



Fig. 1900 Series Installation and Spare Parts Manual

Deck, Wheel or Lever/Gear Control
 Solar-Ray[®] 19" Searchlights



Fig. 1901
 Deck Control

Fig. 1902
 Wheel or Lever/Gear
 Control

Fig. 1900 Solar-Ray® Series Installation Manual Table of Contents

	Page
• Fig. 1901 Assembly Instructions	3
• Fig. 1901 Deck Control Spare Parts Diagram.....	4
• Fig. 1902 Assembly Instructions	5
• Fig. 1902 With Wheel or Lever/Gear Control Spare Parts Diagram	6
• Fig. 1921 Wheel Control Assembly Spare Parts Diagram	7
• Fig. 1922 Lever/Gear Control Assembly Spare Parts Diagram	8
• Spare Parts, Bulbs and Socket Ordering Information.....	9
• 1900 Series Base Mounting Template	10
• Solar-Ray® Searchlight Limited Warranty	11

Fig. 1901
Deck Control



Fig. 1902



Fig. 1922
Wheel Control



Fig. 1921
Lever/Gear Control



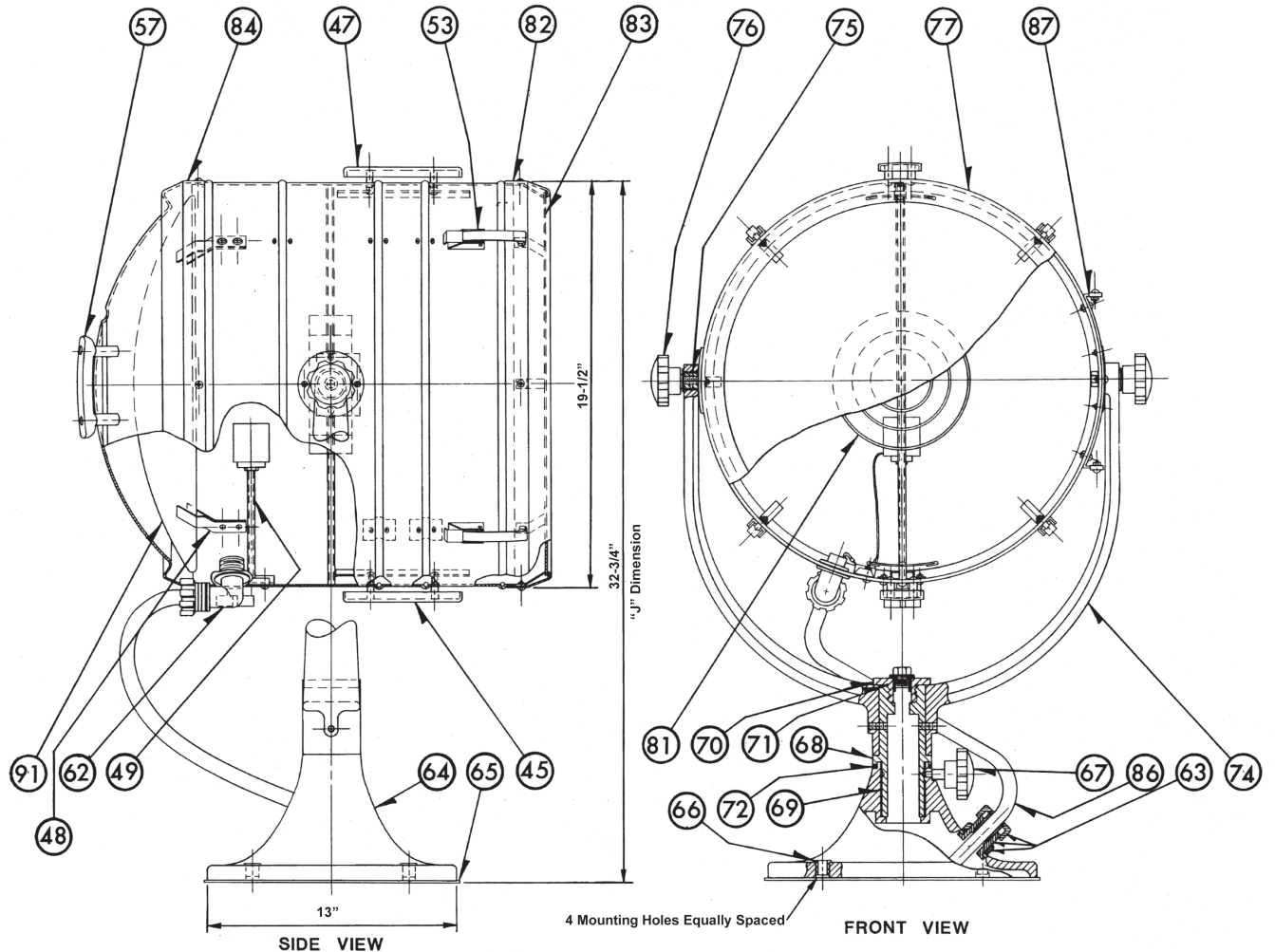
- 1). Carefully unpack searchlight carton. Place head assembly with lens down adjacent to the mounting location.
- 2). Locate the center of where the base is to be mounted.
- 3). Drill a 3/4 inch diameter hole at this location for the electrical cable.
- 4). Properly locate the electrical cable by making sure the cable strain relief gland on the base is on the aft side of the searchlight.
- 5). Using the base as a template, drill to accomodate 1/2 inch diameter, stainless steel hex head bolts. Thru bolt the base to the deck.
- 6). Wire to applicable electrical standards and grease through the zerk fitting.

Note: For information regarding bulbs, repair parts, or special construction, contact your local PERKO® distributor or PERKO,inc. 16490 N.W. 13th Avenue, Miami, FL 33169-5707.



**Fig. 1901
Deck Control**

PERKO® Fig. 1901 19" Deck Control Solar-Ray® Searchlight Spare Parts and Notes



Bill of Material

Item	Spare Part	Description	Qty.
45		Lower Vent Cover	1
47		Upper Vent Cover	1
48	0911	Reflector Clips	4
49		Focus Device Assy w/ Socket & Std. (See Note 1)	1
53	190100099A	Latch, Front Door	4
57		Control Handles	2
62		Strain Relief (90)	1
63		Strain Relief (Straight)	1
64		Base	1
65		Base Gasket	1
66		Bolt Insulator	4
67		Horizontal Lock Knob	1
68		Hub	1
69	1902SPR069	Nyliner Split Bushing	1
70	1902SPR070	Cap Assembly	1
71	1902SPR071	O-Ring (Hub Seal)	1
72	1902SPR072	Base Washer	1
74		Fork	1
75	1902SPR075	Fork Pivot Nyliner Split Bushing	4
76		Vertical Lock Knob	2
77		Drum Assembly	1
81	1902SPR081	Anti-Halo Ring Assembly	1
82	1936000WHT	Front Door w/ Glass Assembly	1
83	0889004CLR	Front Glass	1
84	1932000WHT	Rear Cover WI Screws	1
86		Electrical Cord Assembly	1
87		Hinge, Front Door	1
91	0890004	Reflector	1
78		Fork Assy Incl. Item No's: 74-75-76 and Hardware	1
79	1902SPR079	Fork & Hub Assy. Incl. Item No's: 68-69-70-71-72-74-75-76 and Hdwe	1
80		Hub Assembly Includes Item No's: 68-69-70-71-72	1

Notes

Note 1 All Bulbs using the same socket and stand Fig. No. (last column below) are field interchangeable w/o modification, otherwise a change in bulb type must be accompanied by a new corresponding socket and stand.

Note 2 **Inclination** 90° **Declination** 90° **Rating** IP54

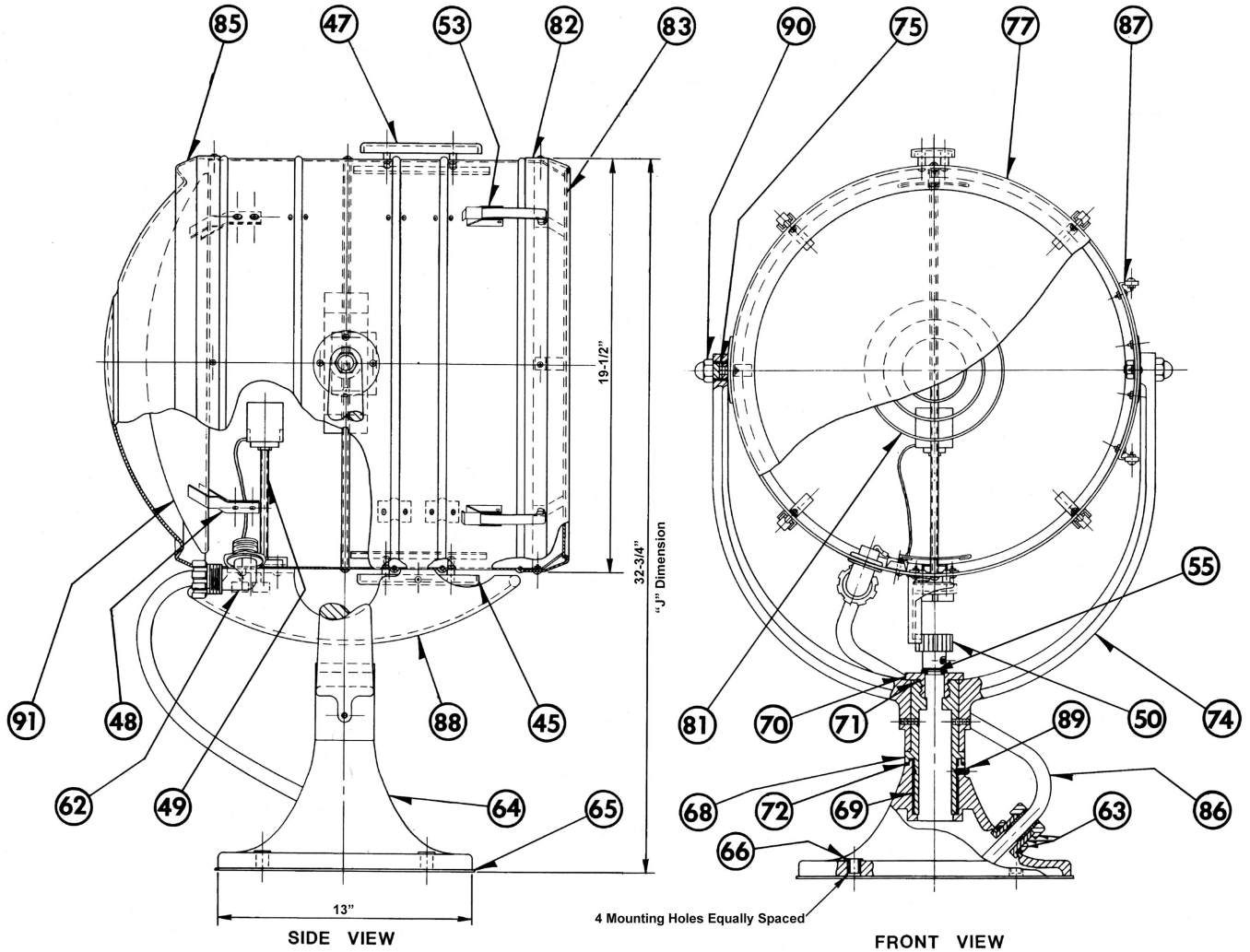
Note 3 Searchlights with special pedistal heights and/or special control lengths can be made to order. The special "J" dimension and/or control length dimensions ("E") must accompany the inquiry.

- 1). Carefully unpack head and control assembly cartons. Place head assembly with lens down.
- 2). Remove pinion gear from inner rod on control assembly, by loosening set screw.
- 3). Examine head assembly and locate the two set screws 180° apart from each other on the bottom of the fork. **DO NOT** disturb the remaining (third) set screw opposite the zerk fitting.
- 4). Remove the two opposing set screws. Underneath each one is a second set screw (in the tapped hole). Back these out until they are flush with the surface.
- 5). **The horizontal stop collars on the Control Assembly are preset and should not be disturbed.** Make sure that the single ear on the upper collar is located between the two ears of the lower collar such that it is free to rotate back and forth in the smaller of the two angles formed by the lower two ears.
- 6). Insert the control assembly into the searchlight base. Make sure the outer tube has fully seated by removing one set screw from the fork and observing the tube pass the tapped hole. Replace the set screw and tighten both to secure the tube. Replace and tighten the outer set screw to provide a double lock.
- 7). Replace and tighten pinion gear onto inner control rod.
- 8). Remove the lever gear assembly by loosening the three set screws at the top of the casting. It is not necessary to detach the beveled gear from the inner control rod.
- 9). Remove the ceiling plate by loosening its knob and sliding it down off the end of the control assembly.
- 10). Drill a 1-5/8 inch diameter hole in roof to clear the outer control tube at the proper location. Drill a 3/4 inch diameter hole aft of the control hole for the electrical cable.
- 11). Working from above, mount the searchlight by lowering the control assembly through its hole in the roof. Properly locate the electrical cable, by making sure the cable strain relief gland on the base is on the aft side of the searchlight (for proper orientation of the port and starboard horizontal stops). Using the base as template, drill to accommodate 1/2 inch diameter stainless steel hex head bolts. Thru bolt the base to the roof.
- 12). Install the ceiling plate and lever gear assembly from below. Orient control handle with the direction of the head as desired.
- 13). Wire to applicable electrical standards and grease through all three zerk fittings.

Note: For information regarding bulbs, repair parts, or special construction, contact your local PERKO® distributor or PERKO, Inc. 16490 N.W. 13th Avenue, Miami, FL 33169-5707.

Fig. 1902**Fig. 1922
Wheel Control****Fig. 1921
Lever/Gear Control**

Fig. 1902 19" Solar-Ray® Searchlight (Wheel or Lever/Gear Control) Spare Parts and Notes



Bill of Material

Item	Spare Part	Description	Qty.
45		Lower Vent Cover	1
47		Upper Vent Cover	1
48	0911	Reflector Clips	4
49		Focus Device Assy. WI Socket & Std. (See Note 1)	1
50	0905	Pinon Gear (Supplied WI Controls)	1
53	190100099A	Latch, Front Door	4
55	0884SPR055	Shaft Seal	1
62		Strain Relief (90)	1
63		Strain Relief (Straight)	1
64		Base	1
65		Base Gasket	1
66		Bolt Insulator	4
68		Hub	1
69	1902SPR069	Nyliner Split Bushing	1
70	1902SPR070	Cap Assembly	1
71	1902SPR071	O-Ring (Hub Seal)	1
72	1902SPR072	Base Washer	1
74		Fork	1
75		Fork Pivot-Ny liner Split Bushing	2
77		Drum Assembly	1
81	1902SPR081	Anti-Halo Ring Assembly	1
82	1936000WHT	Front Door w/ Glass Assembly	1
83	0889004CLR	Front Glass	1
85	1933000WHT	Rear Cover w/ Screws	1
86		Electrical Cord Assembly	1
87		Hinge, Front Door	1
88		Gear Rack	1
89	1902SPR089	S/S Ball, Set Screw! Lock Nut	1
90	1902SPR090	Acorn Nuts	2
91	0890004	Reflector	1
78		Fork Assembly Includes Item No's: 74-75-90 and Hardware	1
79	1902SPR079	Fork & Hub Assy. Includes Item No's: 68-69-70-71-72-74-75-90 and Hdwe	1
80		Hub Assembly Includes Item No's: 68-69-70-71-72	1

Notes

Note 1 All Bulbs using the same socket and stand Fig. No. (last column below) are field interchangeable w/o modification, otherwise a change in bulb type must be accompanied by a new corresponding socket and stand.

Note 2 Inclination 35° Declination 34° Rating IP54

Note 3 "J" Dimension
1902 32-3/4"

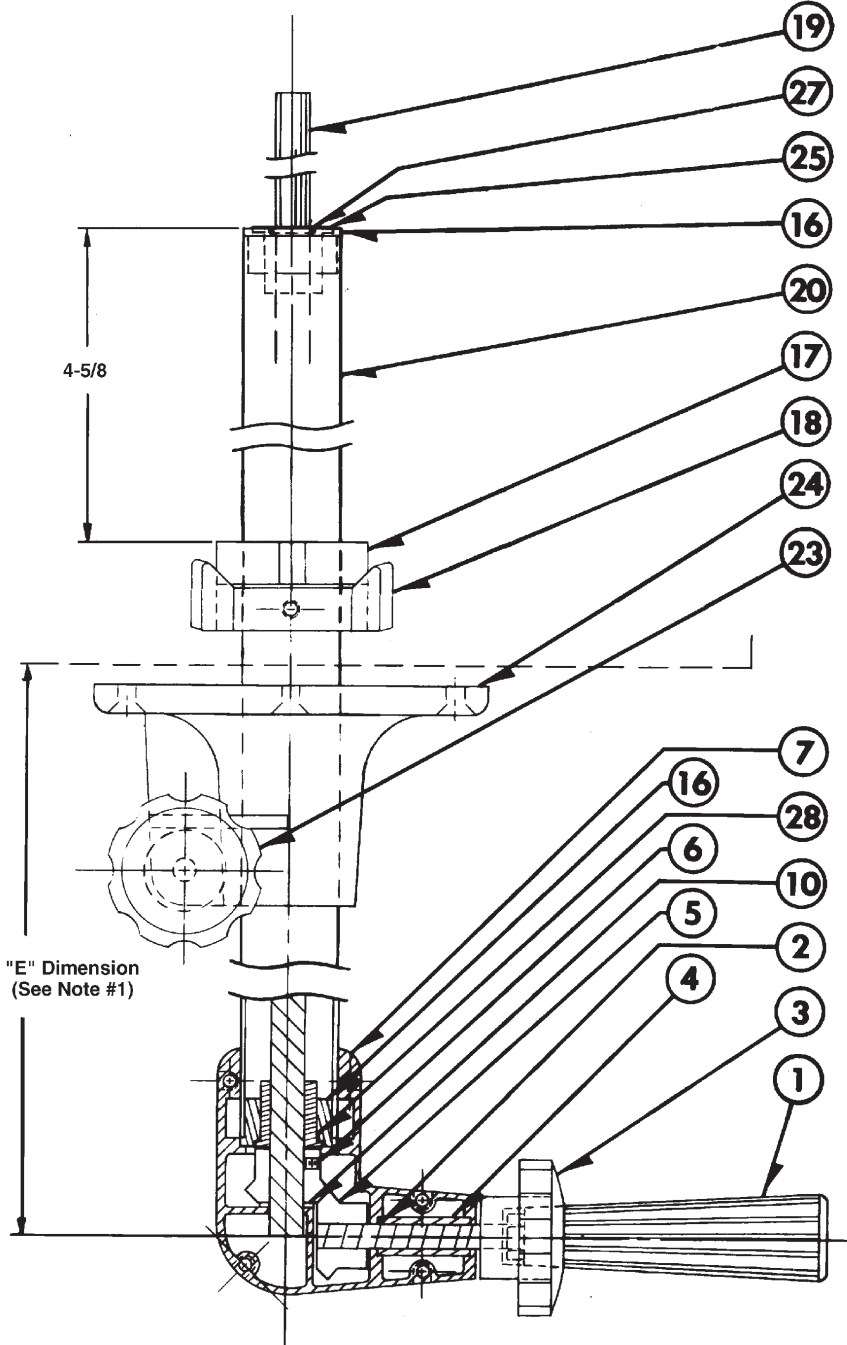
Note 4 Searchlights with special pedestal heights and/or special control lengths can be made to order. The special "J" dimension and/or control length dimensions ("E" or "F") must accompany the inquiry.

Note 5 This searchlight head assembly is compatible with Fig. 1921 (Lever/Gear), Fig. 1922 (Wheel), and Fig. 1925 (Distant Electric Control) series control assemblies. See Fig. 1921, 1922, and 1925 prints for control dimensions and complete searchlight/control figure number designations.

Fig. 1921 Lever/Gear Control Searchlight Control Assembly Instructions

Bill of Material

Item	Spare Part	Description	Qty.
1	0969SPR001	Control Handle (Plastic)	1
2	0969SPR002	Control Shaft, 3/8 IN. Dia., S.S	1
3	0969SPR003	Vertical Lock Knob	1
4	0969SPR004	Sleeve Bushing	1
5	0969SPR005	Control Gear 3/8 IN. Bore	1
6	0969SPR006	Control Gear 1/2 IN. Bore	1
7	0969SPR007	Control Housing With Screws	1
16	1921SPR016	Control Tube Spacer Bushing	2
10	0969SPR010	Thrust Washer (Plastic)	1
17		Floating Stop Collar	1
18		Fixed Stop Collar (See Note 2)	1
19		Vert. Control Rod (See Note 2)	1
20		Horiz. Control Tube	1
24		Horizontal Lock/Ceiling Plate	1
23		Lock Knob With Spacer	1
25	0851SPR025	Upper Control Tube Bushing	1
27	0851SPR027	O-Ring Seal	1
28	0851SPR028	Lower Control Tube Bushing	1



Note 1:

For Searchlight Fig. No.	Control Assy. Only Fig. No.	"E" Dimension
1902	1921	22"

Note 2:

LENGTHS OF VERTICAL CONTROL RODS AND HORIZONTAL CONTROL TUBES MUST BE SPECIFIED BY THE "E" DIMENSION AS SHOWN IN NOTE #1. IN ADDITION TO THE CONTROL ASSEMBLY FIG. NO. IN COLUMN TWO OF THE ABOVE CHART. OTHER DIMENSIONS ARE AVAILABLE ON SPECIAL ORDER BASIS.



PERKO®	
16490 N.W. 13th Avenue	Miami, FL 33169-5707
Date: 3-18-83	Drawn By: D. Beutler
Scale: None	Revised: 6/3/16
Fig. No. 1921 Series Searchlight Lever Gear Controls Fits: Fig. 1902 Series Searchlight Heads	

Fig. 1922 Wheel Control Assembly Spare Parts Diagram

Bill of Material

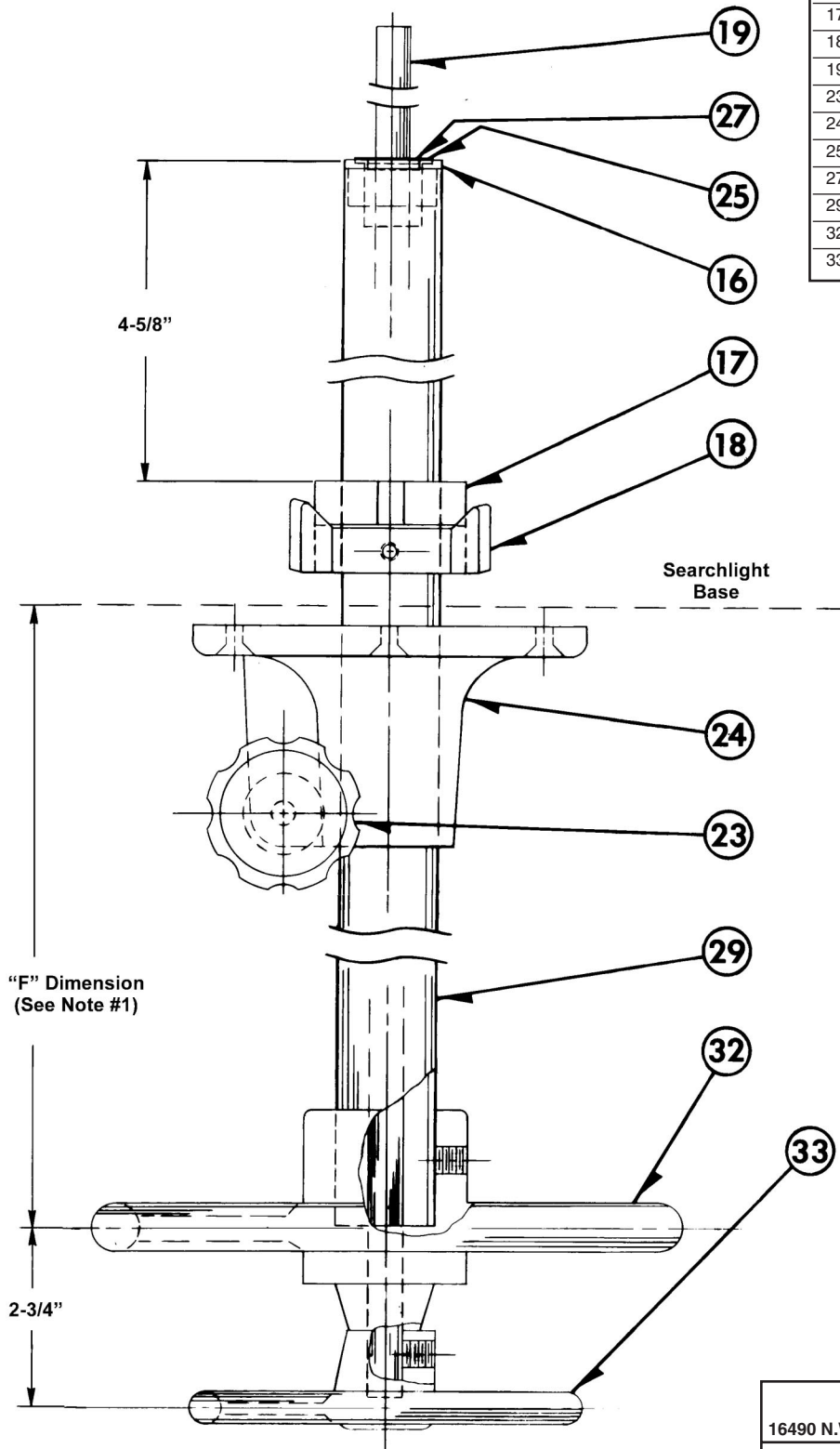
Item	Spare Part	Description	Qty.
16	1921SPR016	Control Tube Spacer Bushing	2
17	1922SPR017	Floating Stop Collar	1
18	1922SPR018	Fixed Stop Collar	1
19		Vert. Control Rod (See Note 2)	1
23		Lock Knob With Spacer	1
24	1922SPR024	Horizontal Lock/Ceiling Plate	1
25	0851SPR025	Upper Control Tube Bushing	1
27	0851SPR027	O-Ring Seal	1
29		Horiz. Control Tube (See Note 2)	1
32	1922SPR032	Horizontal Control Wheel	1
33	1922SPR033	Vertical Control Wheel	1

Note 1:

For Searchlight Fig. No.	Control Assy. Only Fig. No.	"E" Dimension
1902	1922	20-1/8"

Note 2:

LENGTHS OF VERTICAL CONTROL RODS AND HORIZONTAL CONTROL TUBES MUST BE SPECIFIED BY THE "F" DIMENSION AS SHOWN IN NOTE #1. IN ADDITION TO THE CONTROL ASSEMBLY FIG. NO. IN COLUMN TWO OF THE ABOVE CHART. OTHER DIMENSIONS ARE AVAILABLE ON SPECIAL ORDER BASIS.



"F" Dimension
(See Note #1)

2-3/4"

1922INS1

PERKO®	
16490 N.W. 13th Avenue	Miami, FL 33169-5707
Date: 3-18-83	Drawn By: D. Beutler
Scale: None	Revised: 05/03/202
Fig. No. 1922 Series Searchlight Wheel Control Fits: Fig. 1902 Series Searchlight Heads	

Spare Parts Ordering Information For 19 Inch Searchlights

Ordering & Tech Info						
Fig. No.	Front Glass	Front Door with Glass	Rear Cover	Reflector*	Pinion Gear	Notes
1901	0889004CLR	1936000WHT	1932000WHT	0890004	----	*Replacement Retaining Clips (Cat. No. 0911) for the Reflector Should Also Be Ordered When Ordering a Replacement Reflector to Assure a Proper Fit.
1902	0889004CLR	1936000WHT	1933000WHT	0890004	0905	

Bulb Ordering Information For 19 Inch Searchlights

For best results, the bulb and reflector must be perfectly compatible; therefore be sure to specify the catalog number of the bulb desired. Peak candlepower is exceedingly sensitive to many factors, (i.e., a light source out of focus by 1/32 inch, under-voltage of only 4%, or differences between bulb manufacturers) which can cause a reduction of range of up to 20%. See below. For a more concentrated beam, longer range, brighter light and a longer life, we recommend the Quartz/Halogen bulbs.

Ordering & Tech Info											
Voltage	Approx. Range Miles*	Bulb Catalog Number	Bulb Type	Socket Type	Socket Code Letter	Wattage	Rated Life Hours**	Maximum Candlepower Output	Horizontal Beam Spread Degrees	Vertical Beam Spread Degrees	Mfg. Bulb Code
32	1-2/3	0806	Incandescent	Medium Screw	B	500	50	3,520,000	3.5	3.7	DLT
120	1-5/8	0807	Incandescent	Medium Prefocus	E	500	25	3,191,000	3.5	4.0	CZX
120	1-3/8	0837	Incandescent	Medium Prefocus	E	750	200	2,076,000	3.6	4.2	DDY
120	1-3/4	0809	Incandescent	Medium Prefocus	E	750	25	4,569,000	3.6	4.5	DDB
120	2	0810	Incandescent	Medium Prefocus	E	1000	25	5,622,000	3.6	4.2	DRS
120	1-3/4	0844	Quartz/Halogen	Medium Prefocus	E	500	500	3,861,000	3.0	5.4	BTL
120	1-5/8	0845	Quartz/Halogen	Medium Prefocus	E	750	200	2,871,000	3.6	5.4	BTP
120	2	0839	Quartz/Halogen	2-Pin Prefocus	K	900	75	5,769,000	5.9	5.4	BVA
120	1-2/3	0847	Quartz/Halogen	Mogul Prefocus	M	1000	200	3,659,000	4.5	5.4	BVV
120	1-7/8	0846	Quartz/Halogen	Medium Prefocus	E	1000	200	4,601,000	4.5	5.4	BTR
120	2	0848	Quartz/Halogen	Mogul Prefocus	L	1500	300	5,596,000	5.9	5.7	DTA
120	1-2/3	0859	Quartz/Halogen	Mogul Prefocus	M	2000	250	3,633,000	9.4	5.9	BVW
230	1-3/8	0860	Quartz/Halogen	Medium Prefocus	E	1000	950	2,162,000	7.9	6.5	FKD

*The approximate ranges listed above are based on photometric measurements of beam candlepower output under ideal conditions. Many factors such as atmospheric conditions, size and color of target, background, etc., may reduce effective range considerably; therefore, these figures are offered only as a guide to compare different bulb and voltage options.

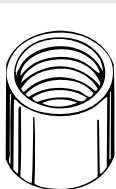
Please Order Carefully, Bulbs Are Not Returnable.

**NOTE: These are the "Rated Average Laboratory Life in Hours" of the Bulb Manufacturer obtained in closely controlled laboratory life testing of groups of lamps at their design voltage. It is not necessarily the same as the service life where conditions such as shock, vibration, voltage fluctuation and environment may result in a shorter average attained life.

Electric Socket and Support Stand Assemblies for 19 Inch Searchlights

Ordering & Tech Info			
Socket Type	Socket Code	Socket & Stand Catalog Number	Height Stand Inches
Medium Screw	B	0872004	5-3/4
Medium Prefocus	E	0873004	5-7/16
Mogul Prefocus (1500 Watt)	L	1930004	3-5/8
Mogul Prefocus (1000 & 2000 Watt)	M	1931004	3-1/8
2-Pin Prefocus (900 Watt)	K	0880004	7-5/16

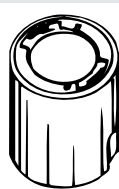
Solar-Ray® Searchlights include a socket and support stand based on the bulb or socket information given when ordering. The following chart makes it possible to order and stock different assemblies for field conversion, to meet a large variety of voltage and candlepower requirements with a minimum of inventory.



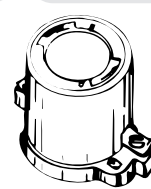
Medium Screw Socket
(Code "B")
Catalog No. 0894



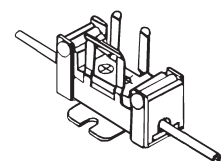
Mogul Screw Socket
(Code "D")
Catalog No. 0897



Medium Prefocus Socket
(Code "E")
Catalog No. 0895



Mogul Prefocus Socket
(Codes "L & M")
Catalog No. 0893



2-Pin Prefocus Socket
(Code "K")
Catalog No. 0899

PERKO®

SOLAR-RAY® SEARCHLIGHT

ONE YEAR LIMITED WARRANTY

PERKO, INC. (PERKO) warrants to the original commercial-purchaser that PERKO'S commercial products will be free from defective materials or workmanship, and that the PERKOPLATE/PERKO•KOTE Finish will remain corrosion-free under normal use and service, for a period of one (1) year from the original purchase date.

ALL IMPLIED WARRANTIES, INCLUDING MERCHANTABILITY, ARE ALSO LIMITED IN DURATION TO THE ONE YEAR PERIOD FROM THE ORIGINAL PURCHASE DATE.

PERKO SHALL NOT BE LIABLE FOR LOSS OF USE OF ANY OF ITS COMMERCIAL PRODUCTS, NOR FOR OTHER INCIDENTAL OR CONSEQUENTIAL COSTS, EXPENSES, OR DAMAGES INCURRED BY THE ORIGINAL COMMERCIAL-PURCHASER OR BY ANY OTHER PERSON.

SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY OR MAY NOT APPLY TO YOU. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY OR MAY NOT APPLY TO YOU.

This warranty is void if the commercial product warranted has been damaged by accident or unreasonable use, neglect, improper service or other cause not arising out of defects in material or workmanship. Excluded from this warranty are Electric Light Bulbs (lamps), Sealed Beam Units and Fuses.

During the warranty period, your PERKO product will either be repaired or it will be replaced with a like product (at PERKO's option) without charge to the original commercial-purchaser, when returned prepaid and insured, with proof-of-purchase date to PERKO at the address shown below. In the event of replacement, the replacement product will continue the warranty of the original product, or ninety (90) days, whichever is longer.

PERKO does not authorize any person or company to create for it any other obligation or liability in connection with any of its products.

Serial Number _____

Date of Purchase _____

(Retain with Proof-of-Purchase Documentation)

PERKO, Inc. • 16490 N.W. 13th Avenue • Miami, FL 33169-5707

9901 019 FRM