



Operations Manual

Hydrocarbon VCx Series



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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°F increments between -8°F and 59°F (-22°C to +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 88lbs of product at any set point temperature, in the range of -8°F to 59°F.



VCS



VCR



VCM

Figure 1: Adande® VCS, VCR & VCM

Adande® uses a modular drawer where each module is an individual refrigeration system. This means that each drawer module can be stacked on top of another. See Fig.2 Below.



Figure 2: Adande® VCS2

3 Ratings and Specifications

ADANDE V Series				
Model	VCS R5 V3	VCR R5 V3	VCM R5 V3	
Region	USA			
Electrical Specifications				
The Adande VCx range of products is configured for the appropriate electrical supply and supplied with a fixed cordset for the appropriate region.				
Rating	120V 60Hz 240W (2 amps per module)			
Cord Set	Type SJT 3 x 14 AWG rated 300V, 60°C, VW1 Fitted with a NEMA 5-15P and an IEC 60320 C19 Coupler 1.8m – 3.0m (5.9 – 9.8 ft) in length			
Interface Power Cord set (Option)	Optional: Power cord to connect two modules Type SJT, 3 x 14 AWG, 300V 60°C, VW-1 Fitted with an IEC 60320 C19 coupler and an IEC 60320 coupler, 0.6m – 1m (2 – 3 ft) in length			
Environmental				
Operating Temperature	15°C – 40°C (60°F – 100°F)			
Noise	70 dB Max			
Altitude	Maximum operating altitude 6560 ft. (2000m)			
Mechanical				
Dimensions – module only	<u>Model</u>	<u>Height</u>	<u>Width</u>	<u>Depth</u>
	VCS	390mm	1100mm	700mm
	VCR	390mm	880mm	885mm
	VCM	390mm	1100mm	700mm
Module weight without counterbalance weights	130lbs (59kg)			
Counterbalance weights in castor base	36lbs (16.5kg)			
Refrigerant	R290 - Volume = 80g (2.8oz)			
	<u>Pressure</u>	<u>HI Side</u>		<u>LO Side</u>
	Operating	179 psi		3.9 psi
	Design (max)	277 psi		85 psi

4 Safety Symbols

The following safety symbols are used upon the product and throughout the product documentation.

<u>Meaning / Description</u>	<u>Symbol</u>
<p>Dangerous Voltage Electrical warning symbol To indicate hazards arising from High voltages.</p>	
<p>Protective Earth (Ground) To identify any terminal which is intended for connection to an external conductor for protection against electric shock in case of a fault, or the terminal of a protective earth (ground) electrode.</p>	
<p>Warning/Caution An appropriate safety instruction should be followed or caution to a potential hazard exists.</p>	
<p>Disposal of Hazardous Waste The product contains hazardous waste which is harmful to the environment. Dispose of properly in accordance with US Federal or Local Regulations. Flammable refrigerant used.</p>	
<p>Do Not Pressure Wash Do Not Pressure Wash the Modules.</p>	
<p>Heavy This product is heavy and reference should be made to the safety instructions for provisions of lifting and moving.</p>	
<p>Flammable Gas Risk of fire or explosion, the product contains flammable refrigerant R290 (Propane).</p>	

5 General Warning and Safety Instructions

The following instructions provide information and guidance on the safe operation of the user and the equipment.

5.1 Electrical

- The operator/end user shall not remove ANY of the access panels.



WARNING: Disconnect the electrical supply before any maintenance or cleaning by removing the plug from the electrical socket

- Only one mains supply should be inserted to the unit at any time. (Refer to Fig. 3 for electrical connection)
- For VC Series Stacked units, either of the appliances may be electrically supplied from a non-isolated supply.
- Ensure safe routing of the electrical cabling.
- Check Inlet Cables for damage before use. If damaged, isolate from the electrical supply and replace the cabling.
- A maximum of 2 cassette units may be powered from a single unit via a single cordset. Power is distributed via an interconnecting appliance inlets and outlets of the each modular unit.
- Only the electrical cables supplied with the machine at the point of purchase, or by a qualified service engineer is to be used with this product.
- This product is to be installed in accordance with regional and local electrical codes.

5.2 Operational Use and Cleaning

- **CAUTION:** All cleaning and servicing requires the equipment to be, switched off at the front/ isolated from the power source and disconnected.
- Ensure the drawers are kept shut between openings.
- **CAUTION:** Do not lean on the drawer when fully extended.
- If modules have been stacked, into a VCS2, avoid opening more than one drawer at a time.
- Ensure foodstuffs that give out acidic odours like vinegar, onions, etc. are sealed before placing in the insulated container.
- Remove all foodstuffs from the drawer container before removing for cleaning.
- **CAUTION:** DO NOT drop the container into the container support cradle.

5.3 General

- The appliance should be used as provided and in accordance with this manual. An electronic copy of the manual is available for download from the Adande USA website: <http://www.adandeusa.com/>
- The refrigeration system uses flammable refrigerant R290. Follow handling instructions carefully in compliance with US Government Regulations.
- Adequate provision should be made for lifting and positioning the equipment in accordance with local policy codes.
- The VCS and VCM models are front vented therefore do not require any clearance, the rear of the units can be placed against the wall and the sides next to other equipment.
- The VCR units have rear, side and bottom venting, if both rear and side vents are blocked due to the unit being enclosed then castors shall be supplied with the unit to ensure heat can be effectively rejected from the bottom of the unit.
- CAUTION: Do not overfill the insulated container or the maximum loading of 88lbs (40 kgs) per drawer.
- CAUTION: Do not sit, stand or apply additional downward pressure on an open drawer. Do not operate or clean the drawer with any panels removed.
- When the machine is being transported it should be sat firmly on its castors/feet with the brakes applied. The machine should be strapped upright to a flat pallet during transport.
- 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 (vent at the front of the unit on a VCS-US and VCM-US models).
- The machine should be regularly inspected and checked against the requirements of this Operations Manual.
- WARNING: Should a fault occur with the product immediately isolate and disconnect the incoming power supply.
- Only Adande trained engineers are permitted to service or carry out repairs to this product.
- The refrigerant tubing shall not be punctured in any condition.
- All components parts must be replaced with like components by factory authorised Service personnel to minimise the risk of possible ignition due to incorrect parts or improper service.

6 Installation Instructions

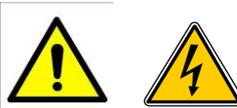
The Adande is delivered as a complete unit. This machine is designed for indoor use only.

6.1 Pre Operation Checks (unpacking)



- Check the Adande® unit for transport damage and report any immediately to Adande® refrigeration.
- Remove all packaging material dispose of responsibly, recycling where applicable.
- Ensure the Adande® units corset is firmly secured in place by the supplied P clip. Ensure the Adande® unit is positioned on a clean, level and stable surface.

6.2 Electrical Connection



- The Adande® unit should be connected to a 120V, single phase, 60 Hz Branch Circuit protected supply.
- The drawer is connected to the mains supply with a detachable cordset.
- The supply lead is a type SJT (3 wire) fitted with a NEMA 5-15P plug.
- The supply lead is connected to the Adande® drawer as shown in *figure 3* below.
- Stacked modules are supplied with chain cables as shown in *figure 3b* below.



Figure 3: Mains connection point



Figure 3b

6.3 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 to allow good airflow around the clearance stated above, and to minimize moisture intake.

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

The air outlet grill MUST be kept clear at all times to maintain optimum performance.

The Adande® drawer can be mounted on rubber feet, rollers or castors. When mounted on a castor base, the front two castors should have their brakes ON during normal use as in *figure 4*.

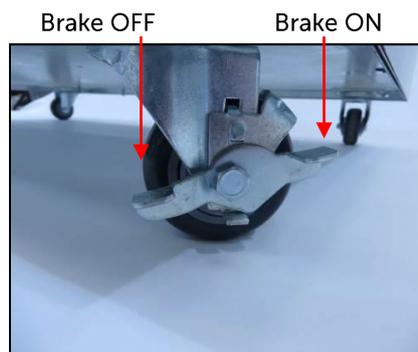


Figure 4: Lockable Castor



THE INSULATED CONTAINER SHOULD BE UNLOADED BEFORE MOVING

7 Operating Adande® Controls

An Adande® is configured with a master power switch located beside the Temperature controls. See Figure 5 below.



Figure 5: Adande® Display Control Panel

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

Temperature accuracy in the drawer will be maintained within $\pm 3.6^\circ\text{F}$ of the set point.

7.1 The Display Temperature Controls

The set-point is factory set, however should you need to adjust the temperature set point, please follow the procedure below:

- First unlock the keypad by quickly tapping the unlock/scroll button (🔒), the light next to the unlock symbol (💡) will illuminate signifying that the keypad is now unlocked.
- Tap the unlock/scroll button (🔒) to display SP (set point) code, then tap the unlock/scroll button once more, to display the current set point of the unit
- To adjust the set point simply either press the + (➕) or – (➖) button until the desired set point is displayed. The unit is now set with the new set point.
- The display panel will automatically lock after 1 minute of inactivity.

Display Control Keys	
Increase Temperature	➕
Cancel	⏻
Unlock/Scroll	🔒
Manual Defrost	❄️
Decrease Temperature	➖
Controller Unlock Symbol	💡

7.2 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. During a defrost "DEF" will show up on the display panel, this will be displayed until the unit reaches its set point.

7.3 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.

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.

7.4 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 5 minute on / 5 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.

7.5 Temperature Alarm

If "HI" should appear on the display, the drawer temperature has exceeded its set point by 12°F 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 12°F 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.

8 Drawer Maintenance

The Adande drawer is virtually maintenance free other than periodic checking of the condensate tray and cleaning.



DISCONNECT THE ELECTRICAL SUPPLY BEFORE ANY MAINTENANCE OR CLEANING BY REMOVING THE PLUG FROM THE ELECTRICAL SOCKET



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

8.1 Condensate Tray

The drain tray located at the front of the drawer should be checked regularly and emptied if necessary. To empty simply pull out the tray as shown in the picture below.



NOTE: The drain tray on the VCR model is located within the drawer cavity.

8.2 Cleaning

It is recommended that cleaning should be performed at minimum weekly or in accordance with local codes.



The airflow through the Adande drawer is designed to deposit grease and dirt on the **outside** surface of the insulated container and **internal** surfaces of the drawer housing.

The insulated container must be removed from the drawer to clean these surfaces.



Always isolate the unit before doing any Cleaning or Maintenance. The dirt and grease deposits should be removed weekly using the following procedures:

- Clean the heated seal with a damp, soaped cloth.
- Always remove any contents from the containers before lifting from the supports.
- Clean the insulated container with an anti-bacterial cleanser.
- Brush any loose dirt from the condenser situated inside at the back left of the drawer.
- Clean the steel surfaces with an anti-bacterial cleaner, with the active ingredient that confers its antiseptic property being **chloroxyleneol (C₈H₉ClO)**, comprising of 4.8% of the total mixture.
- Do not use steel pads, wire brushes, scrapers or chloride cleaners to clean the stainless steel, some parts have painted surfaces, these should be cleaned with a mild soap solution as previously instructed.

9 Insulated Container



The insulated container can be removed for cleaning. To remove the insulated container, first pull the drawer out fully so that the rear edge of the container clears the front and the runners are fully extended. Then lift the container vertically to remove. The container should be completely emptied before moving. When replacing the container do **NOT** drop into position as this can damage the container.



NOTE: The VCM insulated container has a magnet imbedded in the plastic which activates a switch. It is important that the container supplied is kept with the unit to ensure correct operation. If a standard container is used the unit will not work. A sticker identifying the container as being specific to VCM Matchbox is also visible on the side of the container.

10 Drawer Access VCM

<p style="text-align: center;">Access to drawer</p>	<p>To prevent the drawer going full travel from one side to the other and possibly causing injury to the operators, the unit is fitted with a safety bar.</p> <p>With the bar in the open position as shown, the drawer can be pulled open towards the operator.</p>
<p style="text-align: center;">No access to drawer</p>	<p>The bar on the on the other side is then positioned to prevent drawer opening from that side.</p>

11 Food Storage

For the drawer to operate at full efficiency the heated seal should be maintained in good condition. It is essential that the container is not overfilled as this can damage the seal and affect the operation of the drawer.

The drawer is capable of storing any pre-packaged food product. However, foodstuffs that 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.

12 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.

The Location of the unique serial number for your Adande drawer is located at the rear of the unit near the supply inlet below pictured in figure 6 below.

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.

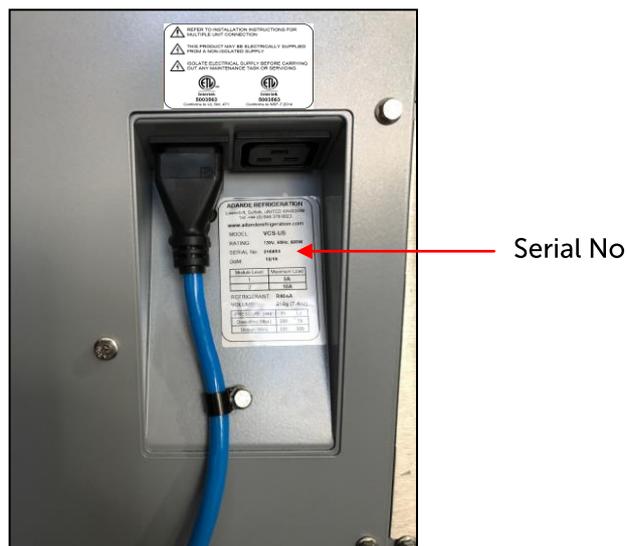


Figure 6

13 Appendix 1: Contact Details

Contact us: USA

Adande Refrigeration Inc.
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Suite 200
St
Garland, TX 75040

Service Enquiries

serviceUS@adande.com
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214.997.7725 office

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