

 ***Xenotech, Inc.***

BRITELIGHT

**BL7000 SYSTEM
OPERATING MANUAL**

REV 2.0
208 / 230V

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POWER INPUT CONNECTOR WIRING INSTRUCTIONS

THE INPUT POWER REQUIREMENTS FOR A 7 KW POWER SUPPLY ARE AS FOLLOWS.

VOLTAGE NOMINAL	208 / 230 VAC
FREQUENCY RANGE	50 / 60 HZ
INPUT CURRENT	30 AMPS
PHASE	3PH 4 WIRE
MINIMUM INPUT WIRE SIZE	12 AWG

CONNECTIONS

THREE PHASE OPERATION

LINE DESIGNATION	WIRE COLOR	PIN COLOR	CONNECTOR PIN
PHASE A	BLACK	BLACK	X
PHASE B	RED	RED	Y
PHASE C	ORANGE	BLUE	Z
SAFETY GROUND	GREEN	GREEN	GREEN

BRITELIGHT 7000 SPECIFICATIONS



BALLAST

MAIN POWER INPUT

INPUT VOLTAGE: 208 / 230 VAC.
INPUT CURRENT: 30 AMPS
PHASE: THREE 4 WIRE
FREQUENCY: 50 / 60 HZ.

OUTPUT

OUTPUT VOLTAGE: 40 - 50 VDC.
OUTPUT CURRENT: 130 -180 ADC.
OUTPUT RIPPLE: LESS THAN 5% P-P
OUTPUT ADJ. RANGE:16 STEPS

LAMP HEAD

LAMP INPUT

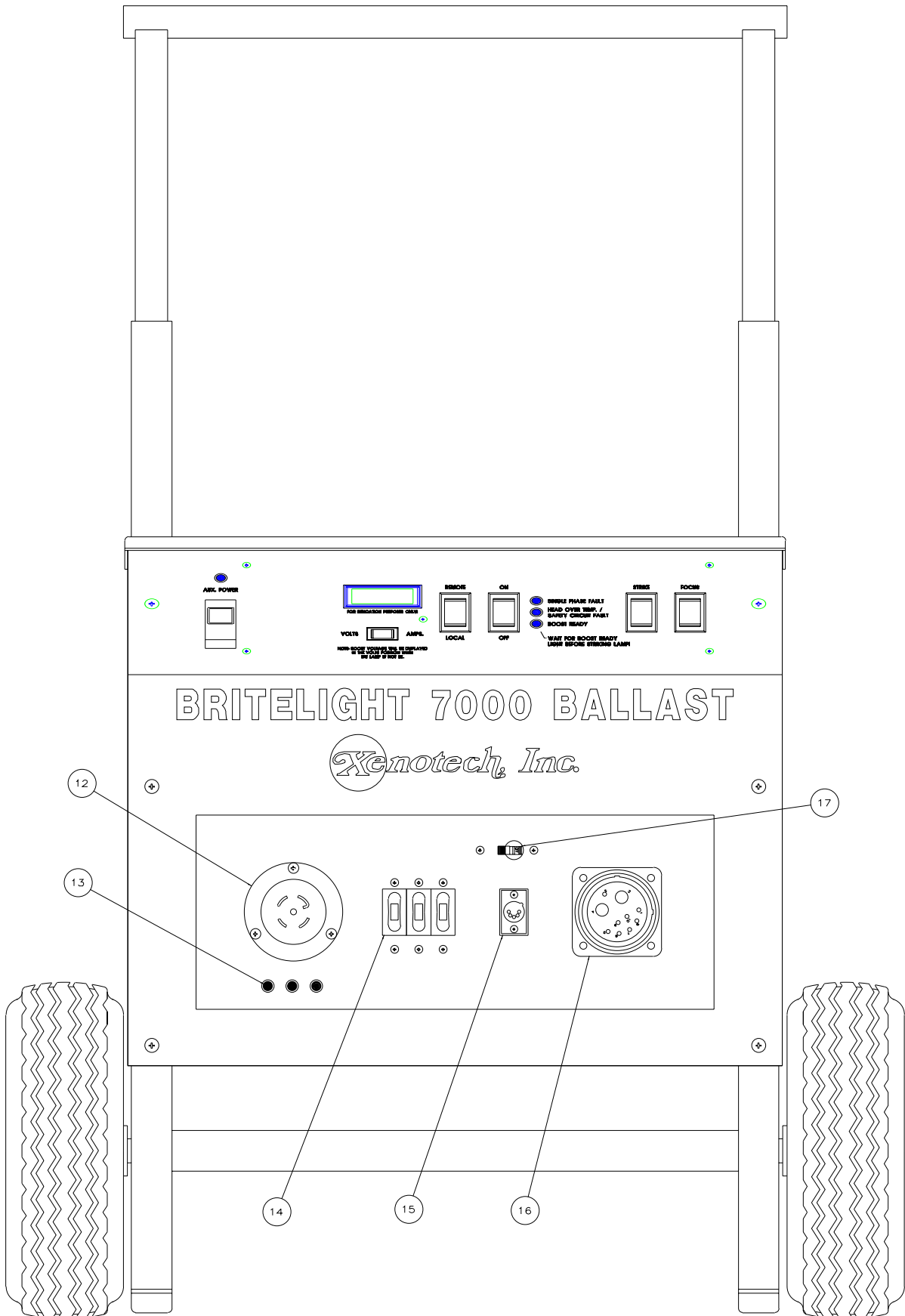
LAMP VOLTAGE: 43 - 49 VDC.
LAMP CURRENT: 120 - 160 ADC.
LIGHT OUTPUT: 795 MILLION PBCP.

COOLING FOCUS & IGNITION CIRCUIT INPUTS

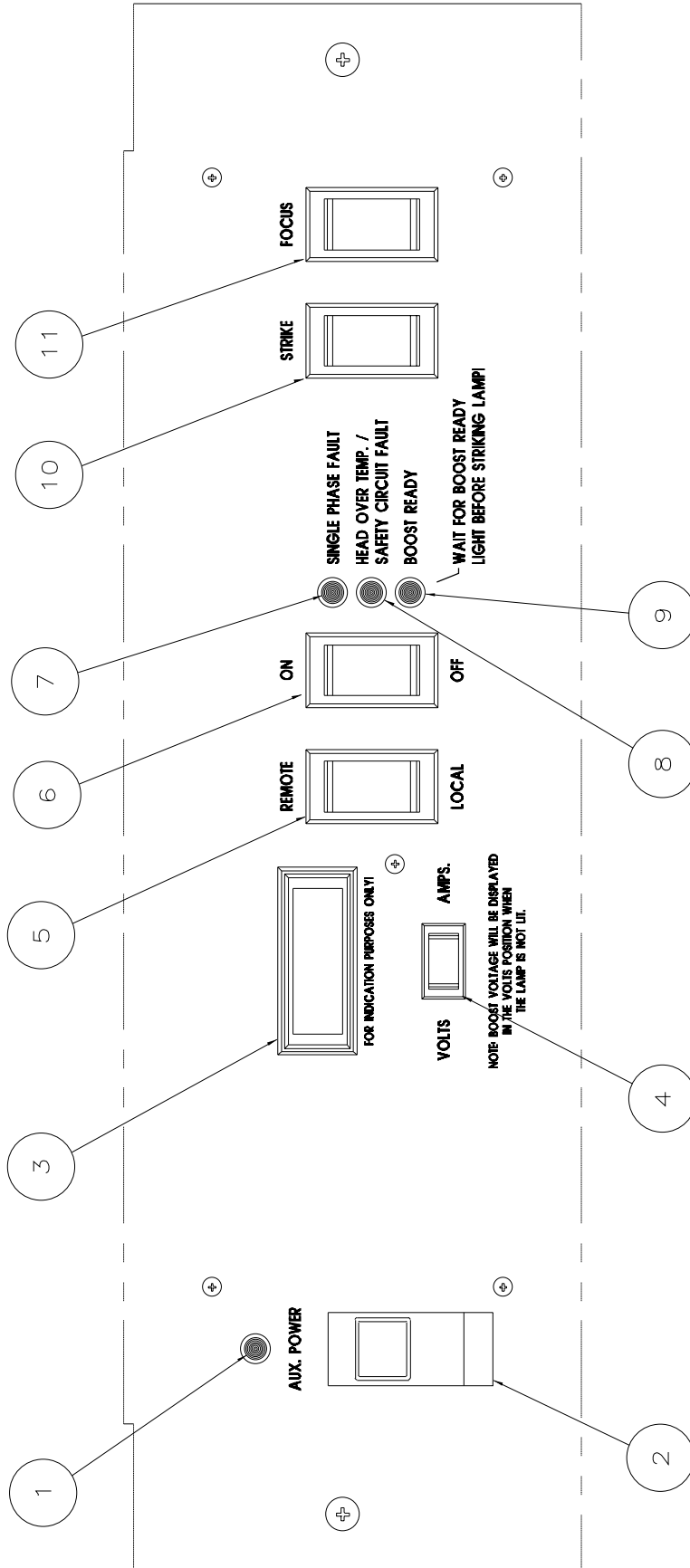
INPUT VOLTAGE: 120 VAC.
INPUT CURRENT: 5 AMPS PEAK
PHASE: SINGLE
FREQUENCY: 50 / 60 HZ.

SYSTEM OPERATION TEMPERATURE RANGE

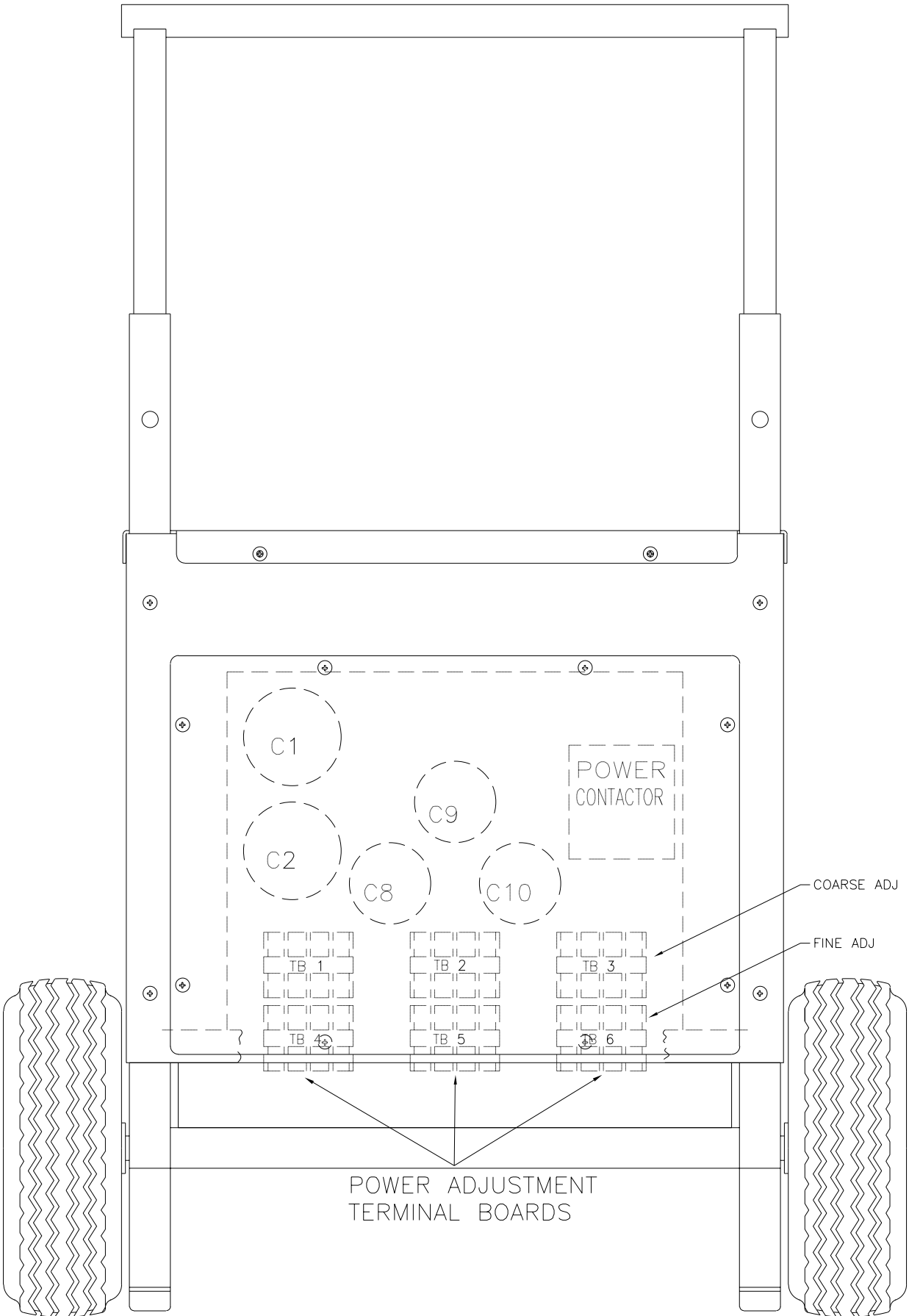
NOMINAL AMBIENT: -18° - 50° C



BALLAST FRONT VIEW



BALLAST CONTROL PANEL



BALLAST REAR VIEW

OPERATING INSTRUCTIONS FOR 7 KW XENON SYSTEM

CONNECTIONS

1. Connect lamp head cable to the BALLAST OUTPUT CONNECTOR (16) located at the lower right front of the ballast.
2. Connect the power cable to the AC INPUT POWER CONNECTOR (12) located at the lower left front of the ballast.
3. Connect the power cable to the power source.
4. When the power is energized the following should occur:
 - a. The three INPUT POWER INDICATORS (13) below the input power connector should light. If one or more of the indicators are out check the power source for a missing phase, and check the power cable for loose connections.
 - b. The AUXILIARY POWER INDICATOR (1) located on the left side of the control panel should light. If this indicator does not light check the AUXILIARY POWER CIRCUIT BREAKER (2) located below the indicator, check the voltage at the source between the neutral and the first phase (black leg) for 230 vac, and check the power cable for loose connections.

NOTE

THERE IS A 3 - 5 SECOND DELAY AFTER THE MAIN POWER IS ENERGIZED BEFORE THE LAMP HEAD COOLING SYSTEM IS UP TO FULL PRESSURE. DURING THAT TIME IF THE **LAMP POWER SWITCH (6)** IS IN THE ON POSITION THE **HEAD OVER TEMP / SAFETY CIRCUIT FAULT INDICATOR (8)** WILL LIGHT AND THE MAIN POWER CONTACTOR IN THE POWER SUPPLY WILL BE LOCKED OUT PREVENTING THE LAMP FROM BEING LIT.

LIGHT OPERATION

1. Move the MAIN POWER CIRCUIT BREAKER (14) to the on position.
2. Move the REMOTE / LOCAL SWITCH (5) to the local position.
3. Move the LAMP POWER SWITCH (6) to the on position.
4. The main power contactor will pull in and the BOOST READY INDICATOR (9) will light in about one second.

If the main power contactor does not pull in; check the AUXILIARY POWER INDICATOR (1), check the SINGLE PHASE FAULT INDICATOR (7), HEAD OVER TEMP / SAFETY CIRCUIT FAULT INDICATOR (8)

If the main power contactor pulls in but the BOOST READY INDICATOR (9) does not light check the main power circuit breaker (14), the INPUT POWER INDICATORS (13)

NOTE

ONCE THE POWER SUPPLY IS ENERGIZED STEPS 5 - 7 MAY BE PREFORMED EITHER AT THE BALLAST OR THE REAR OF THE LAMP HEAD.

5. Depress the STRIKE PUSH-BUTTON SWITCH (10). When the lamp lights release the STRIKE SWITCH (10). If the lamp does not light immediately release the switch wait until the BOOST READY INDICATOR (9) lights and retry.
6. Focus the light to the desired beam spread by moving the FOCUS SWITCH (11) to the forward or reverse position and hold the switch until the desired beam spread is achieved. The focus mechanism works on a cam action and will cycle from full flood to full spot until the focus switched is released. Moving the switch to the opposite position will reverse the focus action.
7. To turn off the light move the LAMP POWER SWITCH (6) to the off position.

CAUTION
LAMP COOLING

DO NOT DISCONNECT THE MAIN POWER UNTIL THE GLOBE HAS COMPLETELY COOLED. THE LAMP HEAD COOLING SYSTEM WILL RUN WHENEVER THE MAIN INPUT POWER LINES ARE ENERGIZED.

NOTE
LAMP HEAD TEMPERATURE AND COOLING SYS PROTECTION CIRCUIT

THE LAMP HEAD AND POWER SUPPLY ARE THERMALLY PROTECTED. THE LAMP HEAD IS ALSO PROTECTED BY AN AIR PRESSURE SWITCH . IF THE LAMP HEAD COOLING SYSTEM FAILS OR THE EQUIPMENT IS USED IN AN EXCESSIVELY HOT ENVIRONMENT (ABOVE 50 DEG C) THE LAMP POWER SYSTEM WILL SHUT OFF TO PREVENT EQUIPMENT DAMAGE AND THE HEAD OVER TEMP / SAFETY CIRCUIT FAULT INDICATOR (8) WILL LIGHT. WHEN THE EQUIPMENT COOLS TO A SAFE OPERATING TEMPERATURE OR WHEN THE FAULT IS CLEARED THE INDICATOR WILL GO OUT, THE MAIN POWER CONTACTOR IN THE POWER SUPPLY WILL REENERGIZE, AND THE LAMP MAY THEN BE RELIT.

NOTE
ARC MAGNETIC STABILIZATION

THE LAMP HEAD INCORPORATES MAGNETIC STABILIZATION OF THE GLOBE ARC. THE LAMP HEAD MUST BE OPERATED IN AN UPRIGHT POSITION FOR THE STABILIZATION TO WORK PROPERLY. THE POSITION OF THE LAMP HEAD CAN BE DETERMINED BY THE POSITION OF THE TEXT ON THE SIDES OF THE LAMP HEAD WHICH SHOULD BE UPRIGHT. OPERATING THE LAMP HEAD UPSIDEDOWN MAY CAUSE MASSIVE INSTABILITY IN THE GLOBE ARC TO THE POINT OF EXTINGUISHING AND MAY CAUSE EXCESSIVE LAMP WEAR.

CAUTION
SHOCK HAZARD

THE POWER SUPPLY CONTAINS A CAPACITOR BANK ACROSS THE OUTPUT TERMINALS THE ENERGY STORED IN THE CAPACITORS MAY BE PRESENT FOR SEVERAL MINUTES AFTER THE POWER SUPPLY IS DE-ENERGIZED.

NOTE
BALLAST PHASE LOSS AND TEMPERATURE PROTECTION CIRCUIT

THIS EQUIPMENT IS PROTECTED AGAINST LOSS OF PHASE (SINGLE PHASING) BY A CIRCUIT BREAKER (17) LOCATED ON THE UPPER CENTER OF THE CONNECTOR PANEL ON THE FRONT OF THE BALLAST. IF THIS EQUIPMENT IS OPERATED ON SINGLE PHASE INPUT POWER THE CIRCUIT BREAKER WILL TRIP AND THE SINGLE PHASE INDICATOR (7) WILL LIGHT. THIS DEVICE MUST BE

RESET MANUALLY TO RESTORE OPERATION OF THE EQUIPMENT AFTER THE FAULT IS CLEARED.

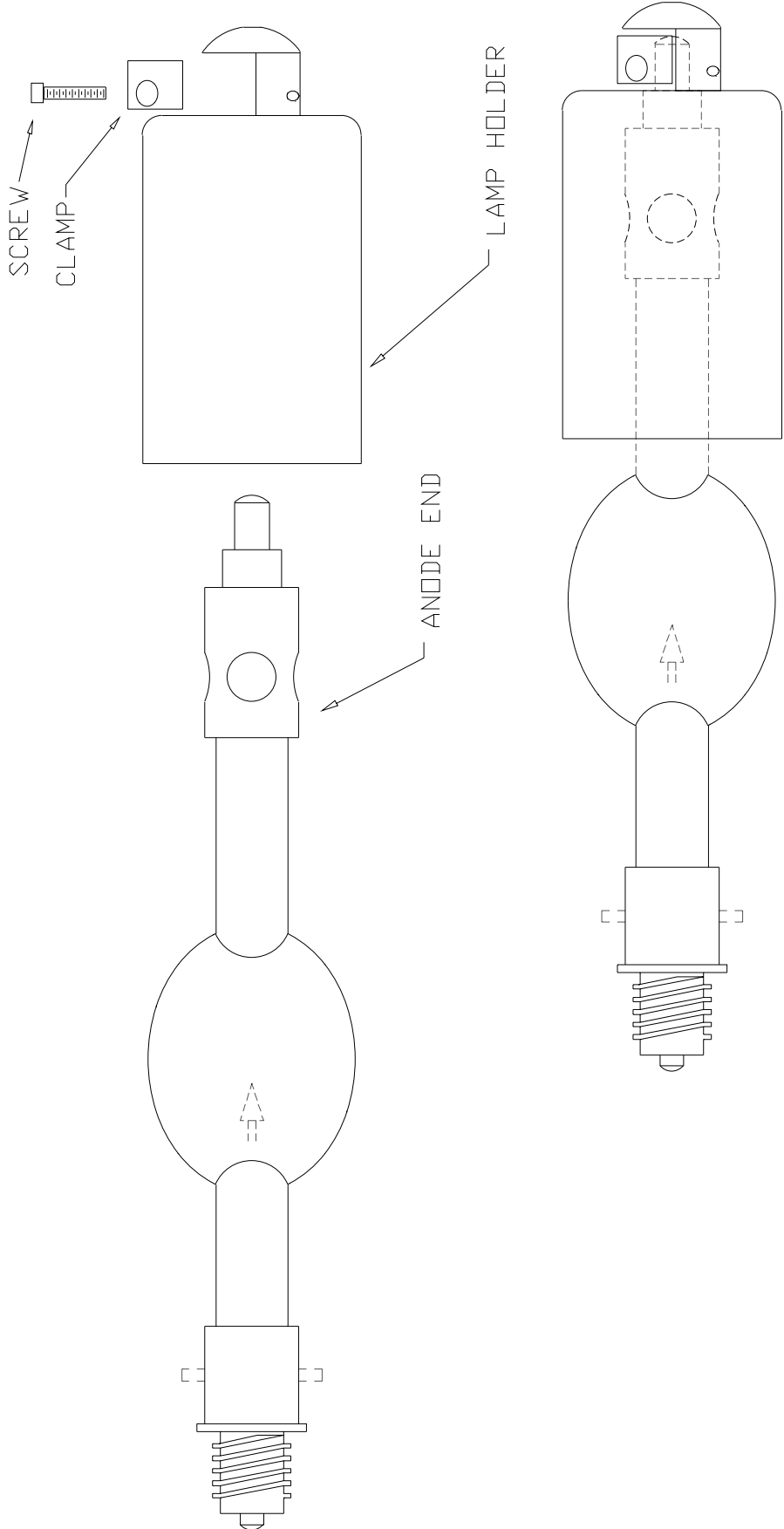
IF THE BALLAST COOLING SYSTEM FAILS OR THE EQUIPMENT IS USED IN AN EXCESSIVELY HOT ENVIRONMENT (ABOVE 50 DEG C) THE LAMP POWER SYSTEM WILL SHUT OFF TO PREVENT EQUIPMENT DAMAGE AND THE SINGLE PHASE INDICATOR (7) WILL LIGHT. WHEN THE EQUIPMENT COOLS TO A SAFE OPERATING TEMPERATURE THE INDICATOR WILL GO OUT, THE MAIN POWER CONTACTOR IN THE POWER SUPPLY WILL REENERGIZE, AND THE LAMP MAY THEN BE RELIT.

NOTE
AUXILIARY POWER CIRCUIT PROTECTION

THE AUXILIARY 120 VAC POWER SUPPLY IS PROTECTED BY THE 5 AMP CIRCUIT BREAKER LOCATED ON THE FRONT PANEL (2). THIS CIRCUIT SUPPLIES POWER FOR THE COOLING SYSTEM, FOCUS, POWER CONTROL, AND IGNITION CIRCUIT.

CAUTION
SHOCK HAZARD

DISCONNECT THE INPUT POWER CONNECTOR (12) BEFORE SERVICING THIS EQUIPMENT. DANGEROUS VOLTAGES ARE PRESENT IN THIS EQUIPMENT.



FRONT LAMP HOLDER ASSEMBLY

INSTRUCTIONS FOR REMOVING AND INSTALLING A TYPE TH GLOBE IN A BL7000 FIXTURE

NOTE

FAMILIARIZE YOURSELF WITH THE LOCATION AND IDENTIFICATION OF THE COMPONENTS OF THIS SYSTEM AND ALSO THE NORMAL OPERATION OF THE SYSTEM BEFORE ATTEMPTING ANY ADJUSTMENT OR SERVICE.

NOTE

COMPLETELY READ THROUGH AND HAVE A GOOD UNDERSTANDING OF THE PROCEDURES BEFORE ATTEMPTING TO SERVICE THIS SYSTEM. FAILURE TO DO SO MAY RESULT IN FATAL INJURY OR EQUIPMENT DAMAGE.

WARNING

DISCONNECT POWER SOURCE BEFORE SERVICING THIS EQUIPMENT.

WARNING

A PROTECTIVE JACKET, FULL FACE SHIELD, AND PROTECTIVE GLOVES MUST BE WORN AT ALL TIMES WHEN THE LAMP HEAD IS OPENED WITH A GLOBE INSTALLED OR WHEN HANDLING THE XENON GLOBES. SERIOUS INJURY MAY OCCUR IF PROPER SAFETY PRECAUTIONS ARE NOT OBSERVED. READ ALL ENCLOSED INSTRUCTIONS AND INFORMATION SHEETS BEFORE HANDLING THE GLOBE.

WARNING

NEVER OPERATE A FIXTURE WITH AN EXPOSED GLOBE! THERE IS AN EXTREME DANGER OF SEVERE BURNS TO EXPOSED SKIN AND EYES FROM THE ULTRAVIOLET LIGHT EMITTED FROM THE EXPOSED GLOBE. DAMAGE CAN OCCUR IN AS LITTLE AS 30 SECONDS OF EXPOSURE. THERE IS ALSO AN ADDITIONAL DANGER FROM FLYING GLASS IF AN EXPOSED GLOBE EXPLODES!

EQUIPMENT REQUIRED

1. PROTECTIVE SAFETY EQUIPMENT KIT
2. 7/16", 5/16", 3/8" OPEN END WRENCH
3. ALLEN WRENCH 5/32"
4. PHILLIPS SCREWDRIVER #2

DISASSEMBLY PROCEDURE

IF THERE IS NO GLOBE INSTALLED IN THE FIXTURE

1. Remove the 8 screws located on the small sides of the front cowling using a #2 phillips screwdriver and remove the cowling.
2. Remove the 2 brass bolts connecting the short leads to the front lamp holder using a 7/16 wrench..
3. Remove the center mounting screw washer and spring from the spider using a 5/32 allen wrench while supporting the front lamp holder so that it does not fall when the screw is removed.
4. Remove the lamp holder from the fixture.
5. Disconnect the focus rod swivel joint from the spider arm using the 5/16 and 3/8 open end wrenches. Do not turn the swivel joint or focus rod.
6. To disassemble the front lamp holder remove the 2 clamp retaining screws located on the side of the lamp swivel hub using a 5/32 allen wrench and remove the clamp.

DISASSEMBLY PROCEDURE

IF THERE IS A GLOBE IS INSTALLED IN THE FIXTURE

1. Remove the 8 screws located on the small sides of the front cowling using a #2 phillips screwdriver and remove the cowling.

CAUTION

DO NOT PLACE ANY EXCESSIVE FORCE ON THE GLOBE WHILE REPLACING THE PROTECTIVE WRAPPER!

2. Wrap the globe securely in the protective wrapper that the globe was originally shipped in.
3. Remove the 2 brass bolts connecting the short leads to the front lamp holder using a 7/16 wrench.
4. Disconnect the focus rod swivel joint from the spider arm using the 5/16 and 3/8 open end wrenches. Do not turn the swivel joint or focus rod.
5. Remove the center mounting screw washer and spring from the spider using a 5/32 allen wrench while supporting the front lamp holder so that the globe does not drop when the mounting screw is removed.

WARNING

DO NOT EXERT EXCESSIVE FORCE ON THE GLOBE WHILE UNSCREWING IT FROM THE REAR LAMP HOLDER! THE GLOBE SHOULD RELEASE FROM THE REAR LAMP HOLDER WITH A VERY LIGHT COUNTER CLOCKWISE ROTATION IF THIS DOES NOT HAPPEN SEE THE PROCEDURE FOR REMOVING A FROZEN GLOBE.

6. Remove the globe by lightly pushing back on the globe to move the rear lamp holder to it's rear most position while lightly turning the globe in a counterclockwise rotation. The globe will release from the rear lamp holder in approximately 1.5 complete turns.
7. Remove the globe with the front lamp holder attached from the fixture and place it on a stable working surface for the removal of the front lamp holder.
8. To remove the front lamp holder from the globe remove the 2 clamp retaining screws located on the side of the lamp swivel hub using a 5/32 allen wrench and remove the clamp.
9. Remove the lamp holder from the globe and place the globe into its shipping container for safe keeping. Resecure the protective wrapper if necessary.

ASSEMBLY PROCEDURE

WARNING

DO NOT REMOVE THE PROTECTIVE COVER FROM THE LAMP UNTIL INSTRUCTED TO DO SO!

WARNING

DO EXERT ANY FORCE ON THE GLASS PORTIONS OF THE GLOBE AT ANY TIME!

NOTE

IF THE FRONT LAMP HOLDER HAS NOT BEEN DISASSEMBLED SEE THE LAST STEPS IN THE APPROPRIATE DISASSEMBLY INSTRUCTIONS.

1. Untie the cord on the anode end of the protective cover. Do not remove the cover at this time!
2. Fasten front lamp holder to the globe by placing the anode end (large electrode) of the lamp in the lamp holder and aligning the stud on the end of the lamp ferrule with the channel in the nose of the lamp holder body. Slide the lamp completely down the channel as far as it will go.
4. Replace the clamp and reinstall the 2 clamp retaining screws located on the side of the lamp swivel hub using a 5/32 allen wrench.
5. Install the globe into the fixture by inserting the cathode end of the lamp through the opening in the reflector.
6. Insert the end of the lamp ferrule into the opening in the rear lamp holder receiver block and align the threads by turning the globe counterclockwise until the globe threads drop into the receiver threads.

NOTE

DO NOT OVER TIGHTEN THE LAMP IN THE RECEIVER BLOCK AS THIS MAY CAUSE THE LAMP TO FREEZE IN THE RECEIVER BLOCK MAKING IT DIFFICULT TO REMOVE. TIGHTEN THE LAMP JUST ENOUGH TO APPLY SPRING PRESSURE TO THE THREADS BUT NOT SO MUCH AS TO BOTTOM OUT THE LAMP FERRULE COMPLETELY AGAINST THE RECEIVER BLOCK.

7. Gently rotate the globe clockwise until resistance is felt.
8. At this point the globe should be in contact with the spring plunger assemblies. Gently turn the globe an additional 1/16-1/8 of a turn to load the threads with the spring plungers.
9. Secure the front lamp holder to the spider with the shoulder bolt, spring, and washer that was removed during disassembly.
10. Reconnect the focus rod swivel joint to the spider arm using the 5/16 and 3/8 open end wrenches. Do not turn the swivel joint or focus rod.
11. Reconnect the 2 short leads from the spider to the front lamp holder using the 2 brass bolts and washers that

were removed during disassembly.

NOTE

ANY TYPE OF ALCOHOL IS SUITABLE FOR CLEANING THE GLOBE EXCEPT FOR ALCOHOL THAT HAS BEEN DENATURED USING PETROLEUM PRODUCTS SINCE THE DENATURING AGENT WILL LEAVE A RESIDUE ON THE GLOBE.

12. Remove the protective cover from the globe and clean the glass portion of the globe completely with alcohol.
13. Reinstall the front cowl using the screws that were removed during disassembly.
14. Log the hour meter reading at installation.

15. Test the lamp operation and perform the output power adjustment procedure.

REMOVING A FROZEN GLOBE

1. Replace the front lamp holder retaining bolt to support the front of the globe while freeing the globe from the rear lamp holder.
2. Remove the fixture rear cover by removing the 10 screws around the perimeter of the sides using a #2 phillips screwdriver and pulling the cover straight back using the rear handle.
3. Disconnect the rear panel wiring connectors from the head wiring harness then set the cover aside.
4. Remove the plenum access cover by removing the 10 screws from around the cover using a #2 phillips screwdriver and remove the cover.

WARNING

DO EXERT ANY FORCE ON THE GLASS PORTIONS OF THE GLOBE WHILE ATTEMPTING TO FREE IT FROM THE REAR LAMP HOLDER!

5. Reach around the rear lamp holder assembly and grasp the globe by its rear ferrule and while lightly pulling the globe back into the receiver block turn the globe in a clockwise direction until the globe begins to rotate freely.
6. Once the globe is free do not remove it completely from the rear lamp holder.
7. Replace the plenum cover, rear panel wiring, and fixture rear cover.
8. Return to step 5 of :

“DISASSEMBLY PROCEDURE
IF THERE IS A GLOBE IS INSTALLED IN THE FIXTURE”

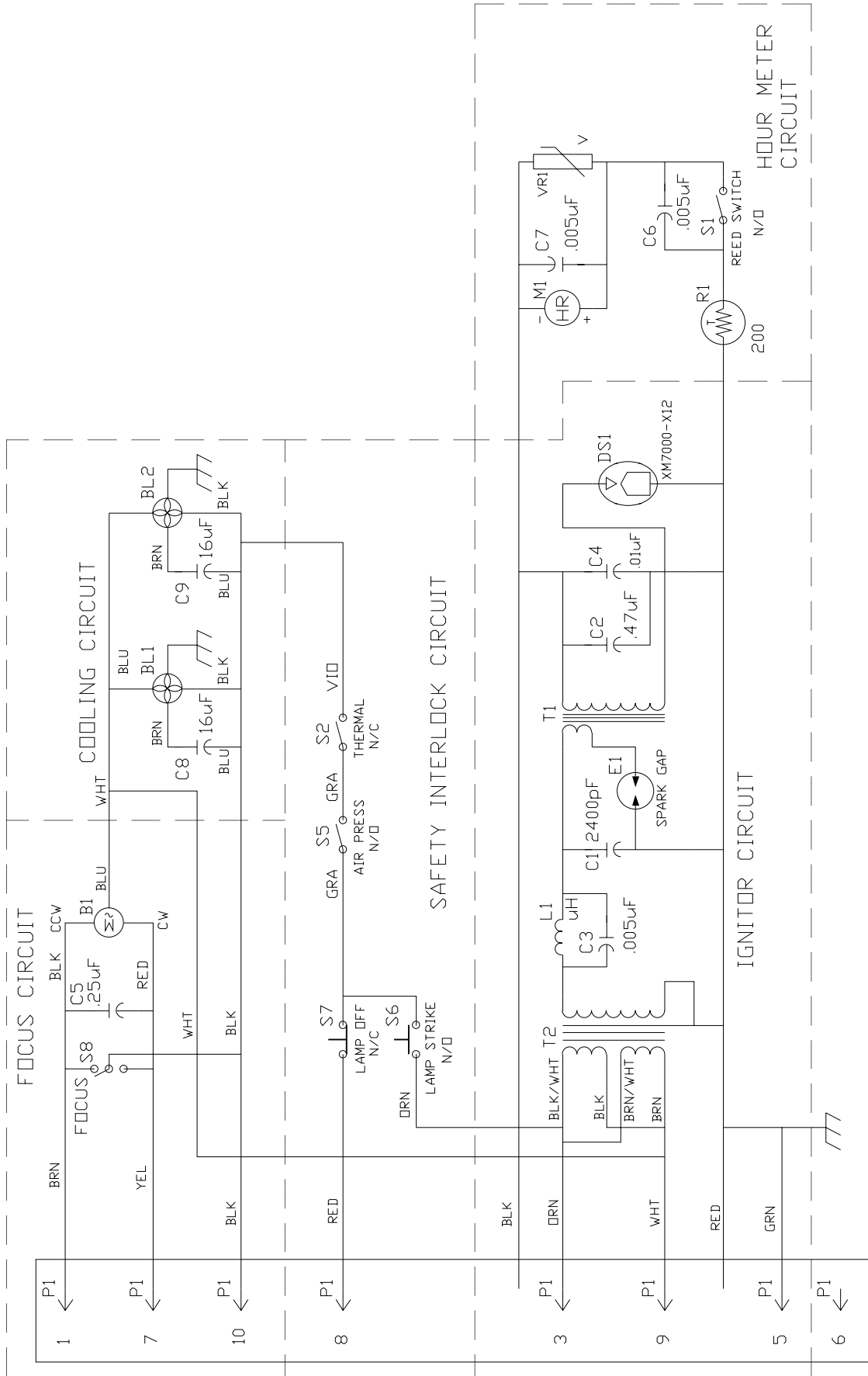
OUTPUT POWER ADJUSTMENT PROCEDURES

EQUIPMENT REQUIRED

1. Phillips screwdriver #2
2. Flat screwdriver large

ADJUSTMENT INSTRUCTIONS

1. Turn on the power supply and strike the lamp.
3. Using the volt / amp meter on the control panel measure the output voltage and current of the power supply.
4. Calculate the output power using the formula (volts) X (amps) = (watts).
5. If the power level is over 7300 watts immediately turn off the light and go to step 9.
6. If the power level is less than 7300 watts allow the light to run at least 5 minutes before making any adjustments.
7. If the power level is within the range of 6650 - 7350 watts and the output current is less than 180 amps no adjustment is necessary.
8. If the power level is not within the range of 6650 - 7350 watts or the output current is greater than 180 amps proceed with the adjustment.
9. Turn off the light and remove the access panel located on the rear of the ballast to expose the output adjustment taps.
10. Reposition the output adjustment taps (TB-1)-(TB-6) to set the output power level to 7000 Watts +/- 5% (6650 - 7350 watts) and/or less than 180 amps..
11. The taps on (TB-1-3) labeled W,X,Y,Z are coarse adjustments with tap (W) being the lowest output and tap (Z) being the highest output.
12. The taps on (TB-4-6) labeled 1,2,3,4 are fine adjustments with tap (1) being the lowest output and tap (4) being the highest output.
13. All six terminal blocks must have the wire in the same letter and number tap location.
14. Be sure all the terminal block screws have been tightened then turn on and restrike the light.
15. Repeat steps 3 thru 14 until the power supply has been properly adjusted. When the adjustments are completed replace the ballast access panel.



7KW LAMP HEAD SCHEMATIC

