CONTAINERIZED TYPE OF COLD STORAGES

TECHNICAL DETAILS AND MANUAL

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Containerized cold storages;

You can put it wherever you wish; you can transfer or rent it as it is movable. There are plenty of advantages for you provided by its mobility.

Mounting and demounting fixed-type panel cold carriages are pretty costly; furthermore they become deformed when mounted more than once. Thus, many enterprise owners, especially fishery companies prefer mobile containerized cold storages.

Portable containerized cold carriages are compliant to international transportation standards and they have no protrusions outside of the container dimensions. Therefore they provide ease of handling.

The net aperture of the door on the panel isolation is 90 cm x 190 cm. It is net transitive. The visible surface material on isolation panels is Polyester painted Galvalum sheet iron. The mounted cooling equipments are able to run properly even in tropical conditions.

PRODUCTION RANGE

Type *Model*	Temperature Range *Celcius*	Refrigeration Capacity *watt (-10 Evap)*	Refrigeration Capacity *watt (-30 Evap)*	Power Input *Hp*	Displacement *cm3/h*	Energy *Power Supply*	Exterior Dimensions *W x L x h*	Approx. Weight *~kg*
RFR10-DBL	+4C to -23C	5.000 w.	2.000 w.	2 HP	53,2 cm3/h	380 V / 50Hz.	10ft Container	2250 kg.
RFR20-DBL	+4C to -23C	6.500 w.	3.200 w.	3 HP	74,25 cm3/h	380 V / 50Hz.	20ft Container	3000 kg.
RFR30-DBL	+4C to -23C	7.000 w.	3.550 w.	4 HP	92,4 cm3/h	380 V / 50Hz.	30ft Spc.Container	4000 kg.
RFR40-DBL	+4C to -23C	11.500 w.	5.600 w.	7 HP	134,8 cm3/h	380 V / 50Hz.	40ft Container	5400 kg.
RFR10-COLD	0C / +4C	2.100 w.	-	1,1 HP	24,2 cm3/h	220 V / 50Hz.	10ft Container	2250 kg.
RFR20-COLD	0C / +4C	3.900 w.	-	2 HP	43,5 cm3/h	380 V / 50Hz.	20ft Container	3000 kg.
RFR30-COLD	0C / +4C	5.100 w.	-	2,5 HP	56,65 cm3/h	380 V / 50Hz.	30ft Spc.Container	4000 kg.
RFR40-COLD	0C / +4C	7.700 w.	-	4,5 HP	100,7 cm3/h	380 V / 50Hz.	40ft Container	5400 kg.
RFR10-FROST	-18C / -23C	-	2.000 w.	2 HP	53,2 cm3/h	380 V / 50Hz.	10ft Container	2350 kg.
RFR20-FROST	-18C / -23C	-	3.200 w.	3 HP	74,25 cm3/h	380 V / 50Hz.	20ft Container	3200 kg.
RFR30-FROST	-18C / -23C	-	3.550 w.	4 HP	92,4 cm3/h	380 V / 50Hz.	30ft Spc.Container	4000 kg.
RFR40-FROST	-18C / -23C	-	5.600 w.	7 HP	134,8 cm3/h	380 V / 50Hz.	40ft Container	5600 kg.

TECHNICAL SPECIFICATIONS OF PANEL COMPONENTS:

Panels:

The walls and ceilings of rooms are isolated be polyurethane prefabricated sandwich panels.

Our panel thickness is 80-100 mms for cold storage areas, while 120-150 mms for deepfreeze areas.

Polyurethane heat transmission coefficient is 0,025 W/mK pursuant to DIN 4108.

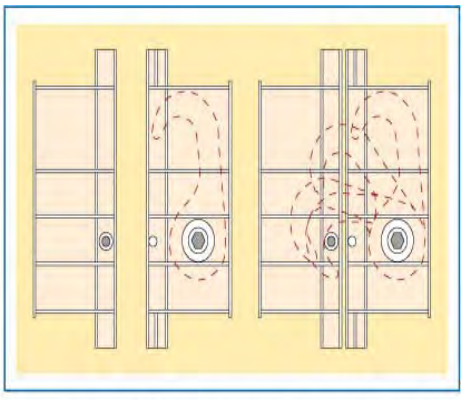
Panels are composed of polyurethane filled panels with 40 kg/m3 (± 5 %) density between two panels. Panels are B3 fire type in accordance with DIN 4102, while B1 fire type in accordance with TS 11989 Part F.

Both of the visible surfaces of wall and ceiling panels are hot-dip galvanized sheets painted with 0.50 mm thick polyester based paint with a color code of RAL 9002. The inner surface of the sheet has epoxy primer. The whole invisible surfaces (sections behind the walls and upper surfaces of the ceiling panels) are composed of solely hot-dip galvanized sheets.

Panels are intermeshed in a male-female form and have eccentric locks. So they can be demounted when necessary. It is composed of lockable panels.

Panels of the cold storages are sheathed by film to be removed after assembly.

Special accessories produced by the same surface material with the panels are used in panel corner joints.



Tavan ve Duvar panelleri çift geçmeli olup ayrıca kilitle birbirlerine bağlanmaktadır.

Wall and Ceiling panel have double connection, and also they are locked for beter connection.

Hinged-Type Cold Storage Door:

Door Leaf: 42 (+/-2) density polyurethane is injected between two panels.

Door Thickness: 92 mms for normal cold storages. Suspension system: Carrier Rail, Wheels, Pull Handles and necessary accessories are made of composite materials and stainless steel.

Surface Sheet: Both sides of the standard production leaf are made of PVC sheet. It can be polyester painted or CrNi optionally.

Door Frame: External frame is made of special PVC, while internal frame is made of aluminum.

Thermal Bridge: It has a single-line special rubber seal encompassing door leaf of normal Storage Rooms. Frames of Frozen Storage Room Doors have resistors which can be easily replaced when necessary.

Dimensions: Dimensions will be 90 x 190 cm. Monorail transition can be added in accordance with the provided dimensions. It is applicable to panels and normal walls.

Surfaces of the doors are collinear with panel surfaces.

Floor Isolation:

Floor is isolated by panels covered with plywood. Visible surface is made of 12 mm, nonslip, non-humectant, hygienic, maintenance friendly plywood having surface layers made of original birch tree and having brown upper parts and nonslip texture and covered by phenolic resin laminat with 240 kg/m² density. Invisible lower surface is made of hot-dip galvanized sheet with a thickness of 0.50 mm.

Floor panels are resistant to 2.000 kg/m² fixed and 175 kg/m² movable loads.

TECHNICAL SPECIFICATIONS OF COOLING EQUIPMENTS :

Cooling groups are produced under a CE certificated quality assurance system.

All cooling equipments we use in our production are high-technology products of globally leading brands.

Components are produced by means of the machinery having CNC technology.

Our cooling groups are manufactured in accordance with the European Safety Standards and have CE marking. .

CE

Compressor group:

Hermetic and semi-hermetic reciprocating compressors are used in our cooling groups depending on the required capacity. Compressors enable high cooling efficiency with a low noise level and reduced power consumption under nominal operating conditions. Our compressor groups are offered in cassette form made of oven-painted galvanized sheet painted. .

Other equipments of the system:

- Pressurestat for preserving High-Low Pressure (combined pressurestat).
- Vibration absorbers on compressor input-output line.
- Safety valve liquid tank.
- Pressurestat for preserving compressor oil pressure (in 12 HP and higher models).
- Sight glass with moisture indicator.
- High-capacity dehumidifiers (driers).
- Ball valves not causing depression falls in copper pipes.
- Oil separator (in frozen systems and multi-evaporator systems).
- Oil filter (in systems having oil separators).
- High and low pressure indicators enabling ease of maintenance on external units (glycerin -type manometers)
- Liquid trap (suction accumulator).

The materials and parts mentioned above are being chosen used in accordance with the system requirements.

Evaporator:

Features of the air cooled evaporators are as follows:

- The heat transfer surface is composed of aluminum wings having a waved form laid over the triangularly arranged copper pipe bunch.

- Evaporate fans are European-origin and high-efficiency axial fans having IP55 protected conduit boxes.

- High quality resistor bars are used for defrost and they are settled in empty copper pipes for obtaining the maximum efficiency and endurance.

- The fan and the clipped electrical terminals are collected in IP55 protected plastic box.

- There is a system composed of by-pass tray, drainage tray and drainage hose for an easy discharge of evaporator defrost liquid.

- Furthermore, a tail resistor is added for tray resistor and drainage hose for evaporators of frozen rooms.

- 1 piece of solenoid valve to be mounted on evaporator input pipe are mounted together with Expansion Valve.

- Our evaporators are in cassette form made of RAL 9010 (white) color electrostatic powder painted hot-dip galvanized sheets.

Defrost:

Ice created in between evaporator lamellas are melted by the heat generated by the electrical resistor. When the ice melted completely, the sensor of the digital control system senses the situation and defrost process stops. So the system switches into cooling mode again. Defrost frequency and time can be adjusted in accordance with the practice. Our industrial cooling groups sweep the gas through evaporator prior to deactivation (Pump-Down System).Evaporator fans does not run during defrosting. Pump-Down System is standard for models higher than 7H.

Condenser:

- Our air cooled condensers are high level condensers optimized in accordance with the most efficient triangular arrangement and air capacity and are operating readily in even tropical climates by means of their minimum pressure drawdown.

- Heat transfer surface is composed of inflated copper pipes and aluminum wings over these.

- Condenser fans are Europe-origin highly efficient axial fans and have IP55 protected conduit boxes.

- Condenser pressure is kept constant by providing AUTOMATICALLY CONTROLLED fan operation. Thus, the system performance is not affected by ambient conditions.

This system is implemented especially for cold climates.

Piping:

The whole piping system is composed of copper pipes engineered specifically for cooling industry.

Welded corners are not utilized in pipes with diameter up to 1-1/8" and other small diameter pipes are uniformly bended. All welding treatments in necessary places are performed by certificated welder by using high quality welding materials.

Impermeability chemicals engineered especially for the cooling industry is used for all bushed connections.

Cabling:

Certificated cables are used for all electrical connections with appropriate diameters and sections.

Power Switchboard:

Our industrial cooling groups are manufactured with power switchboards ready on external units. Each power switchboard is composed of a safe and durable electrostatic powder painted hot-dip galvanized sheet case and the equipments in this case. Unless otherwise requested, it is mounted onto the cooling group. Electrical equipments are composed of components compliant to European safety norms and have CE marking.

- Main fuse, various contactors and relays, adjustable thermals
- Voltage control relay (with +/- 10% tolerance)
- Various indicator lights
- Emergency stop button, numbered clips

Remotely Controlled Panel:

An Intelligent Warning System available in each cooling equipment offers basic control functions for the user. A high safety standard is achieved by means of high or low temperature alarms as well as other safety alarms.
Our control panels are available in 3 separate languages and provide alarms at the undesired upper and lower temperature limits. User has an opportunity for an early interfere for ensuring the product safety by realizing this visual lighted alarm even he is not in the room. Moreover, all of our systems are optionally controlled by dual microprocessors and all temperature changes are tracked and recorded.

Intelligent temperature alarm (Flash Light) provides convenience for the user. There shall be blue continuous LED light when the normal operation is within the desired upper and lower “safe” temperature limits. Lower and upper temperature limits for the operation are provided entirely programmed for the alarm indicator.

The blue LED is on to indicate the acceptability of the measured temperature. When the measured temperature gets out of the interval between the upper and lower temperature limits LED turns to red. Alarms become active in colored flashes in both directions and warn the user by attracting attention.

Lighting:
Waterproof armatures in appropriate quantities and power for providing sufficient lighting are used. Lighting cables are hided under the panel. Systems compliant to European quality standards are used for lighting. There is a waterproof switch near the door or lighting is provided alternatively by sensor-fitted lighting systems, so the user does not need to turn on and off the light.

Testing:
Electrical switchboards of our industrial cooling groups are being tested in compliance with European safety norms. Furthermore evaporator and condenser sections are being subjected to leak tests by pressured nitrogen individually and delivered with nitrogen. Equipments are started up, temperatures are observed for a certain period of time and all controls are conducted after completing the whole process.

Packaging:
Our industrial containerized storages are safely loaded and delivered on your vehicle. They are shipped ready to operate subsequent to making adequate energy connection after unloading.