



Translation of the original

operating manual

COMBINATION DISPLAY CASES



Notes regarding this operating manual

This operating manual is valid for combination display case type built-in units and individual built-in units regardless of the various possible versions with regard to standard and gastronomic dimensions. Built-in units must be clad in accordance with the technical requirements prior to starting up.

The possibilities shown in this operating manual represent the majority of versions. However, many other versions of our products are available through special designs.

NOTE

Please observe any supplementary sheets to this operating manual and declaration of conformity!
For more information, contact our customer service department.

Operating and installation manual

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1 GENERAL INFORMATION AND SAFETY

1.1 FOREWORD

Thank you for choosing one of our units. This products meets the highest technical requirements with practical ease of use. Your unit is a state of the art product when it comes to occupational health and safety for the commissioning staff, operators and users.

Improper use could cause the unit to pose hazards. We will point out dangers in section 1 and using safety instructions in the entire document.

The safety information and instructions in this document must be complied with! Anyone who installs, starts up or operates the unit must have this document available and must have read and understood it.

Our unit requires proper installation, commissioning, operation and care. A failure to comply with the aforementioned points can void guarantee, warranty and product liability claims, but also cause damage and a lack of safety.

Always keep this document complete and in a legible condition. If required, request it from your supplier or owner, or download it from the manufacturer's website at www.ideal-ake.at.

NOTE

The manufacturer is not liable for technical or printing errors in this document and will also not accept liability for any damages caused directly or indirectly by delivery, performance or usage of this document

NOTE

The manufacturer reserves the right to change specifications and designs as part of it continuous product improvement process.

NOTE

Please observe any supplementary sheets to this operating manual and the corresponding declaration of conformity!

For more information, contact the manufacturer!

1.2 FLEXIBILITY



VERSION OPTIONS

COLD

And/or

HOT

COLD UNIT version:

Units with INSULATED TSG (toughened safety glass) layout

HEATING UNIT version:

Units with TSG (toughened safety glass) layout



THE DESIGN (unit photos as an example for closed display cases)

The glass design:



round



squared



oblique *)



PRO squared



PRO round

Customer-side equipment variant:



Customer side open



Customer side closed



Customer side removal flaps



Customer side with Easy
Change system

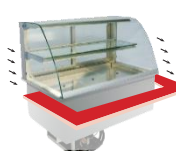
* on request for insulated glass display cases



INSTALLATION VARIANTS (unit photos as an example for closed cabinets)



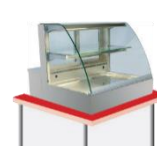
Drop-in



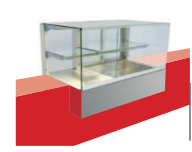
Slide-in



Standing



Tabletop



PRO

NOTE

When combining different products, units with bases (height-adjustable feet) must be clad completely by the customer.



THE SIZES IN USE



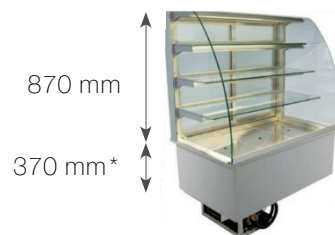
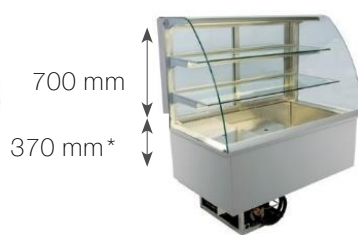
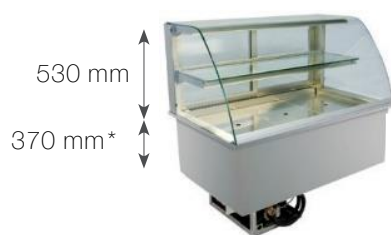
Gastronorm (2 to 5 dishes up to max. 150 mm)



European standard (1 to 4 trays)



THE HEIGHTS (unit photos as an example for closed display cases)



*) optional flat inner pans at 195 mm possible

1.3 AREA OF APPLICATION

This operating manual applies to the following combination units / models and attributable special models (self contained = ready to plug-in, remote cooling, neutral, hot):

Model designation:

Convenience Tower aaa-c d e series

KGU fff-aaa-bbb-c d e series

KGW fff-aaa-bbb-c d e series

Neutral Flaps aaa-d-g series

Snacky Bistro hh fff-aaa-bbb-c d series

Snacky Cool fff-aaa-bbb-c d series

Snacky Hot fff-aaa-bbb-c d series

Snacky WK fff-aaa-bbb-c d series

Take Away Basic fff-aaa-bbb-c d series

Take Away Cool fff-aaa-bbb-c d series

WK aaa-bbb-ccc d series

Abbreviations:

aaa: Number between 40 and 200 (unit width)

bbb: Number between 40 and 200 (unit height)

c: S (self contained) or R (remote cooling)

d: empty or R290 (self contained) or special or Soft-Close or DIAMOND

e: empty or special or CO2 or Pro

fff: empty or C (closed) or CS (closed squared) or CO (10° closed oblique) or CR (closed round) or COR (customer side open round) or COS (customer side open squared) or COO (customer side open 10° oblique)

g: empty or not refrigerated

hh: empty or Cool or HOT

NOTE

Dimensions and weight specifications for the units are specified in the order and vary according to requirements. For detailed information, contact the owner, your supplier or our support department (see [section 1.5](#)).

NOTE

Note that lifting the unit requires at least two people and, from a certain weight (>60kg), or "3/1" Unit sizes, at least four people are required. Call a second person as a marshaller for installation.

1.4 WARRANTY AND LIABILITY

Our "General terms and conditions" (T&C), as well as customer specific payment and delivery conditions apply. Warranty and liability claims for personal injury and damage to property are not possible if they are attributable to one of the following reasons:

- Improper use of the unit;
- Transport damage;
- Operating the unit with faulty safety components or safety components that have not been installed properly and are not functional;
- A failure to comply with the instructions in this operating manual regarding installing, commissioning, operating, maintaining and assembling the unit correctly;
- Unauthorised mechanical or technical modifications to the unit;
- Deficient maintenance of consumables and wear parts;
- Unauthorised repairs;
- Using aggressive or corrosive cleaning agents;
- Natural disasters or force majeure;

Furthermore, liability is also rejected for: Glass breakage, breakages on plastic components, seals or lighting

- Any damage that can be proven to be caused by an unqualified person adjusting the cooling or heat controller incorrectly.
- Damage or malfunctions due to assembling the unit incorrectly after cleaning, maintenance or servicing.

NOTE

Units with the natural refrigerant, propane (R290) must be set up in a safe environment that meets the requirements of the directive. Within the unit where propane (R290) may be present, only electrical units that are approved by the ATEX Directive and the standardised specifications may be used. The owner is responsible for ensuring this.

NOTE

A failure to comply with the specified instructions can void the warranty!

NOTE

If malfunctions occur, switch the unit off and report this to your supplier or the manufacturer immediately.

1.5 MANUFACTURER / SUPPORT

Contact your supplier or the manufacturer in the event of technical queries:

AKE Ausseer Kälte- und Edelstahltechnik GmbH

Pichl 66

A-8984 Bad Mitterndorf, Austria

T: +43 3624 21100 - 0

F: +43 3624 21100 - 33

E: office@ake.at

W: www.ideal-ake.at



NOTE

Always have your unit's serial number available when contacting the support department. You can find this on the type plate or the "AKE checked" sign (see [section 1.7](#)).

1.5.1 FURTHER CONTACT DATA FOR QUERIES/REPAIRS

Technical support (phone)	+43 3624 21100 – 0
Technical support (e-mail)	office@ake.at
Orders / spare parts (e-mail)	webshop@ake.at
Web shop / spare parts (online catalogue)	https://shop.ideal-ake.at/ersatzteilshop/
Minimum warranty duration	See the contractual agreement / AKE T&C

1.6 SYMBOLS AND SIGNAL WORDS USED



DANGER

Immediate danger of death for people

A safety instruction with the DANGER signal word indicates an immediate danger of death and health damage.
A failure to comply with these safety instructions can cause death or serious injuries.



WARNING

Danger of personal injury (serious injuries) and potential further damage to property

A safety instruction with the WARNING signal word indicates a dangerous situation that may affect people's health.
A failure to comply with these safety instructions can cause serious injuries.



CAUTION

Danger of personal injury (minor injuries) and potential further damage to property

A safety instruction with the CAUTION signal word indicates a potentially dangerous situation. A failure to comply with these safety instructions can cause minor injuries.

NOTE

This symbol with the Note remark refers to supplementary information for installation, operation, maintenance and servicing. A failure to comply with these instructions can cause damage to property.

1.7 LABELLING

AKE		AKE Ausseer Kälte- und Edelstahltechnik GmbH Pichl 66, A-8994 Bad Mitterndorf www.ideal-ake.at	
Serial-No.:	<input type="text"/>		
TYPE:			
Voltage:	220-240 V AC ~ / 50 Hz		
Rated current:	n.a. A		
Power con.:	W		
Ref.Cap.:	Wat VT-	10	°C
Refrigerant:	R 134a /	kg	
CO2e / GWP:			
Climate class:	3 according to DIN ISO 23953-2		
Production year:			
Additional heating:	n.a. W		
PS 30 bar, tightness proved			
			

Example illustration

The unit is marked clearly through the contents of its type plate. The type plate is on the controller's cover or on the base near to the control box.

Stückprüfung gemäß EN 60335-1:2012		 
SN:		
WA:		
Datum: 16.03.2020		
Prüfer: 00327		

The unit is also marked with the AKE test seal. The AKE test seal is located on the base or the control unit (depending on the model).

NOTE

An additional identification label may be attached to combination display cases depending on the version. The listed serial number is assigned clearly to the unit type.
Furthermore, identification labels show the cold or heat area with all important data according to the area.

NOTE

If installing the unit makes it no longer possible to access or read the type plate, the owner, installer, person responsible for installation must request an additional type plate from their supplier or the manufacturer. They must attach it to the unit so that it is accessible and legible in order to ensure that the unit can be identified clearly.

NOTE

General technical specifications are provided in [section 2.3](#). Due to the wide range of models, further technical data is provided on the type plate and in the order specification.

1.8 GENERAL SAFETY INSTRUCTIONS

The following safety regulations and obligations apply to handling the unit in general:

- Covers with warning notices may only be opened by authorised specialists.
- The bottom and rear of the unit must not be cleaned using a water jet.
- Protective covers and safety devices must not be removed, as there is otherwise a risk of injuries.
- The controller may only be opened by authorised specialists.
- Flowing air in the unit's vicinity due to improperly installed ventilation (e.g. air conditioning units) or draughts must be prevented in order to ensure that the unit functions properly.
- The ambient temperature is not permitted to exceed +25 °C and the relative ambient humidity must not exceed 60 %.
- The unit is not suitable for operation in entrances and outdoors.
- Protect the unit from direct sunlight.
- Depending on the storage area, the products presented must be pre-cooled or pre-heated to a core temperature that complies with the required temperature (for hot products) or the temperature class (for cold products).
- Sharp items must not be stored loose in the unit, as there is otherwise a risk of injuries.
- All glass attachments must be handled with appropriate care in order to prevent injuries due to glass breakages.
- Components and equipment may only be replaced with original spare parts.
- Do not store any flammable or explosive products in the unit or in its vicinity.
- The unit must be clad sufficiently during assembly or installation in order to ensure that live parts cannot be touched.
- The installation vicinity must be stable in order to withstand the daily strains.
- All cladding that is installed during installation must not be able to be removed without tools.
- The unit must be inspected for loose connections, shearing points and damage after cleaning, maintenance and servicing. Any faults found must be rectified immediately! Do not use the unit for unintended purposes!
- Valid for units with a cooling area: When refilling with refrigerant, only the refrigerant specified on the type plate (identification sign) may be used.
- Valid for units with a cooling area: Only authorised specialists may top up the refrigerant. The fill quantity specified on the type plate must be adhered to.
- Valid for units with a cooling area: The unit must be installed away from heat sources in a low-dust and well ventilated environment.
- Pushing and moving the unit (during operation) is not permitted. Units must be lifted for transport or relocation (depending on the model).
- Valid for units with a heat area: Ensure that there is enough distance between packaged foodstuffs and heat radiators (supplementary heat) – there is a risk of fire.

NOTE

Technical modifications to the unit may only be made by authorised specialists! This applies particularly to work on cooling installations, the electrical installation and the mechanical system.

All modifications must be authorised by your supplier or the manufacturer!

NOTE

If possible, do not operate the unit in the immediate vicinity of units that generate heat or steam. This can cause compressor damage, condensation formation on the glass, temperature control problems in the cooling area and similar problems (valid for units with a cooling area).

1.9 SPECIAL SAFETY INSTRUCTIONS FOR UNITS WITH PROPANE (R290) AS THE REFRIGERANT - COOL AREA

The following applies to units with propane (R290) as the refrigerant:

- When installing or combining with units, as well as electrical and cooling installation components that do not comply with the corresponding regulations for an R290 version, the unit must be clad and separated from the adjacent units/components (zone separation according to ATEX specifications).
- The cooling circuit may only be opened and the refrigerant extracted in well-ventilated rooms or outdoors. This work may only be performed by authorised, specialist staff who have been trained for propane (R290) as the refrigerant.
- Work on the cooling system may only be performed by authorised, specialist staff who have been trained for flammable propane (R290) as the refrigerant.
- Within the unit, only electrical units that are approved by the ATEX Directive may be used.
- The unit's cooling circuit and cooling system must not be damaged. This can result in an inadvertent exothermic reaction of the inflammable gas and air mixture.
- Ventilation openings in the unit cladding (including accessories) must not be blocked or covered. A leak in the cooling system can result in an inadvertent exothermic reaction of the inflammable gas and air mixture.
- Ventilation openings on the front and rear of the units must be kept clear. The minimum gaps to other units must be maintained. The air must be able to circulate without hindrances. A leak in the cooling system can result in an inadvertent exothermic reaction of the inflammable gas and air mixture if air circulation is impaired.
- According to DIN EN 378-1, propane (R290) as a refrigerant is flammable and explosive (refrigerant group A3).
- Propane (R290) as a refrigerant can cause an inflammable gas and air mixture that triggers an exothermic reaction at a critical mix ratio with air and in conjunction with corresponding ignition energy (source of ignition).
- The specified fill level on the type plate must be adhered to. Overfilling can cause damage to components in the cooling circuit.



CAUTION

Using / installing the units with propane (R290) as the refrigerant in closed rooms

Units with propane (R290) as the refrigerant have a maximum fill level of $\leq 150\text{g}$ per cooling circuit.

This fill level results in a minimum requirement (according to the Austrian KAV "Kälteanlagenverordnung", cooling unit regulation and EN 378-1) for the local prerequisites for the installation location:

Limit value $[\text{kg}/\text{m}^3] \times \text{free spatial volume } [\text{m}^3] = \text{max. refrigerant fill weight } [\text{kg}]$

$45\% \times \text{LFL} = 0.0141 [\text{kg}/\text{m}^3]$

Ambient temperature: 25°C

Sea level: up to 1750m

LFL.... (lower flammable limit) = lower explosion limit in accordance with EN378-1 table E

Manufacturer's recommendation for the installation location: min. 12 m^3 spatial volume per unit (at a maximum refrigerant fill level of $\leq 150\text{g}$).

The owner must check and comply with the listed data and prerequisites in accordance with all safety standards and workstation evaluations.

1.10 PROPER USE

The units are designed especially for installation in food and serving counters, as standalone units or for multi-unit installation (e.g. unit island).

Depending on the unit type (product area), they are suitable for cooling (cool area) and keeping warm (heating mode), and displaying food and drinks at controllable temperatures (see the catalogue and the website). The units are only used to keep food cool or hot but not too cool, warm up or cook food.

Ensure the following prior to switching on and switching off:

The units must be complete. All covers and doors provided must be installed and closed during operation. The covers and doors may only be opened for a short time to insert and remove products. The unit is a built-in unit or a standalone unit and must be closed or built in on all sides of the base. Unit stability must be guaranteed and tipping prevented by correct installation in accordance with [section 2.5](#).

The unit's cool area is designed for climate class 3 in accordance with DIN EN ISO 23953 as standard. In order to save energy, we recommend switching the units off when not in use outside of opening hours. Wait until the required temperature has been reached before filling the units.

NOTE

All of the manufacturer's specifications must be complied with. These specifications include the ambient temperature, conditions in the installation environment and connections to be used.

Proper use also includes observing the installation and operating manual, as well as complying with inspection and maintenance conditions. Any other use requires written approval from the manufacturer.

Improper use can pose risks to people and cause the system / unit to be damaged.

A control is used to operate the relevant product area, and this control may only be used after reading and understanding the documentation. If the unit is stopped or taken out of service, the points in [section 1.8](#) must be complied with.

If the unit has propane (R290) as the refrigerant, the points in [section 1.9](#) must also be complied with. Furthermore, a failure to comply with the proper use renders liability and warranty claims void. The unit may only be operated under the usage conditions prescribed in the operating manual.

1.11 TARGET GROUP AND PREVIOUS KNOWLEDGE

This documentation is aimed at operating staff in gastronomy (e.g.: hotel chains, restaurants, catering), as well as the installation staff. The unit is only operated by trained staff that must be designated by the owner.

Ensure that the operating staff meet the following prerequisites:

- The operators must not have any vision impairments, as they must be able to read the safety instructions on the unit and the instructions in the documentation without problems.
- Reading and understanding this documentation is a prerequisite. The current applicable regulations regarding occupational health and safety, and accident prevention must be complied with.
- Only trained staff may operate and clean the unit. Only specialist staff authorised by the manufacturer may perform maintenance and repair work.
- Always observe the locally applicable commercial and safety-related regulations.

The owner must take the following measures to acquire the knowledge required to operate the unit:

- Product training
- Regular safety training

Valid for the cool area:

This unit can be used by children aged 8 and over, as well as by people with reduced physical, sensory or mental capabilities, along with a lack of experience and knowledge as long as they are supervised or have been trained on how to use the unit safely and understand the resulting dangers. Children must not play with the unit. Unsupervised children may not clean and maintain the unit.

1.12 REASONABLY FORESEEABLE MISUSE

The units may not be used as follows:

- **Cold mode:** The unit may not be used to cool foods. The unit must not be filled with foods that exceed the prescribed core temperature (+5 °C).
- **Heating mode:** No foods may be warmed up or cooked. The unit may only be filled with foods that have the prescribed core temperature (of +85 °C).
- Operating outside the specified temperature range is not possible safely, see the catalogue and the website.
- No ventilation slots are permitted to be blocked or covered. Foods may not touch the unit's walls or block the air flow or doors (on both sides).
- The unit must not be used outside buildings. Protect the unit from direct sunlight.
- Units for foods such as seafood, fish and mussels, or similar must be designed with a higher grade steel quality (V4A or AISI 316) or equipped with suitable GN dishes / containers.
- Glass covers and shelves may not be used as climbing aids or for storage.
- **Cool area:** Only authorised specialists may inspect the cooling circuit for escaping refrigerant. All instructions for using propane (R290) according to [section 1.9](#) must be observed.

1.13 INFORMATION REQUIREMENTS (EU) 2019/2024, (EU) 2019/2015

The following specifications are used for the information requirements in accordance with Directive (EU) 2019/2024 – Annex II, 3:

- The temperature for each unit was set in the factory in accordance with the specified technical requirements so that optimum food storage is guaranteed. These settings must be maintained.
- Changes to the temperature settings can cause the stocked products to spoil.
- Not applicable
- Not applicable
- See section 2.5 and section 4
- If the condenser coil is not cleaned once per year, this causes a significant reduction in unit efficiency.
- See section 1.5.1
- See section 1.5.1
- See section 1.5.1
- See section 1.5.1

The following specifications are used for the information requirements in accordance with Directive (EU) 2019/2015 – Annex V.2.:
The products listed in section 1.3 contain the following light sources (if installed):

LED bulbs (2050K): Energy efficiency class G (valid for heat lamps)

LED bulbs (2700K): Energy efficiency class F (valid for heat lamps)

LED bulbs (2700K): Energy efficiency class E

LED bulbs (3000K): Energy efficiency class D

LED bulbs (4000K): Energy efficiency class C

1.14 RESIDUAL RISKS

Despite taking extreme care when designing and building the units and even if all safety-relevant circumstances are considered, there may still be residual risks that are evaluated in a risk assessment. This section lists all residual risks and safety instructions from the risk assessment.



DANGER

Danger due to electrical voltage on live components.

Cleaning, assembly, commissioning, dismantling and repair work on electrical components may only be performed by trained specialists when the unit has been de-energised. To do this, unplug the unit or disconnect it from the mains at all poles.



WARNING

Risk of ignition due to sparks due to electricity or friction and hot surfaces

When using propane R290 as the refrigerant, leaks in the cooling system can cause explosive gas and air mixtures to form. A spark from a suction device or a different electrical device can result in potential, inadvertent ignition. Excessively hot surfaces in the cool area must not exist or be formed. Only use units that comply with the applicable ATEX regulation for cleaning, servicing and maintenance work.



WARNING

Risk of crushing when inserting or moving the units in the counter opening/recess

Pay attention to the risk of crushing, also for third parties, when inserting the units. The units may only be lifted manually by at least four people. These people must be strong enough to carry the units. Pushing or moving the unit is not permitted! Call a second person as a marshaller if necessary. Wear protective gloves and safety shoes when performing assembly and loading work.



WARNING

Risk of crushing and danger due to falling objects when handling/adjusting/positioning heavy individual components

Pay attention to potential risks of crushing, also for third parties, when handling heavy objects. Use both hands if possible when handling heavy objects. Call a second person to assist if necessary. Wear protective gloves and safety shoes when handling/adjusting/positioning heavy individual components.



WARNING

Risk of crushing/cutting when handling the evaporator box

Use the metal rod or handle provided to lift and re-insert the evaporator box (depending on the model). When lifting the evaporator box, ensure that it is only lifted until the locking clips or gas pressure absorbers engage automatically. Hold the evaporator box tight by the metal bar or in position before unlocking.



WARNING

Risk of escaping refrigerant due to a damaged evaporator

Do not use any pointed objects to clean the evaporator fins. Only use products specified by the manufacturer to clean the evaporator fins.

**WARNING****Risk of crushing/cutting when moving the sliding or swing doors**

Only use the handles provided to open and close the sliding doors. Do not reach between the side parts of the sliding door and the unit when closing the sliding doors. Do not reach between the bottom of the angle trim and the top of the sliding door. Ensure that the angle trim is installed and screwed on properly. This also applies to swing doors. Be careful when handling glass.

**WARNING****Risk of crushing/cutting when moving the cover and front glass**

Use the small handle bar provided to lift the cover glass. Two people are required to open the cover or front glass. Close the cover glass and front glass carefully and pay attention to risks of crushing on the cover glass and front glass. Be careful when handling glass.

**WARNING****Various dangers when disposing of various refrigerants**

Wear protective gloves and safety goggles when disposing of refrigerants (R290, R404A, R134a, etc.). Handling naked flames while disposing of the refrigerant is prohibited. Dispose of the refrigerant properly and in an environmentally friendly manner. Country-specific laws must be observed.

**WARNING****Various dangers when disposing of damaged parts/components**

Wear protective gloves when disposing of damaged parts/components. Dispose of damaged parts/components properly and in an environmentally friendly manner. Country-specific laws must be observed.

**WARNING****Electrical hazards**

Ensure that the mains connection line to the units is not damaged. In the event of damage, have this replaced by authorised specialists in order to prevent hazards.

**WARNING****Risk of tipping on uneven or unstable foundations**

The base/foundation onto which the unit is installed must have sufficient stability and be able to bear the unit's weight at all times.

**WARNING****Risk of crushing and falling parts when moving the unit**

Pay attention to moving parts such as doors, discs, etc. when handling the unit. This applies particularly to the larger versions of the unit.

**WARNING****Risk of burns on heating elements on the heating units**

Switch the unit off and allow it to cool for at least 45 minutes before you start cleaning work.



CAUTION

Impact hazard on the units during assembly, cleaning and servicing work

Pay attention to possible impact hazards on the unit.



CAUTION

Risk of slipping due to condensation that has escaped through leaks

Pay attention to the potential risk of slipping due to liquids that have escaped. When installing, ensure that the water seal and drain lines are attached properly and are leak-tight.



CAUTION

Risk of crushing when inserting the manual defrost water receptacle (depending on the model)

Only use the handle bar provided to insert the manual defrost water receptacle. Ensure that the defrost water receptacle is inserted completely into the machine slot.

1.15 PERSONAL PROTECTIVE EQUIPMENT

The following personal protective equipment must be worn during assembly, dismantling and servicing work:



Wear safety shoes when performing assembly and loading work.



Wear protective gloves when performing assembly and loading work, and when performing work with refrigerant in accordance with EN 378-3.



Wear safety goggles when disposing of the refrigerant and damaged parts/components.



Wear a hard hat when performing assembly, lifting and loading work.

NOTE

Wear appropriate protective equipment when cleaning the unit. This must comply with that prescribed by the manufacturer of the cleaning agent used.

1.16 TRANSPORT AND PACKAGING

NOTE

All units may only be transported and stored in the usage position (horizontally). Units with propane (R290) as the refrigerant or other flammable / explosive refrigerants must be transported and handled in accordance with the points listed in [section 1.9](#). Furthermore, all safety instructions according to [section 1.8](#) must be complied with.

The packaging design depends on the quotation and the packaging is designed individually according to the agreements. Units are transported in wooden cladding as standard. This cladding protects the units from serious damage. Glass shelf supports are secured with L-shaped transport locks on the left and right. Glass components are wrapped in additional packaging material. Moving parts and glass shelves have an additional sleeve with packaging material. All parts are positioned and stuck in place inside this wooden cladding to ensure that they are secure for transport.



WARNING

Danger due to falling objects and suspended loads when transporting the units and their components

Use sufficiently-sized lashing and clamping gear. Pay attention to the permissible vehicle regulations when securing the load. Legal, country-specific traffic regulations must be complied with. Load lifting equipment used, such as forklifts must be sufficiently large. When performing lifting work, ensure that no other people remain below loads transported at heights. The unit may only be transported upright (in the usage position).



WARNING

Risk of crushing on fixed components (walls, other machines) when positioning the units and risk of crushing between the pallet and the foundation when setting down

Keep yourself and other people away from hazard points. Call a second person as a marshaller if necessary. Pay attention to the risk of crushing for third parties when setting the units down. Wear protective gloves, safety shoes and a hard hat when performing assembly and loading work.



WARNING

Danger due to falling objects when lifting and unpacking the units

Pay attention to potential risks due to wooden parts folding out when removing the wooden cladding. Call a second person to assist if necessary. The unit must be lifted using a suitable load lifting device such as a forklift. The unit may only be lifted manually by at least four people. These people must be strong enough. Wear protective gloves, safety shoes and a hard hat when performing assembly and loading work.

If the unit is to be returned, it must be returned in the original packaging or packed properly for transport in a similar way. Furthermore, the unit must be returned unused, undamaged and complete. The customer must request and pay for the return. For information on proper disposal of the packaging material, see [section 1.17](#).

NOTE

All units may only be transported and stored in the usage position (horizontally). In order to be able to trace damage during loading, transport and unloading, all units are equipped with a "Shockwatch ® 2". This tool enables the point in the supply chain at which a product has been damaged to be determined in order to clarify transport damage. For information on the ShockWatch ® concept, see the website.

1.17 DISPOSAL



WARNING

Various dangers when disposing of refrigerants

Wear protective gloves and safety goggles when disposing of refrigerants (propane, R404A, R134a, etc.). Handling naked flames while disposing of the refrigerant is prohibited. Dispose of the refrigerant properly and in an environmentally friendly manner. Country-specific laws must be observed.



WARNING

Various dangers when disposing of damaged parts/components

Wear protective gloves when disposing of damaged parts/components. Dispose of damaged parts/components properly and in an environmentally friendly manner. Country-specific laws must be observed.

NOTE



Please note that some of the unit's components are electronic parts. Disposal through public waste disposal authorities is therefore not possible. Check your obligations in accordance with the national WEEE regulations. Correctly sorted disposal is always obligatory. This also applies to packaging, films, glass, plastics, etc.

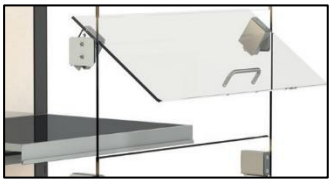
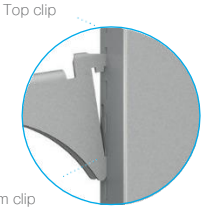
2 TECHNOLOGY

2.1 DEFINITION OF COMPONENTS (COOL AREA)

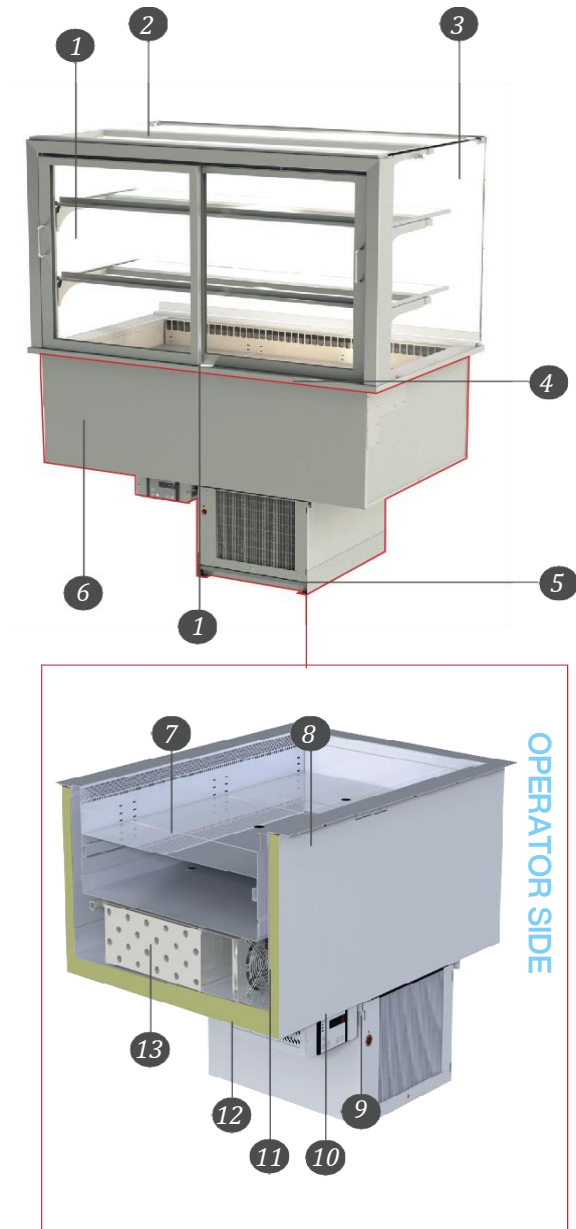
CUSTOMER SIDE





Example illustration

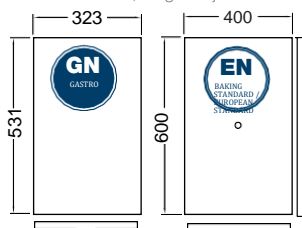
NO.	DESIGNATION
1	Frame support
2	Night shutter including shutter box (optional) (mechanical or electrical depending on the model, with incremental adjustment option)
3	Cover glass (with handle bar, with gas pressure absorber depending on the model)
4	Glass shelf (level 2)
5	Glass shelf (level 1)
6	Front glass (with handle bar, with gas pressure absorber depending on the model) Various versions available: <ul style="list-style-type: none"> - Easy Change function (option of open or closed mode) - Removal flap (soft-close)  <ul style="list-style-type: none"> - Removal flap (acrylic glass)
7	Angled profile for the front glass (depending on the model)
8	Shelf support Options: <ul style="list-style-type: none"> - Optional oblique/straight position by attaching the top clip - Optional height adjustment ± 25 mm by attaching the top and bottom clip 
9	Complete base

OPERATOR SIDE

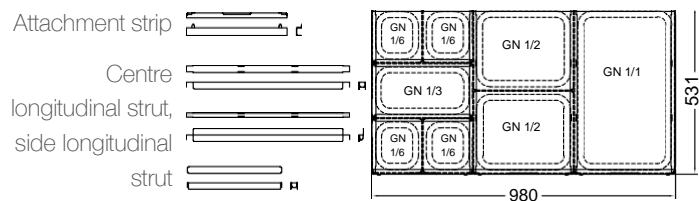


NO.	DESIGNATION
1	Sliding doors with handle and lock  Options: - Swing door (depending on the model) with Lexan® ventilation ducts 
2	Lighting rack (including lighting)
3	Right side glass
4	Chopping board (removable) (depending on the model)
5	Defrost water receptacle For options, see section 2.7
6	Base with cake pull-out or drawer (depending on the model)
7	Air guide plate (including attachment strips)
8	Shelves
9	Inspection glass (not for propane R290)
10	Controller (including display)
11	Evaporator fan
12	Machine compartment ² (including condenser set)
13	Evaporator (including evaporator plate), fold-up, washable

1 Multi-functional, height-adjustable shelves, individual components:

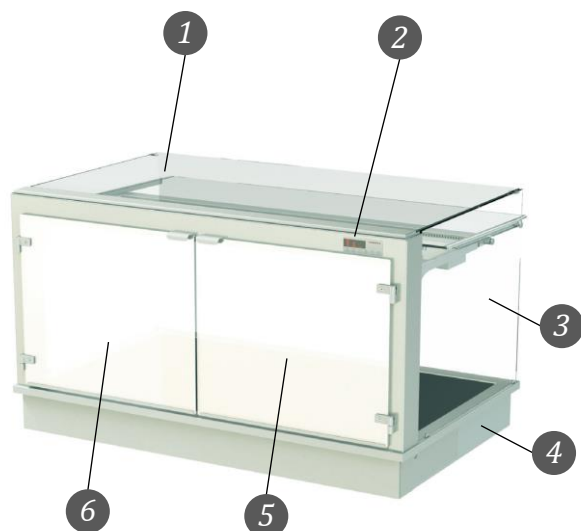


2 Remote cooling not present, water loop of different design

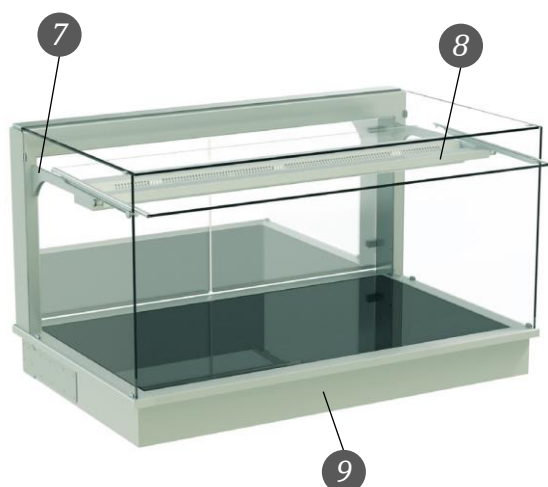




2.2 DEFINITION OF COMPONENTS (HEAT AREA)

OPERATOR SIDE



CUSTOMER SIDE



NO.	DESIGNATION
1	Cover glass
2	Controller display
3	Side glass (right serving side)
4	Base tray
5	Right swing door, "mirror effect" (mirrored with spy glass) and easy-clean (removable)
6	Right swing door, "mirror effect" (mirrored with spy glass) and easy-clean (removable)
7	Lighting rack (including LED and supplementary heat)
8	<p>Front glass (with handle bar, with gas pressure absorber depending on the model)</p> <p>Various versions available:</p> <ul style="list-style-type: none"> - Easy Change function (option of open or closed mode)  <ul style="list-style-type: none"> - Removal flap (soft-close) 
9	Black glass plate (including heating plate)

2.3 TECHNICAL SPECIFICATIONS







Protection class	Protection class I, earthing	EN 61140
Power data	According to the type plate or the <ul style="list-style-type: none"> • Website • Catalogue • Quote / order specification 	
Noise specifications (cool area)	< 70 dB(A) (closed units)	IEC 60335-1 IEC 60335-2-89
Wastewater, condensation (Cool area)	The distributor/owner is responsible	Recommended: IEC 61770:2008 ÖNORMEN 1717:2008-04-01
Condensation (Cool area)	<ul style="list-style-type: none"> • Via a water seal directly into the wastewater system provided by the customer (DN32) • Via the hot gas evaporator • Via the defrost water receptacle: <ul style="list-style-type: none"> ○ Manual emptying ○ Electrical defrost water heating 	
Materials	<ul style="list-style-type: none"> • Stainless steel <ul style="list-style-type: none"> ○ 1.4301 (tray, structure) ○ 1.4016 (machine slot/outer sheath) ○ 1.4404 (special design) • Copper pipes (cooling circuit) 	
Supplier components	<ul style="list-style-type: none"> • Cooling unit (compressor, condenser, fan motor, etc.) • Evaporator • Gas pressure absorber (depending on the model) • Glass (depending on the model) • Electrical cables and assembly materials (cables, cable ties, etc.) • Control box (board, display, etc.) • Lighting (depending on the model) • Lexan® ventilation ducts (depending on the model) 	
Insulation material	Cool area: LAMOLTAN® polyurethane rigid foam system Heat area: INSULFRAX® mat	
Glass	<ul style="list-style-type: none"> • Single-glazed safety glass (6mm, 8mm) • Insulated glass (16mm) 	EN12150-2:2004

NOTE

Thanks to the use of high quality materials and supplier components with a long service life, regular care and maintenance ensures a long service life.

2.4 SAFETY INSTRUCTIONS ON THE UNIT

Safety instructions are installed on the unit, which must be followed at all times. If the safety signs fade or get damaged over the unit's lifetime, they must be replaced with new signs immediately. They must be checked for legibility and completeness on a regular basis.

Pictograms	Descriptions	Pictograms	Descriptions
	Warning of inflammable materials (refrigerants in class A2L, A2, A3, B2L, B2 and B3)		Danger! No naked flames; fire, open sources of ignition and smoking are prohibited
	Warning of electrical hazards		F-gas labelling (according to Regulation (EU) 517/2014); depending on the model.
	Protection class I, earthing		Warning of hot surfaces

2.4.1 ELECTRICAL NOTES

The units are completely electrically equipped and installed (the product can be prepared for customer-provided controllers / electrical systems based on the special design according to the order specification).

NOTE

The refrigeration controller in the cool area is set up and ready for operation. Check parameter H11 (return air probe calibration) after installation. The refrigeration controller must be set up by an authorised specialist in accordance with the enclosed programming manual.



DANGER

Danger due to electrical voltage on live components

The electrical connection must be established by authorised specialists and comply with the applicable standards, regulations and safety regulations.

Connecting the unit

The units are delivered ready to plug in with a 1.5 metre connection cable with safety plug as standard. Depending on the unit version, 2 mains cables (1x cool area and 1x heat area) are connected.

The unit is connected to an alternating current mains with a rated alternate current of 230 volts and a frequency of 50 Hz (with 115 V, 60 Hz, 120 V, 60 Hz, 220-240 V, 50-60 Hz depending on the country).

Every electrical supply line must be fused to 16 A (tripping characteristic C).

The owner must ensure the following electrical connections at all times:

Units with 230 V, 50/60 Hz (single phase): 1 x 16 A

Units with 400 V, 50/60 Hz (three phase): 3 x 16 A

NOTE

A three-pole main switch must be provided by the customer for units with 400 V.

Not supplied as standard.

For more information, see the unit's circuit diagrams.

Ability to disconnect from the mains

If a plug connection to the mains connection is used, the socket must be easily accessible in order to be able to disconnect the unit from the mains if required (cleaning, maintenance work). If direct wiring is used, the ability to disconnect the unit from the mains if required must be provided.



DANGER

Danger due to electrical voltage on live components

The mains voltage and mains frequency must comply with the values specified on the type plate. Connection to different voltage, current type or frequency is not permitted. The applicable local safety regulations must be observed.

The unit manufacturer is not liable for damage caused by improper connection.

2.4.2 COOLING INSTALLATION NOTES

A coated finned evaporator is installed in the cooling circuit. The connection pipes are guided downwards through the foamed refrigerated well, all pipelines are fitted and insulated.



WARNING

Various dangers when disposing of refrigerants

Wear protective gloves and safety goggles when disposing of refrigerants (propane, R404A, R134A, etc.). Handling naked flames while disposing of the refrigerant is prohibited. Dispose of the refrigerant properly and in an environmentally friendly manner. Observe country-specific laws.



WARNING

Various dangers when disposing of damaged parts/components

Wear protective gloves when disposing of damaged parts/components. Dispose of damaged parts/components properly and in an environmentally friendly manner. Observe country-specific laws.

Units that are ready to plug in

On units that are ready to plug in (self contained), the pipelines are permanently connected to the cooling unit and the cooling circuit is filled with refrigerant. Display cases with an expansion valve and those as of a certain size have an inspection glass with a moisture indicator (for inspection in servicing situations) and this is on the side of the condenser. No inspection glass is present on units that are ready to plug in with propane (R290) as the refrigerant.



CAUTION

For servicing purposes, the cooling unit (only if self-contained) can be removed from the machine slot area (customer side) complete with the stainless steel casing depending on the unit model.

Do not pull on cables that are behind it, or damage them.



Remote cooling units

Remote cooling units are intended for connection to a refrigeration system by the customer. The copper connection pipes are insulated and guided downwards through the foamed refrigerated well. The evaporators are equipped with an expansion valve for the required refrigerant and filled with dry nitrogen. The specified evaporation temperatures and the condensation temperatures must be kept constant. Steam parts in front of the expansion valve must be avoided.

NOTE

Solenoid valves, filter driers and, if necessary, suction pressure controllers must be installed by the customer (by specialist staff).

Connection work

All work, installation, deliveries and services may only be performed by authorised specialist refrigeration companies or specialist staff. The state of the art, the applicable legal regulations, directives and guidelines from authorities, trade associations and professional associations must be adhered to. The installed cooling system must be started up and a functional and safety inspection performed. The log must be handed over to the owner.

NOTE

Units without their own cooling unit may only be installed by authorised refrigeration specialists.

2.5 ASSEMBLY AND INSTALLATION INSTRUCTIONS

This section provides you with important information about installing and using the unit.

2.5.1 FIRST STEPS

Handover

Check the unit for transport damage and note any damage / faults discovered on the handover documents from the carrier, as well as on their form, and have the damage confirmed.

NOTE

In order to be able trace damage during loading, transport and unloading, all units are equipped with a "Shockwatch®2". This tool enables the point in the supply chain at which a product has been damaged to be determined in order to clarify transport damage. For information about the ShockWatch® concept, contact the manufacturer.

If the damage only becomes visible after unpacking the unit, you are obliged to declare this immediately in writing. Advanced notice to your supplier by phone is advisable. You require the following to remove the transport packaging:

- At least two people
- Tools:
 - Electric screwdriver or Phillips screwdriver
 - Cutting tools (scissors or knife)

NOTE

If you do not report transport damage in good time, your claims for damages are void (in accordance with the T&C).

2.5.2 INFORMATION REGARDING THE INSTALLATION LOCATION

All installation location requirements in accordance with [section 1.8](#) must be followed in order to guarantee efficient and safe operation.

NOTE

Avoid units that generate steam in the vicinity. This can cause heavy icing on the evaporator, condensation on the glass and further performance-reducing or undesired impairments.

NOTE

Correct installation and fault-free functions are the prerequisite for starting the unit up. Installation must comply with the local electrical, safety and hygiene regulations.



WARNING

Risk of the unit tipping on uneven and unstable foundations

Ensure that you only set the unit up on level and sufficiently stable foundations. Otherwise, the unit may topple or parts of the unit could fall down, or open unintentionally (drawers, swing doors, etc.)

2.5.3 ASSEMBLING THE UNIT

You require the following to install the unit:

- At least two people
- Tools:
 - Adjustable spanner or pipe tongs (for units with bases)
 - Spirit level
 - Potential special tools for refrigeration units

The assembly staff are responsible for the unit's stability. Ensure that furniture covers and counters are prepared according to the technical specifications. The size of the installation opening is specified in the "Technical data" for the relevant product group in the current product catalogue, on the manufacturer's website or in the order specification. Protect the unit and base surfaces from any damage during installation.

NOTE

The base must be horizontal in order to enable the condensation to flow away. Test whether the water inside the tray can also flow away.

All work, installation, deliveries and services may only be performed by authorised specialist refrigeration companies and specialist staff. Electrical connections may only be established by an authorised specialist. You must ensure that suitable staff and tools are used in order to prevent damage and injuries.

INSTALLING THE UNIT AT MORE THAN 2000 m ABOVE SEA LEVEL

The unit is intended for use up to 2000 m above sea level.

If the unit is being used at more than 1500 metres above sea level, pressure relief must be provided for insulated glass in order to prevent damage to the glass! All insulation glass is delivered WITHOUT pressure relief as standard. For more information, contact your service partner or the manufacturer.

NOTE

The manufacturer is not liable for any damage to the unit or components (e.g. glass breakages, etc.) if assembled incorrectly or in the event of additional changes required (e.g. pressure relief) due to specific ambient parameters for the unit.

2.6 INSTALLING THE CONTROL HOUSING (ST501, ST200F; ST200; ST300)

The control housing (including the controller and the display) is attached to the unit's base (standard design). On remote cooling units, the controller is enclosed loose (and must be installed properly after installing the unit).

Each controller comprises the display (control panel) and the power electronics (circuit board), which is installed in the control housing. The display is connected to the power electronics internally via a cable. The control panel can be removed and installed in the front of the furniture (depending on the model).

Possible versions of the control display:

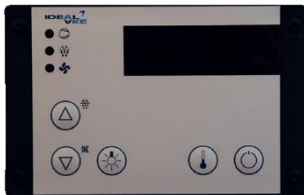
ST200F (cold controller)



ST200F: The control panel is connected to the power electronics using a 1.5 m CAT5 cable as standard (up to a maximum of 100 metres).

Required recess to install the display:
102.5 mm x 52.5 mm (LxH)

ST501 (cold controller)



ST501: The control panel is connected to the power electronics using a 1.5 m data cable as standard (> 2 m data transfer is incorrect).

Required recess to install the display:
87.5 mm x 56.5 mm (LxH)

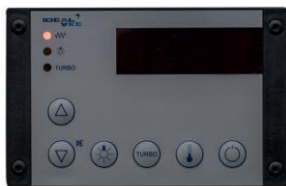
ST122 (heat controller)



ST122:

Required recess to install the display:
35 mm x 105 mm (LxH)

ST501 (heat controller)



B ST501: The control panel is connected to the power electronics using a 1.5 m data cable as standard (> 2 m data transfer is incorrect).

Required recess to install the display:
87.5 mm x 56.5 mm (LxH)

NOTE

Different controllers (refrigeration controller or heat controller) can be installed according to the unit type.
The enclosed operating manual for the controller must always be observed.

2.7 DEFROST WATER DISPOSAL (CONDENSATION)

In the cool area (product cool area), defrost water is formed due to condensation on the evaporator or the glass layout. It is guided into the base via the unit tray and can be disposed of in various ways (see the table in [section 2.3](#)).



WARNING

Risk of escaping water due to an open hot gas evaporator or an improperly installed defrost water receptacle

When setting up and operating the unit, ensure that the defrost water receptacle is inserted properly and that the hot gas evaporator is closed completely. Lifting the units manually can cause the hot gas evaporator seal to loosen and therefore, defrost water may flow out. This must be checked before setting up and before starting up each day. Wear protective gloves when performing assembly and inspection work.

Via a water seal directly into the wastewater system

Units that are operated with remote cooling are equipped with odour traps (seals) in the factory so that only the wastewater connections or external defrost water receptacles have to be installed in accordance with the local conditions. Ensure that wastewater cannot return to the cooling position.

NOTE

Wastewater installation may only be performed by authorised specialists.

Fully-automated defrost water evaporator

Units that are ready to plug in (depending on the model) are equipped with a fully-automated defrost water evaporator.

NOTE

Units with a hot gas evaporator contain a defrost water receptacle. They may only be operated when the defrost water receptacle is inserted and the base is closed completely.

NOTE

Electrical defrost water receptacles generate heat and moisture. In order to prevent damage to the condensers, they must be installed with the largest possible gap. Contact the manufacturer or your service partner for more information.

2.8 HEAT AREA CONNECTION OPTIONS

2.8.1 OUTFLOW CONNECTION (STEAM CONDENSATION)

Ensure that the drain hose's shut-off valve is closed during operation if there is no outflow provided by the customer (depending on the model). If an outflow provided by the customer is used, the drain hose can be connected directly to this. The outflow must be equipped with a water seal. This prevents cold air and odours penetrating the display case.

NOTE

Wastewater installation may only be performed by authorised specialists.



WARNING

Risk of escaping water due to an improperly installed wastewater connection

When setting up and operating the unit, ensure that the wastewater connections are installed properly. Lifting the units manually can cause the seal to loosen and therefore, water may flow out. This must be checked before setting up and before starting up each day. Use protective equipment.

2.8.2 MAINS WATER CONNECTION

Only a drinking water line is permitted to be connected to the unit's mains water connection (depending on the model). Use the seal supplied and the screen during assembly. The customer must provide a shut-off valve. This must be closed every day after operation finishes. Check the connection for leak-tightness on a regular basis.

NOTE

Installation may only be performed by authorised specialists.

2.9 AERATION AND VENTILATION (COOL AREA)

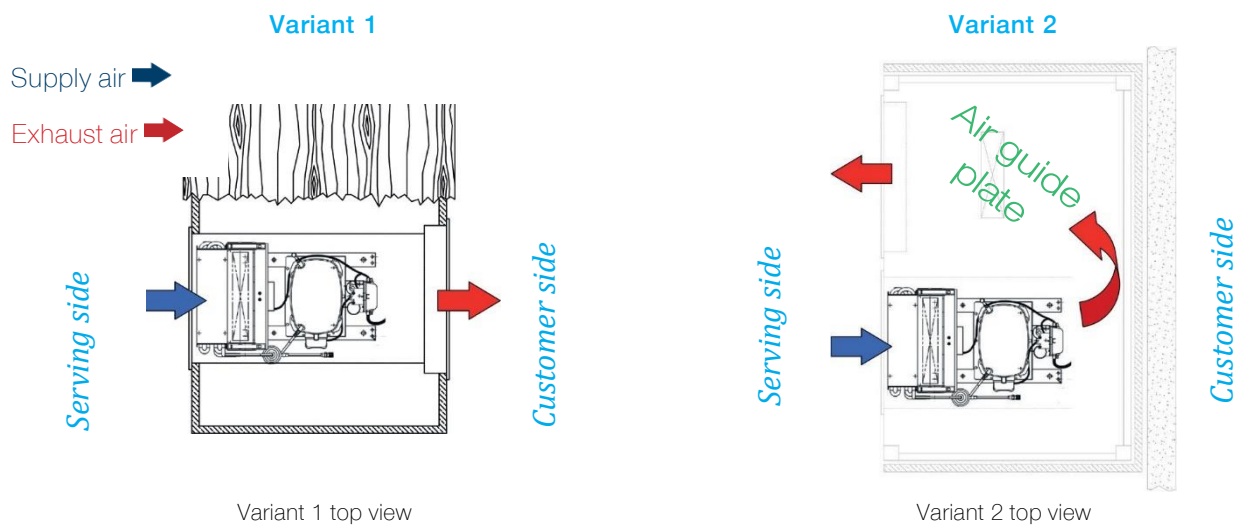
Units with a cooling area are supplied with fresh air on the serving side and the exhaust air on the customer side as standard. We recommend implementing the exhaust air opening on the customer side (see variant 1). If an exhaust air opening on the customer side is not possible, the exhaust air must be discharged on the side or on the serving side (see variant 2). Ensure that this exhaust air is not taken in again directly, in order to ensure that the cooling system works properly.



CAUTION

Reduced cooling performance or destruction due to the refrigeration unit overheating

Aeration and ventilation openings in the refrigeration unit must not be blocked or obstructed. The air flow must not be interrupted or impeded. The ventilation grilles must have a cross section of at least 1.5 times the condenser surface area. Design the ventilation grille openings with fins.

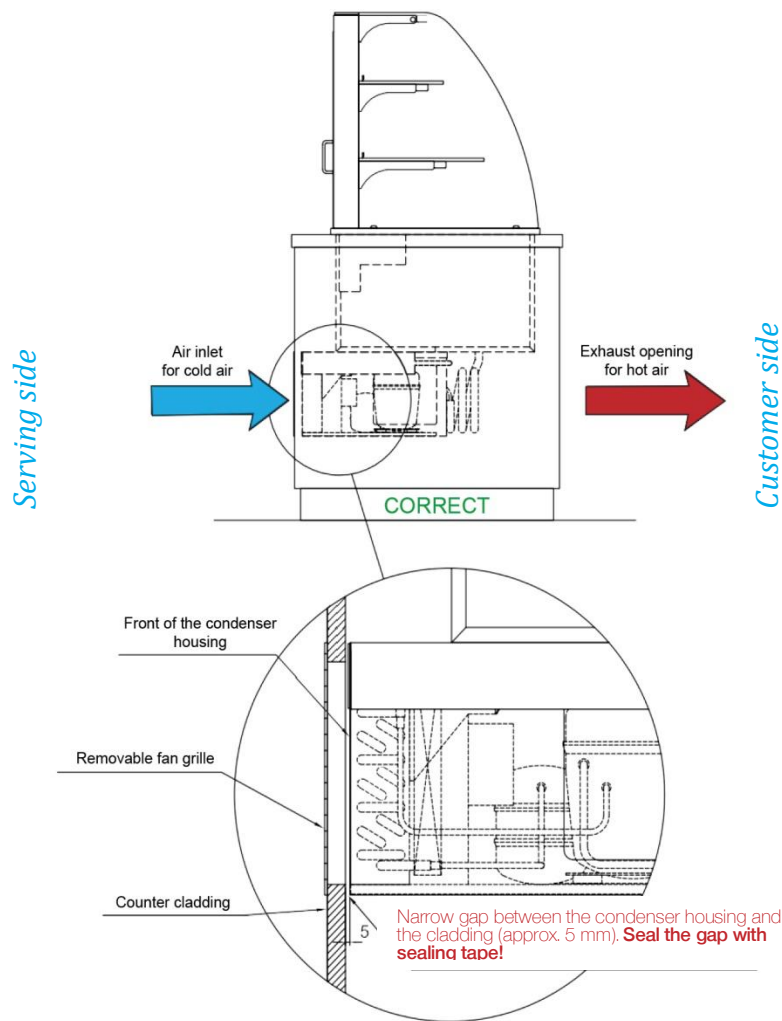


Definitions:

Compressor: The compressor pumps the gaseous refrigerant through the cooling system.

Condenser/blower/fan: The fan sucks cold room air in and therefore cools the compressor and the hot gas in the condenser.

Condenser: Heat exchanger in which the heat removed from the cooling area is returned to the recirculating air. Gaseous refrigerant is re-condensed by the heat removal. All units that are ready to plug in have a removable compressor housing (condenser set). You therefore have the option of positioning the condenser on the air intake's ventilation grille to prevent air circulation.



NOTE

Prevent the unit sucking in hot exhaust air again. The air opening in the cladding must be **less than 5 mm** away from the condenser.

2.10 DEFROSTING OPTIONS (COOL AREA)

Automatic defrosting

Defrosting is fully automated via the electronic thermostat. The unit starts the defrosting process automatically at regular intervals (every 3 hours when the display case is closed, every 2 hours for self-service display cases, depending on the model). The duration is already set in the factory for the relevant model. During this period, the middle LED indicator (defrosting) illuminates on the left display. After defrosting is complete, cooling mode starts automatically.

Manual defrosting

Defrosting can be started at any time by pressing the UP button (for the controller button allocation, see [section 3.2](#)). If the LED starts to flash after pressing the UP button, the input has been recognised. Defrosting starts automatically after a few minutes. The corresponding LED illuminates permanently during defrosting.

3 OPERATION AND CONTROL

This section describes starting up and operating the unit properly.

3.1 STARTING UP FOR THE FIRST TIME

A waiting time (applies only to units that are ready to plug in) of at least two hours must be adhered to prior to starting up for the first time. This resting period ensures that the oil that is in the unit capsule and may have moved during transport can flow back to the compressor.



DANGER

Danger due to electrical voltage on live components

Check the cable connections and the power supply once more before starting up to ensure that they are correct and have contact.

The unit is pre-cleaned prior to delivery. However, we recommend using a suitable cleaning agent (see [section 4.1.2](#)) to clean the unit thoroughly in order to remove any dirt.

3.2 COOL AREA UNIT CONTROLLER

3.2.1 BUTTON ALLOCATION FOR ST501, ST200F

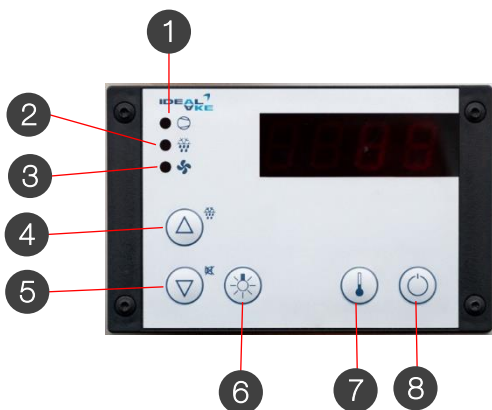
The following table describes the button allocation and their functions for the cool area. The digital display for the refrigeration controller is located above the buttons. The average temperature and any error messages are displayed here (see [section 3.7](#)).

NOTE

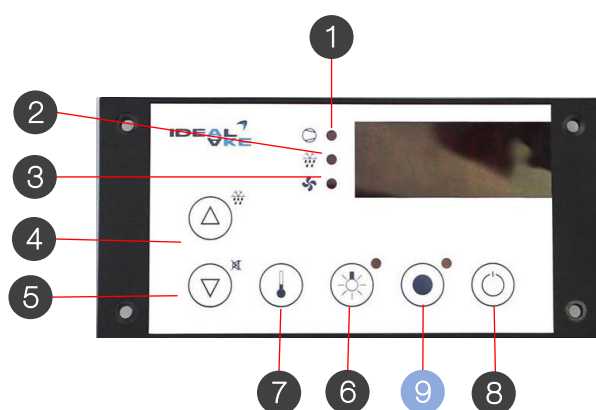
Wait until the required (set) temperature has been reached before filling the units with products.

NO.	DESIGNATION	FUNCTION
1	Cooling LED	Red indicator = active
2	Defrosting LED	Red indicator = active
3	Fan LED	Evaporator fan, red indicator = active
4	UP button	Increase value, Start defrosting (press and hold for approx. 3 seconds)
5	DOWN button	Reduce value, clear alarm
6	LIGHT button	Lighting ON/OFF (depending on the model, optional)
7	SET button	Display target value and adjust parameters
8	ON/OFF button	Unit ON/OFF (standby) (press and hold for approx. 4 seconds)
9	EMPTY (not allocated)	freely programmable button (on ST200F)

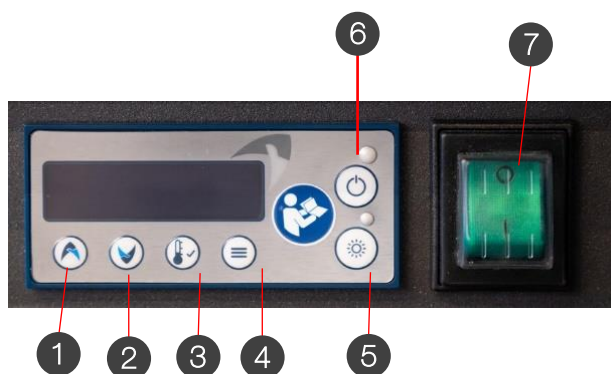
ST 501



ST200F



3.2.2 UNITS WITH COLD STORAGE



NO.	DESIGNATION	FUNCTION
1	UP (button)	Increase value, Select menu item Model with night shutter: Raise shutter
2	DOWN (button)	Decrease value, Select menu item Model with night shutter: Lower shutter
3	OK (button)	Save settings/changes/values, Clear alarm, target value setting: press and hold for approx. 2 seconds
4	MENU/EXIT (button)	Unit settings, close menu item
5	LIGHT (button)	Light on = active, Light off = inactive (dimnable according to the model: press and hold for approx. 4 seconds)
6	ON-OFF (button)	Unit on/off (standby) (press and hold for approx. 4 seconds), Unit on = green, Unit off (standby) = red
7	ON/OFF (switch)	(Unit) main switch: 1 = on 0 = off

NOTE

A separate operating manual for the cold storage, with detailed handling information is enclosed with the unit. Follow the instructions contained there.

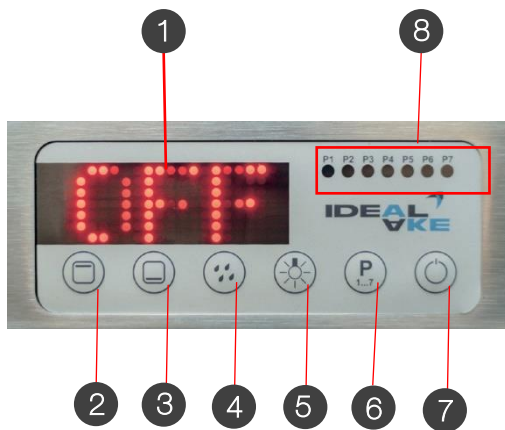
3.3 HEAT AREA UNIT CONTROLLER (BUTTON ALLOCATION ST200, ST501)

The following table describes the button allocation for the heat controller and their functions. The digital display is located above the buttons. The average temperature and any error messages are displayed here (see [section 3.7](#)).

NOTE

Wait until the required (set) temperature has been reached before filling the units with products.

ST200 controller





NO.	DESIGNATION	FUNCTION
1	CONTROLLER DISPLAY	Display settings/changes/values/errors
2	SUPPLEMENTARY HEAT (button)	Supplementary heat ON/OFF (3 heating levels)
3	PRIMARY HEAT (button)	Primary heat ON/OFF (3 heating levels)
4	HUMIDIFICATION (button)	Humidification ON/OFF (3 intensity levels)
5	LED (button)	Light ON/OFF
6	PROGRAMS (button)	Storable programs P1 to P7
7	ON/OFF (button)	Heated display case ON/OFF
8	P1 TO P7 DISPLAY	Red indicator = active





NOTE

If nothing is shown on the display, check whether the unit is connected to the power supply.

OPERATING THE UNIT with moist heat (heat climate)

DISPLAY	DESCRIPTION
	Once the unit has been connected to the power supply, "OFF" is shown on the controller display. Press button No.7 to switch on or off Press button No.5 to switch the light on/off. The unit provides the option of being used in neutral mode (unheated). (all heat levels are deactivated).
	After switching on, the controller display always shows the NEUTRAL power setting for all heat sources. The unit does not heat up. The light can be switched on and off. Pressing the buttons can activate supplementary heat button No.2 , primary heat button No.3 and humidification button No.4 separately at 3 levels each. The heating levels are indicated visually on the controller display.

ST200 heat settings

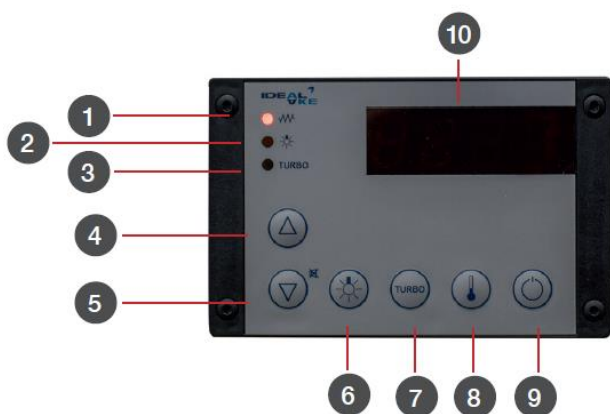
DISPLAY	HEAT DESCRIPTION
	Supplementary heat (No. 2) deactivated Primary heat (No. 3) deactivated Humidification (No. 4) deactivated (Neutral mode)
	Supplementary heat (No. 2) at level 1 Primary heat (No. 3) at level 1 Humidification (No. 4) at level 1
	Supplementary heat (No. 2) at level 2 Primary heat (No. 3) at level 2 Humidification (No. 4) at level 2
	Supplementary heat (No. 2) at level 3 Primary heat (No. 3) at level 3 Humidification (No. 4) at level 3

NOTE

The specified heat levels for supplementary heat, primary heat and humidification can be set individually as required. Press **button No. 6** to select the preset programs. The active program is indicated by the relevant LED in area No.8.

ST501 controller (energy adjuster)

The listed control display (ST501) is installed in some models. The following table describes the button allocation and their functions for this display type.



NO.	DESIGNATION	FUNCTION
1	HEATING (display)	Red indicator = active
2	LIGHTING (display)	Red indicator = active
3	TURBO (display)	Red indicator = active Heat-up phase, level 10 = 100%
4	UP (button)	Increase value Level 1 to LEVEL 10) (1 = 10% → 10=100%)
5	DOWN (button)	Decrease value Level 1 to LEVEL 10) (10 = 100% → 1=10%)
6	LIGHT (button)	Lighting on / off
7	TURBO (button)	Start heat-up phase, Level 10 = 100%
8	SET (button)	Red indicator = active
9	STANDBY (button)	On/OFF (standby)
10	DIGITAL DISPLAY (display)	Display ACTUAL value and messages (errors)

NOTE

If nothing is shown on the display, check whether the unit is connected to the power supply.

3.4 TEMPERATURE SETTING

The interior temperature is regulated using the control display for the electronic temperature controller. This is in the control housing. The target value set in the factory can be displayed by pressing the SET button. The required temperature can be set by pressing and holding the SET button and simultaneously pressing the UP button for higher temperatures / levels or the DOWN button for lower temperatures / levels. The precise button allocation is provided in [section 3.2](#) and [section 3.3](#).

NOTE

The target value set in the factory can be displayed by pressing the SET button. This is set according to the unit and adjustment may only be performed by authorised specialists.

After you change the temperature settings, it takes some time until the required temperature is reached in the unit and stabilises (we recommend using a suitable testing device to check the set temperature). The temperature should be set by the supplier or specialist dealer during installation. Pay attention to the ambient conditions when selecting the interior temperature.

Note regarding the cool area:

A large temperature difference between the interior and exterior temperature in conjunction with high air humidity can cause a high level of ice formation and condensation on components that convey refrigerant. This reduces cooling performance and prevents automatic defrosting working properly.



CAUTION

Changes to the temperature settings can cause the stocked products to spoil.

The temperature for each unit was set in the factory in accordance with the specified technical requirements so that optimum food storage is guaranteed. This temperature setting can be changed according to the foods that are inserted, in order to prevent an onset of food waste due to incorrect cooling temperature settings.

3.4.1 PROBE ALIGNMENT

Each time a unit is installed or started up, a probe alignment is only possible once the target temperature value is reached. It may take some time to reach the temperature.

NOTE

The temperature controller is set up correctly and ready for operation. Check parameter H11 (return air probe calibration) after installation. Calibration may only be performed by authorised specialists in accordance with the programming manual that is valid for the unit.

3.5 STOCKING THE UNIT

Use the sliding doors or swing doors to stock the unit with pre-cooled products from the serving side or from the customer side on open units and units with closed rear walls. The products can be placed on glass shelves and shelves.

NOTE

Pay attention to the maximum bearing capacity of the shelves

Glass shelf loading: see the stacking limit / outline sketch for the corresponding model group.

Shelf loading: see the stacking limit / outline sketch for the corresponding model group.

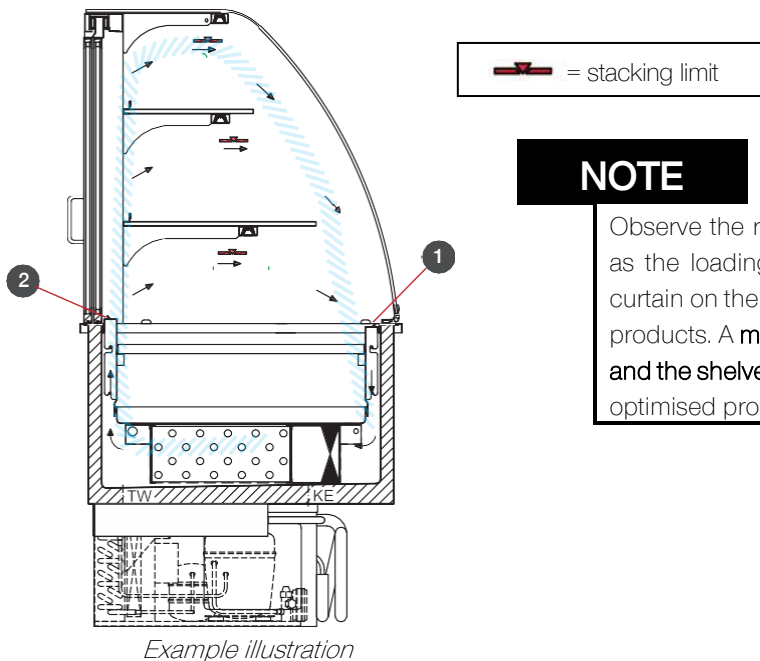
Ensure that you do not place any barrels or bottles on the glass shelves.

ATTENTION: The stacking limit may vary depending on the unit's height. Contact the manufacturer for more information.

NOTE

Ceramic plates can scratch powder-coated shelves.

3.5.1 STOCKING THE COOL AREA



NOTE

Observe the relevant stacking limits (see [section 3.5.1.1](#)), as well as the loading and storage space for the shelves. The cold air curtain on the unit must not be impeded or interrupted by stocked products. A **minimum gap of 40 mm between the inserted product and the shelves** must be maintained. This is the only way to ensure optimised product cooling.

NOTE

Proper functions can only be guaranteed if the supply and return air openings are kept clear and the cold air curtain is not impeded.

On units with recirculating air cooling, the displayed products are cooled using a guided air curtain made of cold air. The specified minimum gap (see the marked stacking limits) to the lighting and the air outlet openings must be adhered to. The ventilation slots on the front **1** and rear **2** of the unit must never be covered.

3.5.1.1 Stacking limits / outline sketches

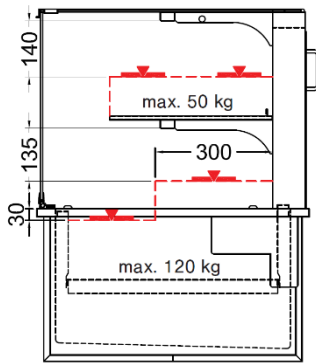
An outline sketch is supplied with the unit depending on the model. Due to the relevant installation positions, attachment to the unit / the definition for the outline sketch differs for each model or cannot be defined by the manufacturer. The assembly staff must ensure that the outline sketch is attached to the unit so that it is clearly visible to the operator after installation. The relevant outline sketch with specified stacking limits is enclosed with each unit when it is delivered. The owner must ensure that it is attached permanently and clearly visibly. If it is illegible, this sticker must be re-ordered from the manufacturer and re-attached to the unit.

NOTE

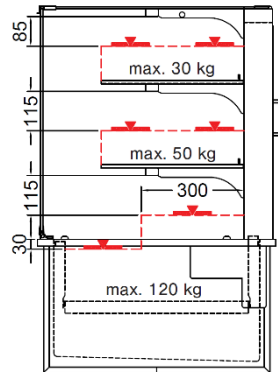
The specified outline sketches with defined stacking limits / loading limits are based on the standard designs for the relevant cool area.

Special attachments and customer-specific designs may render the stacking limits partially and/or completely invalid.

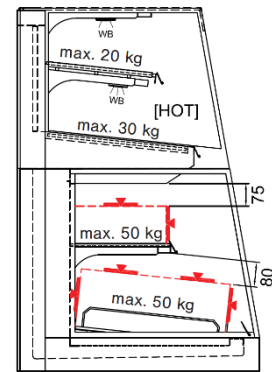
Contact your supplier, specialist dealer or the manufacturer for more information.



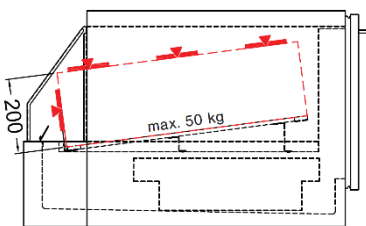
KGW 53; KGU 53 (cool area)



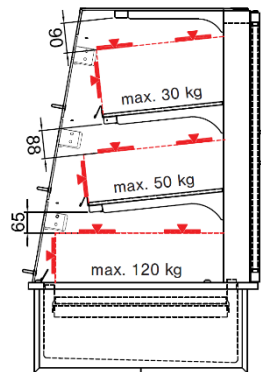
KGW 70; KGU 70 (cool area)



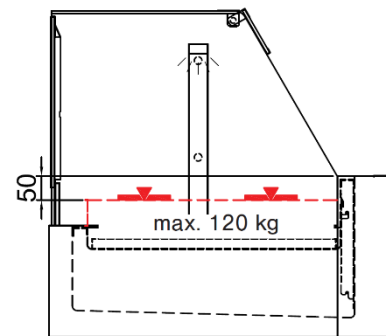
Convenience Tower



Take Away Cool; Take Away Basic (cool area)



Cold Flaps; Tropical Flaps (cool area)



Snackys WK (cool area)

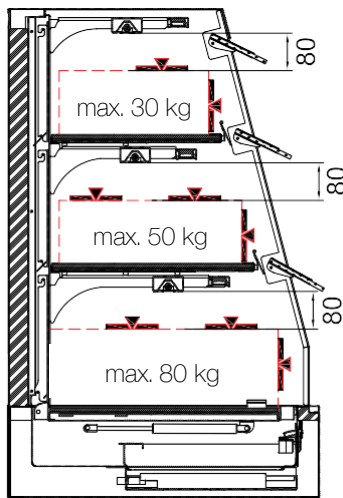


WARNING

Risk of crushing and danger due to falling objects when adjusting the glass surfaces

Always use both hands to remove and re-insert the glass parts. Be careful when handling glass.

3.5.2 STOCKING THE HEAT AREA

*Example illustration*

= stacking limit

NOTE

Adjust the temperature according to your product. An excessively high temperature causes the product to dry out or burn.

**CAUTION****Distance between the products and heat sources**

In the heat area, the stocked products must be a **minimum distance of 80 mm** from the supporting heat (radiator, quartz radiator) in order to prevent the stocked products burning or drying out. The containers / packaging must be temperature-resistant.

**WARNING****Risk of burns when stocking the unit**

When stocking or removing the products in units with a heat climate, ensure that you do not come into direct contact with components that convey steam or hot components.

3.5.3 EASY CHANGE FRONT GLASS



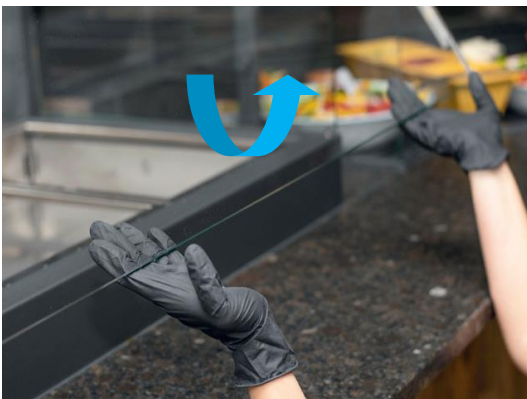
WARNING

Risk of crushing in the front glass area

There is a risk of crushing between the cover and the glass walls when lifting the unit's front glass. Call a second person to assist if necessary. This applies to larger units / models.



Press one of the top corners of the front glass with one hand in order to push the bottom edge out by a few centimetres.



Lift the front glass sufficiently to be able to lift it securely.



Lift the front glass and push it into the lock for the installed rails until it engages.

In order to close the front glass, perform the tasks described in reverse order.

When lowering, ensure that the glass does not fall. Lower it slowly until just before the attachment points. Apply counter pressure to the top corners of the front glass in order to be able to lower the glass slowly into the end position.

3.5.4 HEIGHT ADJUSTMENT FOR THE GLASS SHELF / SHELVES

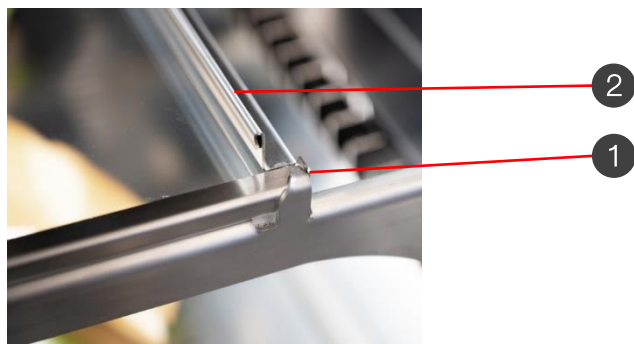
The height and inclination of the intermediate glass shelves can be changed on some unit versions. The intermediate glass shelves can be adjusted by one level (± 25 mm) from the centre position.

Removing the glass shelf

NOTE

Glass shelves can be removed for easier cleaning. At least two people are required for this depending on the unit size. The safety clips must be detached to do this. Ensure that the safety clips are re-attached when re-inserting the glass.

Before you can adjust the supports, remove the glass shelves (see [section 2.1](#)). To do this, lift the glass shelf at the front edge until the safety clip (**No.1**) releases the glass shelf and it can be pulled forwards. Ensure that the product stopper (on the operator side) (**No. 2**) is pointing upwards.



Adjusting the shelf supports/glass shelf

The shelf supports are attached to the recesses using two clips. The top clip has two notches in order to adjust the inclination of the shelf supports (see [section 2.1](#)).

Procedure:

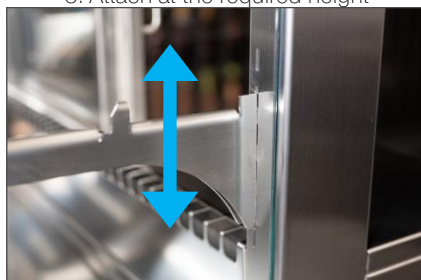
1: Lift the support



2: Pull the support out forwards



3: Attach at the required height



4: Select the oblique/level position



Adjusting the height of the shelves

Some units are supplied with height-adjustable shelves. On models with deep refrigerated wells, this therefore provides many options for displaying products (see [section 2.1](#)). GN dishes with a maximum depth of 150 mm can be used.

NOTE

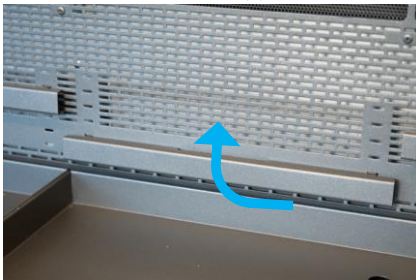
Pay attention to the defined stacking limits for the relevant unit when adjusting the shelves. All stacking limits are provided in [section 3.5.1](#).

If the stacking limit is reached or exceeded, optimum storage (cooling / keeping warm) for the inserted products can no longer be guaranteed.

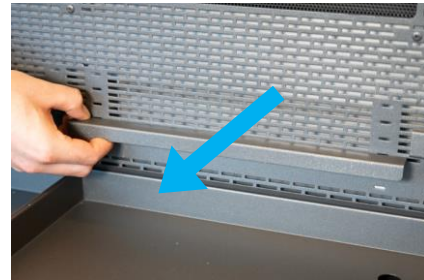
The manufacturer is not liable for product losses caused by this.

Contact your specialist dealer or the manufacturer if you have any further questions.

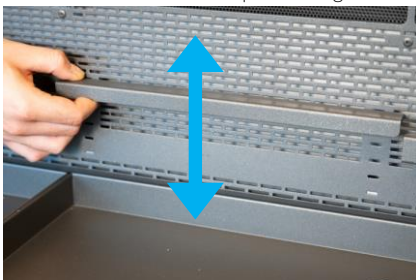
1: Lift the support



2: Pull the support out forwards



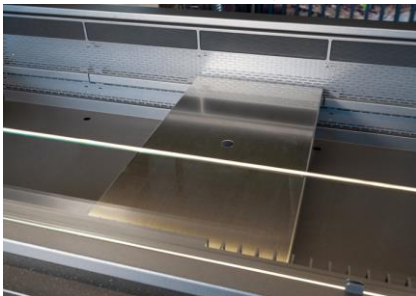
3: Attach at the required height



4: Secure the support



5: Place the shelf in position



WARNING

Risk of crushing when handling/adjusting/positioning heavy individual components

Pay attention to potential risks of crushing, also for third parties, when handling heavy objects. Use both hands if possible when handling heavy objects. Call a second person to assist if necessary. Wear protective gloves and safety shoes when handling/adjusting/positioning heavy individual components.

3.6 FAULTS AND CAUSES

NOTE

Switch the unit off if malfunctions occur. Contact your supplier or the manufacturer immediately.



WARNING

Dangers due to working on / handling the unit

Some inspections can pose a high level of danger (electric shock, etc.). Trained, authorised specialists must be commissioned to perform this work!

Check the points listed below or contact your supplier or specialist dealer if you cannot find the solution to the problem.

General

FAULT	CAUSE	REMEDY
The unit does not work.	Power supply interrupted.	Check that the protective contact plug is tight (at the socket and the controller).
	No voltage to the socket.	Check whether fuses (in the circuit) are intact.
	Electronics are set incorrectly or the display is dark.	Contact an authorised service technician / customer support.
The lighting does not work.	The LED lighting is not switched on.	Switch the lighting on (see section 3).
	The bulbs or cable connection are faulty	Contact an authorised service technician / customer support.

COOL AREA

FAULT	CAUSE	REMEDY
The products do not reach the required temperature.	One/several doors are open.	Close the doors, check the temperature after 30 minutes.
	Ventilation slots in the unit are covered/blocked with products. The cold air curtain is interrupted (see section 3.5.1)	Ventilation slots (see section 3.3).
	Evaporator collection basin inserted incorrectly.	Insert the evaporator collection basin with the opening pointing upwards as described in section 4.1.3.
	Aeration and ventilation insufficient.	Ensure aeration and ventilation as described in section 2.9. Contact an authorised service technician / customer support if required.
	The temperature on the display deviates from the measured temperature.	Contact an authorised service technician / customer support (probe alignment is required (section 3.4.1).
	Too much food or food too hot.	Pre-cool the products (see section 1.12), clear the air openings (see section 2.9).
	Target temperature is too high.	Adjust the target temperature value (see section 3.2).
	The ambient temperature in the room is too high (above 25 °C).	Adjust the room climate control (see section 1.8).
	External draughts cause interruptions in the circulation circuit for the cold air (especially on open units).	The installation location must be free of draughts, follow the specifications in section 1.8.
	The condenser is contaminated.	Clean the condenser (see section 4.1.5).

COOL AREA

FAULT	CAUSE	REMEDY
The products do not reach the required temperature	The evaporator is heavily iced.	Initiate manual defrosting (see section 2.10) or switch the unit off for several hours. Inspection: Visual inspection as to whether the ice has been removed from the evaporator. Otherwise, repeat defrosting.
	Cooling unit cooling components faulty, the cooling circuit is faulty.	Contact an authorised service technician / customer support.
The evaporator ices up continuously.	Evaporator fans do not run.	Contact an authorised service technician / customer support.
	Air circulation in the unit is hindered.	Clear the ventilation slots (see section 3.5).
	Evaporator collection basin inserted incorrectly.	Insert the evaporator collection basin with the opening pointing upwards as described in section 4.1.3.
	The doors are open too long (depending on the model)	Only open the doors as long as absolutely required.
	Too much warm/moist ambient air has been sucked into the cooling chamber.	Follow the specifications in section 1.8.
	Defrosting parameters are incorrect/ Defrosting probe is faulty.	Contact an authorised service technician / customer support.
Condensation on the glass.	The temperature in the unit is too low.	Display the target value: Press the SET button, for units without insulated glass ≥ 4 to 5°C (see section 3.2).
	The ambient temperature is too high / the air humidity is too high.	Do not exceed $+25^{\circ}\text{C}$ ambient temperature and 60 % relative air humidity – tip: switch the air conditioning on if possible.
	Adjacent units emit heat.	Check the installation position. Contact an authorised service technician / customer support.
	Fan speed is too high.	Contact an authorised service technician / customer support.

HEAT AREA

FAULT	CAUSE	REMEDY
The products do not reach the required temperature.	Too much food or food too cold.	Remove and pre-heat the products.
	The heat level is set incorrectly.	Increase the level / target temperature (see section 3.3)
	External draughts cause interruptions.	The installation location must be free of draughts, follow the specifications (section 1.8).
	Primary / supplementary heat fault, the unit is faulty.	Contact an authorised service technician / customer support.
	The ambient temperature in the room is too low.	Adjust the room climate control (for the ambient conditions, see section 1.8).
The primary and/or supplementary heat does not get warm, cannot be regulated.	The unit is not switched on	Switch the unit on.
	Controller / probe or fuse is faulty.	Contact an authorised service technician / customer support.
The radiator and/or base tray/heating tray does not get warm.	The unit is not switched on.	Switch the unit on.
	Controller / probe or fuse is faulty.	Contact an authorised service technician / customer support.
Heat sources cannot be regulated.	Controller / probe or fuse is faulty.	Contact an authorised service technician / customer support.
Food is too hot.	The temperature level is too high.	Set a lower temperature level.
The food cools off.	The stored foodstuffs are cold or not at the required temperature.	Check whether the "Primary heat" or "Supplementary heat" functions are active (section 3.3). Check whether the food was inserted with a core temperature of 85°C .

Contact an authorised service technician / customer support.

NOTE

The manufacturer is not liable for spoiled products even if the unit is still under warranty. We recommend checking the unit temperature technically every six months.

3.7 STATUS INDICATORS AND ERROR MESSAGES ON THE DISPLAY



DANGER

Danger due to electrical voltage on live components

The power supply must be disconnected before all cleaning and servicing work. To do this, unplug the unit or disconnect it from the mains at all poles. Repair work may only be performed by authorised specialists.

NOTE

The tables listed do not apply to special controllers (see the applicable operating manual for the controller). Observe the instructions in the relevant programming manual – contact your supplier or the manufacturer.

3.7.1 Cold area ERROR MESSAGES (STÖRK controller)

ST 501	ST 200F		
MESSAGE		CAUSE	REMEDY
H 11	A 15	Excess temperature, temperature above the alarm limit in parameter A1	
Lo 1	A 13	Insufficient temperature, temperature below the alarm limit in parameter A2	
-	H 12	Excess temperature, alarm circuit 2, temperature above the alarm limit	
-	Lo2	Insufficient temperature, alarm circuit 2, temperature above the alarm limit	
E 1L	F 1L	Error on probe F1, short circuit	Inspect probe F1
E 1H	F 1H	Error on probe F1, breakage	Inspect probe F1
E2L	F2L	Error on probe F2, short circuit	Inspect probe F2
E2H	F2H	Error on probe F2, breakage	Inspect probe F2
E3L	F3L	Error on probe F3, short circuit	Inspect probe F3
E3H	F3H	Error on probe F3, breakage	Inspect probe F3
E4L	F4L	Error on probe F4, short circuit	Inspect probe F4
E4H	F4H	Error on probe F4, breakage	Inspect probe F4
ESL	F5L	Error on probe F5, short circuit	Inspect probe F5
ESH	F5H	Error on probe F5, breakage	Inspect probe F5
E6L	F6L	Error on probe F6, short circuit	Inspect probe F6
E6H	F6H	Error on probe F6, breakage	Inspect probe F6
ES	dor	Door open too long	Close the door
EP0	EP0	Control unit internal error	Repair the control unit
EP 1	EP 1	Error in the parameter memory	Check all parameters
EP2	EP2	Error in the data memory	Repair the control unit

NOTE

Errors EP0 and EP1 block the controller. The controller is only enabled once the error has been rectified. Error EP0 (and EP2) can only be rectified by repairing. The display alternates between the errors and the current measured temperature.

3.7.2 Heat area ERROR MESSAGES (STÖRK controller)

MESSAGE	CAUSE	REMEDY
<i>F 1L</i>	Error on probe F1, supplementary heat	Contact an authorised service technician / customer support
<i>F 1H</i>	Error on probe F1, supplementary heat	Contact an authorised service technician / customer support
<i>F 2L</i>	Error on probe F2, heating plate	Contact an authorised service technician / customer support
<i>F 2H</i>	Error on probe F2, heating plate	Contact an authorised service technician / customer support
<i>F 3L</i>	Error on probe F3, bain-marie angle sensor	Contact an authorised service technician / customer support
<i>F 3H</i>	Error on probe F3, bain-marie angle sensor	Contact an authorised service technician / customer support
<i>F 10</i>	Water tray or float gauge below the heating plate "Primary heat" missing or installed incorrectly	Check the water tray and the float gauge
<i>F 90</i>	Data transmission error, controller not found	Check the interface wiring, check the address, controller may be de-energised

4 CLEANING/MAINTENANCE/SERVICING

4.1 CLEANING AND CARE

In order to guarantee that the products are presented well, daily interior and exterior cleaning must be performed in accordance with the hygiene regulations.



DANGER

Danger due to electrical voltage on live components

The power supply must be disconnected before all cleaning and servicing work. To do this, unplug the unit or disconnect it from the mains at all poles.



WARNING

Impact hazard on the unit during assembly, cleaning and servicing work

Pay attention to possible impact hazards on the unit.

Switch the unit off prior to cleaning work. We recommend performing daily cleaning at the end of the working day.

4.1.1 CLEANING INTERVALS

The following cleaning intervals are recommended to guarantee that the unit works as well as possible:

CLEANING WORK	DAILY	WEEKLY	MONTHLY
Tray including drain (water seal); depending on the model	X		
Defrost water collection basin, hot gas evaporator, electrical defrost water receptacle (depending on the model)	X		
Glass shelf and shelves	X		
Black glass plates – display areas, Supplementary heat (thermal bridge)	X		
Evaporator (including fan)		X	
Condenser		X	
Condenser fan		X	
Extendible drawer		X	
Night shutter		X	
All glass (including sliding and swing doors)	X		
All remaining components on the unit (bases, frames, etc.)		X	

NOTE

We recommend cleaning the unit daily to ensure that its functions are maintained.

NOTE

All glass shelves can be removed for easier cleaning. At least two people are required for this depending on the unit size. The safety clips must be detached to do this. Ensure that the safety clips are re-attached when re-inserting the glass.

After cleaning, all parts must be rinsed with clear water and then dried in order to prevent residues.

The following points are important for keeping the stainless steel parts on the unit in perfect condition:

- Keep stainless steel surfaces clean at all times.
- Ensure sufficient air circulation on the surfaces.
- Never touch the unit's component with rusty materials.

NOTE

People who perform cleaning work must also comply with the prescribed measures for the applicable cleaning agents (e.g. wearing gloves when cleaning, wearing safety goggles, etc.)!

4.1.2 CLEANING AGENTS

NOTE

Only the cleaning agents specified in this section are permissible for cleaning the unit. Do not use any cleaning agents containing chlorine or vinegar.

COMPONENTS / MATERIALS	CLEANING AGENTS	REMARK
Surfaces that come into contact with products	Lukewarm, soapy water	Rinse with clear water.
Glass surfaces	Glass cleaner	Glass panes can be lifted to make cleaning the panes and the areas below them easier.
Stainless steel surfaces	Stainless steel cleaner	Ensure that the stainless steel cleaner that you use is food-safe.
Shelves and GN containers	Washing up liquid and brush	Shelves and GN containers are easy to remove (see section 2.1). Only use brushes with plastic or natural bristles.
Powder-coated surfaces	Soft cloth, lukewarm, soapy water	Do not use any <ul style="list-style-type: none"> • scouring or rough cleaning utensils • Glass cleaner • Solvent
Acrylic glass (flaps); Night shutter	Soft cloth, lukewarm, soapy water	Do not use any <ul style="list-style-type: none"> • scouring or rough cleaning utensils • Glass cleaner • Solvent
LED lighting, supplementary heat	Soft cloth	Only clean dry

NOTE

First check that the cleaning agent is compatible in an invisible location on the unit.

4.1.3 CLEANING THE EVAPORATOR

Cleaning the evaporator (the evaporator unit) periodically and thoroughly is essential in order to be able to guarantee that the unit's cooling performance is maintained.

The evaporator (or the evaporator unit) is installed differently depending on the model. Therefore, additional steps may be required to access the evaporator.

For more information, see [section 4.1.7](#), [4.1.8](#), [4.1.9](#).



DANGER

Danger due to electrical voltage on live components

The power supply must be disconnected before all cleaning and servicing work. To do this, unplug the cooling unit or disconnect it from the mains at all poles.



WARNING

Risk of crushing when handling the evaporator box

Use the lifting devices (handles, metal rod, etc.) provided to lift and re-insert the evaporator box. When lifting the evaporator box, ensure that it is only lifted until the locking clip or gas pressure absorbers engage automatically. Hold the evaporator box tight by the metal bar or in position before unlocking.



WARNING

Risk of escaping refrigerant due to a damaged evaporator

Do not use any pointed objects to clean the evaporator fins.

NOTE

Wear appropriate protective equipment when cleaning the unit. This must comply with that prescribed by the manufacturer of the cleaning agent used (see [section 4.1.2](#)). Prior to cleaning, check whether the water used for cleaning can be discharged or removed from the product area again. If the unit is not connected directly to the wastewater system by the customer, a container of an appropriate size must be placed under the outflow.



CAUTION

Risk of cutting injuries

The condenser's fins are very thin and sharp. Avoid direct contact with the fins in order to prevent injuries. Wear appropriate protective equipment.

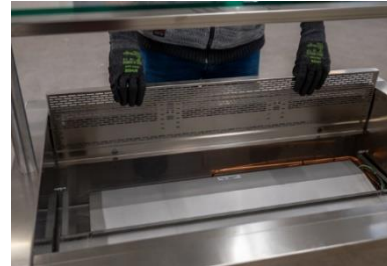
To clean the evaporator, proceed as follows:



- 1 Remove the shelves or GN dishes.



- 2 Remove the attachment strips and the air guide plates upwards and out of the unit.



Attention: The attachment strips can fall off the air guide plate. Damage to the evaporator is possible.

- 3 Remove the insertion cup upwards and out of the unit. To do this, use the round recess on the insertion cup.



- 4 Fold the evaporator cover up. Rinse or clean the entire evaporator box and the evaporator fins.



- 5 Fold the evaporator box up until the locking clip or the gas pressure absorber engages on the side, or the locking pin is engaged.



Note: the evaporator is attached using the securing clip or the locking pin.

- 6 Clean the entire interior. First remove the coarse dirt in order to prevent blocking the outflow.



NOTE

On some models, the sequence for cleaning the evaporator (attaching the evaporator) may differ. Contact your service partner or the manufacturer for this.

Once cleaning is complete, proceed in reverse order:

1. Lift the evaporator box slightly.
2. Swing the side lock inwards or release it (depending on the model).
3. Lower the evaporator box (**do not drop it**) (depending on the model).
4. Close the evaporator box.
5. Re-insert the insertion cup correctly.
6. Use the attachment strips to position the side air guide plates.
7. Re-insert the shelves or GN containers.

NOTE

The exterior and bottom of the unit must not be cleaned using a hose or the washing brush. Running water must always be avoided in this area.

All surfaces can be cleaned with cleaning agents (see [section 4.1.2](#)) and water.

4.1.4 CLEANING THE GLASS / DOORS

The front panes can be folded forwards for easier cleaning and, on models with an Easy Change system, they can also be pushed in. The cover glass can be moved upwards and therefore enable the inside to be cleaned (see [section 2.1](#)).



WARNING

Risk of falling objects

Hold the glass tight while cleaning and do not allow the front glass to fall / tip forwards.

NOTE

On units as of 2/1, the glass must be handled and cleaned by at least two people. Do not underestimate the weight of the glass. This also applies to screw-on glass attachments or models with a safety rope.

The safety rope on models that have it holds them in the final position. However, when opening, the glass must be supported manually to protect the safety rope. The safety rope must be attached during cleaning. This also applies to models that are only equipped with an angled profile. Use a glass cleaner for cleaning (see [section 4.1.2](#)).

NOTE

All glass shelves can be removed for easier cleaning. At least two people are required for this depending on the unit size. The safety clips must be detached to do this. Ensure that the safety clips are re-attached when re-inserting the glass.

Swing and sliding doors



WARNING

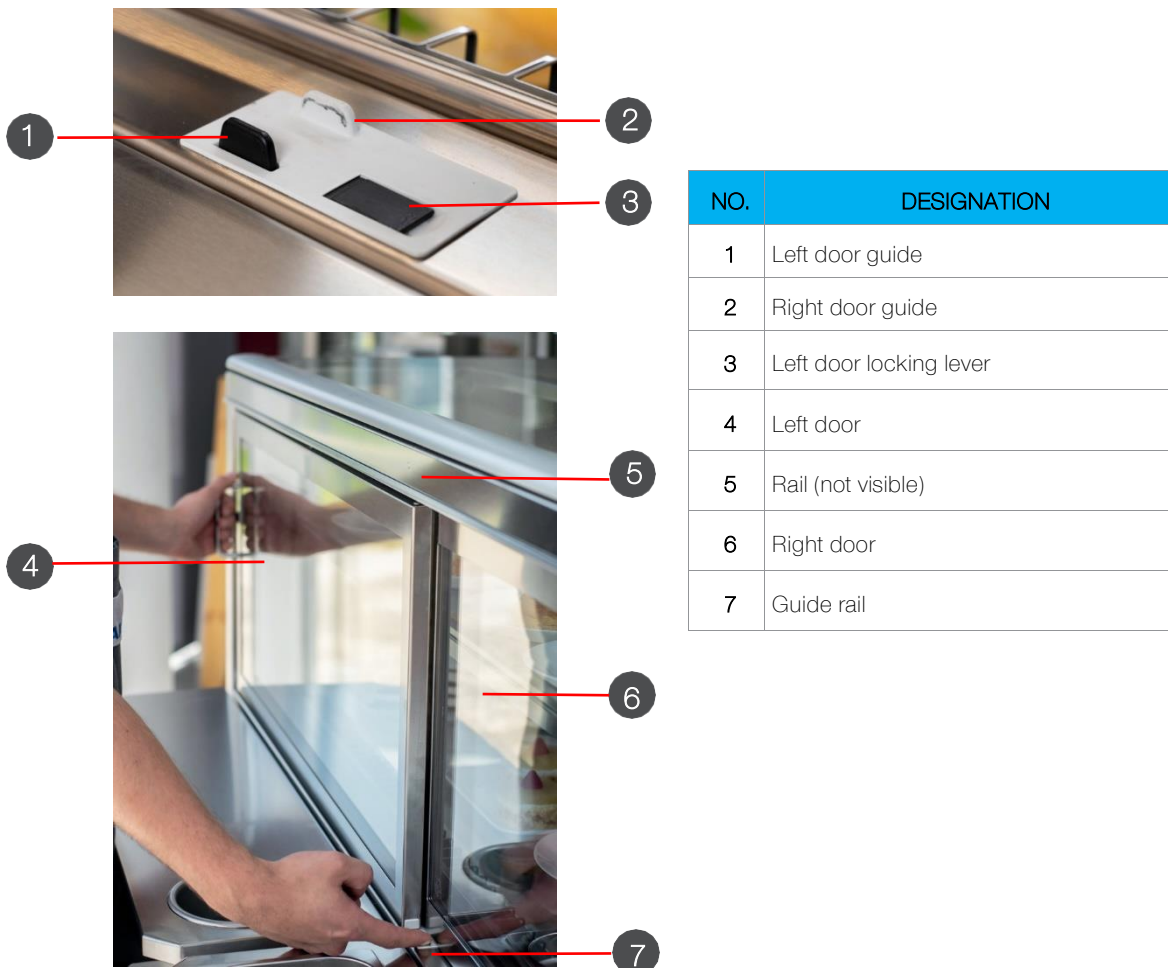
Risk of crushing/cutting when moving the sliding or swing doors

Only use the handles provided to open and close the sliding doors. Do not reach between the side parts of the sliding door and the unit when closing the sliding doors. Do not reach between the bottom of the angle trim and the top of the sliding door. Ensure that the angle trim is installed and screwed on properly. This also applies to swing doors. Be careful when handling glass.

NOTE

Only the cleaning agents specified in [section 4.1.2](#) are permissible for cleaning the swing and sliding doors.

Sliding doors can be removed from the unit for cleaning using the sliding door lock (see [section 2.1](#)). After cleaning is complete, ensure that all doors are re-attached and closed completely.



NOTE

On units as of size "4/1", the sliding doors must be handled and cleaned by at least 2 people. Do not underestimate the weight of the sliding doors. This also applies to swing doors.

NOTE

Ensure that glass is handled with care.

Removal steps / sequence for sliding doors:

1. Hold the door handle tight in your left hand.
Pull the locking lever upwards completely with your right hand.
2. Leave your left hand on the door handle and grasp the door frame with your right hand. Tilt the doors towards the operator.
3. Move the doors to the position in which the recesses are located on the rail for the rollers. In order to remove the door from the guide rails, lift it slightly upwards and push it backwards.
4. Tilt the door up at the front and lift it out of the unit.
5. Place the door on a clean and soft mat. Ensure that the handle is on the top.
6. Hold the door handle tight in your right hand. Grasp the door frame with your right hand. Tilt the door towards the operator.
7. Move the doors to the position in which the recesses are located on the rail for the rollers. In order to remove the door from the guide rails, lift it slightly upwards and push it backwards.
8. Tilt the door up at the front and lift it out of the unit.
9. Place the door on a clean and soft mat. Ensure that the handle is on the top.
10. Clean the doors and the overlap zone. Check that the rollers on the sliding doors move freely. They must be free of contamination.

NOTE

Only the cleaning agents specified in [section 4.1.2](#) are permissible for cleaning the sliding doors.

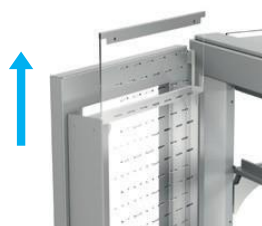
11. Re-attach the right window. Repeat steps 6 to 8 in reverse order. Ensure that the right window is attached to the white lock. Move the right window into the far right position.
12. Re-attach the left window. Repeat steps 1 to 4 in reverse order. Ensure that the left window is attached to the black lock. Move the left window into the far left position.

NOTE

After cleaning is complete, ensure that all doors are re-attached, closed completely and that the lock is activated. Check that the sliding doors can move freely.

Lexan® ventilation ducts (air guide box)

Some units are equipped with Lexan ventilation ducts on the swing doors or rear walls. They can be detached for easier cleaning.



Lift the ventilation ducts upwards and out of the swing door / rear wall and clean them at the intervals specified in [section 4.1.1](#), using the prescribed cleaning agents as specified in [section 4.1.2](#). Re-insert them into the installation bracket after cleaning is complete.

NOTE

Ensure that the ventilation ducts are installed correctly. Incorrect installation can impair the unit's cooling function and the required air flow may no longer be guaranteed. Optimum food cooling can therefore no longer be guaranteed. We cannot accept liability for product loss.

4.1.5 CLEANING THE CONDENSER

On units that are ready to plug in and that have a cooling area, the condenser must be cleaned weekly and subjected to a daily visual inspection in accordance with [section 4.1.1](#). A contaminated condenser causes reduced cooling performance, causes the refrigeration unit to overheat and can even cause damage to the compressor.



Instructions for cleaning the condenser:

1. Remove the ventilation grille or the condenser protection (screen, furniture cover).
2. Remove dirt by vacuuming with a vacuum cleaner. Ensure that fins are not bent.
3. Attach the ventilation grille, the furniture cover, etc.



NOTE

Wear protective gloves when cleaning.

NOTE

The condenser's supply and exhaust air openings must not be sealed or blocked by objects, as otherwise, the cooling performance could be impaired or, in the worst case, the compressor could be destroyed.



CAUTION

Risk of cutting injuries

The condenser's fins are very thin and sharp. Avoid direct contact with the fins in order to prevent injuries. Wear appropriate protective equipment.

4.1.6 CLEANING THE NIGHT SHUTTER

The night shutter (depending on the model) must be cleaned weekly as described in [section 4.1.1](#). Only the cleaning agents specified in [section 4.1.2](#) are permissible for cleaning the unit. Depending on the model, the night shutter may be designed to be mechanical or electric (see [section 2.1](#)). For information on operating units with cold storage, see [section 3.2.2](#).

NOTE

Technical modifications to the unit may only be made by authorised specialists! This applies particularly to work on cooling installations, the electrical installation and the mechanical system.

All modifications must be authorised by the manufacturer!



Example illustration

4.1.7 CLEANING THE COLD STORAGE

NOTE

To clean the cold storage, follow the enclosed operating manual.

The cold storage (depending on the model) must be cleaned weekly. Also observe the instructions in [section 4.1.1](#) and [section 4.1.8](#). Only the cleaning agents specified in [section 4.1.2](#) are permissible for cleaning the unit.

To clean the cold storage, remove the required drawers from the unit.

Proceed as follows:

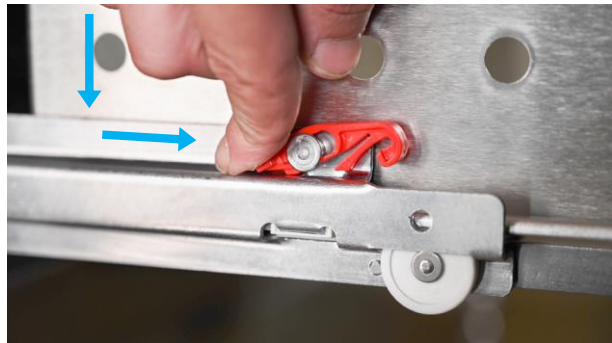
1

Pull out the pull-out until it reaches the stop



2

Release the lock on the guide rails.



3

Lift the drawer by approx. 5 cm so that it can be detached.



4

Clean the base tray (collection cup) below the evaporator.



NOTE

Removing the drawer improves access to the evaporator that is inside. We recommend inspecting or cleaning the evaporator at the same time. Follow the instructions for cleaning the evaporator as specified in the enclosed operating manual for the base.

Once cleaning is complete:

1. Attach the drawer to the guide rails and close it completely.
2. Lift the pull-out and attach it again (see figure 2).
3. Push the pull-out in and close it.

4.1.8 CLEANING THE DRAWER INCL. EVAPORATOR UNIT

To clean the refrigerated well including the evaporator unit, remove the drawer from the unit.

1

Pull out the pull-out until it reaches the stop



2

Lift the drawer by approx. 5 cm so that it can be detached.



3

Lift the evaporator, use the locking pins to release the attachment on both sides.



4

Clean the base tray (collection cup) below the evaporator.



Once cleaning is complete:

1. Lift the evaporator, release the locking pins on both sides.
2. Lift the pull-out and attach it again (see figure 2).
3. Push the pull-out in and close it.

NOTE

Only the cleaning agents specified in [section 4.1.2](#) are permissible for cleaning the unit.

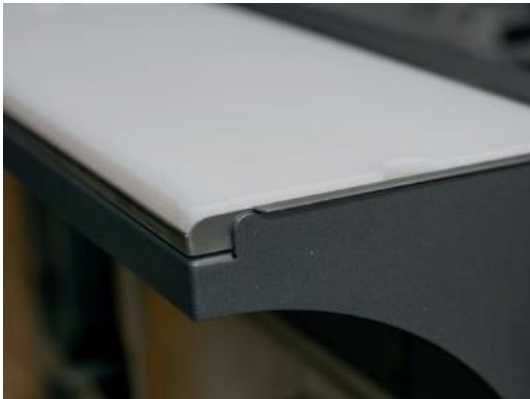
4.1.9 CLEANING THE CHOPPING BOARD

The chopping board comprises a removable nickel-chromium steel cup with one or several poly-hygiene inserts. The poly-hygiene inserts can be removed from the nickel-chromium steel cup for easier cleaning.

When the swing doors are detached, the entire chopping board including the nickel-chromium steel cup can be removed to the side and lifted out of the guide.

1

Chopping board support attached, mirror below.



2

Lift the chopping board attachment out of the fixture.



3

Remove the chopping board support.

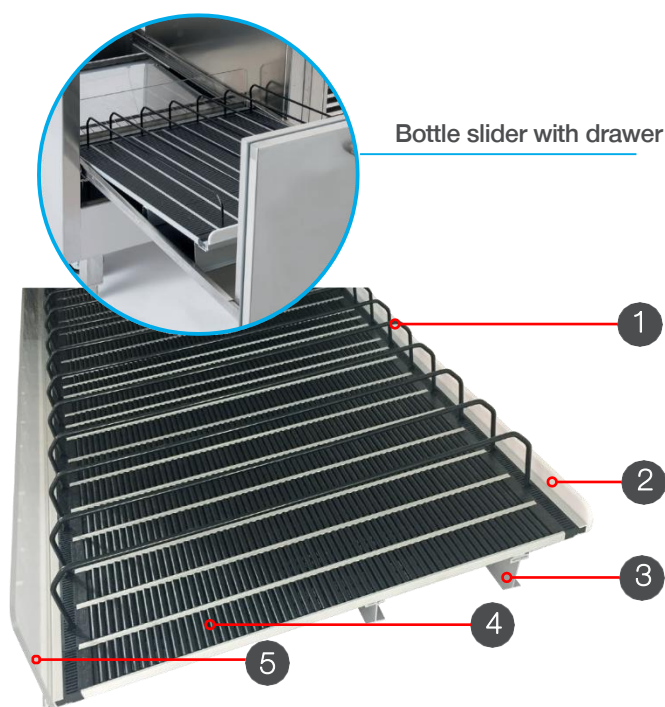


4.1.10 CLEANING THE BOTTLE SLIDER (FLEXROLLER)

NOTE

Only the cleaning agents specified in [section 4.1.2](#) are permissible for cleaning the unit. After cleaning, all parts must be rinsed with clear water and then dried in order to prevent residues.

On units with a drawer (depending on the model), proceed as described in [section 4.1.8](#) in order to be able to remove the Flexroller system completely. Re-insert the Flexroller (with raising profile depending on the model) including the acrylic front glass and the PVC rear pane. Attach the separators according to the inserted products.



NO.	Designation
1	Product separator
2	PVC rear pane (serving side)
3	Raising profile made of aluminium (depending on the model)
4	Flexroller (depending on the model)
5	Acrylic front pane (customer side)

**CAUTION**

Impact hazard on the units during assembly, cleaning and servicing work
Pay attention to possible impact hazards on the unit.

**WARNING**

Risk of crushing and danger due to falling objects when handling/adjusting/positioning individual components
Pay attention to potential risks of crushing, also for third parties, when handling objects. Use both hands if possible when handling objects. Wear protective gloves and safety shoes when handling/adjusting/positioning heavy individual components.

4.1.11 CLEANING THE RETRACTABLE HOT GAS DEFROST WATER EVAPORATOR

The cleaning instructions provided must be used for the hot gas defrost water evaporator and for the electrical defrost water receptacle (optional accessory).



DANGER

Danger due to electrical voltage on live components

The power supply must be disconnected before all cleaning and servicing work. To do this, unplug the cooling unit or disconnect it from the mains at all poles.



CAUTION

Be careful of hot surfaces when opening the defrost water evaporator

Switch the unit off prior to cleaning work. Burns may occur when touching the hot gas line while switched on. Wait a while until the lines have cooled down.



WARNING

Impact hazard on the units during assembly, cleaning and servicing work

Pay attention to possible impact hazards on the unit.



WARNING

Risk of crushing and danger due to falling objects when handling/adjusting/positioning individual components

Pay attention to potential risks of crushing, also for third parties, when handling objects. Use both hands if possible when handling objects. Wear protective gloves and safety shoes when handling/adjusting/positioning heavy individual components.

NOTE

Only the cleaning agents specified in [section 4.1.2](#) are permissible for cleaning the unit. After cleaning, all parts must be rinsed with clear water and then dried in order to prevent residues.

Take the following steps when cleaning the hot gas evaporator receptacle:

Wear protective gloves when cleaning.



NO.	Designation
1	Lock
2	Guide handle



1. Use the controller to switch the unit off and pull the mains plug out of the socket properly or disconnect the unit from the mains at all poles.
2. Push the lock (**No.1**) up with one hand. Push the guide handle (**No.2**) forwards with one hand. The defrost water evaporator receptacle lowers.
3. Remove the defrost water evaporator receptacle, empty and clean it. Please use only the cleaning agents specified in [section 4.1.2](#) to do this.

NOTE

Ensure that no water spills when removing the defrost water evaporator receptacle. Wipe up any spilled water in order to prevent damage to the unit.

4. Re-insert the emptied and cleaned defrost water evaporator receptacle. Ensure that hot gas evaporator receptacle is pushed in completely when doing so.
5. Raise the guide handle with both hands and push in to the rear. The defrost water evaporator receptacle must be flapped up completely.
6. Check the lock. It must be closed.

NOTE

Units with hot gas evaporators may only be operated when the defrost water evaporator receptacle is pushed in completely and closed.

7. Switch the unit on.

NOTE

On units with hot gas evaporators that are not hinged, access is provided by maintenance flaps/covers in order to be able to clean them properly.

4.1.12 CLEANING THE ELECTRICAL DEFROST WATER RECEPTACLE (OPTIONAL ACCESSORY)

The cleaning instructions provided must be used in addition to the instructions provided for the hot gas defrost water evaporator.



Example illustration

NOTE

Further cleaning instructions are provided in the enclosed operating manual for the defrost water receptacle and must also be followed.



CAUTION

Danger due to electrical voltage on live components

The power supply must be disconnected before all cleaning and servicing work. To do this, unplug the cooling unit or disconnect it from the mains at all poles.

Take the additional steps when cleaning the electrical defrost water receptacle (optional accessory):

Points 1 and 7 for the hot gas evaporator receptacle also apply to the following steps:

- Remove any contamination from the defrost water receptacle and clean it thoroughly (including the heating rods and float gauges). Only use permissible cleaning agents as specified in [section 4.1.2](#).
- Check that the float gauges move freely.

NOTE

The electrical defrost water receptacle cannot be removed from the base without special tools. Cleaning must be performed when it is installed.

4.1.13 CLEANING THE DRAIN PIPE (INCL. WATER SEAL)

On units that are connected to the wastewater network, the drain pipes including the water seal (depending on the model) must be rinsed with hot water so that possible contamination and germs are removed.

On units that have a defrost water evaporator (hot gas or electrical) the drain pipe can be removed from the defrost water receptacle depending on the model. Rinse these with hot water. Drain the cleaning water into a suitable container.



CAUTION

Fasten the drain pipe to the defrost water receptacle

Ensure that the tray including the water seal and the drain pipes are re-attached to the defrost water receptacle properly after cleaning. Water can escape. There is a risk of slipping.

4.2 MAINTENANCE INSTRUCTIONS

To ensure that the unit functions properly and provides the best possible presentation area, the unit must be inspected and maintained on a regular basis. Each unit was tested in accordance with the "Routine test, EN 60335-1 Annex A" in the factory. Manufacturer recommendation: annual subsequent test by the owner in accordance with VDE 0701-0702.



DANGER

Danger due to electrical voltage on live components

The unit must be disconnected from the mains supply (using the main switch or by disconnecting at all poles) until the maintenance, inspection and repairs are complete. Inadvertent restarts must be prevented.

NOTE

Maintenance work to be performed by the operating staff or owner only applies to the work listed in [section 4.3](#).

NOTE

Technical modifications to the unit may only be made by authorised specialists! This applies particularly to work on cooling installations, the electrical installation and the mechanical system.

All modifications must be authorised by the manufacturer!

Repair and maintenance manuals are available by scanning the following QR code:



<https://shop.ideal-ake.at/>

If you do not have a QR code reader (scanner), all documents are available in the downloads area on the manufacturer's website or you can contact your supplier or specialist dealer.

4.3 MAINTENANCE AND SERVICING INTERVALS

Always comply with the listed maintenance work in order to ensure that your unit continues to function, and expand this work if necessary.

Component / assembly	Work	Interval
Tray including drain (water seal)	Visual and functional inspection	Daily
Thermal bridge (supplementary heat)	Visual and functional inspection	Daily
Black glass plate	Visual and functional inspection	Daily
All glass (including swing doors, side glass, etc.)	Visual inspection	Daily
Defrost water collection basin, hot gas evaporator	Visual and functional inspection	Daily
Electrical defrost water receptacle (depending on the model)	Visual and functional inspection	Daily
Mechanical damage to all other components on the unit	Visual and functional inspection	Daily
LED lighting, night shutter	Visual and functional inspection	Weekly
Cold storage, extendible drawer (depending on the model)	Visual and functional inspection	Weekly
Condenser (contamination, damage)	Visual and functional inspection	Weekly
Mechanical damage to all other components on the unit	Visual and functional inspection	Weekly
Gas pressure absorber – evaporator unit, black glass plate (depending on the model)	Visual and functional inspection	Monthly

Repair and servicing manuals are available from the manufacturer on request.

4.4 CHECKING THE GAS PRESSURE ABSORBER



DANGER

Danger due to faulty gas pressure absorber

Check the gas pressure absorber monthly to ensure that it is functioning properly. Replace it if it is faulty.

4.5 CHECKING THE COOLING CIRCUIT

All cooling units are equipped with cooling circuits in which tried and tested components are used. Each unit is checked for leak-tightness and refrigerant loss during a final inspection in the factory (self contained models).

NOTE

Whether a time-based inspection of the cooling circuit must be performed in accordance with regulations depends on the relevant country-specific guidelines and regulations.

The owner is obliged to perform legally-prescribed inspections on-time.

The manufacturer is not liable for any damage due to missed inspections.

4.6 SPARE PART PROCUREMENT

Each unit is provided with a type plate (see [section 1.7](#)). In order to ensure that you order the correct spare part for your unit, inform your supplier or specialist dealer of the unit data listed or order the required spare parts directly from the manufacturer's online catalogue. The type, serial number and date of manufacture details are required for allocation.

Spare parts are available at:



<https://shop.ideal-ake.at/>

5 DECLARATION OF CONFORMITY



EC Declaration of Conformity

in accordance with EU Directive 2006/42/EC and 2014/30/EU

Manufacturer: Ausseer Kälte- und Edelstahltechnik GmbH
Pichl 66, 8984 Bad Mitterndorf, AUSTRIA

Product: Combination display cases
See section 1.3

Year of construction: As of 2023

We hereby confirm that the aforementioned products comply with the Machinery Directive 2006/42/EC and the EMC Directive 2014/30/EU. It complies with the basic requirements of the Machinery Directive 2006/42/EC and the significant requirements of the EMC Directive 2014/30/EU, RoHS 2011/65/EU and (EU) 2019/2018*. The required technical documents were compiled and archived. The versions of the following harmonised standards that were valid at the time were applied:

EN 60335-1:2012

Household and similar electrical appliances - Safety - Part 1: General requirements
EN 60335-1:2012 + AC:2014 + A11:2014 + A13:2017
(IEC 60335-1:2010, modified)

EN 60335-2-49:2003**

Household and similar electrical appliances - Safety - Part 2-49: Particular requirements for commercial electric hot cupboards to keep foodstuffs warm and tableware
EN 60335-2-49:2003/AC:2007 + EN 60335-2-49:2003/A11:2012 + A2:2019
(IEC 60335-2-49:2002 + A1:2008 + A2:2017)

EN 60335-2-89:2010*

Household and similar electrical appliances - Safety - Part 2-89: Particular requirements for commercial refrigerating appliances with an incorporated or remote refrigerant condensing unit or compressor
EN 60335-2-89:2010 + A1:2016 + A2:2017
(IEC 60335-2-89:2010)

EN 378-2:2016*

Refrigerating systems and heat pumps - Safety and environmental requirements - Part 2: Design, construction, testing, marking and documentation

EN ISO 12100:2011

Safety of machinery - General principles for design - Risk assessment and risk reduction
(ISO 12100:2010)

In the event of technical modifications to the aforementioned product, which were not approved by the manufacturer, this EC Declaration of Conformity becomes invalid.

Bad Mitterndorf, 2023



Andreas Pilz (CTO)

NOTE

Please observe any supplementary sheets to this operating manual and the corresponding declaration of conformity!

For more information, contact the manufacturer!

*only applicable to the cool area

**only applicable to the heat area

