



Masterliner ZB/4/5

INSTALLATION AND SERVICE MANUAL
VERSION IH ZB-4-5 SAFEWAY 20000914

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1 Warnings.

PLEASE READ THIS MANUAL BEFORE STARTING THE INSTALLATION.

- **The numbers shown in the texts refer to the illustrations at the back of this manual.**
- Check that all components have been delivered and inspect for damage.
- Check all packages and make sure there are no components in them before disposing of them.
- Fastening material, such as connecting plates, screws and the like, is supplied in a separate box where necessary.
- Before starting the installation, check that all lines and cables are properly and safely connected (electricity, water, etc.).
- By law, service and maintenance of the refrigeration system must be performed by a qualified engineer and must comply with the standards and laws applicable in the country in question.
- Evaporators are supplied under nitrogen pressure. Make sure the nitrogen pressure has been relieved before the pipes are opened (see warning label).
- Follow the instructions indicated and displayed (manuals, stickers, etc.).
- **When using the glass panels:**
 - Make sure the panel bolt is released and only then, open the glass. Failure to do this could result in broken panels or damage aluminium profiles, since the locking mechanism is housed in the latter.
 - Guide the panels to their limit positions.
 - Do not force the panels beyond their limit positions.
 - Do not allow them to drop open or closed.
 - Remember that panels are breakable and must be handle with due care!
 - When cleaning the counter, do not leave the panels open at the same time. Only open every second panel.
- **Cleaning:**

ALWAYS TURN THE MAIN SWITCH OFF BEFORE CLEANING.

The main switch is located in the decorative panel.

- Do not spray water on the fans!
- Do not spray water on the control panels!
- Do not spray water on the lighting fixtures or connections or the plug connections!
- Do not spray water on machines in lower cooling sections!
- Do not spray water inside equipment spaces!

- **Connections:**

All connections on the counter, such as electricity, drainage and coolant pipes, must be made by skilled staff. This is required by various laws. Commissioning should also be done by skilled staff.

The manager is legally obliged to ensure that the (STEK) logbook is filled in.

- **Stickers:**

The stickers attached to the counter must not be removed. These are stickers for:

- Identifying the counter (manufacturer / serial number, etc.).
- Warning stickers.
- Stickers referring to the statutory standards (STEK regulations, compression pressures, refrigerant type, etc.).
- Stickers with mounting instructions.
- CE marking stickers.
- Stickers in the form of machine plates (see chapter entitled Product Identification)

The units meet the latest standards, requirements and guidelines:

- Statutory (STEK) regulations.
- CE guidelines.

NB. In conformance with the European guidelines (and Dutch STEK regulations), the built-in evaporators are compressed with nitrogen and supplied under nitrogen overpressure.

2 Unloading the counter sections.

The counter has a sub-frame with omega profiles running across it.

All counters are supplied in modular sections of up to 2500mm. Depending on the layout, corners and the total length of the counter, one or more fastening operations will have to be carried out during the installation. The counter is delivered on wooden transport beams (1), making it easier to move the counter and reducing the chance of damage.

2.1 Unloading

The counter should be unloaded from the lorry using a fork-lift truck or, if none is available, a high-lift truck in combination with the lorry's unloading trap. Be sure to check that the fork-lift truck and the high-lift truck can take the weight of the counter sections (check the maximum lifting weight!).

Note: **When unloading, keep in mind other people's and your own safety. Place marker signs on the road (warning triangle, warning signs, etc.) or get someone to warn other road users.**

Insert rollers or trolleys beneath the wooden beams supporting the counter and/or counter sections and move to roughly the required position.

These trolleys can easily be put in place and removed using the following tools:

- A rack-and-pinion jack

Use the rack-and-pinion jack to raise the counter so that the trolleys can be placed under it. The rack-and-pinion jack, in combination with the trolleys, is particularly suitable in confined spaces where there is not enough room to use a fork-lift truck or pallet truck.

Once the counter is in the required position, remove the trolleys or rollers one by one from under the counter (for example by means of the rack-and-pinion jack). Now remove the wooden transport beams (1).

When the transport beams (1) have been removed, the counter is supported on the adjustable feet (2). Now place the counter in its final position and level it by turning the adjustable feet (2); this affects the height of the worktop. Do not set the counter unnecessarily high, but remember to allow for the course of the floor before setting it.

2.2 Levelling.

Now level the next sections and connect them one by one (see chapter entitled "Connecting the counter"). When doing this, make sure the counter stays in the correct position with regard to the rear wall and any lighting cove.

If several counter sections are connected together, check afterwards to make sure that all the sections are still level and in line. This is because the fastening and adjustment operations can cause the counter sections to shift again, particularly if corner sections are involved, **so check**.

WARNING:

If after the transport beams have been removed the counter needs to be moved, all the lock nuts on the adjustable feet (2) must be tightened.

Once the counter is in its final position and has been levelled, all the lock nuts on the adjustable feet (2) must be secured. This is necessary to ensure stability.

Levelling is possible only at the following points on the counter:

1. For the longitudinal direction of the counter:
 - On the longitudinal beams of the sub-frame. (3)
2. For the transverse direction of the counter:
 - On the longitudinal beams of the sub-frame. (4)
3. For crowd end cabinets:
 - On the back panel of the counter. (5)

The crowd end cabinet must be placed as last cabinet. Move it towards the already placed cabinets and then mount the Boston bumper.

3 Connecting the counter sections.

3.1 Furniture-related connection of the counter sections.

1. Place the first counter section in the correct position.
2. Now position the next counter section to be connected as close as possible to, but not touching, the other counter section and “set” it. Do not cement the sections to be connected! The seal is obtained by the sealing tape (6) being compressed during the connection operation.
3. Then slide the second counter section against the first and pull them together by inserting the draw bolts in the holes provided for them (6) in the uprights and tightening the nuts.
4. The fastening operation can be simplified by pulling the counter sections together using tie rods. Take care that no parts are damaged while the rods are being tightened.
5. Pull the rear walls together by inserting the coupling bolts through the uprights via the holes provided for them (6) and then tightening by means of the nuts supplied. This assembly position can be attained by first removing the rear wall panels of both units at the gable-end positions.
6. The crownend counter must be placed at last counter. Position the counter near the already placed counters and ‘set’ it. Then slide the counters toward the already placed cabinets using tie rods. When properly placed, mount the Boston bumper rail.

3.2 Refrigeration connection of the counter sections.

Every counter section of up to 2.5 metres has its own expansion valve. The length of 2.5 metres applies to R404a. Other gas coolants on request.

The cooling pipes in the counter sections (i.e. the fluid and suction pipes) are coupled together in the shell under the shelves. These pipes are fitted with a filler nipple and a warning sticker (in 4 languages) and are under nitrogen pressure.

Note: When cutting through the pipe, first relieve the nitrogen pressure by means of the filler nipple provided. The pressure demonstrates that the system is gas-tight.

3.3 Connection of the sanitation facilities.

The drainage pipes, 40mm-diameter PVC, must be connected at the point where the connections leave the underside of the counter(7). Always make sure the diameter of the collecting main is sufficiently large for the water to run away quickly and without encountering much resistance. The collecting main must have adequate support, e.g. with brackets that can be fastened to the sub-frame.

4 Electricity.

The electrical components required (fans, valves, lighting, etc.) are operated by the switch box in the counter or counter sections.

The power supply and the control current cables should be connected in accordance with the instructions shown on the junction box and according to the details given on the circuit diagrams (located in the main switch box). The main junction boxes (8) are always located underneath the switch box.

4.1 Main groups.

Connection of the main power supply / supplies is performed as follows:

General main power supply:

(see also circuit diagram in the main switch box)
Junction box near main switch box.

5 Kickplates.

Once the counter has been connected and levelled, the stop profiles are placed underneath the adjustable feet (5).

For this it is important that the floor and the profiles should be made grease-free and treated with primer before the cement is applied.

After the cement has been applied, the kickplates are fastened onto the trestles of the sub-frame.

Make sure the kickplates are pressed down as far as possible.
Now remove any excess cement.

6 Glass panels.

6.1 Front panels.

The hinge-down panels require no adjustment!

- Make sure the panel bolt is released and only then open the glass. Failure to do this could result in broken panels or damaged aluminium profiles, since the locking mechanism is housed in the latter.
- Guide the panels to their limit positions
- Do not force the panels beyond their limit positions.
- Do not allow them to drop open or closed
- Remember that the panels are breakable and must be handled with due care!
- When closing the counter, do not leave all panels open at the same time. Only open every second panel!
- Remember that panels are breakable. And must be handled with due care!!!

6.2 Gable-end panels.

The gable-end panels in the counter are delivered ready-assembled. They require no adjustment.

6.3 Loads on panels.

The front panels must not be loaded. This means it is not permitted to place products and/or accessories on the panels.

7 Refrigeration

7.1 Air circulation.

The air is drawn by the fans out of the interior of the unit and through the outlet grilles near the front panel. It is led through the evaporator, where it is cooled. The cooled air leaves the evaporator at the rear and is then distributed. Some of the air leaves the pressure chamber via the perforated rear wall and passes over the shelves and the products. The rest goes via the inlet plates in the top of the unit and passes over the shelves and products.

The warmed air then arrives back at the outlet grilles (9).

7.2 Refrigeration.

The refrigeration is provided by an evaporator situated in the counter underneath the insert shelves. The evaporator is fitted with an evaporator plate, which lies on it. It must never be removed from the unit. The evaporator is fitted as standard with an expansion valve with external pressure equalisation, suitable for R404a (10).

7.3 Loading.

The maximum stacking height is indicated by the load-level line. However, always make sure there is sufficient space around the products, since refrigeration can only be guaranteed if there is enough air circulation throughout the unit. This means absolutely no products may be placed on the inlet grille!

7.4 Cooling capacities.

Cooling capacity: ZB\1\2: 800 W/m at $-10^{\circ}\text{C}/+25^{\circ}\text{C}$ and 60% RH

8 Control system and settings

8.1 Temperature control.

The ZB/4/5 cabinet is standard supplied with a JTL – LCPN control unit.

For a detailed description and the operation of these control units, see the separate user's manual for the control unit fitted in your counter.

The settings of the control unit can be changed with a remote control.

Like the main switch (11), the control unit is situated behind the decorative panel in the middle unit section (viewed from the consumer's side of the counter).

The control thermostat is situated in the switch box behind the front decorative panel. The temperature sensor for this thermostat is located in the rear wall.

A speed regulator ensures that the fans always operate at the correct speed. The speed regulator is situated in the main switch box.

8.2 Settings:

Control thermostat: Set point -5°C

Defrost times:

JTL-LCPN: 03: 00
07: 00
11: 00
15: 00
19: 00
20: 00
23: 00

Time limit: 00:15

Fan speed control: ZB/4: 180 VAC
ZB/5: 180 VAC

Cooling capacity: ZB/4 - ZB/5: 1000 W/m at $-10^{\circ}\text{C}/+25^{\circ}\text{C}$ and 60% RH

9 Fan maintenance.

BEFORE CLEANING and/or SERVICING, ALWAYS TURN THE MAIN SWITCH OFF IN THE COUNTER AND IN THE MACHINE ROOM

The counter main switch is situated in or behind the decorative panel.

- 1) Make sure that the unit, or to be precise the lower section, is empty, so that the removable shelves can be taken out.
- 2) The fan plate can be lifted out of the unit and may be placed on the evaporator plate. (12)
- 3) Cleaning and inspecting the fans:
 - Demount the fan blades and brush them clean in a bowl of lukewarm water.
 - Brush the fan plate clean.
 - Check that the motor shaft is able to turn smoothly. Lubricate the shaft at the top and bottom with a drop of oil. (Sump oil from cooling units can be used for this).
 - Remount the fan blades correctly.
 - If necessary, replace any defective fans by new ones.
- 4) When the respective main switches have been activated again, check that all fans are running and that the speed regulator is set to the correct voltage: ZB\4/5: 180VAC
- 5) Place the fan plate back into position in the unit.
- 6) Put the removable shelves back.

10 Product identification.

To provide you with rapid assistance in the event of questions or defects, the compartment near the unit's main switch box contains a sticker giving the most important data relating to the unit. Should information be required concerning a particular component or if a component is defective, copy the information shown on this sticker and pass it on to your installer; this will ensure rapid rectification of the problem.