

Brochure

MCR Modular Cold and Freezer Rooms



Modular Step-in Cold and Freezer Rooms



The solution

The need of standard rooms is very versatile. New construction sets different needs compared to alteration and renovation work. The Porkka MCR walk-in room adapts to the customer's needs both in terms of cooking and space use, providing the most environmentally friendly, cost-effective and safe solution for modern professional kitchens.

Space reservation for the installation site

MCR's unique solution is designed to use as little space as possible, with a protrusion of 128 mm. The free space required to open the door is 160 mm more than the width of the door opening. The protrusion of the door handle extends 130 mm from the front wall.

A ventilation gap (cold rooms 50 mm, freezer rooms 100 mm) must be left around the cold room to improve air exchange and facilitate installation. The ventilation and installation required above the cold room is 50 mm.

Assembly site floor

The surface of the site must be level. The evenness requirement is $\pm 1 \text{ mm} / 1 \text{ m}$.

Cold room floor

MCR rooms are equipped with insulated non-slip floor elements as standard. Cold rooms (C) can be supplied without floor elements.

Freezer rooms (F) and medium temperature rooms (M) are always delivered with an insulated floor element. Floors can be embedded in the floor of the assembly site or an optional ramp can be provided.

Freezer room's underfloor heating

A heating cable against the installation floor is recommended on the underside of the floor elements of the freezer rooms. The heating prevents the accumulation of moisture (see figure).

Remote Heat Disposal System

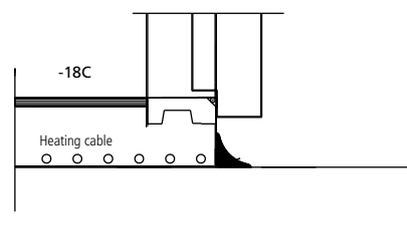
Our RHDS[®] technology allows the heat generated by the refrigeration pod to be disposed of quietly and efficiently outside. The RHDS[®] system consists of an RHDS[®] unit that is connected with plastic pipes to a separate external liquid condenser.

How to re-use the heat

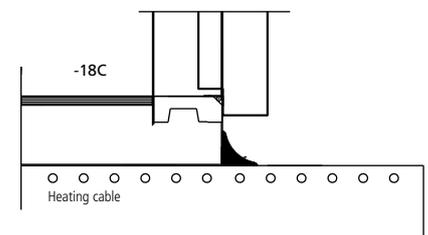
The heat load of the MCR consists of the heat delivered from the ambient, products stored and the room itself. This energy can be easily re-used in the building itself. Porkka offers several energy recycling solutions (see page 7).

The WHE system is intended to be connected to the property's condensate water system, reducing the property's total energy consumption.

Underfloor heating

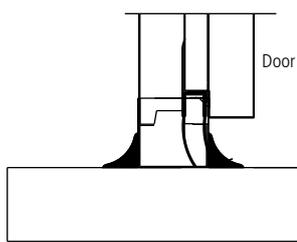


MCR underfloor heating solution keeps the cold inside the cold room and does not allow moisture to build up inside or outside the ground floor.

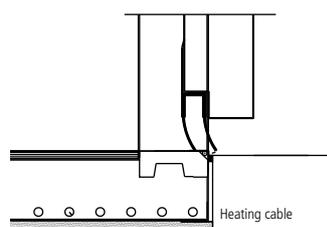


MCR underfloor heating is always highly recommended for freezer rooms, even if underfloor heating is already installed in the property due to possible seasonal outages or other timings.

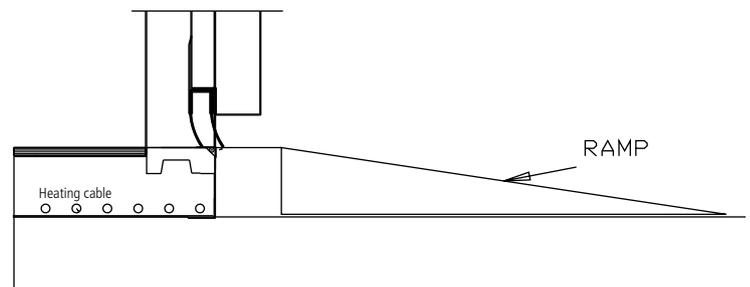
Floor options for trolley use



Without floor



Recessed floor element



Floor element and ramp on the floor of the building

Modular Step-in Cold and Freezer Rooms

General information

Cooling units produced in our own factory have been designed to be both powerful and energy efficient. Digital temperature displays have built-in high/low alarms which are both audible and visual. These can be connected via a volt free relay to a building management system. The controller is also equipped with HACCP features to meet the more stringent temperature monitoring regulations being enforced.



Carefully planned materials and details

Porkka rooms are produced from modular HFC/HFC -free polyurethane insulated panels which are moulded with male / female joints and held by eccentric action cam-locks, giving great all-round strength. The visible exterior surfaces of the panels are coated with durable scratch resistant polyester. Insulation thickness with excellent thermal efficiency is 80 mm as standard with an option of 100 mm for freezer application, if required.

Doors are semi-rebated and supplied with heavy duty hinges and a lockable door handle with emergency entrapment release. Thresholds and surrounds are produced from durable stainless steel with a heater supplied for freezer application. Doors are already pre-mounted on a panel for ease of assembly in the field.

Floors, when supplied, are insulated and have a strong marine plywood surface, which is coated with a non-slip glass fibre resin. Load limit for a standard floor max. 40 kN/m² or max 1,0 kN/per 40 mm castor. Heavy duty floor with stainless steel surface available as an additional accessory.

An ultra-hygienic shelving system allows the operator to wash individual shelves in a commercial dishwasher whilst larger dimensions increase storage areas within our rooms. Select from our extensive range, for a room to suit your requirements.

- Three temperature ranges:
C: +2 to +8°C (+12°C) adjustable in increments of 1°C for chilled produce. **M** for the storage of fresh meat or fish use -2 to +5°C and for frozen select **F** -18 to -22°C.
- Insulation options of either 80 or 100 mm.
- Select floorless chill rooms for trolley operation. (Chill temperature only).
- Medium and freezer rooms must be supplied with a floor which can be either recessed or with a ramp if a trolley is required.
- Cooling units can be manufactured for placement either to the left or right hand side of the door and can also be made for connection to a central cooling system.
- Door opening is available either left or right hinged. Threshold door opening can be changed in the field if required (expect 1200 / 1350 wide rooms)
- All doors are equipped with door switch to ensure energy efficient and safe use.
- Standard external height 2100 mm (note 2140 mm if 100 mm insulation selected) or 2400 / 2440 mm.
- 4 tier fully adjustable shelving is supplied for either 2 or 3 walls depending on model selected. Standard shelves are made of ABS-plastics which is classified as food safe and can be washed in a commercial dishwasher. Stainless steel shelves are available as an additional accessory.

Control unit, equipment, safety

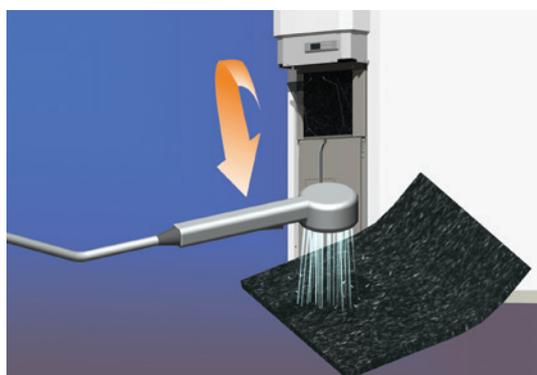
Combined digital temperature display with built-in control functions

- | | | |
|---|------------------------------------|---|
| 1. Compressor RUN light | 5. Temperature/information display | 9. Light switch button with light to indicate ON mode |
| 2. Automatic defrost in operation light | 6. Temperature adjustment button | 10. ON/OFF Stand-by mode button |
| 3. Evaporator fan RUN light | 7. Manual defrost button | 11. Humidity control button (C models only) |
| 4. Alarm activated light | 8. Settings button | 12. Probe display button |



Alarm functions

The Porkka temperature display is supplied with a built-in high/low temperature alarm which is both audible and visual and can also be connected to a building management system by means of a volt free connection.



Air-cooled condenser dust filter

The air inlet to the condenser is on the lower part of the refrigeration unit, ensuring the coolest air is always used helping to reduce running costs and extending the service life of the unit. The dust filter behind the air grill is easy to clean or replace. The controller provides information on when the filter requires cleaning or changing.

Safety

The room is safety equipped according to EN378 recommendations. The door has a lockable pull with an internal safety release. The door frame of the freezer room has a heating element that prevents the seal from sticking.

Standard rooms are intended to be installed indoors only. Ambient temperature must always be higher than + 10 C.



Trolley operation

To facilitate the use of trolleys, chill rooms can be supplied without a floor. In this instance, the room is erected on an insulated plinth. If insulated floor element is essential, it is possible to recess the floor, or, if above ground, supply an optional ramp (see pg. 3).

Shelving system

The Porkka modular cold room shelving system is highly practical and easy to clean. Standard shelving delivery includes four (4) tier dishwasher safe polycarbonate (food safe) inserts and supporting material. Shelving is supplied for either 2 or 3 walls dependent on model selected. Stainless steel shelving system is available as an option.

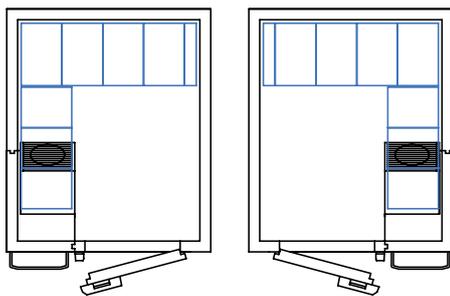
Modular Step-in Cold and Freezer Rooms

Porkka modular cold rooms are the ideal choice for the storage of perishable products.



A large comprehensive range with volumes up to 22 m³

Porkka Modular Step-in Rooms are available in a range of 81 different sizes with volumes from 1.2 m³ up to 22 m³. The rooms are available in three temperature variations with optional insulation thickness and external heights. When this is combined with unit positions and door options, our range is truly massive. Porkka is the perfect partner to work with as we are bound to have a storage solution to suit your requirements.



1518 L

1518 R

Units can be ordered for left or right hand positioning

All Porkka Chiller & Freezer Rooms can be placed next to each other. The refrigeration unit can be placed on the left front side (standard) or on the right front side if required.

- L** = Refrigeration unit left side, door opening right hand hinged
- R** = Refrigeration unit right side, door opening left hand hinged

Price list EXW Finland, EUR VAT 0 %

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RHDS® remote heat disposal system, WHE water heat exchanger and central cooling connection (CC)

Specially equipped MCR cold and freezer storage rooms

Porkka Remote Heat Disposal System RHDS®

EU F-gas regulation forbids to use traditional refrigerants with GWP ≥ 2500 for new installations (e.g. R404A) from the beginning 1st January 2020. It makes installing of traditional HFC remote units impossible. Nevertheless, the need for professional working people for better working conditions has not disappeared.

The RHDS® system offers a modern solution. It improves the working environment's comfort by moving the heat collected by the refrigeration equipment away from the kitchen. In addition, the RHDS® system is quieter than conventional equipment. Compared to conventional machinery, the heat collected by RHDS® can easily be re-used to heat corridors, hallways or the like.

The equipment consists of a Porkka RHDS® unit with cold-technical properties matching the standard Porkka rooms. The installation is easy, the refrigeration unit is connected to the remote RHDS® condensing unit with traditional water pipes.

After assembly, fill the system with a frost-proof water-glycol mixture. The collected heat is transferred by liquid from the refrigerant to a separate condenser.

The maximum pipe length per pipe between units must not exceed 20 meters with a standard pump. The distance plunger trip can be extended, if necessary, with optional power pumps.

POWER PUMPS	HORIZONTAL DISTANCE (max)	HEIGHT DIFFERENCE (max)	PIPE LENGTH PER PIPE (max)
STANDARD PUMP	15 m	5 m	20 m
HEAVY-DUTY PUMP PICO 25/1-8	30 m	10 m	40 m
EXTRAHEAVY-DUTY PUMP MAXO	45 m	15 m	60 m

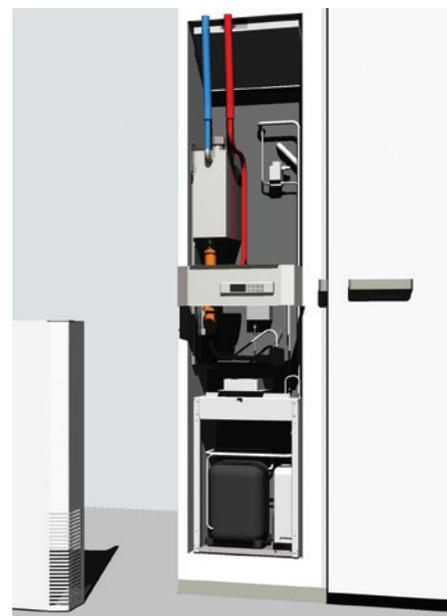
Porkka Water Heat Exchanger (WHE)

The WHE system is similar to Porkka RHDS® unit the difference being removal of header tank and pump. Water pipes are then connected into the constructions condensed water systems. The typical usage of condense water is from 120 to 240 l/h ($T_{in} + 10^{\circ}\text{C}$, $T_{out} + 17^{\circ}\text{C}$).

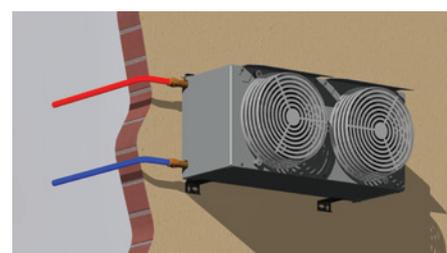
The condensate water inlet temperature T_{in} is adjustable between 0 ... + 40 °C, which affects water consumption. The WHE system is silent and enables easy heat recovery and recycling.

Central Cooling Connection (CC)

The cooling unit that comes with Porkka's CC-model rooms can be connected to the property's central refrigeration unit. The units for the MARK 5 Series R744 are supplied with an electronic expansion valve based on stepper motor technology.



The Porkka RHDS® unit is equipped with a refrigerant-to-liquid heat exchanger. Waste refrigeration heat is transferred to the water solution where it is circulated to the condenser where the heat is given up to the ambient air.



The RHDS® outdoor unit can be placed freely on the wall or under the eaves. The unit should be protected from direct sunlight.

Note! RHDS and WHE are available in limited freezer models (F). For more information, see page 11

Modular Step-in Cold and Freezer Rooms



Size options

There are hundreds of options for standard Porkka MCR rooms

	Depth 900	Depth 1200	Depth 1350	Depth 1500	Depth 1800	Depth 2100
Width 1200	 1209 * (1,4 B)	 1212 * (1,8 A)	 1213 * (2,3 A)	 1215 * (2,6 A)	 1218 * (3,1 A)	 1221 * (3,7 A)
Width 1350	 1309 * (1,6 B)	 1312 * (2,3 B)		 1315 * (2,9 A)	 1318 * (3,6 A)	 1321 * (4,2 A)
Width 1500	 1509 * (1,7 B)	 1512 (2,6 B)	 1513 (2,9 B)	 1515 (3,5 A)	 1518 (4,0 A)	 1521 (4,8 A)
Width 1800	 1809 * (2,2 B)	 1812 (3,1 B)	 1813 (3,6 B)	 1815 (4,0 B)	 1818 (5,0 A)	 1821 (5,9 A)
Width 2100		 2112 (3,7 B)	 2113 (4,2 B)	 2115 (4,8 B)	 2118 (5,9 B)	 2121 (6,9 A)
Width 2400		 2412 (4,3 B)		 2415 (5,5 B)	 2418 (6,7 B)	 2421 (8,0 B)
Width 2700		 2712 (4,9 B)		 2715 (6,1 B)	 2718 (7,6 B)	 2721 (8,9 B)
Width 3000		 3012 (5,4 B)		 3015 (7,0 B)	 3018 (8,5 B)	 3021 (10,1 B)
Width 3300					 3318 (9,5 B)	 3321 (11,2 B)
Width 3600					 3618 (10,3 B)	 3621 (12,3 B)

* Available in 80 mm insulation thickness only

Price list EXW Finland, EUR VAT 0 %

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Depth 2400	Depth 2700	Depth 3000	Depth 3300	Depth 3600
1224* (4,3 A)	1227* (4,9 A)	1230* (5,4 A)		
1524 (5,5 A)	1527 (6,1 A)	1530 (7,0 A)		
1824 (6,7 A)	1827 (7,6 A)	1830 (8,5 A)	1833 (9,5 A)	1836 (10,3 A)
2124 (8,0 A)	2127 (8,9 A)	2130 (10,1 A)	2133 (11,2 A)	2136 (12,3 A)
2424 (9,0 A)	2427 (9,0 A)	2430 (11,6 A)	2433 (12,9 A)	2436 (14,2 A)
2724 (10,4 B)	2727 (11,8 A)	2730 (13,3 A)	2733 (14,7 A)	2736 16,0 A
3024 (11,6 B)	3027 (13,3 B)	3030 (14,9 A)	3033 (16,4 A)	3036 (18,0 A)
3324 (12,9 B)	3327 (14,7 B)	3330 (16,4 B)		
3624 (14,2 B)	3627 (16,0 B)	3630 (18,0 B)		

** Special shelf layout, height 2400

 1833**
(9,5 A)
 1836**
(10,3 A)

MCR Refrigeration units

The standard room with MK 5 refrigeration unit is an excellent choice for professional use. Its new generation refrigeration unit is efficient and environmentally friendly.



Porkka offers today the most environmental-friendly solutions for remote condensing cold rooms with natural refrigerants. The RHDS® is a compact solution for small and medium size operators. The WHE offers the possibility to recycle and re-use the heat in the building's HVAC. Porkka solutions are cost-effective and reliable.

The refrigerant chosen is R290 refrigerant, a natural hydrocarbon. It offers high performance combined with a very low 'Global Warming Potential' (GWP 3) making this Porkka MK 5 cooling unit the optimum solution.

Even more important are the massive energy savings. In tests we have achieved up to 33% reduction in electrical consumption compared to the traditional refrigerants used.

This will save users of Porkka MK 5 modular cold and freezer rooms, vast amounts of operating costs, over the life cycle of the equipment.

CC R744 & CC R452A

Mark 5 CC Mark 4 CC	C950 C940	C1250 C1240	M950 M940	M1250 M1240	F851 F840	- F1140	F1551 F1541
Temperature range	+2°C ... +12°C	+2°C ... +12°C	-2°C ... +12°C	-2°C ... +12°C	-22°C ... -18°C	-22°C ... -18°C	-22°C ... -18°C
Volume	< 12 m ³	< 22 m ³	< 12 m ³	< 22 m ³	< 11 m ³	< 14 m ³	< 22 m ³
Ambient temperature	+5°C ... +32°C						
Refrigerant Mark 5 Refrigerant Mark 4	R744 R452A	R744 R452A	R744 R452A	R744 R452A	R744 R452A	- R452A	R744 R452A
Evaporation temperature	-8°C	-8°C	-10°C	-10°C	-28°C	-28°C	-28°C
Cooling effect	1330 W	1900 W	1240 W	1800 W	1200 W	1430 W	2025 W
Connection power	0,35 kW	0,41 kW	1,32 kW	1,83 kW	1,32 kW	1,83 kW	1,83 kW
Fuse	1 x 10 A	1 x 16 A	1 x 16 A	1 x 16 A			

The Mark 5 CC includes an electronic expansion valve with controls.
R744 maximum allowable operating pressure PS 60bar.

PLUGIN R290 & R455A

	C950	C1240	M950	M1240	F840	F850	F851	F1140	F1541
Temperature range	+2°C ... +12°C	+2°C ... +12°C	-2°C ... +5°C	-2°C ... +5°C	-22°C ... -18°C	-22°C ... -18°C	-22°C ... -18°C	-22°C ... -18°C	-22°C ... -18°C
Volume	< 12 m ³	< 22 m ³	< 12 m ³	< 22 m ³	< 11 m ³	< 5 m ³	< 11 m ³	< 14 m ³	< 22 m ³
Connection power (plug-in)	0,81 kW	1,07 kW	1,20 kW	1,62 kW	1,42 kW	1,43 kW	1,42 kW	1,91 kW	2,19 kW (2,27 kW)
Connection power H2O *	0,73 kW	0,99 kW	1,12 kW	1,54 kW	1,33 kW	1,35 kW	-	1,83 kW	2,08 kW (2,16 kW)
Connection power RHDS®*	0,86 kW	1,13 kW	1,26 kW	1,68 kW	1,48 kW	1,48 kW	-	1,97 kW	2,27 kW (2,35 kW)
Fuse	1 x 10 A	1 x 10 A	1 x 10 A	1 x 16 A	3 x 10 A				
Voltage	230 V / 50 Hz	230 V / 50 Hz	230 V / 50 Hz	230 V / 50 Hz	400V/50Hz 3-Ph (220V 3-ph N)				
Ambient temperature	+5°C ... +32°C	+5°C ... +32°C	+5°C ... +32°C	+5°C ... +32°C	+5°C ... +32°C				
Refrigerant	R290	R455A	R290	R455A	R455A	R290	R290	R455A	R455A
Level of sound pressure 1m / 1,5 m (dB re 20 µPa)	53 dB (A)	53 dB (A)	53 dB (A)	53 dB (A)	55 dB (A)	55 dB (A)	55 dB (A)	58 dB (A)	59 dB (A)
Level of sound pressure 1m / 1,5 m (dB re 20 µPa) RHDS®	49 dB (A)	49 dB (A)	49 dB (A)	49 dB (A)	51 dB (A)	51 dB (A)	-	54 dB (A)	55 dB (A)
RHDS® liquid condenser	RHDS® 2160	RHDS® 2160	-	RHDS® 2160	2 x RHDS® 2160				
Fluid condenser acoustic pressure at location 10m (dB re 20 µPa)	34 dB (A)	34 dB (A)	-	34 dB (A)	37 dB (A)				
Permitted temperature range at fluid condenser location	-40°C ... +35°C	-40°C ... +35°C	-40°C ... +35°C	-40°C ... +35°C	-40°C ... +35°C				

* Maximum allowable pressure PS 60 bar.

Price list EXW Finland, EUR VAT 0 %

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Porkka MCR selection table

	1209	1212	1213	1215	1218	1221	1224	1227	1230		
	(1,4 B)	(1,8A)	(2,3A)	(2,6 A)	(3,1 A)	(3,7 A)	(4,3 A)	(4,9 A)	(5,4 A)		
2,1											
2,4											
	1309	1312	1315	1318	1321						
	(1,6 B)	(2,3 B)	(2,9 A)	(3,6 A)	(4,2 A)						
2,1											
2,4											
	1509	1512	1513	1515	1518	1521	1524	1527	1530		
	(1,7 B)	(2,6 B)	(2,9 B)	(3,5 A)	(4,0 A)	(4,8 A)	(5,5 A)	(6,1 A)	(7,0 A)		
2,1											
2,4											
	1809	1812	1813	1815	1818	1821	1824	1827	1830	1833	1836
	(2,2 B)	(3,1 B)	(3,6 B)	(4,0 B)	(5,0 A)	(5,9 A)	(6,7 A)	(7,6 A)	(8,5 A)	(9,5 A)	(10,3 A)
2,1											
2,4											
	2112	2113	2115	2118	2121	2124	2127	2130	2133	2136	
	(3,7 B)	(4,2 B)	(4,8 B)	(5,9 B)	(6,9 A)	(8,0 A)	(8,9 A)	(10,1 A)	(11,2 A)	(12,3 A)	
2,1											
2,4											
	2412	2415	2418	2421	2424	2427	2430	2433	2436		
	(4,3 B)	(5,5 B)	(6,7 B)	(8,0 B)	(9,0 A)	(10,4 A)	(11,6 A)	(12,9 A)	(12,4 A)		
2,1											
2,4											
	2712	2715	2718	2721	2724	2727	2730	2733	2736		
	(4,9 B)	(6,1 B)	(7,6 B)	(8,9 B)	(10,4 B)	(11,8 A)	(13,3 A)	(14,7 A)	(16,0 A)		
2,1											
2,4											
	3012	3015	3018	3021	3024	3027	3030	3033	3036		
	(5,4 B)	(7,0 B)	(8,5 B)	(10,1 B)	(11,6 B)	(13,3 B)	(14,9 A)	(16,4 A)	(18,0 A)		
2,1											
2,4											
	3318	3321	3324	3327	3330						
	(9,5 B)	(11,2 B)	(12,9 B)	(14,7 B)	(16,4 B)						
2,1											
2,4											
	3618	3621	3624	3627	3630						
	(10,3 B)	(12,3 B)	(14,2 B)	(16,0 B)	(18,0 B)						
2,1											
2,4											

C950, M950, F850

C950, M950, F840, F851

C1240, M1240, F1140

C1240, M1240, F1541

NOTE!! Porkka RHDS® or Porkka WHE are not available for freezer rooms using the F851 refrigerator.

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PORKKA

Porkka is an internationally recognised designer and manufacturer of professional refrigeration solutions. Key target industries include HoReCa, Medical and Research and Marine. Porkka's products are well known on its long life cycle, high quality and technical advantage.

Porkka is a brand of the Festivo-Porkka Group. Porkka brand is well known for its quality and reliability throughout the world. The success of Porkka is based on decades of experience, customer focused design and continuous product development. The materials used in Porkka products are as recyclable and eco-friendly as possible. The recyclability of our product is more than 95%.



Porkka solutions are designed and manufactured according to a quality standard ISO 9001:, controlled and certified by LRQA. Porkka also hold the environmental certificate ISO 14001:2015, issued also by LRQA. Festivo-Porkka Group reserves the right to make any changes without prior notice.