

 Cleveland

Installation Instructions, Operator Interface,
Electrical Schematics & Programs and
Replacement Part Drawings

For

P-TC-220

200 Gal Tumble Chiller
with Reuse Tank

Serial #: 8980

! ATTENTION !

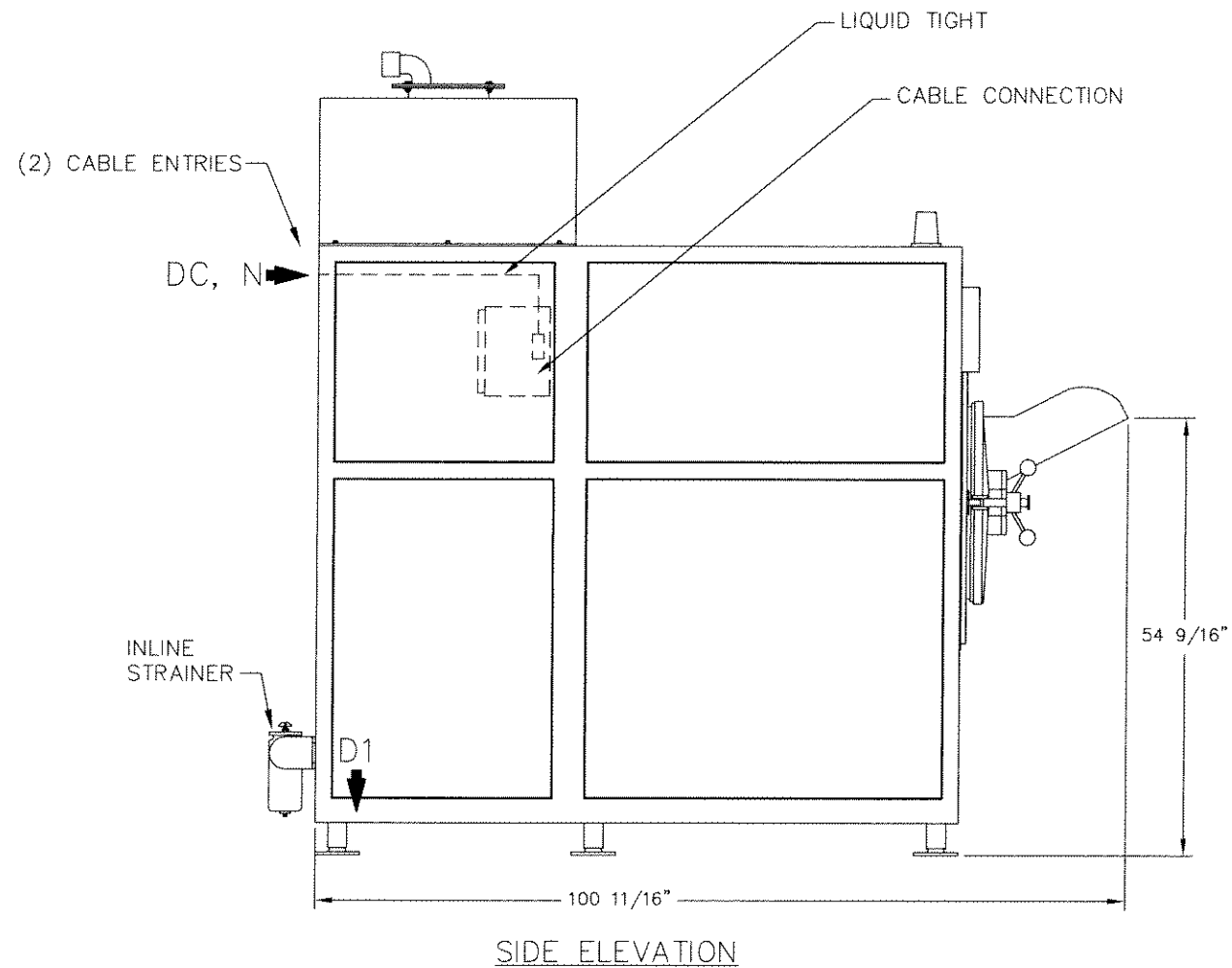
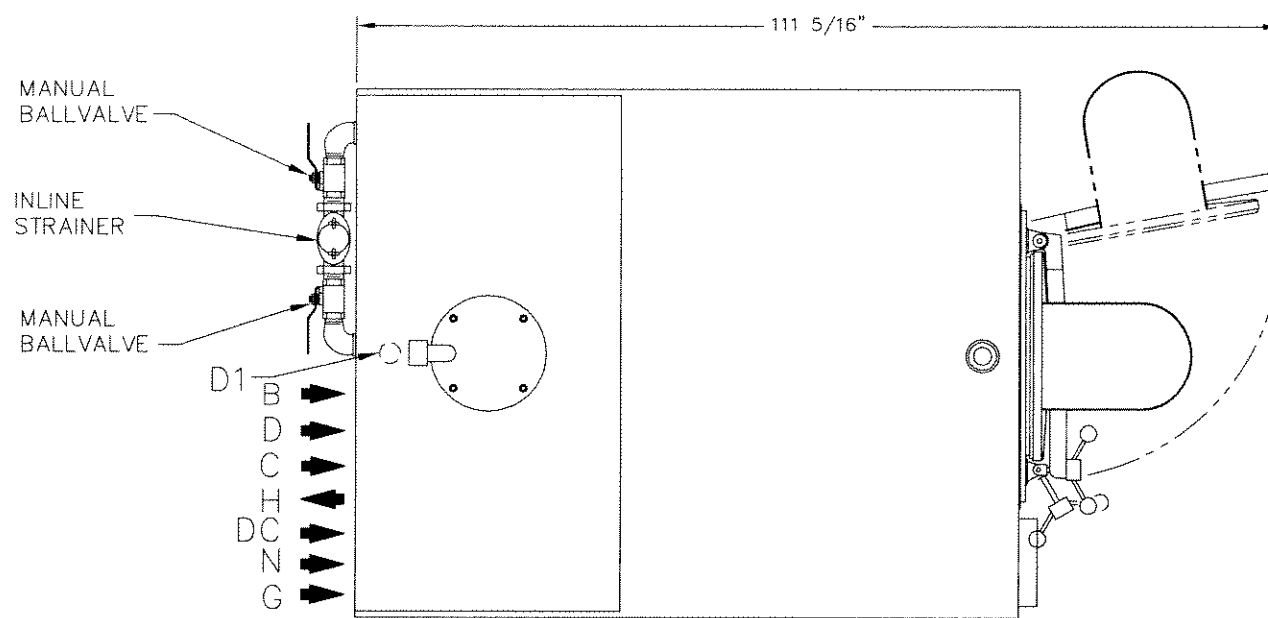
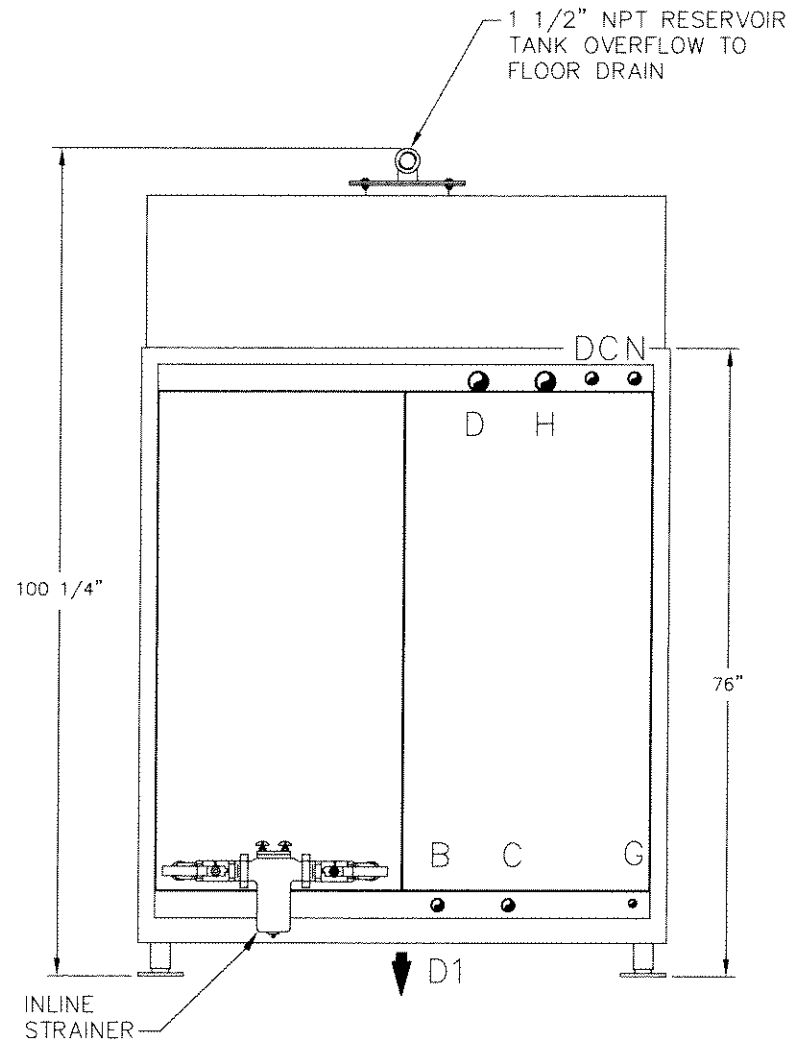
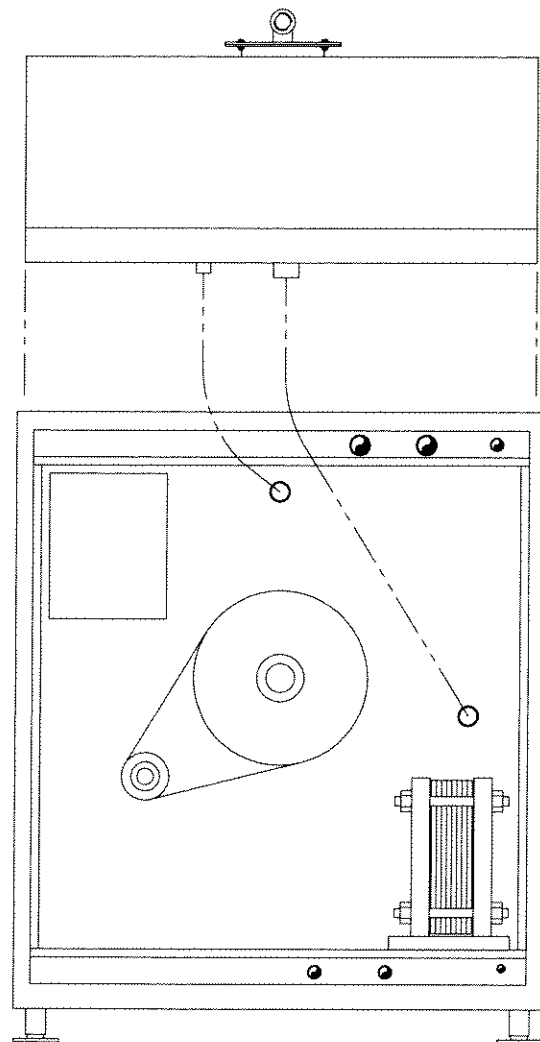
WHEN CALLING FOR
REPLACEMENT PARTS
PLEASE HAVE MODEL
NUMBER & SERIAL NUMBER
AVAILABLE FOR
CLEVELAND SERVICE
REPRESENTATIVES

P-TC-220
200 Gal Tumble Chiller
with Reuse Tank
Serial #: 8980

Installation Instructions

UTILITY CONNECTIONS:

- B. 1" NPT COLD POTABLE WATER IN
- C. 1" NPT HOT POTABLE WATER IN
- D. 2" NPT COOLING WATER IN
- D1. 2" NPT TANK DRAIN TO FLOOR DRAIN
- G. 1/2" NPT AIR IN
- H. 2" NPT COOLING WATER RETURN
- N. MAIN POWER SUPPLY
- DC. DRY CONTACTS FOR CHILL WATER

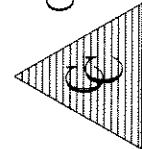


MARSOL

TITLE

P-TC-220, UTILITY/INSTALLATION
220 GALLON TUMBLE CHILLER

Cleveland
Cook/Chill Systems



Cleveland

Cleveland Range LLC, Plant 3

1250 Reames Road, Baltimore, Maryland U.S.A 21220, PH(410) 391-3600, FAX(410) 391-9042

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REVISIONS

LET. DATE

DATE

JOB NO.

DRAWN BY

DWG. NO.

DATE

BY

SHEET

1 of 1

CHECKED BY

SCALE

REV

A

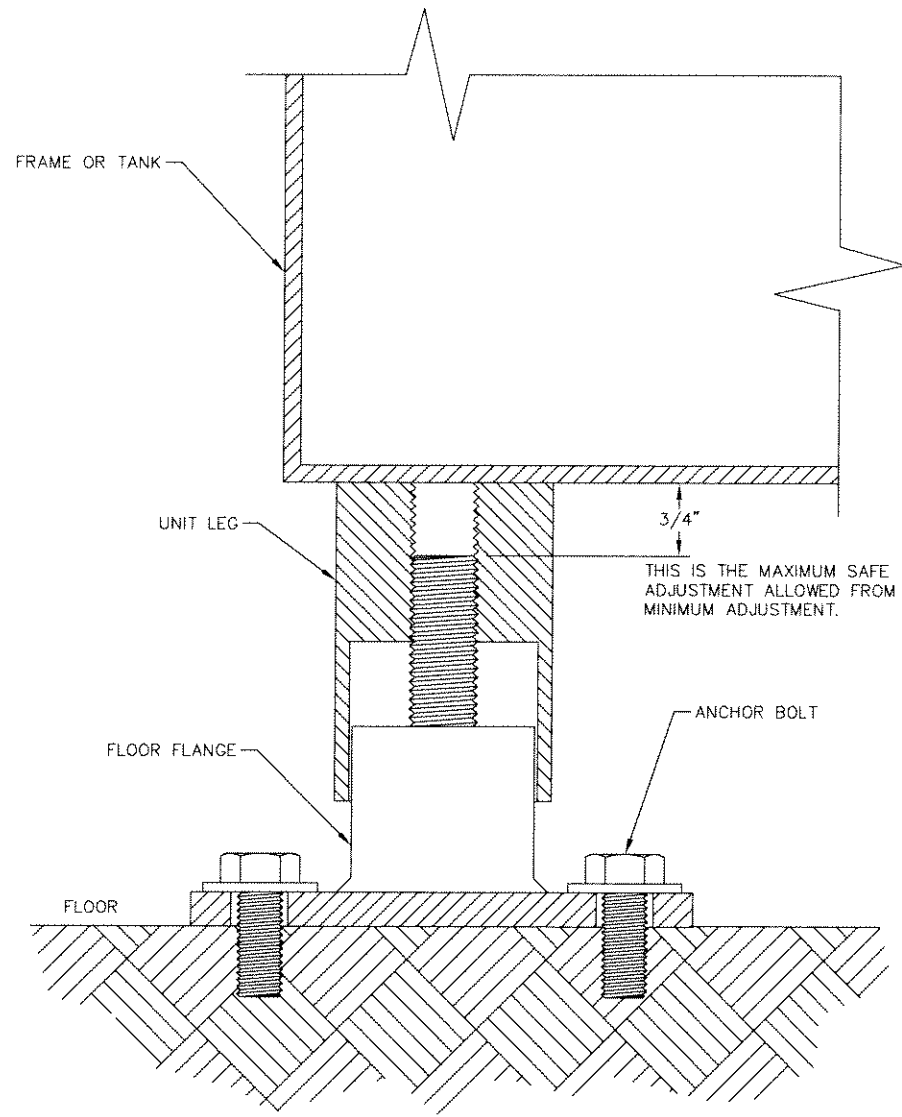
NONE

PROJECT

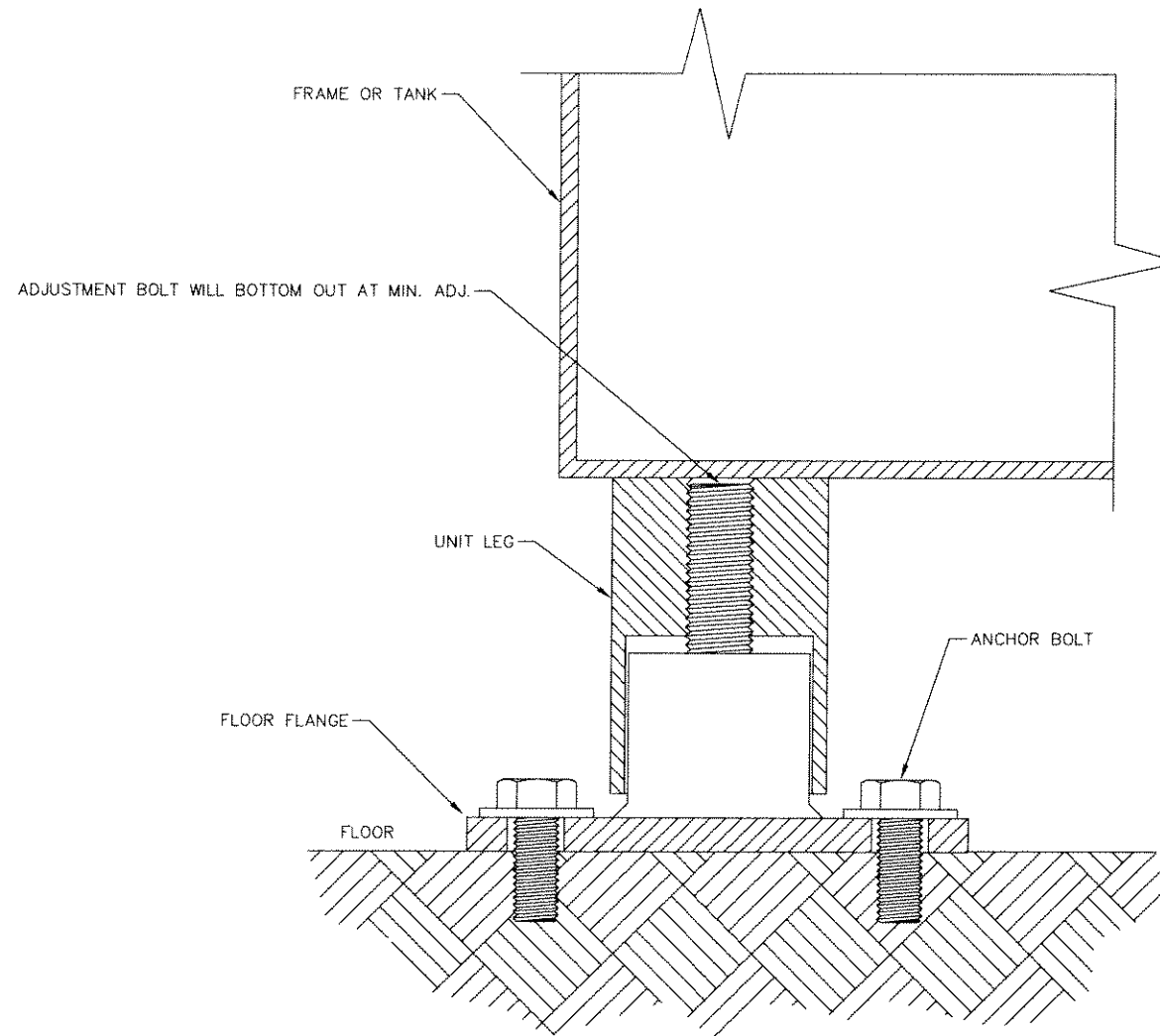
JOB NO.

SHEET

1 of 1



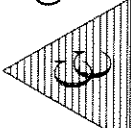
MAXIMUM ADJUSTMENT
OF FLOOR FLANGE



MINIMUM ADJUSTMENT
OF FLOOR FLANGE

NOTES:

AFTER UNIT IS LEVEL, ANCHOR ALL FLOOR FLANGES TO THE FLOOR BY USING AN ANCHOR BOLT IN EACH HOLE OF THE FLANGES.

PROJECT	MARSOL	
	JOB NO.	15600052-8980
TITLE	FLOOR FLANGE ADJUSTMENT	
	P-TC-220/320 AND TJ-100-CC	
DRAWN BY	JES	
	DATE	4-15-96
SHEET	1 of 1	
	SCALE	NONE
CHECKED BY	REV	
	-	
PROJECT	 Cleveland Cook/Chill Systems	
	Cleveland Range LLC, Plant 3 1250 Reames Road, Baltimore, Maryland U.S.A. 21220, PH(410) 391-3600, FAX(410) 391-9042	
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JOB NO.	SHEET	
	1 of 1	

P-TC-220
200 Gal Tumble Chiller
with Reuse Tank
Serial #: 8980

Maintenance

INSTALLATION INSTRUCTIONS:

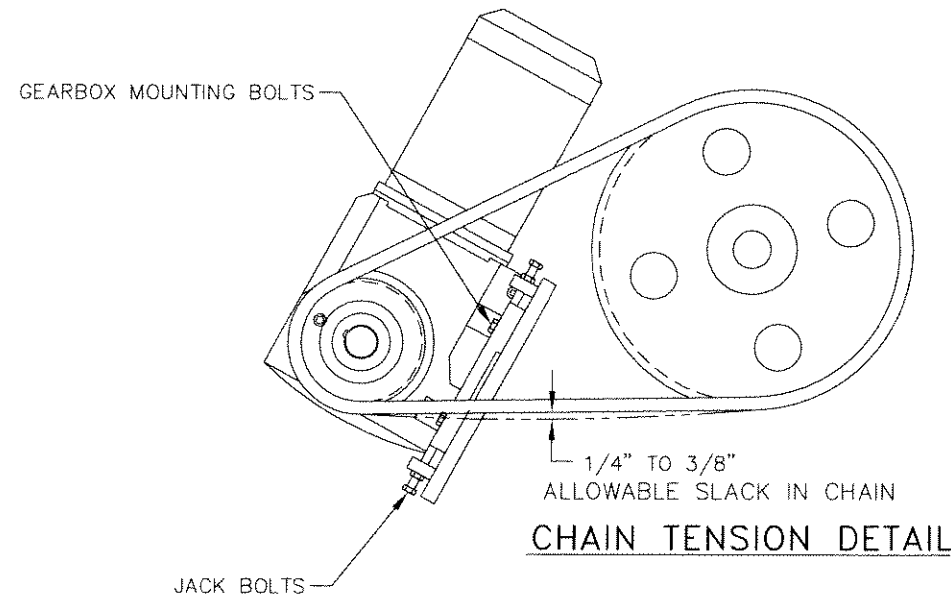
DISCONNECT ALL POWER TO THE CHILLER BEFORE WORKING ON ANY OF THE DRIVE COMPONENTS.

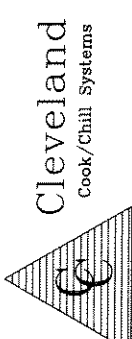
1. LEVEL CHILLER TANK SIDE TO SIDE AND FRONT TO BACK. THE MAX. FEET ADJUSTMENT IS 3/4", IF THIS IS NOT ENOUGH THEN ADD SPACERS UNDER THE FLOOR FLANGES.
2. IF THE CHILLER TANK IS NOT LEVEL THE REMOVABLE ACCESS PANELS WILL NOT FIT PROPERLY AFTER BEING REMOVED.
3. REMOVE BACK PANELS AND MAKE ALL UTILITY CONNECTIONS.
4. CHECK DRIVE ASSEMBLY TO ENSURE ALL BEARINGS, SPROCKETS AND CHAIN ARE TIGHT AND SECURE.
5. CHECK ALL COMPONENTS IN THE PLUMBING SYSTEM TO BE SURE THEY DID NOT VIBRATE LOOSE DURING SHIPMENT. (HEAT EXCHANGER, CIRCULATING PUMP ETC..)
6. NEXT TURN POWER TO CHILL TANK ON, START FILLING TANK (SEE OPERATING INSTRUCTIONS). CHECK THE CIRCULATING PUMP ROTATION VS THE DIRECTION MARKED ON THE PUMP BODY. IF THE PUMP IS RUNNING BACKWARDS THEN SHUT OFF ALL CONTROLS AND POWER, THEN REVERSE PUMP ROTATION.(ROTATING DRUM CAN ROTATE EITHER DIRECTION)
7. **CAUTION:** ROTATING DRUM AND PUMP WILL AUTOMATICALLY START WHEN LOW LEVEL SWITCH IS ACTIVATED DURING A CHILL CYCLE. KEEP ALL PERSONNEL AWAY FROM DRIVE GEARS AND CHAIN WHEN POWER IS ON AND TANK IS FILLING.
8. IF WATER LEVEL NEEDS ADJUSTMENT SEE INSTRUCTIONS ON THE ELECTRICAL SCHEMATICS.
9. AFTER THE CHILL TANK HAS RUN ONE CYCLE OR FULLY TESTED AND BEFORE REATTACHING THE BACK PANELS TURN POWER OFF AND CLEAN ALL IN LINE STRAINERS IN THE PLUMBING SYSTEM.
10. THERE IS ROOM FOR A 5 GALLON PAIL OF CHLORINE INSIDE THE CHILL TANK REAR HOUSING OR A CONTAINER CAN BE SET ON THE OUTSIDE BUT A HOLE MUST BE DRILLED IN THE ACCESS DOOR FOR THE SIPHON TUBE TO COME OUT.
11. THE SWITCH ON THE CHLORINE PUMP MUST BE IN THE ON POSITION IN ORDER FOR THE PUMP TO OPERATE.

CHAIN ADJUSTMENT INSTRUCTIONS:

DISCONNECT ALL POWER TO THE CHILLER BEFORE WORKING ON ANY OF THE DRIVE COMPONENTS.

TO MAKE CHAIN ADJUSTMENT LOOSEN GEARBOX MOUNTING BOLTS. BY USING THE GEARBOX JACK BOLTS PUSH UP TO LOOSEN CHAIN OR PUSH DOWN TO TIGHTEN CHAIN. AFTER THE CHAIN IS ADJUSTED PROPERLY RETIGHTEN THE GEARBOX MOUNTING BOLTS AND THE JACK BOLTS, AT THE SAME TIME MAKE SURE THAT THE CHAIN AND BOTH SPROCKETS ARE IN LINE.



PROJECT	MARSOL	
JOB NO.	ADJUSTMENT, DRIVE CHAIN P-TC-220/320	
SHEET	REVISIONS	JOB NO. E600053-8980
1 of 1	DATE	DRAWN BY JES
NONE	SHEET	DATE 6/16/08
	SCALE	1 of 1
	REV	NONE
	CHECKED BY	
		
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200 Gal Tumble Chiller
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Serial #: 8980

Operator's Manual



Cleveland Range

Tumble Chiller

HMI Operator's
Manual

Version 4.0.1-AB

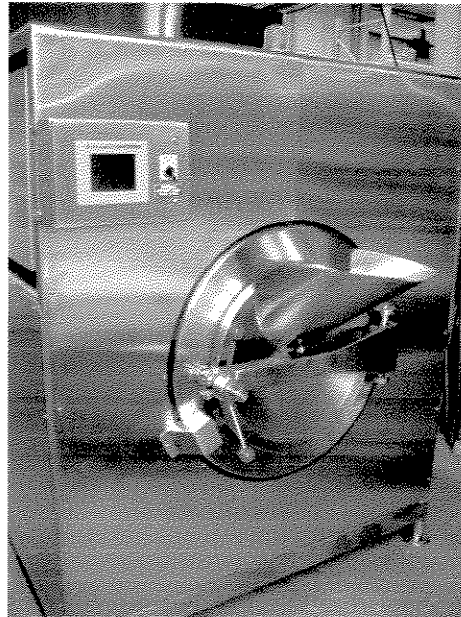
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The purpose of this manual is to guide the operator in the operation of Cleveland Range's Tumble Chiller system. This manual is an overview and not intended to answer any and all questions concerning the operation and functions of the Tumble Chiller. Please contact Cleveland Range for any and all technical questions concerning this product.

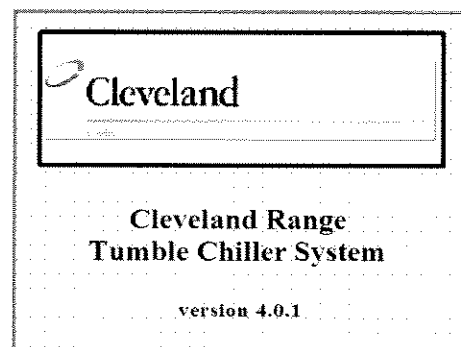
Power-up the Tumble Chiller

Turn on the power by switching the "Power" switch on the front of the control panel.



(NOTE: This is a typical tumble Chiller photo for reference only)


As the system powers up the operator interface screen will display the "Cleveland" logo.



After about ten (10) seconds the operating screen will appear.

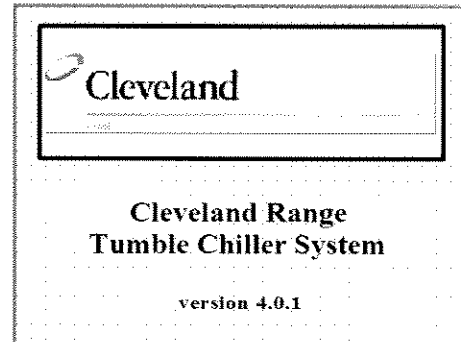
Operational Notes

Before we start the actual discussion of the operation of the system, we need to cover some points about the Operator Interface Panel or screen.

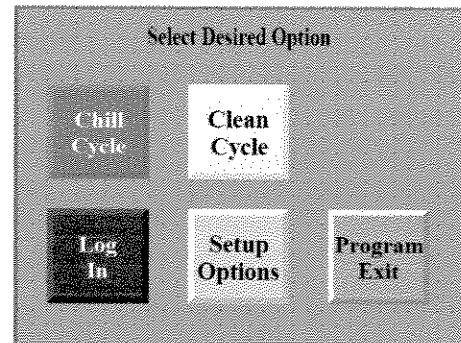
- ◆ All of the illuminated part of the panel is touch activated. The areas that are active on any screen indicated by a colored box that will either jump to another screen, perform some action, or bring up a number pad for data entry.
- ◆ If a button or feature is inactive the button will be grey in color. All activated features or buttons will be colored.
- ◆ Finally, a couple of notes about this manual. This is not designed to be an inclusive guide for every situation encountered, although every attempt has been made to cover the everyday situations.
- ◆ On the screen images there are red arrows that point to buttons or areas of the screen being discussed in the text.  (example)

Configuration Settings

When the system is powered up the initialization screen is displayed. This screen is held for ten (10) seconds to allow the programmable logic controller to power up and stabilize before the operation of the Tumble Chiller can function.



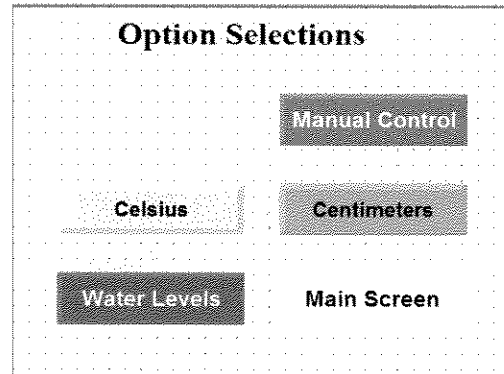
It should be noted that during the startup process the PanelView Plus communicates with the plc. If this initial communication does not take place the PanelView will not change to the main screen.

Main Menu Screen

This screen is used to select the option or cycle desired to run.

- ◆ Chill Cycle button jumps to the chill screen.
- ◆ Clean Cycle button jumps to the clean screen.
- ◆ Log In button allows the user to log in.
- ◆ Setup Options button jumps to the options screen. (Restricted access)
- ◆ Program Exit button exits this application. (Restricted access)

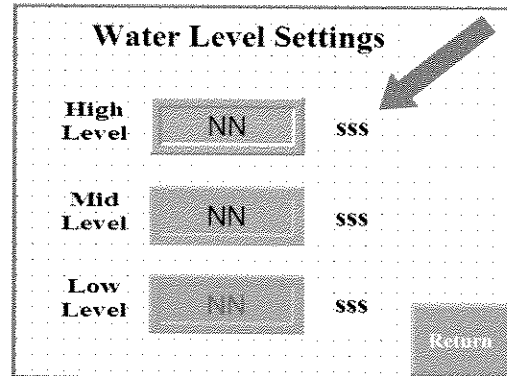
The setup options and program exit buttons will not be visible unless the appropriate authorized user has logged in. This is to prevent the system from being changed accidentally that will affect the system operation.

Setup Options Screen

The yellow button is the temperature unit's button. Pressing this button will cause the system to alternate between Celsius and Fahrenheit.

The green button is the water level unit's button. Pressing this button will cause the system to alternate between Centimeters and Inches. Anytime this unit is changed the water levels are zeroed out to avoid over or under filling due to unit/value conversion differences.

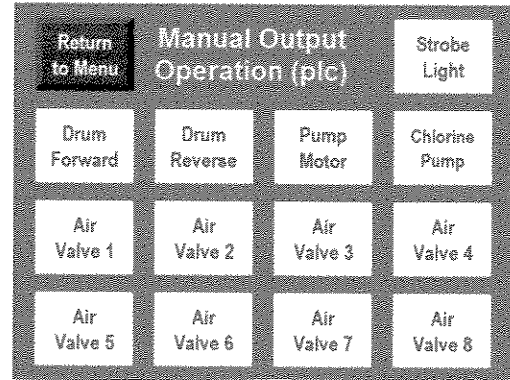
The blue button causes the screen to jump to the water level adjustment screen. While the red button causes the screen to jump to the manual operations screen. The white main screen button will return to the main menu.

Water Level Screen

Pressing the numerical value button(s) will bring up a number pad where the operator can enter the water level, in inches or centimeters, associated with each of the operating levels. The characters “sss” on the screen (as noted by the red arrow) will be either “cm” or “in” to indicate the water level units previously selected. The full level is the maximum water level, and is referred to as the “High” level on the operating screen. The medium level is the “Mid” level on the operating screen. The mid level is the point at which the circulating pump and the drum motor will start operating. The minimum level, “Low” level, indicates the water level at which the pump will stop when draining the water to the reservoir tank.

Pressing the “Return” key will return the screen to the setup screen.

Manual Operation Screen

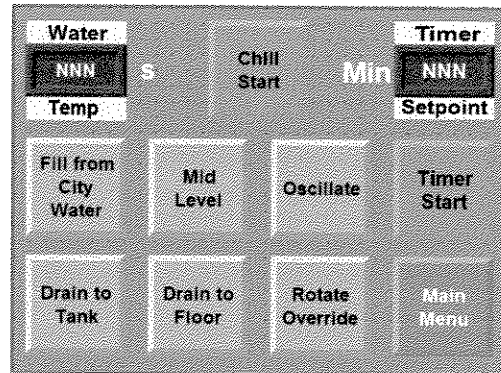


On this screen all of the buttons are “momentary” contact buttons. The selected device will be activated while the button is being pushed. The device will deactivate when the button is released.

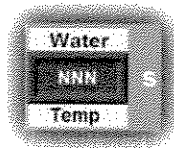
- Air Valve 1.....Chilled Water In
- Air Valve 2.....Cold Water Fill
- Air Valve 3.....Hot Water Fill
- Air Valve 4.....Pump to Tank
- Air Valve 5.....Circulate
- Air Valve 6.....Fill from Tank
- Air Valve 7.....Drain to Floor
- Air Valve 8.....Door Lock

Pressing the “Return to Menu” key will send the display to the setup screen.

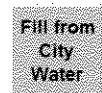
Chill Cycle Screen



The chill cycle screen is used when controlling the chilling aspect of the system operation. Whenever a button is colored gray or has a lack of color this indicates that feature is inactive or in the default condition. Pressing the button will cause its color to appear and will activate that feature.



The water temperature is a display only. The temperature will appear where the “NNN” characters are. The “s” will be replaced by the temperature units, F or C.



“Fill from City Water” is an indicator only. This button will be colored if there is water in the reservoir tank above the Tumble Chiller. Whenever this button is active (colored) the next fill must be from the reservoir.



“Mid Level” is the water level select button. Activating this button will cause the unit to fill the drum to the high level.



Activating the “Oscillate” button will start the drum oscillating during the chilling process.



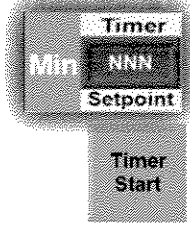
After selecting the chill cycle options desired, pressing the green “Chill Start” button will begin the chilling process. Once the process has started the options cannot be changed without stopping the chilling process.



The two drain buttons, “Drain to Tank” and “Drain to Floor” will only respond when the unit is idle. Selecting either button will cause the drum to immediately drain to the selected location.



The “Rotate Override” button is a momentary button the will rotate the drum if the process is idle. Caution must be used to insure safety from injury while using this feature.

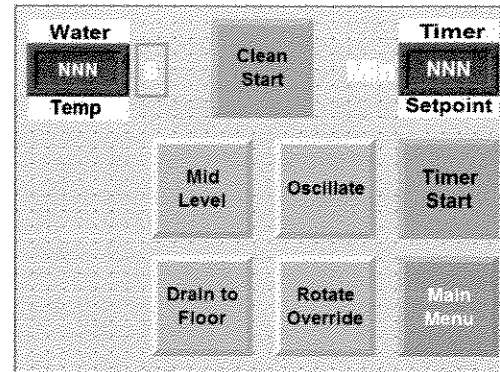


The timer display is also an entry feature for the setting the timer. The timer is nothing more than a time keeper. When the timer times out, the strobe light on the top of the unit will flash. The timer is started with the green “Timer Start” button. Whenever the timer is in operation, the button color changes to red and the button label changes to “Timer Stop”. If the timer has timed out and the strobe is flashing, pressing the “Timer Stop” button will shut off the strobe light.



The button labeled “Main Menu” will return the unit to the menu screen. The operation will not stop.

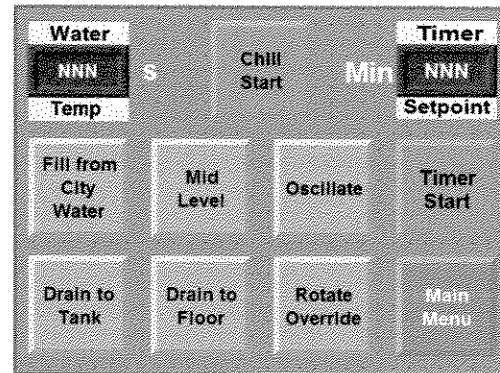
Clean Cycle Screen



The clean cycle is very similar to the chill cycle. The only differences are: a) the drum is filled with hot water, and b) the drum water cannot be pumped to the reservoir. The operating screen buttons operate the same as the described in the chill cycle.

Normal Operation

After the system has started the initialization screen will be replaced by the menu screen. The operator will select the chill cycle button and the “Chill Cycle” screen will be displayed.



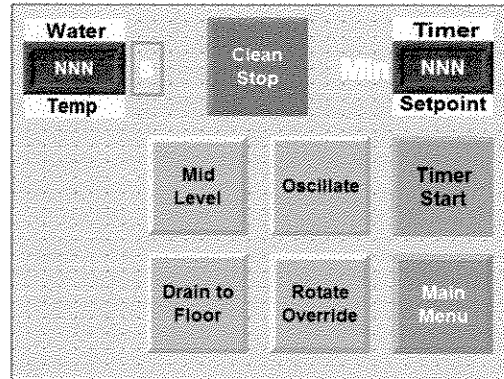
The operator will select the drum water level (Mid Level or High Level) and the “oscillate or rotate” option. The high water level selection will cause the button to be colored as will the oscillate selection. Now the “Chill Start” button is pressed. The chilled water valve will open and the fill the drum to the selected level. Anytime the “city water” valve is open for filling the drum, the chlorine pump is enabled to inject chlorine into the drum water. Once the mid level is reached the circulate pump will start, the chilled water valve will open and the drum motor will start. The operator will now select the timer set point to enter the number of minutes the cycle is to operate and finally press the “Timer Start” button. When the timer times out the strobe light will be activated, however the chill cycle continues to function until the operator presses the “Chill Stop” button.

Once the cycle has stopped the operator can select the type of drain to be used. If the “Drain to Tank” is selected the circulating pump will pump the drum water into the reservoir for later use and the “Fill from City Water” indicator will light, or be colored and change to “Fill from Tank”. Anytime the “Fill from Tank” indicator is active the drum will be filled from the reservoir on the next chill cycle. If there is not enough water in the reservoir to fill the drum to the selected level the city water valve is opened to complete the filling process.

The “Rotate Override” button can be used to rotate the drum to ease the unloading process. Again it needs to be noted that this button only functions when the system is idle and caution must be exercised during its use.

Normal Operation – Clean Cycle

After the system has started the initialization screen will be replaced by the menu screen. The operator will select the clean cycle button and the “Clean Cycle” screen will be displayed.



The operator will select the drum water level (Mid Level or High Level) and the “oscillate or rotate” option. The high water level selection will cause the button to be colored as will the oscillate selection. Now the “Clean Start” button is pressed. The hot water valve will open and fill the drum to the selected level. Once the mid level is reached the circulate pump will start and the drum motor will start. Normally the operator will select the timer set point to enter the number of minutes the cycle is to operate, and finally press the “Timer Start” button. When the timer times out the strobe light will be activated, however the clean cycle continues to function until the operator presses the “Clean Stop” button.

Once the cycle has stopped the operator can select the drain tank button. After the clean cycle the water is not allowed to be pumped to the reservoir, therefore only the “Drain to Floor” button is available.

The “Rotate Override” button can be used to rotate the drum to ease the cleaning process. Again it needs to be noted that this button only functions when the system is idle and caution must be exercised during its use.

Authorized Users

There are two authorized users assigned to the system. Under normal conditions the users are defined as “default” users and do not have to log in to operate the system. In order to perform the system setup the supervisor must log in from the main screen. The supervisor user name is “super” and the password is “super”. There is another authorized user whose user name is “expert” and the password is “expert”. When someone is logged in as “super” the “Setup Screen” button will appear on the main screen. When someone is logged in as “expert” the “Setup Screen” button and the “Program Exit” button will appear.

After fifteen (15) minutes of idle time the authorized users are automatically logged off. Under normal conditions this is not a cause for alarm, however, should the HMI unit be left in the setup or maintenance screen and a login timeout occurs the HMI may not allow the user to leave these screens. In this situation the system may have to be restarted.

P-TC-220
200 Gal Tumble Chiller
with Reuse Tank
Serial #: 8980

Programs

AC-TECH INVERTER PROGRAMS 200-300 TUMBLE CHILLERS

NO#	PARAMETER NAME	RANGE OF ADJUSTMENT	FACTORY DEFAULT	CUSTOMER SETTINGS
01	LINE VOLTAGE	HIGH (01), LOW (02)	HIGH(01)	SEE MOTOR
02	CARRIER FREQUENCY	4KHZ(01), 6KHZ(02), 8KHZ(03) 10KHZ(04)	6KHZ (02)	
03	START METHOD	NORMAL(01), START ON POWER UP(02) START WITH DC BRAKE (03), AUTO RESTART WITH DC BRAKE (04) FLYING RESTART(05), FLYING RESTART(06) FLYING RESTART (07)	NORMAL (01)	
04	STOP METHOD	COAST(01), COAST WITH DC BRAKE(02) RAMP(03), RAMP WITH DC BRAKE(04)	COAST (01)	
05	STANDARD SPEED SOURCE	KEYPAD (01), PRESET #1(02) 0-10 V DC (03), 4-20mA (04)	KEYPAD (01)	01
06	TB-14 OUTPUT	NONE(01), RUN(02), FAULT(03) INVERSE FAULT(04), FAULT LOCK OUT(05) AT SET SPEED(06), ABOVE PRESET #3 (07) CURRENT LIMIT (08), AUTO SPEED (09) REVERSE (10)	NONE (01)	
08	TB-30 OUTPUT	NONE (01), 0-10 VDC FREQ (02) 2-10 VDC FREQ (03) 0-10 VDC LOAD (04) 2-10 VDC LOAD (5)	NONE (01)	
09	TB-31 OUTPUT	NONE(01), 0-10 VDC LOAD (02) 2-10 VDC LOAD (03), DYNAMIC BRAKING (04)	NONE (01)	
10	TB-13A FUNCTION SELECT	NONE (01), 0-10VDC (02), 4-20mA (03) PRESET SPEAD (04), RUN REVERSE (05) START REVERSE (06), EXTERNAL FAULT (07) REMOTE KEYPAD (08), DB FAULT (09) AUXILIARY STOP (10), ACCEL DECEL (11)	NONE (01)	05
11	TB-13B FUNCTION	NONE (01), 0-10 VDC (02), 4-20mA (03) PRESET SPEED (04), DECREASE FREQ (05) JOG FORWARD (06), JOG REVERSE (07) AUXILIARY STOP (08)	NONE (01)	04
12	TB-13C FUNCTION SELECT	NONE (01), 0-10VDC (02), 4-20mA (03) PRESET SPEAD (04), INCREASE FREQ (05) EXTERNAL FAULT (04), REMOTE KEYPAD (07) DB FAULT (08), ACCEL/ DECEL (09)	NONE(01)	
13	TB-15 OUTPUT	(SEE PARAMETER 06 FOR OPTIONS)	NONE (01)	
14	CONTROL	TERMINAL STRIP ONLY (01), REMOTE KEYPAD ONLY (02) TERMINAL STRIP OR REMOTE KEYPAD (03)	TERMINAL STRIP ONLY (01)	
15	SERIAL LINK	DISABLE (01), 9600, 8, N, 2 WITH TIMER (02) 9600, 8, N, 2 WITHOUT TIMER (03) 9600, 8, E, 1 WITH TIMER (04) 9600, 8, E, 1 WITHOUT TIMER (05) 9600, 8, O, 1 WITH TIMER (06) 9600, 8, O, 1 WITHOUT TIMER (07) AT SET SPEED (06), ABOVE PRESET #3 (07)	9600, 8, N, 2 WITH TIMER (02) NONE (01)	
16	UNITS EDITING	TENTHS OF UNITS (01), WHOLE UNITS (02)	WHOE UNITS (02)	
17	ROTATION	FORWARD ONLY (01) FORWARD AND REVERSE (02)	FORWARD ONLY (01)	02
19	ACCELERATION TIME	0.1- 3600.0 SEC.	20 SEC.	1.0
20	DECELERATION TIME	0.1- 3600.0 SEC.	20 SEC.	0.5
21	DC BRAKE TIME	0.1- 3600.0 SEC.	20 SEC.	
22	DC BRAKE VOLTAGE	0.0- 30.0%	0.0&	

23	MINIMUM FREQUENCY	0.0- MAX FREQUENCY	0.0 HZ	
24	MAXIMUM FREQUENCY	MINIMUM FREQUENCY- 240 HZ (NOTE 2)	60HZ	
25	CURRENT LIMIT	30- 180% NOTE (3)	180%	
26	MOTOR OVERLOAD	30- 100 %	100%	
27	BASE FREQUENCY	25.0 - 500.0 HZ (NOTE 4)	60.0 HZ	
28	FIXED BOOST	0.0 - 30%	0.00%	
29	ACCEL BOOST	0.0 - 20%	0.00%	
30	SLIP COMPENSATION	0.0 - 5.0%	0.00%	
31-37	PRESET SPEEDS	0.0 - MAXIMUM FREQUENCY	0.0 HZ	32 = 60 HZ
38	SKIP BANDWIDTH	0.0 - 10 HZ	0.0HZ	
39	SPEED SCALING	0.0 - 6500.0	0	
40	FREQUENCY SCALING	3.0 - 2000.0 HZ	60.0 HZ	
41	LOAD SCALING	10- 200%	200%	
42	ACCEL/ DECEL #2	0.1 - 3600.0 SEC.	20 SEC	
43	SERIAL ADDRESS	1 - 247	1	
44	PASSWORD	000 - 999	225	
47	CLEAR HISTORY	MAINTAIN (01), CLEAR (02)	MAINTAIN (01)	
48	PROGRAM SELECTION	USER SETTING (01), OEM SETTING (02), PRESET OEM (03), RESET 60 (04), RESET 50 (05), TRANSLATE (0,6)	USER SETTINGS (01)	
50	FAULT HISTORY	(VIEW - ONLY)	(N/A)	
51	SOFTWARE CODE	(VIEW - ONLY)	(N/A)	
52	DC BUS VOLTAGE	(VIEW - ONLY)	(N/A)	
53	MOTOR VOLTAGE	(VIEW - ONLY)	(N/A)	
54	LOAD	(VIEW - ONLY)	(N/A)	
55	0 - 1- VDC INPUT	(VIEW - ONLY)	(N/A)	
56	4 - 20 mA INPUT	(VIEW - ONLY)	(N/A)	
57	TB STRIP STATUS	(VIEW - ONLY)	(N/A)	
58	KEYPAD STATUS	(VIEW - ONLY)	(N/A)	
59	TB - 30 OUTPUT	(VIEW - ONLY)	(N/A)	
60	TB - 31 OUTPUT	(VIEW - ONLY)	(N/A)	

TO PROGRAM THE AC TECH INVERTER

1. PUSH THE MODE BUTTON 00 WILL APEAR W/ ARROW KEYS ENTER 22.5 PASSWORD.
2. PUSH THE MODE BUTTON TWICE.
3. PUSH THE ARROW KEY TO MOVE TO THE NEXT PARAMETER.
4. PUSH THE MODE BUTTON ONCE.
5. PUSH THE ARROW KEYS TO ENTER THE PARAMETER.
6. REPEAT STEPS 2 THRU 5 FOR EACH SETTING.
7. PUSH THE MODE BUTTON ONE TIME THE DASH LINE WILL DISPLAY THE PROGRAM IS OK TO GO.

NOTE 1: FACTORY DEFAULTS ARE SHOWN FOR A 60 HZ BASE FREQUENCY.

SEE PARAMETER 48 FOR 50 HZ FREQUENCY.

NOTE 2: MAXIMUM SETTING IS 999.9 HZ. ON DRIVES WITH HIGHT OUTPUT FREQUENCY OPTION.
CONSULT THE FACTORY.

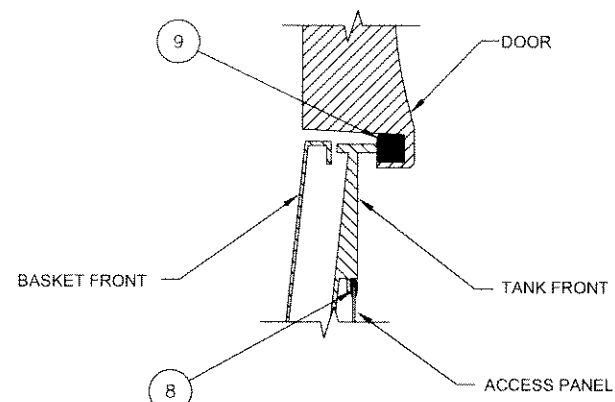
NOTE 3: IF LINE VOLTAGE IS SET TO LOW MAXIMUM SETTING IS 150%.

NOTE 4: MAXIMUM SETTING IS 1300 HZ (FACTORY DEFAULT 999.9) ON DRIVES WITH HIGH
OUTPUT FREQUENCY OPTION CONSULT THE FACTORY.

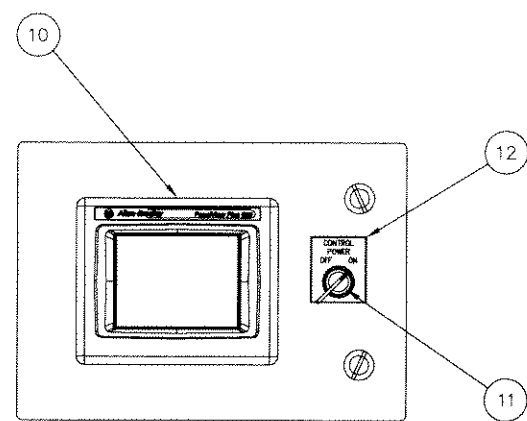
**BOOST SETTINGS DEPENDS ON THE LOAD: THIS UNIT HAS (2) BOOST SETTINGS, FIXED BOOST
AND ACCEL BOOST. BOTH CAN BE ADJUSTED IF THE UNIT TRIPS OUT. MAKE ADJUSTMENTS BY
A FACTOR OF ONE UNTIL THE DRIVE WORKS CORRECTLY.**

P-TC-220
200 Gal Tumble Chiller
with Reuse Tank
Serial #: 8980

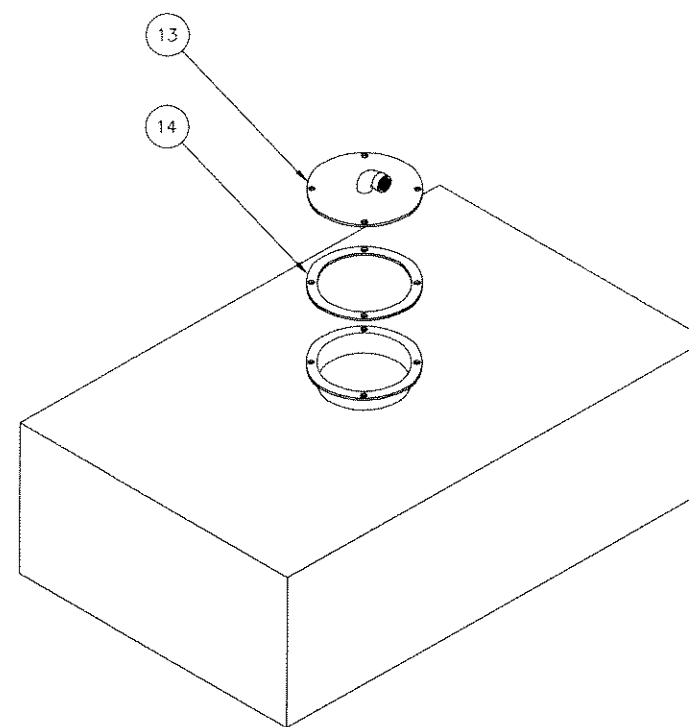
Replacement Part Drawings



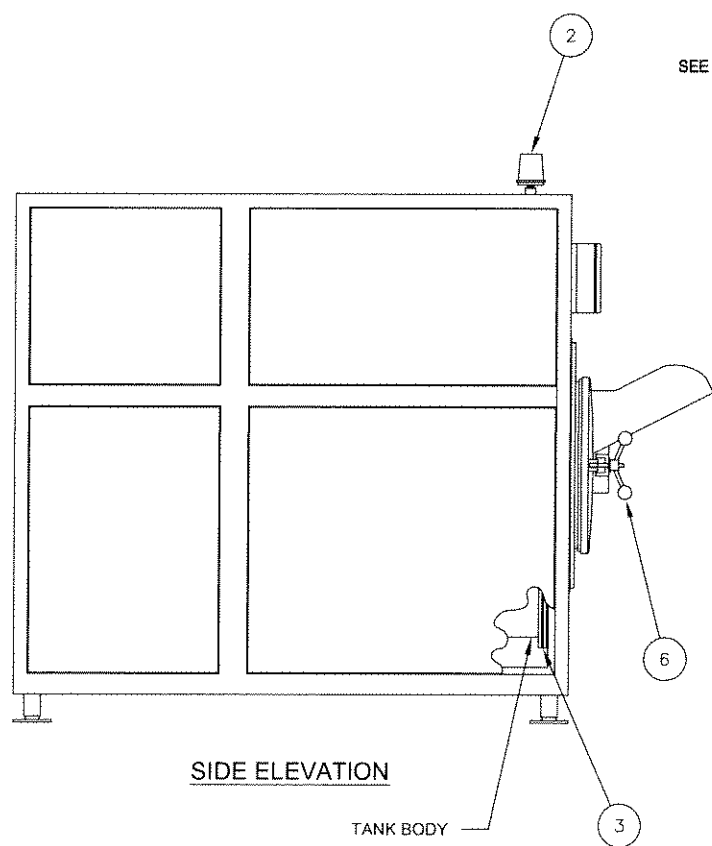
SECTION A-A



DETAIL C

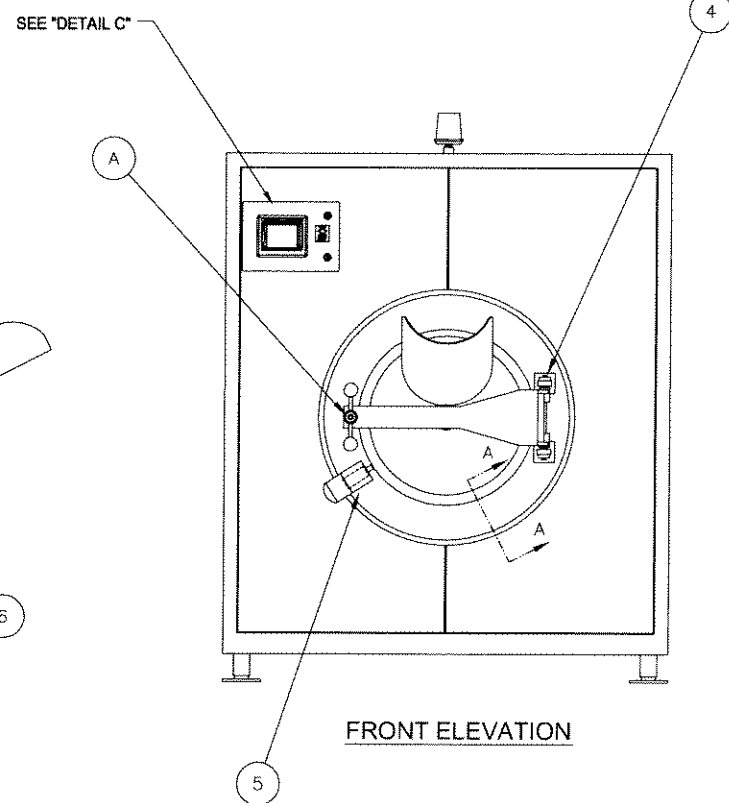


REUSE TANK

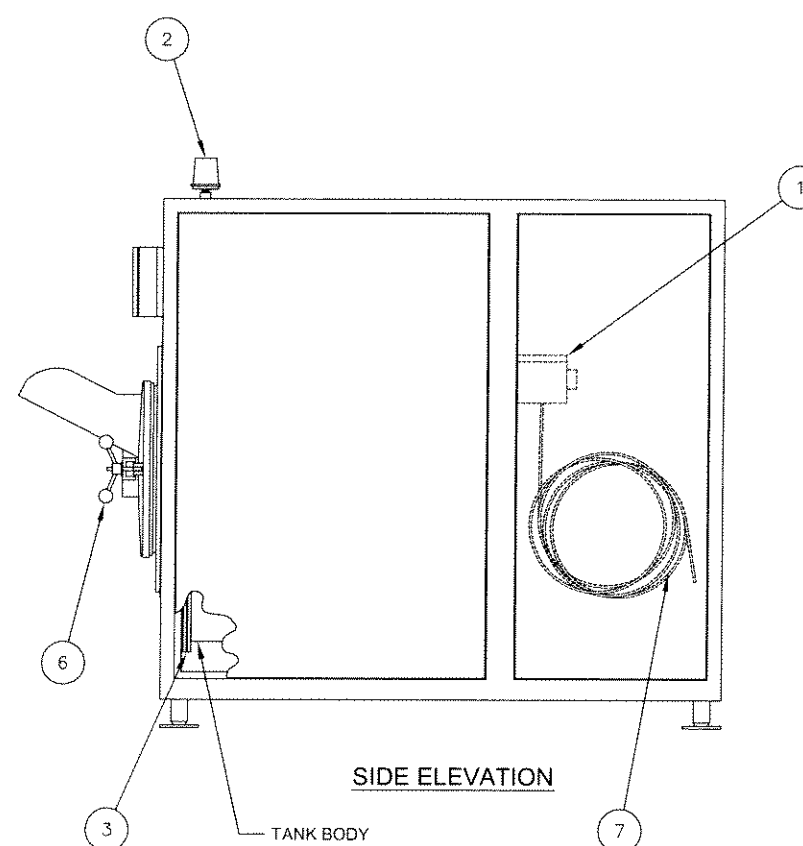


SIDE ELEVATION

TANK BODY



FRONT ELEVATION



SIDE ELEVATION

TANK BODY

PROJECT

MARSOL

Cleveland
Cook/Chill Systems

Cleveland Range LLC, Plant 3
1250 Reames Road, Baltimore, Maryland U.S.A. 21220, PH(410) 391-3600, FAX(410) 391-9042

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JOB NO.

SHEET

1 of 2

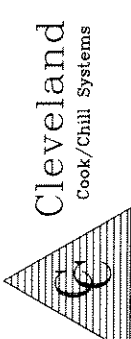

TITLE
EXTERNAL, P-TC-220
REPLACEMENT PARTS

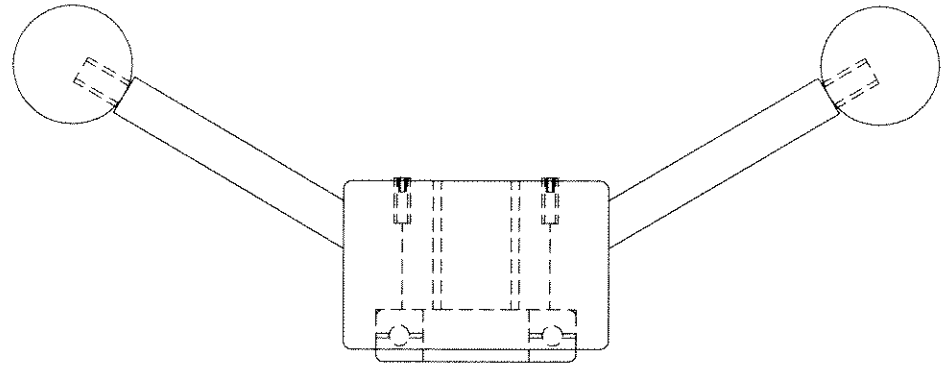
LET.	DATE	REVISIONS	JOB NO.
			DWG. NO. B600031-8980
			DRAWN BY JES
			DATE 12-31-08
			SHEET 1 of 2
			SCALE NONE
			CHECKED BY
			REV

REPLACEMENT PARTS LIST		
ITEM	PART NO.	DESCRIPTION
1	MOMOTORS00015	CHLORINATOR PUMP
2	ELV01-1500008	FLASHING WARNING LIGHT, AMBER
-	ELV00-0000020	REPLACEMENT BULB
3	SEF00-5000001	TANK GASKET
4	BGZ00-7500003	BUSHING, DOOR HINGE
5	ARS00-0000001	PNEUMATIC SAFETY CYLINDER
6	MSP02-0000001	RED BALL
7	MSP00-2500001	CHLORINE SUCTION TUBE
8	SENGASKT00011	PANEL GASKET
9	SED01-0000001	DOOR GASKET
10	EL8CO-000101A	TOUCH SCREEN INTERFACE
11	2EP00-8800025	RED LIGHTED TURN SWITCH
-	ELV00-6000001	REPLACEMENT BULB
12	NPYELLOW00110	NAMEPLATE
13	1FS00-0000099	COVER, PORT, REUSE TANK
14	SENGASKT00017	GASKET, COVER

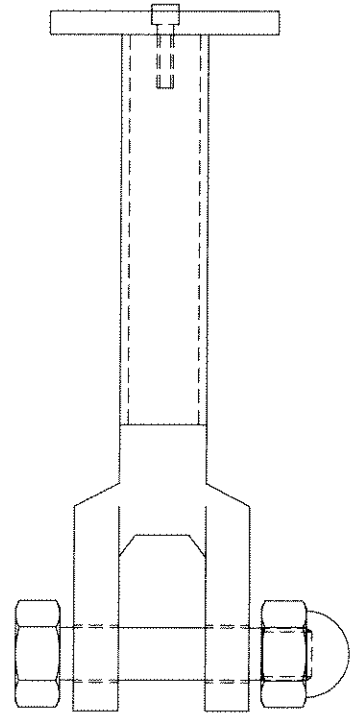
DRAWINGS FOR REPLACEMENT PARTS		
ITEM	DRAWING NO.	DESCRIPTION
A	B600027-8980	WING NUT & SWING BOLT

- IN ORDER TO MAINTAIN A HIGH QUALITY OF SERVICE:
1. WHEN ORDERING A PART HAVE THIS INFORMATION READY AS WELL AS THE PART NUMBER:
SITE NAME/LOCATION, UNIT SERIAL NUMBER AND UNIT VOLTAGE.
 2. CLEVELAND RANGE RESERVES THE RIGHT TO CHANGE ANY PART NUMBER WITHOUT NOTICE.
 3. **OBsolete ITEMS ARE AVAILABLE AS REPLACEMENT PARTS BUT ARE NO LONGER USED IN CURRENT PRODUCTION MODELS.**

PROJECT		MARSOL	
JOB NO.		SHEET	
TITLE		EXTERNAL, P-TC-220 REPLACEMENT PARTS	
LET.	DATE	REV	CHECKED BY
		JOB NO. B600031-8980 DRAWN BY JES DATE 12-31-08 SHEET 2 of 2 SCALE NONE	
		1250 Reames Road, Baltimore, Maryland U.S.A. 21220, PH(410) 391-3600, FAX(410) 391-9042 Cleveland Range LLC, Plant 3 THIS DRAWING DESCRIBES A CONFIDENTIAL & PROPRIETARY ITEM AND/OR PROJECT AND IS THE PROPERTY OF CLEVELAND RANGE. THIS DRAWING IS NOT TO BE COPIED OR USED WITHOUT THE PREVIOUS WRITTEN APPROVAL OF CLEVELAND RANGE.	
2 of 2			

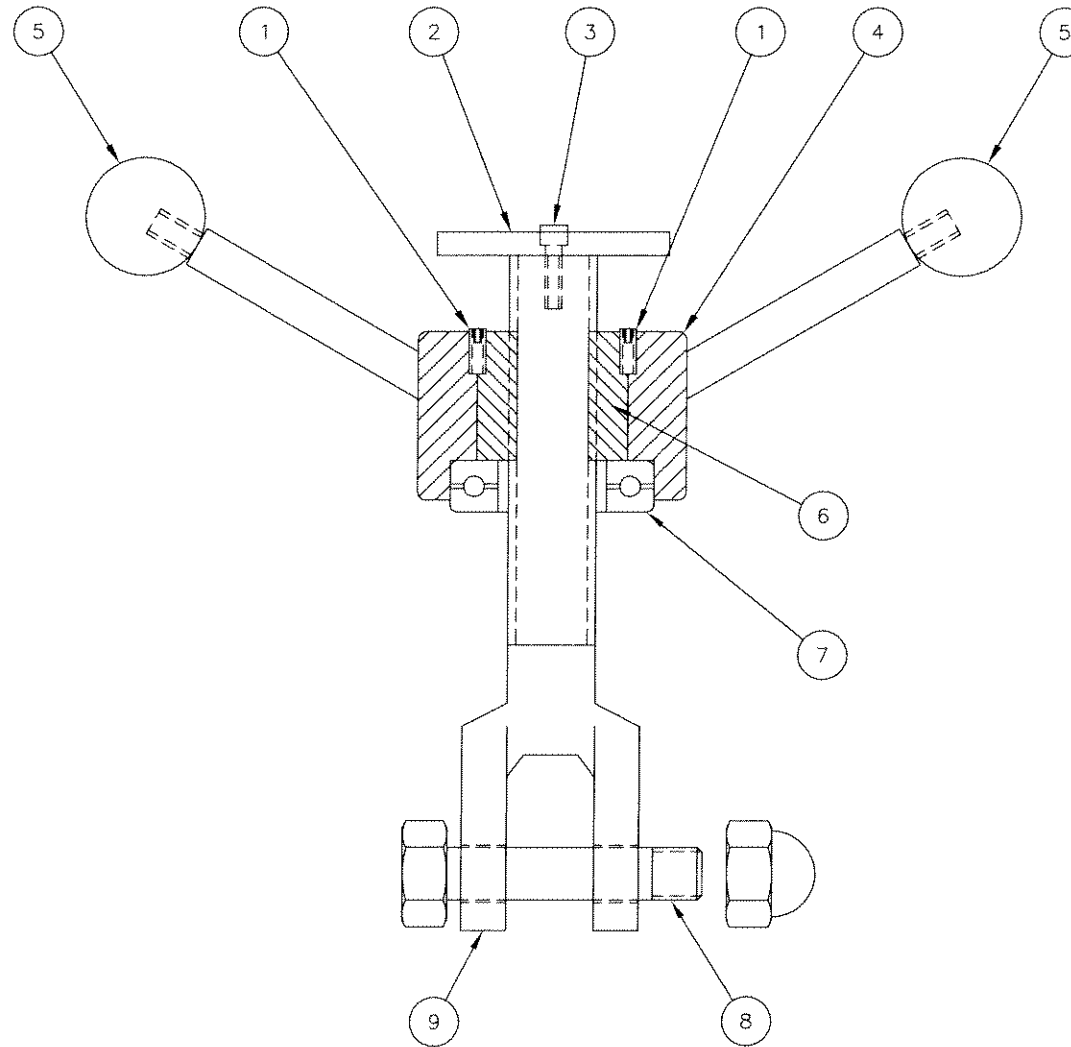


10 WING NUT ASSEMBLY
(ITEMS #1,4,5,6,7)



11 SWING BOLT ASSEMBLY
(ITEMS #2,3,8,9)

REPLACEMENT PARTS LIST		
ITEM	PART NO.	DESCRIPTION
1	HWS00-2500012	SET SCREW
2	1FS02-0000015	RETAINER CAP
3	HWS00-3100004	RETAINER SCREW
4	1FS03-0000009	WING NUT BODY ONLY
5	MSP02-0000001	RED BALL
6	1FZ02-0000002	THREADED INSERT
7	BGS00-0000003	THRUST BEARING
8	1HS00-6200004	PIVOT PIN W/NUT
9	1FS01-0000006	SWING BOLT ONLY
10	1FS03-0000008	WING NUT ASSEMBLY
11	1FS01-0000004	SWING BOLT ASSEMBLY



IN ORDER TO MAINTAIN A HIGH QUALITY OF SERVICE:
 1. WHEN ORDERING A PART HAVE THIS INFORMATION READY AS WELL AS THE PART NUMBER:
 SITE NAME/LOCATION, UNIT SERIAL NUMBER AND UNIT VOLTAGE.
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 3. **OBsolete ITEMS ARE AVAILABLE AS REPLACEMENT PARTS BUT ARE NO LONGER USED
 IN CURRENT PRODUCTION MODELS.**

MARSOL

TITLE

SWING BOLT, DOOR, TANK, P-TC-220
REPLACEMENT PARTS

LET.

DATE

REVISIONS

JOB NO.

CHECKED BY

SCALE

SHEET

DATE

DRAWN BY

DWG. NO.

1 of 1

6-3-08

JES

B600027-8980



Cleveland

Cleveland Range LLC, Plant 3
 1250 Reames Road, Baltimore, Maryland U.S.A. 21220, PH(410) 391-3600, FAX(410) 391-9042

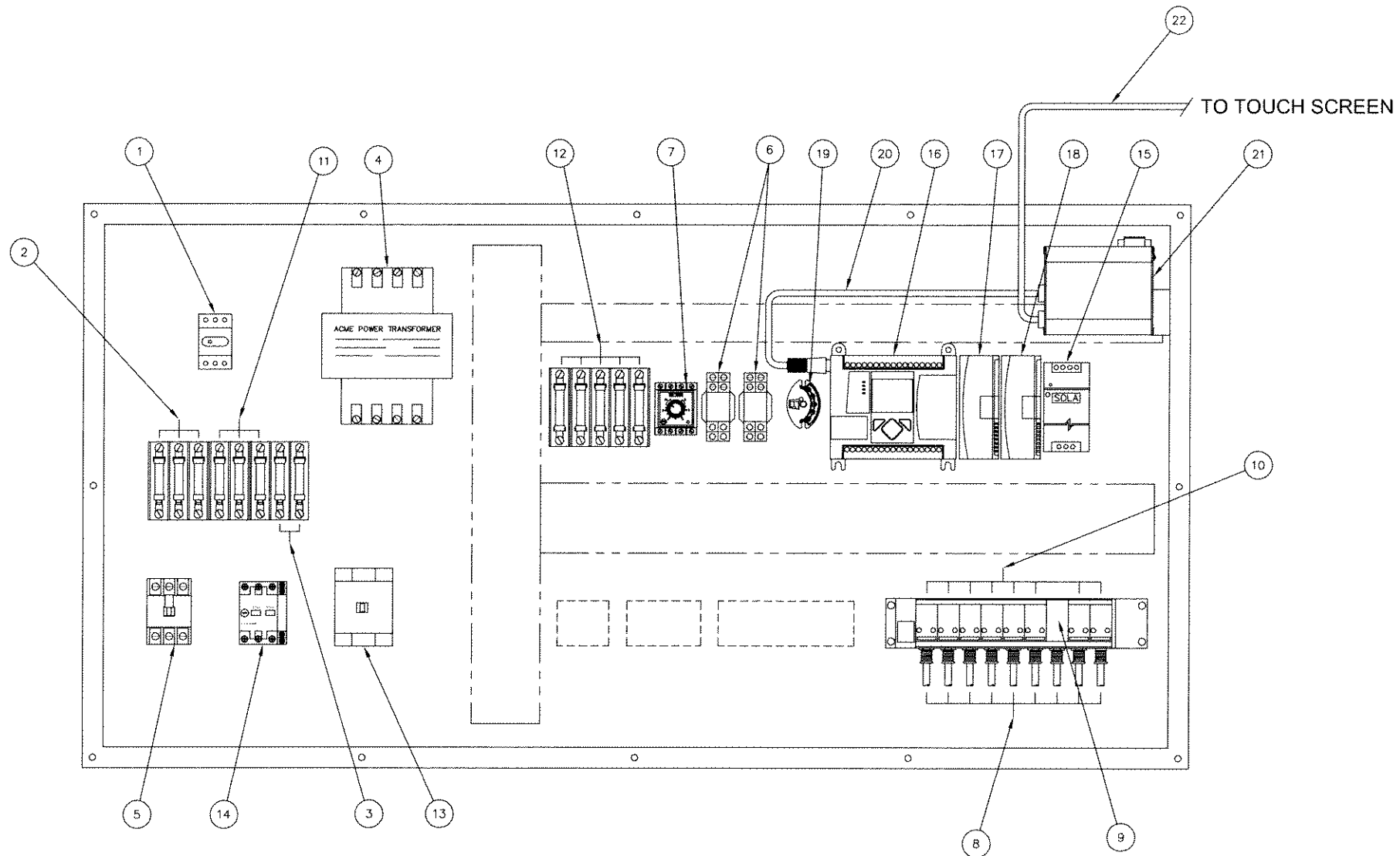
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PROJECT

JOB NO.

SHEET

1 of 1



REPLACEMENT PARTS		
ITEM	PART NO.	DESCRIPTION
1	ELPSW-0000001	HIGH VOLTAGE DISCONNECT
2	ELV06-0000020	FUSE, FNQR-6 AMP
3	ELV06-0000008	FUSE, FNQR-4 AMP
4	ELV05-0000003	TRANSFORMER, 380V TO 115V
5	ELPSW-0000009	MOTOR CONTACTOR PUMP MOTOR
6	ELPSW-0000002	RELAY
-	ELPSW-0000003	RELAY HOLDER
7	EL8CO-0000017	TIMER
-	ELP00-0000006	TIMER BASE
* 8	ARPO0-2500002	BLUE PLASTIC HOSE
9	ELP00-0000016	4 WAY SOLENOID
10	ELP00-0000015	3 WAY AIR SOLENOID
11	ELV06-0000010	FUSE, KTKR-10 AMP
12	ELV02-5000001	FUSE, FNM-5 AMP
13	ELPSW-0000084	MOTOR CONTACTOR, ROTATE MOTOR
14	ELPSW-0000087	MOTOR PROTECTOR, PUMP MOTOR
-	ELPSW-0000088	AUX. CONTACTOR
15	EL8CO-0000115	24 VOLT POWER SUPPLY
16	EL8CO-000102A	PROGRAMMABLE CONTROLLER
17	EL8CO-0000103	EXPANDER, I/O MODULE
18	EL8CO-0000104	EXPANDER, OUTPUT MODULE
19	ELP00-0000063	CONDITIONER, SIGNAL
20	EL8CO-0000116	CABLE, LINKING
21	EL8CO-0000118	ETHERNET HUB
22	EL8CO-0000117	CABLE, LINKING

* SOLD IN FOOT INCREMENTS ONLY

IN ORDER TO MAINTAIN A HIGH QUALITY OF SERVICE:

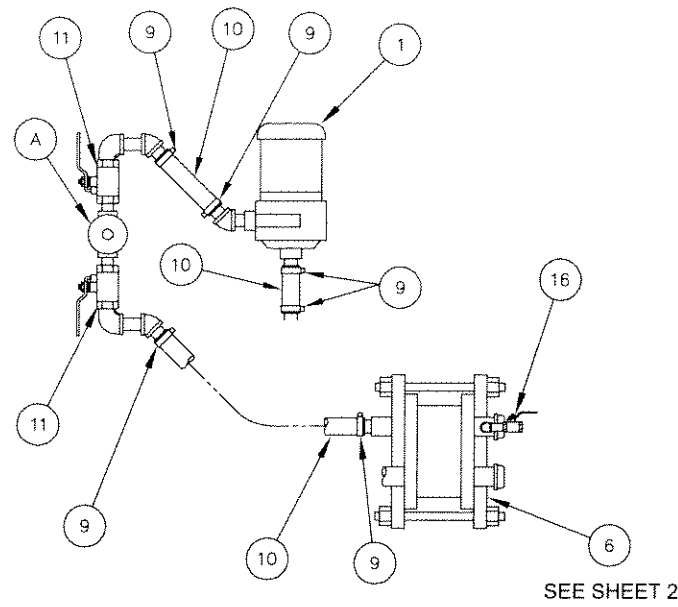
1. WHEN ORDERING A PART HAVE THIS INFORMATION READY AS WELL AS THE PART NUMBER:
SITE NAME/LOCATION, UNIT SERIAL NUMBER AND UNIT VOLTAGE.
2. CLEVELAND RANGE RESERVES THE RIGHT TO CHANGE ANY PART NUMBER WITHOUT NOTICE.
3. **OBsolete items are available as replacement parts but are no longer used in current production models.**

MARSOL		JUNCTION BOX, P-TC-220, INTERNAL REPLACEMENT PARTS	
PROJECT		JOB NO.	
JOB NO.		DWG. NO. B600081-8980	
SHEET		DRAWN BY JES	
1 of 1		DATE 6/27/08	
1 of 1		SHEET	
1 of 1		SCALE	
1 of 1		REV	
1 of 1		CHECKED BY	

Cleveland
Cook/Chill Systems

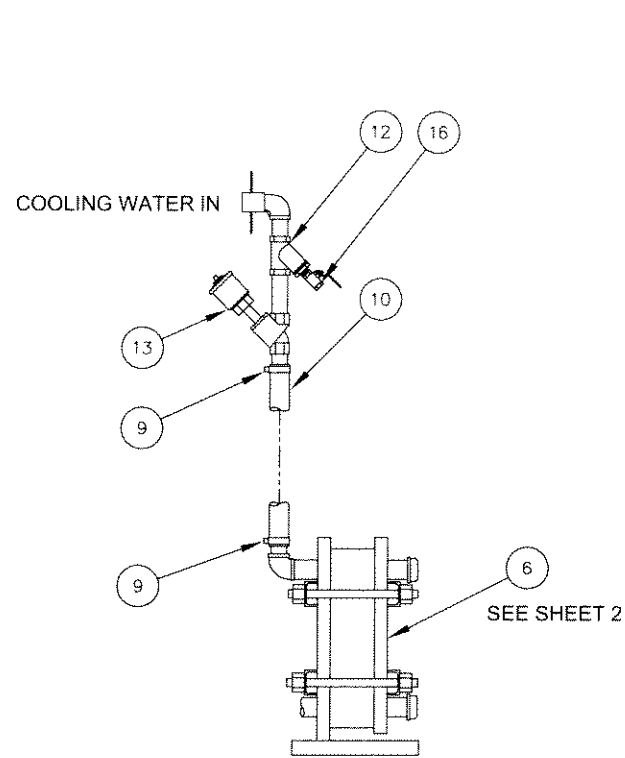
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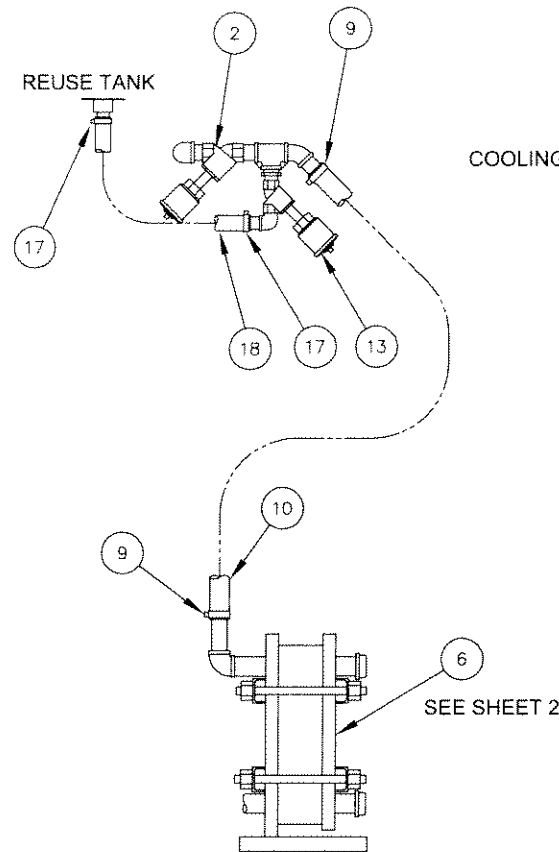
DETAIL A

SEE SHEET 2



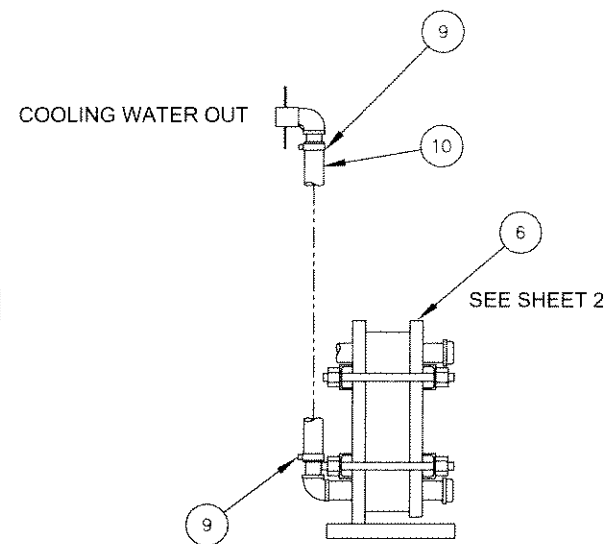
DETAIL B

SEE SHEET 2

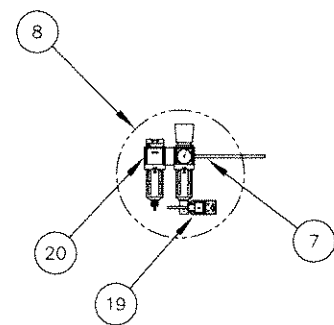
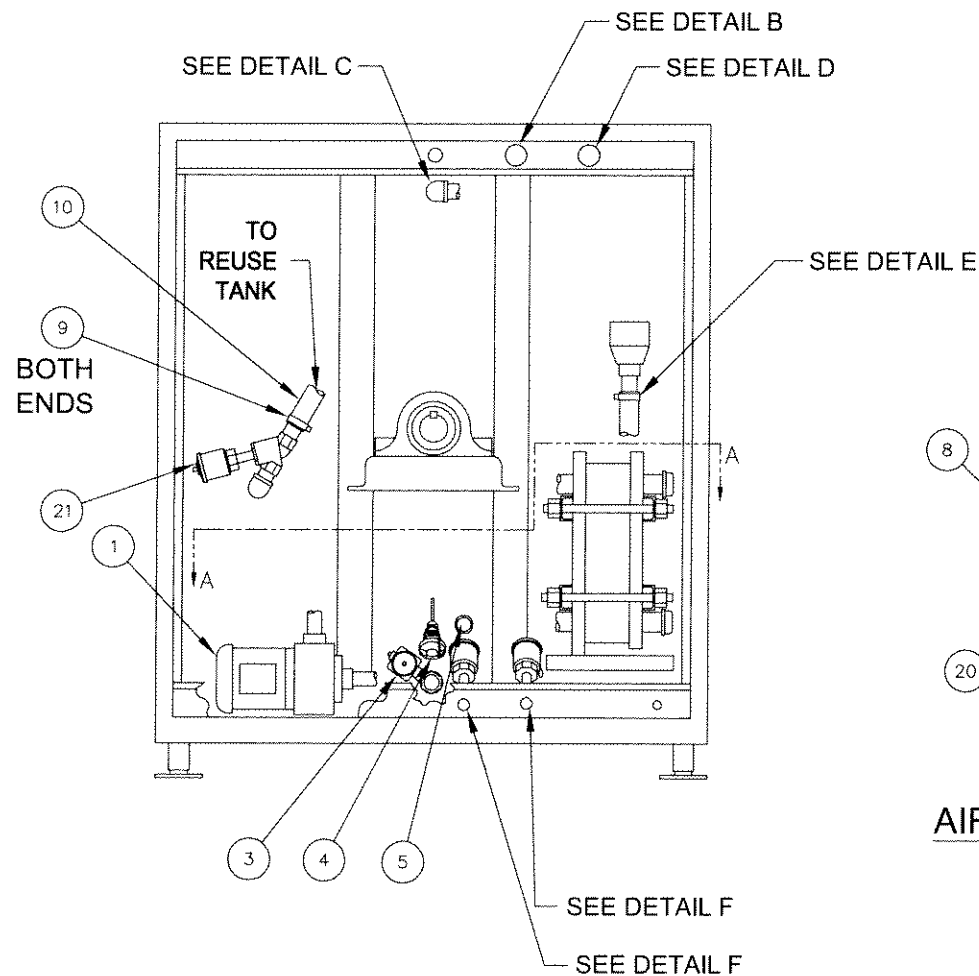


DETAIL C

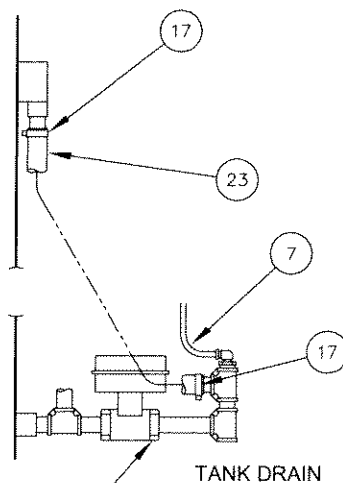
SEE SHEET 2



DETAIL D

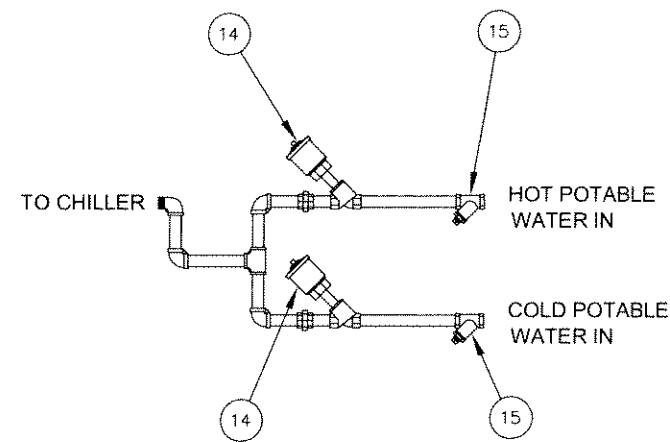


AIR LINE DETAIL



DETAIL E

TANK DRAIN



DETAIL F

PROJECT
MARSOL

Cleveland
Cook/Chill Systems

Cleveland
Cleveland Range LLC, Plant 3
1250 Reames Road, Baltimore, Maryland U.S.A. 21220, PH(410) 391-3600, FAX(410) 391-9042

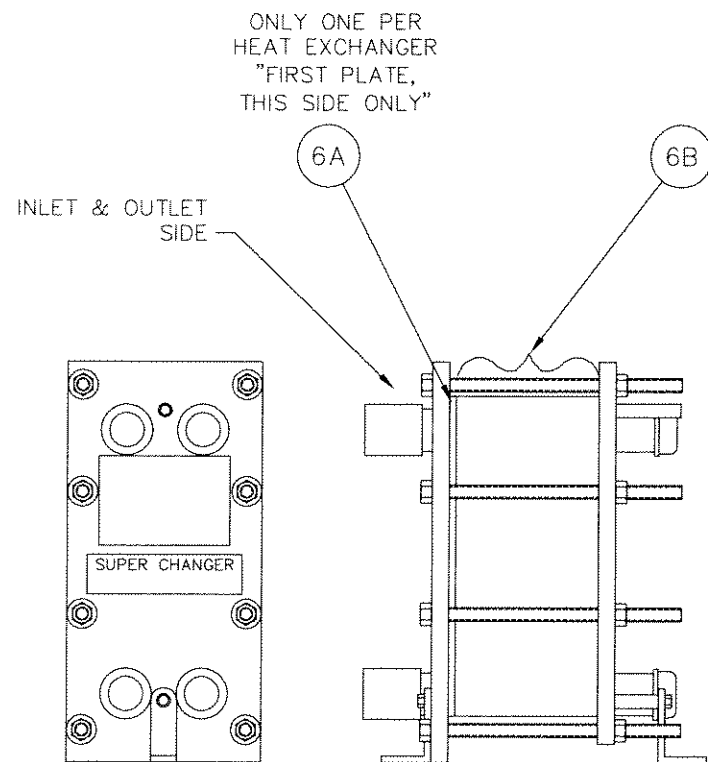
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TITLE
**PLUMBING P-TC-220
REPLACEMENT PARTS**

LET.	DATE	REVISIONS	JOB NO.	DWG. NO.	DRAWN BY	DATE	SHEET	SCALE
				B600029-8980	JES	6-3-08	1 of 2	NONE
CHECKED BY						REV		

JOB NO.

SHEET



HEAT EXCHANGER PLATE LOCATION DETAIL

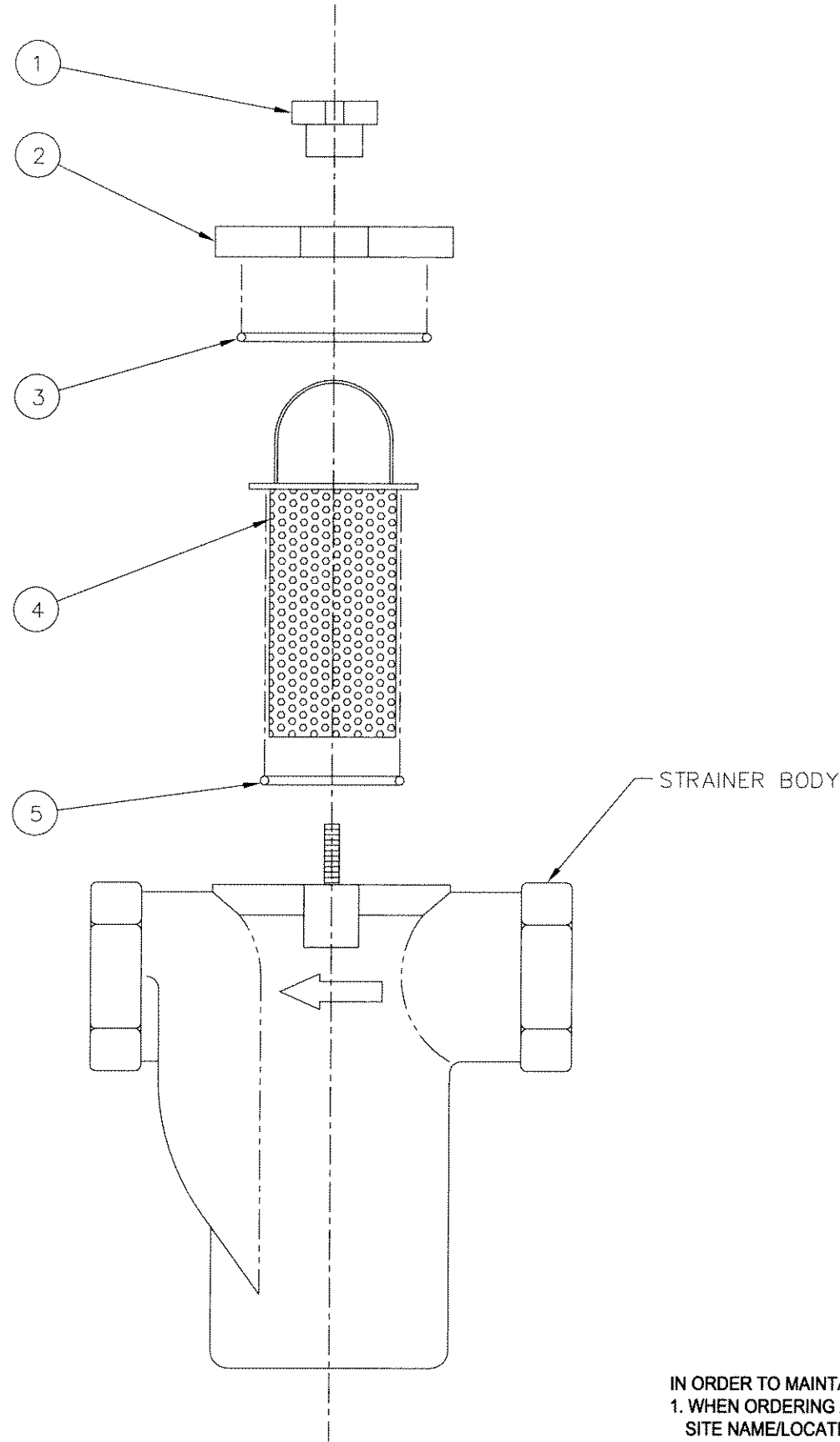
REPLACEMENT PARTS LIST			
ITEM	PART NO.	DESCRIPTION	
1	ELH02-000015	CIRCULATING PUMP	
-	SP999-9900103	REPAIR KIT	
-	SP999-9900104	REPLACEMENT IMPELLER	
2	ARB02-0000001	AIR SOLENOID	
-	SP999-9900052	REPAIR KIT	
3	ARS02-0000001	AIR ACTUATED BALL VALVE	
-	AR8VA-0000003	REPLACEMENT ACTUATOR	
-	VAS02-0000002	REPLACEMENT BALL VALVE	
4	TSENSOR00006	TEMPERATURE SENSOR	
5	ELBSW-0000018	WATER LEVEL SWITCH	
*	6	MSC00-0000011	HEAT EXCHANGER
	6A	MSS00-0000012	REPLACEMENT END PLATE
	-	SED00-0000002	REPLACEMENT GASKET
	6B	MSS00-0000011	REPLACEMENT MIDDLE PLATE
	-	SED00-0000001	REPLACEMENT GASKET
**	7	ARP00-2500003	AIR TUBING
	8	AR800-0000008	AIR FILTER/REGULATOR WITH DRAIN SYSTEM
	-	AR800-0000002	REPLACEMENT GAUGE
**	9	HWS02-7500004	HOSE CLAMP
**	10	PBD02-0000001	FOOD GRADE HOSE
	11	MSB02-0000004	MANUAL BALL VALVE
	12	MSB01-5000001	STRAINER
	-	MSB01-5000003	REPLACEMENT SCREEN
	13	ARB01-5000001	AIR SOLENOID
	-	SP999-9900046	REPAIR KIT FOR
	14	ARB01-0000001	AIR SOLENOID
	-	SP999-9900047	REPAIR KIT
	15	MSB01-0000001	STRAINER
	-	MSB01-0000004	REPLACEMENT SCREEN
	16	MSB00-5000004	MANUAL BALL VALVE
**	17	HWS02-0000005	HOSE CLAMP
**	18	PBD01-5000001	FOOD GRADE HOSE
	19	ELB00-0000025	DRAIN TIMER
	20	AR800-0000030	COALESCING FILTER
	-	AR800-0000031	REPLACEMENT ELEMENT
**	21	PBD01-5000007	OVERFLOW HOSE -NOT SHOWN-

DRAWINGS FOR REPLACEMENT PARTS		
ITEM	DRAWING NO.	DESCRIPTION
A	B600026-8980	IN LINE STRAINER

NOTES:
 * SEE SUPER CHARGER MANUAL FOR MAINTENANCE INFO.
 ** CUSTOMER TO SPECIFY LENGTH IN FOOT INCREMENTS.

IN ORDER TO MAINTAIN A HIGH QUALITY OF SERVICE:
 1. WHEN ORDERING A PART HAVE THIS INFORMATION READY AS WELL AS THE PART NUMBER:
 SITE NAME/LOCATION, UNIT SERIAL NUMBER AND UNIT VOLTAGE.
 2. CLEVELAND RANGE RESERVES THE RIGHT TO CHANGE ANY PART NUMBER WITHOUT NOTICE.
 3. **OBSELETE ITEMS ARE AVAILABLE AS REPLACEMENT PARTS BUT ARE NO LONGER USED
 IN CURRENT PRODUCTION MODELS.**

PROJECT	MARSOL	
	TITLE	
JOB NO.	PLUMBING P-TC-220	
	REPLACEMENT PARTS	
DWG. NO.	B600026-8980	REVISIONS
DRAWN BY	JES	DATE
DATE	6-3-08	SHEET
		2 of 2
		SCALE
		NONE
CHECKED BY		REV
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JOB NO.	SHEET	
	2 of 2	



REPLACEMENT PARTS LIST		
ITEM	PART NO.	DESCRIPTION
1	HWC00-5000001	KNOB
2	MSB02-0000008	COVER
3	SE3ORING00041	LID O-RING
4	MSB02-0000006	BASKET
5	SE3ORING00011	BASKET O-RING
6	MSB02-0000005	COMPLETE BASKET ASSEMBLY

⑥ COMPLETE ASSEMBLY (1 OF EACH ITEM 1 THRU 5 PLUS STRAINER BODY)

IN ORDER TO MAINTAIN A HIGH QUALITY OF SERVICE:

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PROJECT
MARSOL

Cleveland
Cook/Chill Systems

Cleveland
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TITLE
STRAINER, 2" NPT, IN-LINE, P-TC-220
REPLACEMENT PARTS

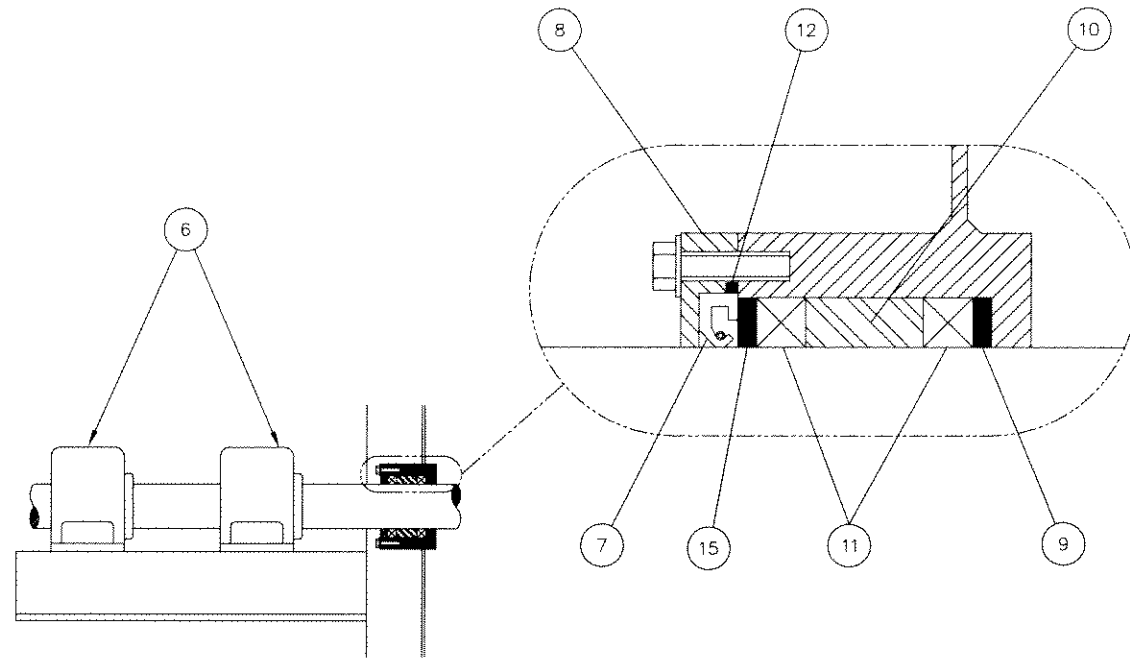
REV.	DATE	CHECKED BY	SCALE
1	6-3-08	JES	1 of 1
			NONE

JOB NO.
DWG. NO. B600026-8980
DRAWN BY
DATE
SHEET
SCALE

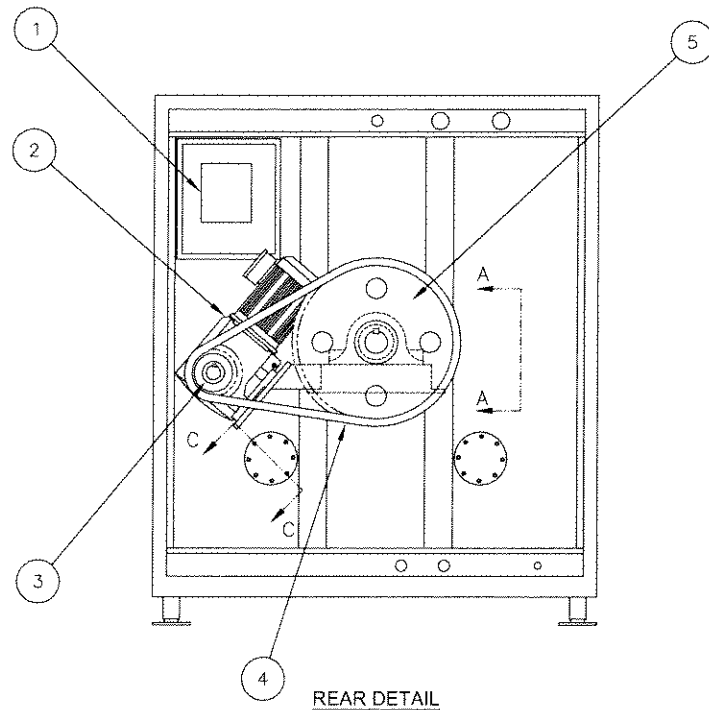
JOB NO.

SHEET

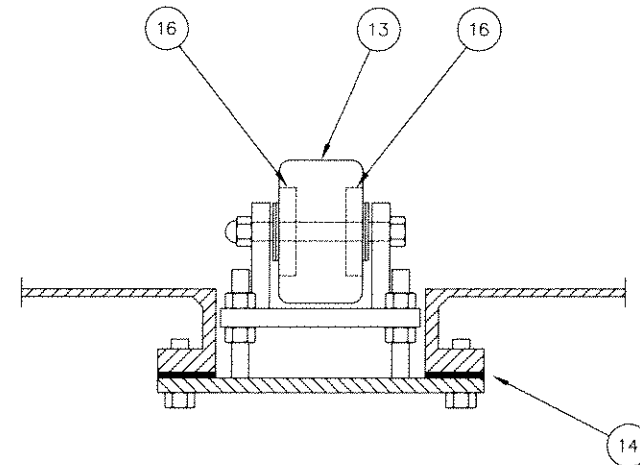
1 of 1



VIEW A-A



REAR DETAIL



SECTION C-C

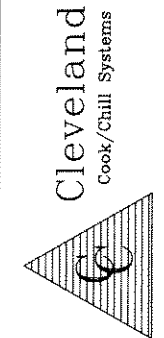
REPLACEMENT PARTS LIST		
ITEM	PART NO.	DESCRIPTION
1	ELH02-0000009	2 HP INVERTER 400/460V
2	DUH02-0000030	2 HP DRIVE UNIT, 220/380V
-	DU902-0000039	REPLACEMENT GEARBOX
-	DU902-0000040	REPLACEMENT 2 HP MOTOR, 380V
3	MSC00-0000004	MOTOR SPROCKET
-	MSC00-0000005	REPLACEMENT INSERT
4	MSC00-0000008	DRIVE CHAIN
-	MSC00-0000009	REPLACEMENT MASTER
5	MSC00-0000007	TANK ROTATE SPROCKET
-	MSC00-0000006	REPLACEMENT HUB
6	BGC03-4400001	PILLOW BLOCK
7	SEDSEALS00009	OIL SEAL
8	1FS06-5000001	COVER PLATE
9	1FW04-4400001	INSIDE PACKING RING
10	MSFLUIDS00002	SEALING MATERIAL -SEE NOTE 1-
11	SEF00-5000002	BRAIDED PACKING
12	SE3ORING00065	O-RING
13	HWP00-0000001	WHEEL, BASKET SUPPORT
14	SENGASKT00015	GASKET, ACCESS DOOR
15	1FW04-4400002	OUTSIDE PACKING RING
16	BGS00-0000005	REPLACEMENT BEARING

NOTE 1:

HAND PUMP REQUIRED TO REFILL/ADD SEALING MATERIAL IN PACKING GLAND CAN BE RENTED WHEN SEALING MATERIAL IS PURCHASED.
 THE HAND PUMP MUST BE RETURNED IN WORKING CONDITION IMMEDIATELY AFTER APPLICATION IS COMPLETED OR THE FULL PRICE OF THE PUMP WILL BE CHARGED TO THE CUSTOMER.

IN ORDER TO MAINTAIN A HIGH QUALITY OF SERVICE:
 1. WHEN ORDERING A PART HAVE THIS INFORMATION READY AS WELL AS THE PART NUMBER: SITE NAME/LOCATION, UNIT SERIAL NUMBER AND UNIT VOLTAGE.
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 3. OBSOLETE ITEMS ARE AVAILABLE AS REPLACEMENT PARTS BUT ARE NO LONGER USED IN CURRENT PRODUCTION MODELS.

MARSOL



Cleveland Range LLC, Plant 3
 1250 Reemes Road, Baltimore, Maryland U.S.A. 21220, PH(410) 391-3600, FAX(410) 391-9042
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MECHANICAL, P-TC-220
 REPLACEMENT PARTS

LET. A	DATE 10/6/2008	JOB NO.	DWG. NO. B600030-8980
			REVISED BY JES
			DATE 6-3-08
			SHEET 1 of 1
			SCALE NONE
			CHECKED BY
			REV A

PROJECT

JOB NO.

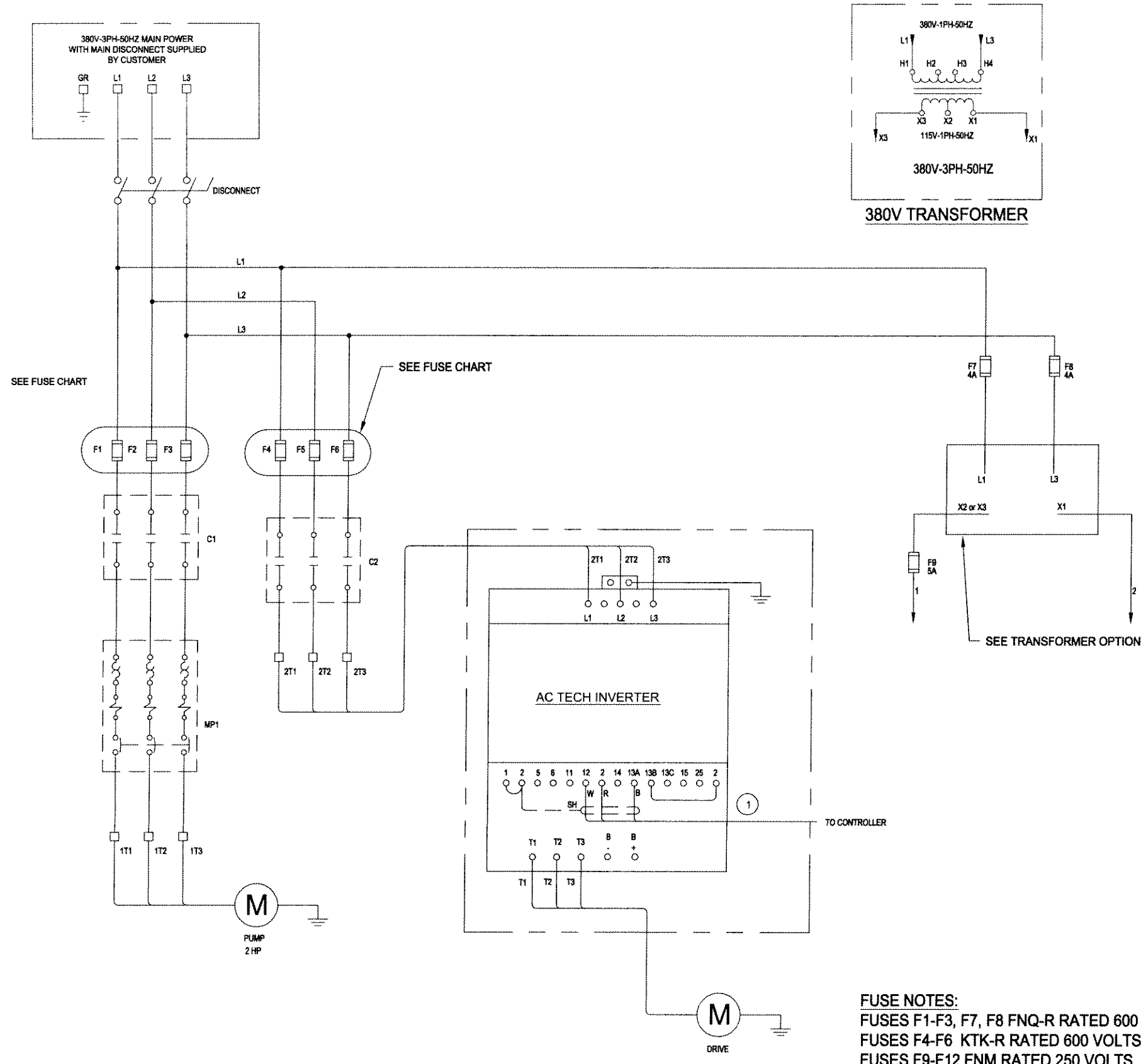
SHEET



P-TC-220
200 Gal Tumble Chiller
with Reuse Tank
Serial #: 8980

Electrical Schematics

LET.	REVISIONS	DATE	BY
A	CORRECTED PARTLOW WIRING	1/13/2009	CWH



FUSE CHART

200 GAL TC	
FUSE#	VOLTAGE
	380
F1	6A
F2	6A
F3	6A
F4	10A
F5	10A
F6	10A

FUSE NOTES:
 FUSES F1-F3, F7, F8 FNQ-R RATED 600 VOLTS
 FUSES F4-F6 KTK-R RATED 600 VOLTS
 FUSES F9-F12 FNM RATED 250 VOLTS

CHILL TANK SIZE FOR THIS JOB IS
 : 220 GAL.
 VOLTAGE FOR THIS JOB IS
 : 380V- 3 PH- 50 HZ.

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CLEVELAND RANGE, LLC, PLANT 3
 1250 Reames Road, Baltimore, MD, 21220

TITLE
ELECTRICAL SCHEMATIC
P-TC-220

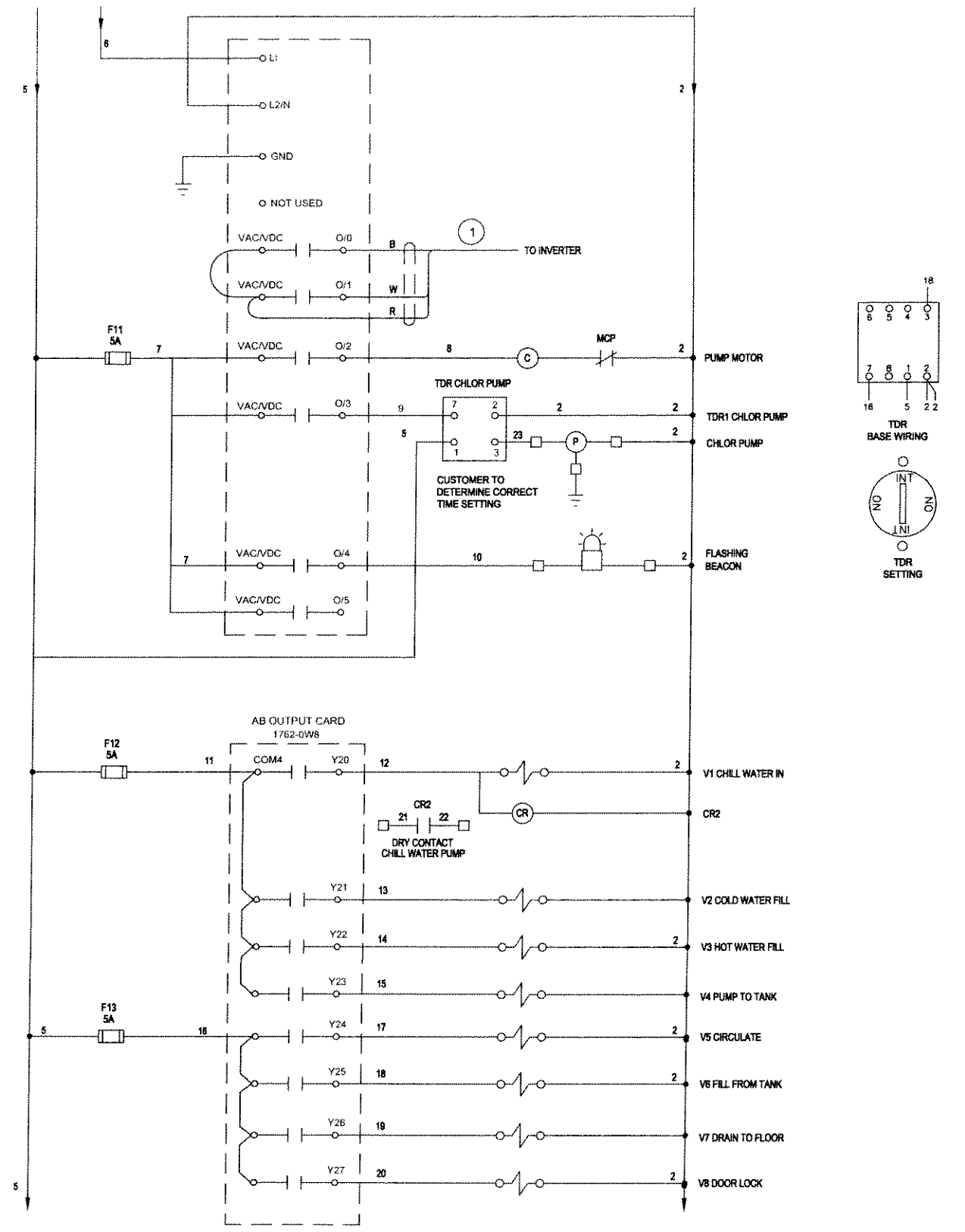
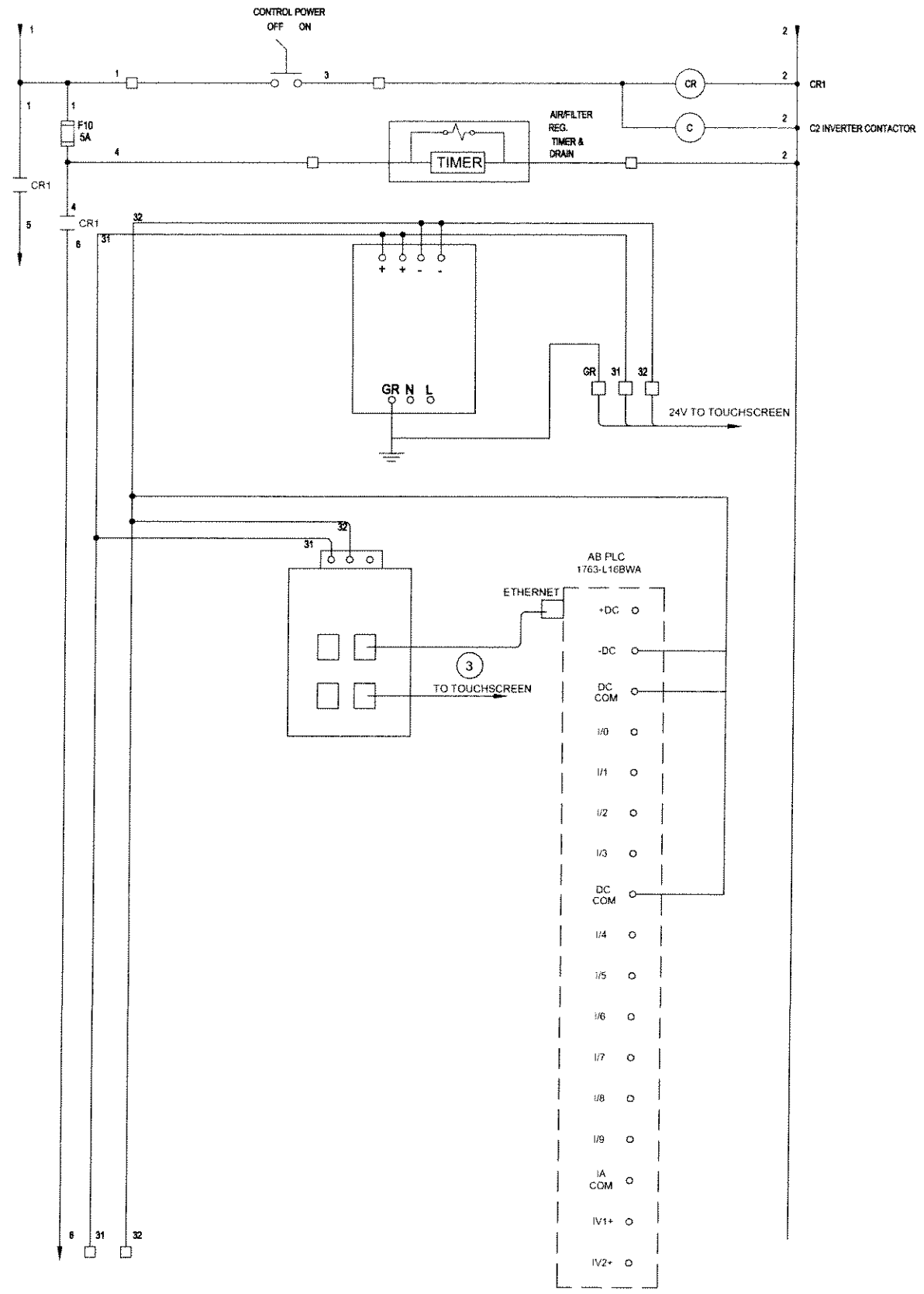
VOLTAGE: 380V/3PH/50Hz
 WATTAGE:
 CURRENT:

DRAWN BY
CWH
 DATE
1/05/2009

DRAWING NO.
B300020-8980
 SIZE
B
SHEET 1 OF 4

REV

SEE SHEET 1 FOR REVISIONS



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CLEVELAND RANGE, LLC, PLANT 3
1250 Reames Road, Baltimore, MD, 21220

TITLE

ELECTRICAL SCHEMATIC
P-TC-220

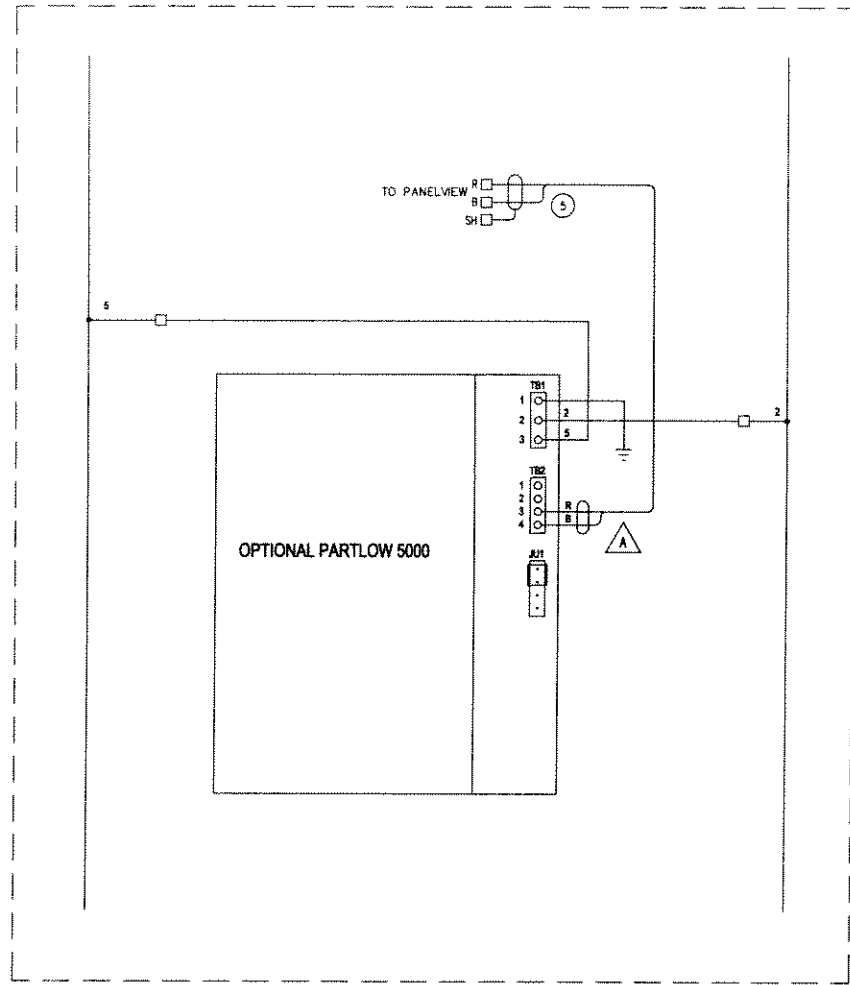
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WATTAGE:
CURRENT:

DRAWN BY CWH
DATE 1/05/2009

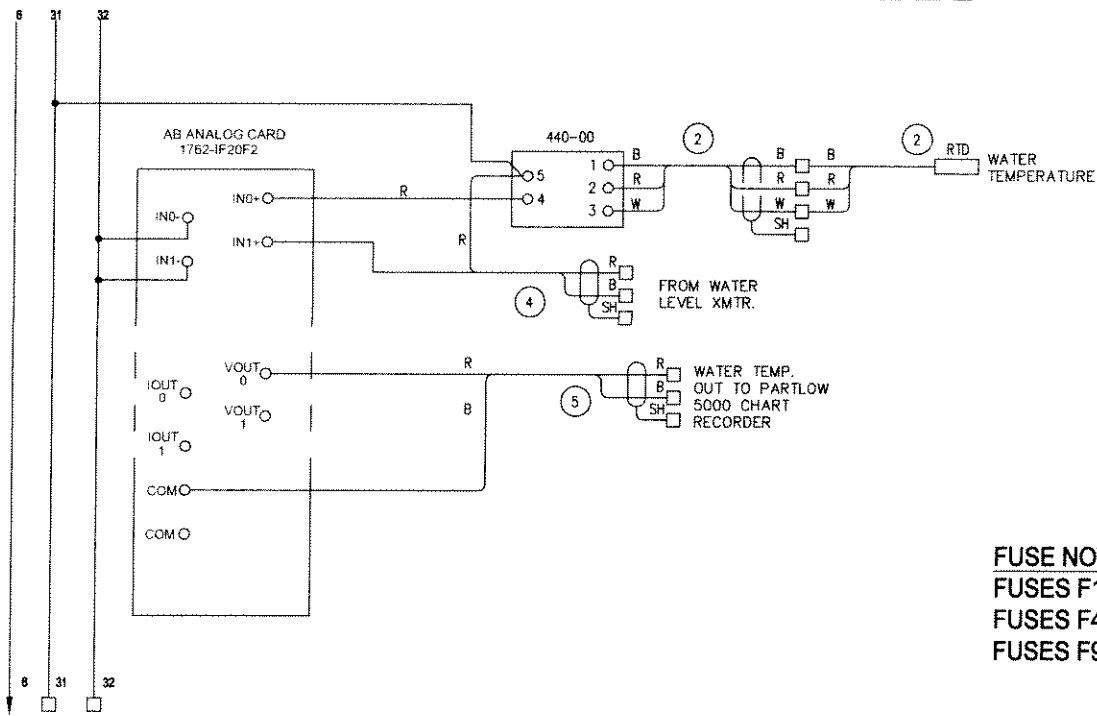
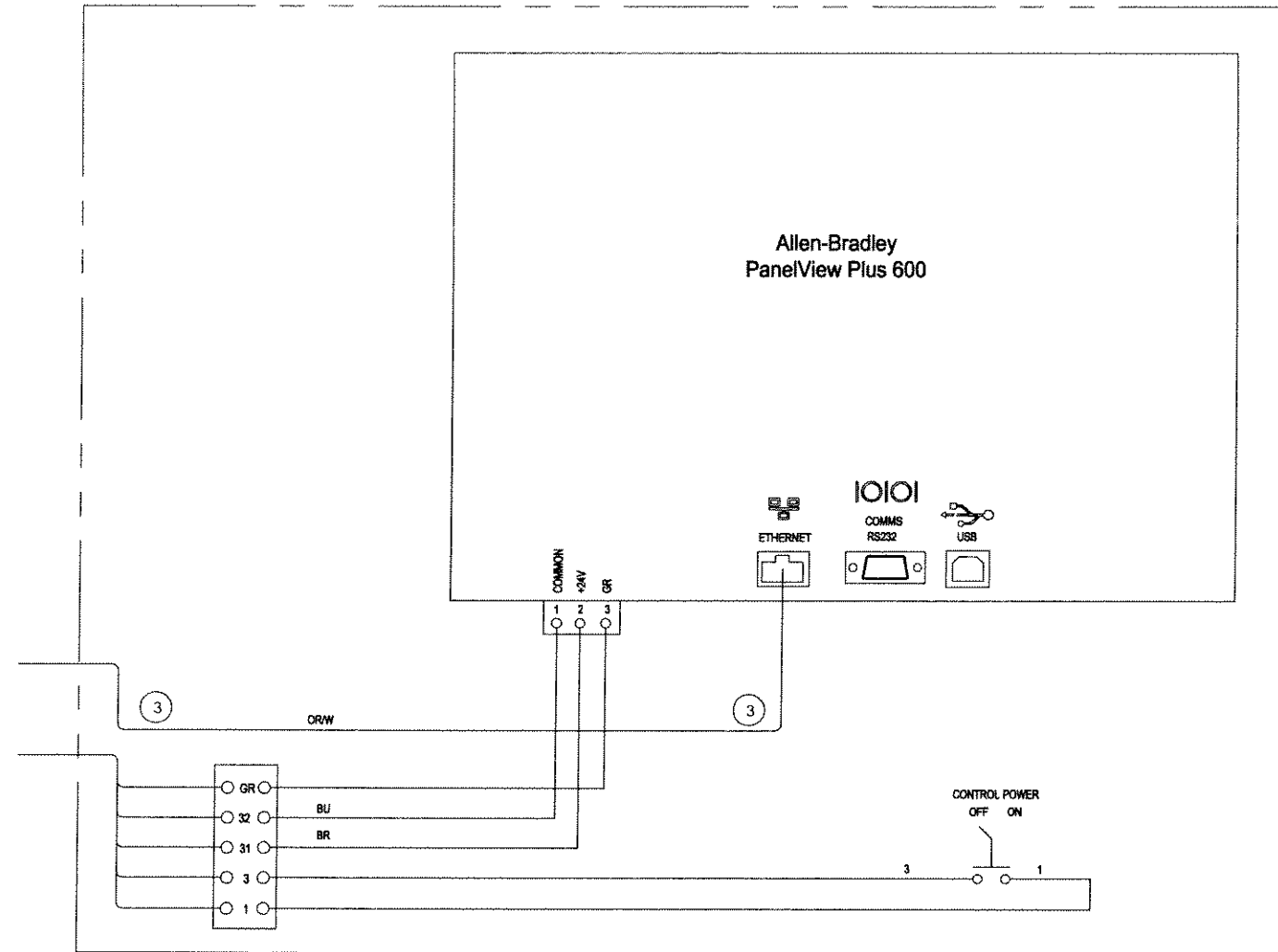
DRAWING NO. B300020-8980
SIZE B
SHEET 2 OF 4

REV

OPTIONAL PARTLOW 5000 CHART RECORDER WIRING DETAIL



OPERATOR CONTROL PANEL



FUSE NOTES:
 FUSES F1-F3, F7, F8 FNQ-R RATED 600 VOLTS
 FUSES F4-F6 KTK-R RATED 600 VOLTS
 FUSES F9-F12 FNM RATED 250 VOLTS

