

BUUS Køleteknik A/S and BUUS Ice A/S



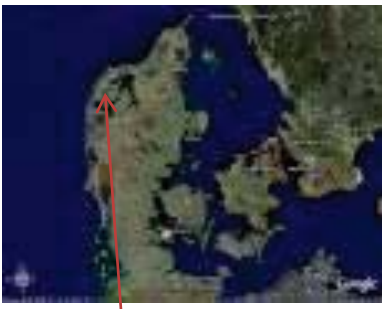
BUUS group consists of two companies: Buus Køleteknik A/S and Buus Ice A/S.

BUUS was established back in 1958. Today the company is specialized in the field of projecting and erecting refrigeration plants as well as ice machines in the range 200 – 80.000 kg/24 hours on single frame machines.

The ice machines are produced in Denmark. The company is located on the island Mors.

We are able to handle enquiries for spare parts from our own stock. Spare parts and machines are sent on a daily basis.

Our technicians are very well educated and trained to service our installations.



BUUS, Frøslev Mors

The Buus group wishes to be in front with the development within the refrigeration segment. We hold all certificates and approvals in our companies.

A **BUUS** plant can be delivered for different types of refrigerant, covering:

- ✓ **HFC/HCFC**
- ✓ **Ammonia**
- ✓ **CO₂**
- ✓ **Brine**

BUUS Group wish to be your innovative supplier when it comes to new thinking. This covers refrigeration plants, freezing and ice machines. Or perhaps something complete different?

This means that our solutions are often based on customer demands. We take pride in that input from our customers, resulting in even better solutions.

As customer you can be confident that your **BUUS** plant fulfills existing and known future regulations. You will also benefit from our existing customers who have supplied us with best possible solutions implemented in our plants. This is an ongoing development.

BUUS Ice machines type M, C, D, E and F.

These machines were originally designed and optimized for onboard installations. They are extremely rugged and compact and are therefore easily installed in fish holds without occupying valuable space.

The machines are optimized and of high standard based on minimum size.

The evaporator forming the ice is produced from aluminum. This means maximum capacity on minimum size requirements.



Ice machine type D

More ice in less space.



Ice machine unit. Marine type.

All models for various types of refrigerant:

CO₂, Ammonia, HFC and Brine

Type	Capacities Kg/24h	Dimension LxBxH mm	Weight
SM	200-550	700x475x350	60
SC	800-2.000	1060x710x510	140
SD	1.000-3.500	1200x605x510	190
SE	3.000-4.500	1385x605x510	220
SF	5.000-10.000	1885x605x510	260

Data. Ice machine type M, C, D, E and F

BUUS Ice machines type V and VD.

These machines are our "heavy duty" series.

The V and VD series were previously produced by Atlas and Sabroe.

The series is developed so that reliable performance in a continuous operation over several years is obtained.

Around the world V and VD machines with an age of more than 40 years are still going strong.

The production of a VD746 is then more than 19 billion ton of ice.



Ice machine type VD746ULTS. Supplied to a customer in the Middle East.

All models for various types of refrigerant:

CO₂, Ammonia and HFC.



Ice machines type V-VD

Type	Capacities Kg/24h	Dimensions LxBxH mm	Weight
V156	4.300-8.800	1230x1145x1845	1100
V316	8.000-.23.300	1230x1165x2495	1360
V373	10.000-27.700	1230x1265x2800	1680
V619	17.100-44.100	1230x1265x3625	1900
VD746	21.400-55.400	1960x1210x2800	3350
VD1206	34.200-88.200	1960X1280X3700	4400

Data. Ice machine type V-VD

BUUS Slurry Ice generator.

Slurry ice is a homogeneous mix of ice and water.

The salt content is 1 to 3% to make it pumpable and smooth.

BUUS' slurry ice series is based on standard ice machines. Since the ice is formed on the outer diameter of the freezing drum, the machine is not so sensitive to the salt content of the inlet water. This is important on marine applications, since good slurry can be produced even if the salt content varies in different areas.

Total plants incl. storage and tapping stations are available.



Slurry on board an African trawler



Slurry plant type SSD8000

Capacities:

Slurry ice generators produces approximately three times as much slurry as solid ice. A one ton flake ice machine then produces three ton of slurry ice per 24 hours.

BUUS has a program for correct calculation and we are happy to calculate also your assignment to secure the optimal solution.



Slurry plant type SVD746

BUUS design.

Cold and Freezing storage.
Refrigeration plants, sales and aftersales service.

The core business of **BUUS** is flake ice machines and industrial refrigeration. We also offer design and project management as part of the scope.

BUUS' engineers are ISO-9001 certified for all applications within refrigeration.



Cold storage. Tange Frilandsgartneri A/S



Fish farming in Norway. 3 x SF8000USW ice flakers



Chilling sous vide meals in slurry ice.
Nursing home. Denmark.

BUUS perform tasks throughout Denmark and the rest of the world. What can we do for you and your company?

Please contact us.
Tel. +45 97 74 40 33.
E-mail buus@buus.dk

BUUS Special plants.

BUUS is much more than just traditional refrigeration plants. The project department has handled assignments in freezing of special medias like:

- ✓ Pet food
- ✓ Fruit juice for concentrate
- ✓ Instant coffee
- ✓ Blood plasma
- ✓ Cellulose fibers at -80°C

Please feel free to ask us
for advice



Water chiller $+3^{\circ}\text{C}$



Complete ice plant, Container solution

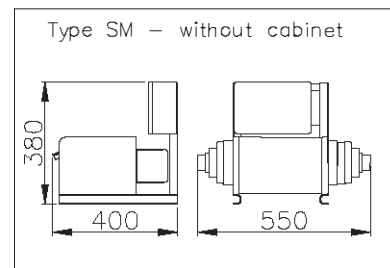
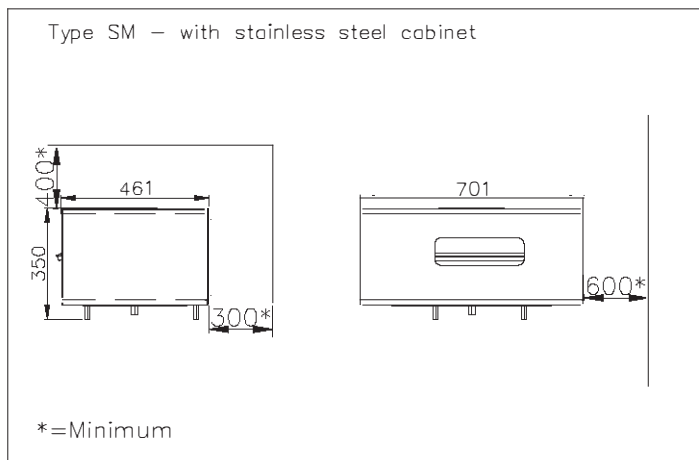
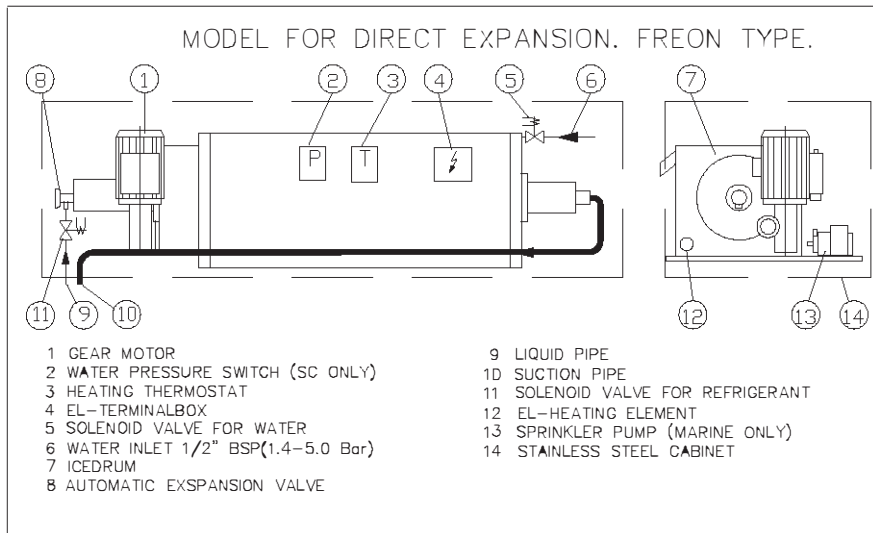


Blood and plasma ice machine type VS373



Shock freezing of cellulose fibers. -80°C plant

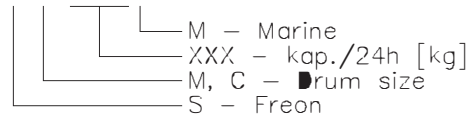
TECHNICAL DATA FOR 200-550 KG/24H ICEFLAKER DRUM FOR FREON



Type	Ice capacity kg/24h	Electric motor kW	Heating in water tank kW	Refrigerant	Weight with cabinet kg	Weight without cabinet kg	Cooling capacity/ evap. temp.** Water +15°C kW/°C	Cooling capacity/ evap. temp.** Water +25°C kW/°C
SM200	200	0.18	0.25	CFC/HCFC	60	37	1,2/-15	1,3/-15
SM350	350	0.18	0.25	CFC/HCFC	60	37	2/-16	2,2/-16
SM400	400	0.18	0.25	CFC/HCFC	60	37	2,3/-18	2,5/-18
SM550	550	0.18	0.25	CFC/HCFC	60	37	3,2/-19	3,5/-19

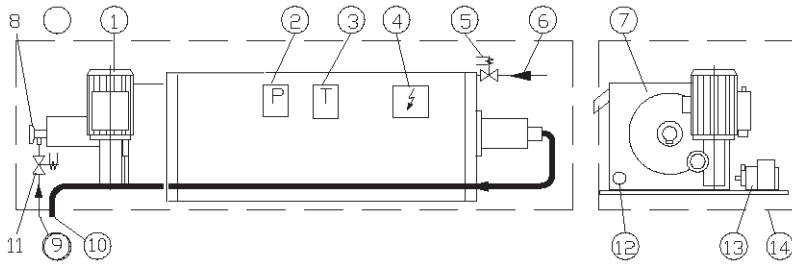
** When the ice is made from sea water, the evaporation temp. must always be -27°C

Types. Example: S M 400 M



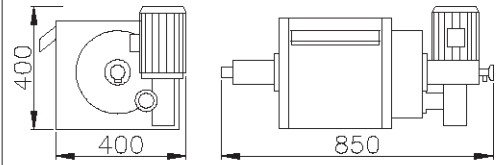
TECHNICAL DATA FOR 700-2000 KG/24H ICEFLAKER FOR CFC/HCFC

MODEL FOR DIRECT EXPANSION. FREON TYPE.

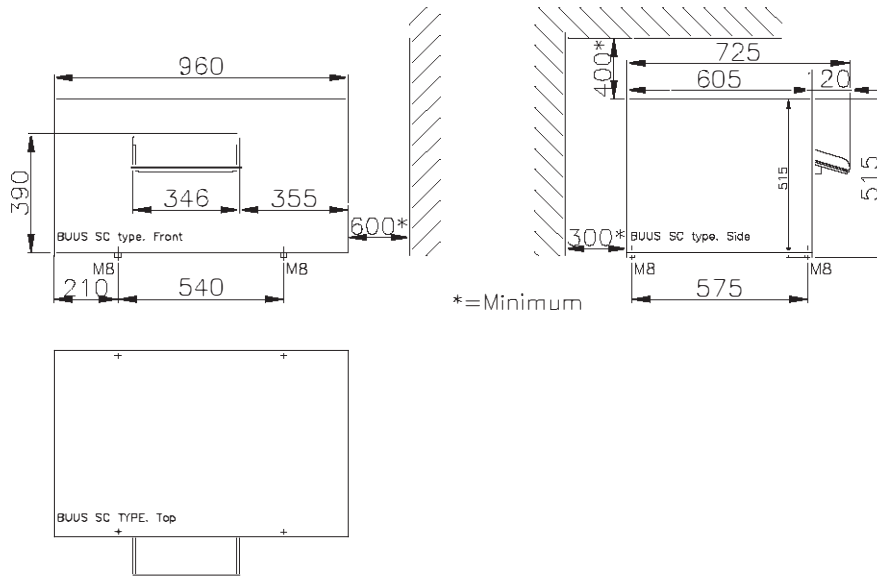


- | | |
|-------------------------------------|-----------------------------------|
| 1 GEAR MOTOR | 9 LIQUID PIPE |
| 2 WATER PRESSURE SWITCH (SC ONLY) | 10 SUCTION PIPE |
| 3 HEATING THERMOSTAT | 11 SOLENOID VALVE FOR REFRIGERANT |
| 4 EL-TERMINALBOX | 12 EL-HEATING ELEMENT |
| 5 SOLENOID VALVE FOR WATER | 13 SPRINKLER PUMP (MARINE ONLY) |
| 6 WATER INLET 1/2" BSP(1.4-5.0 Bar) | 14 STAINLESS STEEL CABINET |
| 7 ICEDRUM | |
| 8 AUTOMATIC EXPANSION VALVE | |

Type SC - without cabinet



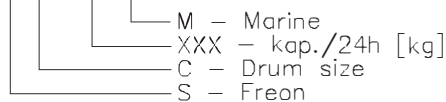
Type SC - with stainless steel cabinet



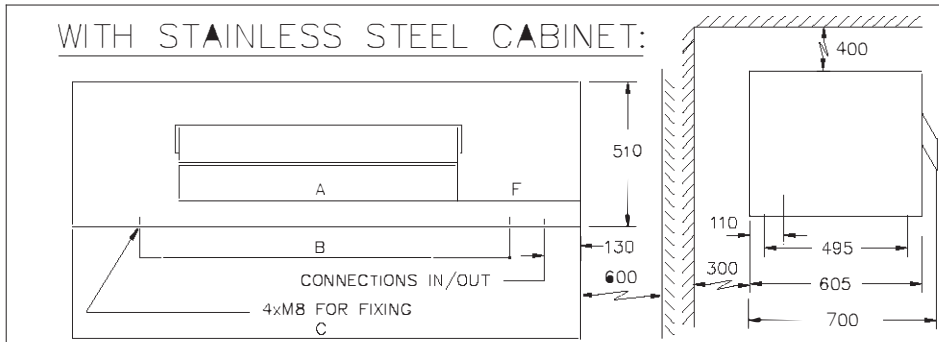
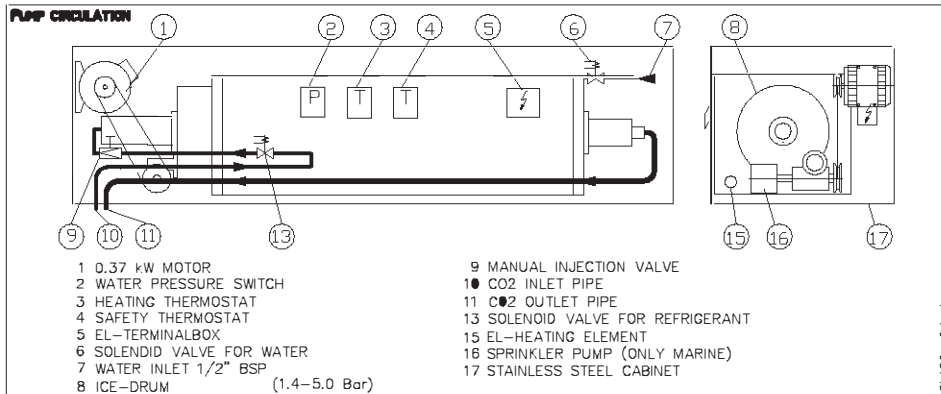
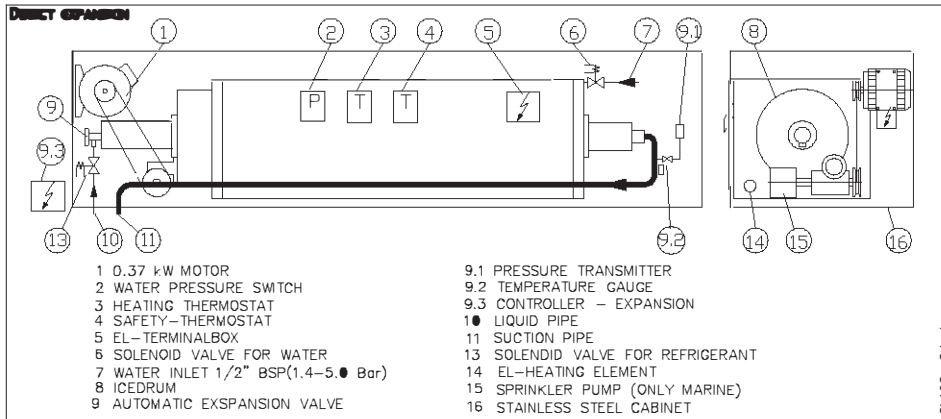
Type	Ice capacity kg/24h	Electric motor kW	Heating in water tank kW	Refrigerant	Weight with cabinet kg	Weight without cabinet kg	Cooling capacity/ evap. temp.** Water +15°C kW/°C	Cooling capacity/ evap. temp.** Water +25°C kW/°C
SC700	700	0.18	0,5	CFC/HCFC	140	99	4/-17	4,4/-17
SC800	800	0.18	0,5	CFC/HCFC	140	99	4,5/-18	5/-18
SC1000	1000	0.18	0,5	CFC/HCFC	140	99	5,5/-20	6,5/-20
SC1200	1200	0.18	0,5	CFC/HCFC	140	99	6,5/-23	7,5/-23
SC1400	1400	0.18	0,5	CFC/HCFC	140	99	8/-25	8,8/-25
SC1700	1700	0.18	0,5	CFC/HCFC	140	99	9,7/-27	10,7/-27
SC2000	2000	0.18	0,5	CFC/HCFC	140	99	11,5/-29	12,5/-29

** When the ice is made from sea water, the evaporation temp. must always be -27°C

Types. Example: S C 800 M



TECHNICAL DATA FOR TYPE D-E-F DRUMS FOR CO2



Type	Ice capacity kg/24h	El-motor ice-flaker kW	Heating in water-tank kW	Refrigerant	Weight with cabinet kg	Weight without cabinet kg	Cooling capacity/ evap.temp.* Water +15°C kW/°C	Cooling capacity/ evap.temp.* Water +25°C kW/°C
CD1700	1700	0.37	0.7	R744	190	130	9,7/-15	11/-15
CD2100	2100	0.37	0.7	R744	190	130	12/-18	13/-18
CD2800	2800	0.37	0.7	R744	190	130	16/-20	17/-20
CD3500	3500	0.37	0.7	R744	190	130	20/-26	22/-26
CD4000	3500	0.37	0.7	R744	190	130	23/-29	25/-29
CE3500	3500	0.37	1.4	R744	200	140	20/-18	22/-18
CE4400	4400	0.37	1.4	R744	200	140	25/-20	27,5/-20
CE5100	5100	0.37	1.4	R744	200	140	29/-24	32/-24
CE6000	6000	0.37	1.4	R744	200	140	35/-29	38,5/-29
CF5500	5500	0.37	2.1	R744	260	180	32/-18	35/-18
CF6700	6000	0.37	2.1	R744	260	180	39/-20	43/-20
CF7800	7800	0.37	2.1	R744	260	180	45/-22	50/-22
CF9000	9000	0.37	2.1	R744	260	180	52/-24	57/-24
CF11000	11000	0.37	2.1	R744	260	180	64/-30	71/-30

DIMENSIONS

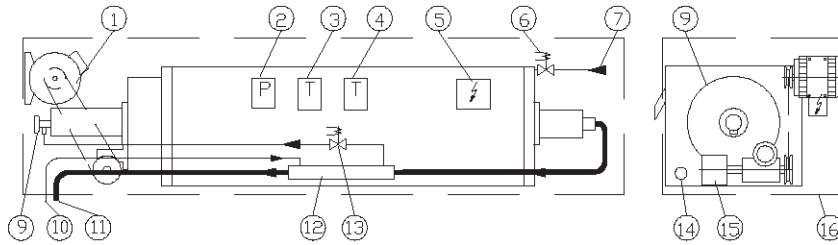
TYPE	A	B	C	D	E	F
TCD PC	595	657	1155	1250	615	290
TCE PCE	815	887	1385	1370	835	290
TCF PCF	1160	1370	1885	1870	1180	420

* When the ice is produced by salt-water, the evaporation temp. must always be -27°C

How to order example:
 P C E 4000 M
 M - Marine model
 XXXX - Cap./24h [kg]
 D,E,F - Drum size
 A - Refrigerant: CO2
 P - Pump circulation. T - X

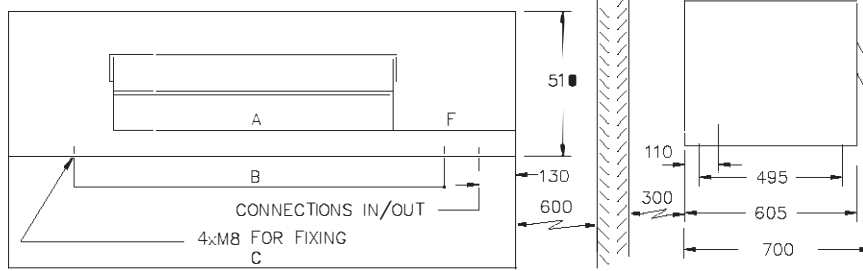
TECHNICAL DATA FOR I000-I0000 KG/24H ICEFLAKER DRUM FOR HFC/HCFC

MODEL FOR DIRECT EXPANSION. FREON TYPE.



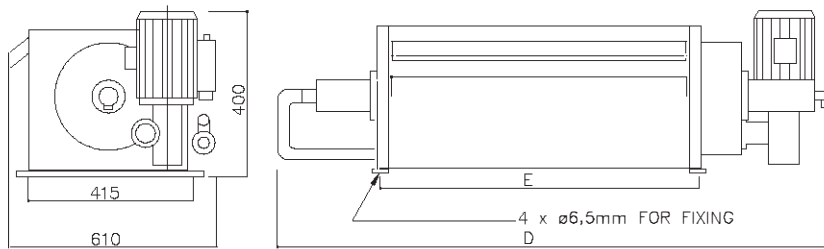
- | | |
|-------------------------------------|-----------------------------------|
| 1 0.37 kW MOTOR | 10 LIQUID PIPE |
| 2 WATER PRESSURE SWITCH | 11 SUCTION PIPE |
| 3 HEATING THERMOSTAT | 12 HEAT EXCHANGER |
| 4 SAFETY-THERMOSTAT | 13 SOLENOID VALVE FOR REFRIGERANT |
| 5 EL-TERMINALBOX | 14 EL-HEATING ELEMENT |
| 6 SOLENOID VALVE FOR WATER | 15 SPRINKLER PUMP (ONLY MARINE) |
| 7 WATER INLET 1/2" BSP(1.4-5.0 Bar) | 16 STAINLESS STEEL CABINET |
| 8 ICEDRUM | |
| 9 AUTOMATIC EXPANSION VALVE | |

WITH STAINLESS STEEL CABINET:



DIMENSIONS						
TYPE	A	B	C	D	E	F
SD	595	657	1155	1250	615	290
SE	815	887	1385	1370	835	290
SF	1160	1370	1885	1870	1180	420

WITHOUT CABINET:



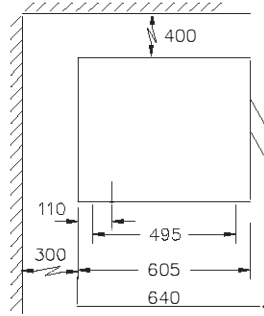
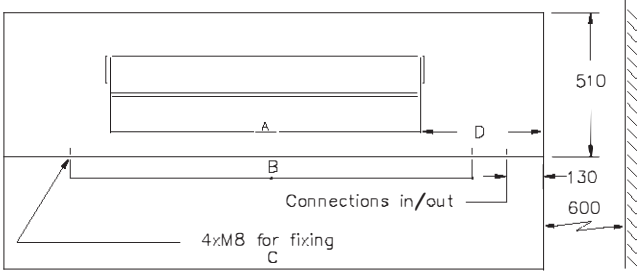
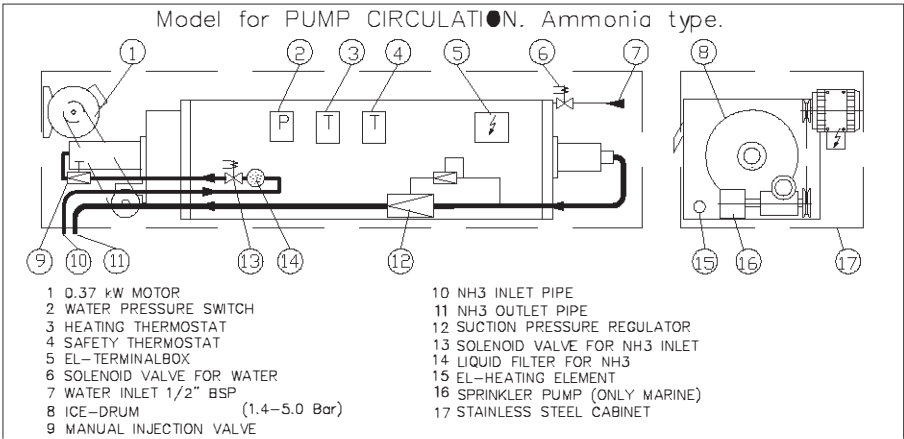
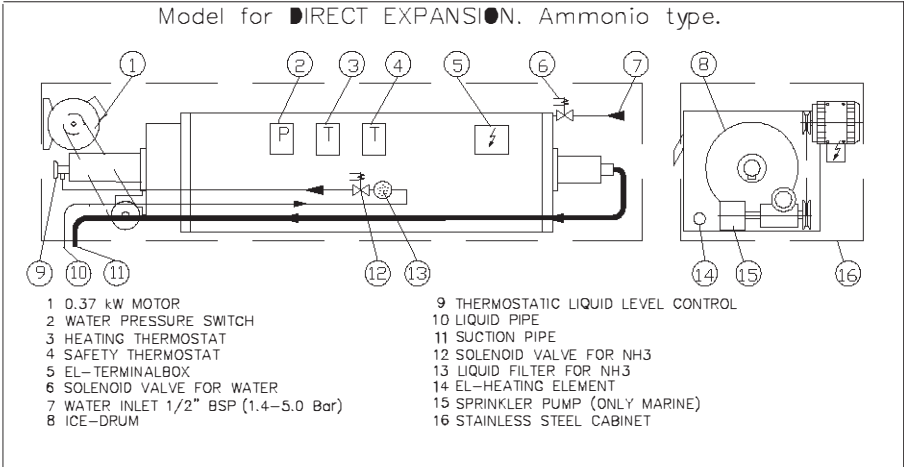
Type	Ice capacity kg/24h	El-motor ice-flaker kW	Heating in water-tank kW	Refrigerant	Weight with cabinet kg	Weight without cabinet kg	Cooling capacity/evap. temp. * Water +15°C kW/°C	Cooling capacity/evap. temp. ** Water +25°C kW/°C
SD 1000	1000	0.37	0.7	CFC HCFC	190	130	5,5/-13	6,0/-13
SD 1500	1500	0.37	0.7	CFC HCFC	190	130	8,5/-14	9,5/-14
SD 2000	2000	0.37	0.7	CFC HCFC	190	130	11,5/-17	12,8/-17
SD 2500	2500	0.37	0.7	CFC HCFC	190	130	14,5/-19	16,5/-19
SE 3000	3000	0.37	1.4	CFC HCFC	200	140	17,5/-17	19,5/-17
SE 4000	4000	0.37	1.4	CFC HCFC	200	140	22,5/-20	25,0/-20
SE 4500	4500	0.37	1.4	CFC HCFC	200	140	26,5/-23	30,0/-23
SF 5000	5000	0.37	2.1	CFC HCFC	260	180	29,0/-17	32,0/-17
SF 6000	6000	0.37	2.1	CFC HCFC	260	180	35,0/-19	39,0/-19
SF 7000	7000	0.37	2.1	CFC HCFC	260	180	40,5/-22	45,5/-22
SF 8000	8000	0.37	2.1	CFC HCFC	260	180	46,5/-23	52,0/-23
SF 10000	10000	0.37	2.1	CFC HCFC	260	180	58,0/-29	65,0/-29

** When the ice is produced by salt-water, the evaporation temp. must always be -27°C

How to order example:

S E 4000 M
 M - Marine model
 XXXX - Cap./24h [kg]
 D,E,F - Drum size
 S - Refrigerant freon

TECHNICAL DATA FOR 1000-10000 KG/24H ICEFLAKER DRUM FOR NH₃



With stainless steel cabinet:

Type	Ice capacity kg/24h	El-motor ice-flaker kW	Heating in water- tank kW	Refrigerant	Weight with cabinet kg	Weight without cabinet kg	Cooling capacity/ evap. temp. ** water+15°C kW/°C	Cooling capacity/ evap. temp. ** water+25°C kW/°C
AD1000	1000	0.37	0.7	NH ₃	210	150	5,5/-18	6,0/-18
AD1500	1500	0.37	0.7	NH ₃	210	150	8,5/-20	9,5/-20
AD2000	2000	0.37	0.7	NH ₃	210	150	11,5/-22	12,8/-22
AD2500	2500	0.37	0.7	NH ₃	210	150	14,5/-24	16,5/-24
AD3300	3300	0.37	0.7	NH	210	150	19,2/-31	21,7/-31
AE3000	3000	0.37	1.4	NH ₃	220	160	17,5/-21	19,5/-21
AE4000	4000	0.37	1.4	NH ₃	220	160	23,5/-23	26,0/-23
AE4500	4500	0.37	1.4	NH ₃	220	160	27,5/-24	31,0/-24
AF5000	5000	0.37	2.1	NH ₃	280	200	29,0/-20	32,0/-20
AF6000	6000	0.37	2.1	NH ₃	280	200	35,0/-22	39,0/-22
AF7000	7000	0.37	2.1	NH ₃	280	200	40,5/-24	45,5/-24
AF8000	8000	0.37	2.1	NH ₃	280	200	46,5/-26	52,0/-26
AF10000	10000	0.37	2.1	NH ₃	280	200	58,0/-31	65,0/-31

DIMENSIONS				
TYPE	A	B	C	D
AD	595	657	1155	290
AE	815	877	1385	290
AF	1160	1370	1885	420

** When the ice is produced by salt-water, the evaporation temp. must always be -27°C