Reichert

Reichert Ophthalmic Instruments

INSTRUCTION MANUAL
FOR THE

CUSTOM II CHAIR AND STAND

Price $3.00

Reichert Ophthalmic Instruments
Warner-Lambert Technologies, Inc.
P.O. Box 123, Buffalo, New York 14240 U.S.A.
(716) 891-3000

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A PRODUCT OF
REICHERT SCIENTIFIC INSTRUMENTS

This product represents over 140 years of progress in the design and manufacture of precision instruments and equipment. Its quality has been rigidly safeguarded by exacting inspections throughout manufacture and it carries the final inspector's stamp of approval.

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We use extreme care in selection, checking, rechecking and packing to eliminate the possibility of error. If any shipping discrepancies are discovered, claims should be filed within 30 days with the office making the shipment.

CLAIMS FOR DAMAGE IN TRANSIT

OUR SHIPPING RESPONSIBILITY CEASES WITH THE SAFE DELIVERY IN GOOD CONDITION TO THE TRANSPORTATION COMPANY. CLAIMS FOR LOSS OR DAMAGE IN TRANSIT SHOULD BE MADE PROMPTLY AND DIRECTLY TO THE TRANSPORTATION COMPANY.

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PRODUCT CHANGES

Reichert reserves the right to make changes in design or to make additions to or improvements in its products without obligation to add such to products previously manufactured.

This product represents over 140 years of progress in the design and manufacture of precision instruments. We recommend that only an authorized representative of an authorized Reichert distributor install it.

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Introduction

Your Reichert opthalmic equipment has been designed and manufactured to meet rigid quality standards. Careful adherence to installation and maintenance recommendations will insure long lasting, trouble-free service.

The Chair is shipped factory assembled in one carton with skid, weighing approximately 400 lbs.

The Stand is shipped factory assembled except for the instrument post which is packed in same carton and weighs approximately 350 lbs.

The Console is shipped factory assembled in one carton weighing approximately 35 lbs.

The cushions are shipped in one carton weighing approximately 25 lbs.

The Overhead Lamp and the PHOROPTOR® Arm are shipped in separate cartons.

General Assembly Information

To speed and simplify installation, carefully follow the sequence in which instructions are presented. Follow both the sequence of the principal sections (i.e., Location of Chair and Stand) and the sequence of the steps listed within each section. Should at any point it seem that a facet of the work had been left incomplete, proceed. There is a specific reason for this. When you have reached the end of the installation section, every step will have been completed in a minimum of time without duplicate effort.

☐ Note that a "box" has been provided next to each installation step. Make a check mark in the appropriate box as the step is accomplished. Before you proceed to the next section, look back over the steps to make sure that every box has been marked.

We manufacture Chairs and Stands as if they will be used in "Right Hand" installations. A "Right Hand" installation means that the Stand will be to your right as you look at the Chair from the front.

The information on the Chair and Stand box can be very helpful to you. For example:

STK. NO.	IS
14401	The Chair
14403	The "Improved" Chair
14451	The Stand (used with a Console) with a "Single" Lower Arm
14453	The Stand (**NOT** used with a Console) with a "Single" Lower Arm
14451 w/14452	The Stand (used with a Console) Double Lower Arm
14453 w/14452	The Stand (**NOT** used with a Console) with a Double Lower Arm
14456	The Stand for the "Improved" Chair (to be used with or without a Console)
14456 w/14452	The Stand for the "Improved" Chair with a Double Lower Arm

IMPORTANT: The 14403 (Chair) and 14456 (Stand) are **NOT** compatible with the 14401 (Chair) or the 14451, 14453, Stands (with or without 14452 Double Lower Arm).

NOTE: This equipment can be cleaned with a soft rag or sponge using a household cleaner, such as Fantastic or 409.

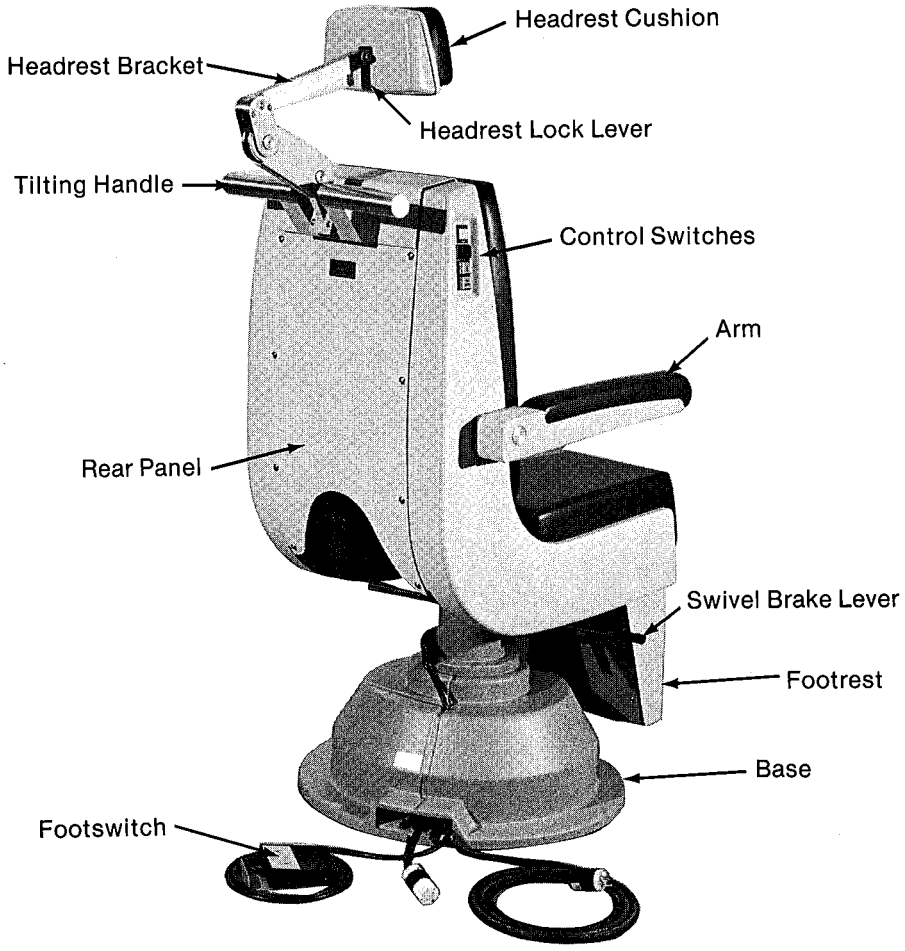


Figure 1

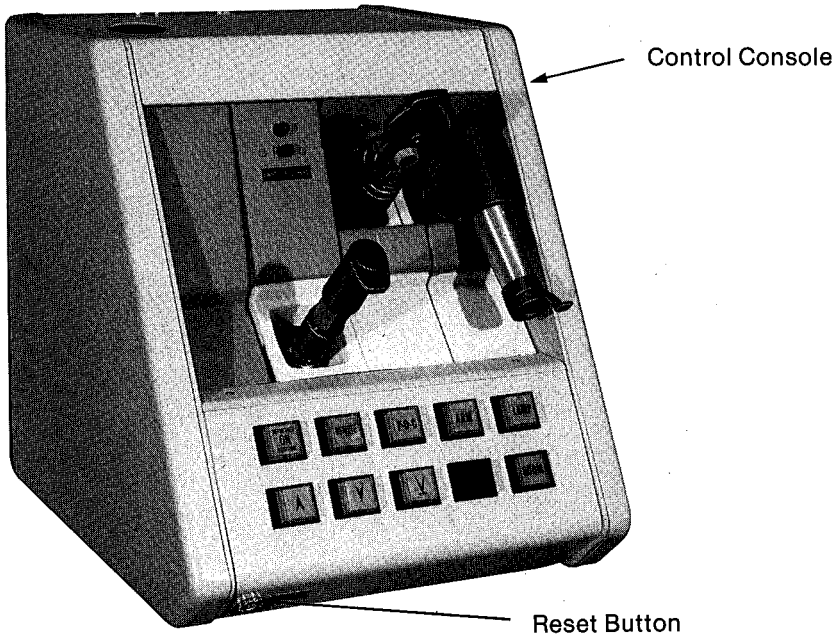


Figure 2

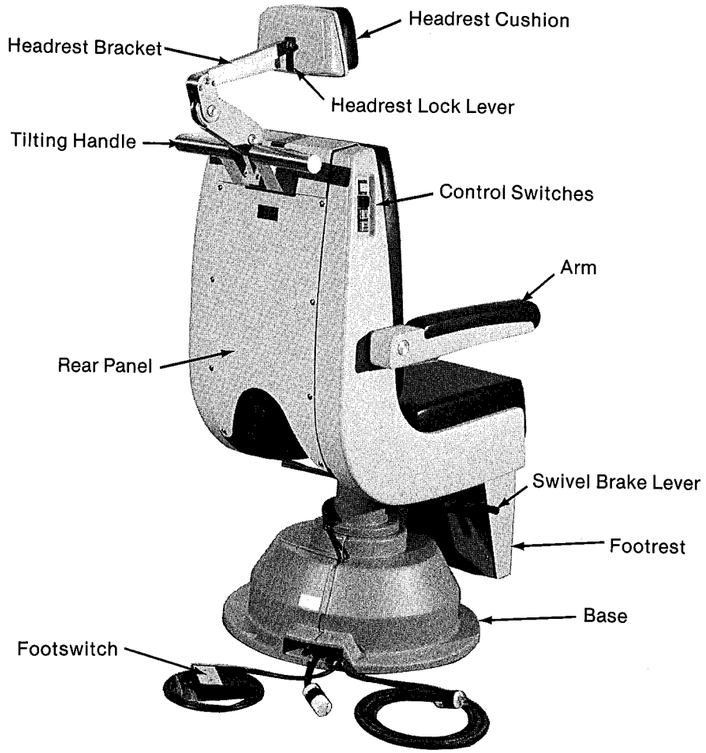


Figure 1

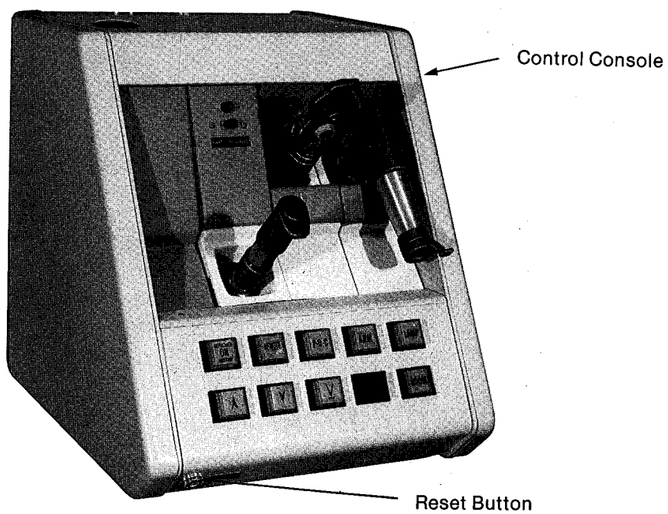


Figure 2

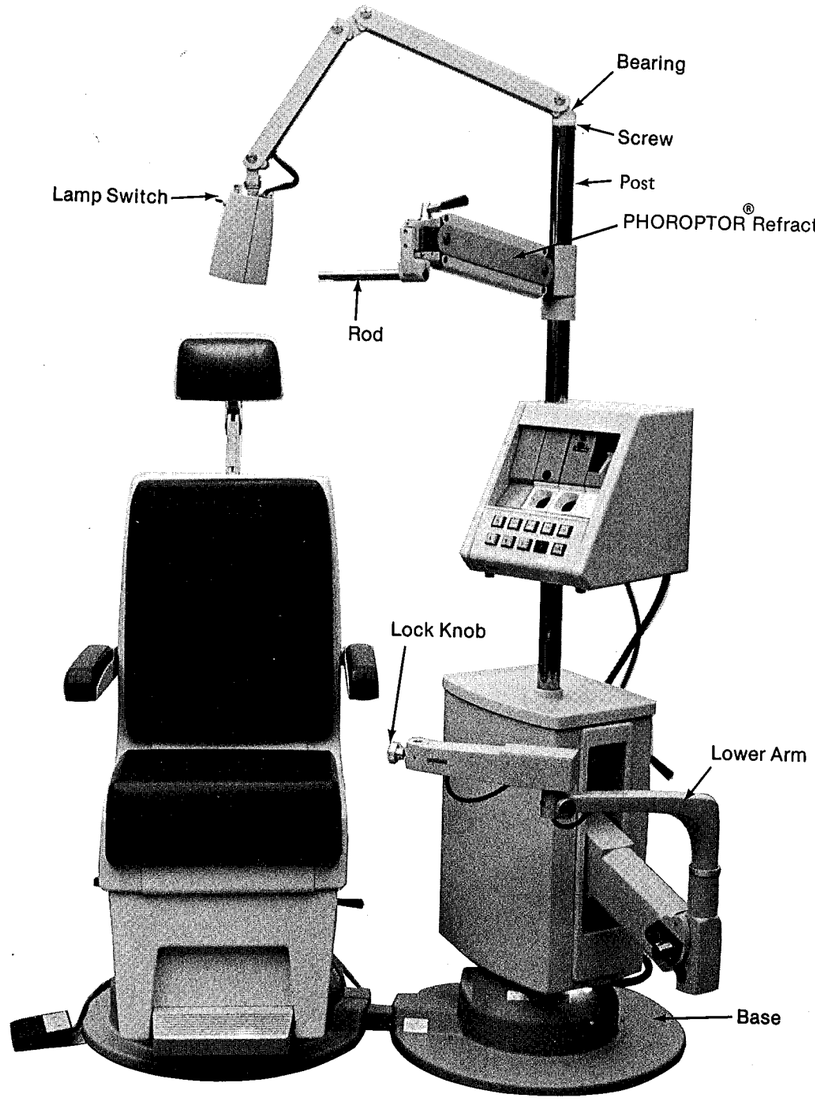


Figure 3

Preliminary Installation Suggestions

1. Determine the final location for the Chair and Stand before moving them. Be sure to allow ample clearance for rotation of the Chair and instruments without restrictions.

2. Have assistance when moving this equipment. Chairs and Stands are heavy and should not be dropped or severely jarred.

3. Caution: Do not lift, push or pull the Chair or Stand by its body panels. If the shipping bracket 4-1 is bolted on the lift tube (Fig. 4), the chair can be lifted by grasping the arms at points "A" and "B" shown in Fig.25. Do not lift Chair by extreme ends of the arms as this places a very large force on the arm latch and may damage it.

4. The Stand can be moved with the Lower Arm and Post. A sliding action is preferred rather than rolling on the base.

NOTE

THERE ARE FOUR SHIPPING BRACKETS ATTACHED TO THE CHAIR TO PREVENT DAMAGE IN TRANSIT. THE CHAIR CANNOT BE RAISED UNTIL THE SHIPPING BRACKET 4-1 IS REMOVED. THE CHAIR CANNOT BE TILTED UNTIL THE TWO SHIPPING BLOCKS 4-2 WITH RED TAGS ATTACHED ARE REMOVED. THE CHAIR CANNOT BE ROTATED UNTIL THE SHIPPING BLOCK 4-3 IS REMOVED. LEAVE BRACKET AND BLOCKS IN PLACE UNTIL CHAIR IS IN ITS FINAL POSITION.

5. A licensed electrician should perform the electrical work in conjunction with the installation to assure proper hook-up and that load limits at outlets are not exceeded.

6. Use the check-off system to assure every step is taken. Make a check mark in the appropriate box as each step is accomplished.

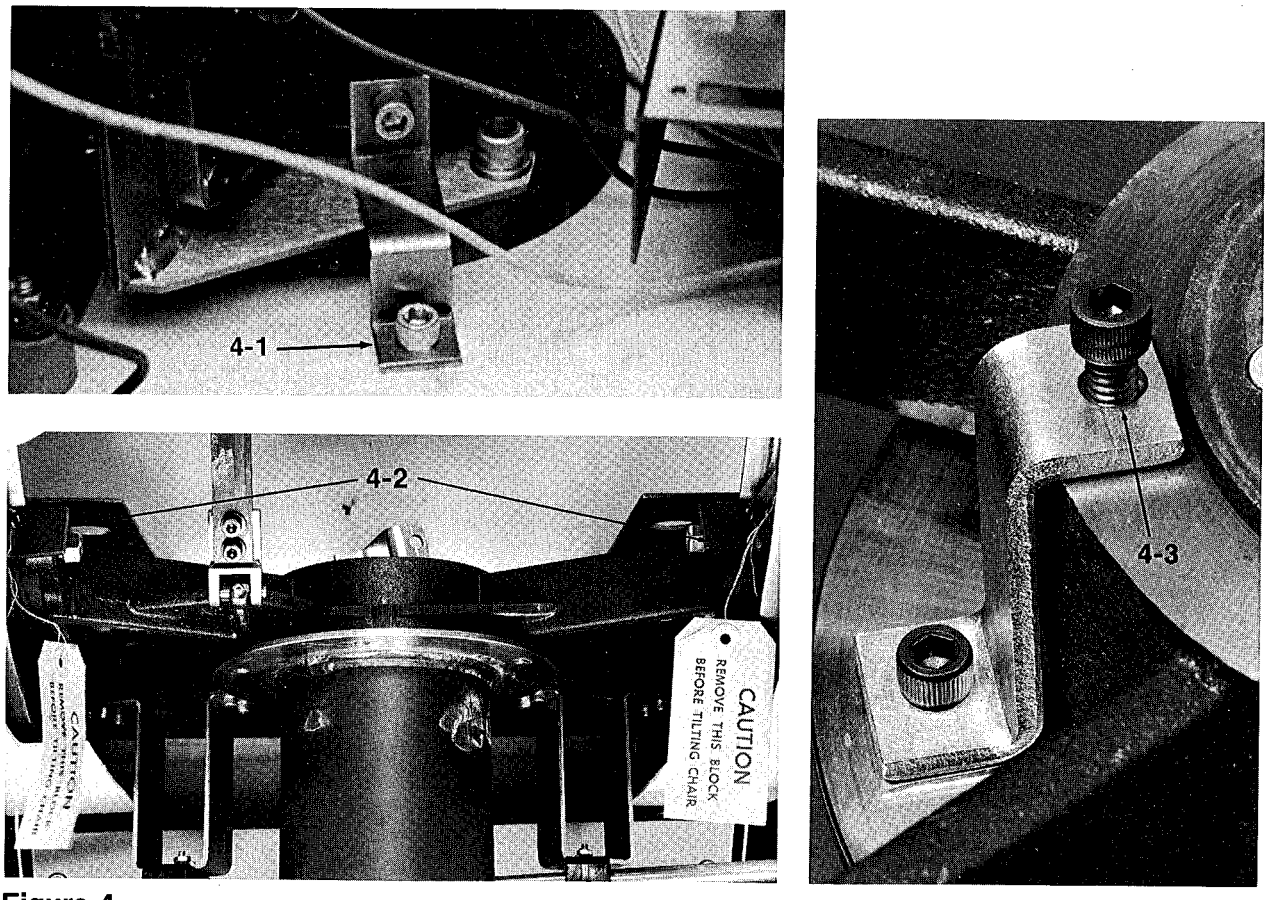


Figure 4

Location and Placement of the Chair and Stand

1.1 We manufacture Chairs and Stands as if they would be used in a right hand installation. That means that the stand will be to your right when facing the Chair from the front.

1.2 Should you, for any reason, want to convert a right-hand installation to a left-hand installation, refer to instructions 31.1 through 30.3 .

☐ 1.3 Decide the Chair's location first. To determine minimum clearances for rotation and tilt, refer to Fig. 5, for clearance radius; note center location of Chair.

☐ 1.4 Determine direction Chair is to face and note position of front.

☐ 1.5 Determine Stand's position by marking off a point 27 inches from the Chair's center and at right angles (90°) from Chair's front.

☐ 1.6 Determine that Stand's instrument arm has sufficient clearance. Refer to Fig. 5.

IF THE STAND IS TO BE USED ALONE, IT MUST BE SECURELY BOLTED TO THE FLOOR BEFORE INSTRUMENTS ARE MOUNTED.

Be certain that the selected locations for the Chair and Stand will allow free movement of equipment and adequate access to the controls, and proceed to the placement.

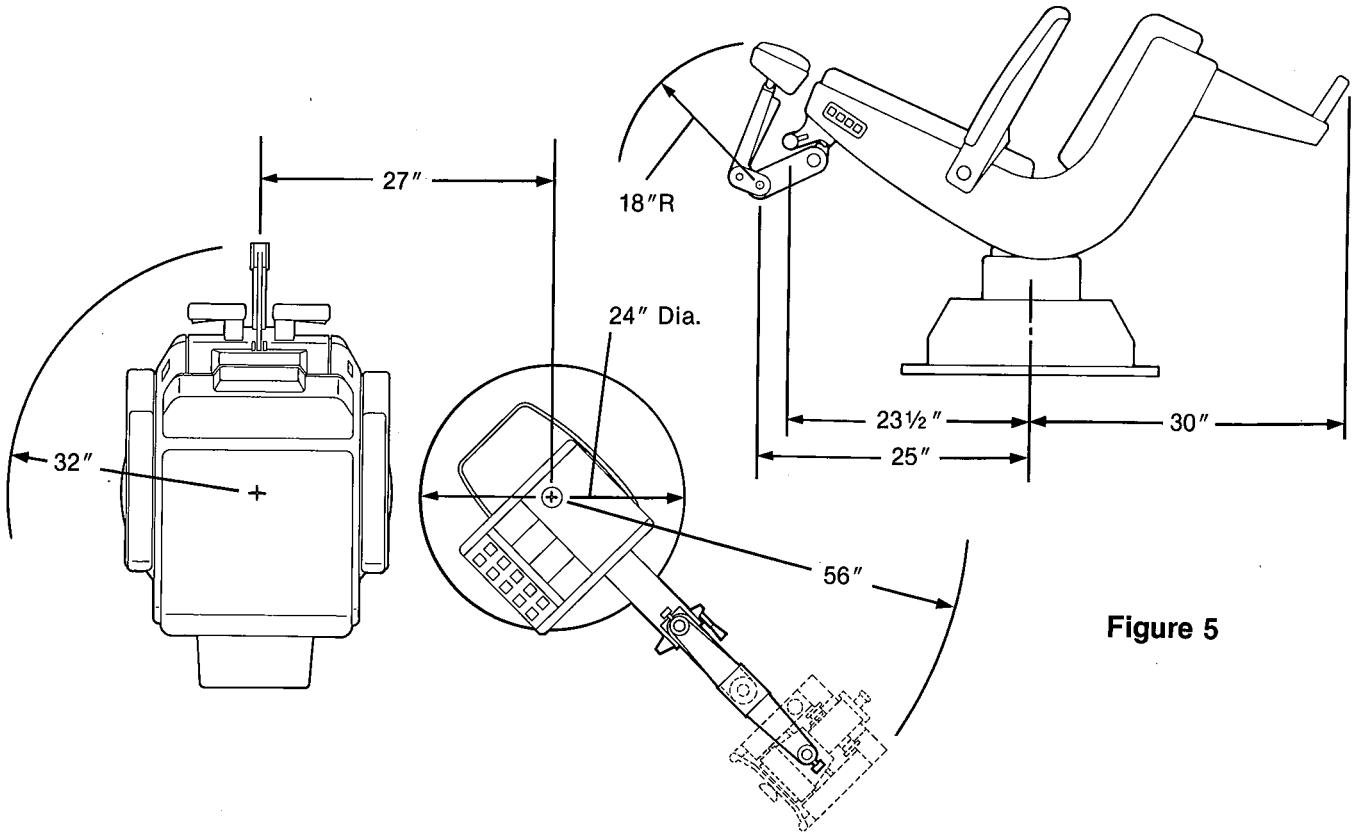


Figure 5

☐ 1.7 Unpack the Chair and Stand units from their shipping cartons close to where the units will be located.

☐ 1.8 Remove the shipping bracket 4-1, two shipping blocks 4-2, and the shipping block 4-3 (Fig. 4).

☐ 1.9 Connect the Chair's power cord to a 115 V.A.C. electrical outlet and elevate the Chair to its highest position by depressing the switch with the upward-pointing arrow on the footswitch, or on the switch cluster located on the side of the Chair back.

☐ 1.10 Remove both halves of the Chair base covers by removing the Phillips head holding screws and lifting up the trim collar 6-1.

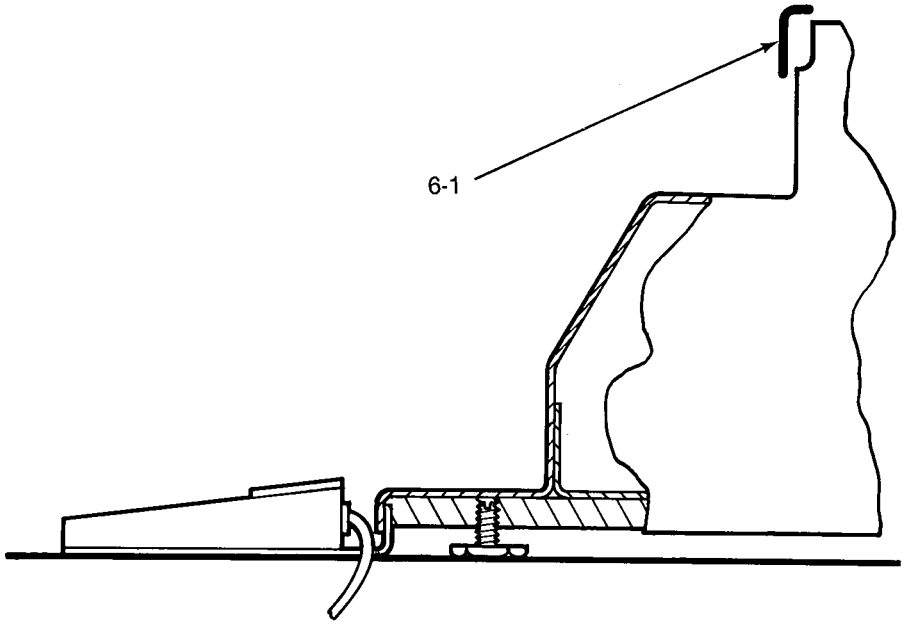


Figure 6

☐ 1.11 Remove the base covers of the Stand by removing the four holding screws. It may be necessary to rotate the main arm so that the base covers will clear the lamp projecting from the bottom of the Stand housing.

☐ 1.12 Remove the three hex-head bolts that hold the base plates of the Chair and Stand units to the wooden shipping skids and move the units onto the floor.

☐ 1.13 Slide the Stand to the position determined in instruction 1.5.

☐ 1.14 Attach the link to the Chair base by using the socket-head Allen screw provided; do not tighten yet.

☐ 1.15 Slide the Chair into its proper position relative to the Stand taking care to align the threaded bolt hole in the outer edge of the Stand base with the drilled hole in the outward end of the link.

☐ 1.16 Attach the link to the Stand base with the socket-head Allen screw provided and tighten firmly. Firmly tighten the Allen screw that attaches the link to the Chair base.

Footswitch

2.1 The footswitch 7-1 is shipped pre-wired to the Chair unit. It is provided with a metal clip 7-2 that is held between the base cover 7-3 and the base 7-4 (Fig. 7).

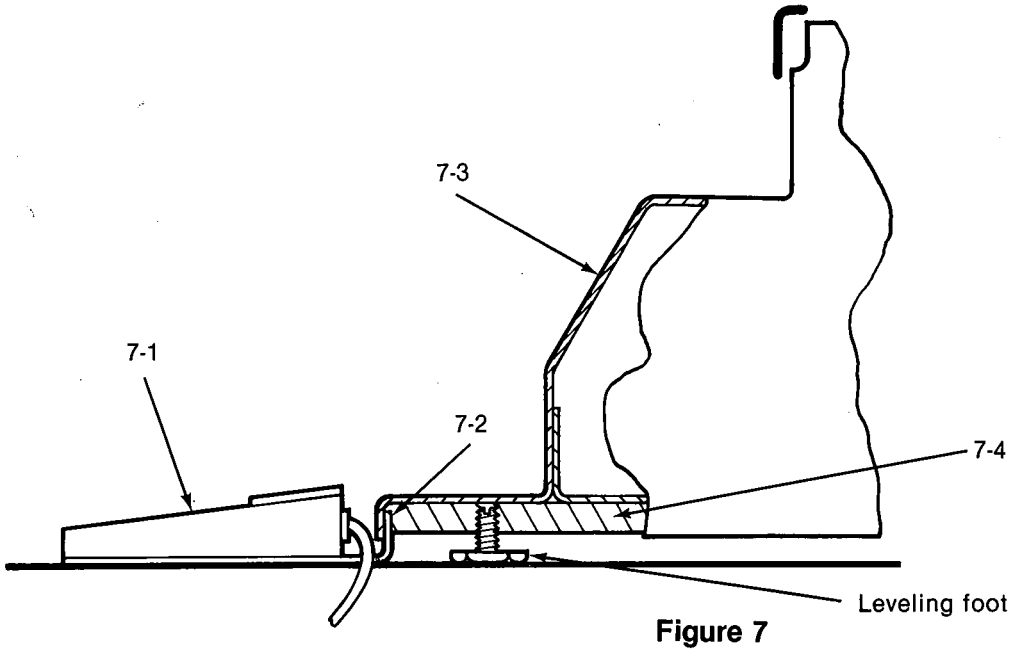


Figure 7

☐ 2.2 Place the footswitch at the desired position around the Chair base and dress its electric cord close to the base's edge to the link, and up through one of the notches on the side of metal portion of the link.

☐ 2.3 Secure cable in place with the nylon strain relief and bolt.

Operation Check

☐ 3.1 Rotate Chair all around in both the upright and reclined positions. Be certain that footrest and headrest clear all obstacles, and that the operator has sufficient space to comfortably recline a patient and return Chair to upright position.

☐ 3.2 Extend Stand's lower arm to furthest position and rotate all around. Be certain that there is sufficient room for freedom of movement of lower arm.

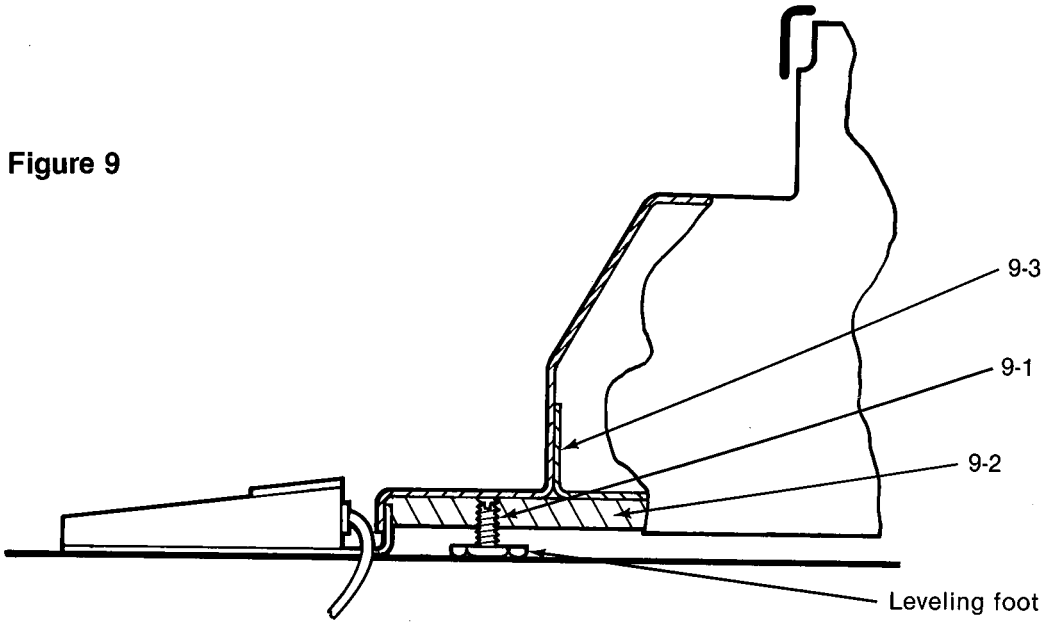
☐ 3.3 Be certain that link attachment bolts are tight.

☐ 3.4 Adjustments of Chair or Stand position, if desired, should be made at this time. The units can be moved while attached together by sliding one about the other. Care should be taken to avoid pushing or pulling on the body panels.

Leveling Chair and Stand

- [ ] 4.1 If rocking is evident in Chair, adjust the leveling feet in the base. Place a large blade screwdriver in slots of leveling bolts 9-1 and turn clockwise until foot just touches floor (Fig. 9).
- [ ] 4.2 The Stand should be adjusted with a bubble level, for proper functioning of instrument arms.
- [ ] 4.3 Level Stand base first by placing a bubble level between the outer edge of base plate 9-2 and the base cover support 9-3. Adjust leveling bolts 9-1 until base is level at that point.
- [ ] 4.4 Then place bubble level at right angles (90°) to its first position and adjust leveling bolts 9-1 until base is level at that point.
- [ ] 4.5 Repeat steps 4.3 and 4.4, continuing around the outer edge of base plate until level readings are obtained at all points on the outer edge of the base plate.
- [ ] 4.6 Bolt Stand to floor through counterbored holes provided in base plate. This is necessary for stability needed for instruments.

Figure 9



Upright Post Installation

☐ 5.1 Unwrap post; remove top cover of Stand housing 46-4 (Fig. 46) by pulling up firmly on edges to disengage strip-type fasteners; unwrap cord hanging from post mount.

☐ 5.2 Make certain that post clamping screw 10-1 is loose so that post will slide through the clamp 10-2 easily. The four socket head cap screws 10-6 that hold clamp 10-2 to Stand must be loosened.

☐ 5.3 Check to be certain that the lamp stop screw hole 10-3 is at the top of post 10-4 before inserting.

☐ 5.4 Feed lamp cord through center of post and let cord hang out top.

☐ 5.5 With Lamp stop screw hole 10-3 facing rear of Stand, insert post into post mount until collar 10-7 rests on clamp 10-2 and securely tighten clamping screw 10-1. (Post can be mounted lower if required by moving collar 10-7 up on post.)

☐ 5.6 Locate 3 socket head set screws 10-5 in clamp 10-2.

☐ 5.7 Place a bubble level against and parallel with post and adjust screws 10-5 until post is plumb.

☐ 5.8 Check to be sure that post clamping screw 10-1 in clamp 10-2 is securely tightened.

☐ 5.9 Tighten the four socket head screws 10-6.

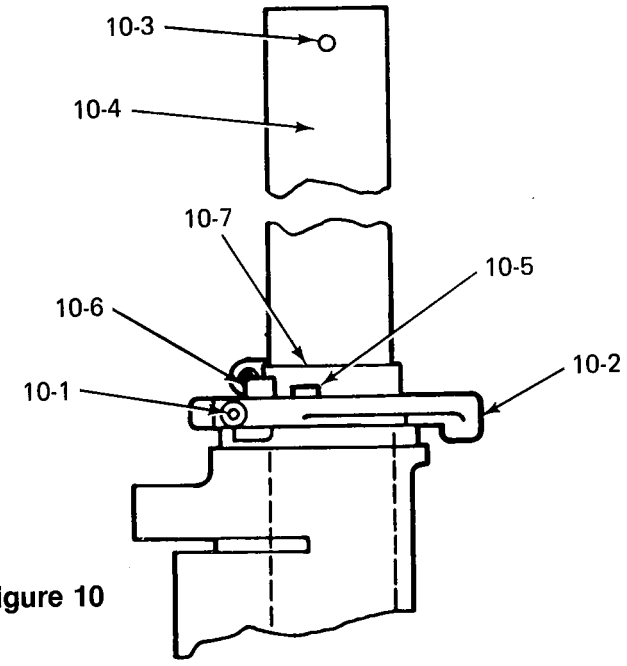


Figure 10

Electrical Connections and Wiring

Power Cord

6.1 The power cord is shipped pre-wired to the Chair unit.

☐ 6.2 Lead cable along top of link and down through notch 11-3 on side of link closest to wall receptacle.

The flexibility of the Chair and Stand allows the practitioner to have a unit specifically suited to his preference. To complete the necessary electrical connections, go to the section below that describes the unit you have selected.

Chair and Stand with Console

7.1 An eight-wire control cable 11-4 and a three-wire power jumper 11-5 are factory pre-wired to the Stand unit (Fig. 11).

☐ 7.2 Lead the three-wire power jumper 11-5 across the top of the link , to the Chair unit and connect to the connector on the Chair base. The connector power cable should be placed inside the ring on the Chair base so that it will not interfere with the installation of the Chair base covers.

☐ 7.3 Disconnect Jumper P-2A connector from receptacle P2 (Fig. 12) in the base of the Chair. Lead the eight wire control cable 11-4 with multi-pin connector across the top of the link and connect to the receptacle labeled P2 (Fig. 11).

NOTE

THE CONNECTOR LABELED P-2A WILL NOT BE USED WHEN THE CHAIR IS CONNECTED TO A STAND WITH A CONSOLE.

Chair and Stand Without Console

☐ 7.4 Install Footswitch as described in paragraph 2.

☐ 7.5 Install Main Power Cord in Chair as described in paragraph 6.

7.6 All Stands are built as if they would be used without a Console.

☐ 7.7 The three-wire power cord in the Stand can be connected to the Chair as described in instruction 7.2 above.

☐ 7.8 Connector P5A must be attached to control console receptable (P5) in the Stand.

7.9 To add a Console to a Stand, remove the P5A jumper from the P5 receptacle on the back of the Stand. Connect the control Console cable to the P5 receptacle and the Console. Check to be sure the 8-wire cable 11-4 (Fig. 11) is connected to the P2 Receptacle (See Step 7.3). The P5A Jumper will not be used when a Console is used.

Chair Without Stand or Console

7.10 If the Chair is to be used without a Stand or Console, all of the wiring was completed at the factory.

Stand Without Console or Chair

7.11 If the stand was specifically ordered to be used without a Console or a Chair, all of the wiring was completed at the factory.

Stand and Console Without Chair

7.12 If the Stand and Console were specifically ordered to be used without a chair follow the instructions in paragraph 8 or 9 for the particular configuration of console that you ordered.

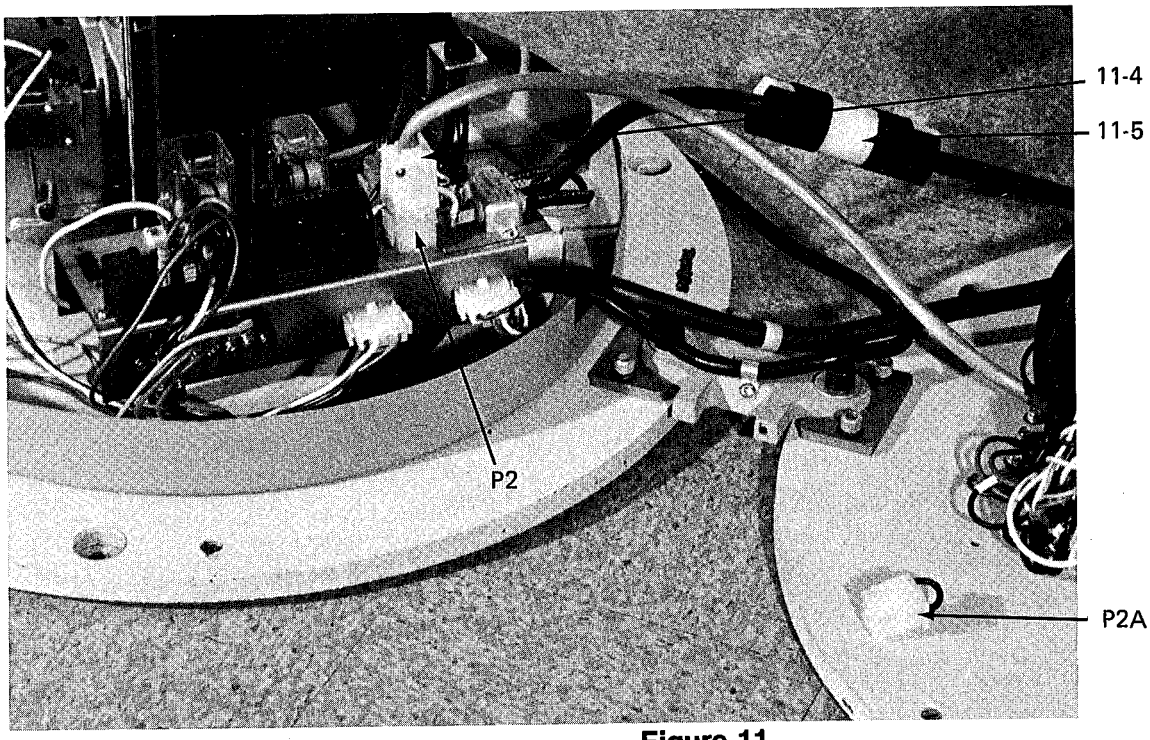


Figure 11

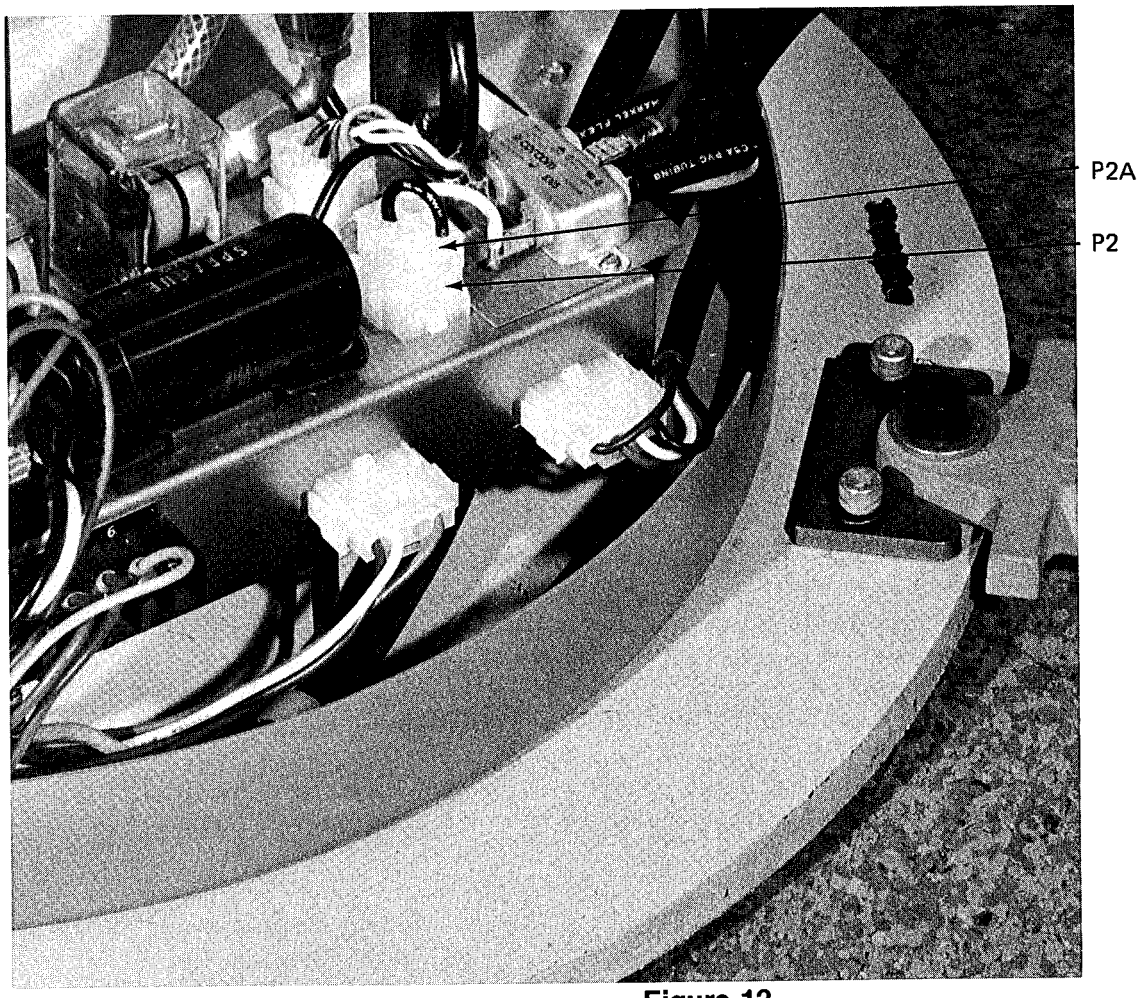


Figure 12

Control Console

☐ 8.1 Remove Control Console from the shipping carton carefully. This unit is factory wired and tested. It has its own power cord and control cord attached.

Arm Mounted Console

☐ 8.2 Remove the Console Arm from the shipping carton.

☐ 8.3 Slide arm down post in such a manner that the arm clamp faces the rear of the Stand.

☐ 8.4 Tighten locking screw, and lock Arm to post temporarily.

☐ 8.5 Turn Console upside down carefully, and install the adapter flange 13-1 with three screws provided (Fig. 13). If the adapter flange was installed at the factory proceed to paragraph 8.6.

☐ 8.6 Insert adapter plug 13-3 into adapter flange 13-1 and tighten clamp screw 13-5.

☐ 8.7 Place washer 13-4 over hole in end of Console arm.

☐ 8.8 Lift Console and place it upright with adapter plug 13-3 inserted through washer 13-4 into hole on Console arm. Position of Console can be adjusted to suit. Be certain that Chair will not contact Console when elevated, rotated, or tilted.

☐ 8.9 Plug Console's power cable into the convenience receptacle on the rear of the Stand (Fig. 14).

☐ 8.10 Remove the P5A jumper from the P5 receptacle on the back of the Stand. Connect the control Console cable to the P5 receptacle and the Console. Check to be sure the 8-wire cable 11-4 (Fig. 11) is connected to the P2 receptacle (See Step 7.3). The P5A jumper will not be used when a Console is used.

Post Mounted Console

☐ 8.11 Turn Console over so that it rests on front panel.

☐ 8.12 Adapter Flange must be mounted over hole on right hand side of Console as indicated by dotted lines (Fig. 13). If the adapter flange was installed at the factory proceed to paragraph 8.13.

☐ 8.13 Loosen Adapter Flange clamp screw 13-5.

☐ 8.14 Remove lamp stop screw 16-2 from top of instrument post (Fig. 16).

☐ 8.15 Remove Console rear cover.

☐ 8.16 Turn Console right side up.

☐ 8.17 Slide Console over top of post while checking that wires inside are clear of post as it slides through Console.

☐ 8.18 When desired position on post is reached, rotate Console to desired position and tighten clamp screw 13-5.

☐ 8.19 Replace rear cover.

☐ 8.20 Plug Console's power cable into the convenience receptacle on the rear of the Stand (Fig. 14).

☐ 8.21 Remove the P5A jumper from the P5 receptacle on the back of the Stand. Connect the control Console cable to the P5 receptacle and the Console. Check to be sure the 8-wire cable 11-4 (Fig. 11) is connected to the P2 receptacle (See Step 7.3). The P5A jumper will not be used when a Console is used.

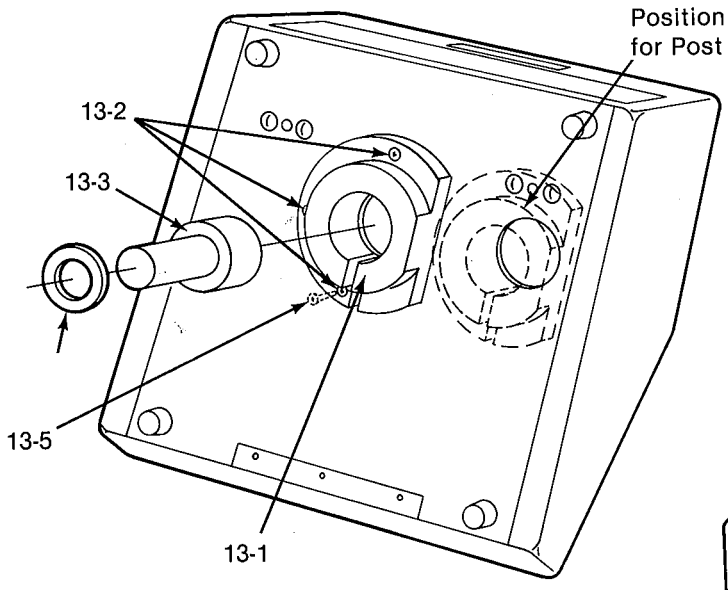


Figure 13

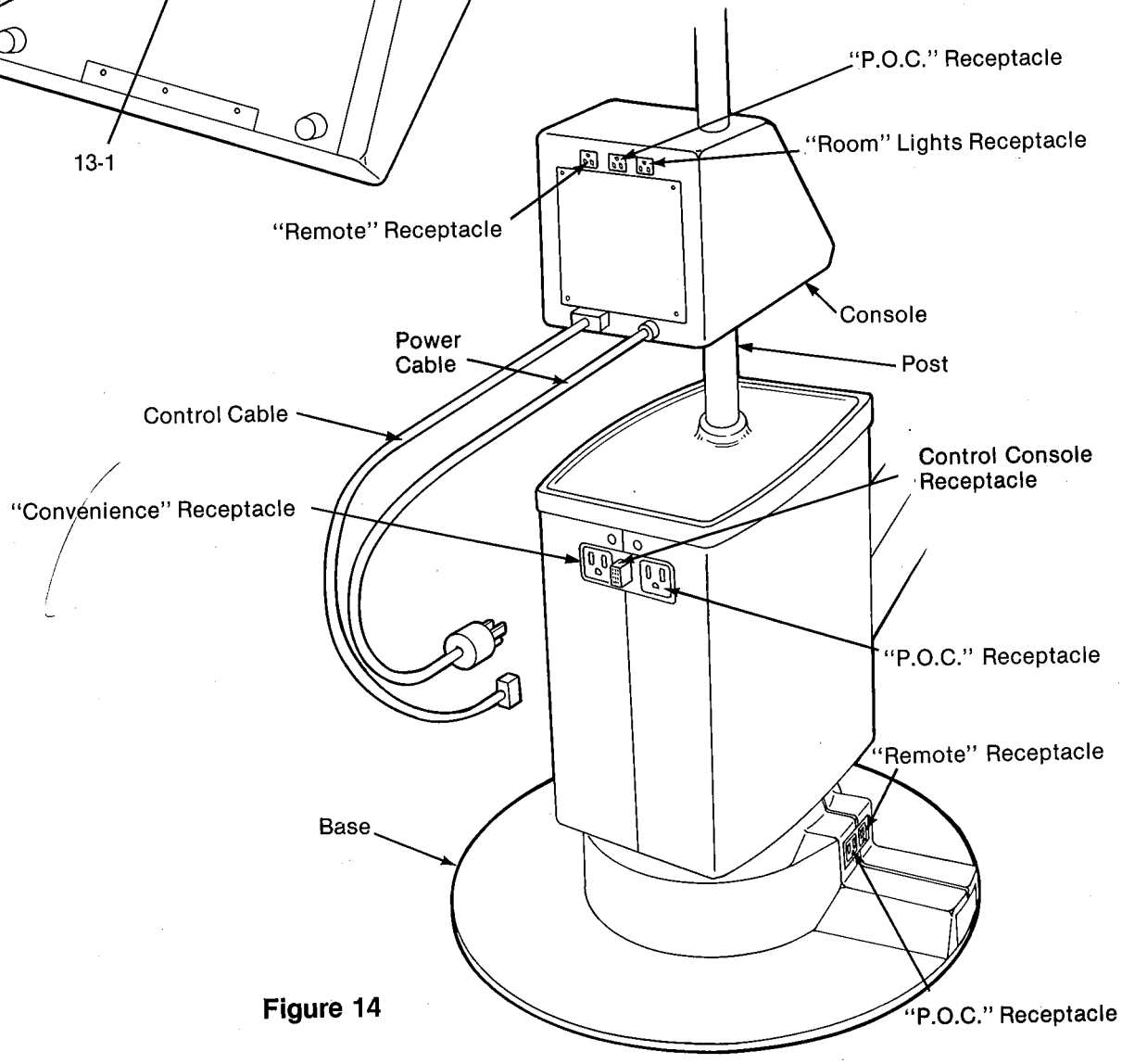


Figure 14

Remote Console Installation

☐ 9.1 Remove the Console from the shipping carton carefully.

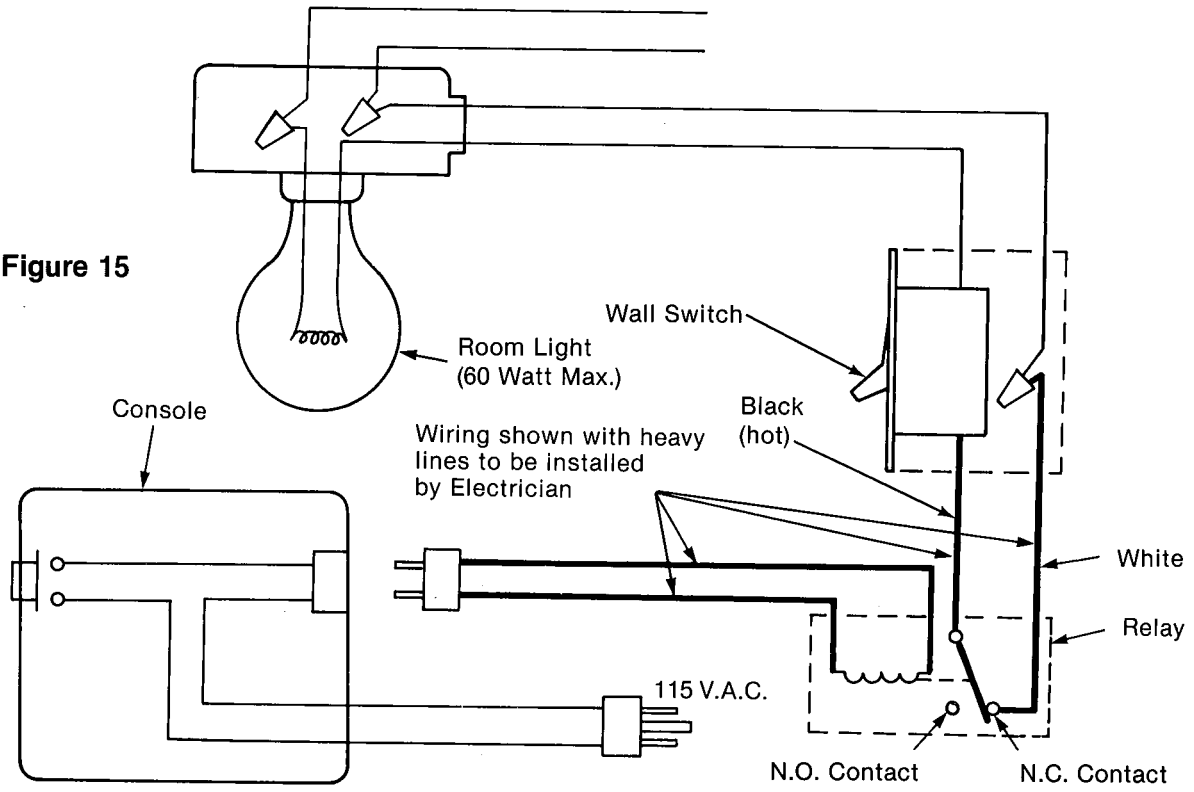
☐ 9.2 Place Console on refracting cabinet or desk and plug its power plug into any convenient 115 V.A.C. room receptacle.

☐ 9.3 Remove the P5A jumper from the P5 receptacle on the back of the Stand. Connect the control Console cable to the P5 receptacle and the Console. Check to be sure the 8-wire cable 11-4 (Fig. 11) is connected to the P2 receptacle (See Step 7.3). The P5A jumper will not be used when a Console is used.

To Operate Lights From the "Room" Switch on the Console

- [ ] 10.1 Wiring should be done by a licensed electrician in compliance with the National Electrical Code, 1978 edition, Article 725, Ref: 725-11b, Class 1, Remote-Control and Signal Circuits.
- [ ] 10.2 The "room" light switch on the Control Console provides 115 V.A.C. to the receptacle on the rear panel marked "Room Lights".
- [ ] 10.3 A relay junction box should be installed in the proximity of the room's light switch. A pair of conductors from the relay contacts must be wired in series with the wall switch. See wiring diagram (Fig. 15).
- [ ] 10.4 The relay to be supplied by the electrician must be UL tested; 115 V.A.C. coil, and have contacts of sufficient rating to switch the lighting load.
- [ ] 10.5 A three conductor #18 AWG Type SJ cable with a three prong plug should be provided between the relay junction box at the wall, and the rear of the Control Console.
- [ ] 10.6 The Control Console, when plugged into the 115 V.A.C. wall socket, will energize the remote relay coil which in turn will switch the lighting load.

Figure 15



PHOROPTOR® Arm Installation

- ☐ 11.1 Unpack PHOROPTOR Arm and locate the locking lever in cloth bag tied to PHOROPTOR Arm.
- ☐ 11.2 Using the hex wrench provided, loosen clamp screw 16-1 (Fig. 16).
- ☐ 11.3 Remove Lamp stop screw 16-2 from top of Stand post 16-3.
- ☐ 11.4 Bearing in mind that the clamp locking screw 16-1 is to be at the bottom of the Arm clamp and is to rear of Stand when installed, feed the post up through the bushing of the PHOROPTOR Refractor Arm.
- ☐ 11.5 Slide Arm down post in such a manner that the "split" in the Arm clamp 16-4 faces the rear of the Stand.
- ☐ 11.6 Tighten clamp screw 16-1 and lock Arm to post temporarily.
- ☐ 11.7 Screw locking lever 16-5 into the PHOROPTOR Refractor Arm adapter. Make as hand-tight as possible.

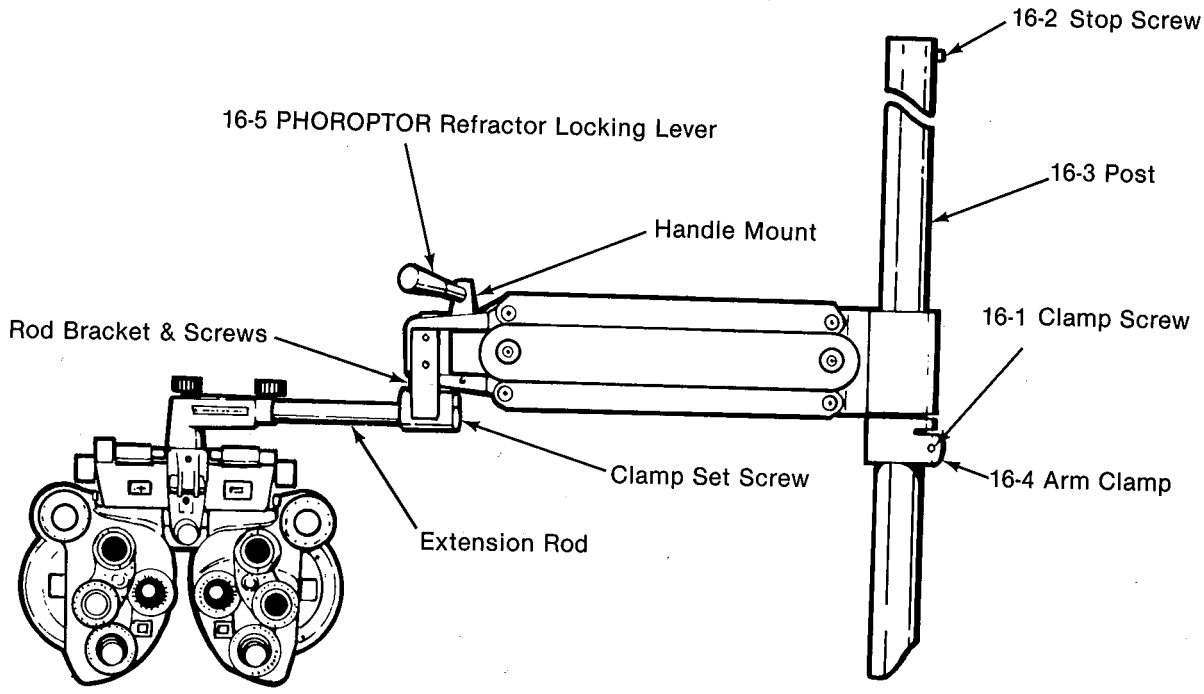


Figure 16

Overhead Lamp Installation

Installation procedure is the same for both the standard incandescent Overhead Lamp and the Custom Dual Overhead Lamp.

- ☐ 12.1 Remove Overhead Lamp assembly from the shipping carton carefully.
- ☐ 12.2 Remove Lamp stop screw from post.
- ☐ 12.3 Hold Lamp over the post and connect Stand post and Lamp plugs as shown in Fig. 17.
- ☐ 12.4 Push surplus wire and plugs down into the center of the post.
- ☐ 12.5 Face Lamp toward the front of the Stand. Insert Lamp bearing 17-1 into top of post. Be certain that the bearing is fully seated in the post.
- ☐ 12.6 Locate stop screw hole 17.2. Insert screw in the hole at top of the post and tighten.

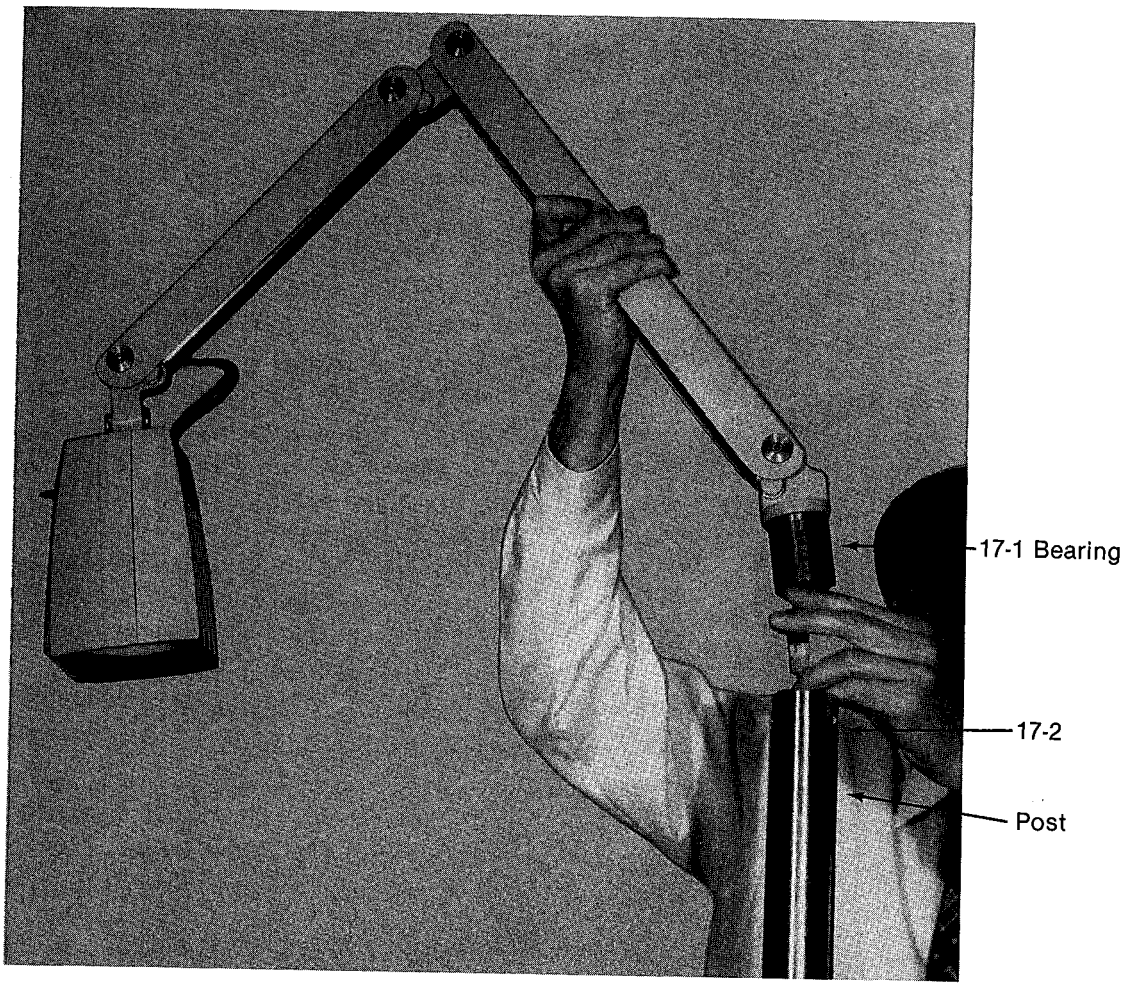


Figure 17

Electrical Check Procedure — Chair and Stand

NOTE

ENSURE THAT 'Z' BRACKET (FIG. 4) WAS REMOVED AS DESCRIBED IN INSTRUCTION 1.8.

☐ 13.1 The Chair's power cord must be plugged into a 115 V.A.C./60Hz receptacle with a 20A capacity.

☐ 13.2 The Console power cord must be plugged into the "convenience" outlet on the Stand, or into any convenient wall receptacle 115 V.A.C./60Hz.

☐ 13.3 The Console to Stand control cable must be connected between both units.

☐ 13.4 All instruments to be plugged into their respective receptacles.

☐ 13.5 Depress the "ON" switch located on the front of the Control Console. Observe that this switch and the four function switches for the Chair raising and lowering illuminate on the control Console and on the side of the Chair.

Chair Console Control Lift Test

☐ 13.6 Depress the button on the Console marked (Λ) and hold in until Chair rises to full up position and motor shuts off.

☐ 13.7 Depress the button marked (V) momentarily and observe that Chair begins to lower, and stops when switch is released.

☐ 13.8 Depress the button marked (V) momentarily and observe that the Chair will continue to lower after button is released.

☐ 13.9 Raise Chair again using the (Λ) button until Chair is extended. Then press the (V) button momentarily. Before the Chair fully retracts, press the red "Halt" button. The Chair should stop descending.

Chair Switch Controls

☐ 13.10 Check the four function switches on the side of the Chair body as follows:

13.10.1 The Up and Down motion of the Chair is controlled by a two position rocker switch. Depressing the upper half of the rocker switch will cause the Chair to rise. Depressing the lower half of the rocker switch will result in the Chair's lowering. Up or down motion will cease when pressure is removed from the rocker switch.

13.10.2 The programmed down button (V), when depressed will result in Chair automatically lowering to its lowest position.

13.10.3 The red stop control when activated will automatically stop the Chair from raising or lowering.

13.10.4 The tilt lock switch, when depressed, will release the tilt lock. This allows the Chair to be tilted as desired. Releasing the tilt lock switch will cause the tilt lock to engage.

Footswitch

☐ 13.11 Test footswitch operation by rocking switch with foot. Foot pressure on one side should cause Chair to rise, the other side to lower. Each function will cease when pressure is removed from switch.

Overhead Lamp

☐ 13.12 Depress switch on Control Console marked "LAMP". Switch should illuminate and turn on overhead lamp, provided switch on lamp itself is in "on" position.

Remote Receptacles

☐ 13.13 Depress switch on Control Console marked "Remote". Switch should illuminate and provide power to two receptacles marked "Remote". One is located at the Stand base. The other is located on the rear of the Console (Fig. 14).

P.O.C. Switch

☐ 13.14 Depress switch on Control Console marked "P.O.C." The switch should illuminate, and provide power to three receptacles marked "P.O.C."

Arm Switch

☐ 13.15 Depress switch on Control Console marked "ARM". The switch should illuminate and supply power to the cord or cords plugged into the instrument or instruments at the end or ends of the lower arm.

Room Switch (installed by licensed electrician)

☐ 13.16 Depress switch on Control Console marked "ROOM". The switch button and lamp under lower arm should illuminate, and the examination room lights should go off. Press again; the switch light should go out and the room lights come on.

Heel Rest

☐ 14.1 With Chair in upright position, pull heel rest forward half way. Rest should not fall with excessive force. If heel rest drops too hard, tighten drag screws.

Head Rest

☐ 15.1 Unlock and position head rest by squeezing locking lever and holding in while positioning headrest. Relock by releasing grip.

NOTE

NEVER RELEASE LOCKING LEVER WHILE HEADREST IS IN MOTION

☐ 15.2 Check lock mechanism by positioning and locking headrest in several positions to be certain of proper function.

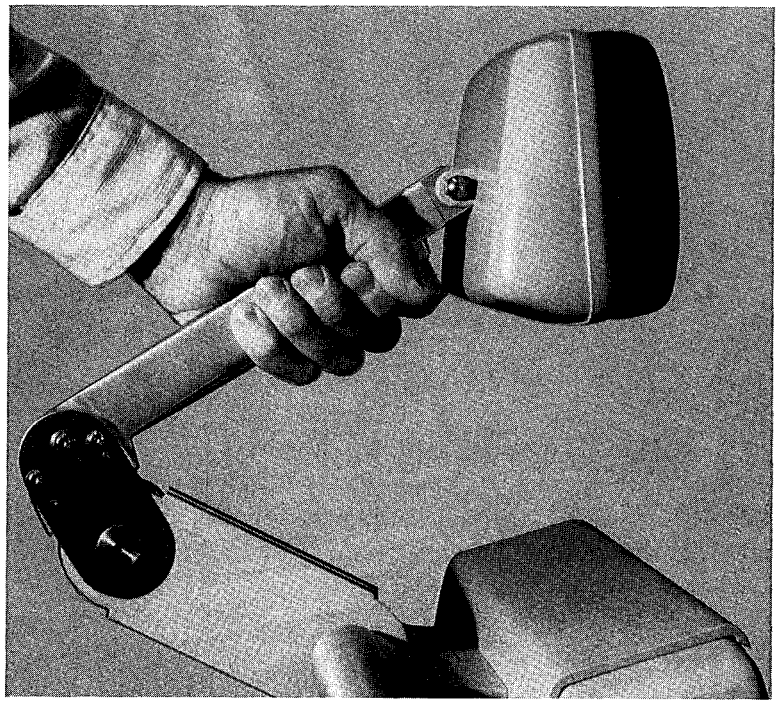


Figure 20

Swivel Brake and Stop

Two handles (one on either side of the Chair) located below the front edge of the seat operate the rotation lock 21-1 (Fig. 21).

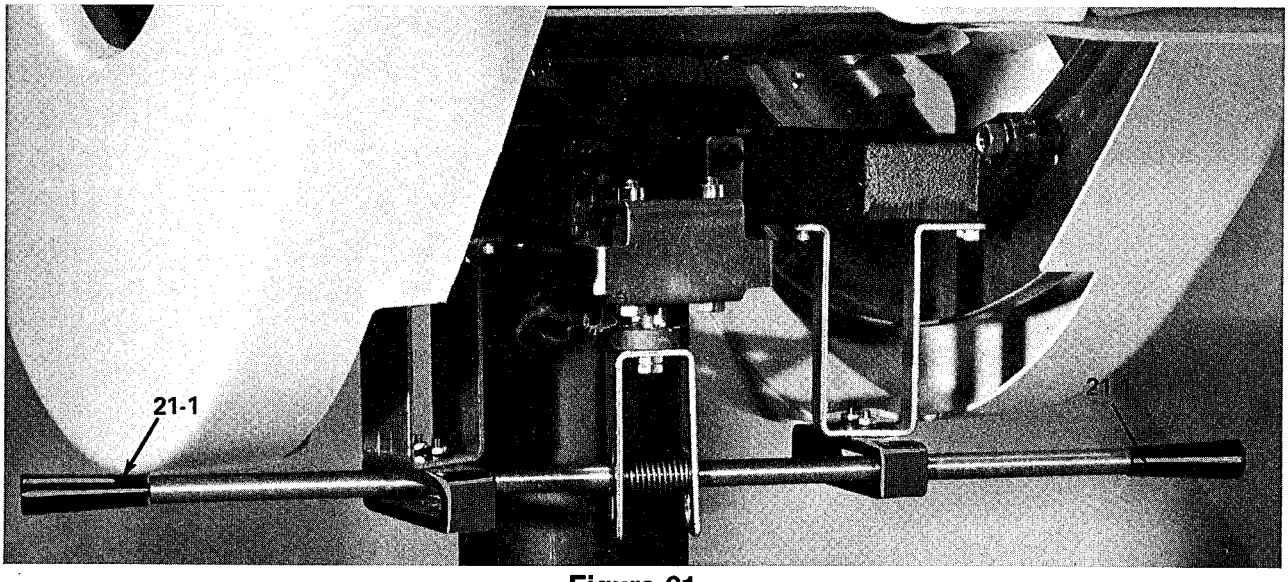


Figure 21

Adjusting Chair Rotation Tension

The Chair is preset at the factory to allow free rotation when in the unlocked position.

☐ 16.1 Move either handle to stop the Chair from being swiveled. Check to see if there is sufficient braking power. The brake should be capable of resisting 30 lbs. of pressure applied to the end of the tilt handle at top of Chair back.

☐ 16.2 Move either handle, and Chair should swivel freely from stop to stop.

Arm Latch

☐ 16.3 With arms down in normal position, check arm latch by lifting on outboard end of arm. There should be a positive lock with very little up and down movement.

☐ 16.4 Depress arm latch lever on bottom of arm just forward of back rest. Latch should unlock and allow arm to be lifted upright.

☐ 16.5 Lower arm half way down, and release grip on it. A friction device inside pivot should allow arm to drop gently and latch. If arm falls with excessive force, tighten drag bolt 22-1 (Fig. 22).

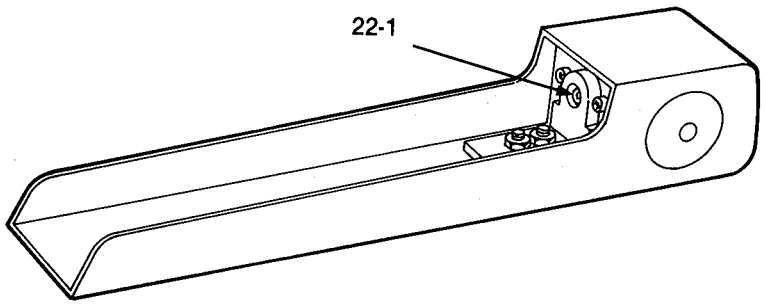


Figure 22

Mechanical Check Procedure—Stand

Lower Arm Swivel

☐ 17.1 Release locking lever 23-1 with instrument load in place and rotate lower arm assembly from Chair to stop. If arm swings too far, refer to adjustment procedures.

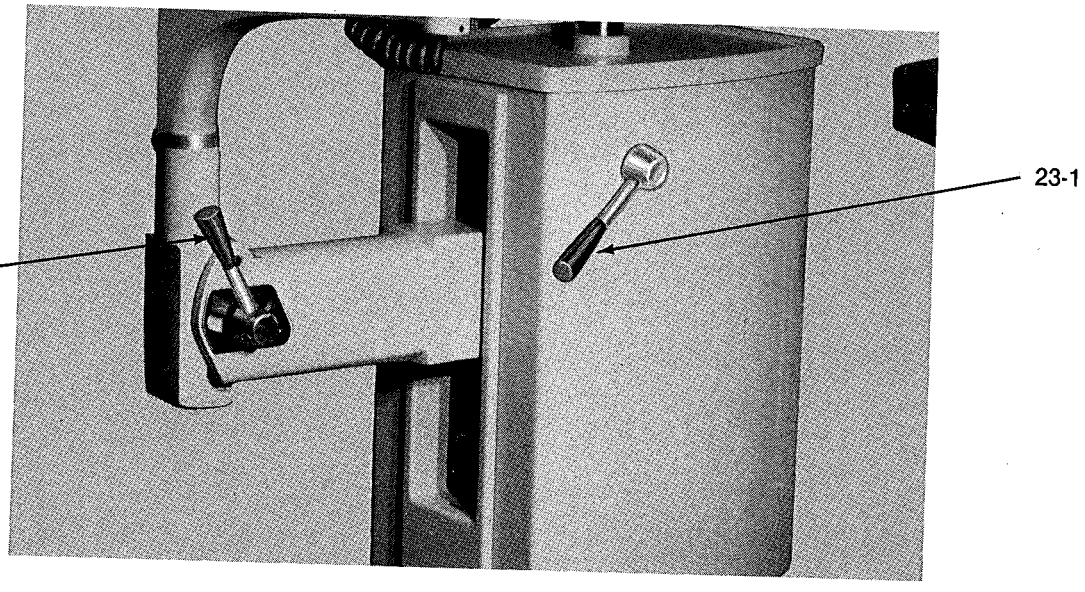


Figure 23

Lower Arm Counterbalance

☐ 17.2 With instrument load in place, release locking lever 23-2 and pull up or push down on the unlocked arm. The arm was factory set for a specific weight and adjusted to provide easy movement over full up and down travel. If the arm is hard to move in either direction or difficult to lock in a certain position, refer to adjustment procedures.

Final Installation Procedure

The Chair and Stand installation should now be complete except for fastening the link and base covers.

Before this is done, use the check list below as a guide for a final "double check" of key installation and operational points.

Final Check List

Connecting link bolts firmly tightened.

Z-shaped shipping bracket and 2 shipping blocks with red tags (Fig. 4) removed from Chair frame.

Chair leveled and firmly seated on floor.

Stand leveled and firmly fastened to floor.

Footswitch positioned and power cord clamped with nylon strain relief into notch on link.

Power and control cables from Stand positioned on link and attached to connectors on Chair.

Chair's power cord plugged into 115 V.A.C. room receptacle.

Console control cable plugged into receptacle at rear of Stand's lower arm cover marked "Control Console".

Console power cord plugged into 115 V.A.C. receptacle at rear of Stand's lower arm cover marked "Convenience".

Overhead lamp plugged into connector inside post.

Instruments plugged into arm receptacle.



Figure 24

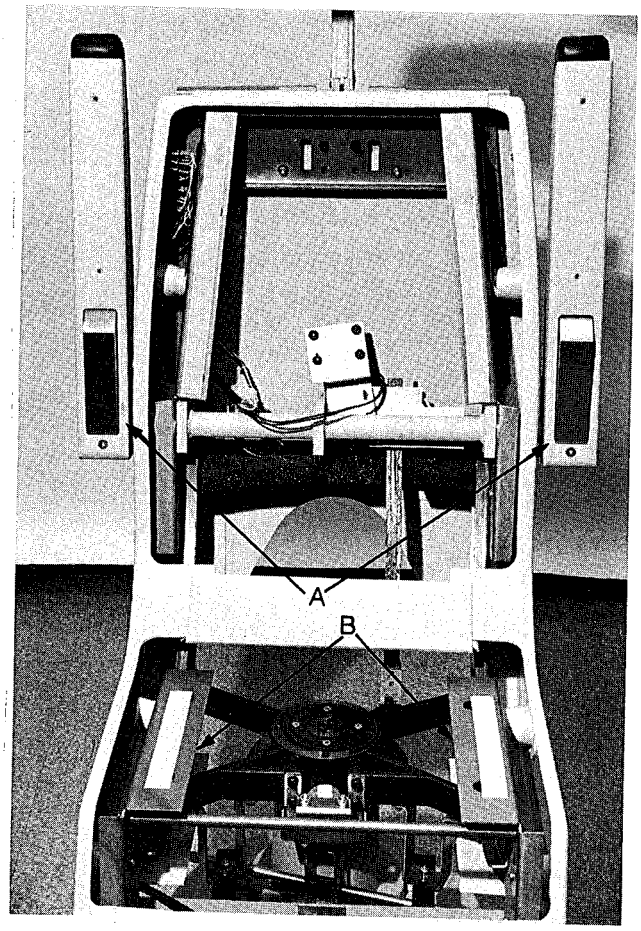


Figure 25

Upholstery Installation

☐ 18.1 The upholstery for your ophthalmic Chair is packed separately. Once you are certain that the Chair is operating properly, remove the upholstery carefully from its carton.

Arm Rests

☐ 18.2 The two arm cushions slip into the U-shaped channels of the arms. Push the cushion down and back as far as possible so that edge of cushion is pushed tight against pivoting end and down into the channel.

☐ 18.3 Fasten in place with two oval head wood screws from under side of channel (Fig. 24).

Chair Back

☐ 18.4 Fit back cushion in place and press onto the Chair frame (Fig. 25).

Chair Seat

☐ 18.5 Place seat cushion in place and press onto the frame.

Headrest

☐ 18.6 Remove one of the acorn nuts 26-1 and extract the threaded rod 26-2 from the headrest support 26-3. Don't lose spacer washers 26-4.

☐ 18.7 Holding upholstery 26-5 against headrest 26-6, thread socket-head Allen screw 26-7 through hole in headrest body, then into threaded insert in upholstery 26-5 and reassemble to headrest with rod, nuts, and spacer washers.

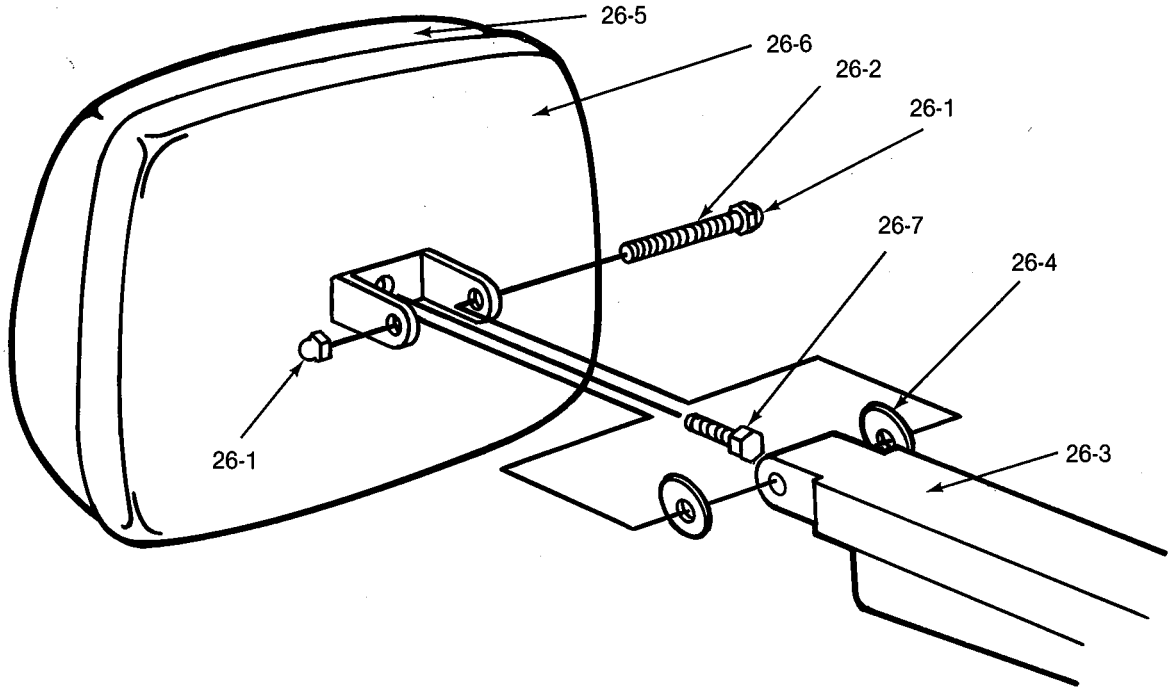


Figure 26

Lower Arm Operation

Three locks control the movement of the Lower Arm and its instrument.

Locking Lever 27-1

1) Locks the rotation of the "entire" Lower Arm about the Stand. (Push lever down to lock; pull forward and up to unlock.)

Locking Lever 27-2

1) Arrests the "up" and "down" motion of the entire Lower Arm.

2) Locks the inner and outer arms together so that the outer arm cannot pivot independently from inner arm. (To lock, push lever toward Stand; to unlock, pull away.)

Locking Knob 27-3

1) Locks the pivoting action of the instrument. (Turn clockwise to lock.)

2) Instrument cannot be "lifted off" Arm until the Knob is sufficiently turned counterclockwise to retract locking screw from "undercut" in instrument bushing pin.

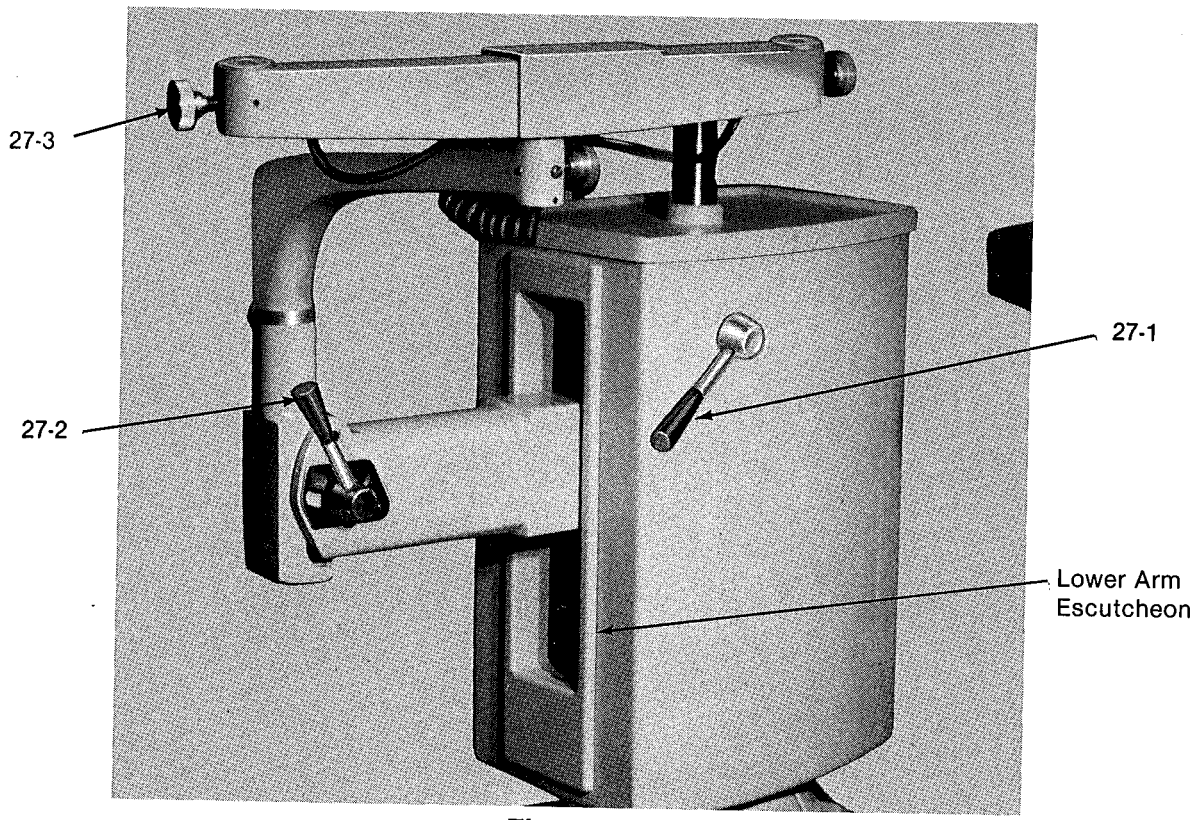


Figure 27

Raising and lowering of the instrument and the Lower Arm is easily achieved by releasing lever 27-2 and pulling up or pulling down on the unlocked Arm. Rotation of the entire Arm is accomplished by releasing lever 27-1 (Fig. 27) and pushing or pulling the Arm in a horizontal plane. You can either grasp the instrument base with two hands and apply the necessary directional pressure, or grasp the outer arm with one hand to obtain motion while the other hand guides the instrument to and from the patient.

Instrument Weight:

The Lower Arm was "set" at the factory to counterbalance a specific instrument weight. If for any reason the setting has to be changed, see instructions on page 41 .

NOTE

PLACE THE LOWER INSTRUMENT ARM AT ITS HIGHEST POSSIBLE POSITION BEFORE REMOVING ANY INSTRUMENT. THIS ARM IS COUNTERBALANCED. IMPROPER HANDLING MAY RESULT IN IT JUMPING UP IF IT IS NOT IN THE HIGHEST POSSIBLE POSITION WHEN ANY INSTRUMENT HAS BEEN REMOVED.

Instrument Installation to Lower Arm

19.1 Lower Arm will accept instrument trays with standard pins (i.e., Tray for Ophthalmometer) or instruments equipped with standard adapters (i.e., Slit Lamp).

☐ 19.2 Turn lock knob 27-3 counterclockwise to back out screw until it is clear of inside of bushing and does not interfere with pin insertion.

☐ 19.3 Insert adapter into arm bushing. Turn knob clockwise until screw stops then "back off" slightly. This permits rotation but prevents accidental intrument removal as screw is still inserted in adapter undercut.

☐ 19.4 Electrical cord has female connector to plug directly into Ophthalmometer. Non-contact Tonometer, Slit Lamp, or to accept the standard male plug from any other instrument cord. Any alteration of plugs or cord length to adapt an instrument for arm use should be accomplished by competent personnel.

☐ 19.5 Do not shorten the Lower Arm Cord. This cord length is designed to allow complete freedom of instrument rotation without straining the wire.

☐ 19.6 If two instruments are placed on the lower arm, they should be positioned so that the patient side of one instrument faces in the opposite direction of the other instrument (Fig. 4).

Installing or Relocating Module

WARNING

ADJUSTMENTS PERTINENT TO MODULES AND SWITCHES SHOULD BE PERFORMED BY QUALIFIED SERVICE PERSONNEL.

The following provides general instructions for removing and/or installing a module. These instructions are used when modules are being relocated, or a new module is being installed. Proceed as follows:

- ☐ 20.1 Remove instruments from modules and carefully set aside.
- ☐ 20.2 Disconnect Console electrically by removing main power cord from wall outlet.
- ☐ 20.3 Remove six screws from rear cover of Console and remove.

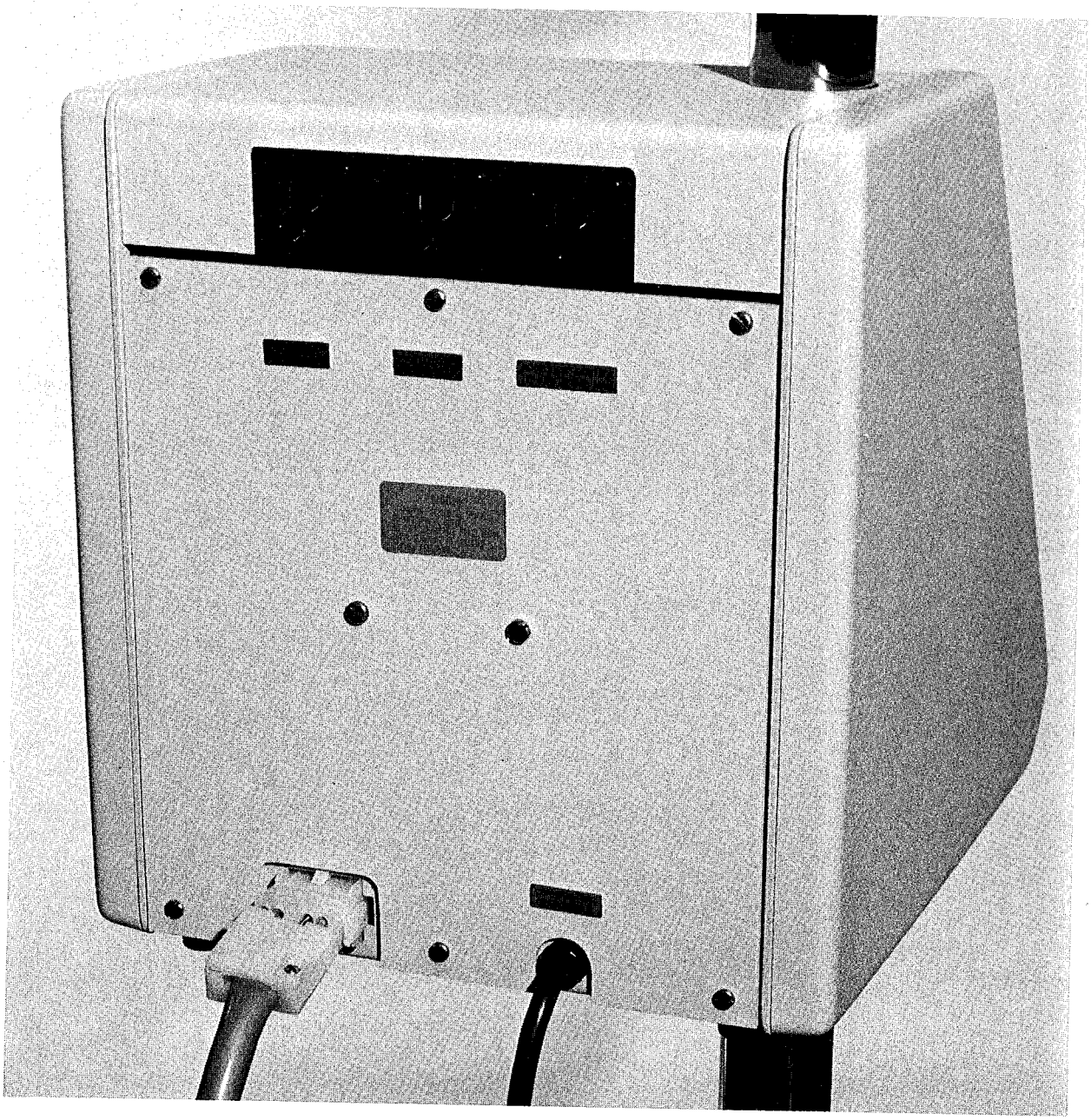


Figure 28

☐ 20.4 Remove module as follows:

a. Disconnect module electrically by separating the white plastic connector on recharging module being removed, or by removing 3 leads from the terminal board on cord operated module being removed. (Terminal board 29-1 located at top of Console behind receptacle.)

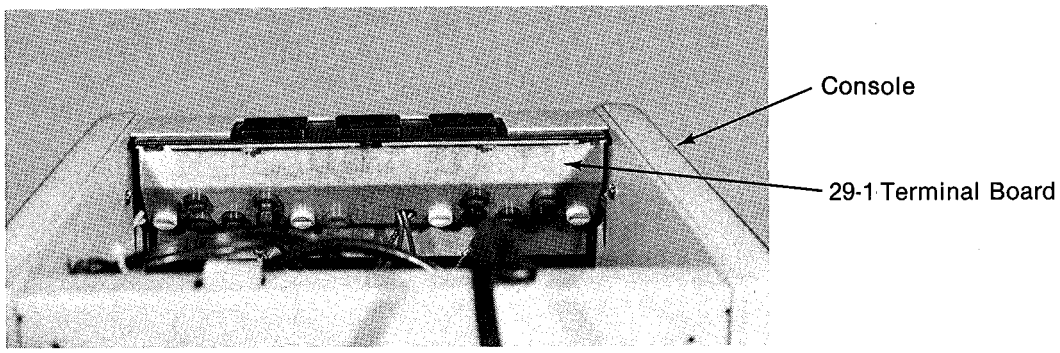


Figure 29

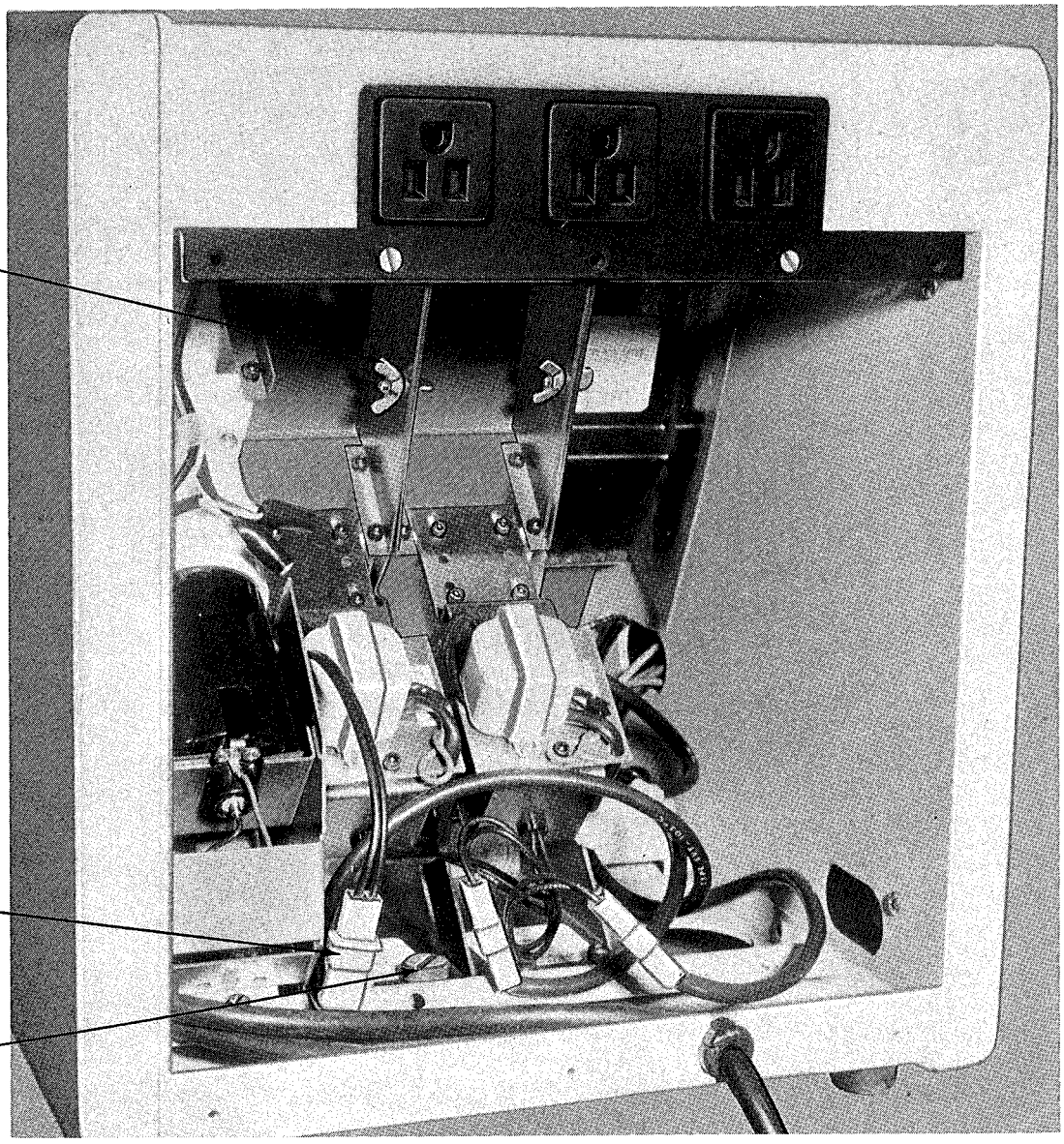


Figure 30

b. Remove wing nuts and screws 31-1 fastening the modules together.

c. Remove knurled head thumbscrews 31-2 or slotted knurled screw 31-3, depending on module being removed.

d. Grasp the module firmly, pulling gently upward at the rear, and remove.

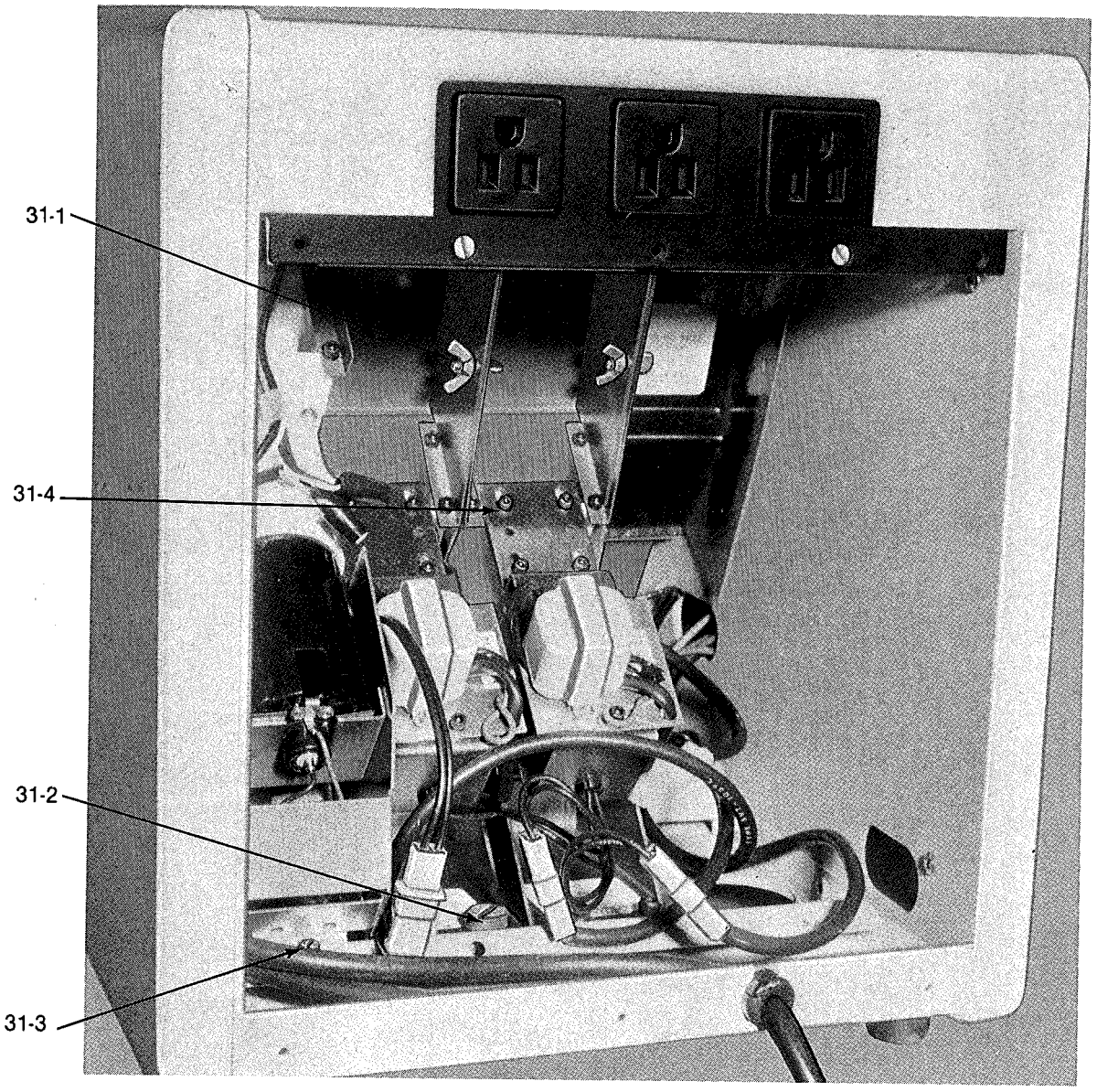


Figure 31

☐ 20.5 Install module as follows:

a. Holding the module 32-1 firmly, slide into position from rear of Control Console. Lip 32-2 on front of module must be inserted into slot 32-3 in Cabinet. Make sure module is properly seated.

NOTE

ALL HARDWARE REQUIRED TO INSTALL A MODULE IS SUPPLIED.

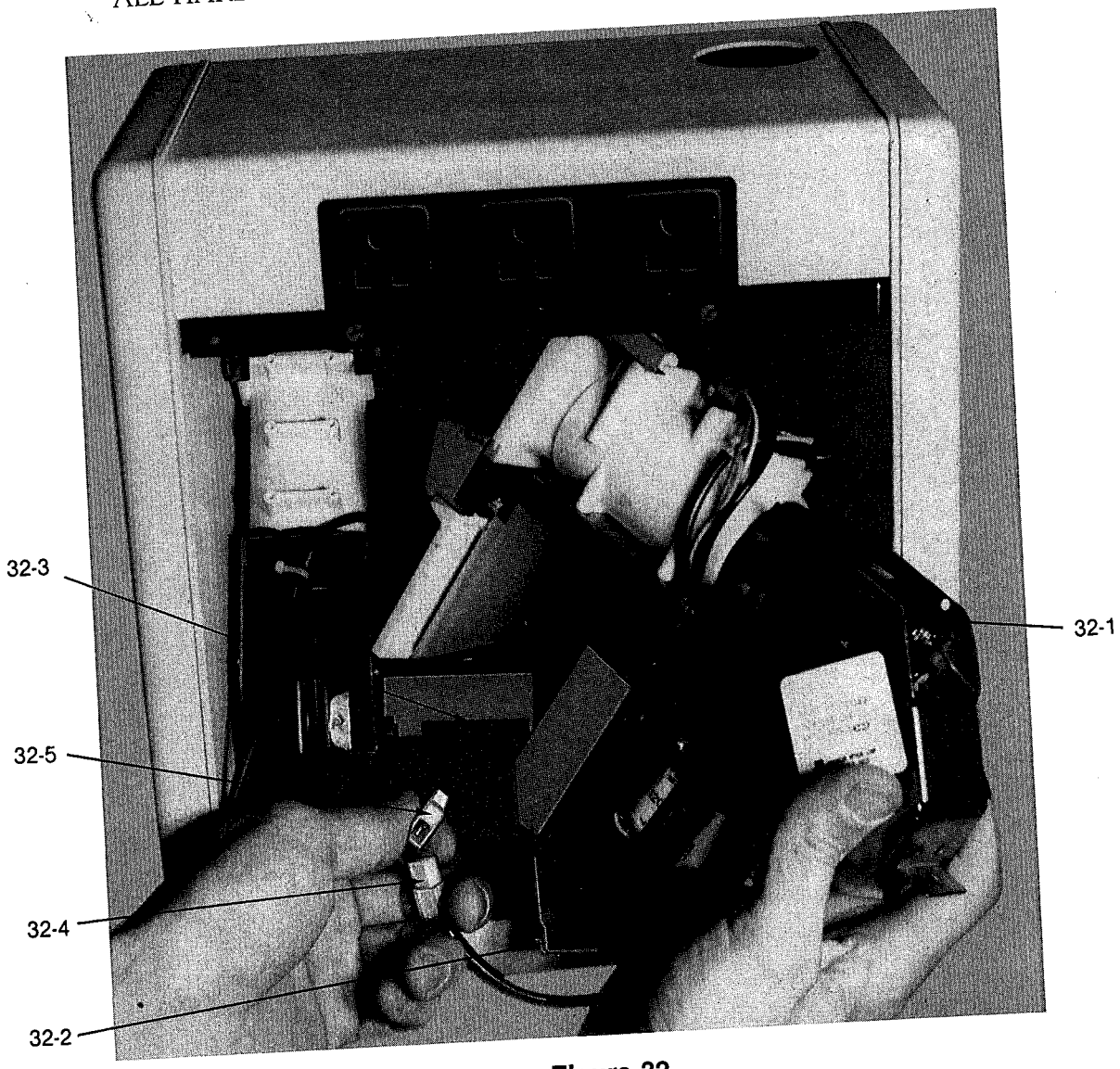


Figure 32

☐ b. Secure module to Control Console with knurled head thumbscrews 31-2 or slotted knurled head screws 31-3 (Fig. 31). Knurled head thumbscrews can be installed with the fingers. Th slotted knurled head screw should be started with the fingers and tightened securely with screwdriver.

☐ c. Fasten modules to each other with wing nuts and screws 30-1 (Fig. 30).

☐ d. Connect recharging modules electrically by mating white plastic connector 32-4 from module 32-1 to any one of the four white connectors 32-5 (Fig. 33) from the Console. Connectors ha been keyed so that they cannot be connected in reverse. Refer to step e, for connecting co type module.

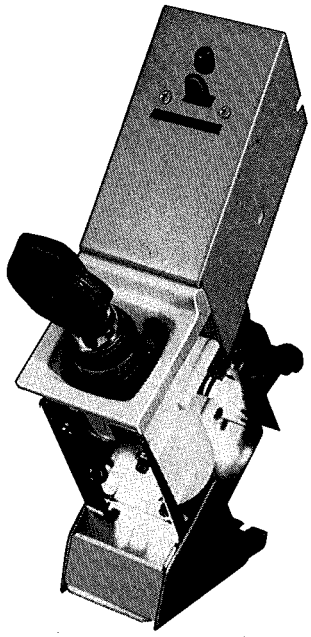
NOTE

IF ADDING RECHARGEABLE MODULE REQUIRING A WHITE PLASTIC CONNECTOR THAT HAS NOT BEEN IN USE, REMOVE WHITE PROTECTIVE CAP FROM THE CONNECTOR IN STAND.

e. Connect blue lead from module to any blue terminals on terminal board 29-1. Connect one black lead, marked, No. 20, to low voltage desired. Connect other black lead to higher voltage desired. See instructions for changing voltages, steps 22.1 through 22.3.

☐ 20.6 Replace rear cover and secure with screws.

Module 14181P (Rechargeable Giantscope)



This module is for use with the Reichert ASTRO® Cordless Giantscope to maintain the Giantscope in a fully charged condition. Before inserting the Giantscope into the module. BE CERTAIN THAT THE RHEOSTAT ON THE GIANTSCOPE HANDLE IS IN THE "OFF" POSITION completely to the left. Insert the Giantscope into the module until it bottoms, thereby making electrical contact.

The Selector Switch on the ASTRO Energizing Module allows one of two charging rates to be selected.

Normal — charging at the standard rate, pilot light will be off.

Fast — charging at a high rate, the pilot light will glow.

NOTE

WHEN NOT IN USE, THE INSTRUMENT SHOULD ALWAYS BE TURNED OFF AND PLACED IN THE MODULE. THERE IS NO DANGER OF OVERCHARGING THE ENERGY CELL IN THE REICHERT ASTRO ENERGIZING MODULE WITH RATE SELECTOR SWITCH IN "NORMAL" POSITION.

Use of the Module Selector Switch

"Normal" Charging — At the "normal" setting the ASTRO Module is designed to maintain the battery in charged condition for full illumination in routine use at all times. At this setting the instrument may be left in the Module without danger of overcharge.

Except as described below the Module should always be set at the "normal" charge rate.

"Fast" Charging— The Fast charge setting increases the charge rate to the battery shortening the charging time significantly (5 to 6 hours from deep discharge). Under the normal use the Fast charging rate may never be needed — it is a convenience feature available on occasions of heavy use. For example, to insure bright illumination throughout a busy workday it may be found advantageous to charge at the fast rate between examinations.

NOTE

DURING "NORMAL" CHARGING CYCLES THE BASE OF THE INSTRUMENT HANDLE WILL BE WARM WHEN REMOVED FROM THE ENERGIZER. THIS IS A NORMAL CONDITION AND WILL NOT AFFECT THE PERFORMANCE OF THE INSTRUMENT. THE TEMPERATURE WILL INCREASE DURING "FAST" CHARGING — AGAIN A NORMAL CONDITION.

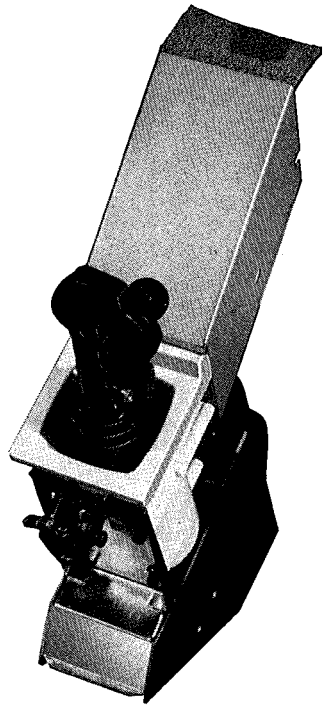
Prolonged Use Without Recharging

It is possible to use the instrument for reasonable periods without recharging between usage. For example, if planning hospital rounds, be certain the instrument is in full charge condition.

It is recommended that the charge not be allowed to completely drain because:

1. The illumination will drop considerably in only a few seconds when complete discharge is reached.
2. Several hours are required to recharge from complete discharge.
3. The life of the Energy Cell will be shortened if complete recharging is routinely required.
4. Frequent recharging at "Fast" setting or overextending the recommended "Fast" charging time will shorten the life of the Energy Cell.

Module 14182P (Cord Type Giantscope)



This module is for use with the Reichert Giantscope, FUL-VUE® Cord Handles, and other cord operated instruments. Two inserts are available, where required for fitting smaller instruments into the module.

14186 Insert for FUL-VUE 11423 Cord Handle

14188 Insert for B & L Copeland Streak Retinoscope

(Note: Installation instructions are included with inserts.)

Install Reichert cord operated instrument as follows:

1. Check to see that MAIN switch is "off".
2. Unless otherwise specified on your order, the voltage is preset at the factory for 6.5 V for normal use and 7.5 V for greater light intensity when required for short periods of time.

IMPORTANT

IF DIFFERENT VOLTAGES ARE REQUIRED, REFER TO CHANGING LOW VOLTAGE CONNECTIONS. SEE STEPS 22.1 THROUGH 22.3 BEFORE CONNECTING INSTRUMENT TO CORD.

3. Free cord and pull from module. Remove plastic jacket from brass contact of male plug.
4. Insert cord plug into base of handle. If using instrument not of Reichert manufacture, the plug on the cord will likely need to be changed. Plugs should be obtained from the manufacturer.

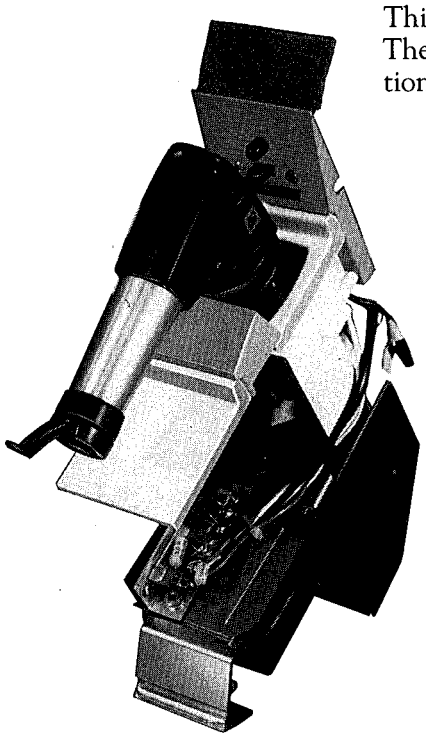
The instrument cord is a "reel" type. The principle is similar to that of a window shade. Pull cord to desired extension. Stop cord motion momentarily and allow it to retract slightly. The gravity action lock will quickly engage and hold the cord in extended position.

To retract, pull cord slightly to disengage lock and promptly allow cord to recoil. Insert instrument into module.

When using a Reichert Giantscope, leave instrument rheostat "on". When handle is placed into module and bottoms properly, it will automatically "trip" switch cutting off current to bulb. Upon removal, light will automatically go "on".

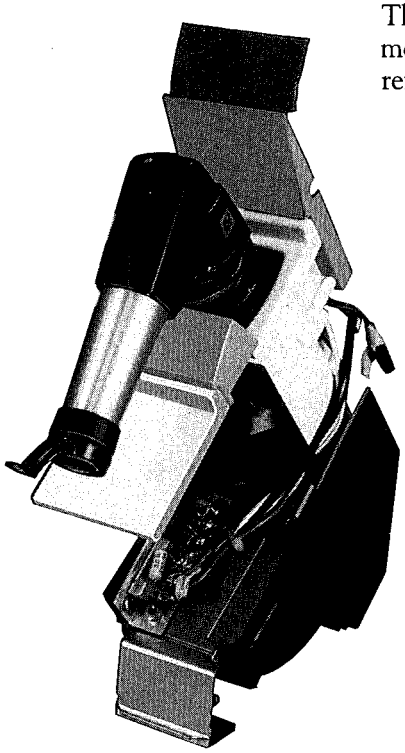
To change from normal voltage operation to the higher voltage setting, press the push button indicator/switch on the module. The switch will illuminate red, indicating that the instrument is being operated at the higher voltage.

Module 14183P (Rechargeable "305" Monocular Indirect Ophthalmoscope)



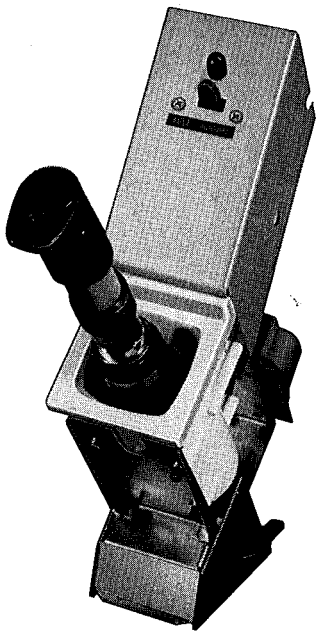
This module is for use with the ASTRO® Cordless "305" Ophthalmoscope. The module operates in the same manner as Module 14181P. For instructions, refer to Module 14181P.

Module 14184P (Cord Type "305" Monocular Indirect Ophthalmoscope)



This module is for use with the cord operated "305" Ophthalmoscope. The module operates in the same manner as Module 14182P. For instructions, refer to Module 14182P.

Module 14185P (Rechargeable FUL-VUE® Diagnostic Instruments)



This module is for use with the 11419 FUL-VUE rechargeable handle. The depth of the module has been preset at the factory at the medium depth. The depth of the module can easily be reset to accommodate different length instruments. Refer to instructions under Depth Adjustment section, below.

If the module has been ordered for use with a standard battery handle, a round polyurethane plug provided must be inserted in the module. Insert plug into module and push fully to bottom to make automatic recharging feature non-operative.

Depth Adjustment of 14185P Module

The well of the 14185P Module can be repositioned to set the depth for various length instruments. Three positions are available. To reset the depth of the module, proceed as follows:

NOTE

ALTHOUGH THE DEPTH ADJUSTMENT CAN BE ACCOMPLISHED WITH THE MODULE IN PLACE, IT MIGHT BE FOUND EASIER TO REMOVE THE MODULE TO ACCOMPLISH THIS ADJUSTMENT.

- ☐ 21.1 Remove rear cover. See steps 20.1 through 20.3.
- ☐ 21.2 Remove four screws 31-4 (Fig. 31).
- ☐ 21.3 Carefully slide plate with attached transformer to one of the other two positions, determined by combination of holes in plate. Be careful not to bend or crimp wires in base of module.
- ☐ 21.4 Reinstall screws and tighten.
- ☐ 21.5 Replace rear cover.

Changing Low Voltage Connections

☐ 22.1 The cord type Modules 14182P and 14184P, can be easily adapted to handle other voltages in the range of 2.5 to 12 volts. This is accomplished by simply changing the module leads on a unique, color-coded terminal board 29-1, positioned horizontally at the rear of the Control Console just inside cover.

☐ 22.2 Each module has three leads for making the connections. A blue lead (common), a plain black lead (higher voltage), and a black lead labeled "20" (lower voltage).

☐ 22.3 Remove rear cover and turn over. Refer to the wiring data found on the back of the rear cover (Fig. 33).

NOTE

THE BLUE LEAD IS COMMON TO ALL LOW VOLTAGES AND MUST BE LEFT CONNECTED TO ONE OF THE FOUR (BLUE) LOW VOLTAGE COMMON OUTLETS.

☐ 23.4 Grasp the red tip of the black terminal wire, labeled "20", firmly and pull from outlet. Remove other black lead in the same manner.

☐ 23.5 Select voltages desired from wiring data on back of rear cover (Fig. 33).

☐ 23.6 Place plain black terminal lead to the higher of two voltage outlets selected. The black terminal lead, labeled "20", must be placed in the lower of the two voltages selected. For example, if 6 volts (ORANGE outlet) and 7.5 volts (BROWN outlet) are required, place plain black lead in the brown outlet and the black lead, labeled "20", in the orange outlet.

NOTE

IF ONLY ONE VOLTAGE IS REQUIRED, THE BLACK LEAD LABELED "20" SHOULD BE CONNECTED. THE OTHER LEAD SHOULD THEN BE CONNNECTED TO AN EQUAL OR **LOWER** VOLTAGE FOR SAFE STORAGE (IT WILL NOT BE ACTIVATED UNLESS PUSH BUTTON SWITCH ON MODULE IS USED).

☐ 23.7 Replace rear cover of Control Console.

NOTE

SWITCHING FROM ONE VOLTAGE TO ANOTHER IS ACCOMPLISHED BY PRESSING THE BUTTON BELOW THE INSTRUMENT ON THE FRONT OF THE MODULE.

Changing Switch Positions on the Control Console

Switches have been positioned to accommodate general preference. However, if desired, the position of the push button switches on the Control Console may be interchanged. The switches that may be interchanged are: P-O-C, ARM and LAMP. The ROOM switch may also be interchanged if not wired for room lights.

Contact Reichert Technical Services Department, P.O. Box 123, Buffalo, NY 14240 for addition information.

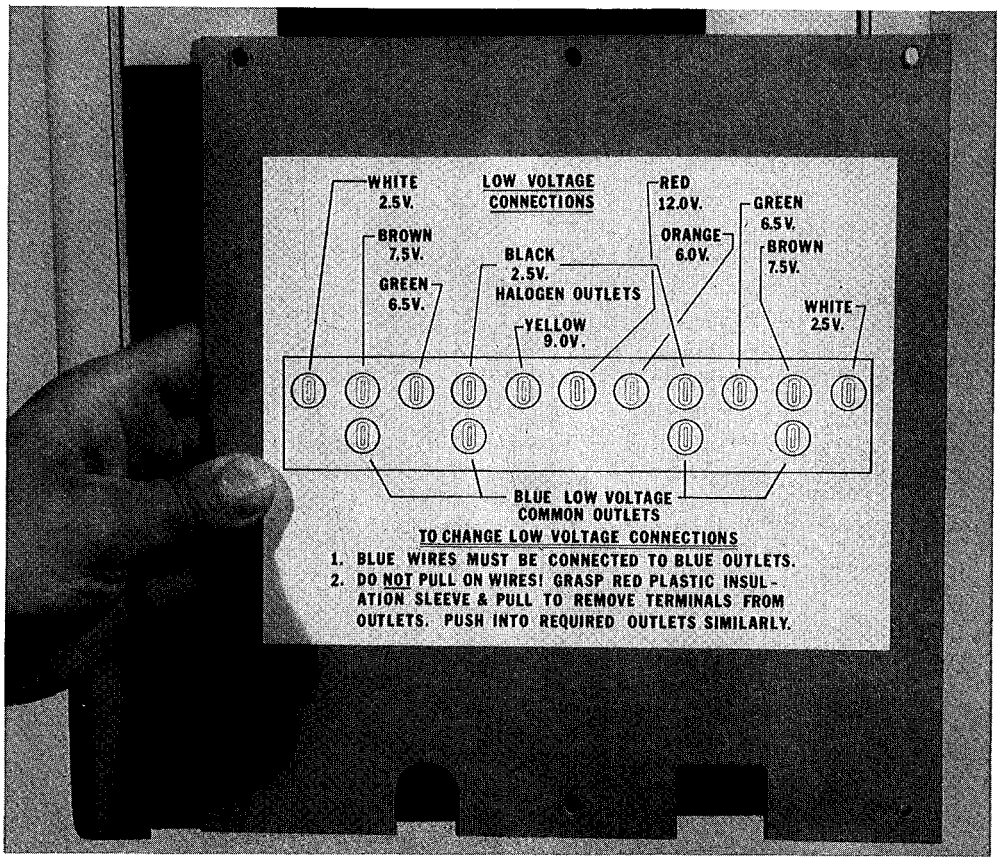


Figure 33

Resetting Circuit Breaker

A circuit breaker for low voltage cord operated instruments is incorporated into the Reichert Custom Console. If the circuit to any of the Cord Operated Hand Instrument Modules (14182P or 14184P) is broken, the instruments will not operate. To reset the circuit proceed as follows:

1. Wait a few moments for circuit breaker to cool.
2. Locate the reset button (Fig. 2) and press it in.

Your cord operated instrument(s) should once again be operable. If not, a short exists in the wiring and the reset button will again pop out, breaking the circuit. Check wiring and correct.

Stand and Base Outlets

There are four 115 V.A.C. outlets on the Stand for connecting instruments. Two are located at the top rear of the lower arm cover and two at the base. The two outlets located at the top rear of the lower arm cover are labled P-O-C and CONVENIENCE; the two at the base are labeled P-O-C and REMOTE. The use of four outlets is described below:

DO NOT OPERATE INSTRUMENTS FROM THESE OUTLETS WHICH EXCEED THE RATED AMPERAGE NOTED AT EACH OUTLET.

PROJECT-O-CHART® Projector (Stand)

Generally used for connecting PROJECT-O-CHART Projector mounted on upright post. Outlet is controlled by P-O-C switch on Control Console.

Convenience (Stand)

Used for connecting Console or additional instrument, such as instrument used on third counter-balanced arm. This outlet is always energized.

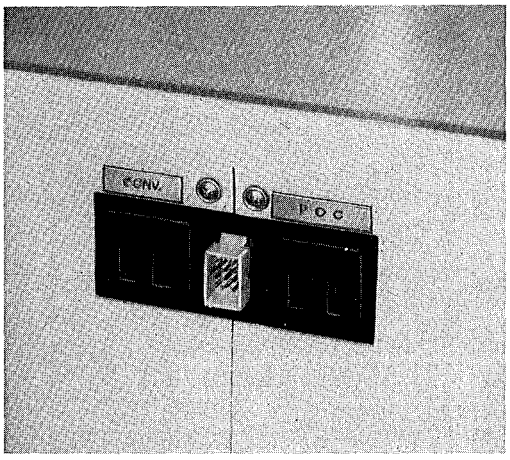


Figure 34

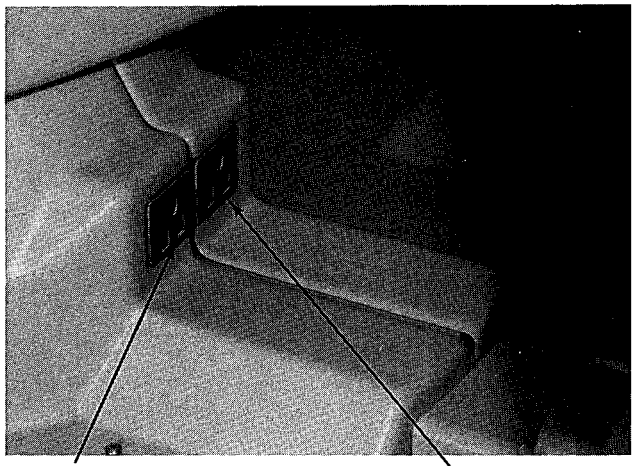


Figure 35

P-O-C (Base)

Generally used for connecting PROJECT-O-CHART Projector not mounted directly to Stand. Outlet is also controlled by P-O-C switch on Control Console.

Remote (Base)

Used for connecting additional instruments. Outlet is controlled by "Remote" switch on Console.

PHOROPTOR® (Refractor Arm Operation)

A single locking lever, 36-1, secures all Arm motions, rotation about the post, vertical "up" and "down" movement, and the pivoting action of the PHOROPTOR Refractor and mounting rod in relation to the Arm. (Turn lever away from Stand post to lock if right hand installation; Toward Stand post to lock if left hand installation.)

Raising and lowering of the unlocked Arm is easily achieved by grasping the PHOROPTOR Refractor with two hands and applying the necessary directional force. Centering horizontally before the patient's eyes is accomplished in the same manner.

Arm "folds" and "unfolds" as you vary horizontal extension. Positioning can also be accomplished by grasping the Arm or locking lever with one hand to raise and lower while the other hand guides the instrument up to the patient and controls the extending. After positioning, just a fraction of a turn of lever 36-1 locks all motions. Upon completing the refraction, unlock lever 36-1. Pull the entire Arm forward and upward to "clear" the PHOROPTOR Refractor from the the patient's face. Simultaneously, rotate the entire Arm about the post while folding the outer arm and PHOROPTOR Refractor rearward. Arm will only fold so that the refractor moves back toward the post.

Recommended PHOROPTOR Refractor storage position is with the Arm "fully" folded toward post and raised to maximum height. Arm is equipped with "limit stop" to protect PHOROPTOR Refractor from "contact" with Arm when Arm is fully folded.

Instrument Weight

When the Stand was shipped, the PHOROPTOR Refractor Arm was counterbalanced for a specific instrument weight. If for any reason the setting has to be changed, see instructions on page

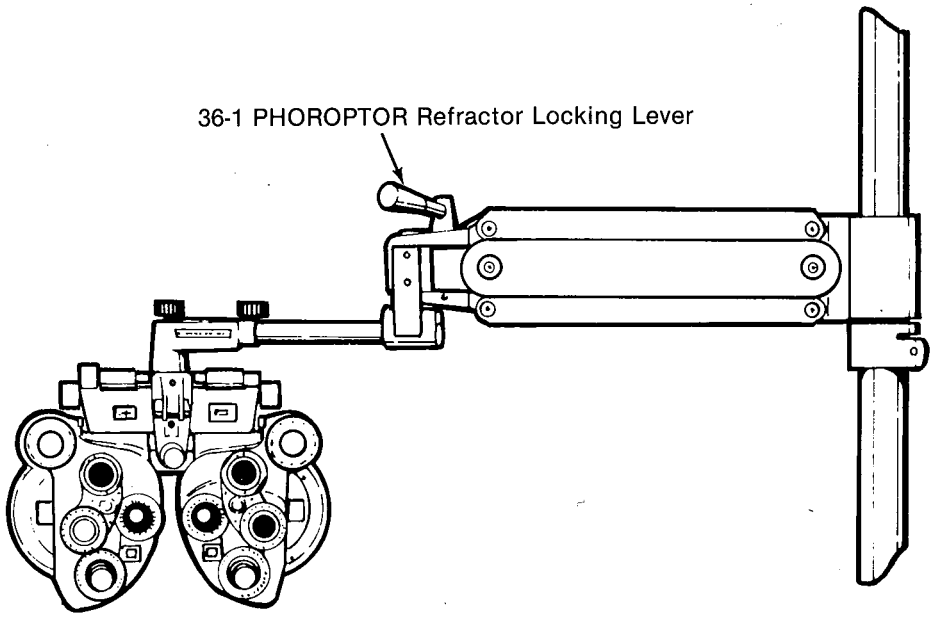


Figure 36

Overhead Lamp

Lamp arm is completely counterbalanced to hold any position. All motions are obtained by grasping the Lamp Shade and applying the necessary directional force. The bulb is recessed to help shade direct light from the practitioner's eyes. Entire arm rotates about the post. Stop prevents 360° rotation to protect the wiring. For "out-of-the-way" storage, push lamp "up" and "in" toward post simultaneously.

Standard Custom Lamp

Lamp Shade is mounted to a universal joint so that the light can be aimed over a wide area. Incandescent bulb used should not be larger than 60 watts. Switch on side of Lamp Shade has two settings: "Hi" for maximum light, "Lo" for subdued illumination. If left in the "Hi" or "Lo" setting, the Lamp may be turned on and off from the LAMP switch on the Control Console.

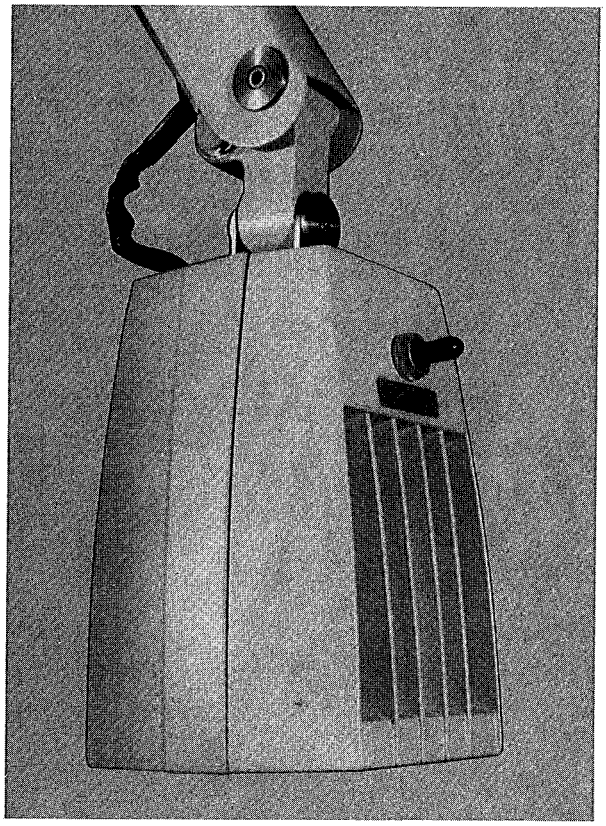


Figure 37

Adjustment to Counterbalancing Action of Lower Arm

NOTE

IF SPECIFIED WHEN ORDERED, THE LOWER ARM WAS COUNTERBALANCED AT THE FACTORY FOR THE SPECIFIC INSTRUMENT WEIGHT TO BE USED. IF NOT SPECIFIED, THE SINGLE LOWER ARM WAS COUNTERBALANCED FOR A REICHERT SLIT LAMP (30 LBS). THE DOUBLE LOWER ARM WAS COUNTERBALANCED FOR A SLIT LAMP AND NON-CONTACT TONOMETER AT 80 LBS.

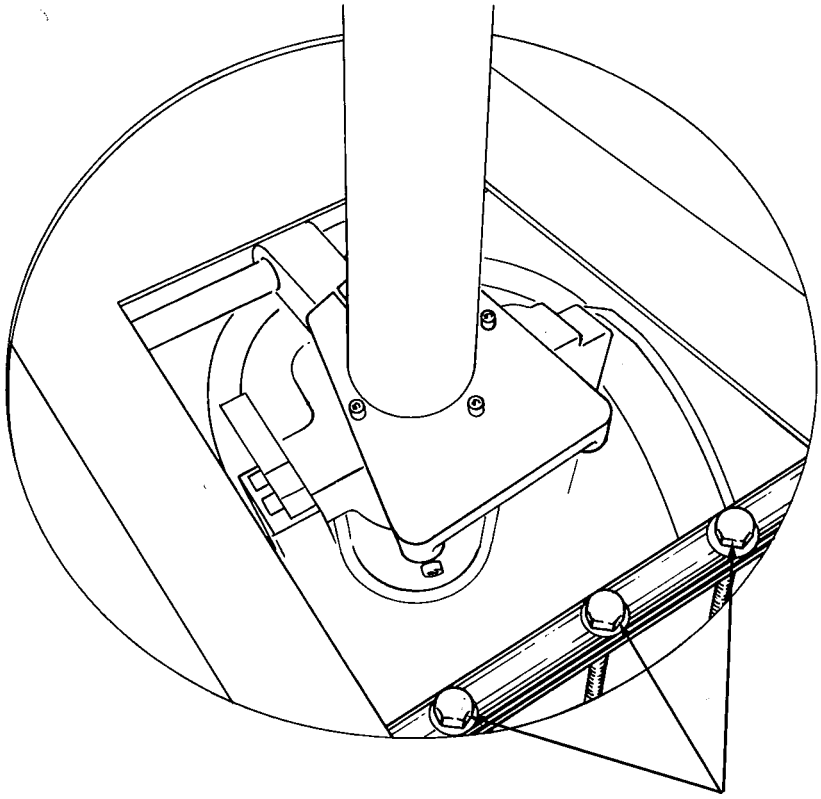


Figure 38

NOTE

PLACE THE LOWER INSTRUMENT ARM AT ITS HIGHEST POSSIBLE POSITION BEFORE REMOVING ANY INSTRUMENT. THIS ARM IS COUNTERBALANCED. IMPROPER HANDLING MAY RESULT IN IT JUMPING UP IF IT IS NOT IN THE HIGHEST POSSIBLE POSITION WHEN ANY INSTRUMENT HAS BEEN REMOVED

Minor Adjustment

- ☐ 24.1 Remove top cover 46-4 of Stand (Fig. 46) by grasping edges of lip and pulling upward; slide lid up post and tape to post.
- ☐ 24.2 With instruments in position, move lower arm to lowest position, which will raise crossbar up.
- ☐ 24.3 Note the three adjusting bolts 38-1 on top of the crossbar which are threaded into the three spring nuts.
- ☐ 24.4 Insert socket wrench down through top of cover support bracket to turn adjusting bolts.

☐ 24.5 Turn counterclockwise to decrease spring tension, and clockwise to increase spring tension.

☐ 24.6 Each bolt should be turned the same amount to keep the springs' tension equal.

☐ 24.7 As you make adjustments, test Arm through the vertical range for adequacy of counterbalance. Spring tension adjustment is a trial and error procedure. Repeat as necessary until desired performance is achieved.

☐ 24.8 Replace lid on lower arm cover.

☐ 24.9 Should you notice that the Arm still tends to "drift up" slightly from the lowest position or "drift down" slightly from the uppermost position, a *friction adjustment* can be made.

Note the three recessed socket head set screws in the polished clamp plate on the side of the Arm pictured in Figure 39.

To correct "upward drift", first slightly loosen the two forward holding screws. Next turn the two forward set screws *counterclockwise* to *increase* friction. Turn set screws a like amount.

To correct "downward drift", first slightly loosen the rear holding screw; then turn the single rear set screw *counterclockwise* to *increase* friction.

Should the Arm "stick" in either the high or low position, *decrease* tension by turning appropriate set screws *clockwise*; then tighten holding screws.

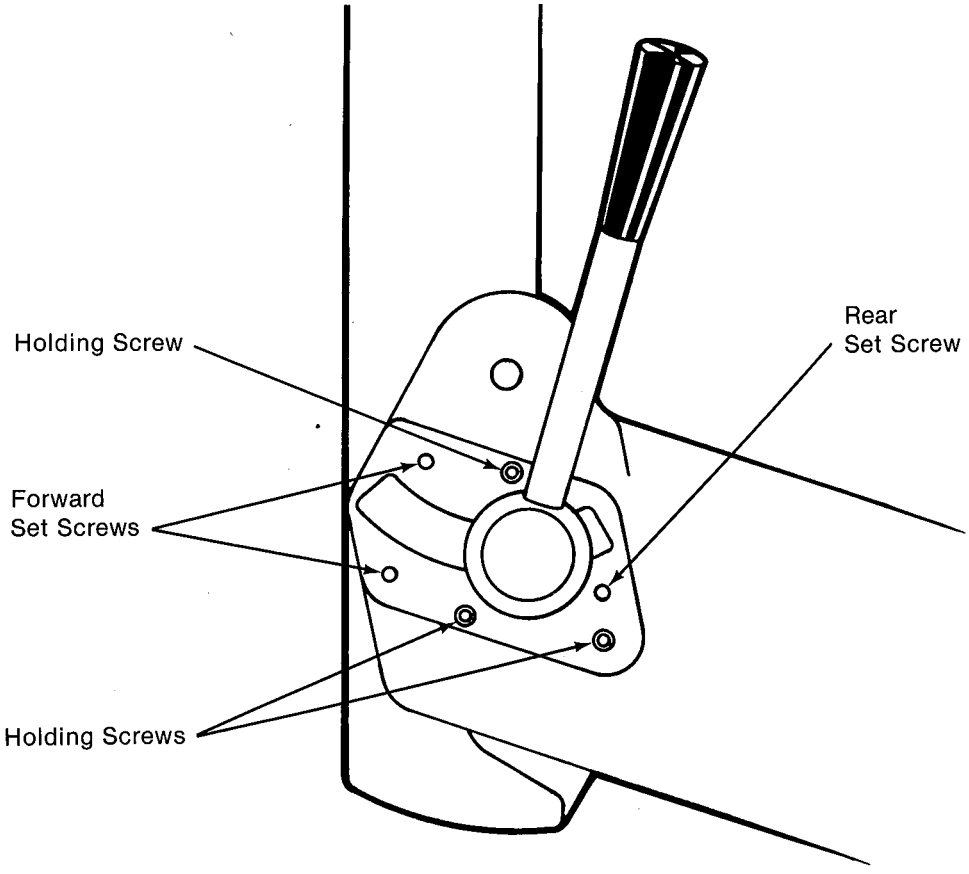


Figure 39

Adjustment to Counterbalancing Action of Lower Arm

Major Adjustment

NOTE

IT IS RECOMMENDED THAT THE FOLLOWING PROCEDURE BE PERFORMED BY A REICHERT SERVICE TECHNICIAN

NOTE

CAM SET NO. 14451-52 IS FOR COUNTERBALANCING INSTRUMENT WEIGHTS OF 15 TO 50 LBS. AND CAM SET NO. 14451-38 IS FOR COUNTERBALANCING INSTRUMENT WEIGHTS OF 50 LBS. TO 85 LBS.

☐ 25.1 For single arm with instruments weighing from 15-30 lbs., only two springs with cams No. 14451-52 are required. Springs should be on either side of center to balance crossbar.

☐ 25.2 For single or double instrument arm use with weights from 30 to 50 lbs., three springs and cams No. 14451-52 should be used.

☐ 25.3 For double instrument arm with instruments weighing 50 to 85 lbs., three springs and cams No. 14451-38 should be used.

To alter arrangements of springs, or change cams, follow these steps:

☐ 26.1 Remove overhead Lamp, PHOROPTOR, PHOROPTOR Arm, Console, and Console Arm from post.

☐ 26.2 Remove the lower arm cover lid 46-4, (Fig. 46) by pulling upward at lip.

☐ 26.3 Remove lower arm escutcheon (Fig. 46) by releasing spring clips.

☐ 26.4 Remove lower arm side covers by removing front and rear screws.

NOTE

EXTREME WEIGHT IS ENCOUNTERED WHEN SPRING TENSION IS REMOVED.

NOTE

RAISE ARM TO MAXIMUM HEIGHT, LOCK IN POSITION AND SUPPORT ARM IN UP POSITION WITH SECURE DEVICE. (THIS IS MOST IMPORTANT.)

☐ 26.4 Turn spring adjusting bolts conterclockwise until springs fall.

☐ 26.5 Lift crossbar off cam and arm lever.

☐ 26.6 Remove cams (Fig. 40) and replace with desired parts.

☐ 26.7 Replace crossbar onto cams. Be sure rollers are properly engaged to cam track before proceeding.

☐ 26.8 Replace spring adjusting bolts 38-1 (Fig. 38) through crossbar, and tighten until spring is upright and fully seated in groove on lower bar.

☐ 26.9 Tighten spring adjusting bolts equally until arm is balanced enough to support its own weight.

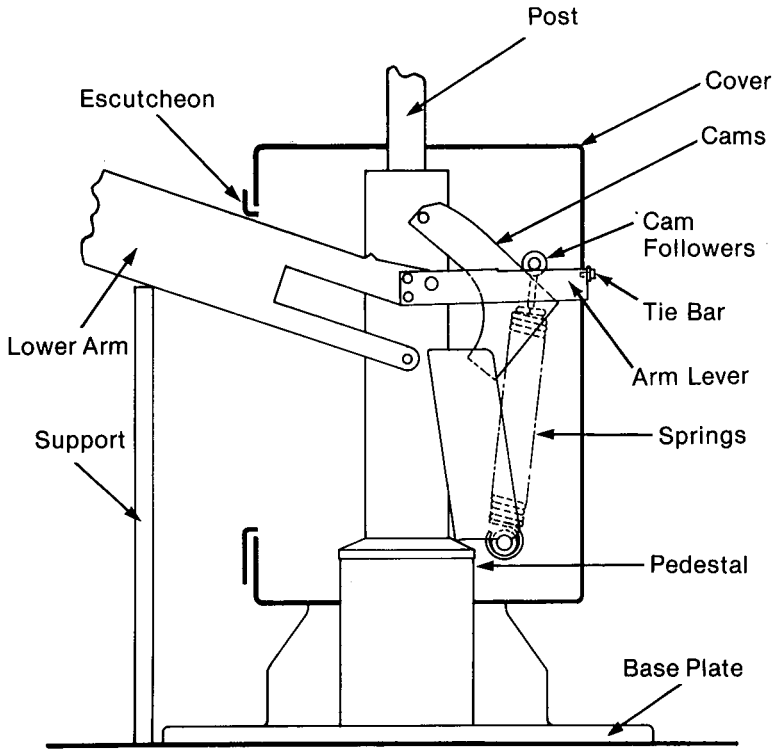


Figure 40

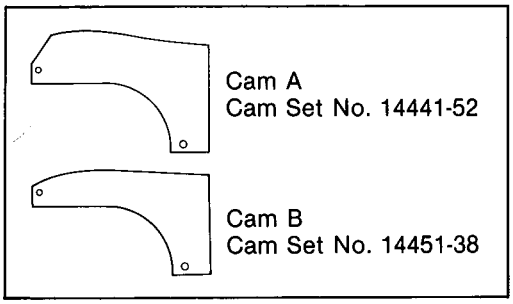


Figure 41

☐ 26.10 Remove support, and unlock arm.

☐ 26.11 Replace instruments and adjust three springs until instrument is adequately balanced.

☐ 26.12 Replace covers, and lid.

Adjusting Horizontal Rotation Stop for Lower Arm

Should working area be at a minimum, it may be desirable to limit Lower Arm rotation so that the Arm or Arm instrument will not "contact" wall or other obstruction. Where there is more than ample space, you may wish, because of personal working preference, to utilize the full outward (away from Chair) rotation range of the Arm. An adjustable "stop" is provided for this purpose. See instructions below.

CAUTION

UNDER NO CIRCUMSTANCES SHOULD THE "STOP" BE PERMANENTLY REMOVED TO ALLOW 360° ROTATION AS THE "STOP" ALSO PROTECTS THE ELECTRICAL WIRING FROM BEING DAMAGED.

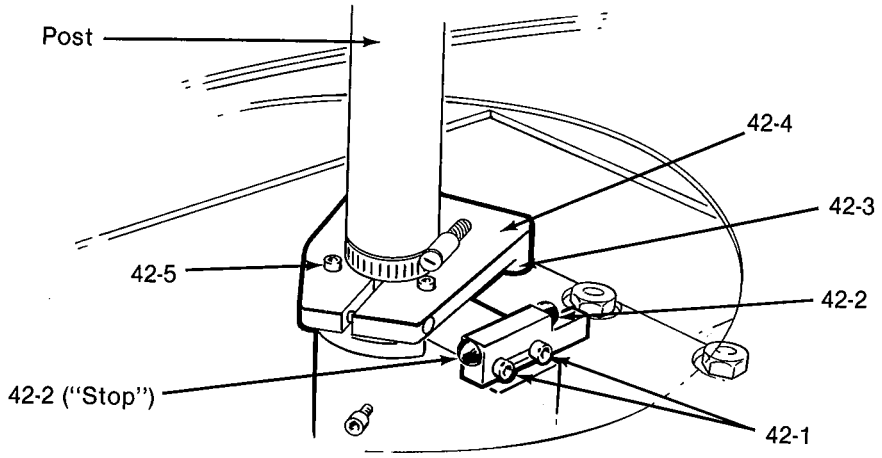


Figure 42

☐ 27.1 Remove top cover 46-4 on Stand (Fig. 46) by pulling up firmly on edges to disengage strip-type fasteners.

☐ 27.2 The "stop" (Fig. 42) is located at top of Stand pedestal section and is held in position by two "holding" screws, 42-1.

☐ 27.3 Loosen the two holding screws 42-1.

☐ 27.4 Rotate the Lower Arm outward or inward to the desired position. (The farthest point you wish the Lower Arm to rotate away from Chair.)

☐ 27.5 Slide "stop" until the rubber bumper 42-2 touches the projection 42-3 on the bottom of the clamp plate 42-4.

☐ 27.6 Retighten "stop" holding screws 42-1 firmly.

Adjustment of Counterbalancing Action of PHOROPTOR® Refractor Arm

Two situations may occur requiring adjustment of the counterbalancing action of the PHOROPTOR Arm.

A) Changing the type of PHOROPTOR used results in a significant weight differential. This requires a change in *spring tension*, and then a friction adjustment, to correctly counterbalance the Arm for the new instrument weight. This is described below under "Major Adjustment".

B) After extended usage, you may note that the PHOROPTOR Instrument Arm tends to "drift downward" slightly when moved to the maximum raised position or "drift upward" somewhat from the lowest position. This can be corrected by a *friction adjustment* described under "Minor Adjustment".

Minor Adjustment

Only one screw controls friction adjustment. That is the larger screw (5/32") at the rear position 43-2. Its specific purpose is the control of Arm movement at the extreme upper and the lowest positions.

Generally, the friction screw is used to correct for a "drifting downward" condition from the maximum raised position or "drifting upward" from the lowest position. However, it can also be used, by reducing friction, to eliminate a "sticking" condition in the high or low extremes. Follow these steps:

☐ 28.1 Hold the friction screw at 43-2 in position with the 5/32" hex wrench and simultaneously loosen the smaller set screw on the opposite side of Arm.

☐ 28.2 To *increase friction* to eliminate either "downward" or "upward" drift, turn 5/32" screw *clockwise*.

☐ 28.3 Adjust in small increments and check after each screw adjustment by moving Arm to maximum raised position and lowest position. Repeat as necessary.

☐ 28.4 When Arm holds in both extreme settings, discontinue friction adjustment. Now retighten smaller set screw on the other side of bushing while holding friction screw in place.

NOTE

IF ARM TENDS TO "STICK" IN EITHER FULLY RAISED OR LOWERED POSITION, FOLLOW THE ABOVE PROCEDURE EXCEPT TURN FRICTION SCREW COUNTERCLOCKWISE TO REDUCE FRICTION.

☐ 28.5 Check to see that screws 43-1 are "snug" but not tight. These screws merely hold side plates onto Arm. Avoid excess tightening as this will cause undue binding. Side plates should always retain sufficient freedom for vertical "play" during Arm movement.

Major Adjustment

29.1 Prior to counterbalancing adjustment, the Extension Rod 43-5 should be reset to the desired length if one wishes to deviate from the factory setting. If so:

- ☐ a) Remove screws 43-7 and bracket 43-4.
- ☐ b) Loosen set screws 43-8 and 43-9.
- ☐ c) Slide extension rod 43-5 in bracket 43-4 until desired length is obtained.
- ☐ d) Tighten set screws 43-8 and 43-9 securely.
- ☐ e) Reinstall bracket 43-4, securing with screws 43-7.

☐ 29.2 Mount complete PHOROPTOR® Instrument, Reading Rod, Card Holder and Reading Card to the Arm.

☐ 29.3 Access to the counterbalancing springs requires the removal of the two side plates 43-3, one on each side of Arm. They are held in place by socket head screws and bushings at 43-1 and 43-2.

☐ 29.4 Check to see that locking lever 43-6 is in unlocked position.

☐ 29.5 First at one position and then the other, use the 5/32" and 3/32" hex wrenches simultaneously, one on each side of Arm. Hold the larger screw in position with the wrench and loosen the smaller set screw, but do not remove.

☐ 29.6 Now carefully remove the two larger screws with the 5/32" hex wrench from front and rear.

☐ 29.7 Remove each side plate separately. Either "mark" each plate or set it aside in such a manner that it can be refastened later exactly as it was removed, side-for-side and end-for-end.

Take care not to drop the bushings, spacers and spring washers. Watch their respective positions as they must be restored to the same locations.

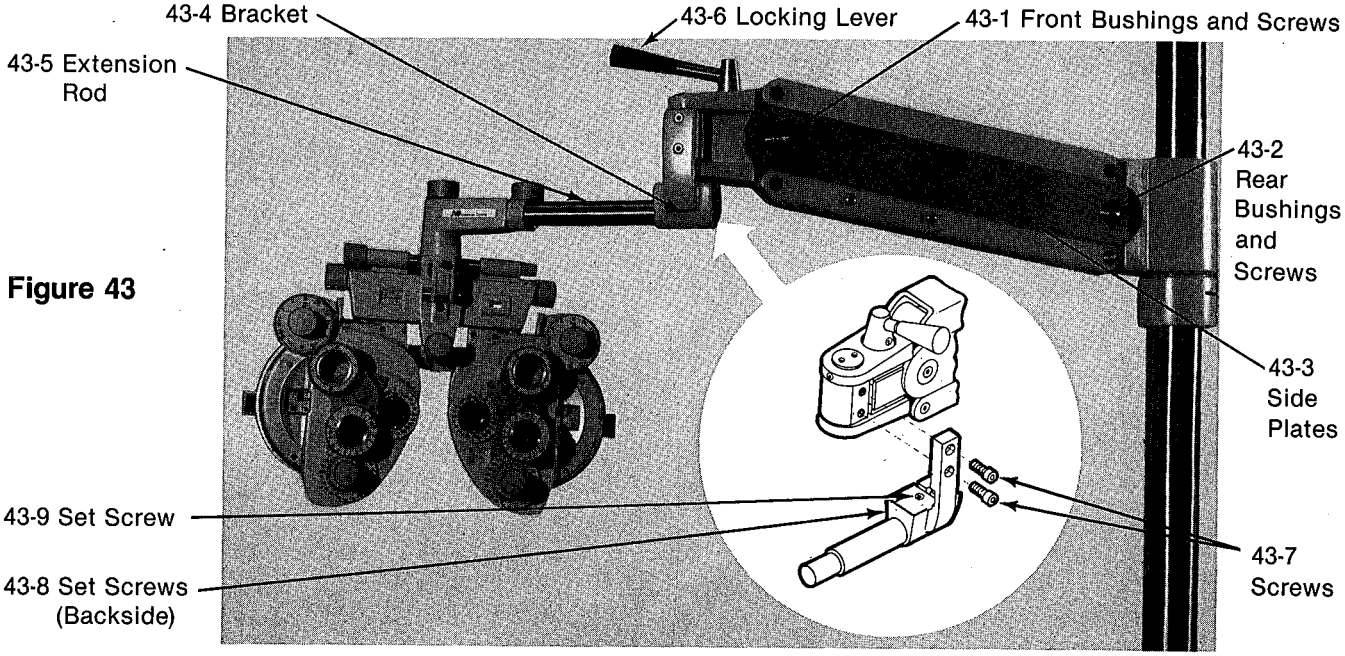


Figure 43

29.8 Note the adjustment wheels #1 and #2 shown in Fig. 44.

To *increase* spring tension for heavier instrument weight, turn wheels *clockwise*.

To *decrease* spring tension for lighter instrument weight, turn wheels *counterclockwise*.

29.9 Insert a screwdriver into slots of adjusting wheels to turn. Depress Arm to improve accessibility.

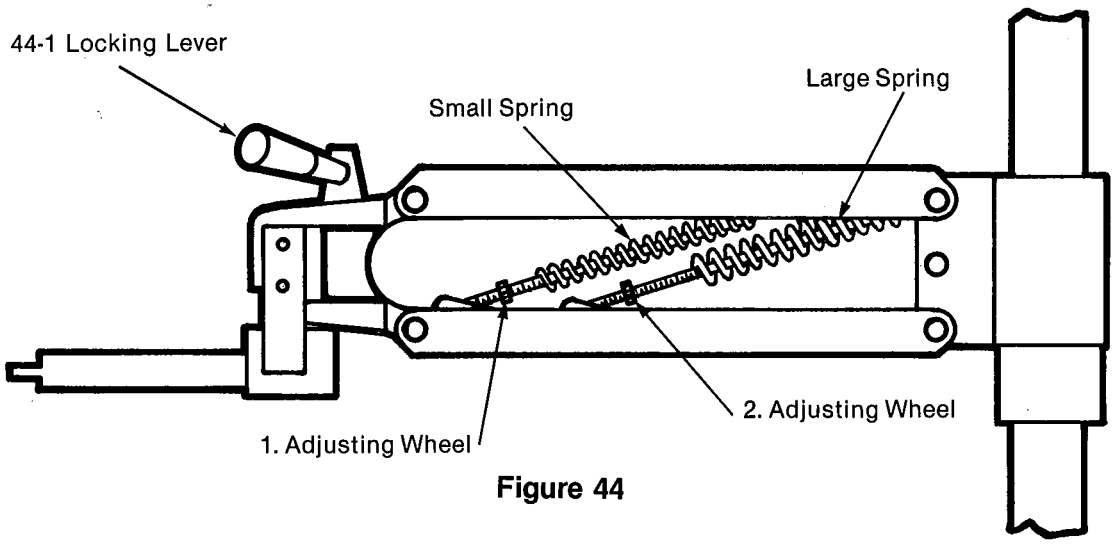


Figure 44

IMPORTANT

BEFORE YOU START TURNING, MAKE A "MARK" ON EACH WHEEL FOR A REFERENCE POINT. WHETHER INCREASING OR DECREASING SPRING TENSION, TURN WHEELS A *LIKE AMOUNT*.

TURN WHEELS, ALTERNATELY, A FULL REVOLUTION EACH TIME, UNTIL APPROXIMATE DESIRED TENSION IS ACHIEVED (AS DESCRIBED BELOW) THEN, IF NECESSARY, USE SMALLER TURNING INCREMENTS.

29.10 While *increasing tension* for heavier instrument weight, periodically check for desired spring counterbalancing action by moving Arm with instrument to maximum raised position. When the Arm "holds" at or close to this position, discontinue wheel adjustments.

While *decreasing tension* for lighter instrument weight, periodically check for desired spring counterbalancing section by moving Arm to lowest position. When the Arm is released and *just barely reaches* the maximum up position, discontinue wheel adjustments.

NOTE

IN EITHER ABOVE CASE, DO NOT BE CONCERNED WITH ARM HOLDING IN LOWEST POSITION. FURTHER COUNTERBALANCING ACTION IS MADE BY *FRICTION ADJUSTMENT*; THEREFORE, SIDE PLATES CAN BE REFASTENED TO ARM.

CHECK TO SEE THAT LOCKING LEVER 44-1 IS FULLY LOCKED. TURN TWO LARGER SCREWS UNTIL THEY ARE JUST "SNUG," NOT TIGHT, AND FOLLOW DIRECTIONS ENTITLED "MINOR ADJUSTMENT". READ INTRODUCTORY PARAGRAPHS ON PG. 46 , AND BEGIN WITH STEP 28.2.

Changing Chair from a Right-Hand Installation to a Left-Hand Installation (or vice versa)

When installing the Chair and Stand combination, the Stand will be to your right when facing the Chair for a right-hand installation and to your left for a left-hand installation.

☐ 30.1 Unless specified on the order, Chairs are shipped for right-hand installations. To convert a right-hand Chair to a left-hand one, do the following: Remove the seat cushion. The circular plate 45-1 may now be seen. Remove the four flat-head screws 45-2 and remove the plate 45-1.

☐ 30.2 Rotate the Chair body to face the opposite direction (Fig. 45), taking care to have the coiled cord on the proper side of the tubes. To do this, rotate the Chair so that the footrest passes over the position of the link on the Chair base. When viewed from the front of the Chair, the coiled cord will be on the right hand side of a right hand unit and on the left side of a left hand unit.

☐ 30.3 Replace the circular plate 45-1 in the same position that it was previously, with the projection 45-3 pointed toward the Stand and tighten the four screws 45-2. Control switches on the Chair back can be relocated by your Reichert Technical Services Technician.

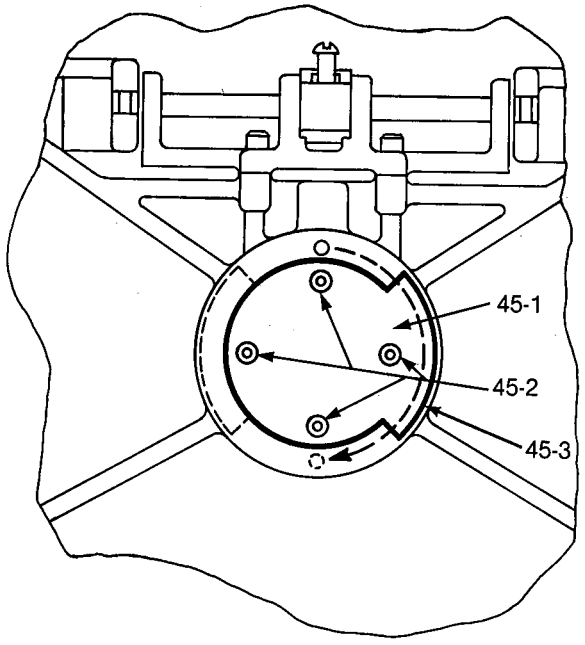


Figure 45

Changing Stand from a Right Hand to a Left Hand Installation (Or Left to Right)

Should it be necessary to alter Stand for use on the opposite side of Chair, proceed as follows:

NOTE

ALL INSTRUMENTS, ARMS, AND THE CONSOLE MUST BE REMOVED FROM THE POST.

☐ 30.4 Check to see that rotation locking lever 46-1 (Fig. 46) is in "unlocked" position.

☐ 30.5 Remove top cover 46-4 by pulling up firmly on edges to disengage strip type fasteners.

☐ 30.6 Locate the "stop" for the lower arm. It is just under the top cover of the Stand (Fig. 42).

☐ 30.7 Remove the two holding screws and washers 42-1 (Fig. 42). This will free the "stop".

☐ 30.8 Rotate "stop" end for end.

☐ 30.9 Using the two holding screws and washers, refasten "stop" to mount. Do not tighten screws.

NOTE

CONNECTING LINK BETWEEN CHAIR AND STAND WILL HAVE TO BE DETACHED BEFORE PERFORMING INSTRUCTION 30.10.

☐ 30.10 Rotate lower arm slowly (toward and over connecting link) as far to the opposite side of Stand as you wish.

☐ 30.11 Slide "stop" until rubber bumper touches the rotation limit screw.

☐ 30.12 Retighten the two "stop" holding screws firmly.

Loosen clamp screw 10-1 (Fig. 10) and rotate post so that threads hole at top of post faces rear of Stand.

Securely tighten clamp screw.

☐ 30.13 Replace top cover.

☐ 30.14 Loosen two socket head cap screws on lever mount 46-3 (Fig. 46) and unscrew mount from shaft by turning counterclockwise.

☐ 30.15 On the other side of arm, a purse handle knob will be found. Loosen the set screw on knob and unscrew from shaft by turning counterclockwise.

☐ 30.16 Replace purse handle knob on opposite end of lock shaft and tighten set screw.

- [ ] 30.17 Replace handle mount 46-3 on opposite end of lock shaft and tighten clamp screws.
- [ ] 30.18 Lock arm with lever and reposition handle by loosening clamp screws.
- [ ] 30.19 Unscrew lower arm lock lever 46-5 from mount. Watch for falling washers.
- [ ] 30.20 On other side of arm, a similar protuding handle mount will be found. Remove the button head screw from the mount.
- [ ] 30.21 Use button head screw to fill threaded hole in mount from which locking lever was removed.
- [ ] 30.22 Screw locking lever 46-5 with spring washer into handle mount at new position. Tighten by hand.
- [ ] 30.23 Remove PHOROPTOR® Refractor from the PHOROPTOR Refractor arm.
- [ ] 30.24 Unlock PHOROPTOR Refractor arm locking lever 46-7. Raise arm to maximum height and relock in this position.
- [ ] 30.25 Remove screws and rod bracket 46-8.
- [ ] 30.26 Loosen clamp set screw 46-9.
- [ ] 30.27 Remove rod from clamp and insert into other end of clamp. The end of the rod should be in the same position as it was originally, (i.e., end of rod flush with clamp face or protruding a certain previously determined distance).
- [ ] 30.28 Reset clamp screw firmly.
- [ ] 30.29 On the inside flat surface of the rod bracket 46-8 is a stop sccrew and a vacant threaded hole. Transfer screw from present position to the vacant hole.
- [ ] 30.30 Reassemble rod and bracket to the arm, holding the rod in a horizontal position.
- [ ] 30.31 Remove the two set screws from handle mount 46-11.
- [ ] 30.32 Turn handle and the mount 180°.
- [ ] 30.33 Visually line up the drilled spot in shaft with the holes in handle mount.
- [ ] 30.34 Reinsert set screws and tighten firmly.
- [ ] 30.35 Install PHOROPTOR Refractor. This completes conversion.

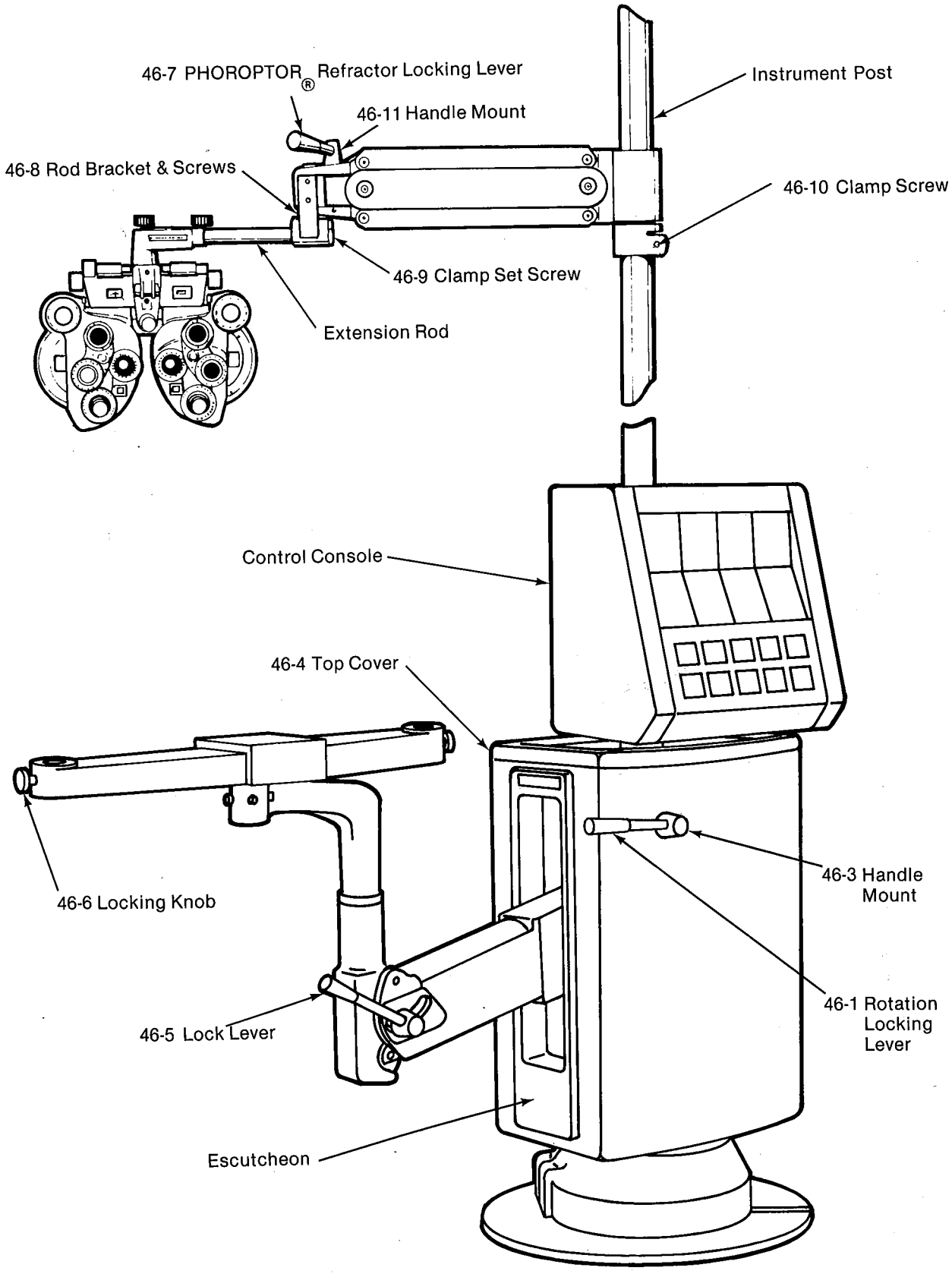
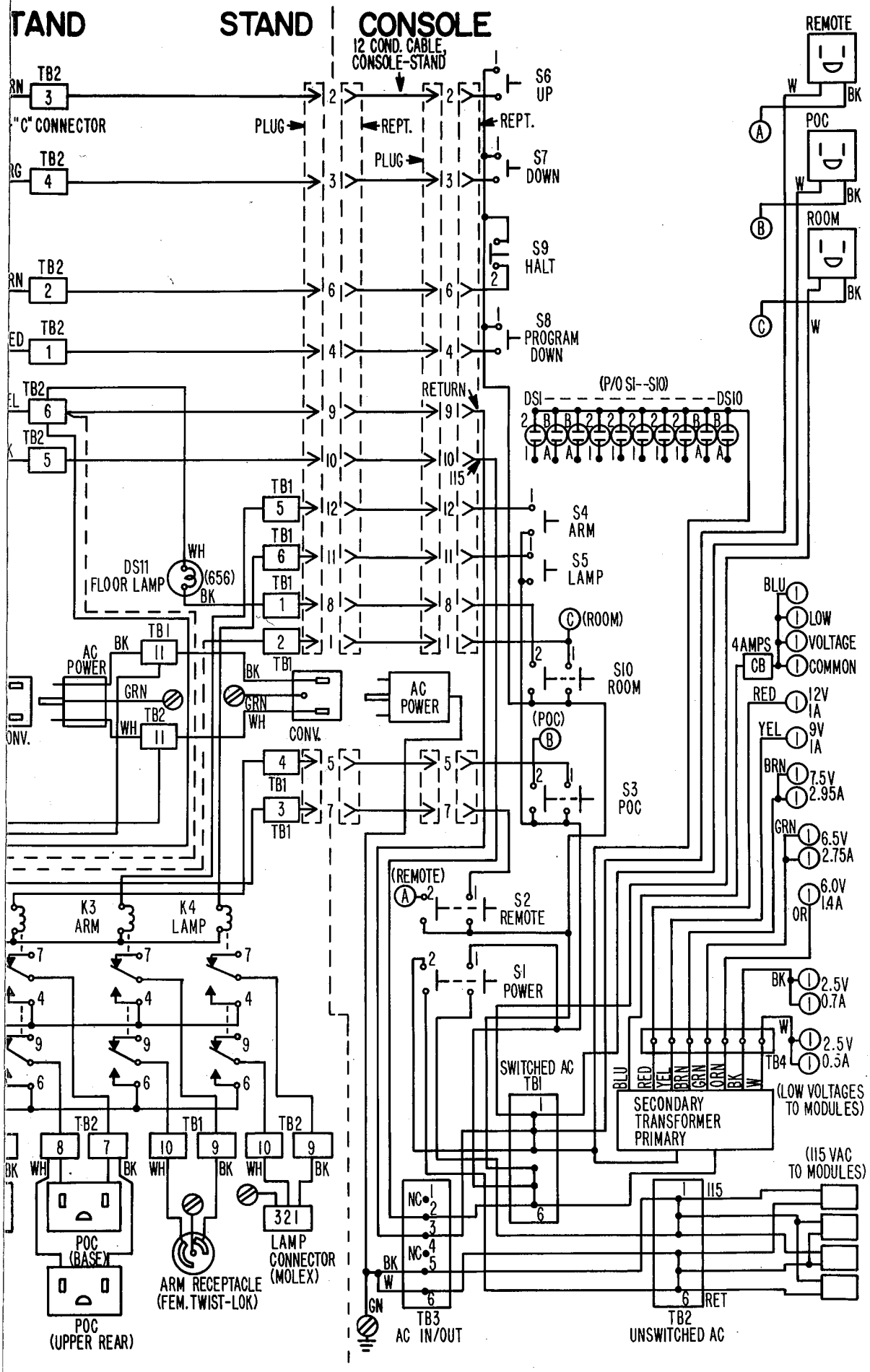
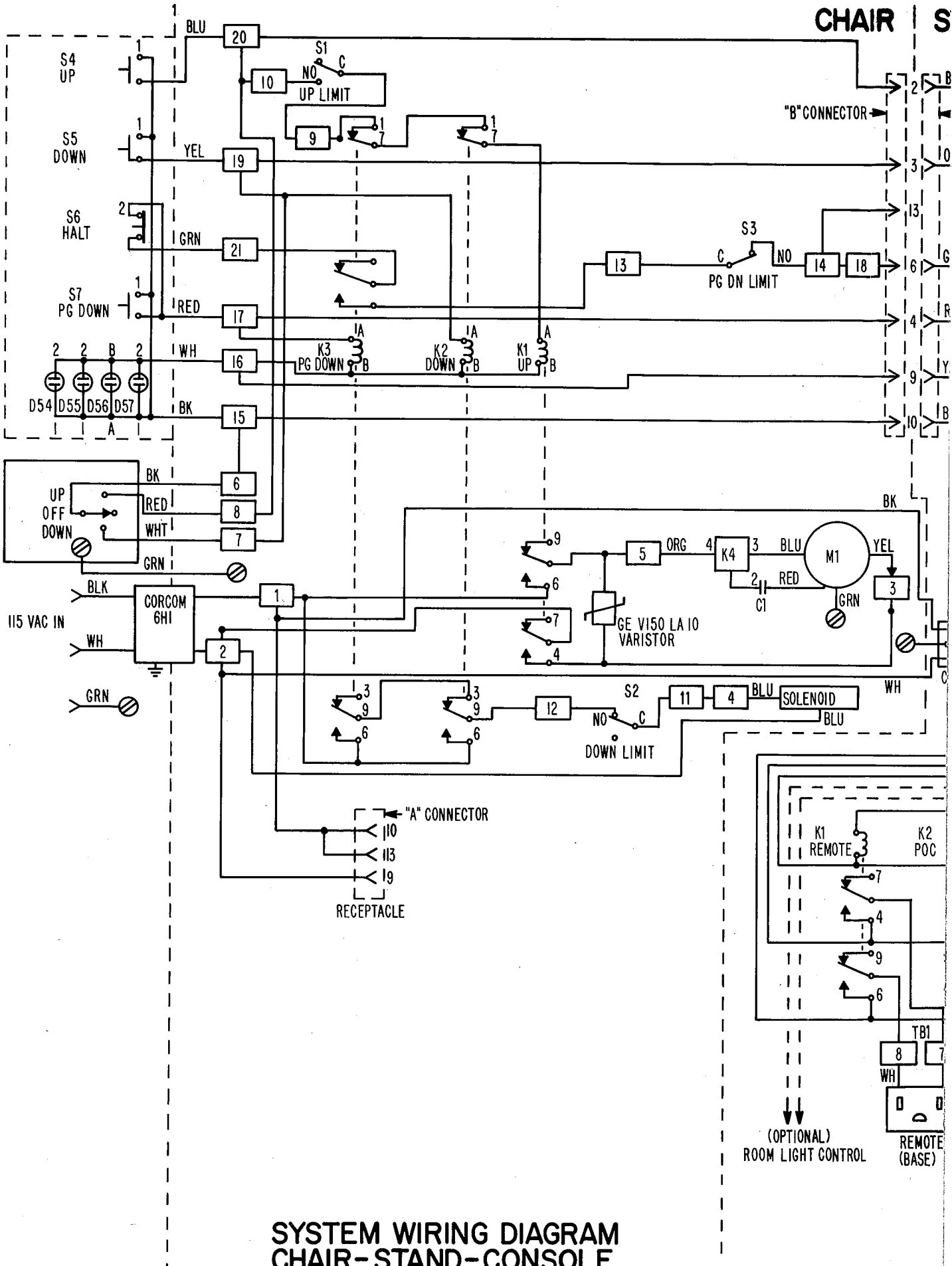

46-7 PHOROPTOR® Refractor Locking Lever
46-11 Handle Mount
Instrument Post
46-8 Rod Bracket & Screws
46-10 Clamp Screw
46-9 Clamp Set Screw
Extension Rod
Control Console
46-4 Top Cover
46-6 Locking Knob
46-3 Handle Mount
46-1 Rotation Locking Lever
46-5 Lock Lever
Escutcheon

Figure 46


TAND
STAND
CONSOLE
12 COND. CABLE, CONSOLE-STAND
"C" CONNECTOR
PLUG
REPT.
S6 UP
S7 DOWN
S9 HALT
S8 PROGRAM DOWN
RETURN
115
S4 ARM
S5 LAMP
S10 ROOM
S3 POC
S2 REMOTE
S1 POWER
REMOTE
POC
ROOM
(P/O S1--S10)
DS1
DS10
DS11 FLOOR LAMP
(656)
AC POWER
CONV.
(ROOM)
(POC)
(REMOTE)
K3 ARM
K4 LAMP
BLU
LOW VOLTAGE COMMON
4 AMPS
CB
RED 12V 1A
YEL 9V 1A
BRN 7.5V 2.95A
GRN 6.5V 2.75A
6.0V 1.4A
OR
BK 2.5V 0.7A
2.5V 0.5A
TB4
SWITCHED AC TB1
SECONDARY TRANSFORMER PRIMARY
(LOW VOLTAGES TO MODULES)
(115 VAC TO MODULES)
POC (BASE)
POC (UPPER REAR)
ARM RECEPTACLE (FEM. TWIST-LOK)
LAMP CONNECTOR (MOLEX)
TB3 AC IN/OUT
TB2 UNSWITCHED AC
RET



SYSTEM WIRING DIAGRAM
CHAIR-STAND-CONSOLE

We've Changed Our Name from AO to Reichert

Reichert™

Reichert Ophthalmic Instruments
Warner-Lambert Technologies, Inc.
P.O. Box 123, Buffalo, New York 14240 U.S.A.
(716) 891-3000

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