

# ***Xenotech, Inc.***

## BRITELIGHT® 2000 OPERATING MANUAL

Equipment Type 32-50494  
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## INSTRUCTIONS FOR INSTALLING BULB IN 16 INCH 2KW FIXTURE

### WARNING

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

### DISASSEMBLY PROCEDURE

1. REMOVE THE SCREWS THAT SECURE THE FRONT COWLING TO THE LAMP HEAD AND REMOVE THE COWLING.
2. REMOVE THE SCREWS THAT SECURE THE TOP COVER TO THE LAMP HEAD AND REMOVE THE COVER.
3. REMOVE THE NUT FROM THE TOP OF THE IGNITER TRANSFORMER LOCATED ON THE REAR OF THE CENTER BULKHEAD NEXT TO THE LAMP COOLING PLENUM.
4. REMOVE THE SHORT LEAD FROM THE FRONT LAMP HOLDER.
5. REMOVE THE CENTER MOUNTING SCREW AND SPRING FROM THE SPIDER WHILE SUPPORTING THE FRONT LAMP HOLDER SO THAT IT DOES NOT FALL WHEN THE SCREW IS REMOVED.
6. 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.

## ASSEMBLY PROCEDURE

1. FASTEN THE LEAD TO THE CATHODE (-) END OF THE BULB (SMALL ELECTRODE) AND BE SURE THAT THE LEAD IS COVERED IN INSULATING TUBING.

### NOTE

**IT IS VERY IMPORTANT THAT THE CORRECT POLARITY OF THE LAMP IS OBSERVED! THE BULB WILL BE DESTROYED VERY QUICKLY IF IT IS RUN WITH THE POLARITY REVERSED!**

**THE CORRECT ORIENTATION IS CATHODE (SMALL ELECTRODE) TOWARD THE REAR OF THE LAMPHEAD AND THE ANODE (LARGE ELECTRODE) TOWARD THE FRONT OF THE LAMPHEAD.**

2. FASTEN FRONT LAMP HOLDER TO THE BULB BY REMOVING THE TWO SCREWS FROM THE CLAMP ON THE FRONT LAMP HOLDER AND REMOVING THE CLAMP. PLACE THE LAMP IN THE LAMP HOLDER ALIGNING THE STUD ON THE END OF THE LAMP FERRULE WITH THE CHANNEL IN THE FIXED SIDE OF THE LAMP HOLDER CLAMP. SLIDE THE LAMP DOWN UNTIL THE SHOULDER ON THE FERRULE CONTACTS THE CLAMP. RE-ATTACH THE CLAMP TO THE LAMP HOLDER.
3. INSTALL THE BULB INTO THE FIXTURE BY INSERTING THE LAMP LEAD THROUGH THE OPENING IN THE REFLECTOR, UP THROUGH THE PLENUM, AND THROUGH THE HOLE IN THE PLENUM UPPER ACCESS PANEL. INSERT THE STUD ON THE END OF THE LAMP FERRULE INTO THE OPENING IN THE REAR LAMP SUPPORT BRACKET WHILE PULLING THE LAMP LEAD THROUGH THE HOLE IN THE PLENUM UPPER ACCESS PANEL. SECURE THE FRONT LAMP HOLDER TO THE SPIDER. CONNECT THE SHORT LEAD FROM THE SPIDER TO THE FRONT LAMP HOLDER.
4. PLACE THE SHORT PIECE OF INSULATING TUBING OVER THE LEAD INSULATING TUBING SO THAT IT IS LOCATED AT THE APEX OF THE BEND WHEN THE LEAD IS ATTACHED TO THE IGNITER TERMINAL.
5. ATTACH THE REAR LEAD LUG TO THE IGNITER TERMINAL.
6. REMOVE THE PROTECTIVE COVER FROM THE BULB AND WIPE THE BULB COMPLETELY WITH ALCOHOL.
7. THE INSTALLATION IS NOW COMPLETE. REPLACE ALL PANELS AND COVERS AND TEST THE LAMP.

## POWER INPUT CONNECTOR WIRING INSTRUCTIONS

THE INPUT POWER REQUIREMENTS FOR A 2 KW SOLID STATE POWER SUPPLY ARE AS FOLLOWS.

VOLTAGE NOMINAL      208/230 VAC

FREQUENCY RANGE    47 - 63 HZ

INPUT CURRENT        1 PHASE  
                             18.5 AMPS

MINIMUM INPUT WIRE SIZE      12 AWG

### CONNECTIONS

#### SINGLE PHASE OPERATION

CONNECTOR TERMINAL	LINE DESIGNATION	PIN COLOR
W	N/C	WHITE N/C
X	PHASE A OR HOT	BLACK
Y	PHASE B OR NEUTRAL	RED
Z	N/C	BLUE N/C
GREEN	SAFETY GROUND	GREEN

## ABRIDGED OPERATING INSTRUCTIONS FOR 2 KW XENON SYSTEM

### NOTE

**BEFORE OPERATING THE POWER SUPPLY IT MUST BE POSITIONED SO THAT THE REAR AIR EXHAUST VENTS ARE UNOBSTRUCTED.**

### CONNECTIONS

1. CONNECT LAMP HEAD TO THE LAMP HEAD CONNECTOR LOCATED ON THE FRONT PANEL
2. CONNECT THE POWER CORD TO THE AC INPUT POWER CONNECTOR.
3. WHEN THE POWER IS ENERGIZED THE INDICATOR LIGHTS NEXT TO THE INPUT POWER CONNECTOR WILL LIGHT INDICATING THE FOLLOWING CONDITIONS.
  - GROUND (GREEN LAMP): SAFETY GROUND AND THE HOT POWER INPUT LINE ARE CORRECTLY CONNECTED.
  - 230 VAC IN (AMBER LAMP): 230 VOLT INPUT IS CONNECTED ACROSS THE HOT AND NEUTRAL LINES AND IS ENERGIZED.
  - AUX POWER (BLUE LAMP): AUXILIARY 120 VOLT POWER SUPPLY IS ENERGIZED.
4. WHEN THE CONNECTIONS ARE CORRECT THE BLOWER IN THE LAMP HEAD WILL OPERATE AND THE UNIT WILL BE READY TO LIGHT.

### LIGHT OPERATION

1. PLACE THE MAIN POWER CIRCUIT BREAKER IN THE ON POSITION. THE INDICATOR LIGHTS NEXT TO THE OUTPUT POWER CONNECTOR WILL LIGHT INDICATING THE FOLLOWING CONDITIONS.
  - MAIN POWER (GREEN LAMP): LOW VOLTAGE HIGH CURRENT POWER SUPPLY IS ENERGIZED AND READY TO RUN THE LAMP.
  - BOOST READY (GREEN LAMP): HIGH VOLTAGE LOW CURRENT POWER SUPPLY IS ENERGIZED. THIS LAMP WILL LIGHT 10 - 15 SECONDS AFTER THE POWER SWITCH HAS BEEN TURNED ON INDICATING THAT THE OPEN CIRCUIT OUTPUT VOLTAGE IS OVER 100 VDC AND THE SUPPLY IS READY TO IGNITE THE LAMP. THE LAMP CAN BE IGNITED BEFORE THIS INDICATOR HAS LIT IF NECESSARY.
  - ONCE THE POWER SUPPLY IS ENERGIZED AND THE READY INDICATORS ARE LIT STEPS 2 - 4 MAY BE PREFORMED EITHER AT THE POWER SUPPLY OR THE REAR OF THE LAMP HEAD.
2. MOVE THE LAMP SWITCH TO THE STRIKE POSITION. WHEN THE LAMP LIGHTS RELEASE THE LAMP SWITCH. IF THE LAMP DOES NOT LIGHT IMMEDIATELY RELEASE THE SWITCH WAIT 5 SECONDS OR UNTIL THE BOOST READY LAMP LIGHTS AND RE-TRY.
3. FOCUS THE LIGHT FOR THE DESIRED EFFECT BY MOVING THE FOCUS SWITCH TO THE FORWARD OR REVERSE POSITION AND HOLD THE SWITCH. 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.
4. TO TURN OFF THE LIGHT MOVE THE LAMP SWITCH TO THE OFF POSITION. IF THE LIGHT IS NOT GOING TO BE IMMEDIATELY REUSED DE-ENERGIZE THE POWER SUPPLY.

5. TO DE-ENERGIZE THE POWER SUPPLY, PLACE THE POWER CIRCUIT BREAKER IN THE OFF POSITION.

#### **CAUTION**

**ALLOW THE GLOBE TO COOL COMPLETELY BEFORE DISCONNECTING THE INPUT POWER. CONNECTOR. THE COOLING SYSTEM IN THE HEAD WILL RUN WHEN EVER THE INPUT LINES ARE ENERGIZED.**

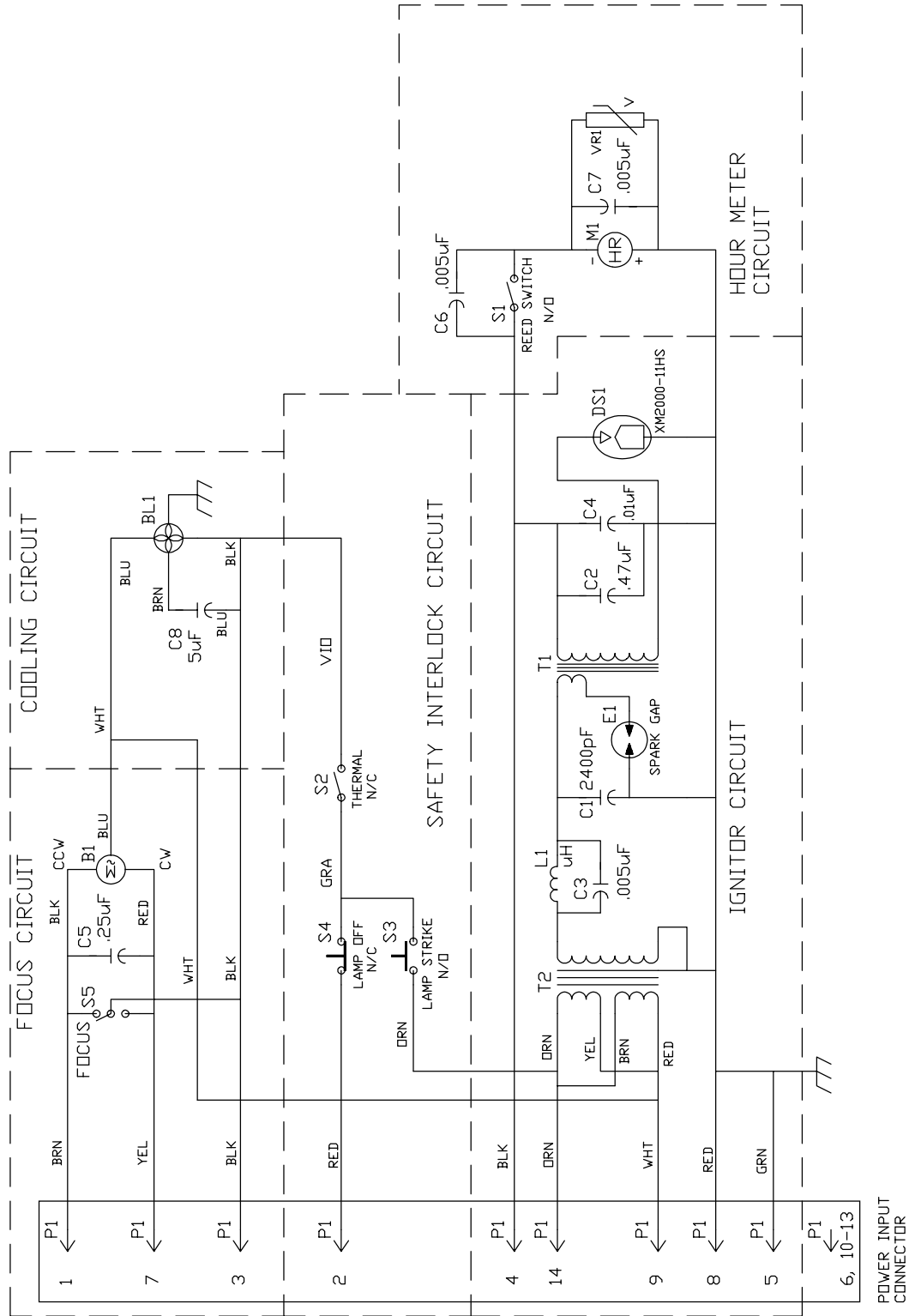
#### **NOTE**

**THE LAMP HEAD AND POWER SUPPLY ARE THERMALLY PROTECTED. IF THE COOLING SYSTEM FAILS, OR THE EQUIPMENT IS USED IN AN EXCESSIVELY HOT ENVIRONMENT, THE LAMP WILL SHUT OFF TO PREVENT DAMAGE. IF THE HEAD OVERHEATS, THE HEAD OVER TEMP INDICATOR ON THE FRONT PANEL WILL LIGHT AND WILL REMAIN LIT UNTIL THE LAMP HEAD COOLS TO A SAFE OPERATING TEMPERATURE. IF THE POWER SUPPLY OVERHEATS, THE MAIN READY INDICATOR WILL GO OUT AND WILL REMAIN UNLIT UNTIL THE POWER SUPPLY COOLS TO A SAFE OPERATING TEMPERATURE. WHEN THE INDICATORS RETURN TO A NORMAL STATE, THE LAMP MAY BE RE-STRUCK.**

#### **CAUTION**

**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.**





2KW LAMPHEAD SCHEMATIC



## INSTALLATION AND CALIBRATION FOR 2KW POWER MODULE

### CAUTION

INSPECT SYSTEM WIRING FOR ANY CONDITION THAT MAY HAVE CAUSED MODULE FAILURE AND CORRECT CONDITION BEFORE INSTALLING NEW MODULE.

### MODULE REMOVAL

1. REMOVE TOP COVER FROM THE POWER SUPPLY BY ROTATING THE INTERNAL COVER LATCHES LOCATED ON THE REAR AND SIDES OF THE POWER SUPPLY. (USE THE WRENCH SUPPLIED WITH THE UNIT)
2. REMOVE THE 8 SCREWS RETAINING THE FRONT PANEL.
3. REMOVE THE CHASSIS RETAINING HARDWARE.
4. LIFT THE CHASSIS AND FRONT PANEL FROM THE CASE.
5. REMOVE THE WIRING FROM THE DEFECTIVE MODULE WHILE NOTING THE CONNECTIONS FOR REASSEMBLY.
6. REMOVE THE 4 RETAINING SCREWS FROM THE BOTTOM OF THE CHASSIS UNDER THE DEFECTIVE MODULE AND SLIDE THE MODULE FORWARD AND LIFT FROM THE CHASSIS.

### MODULE INSTALLATION

1. REVERSE MODULE REMOVAL PROCEDURE STEPS 6 - 3 DO NOT ATTACH THE FRONT PANEL UNTIL THE CALIBRATION IS COMPLETE.

## CALIBRATION FOR 2KW POWER MODULE

### POWER SUPPLY CALIBRATION

#### CAUTION

**THE POWER SUPPLY CALIBRATION PROCEDURE REQUIRES THE UNIT TO BE ENERGIZED WHILE BEING CALIBRATED. USE EXTREME CAUTION DURING THE CALIBRATION; NOT TO COME IN CONTACT WITH THE LIVE CONNECTIONS ON THE FRONT PANEL AND CHASSIS. VOLTAGES FROM 240 VAC TO 160 VDC MAY BE PRESENT ON THE INPUT AND OUTPUT WIRING WHENEVER THE UNIT MAIN INPUT POWER LINES ARE ENERGIZED.**

#### WARNING

#### POTENTIAL SHORT CIRCUIT CONDITION

**DO NOT ALLOW THE TERMINALS OF THE MAIN CIRCUIT BREAKER TO COME IN CONTACT WITH THE FRONT PANEL MOUNTING RAILS IF THE FRONT PANEL IS REMOVED.**

#### EQUIPMENT REQUIRED

DC VOLT METER 0 - 200 VDC  
DC CLAMP ON AMMETER 0 - 200 ADC

#### CALIBRATION

1. ATTACH THE LAMP HEAD TO THE POWER SUPPLY OUTPUT CONNECTOR USING A 50 FT. HEAD EXTENSION AND POINT THE LAMP STRAIGHT UP.
2. ATTACH THE POWER FEEDER TO THE POWER INPUT CONNECTOR.
3. CONNECT THE AMMETER AROUND THE LARGE RED CABLE RUNNING FROM THE HEATSINK TO THE OUTPUT CONNECTOR.
4. CONNECT THE POWER FEEDER TO THE POWER LINE AND SET THE MAIN BREAKER TO THE ON POSITION.
5. MEASURE THE VOLTAGE ACROSS THE OUTPUT TERMINALS OF THE POWER MODULE AND ADJUST THE VOLTAGE TO 30 VDC USING THE VOLTAGE ADJUSTMENT LOCATED AT THE RIGHT CENTER OF THE FRONT OF THE MODULE.
6. REMOVE THE VOLTMETER FROM THE CIRCUIT AND STRIKE THE LIGHT.
7. READ THE OUTPUT CURRENT ON THE AMMETER. IF THE CURRENT IS OVER 85 AMPS AFTER 30 SECONDS; TURN OFF THE LIGHT. REDUCE THE OUTPUT CURRENT TO LESS THAN 85 AMPS USING THE MODULE CURRENT ADJUSTMENT AS FOLLOWS. IF THE CURRENT IS LESS THAN 85 AMPS GO TO STEP 9.

## NOTE

**THE CURRENT ADJUSTMENT IS LOCATED ON THE LEFT CENTER FRONT OF THE MODULE AS YOU ARE FACING THE FRONT OF THE UNIT. THE ADJUSTMENT IS UNMARKED. THE ADJUSTMENT IS A 10 TURN POTENTIOMETER. TURNING THE ADJUSTMENT COUNTERCLOCKWISE DECREASES THE OUTPUT CURRENT.**

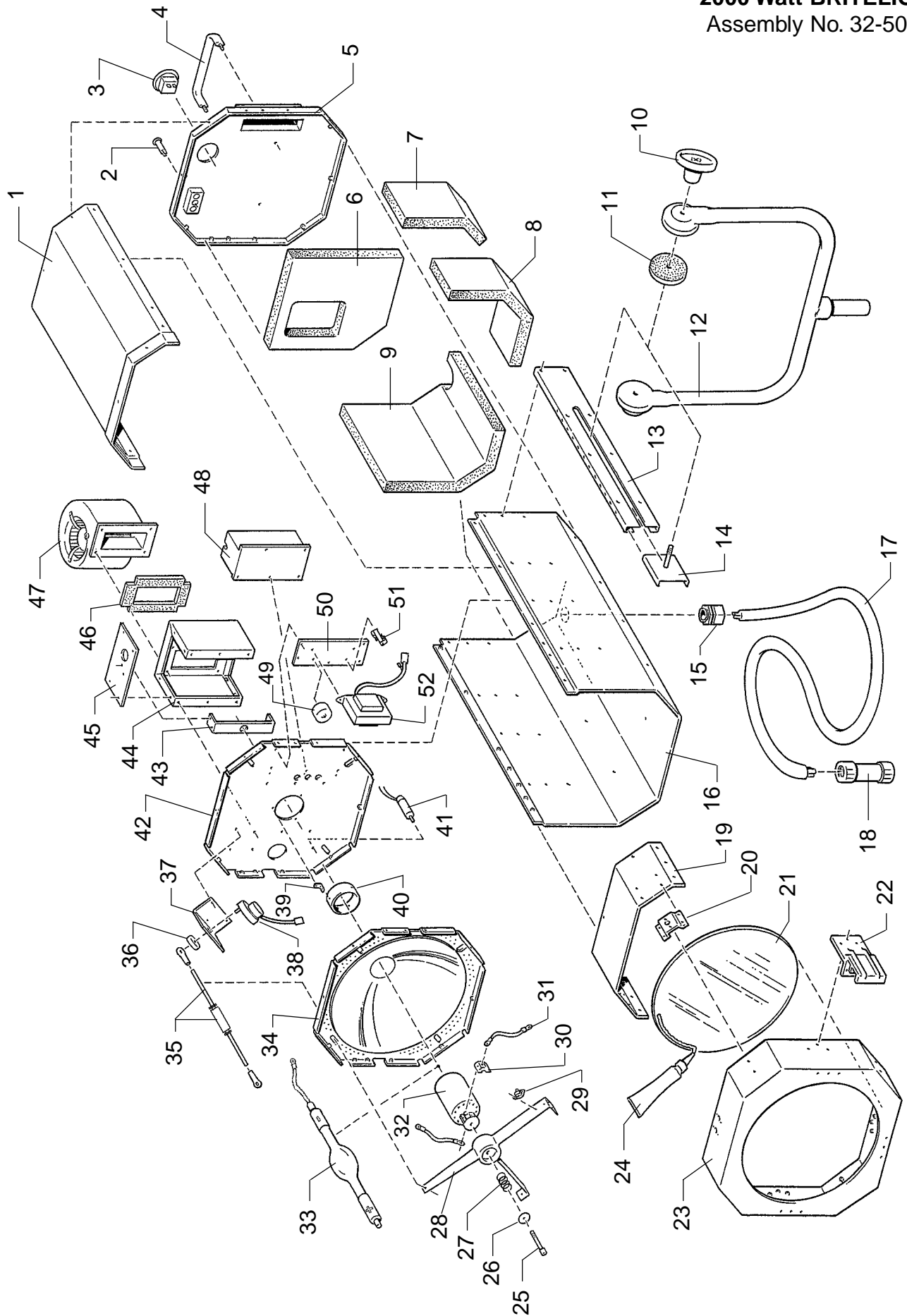
8. RESTRIKE THE LIGHT AND REPEAT STEP 7 UNTIL THE CURRENT IS LESS THAN 85 AMPS.
9. ONCE THE START CURRENT IS SET ALLOW THE LAMP TO BURN FOR AT LEAST 5 MINUTES OR UNTIL THE CURRENT READING STABILIZES.
10. AFTER THE SYSTEM HAS STABILIZED CONNECT THE VOLTMETER POSITIVE LEAD TO THE HEATSINK AND THE NEGATIVE LEAD TO THE NEGATIVE TERMINAL OF THE MODULE.
11. CALCULATE THE TOTAL SYSTEM OUTPUT POWER USING THE FORMULA  $E \times I = W$ . WHERE E = OUTPUT VOLTAGE, I = OUTPUT CURRENT, W = OUTPUT POWER IN WATTS. THE SYSTEM SHOULD BE SET TO RUN BETWEEN 1951 - 1999 WATTS.

## CAUTION

**THE INDIVIDUAL POWER OUTPUT OF A SINGLE MODULE MUST NOT EXCEED 2000 WATTS. EXCEEDING THE MAXIMUM POWER LIMIT MAY DAMAGE THE MODULE.**

12. THE SYSTEM CALIBRATION IS NOW COMPLETE. TURN THE LAMP OFF AND ALLOW THE BULB TO COOL AT LEAST 5 MINUTES. DISCONNECT THE MAIN INPUT POWER LINE AND REPLACE THE FRONT PANEL AND TOP COVER.

**2000 Watt BRITELIGHT**  
Assembly No. 32-50494



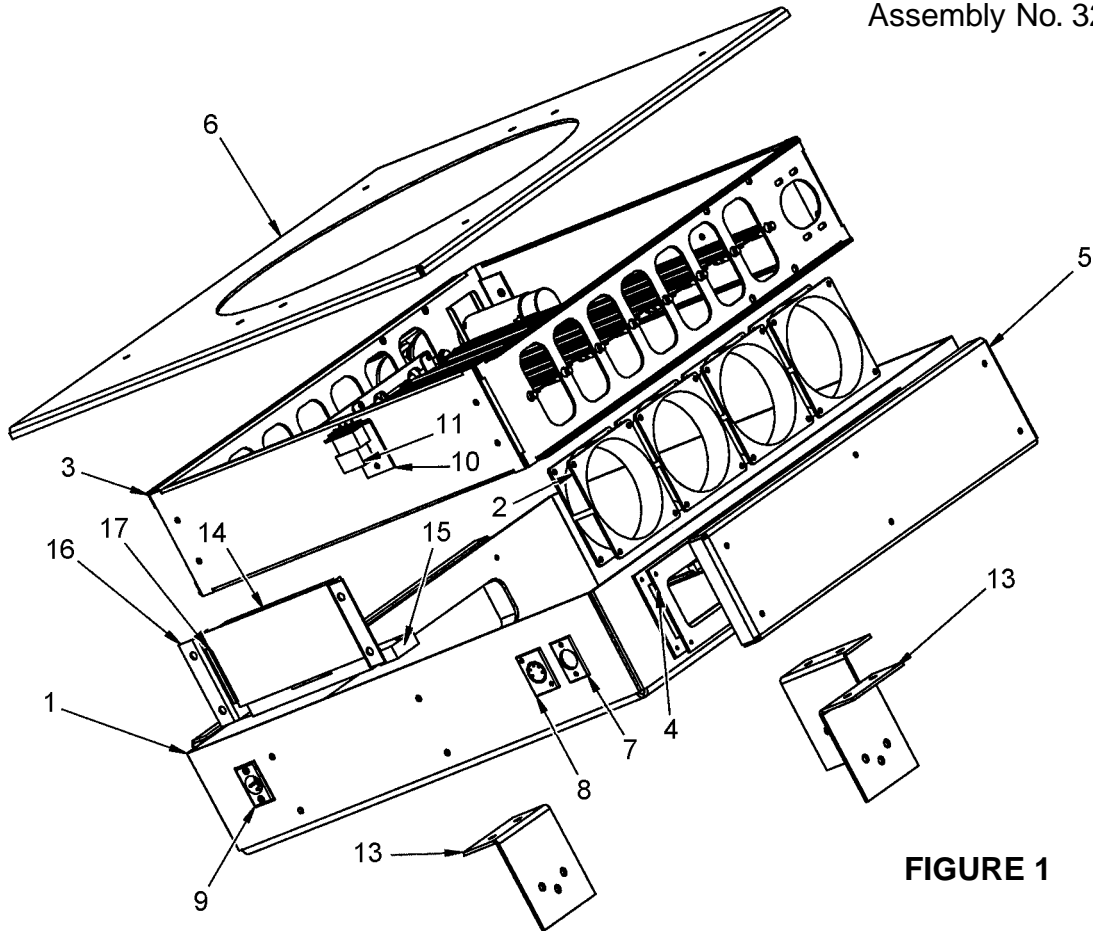
## PARTS LIST

<u>Item</u>	<u>Part No.</u>	<u>Description</u>
1	31-29209	Top Cover, Rear
-	4080621	Mounting Screw, 8-32 x 5/8" Pan Head
2	31-61011	Switch, FOCUS
-	31-61011	Switch, ON
-	31-61059	Boot, FOCUS, ON Switch
-	31-61030	Switch, OFF
-	31-61065	Boot, OFF Switch
3	31-32004	Hour Meter
4	31-28016	Handle
-	4100750	Mounting Screw, 10-32 x 1/4" Socket Head
5	32-40300	Back Cover, Welded Assembly
-	32-50220	Back Cover Assembly (Items 2-5)
6	31-60057	Self-Adhesive Pad, Sound Absorbing
7	31-60057	Self-Adhesive Pad, Sound Absorbing
8	31-60057	Self-Adhesive Pad, Sound Absorbing
9	31-60057	Self-Adhesive Pad, Sound Absorbing
10	32-20145	Locking Knob, Cast
11	31-98574	Friction Washer
12	31-98408	Studio Yoke, Welded Assembly (as shown)
-	32-40469	Architectural Yoke (not shown)
13	32-40127	Slide Bracket
-	4080621	Mounting Screw, 8-32 x 5/8" Pan Head
14	32-40051	Stud Plate, Welded Assembly
15	31-98163	Strain Relief
16	32-40190	Lamphead Base Pan
17	32-50231	Power Cable Assembly (incl. Item 18)
18	31-13404	Plug
19	32-40123	Top Cover, Front
-	4080621	Mounting Screw, 8-32 x 5/8" Pan Head
20	32-40049	Cowl Mounting Bracket (4 req'd.)
-	01639-4	Pop Rivet
21	31-98261	Glass
22	31-98761	Accessory Mounting Bracket
-	4080621	Mounting Screw, 8-32 x 5/8" Pan Head
23	32-40303	Front Cowl, Welded Assembly
-	32-50225	Front Cowl Assembly (Items 21-23)
24	11-98069	RTV Silicone Sealant, 3 oz. Tube
25	41-51767	Shoulder Bolt, 1/4-20 Thrd. 5/16 x 3/4"
26	41-70005	Flat Washer, 5/16"
27	31-58005	Compression Spring
28	32-40355	Bulb Support Spyder
29	31-61007	Thermal Switch
30	32-20020	Clamping Plate
-	4100750	Clamping Screw, 10-32 x 3/4" Socket Head
31	32-50244	Positive Lead Assembly (2 req'd.)
-	4250502	Mounting Screw, 1/4-20 x 1/2" Hex Head, Brass
-	4257100	Brass Washer, 1/4"

## PARTS LIST, continued

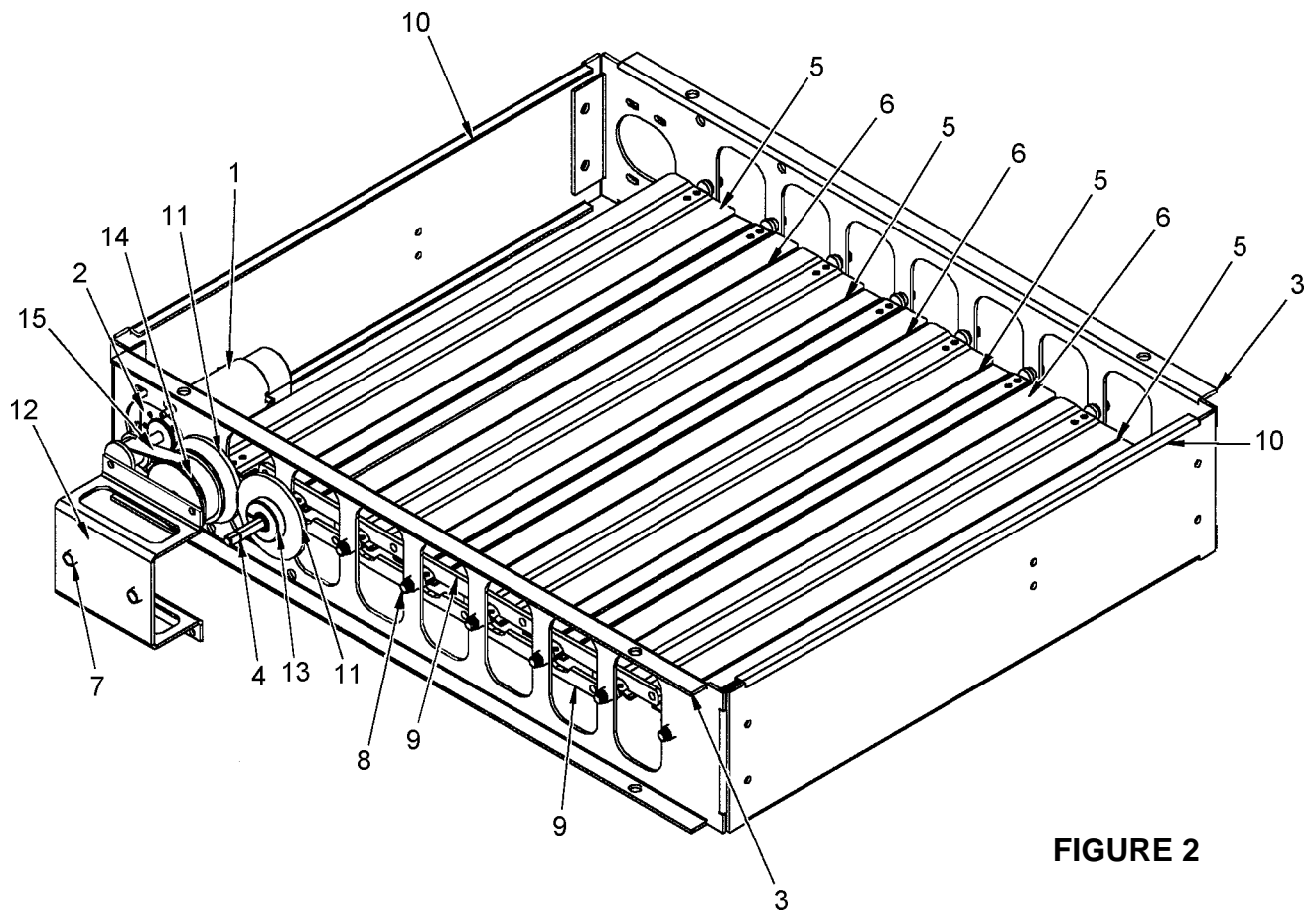
<u>Item</u>	<u>Part No.</u>	<u>Description</u>
32	32-50218	Front Lamp Holder Assembly
33	31-30241	Xenon Bulb, 2000 Watt (LTIX2000W-XS)
34	32-50217	Reflector & Frame Assembly
35	32-50479	Focus Shaft Assembly
-	31-98131	Knuckle Joint, Cam End (Right-Hand Thrd.)
-	31-60071	Shaft, Cam End
-	31-98754	Turnbuckle
-	31-10022	Turnbuckle Clamp (2 req'd.)
-	31-60089	Shaft, Spyder End
-	31-98133	Knuckle Joint, Spyder End (Left-Hand Thrd.)
36	32-20019	Cam, Focus Rod
-	4100756	Set Screw
37	32-40023	Motor Mounting Bracket
-	4100503	Mounting Screw, 10-32 x 1/2" Pan Head
38	32-70204	Focus Motor
-	4080506	Mounting Screw, 8-32 x 1/2" Pan Head
39	31-06004	Ring Mounting Bracket
-	01639-4	Pop Rivet
40	31-26004	Ring
41	31-08075	Capacitor (for Item 47 Motor)
42	32-40025	Bulkhead Plate
43	32-40400	Rear Bulb Support Bracket
-	41-98122	Grommet, Bulb Pin
-	4080506	Bracket Mounting Screw
44	32-40126	Air Plenum, Bulb Seal Blower
-	4100503	Mounting Screw
45	31-18011	Insulated Plate (2 req'd.)
-	4100503	Mounting Screw, 10-32 x 1/2" Pan Head
-	4107000	Lockwasher, #10
-	4107104	Flatwasher, #10
46	31-98136	Blower Gasket
47	31-02048	Bulb Seal Blower, 230 V.AC, 50/60 Hz.
-	32-50213	Blower & Gasket Assembly
-	4250752	Mounting Screw, 1/4-20 x 3/4" Hex Head
48	32-50034	RF Coil Assembly
-	41-51561	Mounting Screw, 8-32 x 5/8" Socket Head
49	39110000	Capacitor
50	32-40125	Transformer Mounting Plate
-	4251001	Mounting Screw
51	31-61018	Spark Gap
-	4068001	Mounting Screw
52	35-50033	High Voltage Transformer
-	4100503	Mounting Screw, 10-32 x 1/2" Pan Head
-	32-50033	Igniter Assembly (Items 49-52)

**EXTERIOR SHUTTER**  
 (Optional Accessory)  
 Assembly No. 32-50553



**FIGURE 1**

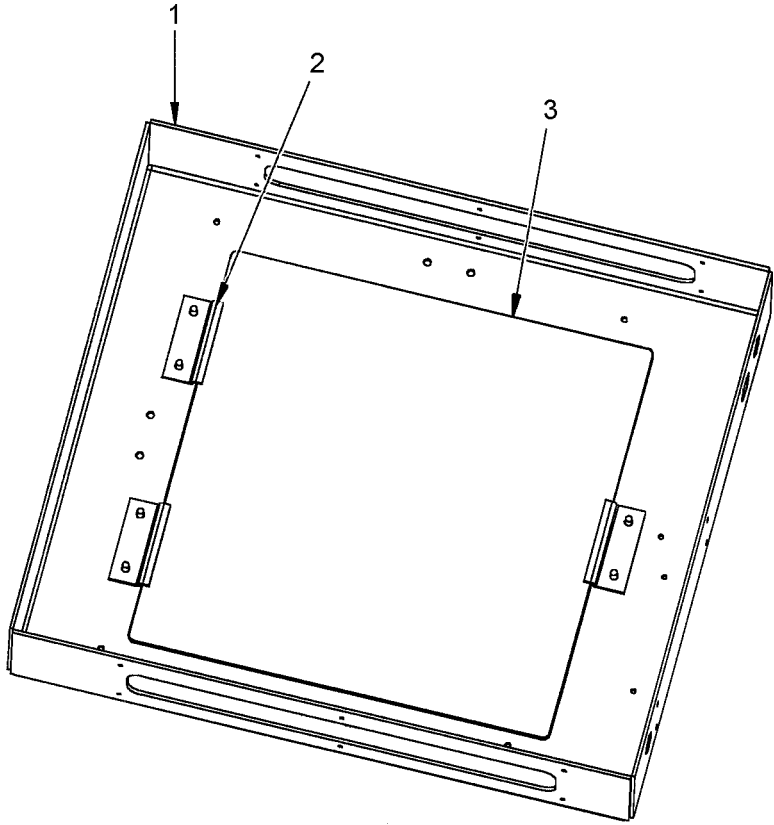
<u>Item</u>	<u>Part No.</u>	<u>Description</u>
1	32-50550	Shutter Housing Assembly (see Figure 3)
2	31-02063	Cooling Fan (4 req'd.)
3	32-50551	Inner Shutter Assembly (see Figure 2)
4	32-20425	Vent Tube (2 req'd.)
5	32-40765	Vent Cover (2 req'd.)
6	32-50549	Top Cover Assembly (see Figure 4)
7	32-70077	XLR Assembly
8	32-70078	XLR Assembly
9	32-70362	3P XLR Assembly
10	32-40764	Switch Mounting Bracket
11	32-70271	BCD Switch Assembly
13	32-40769	Shutter Mount (3 req'd.)
14	32-70229	MOT-3 Interface
15	32-70122	Interface PC Board
16	32-40763	PCB Mounting Bracket (2 req'd.)
17	32-98167	PCB Guide (2 req'd.)



**FIGURE 2**

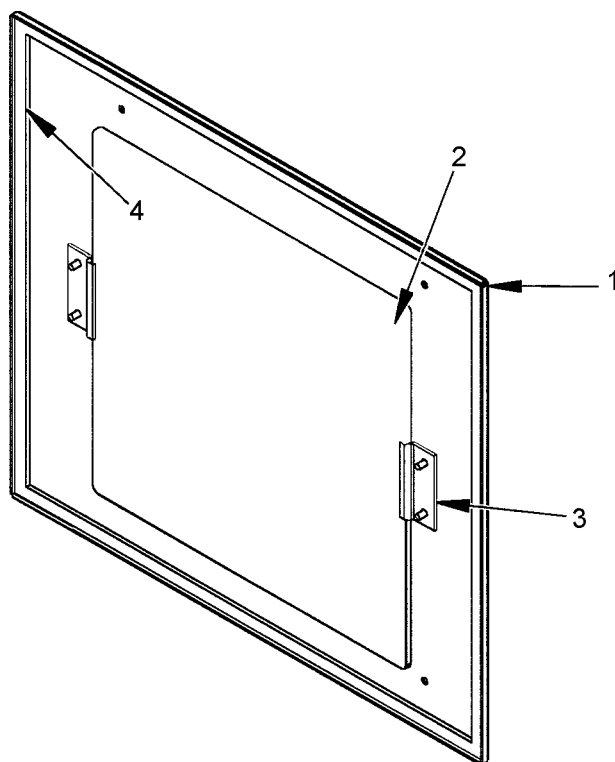
<u>Item</u>	<u>Part No.</u>	<u>Description</u>
1	32-70202	Motor Assembly
2	32-40318	Motor Bracket
3	32-40767	Side Panel (2 req'd.)
4	32-20106	Shaft, Long (14 req'd.)
5	32-40280	Shutter Blade, Odd (4 req'd.)
6	32-40281	Shutter Blade, Even (4 req'd.)
7	31-04281	Bearing (10 req'd.)
8	32-20105	Drive Shaft (2 req'd.)
9	32-20102	Arm (2 req'd.)
10	32-40768	End Panel (2 req'd.)
11	31-23023	Gear (2 req'd.)
12	32-40766	Bearing Block
13	31-10022	Hub Clamp (2 req'd.)
14	31-43004	Pulley
15	31-05004	Belt





**FIGURE 3**

<u>Item</u>	<u>Part No.</u>	<u>Description</u>
1	32-40762	Shutter Housing
2	32-40761	Glass Clip (3 req'd.)
-	31-60086	Weather Stripping (not shown)
-	01573000	Hexnut, 1/4-20 Jam
3	31-98292	Glass



**FIGURE 4**

<u>Item</u>	<u>Part No.</u>	<u>Description</u>
1	32-40760	Cover
2	31-98292	Glass
3	32-40761	Glass Clip (2 req'd.)
-	31-60086	Weather Stripping (not shown)
-	01573000	Hexnut, 1/4-20 Jam
4	31-60086	Weather Stripping