

# INSTRUCTION MANUAL

## TrussTrouper 1.2 Follow Spotlight

Equipment Type 41080

Rev. February 2006



## **STRONG INTERNATIONAL**

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## PREFACE

THE STRONG TrussTrouper 1.2 Type 41080 is a high intensity, lightweight follow spotlight designed for high performance and ease of operation and portability. The light source is an OSRAM 1200 watt double-ended HMI metal halide bulb mounted transversely in a fixed, deep ellipse type metal reflector. The bulb has an expected life of (500) hours of operation, and it is advisable to have a spare bulb available for each unit.

THE SPOTLIGHT is shipped with a yoke adaptable for truss mounting. An optional folding floor stand assembly, and overhead Hanger Kit, are available from Strong International. Lens mechanisms are available in Long, Medium and Short throw configurations, and are readily mounted to the TrussTrouper as the application or venue require.

THE SOLID STATE POWER SUPPLY is mounted below the head assembly. The power supply and lamphouse are forced-air cooled by built-in blowers. Lamphouse and power supply are controlled by means of fixture-mounted switches at the rear of the base pan.

POWER REQUIREMENT for the TrussTrouper is 120 V.AC, 15 amperes, 60 Hertz. Approximate line draw is 12 amperes. A 220 V.AC, 50/60 Hertz model is available under Type Number 41080-03 or -04. A 12 foot, three-wire power cord is mounted to the power supply.

THE OPTICAL SYSTEM, designed for left- or right-hand operation, includes a variable focus lens mechanism which intensifies light output as the spot size is reduced from flood to spot. The (2) rear mounted controls operate the fade out/douser and the iris. Control levers for the six color self-cancelling boomerang are located on the top of the housing. A pattern slot for gobos is accessible in front of the iris.

REPLACEMENT BULBS are available through authorized Strong International and OSRAM Dealers. Use only the OSRAM 1200W double-ended HMI in this unit. Bulbs returned for warranty adjustment must be returned through the original supplier, shipped prepaid, with all relevant warranty papers completed and enclosed.

IF AT ANY TIME you have a suggestion, or desire aid in securing anticipated results, write directly to STRONG INTERNATIONAL, 4350 McKinley Street, Omaha, Nebraska 68112.

## INSTALLATION - OPERATION

INSPECT THE UNIT upon receipt. Any damage must be reported to the freight carrier immediately. It is the responsibility of the *consignee*, not the shipper, to file damage claims.

THE HMI BULB, if ordered with the unit, is included in the accessory kit packed with the spotlight. DO NOT touch the quartz envelope when handling the bulb; fingermarks will burn into the vessel, reducing light, and contributing to premature bulb failure. Handle the bulb by the metal base caps *only*. The HMI bulb is *not* polarized, and the igniter lead can attach to either end.

DISMOUNT THE LAMPHOUSE COVER from the rear of the lamphouse by loosening the (4) captive screws. Loosen the top bulb mounting bracket and remove the threaded nuts from the ends of the HMI bulb. Pull the upper bulb mount clear of the reflector and insert the bulb through the reflector holes. Slide the lower bulb end cap through the lower mounting opening; attach the igniter lead and secure using the knurled nut. Swing the top bulb mounting bracket over the upper end cap; attach the upper lead, and secure using the knurled nut. Tighten the top mounting bracket.

IF USING THE OPTIONAL FLOOR STAND ASSEMBLY, drop the legs to the horizontal position and pin in place. The floor stand may then be moved on its casters to desired location. IMPORTANT: Once the floor stand has been positioned, lower the leveling feet to transfer the weight of the unit from the casters to the leveling feet. If the unit is to be permanently installed, it is advisable to remove both casters and leveling feet, and bolt the stand to the floor.

INSERT THE POST of the yoke assembly into the nylon bushing at the top of the floor stand tube. Position the yoke for right- or left-hand operation (as desired). Place the spotlight head on the yoke assembly, making certain that the semicircular friction plate of the spotlight saddle (see Figure 2, Item 41) is between the yoke and the brake clamping plate. Tighten the (2) handwheel knobs on each side of the yoke allowing adequate end play for free operation, and tighten the (2) lock knobs. Vertical movement of the spotlight head can be adjusted by the amount of torque applied to the lower, spring-loaded braking knob against the friction plate.

SET THE BALANCE of the head assembly. Loosen the (2) hex nuts on each side securing the saddle brackets to the spotlight base rail (see Figure 2, Item 66). Slide the spotlight head inside the slots until the proper balance is achieved, and retighten the hex nuts.

THE SPOTLIGHT YOKE, as supplied, is designed for use with standard truss fixtures. Truss mounting the TrussTrouper will depend largely on its application in any given venue.

THE TRUSSTROUPER SPOTLIGHT may be suspended from a ceiling or overhead truss by means of an optional Hanger Kit. This kit is available through your authorized Strong International Dealer.

ELECTRICAL CONNECTION for the 41080-01 or -02 (120 V.AC, 60 Hz.) requires a 120 V.AC, three prong 15 ampere grounded outlet. The Type 41080-03 or -04 (240 V.AC, 50/60 Hz.) may be fitted with a plug acceptable for the local electrical supply. See the Equipment Data Plate for the correct voltage before connecting the unit. Sustaining line draw of the TrussTrouper is (12) amperes; observe local electrical codes regarding line protection.

ENERGIZE THE AC LINE by closing the POWER circuit breaker at the rear of the spotlight head, and the cooling fans will operate. Close the LAMP switch and the bulb will ignite. Allow one to five minutes for the bulb to reach full intensity. Rotate the three adjusting screws below the lamphouse base pan to center and focus the bulb inside the reflector. Alternate adjustments while observing the spot until the light field is as flat as possible at highest intensity.

WHENEVER THE SPOTLIGHT is moved, either from one position to another, or one show site to another, the bulb mount should be inspected at the new installation site to determine that the bulb is firmly seated in its socket. The above bulb alignment procedure must then be repeated after the bulb mount assembly is replaced.

## MAINTENANCE

THE TrussTrouper requires very little maintenance to keep it in good working order. Cleanliness is the most important factor. Clean the surface of the reflector regularly using a clean, dry cloth. If excessively soiled, a good, spray-on commercial glass cleaner may be used. The bulb envelope may be cleaned with alcohol on a clean cloth, and rinsed with distilled water.

THE COOLING FANS are permanently lubricated, and require no oil. Fan impeller blades and intake grilles must be cleaned regularly to prevent restriction of air flow, particularly after events such as tractor pulls or rodeos.

OPTICAL SYSTEM LENSES may be cleaned with an optical grade lens cleaner and Roscoe Lens Tissue. Light lubrication of the lens carriage slide rods using WD-40® or equivalent may be desirable; do not use graphite lubricants, and do not lubricate the iris assembly.

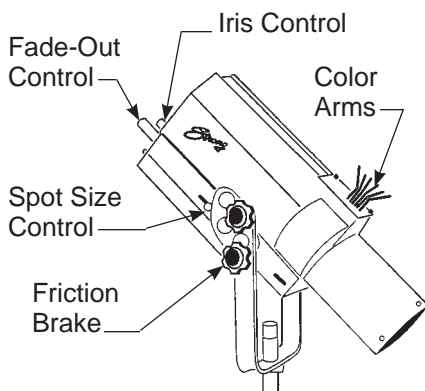
## OPERATION OF OPTICAL SYSTEM

THE OPTICAL SYSTEM of the TrussTrouper consists of a spot size selector, an iris assembly to reduce the size of the spot aperture, and a fade-out chopper assembly to permit reducing light output from full intensity to complete douse. The iris and chopper controls are mounted on the back of the lamphouse and are fully accessible from either side of the unit. The spot size is selected by setting and locking a control knob located on the right side (as viewed from rear) of the unit.

INSTALL A LENS MECHANISM compatible with the desired throw. The three lens mechanisms are designated as Short, Medium, and Long Throw. The throw specifications listed below may serve as a guideline when first setting up the TrussTrouper, but optimal performance at a given throw distance may vary with ambient light levels, projection angles, and other variables unique to the venue.

Short Throw	20 - 50 feet (6.0 - 15.2 m)
Medium Throw	40-100 feet (12.2 - 30.5 m)
Long Throw	50-130 feet (15.2 - 39.6 m)

IGNITE THE LAMPHOUSE and allow the bulb to stabilize. Open the iris to project the largest aperture by rotating the iris control (left) fully counterclockwise. Open the chopper blades by rotating the chopper control (right) fully clockwise. Rotate the spot size control knob (right side) counterclockwise to unlock, and slide the knob forward or back to set the desired spot size. Lock the spot size control at the desired point.



TO REDUCE SPOT SIZE, or to project a “head” spot, rotate the iris control clockwise to the desired spot size. The spot cannot be doused by means of the iris control; do not force the control beyond its stop. Use the fade-out chopper blades to douse (black out) the spot.

ROTATING THE FADE-OUT CONTROL will decrease the light output, and dim the spot to complete douse-out. It is advisable to use the dousing capability of this control to cut off the light between cues instead of extinguishing the bulb. The HMI bulb requires a relatively long warmup period, and repeated ignitions decrease bulb life.

## OPERATION OF COLOR BOOMERANG

THE COLOR BOOMERANG is equipped with six color holders. Additional filter holders can be supplied by an authorized Strong International Dealer.

TO OPERATE INDIVIDUAL COLOR FILTERS, engage the desired filter selector lever. A rocker catch located in the color disc housing holds the filter in position.

TO RELEASE A COLOR, push the filter release button or engage another color, thus releasing the previous color automatically.

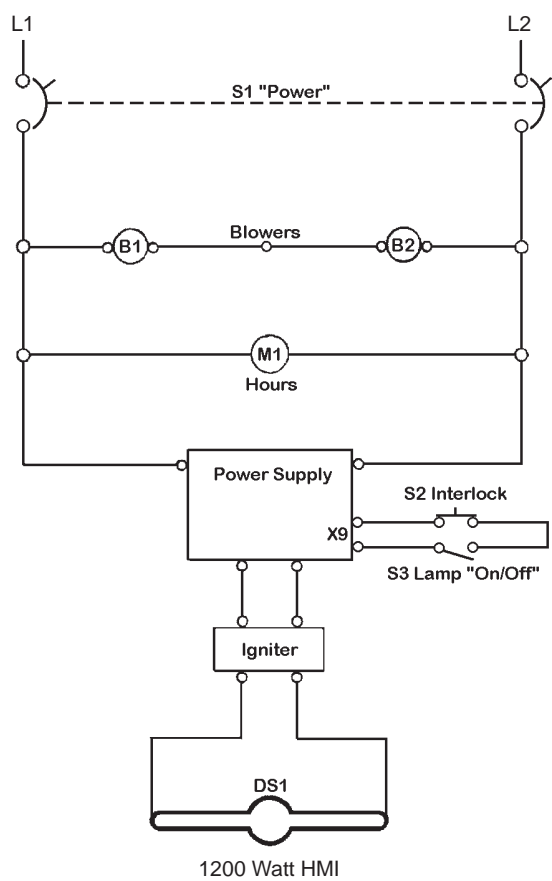
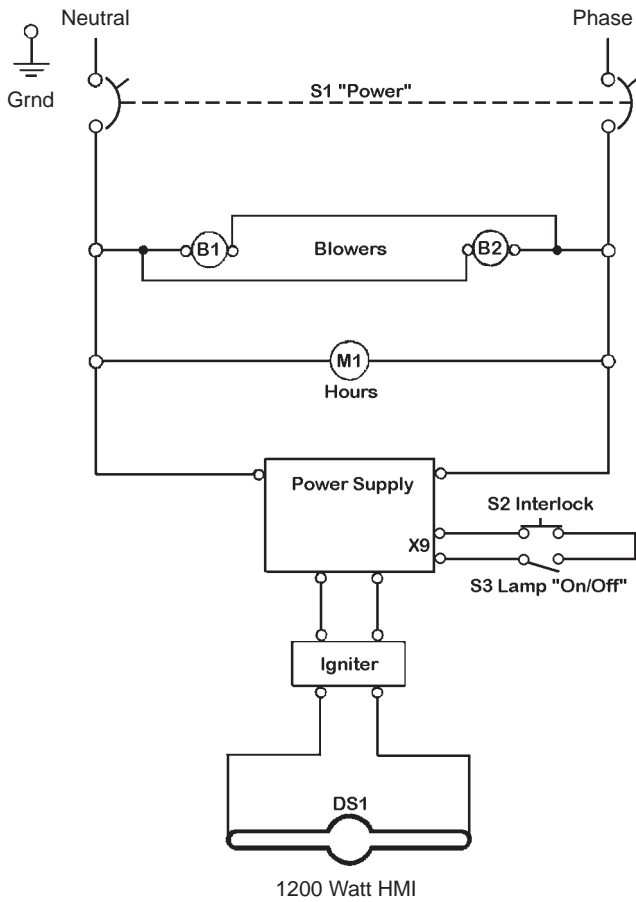
NOTE: WHEN PLACING COLOR FILTERS in the boomerang, the *less* dense colors (pink, amber) should be placed in the holders toward the **rear** of the boomerang (toward arc), and those of *greater* density (red, green) should be placed in the holders toward the **front** of the boomerang (away from the arc). Use *high temperature* filter material (RoscoLux® or equivalent).

COLOR TEMPERATURE REDUCTION FILTERS, required for use with television and videotape, are available from theatrical supply dealers.

# TrussTrouper 1.2 Wiring Diagram

110-120 V.AC

208-230 V.AC



NOTE: Lamp "On" when X9 open  
 Lamp "Off" when X9 shorted  
 Wire S2 switch across COM & N.C.



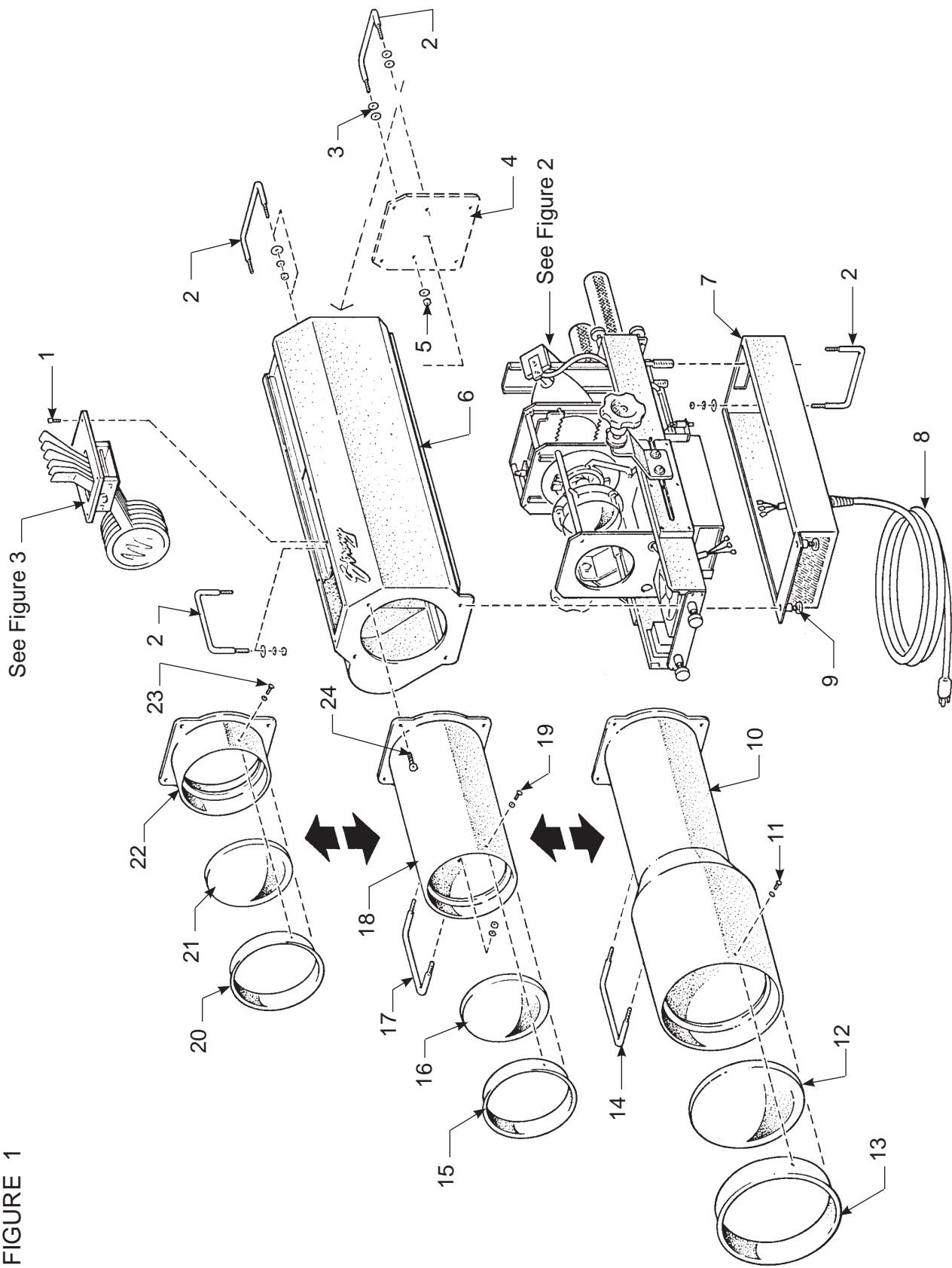
## WIRING DIAGRAM

### Parts List

Ref.		
<u>Desig.</u>	<u>Part No.</u>	<u>Description</u>
B1,2	61-98002	Blower, 115 V.AC, 50/60 Hz.
-	81272	Blower, 230 V.AC, 50/60 Hz. (early Export units)
-	88253	Blower Power Cord & Plug
DS1	41103	HMI Bulb, 1200 Watt
M1	31-32001	Elapsed Time Meter
S1	71660	Switching Circuit Breaker, 16 A.
S2	31-61011	Interlock Switch, Pushbutton
S3	21-61228	Rocker Switch, ON/OFF
	25444	Power Supply
	25447	Igniter

NOTE: Power Supply is set at the factory for 110 or 220 input voltage.  
Specify desired input voltage when ordering replacement.

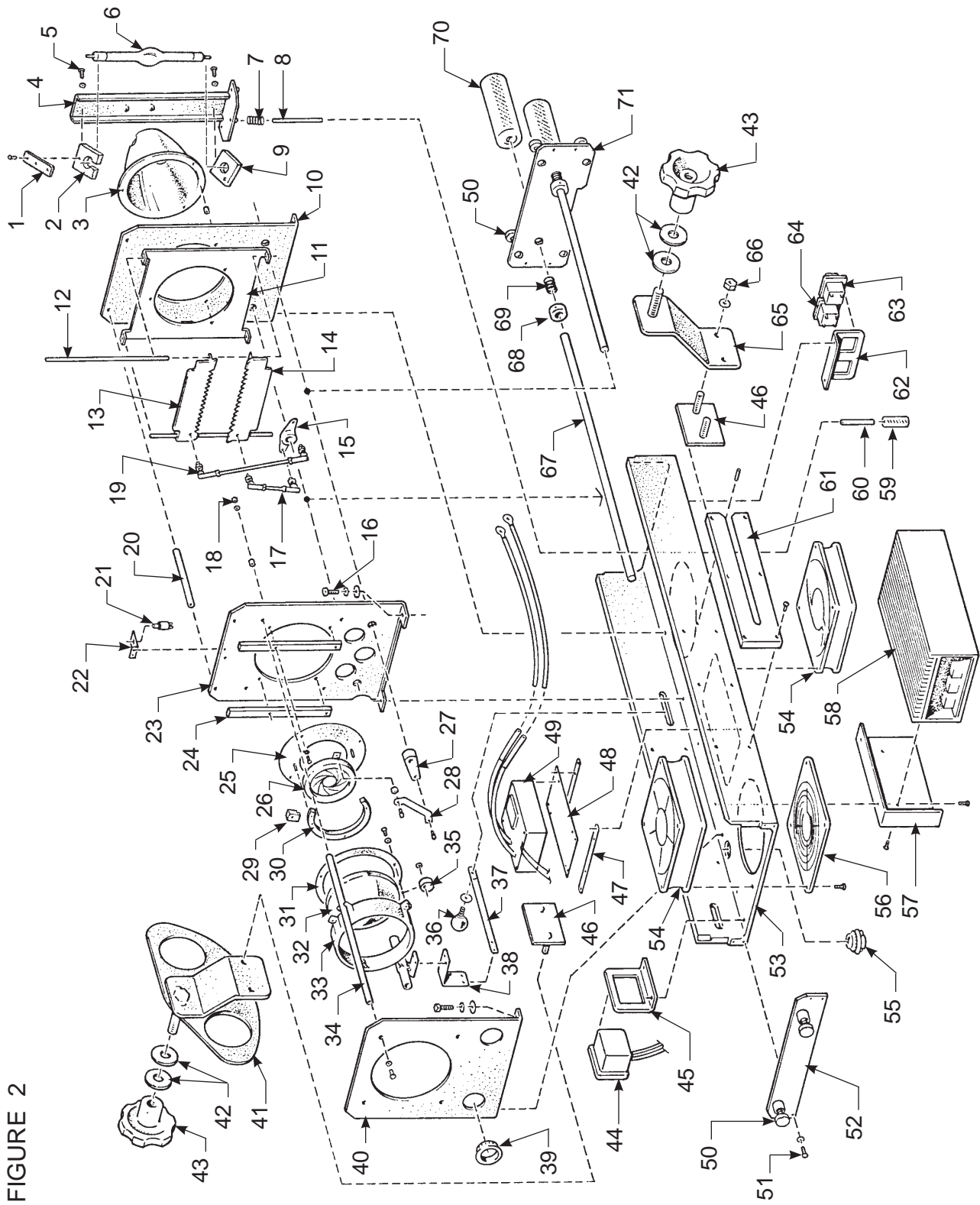
FIGURE 1



**FIGURE 1**  
Parts List

<u>Item</u>	<u>Part No.</u>	<u>Description</u>
1	25396	Screw, 10-32 Captive
2	81-28002	Hand Rail
3	4257102	Washer, Hand Rail
4	41908	Rear Panel (Welded to Item 6)
5	4268006	Hand Rail Fastening Nut, 1/4-28 Hex
6	41908	Lamphouse Cover, Welded Assembly (incl. Item 4)
7	41315	Bottom Cover, Welded Assembly
8	11-40037	AC Power Cord
9	41330	Captive Screw
10	41292	Lens Housing, Welded Assembly
11	4060180	Screw, 6-32 x 3/16" Pan Head
12	41304	Long Throw Lens
13	41289	Lens Ring
14	81-28002	Hand Rail
-	41326	Lens Assembly, Long Throw (Items 10-14)
15	41294	Lens Ring
16	41305	Medium Throw Lens
17	81-28002	Hand Rail
18	41296	Lens Housing, Welded Assembly
19	4060180	Screw, 6-32 x 3/16" Pan Head
-	41327	Lens Assembly, Medium Throw (Items 15-19)
20	41298	Lens Ring
21	25491	Short Throw Lens
22	41299	Lens Housing, Welded Assembly
23	4060180	Screw, 6-32 x 3/16" Pan Head
-	41328	Lens Assembly, Short Throw (Items 20-23)
24	4250500	Mounting Screw, 1/4-20 x 1/2" Button Head

FIGURE 2



**FIGURE 2**  
Parts List

<u>Item</u>	<u>Part No.</u>	<u>Description</u>
1	41257	Bulb Contact
2	41254	Upper Bulb Retainer
3	41300	Reflector
-	4081002	Mounting Screw, 8-32 x 1" Pan Head
-	41-35008	Spacer
4	41907	Bulb Mounting Pedestal
5	4060370	Mounting Screw, 6-32 x 3/8" Pan Head
6	41103	HMI Bulb, 1200 Watt Double-Ended
-	4080310	Mounting Screw, 8-32 x 5/16" Pan Head
7	11-58013	Compression Spring (3 req'd.)
8	41337	Adjusting Shaft, Bulb Positioning (3 req'd.)
9	41255	Lower Bulb Retainer
10	41242	Reflector Mounting Plate
11	41250	Chopper Mounting Plate
12	41248	Chopper Slide Rod (2 req'd.)
13	41278	Upper Chopper Blade Assembly
14	41279	Lower Chopper Blade Assembly
15	41253	Actuator Arm, Choppers
16	4250752	Mounting Screw, Iris Plate; 1/4-20 x 3/4" Hex Head
17	41312	Pull Rod, Short
-	31-98131	Ball Joint Elbow (2 req'd.)
18	4080621	Gobo Channel Mounting Screw, 8-32 x 5/8" Pan Head
19	31-98131	Ball Joint Elbow (2 req'd.)
-	41311	Pull Rod, Long
20	41276	Spacer Rod
21	31-61030	Top Cover Interlock Switch (S2)
22	65322	Switch Mounting Bracket
-	4060501	Mounting Screw, 6-32 x 1/2" Flat Head
23	41242	Iris Mounting Plate
24	41301	Gobo Slide Channel (2 req'd.)
25	41263	Iris Back Plate
26	24374	Iris
27	41261	Iris Actuator Collar
28	41237	Iris Actuator Arm
29	25386	Iris Clamp (2 req'd.)

**FIGURE 2** Parts List (continued)

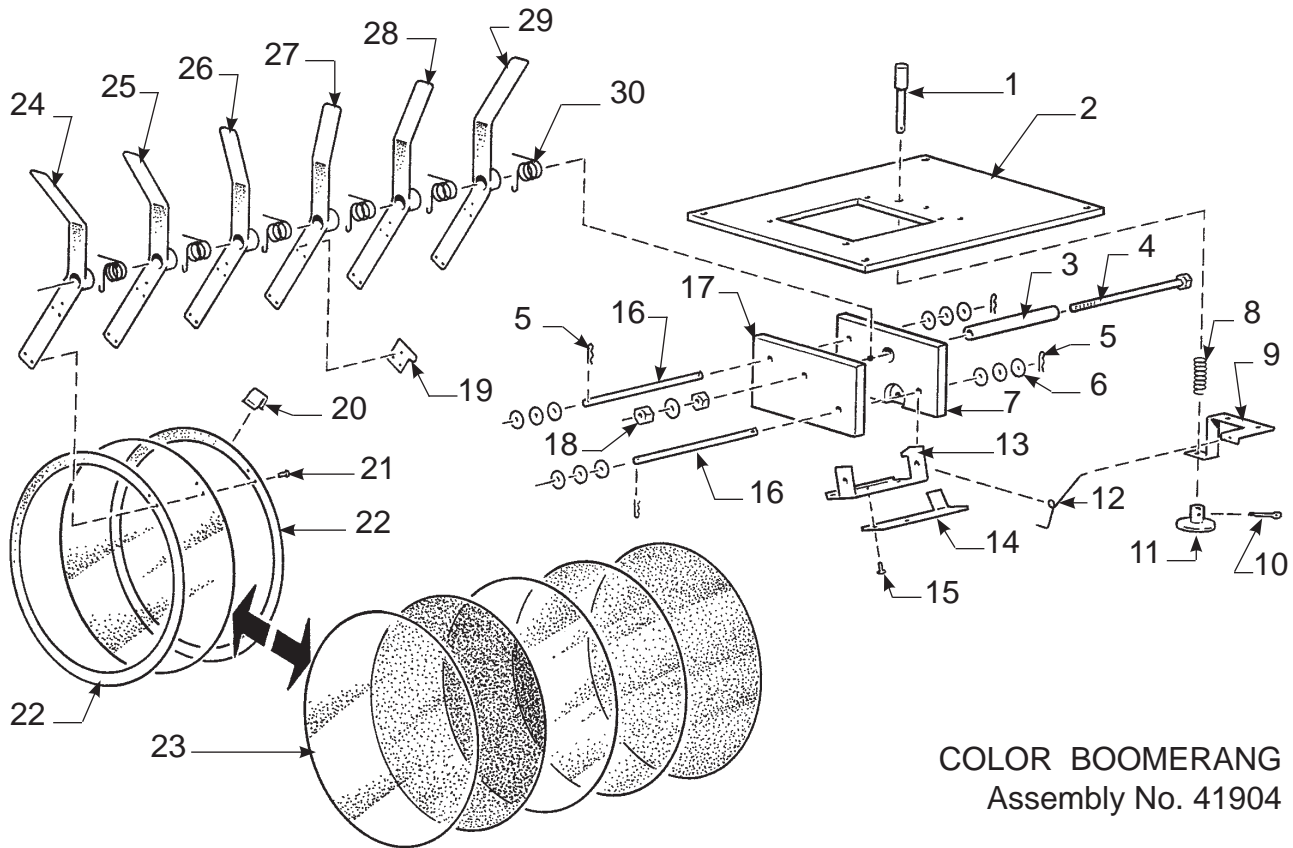
<u>Item</u>	<u>Part No.</u>	<u>Description</u>
30	41264	Iris Spacer Plate
31	41265	Lens Retaining Ring
32	41302	Condensor Lens
32	41281	Condensor Lens Mounting Ring
34	41277	Lens Ring Guide Rod
35	41271	Phenolic Bushing
36	48103	Knob, Red Plastic
-	41370	Threaded Shaft
-	4257102	Flatwasher, 1/4"
37	41229	Slide Bar
38	41275	Slide Bar Transfer Bracket
39	31-07003	Bushing
40	41252	Optical System Front Plate
41	41284	Saddle Bracket & Brake Quadrant, Welded Assembly
42	4507101	Flatwasher, 1/2" Steel
43	45153	Clamping Knob, Cast Aluminum
44	31-32001	Elapsed Time Meter (M1), 60 Hz.
45	41228	Meter Mounting Bracket
46	25389	Stud Plate, Balance Slide
47	41317	Igniter Retaining Strap (2 req'd.)
48	25415	Igniter Mounting Plate
49*	25447	Igniter Assembly (incl. Item 48)
50	41330	Captive Screw
51	4080370	Screw, 8-32 x 3/8" Phillips Head
52	41308	Base Rail Front Plate
53	41226	Base Rail
54	61-98002	Blower (B1, B2), 115 V.AC, 50/60 Hz.
-	81272	Blower (B1, B2), 230 V.AC, 50/60 Hz. (early Export units)
55	11-40037	Cable Clamp (incl. with Figure 1, Item 10 Cord)
56	83131	Blower Grille
57	25417	Mounting Bracket, Power Supply
58	25444	Power Supply Assembly

\* Replacement Igniter supplied as shown; leads must be field-spliced

**FIGURE 2** Parts List (continued)

<u>Item</u>	<u>Part No.</u>	<u>Description</u>
59	51168	Knurled Knob, Bulb Positioning Control (3 req'd.)
-	4080184	Set Screw, 8-32 x 3/16"
60	41336	Spacer, Bulb Adjustment (3 req'd.)
61	25387	Balance Slide Bracket (2 req'd.)
62	41227	Switch Mounting Bracket
63	21-61228	Rocker Switch (S3), LAMP ON/OFF
64	71660	Switching Circuit Breaker (S1), POWER
65	41283	Saddle Bracket, Welded Assembly
66	4378001	Hexnut, Balance Slide Lock; 3/8-16 (4 req'd.)
67	41319	Control Rod (2 req'd.)
68	41320	Locking Collar (2 req'd.)
69	51-58017	Compression Spring (2 req'd.)
70	41318	Control Handle (2 req'd.)
71	41309	Back Plate

FIGURE 3



COLOR BOOMERANG  
Assembly No. 41904

Item	Part No.	Description
1	45308	Color Release Pushbutton
2	41239	Boomerang Cover Plate
3	45306	Pivot Stud Bushing
4	4253500	Pivot Stud Bolt, 1/4-20 x 3-1/2"
5	01704	Hitch Pin (4 req'd.)
6	4087101	Washer (12 req'd.)
7	18122	Retainer Plate, Rear
8	51-58029	Compression Spring
9	41240	Color Release Guide Bracket
10	00919	Cotter Pin
11	41234	Color Release Plunger
12	45310	Torsion Spring, Release Arm
13	45309	Color Arm Catch Bracket
14	41260	Trip Lever
15	4040251	Screw, 4-40 x 1/4" Button Head
16	45304	Stop Pin, Color Arm Travel

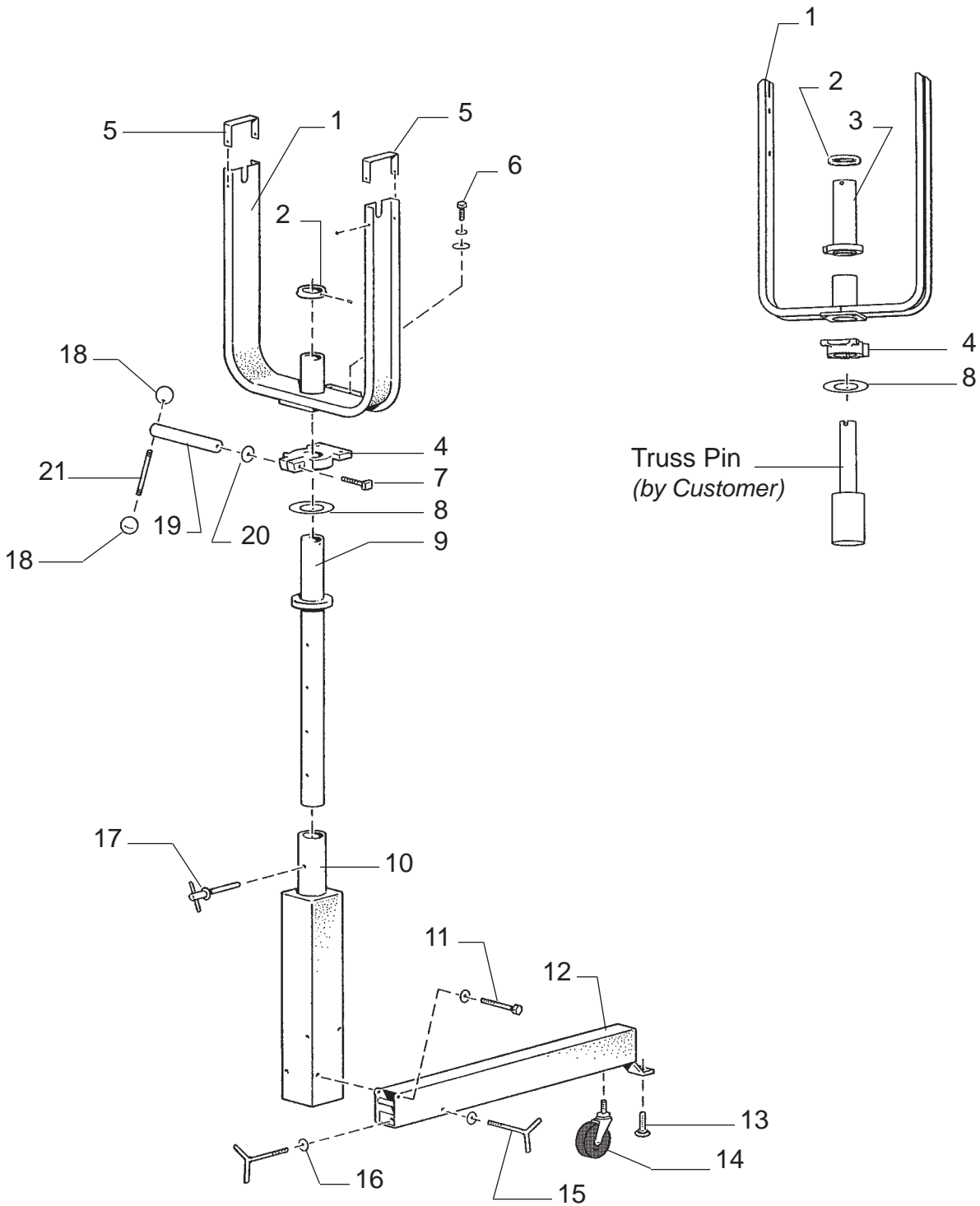


FIGURE 3 Parts List (continued)

<u>Item</u>	<u>Part No.</u>	<u>Description</u>
17	18121	Retainer Plate, Front
18	4258015	Nylon Hexnut, 1/4-20 (2 req'd.)
-	4257001	Shakeproof Lockwasher, 1/4"
19	45308	Hook (early models only)
20	46150	Clip (3 req'd. per Color Holder)
21	4040250	Screw, 4-40 x 1/4" (2 req'd. per Color Holder)
22	18118	Color Frame (2 req'd. per Color Holder)
23*	47215	Color Gel, Light Red (RoscoLux #26)
-	47216	Color Gel, Primary Blue (RoscoLux #80)
-	47217	Color Gel, Sky Blue (RoscoLux #68)
-	47218	Color Gel, Daylight Blue (RoscoLux #65)
-	47219	Color Gel, Flesh Pink (RoscoLux #34)
-	47220	Color Gel, Golden Amber (RoscoLux #21)
24	25412	Color Selector Arm
25	25408	Color Selector Arm
26	25407	Color Selector Arm
27	25411	Color Selector Arm
28	25410	Color Selector Arm
29	25409	Color Selector Arm
30	45303	Torsion Spring (6 req'd.)
		NOT SHOWN
	25396	Boomerang Mounting Screw, Captive (4 req'd.)

\* Install *less dense* colors (pink, amber) **closest** to light source

FIGURE 4



## PARTS LIST

Figure 4

<u>Item</u>	<u>Part No.</u>	<u>Description</u>
1	41243	Yoke, Welded Assembly
2	65431	Inner Tube Retaining Collar
3	41325	Yoke Pivot, Welded Assembly
4	83381	Swivel Clamp Collar
5	25420	Strap (2 req'd.)
6	4251003	Screw, 1/4-20 x 1" Hex Head
-	4257000	Lockwasher, 1/4" Split Ring
-	4257102	Flatwasher, 1/4"
7	4372250	Screw, 3/8-16 x 2-1/4" Square Head
8	65420	Thrust Bearing
9	65824	Inner Tube, Welded Assembly
10	83742	Outer Tube & Base Column, Welded Assembly
11	4433000	Screw, 7/16-14 x 3" Hex Head (4 req'd.)
-	4507101	Flatwasher, 1/2"
-	4438002	FlexLock Hexnut, 7/16-14
12	83744	Base Leg, Welded Assembly (4 req'd.)
13	49226	Leveling Foot (4 req'd.)
14	49208	Caster (4 req'd.)
15	83745	Leg T-Bolt (4 req'd.)
16	4437100	Flatwasher, 7/16"
17	48395	Height Adjusting Pin, 3/8" Diameter
18	10048A	Knob, Red Plastic
19	49290	Swivel Clamping Shaft
20	4377103	Thrust Washer
21	49130	Handle Shaft

