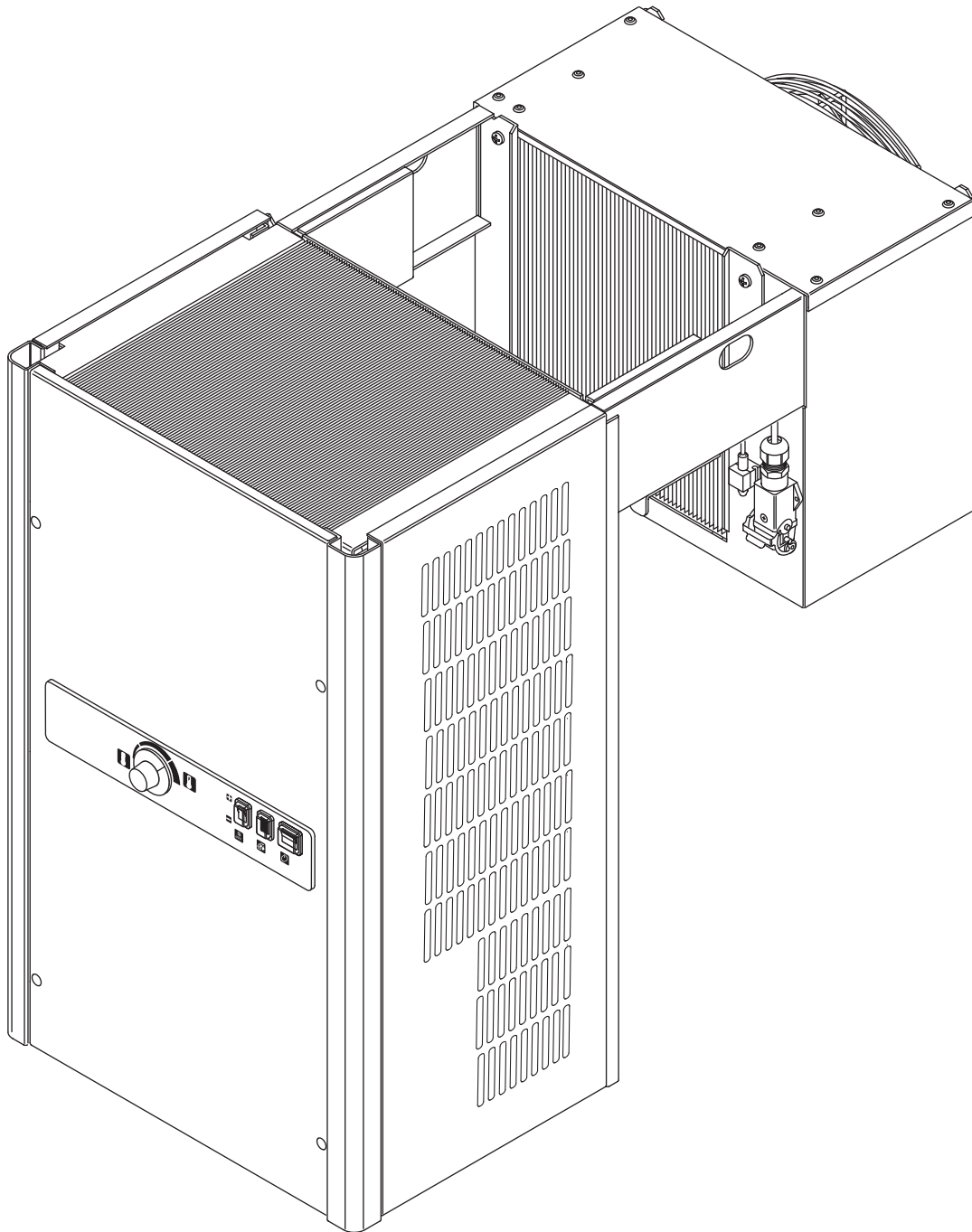


**Refrigeration units
with thermostatic control
TectoRefrigo WMC1
TectoRefrigo WMF1**



Please read carefully the following prior to beginning work on the refrigeration unit:

Assembly, maintenance, cleaning and repair may only be done by companies specialising in refrigeration technology.

Technical changes and manipulation are prohibited.

In case of non-compliance our guarantees are void.

Work on the refrigeration unit may only be carried out if the plug is removed from the power supply. Suitable warnings must be posted to prevent the refrigeration unit from being restarted while work is in progress. The regulations of VDE 0105 Part 1 - for work on electrical equipment must be observed.

General notice (liability): the details of this technical documents serve for description. Consents regarding the availability of certain features or regarding a certain purpose always require a special written agreement.

1. Description

1.1 Deep-freeze unit

TectoRefrigo WMF1 0900, WMF1 1400, WMF1 1800, WMF1 2400

1.2 Refrigeration unit

TectoRefrigo WMC1 0500, WMC1 0900, WMC1 1300, WMC1 2000, WMC1 2800

2. Conditions of guarantee

3. Installation space

4. Energy savings

5. Norms and regulations

6. Doorswitch

7. Cleaning and maintenance of the refrigeration unit

8. Disposal of refrigerant

9. Operation of control

9.1 Temperature control

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9.3 Defrosting

9.4 Refrigeration units TectoRefrigo WMF1

9.5 Refrigeration units TectoRefrigo WMC1

9.6 Storage

9.7 Deactivating refrigeration unit

9.8 Operation of defrosting timer

10. Trouble shooting

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12. Recommended storage values for deep freezers

1. Description

1.1 Deep-freeze unit

TectoRefrigo WMF1 0900, WMF1 1400, WMF1 1800, WMF1 2400

The equipment is designed for cooling of refrigeration rooms in which goods are stored between -1°C to -25°C.

1.2 Refrigeration unit

TectoRefrigo WMC1 0500, WMC1 0900, WMC1 1300, WMC1 2000, WMC1 2800

The equipment is designed for cooling of refrigeration rooms in which goods are stored between +3°C to +19°C.

2. Conditions of guarantee

- Within the period of guarantee, defects resulting from poor workmanship or materials problems will be repaired free of charge.
- Other claims, in particular for follow up damages are excluded.
- Damage and functional problems caused by improper handling or non observation of operating instructions, are not covered by guarantee.
- The guarantee is invalidated if the cooling circulation system is opened by unauthorized personnel, if there is interference in the system, or if the serial number on the machine is changed or rendered unreadable.

3. Requirements for installation area / Intended use

- The area of installation must be well ventilated and may not be heated.
- Direct heat radiation on the refrigeration unit must be avoided. This could result in higher use of energy.
- For economical operation the ambient temperature should be between +5°C to +25°C.
- There must be sufficient space in front of the ventilation openings to guarantee proper ventilation: at least 250 mm in front of all suction and exhaust openings.
- According to BGR 500, chapter 2.35 or local regulations for operation and maintenance. (qualified staff)

4. Energy savings

- Do not install refrigeration unit near any source of heat; high temperatures in the surroundings cause the refrigeration unit to switch on too often.
- Direct sunlight increases energy use.
- Avoid unnecessary and long opening of the door.
- Monitor storeroom temperature.
- Clean refrigeration unit regularly. Clean equipment saves energy and increases life time.
- Observe cleaning intervals (See section „Cleaning and maintenance of refrigeration unit“). Regular maintenance prolongs product life.

5. Norms and regulations

At the time of its production, the refrigeration unit was manufactured and inspected according to valid norms and regulations.

It complies with the
EMC Directive 2004/108/EC,
machinery directive 2006/42/EG.

The unit has been inspected at the factory for refrigeration circulation leakage and for function.

6. Doorswitch

If a doorswitch is installed on the unit using the multiple pole plug, the separating clamp (R) between sections 15 and 16 on the thermostat must be pulled. To do this the front panel of the refrigeration unit and the cover strip on the thermostat housing must be removed.

7. Cleaning and maintenance of the refrigeration unit



Attention!

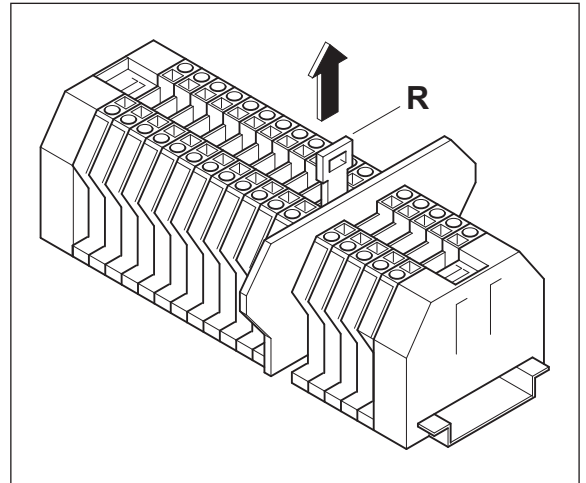
When cleaning work is being done, remove the plug from the power supply and ensure that it cannot be reinserted until the work is done.

- The refrigeration unit should be inspected periodically and cleaned if necessary. Depending on the degree of cleaning necessary, the time until the next inspection must be determined. The intervals between cleaning depend on the conditions of the surroundings.
- The condenser and evaporator can be cleaned either with a soft cleaning brush, by compressed air, or in case of oil deposits, using a compressed air cleaner. Do not use any pointed or sharp objects. The fins may also not be bent or damaged.

8. Disposing of coolant

If the refrigeration unit must be replaced by another one, ensure that the pipes on the refrigeration unit are not damaged, allowing coolant to be released.

Defective refrigeration units must be disposed of in an environmentally friendly manner observing the regulations applying.



9. Operation of control

9.1 Temperature control (A)

The temperature in the coldroom is regulated using the knob of the thermostat.

9.2 Humidity switch (B)

Using this switch, the relative humidity in the coldroom can be regulated by controlling the running time of the evaporation ventilator.

- + The evaporation ventilator runs together with the condenser. Low relative humidity.
- Evaporation ventilator runs permanently. High relative humidity.

9.3 Defrosting (C)

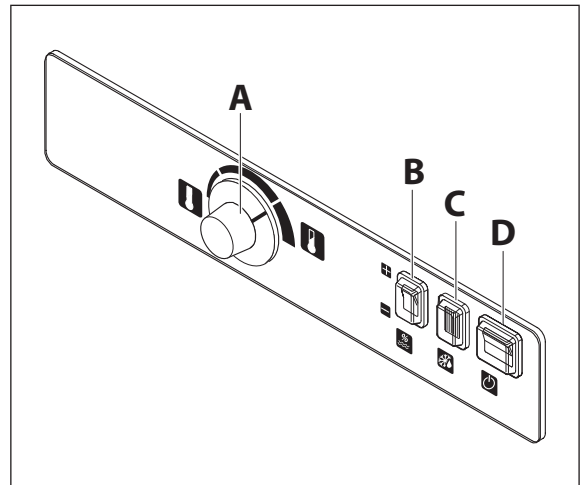
The defroster light is on during defrosting. Defrosting can be set for a particular defrost cycle and defrost time.

9.4 Refrigeration units TectoRefrigo WMF1

The electrical defrosting system is switched off by a temperature safety switch when the appropriate defrosting temperature is reached and the refrigeration unit returns to normal cooling operation when the defrosting time set has elapsed.

9.5 Refrigeration units TectoRefrigo WMC1

Defrosting is done by air circulation. The compressor and condensation ventilators are not in operation, and the evaporator is running. The refrigeration unit returns to normal cooling operation when the defrosting time set has elapsed.



9.6 Storage

When the desired storage temperature has been reached in the coldroom, the refrigerated goods can be brought in. Then the temperature in the coldroom should be checked again, and corrected using the knob on the thermostat.



Note:

So that the temperature does not rise too far, warm products should be cooled off to room temperature (20 °C) prior to storage.

9.7 Deactivating refrigeration unit (D)

If the coldroom is to be taken out of operation, turn off the ON/OFF switch.

If the coldroom is to be out of operation for longer periods, or for maintenance and cleaning work, the plug should also be pulled to separate the coldroom from the power supply.

9.8 Operation of defrosting timer



Attention!

Prior to working on the timer, remove refrigeration unit plug from power source!

The defrosting timer is accessible when the front plate of the refrigeration unit is removed, as well as the thermostat knob and the cover of the regulator housing.

Manual initiation of the procedure:

Turn the left disc clock wise until the switch lever next to the switch stop. Defrosting will start and will stop after the period of time set on the right disc.

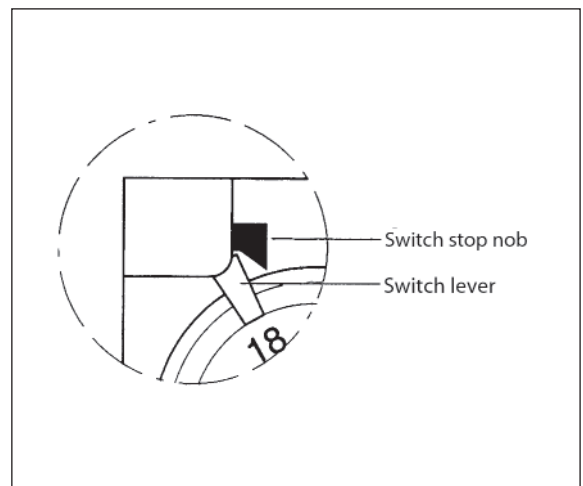
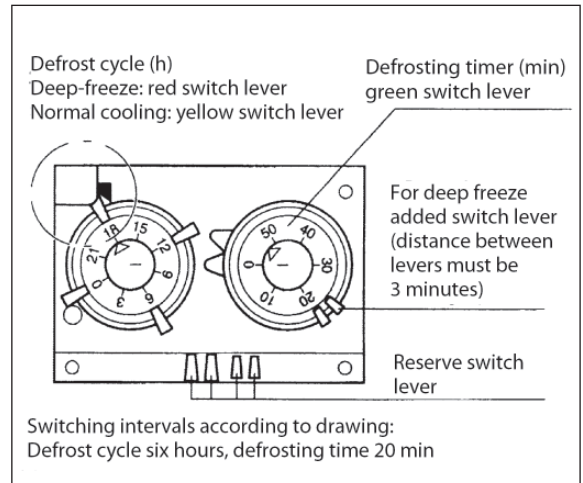
Setting defrosting time:

Left disc with red or yellow switch levers:

- Determine intervals in hours at which the defrosting, will be started.

Right disc with green switch levers:

- Determine length of defrosting time in minutes.
- For deep freeze units, a second switch lever will be mounted on the right disc at an interval of 3 minutes to the first to delay switching on.



10. Troubleshooting

Problem	Cause	Remedy
Refrigeration unit is not running	Plug not inserted Power supply interrupted Regulator defective	Check plug and fuses. If no problem is found, contact specialist.
Unit is constantly running	Coldroom is filled to capacity	Store less, or at a higher temperature (Observe storage dates and shelf-life of stored goods).
	There is too much in store, or the goods are too warm, or the door of the coldroom has been open too long.	Store less, or allow warm goods to cool-off to room temperature before storage.
	Ambient temperature too high.	Lower ambient temperature.
	Suction and exhaust vents are blocked, and the heat cannot be released.	Maintain minimum free space of 250 mm in front of all openings.
	Evaporator is dirty. Condenser is dirty.	Clean fins with brush and vacuum cleaner. Attention! Do not bend fins.
Unit runs constantly and evaporator has ice deposits	Door has been open too long.	Open door only for brief intervals.
	Uncovered fluids are stored in the cell.	Cover fluids.
	Defrosting cells are not optimum.	Initiate manual defrosting. If necessary, shorten the defrosting cycle, or, if the evaporator is still icy after defrosting cycle, extend defrosting time (9.8). For refrigeration units for above-zero applications, switch humidity switch to (+) (9.2).

11. Recommended storage values for coldrooms (recommended standard values)

Stored goods	Temperature in °C	Relative humidity in %
Meat		
Fresh meat	-1/+1	85 - 90
Cooked sausage	+1/+3	80 - 85
Fresh poultry	-1/+1	85 - 90
Fresh venison	-2/+2	70 - 85
Fish		
Fish, fresh from ice	0/+1	90 - 100
Conserved fish	0/+1	75 - 80
Milk and dairy products		
Milk	0/+2	80 - 85
Butter	-1/+4	75 - 80
Soft cheese	0/+2	80 - 85
Swiss cheese	+2/+4	70
Vegetables		
Lettuce	0/1	85 - 90
Cauliflower	-1/0	90
Ripe tomatoes	0/+1	80 - 90
Spinach	-1	90
Cucumbers	0/+4	85
Asparagus	+1	85 - 90
Fruit		
Apples	-1/+3	90 - 95
Pears	-1/+2	85 - 90
Cherries	-1/+1	90
Strawberries	-1/+1	90
Bananas	+12	85

12. Recommended storage values for deep-freezers (recommended standard values)

Stored goods	Temperature in °C	Relative humidity in %
Meat		
Frozen meat	-15/-18	85 - 90
Frozen innards	-15/-18	85 - 90
Fresh bacon	-18/-22	85 - 90
Sausage	-18	90
Venison	-12/-18	80 - 90
Cleaned poultry	-12	85 - 90
Fish		
Frozen, oily fish	-23/-25	90 - 95
Frozen, lean fish	-20	90 - 95
Frozen filets	-23/-25	90
Dough		
Bread	-18	90
Rolls	-18/-20	80
Cake	-18	85 - 90
Small cakes, cookies	-18	85 - 90
Cream cakes	-18	85 - 90
Butter, long-term	-10/-20	80 - 85
Frozen vegetables	-18/-23	85
Fruit	-23/-25	80 - 90

Values taken from ‚Pohlmann‘,
Pocketbook on Refrigeration Technology, Vol. 2;
Breidenbach, Refrigeration Spezialist, Vol. 1

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