

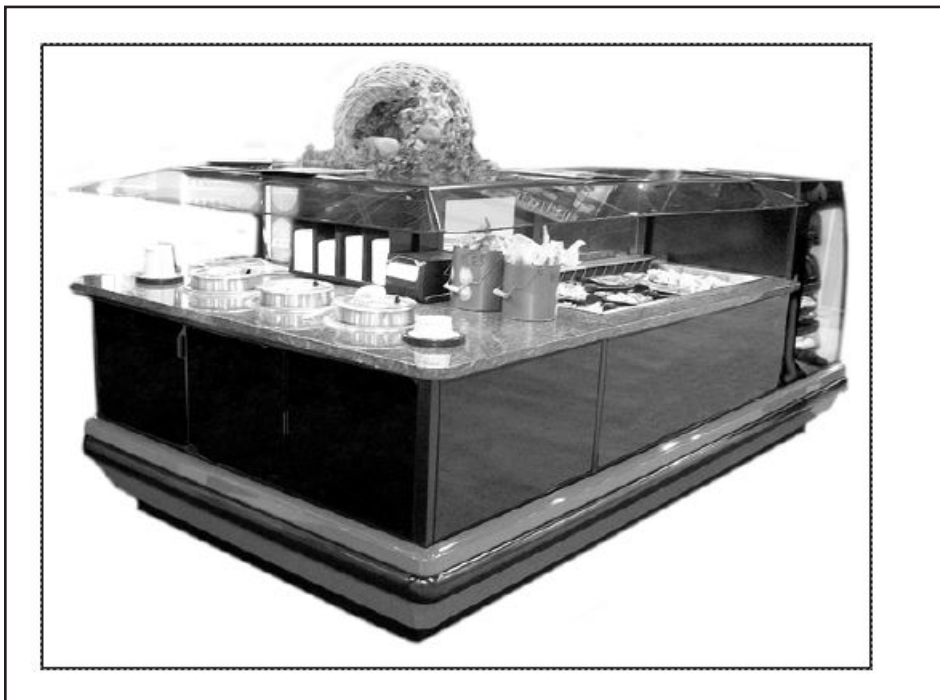
HUSSmann®

ISLA Food Counters

IM-FR-Refrigerated Counters

IM-FH-Hot Counters

IM-FS-Soup Counters



Installation & Operation Manual

Shipped with Technical Data Sheets

P/N P/N 3034423_C



BEFORE YOU BEGIN

Read these instructions completely and carefully.



ANSI Z535.5 DEFINITIONS

- **DANGER** – Indicate[s] a hazardous situation which, if not avoided, will result in death or serious injury.
- **WARNING** – Indicate[s] a hazardous situation which, if not avoided, could result in death or serious injury.
- **CAUTION** – Indicate[s] a hazardous situation which, if not avoided, could result in minor or moderate injury.
- **NOTICE** – Not related to personal injury – Indicates[s] situations, which if not avoided, could result in damage to equipment.

The information contained in this document is the property of Hussmann Corporation and shall not be used in whole or in part without written permission.

WARNING

Proper Field Wiring and Grounding Required!
Failure to follow code could result in death or serious injury. All field wiring **MUST** be performed by qualified personnel. Improperly installed and grounded field wiring poses **FIRE** and **ELECTROCUTION** hazards. To avoid these hazards, you **MUST** follow requirements for field wiring installation and grounding as described in NEC and your local/state electrical codes.

WARNING

PERSONAL PROTECTION EQUIPMENT (PPE)

Only qualified personnel should install and service this equipment. Personal Protection Equipment (PPE) is required whenever installing or servicing this equipment. Always wear appropriate PPE as required by OSHA regulations, as well as all other federal, state and local codes. PPE may include, but is not limited to, safety glasses, gloves, protective boots or shoes, long pants, and a long-sleeve shirt. Observe all precautions on tags, stickers, labels and literature attached to this equipment.

CAUTION

This manual was written in accordance with originally prescribed equipment that is subject to change. Hussmann reserves the right to change all or part of the equipment for future stores such as, but not limited to, controllers and electrical specifications.

WARNING

— LOCK OUT / TAG OUT —

To avoid serious injury or death from electrical shock, always disconnect the electrical power at the main disconnect when servicing or replacing any electrical component. This includes, but is not limited to, such items as controllers, electrical panels, condensers, lights, fans, and heaters.

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IMPORTANT
KEEP THIS DOCUMENT IN YOUR STORE FOR FUTURE REFERENCE

Quality that sets industry standards!

HUSSMANN®

12999 St. Charles Rock Road • Bridgeton, MO 63044-2483

U.S. & Canada 1-800-922-1919 • Mexico 1-800-890-2900

www.hussmann.com

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1. General Instructions

IMPORTANT

KEEP THIS DOCUMENT IN YOUR STORE FOR FUTURE REFERENCE

HUSSMANN®

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(909) 628-8942 FAX
(909) 590-4910

12999 St. Charles Rock Road
Bridgeton, MO 63044-2483
U.S. & Canada
1-800-922-1919

This Booklet Contains Information on: ISLA FOOD COUNTERS

Shipping Damage

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, carrier may refuse claim. The carrier will supply necessary claim forms.

Concealed Loss or Damage

When loss or damage *is not apparent until after equipment is uncrated*, a claim for concealed damage is made. Make request in writing to carrier for inspection within 15 days, and retain all packaging. The carrier will supply inspection report and required claim forms.

Shortages

Check your shipment for any possible shortages of material. If a shortage should exist and is found to be the responsibility of Hussmann, *notify Hussmann*. If such a shortage involves the carrier, *notify the carrier immediately*, and request an inspection. Hussmann will acknowledge shortages within ten days from receipt of equipment.

Hussmann Product Control

The serial number and shipping date of all equipment has been recorded in Hussmann's files for warranty and replacement part purposes. All correspondence pertaining to warranty or parts ordering must include the serial number of each piece of equipment involved, in order to provide the customer with the correct parts.

Keep this booklet with the case at all times for future reference.

General Instructions Continued

UNLOADING FROM TRAILER:

Lever Bar
*(also known as a Mule, Johnson Bar, J-bar, Lever Dolly,
 and pry lever)*
 Moving Dolly



REVISION HISTORY

REVISION C

1. Added Coil Cleaning note

Original Issue

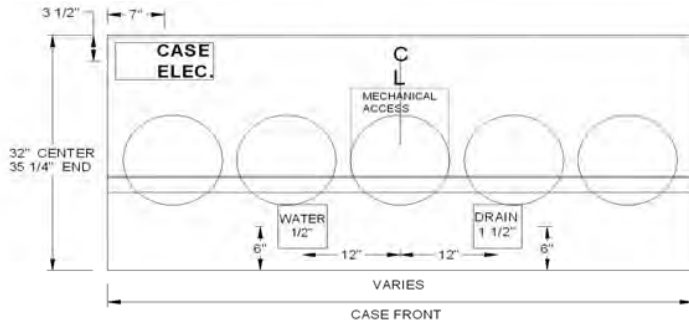


This warning does not mean that Hussmann products will cause cancer or reproductive harm, or is in violation of any product-safety standards or requirements. As clarified by the California State government, Proposition 65 can be considered more of a ‘right to know’ law than a pure product safety law. When used as designed, Hussmann believes that our products are not harmful. We provide the Proposition 65 warning to stay in compliance with California State law. It is your responsibility to provide accurate Proposition 65 warning labels to your customers when necessary. For more information on Proposition 65, please visit the California State government website.

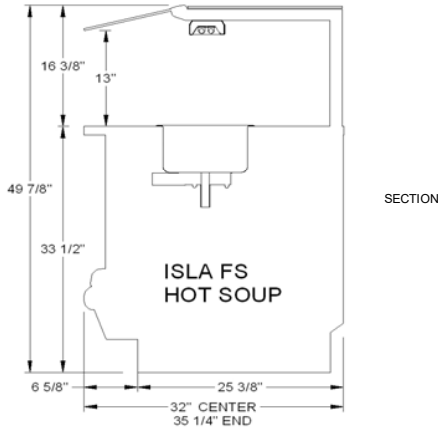
Cut and Plan Views



DESCRIPTION OF CASE
 HUSSMANN - ISLA HOT SOUP SELF-SERVICE FOOD COUNTERS



PHOTO



ELECTRICAL DATA: LIGHTING: T5 WITH ELECTRONIC BALLASTS 120V INPUT VOLTAGE

CASE LENGTH	SOUP WELLS MAX	CASE USAGE	HEAT LAMPS		T5 CANOPY LIGHTS		L.E.D. CANOPY LIGHTS		T5 TOTAL LIGHTS		L.E.D. TOTAL LIGHTS		CONVENIENCE OUTLETS		
			AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	# OUTLETS	VOLTS	AMPS
3'	2	HOT SOUP	N/A	N/A	21	0.19	N/A	N/A	21	0.19	N/A	N/A	N/A	N/A	N/A
4'	3	HOT SOUP	N/A	N/A	28	0.26	N/A	N/A	28	0.26	N/A	N/A	N/A	N/A	N/A
5'	4	HOT SOUP	N/A	N/A	35	0.32	N/A	N/A	35	0.32	N/A	N/A	N/A	N/A	N/A
6'	5	HOT SOUP	N/A	N/A	42	0.39	N/A	N/A	42	0.39	N/A	N/A	N/A	N/A	N/A
8'	6	HOT SOUP	N/A	N/A	56	0.52	N/A	N/A	56	0.52	N/A	N/A	N/A	N/A	N/A

LEGEND

N/A - NOT AVAILABLE
 TBD - TO BE DETERMINED
 SBO - SUPPLIED BY OTHERS

END PANEL WIDTH KEY

# OF END PNLS	END PNL WIDTH (IN.)	TOTAL ADDED LENGTH (IN.)
1	1.125	1.125
2	1.125	2.25

11 QT. SOUP WELL DATA:

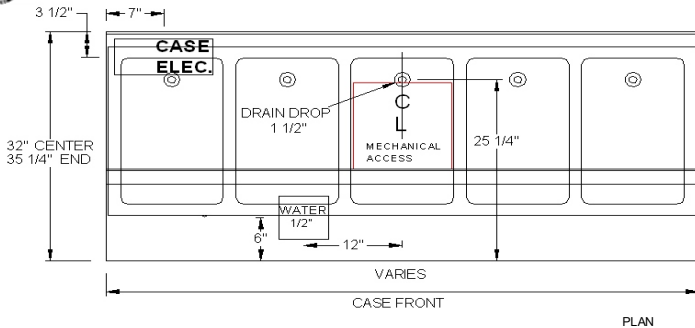
CASE LENGTH	SOUP WELLS MAX	2 SOUP WELLS (HATCO)			3 SOUP WELLS (HATCO)			4 SOUP WELLS (HATCO)			5 SOUP WELLS (HATCO)			6 SOUP WELLS (HATCO)			MAX. TOTAL AMPS / WATTS
		(2) HWB-11QT			(3) HWB-11QT			(4) HWB-11QT			(5) HWB-11QT			(6) HWB-11QT			
		VOLTS/ PHASE	AMPS	WATTS	VOLTS/ PHASE	AMPS	WATTS	VOLTS/ PHASE	AMPS	WATTS	VOLTS/ PHASE	AMPS	WATTS	VOLTS/ PHASE	AMPS	WATTS	
3'	2	240 / 1	5	1200	240 / 1	7.5	1800	240 / 1	10	2400	240 / 1	12.5	3000	240 / 1	15	3600	5.0 / 1200
4'	3					7.5	1800										7.5 / 1800
5'	4								10	2400							10.0 / 2400.0
6'	5											12.5	3000				12.5 / 3000
8'	6														15	3600	15.0 / 3600

- OPTIONS/NOTES:**
- NOTE: SOUP WELLS AND HOT WELLS USE 1 1/2" DRAIN AND 1/2" WATER LINES
 - NOTE: "AUTO-FILL" FOR HOT WELLS AND SOUP WELLS ARE OPTIONAL UNTIL FURTHER NOTICE.

Cut and Plan Views (Continued)



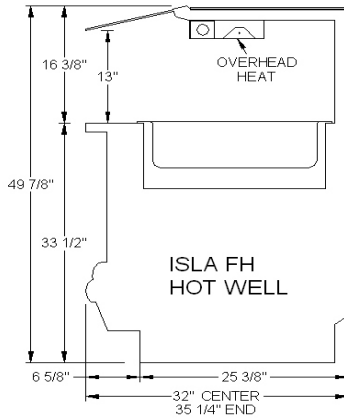
DESCRIPTION OF CASE
HUSSMANN - ISLA HOT WELL SELF-SERVICE FOOD COUNTERS



PLAN



PHOTO



SECTION

ELECTRICAL DATA:

LIGHTING: T5 WITH ELECTRONIC BALLASTS 120V INPUT VOLTAGE

CASE LENGTH	MAX WELLS	CASE USAGE	HEAT LAMPS		CANOPY LIGHTS		SHELF # SHLVs	LIGHTS		LEDGE LIGHTS		TOTAL LIGHTS		CONVENIENCE OUTLETS		
			AMPS	WATTS	AMPS	WATTS		AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	# OUTLETS	VOLTS	AMPS
3'	2	HOT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4'	3	HOT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5'	4	HOT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6'	5	HOT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8'	6	HOT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10'	8	HOT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12'	10	HOT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Light load ratings are included in overhead heater ratings

LEGEND

N/A - NOT AVAILABLE
 TBD - TO BE DETERMINED
 SBO - SUPPLIED BY OTHERS

12 X 20 HOT WELL DATA:

CASE LENGTH	MAX WELLS	HATCO HWBI-1 1 WELL 240 / 1 PHASE		HATCO HWBI-2 2 WELL 240 / 1 PHASE		HATCO HWBI-3 3 WELL 240 / 1 PHASE		HATCO HWBI-4 4 WELL 240 / 1 PHASE		HATCO HWBI-5 5 WELL 240 / 1 PHASE		HATCO HWBI-6 6 WELL 240 / 1 PHASE		MAX. TOTAL AMPS/ WATTS
		AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	
3'	2	5.1	1215	10.1	2415	15.1	3615							10.1 / 2415
4'	3					15.1	3615							15.1 / 1215
5'	4							20.1	4815					20.1 / 4815
6'	5									25.1	6015			25.1 / 6015
8'	6											30.1	7215	30.1 / 7215
10'	8						(2X)	20.1	4815					40.2 / 9630
12'	10							(2X)	25.1	6015				50.2 / 12030

END PANEL WIDTH KEY

# OF END PNLS	END PNL WIDTH (IN.)	TOTAL ADDED LENGTH (IN.)
1	1.125	1.125
2	1.125	2.25

OVERHEAD HEATER DATA:

CASE LENGTH	MAX WELLS	HATCO 30 GRAML 240 / 1 PHASE		HATCO 42 GRAML-2 240 / 1 PHASE		HATCO 60 GRAML 240 / 1 PHASE		HATCO 72 GRAML-72 240 / 1 PHASE		HATCO 84 GRAML-84 240 / 1 PHASE		MAX. TOTAL AMPS/ WATTS
		AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	
3'	2	3.94	945	5.65	1355	8.33	2000	10.15	2435	11.75	2820	3.94 / 945
4'	3	3.94	945	5.65	1355							5.65 / 1355
5'	4			5.65	1355							5.65 / 1355
6'	5					8.33	2000					8.33 / 2000
8'	6									11.75	2820	11.75 / 2820
10'	8				2 X	8.33	2000					16.66 / 4000
12'	10					8.33	2000	10.15	2435			18.48 / 4435

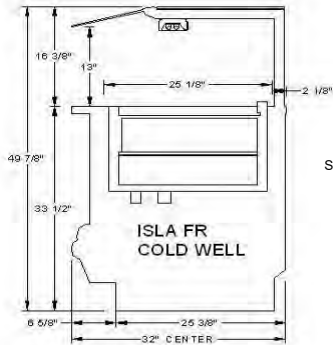
OPTIONS/NOTES:

- NOTE: SOUP WELLS AND HOT WELLS USE 1 1/2" DRAIN AND 1/2" WATER LINES
- NOTE: "AUTO-FILL" FOR HOT WELLS AND SOUP WELLS ARE OPTIONAL UNTIL FURTHER NOTICE.

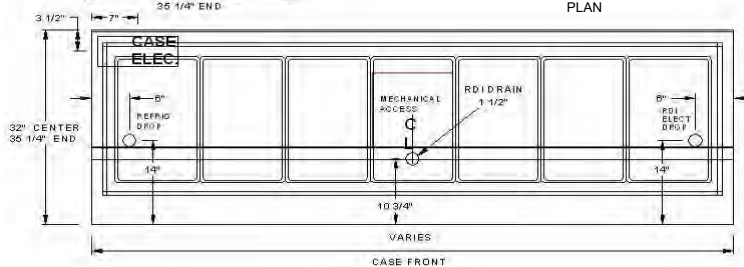
Cut and Plan Views (Continued)



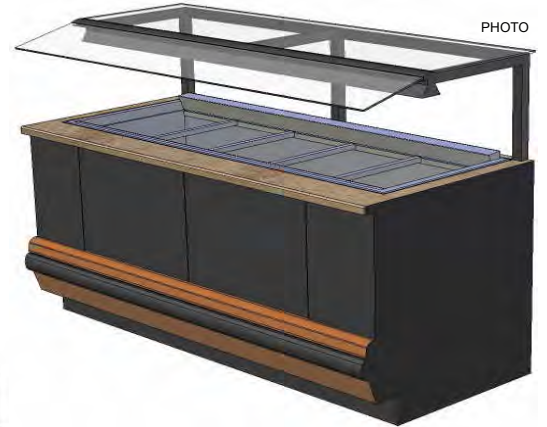
HUSSMANN - ISLA FR COUNTERS



SECTION



PLAN



PHOTO

REFRIGERATION DATA:

CASE LENGTH	# OF WELLS	CASE USAGE	CAPACITY (BTU/HR/TOTAL)		TEMPERATURE (°F)								VELOCITY (FT/MIN)	EST. REFG. CHRGS. (LBS)	GLYCOL REQUIREMENTS	
					EVAPORATOR		UNIT SIZING*		DISCHARGE AIR							
					PAR	CONV	PAR	CONV	PAR	CONV	PAR	CONV				
3'	2	COUNTER	1500	1725	20	20	18	18	30	30	350	1.6	0.5	0.5		
4'	3	COUNTER	2250	2588	20	20	18	18	30	30	350	2.2	0.8	1.2		
5'	4	COUNTER	3000	3450	20	20	18	18	30	30	350	2.2	1.1	2.3		
6'	5	COUNTER	3750	4313	20	20	18	18	30	30	350	2.5	1.3	3.7		
8'	6	COUNTER	4500	5175	20	20	18	18	30	30	350	5.4	1.6	5.4		
10'	8	COUNTER	6000	6900	20	20	18	18	30	30	350	3.7	2.1	7.0		
12'	10	COUNTER	7500	8625	20	20	18	18	30	30	350	5.6	2.7	10.6		

*2° F less than evaporator for pressure loss in refrigerant lines

END PANEL WIDTH KEY

# OF END PNLS	END PNL WIDTH (IN.)	TOTAL ADDED LENGTH (IN.)
1	1.125	1.125
2	1.125	2.25

LEGEND

PAR- PARALLEL
 CONV- CONVENTIONAL
 N/A - NOT APPLICABLE
 TBD - TO BE DETERMINED

REFRIGERATION DATA CONTINUED:

ELEC. THERMOSTAT / AIR SENSOR SETTINGS			EPR SETTINGS			CONVENTIONAL COMPRESSOR SETTINGS					
USAGE	CUT IN (°F)	CUT OUT (°F)	R22 (PSIG)	R404A (PSIG)	R407A (PSIG)	R22		R404A		R407A	
						CUT IN (PSI)	CUT OUT (PSI)	CUT IN (PSI)	CUT OUT (PSI)	CUT IN (PSI)	CUT OUT (PSI)
TEMP. CONTROL	32	28	43	55	N/A	40	10	40	10	40	10

ELECTRICAL DATA:

CASE LENGTH	# OF WELLS	# OF EVAP FANS	FANS AND HEATERS (120 VOLT)				LIGHTING: T5 WITH ELECTRONIC BALLASTS 120V INPUT VOLTAGE																
			TOTAL FANS		CANOPY LIGHTS		L.E.D. CANOPY LIGHTS		SHELF LIGHTS		L.E.D. SHELF LIGHTS		TOTAL LIGHTS		L.E.D. TOTAL LIGHTS		ANTI-SWEAT HEATERS						
			AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	# ROWS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS
3'	2	1	0.23	18	21	0.19	0.07	7.5	N/A	N/A	N/A	N/A	N/A	21	0.19	0.07	7.5	N/A	N/A	N/A	N/A	N/A	N/A
4'	3	2	0.46	36	28	0.26	0.10	10	N/A	N/A	N/A	N/A	N/A	28	0.26	0.10	10	N/A	N/A	N/A	N/A	N/A	N/A
5'	4	2	0.46	36	35	0.32	0.12	12.5	N/A	N/A	N/A	N/A	N/A	35	0.32	0.12	12.5	N/A	N/A	N/A	N/A	N/A	N/A
6'	5	3	0.69	54	42	0.39	0.15	15	N/A	N/A	N/A	N/A	N/A	42	0.39	0.15	15	N/A	N/A	N/A	N/A	N/A	N/A
8'	6	3	0.69	54	56	0.52	0.20	20	N/A	N/A	N/A	N/A	N/A	56	0.52	0.20	20	N/A	N/A	N/A	N/A	N/A	N/A
10'	8	5	1.15	90	70	0.65	0.25	25	N/A	N/A	N/A	N/A	N/A	70	0.65	0.25	25	N/A	N/A	N/A	N/A	N/A	N/A
12'	10	6	1.38	108	84	0.78	0.29	30	N/A	N/A	N/A	N/A	N/A	84	0.78	0.29	30	N/A	N/A	N/A	N/A	N/A	N/A

ELECTRICAL DATA CONTINUED:

CASE LENGTH	# OF WELLS	CONDENSING UNIT 120V 1 PHASE **230V		DRAIN EVAP PAN 120V		CONVENIENCE OUTLETS (Optional)		
		AMPS	WATTS	AMPS	WATTS	# OUTLETS	VOLTS	AMPS
		3'	2	N/A	N/A	N/A	N/A	N/A
4'	3	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5'	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6'	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8'	6	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10'	8	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12'	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A

DEFROST DATA:

# OF WELLS	DEFROST TYPE	TIME (MIN.)	TERM. TEMP (°F) COIL ONLY	DRIP TIME (MIN.)	DEFROST PER DAY	ELECTRICAL DEFROST 208V 1 PHASE		DEFROST WATER (LB/DAY)
						AMPS	WATTS	
2	OFF TIME	20	54	TBD	6	N/A	N/A	TBD
3	OFF TIME	20	54	TBD	6	N/A	N/A	TBD
4	OFF TIME	20	54	TBD	6	N/A	N/A	TBD
5	OFF TIME	20	54	TBD	6	N/A	N/A	TBD
6	OFF TIME	20	54	TBD	6	N/A	N/A	TBD
8	OFF TIME	20	54	TBD	6	N/A	N/A	TBD
10	OFF TIME	20	54	TBD	6	N/A	N/A	TBD

Installation

The ISLA FOOD COUNTER comes in various lengths and should be installed in a proper and uniform manner. The following guidelines will help ensure proper installation.

1. Case location should be near a floor sink or waste outlet - with electrical and refrigeration access usually under the case.
2. All plumbing should conform to local codes.
3. When the ISLA FOOD COUNTERS is to be installed in an existing fixture or in a supplied fixture, the ISLA FOOD COUNTERS and the new or existing fixture should be leveled front to back and side to side.
4. The electrical junction box is located under the ISLA FOOD COUNTERS which is where the electrical is terminated by the manufacturer. The junction box is a standard 2x4 box with knock-outs and cover.
5. The refrigeration is also stubbed down under the case for connection to liquid and suction lines from the remote ISLA FOOD COUNTERS case.
6. In cases where more than one ISLA FOOD COUNTERS are installed, run drains separately to the sink or drain outlet.
7. For ISLA FOOD COUNTERS units installed in an existing table, the lip on the unit should be sealed with a NSF approved sealant and all phillips screws slots should be sealed with same.
8. The ISLA FOOD COUNTERS should be dropped in the existing table oriented with the discharge air blowing from the front to the back of the fixture, the front is identifiable by the adjustable top air discharge control pins.
9. A thermostat and solenoid mounted in the suction line is recommended for temperature control and defrost.
10. Set defrost per case specs section of this book.

Exterior Loading

These models have not been structurally designed to support excessive external loading. Do not walk on their tops; This could cause serious personal injury and damage to the fixture.

Leveling

IMPORTANT! it is imperative that the ISLA FOOD COUNTER(s) and the FIXTURE that the ISLA FOOD COUNTER is installed in, be leveled from front to back and side to side prior to joining. a level case is necessary to ensure proper operation, water drainage.

NOTE: A. To avoid removing concrete flooring, begin lineup leveling from the highest point of the store floor.

B. When wedges are involved in a lineup, set them first.

All cases were leveled and joined prior to shipment to insure the closest possible fit when cases are joined in the field. When joining, use a carpenter's level and shim

PN_3034423_C

legs accordingly. Case must be raised correctly, under legs where support is best, to prevent damage to case.

1. Check level of floor where cases are to be set. Determine the highest point of the floor; cases will be set off this point.
2. Level and set the first case, carefully guiding the electrical, refrigeration and drain lines through the parent case. Case must be raised under legs where support is best to prevent damage to case. Internal bracing may be removed at this time.
3. Apply liberal bead of case joint sealant (NSF Approved) to cover dotted area shown below.

DO NOT USE PERMAGUM!



**ATTENTION
INSTALLER**

Proper case-joint sealing is extremely important to prevent water leaks!



**ATTENTION
INSTALLER**

It is the contractor's responsibility to install case(s) according to local construction and health codes



WARNING

BUILT IN TWO SECTIONS

All cases were leveled and joined and prior to shipment to insure the closest possible fit when cases are joined in the field. To avoid removing concrete flooring, begin line-up leveling from the highest point of the store floor.



**ATTENTION
INSTALLER**

It is imperative that the case be leveled from front to back and side to side. A level case is necessary to insure proper operation of mechanical systems.

Bumper Installation



**ATTENTION
INSTALLER**

THIS EQUIPMENT IS TO BE INSTALLED TO
COMPLY WITH THE APPLICABLE FEDERAL,
STATE, OR LOCAL PLUMBING CODE HAVING
JURISDICTION 430-01-0056

Bumper installation instructions



Step 1: Make sure the aluminum channel and end caps are installed.



Step 2: Use silicone lubricant to help the bumper slide into the channel.



Step 3: Starting on one end: while inserting the bumper, push it up against the end cap to prevent the bumper from shrinking after installation (when it gets cold).



Step 4: As you insert the bumper into the channel with one hand, pull the bumper toward you with the other to open the inside lips. Slowly apply pressure by rolling the bumper into the track.

Plumbing

Waste Outlet and P-TRAP

The waste outlet is located at the left hand end of these fixtures allowing drip piping to be run under the fixture lengthwise.

A 1" P-TRAP and threaded adapter are supplied with each fixture. The P-TRAP must be installed to prevent air leakage and insect entrance into the fixture.

installing Condensate Drain

Poorly or improperly installed condensate drains can seriously interfere with the operation of this refrigerator, and result in costly maintenance and product losses. Please follow the recommendations listed below when installing condensate drains to insure a proper installation:

1. Never use pipe for condensate drains smaller than the nominal diameter of the pipe or P-TRAP supplied with the case.
2. When connecting condensate drains, the P-TRAP must be used as part of the condensate drain to prevent air leakage or insect entrance. Store plumbing system floor drains should be at least 14" off the center of the case to allow use of the P-TRAP pipe section. Never use two water seals in series in any one line. Double P-TRAPS in series will cause a lock and prevent draining.
3. Always provide as much down hill slope ("fall") as possible; 1/8" per foot is the preferred minimum. PVC pipe, when used, must be supported to maintain the 1/8" pitch and to prevent warping.
4. Avoid long runs of condensate drains. Long runs make it impossible to provide the "fall" necessary for good drainage.
5. Provide a suitable air break between the flood rim of the floor drain and outlet of condensate drain. 1" is ideal.
6. Prevent condensate drains from freezing:
 - a. Do not install condensate drains in contact with non-insulated suction lines. Suction lines should be insulated with a non absorbent insulation material such as Armstrong's Armaflex.
 - b. Where condensate drains are located in dead air spaces (between refrigerators or between a refrigerator and a wall), provide means to prevent freezing. The water seal should be insulated to prevent condensation.

Refrigeration

Refrigerant Type

The standard refrigerant will be R-404A unless otherwise specified on the customer order. Check the serial plate on the case for information.

Piping

The refrigerant line outlets are piped through the rear of the fixture at the left hand end when viewed from the back. Insulate suction lines to prevent condensation from dripping.

Refrigeration Lines

<u>Liquid</u>	<u>Suction</u>
3/8" O.D.	5/8" O.D.

NOTE: The standard coil is piped at 5/8" (suction); however, the store tie-in may vary depending on the number of coils and the draw the case has. Depending on the case setup, the connecting point in the store may be 5/8", 7/8", or 11/8". Refer to the particular case you are hooking up.

Refrigerant lines should be sized as shown on the refrigeration legend furnished by the store.

install P-TRAPS (oil traps) at the base of all suction line vertical risers.

Pressure drop can rob the system of capacity. To keep the pressure drop to a minimum, keep refrigerant line run as short as possible, using the minimum number of elbows. Where elbows are required, use long radius elbows only.

Control Settings

Maintain these parameters to achieve near constant product temperatures. Product temperature should be measured first thing in the morning, after having been refrigerated overnight. For all multiplexing, defrost should be time terminated. Loadmaster valves are not recommended. The number of defrosts per day should never change. The duration of the defrost cycle may be adjusted to meet conditions present at your location.

Evaporator Fans

The evaporator fans are located at the center front of these merchandisers directly beneath the display pans. **FOR ACCESS TO THE FANS:** Remove the right hand deck pan as viewed from the front of the case.

Refrigeration (Contd)

Access to TX Valves and Drain Lines

Mechanical - Remove product from end of case. Remove product racks. Remove refrigeration and drain access panels (labeled). TX valve (mechanical only) and drain are located under each access panel at end of the case.

Electronic - The Electronic Expansion valve master and slave cylinder(s) are located within the electrical access panel(s).

Electronic Expansion valve (Optional)

A wide variety of electronic expansion valves and case controllers can be utilized. Please refer to EEV and controller manufacturers information sheet. Sensors for electronic expansion valves will be installed on the coil inlet, coil outlet, and in the discharge air. (Some supermarkets require a 4th sensor in the return air). Case controllers will be located in the electrical raceway or under the case.

Thermostatic Expansion Valve Location

This device is located on the same side as the refrigeration stub. A Sporlan balanced port expansion valve model is furnished as standard equipment, unless otherwise specified by customer.

Expansion Adjustment

Expansion valves must be adjusted to fully feed the evaporator. Before attempting any adjustments, make sure the evaporator is either clear or very lightly covered with frost, and that the fixture is within 10°F of its expected operating temperature.

Measuring the Operating Superheat

1. Determine the suction pressure with an accurate pressure gauge at the evaporator outlet.
2. From a refrigerant pressure temperature chart, determine the saturation temperature at the observed suction pressure.
3. Measure the temperature of the suction gas at the thermostatic remote bulb location.
4. Subtract the saturation temperature obtained in step No. from the temperature measured in step No. 3.
5. The difference is superheat.
6. Set the superheat for 5°F - 7°F.

T-STAT Location

T-STATS are located within the electrical raceway.

Electrical

STANDARD CASE WIRE COLOR CODE CODIGO DE COLORES DE LOS ALAMBRES PARA LAS VITRINAS ESTANDAR CODE COULER POUR FILS DE BOITIER NORMALISE		
COLOR DESCRIPTION	DESCRIPCION	DESCRIPTION
■ GROUND	TIERRA MASA	MASSE
■ ANTI-SWEAT	ANTICONDENSACION	ANTI-SUINTEMENT
■ LIGHTS	LUCES	ECLAIRAGE
■ RECEPTACLES	ENCHUFES	PRISE DE COURANT
■ T-STAT/SOLENOID 230VAC	TERMOSTATO/SOLENOIDE (230VAC)	SOUPAPE A SOLENOID (230 VAC)
■ T-STAT/SOLENOID 115VAC	TERMOSTATO/SOLENOIDE (115VAC)	SOUPAPE A SOLENOID (115 VAC)
■ T-STAT/SOLENOID 24VAC	TERMOSTATO/SOLENOIDE (24VAC)	SOUPAPE A SOLENOID (24 VAC)
■ FAN MOTORS	VENTILADORES	VENTILATEUR
■ BLUE CONDENSING UNIT	UNIDAD DE CONDENSACION	UNITE DE CONDENSATION

USE COPPER CONDUCTORS ONLY
UTILISEZ LES CONDUCTEURS DE CUIVRE SEULEMENT
UTILICE LOS CONDUCTORES DE COBRE SOLAMENTE
 430-01-0338 R101003

CASE MUST BE GROUNDED

NOTE: Refer to label illustrated above that is affixed to case to determine the actual configuration as checked in the "TYPE iNs Tall ED" boxes.

Electrical Circuit Identification

Standard lighting for all models will be full length fluorescent lamps located within the case at the top.

The switch controlling the lights, the plug provided for digital scale, and the thermometer are located at the rear of the case mullion.

The receptacle that is provided on the exterior back of these models is intended for computerized scales with a five amp maximum load, not for large motors or other high wattage appliances. It should be wired to a dedicated circuit.

Electrical service Receptacles

(When applicable)

The receptacles located on the exterior of the merchandiser are intended for scales and lighted displays. They are not intended nor suitable for large motors or other external appliances.



DANGER

**BEFORE SERVICING
ALWAYS DISCONNECT ELECTRICAL
POWER AT THE MAIN DISCONNECT
WHEN SERVICING OR REPLACING ANY
ELECTRICAL COMPONENT.**

This includes (but not limited to) Heaters and Lights.

Field Wiring and Serial Plate Amperage

Field Wiring must be sized for component amperes printed on the serial plate. Actual ampere draw may be less than specified. Field wiring from the refrigeration control panel to the merchandisers is required for refrigeration thermostats. Case amperes are listed on the wiring diagram, but always check the serial plate.

Ballast Location

Ballasts are located within the access panel.

User Information

Hot Well/Soup Well Operating Instructions

Each hot unit has an individual heater with a separate control. These are thermostatically controlled with an indicator light showing when the heater has cycled on and is heating. The light below each control knob indicates when the well heater is heating.



These units are for short-term holding and display of precooked hot foods. They are not intended to cool or reheat food. The temperature of the food entering the display should be approximately 160°F when first inserted.

Any attempt to use the hot unit to display large amounts of food or soup for long periods of time will result in dehydrated, overcooked and unsafe food. The quality of the food will progressively worsen as the length of time increases.

The deterioration of product quality is a function of time and temperature. All products are affected even though in gravy or other liquid. They may appear to withstand the temperature better than “dry” foods such as fried chicken but this is not necessarily true. All foods will continue to be affected by prolonged exposure to elevated temperatures.

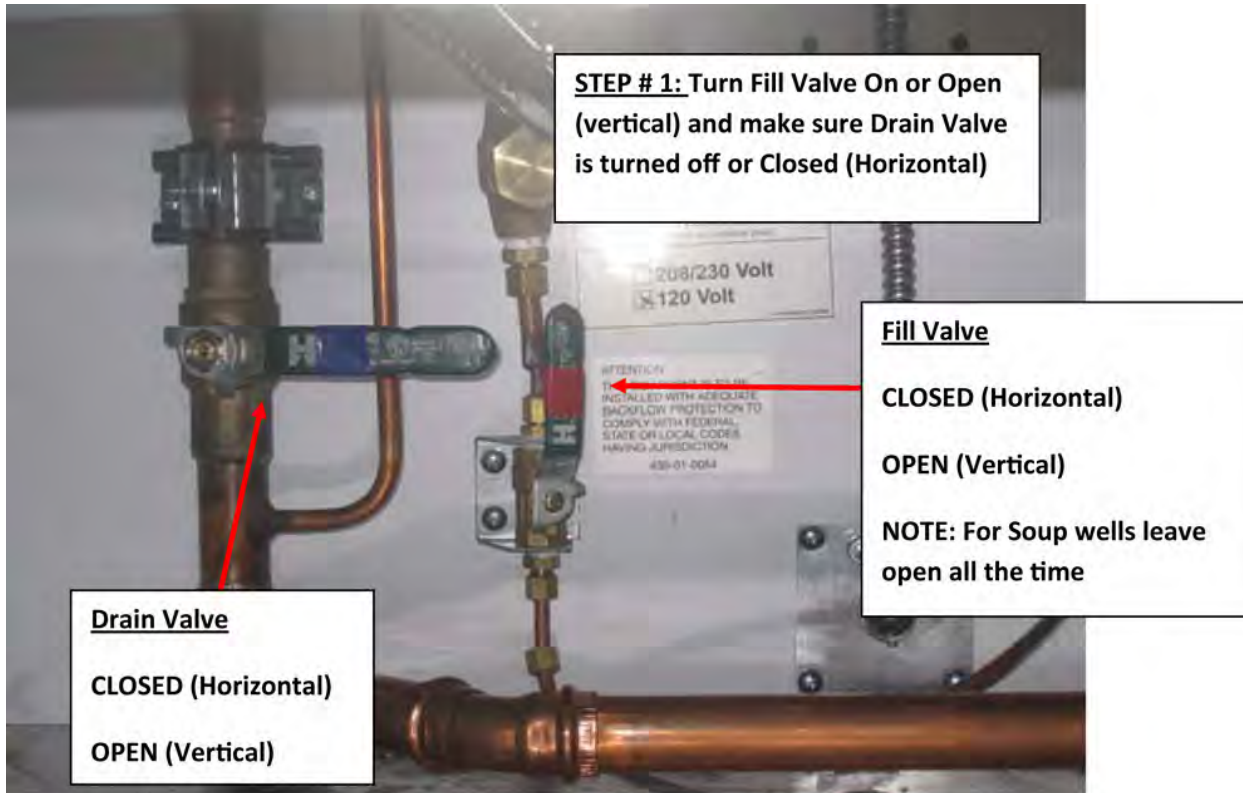
The following guidelines are provided only as a general guide for the use of this equipment. The local health agency for your area can provide specific temperature requirements.

Critical attention must be given to the heat controls for these hot tables/soup bars. Both the upper and lower heat controls (soup only require lower control) must be adjusted to achieve proper food temperatures. Hot foods should be held at a constant temperature of at least 140°F (60°C) (minimum FDA requirements to prevent spoiling). However, increasing the temperature too high will also cause the food to overcook, dry out, lose its flavor, texture and color. Food held for prolonged periods at high temperatures will also lose some of their nutritional value.

Different foods require different control settings. The type of food, the quantities of food and length of time that it is to remain in the hot table must be considered when establishing control settings. Therefore, it must be the user’s responsibility to establish the correct control settings to maintain the food at the safest, tastiest and saleable condition.

User Information (Contd)

Startup:



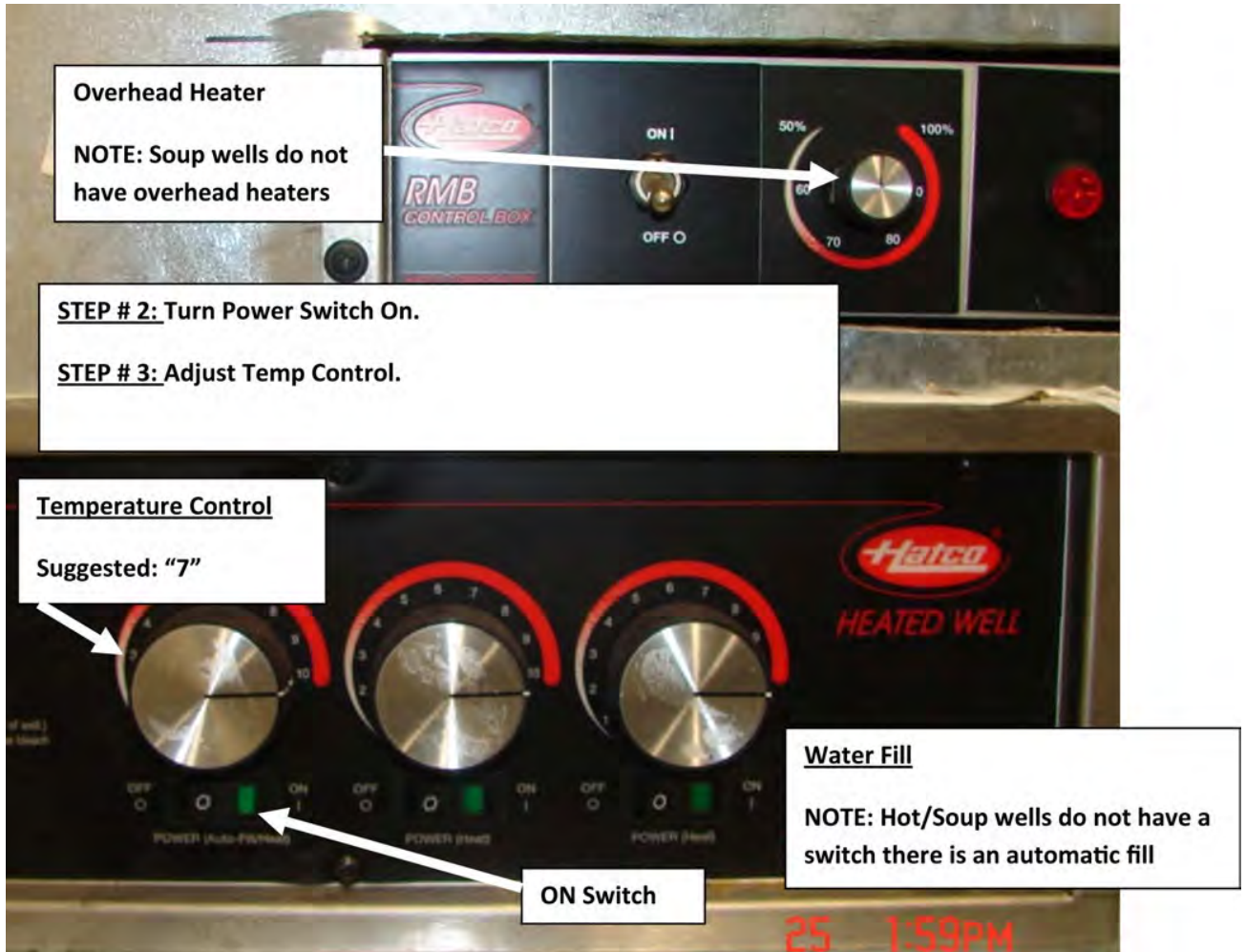
To fill the well:

- Turn the fill valve to open position.
- Close the drain valve.

To drain the well:

- Turn the fill valve to the closed position.
- Open the drain valve.

User Information (Contd)



Operation:

- Turn power switch on.
- Set temperature control to '7" setting. Adjust as necessary.
- Adjust overhead heater as necessary.

Shutting down:

- Turn "ON" switch off.
- Close fill valve.
- Open drain valve.
- Once the water is drained, close the drain valve.

User Information (Contd)

Overhead Heating system

Overhead heaters and fluorescent lights are located above each well to provide both top heat and illumination.

To obtain the proper food temperatures, the well heater and overhead heater must be adjusted. Maximum limits should be avoided to prevent overcooking or drying out of food.

Note: Soup Wells do not have overhead heaters.



Food temperatures can be accurately determined only through the use of food thermometers!

Important Food Handling Tips:

1. Preheat case 30 minutes before loading product.
2. Never place food directly into the warmer. Always use an inset.
3. Food must be displayed in a single layer, in contact with the heat source at all times.
4. Using thermometer, check product before loading in case (150°-160°).
5. At start, set control to "7". After loading, recheck temperature every ½ hour to see that unit is operating properly. Adjust the temperature to maintain a product temperature of 140°F (60°C) and above. The setting will depend on the type and quantity of product being displayed. Be sure to test product temperature with a thermometer frequently for good product maintenance.
6. Food should be rotated periodically.
7. At the end of the day, remove product and let case cool. Then clean with soap and water.



Do not run hot wells without any water!

General Cleaning

Case Cleaning

Long life and satisfactory performance of any equipment are dependent upon the care given to it. To insure long life, proper sanitation and minimum maintenance costs, the unit should be cleaned thoroughly and frequently. The interior may be cleaned with any domestic soap or detergent based cleaners. Sanitizing solutions will not harm the interior bottom, however, these solutions should always be used according to the manufacturer's directions. It is essential to establish and regulate cleaning procedures. This will minimize bacteria causing discoloration which leads to degraded product appearance and significantly shortening product shelf life.

Soap and hot water are not enough to kill this bacteria. A sanitizing solution must be included with each cleaning process to eliminate this bacteria.

1. Scrub thoroughly, cleaning all surfaces, with soap and hot water.
2. Rinse with hot water, but do not flood.
3. Apply the sanitizing solution according to the manufacturer's directions.
4. Rinse thoroughly.
5. Dry completely before resuming operation.

Cleaning Glass and Mirrors

Only use a soft cloth and mild glass cleaner for cleaning any glass or mirrored components. Be sure to rinse and/or dry completely.

Never use hot water on cold glass surfaces! It may shatter and cause serious injury! Allow glass surfaces to warm first.

CAUTION

CLEANING PRECAUTIONS

When cleaning:

- Do not use high pressure water hoses
- Do not introduce water faster than waste outlet can drain
- NEVER INTRODUCE WATER ON SELF CONTAINED UNIT WITH AN EVAPORATOR PAN
- NEVER USE A CLEANING OR SANITIZING SOLUTION THAT HAS AN OIL BASE (these will dissolve the butyl sealants) or an AMMONIA BASE (this will corrode the copper components of the case)
- TO PRESERVE THE ATTRACTIVE FINISH:
- DO USE WATER AND A MILD DETERGENT FOR THE EXTERIOR ONLY
- DO NOT USE A CHLORANITED CLEANER ON ANY SURFACE
- DO NOT USE ABRASIVES OR STEEL WOOL SCOURING PADS (these will mar the finish)

User Information (Contd)

Plexi-glass and Acrylic Care

Improper cleaning not only accelerates the cleaning cycle but also degrades the quality of this surface. Normal daily buffing motions can generate static cling attracting dust to the surface. Incorrect cleaning agents or cleaning cloths can cause micro scratching of the surface, causing the plastic to haze over time.

Cleaning

Hussmann recommends using a clean damp chamois, or a paper towel marketed as dust and abrasive free with **210®** Plastic Cleaner and Polish available by calling **Sumner Labs at 1-800-542-8656**. Hard, rough cloths or paper towels will scratch the acrylic and should not be used.

Antistatic Coatings

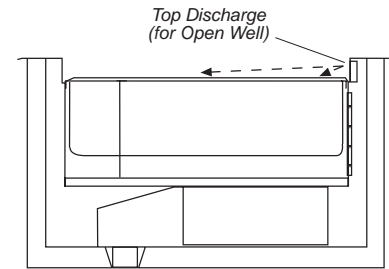
The **210®** has proven to be very effective in not only cleaning and polishing the Plexiglass surface, but also providing antistatic and anti-fog capabilities. This product also seals pores and provides a protective coating.

Cold Food

Stocking

Improper temperature and lighting will cause serious product loss. Discoloration, dehydration and spoilage can be controlled with proper use of the equipment and handling of product. Product temperature should always be maintained at a constant and proper temperature. This means that from the time the product is received, through storage, preparation and display, the temperature of the product must be controlled to maximize life of the product. Hussmann cases were not designed to "heat up" or "cool down" product - but rather to maintain an item's proper temperature for maximum shelf life. To achieve the protection required always:

1. Minimize processing time to avoid damaging temperature rise to the product. Product should be at proper temperature.
2. Keep the air in and around the case area free of foreign gasses and fumes or food will rapidly deteriorate.
3. Maintain the display merchandisers temperature controls as outlined in the refrigerator section of this manual.
4. Do not place any product into these refrigerators until all controls have been adjusted and they are operating at the proper temperature. Allow merchandiser to operate a minimum of 6 hours before stocking with any product.
5. When stocking, never allow the product to extend beyond the recommended load limit. Air discharge and return air flue must be unobstructed at all times to provide proper refrigeration. Do not stock product within the top air discharge zone (See diagram).



6. This case was designed and tested using stainless steel hotel pans. The use of any other material (such as crocks) may insulate the product and thus, not be kept cold. Containers made of materials other than stainless steel is discouraged and may void warranty.
7. Avoid the use of supplemental flood or spot lighting. Display light intensity has been designed for maximum visibility and product life at the factory. The use of higher output fluorescent lamps (H.O. and V.H.O.), will shorten the shelf life of the product.

Important Steps

1. Do not set temperature too cold, as this causes product dehydration. Refer to case specs section for proper settings.
2. Temperature control should be by means of a T-STAT and Suction Stop Solenoid at each case. Do not use EPR valves, Liquid Line Solenoids or electronic control devices of any kind, as these allow temperature swings causing dehydration and excessive energy consumption.

Case Cleaning

Long life and satisfactory performance of any equipment are dependent upon the care given to it. To insure long life, proper sanitation and minimum maintenance costs, the refrigerator should be thoroughly cleaned frequently. **SHUT OFF FAN DURING CLEANING PROCESS.** It can be unplugged within the case, or shut off case at the source. The interior bottom may be cleaned with any domestic soap or detergent based cleaners. Sanitizing solutions will not harm the interior bottom, however, these solutions should always be used according to the manufacturer's directions. It is essential to establish and regulate cleaning procedures. This will minimize bacteria causing discoloration which leads to degraded product appearance and significantly shortening product shelf life.

Soap and hot water are not enough to kill this bacteria. A sanitizing solution must be included with each cleaning process to eliminate this bacteria.

1. Scrub thoroughly, cleaning all surfaces, with soap and hot water.
2. Rinse with hot water, but do not flood.

User Information (Contd)

3. Apply the sanitizing solution according to the manufacturer's directions.
4. Rinse thoroughly.
5. Dry completely before resuming operation.

Cleaning Glass and Mirrors


Only use a soft cloth and mild glass cleaner for cleaning any glass or mirrored components. Be sure to rinse and/or dry completely.

Never use hot water on cold glass surfaces! it may shatter and cause serious injury! Allow glass surfaces to warm first.

Maintenance

Access Panels

The electrical J box is located in the center of the case beneath the plate shelf. The access for condensing units (in the self contained units) is located on the side of the stand, at the end. Ends of stand are fitted for removal, if condensing unit has to be taken out.



DANGER

BEFORE SERVICING
ALWAYS DISCONNECT ELECTRICAL
POWER AT THE MAIN DISCONNECT
WHEN SERVICING OR REPLACING ANY
ELECTRICAL COMPONENT.

This includes (but not limited to) Fans, Heaters
Thermostats, and Lights.

T-5 Bulbs

T-5 lamps are furnished with a shatterproof protective coating. The same type of lamp with protective coating must be used if replaced. All lamps have the label below.

HUSSMANN®

ENCAPSULITE
 SHATTERPROOF COATING - SA 10645

 Complies with FDA USDA
 & OSHA Regulations 

for replacement call:
1-800-395-9229

→ Turn switch off then on after replacing bulb ←

Evaporator fans

The evaporator fans are located at the center front of these merchandisers directly beneath the display pans. Should fans or blades need servicing, always replace fan blades with the raised embossed side of the blade TOWARD THE MOTOR.

Copper Coils


The copper coils used in Hussmann merchandisers may be repaired in the field. Materials are available from local refrigeration wholesalers.

Hussmann recommends using #15 Sil-Fos for repairs.

Tips and Troubleshooting

Before calling for service, check the following:

1. Check electrical power supply to the equipment for connection.
2. Check fixture loading. Overstocking case will affect its proper operation.
3. If frost is collecting on fixture and/or product, check that Humidity Control is working properly, and that no outside doors or windows are open-allowing moisture to enter store.



IMPORTANT
INFORMATION

FOR PROMPT SERVICE
When contacting the factory,
be sure to have the Case Model and Serial
Number handy. This information is on a plate
located on the case itself.

Maintenance (Contd)

Stainless Steel Cleaning and Care

There are three basic things, which can break down your stainless steel's passivity layer and allow corrosion.

1. Mechanical a brasion

Mechanical Abrasion means those things that will scratch the steels surface. Steel Pads, wire Brushes, and Scrapers are prime examples.

2. Water

Water comes out of our tap in varying degrees of hardness. Depending on what part of the country you live in, you may have hard or soft water. Hard water may leave spots. Also, when heated, hard water leaves deposits behind that if left to sit, will break down the passive layer and rust your stainless steel. Other deposits from food preparation and service must be properly removed.

3. Chlorides

Chlorides are found nearly everywhere. They are in water, food and table salt. One of the worst perpetrators of chlorides can come from household and industrial cleaners.

Don't Despair! Here are a few steps that can help prevent stainless steel rust.

1. Use the Proper Tools

When cleaning your stainless steel products, take care to use non-abrasive tools. Soft Clothes and plastic scouring pads will NOT harm the steel's passive layer. Stainless steel pads can also be used but the scrubbing motion must be in the same direction of the manufacturer's polishing marks.

2. Clean With the Polish I ines

Some stainless steels come with visible polishing lines or "grain". When visible lines are present, you should ALWAYS scrub in a motion that is parallel to them. When the grain cannot be seen, play it safe and use a soft cloth or plastic scouring pad.

3. Use alkaline, or

Non-chloride Containing Cleaners

While many traditional cleaners are loaded with chlorides, the industry is providing an ever increasing choice of non-chloride cleaners. If you are not sure of your cleaner's chloride content contact your cleaner supplier. If they tell you that your present cleaner contains chlorides, ask for an alternative. Also, avoid cleaners containing quaternary salts as they also can attack stainless steel & cause pitting and rusting.

4. Treat your Water

Though this is not always practical, softening hard water can do much to reduce deposits. There are certain filters that can be installed to remove distasteful and corrosive elements. Salts in a properly maintained water softener are your friends. If you are not sure of the proper water treatment, call a treatment specialist.

5. Keep your Food Equipment Clean

Use alkaline, alkaline chlorinated or non-chlorinated cleaners at recommended strength. Clean frequently to avoid build-up of hard, stubborn stains. If you boil water in your stainless steel equipment, remember the single most likely cause of damage is chlorides in the water. Heating cleaners that contain chlorides has a similar effect.

6. RINSE, RINSE, RINSE

If chlorinated cleaners are used you must rinse, rinse, rinse and wipe dry immediately. The sooner you wipe off standing water, especially when sit contains cleaning agents, the better. After wiping the equipment down, allow it to air dry for the oxygen helps maintain the stainless steel's passivity film.

7. Never Use Hydrochloric acid (Muriatic acid) on Stainless Steel.

8. Regularly Restore/Passivate Stainless Steel.

CLEANING COILS

Never use sharp objects around coils. Use a soft brush or vacuum brush to clean debris from coils. Do not puncture coils! Do not bend fins. Contact an authorized service technician if a coil is punctured, cracked, or otherwise damaged.

Do NOT use chlorine or ammonia-based cleaners to clean aluminum coils.

ICE in or on the coil indicates the refrigeration and defrost cycle is not operating properly. Contact an authorized service technician to determine the cause of icing, and to make adjustments as necessary. To maintain product integrity, move all product to a cooler until the unit has returned to normal operating temperatures.

10. Electrical Wiring Diagrams

Due to the Custom nature of these cases, the wiring diagrams and loads are appended to each guide. f or additional copies, please contact the factory. Have the unit serial number available.

Troubleshooting Guide (Cold Case)

Problem	Possible Cause	Possible Solution
Case temperature is too warm.	Ambient conditions may be affecting the case operation.	Check case position in store. Is the case located near an open door, window, electric fan or air conditioning vent that may cause air currents? Case must be located minimum 15 Ft away from doors or windows. Cases are designed to operate at 55% Relative humidity and a temperature of 75°F.
	Discharge air temp is out of spec.	Check evaporator fan operation. Check electrical connections and input voltage.
		Fans are installed backwards. Check airflow direction.
		Fan blades are installed incorrectly. Make sure fan blades have correct pitch and are per specification.
		Check to see that fan plenum is installed correctly. It should not have any gaps.
		Check suction pressure and insure that it meets factory specifications.
	Place prepackaged hot food in case.	
	Case is in defrost.	Check defrost settings. See Technical Specifications section.
	Product load may be over its limits blocking airflow.	Redistribute product so it does not exceed load level. There is a sticker on the inside of the case indicating what the maximum load line is.
Coil is freezing over.	Return air is blocked, make sure debris is not blocking the intake section.	
	Coil close-offs are not installed. Inspect coil to make sure these parts are on the case.	
Condensing coil or evaporator coil is clogged or dirty.	Clean coil.	
Case temperature is too cold.	The t-stat temp is set too low.	Check settings. See Technical Specifications section.
	Ambient conditions may be affecting the case operation.	Check case position in store. Is the case located near an open door, window, electric fan or air conditioning vent that may cause air currents? Case must be located minimum 15 Ft away from doors or windows. Cases are designed to operate at 55% Relative humidity and a temperature of 75°F.
	Inadequate air circulation.	Check if air sweep fans are functioning, check electrical connections.
	There is not enough heat provided in the airflow.	Check if air sweep heater is functioning, check electrical connections.
	There are glass gaps on the side of the case.	See glass adjustment section.
	Glass is not completely shut.	Close glass correctly.

continued on next page...

Troubleshooting Guide (Cold Case) (Contd)

Problem	Possible Cause	Possible Solution
Water has pooled under case.	Case drain is clogged.	Clear drain.
	PVC drains under case may have a leak.	Repair as needed.
	Case tub has unsealed opening.	Seal as needed.
	If the case is in a line-up, case to case joint is missing or unsealed.	Install case to case joint and seal as needed.
	Evaporator pan is overflowing (if applicable).	Check electrical connection to evaporator pan. Check float assembly, it should move freely up and down the support stem. Clear any debris.
Case is not draining properly.	Case is not level.	Level the case.
	Drain screen is plugged.	Clean drain screen and remove any debris.
	Drain or P-trap is clogged.	Clear any debris.
Frost or ice on evaporator coil.	Evaporator fans are not functioning.	Check electrical connections.
	Defrost clock is not functioning.	Case should be serviced by a qualified service technician.
	Coil is freezing over.	Return air is blocked, make sure debris is not blocking the intake section. Coil close-offs are not installed. Inspect coil to make sure these parts are on the case.
Large gap is visible on bottom of front glass or glass can't be opened because it is too low.	Glass Height adjusters need to be adjusted.	See Glass Adjustment section.
Large gaps are visible in between glass panels or glass rubs against end panel.	Glass/glass clamp assembly needs to be adjusted.	See Glass Adjustment section.
Front glass does not stay open and falls closed.	Glass shock/piston may need to be replaced.	Case should be serviced by a qualified service technician.
Lights do not come on.	Ballast/light socket wiring.	Check electrical connections. See Electrical Section and check wiring diagram.
	Ballast needs to be replaced.	Case should be serviced by a qualified service technician. See Electrical Section.
	Lamp socket needs to be replaced.	Case should be serviced by a qualified service technician.
	Lamp needs to be replaced.	See Maintenance Section.
	Light Switch needs to be replaced.	Case should be serviced by a qualified service technician.

Troubleshooting Guide (Hot Case)

Problem	Possible Cause	Possible Solution
Product not holding temperature.	Ambient conditions may be affecting the case operation.	Check case position in store. Is the case located near an open door, window, electric fan or air conditioning vent that may cause air currents? Case must be located minimum 15 Ft away from doors or windows. Cases are designed to operate at 55% Relative humidity and a temperature of 75°F.
	Unit not preheated.	Preheat case before loading product.
	Heat settings too low	Adjust shelf/griddle control setting.
	Low voltage.	Using volt meter make sure line voltage matches serial plate voltage.
	Product held too long	Hold product for recommended time.
	Product not placed correctly in case.	Place product in case per recommendations.
	Product not hot when placed in case.	Place prepackaged hot food in case.
No soup/hot well or overhead heat.	Faulty heater.	Check and call Hatco to replace if necessary.
	Faulty control.	Check and call Hatco to replace if necessary.
	Loose wiring on heater.	Check wiring/electrical connections.
	Temperature setting "Off".	Increase shelf heat setting.
No griddle heat.	Faulty griddle heater.	Check and call Hatco to replace if necessary.
	Faulty control.	Check and call Hatco to replace if necessary.
	Loose wiring on heater.	Check wiring/electrical connections.
	Temperature setting "Off".	Increase griddle heat setting.
Main Power switch on but case is inoperative.	Open Circuit.	Check to see that cord is plugged in if plug is provided. Check wiring/electrical connections for hard wired cases. Check line voltage. Check power switch and replace if defective.
Fluorescent Lights do not come on.	Ballast/light socket wiring.	Check electrical connections. See Electrical Section and check wiring diagram.
	Ballast needs to be replaced.	Case should be serviced by a qualified service technician. See Electrical Section.
	Lamp socket needs to be replaced.	Case should be serviced by a qualified service technician.
	Lamp needs to be replaced.	See Maintenance Section.
	Light Switch needs to be replaced.	Case should be serviced by a qualified service technician.

10. Service Record

Last service date: By:

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

HUSSMANN®

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(909) 628-8942 FAX
(909) 590-4910
(800) 395-9229

Hussmann Corporation
12999 St. Charles Rock Road
Bridgeton, MO 63044-2483
(800) 922-1919

www.hussmann.com

The *MODEL NAME* and *SERIAL NUMBER* is required in order to provide you with the correct parts and information for your particular unit.

They can be found on a small metal plate on the unit. Please note them below for future reference.

MODEL:

SERIAL NUMBER:

HATCO SERIAL No: