Horizontal Bottle Coolers
Instruction Manual

-IMPORTANT SAFETY NOTICE-

This manual contains important safety instructions which must be strictly followed when using this equipment. Please retain this manual for future reference.

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IMPORTANT INFORMATION:

Esteemed user, Thanks for your choice!

In order to ensure your safety and achieve the best using effect, please read these instructions carefully. Keep this manual handy for further reference.

- ***This unit is intended to be used in a commercial application. That includes bars and restaurants.***
- ***The manufacturer has designed and produced this machine with the finest in materials. The manufacturer assumes no liability for units that have been altered in any way. Alterations or part substitutions will void the warranty.***
- ***The machine is designed for use indoors in a controlled environment. It must be kept dry, not overheated or subjected to excessive cold. May only be connected to a dedicated electrical circuit. Extension cords are not permitted***

MAIN TECHNICAL DATA:

RATED VOLTAGE (V)	115
RATED FREQUENCY(Hz)	60
TEMP RANGE	33~38℉

The appliance of nameplate of test room climatic class is 4 and 5. Class 4 is performed at an ambient temperature of 32 ° C ± 2 ° C. Class 5 is performed at an ambient temperature of 43 ° C ± 2 ° C.

CAUTION FOR SAFETY.

⚠WARNING

This This unit uses R-290 (propane) as a refrigerant. These hydrocarbon refrigerants are highly environmentally compatible but also are flammable and combustible. Please read this manual thoroughly before installing and operating the unit. Please take cautious measures to avoid risk of fire or explosion Leave enough space from the wall to the cabinet and the ceiling; do not be sealed completely in the back part of the cabinet, prepare an air vent to the outside.

WARNING: Do not use mechanical devices or other means to accelerate the defrosting process, other than those recommended by the manufacturer.

WARNING: Risk of fire or explosion. Flammable refrigerant used. To be repaired only by trained service personnel. Do not puncture refrigerant tubing.

WARNING: Risk of fire or explosion. Flammable refrigerant used. Consult repair manual/owner's guide before attempting to service this product. All safety precautions must be followed.

WARNING: Risk of fire or explosion. Dispose of properly in accordance with federal or local regulations. Flammable refrigerant used.

WARNING: Risk of fire or explosion due to puncture of refrigerant tubing; follow handling instructions carefully. Flammable refrigerant used.

WARNING: Keep clear of obstruction all ventilation openings in the appliance enclosure or in the structure for building-in.

WARNING: servicing shall be done by factory authorized service personnel, so as to minimize the risk of possible ignition due to incorrect parts or improper service.

WARNING: flammable refrigerant used! When handing, moving and use of the refrigerator, make sure to avoid either damaging the refrigerant tubing, or increasing the risk of a leak.
WARNING: Do not damage the refrigerating circuit.

WARNING: Do not use electrical appliances inside the food/ice storage compartments unless they are of the type recommended by the manufacturer.

WARNING: Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.

The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater.
Do not pierce or burn.
Be aware that refrigerants may not contain an outdoor

WARNING: - Keep all required ventilation openings clear of obstruction.

SAFETY INSTRUCTION

Safety Instruction
● If the SUPPLY CORD is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
● This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
Children should be supervised to ensure that they do not play with the appliance.
● Do not store explosive substances such as aerosol cans with a flammable propellant in this appliance.
● Flammable refrigerant used, this appliance is to be installed in accordance with the Safety Standard for Refrigeration Systems, ANSI/ASHRAE 15.



- The triangle warning sign means “warning; Risk of fire / flammable materials”
- Position on a flat, stable surface.
- A service agent/qualified technician should carry out installation and any repairs if required. Do not remove any components or service panels on this product.
- DO NOT use jet/pressure washers to clean the appliance.
- DO NOT use the appliance outside.
- DO NOT use this appliance to store medical supplies.
- DO NOT use electrical appliances inside the appliance.
- DO NOT stand or support yourself on the base, drawers or doors.
- DO NOT allow oil or fat to come into contact with the plastic components or door seal. Clean immediately if contact occurs.
- Bottles that contain a high percentage of alcohol must be sealed and placed vertically in the refrigerator.
- Always carry, store and handle the appliance in a vertical position and move by holding the base of the appliance.
- Always switch off and disconnect the power supply to the unit before cleaning.
- Keep all packing away from children. Dispose of the packaging in accordance with the regulations of local authorities.

⚠WARNING

- Leave enough space from the wall to the cabinet and the ceiling; do not be sealed completely in the back part of the cabinet, prepare an air vent to the outside.

Clearance:

- 3” -Left
- 0” -Right
- 3” -Rear
- 0” -Below

- the floor on which the Refrigerator is located must be even and level, free from vibrations, and strong enough to support the combined weights of the unit and maximum product load.
- Please move away all out-package for bottom heat radiation to avoid fire.
- It’s prohibited to store flammable and volatile chemical, or leading to exploding.
- Individual single-phase socket must be used. It should be reliably connected to a grounding wire.

CAUTION: DO NOT CONNECT GROUNDING WIRE TO A WATER OR GAS PIPE.

- Do not be hard collided or fiercely vibrated when in transportation; it is not larger than 45°for the inclination of the cabinet.
- Please refer to the Trouble Shooting references when the unit is facing some problems. Do not attempt to solve the problem on your own, please refer to certified

technician only.

INSTALLATION & USAGE NOTICE.

● Flammable refrigerant used, to minimize the risk of possible ignition due to incorrect parts, component parts shall be replaced with like components

● If the unit has not been stored or move in an upright position, let it stand upright for approximately 12 hours before operation. If in doubt allow to stand.

1. Leveling:

- Cabinets must be leveled when installed. Level should be measured on the headrail.
- Failure to level your cabinet may result in door not sealing, closing correctly, or condensed water draining not draining properly.
- For cabinets with casters, leveling can be achieved by placing large washers in between the ½' stud and the holes located on the bottom of the case.

2. Start up:

- Before operating your unit, please be sure that all casters are properly installed.
- Before using the appliance for the first time, clean the shelves and interior with soapy water.
- Plug the power cord into an adequate outlet, the unit will run and the cabinet will soon begin to become cold.

3. Set Temperature:

Push the SET key for more than 2 seconds to change the Set point value; The value of the set point will be displayed and the "°C" or "°F" LED starts blinking; To change the Set value push the o or n arrows within 10s.To memories the new set point value push the SET key again or wait 10s.

4. Temperature controller:

After turning on for the delay time (2 minute), the compressor starts when cold room temperature ≥set temperature + hysteresis, and will be off when cold room temperature ≤set temperature. To protect the compressor, it can re-start unless the time when the compressor stops every time is longer than the delay time.

CAUTION—Setting the temperature control to the coldest setting may cause the eventually result in a warmer cabinet temperature.

5. Defrosting:

Timing of defrosting: The electronic control panel is preset to automatically execute four defrosting cycles within twenty-four hours. Its timer will reset to the time or the initial first start-up. In order to modify the start time for the defrost cycle to the desired time, it is sufficient to follow these directions, press the defrosting button for six seconds, the unit will start defrosting at the time, and another cycle will follow six hours later.

Manual defrosting: Press the button on the top right of the display of the electronic thermostat for six seconds. The defrosting will start only if the sensor reveals a temperature that is inferior to a pre-set value. In that phase, the defrosting pilot light and defrost LED switch on. Refrigerator coils are defrosted by compressor stopping. Freezer coils are defrosted electrically.

Caution: Do not remove ice with a sharp metal instrument.

6. **Restart:** Please wait 5 minutes to restart the refrigerator after the plug pulled down or short sudden-cut, or it will reduce the sever life of the compressor. To save energy, the refrigerator door should not be frequently opened or left open for a long time.

7. **Transportation:**
   Do not be hard collided or fiercely vibrated when in transportation; it is not larger than 45°for the inclination of the chest. When it is on working, do not re-move frequently.
8. **Storage:**
   Do not flap foods or cans into the cabinet, In order to avoid bad smell or taste, keep space between each food and do not store the foods too long time.
9. **Maintenance:**
   Please clean the cabinet with soft clothes timely. Before cleaning, **MUST pull out the power plug.** When the cabinet will not be used for a long time, disconnect the power cord then clean it. Please examine the wiring circuit before reusing it.

CLEANING AND MAINTENANCE

⚠WARNING

Disconnect power cord before cleaning any parts of the unit.

An agent or qualified technician must carry out repairs if required.

Prior to beginning work on systems containing FLAMMABLE REFRIGERANTS, safety checks are necessary to ensure that the risk of ignition is minimized.

For repair to the REFRIGERATING SYSTEM, the following step a) -e) should be completed prior to conducting work on the system.

a) The serving work must be undertaken under a controlled procedure so as to minimize the risk of a flammable gas or vapors being present while the work is being performed.

b) All maintenance staff and others working in the local area must be instructed on the nature of work being carried out. Serving work in confined spaces need to be avoided.

c) The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially toxic or flammable atmospheres. Ensure that the leak detection equipment being used is suitable for use with all applicable refrigerants, i.e., nonspeaking, adequately sealed, or intrinsically safe.

d) If any hot work is to be conducted on the refrigerating equipment or any associated parts, appropriate fire extinguishing equipment shall be available on hand. A dry chemical or CO2 fire extinguisher should be adjacent to the charging area.

e) No person carrying out work in relation to a REFRIGERATING SYSTEM which involves exposing any pipe work shall use any sources of ignition in such a manner that it may lead to the risk of fire or explosion. All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which refrigerant can possibly be released to the surrounding space. Prior to work taking place, the area around the equipment shall be surveyed to make sure that there are no flammable hazards or ignition risks. “No Smoking” signs shall be displayed.

Ensure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any hot work. A degree of ventilation shall continue during the period that the work is carried out. The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.

Where electrical components are being changed, they shall be fit for the purpose and to the correct specification. At all times, the manufacturer’s maintenance and service guidelines shall be followed. If in doubt, consult the manufacturer’s technical department for assistance.

The following checks shall be applied to installations using FLAMMABLE REFRIGERANTS:

a) the actual REFRIGERANT CHARGE is in accordance with the room size within which the refrigerant containing parts are installed;

b) the ventilation machinery and outlets are operating adequately and are not obstructed;

c) if an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant;

d) marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected;

e) refrigerating pipe or components are installed in a position where they are unlikely to be exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded.

Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used. This shall be reported to the owner of the equipment, so all parties are advised.

Initial safety checks shall include:

a) that capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking;

b) that no live electrical components and wiring are exposed while charging, recovering or purging the system;

c) that there is continuity of earth bonding.

When repairs to sealed components:

During repairs to sealed components, all electrical supplies shall be disconnected from the equipment being worked upon prior to any removal of sealed covers, etc. If it is absolutely necessary to have an electrical supply to equipment during servicing, then a permanently operating form of leak detection shall be located at the most critical point to warn of a potentially hazardous situation.

Particular attention shall be paid to the following to ensure that by working on electrical components, the casing is not altered in such a way that the level of protection is affected. This shall include damage to cables, excessive number of connections, terminals not made to original specification, damage to seals, incorrect fitting of glands, etc.

Ensure that the apparatus is mounted securely.

Ensure that seals or sealing materials have not degraded to the point that they no longer serve the purpose of preventing the ingress of flammable atmospheres. Replacement parts shall be in accordance with the manufacturer’s specifications.

Repair to intrinsically safe components:

-Do not apply any permanent inductive or capacitance loads to the circuit without ensuring that this will not exceed the permissible voltage and current permitted for the equipment in use.

-Intrinsically safe components are the only types that can be worked on while live in the presence of a flammable atmosphere. The test apparatus shall be at the correct rating.

-Replace components only with parts specified by the manufacturer. Other parts can result in the ignition of refrigerant in the atmosphere from a leak.

Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges, or any other adverse environmental effects. The check shall also take into account the effects of aging or continual vibration from sources such as compressors or fans.

Detection of flammable refrigerants:

- Under no circumstances shall potentially sources of ignition be used in the searching for or detection of refrigerant leaks. A halide torch (or any other detector using a naked flame) shall not be used.

The following leak detection methods are deemed acceptable:

Electronic leak detectors may be used to detect refrigerant leaks but, in the case of FLAMMABLE REFRIGERANTS, the sensitivity might not be adequate, or might need recalibration. (Detection equipment shall be calibrated in a refrigerant-free area.) Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used. Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed, and the appropriate percentage of gas (25 % maximum) is confirmed.

Leak detection fluids are also suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine can react with the refrigerant and corrode the copper pipe-work.

If a leak is suspected, all naked flames shall be removed/extinguished.

If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak. Removal of refrigerant shall be according to instruction of removal and evacuation.

Removal and evacuation:

When breaking into the refrigerant circuit to make repairs – or for any other purpose –conventional procedures shall be used. However, for flammable refrigerants it is important that best practice be followed, since flammability is a consideration. The following procedure shall be adhered to:

a) safely remove refrigerant following local and national regulations;

b) purge the circuit with inert gas;

c) evacuate (optional for A2L);

d) purge with inert gas (optional for A2L);

e) open the circuit by cutting or brazing.

The refrigerant charge shall be recovered into the correct recovery cylinders if venting is not allowed by local and national codes. For appliances containing flammable

refrigerants, the system shall be purged with oxygen-free nitrogen to render the appliance safe for flammable refrigerants. This process might need to be repeated several times. Compressed air or oxygen shall not be used for purging refrigerant systems.

For appliances containing flammable refrigerants, refrigerants purging shall be achieved by breaking the vacuum in the system with oxygen-free nitrogen and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum. This process shall be repeated until no refrigerant is within the system. When the final oxygen-free nitrogen charge is used, the system shall be vented down to atmospheric pressure to enable work to take place.

Ensure that the outlet for the vacuum pump is not close to any potential ignition sources and that ventilation is available.

Charging procedures:

In addition to conventional charging procedures, the following requirements shall be followed.

a) Ensure that contamination of different refrigerants does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimize the amount of refrigerant contained in them.

b) Cylinders shall be kept in an appropriate position according to the instructions.

c) Ensure that the REFRIGERATING SYSTEM is earthed prior to charging the system with refrigerant.

d) Label the system when charging is complete (if not already).

e) Extreme care shall be taken not to overfill the REFRIGERATING SYSTEM.

Prior to recharging the system, it shall be pressure-tested with the appropriate purging gas. The system shall be leak-tested on completion of charging but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.

Decommissioning:

Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its detail. It is recommended good practice that all refrigerants are recovered safely. Prior to the task being carried out, an oil and refrigerant sample shall be taken in case analysis is required prior to re-use of recovered refrigerant. It is essential that electrical power is available before the task is commenced.

a) Become familiar with the equipment and its operation.

b) Isolate the system electrically.

c) Before attempting the procedure, ensure that:

i) mechanical handling equipment is available, if required, for handling refrigerant cylinders;

ii) all personal protective equipment is available and being used correctly;

iii) the recovery process is supervised at all times by a competent person;

iv) recovery equipment and cylinders conform to the appropriate standards.

d) Pump down refrigerant system, if possible.

e) If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.

f) Make sure that cylinder is situated on the scales before recovery takes place.

g) Start the recovery machine and operate in accordance with instructions.

h) Do not overfill cylinders (no more than 80 % volume liquid charge).

i) Do not exceed the maximum working pressure of the cylinder, even temporarily.

j) When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off.

k) Recovered refrigerant shall not be charged into another REFRIGERATING SYSTEM unless it has been cleaned and checked.

Equipment shall be labelled stating that it has been de-commissioned and emptied of refrigerant. The label shall be dated and signed. For appliances containing FLAMMABLE REFRIGERANTS, ensure that there are labels on the equipment stating the equipment contains FLAMMABLE REFRIGERANT.

Recovery:

When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely.

When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct number of cylinders for holding the total system charge is available. All cylinders to be used are designated for the recovered refrigerant and labelled for that refrigerant (i.e., special cylinders for the recovery of refrigerant). Cylinders shall be complete with pressure-relief valve and associated shut-off valves in good working order. Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.

The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of all appropriate refrigerants including, when applicable, FLAMMABLE REFRIGERANTS. In addition, a set of calibrated weighing scales shall be available and in good working order. Hoses shall be complete with leak-free disconnect couplings and in good condition. Before using the recovery machine, check that it is in satisfactory working order, has been properly maintained and that any associated electrical components are sealed to prevent ignition in the event of a refrigerant release. Consult manufacturer if in doubt.

The recovered refrigerant shall be returned to the refrigerant supplier in the correct recovery cylinder, and the relevant waste transfer note arranged. Do not mix refrigerants in recovery units and especially not in cylinders.

If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that FLAMMABLE REFRIGERANT does not remain within the lubricant. The evacuation process shall be carried out prior to returning the compressor to the suppliers. Only electric heating to the compressor body shall be employed to accelerate this process. When oil is drained from a system, it shall be carried out safely.

1. **Quarterly cleaning the condenser coil**

   For efficient operation, it is important that the condenser surface be kept free of dust, dirt, and lint. Dukers recommends cleaning the condenser coil and fins at least once per month. clean with a commercial condenser coil cleaner, available from any kitchen equipment retailer. Brush the condenser fins from top to bottom, not side to side. After cleaning, straighten any bent condenser fins with a fin comb.

2. **Weekly Interior Cleaning of unit**

   (1) Remove all food, food related items. Store the food at a safe temperature;
   (2) Disconnect power to the unit (unplug it or switch the breaker off).
   (3) Scrub all interior surfaces and door gaskets with a warm (100oF to 110oF) detergent solution and a soft scrub brush;
   (4) Rinse with clean water and allow to air dry.
   (5) Restore power and return food to the unit when it has reached a safe temperature;

TROUBLESHOOTING GUIDE

When you found that the refrigerator appears abnormally, please examine it according to the following form.

Troubles		reasons	How to deal with
No indicator light	Unit on work	Not connect with the power	Connecting the plug
		Plug and outlet contacting failure	Repairing or change
		Fail input of control circuit	Checking and repairing
	Unit off	Base of light missing out of welding	Welding the base
		Indicator light burning out	Replacing the controller
Compressor running failure		Low power	Equipping with a manostat
		Power failure	Checking and replacing
		Temperature controller failure	replacing
		Heating protector burning out	replacing
		Starter failure	replacing
		Compressor electricity burning out	replacing
		Compressor mobile part being blocked	replacing
Ceaselessness of compressor		Misplacement of the probe of the temperature controller	Adjusting the place and fixing it
		Damage of controller	replacing
		Insufficiency or leakage of refrigerant	Find the leaking spot，welding and adding refrigerant
		Heavy frosting of evaporator	Defrosting with the compressor stop
		Circulation failure for entrance of uncongealed liquid	Vacuumizing the system and adding refrigerant
		Blocking of refrigeration pipe	Replacing the filter and adding refrigerant
		Failure of condenser fan	Replacing the fan and checking the circuit
		Low efficiency or no exhaust of compressor	replacing
		Opening the door too often	Reducing the frequency of opening door
		Much fat and dirt in condenser and filter	Cleaning the condenser and filter
		bad ventilation result of Too large amount of goods	Reducing the storage and redistributing the interior space

	Heat leakage of door seal	Maintenance of the door seal
Ceaselessness of compressor	High ambient temperature	Improving the ventilation and lowing the ambient temperature
	Low presetting temperature	resetting
Unit noisy	No even placement of the showcase	Trying another placement
	impacting of capillary , other pipeline and accessories for no firm fitting	Clean up the pipe
	Damage of fan	Maintenance and checking
	Condenser fan blocked	Cleaning the fan
	Bad connecting with spring of compressor	Replacing the compressor
	Bolt losing of compressor, fan and condenser	Tightening the bolt

Please ask qualified personnel to service.

ATTENTION!

The following phenomenon is normal, not trouble:

- A light sound of water flow in the cabinet.
- Heat from the compressor or condenser.
- If the ambient humidity is high, it is easy to cause water drops outside the doors, please sweep them off with towel in time.

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