

HUSSMANN®

ARV & ARL SERIES
Merchandisers

Medium Temperature
& Low Temperature
Merchandisers

PLEASE READ THIS MANUAL BEFORE USING THE PRODUCT

Installation &
Operation Manual
Shipped With Case Data Sheets

P/N 2400134E
ARV, ARL Series
DECEMBER,2000

HUSSMANN -CORPORATION

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Warranty

IMPORTANT

KEEP THIS MANUAL FOR FUTURE REFERENCE

Quality that sets industry standards

These merchandisers are conform to:

U.L. - Underwriters Laboratories Inc.®

C.U.L. - Canadian Underwriters Laboratories Inc.®

U.L. Sanitation (ANSI/NSF 7 - 1990)

NOM - Norma Oficial Mexicana

ANCE - Asociacion Nacional de Normalización y Certificación del Sector Eléctrico, A.C.

P/N 2400134E 1-#

SHIPPING DAMAGE

General

All equipment should be thoroughly examined for shipping damage before and during unloading.

This equipment has been carefully inspected at our factory and the carrier has assumed responsibility for safe arrival. If damaged, either apparent or concealed, claim must be made to the carrier.

Apparent Loss Or Damage

If there is an obvious loss or damage, it must be noted on the freight bill or express receipt and signed by the carrier's agent; otherwise, the carrier may refuse the claim. The carrier will supply necessary forms.

Concealed Loss Or Damage

When loss or damage is not apparent until after equipment is uncrated, a claim for concealed damage must be made. Upon discovering damage, make the request in writing to carrier for inspection within 15 days and retain all packing materials and paperwork. The carrier will supply an inspection report and required claim forms.

Location

These merchandisers are designed for indoor operation with a recommended operating room ambient temperature range of 65°F (18°C)/50% rh to 90° F (32° C)/65% rh. Their performance is affected by store air currents when the doors are open. Do NOT allow air conditioning, electric fans, or open doors and windows to create air currents around these merchandisers, nor should they be exposed to direct sunlight or other heat sources.

NOTE: The condensing unit draws ambient air through the front of the unit and discharges hot air out the rear of the unit. In order to maintain proper refrigerator performance and compressor life, a minimum space of 4" (10 cm) must be maintained between the refrigerator and surrounding surfaces.

PREPARATION OF CABINET FOR OPERATION

Removing Cabinet From Skid

Move the merchandiser as close as possible to its permanent location and remove hold-down brackets at the front and rear of the cabinet. Check refrigeration lines to see that they are "free" and no damage has occurred during shipping. Check fan blades for free operation.

Leveling Cabinet

These merchandisers must be installed level (front to back and end to end) to permit maximum draining of the condensate water as well as proper door alignment and operation.

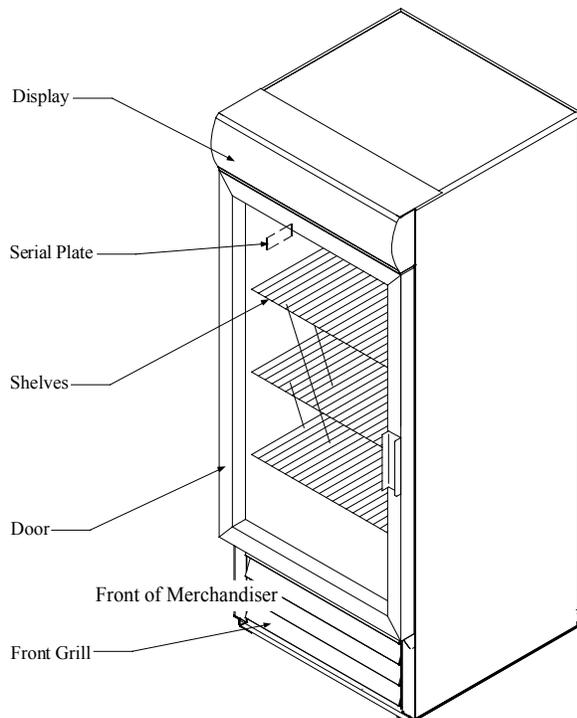
The merchandiser has been shipped with adjustable cabinet levelers installed. Level the unit by placing a level on the merchandiser and adjust as required.

Shelf Installation

After the cabinet has been leveled and is in its final position, the shelves may be installed. Shelf spacing is adjustable by positioning the shelf supports according to your loading requirements.

WARNING

(Low Temp. Models) Do NOT place product directly on floor of merchandiser. Locate bottom shelf in the lowest position to the floor of the merchandiser (approximately 2" [5 cm] off bottom) before loading. Failure to comply may result in product loss.



Door seal (closing mechanisms).

-Hinged Doors. Check to ensure the door torque is capable of closing the door automatically. Open the door 45 degrees and release it, the door should close and seal.

To adjust the torque, place a wrench on each of the 2 nuts located on the bottom hinge. Hold the top wrench firmly and loosen the bottom nut. Torque is increased or decreased by rotating the top nut. After adjustment has been made, tighten the bottom nut.

-Sliding Doors. Check to ensure the doors slide properly. Open each door independently half way and release it, the door should close and seal.

Check the bottom rollers, they must be centered on the stainless steel track.

Fan Cycle Switch (Hinged doors)

The evaporator fan is cycled off upon a door opening by a switch located above each door. This reduces the amount of warm moist air introduced to the evaporator coil during door openings.

With the door open, depress the switch to ensure the evaporator fan is working.

Lamps.

Turn the lighting switch on to ensure the lamps are operating correctly. Check to ensure the lamps are in their place and the terminals remain in contact with the lamps supports.

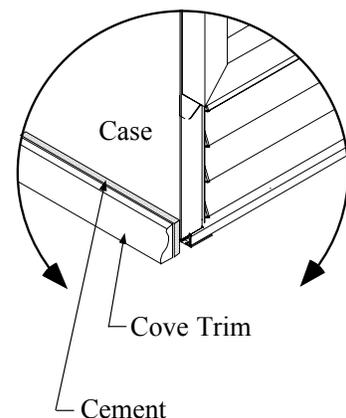
All interior lamps are equipped with a plastic shield, be sure the shield is installed properly.

Sealing Case to Floor

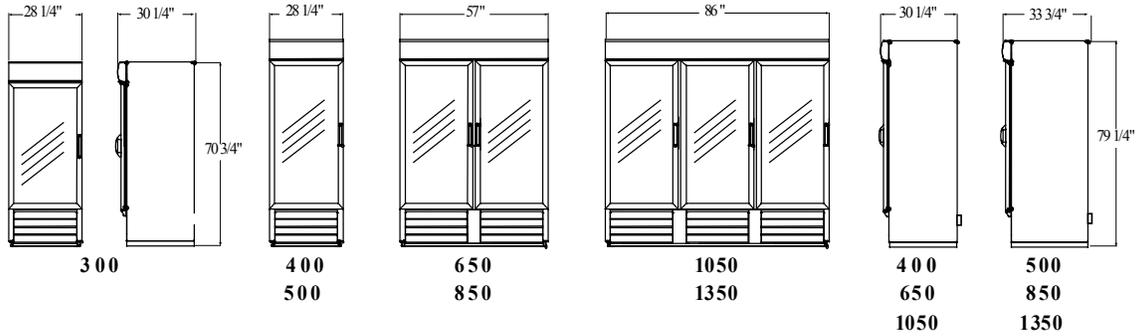
IF REQUIRED by local sanitary codes or if customer so desires, cabinets may be sealed to the floor using a vinyl Cove Base Trim such as produced by Armstrong, Kentile, Johnson, etc. and available at any floor covering supplier. The size required will depend on the amount of variation there is in the floor from one end of the case to the other.

When installing the cove base trim to the base:

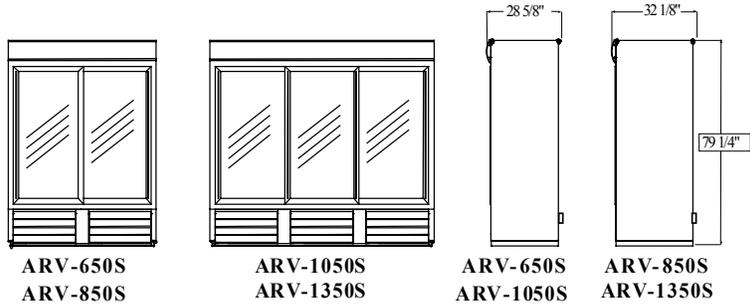
- 1) Remove all dirt, wax and grease from the surface area of the cabinet and floor where adhesion is necessary to ensure a good, secure installation.
- 2) Apply a good contact cement to the cove base trim and allow proper drying time according to the directions supplied with cement.
- 3) Install the cove base trim so that it is lying flush to the store floor.
- 4) Caulk remaining cracks and joints as required.



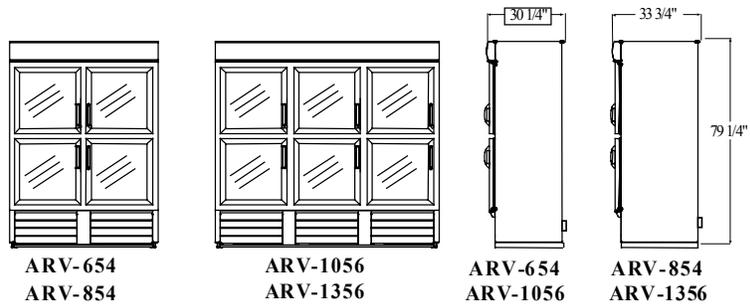
ARV/ARL WITH HINGED DOORS



ARV WITH SLIDING DOORS



ARV WITH HALF DOORS



Features	MODEL														
	ARV-300	ARV-400	ARV-500	ARV-650			ARV-850			ARV-1050			ARV-1350		
Doors	1	1	1	□	S	-4	□	S	-4	□	S	-6	□	S	-6
Cu. Ft Capacity	17.6	20.5	23.4	2	2	4	2	2	4	3	3	6	3	3	6
Shelves	3	4	4	44.7	39.1	44.7	51.2	45.6	51.2	69.2	60.5	69.2	79.3	70.6	79.3
				8			8			12			12		

Features	MODEL							
	ARL-300	ARL-400	ARL-500	ARL-650	ARL-850	ARL-1050	ARL-1350	
Doors	1	1	1	2	2	3	3	
Cu. Ft Capacity	17.6	20.5	23.4	44.7	51.2	69.2	79.3	
Shelves	4	5	5	10	10	15	15	

Specifications subject to change without notice.

REFRIGERATION SYSTEM

Description

All upright merchandisers are equipped with a hermetic or semi-hermetic compressor. The condenser is fin and tube construction. The air is taken in at the front of the cabinet through the lower grill and discharged out by the back of the cabinet.

A crankcase pressure regulating valve is utilized on some low temperature models. The purpose of this valve is to limit the suction pressure AT THE COMPRESSOR during initial cabinet start-up and start-up after a defrost cycle. IT DOES NOT REGULATE EVAPORATED PRESSURE. The valve is set for a maximum of 15 pounds of crankcase pressure. In order to check this setting the pressure at the inlet or evaporator side of the valve must be greater than 15 pounds. Manually initiate a defrost cycle by rotating the timer dial clockwise until the refrigeration cycle terminates. Install service gauge on the suction service valve. Observe the pressure on the gauge as the cabinet comes off the defrost cycle. The needle should drop to valve setting and hold steady. This setting should be a maximum of 15 pounds.

A high pressure limit switch is utilized on all low temperature models. The purpose of this switch is to limit the discharge pressure of the compressor. This switch will automatically cut off the compressor energy when the system has too high pressure and start-up the compressor again when the pressure decreases. This pressure switch is a safety device and will not function during normal case operation. DO NOT remove it from the system.

Cooling is accomplished by forced air circulation through a finned coil, located in the top of the cabinet. Air is drawn in at the back of the refrigerated area, and forced through the coil and down the front of the cabinet.

Defrost Cycle (Low Temperature Models)

The evaporator fin coil is defrosted twice a day for approximately 20 minutes by an electric defrost heater located on the under side of the coil and secured in place with stainless steel retainer clips.

The defrost cycle is initiated by a time clock located behind the condensing unit and terminated by Defrost Termination/Fan Delay Switch located on the suction line just before the accumulator. This control not only terminates the defrost cycle, but delays the fan start-up after the defrost cycle to prevent water from being blown into the product area. (Note at initial start-up of the cabinet, the evaporator fan will not operate due to the function of this control. Allow approximately 10 minutes for the control to close).

START UP / OPERATION

Electrical Supply

WARNING

Equipment **MUST** be GROUNDED!

Wiring of the unit is complete when it is shipped from the factory. The unit is supplied with a three conductor electrical cord which extends from the rear of the unit. Plug the unit into correct grounded outlet. It is recommended that a separate circuit be run for each cabinet to prevent the possibility of another appliance blowing a fuse, causing subsequent loss of product.

Temperature Control

The temperature control is located inside the cabinet at the front of the cooling unit housing. On medium temperature models the control set at number 4 position will maintain product temperature in a range of 36. to 42°F (2.2 to 5.5°C). The same setting on low temperature models will maintain product temperature in a range of 0 to 2 °F (-17.8 to -16.6°C).

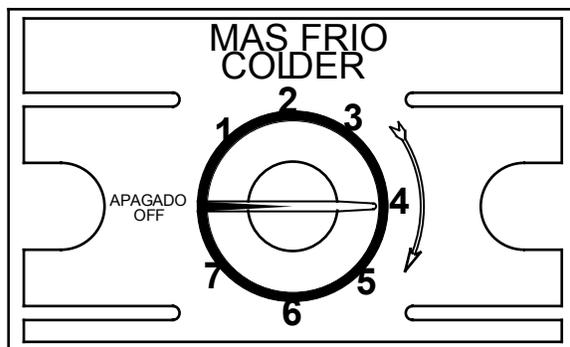
The control is adjustable by turning the dial one number at a time clockwise to obtain colder temperatures, turn it counterclockwise to obtain warmer temperatures.

Lighting

Interior light and lighted sign panel are controlled by a manually operated switch. The switch is located on the front of the cooling unit housing.

Defrost Water Evaporation

External drain plumbing is not required. Behind the cooling unit housing cover, there is a tray for gathering and directing defrost water from the evaporator coil to the condensing unit area. The pan in the condensing unit area serves as a reservoir for the storage of the water until it is evaporated by a hot gas loop from the compressor.



MAINTENANCE

Maintenance

Long life and satisfactory performance of any equipment is dependent upon the care given to it. To ensure efficient operation, proper sanitation and minimum maintenance, the cabinet should be thoroughly cleaned, debris removed and the interior cleaned regularly.

CAUTION

TO AVOID PERSONAL INJURY OR DAMAGE TO ELECTRICAL COMPONENTS, ALWAYS DISCONNECT UNIT FROM MAIN POWER SOURCE BEFORE SERVICING OR CLEANING

Cabinet Surfaces (Interior and Exterior)

To preserve finish, the cabinet should be cleaned with a mild solution of soap and warm water only, using a soft cloth or sponge. DO NOT use any type of caustic soap, abrasive cleaner, or steel wool scouring pads which can mar the cabinet finish.

Condenser

The air cooled condenser should be cleaned regularly. A dirty condenser restricts air flow, causing decreased refrigeration efficiency. (Clean every month or as required).

1) With main power supply disconnected, remove louver grill from front of lower cabinet. Most dirt will collect on the air intake side of the condenser. This is opposite the fan motor.

2) Use a bristle brush to loosen the dust and dirt and remove with a vacuum cleaner. When cleaning condenser line beware of fin edges as they are sharp.

3) If the merchandiser is located in an area susceptible to grease collecting on the condenser, scrub with a solution of warm water and detergent. Care should be taken to keep solution away from wiring and electrical components.

4) Take the fan guard out for fan blades and condenser shroud cleaning, then re-install the fan guard (optional).

Check for loose items before replacing panel.

Evaporator Housing

The thermostat "OFF" position disconnects the condensing unit only. The evaporator fan motor will be energized until the door is opened or the unit is disconnected from the main power source. Remove the fasteners to lower the evaporator housing for cleaning and/or service.

NOTE: Evaporator fan will cycle "OFF" during defrost cycle. Evaporator fan will delay approximately 5 to 10 minutes after each defrost cycle and initial start-up on Low Temperature Models (ARL's).

Merchandiser Electrical Data

Merchandiser data sheets are attached to the back of this manual. The data sheets provide case electrical data, electrical schematics, parts lists and performance data. Refer to the merchandiser data sheets and case serial plate for electrical information.