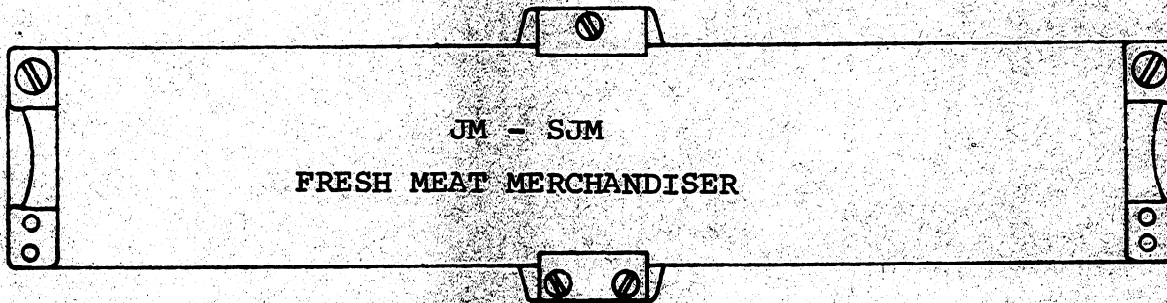


INSTALLATION & SERVICE INSTRUCTIONS

FOR MODEL(S)



**please retain
for future use**

**engineering dept.
bulletin # 75-154-2**

IN THE CONSTANT EFFORT TO IMPROVE OUR PRODUCTS, WE
RESERVE THE RIGHT TO CHANGE AT ANY TIME SPECIFICATIONS,
DESIGN, OR PRICES WITHOUT INCURRING OBLIGATION.

KYSOR

WARREN / SHERER

DIVISION OF KYSOR INDUSTRIAL CORPORATION

P. O. Box C
1600 Rockdale Industrial Blvd.
Conyers, Georgia 30207
404 483-5600

West Industrial Road
Marshall, Michigan 49068
616 781-3911

A New Record For Fresh-Meat Merchandisers

TECHNICAL DATA

JM—Solid Mirrored Back
 SJM—Sliding Rear Glass Doors

	8-Ft.	12-Ft.
	Models	Models
Length: less ends	8'0"	12'0"
with ends	8'4"	12'4"
Cubical content	53.6 cu. ft.	80.4 cu. ft.
Product-facing area	28.7 sq. ft.	43 sq. ft.

CAPACITIES:

	8-Ft.	12-Ft.
Main deck (wire rack)	19.7 sq. ft.	29.5 sq. ft.
Optional shelves - 14"	9.3 sq. ft.	14.0 sq. ft.
16"	10.7 sq. ft.	16.0 sq. ft.
20"	13.3 sq. ft.	20.0 sq. ft.

EXTERIOR: Baked enamel front, ends, and top in standard **COLORAMICS®** shades at no extra charge. Stainless-steel trim in exclusive Warren patterns. Bumper rail on front of display area—stainless steel. Closure plate of black baked enamel to conceal pedestal area—prevents debris accumulating beneath case.

INTERIOR: One-piece shell of fiberglass allows the unit to be hosed. Rear baffle is white baked enamel on rust-resistant steel. White fiberglass ends.

ELECTRIC DEFROSTING is standard.

TEMPERATURE-REGULATING VALVE included in each case.

HIGH-OUTPUT FLUORESCENT LIGHTING in top reflector.

REFRIGERATION: This unique **WARREN/SHERER®** principle features extra-heavy-duty top coiling with multiple fans.

MULTI-CASE CONSTRUCTION allows a continuous lineup of both models without interruption in the displays, using one pair of ends.

MAIN-LEVEL TELESCOPING WIRE RACKS—straight with round wire bright-electro-zinc plated with protective coating of clear lacquer baked on.

ACCESSORIES AVAILABLE AT EXTRA CHARGE

HOT-GAS DEFROSTING in lieu of electric.

UPPER-LEVEL LIGHTED SHELVES — 14", 16", or 20", sloped or flat, white baked enamel; lighted or unlighted. Adjustable on 1½" centers. Recommended shelves are 16" and 20" sloped.

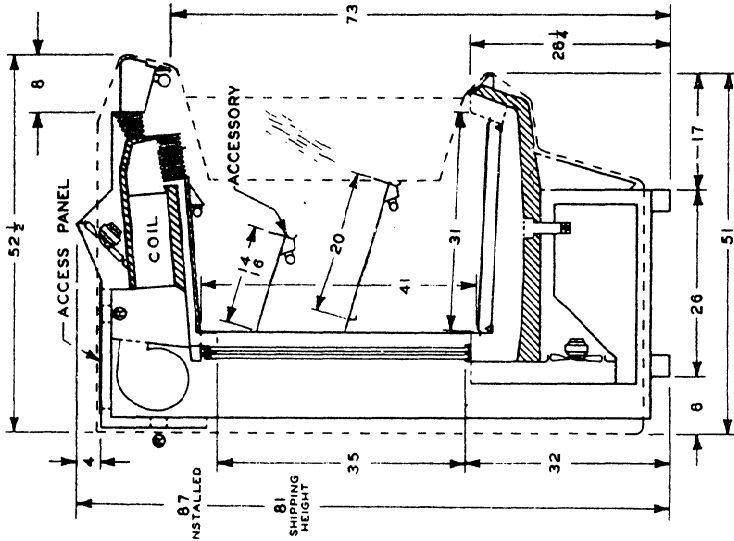
2½" and 4½" **FENCING** for sloped shelving.

TURNTABLE With Two 20" wire shelves rotates electrically - 115 volt.

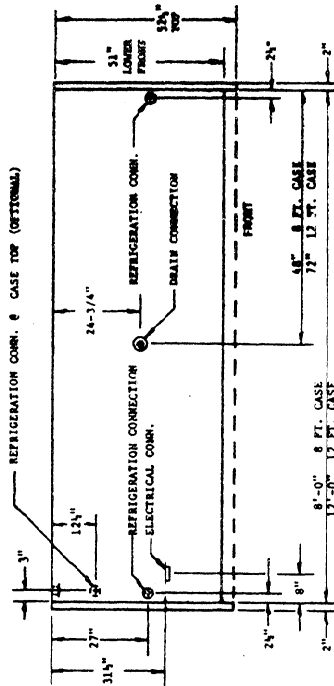
RING-FOR-SERVICE BUTTON.

DECOR TRIM for recessed channel in front of top.

STANDARD OR TRANSPARENT SLIDING MIRRORS in lieu of glass doors in SJM.



MODEL-SJM
 Ⓞ—REFRIGERATION CONNECTION



IN THE CONSTANT EFFORT TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO CHANGE AT ANY TIME SPECIFICATIONS, DESIGN, OR PRICES WITHOUT INCURRING OBLIGATION.



DIVISION OF KYSOR INDUSTRIAL CORPORATION
 P. O. Box 1436, Atlanta, Georgia 30301

Appendix B

INTRODUCTION

The following instructions are provided for your information to facilitate ease and economy of installation along with longevity of product service. Please utilize this important tool to its utmost. For information not contained in this booklet please consult directly with your Warren/Sherer Engineering or Service Department.

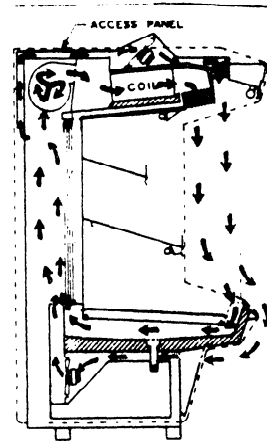
DESCRIPTION AND PURPOSE OF UNIT

Description

The SJM is designed as a rear loaded fixture with sliding doors to be backed up to a meat prep room or open aisle between prep room and fixture. The JM is for front loading only.

The JM-SJM is a combination of two air curtains. The inside jet, discharged through a 6" honeycomb at approximately 550 fpm is recirculated under the deck pans, up the back through the 9" square combination structural supports and return air ducts through the squirrel cage blowers at the top back and then through the 32-tube coil to the 6" honeycomb. The outer jet is a semi-recirculated jet and discharges through the 3" honeycomb at about 400 fpm and goes over the front color band. Just under the projected front is a grille which picks up this air, and it goes through a bottom set of fans and is discharged upward against the back of the sliding doors. This has the dual advantage of keeping the doors condensate free and helping to relieve a potential cold aisle problem. This same air is then picked up at the top of the doors and pulled through another set of fans and discharged again through the 3" honeycomb.

A sketch showing air flow as described above follows.



<u>MODEL</u>	<u>DESCRIPTION</u>	<u>SERIAL NUMBER DESIGNATION</u>
SJM	Multi-deck Fresh Meat Case With Rear Sliding Doors _____	639
JM	Multi-deck Fresh Meat Case _____	638

APPLICATION

Maximum store conditions are 80°F, 55% R.H. A relative humidity in excess of 60% will cause localized sweating and increase operating cost.

When used with an aisle space behind the fixture, it is not necessary to refrigerate this area if conditions can be maintained at 70°F db/55% RH or below. Generally, unless there is externally forced circulation in this area, the recirculated guard jet of air will keep this area at or below these conditions in addition to keeping the glass doors condensate-free.

With a fixture of this size, store air conditioning must be considered. For best merchandising and most comfortable shopping conditions, the fixture should face a wide open aisle, preferably with the gondolas across the aisle perpendicular, not parallel. To avoid excessive cold aisle problems, air circulation must be assured by proper air conditioning design. If in doubt, contact your nearest Warren/Sherer Application Engineering Department.

Refrigeration, electrical and waste drip connections must be planned early. There is provision in the top coil compartment and under the deck pans for interconnection of the fixtures. The waste drips may be interconnected under the foam shell. Best practice is to connect no more than three fixtures together on waste piping. The waste drip should be an "indirect" open type where the condensate free falls into an open floor drain. In the Appendix there is a floor plan layout of the JM-SJM fixture giving location of waste drip, electrical and refrigeration connections.

COMPRESSOR REQUIREMENTS

Compressor requirements are listed in the Appendix for various length lineups. The condensing unit may be either a single compressor - Mastermetic for a lineup of 1 thru 4 fixtures, or a parallel rack of 2 or 4 compressors - Minimetic or Multimetic - serving the entire medium temp requirements of the store. The ratings shown are based on a +5°F evaporator, 105°F condensing temperature and store ambients of 80°F and 55% RH. Higher humidities will induce sweating and excessive coil frosting.

OPTIONS

Options to be considered in planning include glass doors (if you want your customer to see your butchers at work), one-way conventional mirror and two-way "see-thru" mirrors (for a quick visual check of stock labels). When using the two-way mirrors, the area behind the fixture must be a lower level of light intensity than the case itself - 50 foot candles is recommended.

MAINTENANCE

Routine Cleaning

Weekly maintenance should consist of removal of shelves, deck pans, and wire racks, and thorough in-place cleaning of racks, deck pans, shelves, and drain pan area and return air grill, using one of the many high-pressure low-water-volume sprayers now on the market at costs of less than \$200. A detergent such as Tide may be used, although a bactericidal commercial cleaning solution is preferred. Practically any water-based cleaning solution may be used

PROVIDED it is rinsed off immediately. After cleaning, the above should be wiped dry and replaced. Next, all interior surfaces should be wiped dry and replaced. Next, all interior surfaces should be wiped down with a solution of 1/2 cup Lysol (or equal) to one gallon of warm water. Don't use detergents on mirrors - use Bon Ami Wonderful Glass Cleaner or equal.

Semiannual Cleaning

Semiannual maintenance requires removal of honeycombs and thorough cleaning of them with a hose. Handle carefully since they are fragile. Details for honeycomb removal are shown in the Appendix. The upper coil drain pan should be cleaned thoroughly with a high-pressure cleaner. The base area should be vacuumed to remove debris and dust.

INSTALLATION

Unloading

CAUTION: The top of the JM or SJM cases are not designed for walking on. Serious personal injury could occur plus irreparable damage to the case.

Remove all shipping braces carefully and inspect for damage, preferably in the presence of the delivery man. List any damage on the freight bill and have the delivery man sign it. This is for your protection in settling damage claims.

Setting

Setting the cases requires the following:

1. "Johnson bar" or "dog"
2. 3 - 2" pipe rollers
3. Set of socket and box-end wrenches
4. Crowbars
5. Shims
6. 4' Carpenter's Level

These fixtures are 52-1/2 inches wide and 87 inches high complete. If requested, they can be shipped with canopy panel, top fan plenum and cover and rear air duct separately for dimensions of 49 inches wide, 81 inches high or parts removed before moving into store. Measure your doors before arrival.

The fixtures are aligned at the factory prior to shipment on an absolutely level roller bed and cases intended to be joined together are marked "case _____ of lineup _____" on each end. It is imperative that these markings be observed.

Start at the left end and set case 1 in place, on shims if required. It is often helpful to sight the floor to make sure that there is not a pitch to the entire floor. Minor variations in height can be shimmed as you go along. Make sure that gasketing is in place for a good air seal. Replace gasketing if destroyed in transit.

Case 2 should be placed adjacent to case 1, and the T-nuts and bolts (marked 1 on Joint Kit List in Appendix) used to draw the cases together. DO NOT USE JUST ONE OR TWO BOLTS TO DRAW CASES TOGETHER. Tighten all bolts approximately the same amount at a time. When the fixtures are still 1/2" apart, caulk, with silicone sealant, the entire portion of the fixture in the foam shell area (drain pan) so that when final tightening is accomplished, the silicone is squeezed out along the entire metal end frame adjacent to the foam shell.

Next, both cases now joined together should be re-checked for level and shimmed where necessary. Now proceed to case 3.

Joint Trim/End Trim

Do not install any joint trim until entire lineup is in place and level. When the entire lineup is in place and level, then joint trim can be installed as shown on Appendix drawing.

Defrost Types

Defrost can be either conventional electric defrost or reverse cycle hot gas (Minimetic and Multimetic systems only.) Usual requirements in well air-conditioned stores are four defrosts per day at 14 minutes each on electric defrost and four per day at 10 minutes each on hot gas.

The defrost is temperature terminated to assure the shortest defrost possible. A 2EC type control panel will include the proper time clock.

Hookup - Refrigeration, Electric, Waste Drip

CAUTION: FIXTURES MUST BE INSTALLED ACCORDING TO NATIONAL ELECTRIC CODE AND MUST BE GROUNDED. Hookup of refrigeration lines can now be started. Sil-fos, silver solder or soft solder can be used. Be sure that all ferrule openings are sealed with urethane foam which can be dispensed from the throw-away can. Electrical interconnection can be made through the top ferrule along with refrigeration lines, but it is easier and less expensive to use the raceways provided in the lower front. Some areas require that 220-volt and 115-volt wires be segregated. This can be done by using both raceways provided. The circuits that must be pulled to the lineup are:

1. Two 208-230 volt wires for defrost (if electric) (Three wires if 3-phase defrost)
2. Two 115-volt wires for fans and antisweats
3. Two 115-volt wires for lights
4. Two 208-230-volt rated #14 AWG conductors for temperature termination.

Wire sizes can be selected from the application sheet in the Appendix. Local codes should be observed. In most applications, circuits 1 and 4 listed above go back to the condensing unit control panel, while 2 and 3 can be pulled to any convenient separate power source.

The waste drip, discussed earlier, can be run using ABS, PVC, or galvanized iron pipe, local codes permitting.

DEHYDRATION OF REFRIGERATION SYSTEM

PLEASE READ CAREFULLY BEFORE PLACING SYSTEM INTO OPERATION

1. After laying refrigerant lines, they should be blown out before making final connection at fixture or condensing unit. Use either carbon dioxide or dry nitrogen to prevent any foreign matter being left in the lines. Keep pressure below 250 pounds.
2. To prevent sealing due to brazing, dry nitrogen should be allowed to flow through lines while brazing operations are taking place.
3. After installation is complete and checked for leaks, pump a deep vacuum using a vacuum pump. DO NOT USE THE CONDENSING UNIT FOR THIS PURPOSE.
4. Break vacuum on system by releasing refrigerant through a dehydrator until pressure gauge reads above zero pounds. Repeat steps three and four.
5. A dehydrator should be used in the charging line when adding refrigerant.
6. A dehydrator of sufficient capacity must be installed in the liquid line before placing system into operation.

Start-up, Control Settings

Start-up, after proper evacuation, consists mainly of determining correct control settings. Following are recommended initial settings:

1. Defrost Terminating Thermostat - about 50°F
2. Time Clock - 4 per day at 14 minutes each (electric) (for humid stores, increase frequency/length as required)
3. Pressure Control on Condensing Unit - R-12 - cut out 5 psig, cut in 15 psig; R-502 - cut out 24 psig, cut in 42 psig.

OPERATION

To obtain proper temperatures with concise control, a thermostat should be used, although it is not mandatory. When the condensing units are subjected to low ambient during the winter months, a thermostat may be necessary. The thermostat bulb should be located in the discharge air.

EXPANSION VALVE

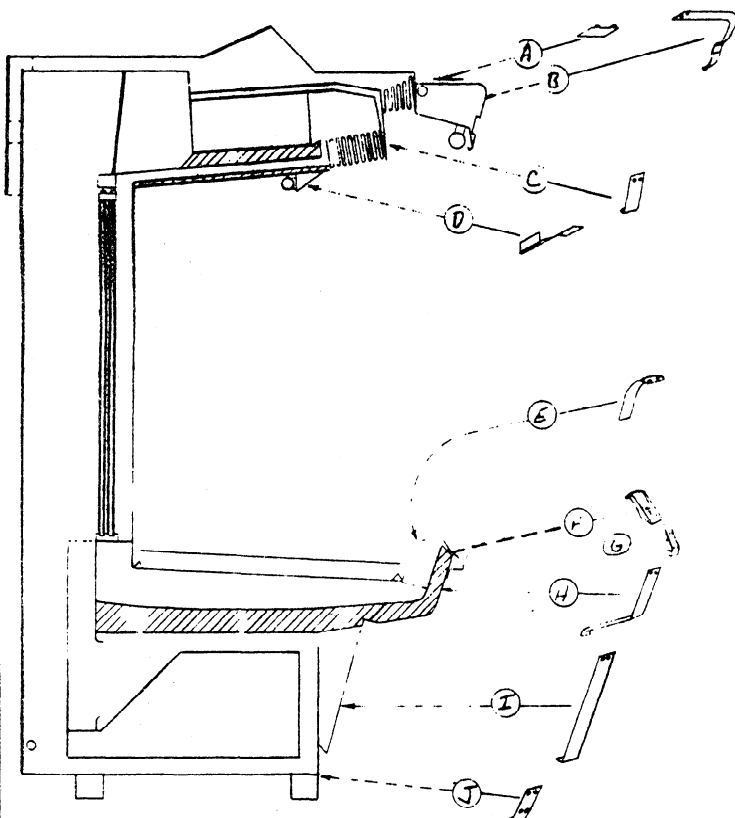
The expansion valve has been carefully sized and set for the unit to give maximum coil efficiency. The valve bulb has been strategically located and **MUST NOT BE MOVED**. Due to local conditions, adjustment of the expansion valve may be necessary after a minimum of 6 hours operation. Do not adjust the expansion valve at this point until you have checked the inlet strainer. If adjustment is necessary, adjust the valve to give frost line to ferrule hole where the suction line exits the case.

JOINT KIT N^o 94D13-99 FOR MODELS (S)JM - (S)JM

PART NUMBER	DRAWING LETTER	DESCRIPTION	REQ'D
16E10-52	F	JOINT TRIM CASTING	1
19A15-10		3/8-16 HEX SCP NUT	2
19A15-13		3/8 SO HD TEE NUT SMALL	5
19R13-11		3/8 CUT WASHER SCP	5
20E10-10		3/8-16 X 2-1/2 HEX HD MACHINE BOLT SCP	5
20E10-12		3/8-16 X 2-1/2 HEX HD MACHINE BOLT SCP THRD	5
21A11-11		8-32 X 1/2 SHEET METAL SCREW SS FH PH	2
21B12-15		8 X 3/4 SS SELF DRILL SCREW	8
21B12-17		10-16 X 1/2 SELF DRILLING SCREW	10
29B10-17		1/4" BEAD SEALER	8.4 FT
51F11-58	J	BASE KICKPLATE JOINT TRIM	1
51F11-88	D	L.S. TOP LIGHT JOINT TRIM	1
51F11-91	E	RETURN AIR JOINT TRIM	1
51X16-43		METAL SHIPPING BRACE	2
53E16-15	H	UPPER FRONT PANEL JOINT TRIM	1
53E16-34	B	CANOPY JOINT VINYL TRIM	1
53E16-42	L	LOWER FRONT JOINT TRIM VINYL ACC.	1
54E18-54		JOINT CASTING TRIM	1
54I20-47	C	HTR RAIL HONEYCOMB JOINT TRIM	1
54V10-13		ROUND SLUG TEE NUT WASHER	5
55P12-96	G	COLORBAND NOSE PIECE TRIM	1
73F19-54	A	BAFFLE ACCESS COVER	2

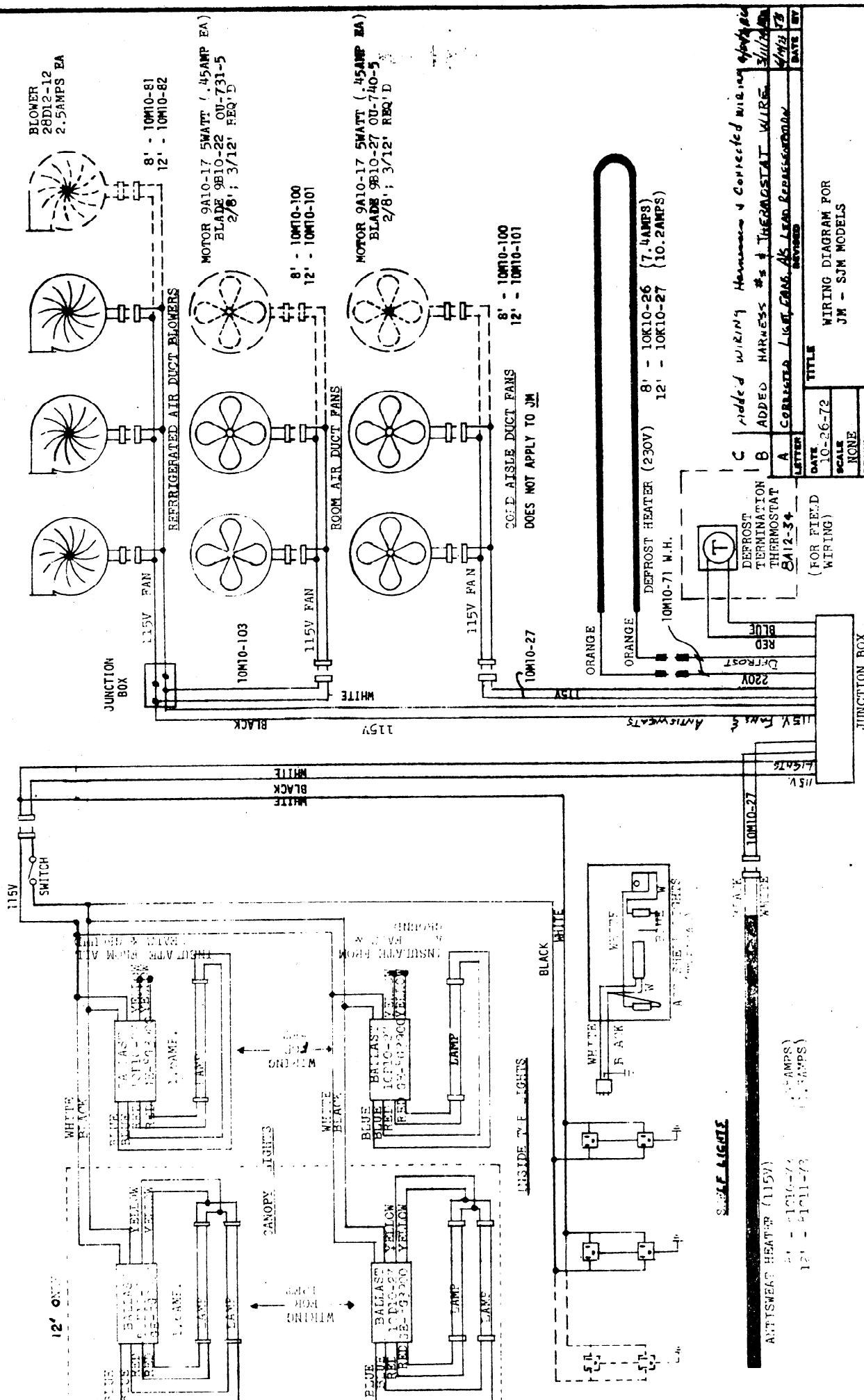
NOTES:

- FOR SIMPLIFICATION, PLACE FIXTURES AS NEAR THEIR PERMANENT LOCATION AS POSSIBLE BEFORE REMOVING SKIDS OR ROLLERS.
- THE LEVELING OF FIXTURES IS VERY IMPORTANT. SKILLED PERSONNEL AND AN ACCURATE LEVEL MUST BE USED. WOODEN WEDGES ARE FURNISHED TO ASSIST IN THIS OPERATION.
- AN AMPLE SUPPLY OF 1/4" ROUND SEALING COMPOUND IS SENT WITH EACH MULTIPLE INSTALLATION FOR SEALING OFF ANY AIR LEAKAGE. IT IS ESSENTIAL THAT ALL AIR LEAKS BE SEALED IN ORDER TO PREVENT OPERATING DIFFICULTIES. REMOVE ANY EXCESS SEALING COMPOUND WITH A SOLVENT SUCH AS MINERAL SPIRITS.
- FIXTURES ARE TO BE PLACED END TO END AS NEAR IN LINE AS POSSIBLE. CASE 2 SHOULD BE PLACED ADJACENT TO CASE 1, AND THE T-NUTS AND BOLTS USED TO DRAW THE CASES TOGETHER. DO NOT USE JUST ONE OR TWO BOLTS TO DRAW CASES TOGETHER, INSTEAD TIGHTEN ALL BOLTS APPROXIMATELY THE SAME AMOUNT AT A TIME. WHEN FIXTURES ARE STILL 1/2" APART, CAULK WITH SILICONE SEALANT, THE ENTIRE PORTION OF THE FIXTURE IN THE FOAM SHELL AREA (DRAIN PAN), SO THAT WHEN FINALLY TIGHTENED, THE SILICONE IS SQUEEZED OUT ALONG THE ENTIRE METAL END FRAME ADJACENT TO THE FOAM SHELL.
- "B" HONEYCOMB DIVIDER JOINT TRIM. PLACE OVER JOINT OF HONEYCOMB AND SECURE WITH (2) #8 X 5/8" SCREWS.
- "C" INSIDE LIGHT RAIL JOINT TRIM. PLACE OVER LIGHT RAIL JOINT AND SECURE WITH (2) #8 X 5/8" SCREWS.
- "A" CANOPY JOINT TRIM. PLACE OVER CANOPY JOINT AND SECURE WITH (2) #8 X 5/8" SCREWS.
- "D" RETURN AIR GRILLE JOINT TRIM. PLACE OVER RETURN AIR GRILLE JOINT AND SECURE WITH (2) #8 X 5/8" SCREWS.
- "H" KICKPLATE JOINT TRIM. PLACE OVER KICK-PLATE JOINT AND SECURE WITH #10 X 1/2" SCREWS.
- "E" COLORBAND JOINT CASTING. PLACE CASTING "E" OVER THE CENTER OF JOINT, HOOK BACK TOP PART OF CASTING OVER TOP CAP AND PRESS DOWN.
- "F" FRONT PANEL JOINT TRIM. PLACE OVER FRONT PANEL JOINT AND SECURE WITH (4) #8 X 1-1/4" SCREWS.
- "G" LOWER FRONT PANEL JOINT TRIM. PLACE OVER LOWER FRONT PANEL AND SECURE WITH (4) #8 X 1-1/4" SCREWS.
- "J" BAFFLE ACCESS COVER. PLACE OVER BAFFLE ACCESS AND SECURE WITH (2) #10-24 X 1/2" SCREWS.



Appendix C

NOTE: DOTTED LINES DENOTE 12" MODEL CIRCUIT

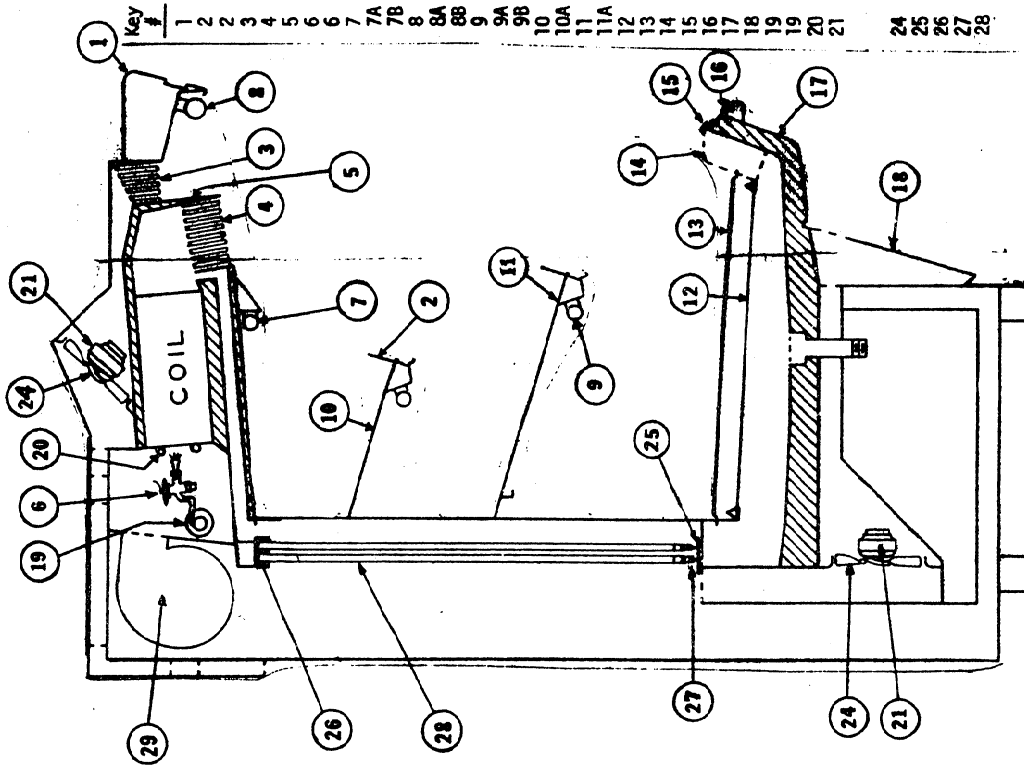


DATE	10-26-72	TITLE	WIRING DIAGRAM FOR JM - SJM MODELS
SCALE	NONE	DRAWN	BENTON
APPR.			
WARREN-Dual Jet DIVISION OF FERRIS INDUSTRIES CORPORATION P.O. BOX 1050, ANN ARBOR, MICHIGAN 48106			
			PB-19706-B

Appendix D
- 8 -

NOTE: DOTTED LINES DENOTE 12" ONLY
BRUNING 4-31

PARTS LIST

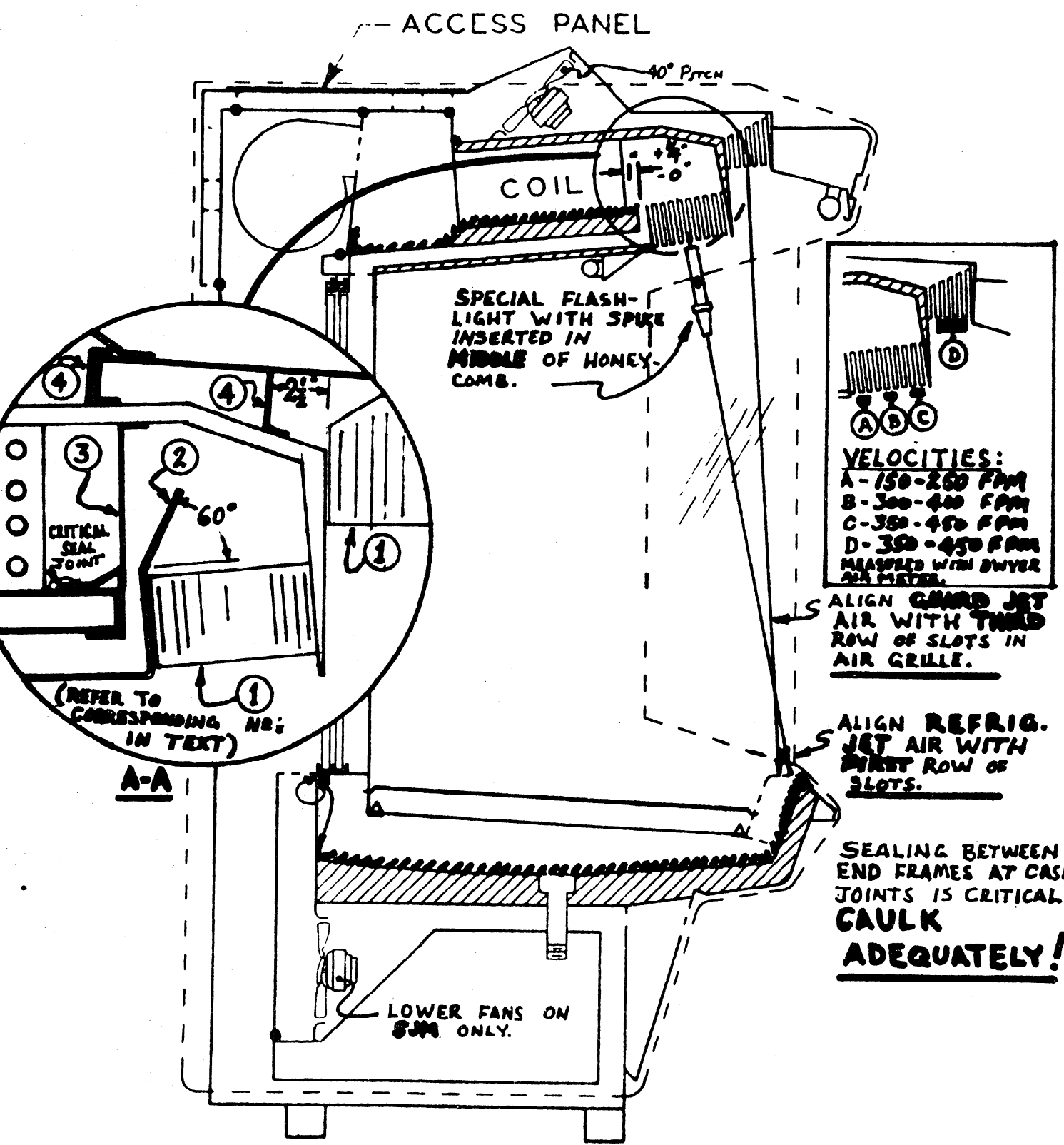


**JM - SJM
MODELS**

*SJM ONLY

Key #	Description	8' Case	12' Case
1	Canopy	1-51C12-45	1-51C14-42
2	2-1/2" Wire Fence	28G13-11	28G13-11
3	4" Wire Fence	28G13-16	28G13-16
4	3"-wide Honeycomb	2-16A16-11	3-16A16-11
5	6"-wide Honeycomb	2-16A16-20	3-16A16-20
6	Honeycomb Divider w/A-S Htr.	1-81C10-73	1-81C11-73
7	Expansion Valve GRE-1-1/2-C	1-3A12-22	1-3A14-23
7A	Expansion Valve GRE-2-C	1-80C12-46	1-80C14-42
7B	I.S. Light Assembly	10010-27	10010-27
8	Ballast for above	10A10-48	10A10-47
8A	Canopy Light Rail Assy.	1-80B22-14	1-80B23-14
8B	Ballast for above	10010-27	10010-27
9	Bulbs for above	80C19-59	10A10-47
9A	Shelf Light Assy.	10010-12	10010-12
9B	Ballast for above	10A10-36	10A10-36
10	Bulb for above	96F17-336	96F17-336
10A	14" Shelf w/Light	54X15-265	54X15-265
11	20" Shelf w/Light	96F17-338	96F17-338
11A	20" Shelf w/o Light	54X15-286	54X15-286
12	Deck Pan	4-54N18-115	6-54N18-115
13	Wire Rack (adjustable)	4-28B19-130	6-28B19-130
14	Return Air Grill	1-54P16-129	1-54P16-130
15	Thermopane Trim	1-15J11-10	1-15J11-12
16	Colorband	1-51A17-33	1-51A19-33
17	Upper Front Panel	1-51A12-43	1-51A14-36
18	Lower Front Panel	1-54A12-54	1-54A14-39
19	Temp. Regulator (CPT-28)	1-3810-63	1-3810-64
19	Temp. Regulator (CPT-35)	1-10K10-26	1-10K10-27
20	Electric Defrost Heater	4-9A10-17	6-9A10-17
21	Fan Motor 115/60/1		
24	Fan Blade OU-740-5	4-9B10-27	6-9B10-27
25	Bottom Door Track	2-62G13-60	2-62G13-61
26	Top Track	1-62G15-26	1-62G15-27
27	Door Roller	2-17A10-15	2-17A10-15
28	Sliding Door - Glass	LH-90D17-11*	90D17-11*
		RH-90D18-12*	90D18-12*
28A	Sliding Door-Trans.Mirror	ctr- --	90D19-11*
		RH-90D13-23*	90D13-23*
		LH-90D12-20*	90D12-20*
		ctr- --	90D14-18*
		RH-90D13-22*	90D13-22*
		LH-90D12-19*	90D12-19*
		ctr- --	90D14-17*
29	Squirrel Cage Blower	28D12-12	28D12-12

Appendix A



○ — DENOTES CRITICAL AIR SEAL AREA.
 ~~~~ — DENOTES CRITICAL WATER SEAL AREA.

MODEL (S)JM

Appendix F

| CASES | HTUH | REQ'D  | CONDENSING UNIT |      |      | SIZING R-12 |         |       | COND  |      |       | ING UNIT |       |       | SIZING R-502 |       |         | DEFROST |     |     | 115 VOLTS |         |     | PHASE |     |      |     |      |     |
|-------|------|--------|-----------------|------|------|-------------|---------|-------|-------|------|-------|----------|-------|-------|--------------|-------|---------|---------|-----|-----|-----------|---------|-----|-------|-----|------|-----|------|-----|
|       |      |        | SAH             | SWH  | SWH  | 0-75'       | 75-150' | SAH   | SWH   | SWH  | 0-75' | 75-150'  | SAH   | SWH   | SWH          | 0-75' | 75-150' | SAH     | SWH | SWH | 0-75'     | 75-150' | SAH |       | SWH | SWH  |     |      |     |
| 1     | 112  | 18665  | 500             | 500  | 300  | 1/2         | 1-1/8   | 1/2   | 1-3/8 | 310  | 310   | 310      | 1/2   | 1-1/8 | 5/8          | 1-1/8 | 7       | 1/4     | 6   | 7   | 1/4       | 6       | 7   | 1/4   | 9.3 | 14   | 3.2 | 1/4  |     |
| 0     | 112  | 28000  | 550             | 750  | 550  | 5/8         | 1-3/8   | 15/8  | 1-5/8 | 560  | 560   | 560      | 5/8   | 1-3/8 | 5/8          | 1-3/8 | 10      | 2       | 1/4 | 9   | 3         | 1/4     | 10  | 2     | 1/4 | 12.7 | 14  | 3.2  | 1/4 |
| 2     | 0116 | 37330  | 780             | 780  | 750  | 5/8         | 1-5/8   | 15/8  | 1-5/8 | 760  | 760   | 760      | 5/8   | 1-3/8 | 7/8          | 1-5/8 | 14      | 8       | 1/4 | 11  | 7         | 1/4     | 14  | 8     | 1/4 | 18.6 | 12  | 6.4  | 1/4 |
| 1     | 120  | 46665  | 1000            | 1000 | 780  | 5/8         | 1-5/8   | 17/8  | 1-5/8 | 790  | 790   | 790      | 7/8   | 1-5/8 | 7/8          | 1-5/8 | 17      | 6       | 1/2 | 14  | 0         | 1/4     | 14  | 0     | 1/4 | 22.0 | 10  | 6.4  | 1/4 |
| 0     | 124  | 56000  | 1500            | 1500 | 1000 | 7/8         | 1-5/8   | 17/8  | 1-5/8 | 1010 | 1010  | 1010     | 7/8   | 1-5/8 | 7/8          | 1-5/8 | 20      | 4       | 1/2 | 16  | 2         | 1/2     | 25  | 4     | 1/2 | 25.4 | 10  | 6.4  | 1/4 |
| 2     | 128  | 65330  | 1500            | 2000 | 1500 | 7/8         | 1-5/8   | 17/8  | 1-5/8 | 1510 | 1510  | 1510     | 7/8   | 1-5/8 | 7/8          | 1-5/8 | 25      | 0       | 1/2 | 14  | 0         | 1/4     | 31  | 3     | 8   | 31.3 | 8   | 9.6  | 1/4 |
| 1     | 132  | 74665  | 2000            | 2000 | 2000 | 7/8         | 1-5/8   | 17/8  | 1-5/8 | 2010 | 2010  | 2010     | 7/8   | 1-5/8 | 7/8          | 1-5/8 | 27      | 8       | 1/2 | 16  | 2         | 1/2     | 34  | 7     | 8   | 34.7 | 8   | 9.6  | 1/4 |
| 0     | 136  | 84000  | 2500            | 2500 | 2000 | 7/8         | 1-5/8   | 17/8  | 1-5/8 | 2010 | 2010  | 2010     | 7/8   | 1-5/8 | 7/8          | 1-5/8 | 30      | 6       | 1/2 | 16  | 2         | 1/2     | 38  | 1     | 8   | 38.1 | 8   | 9.6  | 1/4 |
| 2     | 140  | 93330  | 2500            | 2500 | 2500 | 7/8         | 1-5/8   | 17/8  | 1-5/8 | 2510 | 2510  | 2510     | 7/8   | 1-5/8 | 7/8          | 1-5/8 | 35      | 2       | 1/2 | 18  | 3         | 1/2     | 44  | 0     | 1   | 44.0 | 6   | 12.8 | 1/4 |
| 1     | 144  | 102665 | 0               | 0    | 0    | 2500        | 7/8     | 1-5/8 | 17/8  | 2510 | 2510  | 2510     | 7/8   | 1-5/8 | 7/8          | 1-5/8 | 38      | 0       | 1/2 | 22  | 3         | 1/2     | 47  | 4     | 6   | 47.4 | 6   | 12.8 | 1/4 |
| 0     | 148  | 112000 | 0               | 0    | 0    | 7/8         | 1-5/8   | 17/8  | 1-5/8 | 2510 | 2510  | 2510     | 7/8   | 1-5/8 | 7/8          | 1-5/8 | 40      | 8       | 1/2 | 24  | 7         | 1/2     | 50  | 8     | 6   | 50.8 | 6   | 12.8 | 1/4 |
| 2     | 152  | 121330 | 0               | 0    | 0    | 7/8         | 1-5/8   | 17/8  | 1-5/8 | 2510 | 2510  | 2510     | 7/8   | 1-5/8 | 7/8          | 1-5/8 | 45      | 4       | 1/2 | 27  | 9         | 1/2     | 56  | 7     | 6   | 56.7 | 4   | 16.0 | 1/2 |
| 1     | 156  | 130665 | 0               | 0    | 0    | 7/8         | 1-5/8   | 17/8  | 1-5/8 | 2510 | 2510  | 2510     | 7/8   | 1-5/8 | 7/8          | 1-5/8 | 48      | 2       | 1/2 | 30  | 1         | 1/2     | 60  | 1     | 8   | 60.1 | 4   | 16.0 | 1/2 |
| 0     | 160  | 140000 | 0               | 0    | 0    | 7/8         | 1-5/8   | 17/8  | 1-5/8 | 2510 | 2510  | 2510     | 7/8   | 1-5/8 | 7/8          | 1-5/8 | 51      | 0       | 1/2 | 32  | 3         | 1/2     | 63  | 5     | 8   | 63.5 | 4   | 16.0 | 1/2 |
| 2     | 164  | 149330 | 0               | 0    | 0    | 1-1/8       | 1-1/8   | 1-1/8 | 1-1/8 | 0    | 0     | 0        | 1-1/8 | 1-1/8 | 1-1/8        | 1-1/8 | 55      | 6       | 1/2 | 30  | 1         | 1/2     | 69  | 4     | 4   | 69.4 | 4   | 19.2 | 1/2 |
| 1     | 168  | 158665 | 0               | 0    | 0    | 1-1/8       | 1-1/8   | 1-1/8 | 1-1/8 | 0    | 0     | 0        | 1-1/8 | 1-1/8 | 1-1/8        | 1-1/8 | 58      | 4       | 1/2 | 32  | 3         | 1/2     | 72  | 8     | 4   | 72.8 | 3   | 19.2 | 1/2 |
| 0     | 172  | 168000 | 0               | 0    | 0    | 1-1/8       | 1-1/8   | 1-1/8 | 1-1/8 | 0    | 0     | 0        | 1-1/8 | 1-1/8 | 1-1/8        | 1-1/8 | 61      | 2       | 1/2 | 32  | 3         | 1/2     | 76  | 2     | 4   | 76.2 | 3   | 19.2 | 1/2 |
| 2     | 176  | 177330 | 0               | 0    | 0    | 1-1/8       | 1-1/8   | 1-1/8 | 1-1/8 | 0    | 0     | 0        | 1-1/8 | 1-1/8 | 1-1/8        | 1-1/8 | 65      | 8       | 1/2 | 36  | 0         | 1/2     | 82  | 1     | 4   | 82.1 | 2   | 22.4 | 1/2 |
| 1     | 180  | 186665 | 0               | 0    | 0    | 1-1/8       | 1-1/8   | 1-1/8 | 1-1/8 | 0    | 0     | 0        | 1-1/8 | 1-1/8 | 1-1/8        | 1-1/8 | 68      | 6       | 1/2 | 38  | 3         | 1/2     | 85  | 5     | 6   | 85.5 | 2   | 22.4 | 1/2 |
| 0     | 184  | 196000 | 0               | 0    | 0    | 1-1/8       | 1-1/8   | 1-1/8 | 1-1/8 | 0    | 0     | 0        | 1-1/8 | 1-1/8 | 1-1/8        | 1-1/8 | 71      | 4       | 1/2 | 40  | 7         | 1/2     | 88  | 9     | 6   | 88.9 | 2   | 22.4 | 1/2 |
| 2     | 188  | 205330 | 0               | 0    | 0    | 1-1/8       | 1-1/8   | 1-1/8 | 1-1/8 | 0    | 0     | 0        | 1-1/8 | 1-1/8 | 1-1/8        | 1-1/8 | 76      | 0       | 1/2 | 44  | 0         | 1/2     | 94  | 8     | 6   | 94.8 | 2   | 25.6 | 1/2 |
| 1     | 192  | 214665 | 0               | 0    | 0    | 1-1/8       | 1-1/8   | 1-1/8 | 1-1/8 | 0    | 0     | 0        | 1-1/8 | 1-1/8 | 1-1/8        | 1-1/8 | 78      | 8       | 1/2 | 46  | 3         | 1/2     | 98  | 2     | 6   | 98.2 | 1   | 25.6 | 1/2 |

NOTES:

- COND. UNIT RECOMMENDATIONS BASED ON 80° F & 55% RH STORE AMBIENT. SAH(AIR COOLED) UNIT SELECTION IS BASED ON AIR TEMPERATURE ENTERING CONDENSOR AS SHOWN. SWH (WATER COOLED) UNIT SELECTION BASED ON 2-GPM TON-75° F WATER ENTERING.
- COND. UNIT SUFFIX IS:  
RL-LOW TEMP R-502  
RC-MED TEMP R-502  
FC-MED TEMP R-12
- CAUTION: THESE RECOMMENDATIONS BASED ON BEST INFORMATION AVAILABLE AND ON CONDITIONS AS LISTED FOR APPLICATIONS NOT LISTED CONSULT ENGINEERING DEPARTMENT.  
5. LINE LENGTHS SHOWN ARE EQUIVALENT LENGTHS. TO DETERMINE EQUIVALENT LENGTH MEASURE ACTUAL LINEAL LENGTH FROM COMPRESSOR TO FURTHEST CASE AND ADD FOUR FEET FOR EACH ELBOW OR OTHER FITTING.
- CONDENSING UNIT RECOMMENDATIONS , REFRIGERANT LINE SIZING , ELECTRICAL DATA FOR : MODEL JM UP TO 80 ° STORE 5°
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**5 ° F FRESH MEAT**

CONNECTIONS:

SUCTION LINE **1-1/8** OD, LIQUID LINE **1/2** OD

**(S) J M**  
**5 ° F FRESH MEAT**

W A R R E N / S H E R R CONDENSING UNIT RECOMMENDATIONS , REFRIGERANT LINE SIZING , ELECTRICAL DATA FOR : MODEL JM  
DECEMBER 21, 1972.