

SKY TRACKER PROMOTIONAL SEARCHLIGHTS MOTORIZED SEARCHLIGHT *MiniTracker* INSTRUCTION MANUAL

Equipment Type 3200365 • Rev. December 2004



a division of Ballantyne of Omaha, Inc.

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NOTICE

PATENT POSITION

The MiniTracker is a motorized, high-intensity, single head searchlight system, which was originated by SkyTracker of America, Inc. and is proprietary to Strong Entertainment Lighting/Ballantyne of Omaha, Inc.

Patents, owned by SkyTracker or Ballantyne of Omaha are either issued or pending in this and related concepts.

TRADEMARK

The name, "MiniTracker" is a trademark owned by Ballantyne of Omaha, and has been registered with the U.S. Patent Office.

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INTRODUCTION

The MiniTracker is an original proprietary lighting system developed specifically for the display advertising industry and related technologies. Each unit is designed with highly reliable mechanical, electrical and optical components to insure extended, trouble-free performance. Unlike the full-size SkyTracker Motorized Searchlight systems, the MiniTracker does not require a high voltage, multi-phase AC power source.

Like the SkyTracker, which evolved from space age and military advanced technology applications, the MiniTracker provides an easily transported base unit for the mounting and control of a high intensity searchlight. The light source is a single-ended 1200 watt metal halide lamp, mounted in a parabolic reflector, yielding a coherent beam of light visible for great distances. A motorized yoke permits continuous 360° rotation to attract attention.

SAFETY

The concept of achieving maximum safety through knowledge and understanding is basic to SkyTracker/Strong Entertainment Lighting. This applies to its own personnel, those of the dealer, representative, operator, servicing agency or to any member of the general public who may be exposed to or associated with the operation of a SkyTracker/Strong Entertainment Lighting product.

Safety features and concepts are designed into every SkyTracker/Strong Entertainment Lighting product and component regardless of whether its function is mechanical, electrical, or optical. Since SkyTracker/Strong Entertainment Lighting has no control over the manner in which its products are installed, operated, maintained, or utilized after the product leaves the manufacturing facility, it cannot be held responsible for any injuries resulting from improper installation, use, inadequate maintenance, or any other condition beyond its control.

It is the intent of this manual to call to the attention of the owner, operator, and service technician to any and all hazardous areas or conditions which could lead to operational problems or injury, and to outline proper and recommended procedures to prevent any such occurrence.

The normal warranty will be voided in instances where it is determined that any component of the MiniTracker has been damaged or has failed due to failure to follow procedures or instructions contained in this manual.

The completely assembled and operational MiniTracker has all electrical and optical components contained within closed and secured housings. It is recommended that, if the unit is operated at ground level in areas where crowds may be present, a rope barrier or equivalent barricade be established to keep the general public away from the unit.

As is the case with all intense light sources, it is not advisable to look directly into the light source or into the light beam. It is the responsibility of the operator to see that the necessary rope barriers or other barricades are positioned suitably to prevent passers-by or any member of the crowd from looking directly into the light beam from a close distance.

SET-UP AND OPERATION

Inspect the unit on arrival and report any damage to the freight carrier immediately. It is the responsibility of the consignee, not the shipper, to initiate any damage claims. Strong Entertainment Lighting will provide any required shipping records on request.

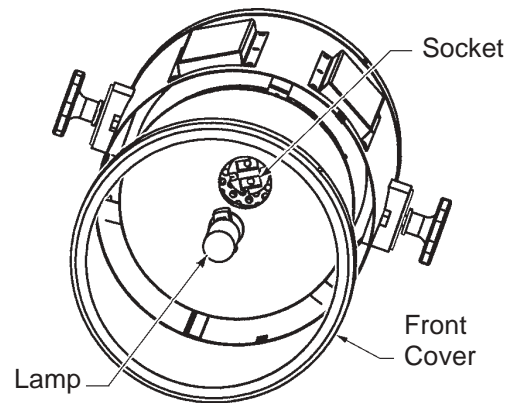
The four feet of the MiniTracker base are threaded to permit leveling the unit on an uneven floor. The leveling feet are adjustable through a two-inch (5cm) range and can be secured by tightening the locknut provided.

Do not connect the power cord to a receptacle before first installing the metal halide lamp.

The MiniTracker lamphead was designed to use the Philips MSR 1200/2 single-ended metal halide lamp. This lamp is not supplied with the unit by Strong Entertainment Lighting, and any lamp other than the one noted above must be certified by its manufacturer as being 100% interchangeable with the specified lamp.

Do not touch the quartz envelope of the metal halide lamp with bare fingers! Skin oils will burn into the envelope material and shorten lamp life. Always wear clean cloth gloves or use a clean towel when handling the lamp. If the envelope is accidentally touched with bare fingers, remove any fingermarks with alcohol before igniting the lamp.

Dismount the light baffle and front cover of the lamphead by removing the three 10-32 truss head screws and weathertight washers from the front cover ring. Locate the two-pin ceramic socket behind the parabolic reflector. Insert the lamp into the reflector, taking care not to scratch the surface of the reflector with the metal pins. Seat the lamp pins into the socket and press the lamp firmly into the socket. Replace the baffle and front cover; secure all three screws and their weathertight washers.

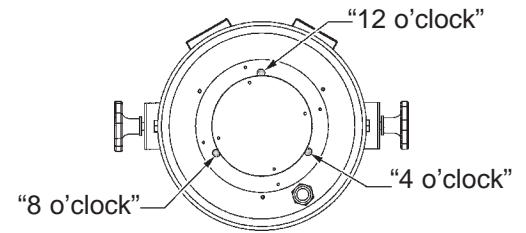


Locate the two toggle switches (LAMP and MOTION) on the bottom of the base assembly and make certain that both are in the OFF positions. Connect the AC power cord to a grounded 115 volt AC outlet. The cooling fans in the lamphead and in the base will start.

Turn the LAMP switch to the ON position, and the lamp will ignite. Allow three to five minutes for the metal halide lamp to reach full intensity. Once ignited, leave the lamp burn throughout its duty cycle; a metal halide lamp does not readily restart when warm.

Lamp focus is set at the factory by positioning the depth of the socket in relation to the parabolic reflector. This setting should remain unaltered when the correct lamp (noted previously) is installed. Manufacturing tolerances between individual lamps however will require fine adjustment of the lamp position after installation.

The lamp positioning controls are accessible through the back cover of the lamphed. Three clearance holes are located around the center air intake cap at the twelve, four, and eight o'clock positions. A #2 phillips screwdriver with a blade exceeding 6 inches (15.25cm) in length is required.



After nightfall (outdoors) or in a dark room (indoors), observe the column of projected light. The light may appear brighter on one side of the beam. If so, insert the screwdriver through one of the clearance holes and locate the phillips-head adjusting screw. Alternately tighten and loosen the adjusting screw while observing the bright portion of the light. Do not adjust more than one full turn of the screw. If the bright portion is not centered, try one or both of the other two adjusting screws. Tighten or loosen the adjusting screws in sequence while observing the light beam. It will normally take a very minor adjustment of two or all three screws to center the brightest portion of the beam. A degree of light spillover from the beam is also normal.

Once the lamp is positioned, set the desired projection angle and tighten both yoke clamping knobs. Turn on the MOTION switch to set the lamphed in motion. The knob adjacent to the MOTION switch can be adjusted to be set to the desired speed of rotation.

At the end of the duty cycle, turn both LAMP and MOTION switches to the OFF positions. The metal halide lamp does not require a forced-air cooling period, but it will not readily restart until it has cooled to ambient temperature (approximately 30 minutes).

MAINTENANCE

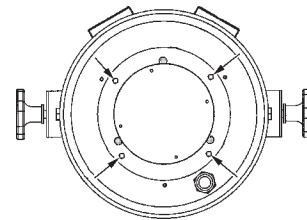
Except for unusual conditions of use (dirty environment, flooding, etc.) the frequency of service and replacement of certain parts and components because of normal wear is directly related to hours of use.

Inspection and preventive maintenance should be performed approximately every 250 hours of use or every three months (whichever occurs first). The period can be adjusted according to actual circumstances.

Lamphead

Clean both surfaces of the front lens on a regular basis. When the lamphead front cover is removed, clean the surface of the reflector. Normal soiling can be removed from the reflective surface with a clean, dry cloth. If excessively soiled, use a commercial glass cleaning solvent (i.e. Windex®). *Use no abrasives.* Before replacing the front cover, inspect the envelope of the metal halide lamp, and dust off any foreign objects. If excessively soiled, clean with alcohol and a clean cloth.

The lamphouse fan and intake cover can be dismantled from the lamphead as an assembly by removing the four phillips-head screws (arrows) adjacent to the lamp position adjustment holes. A molded plug can then be disconnected from the blower frame to separate the fan and cover from the lamphead. Clean the fan blades and keep the intake opening free from dust or other obstructions. The fan motor requires no oil.



Base Assembly

The motor of the squirrelcage blower in the base requires a few drops of light, non-detergent lubricating oil every 250 hours of use or every three months (whichever occurs first). The oil holes are marked on the motor housing.

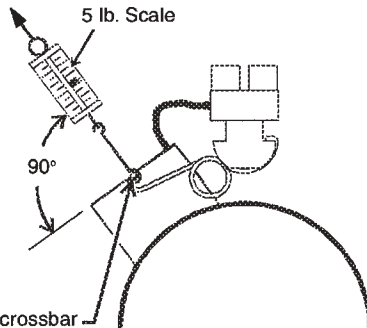
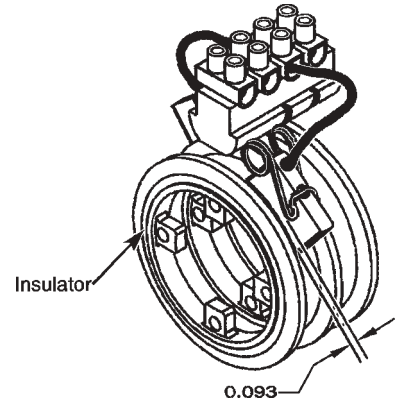
Periodically vacuum or otherwise clean the interior of the base assembly. The heat sink of the metal halide power supply and the exterior of the motor speed controller must be free from dust or other obstructions to permit proper cooling. A thermal switch in the lamp power supply will disable operation of the unit if it overheats. Keep air intakes clean to allow free air flow.

Both the upper and lower ball bearing pillow block assemblies of the rotating yoke shaft have easily accessible grease fittings. Check the bearings annually for proper lubrication; add all-purpose automotive grease as required.

The slip ring attached to the shaft of the yoke assembly transfers electrical current from the stationary base assembly to the rotating lamphead. Proper maintenance of this item is mandatory to insure the correct operation of the MiniTracker. Brushes and springs are key components and are subject to periodic replacement under normal conditions.

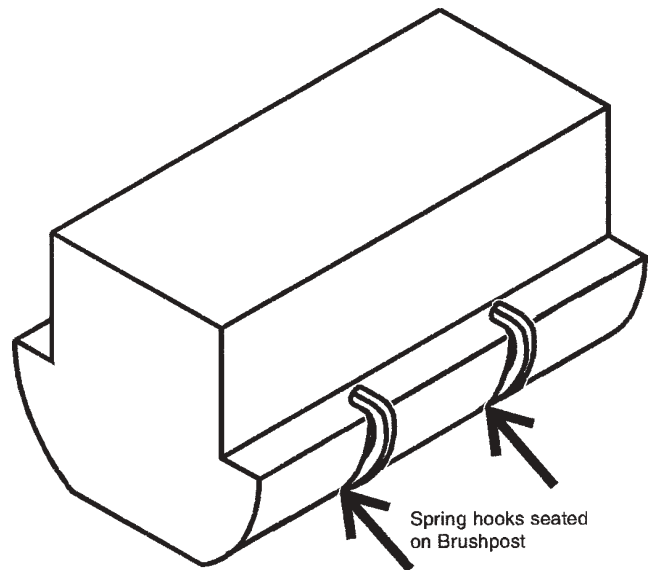
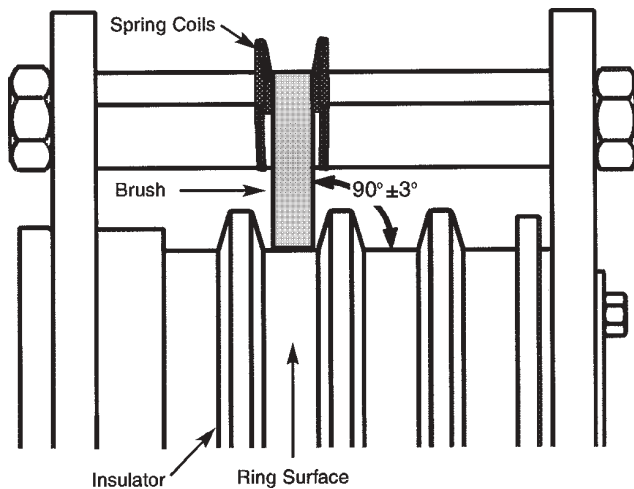
Inspect the brushes for wear. If the distance from the top of the insulator to the lower part of the brush spring is 0.093 inch (2mm) or less, replace the brush. Before installing the new brush, inspect the brush contact surface. Remove surface dust, oxidation, pitting, or other contaminants with a wire brush.

It is advisable to replace the brush springs at the same time to insure proper spring tension. If brush springs fall below two pounds of tension, continued use will be detrimental to the slip ring, and the springs *must* be replaced.



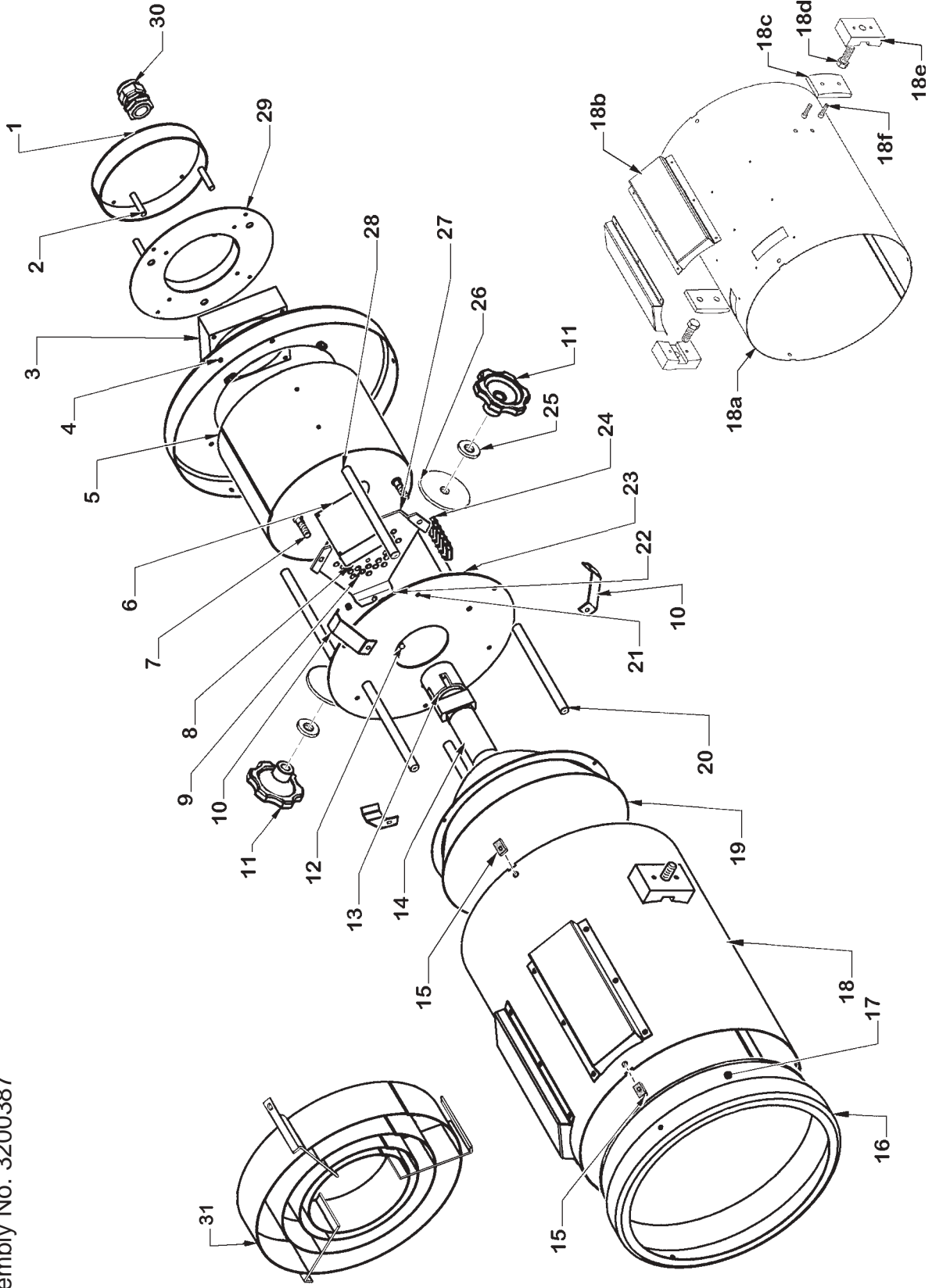
Inspect and test the springs to assure uniform brush tension. Tension should be measured at the top center of the brush, and should exceed two pounds. Replace the spring if the tension fall below two pounds. CAUTION: do not lift the spring more than 1/8 inch (3mm) when measuring or spring tension may be affected.

All brushes must run at 90° (±3°) square on the rings. If a brush is not square, adjust to vertical by moving the coil of the spring. Brushes need not run on the exact center of the rings, but there should be no forceful friction against the insulators. The brush spring crossbar must be seated in the brush slot, and spring hooks must seat securely on brushposts.



Contact your Strong Entertainment Lighting distributor for information regarding replacement brushes and springs.

FIGURE 1
MiniTracker Lamphead
Assembly No. 3200387



PARTS LIST

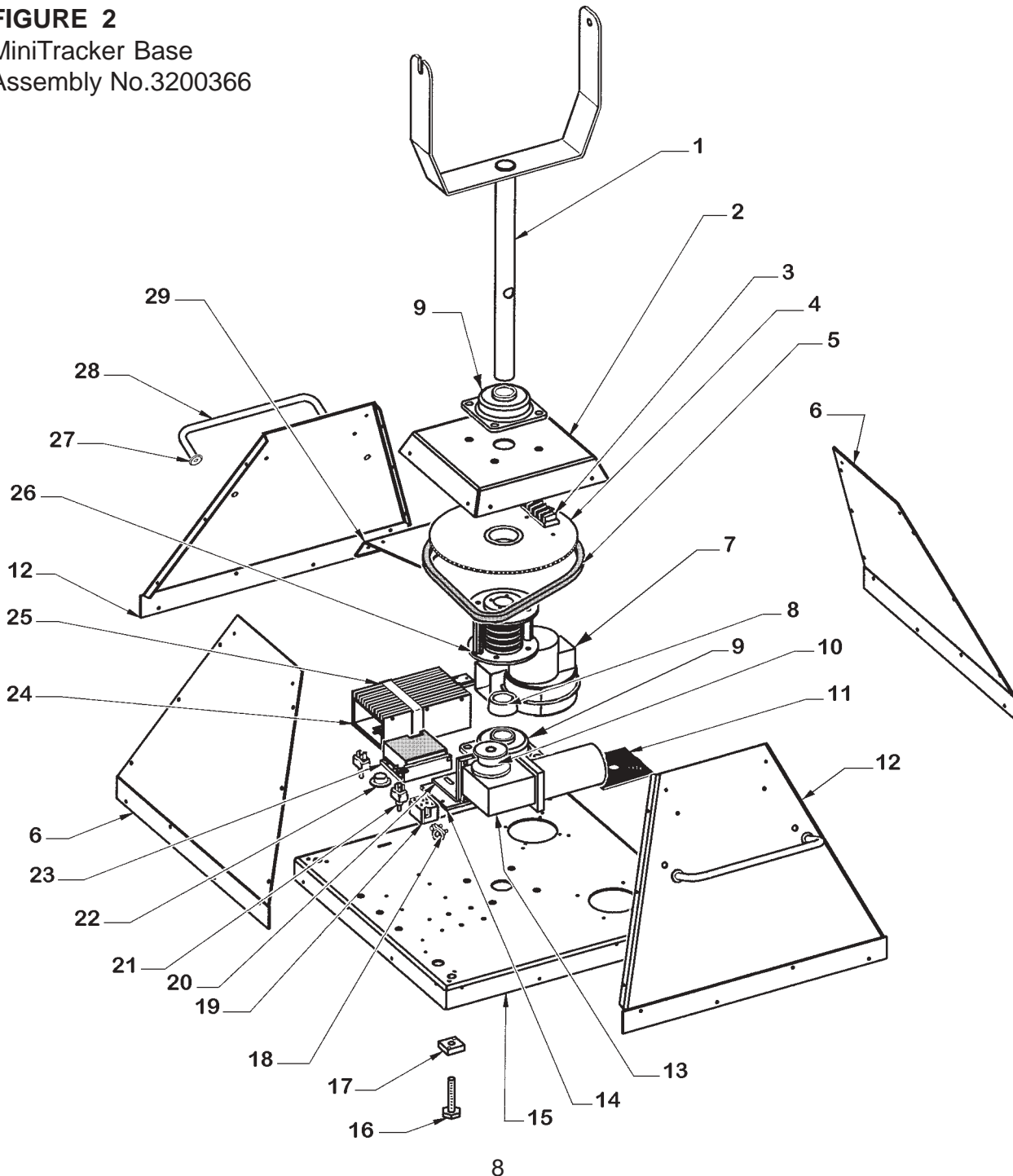
Figure 1

<u>Item</u>	<u>Part No.</u>	<u>Description</u>
1	3200407	Blower Intake Cover
2	3200406	Standoff, Intake Cover (4 req'd.)
3	6198002	Lamphead Blower (B1)
-	4082500	Mounting Screw, 8-32 x 2-1/2" Pan Head
4	3200428	Rear Cover Ring
-	4100501	Mounting Screw, 10-32 x 1/2" Truss Head
-	4170114	Weatherseal Washer, #10
5	3200397	Inner Shell
6	3298147	Igniter, 1200 Watt Metal Halide
-	4041500	Mounting Screw, 4-40 x 1-1/2" Pan Head
7	4081251	Screw, 8-32 x 1-1/4" Socket Head (3 req'd.)
8	3140024	Nylon Plug, .375" (3 req'd.)
9	5158060	Compression Spring (3 req'd.)
10	3200400	Reflector Spring (3 req'd.)
-	4100371	Mounting Screw, 10-32 x 3/8" Pan Head
11	45153000	Clamping Knob (2 req'd.)
12	3135009	Nutsert, 8-32 (3 req'd.)
13	7140016	Socket, G22
-	4081250	Mounting Screw, 8-32 x 1-1/4" Button Head
14	---	Metal Halide Lamp, 1200 Watt Single-Ended (<i>by Customer</i>)
15	4108021	Tinnerman Nut, #10 (6 req'd.)
16	3200415	Front Cover Ring
17	3200426	Front Lens
-	1198062	RTV Silicone Sealant (3 oz. Tube)
18	3200388	Lamphead Housing Assembly
18a	3200389	Housing Shell
18b	3200399	Air Channel (2 req'd.)
18c	3200392	Inner Yoke Bracket (2 req'd.)
18d	4501500	Screw, 1/2-20 x 1-3/4" Hex Head (2 req'd.)
18e	3200391	Outer Yoke Bracket (2 req'd.)
18f	4251002	Screw, 1/4-20 x 1" Socket Head (2 req'd.)
19	3130254	Reflector Assembly
20	4100371	Mounting Screw, 10-32 x 3/8" Pan Head (ref. Item 10)
21	4198043	Rubber Grommet
22	4088007	Hexnut, 8-32 Locking (2 req'd.)
23	3200394	Focus Plate
24	2162008	Barrier Strip
25	4170072	Flat Washer, 1/2" (2 req'd.)
26	45151000	Friction Washer (2 req'd.)
27	3200402	Bulb Adjustment Plate
28	3200395	Focus Plate Standoff (3 req'd.)
20	3200396	Reflector Standoff (3 req'd.)

PARTS LIST, Figure 1 (continued)

<u>Item</u>	<u>Part No.</u>	<u>Description</u>
29	3200402	Blower Mounting Plate
-	4080375	Mounting Screw, 8-32 x 3/8" Pan Head (4 req'd.)
30	3198164	Heyco Strain Relief Bushing
31	3200537	Light Baffle
-	4100501	Mounting Screw, 10-32 x 1/2" Truss Head
-	4170114	Weatherseal Washer, #10

FIGURE 2
MiniTracker Base
Assembly No.3200366



PARTS LIST
Figure 2

<u>Item</u>	<u>Part No.</u>	<u>Description</u>
1	3200375	Yoke & Column, Welded Assembly
2	3200372	Top Cap
-	4100371	Mounting Screw, 10-32 x 3/8" Pan Head
3	8162004	Barrier Strip
-	4100751	Mounting Screw, 10-32 x 3/4" Pan Head
4	3200416	Driven Sprocket
5	3198118	Roller Chain (3.69 feet req'd.)
-	3198119	Master Link
6	3200368	End Panel (2 req'd.)
-	4100371	Mounting Screw, 10-32 x 3/8" Pan Head
7	39938000	Squirrelcage Blower Assembly, 115 V.AC, 50/60 Hz. (B2)
-	4080506	Mounting Screw, 8-32 x 1/2" Pan Head
8	3107005	Taper Lock Bushing, 1-3/8" I.D.
9	3104039	Pillow Block & Bearing Assembly (2 req'd.)
-	4501500	Mounting Screw, 1/2-13 x 1-1/2" Hex Head
-	4507100	Flat Washer, 1/2"
-	4507001	Split Lockwasher, 1/2"
-	4508001	Hexnut, 1/2-13
10	3159006	Drive Sprocket
11	83131000	Blower Intake Grille
-	4100371	Mounting Screw, 10-32 x 3/8" Pan Head
12	3200376	Side Panel (2 req'd.)
-	4100371	Mounting Screw, 10-32 x 3/8" Pan Head
13	3133025	Gear Motor, 90 V.DC (M1)
-	4251003	Mounting Screw, 1/4-20 x 1" Hex Head
14	3200429	Motor Mounting Plate
-	4080506	Mounting Screw, 8-32 x 1/2" Pan Head
15	3200367	Base Plate
16	49226000	Leveling Foot (4 req'd.)
-	4508001	Locknut, 1/2-13 (not shown)
17	3200380	Mounting Block (4 req'd.)
-	410050B	Mounting Screw, 10-32 x 1/2" Pan Head
18	4113004	Strain Relief, Squeeze Connector
-	3140007	AC Power Cord with Molded Plug (not shown)
19	3162010	Terminal Block
-	4060750	Mounting Screw, 6-32 x 3/4" Pan Head
20	3200377	Motor Bracket
-	4250752	Mounting Screw, 1/4-20 x 3/4" Hex Head
21	3161048	Toggle Switch, DPDT (S1,S2), 2 req'd.
22	3133003	Dial, Motor Speed Controller
23	3133003	Motor Speed Controller (R1)
-	4100371	Mounting Screw, 10-32 x 3/8" Pan Head

PARTS LIST, Figure 2 (continued)

<u>Item</u>	<u>Part No.</u>	<u>Description</u>
24	25444000	Lamp Power Supply, 1200 Watt
25	3200378	Power Supply Retaining Strap
-	4100371	Mounting Screw, 10-32 x 3/8" Pan Head
26	3140043	Slip Ring Assembly
27	4377103	Flat Washer, 3/8" (8 Req'd.)
28	49342000	Handle, Chromed (2 req'd.)
-	4310500	Mounting Screw, 5/16-18 x 1/2" Hex Head
-	4317001	Lockwasher, 5/16"
29	3200379	Rotor Bracket
-	4100371	Mounting Screw, 10-32 x 3/8" Pan Head

SkyTracker/Strong Entertainment Lighting

EQUIPMENT WARRANTY

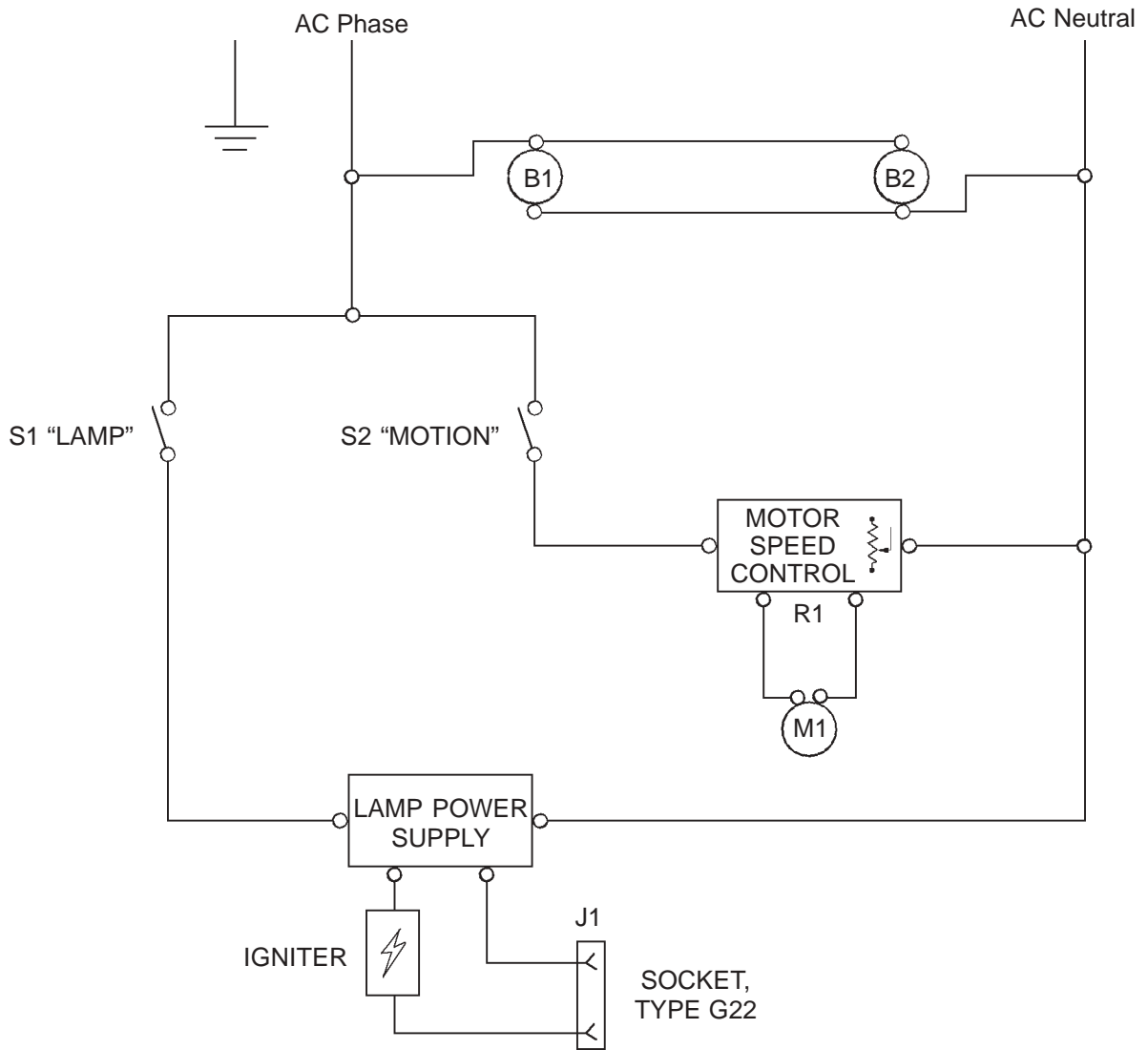
SkyTracker/Strong Entertainment Lighting agrees that its products shall be free from defects in materials and workmanship for a period of one year, from the date of original shipment from its factory. This warranty is nontransferable and applies to the original purchaser only. Said warranty will not apply if equipment is used in conditions of service for which it is not specifically intended. The manufacturer is not responsible for damage to its apparatus through improper installation, physical damage or poor operating practice.

If any device is found to be defective under the warranty, the buyer should notify the manufacturer. Such equipment will be repaired or replaced, at manufacturer's option, free of all charge except transportation, F. O. B. its factory. Any such repair or replacement by the manufacturer shall constitute fulfillment of all obligations to the purchaser. This warranty does not include troubleshooting expense, labor charges associated with service calls, and disassembly or reassembly of the lamp system. Should such a repair or replacement require an on-site service call, the Purchaser shall bear the responsibility for all costs and associated expenses. The manufacturer does not assume responsibility for any unauthorized repairs to its products, even though defective, and unauthorized parts or repairs shall void this warranty.

This warranty is the only warranty given with the manufacturer's products. There are no warranties of merchantability of fitness for a particular purpose or other warranties or representations of any kind, express or implied, which are made with respect to these products.

The remedies of the Owner set forth in this warranty are exclusive. In no event shall the buyer be entitled to recover for incidental, special or consequential damages, arising from the sale or use of these products, including but not limited to loss of profits or revenue, other commercial losses, inconvenience, delay, labor, repairs, or other cost of rental or replacement equipment.

WIRING DIAGRAM MiniTracker



Ref. Desig.	Part No.	Description
B1	6198002	Lamphead Blower, 115 V.AC, 50\60 Hz.
B2	39938000	Base Blower, 115 V.AC, 50\60 Hz.
J1	7140016	Lamp Socket, Two-Pin, Type G22
M1	3133025	Gear Motor, 90 V.DC
R1	3133003	Motor Speed Controller
S1	3161048	Switch, DPDT; "LAMP"
S2	3161048	Switch, DPDT; "MOTION"
-	25444000	Metal Halide Power Supply, 1200 Watt
-	3198147	Metal Halide Lamp Igniter Assembly

