# **ULTRA ARC SERIES II**

HTI 400 WATT FOLLOWSPOT USER MANUAL

**MODELS:** 

LONG THROW UA II-LT/120 SHORT THROW UA II-ST/120



PHOEBUS MANUFACTURING 2800 THIRD STREET SAN FRANCISCO, CA 94107 U.S.A 415-550-1177 TEL 415-550-2655 FAX www.phoebus.com

# PHOEBUS MANUFACTURING ULTRA ARC SERIES II USER MANUAL

### MODELS UA II-LT/120 & UA II-ST/120

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#### LIMITED WARRANTY

Thank you for purchasing the Phoebus Manufacturing Ultra Arc Series II.

The Phoebus Manufacturing Ultra Arc Titan is warranteed against defects in material and work-manship for a period of one year from date of purchase from Phoebus Manufacturing. I case of difficulty, contact Phoebus Manufacturing of your dealer for repair or return instructions. Iris, dowser, and clipper are warranteed for six months under normal use.

Lamps are excluded from this warranty. This warranty does not apply to mechanical defects caused by rough handling or to damage caused by improper operation not in accordance with this manual. Cause of defect is in the sole judgment of Phoebus Manufacturing.

This warranty is voidable at Phoebus Manufacturing's option under the following circumstances: User makes unauthorized modifications (electrical or mechanical).

The unit is connected to improper voltage supply.

Any other condition occurs which causes catastrophic failure or impairs Phoebus Manufacturing's ability to render proper service.

If the unit is modified by the customer without permission, the customer agrees to pay for any time or parts necessary to remove the modifications before repair, if necessary.

Phoebus will not be responsible for consequential damages caused by failure for whatever reason of equipment of its manufacture. Sole liability is for equipment of its manufacture. Sole liability is for repair or replacement (at Phoebus Manufacturing's option) of the defective equipment under the terms described above.

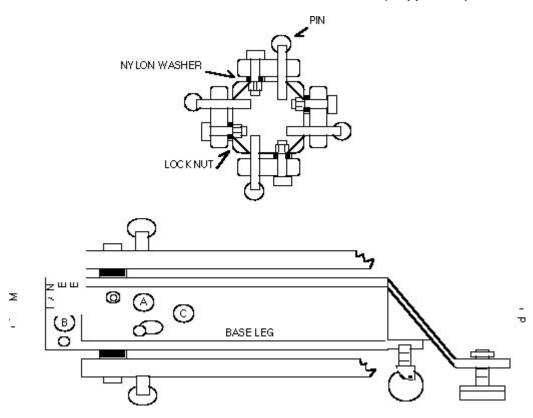
#### INITIAL SET-UP AND OPERATION

- 1. Unpack carefully and inspect for shipping damage.
- 2. Bolt the 4 base legs onto the 3 1/2" square tubing with the elevator brackets and caster holes facing down. (See Collapsible Base Assembly Instruction Diagram on page 4).
- 3. Insert casters into legs.
- 4. Insert levels into elevator brackets located at the end of each leg.
- 5. Insert height collar washer onto yoke.
- 6. Insert height collar handle into height collar.
- 7. Slip height collar & handle onto yoke.
- 8. Insert yoke into base.
- 9. Turn tilt lock knobs on either side of the bail so 3/4" of thread is showing. Position fiber washers nearest the bail.
- 10. Lift the Ultra Arc Series II using the front and rear of the chassis as supports. Position the bail handle shafts in the U-shaped slots at the top of the yoke. Ensure that the washers are positioned properly. Turn the tilt lock knobs to tighten the grip on the yoke.
- 11. Remove shipping bolts and insert tapered handles into front and rear lens holder.
- 12. Unscrew the four thumbscrews on either side of the color boomerang.
- 13. Unpack boomerang. Position it upside down. Control Levers facing you.
- 14. Raise the left-hand (operator right) gel holder.
- 15. Insert gel, cover with ring and secure with three clips. Use hammer or pliers to flatten the clips. (This will also keep the gel frames from hooking up on one another during use.)
- 16. Lower left-hand (operator right) gel holder and raise the next one.
- 17. Repeat steps #14 through #16. To access the bottom gel clip, raise all the gels to the left or right and lower the one being worked on.
- 18. As you move toward the right-hand gels (operator left), insert progressively lighter colors. The left hand (operator right) holder should be used for deep blue or purple colors). This will prolong their life.
- 19. Place the color boomerang on the top of the Ultra Arc Series II with the lever handles facing the other operation controls. Secure with four thumbscrew near the bottom of the boomerang.
- 20. Insert the three control handles (steel shaft with ball knob) into the slots at the top and to the rear of front housing. The handles screw into threaded holes which can be seen through the slots.
- 23. Remove rear cover. Remove four thumbscrews on rear of cover, lift the rear cover straight up.
- 24. Unscrew three thumbscrews on lamp plate. Position lamp (not included) inside ring on lamp plate. (See diagram on page 7 for correct lamp positioning). Snap fiberglass plate over base of lamp. Mount lamp plate back onto three posts.
- 25. Replace rear cover and replace thumbscrews.

#### **BASE ASSEMBLY AND SET UP INSTRUCTIONS**

- 1. Bolt the four base legs onto the 3-1/2" square tubing with elevator brackets and caster holes facing down.
- 2. Insert casters into legs.
- 3. Insert levels into elevator brackets located at the end of each leg.
- 4. Insert height collar handle into height collar.
- 5. Slip height collar washer onto yoke.
- 6. Slip height collar and handle onto yoke.
- 7. Insert yoke into base.

#### **COLLAPSIBLE BASE ASSEMBLY INSTRUCTION DIAGRAM (if applicable)**



- 1. Insert casters into base legs
- 2. Insert leveling jacks onto base leg extension feet. Secure with 3/8-16 hex nuts.
- 3. Insert bolt through hole "A" on the main base tube. Place nylon washer on the bolt. Position hole "A" on the base leg over the bolt in the main base tube. Slide the base leg over the bolt and secure with nyloc nut. NOTE: Nylon washer should be between base leg and main base tube. Nyloc nut should be secured on inside of the base leg. (See diagram above).
- 4. Insert pin into hole "B".
- 5. Repeat steps 3 and 4 for remaining base legs.
- 6. For storing or transporting base:
  - a. Remove pin "B".
  - b. Rotate leg around lock nut.
  - c. Align pin hole with hole "C".
  - d. Snap pin into hole "C" securely.

#### **CONTROL DESCRIPTION**

1. POWER SWITCH Control power to ballast and fans.

Down - Off

Middle – Fans Only Up – Strike Lamp

2. FUSE 3AB 7 amp

3. HOUR METER Records operating time accumulated on lamp. Non-re-

setable.

4. REAR LENS CONTROL Used to focus image. Turn handle clockwise to lock

and counter-clockwise to unlock. Slide handle to focus.

5. TILT LOCK KNOB Friction lock for vertical tilt of unit.

6. FRONT LENS CONTROL Changes image size. Turn handle clockwise to lock

and counter-clockwise to unlock. Slide handle forward for smaller image, spot distribution, long throws. Slide back for larger image, flood distribution, short throws.

7. DOWSER Mechanical dimmer. Open when lever is moved to-

wards operator.

8. CLIPPER Masks spot to rectangular strip. Open when lever is

moved towards operator.

9. IRIS Controls size of image. Opens widest when lever is

moved towards operator. WARNING: Iris left in closed position with dowser open for extended time may

cause damage to iris leaves.

10. COLOR CONTROLS Gel is inserted in beam when lever is moved up. Six

controls.

#### **FOLLOWSPOT OPERATION**

- 1. Connect to 120 Volt 60Hz power line. Turn power switch to middle position (lamp blow er & gel fan only). Be sure both are operating properly before flipping switch to upper position to strike lamp. The lamp should strike within 15 seconds and warm up to full output within 60 seconds. If power is interrupted, bulb will go out. Allow 75 seconds for re-strike. Use middle (fan only) position of power switch before re-strike to cool lamp.
- 2. To maximize lamp life turn power switch to fans only (middle position) for at least 1 minute after each use.
- 3. Dowser, iris and clipper are controlled by the ball knobs on top.
- 4. The front lens control handle (on lower side) is set for desired throw by sliding it forward for a narrow beam (long throw) or rearward for a wide beam (short throw). It may be locked in place by turning it clockwise. Do not over tighten!
- 5. The rear lens control handle (side of unit, near middle is used to obtain the desired focus, soft or hard edge. Slide it forward for wide beam (short throw) or backward for a narrow beam (long throw). It may be locked in position by turning clockwise. Do not over tighten!
- 6. To obtain desired throw at a given distance, both lenses must be moved. Lens position may be chalk marked on the side of the unit.

**NOTE:** Optional Auto Zoom System accomplishes #4, 5, 6 in one movement.

#### **INSTRUCTIONS FOR THE AUTO ZOOM (if applicable)**

The Auto Zoom version of the Ultra Arc Series II automatically moves the rear lens when the front lens is moved to keep the light in focus to the image. It is intended for key lighting a moving performer when the throw distance changes during a performance, such as ice shows, TV studios, etc. Except for the lens motion system, the Auto Zoom unit is identical in all other respects to the standard Ultra Arc Series II.

Both lenses move when the front lens handle is moved. The lens handle is moved toward the front of the unit for a spot light and moved toward the back for a flood light.

Fine focus adjustment can be made with the vernier knob at the rear of the front lens handle slot. This knob rotates through several rotations to give the full range of focus adjustment.

Operate the unit with the iris as wide open as possible, using the Auto Zoom unit motion rather than the iris to provide a constant lighted area as the throw changes. Small iris setting will tend to defocus as the lenses are moved. This is normal and is due to spherical lens aberration. This can be corrected to some extent with the vernier knob.

It is recommended to keep grooves in Auto Zoom bars greased with a Lithium Base MP Grease.

#### **OPTICAL SYSTEM OPERATION**

#### I. SET UP AND FOCUSING

- 1. Turn power switch on (upper position). Lamp should strike within 15 seconds. Wait 45 seconds for lamp warm-up.
- 2. Move iris, dowser, and clipper controls to extreme right hand position (viewing the unit from the rear).
- 3. Move front lens forward for spot or rearward for flood distribution. Position can be chalk marked on side of chassis near handle set.
- 4. Move rear lens until edge of pattern is in focus. Position may be adjusted hard or soft edge.
- 5. Close down the iris by moving its control handle left.
- 6. Focus may change slightly with iris closed. Best focus setting is with iris half open.
- 7. To "zoom" the lenses to a new position, a coordinated motion of both front and rear lenses is used. Note that these lenses move opposite to each other to maintain focus. The optional Auto Zoom System accomplishes this with one movement.

#### II. BEAM CONTROL

- 1. The dowser is a mechanical dimmer. The rear control handle is moved left to close and right to open the dowser.
- 2. The clipper shapes the image to a strip or rectangle of variable height. Move the middle control handle left to close and right to open the clipper.
- 3. The iris provides a 6 to 1 change in image diameter. It is controlled by the front handle, left to close and right to open. The brightest spot is obtained with the iris open and the lenses adjusted for the largest spot desired. Smaller spots are obtained using the iris.

#### **TECHNICAL DATA**

#### I. LAMP

The Ultra Arc Series II uses a Osram HTI 400w/24 lamp or equivalent. This is a 400 watt highluminous vapor discharge lamp utilizing a short light-arc with exactly adjusted metal halides in the envelope. It is mounted in an integral pre-focused dichroic reflector. The arc operates at 55 volts. The lamp current is 7.3 amps. A ballast is used to operate the lamp from standard 120V, 50/60Hz power. Replacement lamps are available from Osram lamp distributors as well as from Phoebus Manufacturing.

Lamp life is an average of 250 hours in normal use. The life depends on the burning time per start. Lamps burned for several hours per start will last longer. Operation for less than 15 minutes per start is not recommended. An hour meter is mounted on the housing to keep track of lamp life (or rental usage). Lumen loss occurs typically at end of lamp life and the lamp will fail to start. Another end of life symptom is arc swirl or flicker in the projected image. Occasionally, a new lamp may exhibit this problem. Return such to your Osram distributor for exchange.

Color temperature is about 5600° Kelvin (white) but may vary somewhat from lamp to lamp.

In handling the lamp, avoid touching the quartz arc tube. Use the outside of the reflector or the porcelain base. If the arc tube is touched, clean it with alcohol or freon before use to prolong lamp life. There is no hazard in handling the lamp, since high pressure is present only when the bulb is hot. Due to the small arc chamber, these bulbs present no explosion hazard in contrast to xenon and other high pressure lamps.

The lamp is cooled by a blower located below the lamp. This blower is essential to lamp operation. Improper cooling will cause decreased life and arc instability or color shift.

#### II. ELECTRICAL

The ULTRA ARC SERIES II operates on 105 to 125 Volt 50/60 Hz AC. Present models draw less that 5 amps, starting or running, at high power factor. An electronic ballast is used to supply the lamp with proper starting and running voltages and currents.

#### **MAINTENANCE**

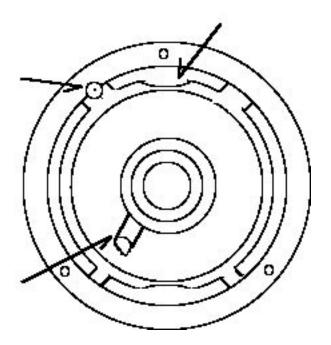
#### I. LAMP INSTALLATION

- 1. Turn power switch to off position, unplug unit from power source.
- 2. Remove four thumbscrews on rear housing.
- 3. Lift rear housing up to remove.
- 4. Unplug lamp connector.
- 5. Unsnap fiberglass plate from base of lamp. Do not unhook springs!
- 6. Lift lamp straight up and out of its holder.
- 7. Position lamp inside ring on lamp plate. (See diagram below for correct lamp positioning). Snap plate over base of lamp. Mount lamp plate back onto three posts.

- 8. Plug lamp connector in.
- 9. Plug the Ultra Arc Series II in and turn power switch to on (upper position). Lamp should strike within 20 seconds and warm up within a minute. Set the lenses for a narrow spot (long throw position). Observe the distribution of the light across the area illuminated. The brightest point should be in center. If it is off to one side remove rear cover and proceed to adjust the 3 lamp adjustment thumbscrews on the rear of the lamp bracket, one at a time, to center the pattern. WARNING: Do not look directly at running lamp. These lamps emit dangerous ultra-violet radiation. We recommend wearing clear or tinted safety goggles when making lamp adjustments.
- 10. Replace the rear cover. Replace the four thumbscrews.

**NOTE:** To prevent lamp breakage during long shipments, removal and separate packing of the lamp is recommended.

#### **II. LAMP POSITIONING DIAGRAM**



#### **III. LENS CLEANING**

- 1. Remove front and rear housing to access all lenses for cleaning. Remove control handles and disconnect fan power connector.
- 2. Clean all lenses using glass cleaner and a soft, lint-free cloth.
- 3. Reconnect fan power connector and replace front housing.
- 4. Reconnect control handles.
- 5. Replace rear housing.
- 6. Replace and tighten all thumbscrews.

#### IV. HOUSING REMOVAL AND LUBRICATION

- 1. Unscrew the three control handles on top of unit and remove.
- 2. Unscrew the thumbscrews on the front and rear housing.
- 3. Remove rear housing (see lamp installation procedure).
- 4. Unplug white connector to gel fan.
- Tighten vertical tilt lock knobs on either side of yoke (unit will be unbalanced with housing off).
- 6. Grip housing at front and rear top edges.
- 7. Lift straight up until front lens is cleared and remove.
- 8. Wipe all four bearing shafts with a clean cloth dampened with light wax or light lubrication (WD-40). Avoid excess wax.
- 9. Operate front and rear lenses forward and back to distribute wax.

#### V. TROUBLESHOOTING – LAMP AND BALLAST (ELECTRICAL)

- 1. If blower fails to run, check power and fuse. Replace fuse with 7 amp 3AB fuses.
- 2. If blower runs and lamp does not strike.
  - A. Check that the lamp connector is firmly seated in its socket. If so, the lamp may have reached the end of its life. Replace the lamp.
  - B. If the new lamp does not strike, check line voltages. Lamps may not start with power line below 105 volts.
  - C. If the above measures have not been successful, the ballast is probably defective. Call your distributor or Phoebus Manufacturing for further assistance.

#### **GEL INSTALLATION**

- 1. Unscrew four thumbscrews on either side of the color boomerang.
- 2. Lift boomerang off. Position it upside down. Control levers should be facing you.
- 3. Raise the lever of the gel holder farthest to the left with the control levers facing you on the boomerang and lower all the others.
- 4. Insert gel, cover with ring and secure with three clips. Use hammer or pliers to flatten the clips. This will also keep the gel frames from hooking up on one another during use.
- 5. Lower first gel holder and raise the next one.
- 6. Repeat steps #3 through #5 for the remaining gel holders. To access the bottom gel clip, raise all the gels to the left or right and lower the one being worked on.
- 7. As your move toward the right, insert progressively lighter colors. The farthest left gel holder should be used for deep blue or purple gels. This will prolong the life of the gel.
- 8. Replace boomerang assembly and secure with four thumbscrews. Due to extreme concentration of energy in light beam inside unit and due to the unavoidable compromise between cooling power and quietness requirement, please load color boomerang so that darkest gels are the farthest away from the light source.

## **Replacement Parts Price List**

UA II-LT/120 UA II-LTZ/120 UA II-ST/120 UA II-STZ/120 UA II-LT/220 UA II-LTZ/220 UA II-STZ/220

\$50.00 minimum order. Prices subject to change without notice

Stock	Description	Set	List	Stock Description	Set	List
#	External Parts	#	\$	#	#	\$
2000	LT Chassis	1	385.00	2115 Upper Clipper Jaw	1	34.00
				2116 Lower Clipper Jaw	1	34.00
2001	ST Chassis	1	308.00	2117 Clipper Swivel	1	28.00
2002	LT Front Housing	1	336.00	2118 D.C. Connecting Rod	2	30.00
2003	ST Front Housing	1	257.00	2119 D.C. Spacer Bar	2	22.00
2004	Front Bulkhead	1	152.00	2120 D.C. Slide Retainer	2	22.00
2005	Rear Bulkhead	1	183.00	2121 LT Front Lens Holder	1	105.00
2006	LT Middle Bulkhead	1	164.00	2122 ST Front Lens Holder	1	105.00
2007	LT Rear Housing	1	95.00	2123 LT Rear Lens Holder	1	45.00
2008	ST Rear Housing	1	82.00	2124 St Rear Lens Holder	1	45.00
2009	Bail	1	75.00	2125 LT Front&Rear Lens clip	6	15.00
2010	Ballast Cover	1	170.00	2126 ST Front&Rear Lens clip	7	15.00
2011	Ballast Standoff LT	4	58.00	2127 Iris Mount Clip	3	12.00
2012	Ballast Standoff ST	4	58.00	2128 FT Lens Bearing Block	4	45.00
2013	Switch Guard	1	18.00	2129 Front Rod Casting	1	45.00
2014	Chassis Guide Handle	2	63.00	2130 Middle Rod Casting	1	65.00
2015	Heavy duty Base tube	1	135.00	2131 Rear Lens Rod Casting	1	45.00
2016	Base Leg	4	245.00	2133 LT Front Lens Rod	2	35.00
2017	Yoke	1	186.00	2134 LT Rear Lens Rod	2	25.00
2018	Access Door Hinge	1	6.00	2135 ST Front Lens Rod	2	35.00
2019	Access Door	1	36.00	2136 ST Rear Lens Rod	2	25.00
	Internal Parts			2137 LT/ST Rear Lens Block	1	65.00
2100	Lamp Bracket	1	90.00	2138 Rear Lens Bearing	2	8.00
2101	Lamp Adjustment Plate	1	34.00	2139 LT Gel Fan Bracket	1	26.00
2102	Blower Bracket	1	18.00	2140 LT Gel FanDeflector	2	26.00
2103	Lamp Holder Plate	1	32.00	2141 LT/ST Front Lens Brace	1	17.00
2104	Lamp Holder ring	1	12.00	2142 LT/ST Rear Lens arm	1	30.00
2105	Lamp air Deflector	1	18.00	2143 LT/ST Light Shield Spacer	4	12.00
2106	Aspheric Lens Plate	1	35.00	2144 LT Light Shield	1	24.00
2107	Dowser Bracket	1	65.00	2145 ST Light Shield	1	24.00
2108	Dowser Plate	1	42.00	2146 Ballast Chassis	1	35.00
2109	Lower Dowser Jaw	1	33.00	2147 Ballast Fan Bracket	1	18.00
2110	Upper Dowser Jaw	1	33.00			
2111	Dowser Swivel	1	28.00	LT LONG THROW		
2112	Field Lens Plate	2	40.00	ST SHORT THROW	*CALL I	FOR QUOTE
2113	Iris Clipper Bracket	1	87.00			
2114	I.C. Support Bracket	1	18.00			

# **Replacement Parts Price List**

UA II-LT/120 UA II-LTZ/120 UA II-STZ/120 UA II-STZ/120 UA II-LT/220 UA II-LTZ/220 UA II-STZ/220

\$50.00 minimum order. Prices subject to change without notice

Stock	k Description	Set	List	Stock	Description	Set	List
#	Internal Parts Continued	#	\$	#		#	\$
2147	Intake Screen	1	4.00	2211	Boom Bracket Right	1	24.00
2148	Exhaust Screen	1	10.00	2212	Boom Latch	1	32.00
2149	Lamp Socket Holder	1	12.00	2213	Boom Thrust Washer	7	38.00
2150	Lamp Seat	1	12.00	2214	Spring Rod Block	2	18.00
2151	Lamp Mount Spring	2	8.00	2215	Long Boom Spring	6	14.00
2152	Spring Anchor	4	28.00	2216	Short Boom Spring	1	4.00
2153	Lamp ADJ. Spacer	6	12.00	2217	Boom Cushion	1	10.00
2154	Aspheric Lens Spacer	6	10.00	2218	Color Brads	18	8.00
2155	Dowser lens spacer	9	20.00	2219	Color Gel	6	25.00
2156	Lens Washer Nylon	9	6.00		Electrical		
2157	Blower Tube Gasket	1	8.00	2300	HTI 400W Ballast	1	1300.00
2158	Blower Tube	1	8.00	2301	HTI 400W Lamp	1	452.00
2159	Lens Brake Collar	2	12.00	2302	Long throw Gel Fan	1	76.00
2160	Hook-up Wire Bushing	2	2.00	2303	Short Throw Gel Fan	1	76.00
2161	Strain Relief	1	2.00	2304	Lamp Blower	1	122.00
2162	Knurled Thumbscrew	3	5.00	2305	Ballast Fan	1	79.00
2163	Lamp Adjustment Spring	3	8.00	2306	Line Cord	1	34.00
2164	Rubber Light Baffle	1	16.00	2307	60 HZ Hour Meter	1	83.00
2165	Iris	1	165.00	2308	Fuse Holder	1	8.00
2166	Lamp Adjustment Washer	3	2.00	2310	Fuse	5	15.00
2167	Knurled Thumbnut	3	5.00	2311	Lamp Socket W/leads	1	35.00
2168	Guard, Gel Fan	1	5.00	2312	3-Position Switch	1	20.00
2169	Lens collar Washer	2	3.00	2313	Gossen Strike Button	1	40.00
	<b>Automatic Color Boom</b>			2314	Terminal Block	1	17.00
2200	Auto Boom Housing	1	198.00				
2201	Color Frame Ring	6	74.00				
2202	Gel Frame 1	1	34.00				
2203	Gel Frame 2	1	34.00				
2204	Gel Frame 3	1	34.00				
2205	Gel Frame 4	1	34.00				
2206	Gel Frame 5	1	34.00				
2207	Gel Frame 6	1	34.00				
2208	Boom Striker	6	45.00				
2209	Boom Release Lever	1	19.00		I A NA TINA		
2210	Boom Bracket Left	1	24.00		LT LONG THROW ST SHORT THROW	*(^^11	FOR OHOTE
				,	SHUKI ITKUW	CALL	FOR QUOTE

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UA II-LT/120 UA II-LTZ/120 UA II-STZ/120 UA II-STZ/120 UA II-LT/220 UA II-LTZ/220 UA II-STZ/220

\$50.00 minimum order. Prices subject to change without notice

Stock	Description	Set	List
#	Optical	#	\$
2400	Long Throw Front Lens	1	456.00
2401	Short Throw Front Lens	1	189.00
2402	Long Throw Rear Lens	1	182.00
2403	Short Throw Rear Lens	1	169.00
2404	LT & ST Field Lens	2	175.00
2405	LT & ST Aspheric lens	1	123.00
	MISC Parts		
2500	Yoke tilt Handle	2	60.00
2501	Yoke tilt Handle Knob	4	16.00
2502	DIC Control Handle	3	35.00
2503	Control Handle Knob	3	15.00
2504	Lens Handle	2	15.00
2505	Thumbscrew	14	10.00
2506	Large Brake Washer	2	9.00
2507	Medium Brake Washer	2	5.00
2508	Lens Handle Washer	2	4.00
2509	Height Collar	1	30.00
2510	Height Collar Handle	1	18.00
2511	Caster W/Brake	4	80.00
2512	Leveling Jack	4	34.00
2513	Chassis Plug	1	1.00
2514	Height Collar Washer1		12.00
2515	Road Case	1	*
2516	User's Manual	1	N/C
	Kits		
2600	Standard Base Kit	1	643.00
2601	Stamdard Base HDWE	1	35.00
2602	Portable Base HDWE	1	60.00
2603	Hour Meter Connector kit	1	14.00
2604	Label Kit	1	48.00
2605	Clipper Jaw Kit	1	58.00
2606	Dowser Jaw Kit	1	58.00
2607	Height Collar Kit	1	55.00
2608	Control Handle Knob Kit	3	45.00

Stock	Description	Set	List
#	Assemblies	#	\$
2700	Portable Base Assembly	1	774.00
2701	Lamp ADJ. Blower Assem	1	448.00
2702	Dowser Plate Assem	1	254.00
2703	Dowser Field Lens Assem	1	700.00
2704	Lamp Mt. Aspheric Assem	1	345.00
2705	Color Boom Assem	1	573.00
2706	Iris Clipper Assem	1	557.00
	Zoom Option		
2800	LT Front Zoom Cam	1	*
2801	ST Front Zoom Cam	1	*
2802	LT Rear Zoom Cam	1	*
2803	St Rear Zoom Cam	1	*
2804	Front Cam Disc Gear	1	*
2805	Rear Cam Spur Gear	1	*
2806	Zoom Focus Knob	1	*
2807	Vernier Mechanism	1	*
2808	1/2" Shaft Collar	1	*
2809	Zoom Cam Pins	1	*
2810	Zoom spring	1	*
	220 Volt Option		
2900	50 HZ Hour Meter	1	136.00
2901	220 Volt Trans	1	*
2902	LT Trans MT Plate	1	5.00

# WARRANTY CARD

MODEL NUMBER(S)	
SERIAL NUMBER(S)	
DATE OF PURCHASE	
(DEALER NAME)	
•	
COMPANY NAME	
STREET ADDRESS	
CITY / STATE / ZIP	
TELEPHONE	Please fold along the dotted lines and staple with return address on the outside as shown above. Thank you!

Place Stamp Here

PHOEBUS MANUFACTURING 2800 THIRD STREET SAN FRANCISCO, CA 94107

ATTENTION: WARRANTY DEPARTMENT