

SELF-CONTAINED CUBER

SERVICE MANUAL

IM-21CNE IM-30CNE IM-30CWNE IM-45CNE IM-45NE IM-45WNE IM-65NE IM-65WNE IM-65WNE IM-100CNE IM-100NE IM-100WNE IM-130NE IM-130WNE IM-240WNE

E1EC-848 (061020)

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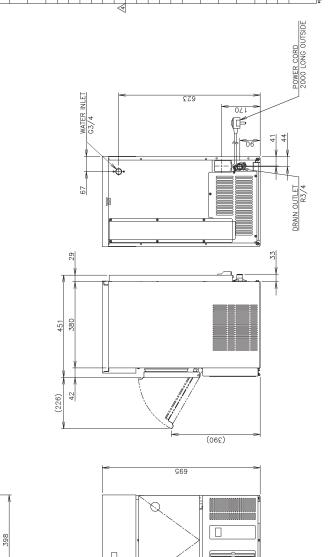
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I. SPECIFICATIONS

1. DIMENSIONS/SPECIFICATIONS

[a] IM-21CNE (Air-cooled)



- Install the product properly in accordance with the instructions and location, water supply/drain connections and electrical connections stated in the instruction and installation manuals provided. Allow 10mm extra space at the installation site to meet any installation requirements (additional spacing is also required for proper air flow and pipe connections).
 The ice production depends on the ambient and water temperatures. Refer to the instruction manual.
 Product Code: E1FA-D003

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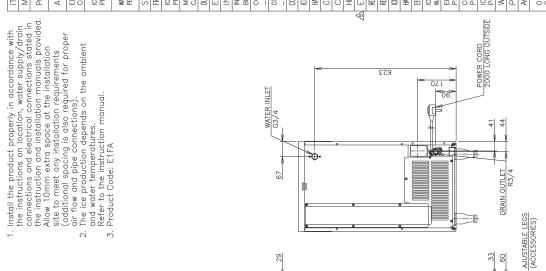
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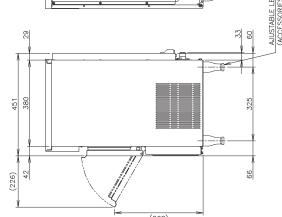
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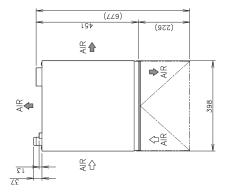
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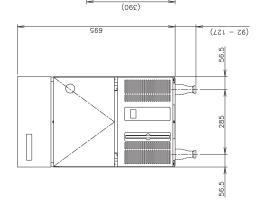
[b] IM-30CNE (Air-cooled)

	ITEM	Hoshizaki Cube Ice Maker
	MODEL	1-30CNE
	POWER SUPPLY	220-240V 50Hz Min. 0.66kVA (2.8A)
	AMPERAGE	Running: 1.7A Rated Motor: 1.7A Starting: 10A
	ELECTRIC CONSUMPTION	Rated Motor: 270W (Power factor: 66%)
	ICE PRODUCTION PER 24h	Approx. 234g (5mm)/28kg (15mm) (Ambient Temp.10°C, Water Temp.10°C) Approx. 224g (5mm)/24kg (15mm) (Ambient Temp.21°C, Water Temp.15°C) Approx. 18kg (5mm)/19kg (15mm) (Ambient Temp.22°C, Water Temp.21°C)
	WATER CONSUMPTION PER 24h	Approx. 0.10nf (Ambient Temp.10°C, Water Temp.10°C) Approx. 0.06nf (Ambient Temp.21°C, Water Temp.15°C) Approx. 0.05nf (Ambient Temp.32°C, Water Temp.21°C)
	SHAPE OF ICE	
	FREEZE CYCLE TIME	Approx. 24min (Ambient Temp.21°C, Water Temp.15°C)
	PER CYCLE	Approx. 0.4kg/18pcs. (Ambient Temp.21°C, Water Temp.15°C)
	MAX STORAGE CAPACITY	Approx. 11.5kg (Bin Control Setting Approx. 6kg)
	OUTSIDE DIMENSIONS	W) × 451mm (D) × 695m
	EXTERIOR	
	INSULATION	
	BLOWING AGENT	Water Blown
	CONNECTIONS – FI FCTRIC	X-Type Con. (with CONT. Plug)
-	CONNECTIONS	Inlet G3/4 (connected at rear side)
	CONNECTIONS-DRAIN	Outlet R3/4 (connected at rear side)
	ICE MAKING SYSTEM	
	HARVESTING SYSTEM	Hot Gas Defrost
	COMPRESSOR	0
	CONDENSER	Fin and Tube type , Air-cooled
~	FVAPORATOR	4JUW (J/UKCGI/II) (AMDIENT LEMP.JZ U, WOTEF LEMP.Z L U) Flactralass nickel plated Conner Tube on Sheet and Calls
5	REFRIGERANT CONTROL	
	REFRIGERANT CHARGE	R134a/130g
	ICE MAKING CONTROL	Thermistor, Timer
	BIN CONTROL	Microswitch (with Time Delay) Board
	ICE MAKING WATER CONTROL	Timer, Water Pan's Movement
	ELECTRICAL PROTECTION	Class I Appliance, 5A Fuse
	COMPRESSOR PROTECTION	Auto-reset Overload Protector
	ICE MAKER PROTECTION	Interlock by Controller Board
	WEIGHT	
	PACKAGE)5mm (W) x 575mm
	ACCESSORIES	u
	OPERATING CONDITIONS	Ambient Temp.: 1 - 40 v., water suppy Temp.: 9-33 v. Water Supply Pressure: 0.07-0.8MPa (0.7-8bar) Voltaae Ranae: Rated Voltaae±6%
	*We reserve the right to	We reserve the right to make changes in specifications and design without prior notice.



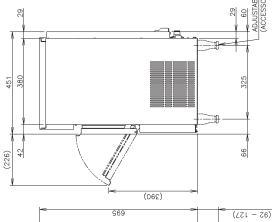






[c] IM-30CWNE (Water-cooled)

L		A		
	OPERATING	Water Supply Pressure: 0.07-0.8MPa (0.7-8bar)		Hoshizaki Cube Ice Maker
		Voltage Range: Rated Voltage±6%		IMI-JUCWINE 1 DIAOF DOD DAME FOLL
///*	e reserve the right t	*We reserve the right to make changes in specifications and design without prior notice. 1 hestall the producet proceeded in accordance with	e. POWER SUPPLY	Capacity: Min. 0.66kVA (2.8A)
-	the instruction	the instructions on location, water supply/drain the instructions on location, water supply/drain connections and electrical connections stated in	AMPERAGE	Running: 1.2A Rated Motor: 1.2A Starting: 10A
	the instruct	the instruction and installation monuals provided.	ELECTRIC CONSUMPTION	Rated Motor: 190W (Power factor: 65%)
	site to mee (additional	Allow Turnin extra space at the installation site to meet any installation requirements (additional spacing is also required for proper	ICE PRODUCTION PER 24h	Aprox. 28kg (5mm)/32kg (15mm) (Ambient Temp.10°C, Water Temp.10°C) Approx. 26kg (5mm)/30kg (15mm) (Ambient Temp.21°C, Water Temp.15°C)
	~	air flow and pipe connections).		Approx. 24kg (Jmm// 20kg (Tomm) (Ambient Temp.32 V, Mater Temp.21 V)
2.		The ice production depends on the ambient and water temperatures.	WATER CONSUMPTION PER 24h	Approx. 0.07m ² (Amiliant Temp.10 c), water Temp.10 c)
ч		Refer to the instruction manual.	SHAPF OF ICF	Clube Approx. U.Uom (Amblent Lemp.22 C., Water Lemp.21 C) Clube Approx. 28 x 28 x 32 mm
ņ		ide: ElrA-DUUZ	FREEZE CYCLE TIME	Approx. 20min (Ambient Temp.21°C, Water Temp.15°C)
			ICE PRODUCTION PFR CYCLF	Approx. 0.4kg/18pcs. (Ambient Temp.21°C, Water Temp.15°C)
			MAX STORAGE	Approx. 11.5kg (Bin Control Setting Approx. 6kg)
			OUTSIDE DIMENSIONS	398mm (W) x 451mm (D) x 695mm (H)
			EXTERIOR	Stainless Steel, Galvanized Steel (Rear)
			INSULATION	Polyurethane Foam
			INSULATION FOAM BLOWING AGENT	Water Blown
			INSULATION FOAM BLOWING AGENT	X-Type Con. (with CONT. Plug)
29		$67 \frac{\text{WALEK INLET}}{163/4}$	CONNECTIONS	Inlet G3/4 (connected at rear side)
		- / - POWER CORD	-	Outlet R3/4 (connected at rear side)
			CONNECTIONS	Inlet Rc1/2 (connected at rear side)
		₩ /	ICF MAKING SYSTEM	Outlet KC1/2 (connected at rear side) Cell +vne
			HARVESTING SYSTEM	Hot Gas Defrost
	0	0	COMPRESSOR	Hermetic
			CONDENSER	Tube-in-Tube Type, Water-cooled
			HEAT REJECTION	225W (195kcal/h) (Ambient Temp.32°C, Water Temp.21°C)
		£ζ	EVAPORATOR	Electroless nickel plated Copper Tube on Sheet and Cells
		.9 .9	REFRIGERANT CONTROL	Thermostatic Expansion Valve
			REFRIGERANT CHARGE	R134a/180g
			ICE MAKING CONTROL	, Timer
		÷	HARVESTING CONTROL	
		- h	BIN CONTROL	Microswitch (with Time Delay) Board
	mm State		ICE MAKING WATER CONTROL	Timer, Water Pan's Movement
	Ì		ELECTRICAL PROTECTION	Class I Appliance, 5A Fuse
29	COOLING WATER	ATER // 41	COMPRESSOR PROTECTION	Auto-reset Overload Protector
60	Rc1/2(INLET)	96	ICE MAKER PROTECTION	Interlock by Controller Board
DUSTABLE LEGS	COOLING WATER	VATER R3/4	WEIGHT	35kg (Gross 41kg)
CCESSORIES)	Rc1/2(0U	ITLET)	PACKAGE	I
			ACCESSORIES	Scoop, Leg, Installation Kit



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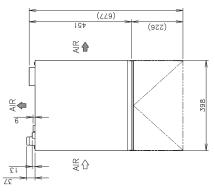
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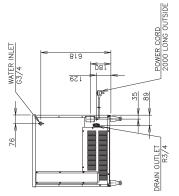


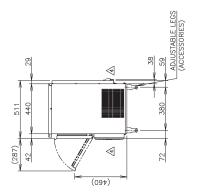


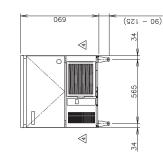
[d] IM-45CNE (Air-cooled)

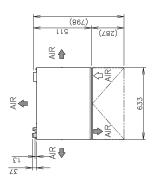
	ITEM	
_	MODEL	M-45CNE
Ti I	POWER SUPPLY	Min.
	AMPERAGE	Running: 2.4A Rated Motor: 2.4A Starting: 13A
	ELECTRIC CONSUMPTION	Rated Motor: 320W (Power factor: 55%)
	ICE PRODUCTION PER 24h	Approx. 364g (5mm)/444g (15mm) (Ambient Temp, 10°C, Water Temp, 10°C) Approx. 324g (5mm)/404g (15mm) (Ambient Temp, 21°C, Water Temp, 15°C) Approx. 294g (5mm)/734a (15mm) (Ambient Temp, 27°C, Mater Temp, 27°C)
	WATER CONSUMPTION PER 24h	Approx. 0.17m ⁽ /Ambient Temp.10°C, Water Temp.10°C) Approx. 0.10m ⁴ (Ambient Temp.21°C, Water Temp.15°C) Approx. 0.09m ⁴ (Ambient Temp.37°C, Water Temp.21°C) Approx. 0.09m ⁴ (Ambient Temp.37°C, Water Temp.21°C)
	SHAPE OF ICE	Cube Approx. 28 x 28 x 32mm
	FREEZE CYCLE TIME	Approx. 28min (Ambient Temp.21°C, Water Temp.15°C)
	ICE PRODUCTION PER CYCLE	Approx 0.67kg/30pcs. (Ambient Temp.21°C, Water Temp.15°C)
	MAX STORAGE CAPACITY	Approx. 15kg (Bin Control Setting Approx. 8kg)
	OUTSIDE DIMENSIONS	W) x 511mm (D) x 690m
	EXTERIOR	Stainless Steel, Galvanized Steel (Rear)
	INSULATION FOAM	
	BLOWING AGENT	UMO
	- ELECTRIC	X-Type Con. (with CONT. Plug)
	CONNECTIONS - WATER SUPPLY	Inlet G3/4 (connected at rear side)
	CONNECTIONS-DRAIN	Outlet R3/4 (connected at rear side)
	ICE MAKING SYSTEM	Cell type
	HARVESTING SYSTEM	Hot Gas Defrost
	COMPRESSOR	Hermetic
	CONDENSER	Fin and Tube type , Air-cooled
<		D4UW (SOUKcal/n) (Ambient Lemp.22 C, Water Lemp.21 C)
4	REFRICERANT CONTROL	Electroless nickel plated Copper Lube on Sheet and Cells Capillary Tube
	REFRIGERANT CHARGE	R134a/160g
	ICE MAKING CONTROL	Thermistor, Timer
	HARVESTING CONTROL	i
	BIN CONTROL	Microswitch (with Time Delay) Board
	ICE MAKING WATER CONTROL	Timer, Water Pan's Movement
	ELECTRICAL PROTECTION	Class I Appliance, 5A Fuse
	COMPRESSOR	Auto-reset Overload Protector
	ICE MAKER PROTECTION	Interlock by Controller Board
	WEIGHT	48kg (Gross 56kg)
	PACKAGE	35mm
	ACCESSORIES	, Installation Kit
	OPERATING CONDITIONS	Ambient lemp.: 1 - 40°C, Water Supply lemp.: 5-35°C Water Supply Pressure: 0.07-0.8MPa (0.7-8bar) Voltane Ranae: Rated Voltane+6%
	*We reserve the right to	We reserve the right to make changes in specifications and design without prior notice.





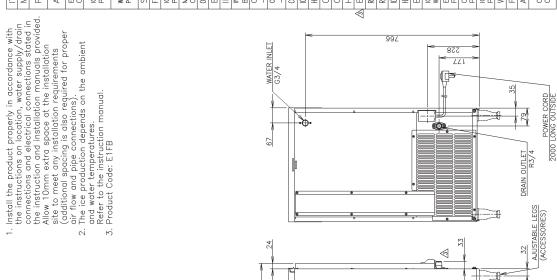


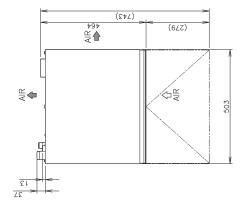


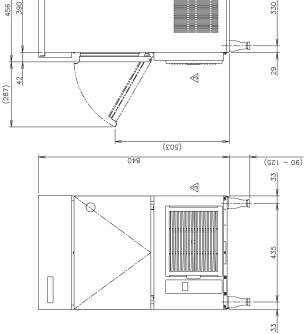


[e] IM-45NE (Air-cooled)

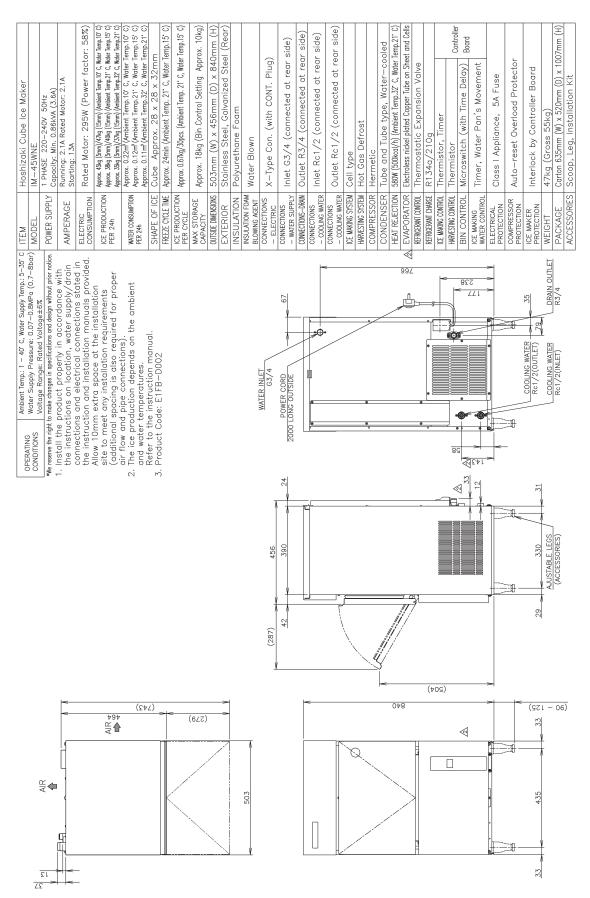
ITEM	Hoshizaki Cube Ice Maker
MODEL	님
POWER SUPPLY	1 PHASE 220-240V 50Hz Capacity: Min. 0.86kVA (3.6A)
AMPERAGE	2.4A Rated Moi 13A
ELECTRIC CONSUMPTION	Rated Motor: 330W (Power factor: 57%)
ICE PRODUCTION PER 24h	Approx. 364g (Smm)/444g (15mm) (Ambient Temp.10° C, Water Temp.10° C) Approx. 324g (Smm)/404g (15mm) (Ambient Temp.21° C, Water Temp.15° C) Approx. 294g (Smm)/329g (15mm) (Ambient Temp.32° C, Water Temp.21° C)
WATER CONSUMPTION PER 24h	Approx. 0.17m [*] (Ambient Temp.10 [°] C, Water Temp.10 [°] C) Approx. 0.10m [*] (Ambient Temp.21 [°] C, Water Temp.15 [°] C) Approx. 0.09m [*] (Ambient Temp.32 [°] C, Water Temp.21 [°] C)
SHAPE OF ICE	Cube Approx. 28 x 28 x 32mm
FREEZE CYCLE TIME	ater Temp.15*
PER CYCLE	Approx. 0.67kg/30pcs. (Ambient Temp.21° C, Water Temp.15° C)
MAX STORAGE CAPACITY	Approx. 18kg (Bin Control Setting Approx. 10kg)
OUTSIDE DIMENSIONS	56mm (D) x 840n
EXTERIOR	Stainless Steel, Galvanized Steel (Rear)
INSULATION	Polyurethane Foam
BLOWING AGENT	Water Blown
CONNECTIONS - FI FCTRIC	X-Type Con. (with CONT. Plug)
CONNECTIONS	Inlet G3/4 (connected at rear side)
CONNECTIONS-DRAIN	Outlet R3/4 (connected at rear side)
ICE MAKING SYSTEM	
HARVESTING SYSTEM	Hot Gas Defrost
COMPRESSOR	Hermetic
CONDENSER	Fin and Tube type , Air-cooled
HEAL REJECTION	540W (550Kcal/h) (Ambient lemp.32 C, Water lemp.21 C)
	clecuoless nickel plateu vopper lube on oneel and vens Capillary Tube
REFRIGERANT CHARGE	R134a/160g
ICE MAKING CONTROL	Thermistor, Timer
HARVESTING CONTROL	Thermistor
BIN CONIROL	Microswitch (with lime Uelay) Board
ICE MAKING WATER CONTROL	Timer, Water Pan's Movement
ELECTRICAL PROTECTION	Class I Appliance, 5A Fuse
COMPRESSOR PROTECTION	Auto-reset Overload Protector
ICE MAKER PROTECTION	Interlock by Controller Board
WEIGHT	52kg)
PACKAGE	55mm (/
ACCESSORIES	Scoop, Leg, Installation Kit Ambient Terms 1 - 40° C Water Sunch Terms 5-35° C
OPERATING CONDITIONS	- 6 8
*We reserve the right to	o make changes in specifications and design without prior notice.







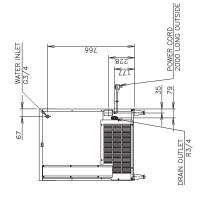
[f] IM-45WNE (Water-cooled)

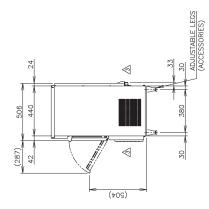


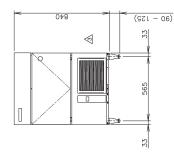
[g] IM-65NE (Air-cooled)

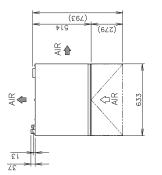
	ITEM	Hoshizaki Cuha Ica Makar
	MODEL	2222
- 11	POWER SUPPLY	1 PHASE 220-240V 50Hz Capacity: Min. 1.11kVA (4.7A)
	AMPERAGE	2.9A Rated Mo
	ELECTRIC CONSUMPTION	Rated Motor: 400W (Power factor: 57%)
	ICE PRODUCTION PER 24h	Approx. SDkg (Smm)//SSkg (15mm) (Ambient Temp.10° C) Water Tem.10° C) Approx. Arbg (Smm)/SSkg (15mm) (Ambient Temp.21° C, Water Temp.15° C) Approx. Askg (Smm1/Askg (15mm) (Ambient Temp.27° C, Water Temp.21° C)
	WATER CONSUMPTION PER 24h	Approx. 0.21mf (Ambient Temp.10' C, Weter Temp.10' C) Approx. 0.14mf (Ambient Temp.10' C, Weter Temp.15' C) Approx. 0.12mf (Ambient Temp.32' C, Weter Temp.21' C)
	SHAPE OF ICE	Cube Approx. 28 x 28 x 32mm
	FREEZE CYCLE TIME ICE PRODUCTION	Approx. 26min (Ambient Temp.21° C, Water Temp.15° C) Annov. 0.94ka/42ncs (Amhiant Temn 31° C. Water Temn 15° C)
	MAX STORAGE	
	OUTSIDE DIMENSIONS	n (W) x 506mm (D) x
	EXTERIOR	teel, Galvanized S
	INSULATION	Polyurethane Foam
	INSULATION FOAM BLOWING AGENT	Water Blown
	CONNECTIONS - ELECTRIC	X-Type Con. (with CONT. Plug)
	CONNECTIONS - WATER SLIPPLY	Inlet G3/4 (connected at rear side)
	CONNECTIONS-DRAIN	Outlet R3/4 (connected at rear side)
	ICE MAKING SYSTEM	Cell type
	HARVESTING SYSTEM	Hot Gas Defrost
	COMPRESSOR	Hermetic
	CONDENSER	Fin and Tube type , Air-cooled
4	HEAT REJECTION	800W (690kcal/h) (Ambient Temp.32' C, Water Temp.21' C) Elocitoloco sicicici alotod Connect Tubic on Shoot and Callo
হ	_	Capillary Tube
\otimes		
	ICE MAKING CONTROL	Thermistor, Timer
	HARVESTING CONTROL	
	BIN CONTROL	Microswitch (with Time Delay) Board
	ICE MAKING WATER CONTROL	Timer, Water Pan's Movement
	ELECTRICAL PROTECTION	Class I Appliance, 5A Fuse
	COMPRESSOR	Auto-reset Overload Protector
	ICE MAKER PROTECTION	Interlock by Controller Board
	WEIGHT	53kg (Gross 61kg)
	PACKAGE	35mm (W) ×
	ACCESSORIES	
	OPERATING CONDITIONS	Amblert lemp: 1 – 40 C, Water Supply lemp: 3–33 C Water Supply Pressure: 0.07–0.8MPa (0.7–8bar) Valtano Brando Valtano 4.69
	*We reserve the right to	We reserve the right to make changes in specifications and design without prior notice.

 Install the product properly in accordance with the instructions on location, water supply/drain the instruction and installation connections stated in the instruction and installation manuals provided. Allow 10mm extra space at the installation site to meet any installation requirements (additional spacing is also required for proper air flow and pipe connections).
 The ice production depends on the ambient and water thermeratures.
 Refer to the instruction manual.
 Product Code: E1FD





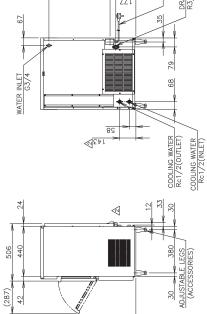


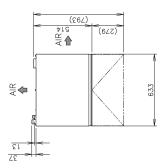


[h] IM-65WNE (Water-cooled)

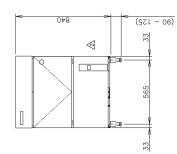
1 - 40° C, Water Supply Temp.: 5-35° C	ITEM	Hoshizaki Cube Ice Maker
Pressure: 0.07-0.8MPa (0.7-8bar) 	MODEL	NE
specifications and design without prior notice.	POWER SUPPLY	220-240V 50Hz Min. 0.99kVA (4.2A)
serly in accordance with ation, water supply/drain	AMPERAGE	Running: 2.5A Rated Motor: 2.5A Starting: 15A
ical connections statea in allation manuals provided.	ELECTRIC CONSUMPTION	Rated Motor: 370W (Power factor: 61%)
e at the installation ation requirements ilso required for proper	ICE PRODUCTION PER 24h	Approx. 53kg (5mm)/63kg (15mm) (Anbient Termp.10° C, Water Termp.10° C) Approx. 46kg (5mm)/55kg (15mm) (Anbient Termp.21° C, Water Termp.15° C) Approx. 44kg (5mm)/52kg (15mm) (Anbient Termp.22° C, Water Termp.21° C)
sctions). ends on the ambient s.	WATER CONSUMPTION PER 24h	Approx. 0.20m ² (Ambient Temp. 10° C, Water Temp. 10° C) Approx. 0.13m ³ (Ambient Temp.21° C, Water Temp. 15° C) Approx. 0.12m ³ (Ambient Temp.32° C, Water Temp.21° C)
r manual.	SHAPE OF ICE	
700	FREEZE CYCLE TIME	nbient Temp.21'
	ICE PRODUCTION PER CYCLE	Approx. 0.94kg/42pcs(5¢) (Ambient Temp.21* C, Water Temp.15* C)
	MAX STORAGE CAPACITY	Approx. 26kg (Bin Control Setting Approx. 18kg)
	OUTSIDE DIMENSIONS	633mm (W) × 506mm (D) × 840mm (H)
	EXTERIOR	Stainless Steel, Galvanized Steel (Rear)
	INSULATION	Polyurethane Foam
	INSULATION FOAM BLOWING AGENT	Water Blown
	CONNECTIONS - ELECTRIC	X-Type Con. (with CONT. Plug)
	CONNECTIONS - WATER SUPPLY	Inlet G3/4 (connected at rear side)
	CONNECTIONS-DRAIN	Outlet R3/4 (connected at rear side)
	CONNECTIONS - COOLING WATER	Inlet Rc1/2 (connected at left side) Outlet Rc1/2 (connected at left side)
	ICE MAKING SYSTEM	Cell type
67	HARVESTING SYSTEM	Hot Gas Defrost
	COMPRESSOR	Hermetic
	CONDENSER	Tube and Tube type , Water-cooled
<		770W (660kcal/h) (Ambient Temp.32' C, Water Temp.21' C)
<u>ه</u>		Electroless nickel plated Copper Tube on Sheet and Cells
	REFRIGERANT CONTROL	
99	REFRIGERANT CHARGE	R134a/250g
L	ICE MAKING CONTROL	Thermistor, Timer
	HARVESTING CONTROL	Thermistor Controller
278 278	BIN CONTROL	Microswitch (with Time Delay) Board
N N. M-	ICE MAKING WATER CONTROL	Timer, Water Pan's Movement
35 POWER CORD	ELECTRICAL PROTECTION	Class I Appliance, 5A Fuse
à	COMPRESSOR PROTECTION	Auto-reset Overload Protector
R3/4	ICE MAKER PROTECTION	Interlock by Controller Board
	WEIGHT	54kg (Gross 64kg)
	PACKAGE	55mm (W) x 570mm (
	ACCESSORIES	Scoop, Installation Kit, Ice Chute







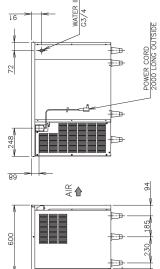




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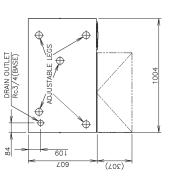
[i] IM-100CNE (Air-cooled)

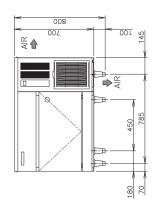
r Supply Temp. : 5–35* C	ITEM	Hoshizaki Cube Ice Maker
0 0	MODEL	LE I
	POWER SUPPLY	1 PHASE 220-240V 50Hz Capacity: Min. 1.28kVA (5.5A)
ccordance with supply/drain	AMPERAGE	Running: 4.1A Rated Motor: 4.1A Starting: 19A
tions stated in inuals provided.	ELECTRIC CONSUMPTION	Rated Motor: 630W (Power factor: 64%)
stallation rements d for proper	ICE PRODUCTION PER 24h	
e ambient	WATER CONSUMPTION	Approx. /:Wg (Jomm)/04Mg (1Jomm) (Ambuent Lemp.JZ L, Water Temp.21 L) Approx. 0.42m ³ (Ambient Temp.10° C, Water Temp.10° C) Approx. 0.20m ³ (Ambient Temp.21° C Wrter Temp.15° C)
	PER 24h	
	SHAPE OF ICE	
	FREEZE CYCLE TIME	Approx. 29min (54) (Ambient Temp. 21° C, Water Temp. 15° C)
	PER CYCLE	Approx. 1.8kg/80pcs. (5¢) (Ambient Temp. 21° C, Water Temp. 15° C)
	MAX STORAGE CAPACITY	Approx. 38kg (Bin Control Setting Approx. 23kg)
	OUTSIDE DIMENSIONS	x 600mm (D) x 800 (79
	EXTERIOR	Stainless Steel, Galvanized Steel (Rear)
	INSULATION	Polyurethane Foam
	INSULATION FOAM BLOWING AGENT	Water Blown
	CONNECTIONS - ELECTRIC	X-Type Con. (with CONT. Plug)
	CONNECTIONS - WATER SUPPLY	Inlet G3/4 (connected at rear side)
	CONNECTIONS-DRAIN	Outlet Rc3/4 (connected at bottom)
	ICE MAKING SYSTEM	Cell type
	HARVESTING SYSTEM	Hot Gas Defrost
·	COMPRESSOR	Hermetic
	CONDENSER	Air-cooled
	HEAT REJECTION	1180W (1015kcal/h) (Ambient Temp. 32° C, Water Temp. 21° C)
۹ ۱6	EVAPORATOR	
×	REFRIGERANT CONTROL	
-	REFRIGERANT CHARGE	R134a/280g
	ICE MAKING CONTROL	Thermistor, limer
	HARVESTING CONTROL	
ATER INLET		MICLOSWILCH (WITH HITHE LEIDY) Board
:3/4	ILE MAKING WATER CONTROL	Timer, Water Pan's Movement
	ELECTRICAL PROTECTION	Class I Appliance, 5A Fuse
	COMPRESSOR PROTECTION	Auto-reset Overload Protector
	ICE MAKER PROTECTION	Interlock by Controller Board
	LEG	Plastic Adjustable from 90 to 130mm
	WEIGHT	
	PACKAGE	Carton 1110mm (W) × 700mm (D) × 875mm (H)
	ACCESSORIES	Scoop, Installation Kit



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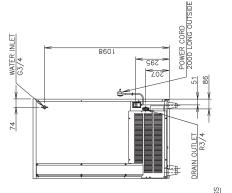
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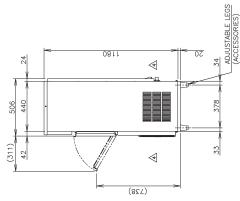
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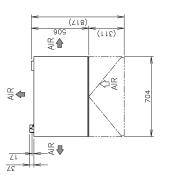
[j] IM-100NE (Air-cooled)

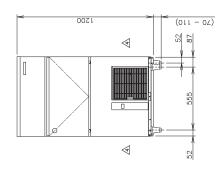
~	,	
	MODEL	HOSNIZAKI CUDE ICE MAKER IM-100NF
- 7	POWER SUPPLY	17 8
	AMPERAGE	Rated M
	ELECTRIC CONSUMPTION	
	ICE PRODUCTION PER 24h	Approx. 85kg (Farm)/95kg (15mm) (Anthient Temp. 10° C, Water Temp. 10° C) Approx. 83kg (5mm)/95kg (15mm) (Anthient Temp. 21° C, Water Temp. 15° C) Approx. 73kg (5mm)/94kg (15mm) (Anthient Temp. 22° C, Water Temp. 21° C)
	WATER CONSUMPTION PER 24h	
	SHAPE OF ICE	Approx. 28 x 28 x 32mm
	FREEZE CYCLE TIME ICE PRODUCTION	Approx. 28min (5¢) (Ambient Temp.21° C, Water Temp.15° C) Approx. 1.8kq/80pcs. (5¢) (Ambient Temp.21° C, Water Temp.15° C)
	MAX STORAGE	
	OUTSIDE DIMENSIONS	704mm (W) x 506mm (D) x 1200mm (H)
	INSULATION	oam
	INSULATION FOAM BLOWING AGENT	Water Blown
	CONNECTIONS - ELECTRIC	X-Type Con. (with CONT. Plug)
	CONNECTIONS – WATER SUPPLY	Inlet G3/4 (connected at rear side)
	CONNECTIONS-DRAIN	Outlet R3/4 (connected at rear side)
	ICE MAKING SYSTEM	Cell type
	HARVESTING SYSTEM	Hot Gas Defrost Hermetic
	CONDENSER	Air-cooled
<	_	1180W (1015kcal/h) (Ambient Temp.32" C, Water Temp.21" C)
€	REFRIGERANT CONTROL	Electroless nickel plated Copper Tube on Sheet and Cells Thermostatic Expansion Valve
\triangleleft		
	ICE MAKING CONTROL	, Timer
	BIN CONTROL	Microswitch (with Time Delay) Board
	ICE MAKING WATER CONTROL	Timer, Water Pan's Movement
	ELECTRICAL	Class I Appliance, 5A Fuse
	COMPRESSOR	Auto-reset Overload Protector
	ICE MAKER PROTECTION	Interlock by Controller Board
	WEIGHT	76kg (Gross 85kg)
	PACKAGE	15mm (W) × 580mm
	ACCESSORIES	1, Installation Kit
	OPERATING CONDITIONS	Ambient temp.: 1 - 40 ℃, water puppy temp.: 9-33 ℃ Water Supply Pressure: 0.07-0.8MPa (0.7-8bar) Voltage Range: Rated Voltage±10%
	*We reserve the right to	We reserve the right to make changes in specifications and design without prior notice.

 Install the ice maker properly in accordance with the instructions on location, water supply/drain connections and electrical connections stated in the instruction and installation manuals provided. Allow 10mm extra space at the installation site to meet any installation requirements (additional spacing is also required for proper air flow and pipe connections). The ice production depends on the ambient and water temperatures. Refer to the instruction manual. Product Code: E1FE
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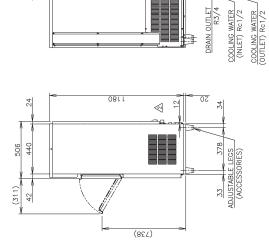


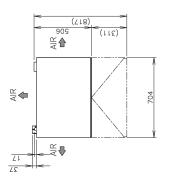


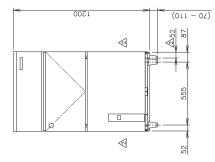
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[k] IM-100WNE (Water-cooled)

	C ITEM	Hoshizaki Cuba Ica Makar
OPERAIING Water Supply Pressure: 0.07–0.8MPa (0.7–8bar) CONDITIONS University (0.7–8bar)		
•We reserve the right to make changes in specifications and design without prior notice.	26. POWER SUPPLY	1 PHASE 220-240V 50Hz Capacity: Min. 1.25kVA (5.5A)
 Install the ice maker properly in accordance with the instructions on location, water supply/drain 		Running: 3.9A Rated Motor: 3.9A Startina: 19A
connections and electrical connections stated in the instruction and installation manuals provided	ELECTRIC CONSUMPTION	Rated Motor: 540W (Power factor: 57%)
Allow 10mm extra space at the installation site to meet any installation requirements (additional spacing is also required for proper	ICE PRODUCTION PER 24h	Approx. SOlig (Smm)/97hg (15mm) (Ambient Term. 10° C, Water Term, 10° C) Approx. Bolg (Smm)/95hg (15mm) (Ambient Term.21° C, Water Term.15° C) Approx. 28a (15mm)/98ha (15mm) (Ambient Term.22° C, Water Term.21° C)
air flow and pipe connections). 2. The ice production depends on the ambient	WATER CONSUMPTION	Approx. 0.45m ² (Ambient Temp.10° C, Water Temp.10° C) Approx. 0.21m ² (Ambient Temp.21° C, Water Temp.15° C)
Refer to the instruction manual.	SHAPF OF ICF	Approx. 0.19m ³ (Ambient Temp.32° C, Water Temp.21° C) Clube Approx 28 × 32 mm
3. Product Code: EIFE-DUUZ	FREEZE CYCLE TIME	Approx. 27min (5¢) (Ambient Temp.21° C, Water Temp.15° C)
	ICE PRODUCTION PER CYCLE	Approx. 1.8kg/80pcs. (54) (Ambient Temp.21° C, Water Temp.15° C)
	MAX STORAGE CAPACITY	Approx. 50kg (Bin Control Setting Approx. 28kg)
	OUTSIDE DIMENSIONS	704mm (W) × 506mm (D) × 1200mm (H)
	EXTERIOR	Stainless Steel, Galvanized Steel (Rear)
	INSULATION	Polyurethane Foam
	INSULATION FOAM BLOWING AGENT	Water Blown
	CONNECTIONS - ELECTRIC	X-Type Con. (with CONT. Plug)
7.4 MATED INI ET	CONNECTIONS - WATER SLIPPLY	Inlet G3/4 (connected at rear side)
$\frac{74}{63/4}$ $63/4$	CONNECTIONS-DRAIN	Outlet R3/4 (connected at rear side)
	CONNECTIONS - CODI ING WATER	Inlet Rc1/2 (connected at left side)
	ICE MAKING SYSTEM	
	HARVESTING SYSTEM	Hot Gas Defrost
	COMPRESSOR	Hermetic
•	CONDENSER	Tube and Tube type, Water-cooled
8		1110W (955kcal/h) (Ambient Temp.32' C, Water Temp.21' C)
601	Z EVAPORATOR	Electroless nickel plated Copper Tube on Sheet and Cells
	REFRIGERANI CUNIKUL	D1212/12/2802
	ICE MAKING CONTROL	Thermistor Timer
	HARVESTING CONTROL	Thermistor
	BIN CONTROL	Microswitch (with Time Delay) Bond
	ICE MAKING WATER CONTROI	Timer, Water Pan's Movement
DRAIN OUTLET	ELECTRICAL	Class I Appliance, 5A Fuse
COOLING WATER	COMPRESSOR	Auto-reset Overload Protector
	ICE MAKER PROTECTION	Interlock by Controller Board
(OUTLET) Rc1/2	WEIGHT	74kg (Gross 84kg)
	PACKAGE	
	ACCESSORIES	Scoop, Leg, Installation Kit



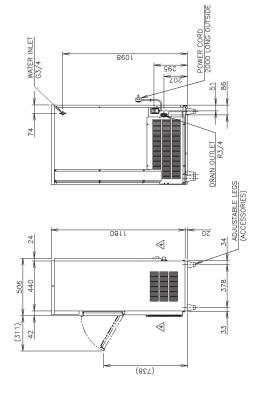




[I] IM-130NE (Air-cooled)

	EM	2
	MODEL	NE
ъ.	POWER SUPPLY	220-240V 50Hz Min. 1.25kVA (5.5A)
	AMPERAGE	Running: 4.5A Rated Motor: 4.5A Starting: 19A
	ELECTRIC CONSUMPTION	Rated Motor: 700W (Power factor: 64%)
4	ICE PRODUCTION PER 24h	Approx. 100kg (5mm)/120kg (15mm) (Ambient Temp.10° C, Water Temp.10° C) Approx. 104kg (5mm)/107kg (15mm) (Ambient Temp.21° C, Water Temp.21° C) Approx. 88kg (5mm)/91kg (15mm) (Ambient Temp.22° C, Water Temp.21° C)
	WATER CONSUMPTION PER 24h	Approx. 0.55m² (Ambient Temp. 10° C, Water Temp. 10° C) Approx. 0.26m² (Ambient Temp. 21° C, Water Temp. 15° C) Approx. 0.22m² (Ambient Temp. 32° C, Water Temp. 21° C)
	SHAPE OF ICE	Approx. 28 x 28 x 32mm
	FREEZE CYCLE TIME	mbient Temp.21
	ICE PRODUCTION PER CYCLE	Approx. 1.8kg/80pcs. (54) (Ambient Temp.21' C, Water Temp.15' C)
	MAX STORAGE CAPACITY	
	OUTSIDE DIMENSIONS	<u>N) × 506mm (D) × 1200r</u>
		Dolvinsthane Form
	INSULATION FOAM	
	CONNECTIONS	X-Type Con. (with CONT. Plug)
	CONNECTIONS - WATER SLIPPLY	Inlet G3/4 (connected at rear side)
	CONNECTIONS-DRAIN	Outlet R3/4 (connected at rear side)
_	ICE MAKING SYSTEM	Cell type
	HARVESTING SYSTEM	Hot Gas Defrost
	CONFRESSOR	Air-cooled
	HEAT REJECTION	1880W (1015kcal/h) (Ambient Temp.32° C, Water Temp.21° C)
4	EVAPORATOR	Electroless nickel plated Copper Tube on Sheet and Cells
	REFRIGERANT CONTROL	
	REFRICERANT CHARCE	
	ICE MAKING CONTROL	, Timer
	HARVESTING CONTROL	Microswitch (with Time Delay) Board
	ICE MAKING WATER CONTROL	Pan's Movement
	ELECTRICAL	Class I Appliance, 5A Fuse
	COMPRESSOR	reset Overload F
	ICE MAKER	Interlock by Controller Board
	WEIGHT	76kg (Gross 85kg)
	PACKAGE	
	ACCESSORIES	Installation Kit
	OPERATING CONDITIONS	Ambient Temp.: 1 - 40° C, Water Supply Temp.: 5-35° C Water Supply Pressure: 0.07-0.8MPa (0.7-8bar) Witting Ranne: Paried Witting+6%

 Install the ice maker properly in accordance with the instructions on location, water supply/drain connections and electrical connections striked in 	the instruction and installation manuals provided. Alow 10mm extra space at the installation	site to meet any installation requirements (additional spacing is also required for proper	air flow and pipe connections). 2 The ice production depends on the ambient	and water temperatures of the second	



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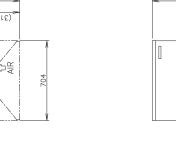
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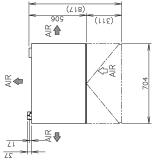
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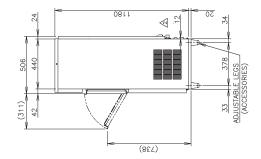
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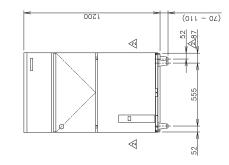


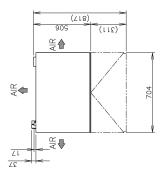


[m] IM-130WNE (Water-cooled)

CDEPATING Ambient Temp.: 1 – 40° C, Water Supply Temp.: 5–35° C	ITEM	Hoshizaki Cube Ice Maker
CONDITIONS Water Supply Pressure: 0.07–0.8MPa (0.7–8bar)	MODEL	
•We reserve the right to make changes in specifications and design without prior notice.	POWER SUPPLY	1 PHASE 220-240V 50Hz Capacity: Min. 1.32kVA (5.6A)
 Install the ice maker properly in accordance with the instructions on location, water supply/drain 	AMPERAGE	Running: 4.2A Rated Motor: 4.2A Storting: 19A
connections and electrical connections stated in the instruction and installation manuals provided.	ELECTRIC CONSUMPTION	Rated Motor: 640W (Power factor: 63%)
Allow 10mm extra space at the installation site to meet any installation requirements (additional spacing is also required for proper	ICE PRODUCTION PER 24h	Approx. 110kg (Emm)/127kg (15mm) (Ambient Temp.10° C, Waler Temp.10° C) Approx. 105kg (Emm)/112kg (15mm) (Ambient Temp.21° C, Waler Temp.15° C) Aborose 95ka (15mm) (Ambient Temp.20° C, Waler Temp.21° C)
air flow and pipe connections). 2. The ice production depends on the ambient and water temperatures.	WATER CONSUMPTION PER 24h	Approx. 0.265m ² (Ambient Temp.10° C, Water Temp.10° C) Approx. 0.265m ² (Ambient Temp.21° C, Water Temp.10° C) Approx. 0.265m ³ (Ambient Temp.21° C, Mater Temp.10° C)
	SHAPE OF ICE	Cube Approx. 0.2011 (Alliated Lettip.22 V, Mater Ferrip.21 V)
3. Product Lode: EIFF-DUUZ	FREEZE CYCLE TIME	Approx. 22min (5¢) (Ambient Temp.21 [•] C, Water Temp.15 [•] C)
	ICE PRODUCTION PER CYCLE	Approx. 1.8kg/80pcs. (5#) (Ambient Temp.21* C, Water Temp.15* C)
	MAX STORAGE CAPACITY	Approx. 50kg (Bin Control Setting Approx. 28kg)
	OUTSIDE DIMENSIONS	704mm (W) x 506mm (D) x 1200mm (H)
	EXTERIOR	Stainless Steel, Galvanized Steel (Rear)
	INSULATION	Polyurethane Foam
	INSULATION FOAM BLOWING AGENT	Water Blown
	CONNECTIONS - ELECTRIC	X-Type Con. (with CONT. Plug)
	CONNECTIONS - WATER SUPPLY	Inlet G3/4 (connected at rear side)
	CONNECTIONS-DRAIN	Outlet R3/4 (connected at rear side)
	CONNECTIONS	Inlet Rc1/2 (connected at left side)
$4 \rightarrow 63/4$	ICE MAKING SYSTEM	Cell type
	HARVESTING SYSTEM	Hot Gas Defrost
	COMPRESSOR	Hermetic
<u>-</u>	CONDENSER	Tube and Tube type, Water-cooled
		1500W (1290kcal/h) (Ambient Temp.32° C, Water Temp.21° C)
·		Electroless nickel plated Copper Tube on Sheet and Cells
	REFRICERANT CHARCE	ΠΕΓΠΟΣΙΔΙΙΟ ΕΧΡΟΠΣΙΟΠ ΥΠΙΥΕ ΡΑΛΛΑλ /ΑΕΛΑ
2601	ICE MAKING CONTROL	Thermistor, Timer
	HARVESTING CONTROL	Thermistor Controller
	BIN CONTROL	Microswitch (with Time Delay) Board
101.9	ICE MAKING WATER CONTROL	Timer, Water Pan's Movement
	ELECTRICAL PROTECTION	Class I Appliance, 5A Fuse
DRAIN OUTLET	COMPRESSOR PROTECTION	Auto-reset Overload Protector
	ICE MAKER PROTECTION	Interlock by Controller Board
COOLING WATER / → ← 86 (INLET) Rc1/2	WEIGHT	74kg (Gross 84kg)
COOLING WATER	PACKAGE	Carton 805mm (W) x 580mm (D) x 1375mm (H)
(OUTLET) Rc1/2	AULESOUNES	Jeoop, reg, illataliation Ait

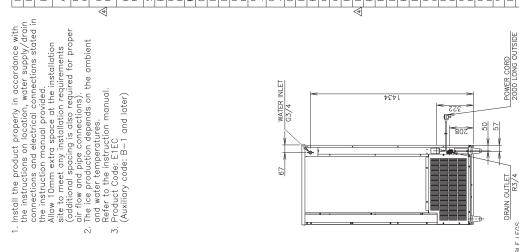


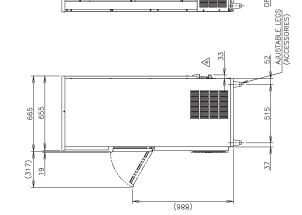


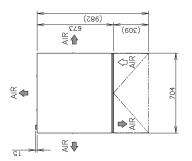


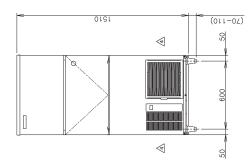
[n] IM-240NE (Air-cooled)

MODEL Im-240NE Formary Solution Solutin Solution Solutinu Solutico Solution Solutinu Solut	ITEM		Hoshizaki Cube Ice Maker
POWER SUPPLY Conscience: 3:5A Conscience: 5:6A AMPERAGE Runnin: 5:6A Rided Motor: 6:6A AMPERAGE Runnin: 5:6A Rided Motor: 6:6A AMPERAGE Runnin: 5:6A Rided Motor: 1:020W (Power factor: 1:00W (Power factor: 1:00W (Power factor: 1:00W (Power factor: 1:00W Aprox. 0:36m (Ambent impurt: 0; Metr Temp. Pres. 2:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0	MODE		-240NE
AMPERACE Running: 6.6. Rated Motor: 6.6.A ELECTRIC CONSUMETION Read Motor: 1320W (Power factor: Wet Ian ELECTRIC, Read Motor: 1320W (Power factor: Wet Ian ELECTRIC, Read Motor: 1320W (Power factor: Wet Ian Rest: A) Reprov.036m (Ambient Ianp.27: C, Weter Temp. SHAPE OF ICE Approv.036m (Ambient Ianp.27: C, Weter Temp. Approv.036m (Ambient Ianp.21: C, Weter Temp. Approv.036m (Ambient Ianp.21: C, Weter Temp. SHAPE OF ICE RETER COLLENE Approv.036m (Ambient Ianp.21: C, Weter Temp. Approv.036m (Ambient Ianp.21: C, Weter Temp. EREZ COLLENE RMEXTRACE Cube Approv.036m (Ambient Ianp.21: C, Weter Temp. Approv.036m (Ambient Ianp.21: C, Weter Temp. EREZ COLLENE RMEXTRACE SHUTM Approv.036m (Ambient Ianp.21: C, Weter Temp. Approv.036m (Ambient Ianp.21: C, Weter Temp. EREZ COLLENE RMEXTRACE ADDICTION Approv.036m (Ambient Ianp.21: C, Weter Temp. Approv.036m (Ambient Ianp.21: C, Weter Temp. EREZ COLLENE RMEXTRACENER Approv.036m (Ambient Ianp.21: C, Weter Temp. EREX COLL RMEXTRACENER Activactor RMEXTRACENER Activactor	POWER	SUPPLY	PHASE 220-240V apacity: Min. 2.3kVA
ELECTRIC CONSUMENTION Rote dudor: 1320W (Power factor: wer into prov. 2304 (Emm)/2404 (Emm) (Interlit Temp, 21' c., Water Temp, PER 24n. RER 24n. Approv. 0.36m (Ambient Temp, 21' c., Water Temp, Approv. 0.36m (Ambient Temp, 21' c., Water Temp, Approv. 0.36m (Ambient Temp, 21' c., Water Temp, Direct CILDE SHAPE OF ICE Cube Approv. 0.36m (Ambient Temp, 21' c., Water Temp, Approv. 0.36m (Ambient Temp, 21' c., Water Temp, Direct CILDE SHAPE OF ICE Cube Approv. 0.36m (Ambient Temp, 21' c., Water Temp, Direct CILDE Approv. 0.36m (Ambient Temp, 21' c., Water Temp, Direct CILDE Approv. 0.36m (Ambient Temp, 21' c., Water Temp, Direct CILDE Approv. 0.36m (Ambient Temp, 21' c., Water Temp, UKI STIDRICKING Zotarm (Ambient Temp, 21' c., Water Temp, Direct CILDE Approv. 110kg (Bin Control Setting Approv. 0.0030E DMMRSIONS Zotarm (Mithent Temp, 21' c., Water Temp, Matter Zam, USSUATION ADV COLDENTION Polyurrethane F oorn Water Blown CONTROL Polyurrethane F oorn Sotar Control Setting Approv. USSUATION FOW RINUARION FORM Matter ZA/A (Connected at rear side DOWNECTONS Sotar Control Setting Approv. RINUARION FORM Matter ZA/A (Connected at rear side DOWNECTONS Sotar Control Control Setting Approv. RINUARION FORM Matter ZA/A (Connected at rear side DOWNECTONS Sotar Control Control Contreacted at rear side CONNECTONS <t< td=""><td>AMPE</td><td>RAGE</td><td>6.6A Rated Motor: 35A</td></t<>	AMPE	RAGE	6.6A Rated Motor: 35A
ICE PRODUCTION Mean Zibing (Simm)/2449 (Simm) (Ameint Imary 1°, Weat Temp, PER 24h. Approx. Zibing (Simm)/2449 (Simm) (Meaint Imary 1°, Weat Temp, RE 24h. Approx. Zibing (Simm)/2449 (Simm) (Meaint Imary 2°, Weat Temp, RE 24h. Approx. District Annoheant Imary 1°, Si Water Temp, PER 24h. Approx. District Annoheant Imary 1°, Si Water Temp, PER 24h. Approx. District Annoheant Imary 1°, Si Water Temp, PER 24h. Approx. District Annoheant Imary 1°, Water Temp, DC, Expondent Imary 1°, Si Water Temp, EER CYCLE TIME. Approx. District Annoheant Imary 1°, Water Temp, UC, RND, COLDEN 2001, Matter Temp, 2°, Si Water Temp, EER CYCLE TIME. Approx. District Annoheant Imary 1°, Water Temp, UC, RND, EDD 2010, Matter Temp, 2°, Si Water Temp, VE, STDALTIONN Approx. District Annoheant Imary 1°, Water Temp, UC, RND, EDD 2010, Matter Temp, 2010, Matter Temp, 2010, Mater Temp	ELECTF	RIC	Aotor:
wttr Approx. 0.76mf (Ambient Termp. 21° C, Water Termp. FER 24h. RR 24h. Approx. 0.35mf (Ambient Termp.21° C, Water Termp. Approx. 0.35mf (Ambient Termp.21° C, Water Termp. 26: FROLE TIME PAPPROX. 28 X 52: CMTERTEX CVCLE TWE Approx. 23mg/140pcs. (Ambient Termp.21° C, Water Termp. 0.54mf (Ambient Termp.21° C, Mater Termp.21° C, Water Termp. 0.54mf (Ambient Termp.24mg (Ambient Termp.27mg (Ambient T		DUCTION	Approx. Z20kg (5mm)/240kg (15mm) (Ambient Temp.10° C) Vbtber Temp.10° C) Approx. 205kg (5mm)/220kg (15mm) (Ambient Temp.21° C) Vbtber 15mp.21° C) Approx. 161kg (5mm)/190kg (15mm) (Ambient Temp.21° C) Vbtber 27° C)
Cube Approx. 28 x 32 mm Approx. 20min (Ambient Temp.21° C, Water Temp. Approx. 32/ag/140pcs. (Ambient Temp.21° C, Water Temp. Approx. 110/bg (Bin Control Setting Approx. TO4mm(W) x 665mm(D) x 1510mr Stoinless Steel, Golvanized Steel (F Polyurethane Foam Water Blown X-Type Con. (with CONT. Plug) Inlet G3/4 (connected at rear sid. Outlet R3/4 (connected at rear sid. Phot Gas Defrost Hermetic Thermistor Thermistor Thermistor Thermistor Microswitch (with Time Delay) R404A/500g Appliance, 5A Fuse Auto-reset Overload Protector Interlock by Controller Board Thermistor Microswitch (with Time Delay) Microswitch (with Time Delay) Microswitch (With X 560m/(W) × 760m/(D) × 1684m Scoopy Leg.	WATER CO PER 24h	NOLLANN	
FREEE CVCLE TWB Approx. 20min (Ambient Temp. 21° C, Water Temp. UCE NOUCTION Approx. 328/140ps. (Ambient Temp. 21° C, Water Temp. UCE NOUCTION MAX TORNE CAPACITY Approx. 110/kg (Bin Control Setting Approx. 00/SBE DMERXONS 704-mm(W) x 665/mm(D) x 151/07mit 243/1201 WX STORNE CAPACITY Poprox. 110/kg (Bin Control Setting Approx. 00/SBE DMERXONS 704-mm(W) x 665/mm(D) x 151/07mit 243/151/07mit 243/1201 EXTERIOR Statinless Steel, Golvanized Steel (Groundized Steel (Groundised Steel (Grouddised Steel (Grouddised Steel (Groundised Steel (SHAPE	OF ICE	Approx. 28 x 28 x 32mm
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WK STORAGE CAMPICING Approx. WK STORAGE CAMPICING 704+mm/(W) x 665/mm/(D) x 1510-mm UNISULATION Polyurethane Foarm INSULATION Polyurethane RINGSTRUM X-Type Con. (with CONT. Plug) LEUECTIONS X-Type Con. (with CONT. Plug) CONNECTIONS Notel KR3/4 (connected at rear side CONNECTIONS-DRIN Hot Gas Defrost CONNECTIONS-DRIN Hot Gas Defrost CONNECTIONS-DRIN Hot Gas Defrost CONNECTIONS Stow (37/kgd/h) (Anbient Emp.37. (where Temp Temp Temp Temp Temp Temp Temp Tem		DUCTION	Approx. 3.2kg/140pcs. (Ambient Temp.21° C, Water Temp.15° C)
OUSBE DMBROWR 704-mm(W) x 665mm(D) x 1510m EXTERIOR Statialess Steel, Golvanized Steel (Internation Foam INSULATION Polyurethane Foam Internation Foam BLOWING ACENT X-Type Con. (with CONT. Plug) CONNECTIONS X-Type Con. (with CONT. Plug) CONNECTIONS X-Type Con. (with CONT. Plug) CONNECTIONS N-Type Con. (with Control of rear sid) CONNECTIONS Intel (3/4 (connected at rear sid) CONNECTIONS-DRM Outlet R3/4 (connected at rear sid) CONNECTIONS-DRM Intel (1/2) CONNECTIONS-DRM Dutlet R3/4 (connected at rear sid) CONNECTIONS-DRM Dutlet R3/4 (connected at rear sid) CONNECTIONS-DRM Dutlet R3/4 (connected at rear sid) CONNECTION State and for the procestor CONNECTION Distribution Valve ELECTION Distribution Valve ENAPORETION Thermistor	MAX STORA	GE CAPACITY	Approx. 110kg (Bin Control Setting Approx. 80kg)
EXTERIOR Staniess Steel, Golvanized Steel (In NISUJATION Polyurethane Foam NISUJATION Polyurethane Foam NISUJATION NISUJATION Polyurethane Foam NISUJATION NISUJATION Polyurethane Foam Staniet BLOWING AERT Water Blown CONNECTORS X-Type Con. (with CONT. Plug) CONNECTORS X-Type Con. (with CONT. Plug) CONNECTORS Statistical	OUTSIDE	DIMENSIONS	/) × 665mm(D) × 1510r
 INSUATION Polyurethane Foam INSUATION Polyurethane Foam BLOWING AGENT X-Type Con. (with CONT. Plug) CONNECTIONS X-Type Con. (with CONT. Plug) CONNECTIONS A Variable State of trear side CONNECTIONS A Variable State of the G3/4 (connected at rear side CONNECTIONS A Unite R3/4 (connected at rear side CONNECTIONS A Variable State of the G3/4 (connected at rear side CONNECTIONS A Variable State of the G3/4 (connected at rear side CONNECTIONS A Variable State of the G3/4 (connected at rear side CONNECTIONS A Variable State of the G3/4 (connected at rear side CONNECTIONS A Variable State of the G3/4 (connected at rear side CONNECTION A Variable State of the G3/4 (connected at rear side CONNECTION A Variable State of the G3/4 (connected at rear side CONNECTION A Variable State of the G3/4 (connected at rear side CONNECTION A Variable State of the G3/4 (connected at rear side CONNECTION A Variable State of the G3/4 (connected at rear side CONNECTION A Variable State of the G3/4 (connected at rear side CONNECTION A Variable State of the CONNECTION A Variable State of the C3/4 (connected at rear side of the C	EXTER	RIOR	Steel, Galvanized Steel
Matter Blown Buowns Gekin Convections Water Blown Convections Convections X - Type Con. (with CONT. Plug) Convections Convections Convections Inlet G3/4 (connected at rear side convections) Convections Inlet G3/4 (connected at rear side convections) Convections Inlet G3/4 (connected at rear side convections) Convections Mater Blown Convections Inlet G3/4 (connected at rear side convections) Convections Mater Bay Convections Inlet G3/4 (connected at rear side convections) Convections Bay Mater Bay Inter G3/4 (connected at rear side convections) Convections Bay Mater Bay Inter Gas Convection Bay Mater Bay Convection Convection Mater Pan's Movement Mater Conreal Timer, Water Pan's Movement ELERTROAL Clars I Appliance, 5 A Fuse Convection Convector Mater Conreal Interlock by Conroller Board Mater Conreal Mater Sap Mater Conreal Cono		ALION	Polyurethane Foam
CONNECTIONS X—Type Con. (with CONT. Plug) CONNECTIONS DAILER G3/4 (connected at rear side connections) CONNECTIONS BMM Intel G3/4 (connected at rear side connections) Edmitting supply CONNECTIONS BMM EREMEMICANT Retroless incise joided Coper Tube on Sheet on Example on Value EREMEMICANT REtroless incise joided Coper Tube on Sheet on Example on Value EREMEMICANT Thermostoric Expansion Value EREMEMICANT Thermostoric Timer MMCSING Thermostoric Expansion Value EREMEMICAND More on Sheet on Value EREMEMICAND Thermostoric Expansion Value EREMEMICAND Thermostoric Expansion Value MMCSING Thermostoric Expansion Value <td>BLOWIN</td> <td>G AGENT</td> <td>Water Blown</td>	BLOWIN	G AGENT	Water Blown
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Compression Control of Call type HARKSTIK Heir Call type HARKSTIK Hermetic COMPRESSOR Hermestatic Hall Recommend Hermistor, Timer HARSIMUMIR Thermistor, Timer Makino Thermistor, Timer Misson Ither, Water Pan's Movernent Maker Timer, Water Pan's Movernent Maker Itherlock by Controller Board Maker Interlock by Controller Board Makersuphy Teame: Job	CONNECT	R SUPPLY	t R3/4 (connected at rear
HWRESTING SYSTEM Hot Gas Defrost COMPRESSOR Hermetic COMPRESSOR Rine and Tube type. Air-cooled HEAT RELECTION 2800% (2470ka/dh) (Ambient Temp.32 C, Whet Temp HEAT RELECTION Retroless indee ploted Copper Tube on Sheet an RERREAWI CUNRIQ Thermistor. ITHEN Thermistor. RERREAWI CONRIQ Thermistor. RENOUND Thermistor. IER WAKING Internistor. MRSSING CONRIQ Thermistor. RELECTION Micros Novement MERSING CONRIQ Interfor by Controller Board Conspector Interlock by Controller Board MEIGHT 111 Lkg (Gross 128kg) MetCESORIC Carton 805mm(W) X 760mm(D) X 1684m Auto-reset Noverloler Board WEIGHT MERCESORIC Carton 805mm(W) X 760mm(D) X 1684m <td< td=""><td>ICE MAKI</td><td>NG SYSTEM</td><td>type</td></td<>	ICE MAKI	NG SYSTEM	type
COMPRESSOR Hermetic CONPRESSOR Hermetic CONDENSER Fin and Tube type, Air-cooled HEAI REJECTION 28709 (4270kad/h) (Ambient Temp HEAI REJECTION 28709 (4270kad/h) (Ambient Temp 27.0. Where HEAI REJECTION 28709 (4270kad/h) (Ambient Temp 27.0. Where RETRARMIN Thermistor, Timer Tube on Sheet an RETRARMIN Thermistor, Timer Delay) IC WANNG CNITROL Microswitch (with Time Delay) IC WANNG CNITROL Microswitch (with Time Delay) ID NOUTROL Microswitch (with Time Delay) RELEATROAL Class I Appliance, 5A Fuse COMPRESSOR Auto-reset Overload Protector RETRARME RECONTROL 111 Kg (Gross 128Kg) MICHT 111 Kg (Gross 128Kg) Were Supply Temp: 5- CONDITON Auto-reset Overload Protector CRAKER Method Renge: Rade Voters 2007–0.8040 MICHT 111 Kg (Gross 128Kg) MICHT 2010 (10) x 1684m ACCESSORIES Scoop, Leg, Installalition Kit ONDITION Votege Range: Rade Voters 2007–0.8040 (0.7- CONDITION VOTEGER RANG VOTEGER RANG VOTEGER (0.7- CONDITIONS Votege Range: Rade Voters 2007–0.8040 (0.7- CONDITIONS VOTEGER RANGE RANGE RANG VOTEGER RANGE RA	HARVESTI	NG SYSTEM	Hot Gas Defrost
CONDENSTR Fin and Tube type, Airr-cooled Hear ReJECTION 29/08 (24/08/n/) (Ambet Temp.27, Weder Temp HEAT REJECTION 28/08 (24/08/n/) (Ambet Temp.27, Weder Temp HEARDEANTOR Electroless nickel poled Copper Tube on Sheet an RETROGRAM CHARK Retroless nickel poled Copper Tube on Sheet an RETROGRAM CHARK Retroless nickel poled Copper Tube on Sheet an RETROGRAM CHARK Retroless nickel poled Copper Tube on Sheet an RETROGRAM CHARK Retroless nickel poled Copper Tube on Sheet RETROGRAM CHARK Retroless nickel poled Copper Tube on Sheet Retroless Retroless nickel poled Copper Tube on Sheet MARKING Thermistor Timer, Water Pan's Movement LECRIRCAL Class I Appliance, 5A Fuse COMPRESSOR Auto-reset Overload Protector RECTION Interlock by Controller Board WEIGHT 11 TLAG (Gross 128/kg) WEIGHT 2000 (M) X 7600m(U) X 1684m PACRESORIES Scoop, Led, Instellation Kit ONDRION Valens Render Renge: Rade Voltaget-Bas CONDRION Valens Renge: Rende Voltaget-Bas CONDRION Valens Renge: Rende Voltaget-Bas Without from the Condend Protector To Condon Tool	COMPF	RESSOR	
HEXI REJECTION <i>B2/0W (24/04/h)</i> (Ambient Temp, 25, Gwler Temp EVAPORATIOR Electroless nickel plated Copper Tube on Sheet an EWRREAM CAWRIC Therrmostatic Expansion Valve RERREAM CAWRIC Therrmistor. Timer MRREAM CAWRIC Therrmistor. Timer MRREAM CONIROL Therrmistor. Timer MRREAM CONIROL Therrmistor. Timer MRREAM CAWRIC Mith Time Delay) Buc CR MAKING MATER CONIROL Class I Appliance, 5A Fuse COMPRESSOR Auto-reset Overload Protector PROTECTION Auto-reset Overload Protector RECENT 1114g (Coss 128kg) MRCESSORIS Scoop. Leg. Installation Kit AWRE Shopy Teamp: 5-000 VIELSATING West Supply Teamp: 5-000 VIELSATING VIELS Roop. Leg. Installation Kit DERANING West Supply Teamp: 5-000 VIELSATING VIELS Roop. Leg. Installation Kit DERANING VIELS Scoop. Leg. Installation Kit DERANING VIELS Scoop. Leg. Installation Kit DERANING VIELSES Roop VIELS Scoop. Leg. Installation Kit DERANING VIELS Scoop. Leg. Installation Kit DERANING VIELS Roop VIELS Scoop. Leg. Installation Kit DERANING VIELS Roop VIELS Scoop. Leg. Installation Kit DERANING VIELS ROOP. MICH VIELS Scoop. Leg. Installation Kit DERANING VIELS ROOP. MICH VIELS Scoop. Leg ON CONTONS VIELS ROOP. RANGE VIELS VIELS ROOP. MICH VIELS SCOOP. Leg ON VIELS VIELS VIELS ROOP. ROOP. AND VIELS VIELS VIELS ROOP. MICH VIELS VIELS VIELS ROOP. Leg ON VIELS VIELS ROOP. Leg ON VIELS VIELS ROOP. Leg ON VIELS VIELS VIELS ROOP. Leg ON VIELS VIELS VIELS ROOP. Leg ON VIELS VIELS VIELS VIELS ROOP. Leg ON VIELS VIELS VIELS ROOP. Leg ON VIELS VIELS VIELS VIELS ROOP. VIELS VIELS VIELS VIELS VIELS VIELS VIELS ROOP. VIELS VIELS VIELS VIELS VIELS ROOP. VIELS VI	COND	ENSER	Fin and Tube type, Air-cooled
EVAPORATIOR Electroless make pated Copper lube on Sheet on RERGEAMI CNNRG. RERGEAMI CNNRG. Therrmostatic Expansion Valve RERGEAMI CNNRG. Therrmistor, Timer RERGEAMIC CNNRG. Therrmistor, Timer RERGEAMIC CNNRG. Therrmistor, Timer RERGEAMIC CNNRG. Thermistor, Timer RERGEAMIC CNNRG. Thermistor, Timer BIN CONTROL Microswitch (with Time Delay) BIN CONTROL Timer, Water Pan's Movernent ELECTRICAL Class I Appliance, 5A Fuse RONFECTION Auto-reset Overload Protector RONFECTION Auto-reset Overload Protector REGERTION Nater Supply Fresure: 0.07-0.8MP REGERTION Valeage Range: Rade Voltoge-BS REMERTION Vales Supply Fresure: 0.07-0.8MP		EJECTION	2870W (2470kcal/h) (Ambient Temp.32° C, Water Temp.21° C)
Intermostatic Expansion Valve R404A/500g Thermistor Timer Thermistor Microswitch (with Time Delay) Bio Timer, Water Pan's Movement Timer, Water Pan's Movement Class I Appliance, 5A Fuse Auto-reset Overload Protector Auto-reset Overload Protector Interlock by Controller Board 111kg (Gross 128kg) Carton 805mm(W) X 760mm(D) x 1684m Scoop, Leg, Installation Kit Ambient Temp: 1 – 40° C, Water Supply Temp: 5- Woltege Range: Reted Voltoge-Ender Voltage Range: Reted Voltoge-Ender Mate changes in specifications and design without prior		RATOR T 201100	Electroless nickel plated Copper Tube on Sheet and Cells
Thermistor Con Thermistor Timer Thermistor Con Microswitch (with Time Delay) Box Timer, Water Pan's Movement Con Class I Appliance, 5A Fuse Auto-reset Overload Protector Auto-reset Overload Protector Interlock by Controller Board Caton 805mm(W) x 760mm(D) x 1684m Scoop, Leg. Installation Kit Ambent Temp: 1 - 40°, water Supply Temp: 5- Woter Supply Temp: 6.07-0.8MFa Outset Supply Legange: Rede Voltoge=Rede Voltoge=Rede (0.1- Woter Supply Temp: 5-	KEFKIGEKA	NI CONIKOL	Expansion
Thermistor, Inmer Thermistor, Inmer Microswitch (with Time Delay) Boo Microswitch (with Time Delay) Timer, Water Pan's Movement Class I Appliance, 5A Fuse Auto-reset Overload Protector Auto-reset Overload Protector Interlock by Controller Board 111kg (Cross 128kg) Carton 805mm(W) x 760mm(D) x 1684m Scoop, Leg, Installation Kit Ambient Temp: 1 - 40° c, Water Supply Temp: 5- Water Supply Temp: 1 - 40° C, Water Supply Temp: 5- Water Supply Temp: 6-0.7- Voltage Range: Retea Voltage=Ra	KEFKIGEK	ANI CHAKGE	U 1'
Microswitch (with Time Delay) Microswitch (with Time Delay) But Timer, Water Pan's Movement Class I Appliance, 5A Fuse Auto-reset Overload Protector Interlock by Controller Board 111kg (Gross 128kg) Carton 805mm(W) x 766mm(D) x 1684m Scoop, Leg. Installation Kit Ambient Temp: 1 - 40° c, Water Supply Temp: 5- and Residen Stores Reseave (voltoge-Rage (voltoge-Rage) and Resign without prior make changes in specifications and design without prior	HARVESTIN	G CUNIKUL	
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Auto-reset Overload Protector Interlock by Controller Board 111kg (Gross 128kg) Carton 805mm(W) x 760mm(D) x 1684m Scoop, Leg, Installation Kit Ambient Temp: 1 – 40° c, Water Supply Temp: 5- Voltage Range: Researce: 0.07–0.8MPa (0.7- Voltage Range: Researce: 0.07–0.8MPa (0.7- voltage Range: Researce: 0.07–0.8MPa (0.7- voltage range: rescriptions and design without prior	PROTE	CTION	l Appliance, 5A
Interlock by Controller Board 111kg (Gross 128kg) Carton 805mm(W) x 760mm(D) x 1684m Scoop, Leg, Installation Kit Ambient Temp.: 1 - 40° C, Water Supply Temp.: 5- Votage Range: Restard Voltog=L67a (0.7- Votage Range: Restard Voltog=L67a Make changes in specifications and design without prior	PROTEC	RESSOR	-reset Overload
111kg (Gross 128kg) Carton 805mm(W) x 760mm(D) x 1684m Scoop, Leg, Installation Kit Ambient Temp.: 1 - 40° C, War Supply Temp. 5- Voltage Ronge: Rated Voltage±63 Woltage Ronge: Rated Voltage±63 make changes in specifications and design without prior	ICE MA PROTEC	KER CTION	
Carton 805mm(W) x 760mm(D) x 1684m Scoop, Leg, Installation Kit Ambient Temp. Pr - 40° C, Wallaction Kit Arter Supply Pr - 40° C, 0.70° Supply Temp. 5- Voltage Ronge: Rated Voltage±67 make changes in specifications and design without prior	WEIGH	F	
Scoop, Leg, Installation Kit Ambient Terma: 1 - 40° C, Weter Supply Terma: 5- Voltage Ronge: Rested Voltage±67 with a changes in specifications and design without prior	PACK	AGE	Carton 805mm(W) × 760mm(D) × 1684mm(H)
Ambient Temp.: 1 - 40° C, Water Supply Temp.: 5- Water Supply Pressure: 0.07-0.8MPa (0.7- Voltage Range: Rated Voltage±637 make changes in specifications and design without prior	ACCES	SORIES	Leg, Installation Kit
*We reserve the right to make changes in specifications and design without prior notic	OPERA CONDIT	TING	Ambient Temp.: 1 - 40° C, Water Supply Temp.: 5-35° C Water Supply Pressure: 0.07-0.8MPa (0.7-8bar) Watera Bonne: Prired Voltane+67
	*We reserve	e the right to	









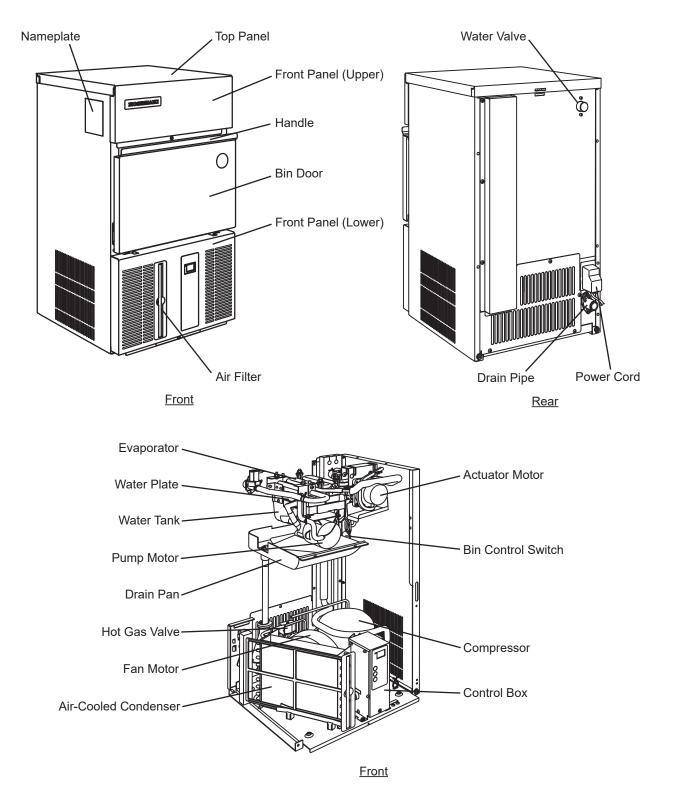
[o] IM-240WNE (Water-cooled)

Hoshrizaki Cube Ice Maker IM—240WNE 1PHASE 220-240V 50Hz 1 PHASE 220-240V 50Hz 1 PHASE 220-240V 50Hz 1 PHASE 220-240V 50Hz Running: 6.3A Rated Motor: 6.3A Starting: 35A Rated Motor: 1300W (Power factor: 857) Aprox 23bg (Sam)/240g (Sam) (Ambient Imap.1C, Mate Imap.1C () Approx 2089 (Sam)/240g (Sam) (Mabient Imap.2C, Water Imap.1C () Approx.035mf (Ambient Temp.1C, C, Water Imap.1C () Approx.035mf (Ambient Temp.2C, C, Water Temp.1C () Approx.035mf (Ambient Temp.2C, C, Water Temp.1C () Approx.103mf (Ambient Temp.2C) C, Water Temp.1C () Approx.103mg (Bin Control Setting Approx. 80kg) 7044mm(W) × 665mm(D) × 1510mm(H) Statinless Steel, Golvanized Steel (Rear) Polyurethane Foam	Water Blown X-Type Con. (with CONT. Plug) Inlet G3/4 (connected at rear side) Outlet R3/4 (connected at rear side) Inlet R1/2 (connected at left side) Outlet R1/2 (connected at left side) Outlet R1/2 (connected at left side) Cell type Cell type Contented at left side) Contented Contented at left side) Controllet R1/2 (connected at left side) Controllet Board 120kg (Gross 127kg) Carton 805mm(W) x 760mm(D) x 1684mm(H) Controllet Board
	INSUCION POAR INSUCION ACENTRY CONNECTIONS CONNECTIONS CONNECTIONS - WATER SUPPLY CONNECTIONS-DBMIN CONNECTIONS-DBMIN CONNECTIONS-STEIM HARANESTER HEAT REJECTION ECONDERSSTER HEAT REJECTION EVAPORATIOR REFREGANT CONTROL INSUCION BIN CONTROL INSUCION BIN CONTROL INSUCION BIN CONTROL INSUCION BIN CONTROL INSUCION BIN CONTROL REFREGANT CONTROL REFREGANT CONTROL REFREGANT CONTROL REFREGANT CONTROL REFREGANT CONTROL REFREGANT CONTROL INSUCION BIN CONTROL REFREGANT CONTROL REFREGAN
OPERATING Ambient Temp: 1 - 40° C., Water Supply Temp: 5-35° C CONDITIONS Water Supply Pressure: 0.07-0.8MPa (0.7-8bar) We reserve the right to make changes in specification without property 1. Install the product property in accordance with the instructions and electrical connections stated in connections can and electrical connections stated in the instruction manual provided. Allow 10mm extra space of the installation stated in the instruction manual provided. The ice product property in accordance with the instruction manual provided. Allow 10mm extra space of the installation stated in the instruction manual provided. Allow 10mm extra space of the installation state of and water temperatures. 2. The ice product propertion space of the installation state of and water temperatures. 3. Refer to the instruction manual. 3. Refer to the instruction manual. 4. Auxiliary code: B-1 and later)	

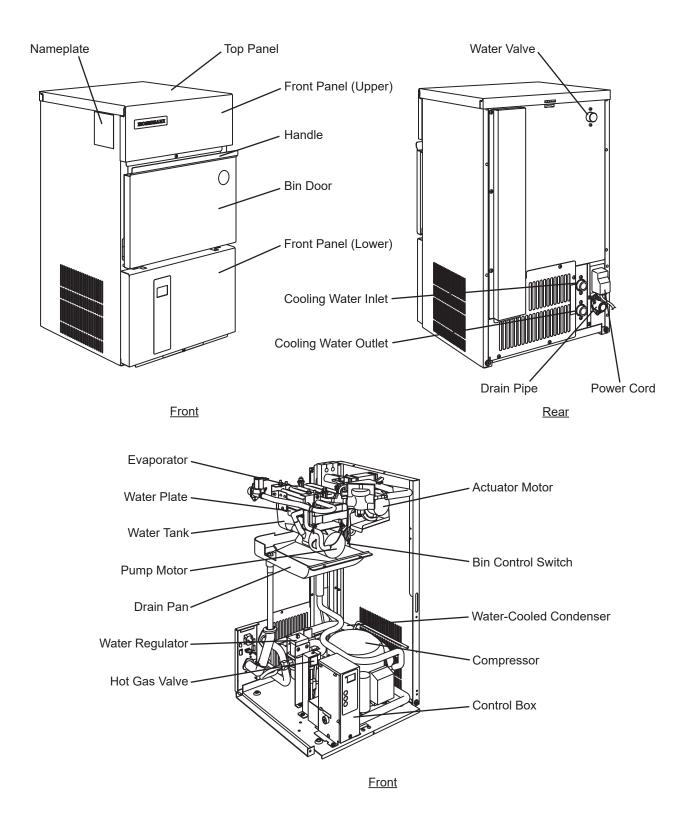
II. GENERAL INFORMATION

1. CONSTRUCTION

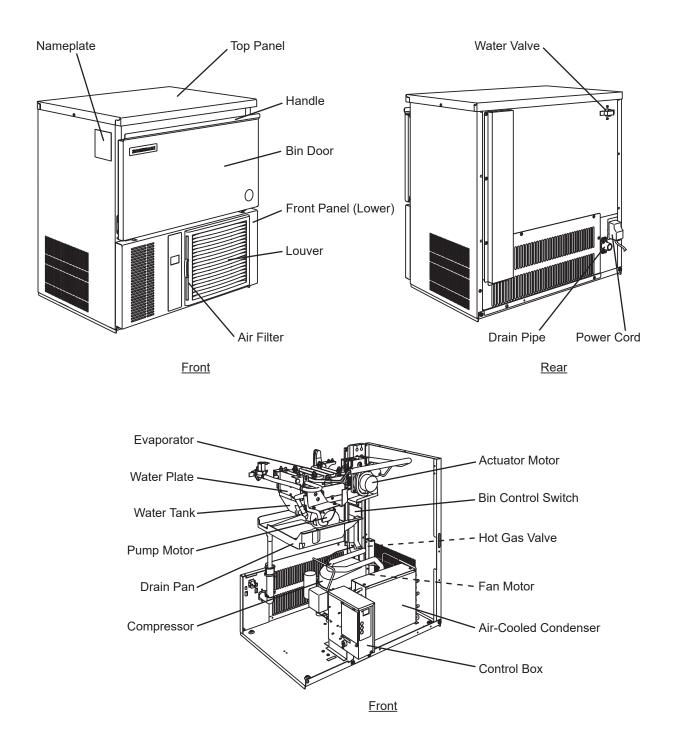
[a] IM-21CNE, IM-30CNE (Air-cooled)



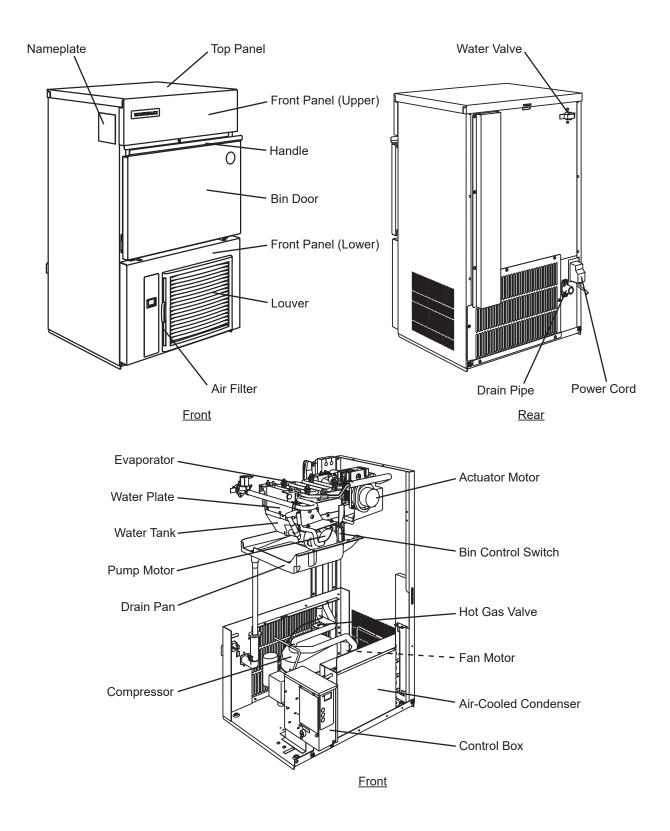
[b] IM-30CWNE (Water-cooled)



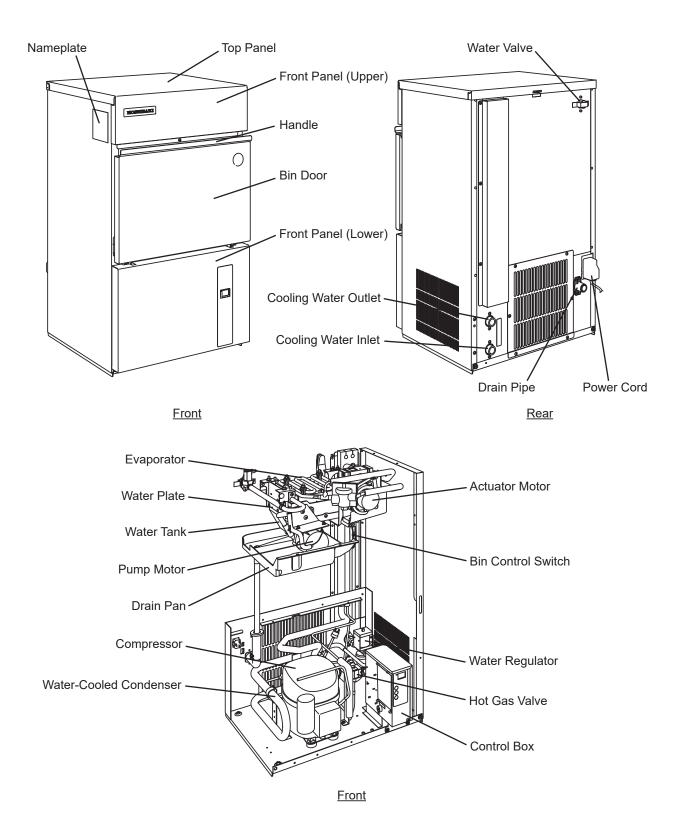
[c] IM-45CNE (Air-cooled)



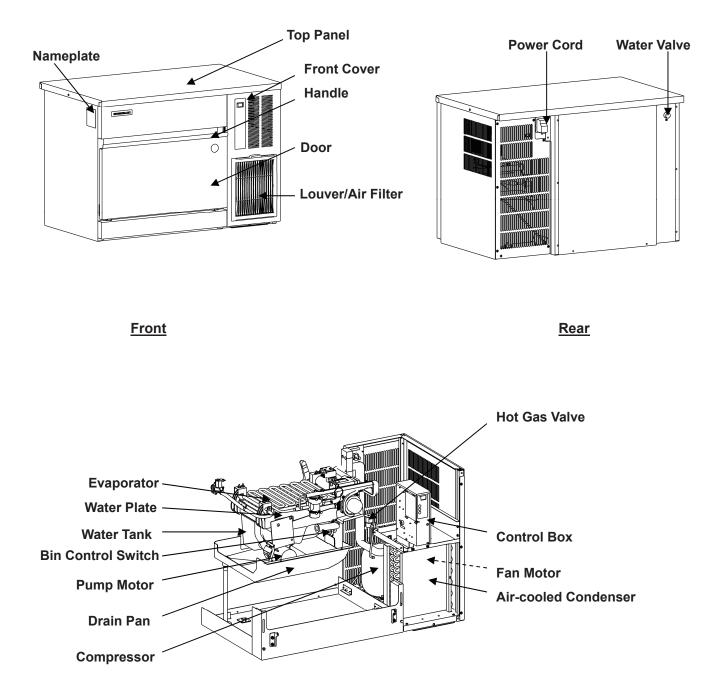
[d] IM-45NE, IM-65NE (Air-cooled)



[e] IM-45WNE, IM-65WNE (Water-cooled)

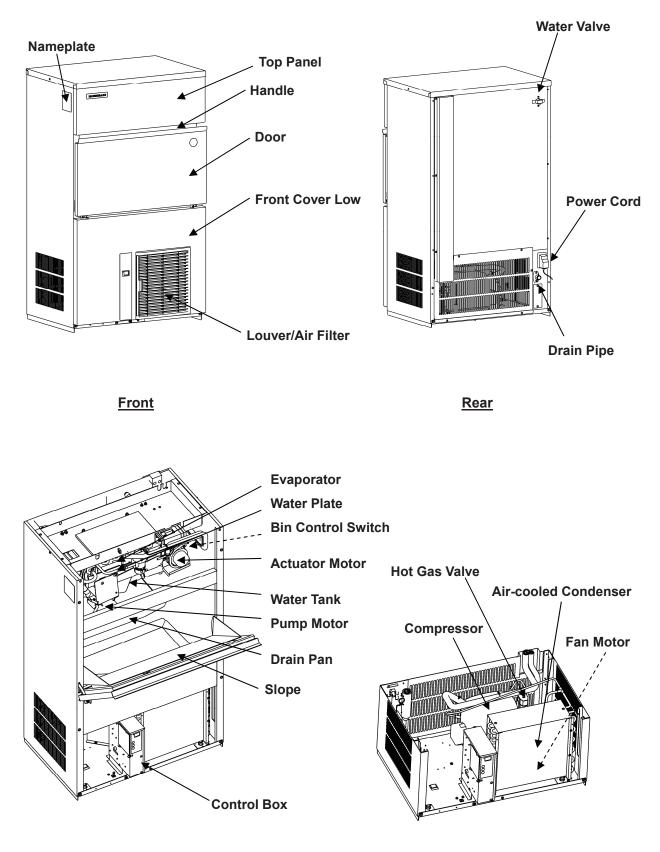


[f] IM-100CNE (Air-cooled)



Front

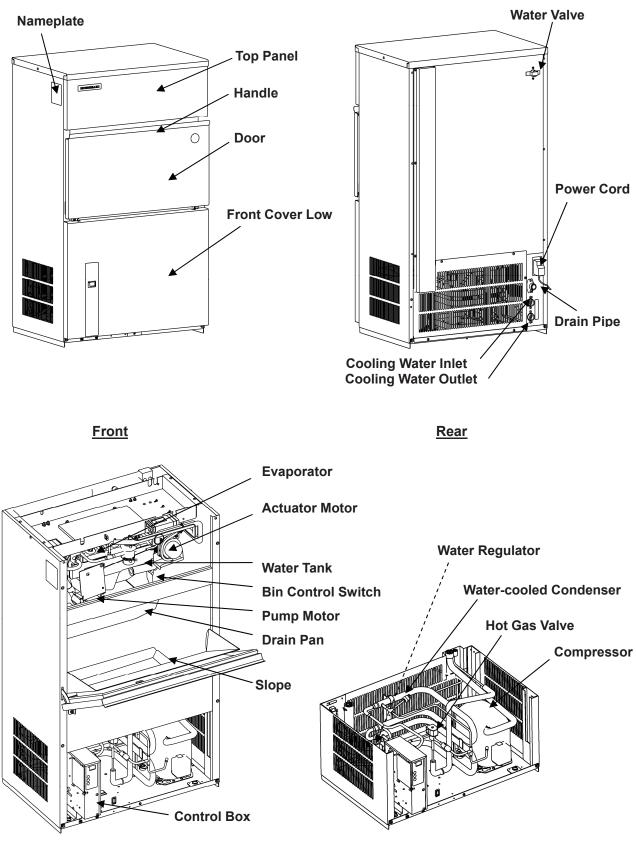
[g] IM-100NE, IM-130NE (Air-cooled)



Front



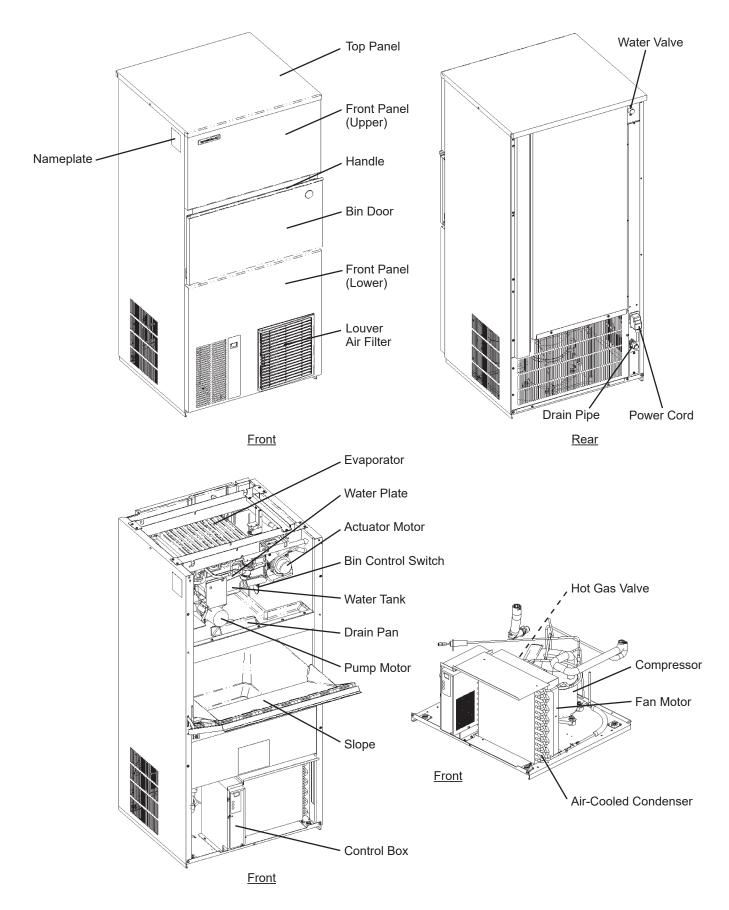
[h] IM-100WNE, IM-130WNE (Water-cooled)



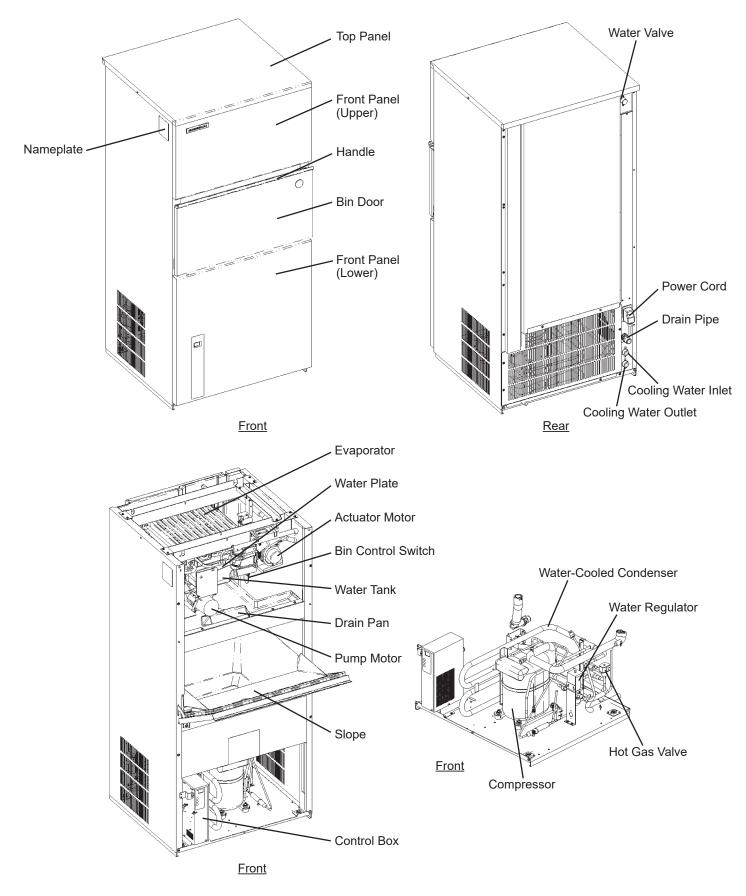
Front

Front

[i] IM-240NE (Air-cooled)



[j] IM-240WNE (Water-cooled)



2. CONTROLLER BOARD

Note: Refer to the controller board service manual.

IMPORTANT -

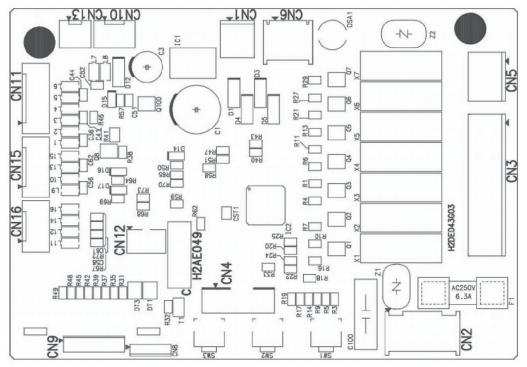
If receiving a service call, ask the user to turn off the power to the icemaker and turn it on again, while watching the icemaker. This will reset the controller, and in some cases normal operation will resume.

- NOTICE —

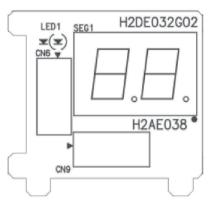
- 1. Check that the icemaker has been earthed properly. If not, the controller board will not work properly.
- 2. Do not change wiring and connections, or the controller board will not work properly.
- 3. Do not touch the reverse side of the controller board and tiny electronic devices on it.
- 4. Do not repair the electronic devices and parts on the controller board in the field (except for fuse replacement). Replace the whole board assembly when it fails.
- 5. To get static free, always touch the metal part of the icemaker before servicing. Electrostatic discharge will cause severe damage to the controller board.
- 6. The signal ground wire must be connected to the control box when replacing the controller board after service.
- 7. The controller board is fragile. Handle with care.
 - * Do not drop the board on the floor.
 - * Handle the board by the edges only. Do not touch the electric parts and devices.

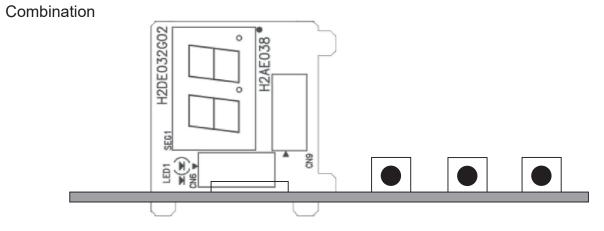
[a] CONTROLLER BOARD LAYOUT

Main Board

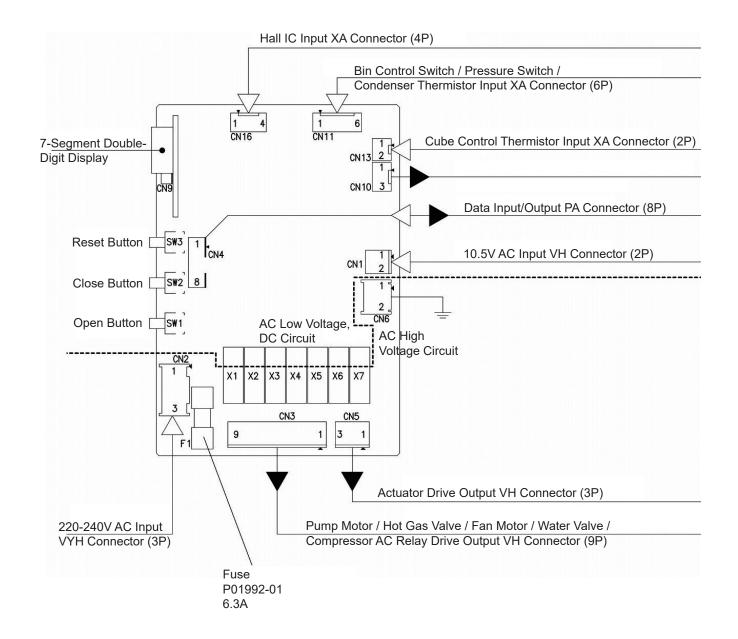


Sub Board





[b] INPUT/OUTPUT LAYOUT



[c] BEFORE CHECKING CONTROLLER BOARD

Check the power source voltage and the components as shown in the table below.

Component	Procedure	Normal
1. Thermistor (on evaporator)	NOTICE Thermistor sensor part is fragile, glass sealed. Handle with care.	5 -7 kilohms
Holder Screw Evaporator	 * Disconnect the connector CN13 on the board. * R e m o ve the screw and the thermistor holder on the evaporator. * Immerse the sensor part in a glass containing ice and water for 5 minutes. * Check the resistance between CN13 connector pins. * Replace the thermistor in its correct position. * Connect CN13. 	
2. Bin Control Switch	Manually set the micro switch in the TRIP and RESET positions, and check the period.	Approx. TRIP(Closed) 10 sec. RESET(Open) 80 sec.

III. OPERATING INSTRUCTIONS

The use of any electrical equipment involves the observance of some fundamental rules. In particular:

- * Instances of high humidity and moisture increase the risk of electrical short circuits and potential electrical shocks. If in doubt, disconnect the icemaker.
- * Do not damage the power cord or pull it in order to disconnect the icemaker from the electrical supply network.
- * Do not touch the electrical parts or operate the switches with damp hands.
- * This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- * Young children should be supervised to ensure that they do not play with the appliance.
- * Do not attempt to modify the icemaker. Only qualified personnel may disassemble or repair the appliance.

ACAUTION -

Do not put your hands into the back of the storage bin or the ice chute on top of the storage bin. Ice may drop off the icemaker, a hard block of ice may suddenly break down, or the icemaking mechanism may suddenly move, resulting in injury.

NOTICE -

- 1. All parts are factory-adjusted. Improper adjustments may result in failure.
- 2. If the unit is turned off, wait for at least 3 minutes before restarting the icemaker to prevent damage to the compressor.

This icemaker is designed to produce and store edible ice. To keep the icemaker hygienic:

- * Wash your hands before removing ice. Use the plastic scoop provided (accessory).
- * The storage bin is for ice use only. Do not store anything else in the bin.
- * Clean the storage bin before use (see "IV. 1. PERIODICAL CLEANING").
- * Keep the scoop clean. Clean it by using a neutral cleaner and rinse thoroughly.

* Close the door after removing ice to prevent entrance of dirt, dust or insects into the storage bin.

1. START UP

- 1) Disconnect the power supply.
- 2) Open the water tap.
- 3) Connect the power supply and energise.
- 4) The following should occur in sequence:
 - a) Hot gas valve will open.
 - b) Compressor will start.
 - c) Water pan will fully open.
 - d) Water valve will open.
 - e) Water pan will start to close (hot gas valve closed).
 - f) Water pan fully closed pump motor will start.
 - g) Water valve will close.

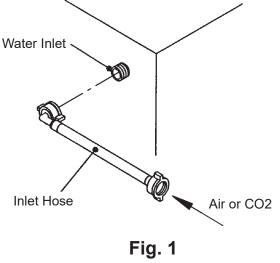
2. PREPARING THE ICEMAKER FOR LONG STORAGE

WARNING -

Drain the icemaker to prevent damage to the water supply line at subfreezing temperatures, using air or carbon dioxide. Shut off the icemaker until proper air temperature is resumed.

[a] IM-21, 30, 45, 65

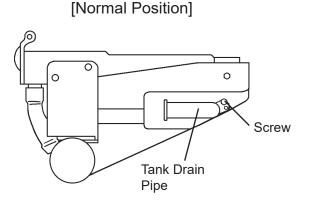
- 1) Close the water supply tap, and remove the inlet hose.
- 2) Remove the front panel.
- 3) Push the reset switch. The water pan will start to open.
- 4) Blow out the water supply line immediately after the water pan has opened.
 - Note: This procedure is necessary to protect the icemaker from freezing up at subfreezing temperature.

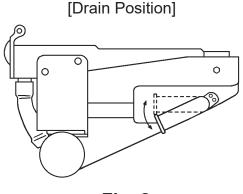


- 5) Unplug the icemaker or disconnect the power source when the water pan has fully opened.
- 6) Remove all ice from the storage bin, and clean the bin.
- 7) Replace the front panel in its correct position.
- 8) Replace the inlet hose in its correct position.

[b] IM-100, 130, 240

- 1) Close the water supply tap, and remove the inlet hose.
- 2) Remove the front panel.
- 3) Remove the screw located on the front of the water tank.
- 4) Move the tank drain pipe to the drain position. See Fig. 2.
- 5) Push the reset switch. The water pan will start to open.
- 6) Blow out the water supply line immediately after the water pan has opened.
 - Note: This procedure is necessary to protect the icemaker from freezing up at subfreezing temperature.
- 7) Unplug the icemaker or disconnect the power source when the water pan has fully opened.
- 8) Move the tank drain pipe to the normal position, and secure it with the screw.
- 9) Remove all ice from the storage bin, and clean the bin.
- 10) Replace the front panel in its correct position.
- 11) Replace the inlet hose in its correct position.







3. BIN CONTROL

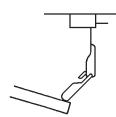
Bin control switch is mounted on the upper side of the storage bin. This switch will turn off the unit automatically when the storage bin is full of ice.

Handle the bin control switch carefully, because the switch assembly is fragile. Especially on removing ice, do not touch or poke with a scoop.

Running

Keep away from the water plate or drain pan to prevent jamming.

ng



Fragile Keep away from water plate or drain pan.

Fig. 3

Bin full

(Tripped)

[a] BIN CONTROL SWITCH ASSEMBLY

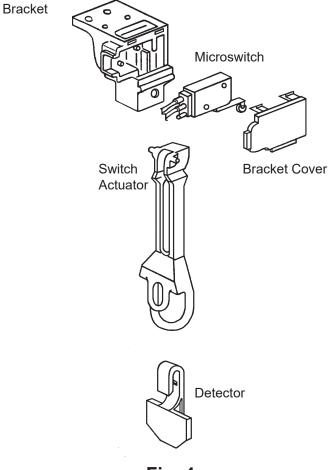


Fig. 4

[b] REMOVAL

BRACKET COVER

Push the two pawls and remove the bracket cover.

<u>SWITCH</u>

Pull out the switch, holding the rubber leads cap. Handle with care.

SWITCH ACTUATOR

Insert a flat blade screwdriver and wrench it slightly to pull out the switch actuator. Handle with care to prevent damage to the cam surface of the actuator.

DETECTOR

Push out the detector, holding the switch actuator.

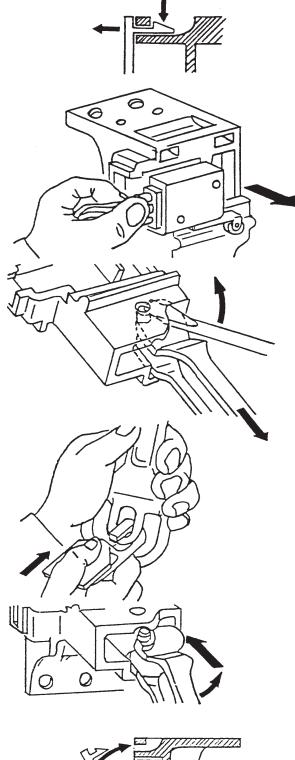
[c] REASSEMBLING

SWITCH ACTUATOR

Insert the lower shaft and push it along the U notch. Check that the switch actuator moves free.

SWITCH & BRACKET COVER

Place the switch lever first, and then attach the switch in position. Insert the guide and push the bracket cover to lock.



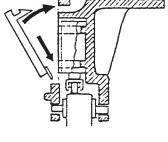


Fig. 5

IV. MAINTENANCE INSTRUCTIONS

- 1. Before carrying out any cleaning or maintenance operations, unplug the icemaker from the electrical supply network.
- 2. This appliance must not be cleaned by use of a water jet.

ACAUTION -

Before handling or using cleaning solutions, check the guidelines on the product for advice on suitable personal protective clothing, gloves, goggles, etc.

NOTICE -

- 1. Clean and sanitize the icemaker water system at least twice a year, and check and clean the condenser at least once a year.
- 2. To prevent possible damage, do not clean the plastic parts with water above 40°C or in a dishwasher.

1. PERIODICAL CLEANING

[1] Machine and Bin Exterior

Wipe the exterior at least once per week with a clean, soft cloth. Use a damp cloth containing a neutral cleaner to wipe off grease or dirt.

[2] Scoop and Storage Bin Handle Cleaning/Sanitisation (Daily)

- 1) Either mix 1 litre of water with 4 ml of 5.25% sodium hypochlorite solution in a suitable container, or the recommended Hoshizaki sanitiser as directed.
- 2) Soak the scoop in the solution for more than 3 minutes. Rinse thoroughly, and shake to remove surplus liquid.

Note: Using a cloth to dry may re-contaminate.

- 3) Use a neutral cleaner to wash the storage bin handle. Rinse thoroughly.
- 4) Soak a clean cloth with the sanitising solution, and wipe the handle. Use fresh water and a clean cloth to rinse/dry.

[3] Storage Bin Interior Cleaning/Sanitisation (Weekly)

- 1) Open the storage bin door, and remove all ice.
- 2) Wash the bin liner with a neutral non-abrasive cleaner. Rinse thoroughly.
- 3) Soak a clean cloth with the neutral cleaner, and wipe both sides of the slope and the door inner surface. Wipe off the cleaner with a clean damp cloth.
- 4) Either mix 5 litres of water with 18 ml of 5.25% sodium hypochlorite solution in a suitable container, or the recommended Hoshizaki sanitiser as directed.
- 5) Soak a clean sponge or cloth with the solution, and wipe the bin liner, bin door and slope.
- 6) The remaining solution can be used to sanitise utensils.

Note: Do not wipe dry or rinse after sanitising, but allow to air dry.

[4] Air Filter (Air-Cooled Model Only)

Plastic mesh air filters remove dirt or dust from the air, and keep the condenser from getting clogged. If the filters get clogged, the icemaker's performance will be reduced. Remove and clean the air filters at least twice per month:

1) Slide the air filter off the filter guide [IM-21CNE/30CNE] or the louver [IM-45CNE/45N E/65NE/100CNE/100NE/130NE/240NE].

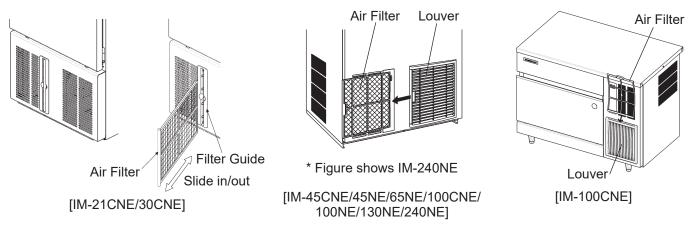


Fig. 6

- 2) Clean the air filter by using a vacuum cleaner. When severely clogged, use warm water and a neutral cleaner to wash the air filter.
- 3) Rinse and dry the air filter thoroughly.

NOTICE ·

After cleaning, be sure to place the air filter back in position.

2. WATER VALVE

- 1) Unplug the icemaker or disconnect the power source.
- 2) Close the water supply tap.
- 3) Remove the top panel and front panel.
- 4) Disconnect the inlet hose from the water valve.
- 5) Remove the mesh filter from the water valve.
- 6) Clean the mesh using a brush.
- 7) Replace the mesh and inlet hose in their correct positions.
- 8) Open the shut-off valve.
- 9) Plug in the icemaker or connect the power source.
- 10) Check for leaks.
- 11) Replace the panels in their correct positions.

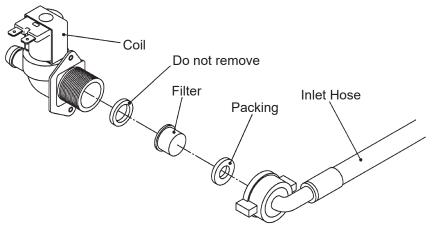


Fig. 7

3. WATER-COOLED CONDENSER

Deposits inside the water circuit of the water-cooled condenser decrease cooling performance. Clean inside of the condenser by circulating a cleaning solution.

1) Prepare the following:

Cleaning solution [Read and follow any instructions on label or bottle.]PumpContainer for solutionHoseHose bandsTwo fittings [R1/2 - 3/8"DIA]Two fittings [3/8" flare - 3/8"DIA]

NOTICE -

Do not use a cleaning solution that will corrode the copper tubing. In case of contact with the solution, flush with water.

- 2) Remove the panels and check for leaks from the water line.
- 3) Unplug the icemaker or disconnect the power source, and close the water supply tap.
- 4) Disconnect the cooling water inlet and outlet pipings and attach fittings to connect hoses.
- 5) Disconnect the inlet and outlet tubings of the water regulator and replace the water regulator by fittings.
- 6) Connect hoses as shown in Fig. 8 and secure them by hose bands.

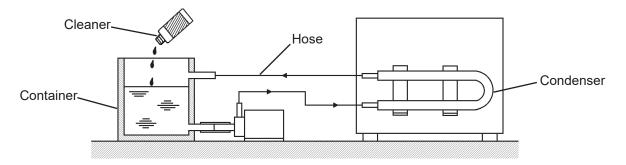


Fig. 8

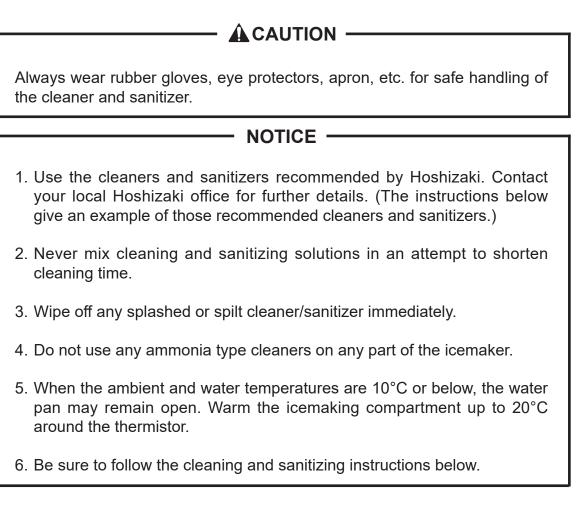
- 7) Fill the container with the cleaning solution.
- 8) Run the pump motor and circulate the solution for a period recommended in the instructions on label or bottle of the cleaner.
- 9) Rinse the water circuit.

10) Reverse the above procedure in steps 2) through 6).

11) Check the icemaking capacity referring to "V. 3. PERFORMANCE DATA".

4. ICEMAKING WATER SYSTEM

To keep the icemaker hygienic, clean and sanitize the icemaking water system at least once every six months. More frequent cleaning and sanitizing may be required depending on the water quality.



- 1) Use a suitable container to dilute 236 ml of the cleaner ("Nickel-Safe Ice Machine Cleaner" by The Rectorseal Corporation) with 11.4 lit. of water.
- 2) Open the storage bin door, and remove all the ice to avoid contaminating by the cleaner.
- 3) Remove the front and top panels.
- 4) If the icemaker is in a defrost cycle, wait until a freeze cycle starts.
- 5) Close the water supply tap.

- 6) [IM-100, 130, 240 only] Remove the screw, and move the tank drain pipe to the drain position. See Fig. 2.
- 7) Push the reset switch to open the water pan.
- 8) Unplug the icemaker or disconnect the power source when the water pan has fully opened.
- 9) After the water has completely drained out, plug in the icemaker or connect the power source. When the 7-segment display on the controller board turns on, press DOWN on the controller board for 3 seconds to start the flush mode. (See the controller board service manual for further details.)
- 10) When the flush mode has started, pour the cleaning solution prepared in 1) carefully into the water tank within 60 seconds before the pump motor starts. Do not splash or spill the solution onto the other parts.
- 11) Circulate the cleaning solution for 30 minutes. Push the reset switch to open the water pan. Unplug the icemaker or disconnect the power source when the water pan has fully opened. Wait until the cleaning solution has completely drained out.
- 12) Open the water supply tap, and repeat the above step 9). Since the water supply tap is open this time, water is supplied as in the normal freeze cycle.
- 13) When the water pan closes again, pour clean water into the water pan until it floods from the overflow pipe, and circulate the water for 5 minutes.
- 14) Push the reset switch to open the water pan and drain the water. This time the water does not drain out completely.
- 15) Repeat the above steps 13) and 14) at least three times to rinse thoroughly. To drain the rinse water completely, unplug the icemaker or disconnect the power source when the water pan has fully opened.

SANITIZING INSTRUCTIONS

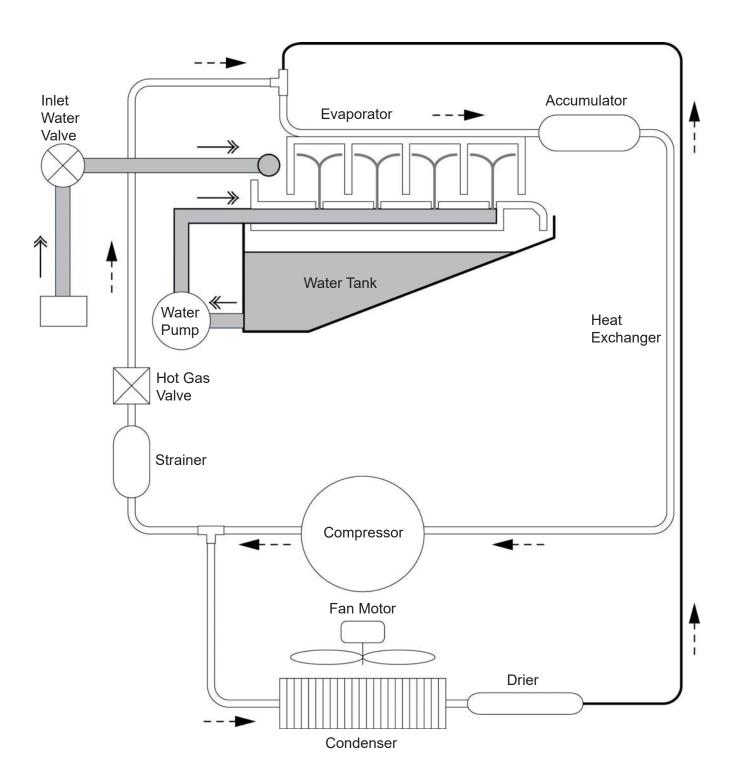
- Note: Sanitizing should always be completed after cleaning or alternately as an individual procedure if conditions exist to make it necessary.
- 16) Use a suitable container to dilute 44 ml of 5.25% sodium hypochlorite solution with 11.4 lit. of water.
 - * Alternatively use the Hoshizaki recommended sanitizer as directed by the relevant instructions.

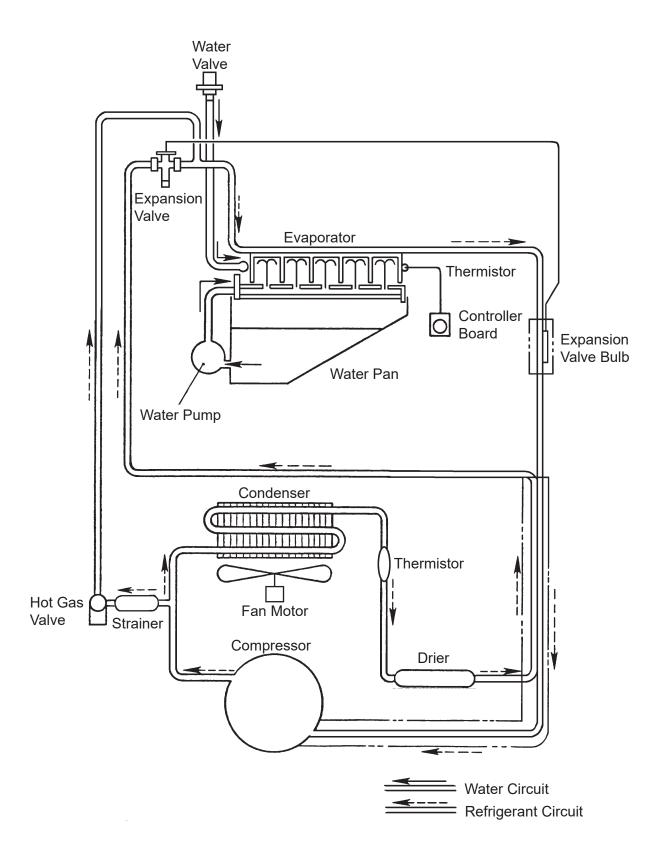
- 17) Close the water supply tap. Plug in the icemaker or connect the power source. When the 7-segment display on the controller board turns on, press DOWN on the controller board for 3 seconds to start the flush mode.
- 18) When the flush mode has started, pour the cleaning solution prepared in 16) carefully into the water tank within 60 seconds before the pump motor starts. Do not splash or spill the solution onto the other parts.
- 19) Circulate the sanitizing solution for 15 minutes. Push the reset switch to open the water pan. Unplug the icemaker or disconnect the power source when the water pan has fully opened. Wait until the sanitizing solution has completely drained out.
- 20) Open the water supply tap, and repeat the above step 9). Since the water supply tap is open this time, water is supplied as in the normal freeze cycle.
- 21) When the water pan closes again, pour clean water into the water pan until it floods from the overflow pipe, and circulate the water for 5 minutes.
- 22) Push the reset switch to open the water pan and drain the water. This time the water does not drain out completely.
- 23) Repeat the above steps 21) and 22) at least three times to rinse thoroughly. To drain the rinse water completely, unplug the icemaker or disconnect the power source when the water pan has fully opened.
- 24) [IM-100, 130, 240 only]Move the tank drain pipe to the normal position, and secure it with the screw. See Fig. 2.
- 25) Plug in the icemaker or connect the power source. Check for proper icemaking operation.
- 26) Replace the front panel and top panel in their correct positions.
- 27) Complete storage bin cleaning as detailed in IV. 1. [3].

V. TECHNICAL INFORMATION

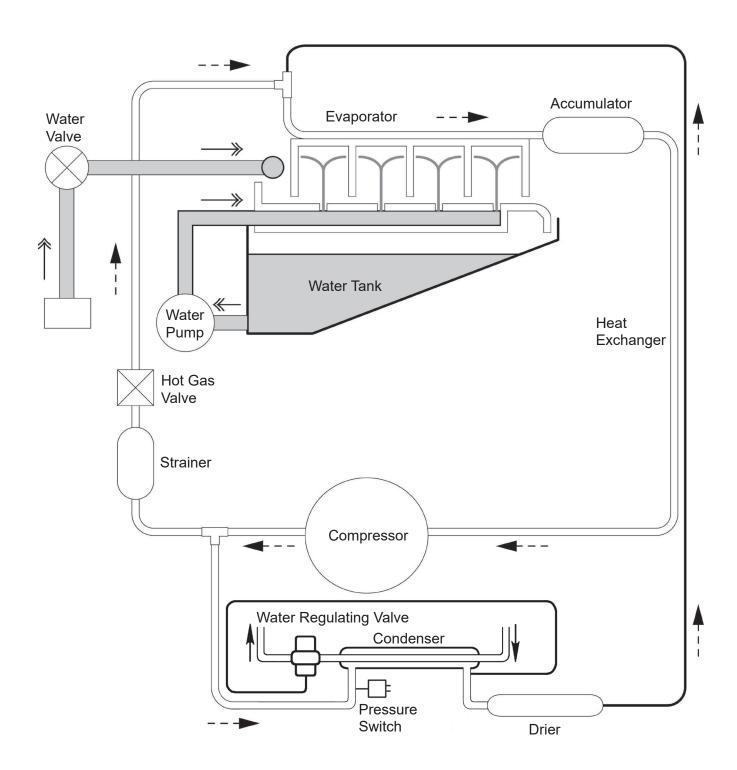
1. WATER CIRCUIT AND REFRIGERANT CIRCUIT

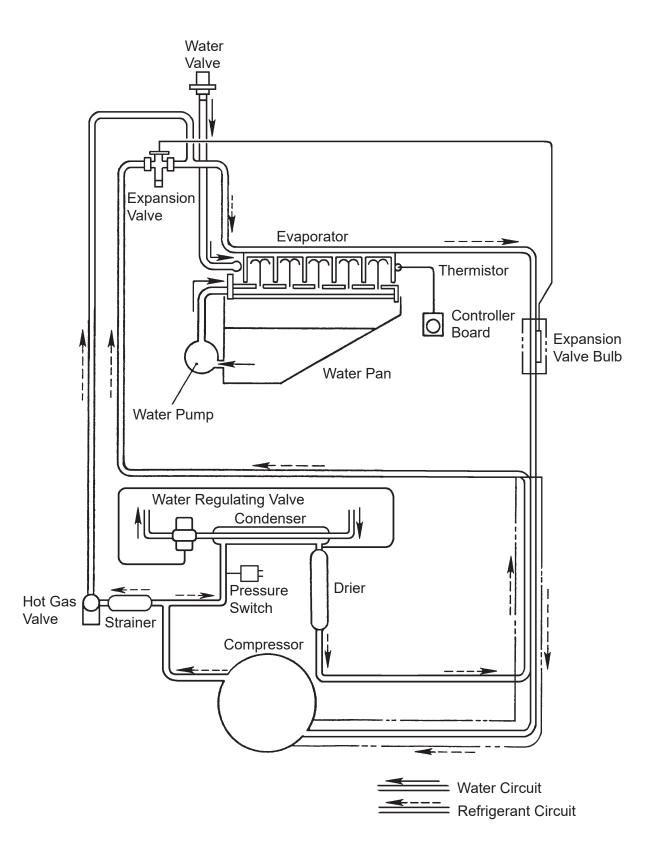
[a] IM-21CNE, IM-30CNE, IM-45CNE, IM-45NE, IM-65NE (Air-cooled)





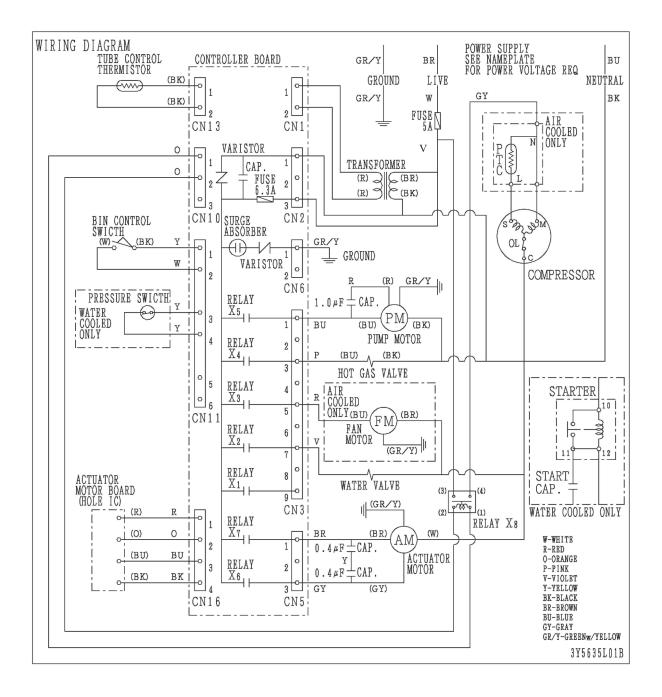
[c] IM-65WNE (Water-cooled)

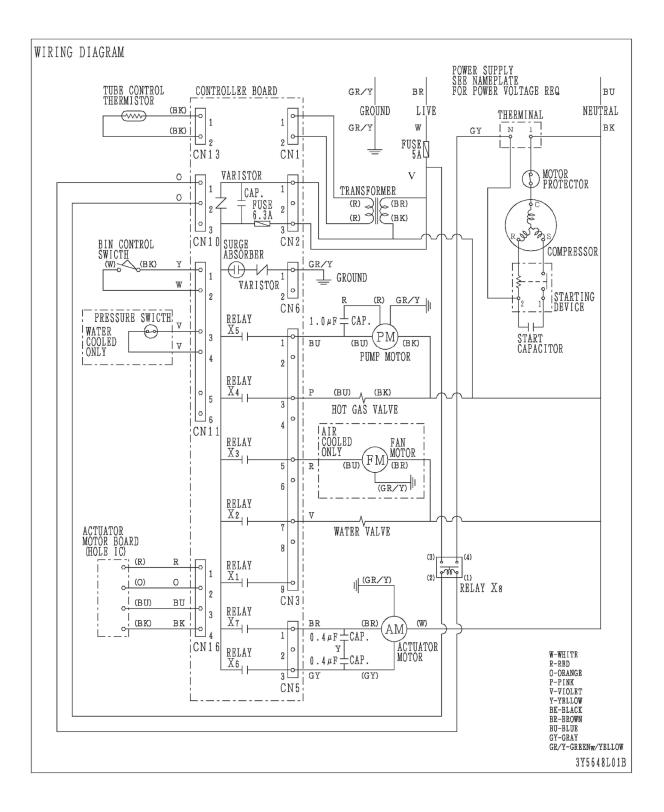


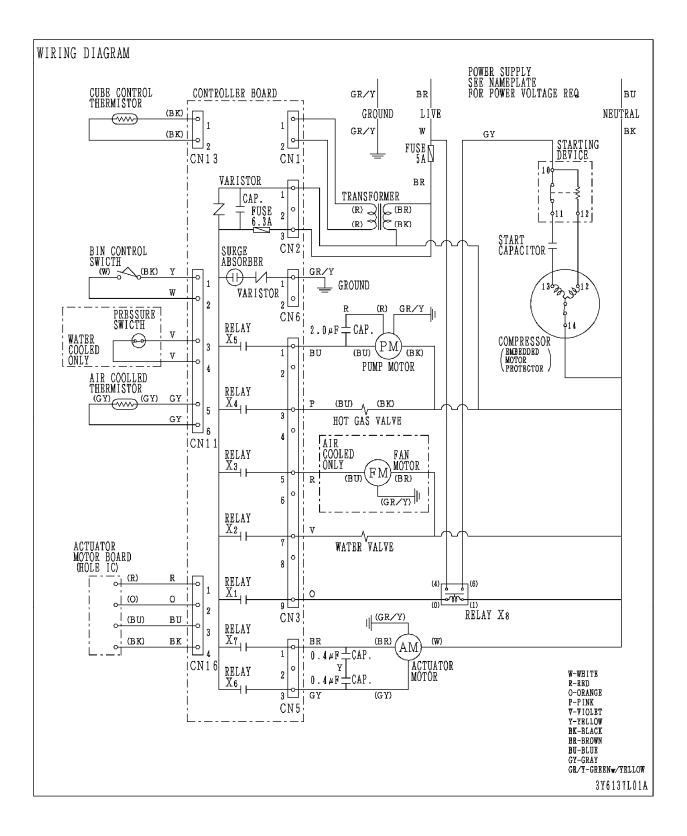


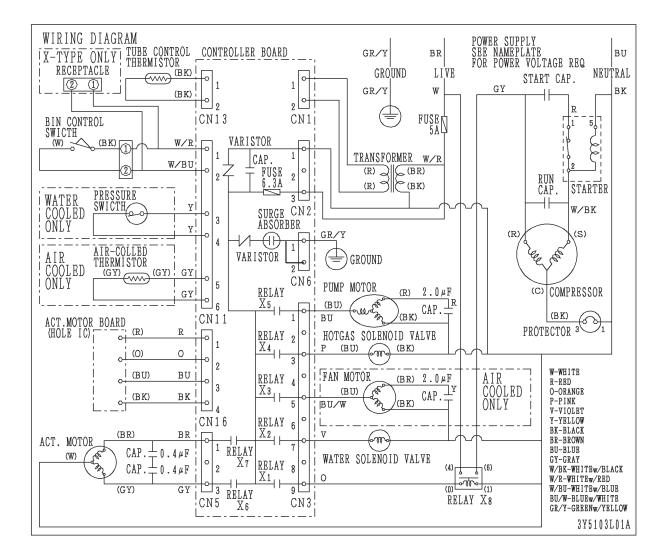
2. WIRING DIAGRAM

[a] IM-21CNE, IM-30CNE, IM-30CWNE









3. PERFORMANCE DATA

Ice Production = Capacity when shipped from factory

Values for water-cooled models are for icemaking water only. Use a cooling tower for cooling water.

Cube Hole Diameter:	5mm (15mm) for -28, -23, -32	3mm (7mm) for -21	6mm for -Q ball ice (45mm dia)
	5mm for -S star iceH heart ice	10mm for -LMLM10)3

	5mm for -S star ice, -H he				
	Ambient Temp. (°C)	10	21	32	38
Model	Water Temp. (°C)	10	15	21	32
	Cube Hole Diameter (mm)	5 (15)	5 (15)	5 (15)	5 (15)
IM-21CNE	Ice Production (kg/d)	20 (22)	17 (19)	14 (16)	12 (14)
	Freeze Cycle Time (min)	23.0 (21.7)	30.4 (17.5)	39.0 (34.1)	45.0 (39.2)
	Defrost Cycle Time (min)	5.8 (4.5)	3.5 (2.8)	2.1 (1.9)	2.0 (1.9)
	Water Consumption (lit/h)	3.4 (3.6)	1.7 (1.8)	1.4 (1.6)	1.2 (1.4)
	Electric Consumption (W)	200	220	240	250
	Head Pressure [peak] (bar)	5.1	7.6	10.2	12.8
IM-30CNE	Ice Production (kg/d)	23 (28)	22 (24)	18 (19)	15 (16)
	Freeze Cycle Time (min)	21.0 (13.5)	23.8 (17.7)	30.0 (23.1)	36.5 (27.9)
	Defrost Cycle Time (min)	4.0 (3.5)	2.4 (2.1)	2.0 (1.9)	1.9 (1.8)
	Water Consumption (lit/h)	4.0 (5.8)	2.2 (2.9)	1.8 (2.3)	1.5 (1.9)
	Electric Consumption (W)	240	250	270	280
	Head Pressure [peak] (bar)	5.1	7.6	10.2	12.8
IM-30CNE	Ice Production (kg/d)	24 (27)	23 (24)	20 (21)	16 (17)
(60Hz)	Freeze Cycle Time (min)	20.5 (14.6)	23.0 (17.8)	27.2 (21.0)	34.4 (26.4)
	Defrost Cycle Time (min)	4.0 (3.5)	2.0 (2.0)	1.6 (1.6)	1.6 (1.6)
	Water Consumption (lit/h)	4.1 (5.6)	2.3 (2.9)	2.0 (2.5)	1.6 (2.0)
	Electric Consumption (W)	240	250	270	280
	Head Pressure [peak] (bar)	5.1	7.6	10.2	12.8
IM-30CNE-25	Ice Production (kg/d)	22 (24)	18 (20)	15 (17)	11 (13)
	Freeze Cycle Time (min)	13.7 (9.7)	19.2 (13.7)	23.9 (16.7)	33.4 (22.6)
	Defrost Cycle Time (min)	4.0 (3.5)	2.4 (2.1)	2.0 (1.9)	1.9 (1.8)
	Water Consumption (lit/h)	5.6 (7.5)	2.6 (3.6)	2.2 (3.1)	1.6 (2.3)
	Electric Consumption (W)	240	250	270	280
	Head Pressure [peak] (bar)	5.1	7.6	10.2	12.8
IM-30CWNE	Ice Production (kg/d)	28 (32)	26 (30)	24 (28)	22 (26)
	Freeze Cycle Time (min)	18.5 (16.0)	20.1 (17.3)	22.0 (18.9)	24.3 (20.6)
	Defrost Cycle Time (min)	2.1 (2.0)	2.1 (1.9)	2.0 (1.7)	1.9 (1.6)
	Water Consumption (lit/h)	4.8 (5.5)	2.6 (2.9)	2.4 (2.7)	2.2 (2.5)
	Electric Consumption (W)	235	235	245	340
	Head Pressure [peak] (bar)	10.0	10.0	10.0	10.0
IM-30CWNE-25	Ice Production (kg/d)	24 (25)	22 (23)	21 (22)	20 (21)
	Freeze Cycle Time (min)	14.0 (10.7)	15.4 (11.9)	16.7 (12.7)	17.6 (13.3)
	Defrost Cycle Time (min)	2.1 (2.0)	2.1 (1.9)	2.0 (1.8)	1.8 (1.7)
	Water Consumption (lit/h)	4.3 (7.0)	5.5 (6.9)	2.8 (3.6)	2.7 (3.4)
	Electric Consumption (W)	235	235	245	340
	Head Pressure [peak] (bar)	10.0	10.0	10.0	10.0
IM-30CWNE	Ice Production (kg/d)	25 (28)	24 (27)	22 (26)	19 (24)
(60Hz)	Freeze Cycle Time (min)	19.8 (14.4)	22.4 (15.3)	24.2 (15.8)	28.5 (17.4)
(00112)	Defrost Cycle Time (min)	2.1 (2.0)	2.0 (2.0)	1.9 (1.9)	1.8 (1.8)
	Water Consumption (lit/h)	4.1 (5.5)	2.1 (3.0)	2.0 (2.9)	1.7 (2.7)
	Electric Consumption (W)	219	233	245	251
	Head Pressure [peak] (bar)	10.0	10.0	10.0	10.0
IM-45CNE	Ice Production (kg/d)	36 (44)	32 (40)	29 (32)	26 (29)
	Freeze Cycle Time (min)	22.5 (15.8)	27.5 (19.5)	31.1 (25.0)	35.2 (28.0)
	Defrost Cycle Time (min)	4.3 (3.8)	2.7 (2.1)	2.2 (2.0)	1.9 (1.8)
	Water Consumption (lit/h)	7.0 (9.6)	3.8 (5.4)	3.5 (4.3)	3.1 (3.9)
	Electric Consumption (W)	295	315	320	370
		6.0		12.0	15.0
	Head Pressure [peak] (bar)	0.0	9.0	12.0	10.0

	Ambient Temp. (°C)	10	21	32	38
Model	Water Temp. (°C)	10	15	21	32
Wodel	Cube Hole Diameter (mm)	5 (15)	5 (15)	5 (15)	5 (15)
IM-45CNE-25	Ice Production (kg/d)	35 (39)	32 (35)	27 (28)	24 (25)
	Freeze Cycle Time (min)	18.1 (13.3)	21.7 (16.6)	27.2 (22.4)	31.0 (25.2)
	Defrost Cycle Time (min)	4.5 (4.1)	3.1 (2.7)	2.1 (1.8)	2.0 (1.9)
	Water Consumption (lit/h)	8.3 (10.8)	4.7 (6.0)	4.0 (4.8)	3.5 (4.3)
	Electric Consumption (W)	290	305	330	360
	Head Pressure [peak] (bar)	6.0	9.0	12.0	15.0
IM-45CNE	Ice Production (kg/d)	41 (46)	37 (40)	33 (36)	30 (33)
(60Hz)	Freeze Cycle Time (min)	18.9 (14.8)	23.3 (19.3)	27.0 (22.1)	30.1 (24.4)
(00112)	Defrost Cycle Time (min)	4.6 (4.0)	2.8 (2.3)	2.2 (1.9)	2.1 (1.8)
	Water Consumption (lit/h)	. ,		. ,	3.6 (4.4)
	· · · · · · ·	8.0 (9.7)	4.4 (5.2)	4.0 (4.8) 360	· · · · ·
	Electric Consumption (W)	310 6.0	340 9.0	12.0	380
	Head Pressure [peak] (bar)				15.0
IM-45NE-25	Ice Production (kg/d)	35 (39)	32 (35)	27 (28)	24 (25)
	Freeze Cycle Time (min)	18.5 (13.9)	21.7 (16.6)	27.2 (22.4)	31.1 (25.3)
	Defrost Cycle Time (min)	4.1 (3.5)	3.1 (2.7)	2.1 (1.8)	1.9 (1.8)
	Water Consumption (lit/h)	8.3 (10.8)	4.7 (6.0)	4.0 (4.8)	3.5 (4.3)
	Electric Consumption (W)	290	305	330	360
	Head Pressure [peak] (bar)	6.0	9.0	12.0	15.0
IM-45NE	Ice Production (kg/d)	41 (46)	37 (40)	33 (36)	26 (29)
(60Hz)	Freeze Cycle Time (min)	19.1 (14.9)	23.3 (18.9)	27.0 (22.1)	35.2 (28.0)
	Defrost Cycle Time (min)	4.4 (3.9)	2.8 (2.7)	2.2 (1.9)	1.9 (1.8)
	Water Consumption (lit/h)	8.0 (9.7)	4.4 (5.3)	4.0 (4.8)	3.1 (3.9)
	Electric Consumption (W)	310	340	360	390
	Head Pressure [peak] (bar)	6.0	9.0	12.0	15.0
IM-45NE-25	Ice Production (kg/d)	38 (41)	36 (39)	31 (34)	27 (30)
(60Hz)	Freeze Cycle Time (min)	16.9 (12.9)	18.1 (15.3)	23.5 (18.2)	27.4 (20.9)
	Defrost Cycle Time (min)	3.9 (3.6)	3.9 (2.1)	2.0 (1.7)	1.9 (1.7)
	Water Consumption (lit/h)	9.0 (11.2)	5.3 (6.1)	4.5 (5.7)	4.0 (5.1)
	Electric Consumption (W)	310	340	360	390
	Head Pressure [peak] (bar)	6.0	9.0	12.0	15.0
IM-45WNE	Ice Production (kg/d)	45 (47)	38 (40)	35 (37)	32 (34)
	Freeze Cycle Time (min)	19.5 (17.7)	23.6 (21.2)	25.8 (23.1)	28.5 (25.5)
	Defrost Cycle Time (min)	1.9 (1.9)	1.8 (1.8)	1.8 (1.8)	1.7 (1.6)
	Water Consumption (lit/h)	8.8 (9.6)	4.6 (5.0)	4.2 (4.7)	3.8 (4.3)
	Electric Consumption (W)	275	280	295	315
	Head Pressure [peak] (bar)	10.0	10.0	10.0	10.0
IM-45WNE-25	Ice Production (kg/d)	40 (49)	38 (45)	36 (42)	34 (38)
	Freeze Cycle Time (min)	17.6 (11.8)	18.9 (13.3)	20.2 (14.6)	21.6 (16.2)
	Defrost Cycle Time (min)	2.2 (2.0)	2.0 (1.8)	1.8 (1.6)	1.7 (1.6)
	Water Consumption (lit/h)	7.5 (13.4)	9.8 (13.4)	5.3 (7.1)	5.0 (6.5)
	Electric Consumption (W)	275	280	295	315
	Head Pressure [peak] (bar)	10.0	10.0	10.0	10.0
IM-45WNE	Ice Production (kg/d)	45 (50)	41 (45)	39 (43)	36 (40)
(60Hz)	Freeze Cycle Time (min)	19.1 (16.2)	21.5 (18.5)	22.8 (19.6)	25 (21.3)
	Defrost Cycle Time (min)	2.3 (2.2)	2.0 (2.0)	1.9 (1.8)	1.8 (1.7)
	Water Consumption (lit/h)	8.8 (10.2)	4.9 (5.7)	4.7 (5.4)	4.3 (5.0)
	Electric Consumption (W)	300	305	310	320
	Head Pressure [peak] (bar)	10.0	10.0	10.0	10.0

	Ambient Temp. (°C)	10	21	32	38
Model	Water Temp. (°C)	10	15	21	32
Model	Cube Hole Diameter (mm)	5 (15)	5 (15)	5 (15)	5 (15)
IM-45WNE-25	Ice Production (kg/d)	39 (43)	40 (42)	37 (41)	46 (40)
(60Hz)	Freeze Cycle Time (min)	18.3 (13.8)	18.5 (14.4)	19.7 (14.9)	20.3 (15.3)
(00112)	Defrost Cycle Time (min)	2.0 (1.9)	1.8 (1.7)	1.7 (1.6)	1.7 (1.6)
	Water Consumption (lit/h)	9.3 (11.9)	5.7 (7.2)	5.4 (7.0)	5.3 (6.8)
	Electric Consumption (W)	300	305	310	320
	Head Pressure [peak] (bar)	10.0	10.0	10.0	10.0
IM-65NE	Ice Production (kg/d)	50 (63)	47 (56)	39 (46)	35 (42)
	Freeze Cycle Time (min)	21.4 (15.0)	25.9 (19.7)	32.6 (24.9)	36.7 (27.2)
	Defrost Cycle Time (min)	5.7 (4.4)	2.9 (2.2)	2.1 (1.7)	2.0 (1.9)
	Water Consumption (lit/h)	7.1 (9.3)	4.7 (6.0)	3.9 (5.0)	3.5 (4.7)
	Electric Consumption (W)	320	340	400	420
	Head Pressure [peak] (bar)	5.0	7.0	10.0	12.5
IM-65NE-Q	Ice Production (kg/d)	26	24	20	12.3
ϕ 45mm	Freeze Cycle Time (min)	29.6	33.2	42.2	53.8
ψ τυππι	Defrost Cycle Time (min)	7.5	7.0	6.0	3.0
	Water Consumption (lit/h)	40.4	29.9	18.7	10.0
	Electric Consumption (W)	320	350	390	420
	Head Pressure [peak] (bar)	5.0	7.0	10.0	12.5
IM-65NE-H	Ice Production (kg/d)	28	27	25	22
		18.9	22.7	27.2	29.7
	Freeze Cycle Time (min)	7.1	5.0	3.1	3.5
	Defrost Cycle Time (min)	6.2	4.8	4.4	4.0
	Water Consumption (lit/h)	330	340	370	390
	Electric Consumption (W)				
	Head Pressure [peak] (bar)	5.5	7.0	10.5	12.5
IM-65NE-S	Ice Production (kg/d)	22	21	20 21.9	19
	Freeze Cycle Time (min)	15.1 8.5	18.5 6.5	4.0	24.8 2.5
	Defrost Cycle Time (min)				
	Water Consumption (lit/h)	17.0	4.8	4.6	4.4
	Electric Consumption (W)	340	350	400	450
	Head Pressure [peak] (bar)	5.5	7.0	10.5	12.5
IM-65NE-LM	Ice Production (kg/d)	40	33	25	20
	Freeze Cycle Time (min)	43.8	61.6	79.4	90
	Defrost Cycle Time (min)	8.0	5.5	3.5	2.5
	Water Consumption (lit/h)	36.4	3.2	2.6	1.7
	Electric Consumption (W)	340	350	400	450
	Head Pressure [peak] (bar)	5.5	7.0	10.5	12.5
IM-65NE-LM103	Ice Production (kg/d)	32	28	23	18
	Freeze Cycle Time (min)	55.8	71.2	86.7	90
	Defrost Cycle Time (min)	9.0	6.5	3.5	2.5
	Water Consumption (lit/h)	32.8	2.8	2.5	1.7
	Electric Consumption (W)	340	350	400	450
	Head Pressure [peak] (bar)	5.5	7.0	10.5	12.5
IM-65NE-LM	Ice Production (kg/d)	43	33	28	24
(60Hz)	Freeze Cycle Time (min)	40.7	57.8	70.6	83.1
	Defrost Cycle Time (min)	7.5	5.0	3.5	2.5
	Water Consumption (lit/h)	33.3	3.3	2.9	70.6
	Electric Consumption (W)	340	370	410	465
	Head Pressure [peak] (bar)	5.5	7.0	10.5	12.5

	Ambient Temp. (°C)	10	21	32	38
Model	Water Temp. (°C)	10	15	21	32
Woder	Cube Hole Diameter (mm)	5 (15)	5 (15)	5 (15)	5 (15)
IM-65NE-LM103	Ice Production (kg/d)	33	30	26	23
(60Hz)	Freeze Cycle Time (min)	54.8	64.1	75.8	87.7
(00112)	Defrost Cycle Time (min)	8.0	5.0	4.0	2.5
	Water Consumption (lit/h)	27.9	2.9	2.5	2.2
	Electric Consumption (W)	370	410	450	525
	Head Pressure [peak] (bar)	5.5	7.0	10.5	12.5
IM-65NE-25	Ice Production (kg/d)	45 (56.)	44 (52)	37 (42)	35 (38)
	Freeze Cycle Time (min)	15.8 (13.8)	21.5 (16.7)	25.9 (21.0)	27.6 (23.5)
	Defrost Cycle Time (min)	7.2 (3.4)	2.1 (1.9)	2.1 (2.0)	2.0 (1.9)
	Water Consumption (lit/h)	9.0 (9.9)	6.6 (8.3)	5.6 (6.8)	5.3 (6.1)
	Electric Consumption (W)	320	340	400	420
	Head Pressure [peak] (bar)	5.0	7.0	10.0	12.5
IM-65NE	Ice Production (kg/d)	55 (62)	52 (58)	43 (47)	40 (44)
(60Hz)	Freeze Cycle Time (min)	19.9 (15.9)	23.1 (18.9)	29.6 (24.4)	32.0 (26.1)
(00112)	Defrost Cycle Time (min)	4.7 (3.8)	2.9 (2.2)	1.9 (1.6)	1.8 (1.7)
	Water Consumption (lit/h)	8.5 (10.1)	6.0 (7.2)	5.0 (5.9)	4.6 (5.6)
	Electric Consumption (W)	325	350	370	400
		5.0	7.0	10.0	12.5
IM-65NE-25	Head Pressure [peak] (bar) Ice Production (kg/d)	50 (59)	47 (52)	40 (44)	37.0 (41)
(60Hz)	Freeze Cycle Time (min)	· · · ·	. ,	. ,	. ,
(0012)		16.0 (13.7)	19.7 (16.5)	23.9 (20.2)	26.0 (21.6)
	Defrost Cycle Time (min)	4.7 (2.7)	2.4 (2.1)	2.0 (1.7)	1.9 (1.9)
	Water Consumption (lit/h)	10.0 (11.3)	7.1 (8.3)	6.0 (7.0)	5.6 (6.6)
	Electric Consumption (W)	325	350	370	400
	Head Pressure [peak] (bar)	5.0	7.0	10.0	12.5
IM-65NE-Q (60Hz)	Ice Production (kg/d)	29	26	20	16
(0012)	Freeze Cycle Time (min)	24.4	29.9	42.1	54.8
	Defrost Cycle Time (min)	8.1	5.8	5.6	5.5
	Water Consumption (lit/h)	44.8	32.4	19.0	24.1
	Electric Consumption (W)	290	340	355	365
	Head Pressure [peak] (bar)	4.6	7.6	10.2	19.4
IM-65WNE-25	Ice Production (kg/d)	50 (60)	46 (54)	42 (49)	40 (47)
	Freeze Cycle Time (min)	18.7 (14.2)	20.7 (16.1)	22.7 (18.1)	23.9 (18.9)
	Defrost Cycle Time (min)	2.0 (1.9)	2.0 (1.8)	2.0 (1.6)	2.0 (1.6)
	Water Consumption (lit/h)	7.1 (11.6)	9.9 (12.4)	5.5 (6.8)	5.2 (6.6)
	Electric Consumption (W)	350	360	370	400
	Head Pressure [peak] (bar)	10.0	10.0	10.0	10.0
IM-65WNE-Q	Ice Production (kg/d)	26	25	22	19
	Freeze Cycle Time (min)	31.4	33.5	39.1	44.8
	Defrost Cycle Time (min)	5.0	4.8	4.8	4.5
	Water Consumption (lit/h)	31.4	16.1	10.9	9.2
	Electric Consumption (W)	330	340	350	356
	Head Pressure [peak] (bar)	10.0	10.0	10.0	10.0
IM-65WNE	Ice Production (kg/d)	57 (67)	56 (58)	52 (54)	50 (52)
(60Hz)	Freeze Cycle Time (min)	18.0 (14.4)	22.5 (19.6)	24.4 (21.1)	25.5 (21.9)
	Defrost Cycle Time (min)	2.0 (1.7)	1.7 (1.6)	1.6 (1.6)	1.6 (1.6)
	Water Consumption (lit/h)	8.1 (10.0)	5.6 (6.4)	5.2 (6.0)	3.5 (5.8)
	Electric Consumption (W)	300	305	310	320
	Head Pressure [peak] (bar)	10.0	10.0	10.0	10.0

	Ambient Temp (°C)	10	01	20	20
Model	Ambient Temp. (°C) Water Temp. (°C)	10 10	21 15	32 21	38 32
Woder	Cube Hole Diameter (mm)	5 (15)	5 (15)	5 (15)	5 (15)
IM-65WNE-25	Ice Production (kg/d)	58 (66)	57 (58)	52 (53)	50 (55)
(60Hz)	Freeze Cycle Time (min)	15.9 (12.9)	16.5 (15.0)	18.3 (16.6)	19.1 (15.9)
(00112)	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	, ,		. ,
	Defrost Cycle Time (min)	2.0 (1.7)	1.7 (1.6)	1.6 (1.6)	1.6 (1.6)
	Water Consumption (lit/h)	11.6 (13.9)	8.6 (9.3)	7.8 (8.6)	7.5 (8.9)
	Electric Consumption (W)	300	305	310	320
	Head Pressure [peak] (bar)	10.0	10.0	10.0	10.0
IM-100NE	Ice Production (kg/d)	85 (95)	83 (93)	73 (84)	65 (70)
	Freeze Cycle Time (min)	25.1 (20.0)	28.3 (23.2)	33.2 (26.4)	38.0 (32.1)
	Defrost Cycle Time (min)	5.4 (5.0)	2.9 (2.3)	2.3 (1.9)	1.9 (1.8)
	Water Consumption (lit/h)	17.7 (21.3)	8.3 (9.9)	7.3 (9.1)	6.5 (7.6)
	Electric Consumption (W)	540	570	630	640
	Head Pressure [peak] (bar)	6.5	9.0	12.0	15.0
IM-100NE-C	Ice Production (kg/d)	77 (85)	74 (81)	65 (71)	60 (66)
	Freeze Cycle Time (min)	28.4 (22.0)	31.6 (25.1)	38.5 (31.2)	42.4 (34.2)
	Defrost Cycle Time (min)	6.2 (6.0)	4.4 (4.2)	2.5 (2.3)	2.0 (1.8)
	Water Consumption (lit/h)	16.2 (10.7)	8.3 (10.2)	6.3 (7.8)	5.9 (7.2)
	Electric Consumption (W)	540	570	630	640
	Head Pressure [peak] (bar)	6.5	9.0	12.0	15.0
IM-100NE-23	Ice Production (kg/d)	72 (79)	71 (77)	67 (70)	65 (70)
	Freeze Cycle Time (min)	20.9 (16.5)	22.8 (18.7)	25.9 (22.5)	27.0
	Defrost Cycle Time (min)	5.1 (5.0)	3.6 (3.4)	2.0 (1.8)	1.8 (1.7)
	Water Consumption (lit/h)	20.8 (25.0)	9.9 (11.7)	9.3 (10.6)	9.0 (10.7)
	Electric Consumption (W)	540	570	630	640
	Head Pressure [peak] (bar)	6.5	9.0	12.0	15.0
IM-100NE-21	Ice Production (kg/d)	87 (98)	86 (95)	76 (87)	71 (78)
	Freeze Cycle Time (min)	12.3 (9.4)	15.9 (12.4)	20 (15)	21.6 (16.9)
	Defrost Cycle Time (min)	5.0 (4.0)	3.4 (2.8)	1.8 (1.6)	1.7 (1.6)
	Water Consumption (lit/h)	28.4 (34.4)	· · · · ·	. ,	
	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	13.5 (16.5)	11.9 (15.5)	11.7 (14.0)
	Electric Consumption (W)	540 6.5	570 9.0	630 12.0	640 15.0
IM-100NE	Head Pressure [peak] (bar)	88 (98)	85 (93)	75 (83)	70 (75)
(60Hz)	Freeze Cycle Time (min)	24.5 (19.9)	26.9 (22.5)	32.4 (26.7)	35.0 (29.8)
(00112)	Defrost Cycle Time (min)	5.0 (4.3)	3.6 (3.0)	2.2 (1.9)	2.0 (1.9)
	Water Consumption (lit/h)	18.3 (21.6)	8.5 (9.9)	7.5 (9.0)	7.0 (8.2)
	Electric Consumption (W)	610	630	650	660
	Head Pressure [peak] (bar)	6.5	9.0	12.0	15.0
IM-100NE-23	Ice Production (kg/d)	75 (81)	73 (79)	69 (75)	65 (70)
(60Hz)	Freeze Cycle Time (min)	20.0 (16.1)	22.1 (18.2)	25.0 (20.9)	26.9 (22.5)
	Defrost Cycle Time (min)	5.0 (4.9)	3.5 (3.3)	2.1 (1.8)	1.9 (1.8)
	Water Consumption (lit/h)	21.6 (25.6)	10.1 (12.0)	9.6 (11.3)	9.0 (10.7)
	Electric Consumption (W)	610	630	650	660
	Head Pressure [peak] (bar)	6.5	9.0	12.0	15.0
IM-100NE-21	Ice Production (kg/d)	87 (98)	86 (95)	76 (87)	71 (78)
(60Hz)	Freeze Cycle Time (min)	14.0 (10.7)	16.0 (12.5)	19.9 (14.9)	21.5 (16.8)
	Defrost Cycle Time (min) Water Consumption (lit/h)	5.0 (4.0) 28.4 (34.4)	3.3 (2.7) 13.5 (16.5)	1.9 (1.7) 11.9 (15.5)	1.8 (1.7) 11.1
	Electric Consumption (W)	610	630	650	660
	Head Pressure [peak] (bar)	6.5	9.0	12.0	15.0
IM-100WNE	Ice Production (kg/d)	90 (97)	86 (95)	78 (88)	70 (75)
	Freeze Cycle Time (min)	25.6 (21.8)	27.4 (22.7)	30.9 (24.9)	34.7 (29.5)
	Defrost Cycle Time (min)	3.2 (2.7)	2.7 (2.3)	2.3 (2.1)	2.3 (2.2)
	Water Consumption (lit/h)	18.8 (21.6)	8.6 (10.2)	7.8 (9.6)	7.0 (8.2)
	Electric Consumption (W)	520	530	540	550
	Head Pressure [peak] (bar)	10.5	10.5	10.5	10.5

		40	21		00
	Ambient Temp. (°C)	10	21	32	38
Model	Water Temp. (°C)	10	15	21	32
	Cube Hole Diameter (mm)	5 (15)	5 (15)	5 (15)	5 (15)
IM-100WNE-23	Ice Production (kg/d)	77 (84)	73 (80)	71 (78)	69 (76)
	Freeze Cycle Time (min)	22.1 (18.2)	23.1 (19.3)	24.2 (19.9)	25.1 (20.6)
	Defrost Cycle Time (min)	2.3 (2.0)	2.3 (2.0)	2.2 (1.9)	2.0 (1.8)
	Water Consumption (lit/h)	20.6 (26.4)	13.7 (16.1)	9.9 (11.8)	9.6 (11.6)
	Electric Consumption (W)	520	530	540	550
	Head Pressure [peak] (bar)	10.5	10.5	10.5	10.5
IM-100WNE-21	Ice Production (kg/d)	87 (96)	84 (88)	79 (82)	74 (81)
	Freeze Cycle Time (min)	16.8 (13.0)	17.6 (14.5)	19.0 (15.9)	20.1 (15.6)
	Defrost Cycle Time (min)	2.2 (2.0)	2.1 (1.9)	2.0 (1.7)	2.3 (2.2)
	Water Consumption (lit/h)	28.4 (35.5)	13.2 (15.7)	12.4 (14.6)	11.6 (14.6)
	Electric Consumption (W)	520	530	540	550
	Head Pressure [peak] (bar)	10.5	10.5	10.5	10.5
IM-100WNE	Ice Production (kg/d)	95 (104)	90 (98)	84 (92)	76 (83)
(60Hz)	Freeze Cycle Time (min)	23.9 (19.9)	26.1 (21.9)	28.5 (23.5)	31.8 (26.4)
	Defrost Cycle Time (min)	3.4 (2.9)	2.7 (2.3)	2.4 (2.3)	2.3 (2.2)
	Water Consumption (lit/h)	19.8 (23.1)	9.0 (10.5)	8.4 (10.0)	7.6 (9.1)
	Electric Consumption (W)	560	580	600	620
	Head Pressure [peak] (bar)	10.5	10.5	10.5	10.5
IM-100WNE-21	Ice Production (kg/d)	94 (103)	88 (97)	85 (94)	82 (90)
(60Hz)	Freeze Cycle Time (min)	15.3 (12.0)	16.7 (13.0)	17.6 (13.7)	18.4 (14.3)
	Defrost Cycle Time (min)	2.3 (2.0)	2.1 (1.8)	1.9 (1.6)	1.8 (1.7)
	Water Consumption (lit/h)	30.7 (37.8)	13.8 (17.2)	13.3 (16.6)	12.9 (16.3)
	Electric Consumption (W)	560	580	600	620
	Head Pressure [peak] (bar)	10.5	10.5	10.5	10.5
IM-130NE	Ice Production (kg/d)	100 (130)	104 (112)	88 (96)	75 (82)
	Freeze Cycle Time (min)	19.0 (14.5)	22.4 (19.0)	27.4 (23.0)	32.9 (27.4)
	Defrost Cycle Time (min)	6.9 (3.8)	2.5 (2.2)	2.1 (1.8)	1.7 (1.6)
	Water Consumption (lit/h)	20.8 (25.3)	10.4 (12.1)	8.8 (10.4)	7.5 (8.9)
	Electric Consumption (W)	610	650	700	720
	Head Pressure [peak] (bar)	12.5	16.0	21.0	24.5
IM-130NE-23	Ice Production (kg/d)	90 (100)	86 (90)	75 (76)	70 (75)
	Freeze Cycle Time (min)	15.6 (12.9)	19.0 (16.6)	23.0 (20.9)	24.8 (20.9)
	Defrost Cycle Time (min)	5.2 (4.1)	2.6 (2.3)	2.0 (1.8)	1.9 (1.7)
	Water Consumption (lit/h)	26.0 (29.8)	12.0 (13.6)	10.4 (11.5)	9.7 (11.5)
	Electric Consumption (W)	610	650	700	720
	Head Pressure [peak] (bar)	12.5	16.0	21.0	24.5
IM-130WNE	Ice Production (kg/d)	110 (127)	105 (117)	95 (105)	90 (99)
	Freeze Cycle Time (min)	19.9 (15.7)	21.6 (17.7)	24.9 (20.6)	26.8 (22.1)
	Defrost Cycle Time (min)	3.7 (3.0)	3.1 (2.6)	2.4 (2.0)	2.0 (1.9)
	Water Consumption (lit/h)	22.9 (27.8)	10.5 (12.5)	9.5 (11.3)	9.0 (10.8)
	Electric Consumption (W)	610	650	700	720
	Head Pressure [peak] (bar)	19.5	19.5	19.5	19.5
IM-130WNE-23	Ice Production (kg/d)	90 (100)	91 (95)	90 (92)	87 (89)
	Freeze Cycle Time (min)	17.6 (14.0)	17.9 (15.4)	18.6 (16.5)	19.5 (17.3)
	Defrost Cycle Time (min)	3.2 (3.0)	2.7 (2.5)	2.2 (1.9)	2.0 (1.8)
	Water Consumption (lit/h)	26.0 (31.8)	12.6 (19.3)	12.2 (13.9)	11.7 (13.6)
	Electric Consumption (W)	610	650	700	720
	Head Pressure [peak] (bar)	19.5	19.5	19.5	19.5
IM-100CNE	Ice Production (kg/d)	85 (95)	83 (93)	73 (84)	65 (70)
	Freeze Cycle Time (min)	25.6 (21.1)	28.5 (23.4)	33.6 (26.6)	38.0 (32.1)
	Defrost Cycle Time (min)	4.9 (3.9)	2.7 (2.1)	1.9 (1.7)	1.9 (1.8)
	Water Consumption (lit/h)	17.7 (20.8)	8.3 (9.9)	7.3 (9.1)	6.5 (7.7)
	Electric Consumption (W)	555	570	630	640
	Head Pressure [peak] (bar)	6.5	9.0	12.0	15.0
L	[hear] (bal)	0.0	0.0	12.0	10.0

	Ambient Temp. (°C)	10	21	32	38
Model	Water Temp. (°C)	10	15	21	32
	Cube Hole Diameter (mm)	5 (15)	5 (15)	5 (15)	5 (15)
IM-100CNE-23	Ice Production (kg/d)	72 (79)	71 (77)	67 (70)	65 (70)
	Freeze Cycle Time (min)	20.9 (16.5)	23.4 (19.5)	26.1 (22.6)	27.0 (22.6)
	Defrost Cycle Time (min)	5.1 (5.0)	3.0 (2.6)	1.8 (1.7)	1.8 (1.7)
	Water Consumption (lit/h)	20.8 (25.0)	9.9 (11.6)	9.3 (10.7)	9.0 (10.7)
	Electric Consumption (W)	555	570	630	640
	Head Pressure [peak] (bar)	6.5	9.0	12.0	15.0
IM-100CNE-21	Ice Production (kg/d)	90 (92)	85 (87)	62 (64)	60 (62)
	Freeze Cycle Time (min)	14.9 (12.5)	16.8 (14.3)	24.7 (20.7)	25.7 (21.5)
	Defrost Cycle Time (min)	3.5 (3.2)	2.7 (2.3)	2.0 (1.8)	1.9 (1.7)
	Water Consumption (lit/h)	29.3 (33.9)	13.3 (15.3)	9.7 (11.5)	9.4 (11.2)
	Electric Consumption (W)	555	570	630	640
	Head Pressure [peak] (bar)	6.5	9.0	12.0	15.0
IM-100CNE	Ice Production (kg/d)	88 (98)	85 (93)	75 (83)	70 (75)
(60Hz)	Freeze Cycle Time (min)	23.9 (18.8)	26.2 (21.4)	32.6 (26.8)	35.0 (29.8)
	Defrost Cycle Time (min)	5.6 (5.4)	4.3 (4.1)	2.0 (1.8)	2.0 (1.9)
	Water Consumption (lit/h)	18.3 (22.3)	8.5 (10.2)	7.5 (9.1)	7.0 (8.2)
	Electric Consumption (W)	610	630	650	660
	Head Pressure [peak] (bar)	6.5	9.0	12.0	15.0

[a] COPELAND COMPRESSOR

Ice Production = Capacity when shipped from factory

Values for water-cooled models are for icemaking water only. Use a cooling tower for cooling water.

Cube Hole Diameter: 5mm (15mm) for -28, -23, -32 3mm (7mm) for -21 6mm for -Q ball ice (45mm dia) 5mm for -S star ice, -H heart ice 10mm for -LM, -LM103

5mm for -S star ice, -H heart ice 10mm for -Livi, -LM103					
	Ambient Temp. (°C)	10	21	32	38
Model	Water Temp. (°C)	10	15	21	32
	Cube Hole Diameter (mm)	5 (15)	5 (15)	5 (15)	5 (15)
IM-240NE	Ice Production (kg/d)	230 (240)	210 (230)	195 (210)	170 (195)
	Freeze Cycle Time (min)	15.9 (14.3)	19.5 (16.7)	21.6 (18.9)	25.3 (20.5)
	Defrost Cycle Time (min)	4.1 (3.7)	2.4 (2.1)	2.0 (1.7)	1.8 (1.7)
	Water Consumption (lit/h)	31.3 (34.1)	14.9 (17.2)	13.9 (15.7)	12.1 (14.7)
	Electric Consumption (W)	1195	1270	1320	1450
	Head Pressure [peak] (bar)	14.0	17.0	21.0	25.0
IM-240NE-23	Ice Production (kg/d)	185 (225)	175 (215)	165 (195)	155 (185)
	Freeze Cycle Time (min)	14.6 (10.8)	17.1 (13.0)	19.0 (15.2)	20.3 (15.0)
	Defrost Cycle Time (min)	3.9 (3.7)	2.5 (2.2)	1.8 (1.6)	1.8 (1.7)
	Water Consumption (lit/h)	33.9 (42.6)	16.7 (21.2)	15.8 (19.3)	14.8 (18.5)
	Electric Consumption (W)	1195	1270	1320	1450
	Head Pressure [peak] (bar)	14.0	17.0	21.0	25.0
IM-240WNE	Ice Production (kg/d)	230 (240)	215 (225)	205 (215)	185 (195)
	Freeze Cycle Time (min)	17.9 (16.0)	19.4 (17.3)	20.7 (18.4)	23.2 (20.6)
	Defrost Cycle Time (min)	2.1 (2.0)	2.0 (1.9)	1.8 (1.7)	1.7 (1.6)
	Water Consumption (lit/h)	31.3 (34.7)	15.3 (17.0)	14.6 (16.2)	13.2 (14.7)
	Electric Consumption (W)	1250	1250	1300	1300
	Head Pressure [peak] (bar)	19.5	19.7	19.8	20.0

Suction Pressure and Evaporator Temp.

					50/60 Hz
Model	Ambient Temp. (°C)	10	21	32	38
woder	Water Temp. (°C)	10	15	21	32
	Suction Pressure Peak (bar)	0.4	1.0	1.5	2.1
IM-21_NE	Evaporator Inlet Temp. (°C)	-17	-17	-16	-15
	Suction Pressure Peak (bar)	0.4	1.0	1.5	2.1
IM-30_NE	Evaporator Inlet Temp. (°C)	-17	-17	-16	-15
	Suction Pressure Peak (bar)	0.7	1.1	1.6	2.1
IM-45_NE	Evaporator Inlet Temp. (°C)	-19	-18	-15	-14
IM-65 NE	Suction Pressure Peak (bar)	0.7	1.0	1.3	1.7
—	Evaporator Inlet Temp. (°C)	-16	-16	-13	-12
IM-65NE-Q	Suction Pressure Peak (bar)	0.7	1.0	1.3	1.7
(60Hz)	Evaporator Inlet Temp. (°C)	-23	-20	-17	-12
IM-65WNE-Q	Suction Pressure Peak (bar)	0.7	1.0	1.3	1.5
IN-03WINE-Q	Evaporator Inlet Temp. (°C)	-19	-17	-19	-15
IM 100 NE	Suction Pressure Peak (bar)	1.2	1.5	1.8	2.2
IM-100_NE	Evaporator Inlet Temp. (°C)	-17	-17	-14	-12
IM 120 NE	Suction Pressure Peak (bar)	3.0	3.5	4.0	5.0
IM-130_NE	Evaporator Inlet Temp. (°C)	-20	-19	-18	-17
IM-240_NE	Suction Pressure Peak (bar)	3.0	3.5	4.0	5.0
IN-240_NL	Evaporator Inlet Temp. (°C)	-20	-19	-18	-17
IM-100_NE-21	Suction Pressure Peak (bar)	1.2	1.5	1.8	2.2
	Evaporator Inlet Temp. (°C)	-13	-11	-10	-9.0
IM-100_NE-23	Suction Pressure Peak (bar)	1.2	1.5	1.8	2.2
IN-100_NL-23	Evaporator Inlet Temp. (°C)	-17	-17	-14	-12
IM-130_NE-23	Suction Pressure Peak (bar)	3.0	3.5	4.0	5.0
IN-130_NE-23	Evaporator Inlet Temp. (°C)	-20	-19	-18	-17
IM-240_NE-21	Suction Pressure Peak (bar)	3.0	3.5	4.0	5.0
	Evaporator Inlet Temp. (°C)	-13	-11	-10	-9
IM-240_NE-23	Suction Pressure Peak (bar)	3.0	3.5	4.0	5.0
IIVI-240_INE-23	Evaporator Inlet Temp. (°C)	-20	-19	-18	-17
IM-240_NE-32	Suction Pressure Peak (bar)	3.0	3.5	4.0	5.0
IIVI-240_INE-32	Evaporator Inlet Temp. (°C)	-23	-22	-21	-20

Note: The above data are only for reference in servicing. Actual readings may be slightly different for each product.

Suction Pressure = Peak readings in freezing cycle

Evaporator Inlet Temp. = 5 minutes before completion of freezing cycle

[b] SECOP (DANFOSS) COMPRESSOR

Ice Production = Capacity when shipped from factory

Values for water-cooled models are for icemaking water only. Use a cooling tower for cooling water.

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Cube Hole Diameter: 5mm (15mm) for -28, -23,	-32 3mm (7	mm) for -21	
Ambient Temp (°C)	10	21	30

	Ambient Temp. (°C)	10	21	32	38
Madal					
Model	Water Temp. (°C)	10	15	21	32
	Cube Hole Diameter (mm)	5 (15)	5 (15)	5 (15)	5 (15)
	Ice Production (kg/d)	230 (240)	210 (230)	195 (210)	170 (195)
	Freeze Cycle Time (min)	15.9 (14.3)	19.5 (16.7)	21.6 (18.9)	25.3 (20.5)
IM-240NE	Defrost Cycle Time (min)	4.1 (3.7)	2.4 (2.1)	2.0 (1.7)	1.8 (1.7)
	Water Consumption (lit/h)	31.3 (34.1)	14.9 (17.2)	13.9 (15.7)	12.1 (14.7)
	Electric Consumption (W)	1195	1270	1320	1450
	Head Pressure [peak] (bar)	14.0	17.0	21.0	25.0
	Ice Production (kg/d)	185 (225)	175 (215)	165 (195)	155 (185)
	Freeze Cycle Time (min)	14.6 (10.8)	17.1 (13.0)	19.0 (15.2)	20.3 (15.0)
IM-240NE-23	Defrost Cycle Time (min)	3.9 (3.7)	2.5 (2.2)	1.8 (1.6)	1.8 (1.7)
	Water Consumption (lit/h)	33.9 (42.6)	16.7 (21.2)	15.8 (19.3)	14.8 (18.5)
	Electric Consumption (W)	1195	1270	1320	1450
	Head Pressure [peak] (bar)	14.0	17.0	21.0	25.0
	Ice Production (kg/d)	190 (217)	180 (210)	165 (190)	152 (167)
	Freeze Cycle Time (min)	12.3 (8.3)	14.5 (10.2)	16.3 (11.9)	18.1 (13.8)
IM-240NE-21	Defrost Cycle Time (min)	3.6 (3.6)	2.3 (2.1)	2.0 (1.7)	1.8 (1.7)
	Water Consumption (lit/h)	39.5 (52.6)	19.5 (26.2)	17.9 (23.5)	16.5 (21.0)
	Electric Consumption (W)	1195	1270	1320	1450
	Head Pressure [peak] (bar)	14.0	17.0	21.0	25.0
	Ice Production (kg/d)	230 (240)	215 (225)	205 (215)	185 (195)
	Freeze Cycle Time (min)	17.9 (16.0)	19.4 (17.3)	20.7 (18.4)	23.2 (20.6)
IM-240WNE	Defrost Cycle Time (min)	2.1 (2.0)	2.0 (1.9)	1.8 (1.7)	1.7 (1.6)
IIVI-240VVINE	Water Consumption (lit/h)	31.3 (34.7)	15.3 (17.0)	14.6 (16.2)	13.2 (14.7)
	Electric Consumption (W)	1250	1250	1300	1300
	Head Pressure [peak] (bar)	19.5	19.7	19.8	20.0
	Ice Production (kg/d)	185 (210)	175 (202)	168 (185)	150 (165)
	Freeze Cycle Time (min)	15.5 (12.8)	16.6 (13.5)	17.7 (15.1)	20.8 (18.0)
	Defrost Cycle Time (min)	3.0 (2.8)	2.9 (2.7)	2.7 (2.5)	2.5 (2.3)
IM-240WNE-23	Water Consumption (lit/h)	31.7 (39.8)	21.4 (25.4)	16.1 (18.4)	14.4 (16.4)
	Electric Consumption (W)	1250	1250	1300	1330
	Head Pressure [peak] (bar)	19.5	19.7	19.8	20.0

Suction Pressure and Evaporator Temp.

					50/60 Hz
Model	Ambient Temp. (°C)	10	21	32	38
	Water Temp. (°C)	10	15	21	32
IM-240_NE	Suction Pressure Peak (bar)	3.0	3.5	4.0	5.0
	Evaporator Inlet Temp. (°C)	-20	-19	-18	-17
IM-240_NE-21	Suction Pressure Peak (bar)	3.0	3.5	4.0	5.0
	Evaporator Inlet Temp. (°C)	-13	-11	-10	-9
IM-240_NE-32	Suction Pressure Peak (bar)	3.0	3.5	4.0	5.0
	Evaporator Inlet Temp. (°C)	-23	-22	-21	-20

Note: The above data are only for reference in servicing. Actual readings may be slightly different for each product.

Suction Pressure = Peak readings in freezing cycle

Evaporator Inlet Temp. = 5 minutes before completion of freezing cycle

VI. SERVICE DIAGNOSIS

1. ERROR CODE INDICATION

- * See the controller board service manual for detailed diagnosis and remedies.
- * The error and caution codes other than E1 and E2 are indicated as "EE" in the 7-segment display at the time of occurrence. But the error history is recorded as the actual error codes in parenthesis, and a maximum of five errors are indicated from the latest entry.

Error	Item	Description	Operation	Reset
E1	Freeze error	Freeze backup timer (45/60 minutes) counts up before freeze cycle completes, and evaporator temperature is 0°C or higher.	Shut down	Press reset switch
E2	Defrost error	Defrost backup timer (30 minutes) counts up before defrost cycle completes.	Shut down	Press reset switch
EE (E3)	Water pan opening error	Water pan has not fully opened within 60 seconds, and 3 minutes have passed even with opening failure control.	Halt	Press reset switch
		Unit resumes operation after 60 minutes and repeats the above error.	Shut down	- switch
	Water pan closing error	[Controller board before ver. 1.6A] Water pan has not fully closed within 60 seconds, and 3 minutes have passed even with closing failure control.		Press reset switch
EE (E4)		[Controller board ver. 1.6A and later] Water pan has not fully closed within 50 seconds, opened and started to close again, but failed to close fully within 50 seconds.	Halt	
		Unit resumes operation after 60 minutes and repeats the above error.	Shut down	
EE (E5)	High temperature error	Evaporator temperature stays 60°C or higher for 5 seconds or more.	Shut down	Press reset switch
EE (E9)	Condenser thermistor error	Condenser thermistor circuit is open or shorted for 2 seconds.	Shut down	Replace thermistor
EE (EA)	Data errorModel setting data memory IC is defective.		Shut down	Replace controller board
EE (EC)	Cube control thermistor error	Cube control thermistor circuit is open or shorted for 2 seconds.	Shut down	Replace thermistor
EE (Ed)	Water regulator error	Cooling water cannot stop by water regulator error, and thermistor senses set point or lower temperature.	Continue	Press reset switch

Caution	Item	Description	Operation	Reset
EE (C2)	High pressure	[Air-cooled] Condenser thermistor senses 63°C or higher temperature. [Water-cooled] Pressure switch senses 2.65MPa or higher pressure.	Compressor stops	After 5 minutes, condensing temperature 50°C or lower, pressure 1.96MPa or lower

2. NO ERROR CODE INDICATION

Problem	Check	Possible Cause	Remedy	
Icemaker will	Power source	Turned off.	Turn on.	
not start.		Supply voltage too low.	Remove cause	
		Power failure	Wait until power is resumed.	
	Transformer	Defective.	Replace.	
	Power cord	Not connected properly.	Reconnect.	
		Open circuit (damaged).	Replace.	
	Controller board	Defective.	Replace.	
	Fuse	Blown out.	Check for cause. Replace.	
	Bin control switch	Stuck on other parts (e.g. ice guide).	Remove ice.	
		Short circuit (display shows "on").	Replace.	
Slab does	Extension spring	Over-extended.	Replace.	
not break into separate cubes.	Water plate	Obstacle caught between evaporator and water plate.	Remove obstacle.	
Icemaker will	Bin control switch	Out of position.	Place in position.	
not stop when bin is filled with	actuator	Broken.	Replace.	
ice.	Bin control switch	Out of position.	Place in position.	
1001		Broken.	Replace.	
	Bin control switch detector	Out of position.	Place in position.	
		Broken.	Replace.	
	Bin control micro switch	Disconnected from switch box.	Reconnect.	
		Seizing with open contacts.	Replace.	
	Controller board	Defective.	Replace.	
Cloudy cubes.	Water quality	High hardness.	Set hard water control.	
			Switch to full drain flush (see note below).	
	Ice condition	Slush ice.	Set slush ice control.	
Abnormal noise	Pump motor	Bearing worn out.	Replace.	
		Vapor lock.	Clean water valve filter.	
			Check water supply cycle time setting.	
	Fan motor	Bearing worn out.	Replace.	
		Fan touching obstacle.	Remove obstacle.	
	Actuator motor	Gear worn out.	Replace.	
Cubes drop separately.	Refrigeration circuit	Gas leaks (long defrost cycle). Repair.		
	Cam arm	Worn out.	Replace.	

Note:

<u>Full drain flush</u> - After a freeze cycle ends, the unit drains all the remaining water in the tank and refills the tank in the next freeze cycle.

<u>Partial drain flush</u> (default setting) - After a freeze cycle ends, the unit leaves the remaining water in the tank and adds some water to fill the tank in the next freeze cycle.

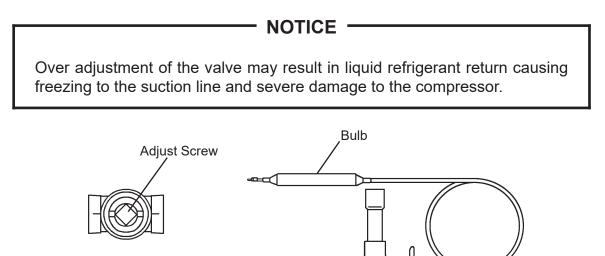
Problem	Check	Possible Cause	Remedy	
Imperfect ice	Insufficient water	Water valve filter clogged.	Clean.	
production.	supply	Water supply cycle too short.	Extend.	
		Water supply pressure too low.	Remove cause.	
	Water leaks from	Water tank broken.	Replace.	
	water tank or	Water plate broken.	Replace.	
	water plate	Icemaker not level.	Adjust.	
	Water valve	Water leaks valve body.	Replace.	
		Water leaks from water supply	Check hose clamp.	
		pipe joint.	Replace connection hose.	
	Water plate	Spray holes clogged.	Unclog.	
	Pump motor	Defective.	Replace.	
Large-hole cubes.	Refrigeration circuit	Gas leaks (low refrigeration capacity).	Repair.	
	Condenser	Not clean (low condensing capacity).	Clean.	
		Filter clogged.	Clean.	
	Fan motor	Defective.	Replace.	
	Installation site	No clearance at right side and rear (air-cooled model only).	Ensure clearance.	
		Ambient temperature above 40°C.	Ensure ventilation to lower temperature.	
	Power supply Supply voltage too low (lo refrigeration capacity).		Remove cause.	
	Water valve	Water leaks.	Replace.	
	Insufficient water supply	Water supply pressure too low.	Remove cause.	
Freeze cycle time is too long.	Installation site	Ambient temperature too high.	Ensure ventilation to lower temperature.	
	Condenser	Not clean (low condensing capacity).	Clean.	
		Filter clogged.	Clean.	
	Fan motor	Defective.	Replace.	
	Refrigeration circuit	Gas leaks (low refrigeration capacity).	Repair.	

VII. ADJUSTMENT

1. EXPANSION VALVE

The expansion valve is factory-adjusted. Do not adjust it except at replacement or service. Adjust the valve setting, if necessary, as follows:

- 1) Remove the cap nut.
- 2) Rotate the adjust screw by using a flat blade screwdriver.
- 3) Watch holes of ice cubes produced. Standard setting is that evaporator inlet side and outlet side cubes have almost the same diameters. To make the inlet side larger, rotate 90 - 180° clockwise. Smaller, counterclockwise. Do not rotate more than 180° at a time.



Bottom View

Solder Connection

Capillary Tube

Fig. 9

Cap Nut

2. WATER REGULATING VALVE - WATER-COOLED MODEL ONLY

The water regulating valve is factory-adjusted. Do not adjust it except at replacement or service. Adjust the valve setting, if necessary, as follows:

- 1) Attach a pressure gauge to high-side line, or prepare a thermometer to check condenser drain temperature.
- 2) Rotate the adjust screw using a flat blade screwdriver so that the pressure gauge shows 10 bar (IM-30/45/65/100) / 16 bar (IM-130) / 19 bar (IM-240), or the thermometer reads 30 40°C (IM-30/45/65/100) / 35 40°C (IM-130) / 45 50°C (IM-240), 5 minutes after freeze cycle starts.

When the pressure or temperature exceeds the above, rotate the adjust screw counterclockwise.

3) Check that the pressure or temperature holds.

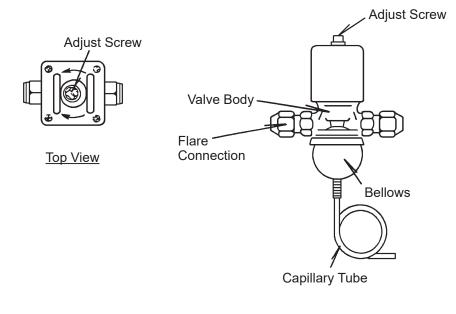


Fig. 10

3. FULL DRAIN FLUSH

In some hard water areas, white ice and scaling can be caused. In such case, install a filter or softener, and change the flush mode from "partial drain flush" to "full drain flush" according to the following instructions.

<u>Full drain flush</u> – After a freeze cycle ends, the unit drains all the remaining water in the tank and refills the tank in the next freeze cycle.

<u>Partial drain flush</u> (default setting) – After a freeze cycle ends, the unit leaves the remaining water in the tank and adds some water to fill the tank in the next freeze cycle.

1) Remove the screw located on the front of the water tank. Move the tank drain pipe to the drain position (see Fig. 11). Secure the tank drain pipe with the screw.

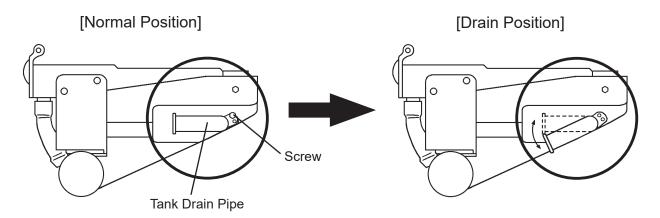


Fig. 11

 Change the following controller board settings from "partial drain flush" to "full drain flush", referring to "3. [b] MAINTENANCE MODE" in the IM-N series controller board service manual (E1CK-811).

Full / partial drain flush selection – Maintenance mode No. 14 (0: full, 1: partial) Icemaking water supply time – Maintenance mode No. 12 Additional icemaking water supply time – Maintenance mode No. 15

4. DIMPLE DIAMETER

See "2. [i] DIMPLE DIAMETER SETTING" in the IM-N series controller board service manual (E1CK-811).

VIII. REMOVAL AND REPLACEMENT

1. SERVICE FOR REFRIGERANT LINES

[a] SERVICE INFORMATION

1) Allowable Compressor Opening Time and Prevention of Lubricant Mixture [R134a/R404A]

The compressor must not be opened more than 30 minutes in replacement or service. Do not mix lubricants of different compressors even if both are charged with the same refrigerant, except when they use the same lubricant.

2) Treatment for Refrigerant Leak [R134a/R404A]

If a refrigerant leak occurs in the low side of an ice maker, air may be drawn in. Even if the low side pressure is higher than the atmospheric pressure in normal operation, a continuous refrigerant leak will eventually reduce the low side pressure below the atmospheric pressure and will cause air suction. Air contains a large amount of moisture, and ester oil easily absorbs a lot of moisture. If an ice maker charged with R134a/R404A has possibly drawn in air, <u>the drier must be replaced</u>. Be sure to use a drier designed for R134a/R404A.

3) Handling of Handy Flux [R134a/R404A]

Repair of the refrigerant circuit needs brazing. It is no problem to use the same handy flux that has been used for the current refrigerants. However, its entrance into the refrigerant circuit should be avoided as much as possible.

4) Oil for Processing of Copper Tubing [R134a/R404A]

When processing the copper tubing for service, wipe off oil, if any used, by using alcohol or the like. Do not use too much oil or let it into the tubing, as wax contained in the oil will clog the capillary tubing.

5) Service Parts for R134a/R404A

Some parts used for refrigerants other than R134a/R404A are similar to those for R134a/R404A. But never use any parts unless they are specified for R134a/R404A because their endurance against the refrigerant has not been evaluated. Also, for R134a/R404A, do not use any parts that have been used for other refrigerants. Otherwise, wax and chlorine remaining on the parts may adversely affect the R134a/R404A.

6) Replacement Copper Tubing [R134a/R404A]

The copper tubes currently in use are suitable for R134a/R404A. But do not use them if

oily inside. The residual oil in copper tubes should be as little as possible. (Low residual oil type copper tubes are used in the shipped units.)

7) Evacuation, Vacuum Pump and Refrigerant Charge [R134a/R404A]

Never allow the oil in the vacuum pump to flow backward. The vacuum level and vacuum pump may be the same as those for the current refrigerants. However, the rubber hose and gauge manifold to be used for evacuation and refrigerant charge should be exclusively for R134a/R404A.

8) Refrigerant Leak Check

Refrigerant leaks can be detected by charging the unit with a little refrigerant, raising the pressure with nitrogen and using an electronic detector. Do not use air or oxygen instead of nitrogen for this purpose, or rise in pressure as well as in temperature may cause R134a/R404A to suddenly react with oxygen and explode. Be sure to use nitrogen to prevent explosion.

[b] REFRIGERANT RECOVERY

IM-21, 30, 45, 65, 100 (R134a)

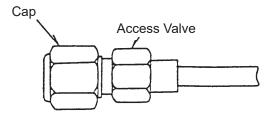
No refrigerant access valve is provided in the unit. A tap valve should initially be fitted to the low-side process tube and be replaced with a proper access valve (see Fig. 12) when recovery is completed.

Recover the refrigerant by using a refrigerant recovery machine (see its instruction manual for proper operation), and store the refrigerant in a proper container. Do not discharge the refrigerant into the atmosphere.

IM-130, 240 (R404A)

A low-side access valve is provided on an extension pipe connected to the suction port of the compressor. A tap valve should initially be fitted to the high-side process tube and be replaced with a proper access valve (see Fig. 12) when recovery is completed.

Recover the refrigerant by using a refrigerant recovery machine (see its instruction manual for proper operation), and store the refrigerant in a proper container. Do not discharge the refrigerant into the atmosphere.



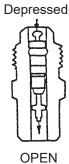


Fig. 12

[c] EVACUATION AND RECHARGE

IM-21, 30, 45, 65, 100 (R134a)

- 1) Attach a charging hose of a gauge manifold to a vacuum pump and the low-side access valve.
- 2) Open the low-side valve on the gauge manifold, and turn on the vacuum pump.
- 3) Allow the vacuum pump to pull down to a 760 mmHg vacuum. Evacuating period depends on the pump capacity.
- 4) Close the low-side valve on the gauge manifold.
- 5) Disconnect the vacuum pump, and attach a refrigerant charging cylinder to accurately weigh in the liquid charge. Remember to purge any air from the charging hose. See the nameplate for the required refrigerant charge.
- 6) Open the low-side valve on the gauge manifold and the valve on the charging cylinder.
- 7) When no more refrigerant is drawn in, turn on the icemaker. When the required amount of refrigerant has been charged, close the valve on the charging cylinder and turn off the icemaker.
- 8) Close the low-side valve on the gauge manifold.
- 9) Disconnect the charging hose from the access valve. Always cap the access valve to prevent a refrigerant leak.
- 10) Always thoroughly leak test all joints and valve caps.
- 11) Avoid charging large quantities of liquid into the low side in case of damage to the compressor.

IM-130, 240 (R404A)

- 1) Attach charging hoses of a gauge manifold to a vacuum pump and the low-side and high-side access valves.
- 2) Open the low-side and high-side valves on the gauge manifold, and turn on the vacuum pump.
- 3) Allow the vacuum pump to pull down to a 760 mmHg vacuum. Evacuating period depends on the pump capacity.
- 4) Close the low-side and high-side valves on the gauge manifold.

- 5) Disconnect the vacuum pump, and attach a refrigerant charging cylinder to accurately weigh in the liquid charge. Remember to purge any air from the charging hose. See the nameplate for the required refrigerant charge.
- 6) Open the high-side valve on the gauge manifold and the valve on the charging cylinder.
 - Note: Always charge in the liquid stage, as many refrigerants are blends and vapour charging will affect the blend consistency (e.g. R404A).
- 7) When no more refrigerant is drawn in, turn on the icemaker. When the required amount of refrigerant has been charged, close the valve on the charging cylinder and turn off the icemaker.
- 8) Close the high-side valve on the gauge manifold.
- 9) Disconnect the charging hoses from the access valves. Always cap the access valves to prevent a refrigerant leak.
- 10) Always thoroughly leak test all joints and valve caps.
- 11) Avoid charging large quantities of liquid into the low side in case of damage to the compressor.

2. COMPRESSOR

- 1) Unplug the icemaker or disconnect the power source.
- 2) Remove the front and rear panels.
- Recover the refrigerant and store it in a proper container, if required by an applicable law (See "1. [b] REFRIGERANT RECOVERY").
- 4) Remove the terminal cover on the compressor, and disconnect solderless terminals.
- 5) Disconnect the discharge and suction pipes using brazing equipment.
- 6) Remove the hold-down bolts, washers and rubber grommets.
- 7) Slide and remove the compressor. Unpack the new compressor package.
- 8) Attach the rubber grommets of the previous compressor.
- 9) Clean the suction and discharge pipes with an abrasive cloth/paper.
- 10) Place the compressor in position, and secure it using the bolts and washers.

- 11) Remove plugs from the compressor suction and discharge pipes.
- 12) Braze or solder the access, suction and discharge lines (Do not change this order), with nitrogen gas flowing at the pressure of 0.2 0.3 bar.
- 13) Install the new drier (See "3. DRIER").
- 14) Check for leaks using nitrogen gas (10 bar) and soap bubbles.
- 15) Evacuate the system and charge it with refrigerant (See "1. [c] EVACUATION AND RECHARGE").
- 16) Connect the solderless terminals and replace the terminal cover in its correct position.
- 17) Replace the panels in their correct positions.
- 18) Plug in the icemaker or connect the power source.
- Note: Hoshizaki recommends that compressor starting electrics are always replaced at the same time as the compressor.

3. DRIER

- 1) Unplug the icemaker or disconnect the power source.
- 2) Remove the front and rear panels.
- 3) Recover the refrigerant and store it in a proper container, if required by an applicable law (See "1. [b] REFRIGERANT RECOVERY").
- 4) Remove the drier holder, if any, and pull the drier toward you for easy service.
- 5) Remove the drier using brazing equipment.
- 6) Braze or solder the new drier, with the arrow on the drier in the direction of the refrigerant flow. Use nitrogen gas at the pressure of 0.2 0.3 bar when brazing tubings.
- 7) Check for leaks using nitrogen gas (10 bar) and soap bubbles.
- 8) Evacuate the system and charge it with refrigerant (See "1. [c] EVACUATION AND RECHARGE").
- 9) Replace the panels in their correct positions.

10) Plug in the icemaker or connect the power source.

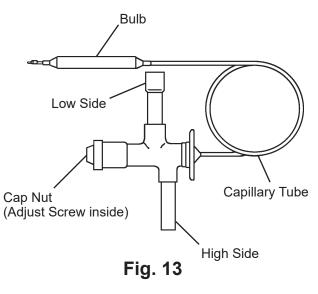
Note: Always use a drier of the correct capacity and refrigerant type.

4. EXPANSION VALVE

- IMPORTANT

Always install a new drier every time the sealed refrigeration system is opened. Do not replace the drier until after all other repair or replacement has been made.

- 1) Unplug the icemaker or disconnect the power source.
- 2) Remove the front and rear panels.
- 3) Recover the refrigerant and store it in a proper container, if required by an applicable law (See "1. [b] REFRIGERANT RECOVERY").
- 4) Remove the expansion valve using brazing equipment. Protect the evaporator and pipes from excessive heat with damp cloths or similar.
- 5) Remove the expansion valve sensor (bulb).
- 6) Remove the drier using brazing equipment.
- 7) Braze in the new expansion valve. Protect the body of the valve from excessive heat, and use nitrogen at a pressure of 0.2 0.3 bar when brazing.
- 8) Braze or solder the new drier (See "3. DRIER").
- 9) Check for leaks using nitrogen gas (10 bar) and soap bubbles.
- 10) Evacuate the system and charge it with refrigerant (See "1. [c] EVACUATION AND RECHARGE").
- 11) Attach the bulb to the suction line in position. Be sure to secure it using a wire or clamp and replace the insulation.
- 12) Replace the panels in their correct positions.
- 13) Plug in the icemaker or connect the power source.



5. EVAPORATOR

IMPORTANT ·

Always install a new drier every time the sealed refrigeration system is opened. Do not replace the drier until after all other repair or replacement has been made.

- 1) Unplug the icemaker or disconnect the power source.
- 2) Remove the front and rear panels.
- 3) Recover the refrigerant and store it in a proper container, if required by an applicable law (See "1. [b] REFRIGERANT RECOVERY").
- 4) Remove the water pan assembly, referring to "8. WATER PAN ASSEMBLY".
- 5) Disconnect the solder connections on the evaporator using brazing equipment. Protect the expansion valve from excessive heat.
- 6) Remove four nuts holding the evaporator.
- 7) Install the new evaporator, and secure it with the bolts, collars (spacer) and nuts.
- 8) Install the new drier (See "3. DRIER").
- 9) Braze pipes, with nitrogen gas flowing at the pressure of 0.2 0.3 bar.
- 10) Check for leaks using nitrogen gas (10 bar) and soap bubbles.
- 11) Evacuate the system and charge it with refrigerant (See "1. [c] EVACUATION AND RECHARGE").
- 12) Replace the removed panels in their correct positions.
- 13) Plug in the icemaker or connect the power source.

6. HOT GAS VALVE

- IMPORTANT ·

Always install a new drier every time the sealed refrigeration system is opened. Do not replace the drier until after all other repair or replacement has been made.

- 1) Unplug the icemaker or disconnect the power source.
- 2) Remove the front and rear panels.
- 3) Recover the refrigerant and store it in a proper container, if required by an applicable law (See "1. [b] REFRIGERANT RECOVERY").
- 4) Disconnect the hot gas valve leads.
- 5) Remove the screw and the solenoid coil.
- 6) Remove the valve and drier using brazing equipment.
- 7) Braze the new hot gas valve with nitrogen gas flowing at the pressure of 0.2 0.3 bar.

WARNING -

Always protect the valve body by using a damp cloth to prevent the valve from overheating. Do not braze with the valve body exceeding 120°C.

- 8) Install the new drier (See "3. DRIER").
- 9) Check for leaks using nitrogen gas (10 bar) and soap bubbles.
- 10) Evacuate the system and charge it with refrigerant (See "1. [c] EVACUATION AND RECHARGE").
- 11) Attach the solenoid coil to the valve body, and secure it with the screw.
- 12) Connect the leads.
- 13) Replace the panels in their correct positions.
- 14) Plug in the icemaker or connect the power source.

7. WATER REGULATING VALVE - WATER-COOLED MODEL ONLY

[a] VALVE BODY

- 1) Unplug the icemaker or disconnect the power source.
- 2) Close the water supply tap.
- 3) Remove the front and rear panels.
- 4) Disconnect the flare connections of the water regulating valve.
- 5) Remove the valve from the bracket.
- 6) Install a new water regulating valve.
- 7) Connect the flare connections.
- 8) Open the water supply tap.
- 9) Check for water leaks.
- 10) Replace the panels in their correct positions.
- 11) Plug in the icemaker or connect the power source.

[b] WHOLE VALVE

- IMPORTANT -

Always install a new drier every time the sealed refrigeration system is opened. Do not replace the drier until after all other repair or replacement has been made.

- 1 Unplug the icemaker or disconnect the power source.
- 2) Close the water supply tap.
- 3) Remove the front and rear panels.
- 4) Recover the refrigerant and store it in a proper container, if required by an applicable law (See "1. [b] REFRIGERANT RECOVERY").
- 5) Cut off the copper tube near the capillary tube solder connection, using a pipe cutter.

- 6) Cut off the capillary tubes of the valve and high-pressure switch, using a file and pliers. Be careful not to damage the capillary tube end.
- 7) Disconnect the flare connections from the bracket.
- 8) Remove the screws and the valve from the bracket.
- 9) Install the new valve, and insert the capillary tubes into the copper tube.
- 10) Web the copper tube end, and braze or solder the copper tube and capillary tubes together.
- 11) Install the new drier (See "3. DRIER").
- 12) Check for leaks using nitrogen gas (10 bar) and soap bubbles.
- 13) Evacuate the system and charge it with refrigerant (See "1. [c] EVACUATION AND RECHARGE").
- 14) Connect the flare connections.
- 15) Open the water supply tap.
- 16) Check for water leaks.
- 17) Replace the panels in their correct positions.
- 18) Plug in the icemaker or connect the power source.

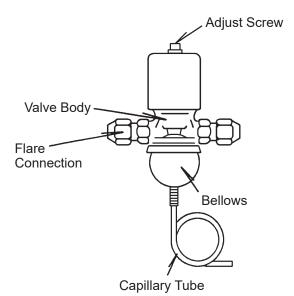
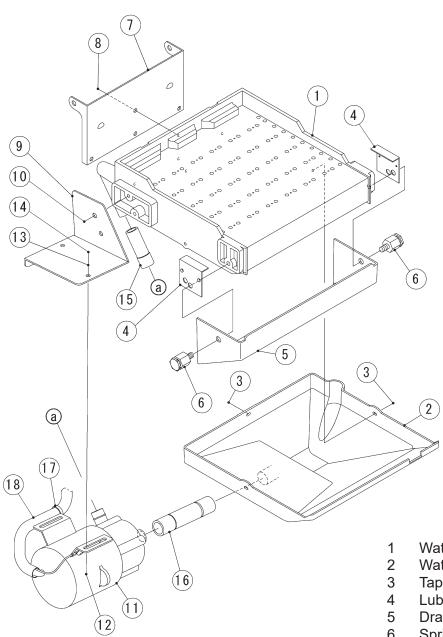


Fig. 14

8. WATER PAN ASSEMBLY

- 1) Remove the top and front panels.
- 2) Push the reset switch on the control box to open the water pan.
- 3) Unplug the icemaker or disconnect the power source.
- 4) Disconnect the pump motor leads in the wiring channel.
- 5) Remove the two extension springs from the cams.
- 6) Remove the water plate bracket and the water pan assembly.
- 7) Remove the two spring hook screws from the water tank.
- 8) Remove the screws and the water plate bracket.
- 9) Remove the pump suction and discharge tubings.
- 10) Remove the pump motor bracket from the water plate.
- 11) Install the new water plate or water tank in the reverse order of the removal procedure.
- 12) Replace the panels in their correct positions.
- 13) Plug in the icemaker or connect the power source.



- Water Plate
- Water Tank
- Tapping Screw
- Lubrication Plate
- Drain Guide
- Spring Hook Screw 6
- 7 Water Pan Bracket
- Tapping Screw 8
- Pump Motor Bracket Tapping Screw Pump Motor 9
- 10
- 11
- 12 Hex Head Bolt
- 13 Flat Washer
- Flange Nut 14
- Discharge Tubing 15
- Suction Tubing 16
- Nylon Tie 17
- Silicone Tube 18

Fig. 15

9. PUMP MOTOR

- 1) Unplug the icemaker or disconnect the power source.
- 2) Remove the top panel and front panel.
- 3) Disconnect the pump motor leads in the wiring channel.
- 4) Unscrew and remove the pump motor from the bracket.
- 5) Disconnect the pump suction and discharge tubings.
- 6) Install the new motor in the reverse order of the removal procedure.
- 7) Plug in the icemaker or connect the power source, and check for leaks.
- 8) Replace the panels in their correct positions.

10. WATER VALVE

- 1) Close the water supply tap.
- 2) Unplug the icemaker or disconnect the power source.
- 3) Remove the top panel and front panel.
- 4) Disconnect the receptacle (leads) from the water valve.
- 5) Remove the valve outlet tubing by releasing the clamp.
- 6) Remove the inlet hose and water valve.
- 7) Install the new valve in the reverse order of the removal procedure.
- 8) Open the water supply tap.
- 9) Plug in the icemaker or connect the power source.
- 10) Check for leaks.
- 11) Replace the panels in their correct positions.
- Note: When replacing parts, disassemble as shown in Fig. 7 and replace the defective parts.

11. ACTUATOR MOTOR

- 1) Remove the top panel and front panel.
- 2) Push the reset switch on the control box to open the water pan.
- 3) Unplug the icemaker or disconnect the power source.
- 4) Remove the extension spring (actuator motor side) from the cam.
- 5) Disconnect the actuator motor leads in the wiring channel.
- 6) Remove the actuator motor bracket.
- 7) Remove the spring pin securing the shaft to the cam.
- 8) Remove the actuator motor.
- 9) Install the new actuator motor in the reverse order of the removal procedure.
- 10) Check that the cam can move in the proper range. 11) Replace the panels in their correct positions. 12) Plug in the icemaker or connect the power source. (7 (10)9 0 2 (8) 4 5 (6) 1 Actuator Motor $\left(1\right)$ 2 Cam (A) 3 Spring Pin (10)Spring 4 5 Actuator Motor Bracket (12)**Truss Head Machine Screw** 6 7 Flat Head Machine Screw (11)Silicone Tube 8 9 Silicone Tube 10 Tie Actuator Motor Cover 11 12 Hex Head Bolt
 - Fig. 16

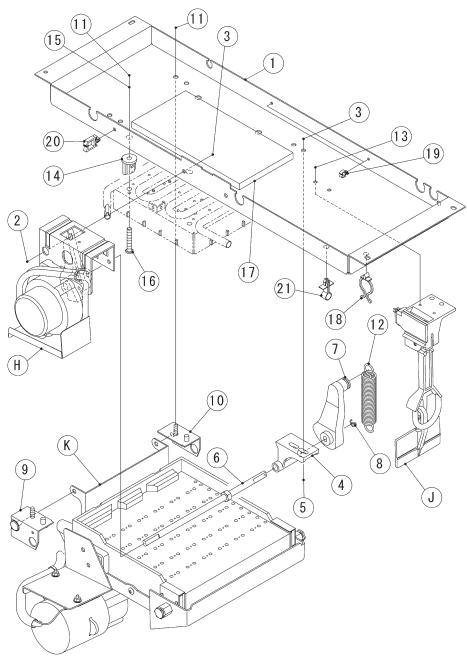
12. CAM

[a] CAM (A) - ACTUATOR MOTOR SIDE

Refer to "11. ACTUATOR MOTOR".

[b] CAM (B) - REAR SIDE

- 1) Remove the top panel and front panel.
- 2) Push the reset switch on the control box to open the water pan.
- 3) Unplug the icemaker or disconnect the power source.
- 4) Remove the extension spring from the cam (B).
- 5) Remove the split pin from the cam shaft.
- 6) Remove the cam (B).
- 7) Install the new cam in the reverse order of the removal procedure.
- 8) Replace the panels in their correct positions.
- 9) Plug in the icemaker or connect the power source.



- Actuator Motor Assembly
- Bin Switch Assembly J
- Κ Water Pan Assembly
- Ice Making Mechanism Bracket 1
- 2 3 Machine Screw
 - Flange Nut

Н

- 4 Cam Shaft Bearing
- 5 Machine Screw
- 6 Cam Shaft 7
 - Cam (B)
- Cotter Pin 8
- Water Pan Bearing (Front) 9
- Water Pan Bearing (Rear) 10
- 11 Flange Nut
- Spring 12
- 13 Tapping Screw
- 14 Spacer
- 15 Washer
- **Evaporator Screw** 16
- Insulation (D) 17
- 18 Clamp
- 19 Clamp
- Wire Saddle 20 21 Clamp

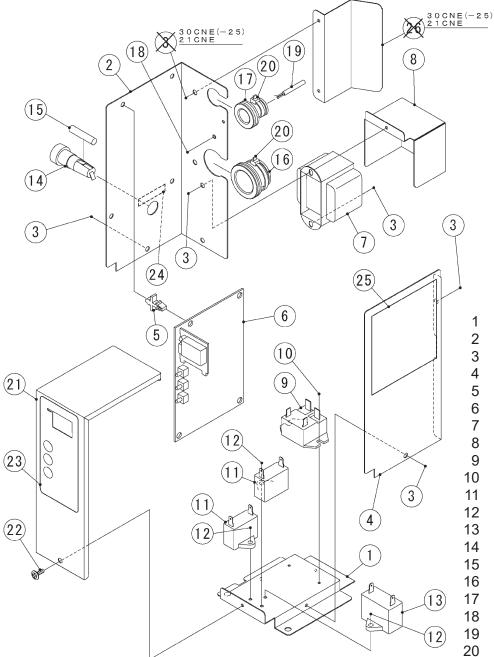
Fig. 17

13. CONTROLLER BOARD

IMPORTANT -

Some adjustment will be required for the controller board to fit the icemaker models. Do not repair any parts and electronic devices on the controller board in the field. Replace the whole board with a new service board.

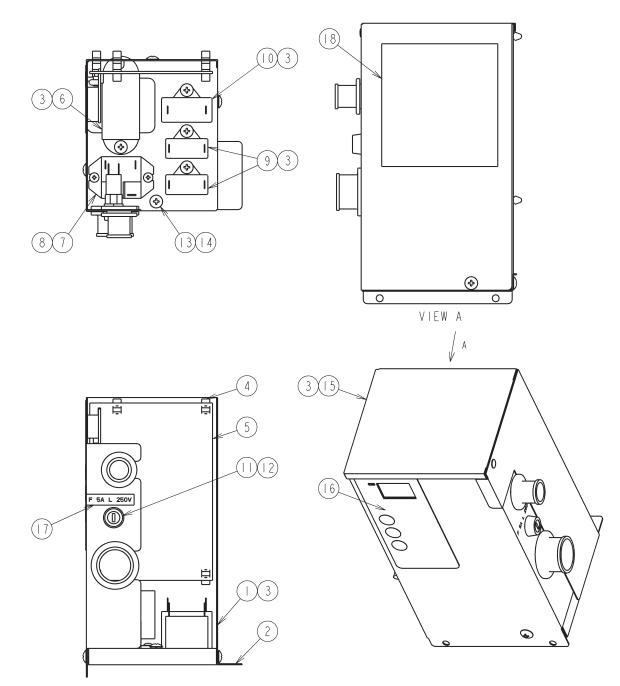
- 1) Unplug the icemaker or disconnect the power source.
- 2) Remove the front panel.
- 3) Unscrew and remove the control box cover.
- 4) Disconnect all the connectors from the controller board.
- 5) Remove the controller board from the four board supports for connection to the control box.
- 6) Install the new controller board in the reverse order of the removal procedure.
- 7) Replace the front panel in its correct position.
- 8) Plug in the icemaker or connect the power source.
- 9) The icemaker restarts in the model setting mode. Set the model code according to the controller board service manual.



- Control Box (A)
- Control Box (B)
- 3 Tapping Screw
- 4 Control Box (C)
- 5 Board Support
- 6 Controller Board
- Transformer
- 3 Transformer Cover
- Power Relay
- Tapping Screw
- Capacitor
- 2 Tapping Screw
- 3 Capacitor
- 4 Fuse Holder
- 5 Fuse
- 6 Grommet
- 17 Grommet
- 8 Machine Screw
- 9 Cube Control Thermistor
- 0 Tie
- 21 Control Box Cover
- 22 Screw
- 23 Control Label
- 24 Fuse Label
- 25 Wiring Label
- 26 Plate

Fig. 18

IM-21CNE/30CNE (auxiliary code K1 and later)

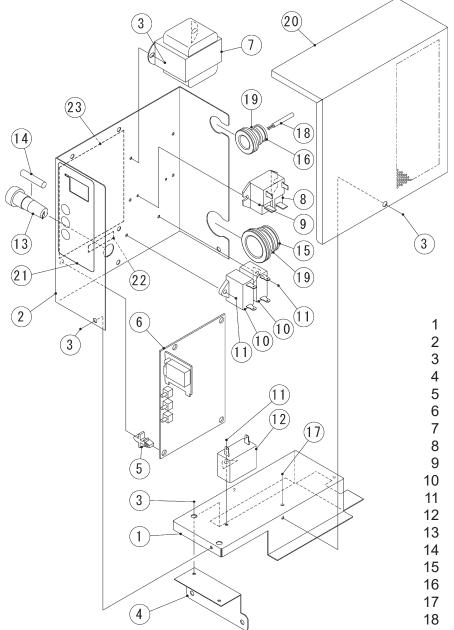




- 1 Control Box (B)
- 2 Control Box (A)
- 3 Tapping Screw
- 4 Board Support
- 5 Controller Board
- 6 Transformer
- 7 Power Relay
- 8 Tapping Screw
- 9 Capacitor

- 10 Capacitor
- 11 Fuse Holder
- 12 Fuse
- 13 Machine Screw
- 14 Spring Washer
- 15 Control Box Cover
- 16 Control Label
- 17 Fuse Label
- 18 Wiring Label

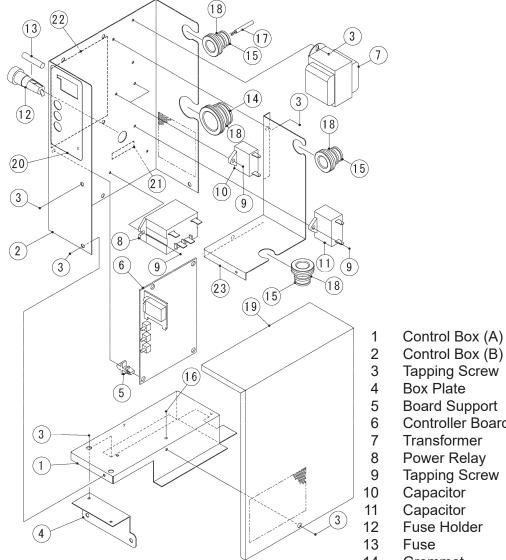
IM-45CNE/NE/WNE, 65NE/WNE



- Control Box (A)
- Control Box (B)
- 3 Tapping Screw
- Box Plate
- 5 Board Support
- 6 Controller Board
- 7 Transformer
- 8 Power Relay
- 9 Tapping Screw
- 0 Capacitor
- 11 Tapping Screw
- 12 Capacitor
- 13 Fuse Holder
- 14 Fuse
- 15 Grommet
- 16 Grommet
- 17 Machine Screw
- 18 Cube Control Thermistor
- 19 Tie
- 20 Control Box Cover
- 21 Control Label
- 22 Fuse Label
- 23 Wiring Label

Fig. 20

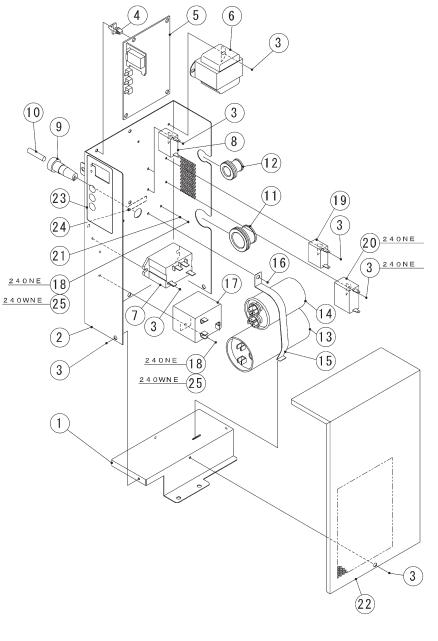
IM-100CNE/NE/WNE, 130NE/WNE



- Control Box (A)
- Tapping Screw
- Board Support
- Controller Board
- Tapping Screw
- 14 Grommet
- 15 Grommet
- 16 Machine Screw
- 17 Cube Control Thermistor
- 18 Tie
- **Control Box Cover** 19
- 20 Control Label
- 21 Fuse Label
- 22 Wiring Label
- Box Separator 23

Fig. 21

IM-240NE/WNE

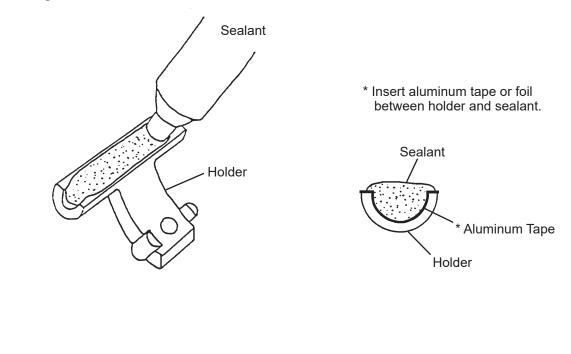


- 1 Control Box (B)
- 2 Control Box Body (G)
- 3 Tapping Screw
- 4 Board Support
- 5 Controller Board
- 6 Transformer
- 7 Power Relay
- 8 Capacitor 9 Fuse Holder
- 10 Fuse
- 11 Grommet
- 12 Grommet
- 13 Start Capacitor
- 14 Run Capacitor
- 15 Band
- 16 Flange Bolt (S-TITE)
- 17 Starter
- 18 Tapping Screw (S-TITE) [IM-240NE]
- 19 Capacitor
- 20 Capacitor [IM-240NE]
- 21 Spring Washer
- 22 Control Box Cover
- 23 Control Label
- 24 Fuse Label
- 25 Machine Screw [IM-240WNE]

Fig. 22

14. THERMISTOR FOR CUBE CONTROL

- 1) Unplug the icemaker or disconnect the power source.
- 2) Remove the top and front panels.
- 3) Remove the connector CN13 on the controller board, referring to "13. CONTROLLER BOARD".
- 4) Unscrew and remove the thermistor holder and thermistor, located on the evaporator (front side).
- 5) Install the new thermistor in the reverse order of the removal procedure, by using a sealant (high-thermal conduct type). See Fig. 23.
 - Note: Recommended sealant is KE4560RTV, manufactured by Shin-Etsu Silicones. When other type of sealant used, the cube size and performance will be changed. <u>Do not</u> use silicone sealant as this will insulate the thermistor.



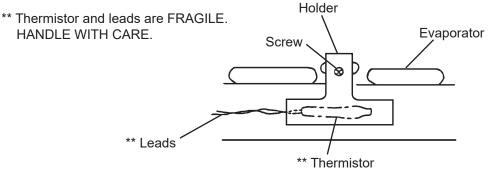


Fig. 23

15. FAN MOTOR - AIR-COOLED MODEL ONLY

- 1) Unplug the icemaker or disconnect the power source.
- 2) Remove the top and rear panels.
- 3) Disconnect the connector of the fan motor.
- 4) Remove the fan motor bracket and the fan motor.
- 5) Cut the leads of the fan motor allowing enough lead length to reconnect using closed end connectors.
- 6) Install the new fan motor in the reverse order of the removal procedure.
- 7) Refit the panels in their correct positions.
- 8) Plug in the icemaker or connect the power source.