



Operations Manual

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Welcome to Adande® Refrigeration

1 What is Adande®?

Adande® is a new method of cold storage developed as a series of refrigerated drawers that offer storage temperature flexibility in 1°C increments between –22°C and +15°C.

Each refrigerated drawer:-

- Provides stable temperature storage
- A removable container to act as temporary cool and safe product storage.
- Gives full plan area access providing space efficient storage.
- Is easily cleaned or replaced.

2 Adande® Explained

Adande® uses standard technology and refrigeration parts but in a completely new and patented way.

A dedicated fridge engine supplies refrigerant to an evaporator coil assembly. The evaporator coil assembly then supplies cooling to the insulated container and is sized to maintain up to 40kg of product at any set point temperature, in the range of –22°C to +15°C.



Figure 1: Front view of Adande® Compact Drawer

3 EC Declaration of Conformity

We declare that the following machinery complies with the essential health and safety requirements of:-

The Machinery Directive 2006/42/EC
The Low Voltage Directive 2006/95/EC
The Electromagnetic Compatibility Directive 2004/108/EC
The Pressure Equipment Directive 97/23/EC

Machinery Description: 1 Drawer Appliance for Chilled Storage.
Make: Adande®.
Type: Adande® Drawer Refrigeration Units
Manufactured by Adande® Refrigeration,
45 Pinbush Road, South Lowestoft Industrial Estate, Lowestoft, Suffolk NR33 7NL

The following transposed harmonised European Standards have been used:

EN ISO 12100 parts 1 & 2 Safety of Machinery – Basic concepts, general principles for design
EN ISO 13857 Safety of Machinery – Safety distances to prevent danger zones being reached by the upper and lower limbs.
EN ISO 13732-1: 2006 Ergonomics of the thermal environment -- Methods for the assessment of human responses to contact with surfaces -- Part 1: Hot surfaces
EN 1672-2 Food processing machinery – Basic concepts – Part 2 : Hygiene requirements
EN 61000-6-3:2001, Electromagnetic compatibility (EMC) - Part 6-3: Generic standards; Emission standard for residential, commercial and light- industrial environments
EN 61000-6-1 Generic Immunity Standard; Residential commercial and light industrial environments.
EN 60335-2-24 The Safety of Household and Similar Electrical Appliances – Part 2 –24: Particular Requirements for Refrigerating Appliances and Ice Makers.

The technical file for this machinery will be prepared on demand by :-

Name: Ian Wood
Position: Managing Director
Who signs on behalf of the manufacturer

ADANDE® REFRIGERATION
45 Pinbush Road
South Lowestoft Industrial Estate
Lowestoft
Suffolk
NR33 7NL

4 Storage of Product

For the drawer to operate at full efficiency the heated seal should be maintained in good condition. It is essential that the product is not stored above the **"MAX FILL LEVEL"** line as this can damage the seal and affect the operation of the drawer.

The drawer is capable of storing any food product. However, products which may give off acidic odours like vinegar, onions, etc should be suitably sealed. Adande® also recommends storage containers with liquid food products be stored with lids.

Ensure that the product is never stacked above the **"MAX FILL LEVEL"** Label in the insulated container.

5 Operating Adande® Temperature Control System

The Adande® temperature control system allows you to set and control the drawer within a temperature range of -22°C (-8°F) and +15°C (59°F).

Temperature accuracy in the drawer will be maintained within $\pm 2^{\circ}\text{C}$ of the set point.

5.1 The Display Controls

To adjust the temperature set point (*figure 2*) press and hold the "i" button, the drawer set point will then be displayed. While holding the "i" button Increase or decrease temperature using the arrow buttons, on release of both buttons the new set point will be stored.



Figure 2: Adande® Display Control Panel

5.2 Locking and Unlocking the Controller

	
<p>a) Press and immediately release "i" button to display 'T1'</p>	<p>b) Press button "i" again to display 'T2'</p>
	
<p>c) Press button "i" again to display 'TH1'</p>	<p>d) Press button "i" again to display 'TLO'</p>
	
<p>e) Press button "i" again to display 'CND'</p>	<p>f) Press button "i" again to display 'LOC'</p>
	
<p>g) Hold the "i" button to display either yes or no</p>	<p>h) Press either of the  or  buttons to change yes/no setting</p>

5.3 Defrost

The refrigeration system automatically defrosts. If a manual defrost is required then press the manual defrost button on the control panel for 3 seconds. After a defrost has been performed "REC" will show up on the display read out, this stands for recovery and will be displayed until the unit reaches it's set point .

5.4 Drawer Alarm

If the drawer is open for more than 3 minutes, the Drawer Open alarm will be triggered, an audible alarm will sound and "DO" will flash on the display panel, if the drawer is still not closed after an additional 3 minutes then "HI" will be displayed.

When the alarm has been activated, the Adande[®] drawer will alarm both visually and audibly.

To silence the audible alarm, press ANY button on the display, or close the drawer. The alarm light and flashing display will continue to show until the drawer has been fully closed.

NOTE: THERE IS NO COOLING TO THE INSULATED CONTAINER WHEN THE DRAWER IS OPEN.

5.5 Error Alarm

If display reads "E1" or "E2", a temperature probe has failed, and an engineer should be called.

The Adande[®] drawer will operate with a 10 minute on / 10 minute off cycle in the event of an "E1" failure. This will help to maintain the stored product at a safe temperature, but precise temperature control will be lost. "E2" will only affect defrosts, and these will be timed to maintain operation of the unit. An engineer should be called as soon as possible for either fault.

5.6 Temperature Alarm

If "HI" should appear on the display, the drawer temperature has exceeded its set point by 7°C and product core temperature should be checked. This alarm may also be triggered if the Adande[®] drawer has recently been turned on, loaded with warm product or left open for a long period of time. If the temperature does not return to the set point temperature, an engineer should be called.

If "LO" should appear on the display, the drawer temperature has fallen below its set point by 7°C and product core temperature should be checked. This alarm may also be triggered if the Adande[®] drawer's temperature set point has recently been increased. If the temperature does not return to the set point temperature, an engineer should be called.

5.6 Location and Stability

It is important that the Adande® drawer is installed and maintained on a flat, clean and level surface to ensure correct operation.

The room should be dry and sufficiently ventilated.

Optimum performance is obtained at ambient temperatures between +16°C (60°F) and +38°C (100°F).

The air outlet grille which is situated underneath the drawer must be kept clear at all times to maintain optimum performance.

The Adande® drawer has four castors, two of which have brakes which should be ON during normal use, as shown in *figure 4*.



Press to
lock the
castor

Figure 4: Lockable Castor

THE INSULATED CONTAINER SHOULD BE UNLOADED BEFORE MOVING

5.7 Servicing & Warranty

Service personnel must be suitably trained in refrigeration and experienced in servicing Adande® products. Only use Adande® Approved and Registered Service Engineers which can be supplied on request.

Your Adande drawer should be regularly inspected and checked against the requirements of this Operations Manual. Failure to do so may invalidate the warranty. Your particular attention is drawn to the requirements of sections 6 and 7 of this document.

ACCESS PANELS MUST NOT BE REMOVED BY UNTRAINED PERSONNEL

Advice and help can be obtained to resolve any problems that may occur during operation or servicing, by contacting the Adande® technical support line, refer to Appendix 1 at the back of this manual.

6 General Warning and Safety Precautions

6.1 Electrical

- Untrained personnel should not remove any of the access panels.
- The access panels should not be removed with the electrical supply connected.
- To disconnect the electrical supply, remove the plug from the electrical socket.

6.2 Operational Use and Cleaning

- Use only a soft cloth, water or mild soap solutions to clean the drawer.
- Do not use hard brushes or other items for cleaning.
- Remove any food which may have accidentally dropped from the food preparation surface into an open drawer or drawer runners.
- Do not leave drawers open for longer periods of time than necessary.
- If drawers are stacked, avoid opening more than one drawer at a time.
- Ensure products that give out acidic odours like vinegar, onions, etc. are sealed before placing in the insulated container.

6.3 General

- Do not exceed the maximum fill level or loading of 40kg per drawer.
- Do not sit, stand or apply additional downward pressure on an open drawer.
- Do not operate drawer with any panels removed.
- Do not clean drawer with any panels removed.
- Ensure drawer is installed and maintained on a flat, clean and level surface.
- If mounted on a castor base, ensure brakes are applied to the front two castors.
- The room in which the drawer is kept should be dry and sufficiently ventilated.
- No obstructions should be placed directly in front of the condenser air outlet.
- The drawer should be regularly inspected and checked against the requirements of this Operations Manual.

7.0 Drawer Maintenance

Dirt and grease should be removed on a weekly basis using the following procedures:

			<p>The heated seal should be cleaned on a weekly basis with a solution of warm water and mild detergent.</p>
			<p>The insulated container can be totally removed from the drawer for deep cleaning. Clean the insulated container with an anti-bacterial cleanser.</p>
			<p>Clean the steel surfaces with a polish cleaner.</p> <p>NOTE: DO NOT USE SHARP UTENSILS, STEEL PADS, WIRE BRUSHES, SCRAPERS OR CHLORIDE CLEANERS TO CLEAN STAINLESS STEEL.</p>

NOTE: DO NOT PRESSURE WASH EQUIPMENT, THIS CAN DAMAGE THE ELECTRICAL COMPONENTS.



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