



Model M202B (IntelliTec™)
SERVICE MANUAL

Manual No. 513696

Rev.0

This manual provides basic information about the machine. Instructions and suggestions are given covering its operation and care.

The illustrations and specifications are not binding in detail. We reserve the right to make changes to the machine without notice, and without incurring any obligation to modify or provide new parts for machines built prior to date of change.

DO NOT ATTEMPT to operate the machine until instructions and safety precautions in this manual are read completely and are thoroughly understood. If problems develop or questions arise in connection with installation, operation, or servicing of the machine, contact Stoelting.



stoeltingfoodservice.com

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A Few Words About Safety

Safety Information

Read and understand the entire manual before operating or maintaining Stoelting equipment.

This manual provides the operator with information for the safe operation and maintenance of Stoelting equipment. As with any machine, there are hazards associated with their operation. For this reason safety is emphasized throughout the manual. To highlight specific safety information, the following safety definitions are provided to assist the reader.

The purpose of safety symbols is to attract your attention to possible dangers. The safety symbols, and their explanations, deserve your careful attention and understanding. The safety warnings do not by themselves eliminate any danger. The instructions or warnings they give are not substitutes for proper accident prevention measures.

If you need to replace a part, use genuine Stoelting parts with the correct part number or an equivalent part. We strongly recommend that you do not use replacement parts of inferior quality.



Safety Alert Symbol:

This symbol Indicates danger, warning or caution. Attention is required in order to avoid serious personal injury. The message that follows the symbol contains important information about safety.

Signal Word:

Signal words are distinctive words used throughout this manual that alert the reader to the existence and relative degree of a hazard.



The signal word “WARNING” indicates a potentially hazardous situation, which, if not avoided, may result in death or serious injury and equipment/property damage.



The signal word “CAUTION” indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury and equipment/property damage.

CAUTION

The signal word “CAUTION” not preceded by the safety alert symbol indicates a potentially hazardous situation, which, if not avoided, may result in equipment/property damage.

NOTE (or NOTICE)

The signal word “NOTICE” indicates information or procedures that relate directly or indirectly to the safety of personnel or equipment/property.

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SECTION 1 DESCRIPTION AND SPECIFICATIONS

1.1 DESCRIPTION

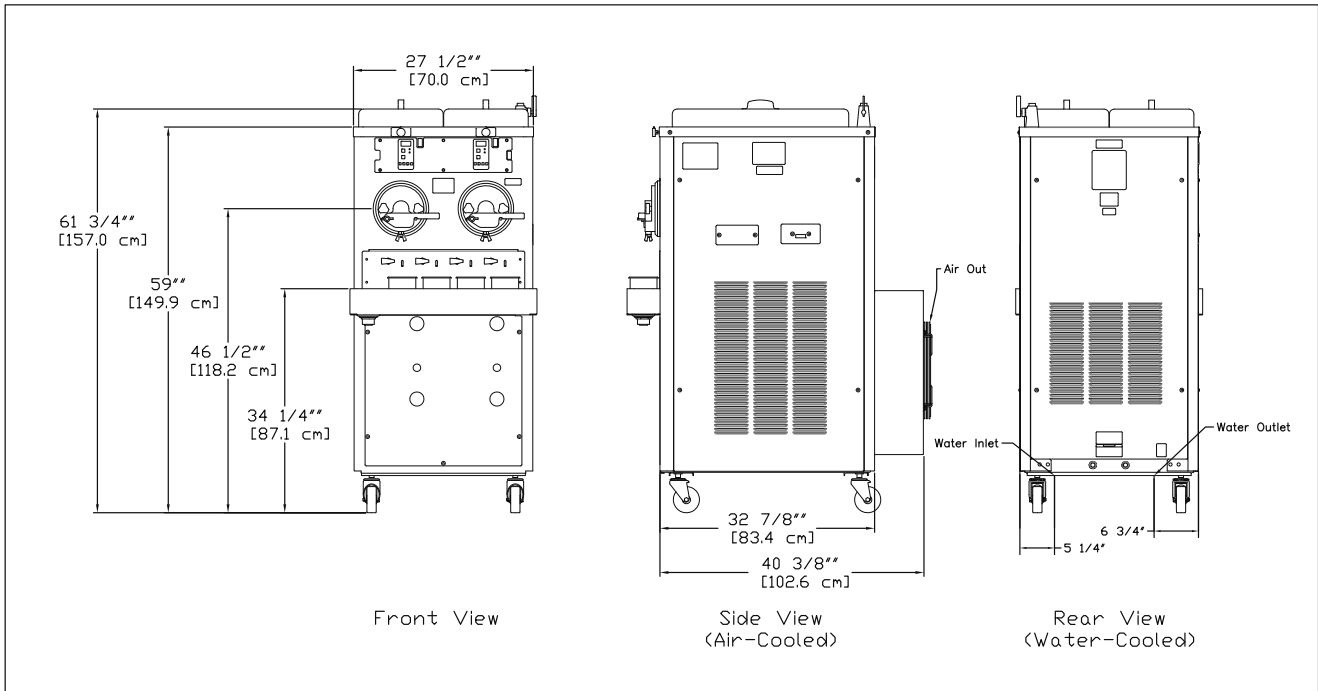
The M202 is continuous flow custard machine. It is equipped with fully automatic controls to provide a uniform product and features Quick-Freeze technology. This manual is designed to assist qualified service personnel and operators in the installation, operation and maintenance of the M202 frozen custard machine.

NOTE

Product breakdown could happen quicker if product is stored in the freezing cylinders for more than one hour. After a batch is made, close the flow control and empty the contents of the freezing cylinder.



Figure 1-1 Model M202B



1.2 SPECIFICATIONS

	M202B A/C		M202B A/C Remote		M202B W/C	
	Machine	with crate	Machine	with crate	Machine	with crate
Dimensions						
width	27-1/2" (69,9 cm)	48" (121,9 cm)	27-1/2" (69,9 cm)	42-1/2" (108,0 cm)	27-1/2" (69,9 cm)	42-1/2" (108,0 cm)
height	59" (149,9 cm)	69-1/4" (175,9 cm)	57-1/2" (146,1 cm)	67" (170,2 cm)	57-1/2" (146,1 cm)	67" (170,2 cm)
depth	40-3/8" (102,6 cm)	60" (152,4 cm)	32" (81,3 cm)	48" (121,9 cm)	32" (81,3 cm)	48" (121,9 cm)
Weight	845 lbs (383,2 kg)	1100 lbs (498,9 kg)	645 lbs (292,5 kg)	945 lbs (428,6 kg)	845 lbs (383,2 kg)	1100 lbs (498,9 kg)
Electrical	1 PH	3 PH	1 PH	3 PH	1 PH	3 PH
circuit ampacity (per barrel)	20A	15A	15A	15A	20A	15A
overcurrent protection device (per barrel)	25A	15A	15A	15A	25A	15A
Drive Motor	Two - 2 hp					
Cooling	Self contained air cooled units require 6" (15,2 cm) air space on sides and 24" (60,9 cm) at the back. They are charged with R-404A.		Air cooled units require one remote condensing unit (with compressor) per barrel. Condensing units #285090 and #285091 ship from the factory with 20 lbs of R-404A for up to a 50' line set. Add 1 lb of refrigerant for every 10' increase to the line set. Line set max 100'. (Condensing units CU-0050 and CU-0060 do not ship charged and require 20 lbs of R-404A)		Water cooled units are self contained and require a Standard Hose Adapter water fitting and a 1/2" OD drain fitting for each barrel. They are charged with R-404A.	
Hopper Volume	Two - 5.4 gallon (20,57 liters)					

M202B Remote Condensing Unit (1 per barrel)	
Dimensions	Condenser
width	37-3/4" (95,9 cm)
height	17-1/4" (43,7 cm)
depth	28-1/4" (71,7 cm)
Weight	222 lbs (100,7 kg)
Electrical	1 Phase, 208-230 VAC, 60Hz 3 Phase, 208-230 VAC, 60Hz
circuit ampacity	20A minimum 15A minimum
overcurrent protection device	25A maximum 20A maximum
Refrigerant	R-404A
Charge	20 lbs. (Charged at Factory)
Refrigerated Line Sizes	Liquid Line - 3/8" Suction Line - 5/8"

Menu	Display	Value
Product 1	Cut In T	30 °F
	Cut Out T	-20 °F
Product 2	Cut In T	30 °F
	Cut Out T	-20 °F
Standby	Cut In T	45 °F
	Cut Out T	40 °F
	On Time	60 seconds
	Off Time	900 seconds
	Stir On	5 seconds
	Stir Off	15 minutes
Storage	HprCutIn	39 °F
	HprCtOut	36 °F
	Hpr On	180 seconds
	Hpr Off	4 minutes

	M202B*
Refrigerant	R-404A
Charge	(A/C & W/C) 8 lbs (A/C Remote) 20 lbs
AXV	28-32 psig
Head Pressure Regulator (Water Valve)	(W/C) 225-235 psig (A/C) 255 psig
Crankcase Pressure Regulator	25 psig
Lemon Ice AXV	38-42 psig
Hopper Pressure	53-57 psig

* There is a separate refrigeration system for each freezing cylinder. The refrigeration specifications are per freezing cylinder.

1.3 COMPONENT SETTINGS

Following are the settings for the components in the M202B machine.

A. COMPRESSOR WINDINGS

When testing the compressor windings the resistance through the windings should be as follows:

Compressor	Electrical	S to C	R to C
282031	3 PH	4.95Ω	0.00Ω
282055	1 PH	2.85Ω	0.74Ω
282095	3 PH	0.00Ω	1.26Ω

B. CAPACITORS

Refer to the following table for the capacitance of all the capacitors in the machine:

Capacitor	Part	Rating	
		MFD	VAC
Compressors - Start	231079	145-174 MFD	220 VAC
Compressor - Run	231084	30 MFD	370 VAC
Motor - Start	230622	200 MFD	250 VAC
Motor - Run	231075	30 MFD	370 VAC
Fan Motor	230654	5 MFD	400 VAC

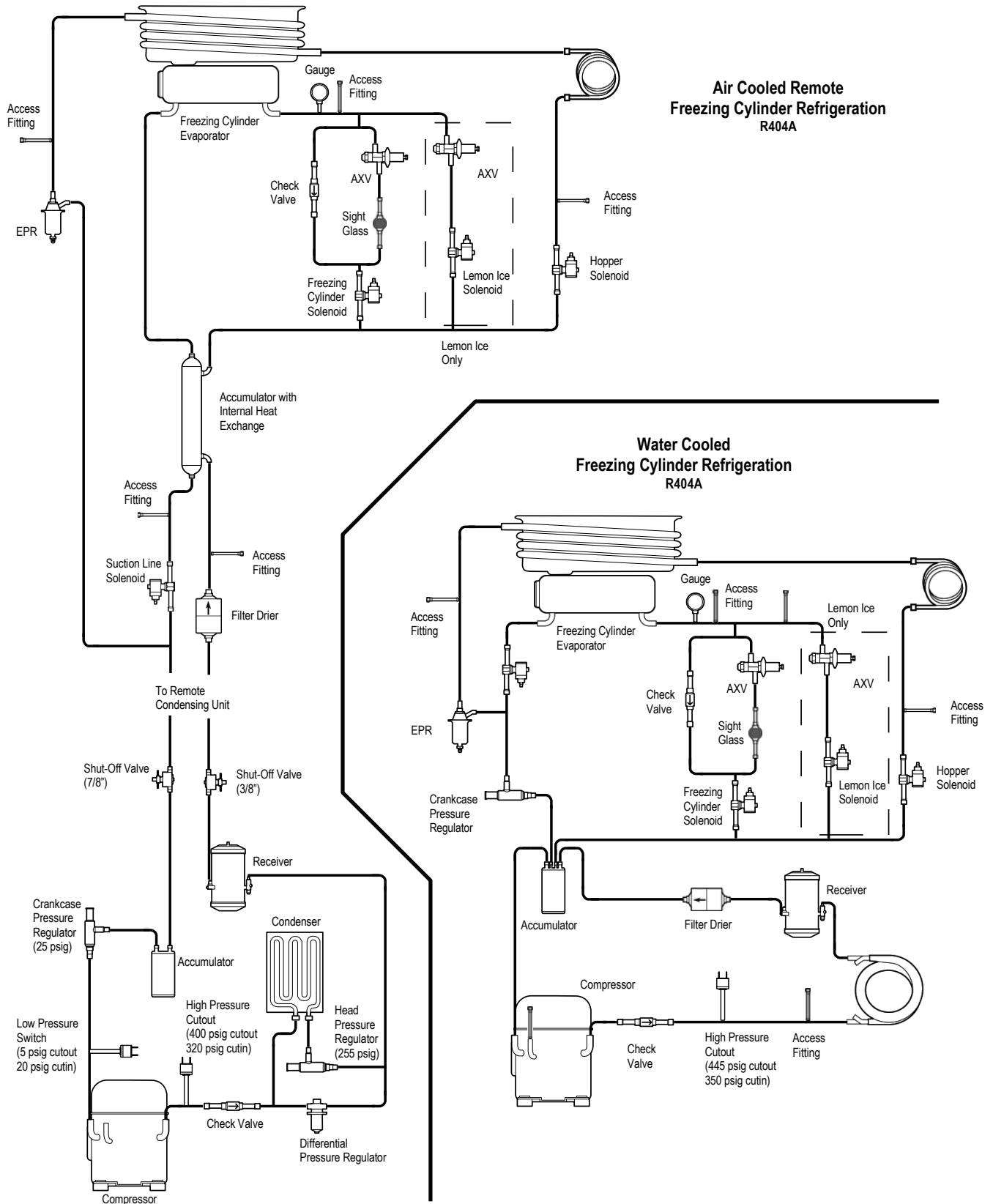
D. TEMPERATURE CONTROL SENSOR

The following table shows the relationship between the thermistor resistance and the suction line temperature.

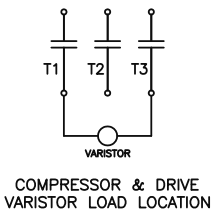
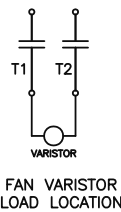
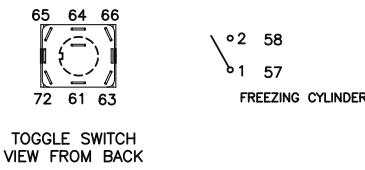
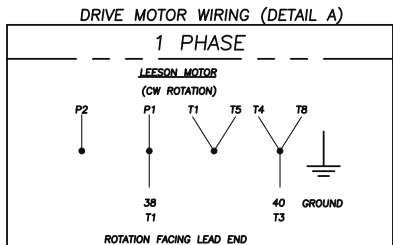
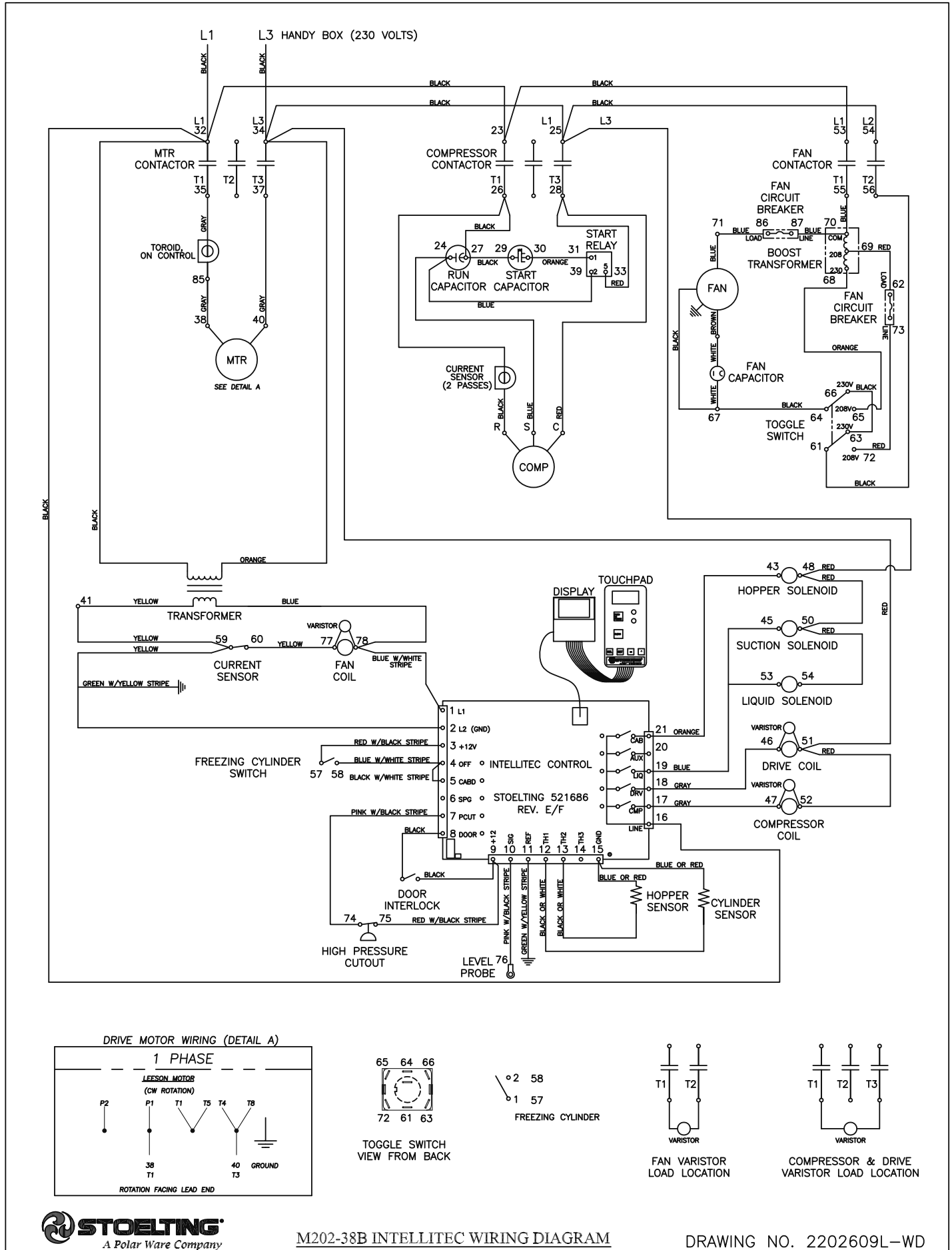
°F	Resistance	°F	Resistance
-22	176950	40	26100
-20	165200	42	24725
-18	154300	44	23400
-16	144200	46	22175
-14	134825	48	21000
-12	126125	50	19900
-10	118050	52	18875
-8	110550	54	17900
-6	103550	56	17000
-4	97075	58	16125
-2	91025	60	15325
0	85400	62	14550
2	80150	64	13825
4	75275	66	13150
6	70725	68	12500
8	66475	70	11875
10	62500	72	11300
12	58800	74	10750
14	55325	76	10250
16	52100	78	9750
18	49075	80	9300
20	46250	82	8850
22	43600	84	8450
24	41125	86	8050
26	38800	88	7675
28	36625	90	7325
30	34575	92	7000
32	32675	94	6675
34	30875	96	6375
36	29175	98	6100
38	27600	100	5825

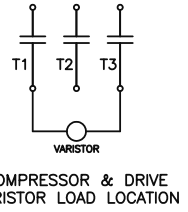
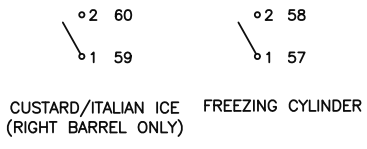
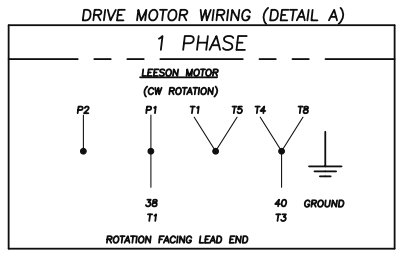
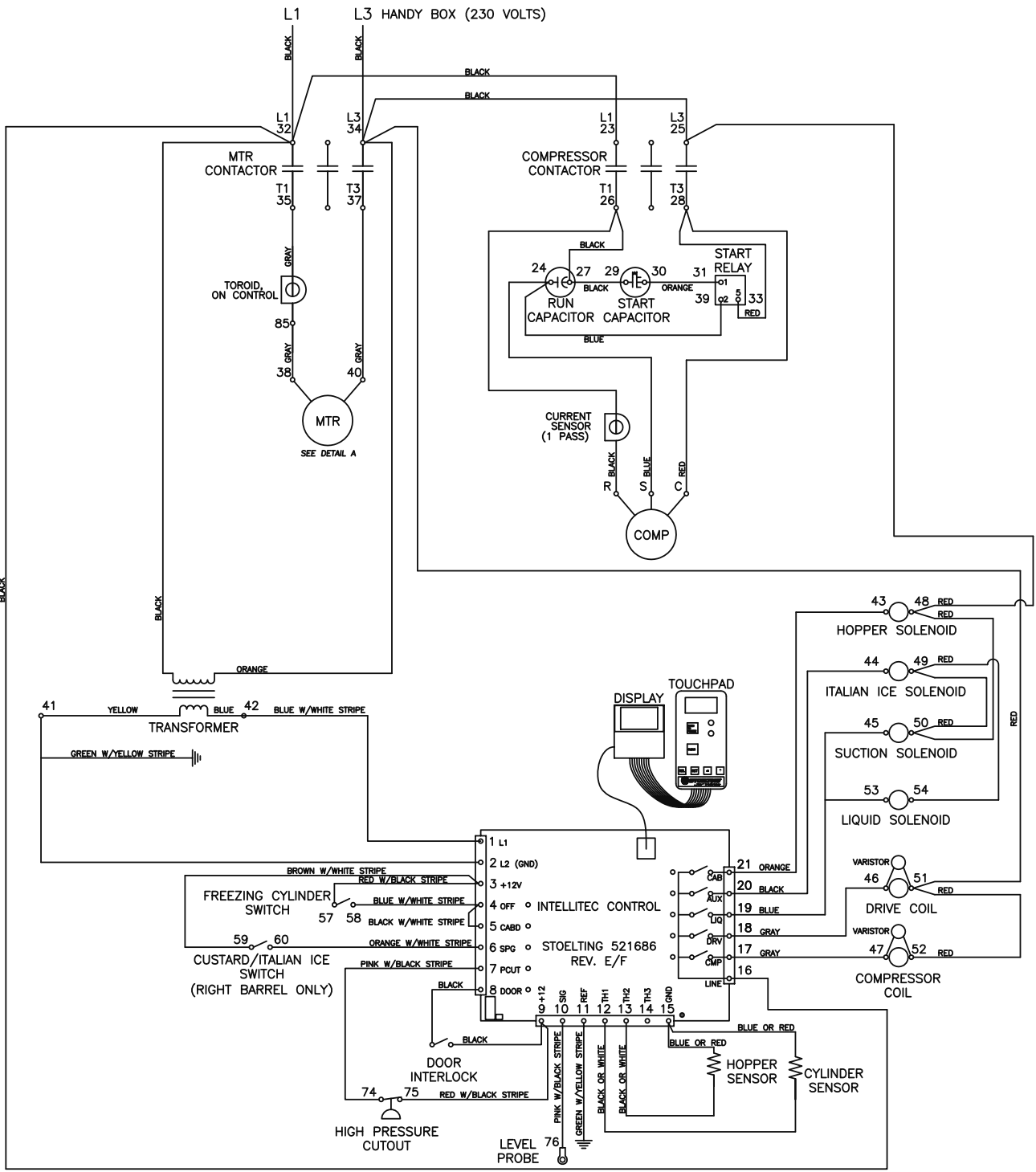
SECTION 2 REFRIGERATION DIAGRAM AND WIRING DIAGRAMS

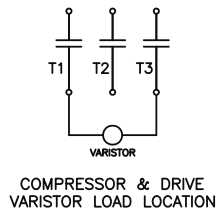
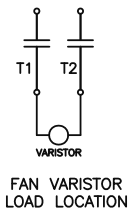
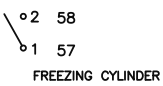
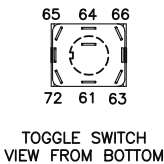
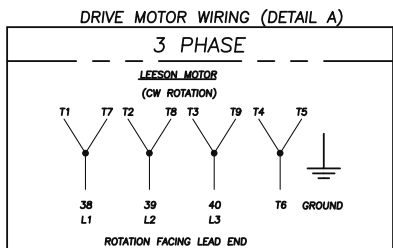
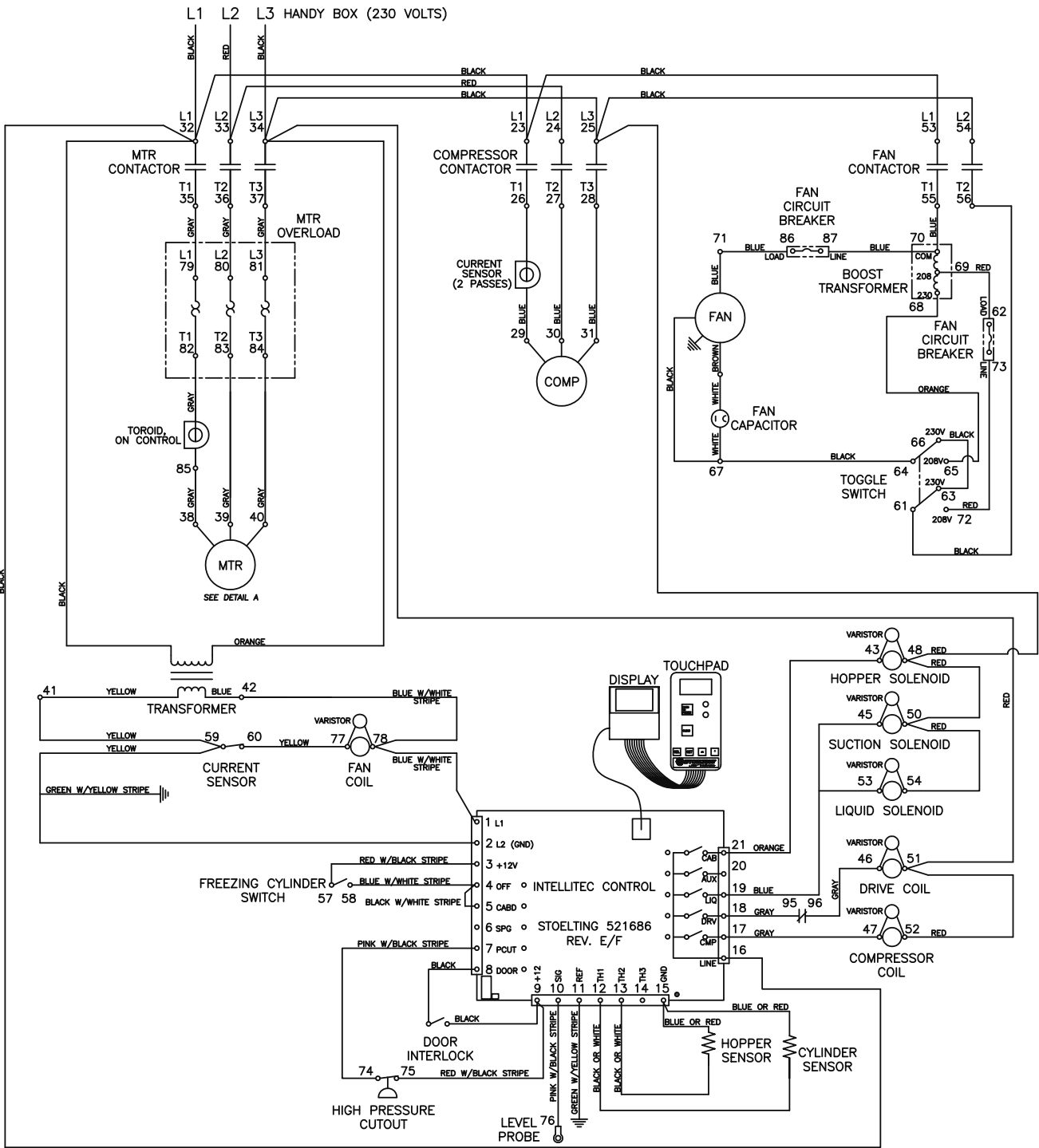
2.1 REFRIGERATION DIAGRAMS

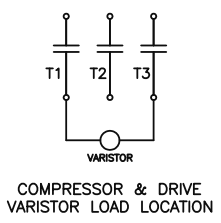
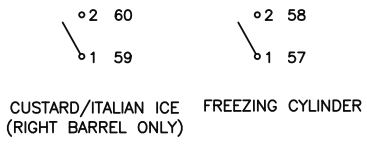
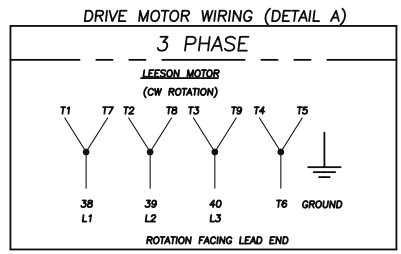
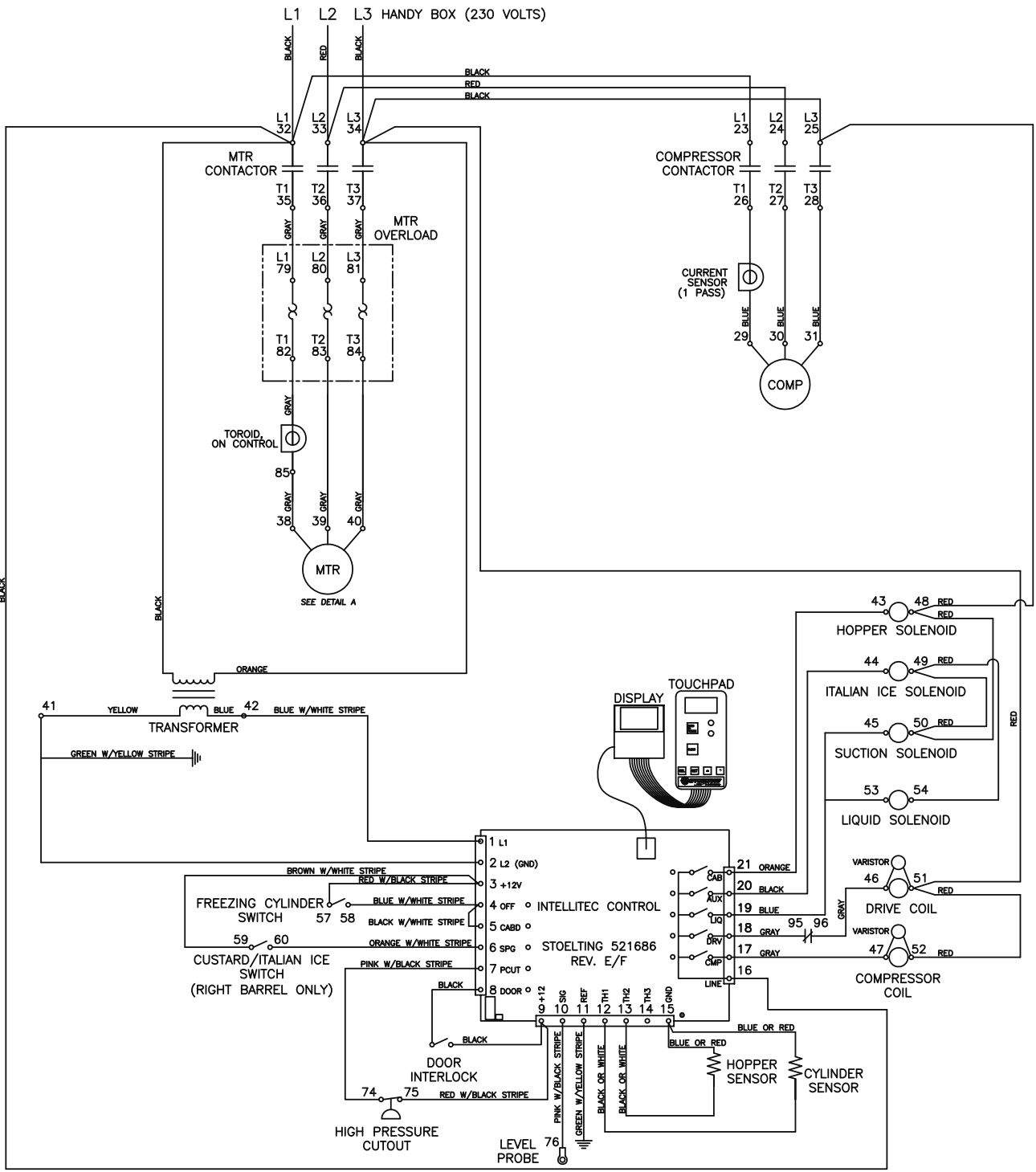


2.2 WIRING DIAGRAMS



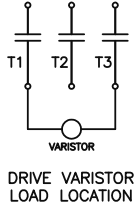
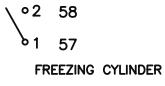
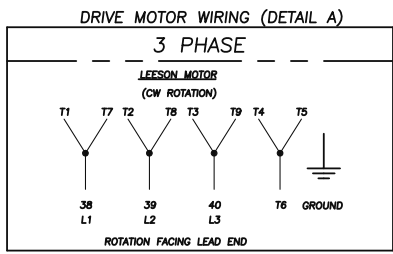
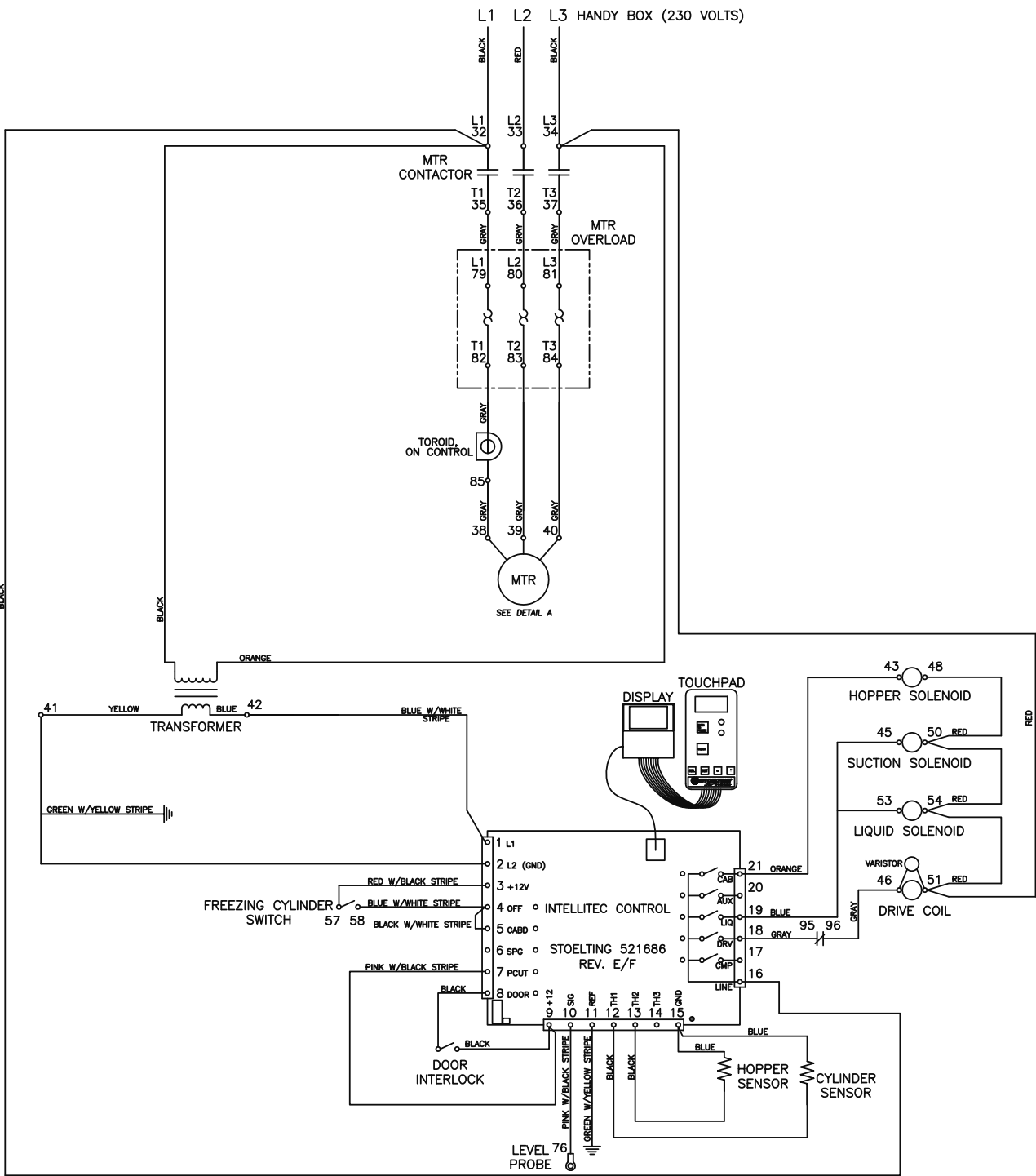


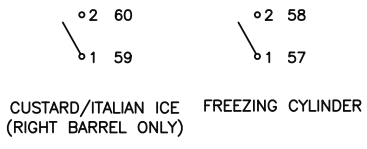
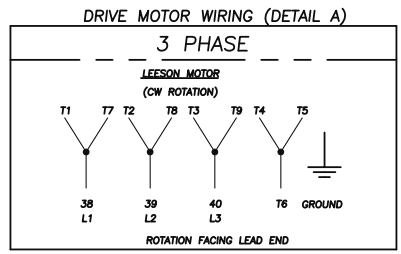
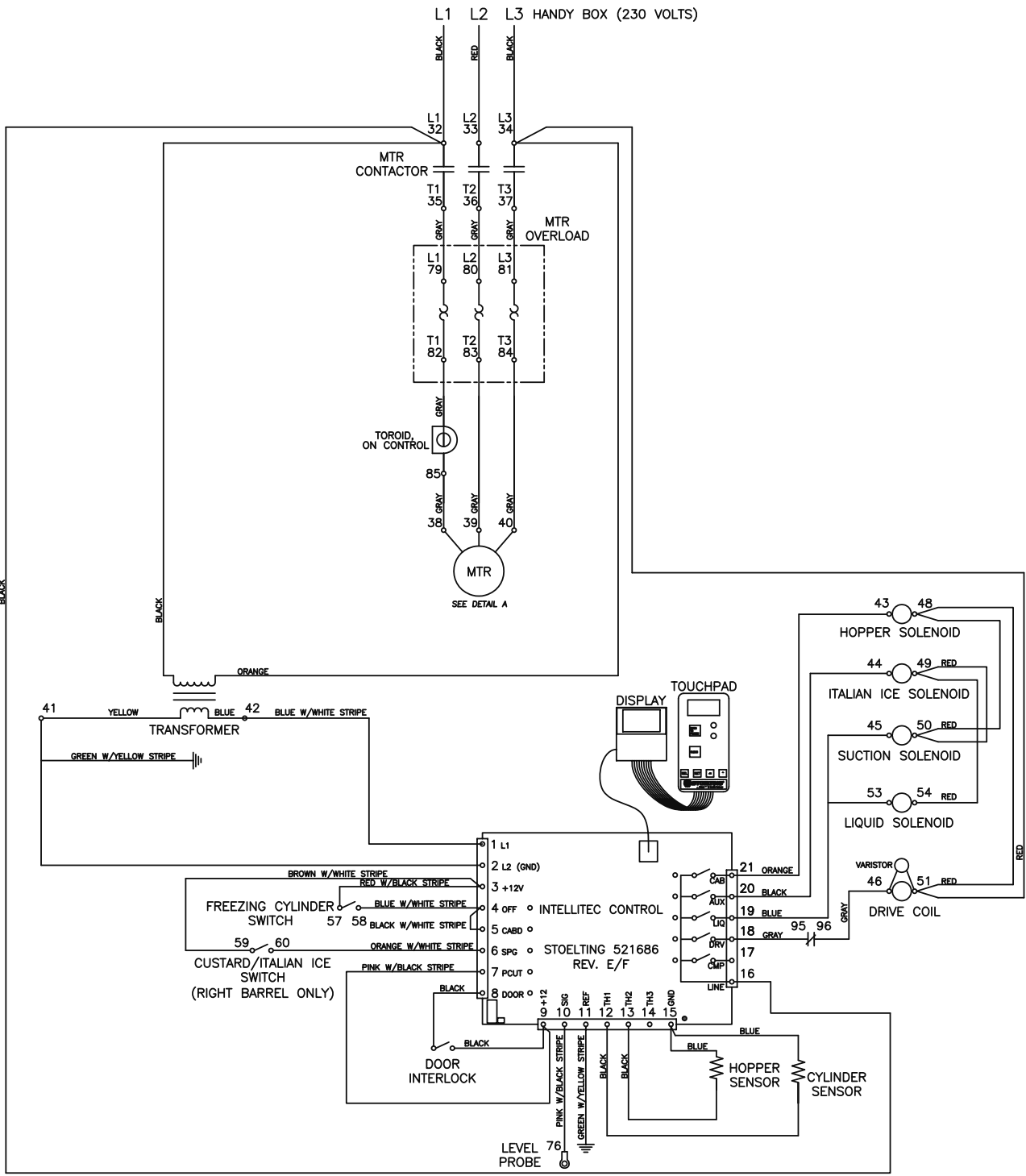




M202-309B INTELLITEC WIRING DIAGRAM

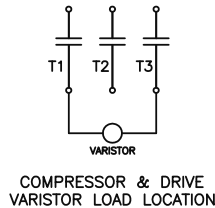
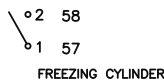
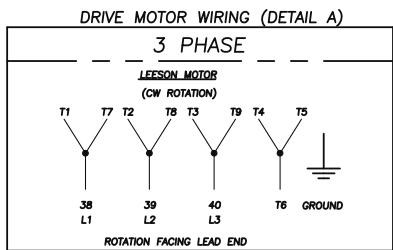
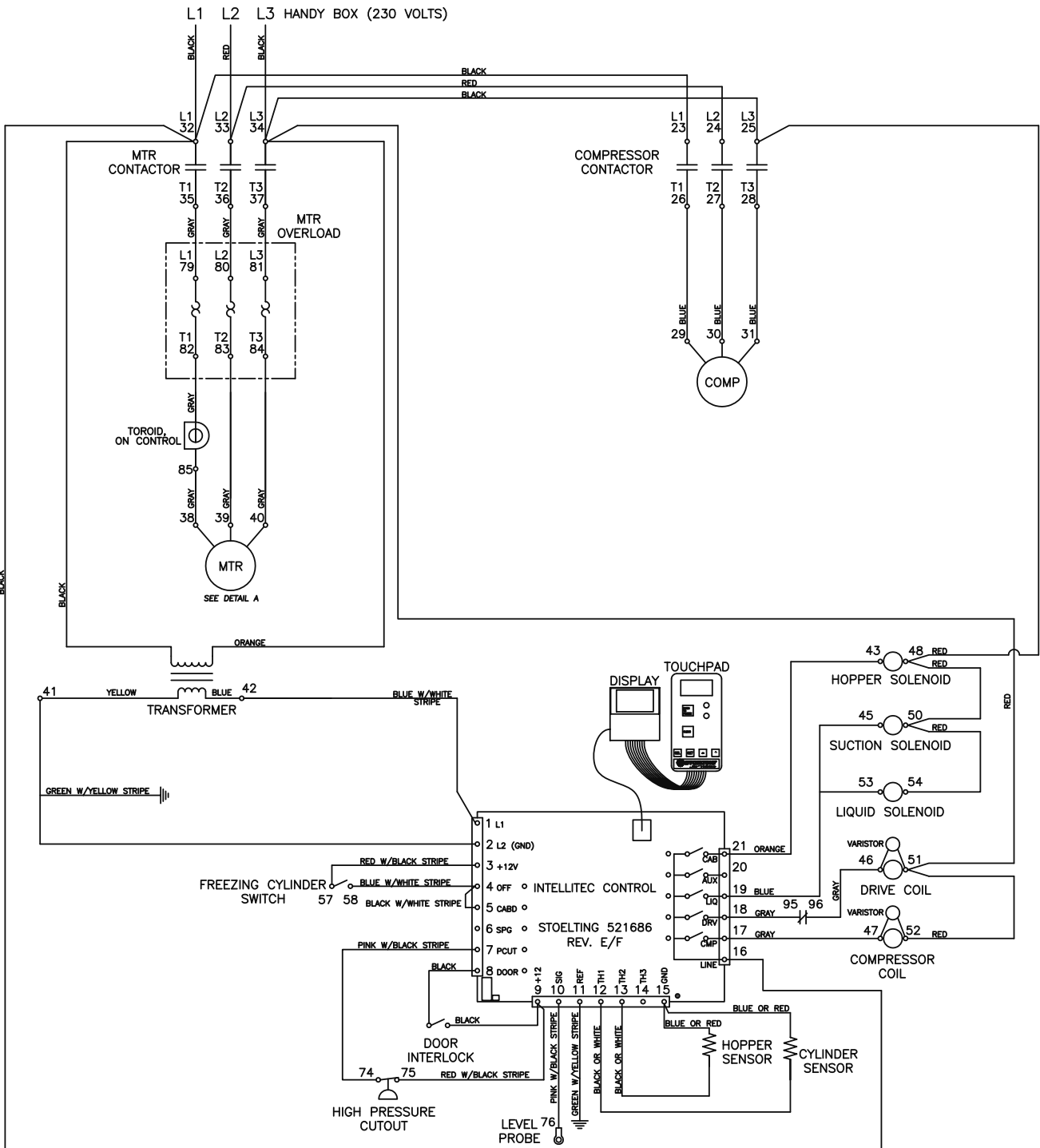
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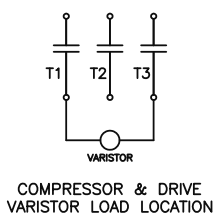
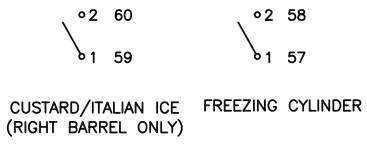
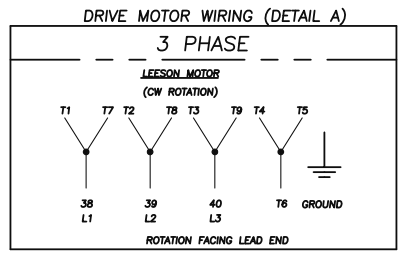
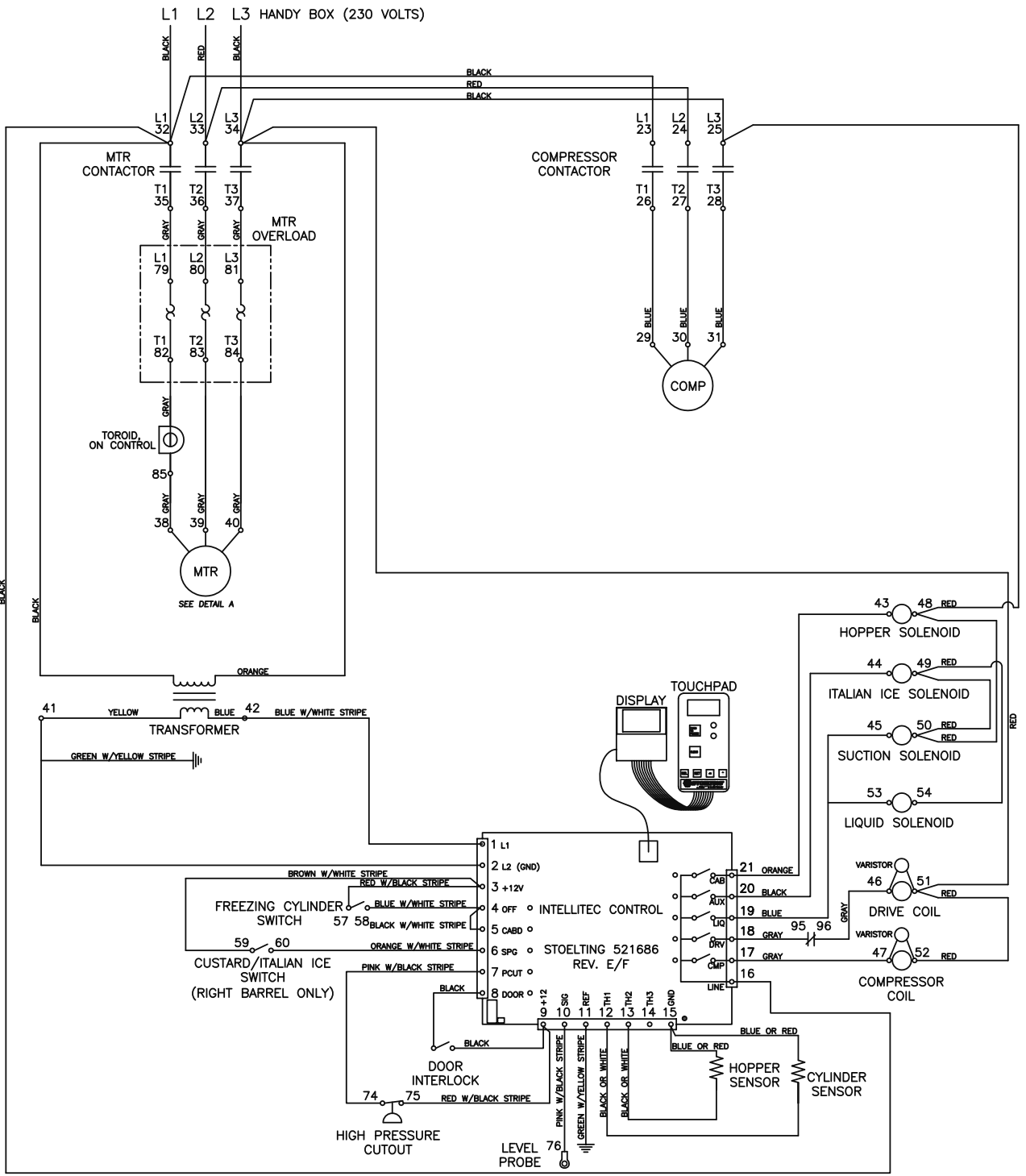




M202-209B INTELLITEC WIRING DIAGRAM

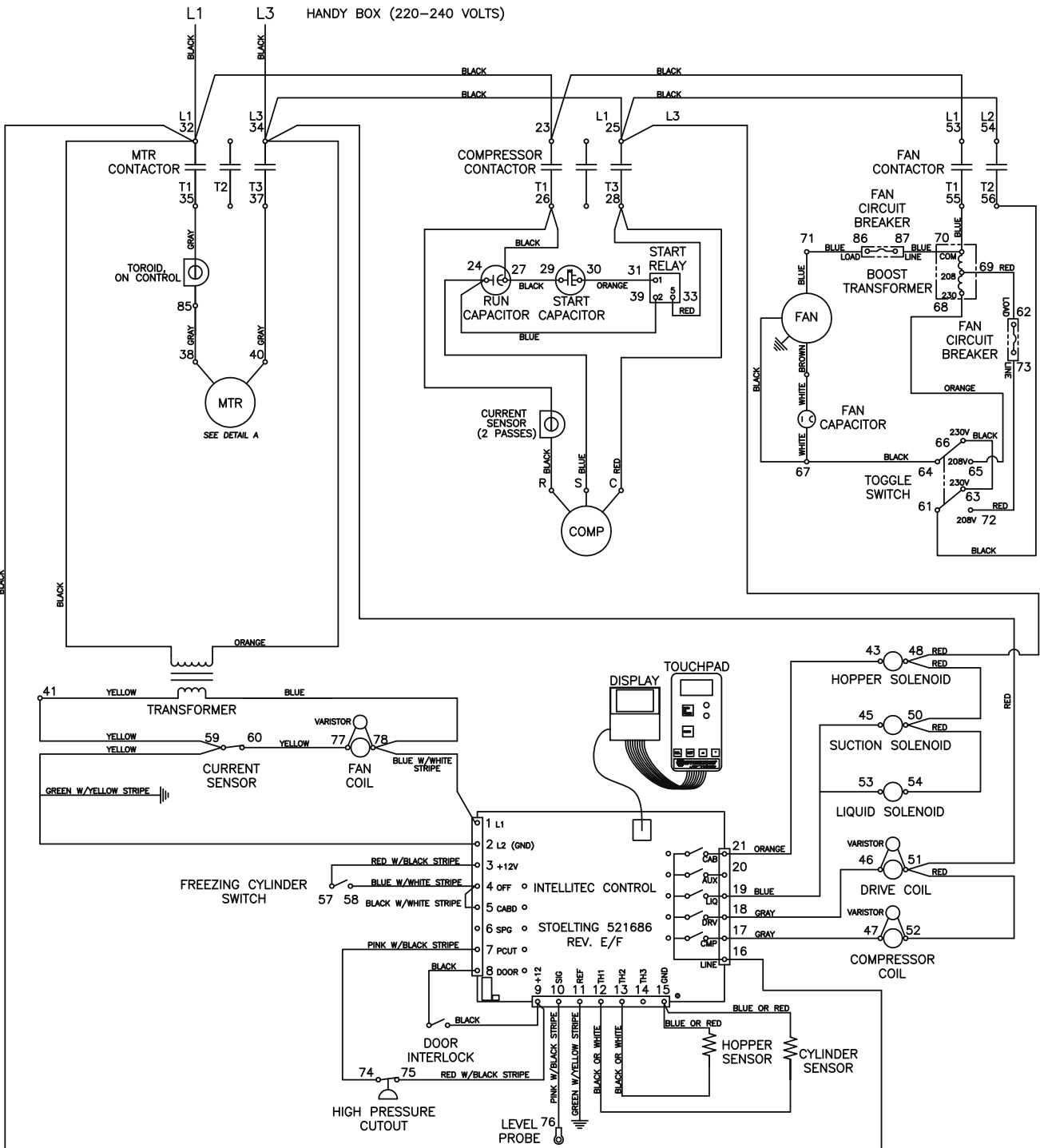
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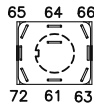
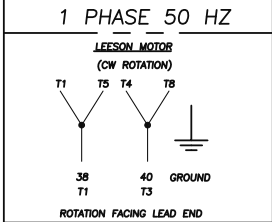


M202-109B INTELLITEC WIRING DIAGRAM

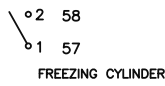
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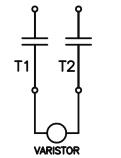
DRIVE MOTOR WIRING (DETAIL A)



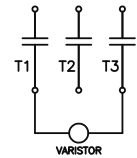
TOGGLE SWITCH
VIEW FROM BACK



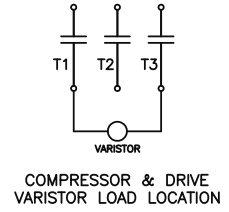
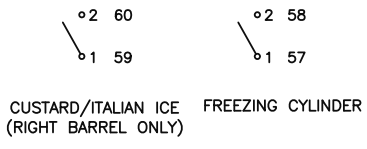
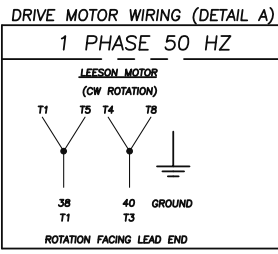
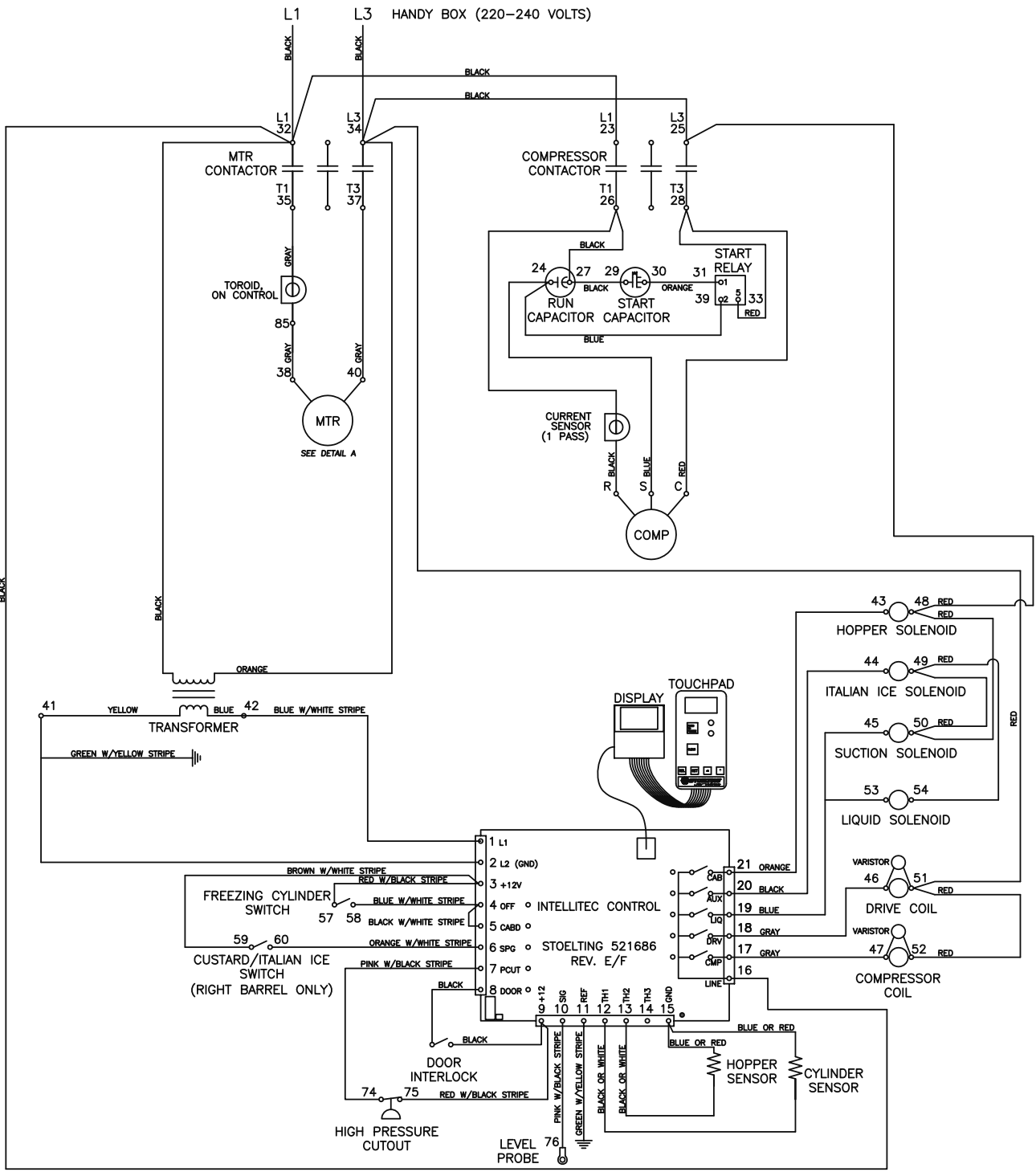
FREEZING CYLINDER



FAN VARISTOR
LOAD LOCATION

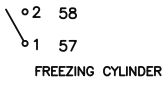
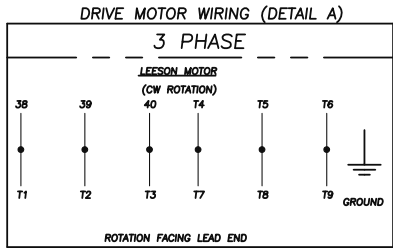
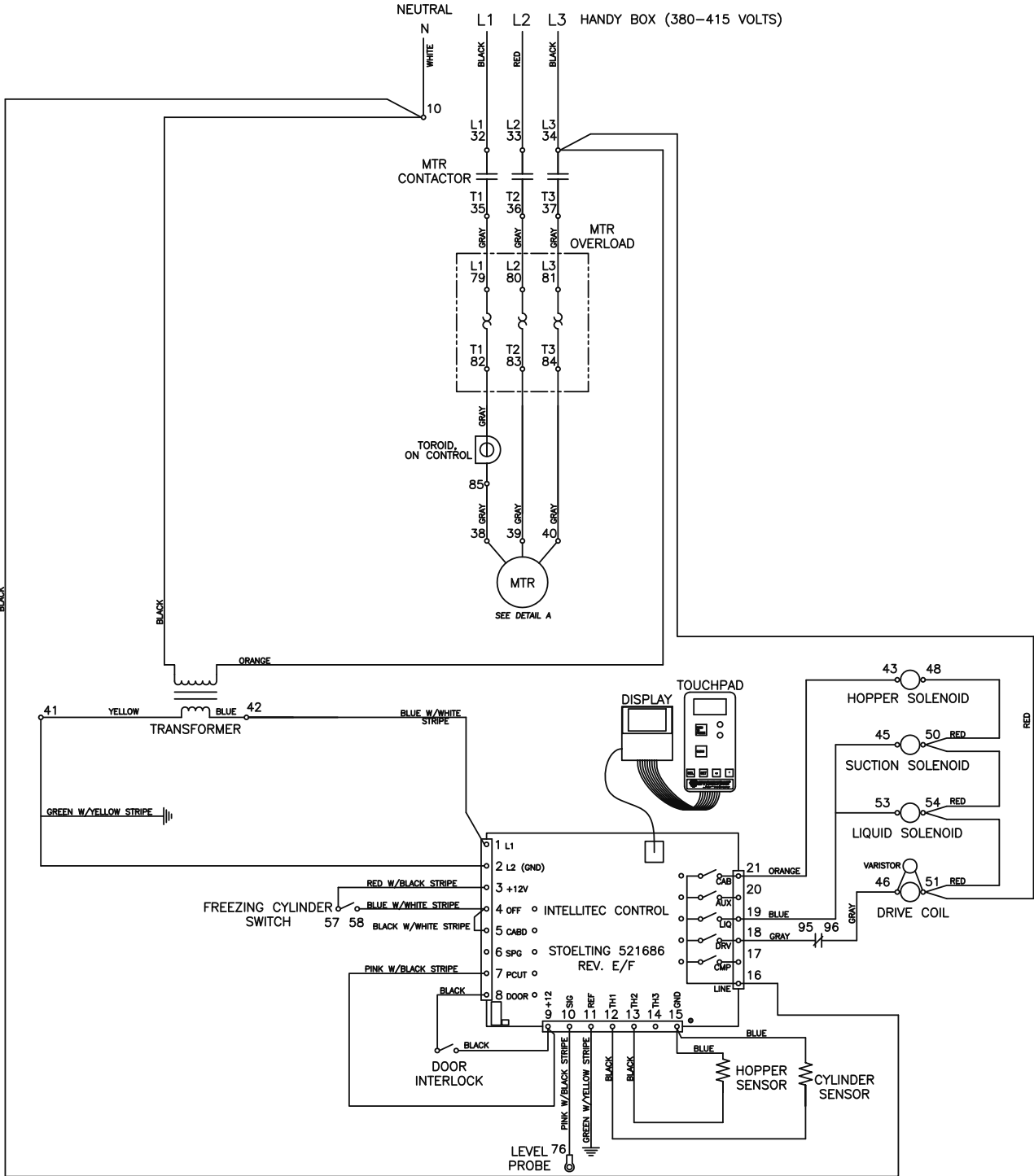


COMPRESSOR & DRIVE
VARISTOR LOAD LOCATION



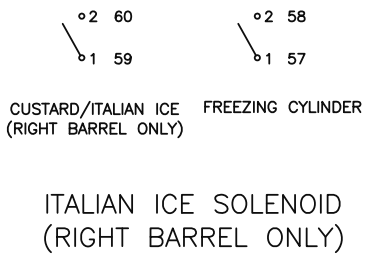
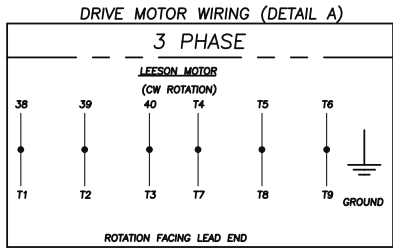
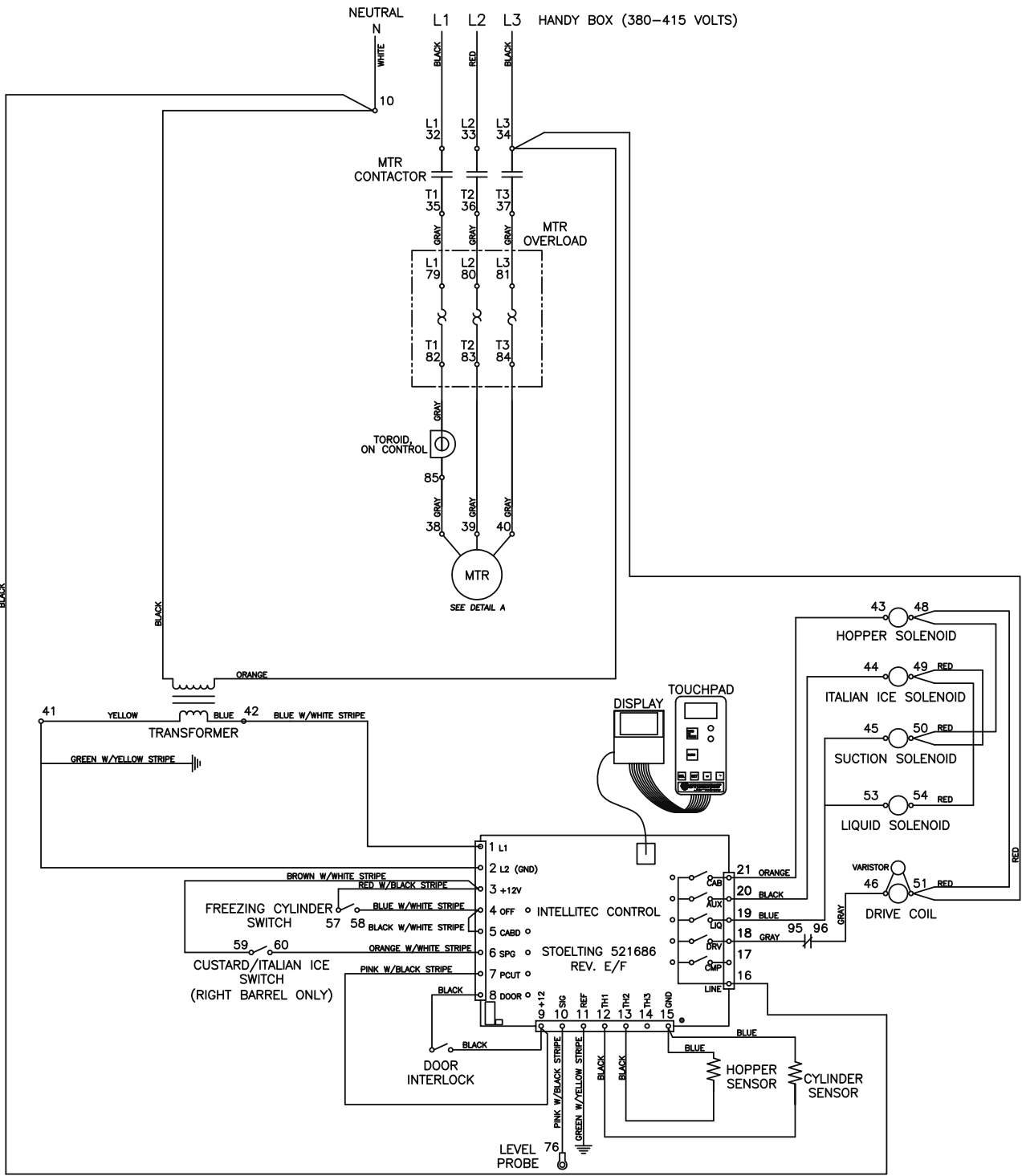
M202-302B INTELLITEC WIRING DIAGRAM

DRAWING NO. 2204462R-WD



M202-214B INTELLITEC WIRING DIAGRAM

DRAWING NO. 2205387L-WD



M202-214B INTELLITEC WIRING DIAGRAM

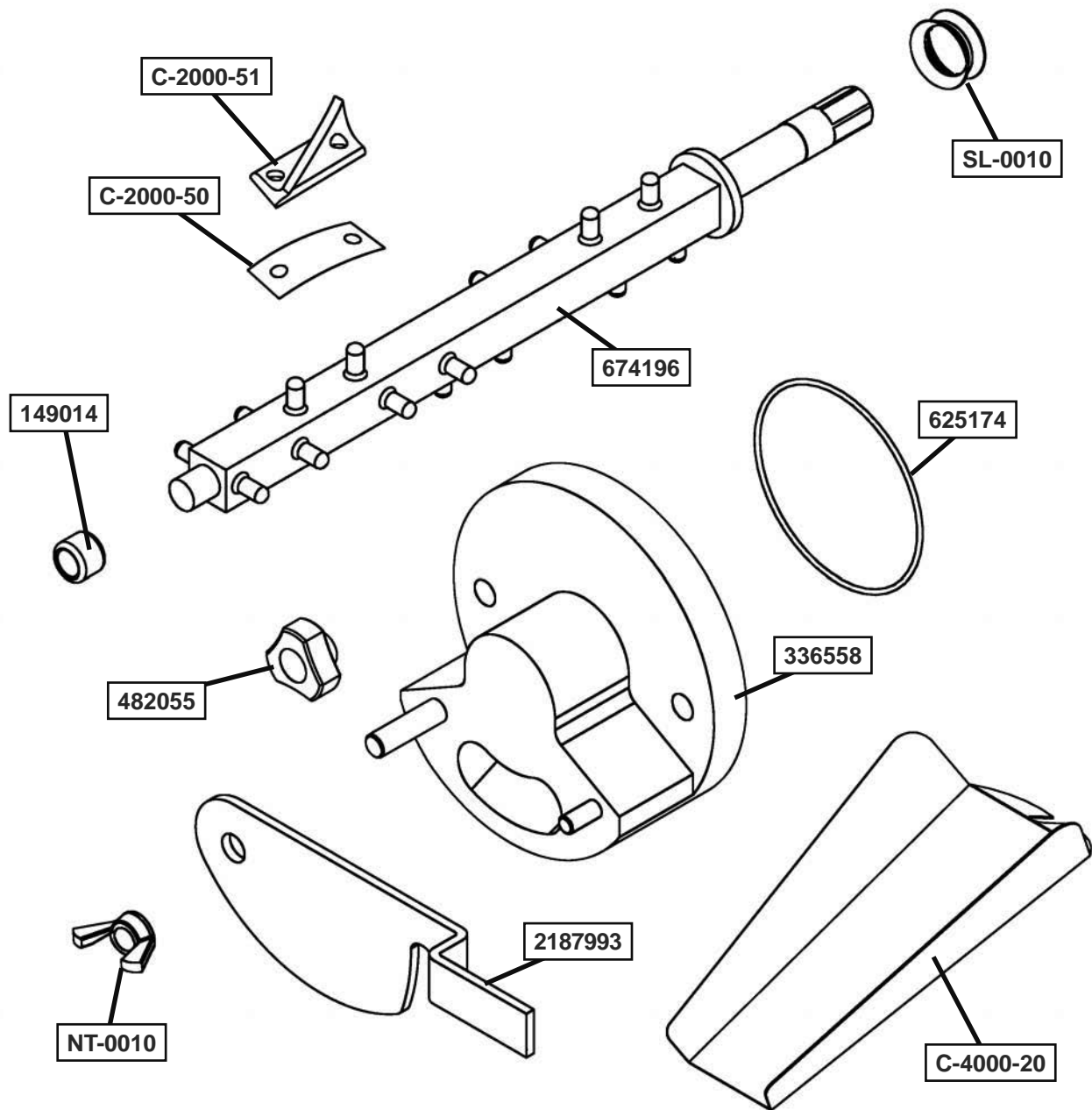
DRAWING NO. 2205388R-WD

SECTION 3 REPLACEMENT PARTS

3.1 BRUSHES, DECALS, KITS AND LUBRICATION

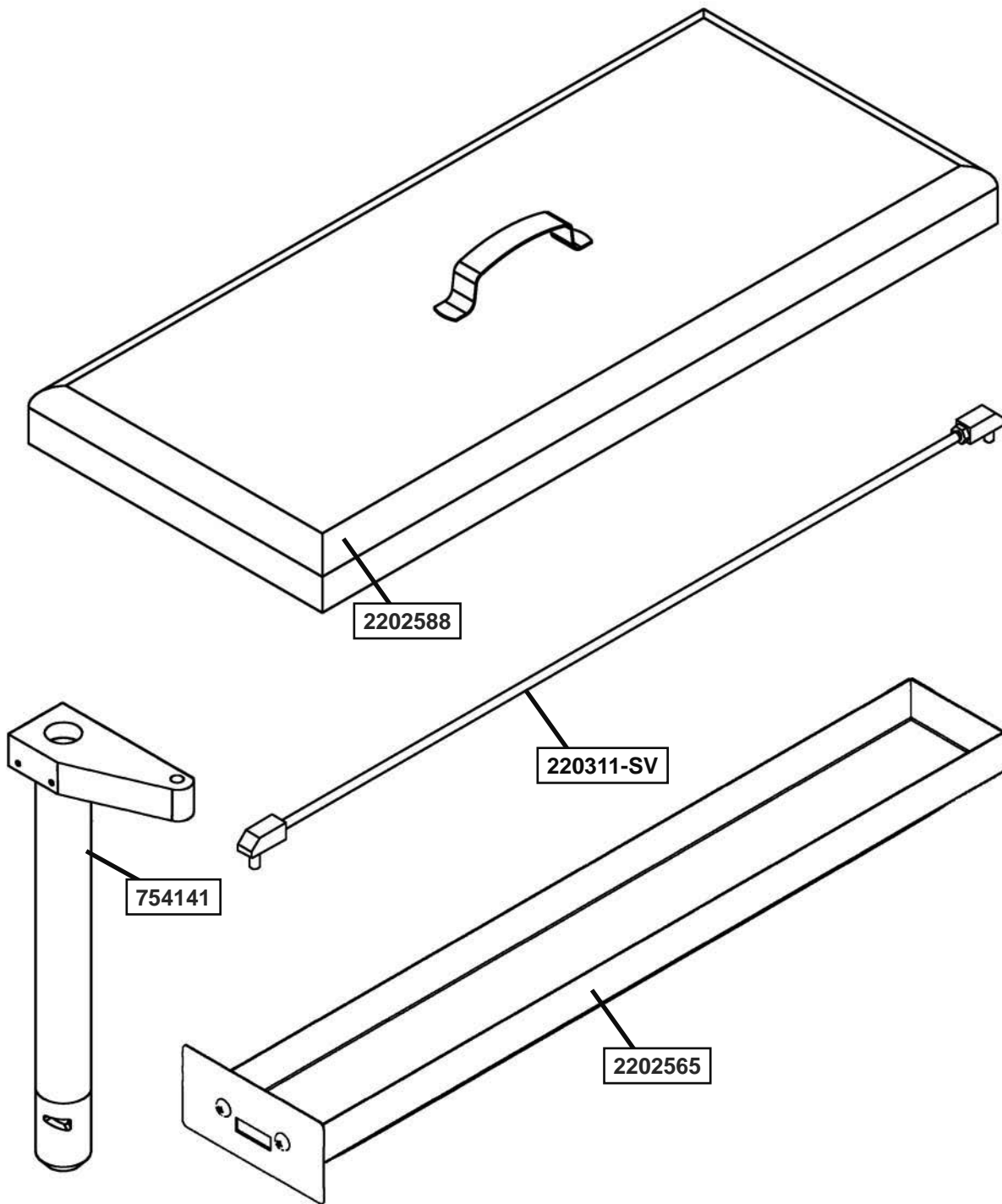
Part Number	Description	Quantity
BR-0020	Brush - Tubing (1/2")	1
BR-0030	Brush - Head w/Handle	1
BR-0035	Brush - Handle (Barrel)	1
C74	O-Ring Pick	1
C-1000-25F	Decal - Caution 100 Degree	2
C-1000-26C	Decal - Made In USA	1
C-2000-57	Wrench - Beater Shaft	1
C-4000-14	Guard Splash	1
VA-0240	Rebuild Kit (For #VA-0040 Solenoid Valve)	-
236058	Card - Cleaning Instructions	1
244138	Caster - Non-Locking (4") (Each)	2
244139	Caster - Locking (4") (Each)	2
324007	Decal - Flow Valve	2
324065	Decal - Water Inlet	1
324105	Decal - Caution Electrical Shock	1
324106	Decal - Caution Electrical Wiring Materials	1
324141	Decal - Caution Rotating Blades	1
324208	Decal - Attention Refrigerant Leak Check	1
324346	Decal - Caution Hazardous Moving Parts	1
324509	Decal - Cleaning Instructions	1
324548	Decal - Adequate Ventilation 6"	1
324566	Decal - Wired According To	1
324594	Decal - Attention Heat Sensitive	2
324686	Decal - Danger Automatic Start	1
324888	Decal - Fan Motor Reset	1
324894	Decal - Flow Control	2
324900	Decal - Safety Warning Alert (Open Market)	1
324901	Decal - Transformer Switch	1
324907	Decal - Holding Product	1
324927	Decal - Motor Compressor Thermally Protected	2
324928	Decal - Use With UL Condensing Units	1
490760	Leg	4
508048	Lubricant - Spline (2 oz Squeeze Tube)	1
508135	Petrol Gel - 4 oz Tube	1
513666	Manual - Owner's	1
756095	Tubing - 5/8" ID - Rear Drain Hose (25' Increments) (Per Inch)	120"
764385	Valve Kit - Water Valve Repair	-
2202377	Pin Cleaning Tool - Front Plate	1
2203790	Sensor Probe Kit	-

3.2 AUGER SHAFT AND FACEPLATE PARTS



Part Number	Description	Quantity
C-2000-50	Spring	20
C-2000-51	Blade (10 per Barrel)	20
C-4000-19	Slide - Long (Chute) (14")	1
C-4000-20	Slide - Short (Chute) (10")	2
NT-0010	Wing Nut - Stainless Steel (Front Gate)	2
SL-0010	Seal - Beater Shaft (Rear)	2
149014	Wearguard - Front Beater Shaft (Small)	2
336588	Front Door w/Pins	2
482055	Knob - Front Door (Black) (3 Point)	4
482061	Knob - Front Door (Black) (5 Point)	4
538397	Hex Nut - Front Gate	2
625174	O-Ring - Front Door (Black)	2
674196	Beater Shaft	2
2187993	Gate - Front	2

3.3 HOPPER PARTS



Part Number	Description	Quantity
754141	Flow Valve	2
2202565	Tray - Drain	2
2202588	Cover w/Handle - Hopper	2
220311-SV	Flow Control Rod Assembly	2
2205856	Flow Valve Kit (Includes (2) Each #754141 & #324007)	-

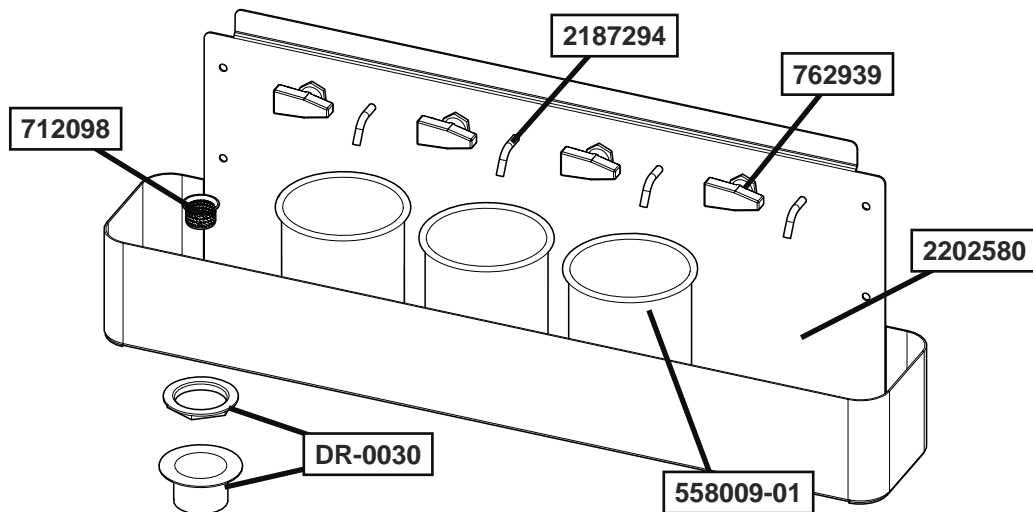
3.4 PANELS AND SCREWS

Part	Description	Quantity
647899	Screw - All Panels	-
2187751	Panel - Drain Tray Cover	1
2187754	Panel - Side Panel Cover	3
2202561	Panel - Front Shroud	1
2202567	Panel - Rear (Water-Cooled / Air Remote)	1
2202568	Panel - Lower Front	1
2202569	Panel - Side	2
2202581	Panel - Front Electrical (Standard)	1
2202603	Panel - Rear (Air-Cooled Self Contained)	1
2203465	Panel - Front Electrical (Freddy's)	1

3.5 FAUCET

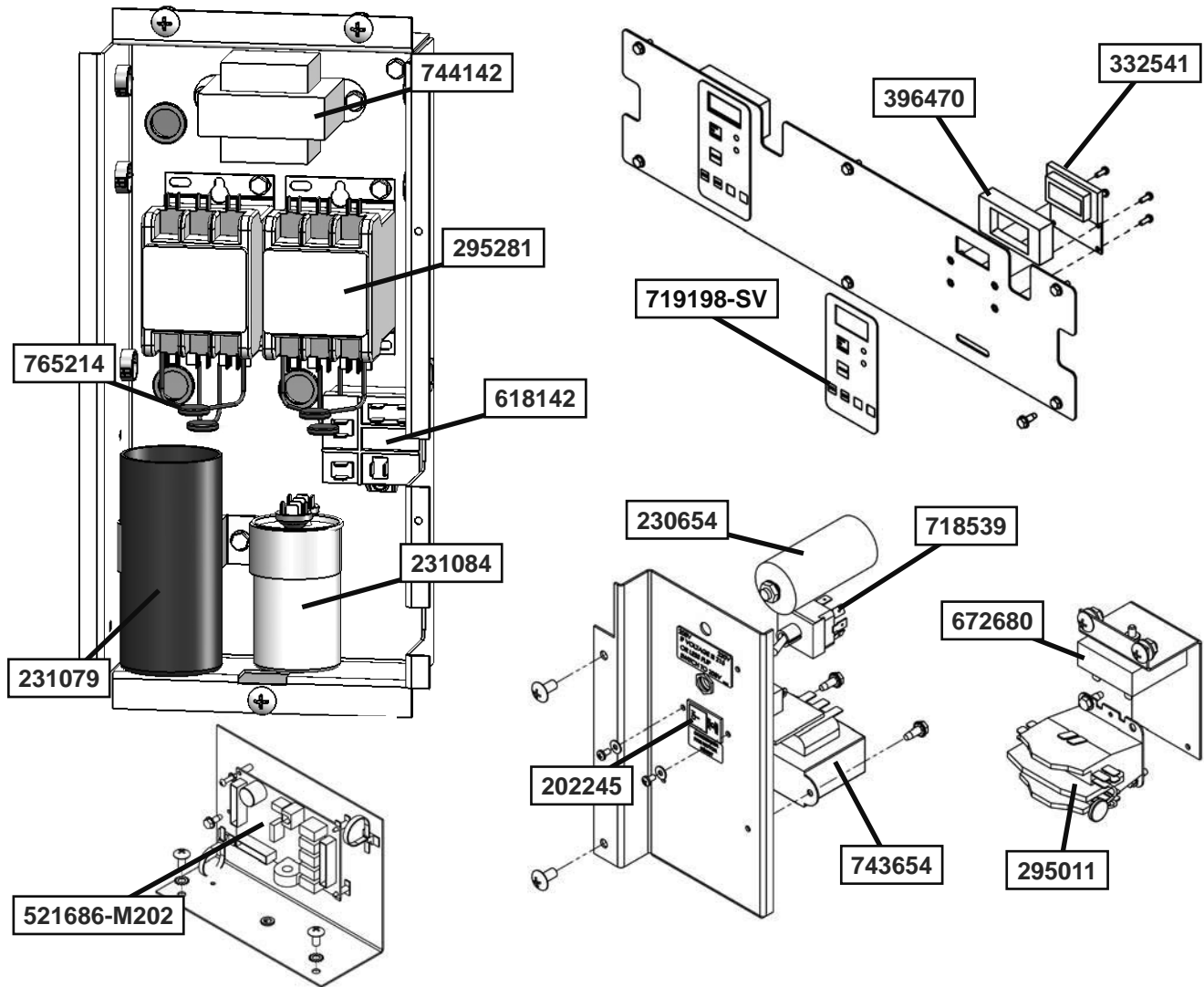
Part	Description	Quantity
FA-0010	Faucet - Swing-Out	1
360003	Extension (#FA-0010 Faucet)	1
369336	Aerator - Swing Faucet	1
369337	Faucet Arm - Swing Style	1
369337-SV	Faucet Arm Kit (Arm & Aerator)	-

3.6 DIPPING TROUGH



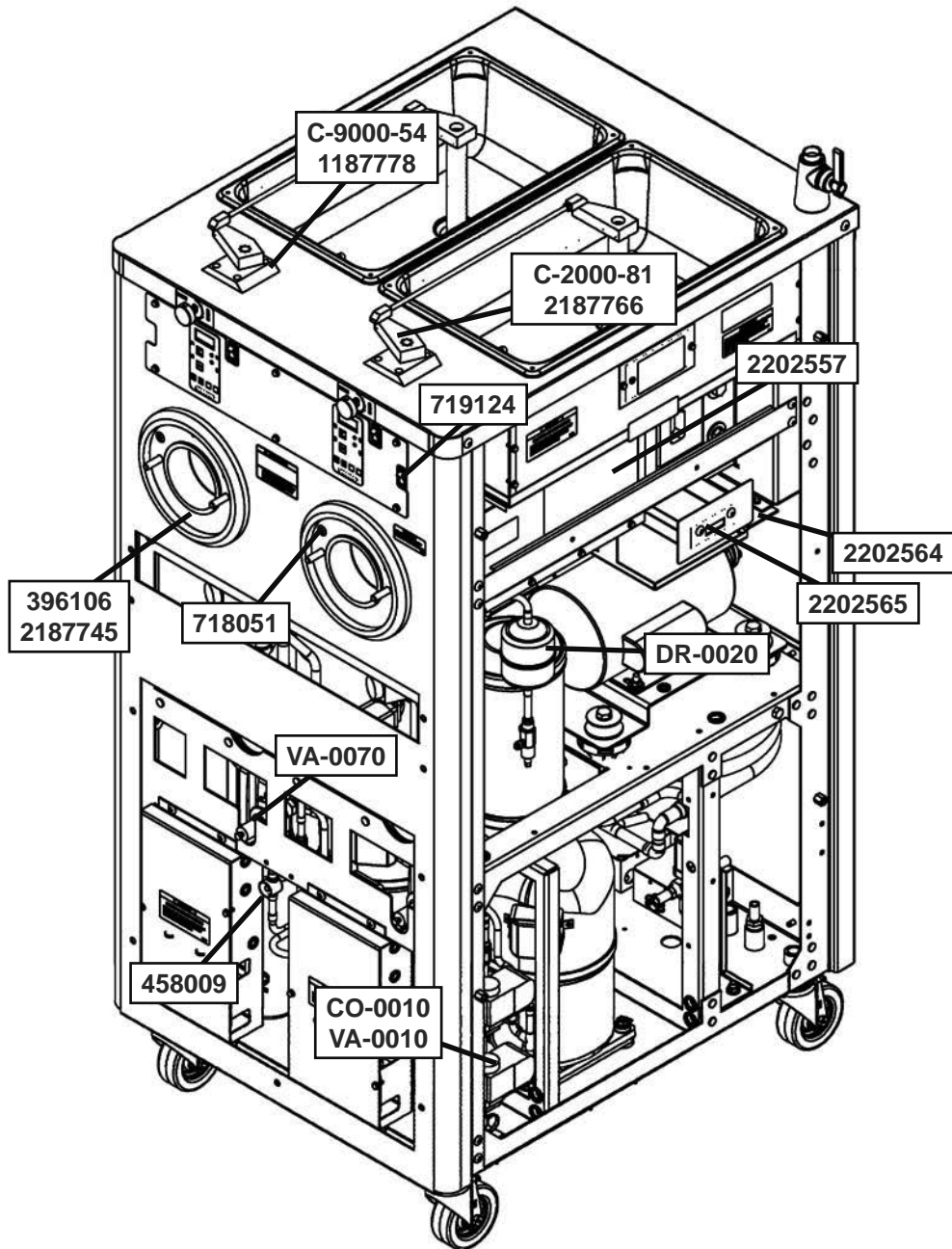
Part	Description	Quantity
DR-0030	Drain	1
558009-01	Pot - Round	3
712098	Strainer	1
762925	Valve - Needle (Water Supply)	4
762939	Valve Ball (Water Supply)	4
762939-KNOB	Knob - Valve Ball	4
2187294	Spout - Needle Valve	4
2187569	Overflow	1
2202098	Divider	3
2202580	Dipping Trough	1

3.7 ELECTRICAL PANELS



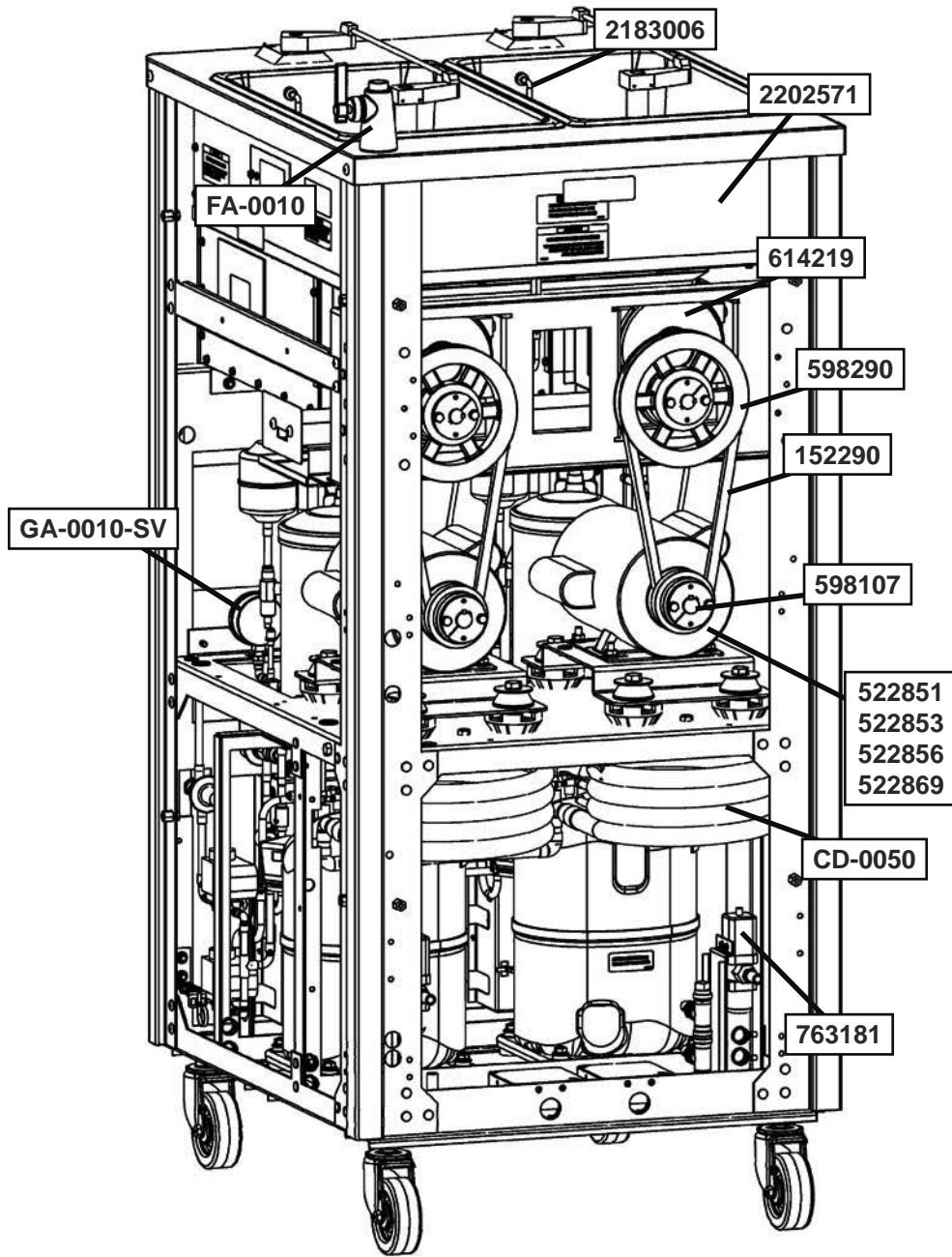
Part	Description	Quantity
202245	Circuit Breaker	1
229115	Cable - Phone (Control Board To Display Board)	2
230622	Capacitor - Start (#522856 Motor)	2
230633	Capacitor - Run (#282114 Compressor)	2
230654	Capacitor (#357102 Axial Fan Motor)	1
231075	Capacitor - Run (#522856 Motor)	2
231079	Capacitor - Start (#282055 Compressor)	2
231084	Capacitor - Run (#282055 Compressor)	2
295011	Contactors (Fan)	1
295281	Contactors (Compressor / Drive)	4
332541	Board - Display Module	2
396470	Gasket - Display (1 Per Barrel)	2
521686-M202	Board - Program (IntelliTec)	2
618142	Relay (#282055 Compressor) (1 PH)	2
618195	Relay (#282114 Compressor)	2
618231	Relay - Overload (3 PH)	2
672680	Sensor - Current - 24 VAC	1
718539	Switch - Toggle (Voltage)	1
719098-SV	Switch - Membrane Strip (Touchpad & Ribbon)	2
743654	Transformer - Booster	1
744142	Transformer	2
765214	Varistor Harness	8

3.8 RIGHT SIDE VIEW



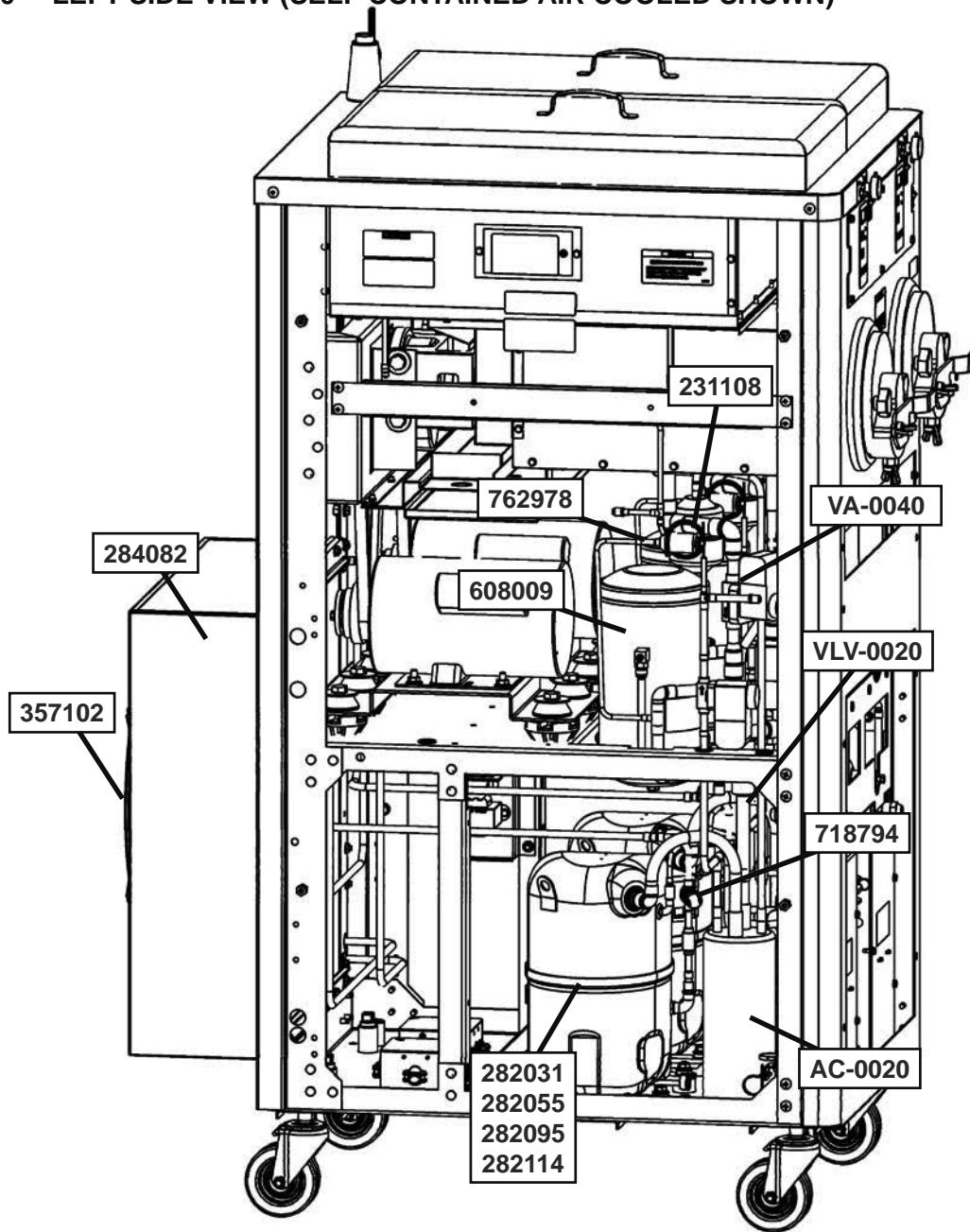
Part	Description	Quantity
C-2000-81	Flow Control Gear Arm	2
C-9000-54	Shim - Gearbox	2
CO-0010	Valve Coil - Solenoid (240V) (VA-0010) (Barrel)	7
DR-0020	Drier - Filter (3/8" OD) (Cap Tube)	2
VA-0010	Valve - Solenoid (3/8")	5
VA-0070	Valve - Expansion (AXV)	3
396106	Gasket - Front Evaporator	2
458009	Sight Glass	2
718051	Switch - Reed (Door Interlock)	2
719124	Switch - Rocker (Freezing Cylinders / Lemon Ice)	3
1187778	Hopper Cover Stop	2
2187745	Trim Ring - Front Barrel	2
2187766	Gearbox - Flow Control	2
2202557	Evaporator Assembly - Foamed	2
2202564	Drain Tray Support	1
2202565	Tray - Drain	1

3.9 REAR VIEW (WATER COOLED SHOWN)



Part	Description	Quantity
CD-0050	Condenser - 2 Ton (Water-Cooled)	2
FA-0010	Faucet - Swing-Out	1
GA-0010-SV	Gauge - Barrel Pressure (Suction)	2
152290	Belt - V (BX36)	2
522851	Motor - Drive (1 PH) (50 Hz)	2
522853	Motor - Drive (3 PH, 380V-415V, 50 Hz)	2
522856	Motor - Drive (1 PH) (60 Hz)	2
522869	Motor - Drive (3 PH) (60 Hz)	2
598107	Pulley - Drive Motor	2
598290	Pulley - Speed Reducer	2
614219	Speed Reducer	2
763181	Valve - Water	2
2183006	Probe Assembly - Hopper Liquid Level	2
2202571	Hopper Assembly - Foamed	1

3.10 LEFT SIDE VIEW (SELF CONTAINED AIR COOLED SHOWN)



Part	Description	Quantity
AC-0020	Accumulator / Heat Exchanger - 5/8"	2
VA-0040	Valve - Solenoid (7/8")	2
VLV-0020	Valve - Crankcase Pressure Regulator (5/8")	2
231108	Cap Tube Only	2
282031	Compressor 3 PH, 380V/480V, 50 Hz	2
282055	Compressor - 1 PH, 60 Hz (Air-Cooled Self Contained & Water-Cooled)	2
282095	Compressor - 3 PH, 60 Hz (Air-Cooled Self Contained & Water-Cooled)	2
282114	Compressor - 1 PH, 50 Hz	2
284082	Condenser (Air-Cooled)	1
357102	Motor - Fan (Air-Cooled Condenser) (Includes Blade & Guard)	1
608009	Receiver	2
718794	Switch - High Pressure Auto Reset	2
762978	Valve - EPR	2



**WARRANTY
CUSTARD EQUIPMENT AND BATCH EQUIPMENT**

1. **Scope:**

PW Stoelting, L.L.C. ("Stoelting") warrants to the first user (the "Buyer") that the freezing cylinders, hoppers, compressors, drive motors, speed reducers, beaters, and auger shafts of Stoelting custard equipment and batch equipment will be free from defects in materials and workmanship under normal use and proper maintenance appearing within two (2) years, and that all other components of such equipment manufactured by Stoelting will be free from defects in material and workmanship under normal use and proper maintenance appearing within twelve (12) months after the date that such equipment is originally installed.

2. **Disclaimer of Other Warranties:**

THIS WARRANTY IS EXCLUSIVE; AND STOELTING HEREBY DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE.

3. **Remedies:**

Stoelting's sole obligations, and Buyer's sole remedies, for any breach of this warranty shall be the repair or (at Stoelting's option) replacement of the affected component at Stoelting's plant in Kiel, Wisconsin, or (again, at Stoelting's option) refund of the purchase price of the affected equipment, and, during the first twelve (12) months of the warranty period, deinstallation/reinstallation of the affected component from/into the equipment. Those obligations/remedies are subject to the conditions that Buyer (a) signs and returns to Stoelting, upon installation, the Start-Up and Training Checklist for the affected equipment, (b) gives Stoelting prompt written notice of any claimed breach of warranty within the applicable warranty period, and (c) delivers the affected equipment to Stoelting or its designated service location, in its original packaging/crating, also within that period. Buyer shall bear the cost and risk of shipping to and from Stoelting's plant or designated service location.

4. **Exclusions and Limitations:**

This warranty does not extend to parts, sometimes called "wear parts", which are generally expected to deteriorate and to require replacement as equipment is used, including as examples but not intended to be limited to o-rings, auger seals, auger support bushings, and drive belts. All such parts are sold

AS IS.

Further, Stoelting shall not be responsible to provide any remedy under this warranty with respect to any component that fails by reason of negligence, abnormal use, misuse or abuse, use with parts or equipment not manufactured or supplied by Stoelting, or damage in transit.

THE REMEDIES SET FORTH IN THIS WARRANTY SHALL BE THE SOLE LIABILITY STOELTING AND THE EXCLUSIVE REMEDY OF BUYER WITH RESPECT TO EQUIPMENT SUPPLIED BY STOELTING; AND IN NO EVENT SHALL STOELTING BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, WHETHER FOR BREACH OF WARRANTY OR OTHER CONTRACT BREACH, NEGLIGENCE OR OTHER TORT, OR ON ANY STRICT LIABILITY THEORY.