

**Xenotech, Inc.**<sup>®</sup>

**BRITELIGHT**<sup>®</sup>

**7000ART**

**SYSTEM MANUAL**

REV 2.0

Entel Tower Chile

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# BRITELIGHT 7000ART SPECIFICATIONS

## POWER SUPPLY

### MAIN POWER INPUT

INPUT VOLTAGE: 380/220 VAC.  
INPUT CURRENT: 20 AMPS  
PHASE: THREE  
FREQUENCY: 60/50 HZ.

### SYSTEM CONTROL INPUT

SWITCH CLOSURE NORMALLY OPEN  
UNIT SOURCES 120 VAC 5 AMPS MAX.

### MOTION POSITION CONTROL INPUT

24 VAC 42 MA PER CHANNEL

## 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 & IGNITION CIRCUIT INPUT

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

### SYSTEM OPERATION TEMPERATURE RANGE

NOMINAL AMBIENT: 0° - 100° F.

### SYSTEM WEIGHT

600 LBS.

# **SYSTEM INSTALLATION**

# **BRITELIGHT 7000ART INSTALLATION INSTRUCTIONS**

## **NOTE**

**THE BL7000ART SYSTEM SHOULD BE INSTALLED BY AN ELECTRICAL CONTRACTOR FOLLOWING ALL APPLICABLE ELECTRICAL AND BUILDING CODES FOR THE INSTALLATION SITE.**

## **RECEIVING**

IMMEDIATELY INSPECT ALL CRATES FOR SIGNS OF DAMAGE AND ABUSE. IF CRATE DAMAGE IS PRESENT, NOTE ON THE SHIPPING DOCUMENTS BEFORE ACCEPTING SHIPMENT AND IMMEDIATELY INSPECT THE SHIPMENT FOR HIDDEN DAMAGE. NOTIFY SHIPPING COMPANY AS SOON AS POSSIBLE IF THERE IS EQUIPMENT DAMAGE.

## **EQUIPMENT INITIAL INSPECTION**

AFTER UNCRATING AND BEFORE SYSTEM ASSEMBLY CAREFULLY INSPECT THE SYSTEM FOR LOOSENING OF MECHANICAL AND ELECTRICAL CONNECTIONS THAT MAY HAVE OCCURRED DURING SHIPPING. THE FOLLOWING IS A LISTING OF SOME OF THE MORE IMPORTANT PLACES TO CHECK. A THOROUGH INSPECTION OF THE SYSTEM MAY PREVENT MANY POTENTIAL PROBLEMS AND HOURS OF TROUBLE SHOOTING AFTER THE SYSTEM INSTALLATION.

## **HEAD**

1. REMOVE FRONT COWL
2. CHECK THE FRONT SPIDER MOUNTING FOR LOOSE OR MISSING PARTS AT THE END OF THE THREE ARMS.
3. CHECK ELECTRICAL CONNECTIONS ON THE FRONT SPIDER FOR LOOSE CONNECTIONS.
4. CHECK THE REAR LAMP MOUNTING RECEIVER ASSEMBLY (LOCATED IN THE HOLE AT THE REAR) FOR LOOSE OR MISSING PARTS.
5. REMOVE THE TOP COVER. (COVER WITH WARNINGS & LOGO)
6. CHECK ALL HIGH CURRENT ELECTRICAL CONNECTIONS FOR LOOSE HARDWARE.
7. CHECK MULTIPIN CONNECTOR LOCATED AT THE END OF THE HEAD CABLE FOR DAMAGE.

## BASE

1. REMOVE SIDE PANELS
2. CHECK POWER SUPPLY MOUNTING HARDWARE.
3. REMOVE WOOD BLOCKS AND STEEL BANDS FROM POWER SUPPLY CHASSIS
4. CHECK POSITION SWITCH ACTUATOR ARM AND POSITION SWITCHES FOR DAMAGE AND LOOSE HARDWARE. (LOCATED BEHIND CONTROL PANEL)
5. CHECK POWER SUPPLY POWER ADJUSTMENT TAP TERMINAL BLOCK FOR LOOSE CONNECTING SCREWS.
6. CHECK POWER SUPPLY INPUT TERMINAL BLOCK FOR LOOSE CONNECTING SCREWS. (LOCATED NEXT TO POWER CONTACTOR)
7. CHECK POWER SUPPLY CONTACTOR FOR LOOSE CONNECTING SCREWS.
8. CHECK THE POWER SUPPLY OUTPUT LUGS FOR LOOSE OR MISSING HARDWARE. (LOCATED ON HEATSINK ENDS)
9. CHECK CONTROL CIRCUIT BOARD TERMINAL BLOCKS FOR LOOSE CONNECTIONS.
10. VISUALLY INSPECT POWER SUPPLY AND MOTION SYSTEM FOR SIGNS OF LOOSE PARTS OR DAMAGE.

## SYSTEM ASSEMBLY

### HEAD

#### INITIAL GLOBE INSTALLATION

1. PLACE THE LAMP HEAD ON A WORK BENCH WITH THE TOP SIDE UP AND THE FRONT COWL OVERHANGING THE EDGE OF THE BENCH.
2. REFER TO THE GLOBING INSTRUCTIONS AND INSTALL THE GLOBE.

### BASE

#### RELAY INSTALLATION

1. REMOVE BASE SIDE COVERS.
2. LOCATE CONTROL CIRCUIT BOARD BELOW THE CONTROL PANEL.
3. INSERT RELAYS FROM LEFT TO RIGHT AS FOLLOWS:

REF	DESCRIPTION	SYSTEM FUNCTION
K4	30 MIN OFF DELAY 120 VAC COIL MODEL# SS-51922-F30M	SYSTEM COOL DOWN TIMER
K2	1 MIN INTERVAL DELAY 120 VAC COIL MODEL# SS-50522-F1M	AUTO STRIKE TIME OUT RELAY
K3	SPDT 10 AMP 120 VAC COIL MODEL# RH1B-U	AUTO STRIKE POWER RELAY
K5	DPDT 3 AMP 24 VAC COIL MODEL# RY2S-U	HORIZ POSITION RMT CONTROL
K6	DPDT 3 AMP 24 VAC COIL MODEL# RY2S-U	CTR POSITION RMT CONTROL
K7	DPDT 3 AMP 24 VAC COIL MODEL# RY2S-U	VERT POSITION RMT CONTROL
K8	SPDT 10 AMP 120 VAC COIL MODEL# RH1B-U	MOTION MOTOR POWER RELAY
K9	DPDT 7.5 AMP LATCHING 120 VAC COIL MODEL# RH2LB-U	MOTION MOTOR DIRECTION

4. ATTACH RELAY HOLD DOWN CLIPS TO EACH RELAY SOCKETS K3, K5-K9 AFTER RELAY INSTALLATION.

## LAMP HEAD MOUNTING

### NOTE

**THE MOTION ARM LOCATED ON THE TOP OF THE BASE UNIT MUST BE IN THE VERTICAL POSITION TO MOUNT THE LAMP HEAD AND COUNTER BALANCE SPRINGS.**

1. PLACE THE LAMP HEAD ON THE MOTION ARM MOUNTING PLATE WITH THE TOP OF THE LAMP HEAD FACING THE REAR OF THE BASE AND THE HEAD CABLE ASSEMBLY FACING THE SIDE OF THE BASE WITHOUT THE CONTROL PANEL.
2. ALIGN THE HEAD MOUNTING HOLES WITH THE MOUNTING HOLES IN THE ARM MOUNTING PLATE.
3. ATTACH THE HEAD AND ARM AT THE LEFT, RIGHT, AND FRONT MOUNTING POINTS USING THE 3/8 BOLTS, LOCK WASHERS, AND FLAT WASHERS SUPPLIED IN THE HEAD MOUNTING KIT.
4. ATTACH THE 3/8 EYE BOLT TO THE HEAD AT THE ARM MOUNTING PLATE REAR MOUNTING HOLE. THREAD THE EYE BOLT INTO THE PLATE UNTIL IT PRESSES SECURELY INTO THE PLATE AND IS ALIGNED WITH THE FRONT AND REAR OF THE BASE.

### COUNTER BALANCE SPRING ASSEMBLY INSTALLATION

1. ATTACH THE LARGE FASTENING COUPLER ON THE COUNTER BALANCE SPRING ASSEMBLY TO THE 3/8 EYE BOLT ON THE REAR OF THE LAMP HEAD.
2. ATTACH THE SMALL FASTENING COUPLERS ON THE OTHER ENDS OF THE COUNTER BALANCE SPRING ASSEMBLY TO THE 1/4 INCH EYE BOLTS LOCATED AT THE REAR TOP OF THE BASE UNIT.

### LAMP HEAD ELECTRICAL CONNECTIONS

1. REMOVE THE LOCK NUT FROM THE CORD GRIP LOCATED AT THE FREE END OF THE LAMP HEAD POWER CABLE.
2. FEED THE LAMP HEAD POWER CABLE THROUGH THE HOLE LOCATED AT THE FRONT OF THE BASE UNIT UNTIL THE CORD GRIP IS SEATED IN THE HOLE.
3. REPLACE THE LOCK NUT AND TIGHTEN.

### WARNING

**EXTREME CARE MUST BE TAKEN WHEN CONNECTING THE LAMP HEAD DC INPUT WIRES TO THE POWER SUPPLY OUTPUT. REVERSING THE POLARITY OF THE LEADS WILL CAUSE IMMEDIATE DAMAGE TO THE XENON GLOBE WHEN THE LAMP IS LIT.**

4. CONNECT THE LARGE RED LEAD (POSITIVE) TO THE COMPRESSION LUG MARKED POS LOCATED AT THE REAR OF THE TOP HEATSINK ON THE POWER SUPPLY.
5. CONNECT THE LARGE BLACK LEAD (NEGATIVE) TO THE COMPRESSION LUG MARKED NEG LOCATED AT THE REAR OF THE SIDE HEATSINK ON THE POWER SUPPLY.
6. ATTACH THE HOUR METER SWITCH BOARD TO THE NEGATIVE CABLE USING THE WIRE TIE ATTACHED TO THE BOARD. DO NOT TIGHTEN THE WIRE TIE MORE THAN IS NECESSARY TO HOLD THE SWITCH BOARD CLOSE TO THE CABLE.
7. ROUTE THE CONTROL WIRES TO THE TOP OF THE BASE MIDPANEL THROUGH THE SLOT AT THE REAR CORNER AND CONNECT TO THE MULTI PIN CONNECTOR LOCATED AT THE CENTER REAR OF THE MIDPANEL.



## **SYSTEM MOUNTING**

BEFORE THE ELECTRICAL AND CONTROL SERVICE WIRING IS INSTALLED THE SYSTEM SHOULD BE POSITIONED AND SECURELY FASTENED TO ITS MOUNTING SURFACE. ALLOW ADEQUATE SPACE AROUND THE SYSTEM FOR VENTILATION AND SERVICING THE SYSTEM.

## **ELECTRICAL SERVICE INSTALLATION**

**THIS SYSTEM HAS BEEN CONFIGURED FOR 380/220 VAC 3 PHASE 20 AMPS 50 HZ MAINS.**

### **NOTE**

**TO ALLOW FLEXIBILITY IN THE INSTALLATION OF THIS SYSTEM NO PREMADE KNOCKOUT HOLES HAVE BEEN PROVIDED. INSTEAD THE APPROPRIATE SIZE AND NUMBER OF HOLES MAY BE PUNCHED THROUGH THE LOWER HALF OF THE BASE REAR PANEL WHERE REQUIRED.**

**FOR PROPER OPERATION OF THIS SYSTEM THE MAINS SHOULD REMAIN ON AT ALL TIMES AND NOT NORMALLY BE USED TO TURN THE SYSTEM ON AND OFF.**

1. INSTALL WIRING TO SYSTEM AS REQUIRED BY LOCAL CODES AND REGULATIONS.
2. CONNECT THE THREE MAIN HOT LINES TO THE THREE TOP CONTACTOR TERMINALS LOCATED ON THE POWER SUPPLY BELOW THE CONTROL PANEL.
3. CONNECT THE NEUTRAL LINE TO THE NUMBER ONE POSITION ON THE TERMINAL BLOCK MARKED TB-7 NEXT TO THE POWER CONTACTOR.
4. CONNECT THE GROUND LINE TO THE GROUND STUD LOCATED ON THE POWER SUPPLY NEXT TO THE POWER CONTACTOR.

## SYSTEM POWER REMOTE CONTROL

### NOTE

**THE SYSTEM POWER REMOTE CONTROL LINE SHOULD BE CONFIGURED TO SUPPLY A CLOSED CIRCUIT WHEN THE SYSTEM IS ON AND AN OPEN CIRCUIT WHEN THE SYSTEM IS OFF.  
THE UNIT CONTROL CIRCUIT WILL SOURCE 120 VAC TO THE SYSTEM POWER REMOTE CONTROL LINE.**

### WARNING

**THIS CIRCUIT IS POWERED FROM THE UNIT CONTROL CIRCUIT AND SHOULD NOT BE ENERGIZED BY ANY OTHER POWER SOURCE.**

1. INSTALL WIRING TO SYSTEM AS REQUIRED BY LOCAL CODES AND REGULATIONS.
2. ROUTE WIRING THROUGH THE SLOT AT THE CORNER OF THE BASE MIDPANEL TO THE FRONT OF THE CONTROL CIRCUIT BOARD LOCATED BELOW THE CONTROL PANEL.
3. CONNECT THE TWO POWER REMOTE CONTROL WIRES TO THE CONTROL INPUT TERMINAL BLOCK MARKED TB3.

## MOTION POSITION REMOTE CONTROL

### NOTE

**THE MOTION POSITION REMOTE CONTROL LINES SHOULD BE CONFIGURED TO SUPPLY A PULSE OF 24 VAC WITH A NOMINAL ON DWELL TIME OF 1 SECOND AND AN OFF DWELL TIME OF NO LESS THAN 3 SECONDS BETWEEN THE RESPECTIVE POSITION CHANNEL AND THE COMMON LINE IN A REPEATING SEQUENTIAL ORDER OF CENTER, HORIZONTAL, CENTER, VERTICAL, CENTER, HORIZONTAL...**

### WARNING

**DO NOT SOURCE A CONTINUOUS 24 VAC SIGNAL TO ANY POSITION CONTROL CHANNEL. THIS CONDITION WILL FORCE THE UNIT TO BYPASS ALL POSITION LIMIT SWITCHES AND FORCE THE MOTION SYSTEM INTO AN END OF TRAVEL HARD LIMIT CONDITION.**

### NOTE

**THE VERTICAL POSITION CHANNEL IS ALSO A MASTER POSITION CONTROL OVERRIDE CHANNEL. WHEN THIS CHANNEL IS ENERGIZED IT WILL FORCE MOTION TO START REGARDLESS OF THE ACTUAL POSITION OF THE MOTION ARM.**

1. INSTALL WIRING TO SYSTEM AS REQUIRED BY LOCAL CODES AND REGULATIONS.
2. ROUTE WIRING THROUGH THE SLOT AT THE CORNER OF THE BASE MIDPANEL TO THE FRONT OF THE CONTROL CIRCUIT BOARD LOCATED BELOW THE CONTROL PANEL.
3. CONNECT THE FOUR POSITION REMOTE CONTROL WIRES TO THE POSITION CONTROL TERMINAL BLOCK MARKED TB8 NOTING THE WIRE FUNCTIONS AND TERMINAL MARKINGS.

THE SYSTEM INSTALLATION IS NOW BE COMPLETE.

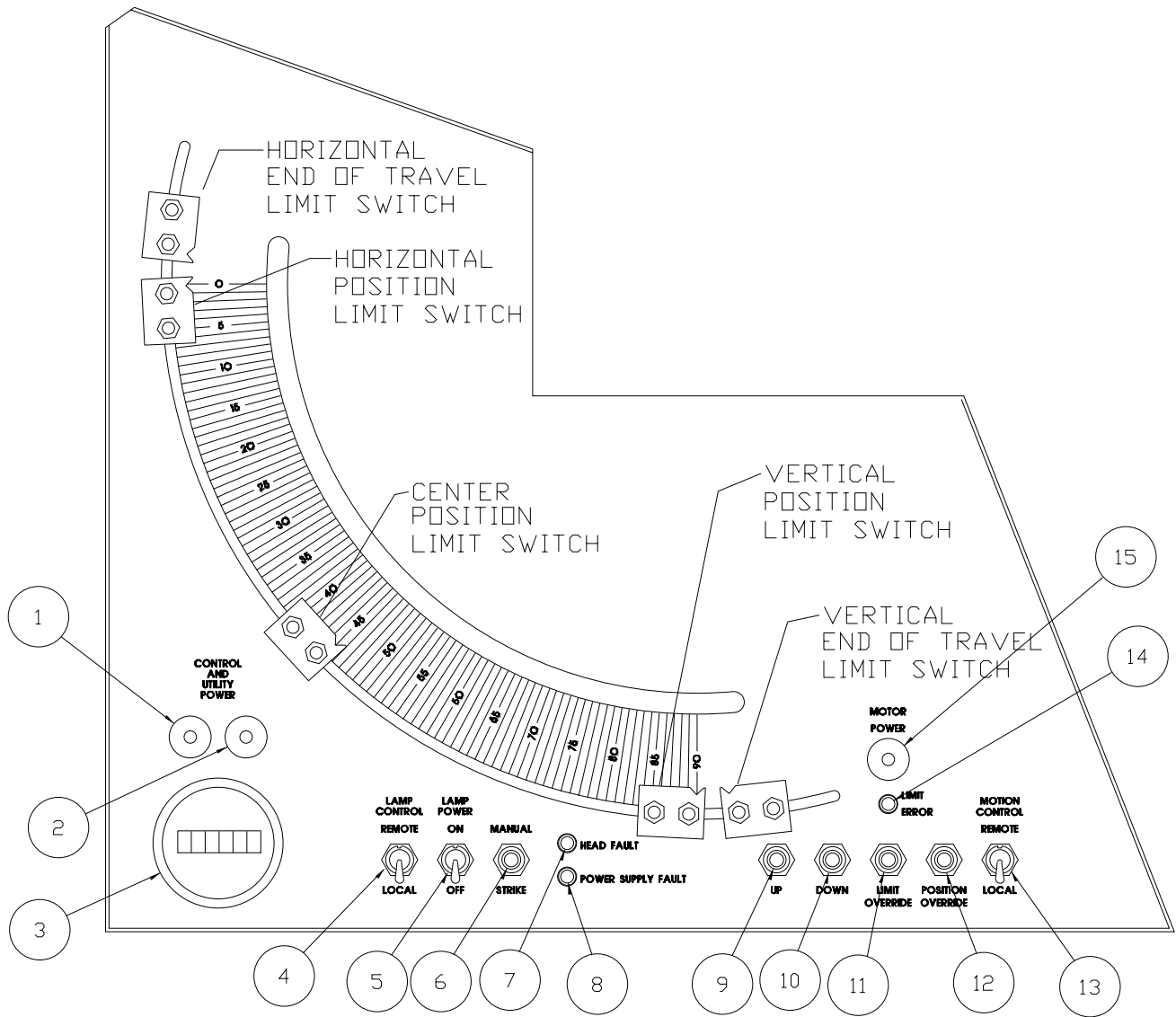
CHECK THAT THE POWER SUPPLY PHASE LOSS CIRCUIT BERAKER IS IN THE ON POSITION.

IF IT HAS NOT ALREADY BEEN DONE DURING THE GLOBE INSTALLATION THE LAMP POWER ADJUSTMENT, FOCUS, AND X-Y ADJUSTMENTS SHOULD NOW BE DONE.

IF NECESSARY THE POSITION LIMIT POINTS SHOULD BE ADJUSTED AND THE SYSTEM SHOULD BE TESTED IN THE LOCAL MODE TO VERIFY PROPER SYSTEM OPERATION BEFORE ATTEMPTING TO OPERATE THE SYSTEM BY THE REMOTE CONTROL SYSTEM.

REFER TO THE APPROPRIATE SECTIONS OF THE MANUAL FOR THE PROPER ADJUSTMENT PROCEDURES.

# **SYSTEM OPERATION**



# **BL7000ART CONTROL PANEL & SYSTEM OPERATION**

## **1. AUTO TRANSFORMER ( T2 ) SECONDARY CIRCUIT BREAKER.**

PROTECTS THE AUTO TRANSFORMER SECONDARY FROM OVER CURRENT, AND SHORT CIRCUIT CONDITIONS.

## **2. AUTO TRANSFORMER ( T2 ) PRIMARY CIRCUIT BREAKER.**

PROTECTS THE AUTO TRANSFORMER PRIMARY FROM OVER CURRENT, AND SHORT CIRCUIT CONDITIONS.

### **LAMP CONTROL SECTION**

## **3. GLOBE ELAPSED TIME METER.**

LOGS THE ACTUAL BURN TIME OF THE GLOBE. THIS METER WILL ONLY RUN DURING THE TIME THE GLOBE IS LIT.

## **4. LAMP LOCAL / REMOTE CONTROL SWITCH.**

THIS SWITCH SELECTS THE CONTROL MODE OF THE BALLAST / LAMP HEAD PORTION OF THE SYSTEM. THIS SWITCH SELECTS A POWER SOURCE FROM EITHER THE MAIN POWER INPUT IN THE LOCAL MODE OR THE REMOTE CONTROL SWITCH LOOP ( CONTROL PCB TB3-1,2 ) IN THE REMOTE MODE.

## **5. LAMP POWER SWITCH.**

THIS SWITCH IS THE MASTER POWER SWITCH FOR THE BALLAST / LAMP HEAD PORTION OF THE SYSTEM. THIS SWITCH WILL INHIBIT OPERATION OF THE BALLAST / LAMP HEAD IN ALL MODES OF OPERATION.

## **6. MANUAL STRIKE SWITCH.**

THIS SWITCH WILL MANUALLY ENERGIZE THE IGNITION CIRCUIT LOCATED IN THE LAMP HEAD BY BYPASSING THE AUTO STRIKE CIRCUITRY. THIS SWITCH IS NORMALLY NOT USED EXCEPT WHEN TROUBLE SHOOTING A LAMP IGNITION PROBLEM.

## **7. HEAD FAULT INDICATOR.**

THIS INDICATOR WILL LIGHT IF THE FOLLOWING FAULT CONDITIONS EXIST IN THE LAMP HEAD SECTION OF THE SYSTEM. OVER TEMPERATURE, COOLING BLOWER FAILURE, INSUFFICIENT AIRFLOW WITHIN THE COOLING SYSTEM. WHEN THE PROBLEM IS CORRECTED THIS INDICATOR WILL EXTINGUISH AND THE SYSTEM WILL GO INTO NORMAL OPERATION.

## **8. POWER SUPPLY FAULT INDICATOR.**

THIS INDICATOR WILL LIGHT IF THE FOLLOWING CONDITIONS EXIST IN THE BALLAST SECTION OF THE SYSTEM. IF THE POWER SUPPLY FAULT INDICATOR IS LIT THE POWER SUPPLY IS OVER SAFE OPERATING TEMPERATURE OR THE PHASE LOSS CIRCUIT BREAKER ( CB1 LOCATED ON THE CENTER OF THE POWER SUPPLY ) HAS TRIPPED. CHECK THE BASE COOLING FAN OPERATION. IF THE PHASE LOSS CIRCUIT BREAKER IS TRIPPED CHECK THE INPUT POWER FOR A MISSING PHASE OR LINE IMBALANCE AND RESET THE CIRCUIT BREAKER. WHEN THE PROBLEM IS CORRECTED THIS INDICATOR WILL EXTINGUISH AND THE SYSTEM WILL GO INTO NORMAL OPERATION.

### **NOTE**

**IF A FAULT CONDITION EXISTS IN BOTH THE LAMP HEAD AND BALLAST UNITS ( SUCH AS A TRIPPED PHASE LOSS CIRCUIT BREAKER AND A NON OPERATING LAMP HEAD COOLING SYSTEM ) NEITHER INDICATOR WILL LIGHT.**

## MOTION CONTROL SECTION

### 9. UP DIRECTION SWITCH

PRESSING THIS SWITCH WILL PLACE THE MOTION CONTROL CIRCUIT INTO THE VERTICAL DIRECTION MODE. AFTER PRESSING THIS SWITCH THE LAMP HEAD WILL MOVE TOWARD VERTICAL DIRECTION WHEN THE POSITION OVERRIDE SWITCH IS PRESSED IN THE LOCAL MODE OR WHEN THE REMOTE CONTROL CHANNEL FOR THE CURRENT LAMP HEAD POSITION ( TB8-1-4 ) IS ACTIVATED IN THE REMOTE MODE. IF THIS SWITCH IS PRESSED WHEN THE LAMP HEAD IS IN THE VERTICAL POSITION THE SYSTEM WILL AUTOMATICALLY REMAIN IN THE DOWN ( HORIZONTAL ) DIRECTION MODE.

### 10. DOWN DIRECTION SWITCH

PRESSING THIS SWITCH WILL PLACE THE MOTION CONTROL CIRCUIT INTO THE HORIZONTAL DIRECTION MODE. AFTER PRESSING THIS SWITCH THE LAMP HEAD WILL MOVE TOWARD THE HORIZONTAL DIRECTION WHEN THE POSITION OVERRIDE SWITCH IS PRESSED IN THE LOCAL MODE, OR WHEN THE REMOTE CONTROL CHANNEL FOR THE CURRENT LAMP HEAD POSITION ( TB8-1-4 ) IS ACTIVATED IN THE REMOTE MODE. IF THIS SWITCH IS PRESSED WHEN THE LAMP HEAD IS IN THE HORIZONTAL POSITION THE SYSTEM WILL AUTOMATICALLY REMAIN IN THE UP ( VERTICAL ) DIRECTION MODE.

### 11. LIMIT OVERRIDE SWITCH.

PRESSING THIS SWITCH WHILE THE MOTION SYSTEM IS IN A LIMIT ERROR CONDITION WILL MOVE THE LIMIT SWITCH ACTUATOR OFF THE END OF TRAVEL LIMIT SWITCHES AND TO THE NEXT POSITION IN THE MOTION SEQUENCE. SEE THE MANUAL RESET PROCEDURES IN THE MOTION OPERATION SECTION FOR PROPER USE OF THIS SWITCH.

### 12. POSITION OVERRIDE SWITCH.

PRESSING THIS SWITCH WILL CAUSE THE MOTION SYSTEM TO ENERGIZE AND REMAIN IN MOTION UNTIL THE SWITCH IS RELEASED AND A POSITION LIMIT SWITCH IS ACTUATED. SEE THE MOTION OPERATION SECTION FOR THE PROPER USE OF THIS SWITCH.

### 13. MOTION CONTROL LOCAL / REMOTE SWITCH.

THIS SWITCH SELECTS THE CONTROL MODE OF THE MOTION SYSTEM. THIS SWITCH SELECTS A POWER SOURCE FROM EITHER THE UNSWITCHED MAIN POWER INPUT IN THE LOCAL MODE OR THE REMOTE CONTROL SYSTEM SWITCHED MAIN POWER INPUT IN THE REMOTE MODE. THIS SWITCH ALSO DISCONNECTS THE REMOTE MOTION POSITION CONTROL SIGNALS IN THE LOCAL MODE TO PREVENT THE ACCIDENTAL REMOTE ACTIVATION OF THE MOTION SYSTEM DURING SYSTEM SERVICING.

### 14. LIMIT ERROR INDICATOR.

THIS INDICATOR WILL LIGHT IF THE MOTION OF THE SYSTEM HAS TRAVELED PAST THE VERTICAL OR HORIZONTAL LIMIT SWITCH POSITIONS AND HAS CONTINUED TO TRAVEL UNTIL THE MAXIMUM LIMIT OF TRAVEL WAS REACHED. WHEN THIS HAPPENS POWER TO THE MOTOR WILL BE DISCONNECTED AND THE MOTION SYSTEM MUST BE MANUALLY RESET. IF THE LIMIT ERROR INDICATOR BLINKS WHILE THE SYSTEM IS OPERATING IN THE REMOTE MODE OR IF THE INDICATOR LIGHTS WHEN THE POSITION OVERRIDE BUTTON IS PRESSED THE MOTION POSITION ACTUATOR IS DEPRESSING BOTH A POSITION AND END OF TRAVEL LIMIT SWITCH SIMULTANEOUSLY. SEE THE MANUAL RESET PROCEDURES IN THE MOTION OPERATION SECTION FOR INSTRUCTIONS ON CLEARING THESE FAULT CONDITIONS.

### 15. MOTOR CIRCUIT BREAKER ( CB4 ).

PROTECTS THE MOTION MOTOR FROM OVER CURRENT, AND SHORT CIRCUIT CONDITIONS.

## **LAMP OPERATION**

### **REMOTE OPERATION**

1. SET THE LAMP CONTROL SWITCH TO THE REMOTE POSITION.
2. SET THE LAMP POWER SWITCH TO THE ON POSITION.
3. WHEN THE SYSTEM REMOTE CONTROL CIRCUIT IS CLOSED THE LAMP WILL AUTOMATICALLY STRIKE AND WILL REMAIN LIT UNTIL THE CONTROL CIRCUIT IS OPENED OR THE LAMP POWER SWITCH IS SET TO THE OFF POSITION.

### **LOCAL OPERATION**

1. SET THE LAMP CONTROL SWITCH TO THE LOCAL POSITION.
2. SET THE LAMP POWER SWITCH TO THE ON POSITION.
3. THE LAMP WILL AUTOMATICALLY STRIKE AND WILL REMAIN LIT UNTIL THE LAMP POWER SWITCH IS SET TO THE OFF POSITION.

### **NOTE**

**THE LAMP HEAD AND BASE COOLING SYSTEMS ARE ON A 30 MINUTE TIME DELAY TO ALLOW PROPER COOLING AFTER THE LAMP IS TURNED OFF.**

### **HEAD FAULT INDICATOR**

IF THE HEAD FAULT INDICATOR IS LIT THE LAMP HEAD IS OVER SAFE OPERATING TEMPERATURE OR THE COOLING BLOWER HAS FAILED.

### **POWER SUPPLY FAULT INDICATOR**

IF THE POWER SUPPLY FAULT INDICATOR IS LIT THE POWER SUPPLY IS OVER SAFE OPERATING TEMPERATURE OR THE PHASE LOSS CIRCUIT BREAKER ( LOCATED ON THE CENTER OF THE POWER SUPPLY ) HAS TRIPPED. CHECK THE BASE COOLING FAN OPERATION. IF THE PHASE LOSS CIRCUIT BREAKER IS TRIPPED CHECK THE INPUT POWER FOR A MISSING PHASE OR LINE IMBALANCE AND RESET THE CIRCUIT BREAKER.



## MOTION OPERATION

### REMOTE OPERATION

1. SET THE MOTION CONTROL SWITCH TO THE REMOTE POSITION.
2. WHEN THE SYSTEM REMOTE CONTROL CIRCUIT IS CLOSED THE MOTION SYSTEM WILL AUTOMATICALLY START AND WILL REMAIN ENERGIZED UNTIL THE CONTROL CIRCUIT IS OPENED.

### LOCAL OPERATION

#### WARNING

**IF THE MOTION POSITION SWITCH ACTUATOR IS NOT ACTUATING ONE OF THE POSITION SWITCHES WHEN THE SYSTEM IS PLACED IN THE LOCAL OPERATION MODE THE SYSTEM WILL IMMEDIATELY BEGIN TO MOVE AND WILL CONTINUE UNTIL THE NEXT POSITION IS REACHED OR AN END OF TRAVEL LIMIT SWITCH IS ACTIVATED.**

1. SET THE MOTION CONTROL SWITCH TO THE LOCAL POSITION.
2. SELECT THE DESIRED DIRECTION OF TRAVEL BY PRESSING AND RELEASING ONE OF THE MOTION DIRECTION SWITCHES.

#### WARNING

**DO NOT HOLD DOWN THE POSITION OVERRIDE BUTTON WHILE THE SYSTEM IS IN MOTION. IF DEPRESSED WHEN THE HORIZONTAL OR VERTICAL POSITION IS REACHED THE MOTION WILL CONTINUE UNTIL THE MAXIMUM LIMIT IS REACHED CAUSING A LIMIT ERROR CONDITION.**

3. PRESS THE POSITION OVERRIDE BUTTON UNTIL THE MOTION BEGINS THEN IMMEDIATELY RELEASE THE BUTTON. THE LAMP WILL MOVE TO THE NEXT POSITION AND STOP.
4. REPEAT STEP 3 UNTIL THE DESIRED POSITION IS REACHED.

#### NOTE

**WHEN THE VERTICAL AND HORIZONTAL POSITIONS ARE REACHED THE SYSTEM WILL AUTOMATICALLY REVERSE DIRECTION. IT IS NOT NORMALLY NECESSARY TO MANUALLY REVERSE DIRECTION WITH THE LAMP DIRECTION SWITCHES AFTER THE INITIAL DIRECTION IS SELECTED.**

### LIMIT ERROR INDICATOR

IF THE LIMIT ERROR INDICATOR IS LIT THE MOTION OF THE SYSTEM HAS EXCEEDED THE VERTICAL OR HORIZONTAL SWITCH POSITIONS AND HAS CONTINUED TO TRAVEL UNTIL THE MAXIMUM LIMIT OF TRAVEL WAS REACHED. WHEN THIS HAPPENS POWER TO THE MOTOR WILL BE DISCONNECTED AND THE MOTION SYSTEM MUST BE MANUALLY RESET.

IF THE LIMIT ERROR INDICATOR BLINKS WHILE THE SYSTEM IS OPERATING IN THE REMOTE MODE OR IF THE INDICATOR LIGHTS WHEN THE POSITION OVERRIDE BUTTON IS PRESSED THE MOTION POSITION ACTUATOR IS DEPRESSING BOTH A POSITION AND LIMIT SWITCH SIMULTANEOUSLY. CLEAR THIS CONDITION BY FOLLOWING THE MANUAL RESET PROCEDURE AND PRESSING THE POSITION OVERRIDE BUTTON AT THE SAME TIME AS THE LIMIT OVERRIDE BUTTON.

## MANUAL RESET

### CAUTION

**BEFORE MANUALLY RESETTING THE MOTION SYSTEM A COMPLETE VISUAL INSPECTION OF THE SYSTEM AND REPAIR OR ADJUSTMENT OF ANY FAULTY COMPONENTS SHOULD BE DONE.**

1. SET THE MOTION CONTROL SWITCH TO THE LOCAL POSITION.

### WARNING

**INCORRECT DIRECTION SELECTION DURING THIS PROCEDURE MAY CAUSE DAMAGE TO THE MOTION SYSTEM BY SLAMMING THE MOTION ARM INTO THE SYSTEM STRUCTURE!**

2. SELECT THE DESIRED DIRECTION OF TRAVEL BY PRESSING AND RELEASING ONE OF THE MOTION DIRECTION SWITCHES.
3. PRESS THE LIMIT OVERRIDE BUTTON UNTIL THE MOTION BEGINS THEN IMMEDIATELY RELEASE THE BUTTON. THE LAMP SHOULD MOVE TO THE FIRST POSITION AFTER THE OVERRIDE BUTTON IS RELEASED AND STOP. IF THE LAMP CONTINUES PAST THE FIRST POSITION CHECK THE TROUBLE SHOOTING SECTION OF THE SERVICE MANUAL.

## **SYSTEM ADJUSTMENTS**

## POSITION LIMIT SWITCH ADJUSTMENT

1. PLACE THE MOTION SYSTEM IN THE LOCAL MODE.
2. MOVE THE ARM TO THE CENTER POSITION.

### WARNING

**THE STEPS 3-5 PLACE THE MOTION SYSTEM INTO A NON POWERED CONDITION. IF THESE STEPS ARE NOT FOLLOWED CORRECTLY THE MOTION SYSTEM WILL MOVE IF THE ACTIVE POSITION LIMIT SWITCH IS ADJUSTED.**

3. TURN OFF THE LAMP POWER SWITCH.
4. PLACE THE LAMP INTO REMOTE MODE.
5. PLACE THE MOTION SYSTEM INTO REMOTE MODE.

### NOTE

**BE CERTAIN OF THE FUNCTION OF THE SWITCH UNDER ADJUSTMENT BEFORE MAKING ANY ADJUSTMENTS. INADVERTENTLY ADJUSTING THE END OF TRAVEL LIMIT SWITCHES MAY DAMAGE THE SYSTEM OR CAUSE THE IMPROPER SYSTEM OPERATION.**

6. LOOSEN THE TWO LOCK NUTS ON THE POSITION SWITCH ASSEMBLY UNDER ADJUSTMENT JUST ENOUGH TO ALLOW THE ASSEMBLY TO SLIDE.

### NOTE

**THE ELEVATION SCALE ON THE BASE UNIT IS ORIENTED SO THAT 0° EQUALS THE FULL HORIZONTAL POSITION, AND 90° EQUALS THE FULL VERTICAL POSITION.**

7. MOVE THE POSITION SWITCH ASSEMBLY SO THAT THE POINTER ON THE SWITCH PLATE ALIGNS WITH THE DESIRED LAMP ANGLE.
8. RETIGHTEN THE TWO LOCK NUTS.
9. UPON COMPLETION OF THE ADJUSTMENTS VERIFY THE CORRECT SYSTEM OPERATION BY CYCLING THE UNIT IN THE LOCAL MODE.
10. RETURN THE SYSTEM TO REMOTE OPERATION MODE AND SWITCH THE LAMP POWER SWITCH TO THE ON POSITION.

## END OF TRAVEL LIMIT SWITCH ADJUSTMENTS

### NOTE

**THE END OF TRAVEL LIMIT SWITCH IS FACTORY SET TO STOP THE MOTION ARM APPROXIMATELY 1/4" BEFORE STRIKING THE HARD LIMIT OF THE BASE FRAME.**

IF THERE IS AN EXTERNAL OBJECT SUCH AS A WALL, RAILING, OVERHANG, ETC. THAT THE LAMP HEAD MAY STRIKE WHILE MOVING, THE END OF TRAVEL LIMIT SWITCH SHOULD BE ADJUSTED SO THE MOTION WILL STOP BEFORE THE OBJECT IS STRUCK IF A FAULT CONDITION OCCURS.

1. ADJUST THE POSITION LIMIT SWITCHES BEFORE ADJUSTING THE END OF TRAVEL LIMIT SWITCHES.

### NOTE

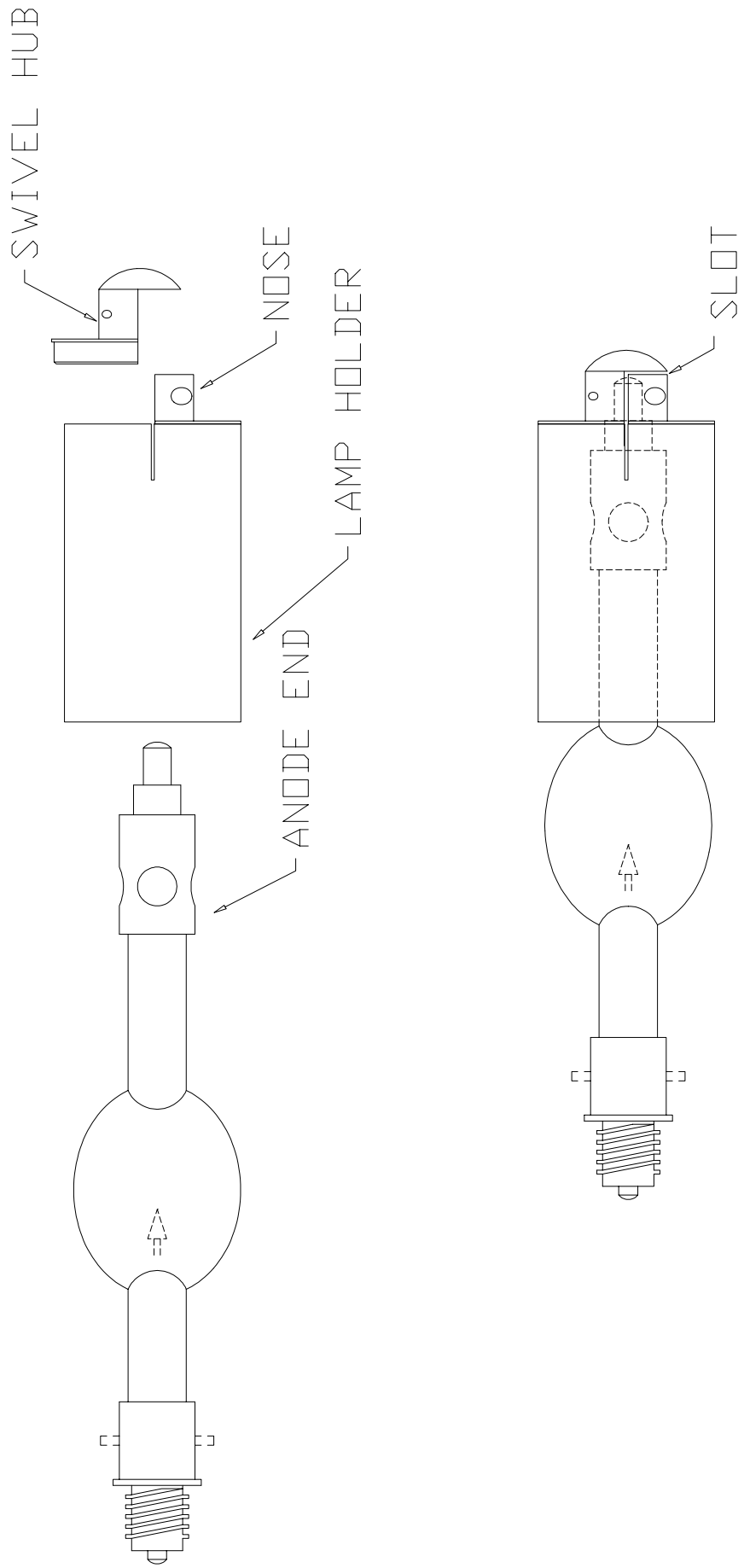
**THE STEPS 3-5 PLACE THE MOTION SYSTEM INTO A NON POWERED CONDITION. IN THIS MODE THE MOTION LOCAL/REMOTE SWITCH WILL ACT AS A POWER SWITCH TO STOP THE MOTOR WHILE ADJUSTING THE END OF TRAVEL LIMIT SWITCH.**

3. TURN OFF THE LAMP POWER SWITCH.
4. PLACE THE LAMP INTO REMOTE MODE.
5. PLACE THE MOTION SYSTEM INTO REMOTE MODE.
6. LOOSEN THE TWO LOCK NUTS JUST ENOUGH TO SLIDE THE END OF TRAVEL LIMIT SWITCH TO BE ADJUSTED.
7. SWITCH THE MOTION SYSTEM INTO THE LOCAL MODE.
8. MOVE THE ARM TO THE POSITION LIMIT CLOSEST TO THE EXTERNAL OBSTACLE.
9. IF THE OBSTACLE IS WITHIN 6° OF THE LAMP HEAD WHEN AT THE POSITION LIMIT MOVE THE END OF TRAVEL LIMIT SWITCH ASSEMBLY WITHIN 40 OF THE POSITION LIMIT SWITCH ASSEMBLY.

### NOTE

**MOVING THE END OF TRAVEL LIMIT SWITCH TOO CLOSE TO THE POSITION LIMIT SWITCH WILL CAUSE FALSE LIMIT ERRORS DUE TO THE NORMAL OVERTRAVEL OF THE SWITCH ACTUATOR.**

10. IF THE OBSTACLE IS FARTHER AWAY THAN 6° MOVE THE LAMP HEAD TO THE CLOSEST POSITION TO THE OBJECT DESIRED BY PRESSING THE BUTTON FOR THE DIRECTION YOU WANT THE HEAD TO MOVE AND THE POSITION OVERRIDE BUTTON SIMULTANEOUSLY. TO STOP THE MOTION WHEN THE DESIRED POSITION IS REACHED SWITCH THE MOTION SYSTEM INTO THE REMOTE MODE USING THE LOCAL/REMOTE SWITCH.
11. ONCE THE LAMP HEAD IS IN THE DESIRED POSITION SLIDE THE END OF TRAVEL LIMIT SWITCH ASSEMBLY TO THE POINT THAT THE SWITCH IS ACTUATED BY THE LIMIT SWITCH ACTUATOR.
12. TIGHTEN THE TWO LOCK NUTS ON THE END OF TRAVEL LIMIT SWITCH ASSEMBLY.
13. SWITCH THE MOTION INTO THE LOCAL MODE. THE LIMIT ERROR INDICATOR SHOULD LIGHT.
14. MOVE THE LAMP HEAD BACK TO THE FIRST POSITION LIMIT. SEE THE MANUAL RESET PROCEDURES.
15. SET THE LAMP, AND MOTION INTO REMOTE MODE, AND SET THE LAMP POWER SWITCH TO THE ON POSITION.



FRONT LAMP HOLDER ASSEMBLY

# **INSTRUCTIONS FOR REMOVING AND INSTALLING A TYPE TH GLOBE IN A BL7000ART 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.**

## **NOTE**

**THE LAMP HEAD SHOULD BE IN THE HORIZONTAL POSITION DURING THE GLOBING PROCEDURES.**

## **WARNING**

**DISCONNECT POWER SOURCE BEFORE SERVICING THIS EQUIPMENT.**

## **WARNING**

**THIS SYSTEM MAY BE UNDER THE CONTROL OF AN AUTOMATIC TIMING SYSTEM AND MAY START AT ANY TIME WHEN THE LOCAL/REMOTE SELECTOR SWITCH IS IN THE REMOTE POSITION.**

## **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. FLAT SCREWDRIVER MEDIUM SIZE
3. 7/16 WRENCH OR SOCKET
4. ALLEN WRENCH 5/32
5. PHILLIPS SCREWDRIVER #2

## DISASSEMBLY PROCEDURE

### IF THERE IS NO GLOBE INSTALLED IN THE FIXTURE

1. Release the 4 1/4 turn fasteners located at the small sides of the cowl 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. 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.
6. Slide the blade of the screwdriver in the slot between the rounded end of the swivel hub and the nose of the lamp holder body and twist the screwdriver to pop the end of the swivel hub off the lamp holder.



## DISASSEMBLY PROCEDURE

### IF THERE IS A GLOBE IS INSTALLED IN THE FIXTURE

1. Release the 4 1/4 turn fasteners located at the small sides of the cowl 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 with.
3. Remove the 2 brass bolts connecting the short leads to the front lamp holder using a 7/16 wrench.
4. 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.**

5. 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.
6. 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.
7. 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.
8. Slide the blade of the screwdriver in the slot between the rounded end of the swivel hub and the nose of the lamp holder body and twist the screwdriver to pop the end of the swivel hub off the lamp holder.
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.

## 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.

### WARNING

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

2. Reach through the opening in the rear of the reflector and grasp the globe by its rear ferrule and while lightly pushing the globe back into the receiver block turn the globe in a counterclockwise direction until the globe begins to rotate freely.
3. Once the globe is free do not remove it completely from the rear lamp holder.
4. Return to step 5 of :

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

## 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.

### WARNING

**DO NOT PLACE ANY PRESSURE ON THE GLOBE WHILE REASSEMBLING THE FRONT LAMP HOLDER!**

3. Align the swivel hub with the lamp holder body and press the two halves together while making sure that the stud of the globe does not slip back into the lamp holder. The two halves will have a snug fit and it may be necessary to **lightly** tap the swivel hub into the lamp holder body using the handle of a screwdriver or similar object.
4. Replace 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.

### CAUTION

**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. Connect 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.**

11. Remove the protective cover from the globe and clean the glass portion of the globe completely with alcohol.
12. The installation is now complete. Replace the front cowl and test the lamp.
13. Log the hour meter reading at installation.
14. Perform the output power adjustment procedures.
15. Perform the focus and X-Y procedures.

# FOCUS AND X-Y ADJUSTMENT INSTRUCTIONS

## 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.**

## EQUIPMENT REQUIRED

1. ALLEN WRENCH 5/32, 3/16
2. # 5 WELDERS GLASSES OR VERY DARK SUNGLASSES

## WARNING

**THE BL7000 SYSTEMS PROJECT A VERY INTENSE BEAM OF FULL SPECTRUM LIGHT. THE USE OF DARK GLASSES WHILE ADJUSTING THE BEAM PARAMETERS ON A LIGHT COLORED REFLECTIVE SURFACE AT A CLOSE DISTANCE IS REQUIRED.**

## WARNING

**NEVER LOOK DIRECTLY INTO A LIT FIXTURE'S LIGHT SOURCE.**

## ADJUSTMENT INSTRUCTIONS

1. Loosen the positioning fasteners and point the lamphead toward a wall, ceiling, or other flat surface at least 10 feet away.
2. Locate the focus adjustment access hole located on the front of the front cowl at approximately 2:00 as you look into the front of the head.
3. Locate the X & Y adjustment holes located on the lower small sides of the front cowl.

## WARNING

**THE BL7000 SYSTEMS PROJECT A VERY INTENSE BEAM OF FULL SPECTRUM LIGHT. CAUTION MUST BE TAKEN WHEN POINTING THE BEAM AT AN OBJECT AT A DISTANCE OF LESS THAN 100 FEET WITH THE FOCUS SET FOR A CONVERGING BEAM. COMBUSTABLE OBJECTS AND OBJECTS WITH A DARK COLOR MAY UNEXPECTEDLY IGNITE IF CARE IS NOT TAKEN IN THE FOCUSING AND POSITIONING OF THE BEAM.**

4. Energize the fixture and ignite the lamp.
5. Adjust the focus adjustment screw in a counterclockwise direction using a 3/16 allen wrench to produce a diverging beam pattern with 2-3 clearly defined rings of light with or without an off center hot spot.
6. Adjust the X & Y adjustment screws using a 5/32 allen wrench to move the inner rings of light to create concentric rings with the hot spot at the center of the light field. Turning the adjustment screw clockwise will move the rings toward that adjustment axis and turning the screw counterclockwise will move the rings away from that adjustment axis.
7. Readjust the focus screw to set the desired beam spread.
8. Reposition the lamp head and resecure the position locking fasteners.

# OUTPUT POWER ADJUSTMENT PROCEDURES

## 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.

## NOTE

THE LAMP HEAD SHOULD BE IN THE VERTICAL POSITION DURING THE POWER ADJUSTMENT PROCEDURE.

## WARNING

DISCONNECT POWER SOURCE BEFORE SERVICING THIS EQUIPMENT.

## WARNING

THIS SYSTEM MAY BE UNDER THE CONTROL OF AN AUTOMATIC TIMING SYSTEM AND MAY START AT ANY TIME WHEN THE LOCAL / REMOTE SELECTOR SWITCH IS IN THE REMOTE POSITION.

## EQUIPMENT REQUIRED

1. SCREWDRIVER FLAT BLADE, LARGE
2. WRENCH 3/8
3. DC VOLTMETER WITH A RANGE OF 50 VOLTS
4. DC CLAMP ON AMMETER WITH A RANGE OF 200 AMPS

## ADJUSTMENT INSTRUCTIONS

1. Remove the left and right access covers from the base enclosure by removing the screws along the sides of the panels with a 3/8 wrench.
2. Note the location and settings of the power supply adjustment taps (located below the control panel on the lower portion of the power supply).
3. If the system is to be adjusted without the control timing circuit energized set the main power switch to the off position and set the lamp local / remote selector switch to the local position.
4. Set the main power switch to the on position. The unit cooling system should start immediately, and the lamp should strike after a several second delay. If nothing happens and the selector switch is set per step 3 check the main 3 phase power supplying this system in all likelihood the main power has been turned off at the source.
5. Attach the clamp on ammeter around one of the high current output leads and attach the voltmeter to the positive and negative heatsinks.
6. Measure the output voltage and current.
7. Calculate the output power using the formula (volts) X (amps) = (watts). If the power level is over 7350 watts immediately turn off the light and go to step 8.
8. Allow the light to run at least 10 minutes before making any adjustments.

9. Turn off the light using the main power switch on the control panel. The cooling system will continue to run for at least 30 minutes after the power is turned off. Do not be concerned. The power to the power supply adjustment taps have been disconnected by the unit's main power contactor.

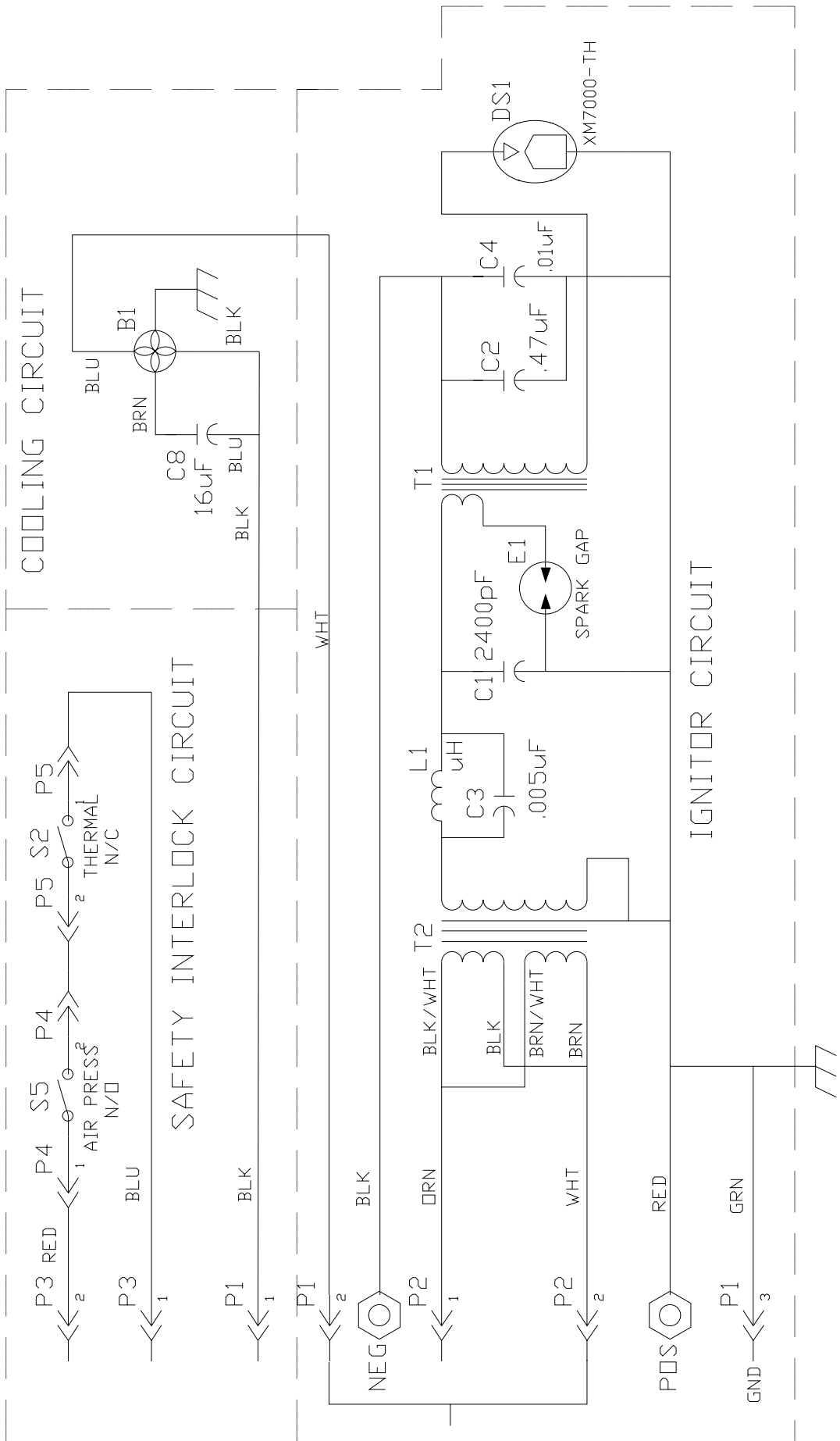
**WARNING**

**ALL THREE TERMINAL BLOCKS IN THE COARSE AND FINE ADJUSTMENT GROUPS MUST BE SET AT THE SAME LETTER OR NUMBER TAP SETTING. FAILURE TO OBSERVE THE CORRECT TAP SETTINGS WILL RESULT IN SHORTENED LAMP LIFE, EXCESSIVE INPUT CURRENT DRAW, AND POSSIBLE EQUIPMENT DAMAGE.**

10. Adjust the input voltage taps (TB-1)-(TB-6) to set the output power level to 7000 Watts +/- 5%.
11. The taps on (TB-1-3) labeled W,X,Y,Z are coarse adjustments with tap (W) being the lowest current and tap (Z) being the highest current.
12. The taps on (TB-4-6) labeled 1,2,3,4 are fine adjustments with tap (1) being the lowest current and tap (4) being the highest current.
13. Be sure all the terminal block screws have been tightened then re-energize the unit using the main power switch.
14. Repeat steps 6 thru 13 until the power supply has been properly adjusted. When the adjustments are completed replace the base access panels.

## **CIRCUIT DESCRIPTIONS**





## **IGNITOR CIRCUIT THEORY OF OPERATION**

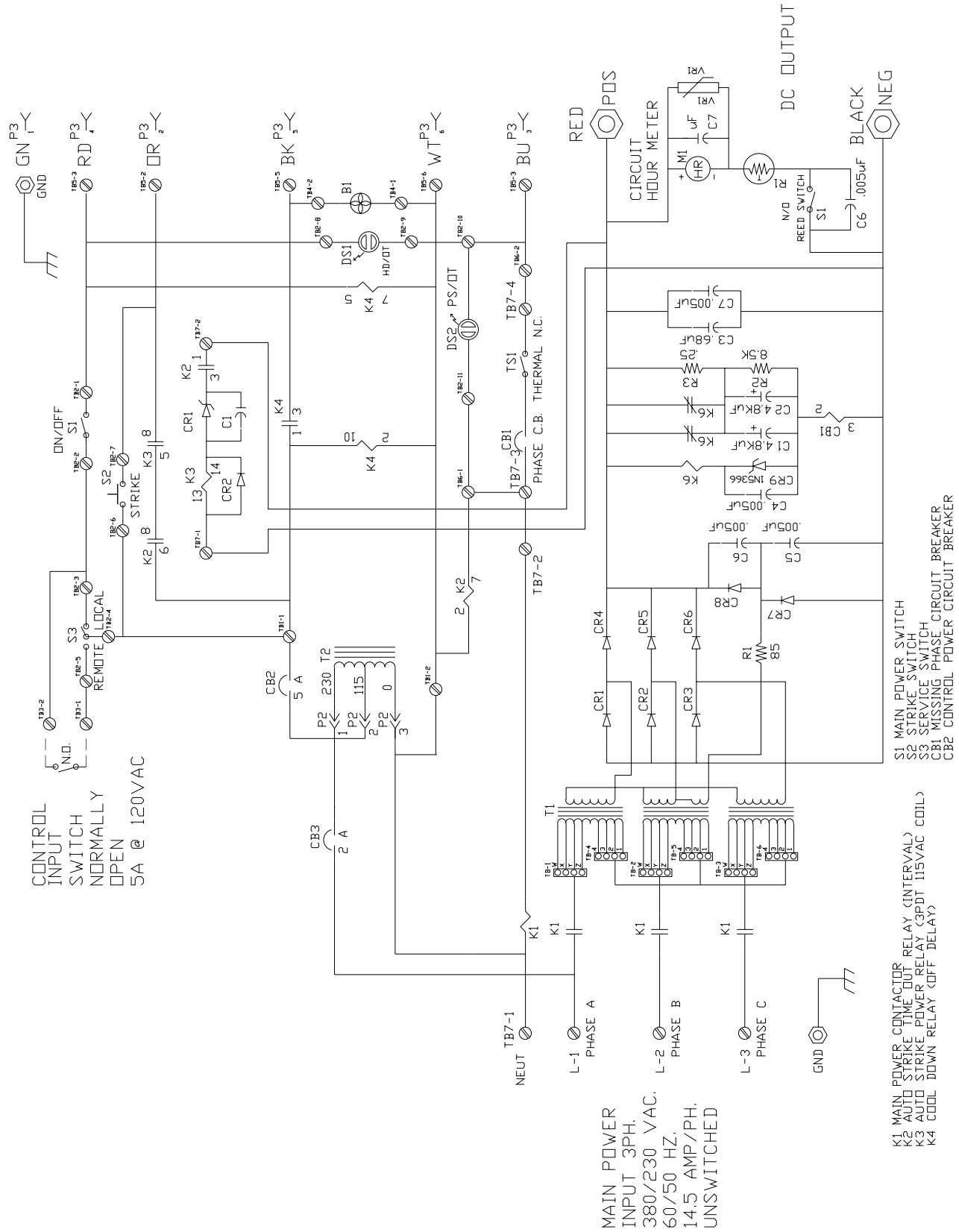
When power is applied through the orange and white wires from pins 1 and 2 respectively of (P2) to the input step up transformer (T2) at 115 vac, 60 Hz, it causes the spark gap (E1) to break down. The rf trap (L1, C3) in the secondary of (T2) minimizes rf losses to the power line. The spark gap breakdown allows current to flow in the resonant circuit consisting of (C1) and the primary of (T1). A series of damped oscillations occur (at 2 to 4 MHz) during a portion of each half of the 60 Hz line frequency. These high frequency pulses are stepped up in voltage (to approximately 60 KV) thru (T1) and then applied to the lamp terminals. (C2, C4) provides a low impedance, rf return path for the high voltage pulse through the lamp. An arc is struck in the lamp ionizing the insulating xenon gas and when suitable DC power is available the lamp will ignite.

## **SAFETY INTERLOCK CIRCUIT THEORY OF OPERATION**

The safety interlock circuit is composed of a thermal switch (S2) located on the lower right front spider arm and an air pressure switch (S5) located at the rear of the lamp head near the cooling blower.

If the lamp head becomes too hot to safely operate the lamp the thermal switch (S2) will open causing the ballast contactor (K1) to de-energize turning the lamp off. When the lamp head cools to a safe operating temperature the thermal switch (S2) will reset and the system will automatically relight.

If the lamp head cooling system becomes inoperative or becomes blocked with debris the air pressure switch will detect the drop in blower intake pressure and will open causing the ballast contactor (K1) to de-energize turning the lamp off. When the problem has been corrected and the cooling system is operating correctly the air pressure switch will reset and the system will relight.



## 7 KW POWER SUPPLY THEORY OF OPERATION

The xenon lamp power supply has two stages of operation. Before the lamp has lit the boost voltage circuit supplies 100 Vdc or more to the lamp. This boosted voltage enhances the initial ignition arc for several hundred milliseconds after the lamp has lit assuring a reliable ignition. Upon ignition of the lamp the main power supply takes over supplying low voltage and regulated constant high current.

The boost circuit functions as follows. The power supply transformer contains a set of high voltage low current auxiliary windings. These windings supply a minimum of 85 Vac. The voltage passes through the current limiting resistor (R1) and is full wave rectified by diodes (CR7,8,2,5). The rectified voltage is then stored in capacitors (C1, C2) until the ignitor circuit is energized.

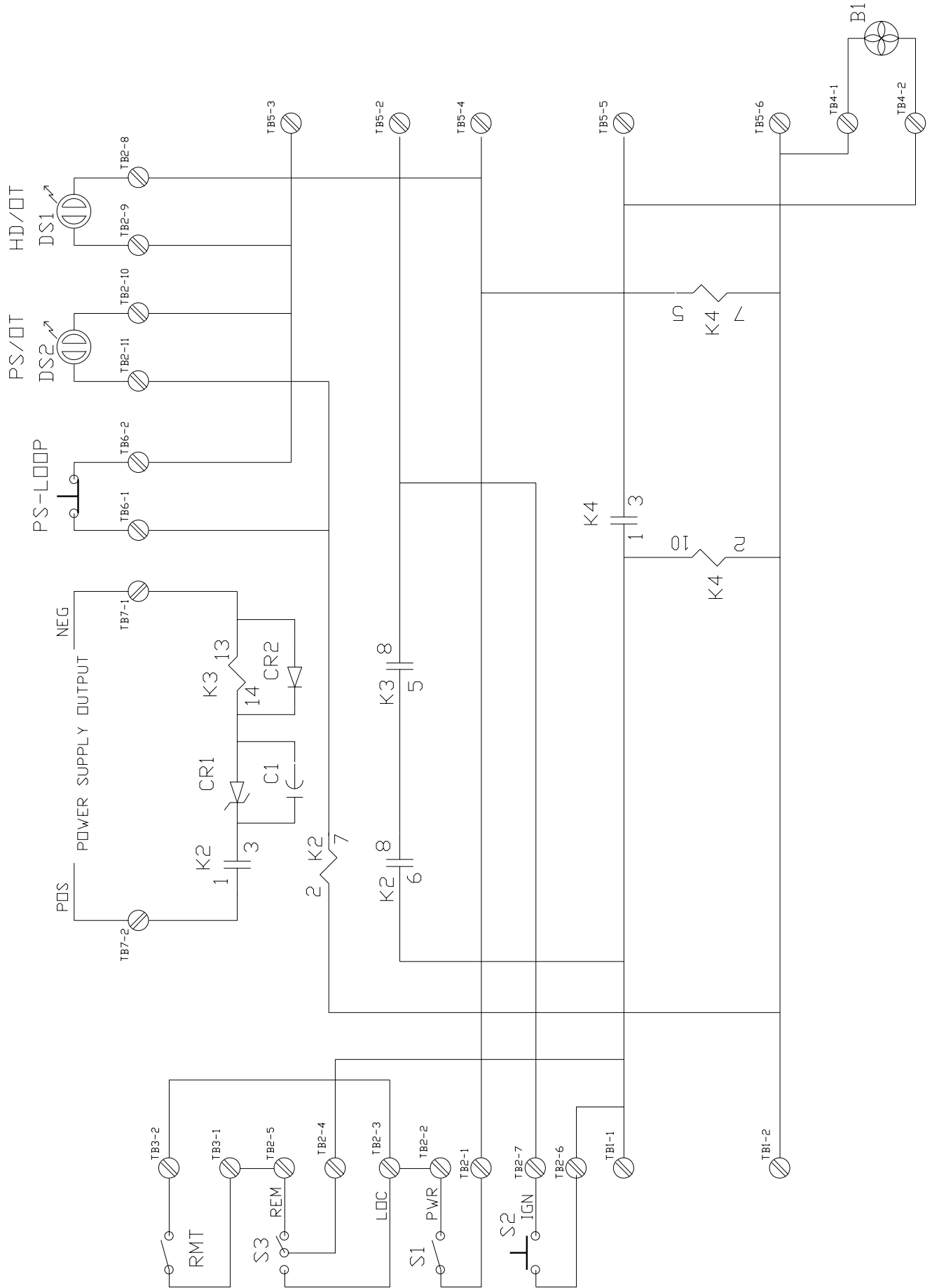
The main power supply circuit functions as follows. The main three phase power enters the unit at the input terminals of the power contactor (K1). When the contactor is energized current flows through the power adjustment terminal boards (TB1 - 6) to the primary windings of the power transformer (T1). The power transformer steps down the input voltage and limits the output current to a range that is safe for the operation of the lamp that is attached to the power supply. The power transformer output is then rectified by the power diodes (CR1-6) and filtered by the output capacitors (C1-2). Capacitor (C3, C7) form a filter to protect the power diodes from high voltage spikes on the output power lines when the ignitor is energized.

When the ignitor circuit is energized a high voltage high frequency arc passes across the electrodes in the lamp ionizing the insulating xenon gas creating a path for the discharge of capacitors (C1, C2) through the lamp. As the capacitors discharge the current through the lamp increases. The current limiting resistor (R1) stops the effect of the boost circuit on the output of the power supply as the current increases. At the same time the main power supply continues supplying regulated constant current to the lamp. The output voltage of the main power supply is determined by the impedance of the lamp after it is lit.

The resistor (R3) limits the discharge current of capacitors (C1, C2) through the lamp during the ignition cycle preventing damage to the lamp due to excessive current. Once the output voltage of the power supply has dropped to the normal operating level relay (K6) de-energizes connecting capacitors (C1, C2) directly to the power supply output thereby increasing their filtering capability. Zener diode (CR9) is in series with the coil of (K6) to insure that relay (K6) releases during the lamp operation.

The circuit breaker (CB1) monitors the ripple current on the output of the power supply. When the lamp is running if one of the three phase input power lines fails or if one of the rectification or filter components fails the output ripple of the power supply will increase significantly. When the ripple current increases the circuit breaker will trip de-energizing the input power contactor (K1) thereby preventing damage to the lamp from the high ripple current.

The thermal switch (TS1) is located on the negative heatsink and monitors the output power diode temperature. When the heatsink temperature exceeds the safe maximum limit for the power diodes the switch will open de-energizing the input power contactor (K1) thereby preventing damage to the output power diodes from excessive operating temperature.



## **AUTO STRIKE CIRCUIT THEORY OF OPERATION**

When the circuit supplying power to the power supply main contactor (K1) is energized current flows through the lamp power switch (S1) to (TB2-1) out (TB5-3) through the lamp head safety interlock circuit returns to (TB5-3) out (TB6-2) to power supply terminal block (TB7-4) through the power supply safety interlock circuit (TS1, CB1) out (TB7-3) and splits off to the main contactor coil (K1) through (TB7-2) and to the coil of the auto strike time limit relay (K2).

The auto strike time limit relay (K2) restricts the operation of the auto strike circuit to one minute after the system is energized by opening the circuit supplying power to the lamp head ignitor circuit (K2-6,8) and opening the circuit supplying power to the coil of the auto strike power relay (K3) (K2-1,3).

When the power supply is energized and the pre ignition output voltage is above 85 Vdc zener diode (CR11) breaks down allowing the current to flow through the coil of the auto strike power relay (K3). When the auto strike power relay (K3) actuates current flows through it's contacts (K3-5,8) to (TB5-2) and out to the lamp head ignitor circuit. When the lamp head ignitor circuit energizes the output voltage of the power supply drops below the break down threshold of zener diode (CR11) causing the auto strike relay (K3) to de-energize opening the ignitor power circuit. If the lamp lights the output voltage of the power supply will remain below the break down threshold of zener diode (CR11) and the auto strike relay (K3) will remain de-energized. If the lamp does not light the output voltage of the power supply will recycle to above the zener diode (CR11) break down threshold and the auto strike power relay (K3) will reenergize. This cycle will repeat until the lamp lights or the auto strike time limit relay (K2) times out. Once the time limit is reached the auto strike circuit will not operate until the circuit supplying power to the main power supply contactor (K1) is de-energized and reenergized. If one of the system safety interlock circuits opens the power supply contactor circuit, upon resetting the auto strike cycle will reinitialize.

## **SYSTEM COOL DOWN CIRCUIT THEORY OF OPERATION**

When the system main power is energized the current flows from the line side of the power supply contactor (K1) through circuit breaker (CB3) to autotransformer (T2) where the 230 Vac line is stepped down to 120 Vac. The current flows through circuit breaker (CB2) to (TB1-1) to the supply input (K4-10,2) and power contacts (K4-1,3) of cool down timing relay (K4).

When the circuit supplying power to the power supply main contactor (K1) is energized current flows through the lamp power switch (S1) to (TB2-1) and to the control input of cool down timing relay (K4-5,7). The cool down timing relay (K4) actuates closing it's power contacts (K4-1,3). Current flows to (TB5-5) out to the lamp head cooling circuit and to (TB4-2) out to the power supply cooling fan. When the circuit supplying to the power supply main contactor (K1) is de-energized the removal of power to the cool down timing relays control input (K4-5,7) causes the cool down timing relay (K4) to start it's timing cycle. Thirty minutes after the control input is de-energized the cool down timing relay (K4) will open it's power contacts (K4-1,3) de-energizing the lamp head and power supply cooling circuits.

## MOTION CONTROL CIRCUIT THEORY OF OPERATION

The motor in this system utilizes an integral braking system. Do not attempt to move the motion system manually.

The motion control system requires three sources of power to operate.

The motor power source is 240 Vac. In the local mode the motor current flows from the line side of power supply contactor (K1) to the motion control local / remote switch through the motor power circuit breaker to (TB13-1) through motor power relay contacts (K8-9,5) out (TB14-6) through the motor (M1) and returns to (TB14-1) out (TB12-4) through the vertical end of travel limit switch into (TB12-3) out (TB12-2) through the horizontal end of travel limit switch into (TB12-1) out (TB13-3) and to power supply terminal block (TB7-1). The circuit is the same in the remote mode with the exception that the current is sourced from the load side of power supply contactor (K1).

The control circuit power source is 120 Vac. The current flows from the output of autotransformer (T2) through circuit breaker (CB2) to (TB1-1) to the contacts of horizontal position relay (K5-8,5,12,9) to the contacts of center position relay (K6-8,5,12,9) to the contacts of vertical position relay (K7-8,5,12,9) out (TB10-1) to the position limit switch circuit, out (TB10-7) to the position override switch circuit, out (TB11-6) to the up direction limit switch circuit, out (TB11-7) to the up direction switch circuit, out (TB11-2) to the down direction limit switch circuit, out (TB11-3) to the down direction switch circuit, through the coil of the motor power relay (K8) and through the coils of the motor direction relay (K9) out (TB1-2) to power supply terminal block (TB7-1).

The remote control signal input power source is 24 Vac. The current flows from the remote control system to either (TB8-3) to the coil of the vertical position relay (K7-14,13) out (TB9-2) through the motion control local / remote switch into (TB9-1) and out (TB8-4) to the remote control system or, (TB8-2) to the coil of the center position relay (K6-14,13) out (TB9-2) through the motion control local / remote switch into (TB9-1) and out (TB8-4) to the remote control system or, (TB8-1) to the coil of the horizontal position relay (K5-14,13) out (TB9-2) through the motion control local / remote switch into (TB9-1) and out (TB8-4) to the remote control system.

### POSITION CIRCUIT

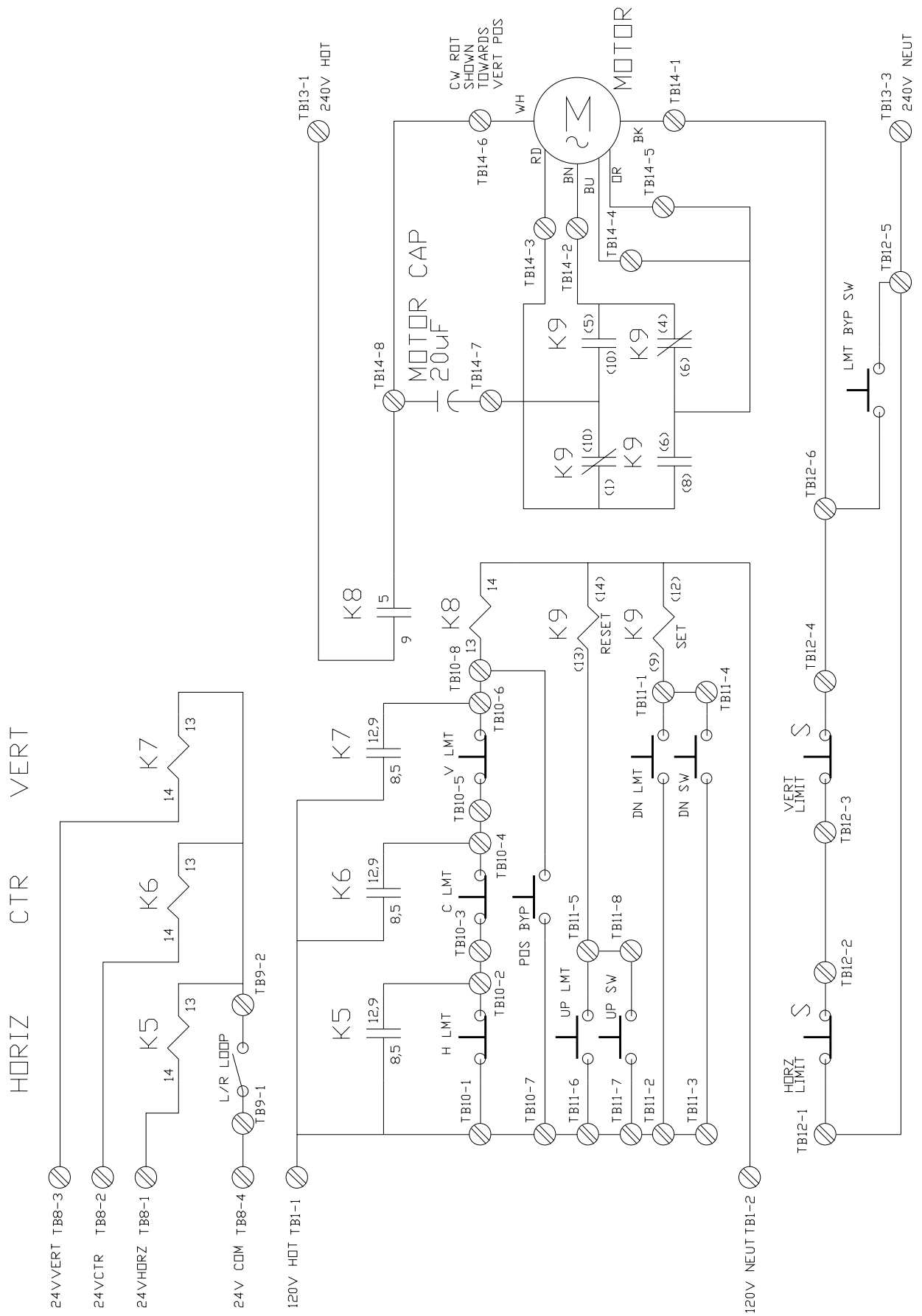
The position control circuit utilizes three separate paths to energize the motor power relay (K8). Through the position limit switch loop circuit, through the remote control position relay circuit, and through the position override switch circuit.

### LIMIT SWITCH LOOP CIRCUIT

The current to energize the motor power relay (K8) enters the circuit at (TB1-1) is connected to the start of the position limit switch loop at (TB10-1) through the horizontal position limit switch to (TB10-2) out (TB10-3) through the center position limit switch to (TB10-4) out (TB10-5) through the vertical position limit switch to (TB10-6) and to the coil of the motor power relay (K8). The position limit switches are wired in series. Whenever the limit switch actuator contacts a position limit switch the circuit supplying power to the coil of the motor power relay (K8) is opened. The motor will stop at that position and will not move until the coil of the motor power relay (K8) is energized from an alternate source.

### REMOTE CONTROL POSITION RELAY CIRCUIT

The current to energize the motor power relay (K8) enters the circuit at (TB1-1) is connected to the contacts of horizontal position relay (K5-8,5,12,9) to the contacts of center position relay (K6-8,5,12,9) to the contacts of vertical position relay (K7-8,5,12,9). When the limit switch loop circuit is open momentarily energizing the coil of the remote control position relay for the position the system has stopped at will shunt power around the open position limit switch and energize the motor power relay (K8) causing the motor to start and run until the current to the coil of the motor power relay (K8) is interrupted by the next position limit switch actuation. Energizing the coil of any remote control position relay between the open position limit switch and the coil of the motor power relay (K8) will cause the system to move. See the control truth table for the movement variables.





## **POSITION OVERRIDE CIRCUIT**

The current to energize the motor power relay (K8) enters the circuit at (TB1-1) is connected to (TB10-7) to the position override switch circuit into (TB10-8) and connects to the coil of the motor power relay (K8). When this circuit is energized it will shunt power around all the position limit switches and energize the motor power relay (K8) causing the motor to start and run until the current to the coil of the motor power relay (K8) is interrupted by the next position limit switch actuation.

## **DIRECTION CIRCUIT**

The direction circuit can be activated by either the direction limit switches located on the vertical and horizontal position limit switch brackets, or the direction control switches located on the control panel.

## **DIRECTION LIMIT SWITCH CIRCUIT**

The current to energize the motor direction relay (K9) in the up direction enters the circuit at (TB1-1) is connected to (TB11-6) to the up direction limit switch to (TB11-5) and to the reset coil of the motor direction relay (K9-13).

The current to energize the motor direction relay (K9) in the down direction enters the circuit at (TB1-1) is connected to (TB11-2) to the down direction limit switch to (TB11-1) and to the set coil of the motor direction relay (K9-9).

Motor direction relay (K9) is a latching relay and will remain in the last direction set until the opposing coil is energized. When the lamp head is moving in a downward direction and reaches it's horizontal position the limit switch actuator will contact the up direction limit switch closing the circuit to the reset coil of the motor direction relay (K9) causing the relay contacts to change state. This action switches the field coils and start capacitor of the motor reversing the motor direction. Upon the next energizing of the motor power relay (K8) the lamp head will move in an upward direction. The lamp head will continue to move in an upward direction until the set coil of the motor direction relay (K9) is energized by the closing of the down limit switch by the limit switch actuator.

## **DIRECTION CONTROL SWITCH CIRCUIT**

The current to energize the motor direction relay (K9) in the up direction enters the circuit at (TB1-1) is connected to (TB11-7) to the up direction control switch to (TB11-8) and to the reset coil of the motor direction relay (K9-13).

The current to energize the motor direction relay (K9) in the down direction enters the circuit at (TB1-1) is connected to (TB11-3) to the down direction control switch to (TB11-4) and to the set coil of the motor direction relay (K9-9).

The direction control switches are wired in parallel with their comparable direction limit switch. The circuit function is identical to the operation using the direction limit switches with the exception that the lamp head does not have to be at the horizontal or vertical limits for the direction control switches to work. If the direction control switch is actuated while the system is in motion nothing will happen until the systems stops. The motor must be stopped before it can change direction.

## **END OF TRAVEL LIMIT SWITCH CIRCUIT**

The end of travel limit switches are wired in series with the return line of the motor. If the motion system exceeds its travel limits in either direction the limit switch actuator will contact one of the end of travel limit switches opening up the motor power circuit. The motor will stop and will not move until the limit switch actuator is moved off the end of travel limit switch. The limit override switch will shunt the motor current around the end of travel limit switches to reset the motion system.



## **SYSTEM PART LISTS**

## HEAD ENCLOSURE PART LIST

XENOTECH P/N	PART DESCRIPTION	
171025-001	REFLECTOR ASSY, 4&7K	
598407-003	GLOBE, 7KW XE7000-TH	
515200-001	LOCKNUT, CONDUIT 1 1/4	
524900-001	CORD GRIP, 4&7K STRAIN RELIEF 1-1/4	
526100-001	CABLE, 10K EXTENSION BLACK	
515900-001	FITTING, HOSE MALE 1/8NPT 1/4ID HOSE	
522400-001	BLOWER 400 CFM 115VAC 7K	B1
530216-101	CAPACITOR 16 uF 400VAC (7K BLOWER)	C5
578912-001	SWITCH, PRESSURE 7K .04-1.6 IN WC	S5

## FRONT COWL PART LIST

XENOTECH P/N	PART DESCRIPTION
171011-001	COWL, 4 & 7K W/O EAR MOUNTING HOLES
171014-001	GLASS, TEMPERED 3/8 21 X 21 7K
171026-001	RETAINER, 4&7K GLASS
518900-001	SILCONE SPONGE STRIPS 1/8 THK 1/2 WD

## HOUR METER CIRCUIT PART LIST

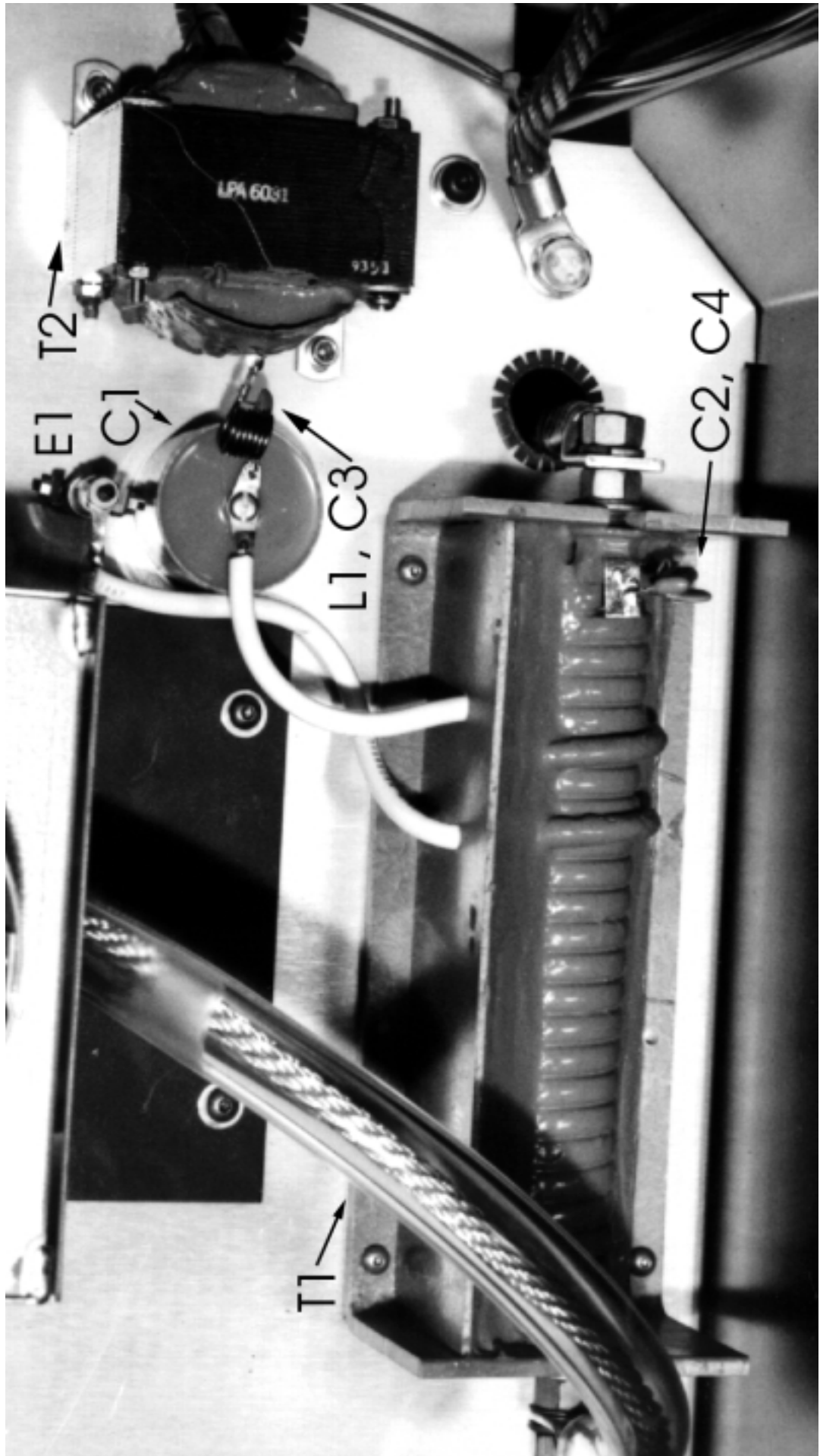
XENOTECH P/N	PART DESCRIPTION	REF DES
518911-001	SWITCH, REED SPST NO 200V 2A 15-20 AT	S1
530705-008	CAPACITOR .005 uF 1KV CERAMIC	C4-7
537032-001	METER, HOUR 10-80VDC	M1
541945-001	VARISTOR 45VDC	CR1

## MANUAL FOCUS ASSY PART LIST

XENOTECH P/N	PART DESCRIPTION
171002-001	BLOCK, FOCUS 1/4-20 SHAFT
171004-001	BRACKET, FOCUS 7K
515000-002	CLIP, E
515500-005	SCREW, SOCKET HEAD CAP 1/4-20 X 6 W/4" THREAD ALLOY
515610-004	SPRING, COMPRESSION .027 WIRE 4 1/8 LENGTH
515819-501	WASHER, SPHERICAL 1/4

## REAR LAMP HOLDER ASSY PART LIST

XENOTECH P/N	PART DESCRIPTION
171003-001	BRACKET, 7K THREADED RECEIVER
171022-001	RAIL, 7K INSULATING LEFT
171023-001	RAIL, 7K INSULATING RIGHT
171024-001	RECEIVER, THREADED END W/FINISH
515500-002	BOLT, SHOULDER 3/8 10-32 THD. 1/4 DIA. SOCKET HEAD S/S
515610-001	SPRING PLUNGER HVY FORCE S/S
515803-501	WASHER, FLAT 1/4 14S BRASS
518600-001	STANDOFF, 3 X 1/8 2-56 THD ALUMINIUM



## IGNITOR CIRCUIT PART LIST

XENOTECH P/N	PART DESCRIPTION	REF DES
530701-700	CAPACITOR .01 uF 1KV CERAMIC	C4
530705-008	CAPACITOR .005 uF 1KV CERAMIC	C3
530724-900	CAPACITOR 2400 pf. 20 KV CERAMIC DOOR KNOB	C1
530847-700	CAPACITOR .47 uF 250V POLYESTER	C2
546800-001	SPARK GAP	E1
587500-001	CHOKER, IGNITOR RF	L1
587700-007	TRANSFORMER, PRI. 4/7K 115/230 PRI.	T2
587902-001	TRANSFORMER, R.F. 4/7K	T1

## SPIDER & FRONT LAMP HOLDER ASSY PART LIST

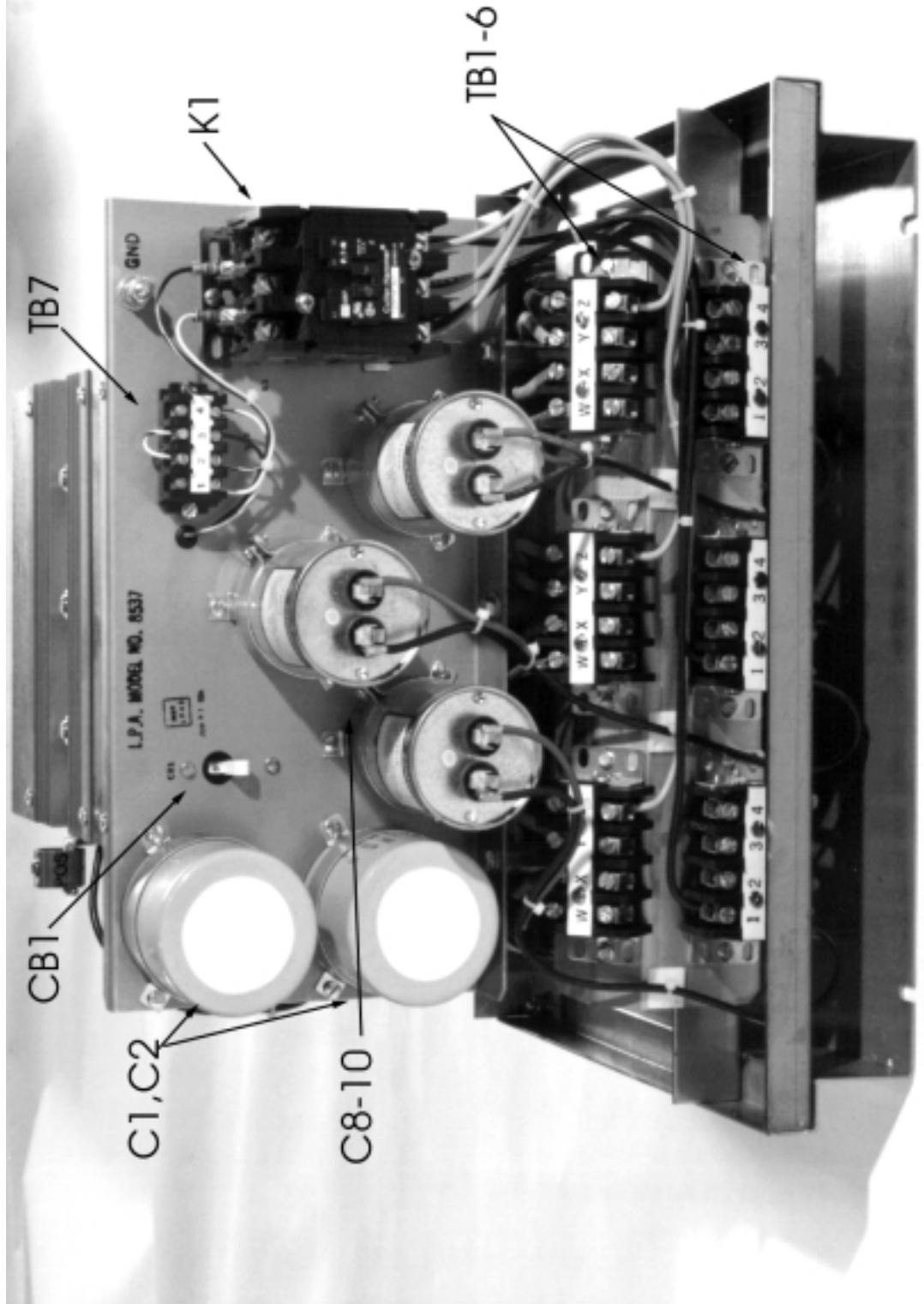
XENOTECH P/N	PART DESCRIPTION	REF DES
171016-001	HOLDER, 4&7K WELDMENT LAMP HOLDER	
171017-001	HUB, 4&7K LAMP SWIVEL	
171029-001	SPYDER, FRONT 4&7K	
171032-001	JUMPER ASEMBLY,SMALL	
171033-001	JUMPER ASEMBLY,LARGE	
515500-004	BOLT, SHOULDER 5/8 SHOULDER 1/4-20 THD. 5/16 DIA. S/S	
515500-007	SCREW, SOCKET HEAD CAP 10-32 X 2 S/S	
515500-008	SCREW, HEX HEAD CAP 1/4-20 X 1/2 BRASS	
515500-009	SCREW, HEX HEAD CAP 1/4-20 X 3/4 BRASS	
515500-010	SCREW, SOCKET HEAD CAP 10-32 X 3/4 S/S	
515610-002	SPRING, S/S .300 OD .042 WIRE 1-1/2" LENGTH	
515610-003	SPRING, S/S .720 OD .063 WIRE .75" LENGTH	
515807-501	WASHER, INTERNAL STAR LOCK 1/4 BRONZE	
515819-601	WASHER, FLAT 5/16 STAINLESS STEEL	
578811-001	SWITCH, THERMAL 220 DEG.F +-6DEG. 30DEG.F DIFFERENTIAL	S2

## CONTROL PANEL PART LIST

XENOTECH P/N	PART DESCRIPTION	REF DES
175003-001	PANEL, BL7000ART CONTROL	
518110-001	CLIP, CIRCUIT BREAKER 5 AMP	
546700-002	INDICATOR, RED NEON 125V	DS1,DS2
573105-001	CIRCUIT BREAKER 5 AMP	CB2
578311-001	SWITCH, TOGGLE DPDT	S1
578311-002	SWITCH, PUSHBUTTON NO ASSY, LIMIT SWITCH	
573105-001	CIRCUIT BREAKER 2 AMP	CB2
175030-001	ASSY, LIMIT SWITCH MTG BRACKET	
546700-002	INDICATOR, RED NEON 250V	

## CONTROL CIRCUIT BOARD ASSY PART LIST

XENOTECH P/N	PART DESCRIPTION	REF DES
541724-001	DIODE, 1 AMP 400V	CR10
530705-008	CAPACITOR .005 uF 1KV CERAMIC	C11
571000-002	SPRING, RELAY HOLD DOWN DIN SOCKET	
571210-001	RELAY, TIME DELAY OFF 120VAC 10AMP 30MIN DELAY	K4
571210-002	RELAY, TIME DELAY INTERVAL 120VAC 10AMP 1MIN DELAY	K2
571311-001	RELAY, SPDT 10 AMP 120 VAC COIL	K3
	RELAY, DPDT 3 AMP 24 VAC COIL	
	RELAY, DPDT 7.5 AMP LATCHING 120 VAC COIL	
541182-001	DIODE, ZENER 82V	
100206-001	ASSY, CONTROL PCB	





## POWER SUPPLY ASSY PART LIST

XENOTECH P/N	PART DESCRIPTION	REF DES
541724-001	DIODE, 1 AMP 400V	CR7,8
530705-008	CAPACITOR .005 uF 1KV CERAMIC	C4-7
530148-200	CAPACITOR 4900 uF. 150 VDC	C1,C2
530260-001	CAPACITOR, 60uF 370VAC	C8-10
530668-701	CAPACITOR, .67uF 200V	C3
541106-001	DIODE, POWER 1N3291A	CR4-6
541106-002	DIODE, POWER 1N3291R	CR1-3
541747-001	ZENER DIODE 47V 5W	CR9
555083-601	RESISTOR 8K OHM 10 WATT W/W	R2
555258-801	RESISTOR .25 OHM 20W W/W	R3
555850-001	RESISTOR 85 OHM 100W W/W	R1
571220-001	RELAY, DPDT 20 AMP W/120 VAC COIL	K6
573103-001	CIRCUIT BREAKER 30 AMP 1 POLE W/AUX SWITCH	CB1
575113-001	CONTACTOR, 3PDT 30 AMP W/120 VAC COIL	K1
578811-002	SWITCH, THERMAL 225 DEG F N/C	TS1
586240-401	TERMINAL BLOCK 4 SECTION 40 AMP	TB7
586240-402	TERMINAL BLOCK 4 SECTION 70 AMP	TB1-6
587770-002	TRANSFORMER, 7KW 3PH 380 VAC PRI	T1
522500-001	FAN 500 CFM 120 VAC	B1

## MOTION TRANSMISION PARTS LIST

515001-004	PILLOW BLOCK 1 IN ID
515001-005	PILLOW BLOCK 3/4 IN ID
175031-001	GEAR, SPUR 12T 8DP W/ 3/16 KEYWAY
175032-001	GEAR, SPUR 48T 8DP W/ 1/4 KEYWAY
175033-001	COUPLING 3/4 SHAFT W/ 3/16 KEYWAY
582002-003	MOTOR 230 VAC 1/4 HP W/ BRAKE
515002-001	KEY, TAPERED W/ GIB HEAD 3/16
515002-003	KEY, TAPERED W/ GIB HEAD 1/4
175034-001	BOOT, WEATHER
175035-001	ASSY, LIMIT SWITCH ACTUATOR