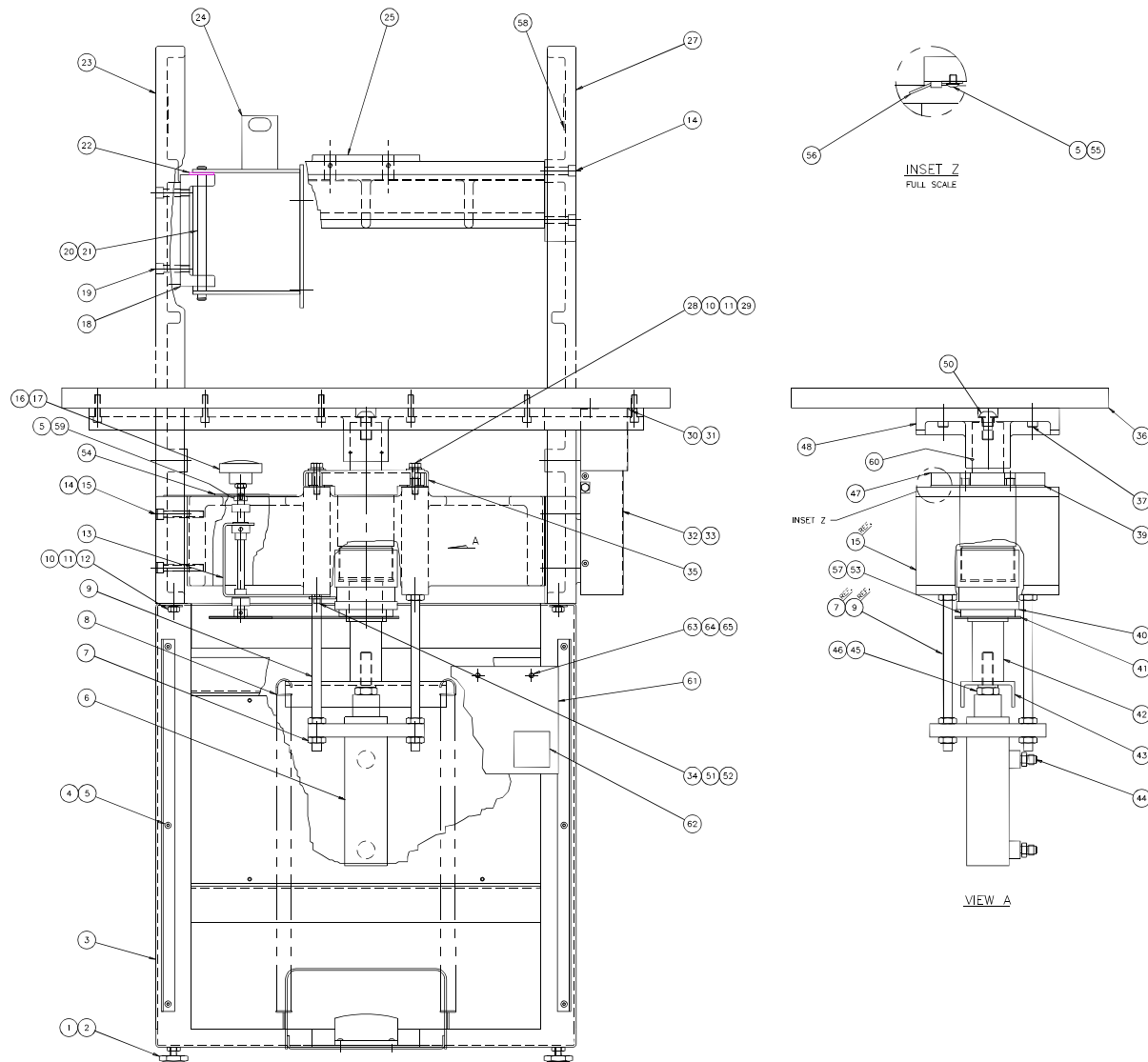


5.0 Main Assemblies

5.1 Main Assembly – Front View

45000 Sheet 1 Rev. N



Main Assembly – Front View – Parts List

45000 Sheet 1 Rev. N

NO.	PART NO.	DESCRIPTION OF ACCESSORIES	QTY
1	16543	LEVELER	4
2	H-6424-6	3/8-16 HEX JAM NUT	4
3	45051	BASE ASSEMBLY	1
4	45049	BRACKET - LOWER BASE COVER	2
5	H-6910-102404	#10-24 X 1/2 BUTTON HD SOC. CAP SCREW	9
6	H-377	HYDRAULIC CYLINDER	1
7	H-6424-8	1/2-13 HEX JAM NUT	12
8	8843-1	SPRING - TABLE RETURN	2
9	45007	ROD - CYLINDER MOUNTING	4
10	H-7327-12	3/8 MEDIUM LOCKWASHER	8
11	H-7321-6	3/8 FLAT WASHER	8
12	H-6913-608	3/8-16 X 1 HEX HD CAP SCREW	4
13	45136-1	TABLE ADJUSTMENT ASSEMBLY	1
14	H-6918-616	3/8-16 X 2" SOC. HD. CAP SCREW	14
15	45073	BRACE - CROSS	1
16	S-1753-2	KNOB - TABLE ADJUSTMENT	1
17	H-6424-6	3/6-16 HEX JAM NUT	1
18	45070	BRACKET - MOTOR	1
19	H-6918-612	3/8-16 X 1-1/2 SOC HD CAP SCREW	2
20	45001	PIN - MOTOR	1
21	S-1193-50	1/2 'E' RING	2
22	11288	WASHER - NYLON	1
23	45077	SIDE FRAME - L.H.	1
24	45002	BRACKET ASSEMBLY - MOTOR	1
25	45079-1	DOVETAIL	1
26			
27	45075	SIDE FRAME - R.H.	1
28	H-6913-612	3/8-16 X 1-1/2 HEX HD CAP SCREW	4
29	11288-1	WASHER - NYLON	4
30	45117	COVER - TABLE GUIDE - TOP	1
31	S-1088-5	#10 X 5/8 TYPE AB SCREW	2
32	45017	COVER - VERTICAL TABLE GUIDE	1
33	H-6910-102402	#10-24 X 1/4 BUTTON HD SOC. CAP SCREW	4
34	H-7321-4	1/4 FLAT WASHER	2
35	45092	COVER - TABLE ROD GUIDE	1
36	45011-2	TABLE	1
37	H-6918-510	5/16-18 X 1-1/4 SOC HD CAP SCREW	11
38			
39	45084	ISOLATOR	2
40	45131	NUT - ADJUSTING	1
41	45135-1	CHAIN	1
42	45115-1	ROD - TABLE	1
43	45037	BRACKET - RETURN SPRING	1
44	H-236-3	ADAPTER - 9/16-18 S.A.E. 'O' RING TO TUBE	2

Main Assembly – Front View – Parts List (cont)

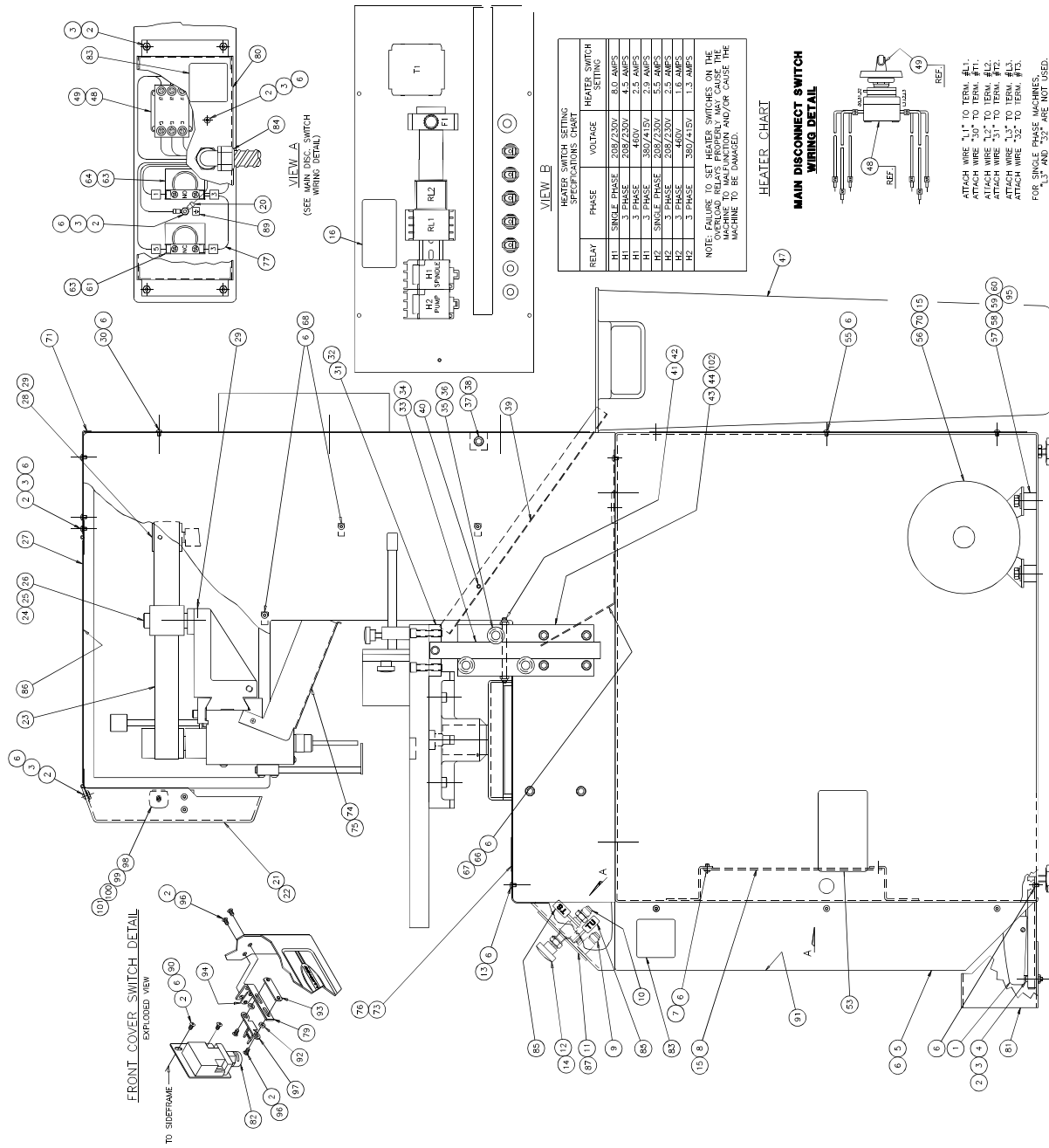
45000 Sheet 1 Rev. N

NO.	PART NO.	DESCRIPTION OF ACCESSORIES	QTY
45	H-6913-1012	5/8-11 X 1-1/2 HEX HD. CAP SCREW	1
46	H-7327-20	5/8 MEDIUM LOCKWASHER	1
47	45137	GUIDE ASSEMBLY - TABLE ROD	1
48	45116-2	BRACKET - TABLE MOUNTING	1
49			
50	H-6910-1010	5/8-11 X 1-1/4 BUTTON HD. CAP SCREW	1
51	45118	STOP - TABLE TRAVEL	1
52	H-6918-405	1/4-20 X 5/8 SOC. HD CAP SCREW	2
53	45138	SPROCKET - TABLE ADJ.	1
54	45142	DECAL - TABLE ADJ.	1
55	H-7330-#10	#10 EXT. TOOTH LOCKWASHER	1
56	EE-2425	WIRE ASSEMBLY - AUTO TRIP	REF
57	H-6910-83208	SCREW - #8-32 X 1" BUT HD CAP	2
58	S-1781-16	LABEL - CAUTION	2
59	45165	BLOCK - TABLE ADJ. ROD	1
60	H-6938-406	SCREW, 1/4-20 X 3/8 SOC SET SCR	2
61	47157-5	SHIELD - PLEXIGLASS	1
62	S-1781-35	LABEL - SHOCK HAZARD	1
63	E-1152-36	SPACER - 1/4-20 X 2"	2
64	H-6910-403	SCREW - 1/4-20 X 3/8 BUT HD. CAP	2
65	H-7324-8	WASHER - 1/4-20 INT. TOOTH	2

Notes:

5.2 Main Assembly – Side Elevation

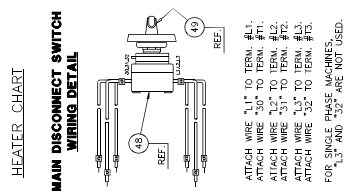
45000 Sheet 2 Rev. X



HEATER SWITCH SETTING SPECIFICATIONS CHART

HEATER SWITCH SETTING	PHASE	VOLTAGE	HEATER SWITCH SETTING
H1	SINGLE PHASE	208/230V	0.0 AMPS
H1	3 PHASE	208/230V	4.5 AMPS
H1	3 PHASE	380/415V	2.0 AMPS
H2	SINGLE PHASE	208/230V	5.5 AMPS
H2	3 PHASE	208/230V	2.5 AMPS
H2	3 PHASE	380/415V	1.5 AMPS

NOTE: FAILURE TO SET HEATER SWITCHES ON THE MACHINE TO MALFUNCTION AND/OR CAUSE THE MACHINE TO BE DAMAGED.



Main Assembly – Side Elevation – Parts List

45000 Rev. X

NO.	PART NO.	DESCRIPTION OF ACCESSORIES	QTY
1	E-875-4	FOOTSWITCH (REPAIRS ONLY)	REF.
2	H-7324-#10	#10 INT. TOOTH LOCKWASHER	23
3	H-6423-#10	#10-24 HEX NUT	16
4	H-6918-102406	#10-24 X 3/4 SOC. HD CAP SCREW	2
5	45048	COVER - LOWER BASE	1
6	H-6910-102404	#10-24 X 1/2 BUTTON HC SOC. CAP SCREW	50
7	H-7330-#10	#10 EXT. TOOTH LOCKWASHER	4
8	EE-2369-3	POWER PNL ASSY.-380/415V (3 PHASE)	1
8	EE-2385-3	POWER PNL ASSY.-(SINGLE PHASE)	1
8	EE-2386-3	POWER PNL ASSY.-208-230/460V (3 PH)	1
9	H-237-5	ELBOW 90%%D - 1/8 NPT X 9/16-18 TUBE	1
10	H-241-5	ADAPTER - 1/8 NPT X 9/16-18 TUBE	1
11	45110	PANEL - CONSOLE	1
12	4771-1	VALVE	1
13	45081	COVER	1
14	H-7322-8	1/2 POLISHED WASHER	1
15	S-1694	TYRAP	2
16	S-1781-11	CAUTION LABEL - SHOCK	1
17			
18			
19			
20	EE-2753	WIRE ASSEMBLY - GROUND	1
21	45047-1	COVER - FRONT	1
22	45109	LABEL	1
23	45160	DRIVE BELT	1
24	45129	PULLEY ASSEMBLY (UNCROWNED)	2
25	20075-7	SHIM	2
26	45040-1	PIN - IDLER PULLEY	2
27	45043	COVER ASSEMBLY - TOP	1
28	45103-2	DRIVE PULLEY - 2.1" DIA.	1
29	H-6938-404	1/4-20 X 1/4 CUP PT. SOC. SET SCREW	3
30	45145-1	COVER ASSEMBLY - REAR	1
31	45015	BLOCK - GUIDE	1
32	H-6918-612	3/8-16 X 1-1/2 SOC. HD CAP SCREW	2
33	45016	GUIDE - VERTICAL	1
34	H-21S-500-1750	1/2 X 1-3/4 ROLL PIN	1
35	S-1073-50	1/2" RETAINING RING	3
36	A-10257-8	BEARING - FLANGED (BRONZE)	3
37	H-6918-616	3/8-16 X 2" SOC. HD CAP SCREW	2
38	45107	TIEBAR	1
39	45032	CHIP CHUTE - LOWER	1
40	H-5254-406	1/4-20 X 3/4 SOC. SHOULDER SCREW	2
41	45080-1	STUD - TABLE GUIDE	1

Main Assembly – Side Elevation – Parts List (cont)

45000 Rev. X

NO.	PART NO.	DESCRIPTION OF ACCESSORIES	QTY
42	H-5248-4	1/4-28 FLEX LOCK NUT	2
43	45012	VERTICAL TABLE GUIDE ASSEMBLY	1
44	H-6918-612	3/8-16 X 1-1/2 SOC. HD CAP SCREW	4
45			
46			
47	56143	WASTE BIN	1
48	E-3082	SWITCH - MAIN DISCONNECT	1
49	E-3083	SWITCH FACE - MAIN DISCONNECT	1
50			
51			
52			
53	41130	PLATE - SERIAL NUMBER	1
54			
55	45056	COVER - REAR	1
56	H-407-2	HYD POWER UNIT ASM. (50/60 C. 3 PH)	1
56	H-378-2	HYD. POWER UNIT ASM. (50/60C 1 PH.)	1
57	40016-2	VIBRATION MOUNT	4
58	H-7321-5	5/16 FLAT WASHER	4
59	H-7327-10	5/16 MED LOCKWASHER	4
60	H-6423-5	5/16-18 HEX HUT	4
61	E-3073-5	PUSHBUTTON - OFF (RED)	1
62			
63	16520	RING - ANTI ROTATION	2
64	E-3073	PUSHBUTTON - ON (GREEN)	1
65			
66	45147	COVER - LOWER BASE TOP	1
67	8254-2	GROMMET	1
68	S-1694-2	CABLE TIE	3
69			
70	E-1237-2	WIRE NUT (3 PHASE MACHINES ONLY)	3
71	45150	COVER - CORNER	1
72			
73	S-1781-16	CAUTION LABEL	1
74	H-21S-250-1250	1/4 X 1-1/4 ROLL PIN	2
75	45159	CHIP CHUTE	1
76	S-1781-31	LABEL - SINGLE OPERATOR	1
77	E-709-R	WIRE, #18 GA. RED MTW 6" LONG	1
78			
79	45173	BRACKET - DOOR INTERLOCK KEY	1
80	45176	COVER - DISCONNECT SWITCH	1
81	45168	GUARD - FOOTSWITCH	1
82	EE-2749-1	SWITCH ASM - BELT GUARD	REF
83	S-1781-35	LABEL - CAUTION	3

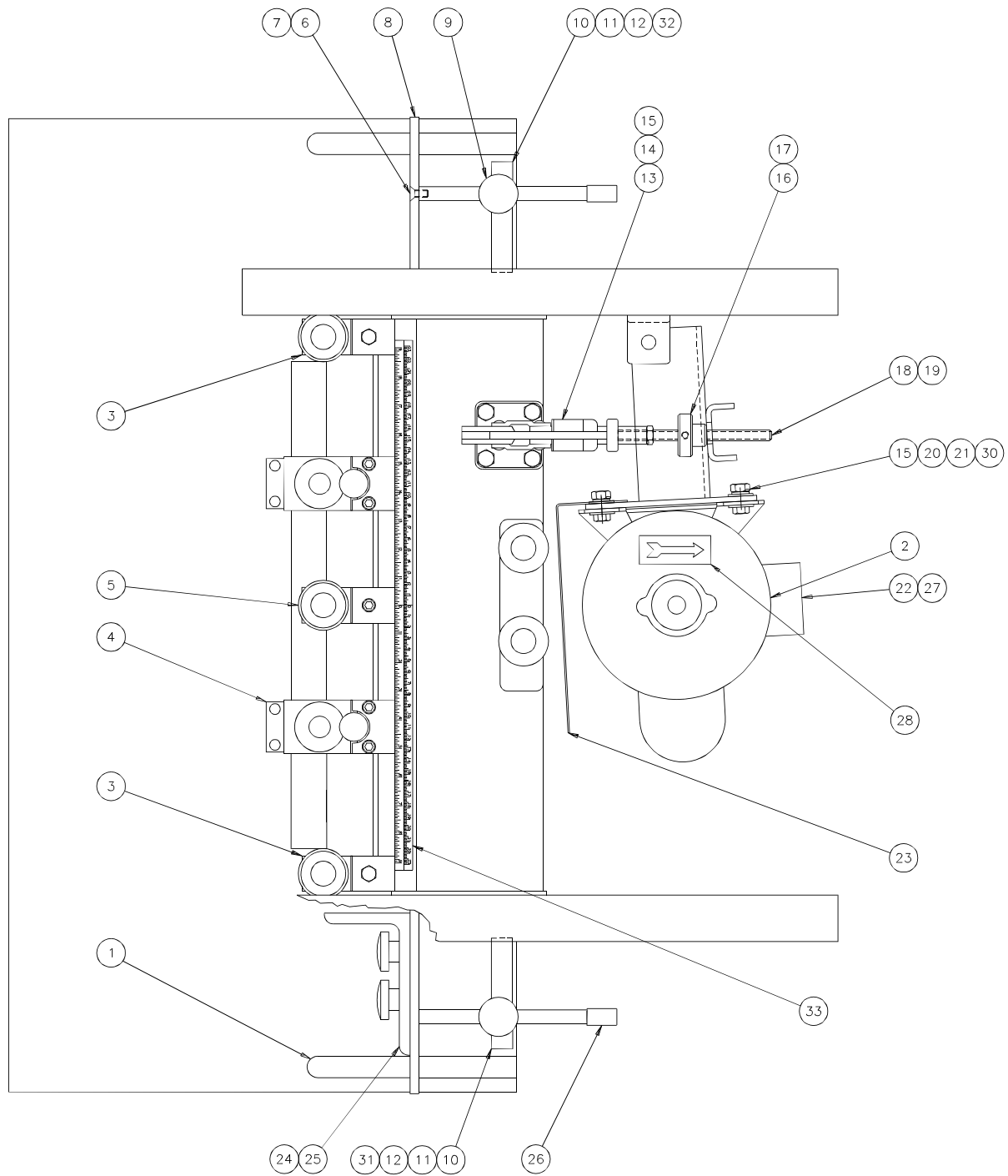
Main Assembly – Side Elevation – Parts List (cont)

45000 Rev. X

NO.	PART NO.	DESCRIPTION OF ACCESSORIES	QTY
84	EE-2751-1	CONDUIT ASM - CONTROL CONSOLE - 3PH	REF
84	EE-2751	CONDUIT ASM - CONTROL CONSOLE - 1PH	REF
85	S-1694-5	TYRAP - IDENTIFICATION	2
86	S-1781-46	LABEL - BELT INSTALLATION	1
87	H-6910-102406	SCREW - #10-24 X 3/4 BUT HD SOC	6
88			
89	S-1781-42	LABEL - GROUND	1
90	H-7321-#10	WASHER - #10 PLAIN	2
91	S-1781-47	LABEL - FUSE REPLACEMENT	1
92	E-1152-62	SPACER	2
93	H-6416-102412	WELDNUT	1
94	H-6416-102406	WELDNUT	1
95	H-7321-5	5/16 FLAT WASHER (3 PH MACHINES ONLY)	6
96	H-6888-102404	SCREW - #10-24 X 1/2 BUT HD, TAMP. PROOF	4
97	45180	ACTUATOR - INTERLOCK SWITCH	1
98	45179	MAGNETIC CATCH	2
99	H-6923-44012	SCREW - #4-40 X 3/4 ROUND HD. MACH	2
100	H-7324-#4	WASHER - #4 INT. TOOTH	2
101	H-6423-#4	NUT - #4-40 HEX	2
102	A-10644-1	COLLAR	4

5.3 Main Assembly – Top View

45000 Sheet 3 Rev. G



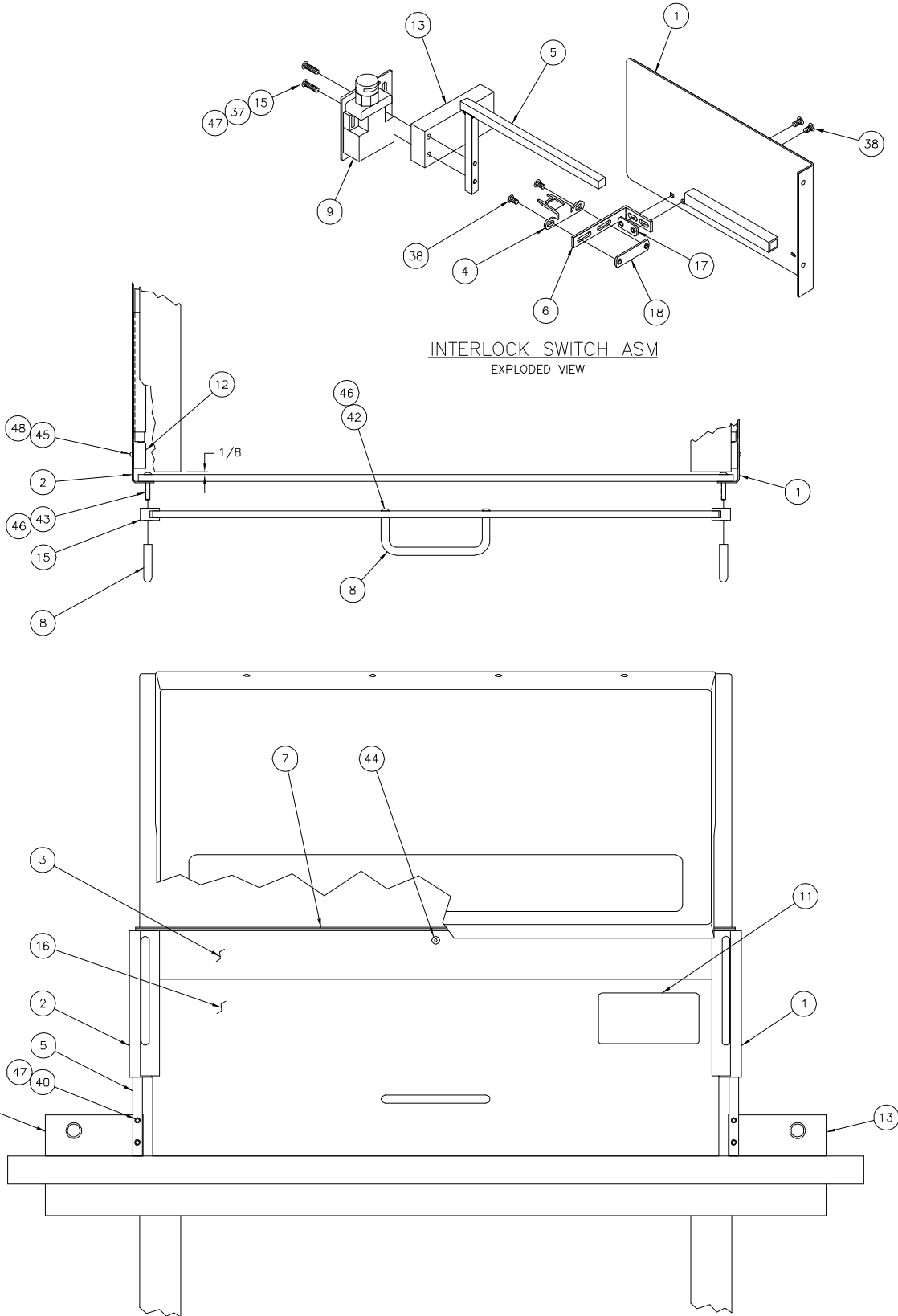
Main Assembly – Top View – Parts List

45000 Rev. G

NO.	PART NO.	DESCRIPTION OF ACCESSORIES	QTY
1	4636-3	SCALE - B/G POSITION	2
2	S-1781-12	CAUTION LABEL	1
3	45035	IDLER ASSEMBLY - STATIONARY	2
4	45152	DRILL HEAD ASSEMBLY	AS REQ'D
5	45161	IDLER ASSEMBLY - MOVEABLE	1 FOR STD HEADS
			2 FOR NARROW HEADS
6	H-6909-405	1/4-20 X 5/8 FLAT HD SOC CAP SCREW	2
7	45018	ROD - B/G GUIDE	2
8	45020	BACKGAUGE	1
9	8278-3	KNOB	2
10	45019	BLOCK - BACKGAGE GUIDE (60 Hz.)	2
11	H-6913-614	3/8-16 X 1-3/4 HEX HD CAP SCREW	4
12	H-7321-6	3/8 FLAT WASHER	4
13	45006	CLAMP	1
14	H-6913-506	5/16-18 X 3/4 HEX HD CAP SCREW	4
15	H-7327-10	5/16 MED. LOCKWASHER	8
16	45060	KNOB - BELT TENSIONER	1
17	H-6964-404	1/4-20 X 1/4 SOC SET SCREW (BRASS TIP)	1
18	45059	STUD - BELT TENSIONER	1
19	H-6423-6	3/8-16 HEX NUT	1
20	H-7321-5	5/16 FLAT WASHER	4
21	H-6423-5	5/16-18 HEX NUT	4
22	E-1600-191	MOTOR (208-230/460 V. 3 PH. 60 C.)	1
22	E-1600-192	MOTOR (208-230 V. 1 PH. 60 C.)	1
22	E-1600-189	MOTOR (200-230/380-415 V. 3 PH. 50 C.)	1
22	E-1600-190	MOTOR (208-230 V. 1 PH. 50 C.)	1
23	45146	BRACKET - CHIP DEFLECTOR	1
24	45066	SIDEGUIDE	2
25	8278-4	KNOB	4
26	45143	VINYL CAP	2
27	E-1237-1	WIRE NUT (YELLOW)	3
28	S-1106	ARROW DECAL	1
29	45106-1	TOOL KIT (NOT SHOWN)	1
30	H-6913-508	5/16-18 X 1" HEX HD CAP SCREW	4
31	45019-1	BLOCK - BACKGAGE GUIDE, R.H. (50 Hz.)	1
32	45019-2	BLOCK - BACKGAGE GUIDE, L.H. (50 Hz.)	1
33	45065-1	SCALE	1

5.4 Main Assembly – Spindle Guard (S/N's 135928 and up)

45000 Sheet 4 Rev. G



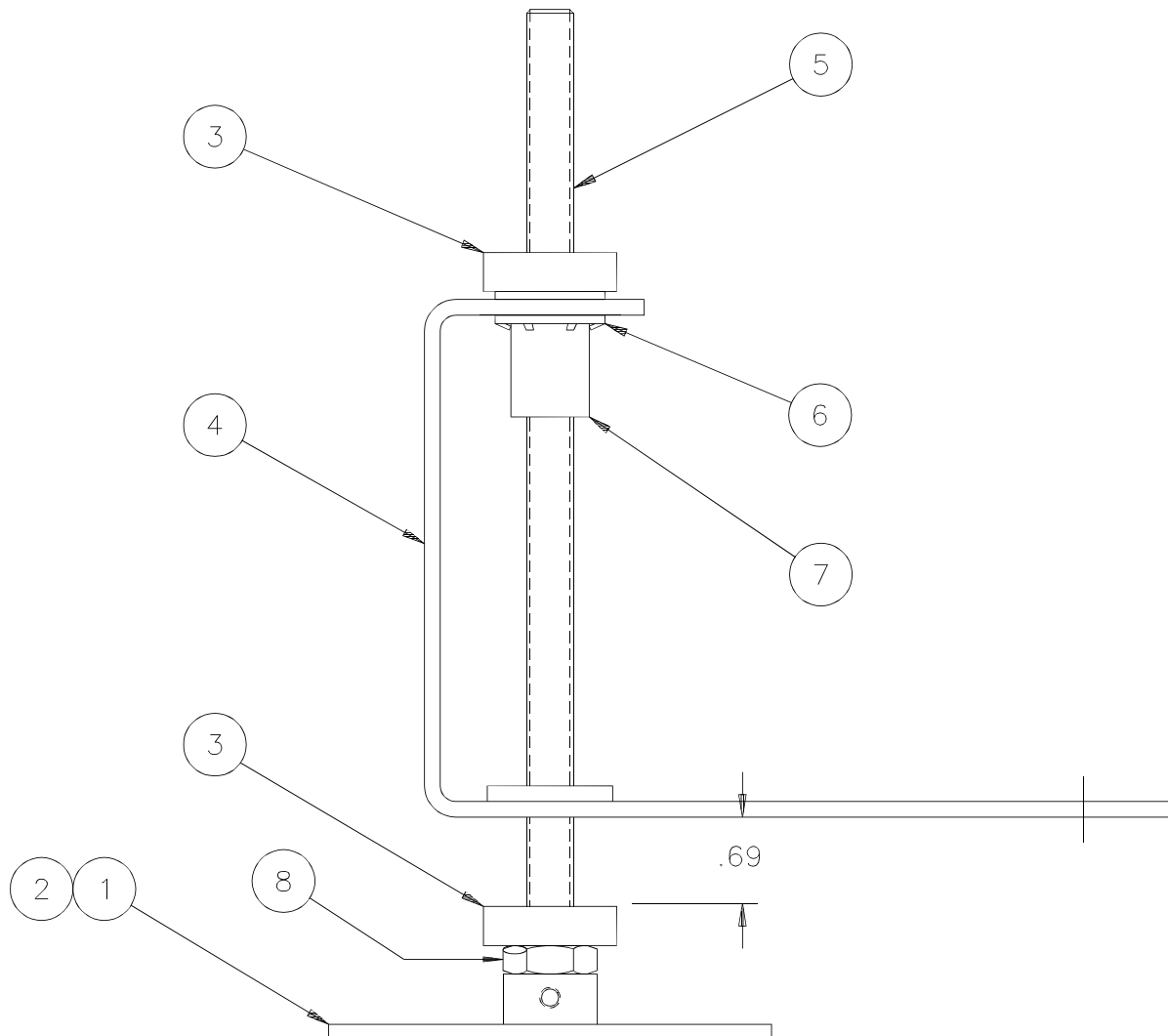
Main Assembly – Spindle Guard – Parts List

45000 Rev. G

NO.	PART NO.	DESCRIPTION OF ACCESSORIES	QTY
1	45169-1	GUARD - R.H. SIDE	1
2	45170	GUARD - L.H. SIDE	1
3	45171	GUARD - CENTER	1
4	45180	ACTUATOR - INTERLOCK SWITCH	1
5	45174	SUPPORT - SPINDLE GUARD	2
6	45175-1	BRACKET - GUARD INTERLOCK KEY	1
7	45177	SUPPORT - SHIELD	1
8	13940	HANDLE	3
9	EE-2750-1	SWITCH ASM - TABLE	REF
10			
11	S-1781-16	WARNING LABEL	1
12	45179	CATCH - MAGNETIC	2
13	45019-1	BLOCK - BACKGAGE GUIDE, R.H.	1
14	45019-2	BLOCK - BACKGAGE GUIDE, L.H.	1
15	45186	GUARD MOUNT	2
16	45185	GUARD - LOWER	1
17	H-6416-102406	WELDNUT	1
18	H-6416-102412	WELDNUT	1
37	H-6910-102410	SCREW - #10-24 X 1-1/4 BUT HD CAP	2
38	H-6888-102404	SCREW - #10-24 X 1/2 BUT HD, TAMP. PROOF	4
39	H-6918-102408	SCREW - #10-24 X 1" SOC HD CAP	2
40	H-6918-102410	SCREW - #10-24 X 1-1/4 SOC HD CAP	2
41	H-6910-102404	SCREW - #10-24 X 1/2 BUT. HD	2
42	H-6910-83204	SCREW - #8-32 X 1/2" BUT HD CAP	2
43	H-6910-83210	SCREW - #8-32 X 1-1/4" BUT HD CAP	4
44	H-6910-83203	SCREW - #8-32 X 3/8 BUT HD SOC	1
45	H-6923-44012	SCREW - #4-40 X 3/4 ROUND HD. MACH.	2
46	H-7324-#8	WASHER - #8 INT. TOOTH	6
47	H-7324-#10	WASHER - #10 INT. TOOTH	4
48	H-6423-#4	NUT - #4-40 HEX	2

5.5 Table Adjustment Assembly

45136-1 Rev. C

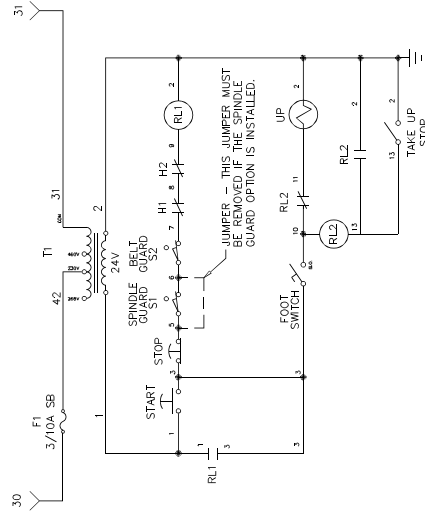
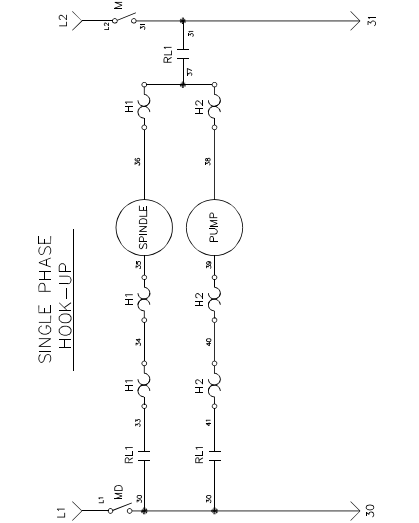
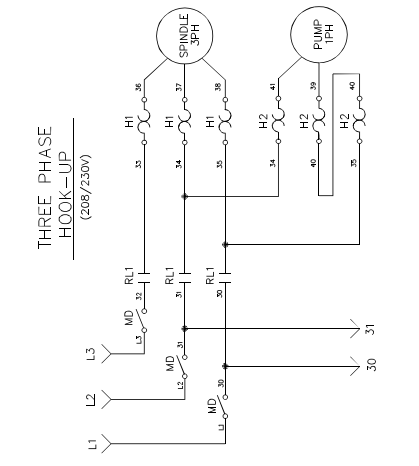
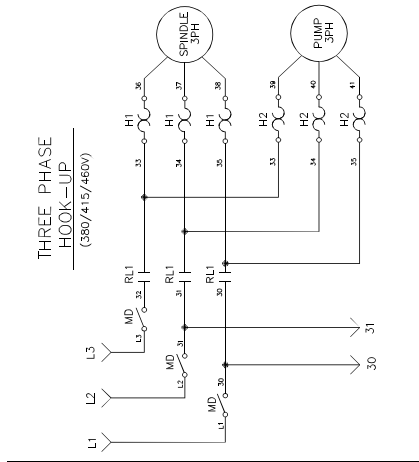


NO.	PART NO.	DESCRIPTION OF ACCESSORIES	QTY
1	45139-1	SPROCKET	1
2	H-6938-83204	#8-32 X 1/4 CUP PT. SOC SET SCREW	2
3	S-1818-4	COLLAR - THREADED	2
4	45122-1	BRACKET	1
5	45008-1	ROD	1
6	H-6450-62	PUSH ON RETAINING RING	1
7	A-10257-10	BEARING - FLANGED	1
8	H-6424-6	NUT - 3/8-16 HEX JAM	1

NOTES

5.6 Basic Machine Schematic

E-2384-1 Rev. B



Electrical Sequence of Operation

NOTE: Please see section on Hydraulic Sequence of Operation for more details

Electrical Sequence of Operation

A. Close the main disconnect switch (MD).

B. Press the ON button (START)

C. Press the footswitch (FOOTSWITCH).

Electrical Schematic References

(Drawing E-2384-1)

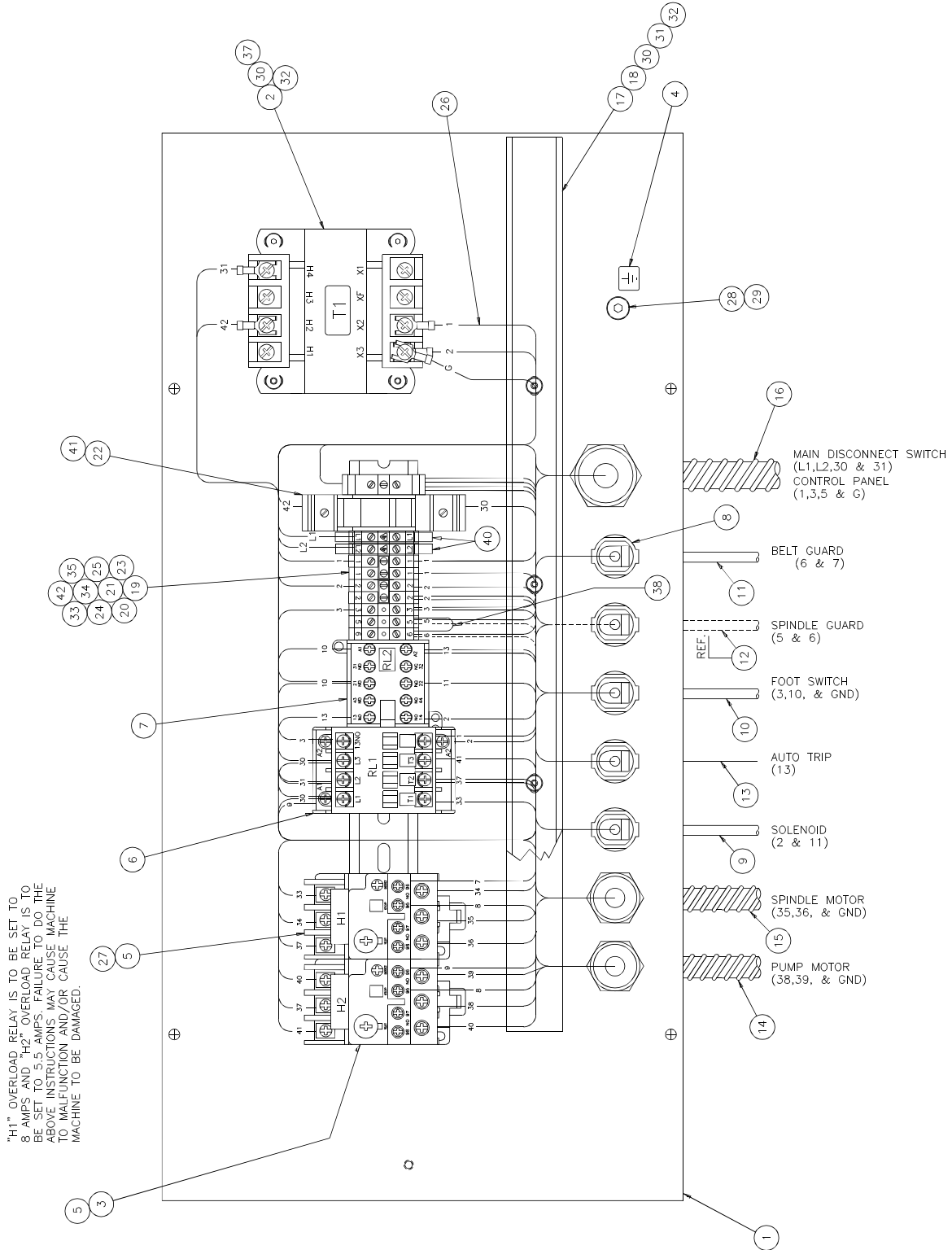
While the main disconnect switch "MD" is closed. Power is brought to the transformer "T1", provided the fuse "F1" is conductive. Transformer "T1" provides power to the hydraulic motor and spindle motor contactors "RL1. Until power is applied thru the transformer "T1" the contactors are open and therefore the motors will not run. Opening the main disconnect switch "MD" at any time cuts power to the transformer "T1".

When the Start switch is closed, the hydraulic motor and spindle motor relay coil "RL1" will energize, provided the interlock switches "S1" and "S2" are closed. Power is then supplied to the hydraulic and spindle motors. "RL1" remains energized until the STOP switch or any interlock switch is opened.

While the FOOTSWITCH switch is closed, power is brought to the UP solenoid, which raises the table. When the table reaches the top, the TAKE UP STOP switch closes, causing the relay coil of "RL2" to energize. While "RL2" is energized, The UP solenoid becomes de-energized, which lowers the table. Opening the FOOTSWITCH switch de-energizes "RL2" and the UP solenoid.

5.7 Power Panel Assembly – 208/230V (1ph)

EE-2385-3 Rev. E



Power Panel Assembly – 208/230V (1ph) Parts List
 EE-2385-3 Rev. E

NO.	PART NO.	DESCRIPTION OF ACCESSORIES	QTY
1	45119-1	PANEL - ELECTRICAL	1
2	E-1089-40	TRANSFORMER - 208/230/460 75VA	1
3	E-2441-14	RELAY - OVERLOAD, 4.5A to 6.5A (H2)	1
4	S-1781-42	LABEL - MAIN GROUND	1
5	E-2445-1	BRACKET - OVERLOAD RELAY	2
6	E-2805	STARTER - 24V COIL (A16-30-10-16) (RL1)	1
7	E-2403-8	RELAY - RL2	1
8	S-1350-16	STRAIN RELIEF	5
9	EE-2396-1	CABLE ASSEMBLY - SOLENOID	1
10	E-875-4	FOOTSWITCH - SINGLE SWITCH	1
11	EE-2749-1	CABLE ASSEMBLY - SWITCH, BELT GUARD	1
12	EE-2750-1	CABLE ASm. - SWITCH, SPINDLE GUARD	REF
13	EE-2425	WIRE ASSEMBLY - AUTO TRIP	1
14	EE-2392	CONDUIT ASSEMBLY - PUMP MOTOR	1
15	EE-2393	CONDUIT ASSEMBLY - SPINDLE MOTOR	1
16	EE-2751	CONDUIT ASSEMBLY - CONT. PNL. & MD SW	1
17	E-1429-13	WIRING DUCT (18" LONG)	1
18	E-2719-10	WIRING DUCT COVER (16-1/4" LONG)	1
19	E-1977-17	RAIL - MOUNTING (12-1/2" LONG)	1
20	E-2068-3	TERMINAL BLOCK - GROUND	1
21	E-2068-8	TERMINAL BLOCK - FEED THROUGH	9
22	E-1974-10	TERMINAL BLOCK - MIDGET FUSE HOLDER	1
23	E-2507-2	FIXED BRIDGE - 2 POLE	2

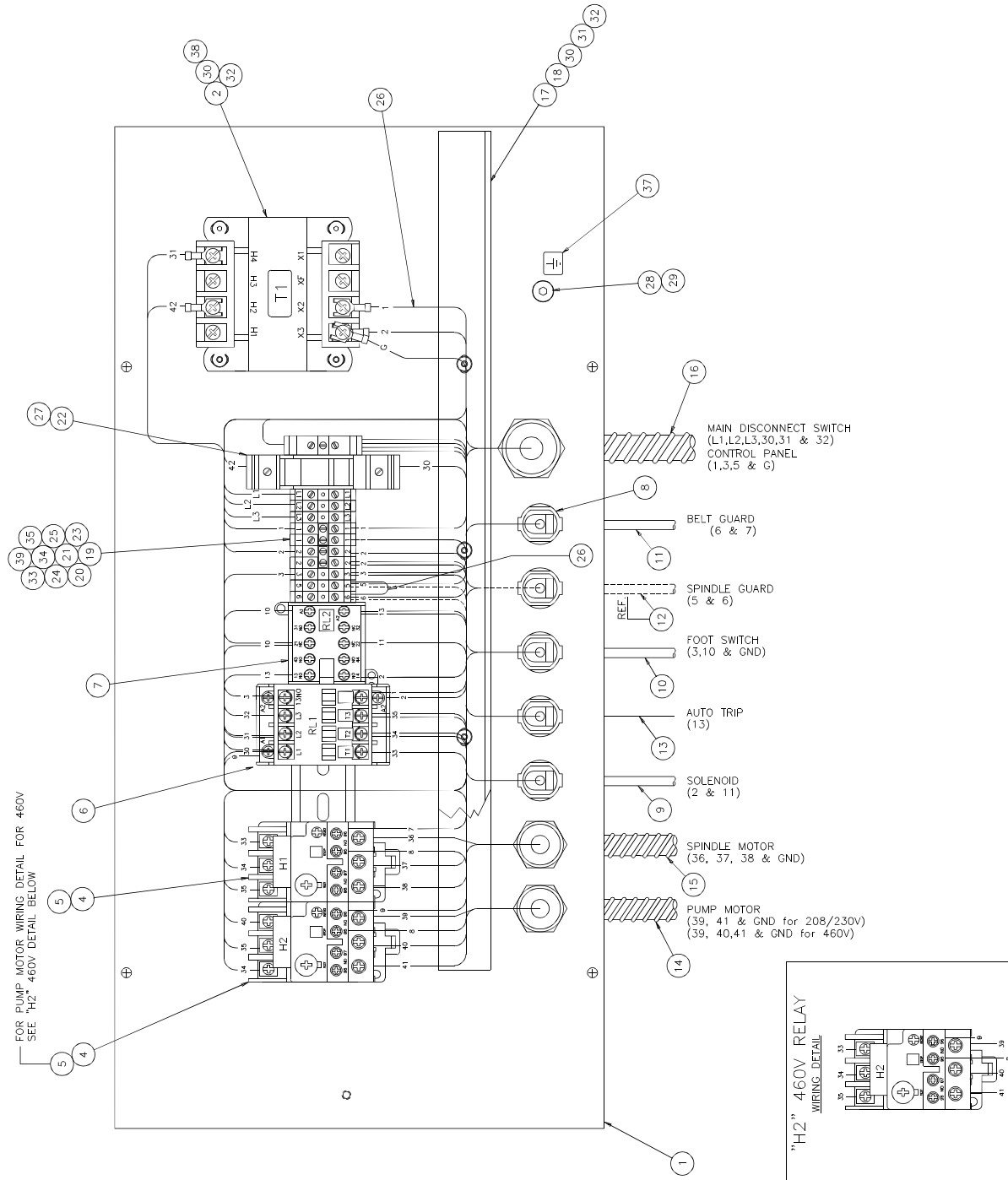
Power Panel Assembly – 208/230V (1ph) Parts List (cont.)
 EE-2385-3 Rev. E

NO.	PART NO.	DESCRIPTION OF ACCESSORIES	QTY
24	E-1356-107	LABEL - TERMINAL BLOCK	1
25	E-1356-108	LABEL - TERMINAL BLOCK	1
26	EE-3122	WIRES - CUT LIST (208/230V 1PH)	1
27	E-2441-15	RELAY - OVERLOAD, 6.0A to 8.5A (H1)	1
28	H-6910-403	SCREW - 1/4-20 x 3/8 BUT HD SOC CAP	1
29	H-7324-8	WASHER - 1/4" INT. TOOTHLOCK	1
30	H-6910-83204	SCREW - #8-32 X 1/2" BUT HD SOC CAP	8
31	H-7321-#8	WASHER - #8 USS FLAT	4
32	H-7330-#8	LOCKWASHER - #8 SHAKEPROOF	8
33	H-6910-102403	SCREW - #10-24 X 3/8" BUT HD SOC CAP	4
34	H-7330-#10	LOCKWASHER - #10	4
35	H-7321-#10	WASHER - #10 USS FLAT	4
36	S-1694	TYRAP (NOT SHOWN)	2
37	E-1584-51	LABEL - TRANSFORMER "T1"	1
38	E-709-R	WIRE - #18 GA. RED MTW 4" LONG	1
39			
40	E-2752	COVER - TERMINAL BLOCK, YELLOW	2
41	E-2308-9	FUSE - MIDGET, 3/10A SLO-BLO	1
42	E-2864	SEPERATOR PLATE - TERMINAL BLOCK	1

NOTES

5.8 Power Panel Assembly – 208/230/460V (3ph)

EE-2386-3 Rev. F



Power Panel Assembly – 208/230/460V (3ph) Parts List
 EE-2386-3 Rev. F

NO.	PART NO.	DESCRIPTION OF ACCESSORIES	QTY
1	45119-1	PANEL - ELECTRICAL	1
2	E-1089-40	TRANSFORMER - 208/230/460 75VA	1
3			
4	E-2441-14	RELAY - OVERLOAD (H1 & H2), 4.5A to 6.5A	2
5	E-2445-1	BRACKET - OVERLOAD RELAY	2
6	E-2805	STARTER - 24V COIL (A16-30-10-81) (RL1)	1
7	E-2403-8	RELAY - RL2	1
8	S-1350-16	STRAIN RELIEF	5
9	EE-2396-1	CABLE ASSEMBLY - SOLENOID	1
10	E-875-4	FOOTSWITCH - SINGLE SWITCH	1
11	EE-2749-1	CABLE ASSEMBLY - SWITCH, BELT GUARD	1
12	EE-2750-1	CABLE ASSEMBLY - SWITCH, SPINDLE GUARD	REF
13	EE-2425	WIRE ASSEMBLY - AUTO TRIP	1
	EE-2392-2	CONDUIT ASSEMBLY - PUMP MOTOR (230V 1PH)	
14	EE-2392-1	CONDUIT ASSEMBLY - PUMP MOTOR (460V 3PH)	1
15	EE-2393-1	CONDUIT ASSEMBLY - SPINDLE MOTOR	1
16	EE-2751-1	CONDUIT ASSEMBLY - CONT. PNL. & MD SW	1
17	E-1429-13	WIRING DUCT (18" LONG)	1
18	E-2719-10	WIRING DUCT COVER (16-1/4" LONG)	1
19	E-1977-17	RAIL - MOUNTING (12-1/2" LONG)	1
20	E-2068-3	TERMINAL BLOCK - GROUND	1
21	E-2068-8	TERMINAL BLOCK - FEED THROUGH	10
22	E-1974-10	TERMINAL BLOCK - MIDGET FUSE HOLDER	1
23	E-2507-2	FIXED BRIDGE - 2 POLE	2
24	E-1356-105	LABEL - TERMINAL BLOCK	1
25	E-1356-106	LABEL - TERMINAL BLOCK	1
26	EE-3121	WIRES - CUT LIST (208/230V 3PH)	1
27	E-2308-9	FUSE - MIDGET, 3/10A SLO-BLO	1
28	H-6910-403	SCREW - 1/4-20 x 3/8 BUT HD SOC CAP	1

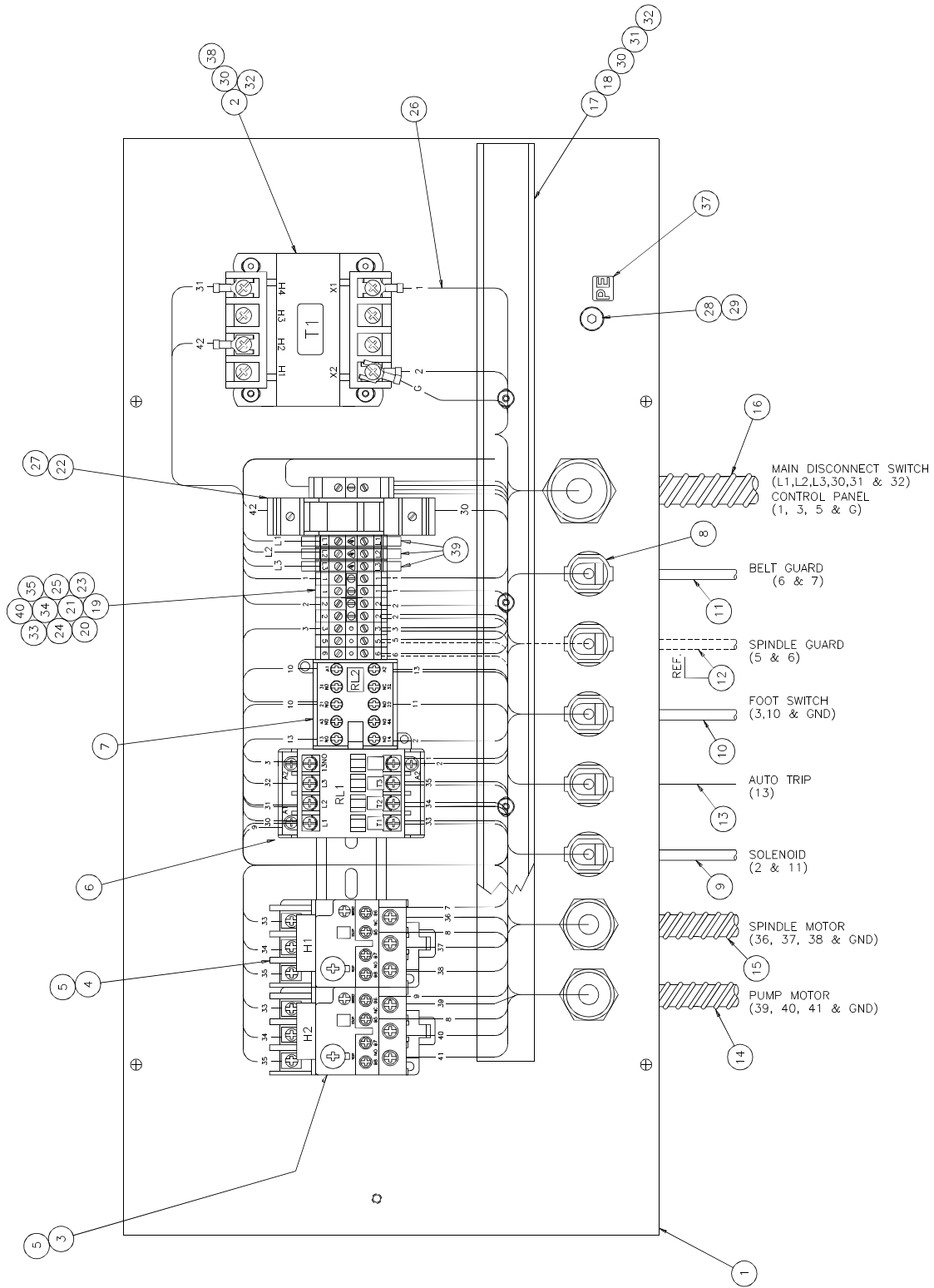
Power Panel Assembly – 208/230/460V (3ph) Parts List (cont)
 EE-2386-3 Rev. F

NO.	PART NO.	DESCRIPTION OF ACCESSORIES	QTY
29	H-7324-8	WASHER - 1/4" INT. TOOTHLOCK	1
30	H-6910-83204	SCREW - #8-32 X 1/2" BUT HD SOC CAP	8
31	H-7321-#8	WASHER - #8 USS FLAT	4
32	H-7330-#8	LOCKWASHER - #8 SHAKEPROOF	8
33	H-6910-102403	SCREW - #10-24 X 3/8" BUT HD SOC CAP	4
34	H-7330-#10	LOCKWASHER - #10	4
35	H-7321-#10	WASHER - #10 USS FLAT	4
36	S-1694	TYRAP (NOT SHOWN)	2
37	S-1781-42	LABEL - MAIN GROUND	1
38	E-1584-51	LABEL - TRANSFORMER "T1"	1
39	E-2864	SEPERATOR PLATE - TERMINAL BLOCK	1

NOTES

5.9 Power Panel Assembly – 380/415V (3ph)

EE-2369-3 REV. "D"



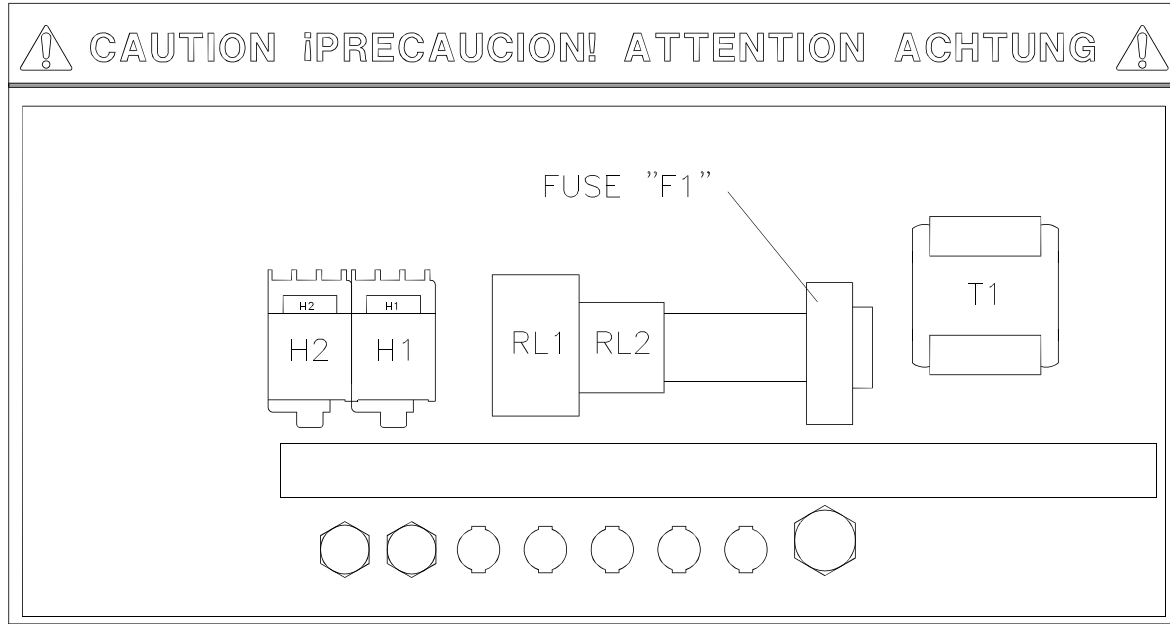
Power Panel I Assembly – 380/415V (3ph) Parts List

EE-2369-3 REV. "D"

NO.	PART NO.	DESCRIPTION OF ACCESSORIES	QTY
1	45119-1	PANEL - ELECTRICAL	1
2	E-1089-39	TRANSFORMER - 230/380/415 50VA	1
3	E-2441-17	RELAY - OVERLOAD (PUMP), 1.3A to 1.8A (H2)	1
4	E-2441-16	RELAY - OVERLOAD (SPINDLE), 2.2A to 3.1A (H1)	1
5	E-2445-1	BRACKET - OVERLOAD RELAY	2
6	E-2805	STARTER - 24V COIL (A16-30-10-81) (RL1)	1
7	E-2403-8	RELAY - RL2	1
8	S-1350-16	STRAIN RELIEF	5
9	EE-2396-1	CABLE ASSEMBLY - SOLENOID	1
10	E-875-4	FOOTSWITCH - SINGLE SWITCH	1
11	EE-2749-1	CABLE ASSEMBLY - SWITCH, BELT GUARD	1
12	EE-2750-1	CABLE ASSEMBLY - SWITCH, SPINDLE GUARD	REF
13	EE-2425	WIRE ASSEMBLY - AUTO TRIP	1
14	EE-2392-1	CONDUIT ASSEMBLY - PUMP MOTOR	1
15	EE-2393-1	CONDUIT ASSEMBLY - SPINDLE MOTOR	1
16	EE-2751-1	CONDUIT ASSEMBLY - CONT. PNL. & MD SW	1
17	E-1429-13	WIRING DUCT (18" LONG)	1
18	E-2719-10	WIRING DUCT COVER (16-1/4" LONG)	1
19	E-1977-17	RAIL - MOUNTING (12-1/2" LONG)	1
20	E-2068-3	TERMINAL BLOCK - GROUND	1
21	E-2068-8	TERMINAL BLOCK - FEED THROUGH	10
22	E-1974-10	TERMINAL BLOCK - MIDGET FUSE HOLDER	1
23	E-2507-2	FIXED BRIDGE - 2 POLE	2
24	E-1356-105	LABEL - TERMINAL BLOCK	1
25	E-1356-106	LABEL - TERMINAL BLOCK	1
26	EE-3121	WIRES - CUT LIST	1
27	E-2308-9	FUSE - MIDGET, 3/10A SLO-BLO	1
28	H-6910-403	SCREW - 1/4-20 x 3/8 BUT HD SOC CAP	1
29	H-7324-8	WASHER - 1/4" INT. TOOTHLOCK	1
30	H-6910-83204	SCREW - #8-32 X 1/2" BUT HD SOC CAP	8
31	H-7321-#8	WASHER - #8 USS FLAT	4
32	H-7330-#8	LOCKWASHER - #8 SHAKEPROOF	8
33	H-6910-102403	SCREW - #10-24 X 3/8" BUT HD SOC CAP	4
34	H-7330-#10	LOCKWASHER - #10	4
35	H-7321-#10	WASHER - #10 USS FLAT	4
36	S-1694	TYRAP (NOT SHOWN)	2
37	S-1781-45	LABEL - "PE" PROTECTED EARTH	1
38	E-1584-51	LABEL - TRANSFORMER "T1"	1
39	E-2752	COVER - TERMINAL BLOCK, YELLOW	3
40	E-2864	SEPERATOR PLATE - TERMINAL BLOCK	1

5.10 Label – Component Placement/Heater settings

S-1781-47 Rev. B



CAUTION: FIRE HAZARD, REPLACE ONLY WITH SAME TYPE AND RATING FUSE.



	VALUE CLASSEMENT CLASIFICACIÓN WERT	DIMENSION (INCHES)	PART NUMBER ARTICLE NUMBRE ARTÍCULO NÚMERO TEIL ZAHL
F1	.3AMP T	13/32x1-1/2	E-2308-9

HEATER SWITCH SETTING SPECIFICATIONS CHART			
RELAY	PHASE	VOLTAGE	HEATER SWITCH SETTING
H1	SINGLE PHASE	208/230V	8 AMPS
H1	3 PHASE	208/230V	4 AMPS
H1	3 PHASE	460V	2.5 AMPS
H1	3 PHASE	380/415V	2.88 AMPS
H2	SINGLE PHASE	208/230V	5.5 AMPS
H2	3 PHASE	208/230V	2.5 AMPS
H2	3 PHASE	460V	1.6 AMP
H2	3 PHASE	380/415V	1.3 AMPS

MS5 DRILL

S-1781-47

Hydraulic Sequence of Operation

NOTE: Please see section on Electrical Sequence of Operation for more details

Hydraulic Sequence of Operation

A. Pump relay is energized providing power to the hydraulic motor.

B. Energize the UP solenoid (the table is sent up).

C. De-energize the UP solenoid (the table is sent down).

Hydraulic Schematic References

(drawings H-378-2 and H-407-2)

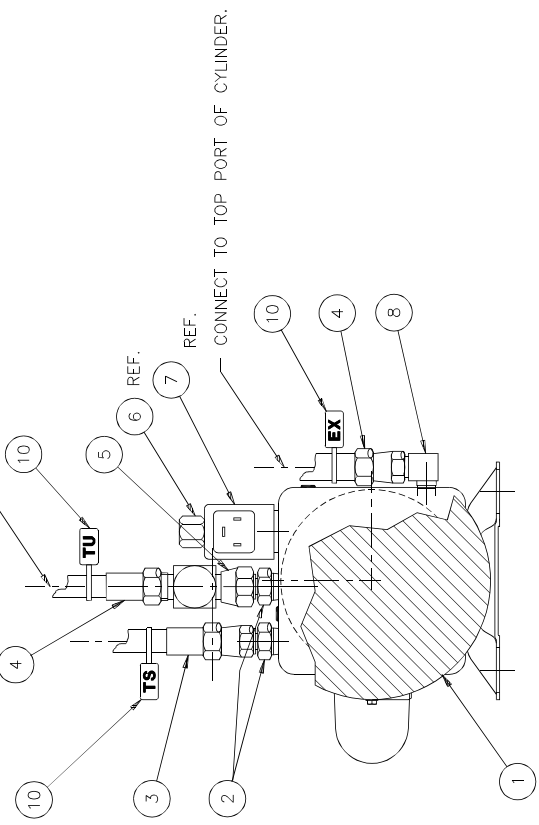
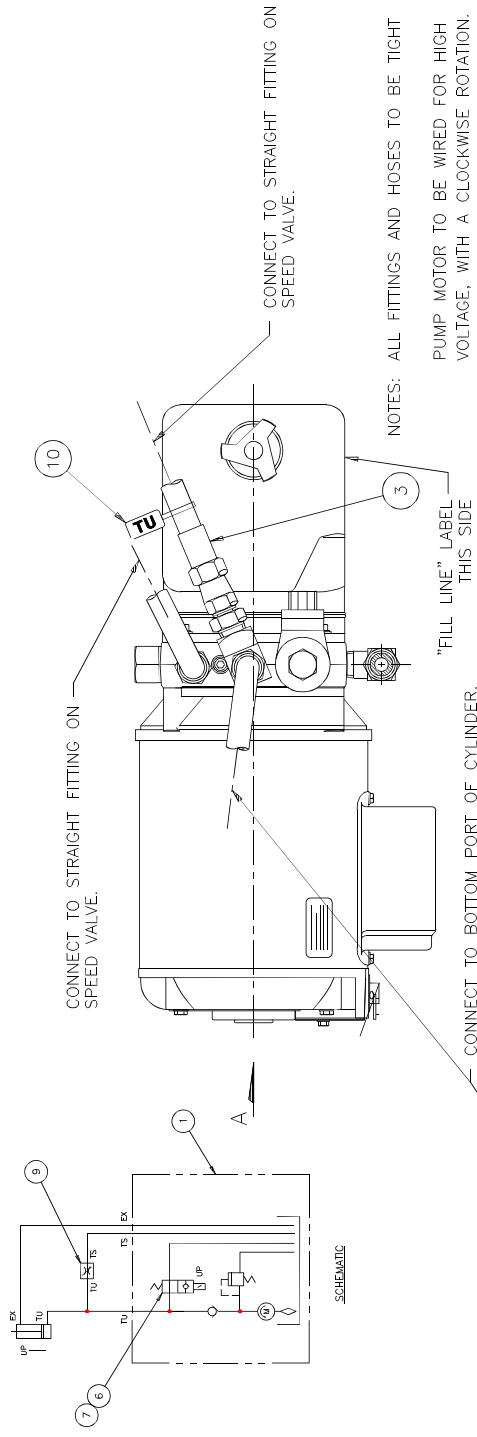
Once the pump relay “RL1” is energized, the hydraulic motor runs with the UP solenoid de-energized. This allows oil to flow through the UP solenoid valve (item #6) and back to tank. The table remains in the down position.

When the UP solenoid is energized, oil stops flowing through the UP solenoid valve (item #6) and flows to the table up (TU) port of the table speed adjustment valve (item #9) and to the table up (TU) port of the cylinder. Oil exits the table speed adjustment valve (item #9) through the table speed (TS) port and then returns to tank. The amount of oil that flows through the valve affects how much oil flows to the cylinder piston. As the piston moves up, excess oil in the cylinder is forced out the excess (EX) cylinder port and back to tank.

When the UP solenoid is de-energized, oil from the pump flows freely through the UP solenoid valve (item #6) and back to the tank. This allows oil to flow out of the cylinder through the table up (TU) cylinder port, through the UP solenoid valve (item #6) and back to the tank. Two springs force the piston down. The pump relay “RL1” remains energized.

5.11 Hydraulic Power Unit – Single and Three Phase

H-378-2 Rev. A (50/60Hz 1ph)
H-407-2 Rev. A (50/60Hz 3ph)

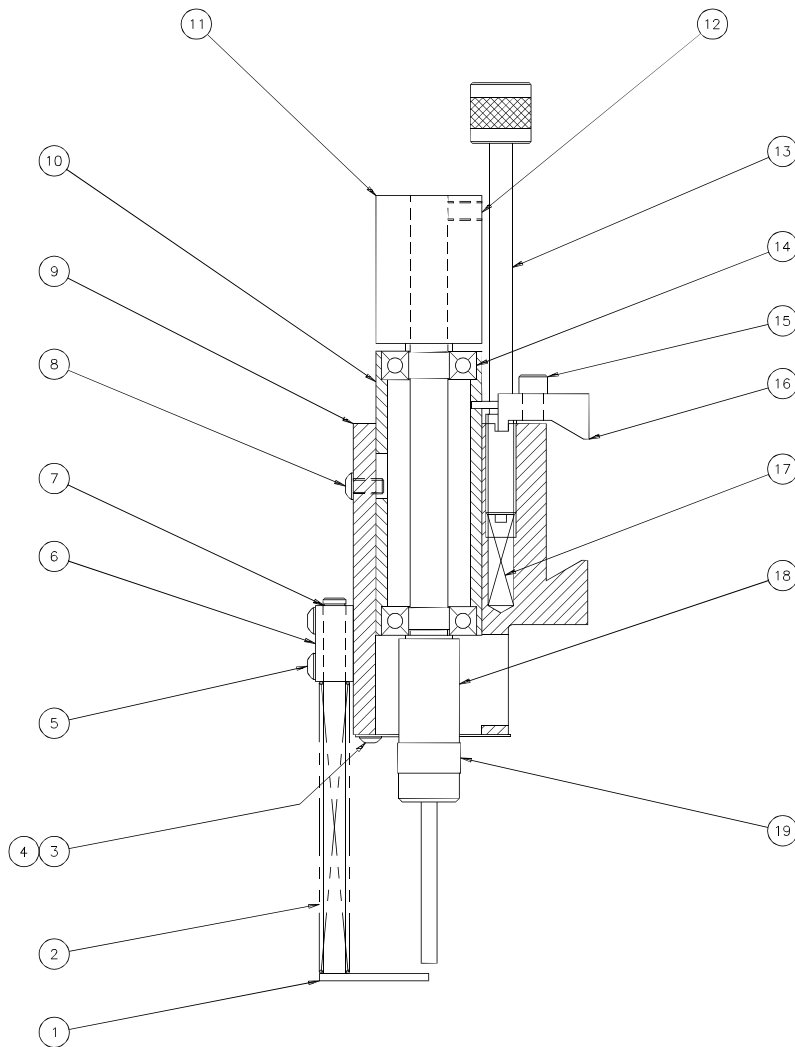


VIEW B
FITTINGS ROTATED FOR CLARITY

NO.	PART NO.	DESCRIPTION OF ACCESSORIES	QTY
1	H-372-2	HYD. POWER UNIT – 208/230V 50/60C 1PH	1
2	H-405-2	HYD. POWER UNIT – 230/460V 60C 3PH	2
3	H-241-6	ADAPTER – 3/8 NPT TO 9/16 TUBE	2
4	H-242-10	HYDRAULIC HOSE ASSEMBLY 39" LONG	2
5	H-242-41	HYDRAULIC HOSE ASSEMBLY 25" LONG	2
6	H-553	TEE – SWIVEL RUN – TUBE (1PH UNIT ONLY)	1
7	H-263-2	TEE (3PH UNIT ONLY)	REF
8	H-200-5	SOLENOID CARTRIDGE	REF
9	E-1069-17	COIL	REF
10	H-237-4	ELBOW – 1/4 NPT TO 9/16 TUBE	1
10	H-4771-1	TABLE SPEED ADJUSTMENT VALVE	REF
10	S-1694-5	TYRAP – IDENTIFICATION	4

5.12 Drill Head Assembly

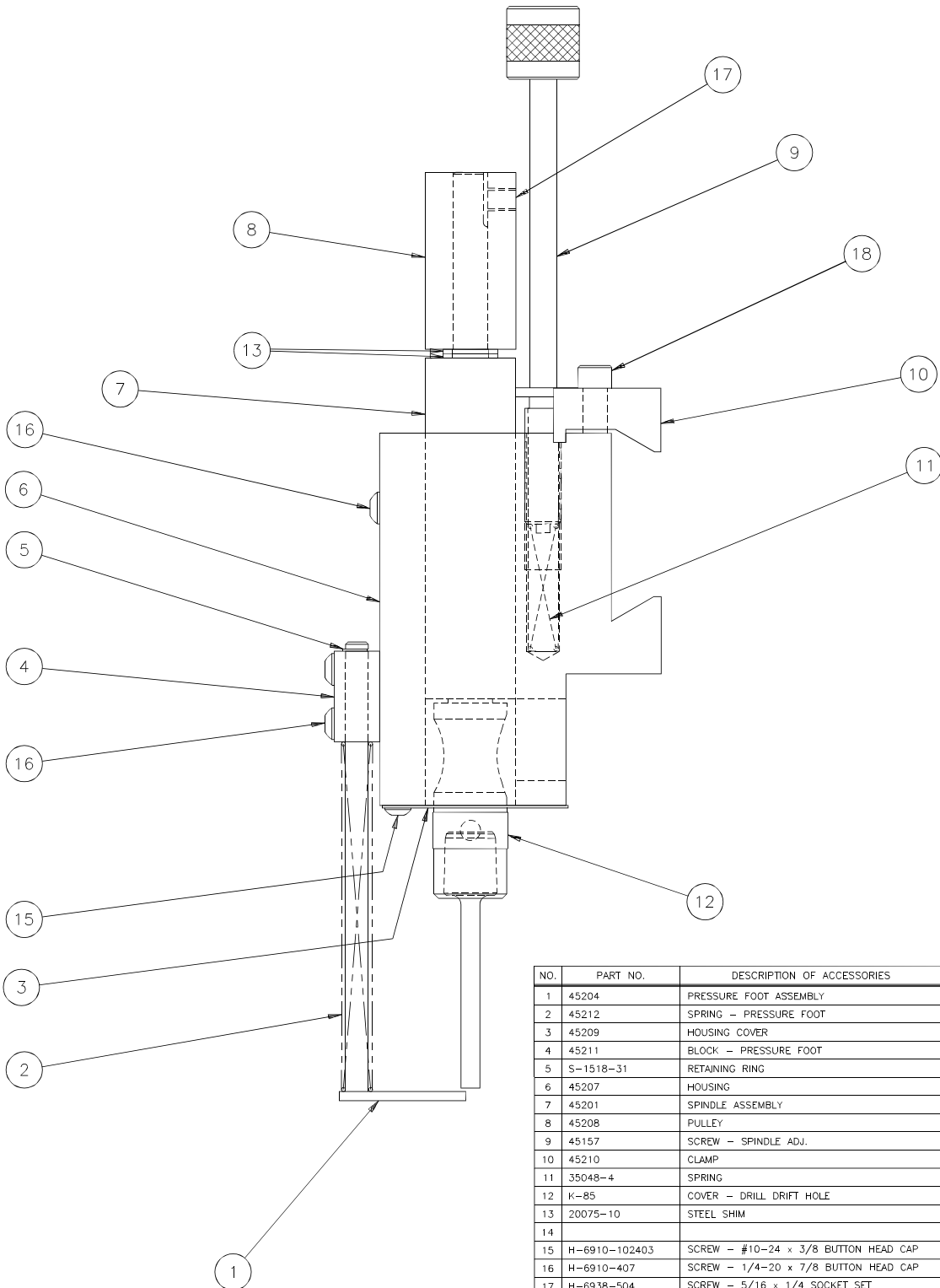
45152-1 Rev. A



NO.	PART NO.	DESCRIPTION OF ACCESSORIES	QTY
1	45126	PRESSURE FOOT ASSEMBLY	1
2	4629-1	SPRING - PRESSURE FOOT	2
3	45158	COVER - HOUSING	1
4	H-6910-102403	#10-24 X 3/8 BUTTON HEAD CAP SCREW	2
5	H-6910-407	1/4-20 X 7/8 BUTTON HEAD CAP SCREW	2
6	45125	BLOCK PRESSURE FOOT	1
7	S-1518-37	RETAINING RING	2
8	H-6910-404	1/4-20 X 1/2 BUTTON HEAD CAP SCREW	1
9	45153	HOUSING	1
10	45156	SLEEVE	1
11	45154	PULLEY	1
12	H-6938-506	5/16-18 X 3/8 SOCKET SET SCREW	1
13	45157	SCREW - SPINDLE ADJUSTING	1
14	S-706	BEARING	2
15	H-6918-510	5/16-18 X 1-1/4 SOCKET HEAD CAP SCREW	2
16	45090	CLAMP - HOUSING	1
17	35048-4	SPRING	1
18	45155	SPINDLE	1
19	K-85	COVER - DRILL DRIFT HOLE	1

5.13 Narrow Drill Head Assembly

45200 Rev. A.

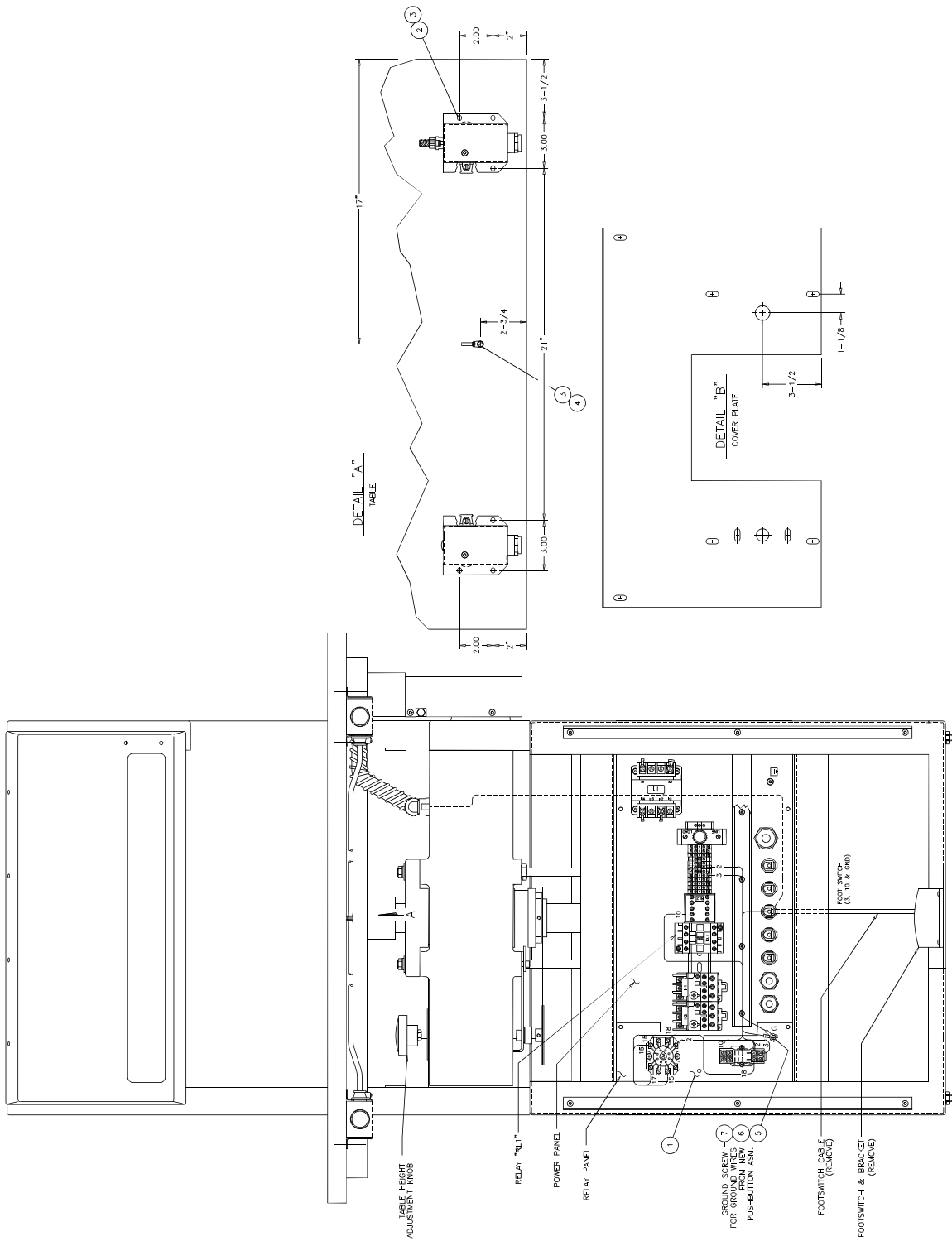


NO.	PART NO.	DESCRIPTION OF ACCESSORIES	QTY
1	45204	PRESSURE FOOT ASSEMBLY	1
2	45212	SPRING - PRESSURE FOOT	2
3	45209	HOUSING COVER	1
4	45211	BLOCK - PRESSURE FOOT	1
5	S-1518-31	RETAINING RING	2
6	45207	HOUSING	1
7	45201	SPINDLE ASSEMBLY	1
8	45208	PULLEY	1
9	45157	SCREW - SPINDLE ADJ.	1
10	45210	CLAMP	1
11	35048-4	SPRING	1
12	K-85	COVER - DRILL DRIFT HOLE	1
13	20075-10	STEEL SHIM	2
14			
15	H-6910-102403	SCREW - #10-24 x 3/8 BUTTON HEAD CAP	2
16	H-6910-407	SCREW - 1/4-20 x 7/8 BUTTON HEAD CAP	3
17	H-6938-504	SCREW - 5/16 x 1/4 SOCKET SET	1
18	H-6918-510	SCREW - 5/16-18 x 1-1/4 SOCKET HEAD	2

Notes

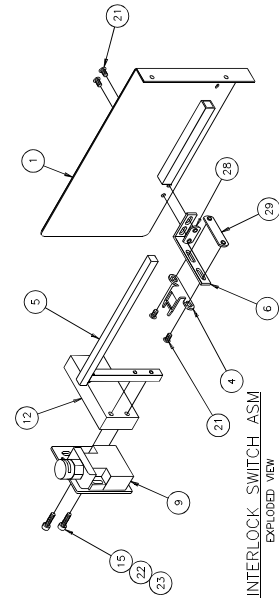
5.14 Two Hand Control Option

A-4851-48 Rev. A



5.15 Drill Guard Kit

K-45180 Rev B (S/N's: 965600 to 135927)

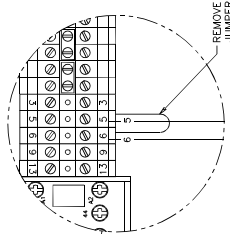
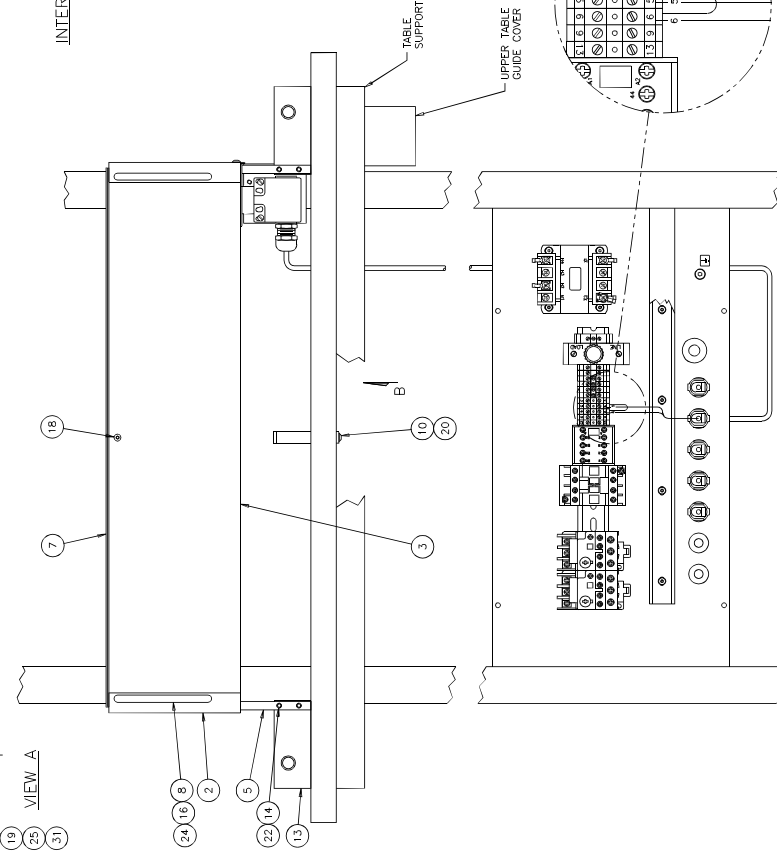
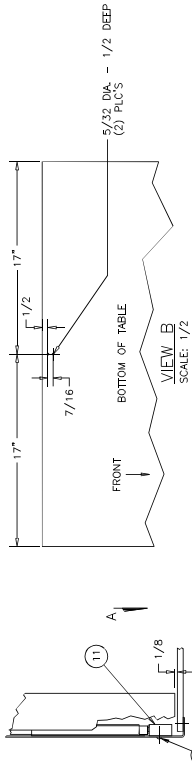


INTERLOCK SWITCH ASM
EXPLODED VIEW

INSTALLATION INSTRUCTIONS

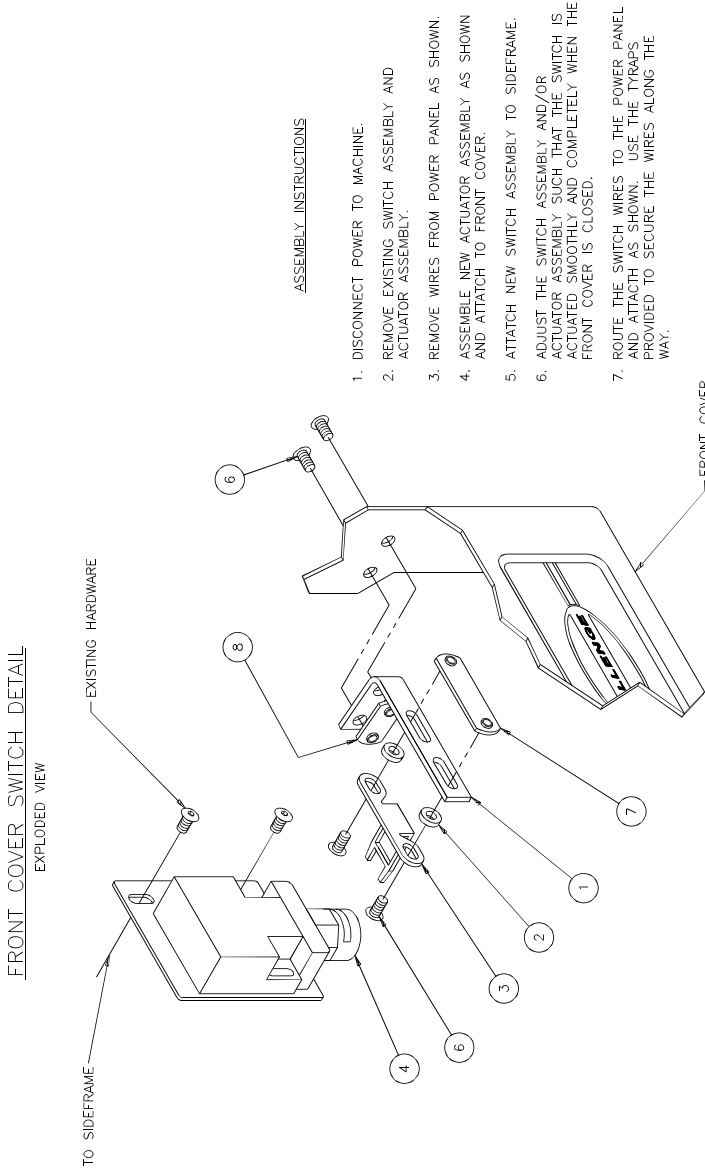
1. DISCONNECT POWER TO MACHINE.
2. REMOVE LOWER FRONT COVER.
3. REMOVE JUMPER AND CONNECT INTERLOCK SWITCH WIRES TO TERMINAL AS SHOWN.
4. REPLACE FRONT COVER.
5. REMOVE THE TABLE BY REMOVING THE (11) SCREWS THAT ATTACH TABLE TO THE TABLE SUPPORT AND THE (2) SCREWS THAT MOUNT THE TABLE GUIDE TO THE TABLE (NEAR THE RIGHT REAR OF THE TABLE).
6. DRILL (2) HOLES IN BOTTOM OF TABLE AS SHOWN. DO NOT DRILL THROUGH TABLE TOP.
7. ATTACH CHIP CHUTE LIFTER (ITEM #10).
8. REMOVE BACKGAGE GUIDE BLOCKS AND REPLACE WITH NEW BLOCKS (ITEMS #12 & #13) AS SHOWN.
9. REATTACH TABLE.
10. ASSEMBLE SPINDLE GUARD AND ATTACH ALL PARTS TO MACHINE AS SHOWN. IT MAY BE NECESSARY TO LEAVE SOME SCREWS FINGER TIGHT UNTIL ALL PARTS ARE IN PLACE. MAKE SURE THE INTERLOCK SWITCH ARE ALIGNED WITH THE FRONT OF THE SWITCH. TIGHTEN ALL SCREWS AND NUTS.
11. ADJUST THE POSITION OF THE MAGNETIC CATCHES (ITEM #11) AS SHOWN.

ITEM	QTY	DESCRIPTION OF ACCESSORIES
1	1	DRUMS - 1/2" SIZE
2	1	DRUMS - 1/2" SIZE
3	1	DRUMS - 1/2" SIZE
4	1	DRUMS - 1/2" SIZE
5	1	DRUMS - 1/2" SIZE
6	1	DRUMS - 1/2" SIZE
7	1	DRUMS - 1/2" SIZE
8	1	DRUMS - 1/2" SIZE
9	1	DRUMS - 1/2" SIZE
10	1	DRUMS - 1/2" SIZE
11	1	DRUMS - 1/2" SIZE
12	1	DRUMS - 1/2" SIZE
13	1	DRUMS - 1/2" SIZE
14	1	DRUMS - 1/2" SIZE
15	1	DRUMS - 1/2" SIZE
16	1	DRUMS - 1/2" SIZE
17	1	DRUMS - 1/2" SIZE
18	1	DRUMS - 1/2" SIZE
19	1	DRUMS - 1/2" SIZE
20	1	DRUMS - 1/2" SIZE
21	1	DRUMS - 1/2" SIZE
22	1	DRUMS - 1/2" SIZE
23	1	DRUMS - 1/2" SIZE
24	1	DRUMS - 1/2" SIZE
25	1	DRUMS - 1/2" SIZE
26	1	DRUMS - 1/2" SIZE
27	1	DRUMS - 1/2" SIZE
28	1	DRUMS - 1/2" SIZE
29	1	DRUMS - 1/2" SIZE
30	1	DRUMS - 1/2" SIZE
31	1	DRUMS - 1/2" SIZE



5.16 Belt Guard Switch Replacement Kit

K-45181 Rev. A (For S/N's: 965600 to 975272 Only)



ASSEMBLY INSTRUCTIONS

1. DISCONNECT POWER TO MACHINE.
2. REMOVE EXISTING SWITCH ASSEMBLY AND ACTUATOR ASSEMBLY.
3. REMOVE WIRES FROM POWER PANEL AS SHOWN.
4. ASSEMBLE NEW ACTUATOR ASSEMBLY AS SHOWN AND ATTACH TO FRONT COVER.
5. ATTACH NEW SWITCH ASSEMBLY TO SIDEFRAME.
6. ADJUST THE SWITCH ASSEMBLY AND/OR ACTUATOR ASSEMBLY SUCH THAT THE SWITCH IS ACTUATED SMOOTHLY AND COMPLETELY WHEN THE FRONT COVER IS CLOSED.
7. ROUTE THE SWITCH WIRES TO THE POWER PANEL AND ATTACH AS SHOWN. USE THE TIRRAP PROVIDED TO SECURE THE WIRES ALONG THE WAY.

NO.	PART NO.	DESCRIPTION OF ACCESSORIES	QTY
9	S-1694	TIRRAP (NOT SHOWN)	2
8	H-6416-102406	WELDNUT	1
7	H-6416-102412	WELDNUT	1
6	H-6810-102404	SCREW - #10-24 x 1/2 BUT HD CAP	4
5			
4	EE-2749-1	SWITCH ASSEMBLY	1
3	45180	ACTUATOR	1
2	E-1152-62	SPACER	2
1	45173	BRACKET	1

