

## HES Series Parts List

### HES SERIES PARTS LIST

#### Control Panel Components

<u>Part Number</u>	<u>Req'd</u>	<u>Description</u>
12A7515E21	2	CONTROL CIRCUIT CIRCUIT BREAKER, 3 AMP, 2-POLE
12A7515E18	1	PUMP/CUTTER MOTOR CIRCUIT BREAKER, 2-POLE, 10 AMP <b>Cutter/Pump</b>
12A7515E19	1	CONDENSER FAN CIRCUIT BREAKER, 2-POLE, 15 AMP <b>Air-Cooled machines</b>
12A7516E26	1	A/B CONTACTOR, 23-AMP, 3-POLE, 208/240V W/1-NC AUX <b>Compressor Motor Contactor, Replaces C/H 12A7516E13</b>
12A7518E30	1	A/B AUX. CONTACT, 3A, 1 NO/1 NC, (SIDE MOUNT) <b>Auxillary contact for compressor contactor above</b>
12A7516E43	1	A/B CONTACTOR, 9-AMP, 4-POLE, 208/240V W/2-NO,2-NC <b>Reversing relay for dual ice machines (Replaces 12A7517E27)</b>
12A7516E23	2	A/B CONTACTOR, 9-AMP, 3-POLE, 208/240V W/1-NO AUX <b>Pump or Cutter Motor</b>
12A7538E01	2	OVERLOAD RELAY, 2 - 7 AMP, CUTTER OR PUMP <b>Used with above contactor</b>
12A7536M01	1	PROGRAMMABLE CONTROLLER (PLC) FXOS-14MR <b>(Must specify model &amp; serial number)</b>
12A2117E04	2	FREEZER PRESSURE SWITCH-R22
12A2117F08	1	CONDENSER FAN CONTROL SWITCH <b>Air-cooled units</b>
12A2117D02	1	HI/LOW PRESSURE SWITCH <b>Hi/low pressure switch</b>
12A7500E44	1	SELECTOR SWITCH 3 POSITION C/H <b>Single ice selector switch</b>
12A7500E61	1	A/B SELECTOR SWITCH, 3 POSITION <b>Single ice selector switch (also requires contact block below)</b>
12A7500E73	1	CONTACT BLOCK/MOUNTING LATCH, 2-NO
12A7500E43	1	SELECTOR SWITCH 5 POSITION C/H <b>Dual ice selector switch</b>
12A7500E56	1	A/B PUSH BUTTON SWITCH (GREEN) <b>Start/harvest switch (requires contact below)</b>
12A7500E75	1	CONTACT BLOCK/MOUNTING LATCH, 1-NO <b>Momentary contact for above push button</b>
12A7500E65	1	FAULT INDICATOR LIGHT, RED, 24 VDC, A/B
12A2117G09	2	ELECTRONIC BIN THERMOSTAT
12A2117G0901	2	ELECTRONIC THERMOSTAT PROBE
12AHES01	1	HES SINGLE TO DUAL ICE CONVERSION KIT

Note: Machines manufactured before May 1999 will have Cutler Hammer controls and may be replaced with the Allen Bradley controls listed above.

## HES Series Parts List

### Freezer Components

<u>Part Number</u>	<u>Req'd</u>	<u>Description</u>
12A2600G01	1	FREEZER COVER GASKET 13" OD X 11 11/16" ID X 3/16"
12A2145C09	1	COVER, FREEZER, 12" TYPE 304 CAST STAINLESS STEEL
12A2222H1118	8	STUD BOLT, 3/8"-16NC X2 3/4"LG
12A2240H4109	8	NUT, WING, BRASS, 3/8"-16NC
12A2250A109	8	WASHER, CUT 3/8" x 7/8" O.D. SS
12A4200L0402	1	RELIEF VALVE #3020 SET @ 350#, 1/2" MPT x 5/8" SAE
12A4200G0301	1	CHARGING VALVE, 3/8 MPT X 1/2 SAE FLARE
12A2451R01	1	REDUCER WITH GASKET 1/2" SAE X 1/4" SAE
12A2451C01	1	CAP, WC, 1/4" FLARE, WITH NEOPRENE SEAL
12A4200R0702	1	ROTA-LOCK VALVE VERTICAL 7/8" ID SWT x 1-1/4-12 THREAD <i>Liquid feed/Thawing gas (also freezer pressure switch)</i>
12A2600T01	1	ROTA-LOCK PRIMORE TEFLON SEAL FOR 1-1/4-12 THREAD
12B2185N11	78	1" WATER DISTRIBUTOR SANOPRENE NO VENT
12B2185N21	48	1-1/4" WATER DISTRIBUTOR SANOPRENE NO VENT

### Compressors / Components

<u>Part Number</u>	<u>Req'd</u>	<u>Description</u>
12A2110S3801	1	SCROLL COMPRESSOR, ZS21K4-TF5-230 <i>HES20 Models, 208/230V-3P-60HZ or 200V-3P-50HZ</i>
12A2110S3901	1	SCROLL COMPRESSOR, ZB21KC-TFD-230 <i>HES20 Models, 460V-3P-60HZ or 380/400V-3P-50HZ</i>
12A2110S4501	1	SCROLL COMPRESSOR, Z230K4-TF5-250, 2 <i>HES30 Models, 208/230V-3P-60HZ or 200V-3P-50HZ</i>
12A2110S4601	1	SCROLL COMPRESSOR, ZB30KC-TFD-250 <i>HES30 Models, 460V-3P-60HZ or 380/400V-3P-50HZ</i>
12A2110S4301	1	SCROLL COMPRESSOR, ZS45K4-TF5-250, 20 <i>HES40 Models, 208/230V-3P-60HZ or 200V-3P-50HZ</i>
12A2110S4401	1	SCROLL COMPRESSOR, ZB45KC-TFD-250 <i>HES40 Models, 460V-3P-60HZ or 380/400V-3P-50HZ</i>
12A7509E13K	1	SCROLL CRANKCASE HTR KIT, 70WATTS FOR HES30/40 <i>Replaces 40 or 80 watt heaters on all scroll compressors</i>
12A4200R0801	1	ROTA-LOCK VALVE W/NEUTRAL PORT 1-1/8" SWT x 1-1/4"-12 <i>Compressor suction service valve with neutral port</i>
12A2600T01	1	ROTA-LOCK PRIMORE TEFLON SEAL FOR 1-1/4-12 THREAD
12A2396C0401	1	ROTALOCK BRASS ADAPTER, 3/4" IDS x 1-1/4"-12 THREAD <i>Compressor suction adaptor HES20</i>
12A2396C0402	1	ROTALOCK BRASS ADAPTER, 7/8" IDS x 1-1/4"-12 THREAD <i>Compressor suction adaptor HES30 &amp; HES40</i>
12A2396C0201	1	ROTALOCK BRASS ADAPTER, 1/2" IDS x 1"-14 THREAD <i>Compressor discharge adaptor all models</i>
12A4200R0402	1	ROTA-LOCK VALVE W/NEUTRAL PORT 5/8" IDS x 1-14 THREAD <i>Compressor discharge service valve with neutral port</i>
12A2600T02	1	ROTA-LOCK PRIMORE TEFLON SEAL FOR 1-14 THREAD

## HES Series Parts List

### Cutter Drive/Cutter Internals

<u>Part Number</u>	<u>Req'd</u>	<u>Description</u>
12A2900M0507	1	CUTTER MOTOR, 1/2HP 208/230V-1P-50/60HZ
12A4030R12	1	GEAR REDUCER, GROVE 10:1 WASHDOWN W/VENT PLUG
19T3020C01	1	GEAR OIL, 10 OUNCE BOTTLE, TEXACO CYGNUS
19T2615D01	1	CUTTER DRIVE GEAR TI-59 W/O HUB
12A2160H0101	1	CUTTER DRIVE GEAR HUB 5/8" BORE
12A2215F1112	3	CAP SCREW, 1/4"-20NC X 1 1/4" Long SS <b>Hub mounting screws</b>
12A2250B107	3	WASHER, LOCK 1/4" SS ( 300 SERIES)
12B2020R04	1	HE ( UHMW ) CUTTER BEARING
12A3040S02	1	CUTTER BEARING ROLL PIN 3/16" X 1/2"
19T2025B0103	1	BEARING BRACKET FOR 12" CUTTER
19T2170D01	1	ICE DEFLECTOR DOOR
12A4071S03	1	RIVET, 3/16 X 2 1/4 FLAT HD. FOR ICE DELECTOR DOOR
19T2163D0101	1	CUTTER DISC, STAINLESS STEEL FOR 12" CUTTER
12A3040S01	1	CUTTER DISC ROLL PIN, 1/4" X 1 1/2"
19T4073R07	1	CUTTER DISC ROLL PIN TOOL
19T2160C0101	1	HE CUTTER ASSEMBLY, INVESTMENT CAST SS
19T2010A01	1	ADAPTOR PLATE FOR HE 1" DIAMETER x 3/4" LG ICE <b>Mounting screws below thread directly into lower plate</b>
12A2226F1108	4	MACHINE SCREW, FLAT HEAD SS, 1/4" x 3/4"
19T2090C04	1	HE ICE CHUTE ASSEMBLY FOR DUAL ICE
19T2090C07	1	HE ICE CHUTE ASSEMBLY FOR SINGLE TYPE ICE

## HES Series Parts List

### Water Pump/Circulating Water

<u>Part Number</u>	<u>Req'd</u>	<u>Description</u>
12A4200H0401	1	FLOAT VALVE, 1/2" ROBERTS #RM214
12A4020GR01	1	GORMAN-RUPP WATER PUMP 1/3HP 208/230/1/60HZ <i>Used on all machines built after July 2007</i>
12A4020GR02	1	GORMAN-RUPP WATER PUMP 1/3HP 208/230/1/50HZ <i>Used on all machines built after July 2007</i>
12A4020Z14	1	HE SERIES WATER PUMP REPLACEMENT KIT, 60HZ <i>Replaces AP pump on machines built before July 2007</i> <i>Kit includes Gormann-Rupp pump, fittings, bracket &amp; hoses</i>
12A4020Z15	1	HE SERIES WATER PUMP REPLACEMENT KIT, 50HZ <i>Replaces AP pump on machines built before July 2007</i> <i>Kit includes Gorman-Rupp pump, fittings, bracket &amp; hoses</i>
12A4080S21	1	SEAL/IMPELLER KIT 60HZ GORMAN-RUPP WATER PUMP
12A4080S22	1	SEAL/IMPELLER KIT 50HZ GORMAN-RUPP WATER PUMP
12A2450E29	1	SUCTION ELBOW FOR GORMAN-RUPP WATER PUMP
12A2450E30	1	DISCHARGE ELBOW FOR GORMAN-RUPP WATER PUMP
12A4200G0103	1	VALVE, POLYPROPYLENE AIR COCK 1/4" MPT X 1/4" TUBING
12A4080S04	1	SEAL ASSEMBLY #397012 FOR A/P PUMP
126628AP		PUMP HOUSING O-RING #391015 FOR A/P PUMP
12A4020Y02	1	PUMP, IMPELLER #391046 FOR A/P PUMP 60HZ (12A4020A06)
12A4020Y04	1	PUMP, IMPELLER #391531 FOR A/P PUMP 50HZ (12A4020A07)
12A2240C4111	1	BRASS HEX NUT FOR MAKEUP FLOAT VALVE
12A2475T0404	1	ELL, S.S. 1/2" FPT 90 DEG.
12A2452M05	1	ADAPTOR, 1/2" MPT x 3/8" TUBING
12A2452E07	1	ELL, SWIVEL, MALE, 90 DEG. 3/8" MPT x 3/8" TUBING
19T1501S0505	1	WATER FLOAT BOX COVER FOR HE SERIES
12A4181T12	2FT	TUBING, POLYETHYLENE 3/8" OD x 1/4" ID <i>Make-up water tubing (priced per foot)</i>
12A2600G12	1	WATER TANK GASKET 16 1/8" OD x 14" ID x 3/16" THK
12A4181T06	5FT	TUBING, TYGON B-44-3, 1-1/2" OD x 1-1/4" ID <i>Pump discharge tubing (priced per foot)</i>
12A4181CL02	1	PUMP SUCTION TUBING, 2" OD x 1-1/2" ID x 4" LONG

### Water Tank Drain & Blowdown

<u>Part Number</u>	<u>Req'd</u>	<u>Description</u>
12A1501S26	1	PVC DRAIN / BLOWDOWN ASSEMBLY
12A4200G0102	1	VALVES, BRASS AIR COCK, 1/4"MPT
12A2451U19	1	CONNECTOR, MALE, BRASS 1/4" MPT X 1/4" TUBING
12A2450E19	1	ELL, PVC, (NYLON) 1/4"FPT X 1/4" TUBING
12A4181T11	2	TUBING, POLYETHYLENE 1/4OD X .170" ID <i>Pet Cock Valve Tubing (priced per foot)</i>
12A4181T04	3FT	TUBING, TYGON B-44-3, 1-1/4" OD x 1" ID <i>Water tank drain tubing (priced per foot)</i>
12A2200D06	1	DRIP PAN, PLASTIC FOR HES SERIES

## **HES Series Parts List**

### **Water-Cooled Condenser**

<b><u>Part Number</u></b>	<b><u>Req'd</u></b>	<b><u>Description</u></b>
12A2115S0401	1	CONDENSER, STANDARD KH2X, 8710 <b>HES20</b>
12A2115S0301	1	CONDENSER, STANDARD QC3X #8710-41 <b>HES30</b>
12A2115S0201	1	CONDENSER, STANDARD QC5X #8710-43 <b>HES40</b>
12A2055B01	1	CONDENSER CLEANING TOOL, ADJUSTABLE 3/8" x 1/2" ID
12659623	1	GASKET SET-K2X, KH2X & K3X "STANDARD" CONDENSER <b>HES20 (12-1/2" x 4-1/2")</b>
1265961	1	GASKET SET-K10X, KH10X, QC3X & QC5X "STANDARD" COND. <b>HES30 &amp; HES40 (16" x 5-1/2")</b>
12A4200E0605	1	WATER REGULATING VALVE, 3/4" <b>HES20 &amp; HES30</b>
12A4200E0802	1	WATER REGULATING VALVE, 1" FPT <b>HES40</b>
12A4200E0402	1	WATER REGULATING VALVE, 1/2" HP <b>HES20 &amp; HES30 High pressure (above 90 psi)</b>
12A4200E0801	1	WATER REGULATING VALVE, 1" METREX <b>HES40 High pressure (above 90 psi)</b>

### **Air-Cooled Condenser**

<b><u>Part Number</u></b>	<b><u>Req'd</u></b>	<b><u>Description</u></b>
12A2115KS061	1	CONDENSER, HDD-61, 50/50 SPLIT COIL SINGLE PHASE <b>HES20</b>
12A2115KS101	1	CONDENSER, HDD-101, 50/50 SPLIT COIL SINGLE PHASE <b>HES30</b>
12A2115KS131	1	CONDENSER, HDD-131, 50/50 SPLIT COIL SINGLE PHASE <b>HES40</b>
12A2900M0401	1	MOTOR 1/3HP GE#5KCP35MN34GS (KRAMER 049-161) <b>HDD-61 (HES20)</b>
12A2900M0506	2	MOTOR, 1/2HP, 208/230-1-60HZ, (KRAMER 049-158) <b>HDD-101, HDD-131 (HES30 &amp; HES40)</b>
12A2115P0301	1	CONDENSER, FAN BLADE 039-193, 30" <b>HDD-61 (HES20)</b>
12A2115P0401	2	CONDENSER, FAN BLADE 213455000, 24" <b>HDD-101, HDD-131 (HES30 &amp; HES40)</b>
12A2105C04	1	COIL, #0MKC-2 FOR SPORLAN N/O 208-240V.,50/60HZ
12A2117G05		CONTROL, THERMOSTAT, PENN #A19 <b>(1 Req'd on HDD61, 2 Req'd on HDD101 &amp; HDD131)</b>
12A4200A0503	1	SOLENOID VALVE, 5/8" NORMALLY OPEN <b>HDD-61 (HES20)</b>

## HES Series Parts List

### Air-Cooled Condenser (Con'd)

<u>Part Number</u>	<u>Req'd</u>	<u>Description</u>
12A4200A0704	1	SOLENOID VALVE, 7/8" NORMALLY OPEN <b>HDD-101, (HES30)</b>
12A4200A0902	1	SOLENOID VALVE, 1-1/8" NORMALLY OPEN <b>HDD-131 (HES40)</b>
12A4199V42	1	REPAIR KIT #KS-0B14/0E14 FOR SPORLAN 5/8" N/O VALVE
12A4199V44	1	REPAIR KIT #KS-0B25/0E25 FOR SPORLAN 7/8" N/O VALVE
12A4199V45	1	SUCTION STOP VALVE REPAIR KIT FOR SPORLAN 0E34S290
12A4200B0401	1	CHECK VALVE, 1/2" O.D. <b>HDD-61 (HES20)</b>
12A4200B0502	1	BALL CHECK VALVE, 5/8" O.D. <b>HDD-101, (HES30)</b>
12A4200B0701	1	CHECK VALVE, 7/8" O.D. <b>HDD-131 (HES40)</b>
12A4200L0201	1	RELIEF VALVE #3012 SET @ 400#, 1/4" NPT x 3/8" SAE
12A7512E13	1	ENCLOSURE, HOFFMAN #A-8R64, 8" x 6" x 4"
12A2396A0501	2	ROTA LOCK CONNECTOR, 1 1/8" IDS x 1-1/4-12 THREAD
12A2600T01	2	ROTA-LOCK PRIMORE TEFLON SEAL FOR 1-1/4-12 THREAD
12A4200G0408	1	BALL VALVE, 1/2" O.D. WITH SEAL CAP
12A4200G0502	1	BALL VALVE, 5/8" O.D. WITH SEAL CAP
12A4200G0702	1	BALL VALVE, 7/8" O.D. WITH SEAL CAP
12A4200G0902	1	BALL VALVE, 1-1/8" O.D. WITH SEAL CAP

**BALL VALVE USAGE: HDD-61 (1/2" & 5/8"), HDD-101 (5/8" & 7/8"), HDD131 (7/8" & 1-1/8")**

### Receiver Parts

<u>Part Number</u>	<u>Req'd</u>	<u>Description</u>
12A4200J0405W	1	UPPER GAGE COCK VALVE, WESTERMAYER PLATED <b>Replaced Brass Valve 12A4200J0403 - May 1999</b>
12A4200J0406W	1	LOWER GAGE COCK VALVE, WESTERMAYER PLATED <b>Replaced Brass Valve 12A4200J0404 - May 1999</b>
12A3050C0301	2	PIPE NIPPLE, 1/2" X 1-1/2" LONG
12A2625G10	1	GAGE GLASS, 1/2" X 20" LONG <b>For Steel Valves (Started use in May 1999)</b>
12A2625G08	1	GAGE GLASS 1/2" X 18 7/8" LONG <b>For Brass Valves (Usage before May 1999)</b>
19T2635G07	1	GAGE GLASS GUARD SET, 18 5/8"
12A4199V26	2	GAGE GLASS PACKING O-RING FOR 1/2" DIAMETER
12A4200L0408	1	RELIEF VALVE #3020 SET @ 400#, 1/2" MPT x 5/8" SAE
12A4200B0502	1	BALL CHECK VALVE, 5/8" O.D.

## HES Series Parts List

### Receiver Parts (Con'd)

<u>Part Number</u>	<u>Req'd</u>	<u>Description</u>
12A4200R0401	1	ROTA-LOCK VALVE HORIZONTAL 1/2" ID SWT x 1-14 THREAD <i>King Valve</i>
12A2600T02	1	ROTA-LOCK PRIMORE TEFLON SEAL FOR 1-14 THREAD
12A4200R0701	2	ROTA-LOCK VALVE HORIZ. 7/8" ID SWT x 1-1/4-12 THREAD <i>Liquid Return &amp; Thawing Gas</i>
12A2600T01	2	ROTA-LOCK PRIMORE TEFLON SEAL FOR 1-1/4-12 THREAD

**Note: Valve core and 1/4" seal cap required for Rota-lock valves**

12A2451C01	1	CAP, WC, 1/4" FLARE, WITH NEOPRENE SEAL
12A2451V01	1	VALVE CORE FOR 1/4" ACCESS VALVE

### Thawing Gas Line

<u>Part Number</u>	<u>Req'd</u>	<u>Description</u>
12A4200A0705	1	SOLENOID VALVE, SPORLAN ME25S 7/8" ODF 208-230V COIL <i>Thawing gas solenoid (D-valve)</i>
12A2105C16	1	COIL, #MKC-2 FOR SPORLAN 208/240V-50/60HZ
12A4199V39	1	REPAIR KIT #KSB25/E25 FOR SPORLAN ME25S
12A4200R0701	1	ROTA-LOCK VALVE HORIZ. 7/8" ID SWT x 1-1/4-12 THREAD <i>Thawing gas stop valve</i>
12A2600T01	1	ROTA-LOCK PRIMORE TEFLON SEAL FOR 1-1/4-12 THREAD
12A2451C01	1	CAP, WC, 1/4" FLARE, WITH NEOPRENE SEAL
12A2451V01	1	VALVE CORE FOR 1/4" ACCESS VALVE

### Liquid Line

<u>Part Number</u>	<u>Req'd</u>	<u>Description</u>
12A4200C0312	1	EXPANSION VALVE, SPORLAN #SBF-V-A-C 3/8" IN x 1/2" OUT <i>HES20</i>
12A4200C0311	1	EXPANSION VALVE, SPORLAN #SBF-V-C-C 3/8" IN x 1/2" OUT <i>HES30 &amp; HES40</i>
12A4200A0404	1	VALVES, SOLENOID SPORLAN #ME9S 1/2" ODF 208/230V-50/60 <i>Liquid line solenoid (A-valve)</i>
12A2105C16	1	COIL, #MKC-2 FOR SPORLAN 208/240V-50/60HZ
12A4199V37	1	REPAIR KIT #KSB9/E9 FOR SPORLAN ME9S
12A4200R0401	1	ROTA-LOCK VALVE HORIZONTAL 1/2" ID SWT x 1-14 THREAD
12A2600T02	1	ROTA-LOCK PRIMORE TEFLON SEAL FOR 1-14 THREAD
12A4140S04	1	STRAINER, 1/2" ODS Y-TYPE HENRY
12A2195D02	1	DRIER, SPORLAN #C304, 1/2" SAE

## HES Series Parts List

### Suction Line

<u>Part Number</u>	<u>Req'd</u>	<u>Description</u>
19T4200A09022	1	SUCTION STOP VALVE ASSY FOR HES20, 1-1/8"
19T4200A09023	1	SUCTION STOP VALVE ASSY FOR HES30, 1-1/8"
19T4200A09024	1	SUCTION STOP VALVE ASSY FOR HES40, 1-1/8"
12A4199V45	1	SUCTION STOP VALVE REPAIR KIT FOR SPORLAN 0E34S290 <i>(Sporlan 0E34S290 discontinued use in Aug, 2006)</i>
12A2105C04	1	COIL, #0MKC-2 FOR SPORLAN N/O 208-240V.,50/60HZ <i>(For Sporlan 0E34S290)</i>
12A4199V55	1	SUCTION STOP VALVE REPAIR KIT FOR SPORLAN 0E35S190 <i>(Sporlan 0E35S190 used on machines beginning Sept,2006)</i>
12A2105C25	1	COIL, #0MKC-1 SPORLAN, 120/208-240, 50/60HZ, <i>(For Sporlan 0E35S190)</i>
12A2000A14	1	SUCTION ACCUMULATOR/HEATX REF. RESEARCH 1-1/8"X1/2" <i>(Replaces AC &amp; R #12A2000A16)</i>

### Discharge Line & Oil Return

<u>Part Number</u>	<u>Req'd</u>	<u>Description</u>
12A4200A0504	1	SOLENOID VALVE, 5/8" ODF SPORLAN ME14S <i>(X-valve) For air-cooled units only</i>
12A4199V38	1	REPAIR KIT #KSB14/E14 FOR SPORLAN ME14S
12A2105C16	1	COIL, #MKC-2 FOR SPORLAN 208/240V-50/60HZ
12A3025S18	1	OIL SEPARATOR TEMPRITE #902, 5/8" CONN, 1/4" SAE OIL <i>(Replaces ACR #12A3025S10) (Mounting leg, Access Valve, and 20" Superhose required for changing from ACR)</i>
12A4000P03	1	MOUNTING LEG FOR TEMPRITE 902 OIL SEPARATOR
12A4206A01	1	ACCESS VALVE, 1/4" ODC X 1/4"
12A2742S03	1	SUPERHOSE ASSY, 20" LONG, 1/4"
12A2742S01	1	SUPERHOSE ASSY, 12" LONG, 1/4"
12A4140S16	1	STRAINER, OIL LINE 1/4" FLARE

### Casings

<u>Part Number</u>	<u>Req'd</u>	<u>Description</u>
12A2080K03	1	CASING KIT FOR HES SERIES, STAINLESS STEEL
12A2080K02	1	CASING KIT FOR HES SERIES, PLASTIC

### Goldenrod Water Treatment

<u>Part Number</u>	<u>Req'd</u>	<u>Description</u>
12A2195W0501	1	GOLDENROD WATER TREATMENT, 5" - 13 GPM - NSF
12A2195W0502	1	REPLACEMENT GOLDENROD CELL, 5"
12A2195I01	2	INSULATOR, DELRON FOR 5", 9", OR 12" GOLDENROD
12A4020Z10	1	GOLDENROD INSTALLATION KIT FOR HES SERIES
12A2195W0504	1	DELRON THREADED PLUG FOR GOLDENROD



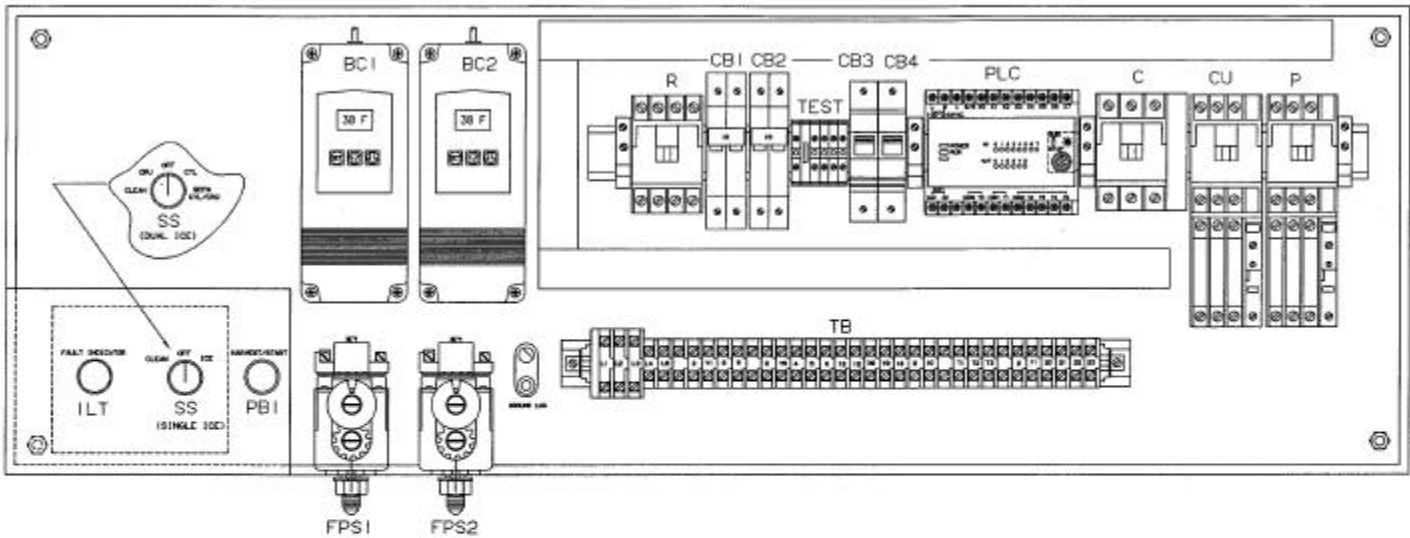
# HES-Series Conversion Instructions - Single Ice to Dual Ice

## Dual Ice Conversion Kit

Part #: 12A HES01 - Total Kit

Part	Vogt Part #
5 Position Selector Switch (SS)	12B 7500E43
Reversing Relay (R)	12A 7517E18
Bin Control (BC1)	12A 2117G09
Freezer Pressure Switch (FPS1)	12A 2117E04
Wire Set	12B 2660H0105
* Cap Tube Assembly (2 pressure switch connections)	12C 1501S10
Entire Dual Ice Chute Assembly (for HES)	19T2090C04
Switch plate sticker (Dual ice)	12A4171T56
(2) Mounting screws for bin controls (#6)	N/A
Instructions for Conversion	N/A
New Control Panel Cover Wiring Stickers	N/A

\* Note: May substitute standard single connection cap tube with "T" fitting



### CONTROL PANEL PARTS

BC1	12A 2117G09000000	CRUSHED ICE BIN CONTROL (DUAL ICE ONLY)
BC2	12A 2117G09000000	CYLINDER ICE BIN CONTROL
C	12A 7518E10000000	COMPRESSOR CONTACTOR
	12A 7518E15000000	COMPRESSOR AUX CONTACT
CB1	12A 7518E19000000	PUMP/CUTTER MOTOR CIRCUIT BREAKER (15 AMP)
CB2	12A 7518E19000000	* CONDENSER FAN MOTOR CIRCUIT BREAKER (15 AMP)
CB3	12A 7518E20000000	CONTROL CIRCUIT BREAKER (3 AMP)
CB4	12A 7518E20000000	CONTROL CIRCUIT BREAKER (3 AMP)
CU	12A 7530E11000000	CUTTER MOTOR STARTER
	12A 7508H210800000	CUTTER MOTOR OVERLOADS (3.38 - 5.54 AMPS)
FPS1	12A 2117E04000000	FREEZER PRESSURE SWITCH (DUAL ICE ONLY)
FPS2	12A 2117E04000000	FREEZER PRESSURE SWITCH

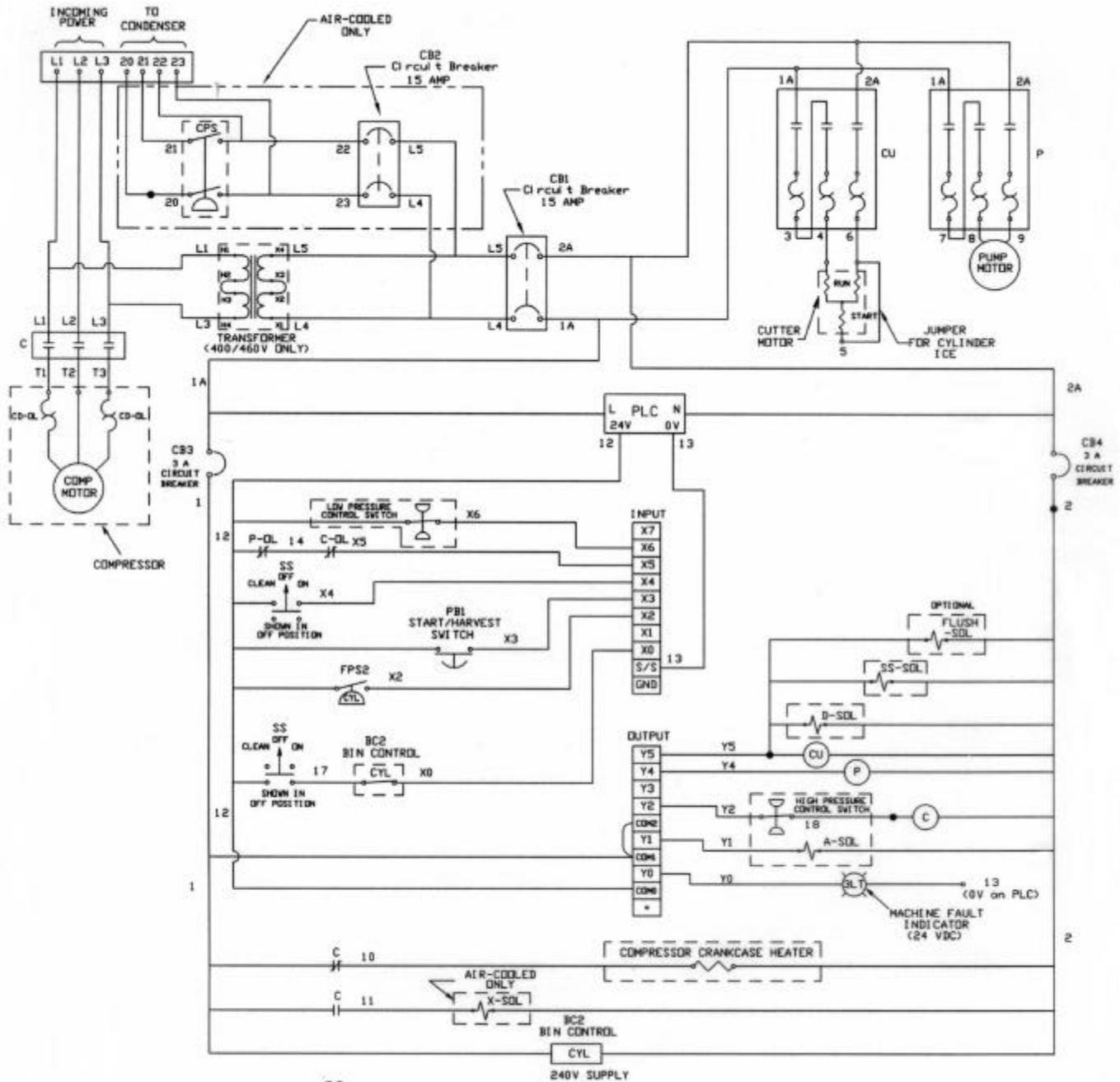
P	12A 7530E11000000	PUMP MOTOR STARTER
	12A 7508H210800000	PUMP MOTOR OVERLOADS (4.96 - 8.16 AMPS)
PBI	12A 7500E45000000	START / HARVEST BUTTON
PLC	12A 7536ND1000000	PROGRAMMABLE CONTROLLER
R	12A 7517E18000000	REVERSING RELAY (DUAL ICE ONLY)
SS	12A 7500E43000000	5 POSITION SELECTOR SWITCH (DUAL ICE)
	12A 7500E44000000	3 POSITION SELECTOR SWITCH (SINGLE ICE)
TB	N/A	TERMINAL BLOCK
TEST	N/A	TEST BLOCK (FOR MANUFACTURER'S USE ONLY)
ILT	12A 7500E46000000	FAULT INDICATOR LIGHT

\* NOTE: AIR COOLED ONLY

### Control Panel Layout

Revision Date: 4/8/98

# HES-Series Conversion Instructions - Single Ice to Dual Ice (Cont.)



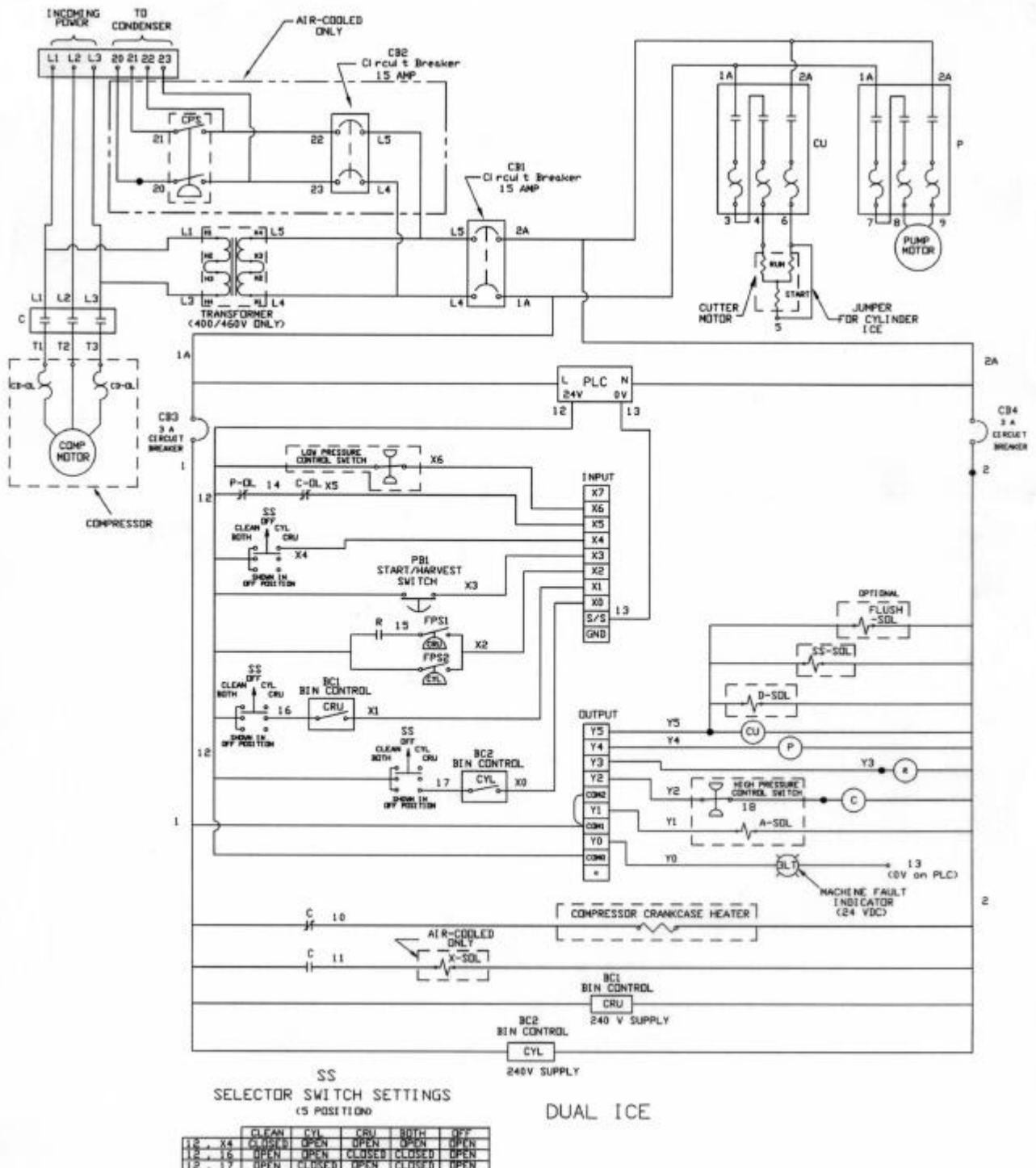
SS  
SELECTOR SWITCH SETTINGS  
(3 POSITION)

	CLEAN	OFF	ICE
1.2, X4	CLOSED	OPEN	OPEN
1.2, 1.7	OPEN	OPEN	CLOSED

SINGLE ICE  
CRUSHED OR CYLINDER

## Wiring Schematic Before Conversion

# HES-Series Conversion Instructions - Single Ice to Dual Ice (Cont.)



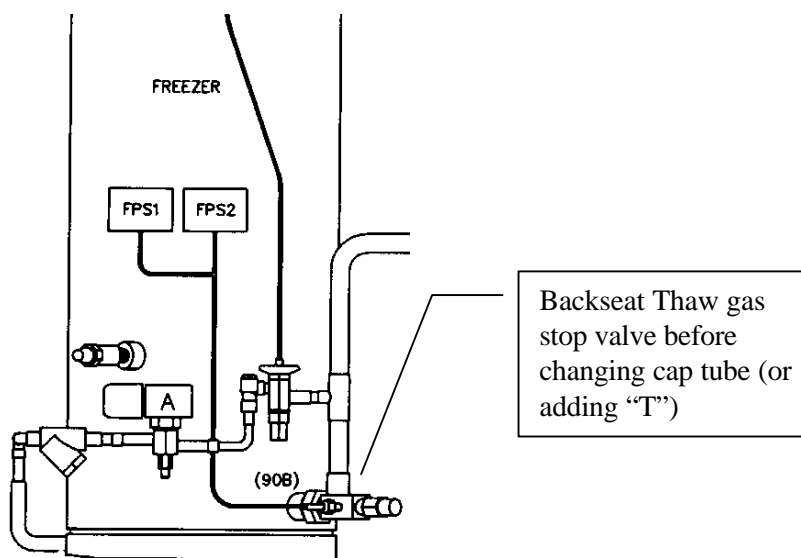
**Wiring Schematic after Conversion**

## HES-Series Conversion Instructions - Single Ice to Dual Ice (Cont.)

### General Instructions

- 1) Remove contact block from the “Manual Harvest / Start” button, the “Selector Switch” and the “Fault Indicator Light”. Remove the locking nut from the back of all three devices and remove them from the switch plate.
- 2) Install new Switch plate sticker.
- 3) Reinstall the “Manual Harvest / Start” button and the “Fault Indicator Light”. Reconnect the contact blocks.
- 4) Install the switch or knob portion of the new 5 position “Selector Switch” in the switch plate. **DO NOT** install the terminal block section of the switch at this time. Remove the three wires and the jumper from the old three position selector switch. These wires will be connected to the new selector switch at a later time.
- 5) Put Bin Control (BC1) and Freezer Pressure Switch (FPS1) in control panel

*Note: Do not install the Reversing Relay(R) at this time - wire relay coil before installing on din-rail.*

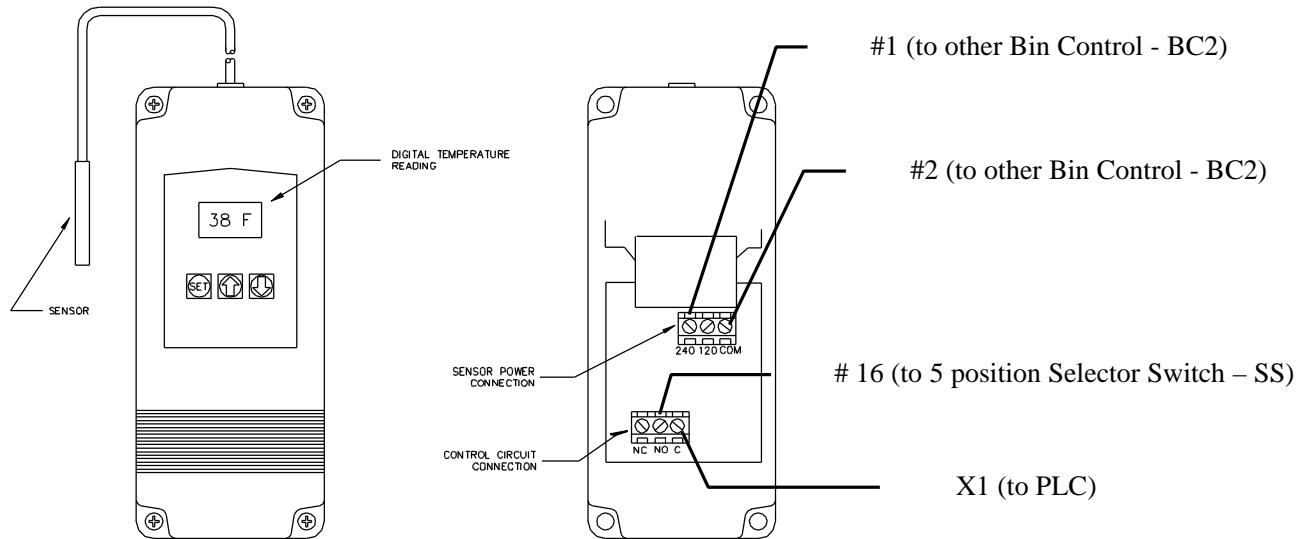


### **Thaw Gas Stop Valve (90B)**

- 6) After backseating the Thaw Gas Stop Valve (90B), remove cap tube from valve to Freezer Pressure switch (FPS2).
  - 7) Install new cap tube assembly—connect to Thaw Gas Stop Valve (90B) and the two Freezer Pressure switches (FPS1 & FPS2).
- Note: If supplied with “T”, install the “T” to Thaw Gas Stop Valve (90B). Connect separate cap tube to each pressure switch and “T”.*
- 8) Open Thaw Gas Stop valve (90B) 1/4 of a turn and verify no leaks
  - 9) Remove old ice chute and install new ice chute with deflector door
  - 10) Installed new Bin Control in Ice bin

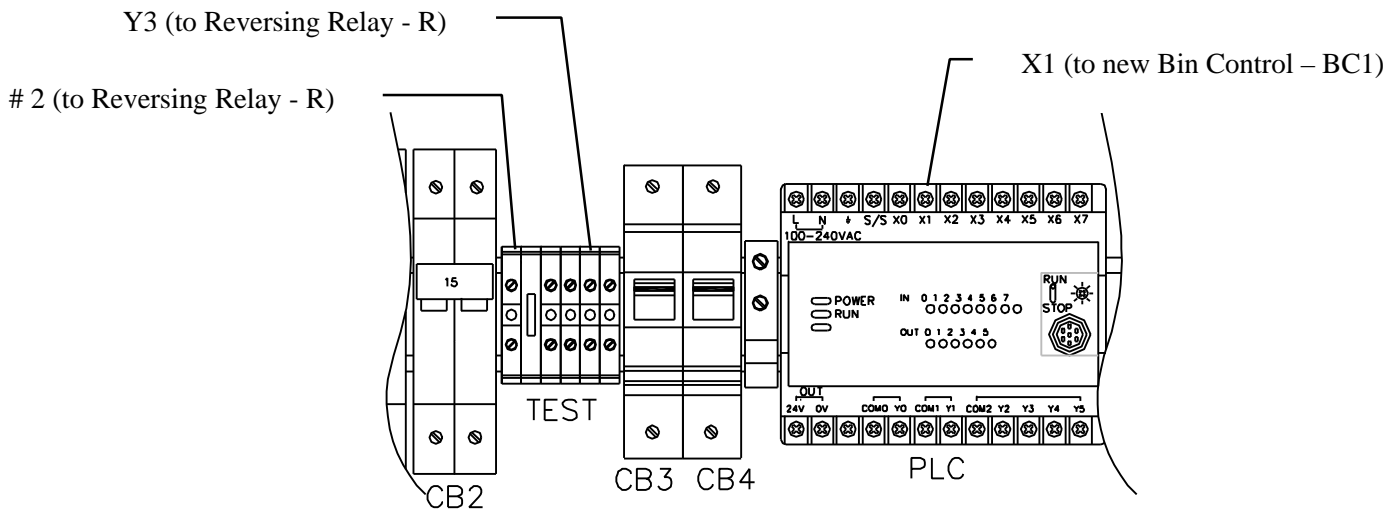
# HES-Series Conversion Instructions - Single Ice to Dual Ice (Cont.)

## Wiring Modifications



**Bin Control (BC1)**  
Part #: 12A 2117G09

- 1) a) Run line from #1 on Cylinder Ice Bin Control (BC2) to new Bin Control (BC1)
- b) Run line from #2 on Cylinder Ice Bin Control (BC2) to new Bin Control (BC1)
- c) Run line (X1) from new Bin Control (BC1) to PLC input X1
- d) Run line (# 16) from new Bin Control (BC1) to Selector Switch (SS) – (connection marked # 4 on switch)



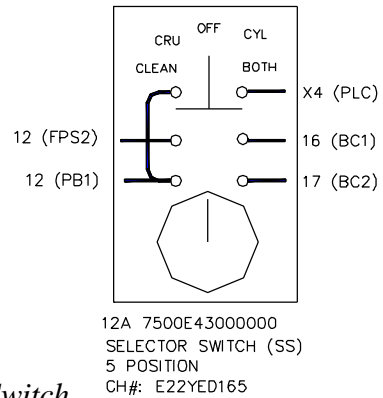
**Test Terminal Block / PLC**

# HES-Series Conversion Instructions - Single Ice to Dual Ice (Cont.)

## Wiring Modifications (Cont.)

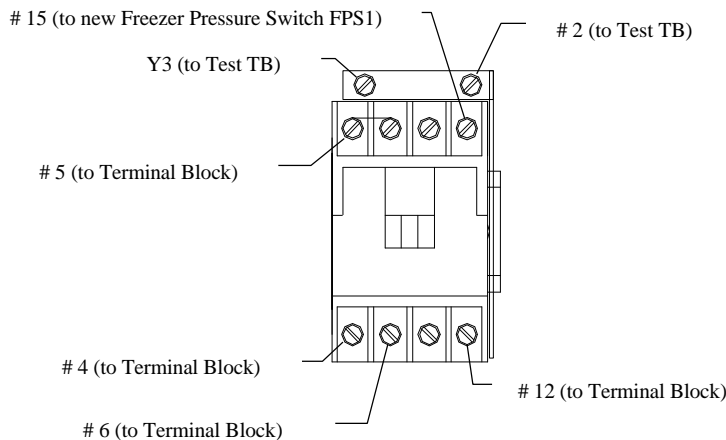
- 2) a) Connect #12, 17 and X4 that were disconnected from the old selector switch to the new 5 position Selector Switch (use table below):

Selector Switch Terminal #'s	Wire #'s
1	12 (FPS2)
3	12 (PB1)
2	X4 (PLC)
4	16 (BC1)
6	17 (BC2)
7 & 8	Not Used

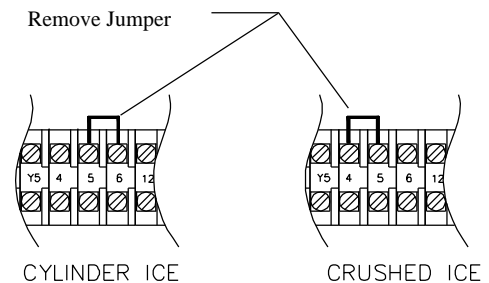


*Note: Place jumper between 1 & 5 on the new Selector Switch*

- b) Connect selector switch terminal block section to selector switch located in ice machines control panel (switch plate)



**Reversing Relay (R)**



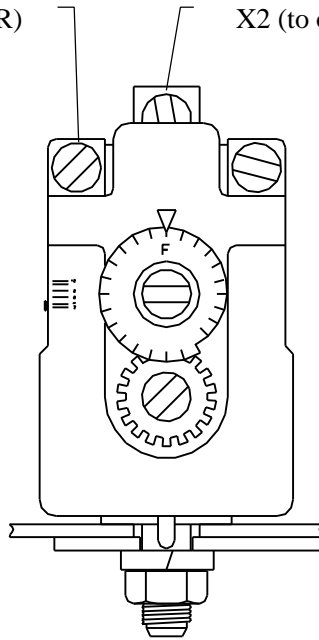
**Terminal Block Jumper**

- 3) a) Run line from #2 on Test terminal block to #2 on Reversing Relay (R) - Relay coil
- b) Run line from Y3 on Test terminal block to Reversing Relay (R) - Relay coil
- c) Install Reversing Relay on din-rail in control panel.
- d) Remove jumper between 5 & 6 (4 & 5 if crushed ice machine)
- e) Run line from #6 on terminal block to #6 on Reversing Relay (R) - N.C. contact
- f) Run line from #4 on terminal block to #4 on Reversing Relay (R) - N.O. contact
- g) Run line from #5 on terminal block to #5 on Reversing Relay (R) - N.O. & N.C. contact (Note: There should be a jumper between #5 N.O. contact and #5 N.C. contact)
- h) Run line from #12 on terminal block to #12 on Reversing Relay (R) - N.O. contact

## HES-Series Conversion Instructions - Single Ice to Dual Ice (Cont.)

### Wiring Modifications (Cont.)

# 15 (to Reversing Relay - R)      X2 (to other Freezer Pressure Switch - FPS2)



**Freezer Pressure Switch (FPS1)**

Part #:12A 2117E04

- 4) a) Run line from #15 on new Freezer Pressure Switch (FPS1) to #15 on Reversing Relay (R)  
– N.O. contact
- b) Run X2 on new Freezer Pressure Switch (FPS1) to X2 on other Freezer Pressure Switch (FPS2)

# HES-Series Conversion Instructions - Single Ice to Dual Ice (Cont.)

## Machine Setup

- 1) Verify proper operation of new Bin Control (BC1)
  - a) Place Selector Switch Ice in Crushed position—verify PLC input X1 is “on”
  - b) Place bulb in ice water and verify PLC input X1 turns “off”
- 2) Set the Differential on the new Freezer Pressure Switch (FPS1) by turning the bottom screw approximately 1/2 turn to the left (counter clockwise) or until the “Fixed Pointer” is on “F”. After this is set, the bottom screw will not have to be adjusted again.
- 3) Adjust set point on the new Freezer Pressure switch (FPS1) until the desired ice thickness is obtained. This is accomplished by turning the top screw on the Freezer Pressure Switch
  - See table below for recommended pressure settings and ice weights

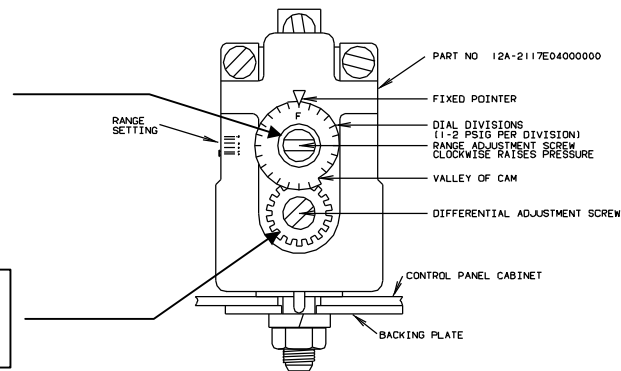
Machine	Crushed Ice		Cylinder Ice	
	Pressure Setting (psig)	Ice Weights (lbs.)	Pressure Setting (psig)	Ice Weights (lbs.)
HES-20S	46 - 48	30 – 32	43 - 45	41 – 43
HES-20M	41 - 43	29 – 31	38 - 40	40 – 42
HES-30S	41 - 43	30 – 32	38 - 40	41 – 43
HES-30M	39 - 41	29 – 31	35 - 37	40 – 42
HES-40S	36 - 38	30 – 32	31 - 33	41 – 43
HES-40M	31 - 33	29 – 31	25 – 27	40 – 42

**Recommended Freezer Pressure Settings & Ice Weights**

Turn top screw to adjust the pressure setting (also referred to as the Range)

Clockwise = increase pressure setting  
Counterclockwise = decrease pressure setting

The bottom screw is used to set the Differential  
– After Differential is set **DO NOT ADJUST**



**Freezer Pressure Switch (FPS1)**

- 4) Verify proper Ice chute deflector operation when switching form cylinder to crushed ice and from crushed to cylinder ice



# HES-Series Conversion Instructions - Single Ice to Dual Ice (Cont.)

## Machine Setup (Cont.)

### Bin Control Setup

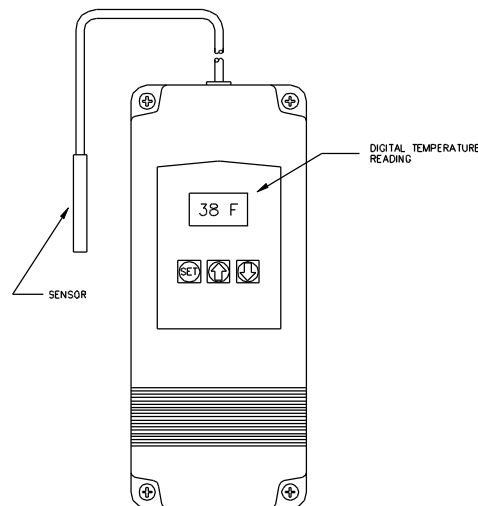
The Ranco electronic temperature control is to be used like the standard Johnson Control bin control (the ice must come in contact with the sensor to shut the machine off). The sensor should be installed in the bin using the standard bin thermostat mounting bracket. Three quarters of the sensor (black part) should hang below the bottom of the bracket.

### Programming the Sensor

- 1) Press the “SET” button to enter the sensors setup mode
- 2) Select between “C”- Celsius and “F” - Fahrenheit  
Use the up ↑ or down ↓ key to select “F”
- 3) Press the “SET” button to set the Set point (S1 will be blinking)  
Use the up ↑ or down ↓ key to set the temperature at 38°F
- 4) Press the “SET” button to set the Differential (DIF 1 will be blinking)  
Use the up ↑ or down ↓ key to set the differential at 2°F
- 5) Select between “C1”- Cooling mode and “H1” - Heating mode  
Use the up ↑ or down ↓ key to select “C1”

Machine will shut off when temperature drops to 38°F and come on when temperature reaches 40°F.

**Note:** *The sensor will automatically exit the programming mode if no keys are depressed for a period of thirty seconds. Any settings that have been input to the control will be accepted at that point.*



Electronic Temperature Control - Part # 12A 2117G09

**Note:** *Replacement Sensor #: 12A 2117G0901 – Ranco 1309007-044 ETC Temperature Sensor  
Electronic Bin Control Kit #: 12A 2117G0902*