



**HOWARD INSTRUMENTS INC.**  
**PHACOJACK<sup>®</sup>**

**THE PHACOSYSTEM**  
**OPERATOR'S MANUAL**



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PhacoJack<sup>®</sup>  
THE Phacosystem

## SECTION 1 INTRODUCTION

- 1.1 GENERAL INFORMATION** THE PHACOJACK® PHACOSYSTEM IS A SOPHISTICATED SURGICAL TOOL DESIGNED FOR OPHTHALMIC SURGEONS. IT IS INTENDED TO BE USED ONLY BY THOSE SURGEONS FAMILIAR WITH EXTRACAPSULAR CATARACT EXTRACTION (ECCE) AND/OR PHACO-EMULSIFICATION (PHACO). IT IS DESIGNED AND MANUFACTURED TO BE RELIABLE, SAFE AND EASY TO OPERATE.
- 1.2 SAFETY** THE PHACOJACK® PHACOSYSTEM IS DESIGNED TO PROMOTE OPERATOR SAFETY WHEN USED PROPERLY. THE PHACOJACK® CONFORMS TO THE STANDARDS SET FORTH BY UNDERWRITERS LABORATORIES INC. FOR MEDICAL AND DENTAL EQUIPMENT (UL544).
- THE OPERATOR OF THIS SYSTEM MUST READ THIS OPERATOR'S MANUAL CAREFULLY AND BECOME FAMILIAR WITH ALL THE WARNINGS. THE WARNINGS CONTAINED IN THIS MANUAL ARE IMPORTANT AND MUST BE FOLLOWED.
- 1.3 HOW TO USE THIS MANUAL** THIS MANUAL IS YOUR GUIDE TO THE PHACOJACK®. READ THE ENTIRE MANUAL CAREFULLY BEFORE OPERATING THE INSTRUMENT. THE SURGICAL TEAM SHOULD BE EXPERIENCED WITH THE SYSTEM AND IS **SOLELY RESPONSIBLE FOR THE PROPER SETTINGS FOR ALL SURGICAL PROCEDURES.**

THE MANUAL IS ORGANIZED TO ENABLE THE USER TO DO THE FOLLOWING:

- \* BECOME AWARE OF THE SAFETY PRECAUTIONS FOR WORKING WITH THIS SYSTEM.
- \* BECOME ACQUAINTED WITH THE OVERALL CONCEPT, LAYOUT, USE AND INTERRELATIONSHIPS OF THE SYSTEM.
- \* LEARN THE BASIC OPERATING PROCEDURES OF THE SYSTEM.
- \* LEARN THE RECOMMENDED SYSTEM SETUP PROCEDURE FOR EACH SURGICAL HANDPIECE.
- \* BECOME FAMILIAR WITH THE NECESSARY POSTSURGICAL DISASSEMBLY PROCEDURES AND MAINTENANCE OF THE SYSTEM.
- \* LEARN TO TROUBLESHOOT MINOR PROBLEMS.
- \* KNOW THE SPECIFICATIONS OF THE SYSTEM.
- \* ORDER REPLACEMENT PARTS AND ACCESSORIES.

#### **1.4 TERMS OF LIMITED WARRANTY**

HOWARD INSTRUMENTS, INC. WARRANTS FOR A PERIOD OF TWO (2) YEARS FROM THE DATE OF SHIPMENT, THE PHACOJACK® AND ALL ITEMS SHIPPED WITH THE UNIT, EXCEPT THE ULTRASONIC (U/S) HANDPIECE, WHICH HOWARD INSTRUMENTS WARRANTS FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF SHIPMENT, TO BE FREE FROM DEFECTS IN MATERIALS AND WORKMANSHIP WHEN PROPERLY INSTALLED, MAINTAINED AND USED FOR THE INTENDED PURPOSE. THIS WARRANTY APPLIES ONLY TO THE ORIGINAL PURCHASER/USER OF THE INSTRUMENT, AND ONLY SO LONG AS THE EQUIPMENT IS USED IN THE COUNTRY TO WHICH IT WAS ORIGINALLY SHIPPED.

THIS WARRANTY IS NULL AND VOID IF THE USER ATTEMPTS TO SERVICE THE EQUIPMENT OTHER THAN PERFORMING THE PROCEDURES DESCRIBED IN THIS MANUAL, OR IF THE SERVICE IS PERFORMED BY PERSONS WHO ARE NOT TRAINED AND AUTHORIZED TO DO SO. IF THE UNIT IS FOUND TO BE DEFECTIVE WITHIN THE PERIOD SPECIFIED ABOVE AFTER EXAMINATION BY AN AUTHORIZED SERVICE REPRESENTATIVE, AND HOWARD INSTRUMENTS IS SATISFIED THAT THE FAILURE WAS DUE TO DEFECTIVE MATERIALS AND/OR WORKMANSHIP, HOWARD INSTRUMENTS WILL REPAIR OR, AT ITS OPTION, REPLACE THE DEFECTIVE PARTS WITHOUT CHARGE.

HOWARD INSTRUMENTS, INC. RESERVES THE RIGHT TO MAKE SUCH AN EXAMINATION AND TO MAKE NECESSARY REPAIR/REPLACEMENT IN ITS OWN FACTORY OR AT ANY AUTHORIZED REPAIR STATION, OR AT THE PURCHASER'S/ USER'S PLACE OF INSTALLATION. ANY SHIPPING CHARGES INCURRED SHALL BE PAID BY THE PURCHASER/USER OF THE EQUIPMENT. DISPOSABLE OR CONSUMABLE ITEMS ARE NOT COVERED BY THIS WARRANTY.

THE WARRANTY ABOVE IS THE SOLE WARRANTY OBLIGATION OF HOWARD INSTRUMENTS AND THE REMEDY PROVIDED ABOVE IS LIEU OF ANY AND ALL OTHER REMEDIES. THERE ARE NO OTHER AGREEMENTS, GUARANTEES, OR WARRANTIES, ORAL OR WRITTEN, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. HOWARD INSTRUMENTS SHALL HAVE NO LIABILITY WHATSOEVER FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING FROM IMPROPER USE OR UNAUTHORIZED SERVICE/REPAIR.

**1.5 UNPACKING  
SYSTEM  
INSPECTION**

YOUR PHACOJACK<sup>®</sup> HAS BEEN INSPECTED AND CAREFULLY PACKAGED FOR SHIPPING. PLEASE INSPECT IT FOR SHIPPING DAMAGE. IF THE SHIPPING CONTAINER IS DAMAGED TO THE EXTENT THAT THE EQUIPMENT MAY BE DAMAGED, DO NOT ATTEMPT TO UNPACK. PLEASE NOTIFY BOTH THE FREIGHT COMPANY AND HOWARD INSTRUMENTS IMMEDIATELY. UNPACK ONLY IN THE PRESENCE OF THE FREIGHT COMPANY REPRESENTATIVE.

IF THE SHIPPING CONTAINER APPEARS INTACT, CAREFULLY REMOVE ITS CONTENTS AND ACCESSORIES FROM THE SHIPPING CONTAINER AND CHECK FOR LOOSE, BROKEN OR MISSING PARTS. PLEASE COMPARE THE PACKING SLIP WITH THE RECEIVED PRODUCT AND REPORT ANY DISCREPANCY TO HOWARD INSTRUMENTS, INC.

AFTER UNPACKING, THE SHIPPING CONTAINER AND PACKING MATERIAL SHOULD BE SAVED IN THE EVENT OF ANY RETURN.

**1.6 RETURN  
PROCEDURE**



PRIOR TO RETURN OF A UNIT, OR ANY PORTION THEREOF, HOWARD INSTRUMENTS, INC. MUST BE CONSULTED TO AVOID ANY UNNECESSARY SHIPPING. IF RETURN IS DEEMED NECESSARY, A RETURNED MATERIALS AUTHORIZATION (RMA) NUMBER WILL BE ASSIGNED. THIS NUMBER MUST BE CLEARLY MARKED ON THE OUTSIDE OF THE SHIPPING CONTAINER.

## SECTION 2 BASIC SYSTEM INFORMATION

- 2.1 BASIC SYSTEM COMPONENTS** THE COMPLETE PHACOJACK<sup>®</sup> CONSISTS OF THE COMPONENTS SHOWN IN FIGURE 1 (PAGE 8). ALSO SHOWN ARE THE ACCESSORIES AND DISPOSABLES NOT NORMALLY SUPPLIED BY HOWARD INSTRUMENTS, INC. EXCEPT FOR THE DISPOSABLES, THE USER HAS SIGNIFICANT FREEDOM IN CHOOSING THE ACCESSORY THAT BEST SUITS HIM. PLEASE CONTACT YOUR SALES REPRESENTATIVE FOR COMPATIBILITY/SUITABILITY OF A PARTICULAR ACCESSORY THAT YOU WISH TO USE.
- 2.2 GENERAL DESCRIPTION** THE PHACOJACK<sup>®</sup> IS AN OPHTHALMIC SURGICAL INSTRUMENT FOR ECCE. THE OPHTHALMIC SURGEON HAS THE CHOICE TO REMOVE THE NUCLEUS FROM THE EYE MANUALLY OR TO EMULSIFY THE NUCLEUS WITH PHACO. FOLLOWING THE ECCE, PHACOJACK<sup>®</sup> ASPIRATES CATARACTOUS AND/OR CORTICAL MATERIAL FROM THE EYE.
- A RELATIVELY CONSTANT INTRAOCULAR PRESSURE (IOP) IS MAINTAINED THROUGH THE INFUSION OF A STERILE SOLUTION, SUCH AS BASIC SALT SOLUTION (BSS). IOP IS ADJUSTED BY RAISING/LOWERING THE IRRIGATION SOLUTION CONTAINER.
- VIT IS USED TO CUT AND ASPIRATE VITREOUS. CAUTERY IS USED TO CAUTERIZE BLOOD VESSELS.
- 2.3 SPECIFICATIONS** PHACOJACK<sup>®</sup> SPECIFICATIONS ARE SHOWN IN FIGURES 2-3 (PAGES 9-10).
- 2.4 FEATURES & BENEFITS** PHACOJACK<sup>®</sup> FEATURES & BENEFITS ARE SHOWN IN FIGURES 4-6 (PAGES 11-13).
- 2.5 MODES & FUNCTIONS** A DESCRIPTION OF EACH MODE OR FUNCTION OF THE PHACOJACK<sup>®</sup> IS GIVEN IN FIGURE 7 (PAGE 14).

## 2.6 SURGICAL TEAM

THE FOLLOWING SURGICAL TEAM IS PRESUMED:

- SCRUB NURSE 
- CIRCULATING NURSE 

ANY QUESTIONS PERTAINING TO THESE INSTRUCTIONS SHOULD BE DIRECTED TO HOWARD INSTRUMENTS, INC. WHILE HOWARD INSTRUMENTS HAS MADE SPECIAL EFFORTS TO ILLUSTRATE, IT IS THE RESPONSIBILITY OF THE USER TO USE ACCEPTABLE STERILE TECHNIQUES.

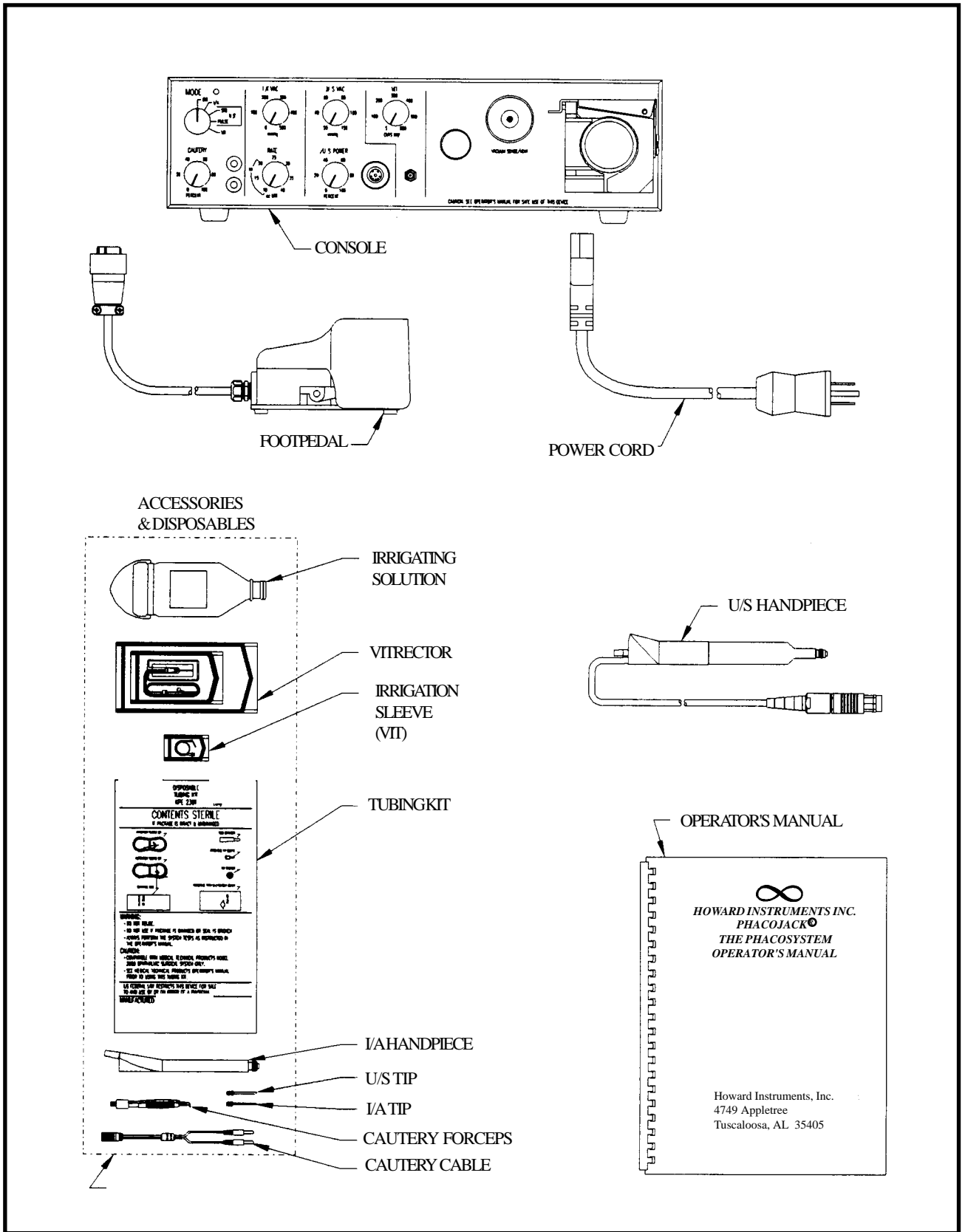
<b>SECTION 3    OPERATING INSTRUCTIONS</b>
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- |                                     |   |
|-------------------------------------|---|
| <b>3.1    U/S HANDPIECE</b>         | THE SURGICAL TEAM SHOULD BE FAMILIAR WITH THE SETUP & TEST PROCEDURES DESCRIBED IN FIGURES 8-16 (PAGES 15-23) FOR THE U/S HANDPIECE.          |
| <b>3.2    I/A HANDPIECE</b>         | THE SURGICAL TEAM SHOULD BE FAMILIAR WITH THE SETUP & TEST PROCEDURES DESCRIBED IN FIGURES 18-26 (PAGES 25-33) FOR THE I/A HANDPIECE.         |
| <b>3.3    VITRECTOR</b>             | THE SURGICAL TEAM SHOULD BE FAMILIAR WITH THE SETUP & TEST PROCEDURES DESCRIBED IN FIGURES 28-33 (PAGES 35-40) FOR THE VITRECTOR.             |
| <b>3.4    CAUTERY<br/>HANDPIECE</b> | THE SURGICAL TEAM SHOULD BE FAMILIAR WITH THE SETUP & TEST PROCEDURES DESCRIBED IN FIGURES 34 & 35 (PAGES 41 & 42) FOR THE CAUTERY HANDPIECE. |

## SECTION 4 MAINTENANCE

- 4.1 CLEANING** IMMEDIATELY AFTER EACH SURGICAL PROCEDURE, DISASSEMBLE THE TUBING AND CLEAN THE I/A & U/S HANDPIECES PER FIGURES 17 & 27 (PAGES 24 & 34).
- THE CONSOLE AND FOOTPEDAL MAY BE CLEANED WITH A SOFT DAMP (NOT WET) CLOTH. ALWAYS DISCONNECT THE POWER CORD BEFORE CLEANING.
- 4.2 MAINTENANCE** EXCEPT FOR CLEANING, THE CONSOLE AND FOOTPEDAL REQUIRE NO PERIODIC MAINTENANCE. THERE ARE NO USER-SERVICABLE PARTS INSIDE. REFER ALL REPAIRS AND SERVICING TO HOWARD INSTRUMENTS, INC. OPENING THE CONSOLE OR FOOTPEDAL ENCLOSURE WILL VOID THE WARRANTY.
- 4.3 STORING THE INSTRUMENT** WHEN THE INSTRUMENT IS NOT IN USE, DISASSEMBLE IN TUBING AND CLEAN THE EQUIPMENT AS DESCRIBED IN SECTION 4.1. STORE THE UNIT IN A SAFE PLACE.

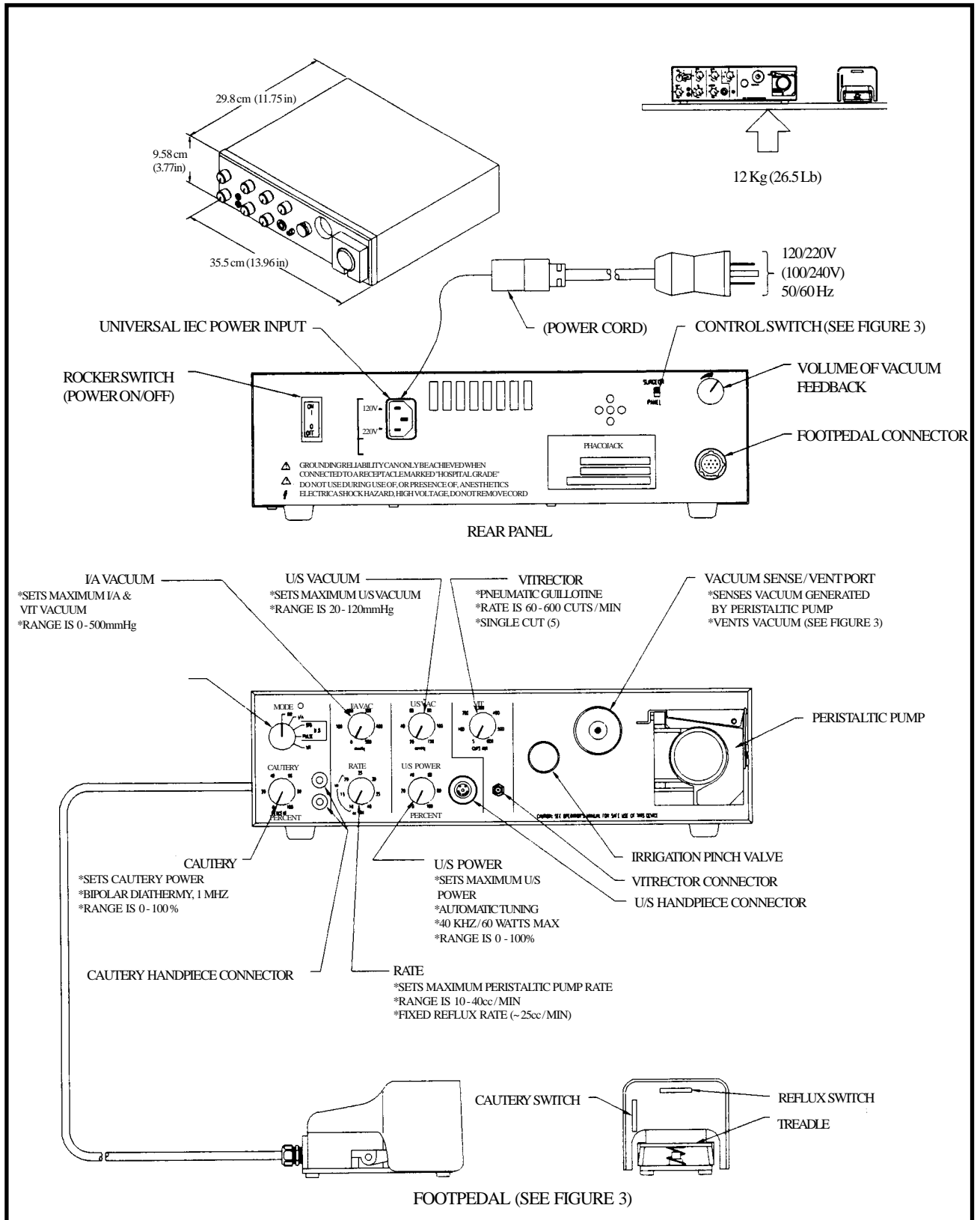




**BASIC SYSTEM COMPONENTS**

**FIGURE 1**

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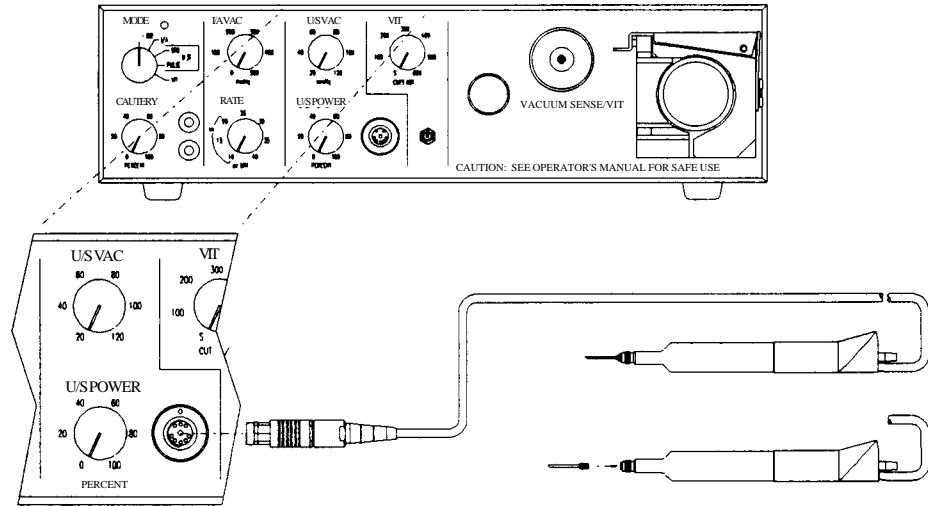
**SPECIFICATIONS (CONSOLE)  
 FIGURE 2**

PhacoJack®  
 THE Phacosystem

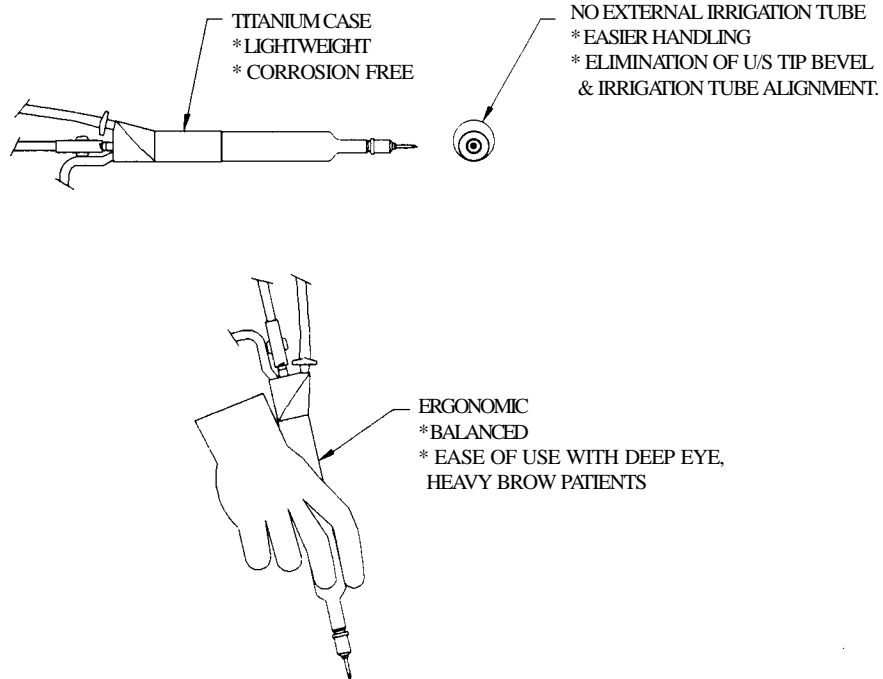


**\*ADVANCED AUTOMATIC TUNING**

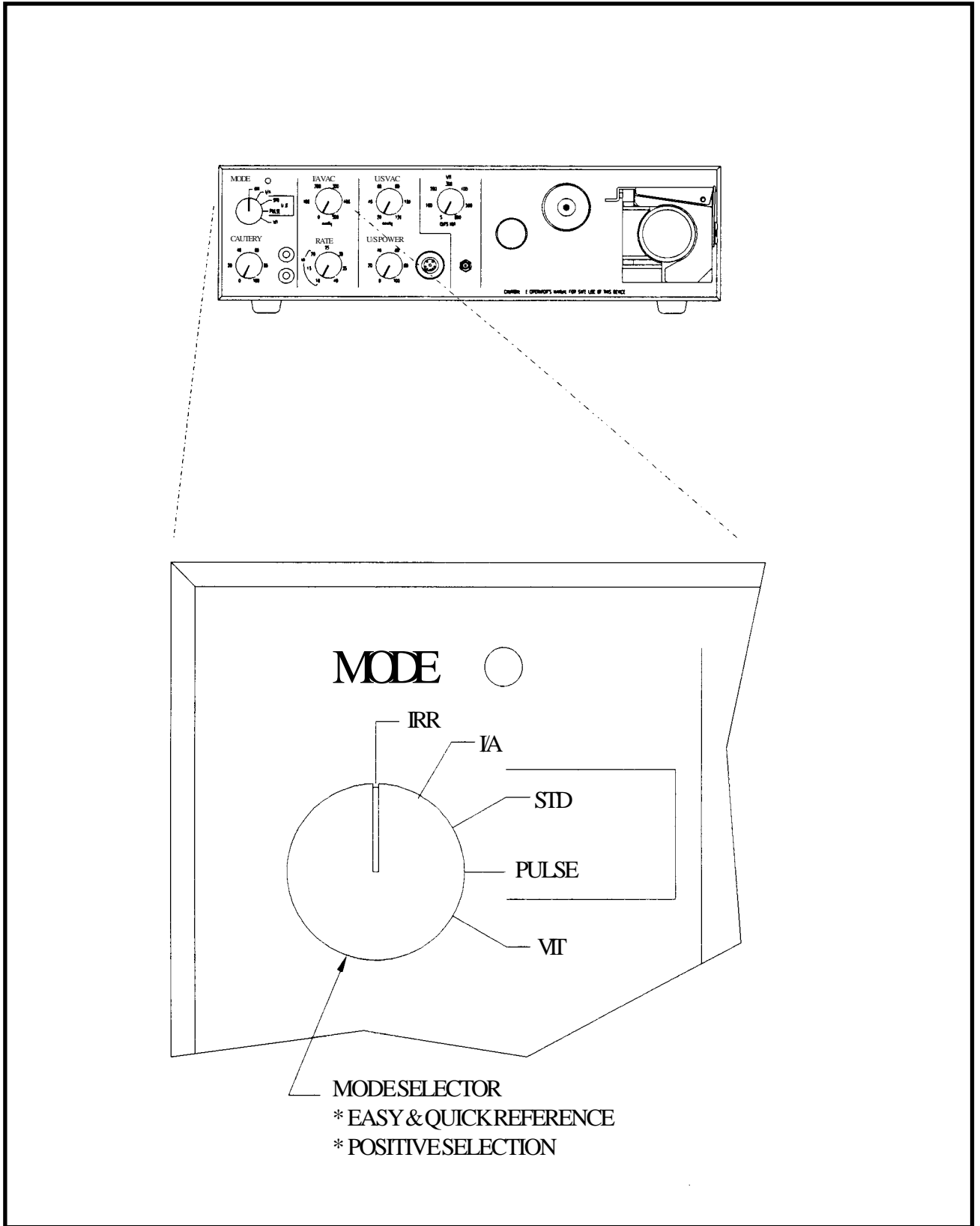
- \*CHANGE U/S HANDPIECE AND/OR U/S TIP
- AT ANY TIME WITHOUT LOSS OF PERFORMANCE
- \*NO USER INTERFACE OF ANY KIND
- REQUIRED FOR TUNING



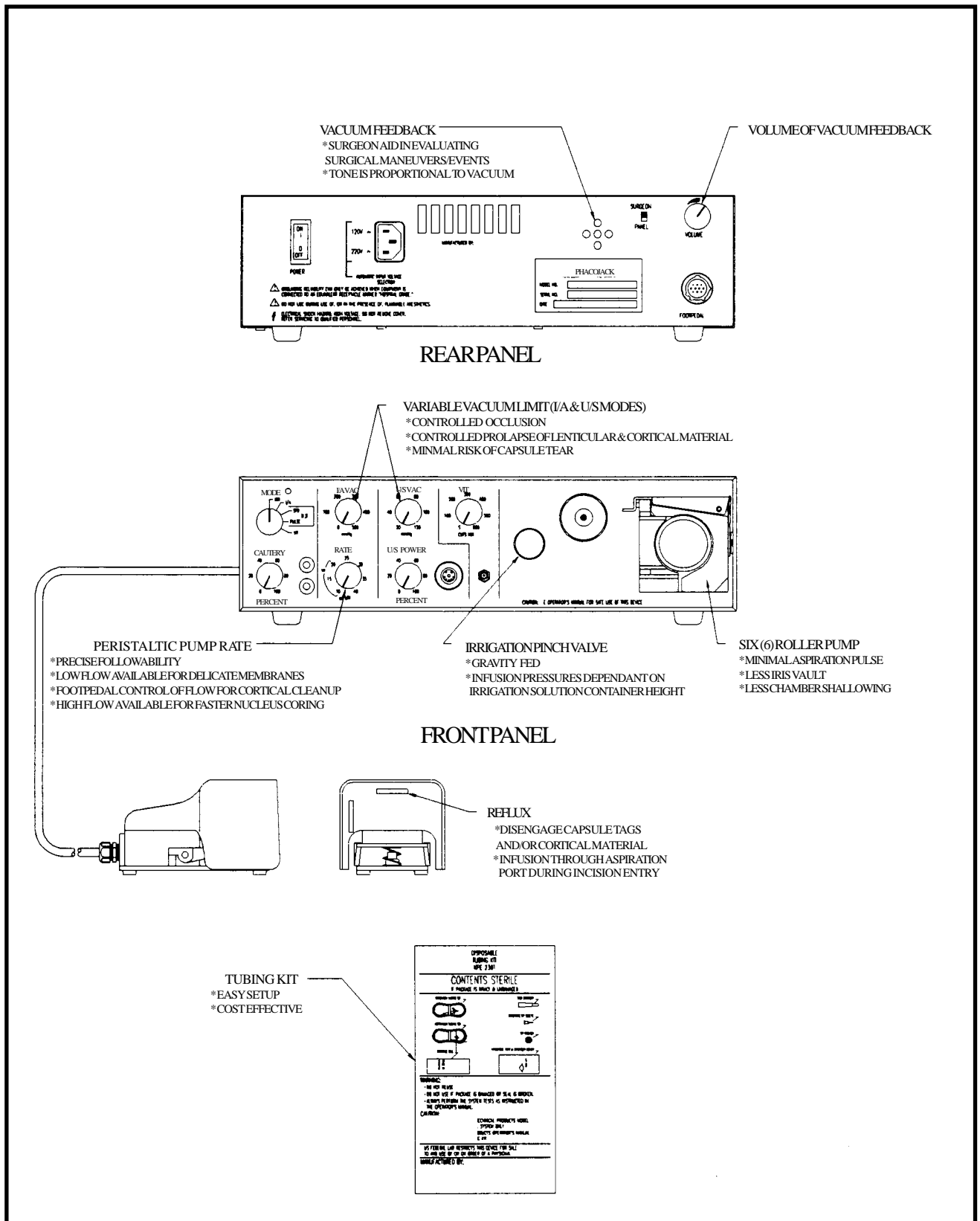
**\*ADVANCED U/S HANDPIECE DESIGN**



**FEATURES & BENEFITS (ULTRASONICS)**  
**FIGURE 4**



**FEATURES & BENEFITS (CHOICE OF MODE)  
 FIGURE 5**

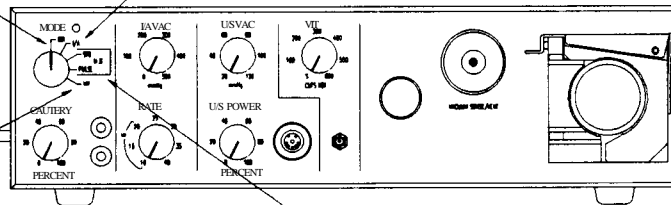


**FEATURES & BENEFITS (FLUIDICS)  
 FIGURE 6**

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IRR. ONLY THE IRRIGATION PINCH VALVE IS ACTUATED WITH DEPRESSION OF THE FOOTPEDAL TREADLE. WITH THE IRRIGATION PINCH VALVE ACTUATION, IRRIGATING FLUID CAN PASS FROM THE IRRIGATING CONTAINER TO THE PATIENT'S EYE.

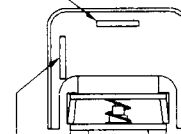
I/A. IRRIGATION AND ASPIRATION ARE BOTH PROVIDED WITH DEPRESSION OF THE FOOTPEDAL TREADLE. VACUUM LIMIT RANGE IS 0-500mmHG AND IS SET BY THE I/A VAC KNOB. THE RATE THAT THE VACUUM INCREASES WITH AN OCCLUSION IS DETERMINED BY THE RATE KNOB. MAXIMUM RATE IS 40cc/MIN. WHEN CONTROL SWITCH IS POSITIONED IN SURGEON, RATE IS CONTROLLED VIA THE FOOTPEDAL TREADLE, UP TO THE RATE LIMIT SETTING.



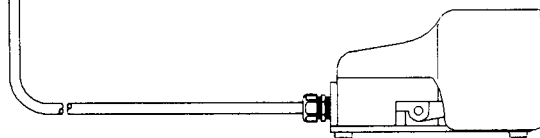
VT. ALLOWS THE USE OF A PNEUMATIC VITRECTOR. MAXIMUM VACUUM IS 500mmHG. MAXIMUM RATE IS RECOMMENDED TO BE 20cc/MIN AND IS INDICATED ON THE RATE KNOB. WHEN CONTROL SWITCH IS POSITIONED IN SURGEON, RATE IS CONTROLLED VIA THE FOOTPEDAL TREADLE, UP TO MAX SETTING.

U/S. SELECTION CAN BE MADE IN STD OR PULSE. THIS MODE ALLOWS THE SURGEON TO OPERATE THE U/S HANDPIECE TO EMULSIFY THE CATARACTOUS LENS NUCLEUS & ASPIRATE THE FRAGMENTS. U/S POWER IS DETERMINED BY THE U/S POWER KNOB. VACUUM IS LIMITED TO 120mmHG MAX IN BOTH STD & PULSE MODES. THERE IS NO TUNING REQUIRED. WHEN CONTROL SWITCH IS POSITIONED IN SURGEON, U/S POWER IS CONTROLLED VIA THE FOOTPEDAL TREADLE, UP TO MAX SETTING.

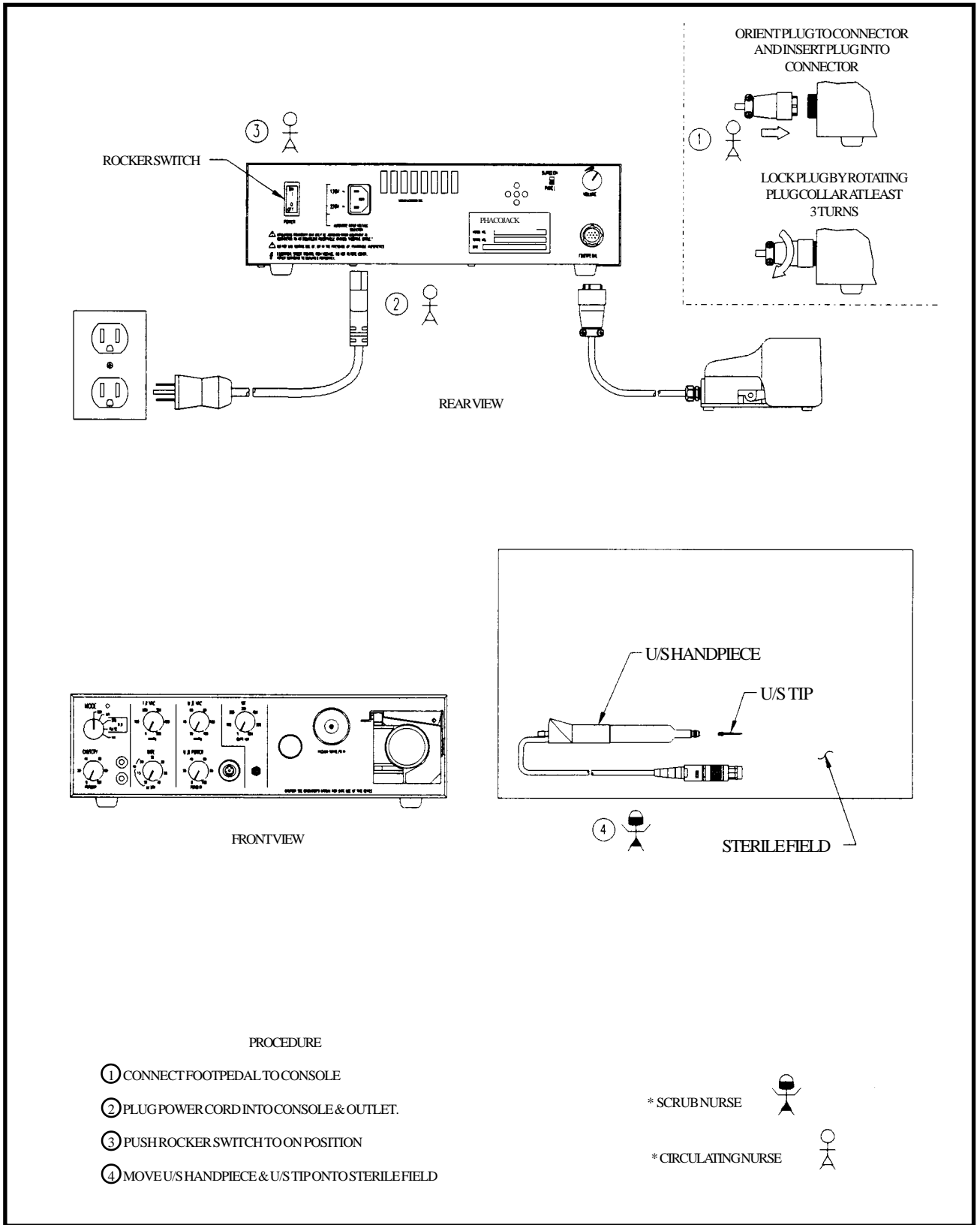
REFLUX. PROVIDES A BACK FLUSH OF IRRIGATION SOLUTION IN THE ASPIRATION TUBING, GIVING THE SURGEON THE ABILITY TO FREE UNWANTED TISSUE OCCLUDING THE TIP.



CAUTERY. PROVIDES BIPOLAR DIATHERMY WHEN DEPRESSED.



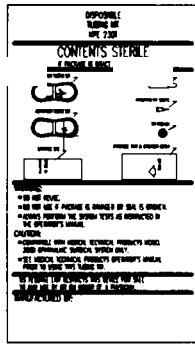
## MODES & FUNCTIONS FIGURE 7



**U/S HANDPIECE  
SYSTEM SETUP (CONSOLE CONNECTIONS)  
FIGURE 8**

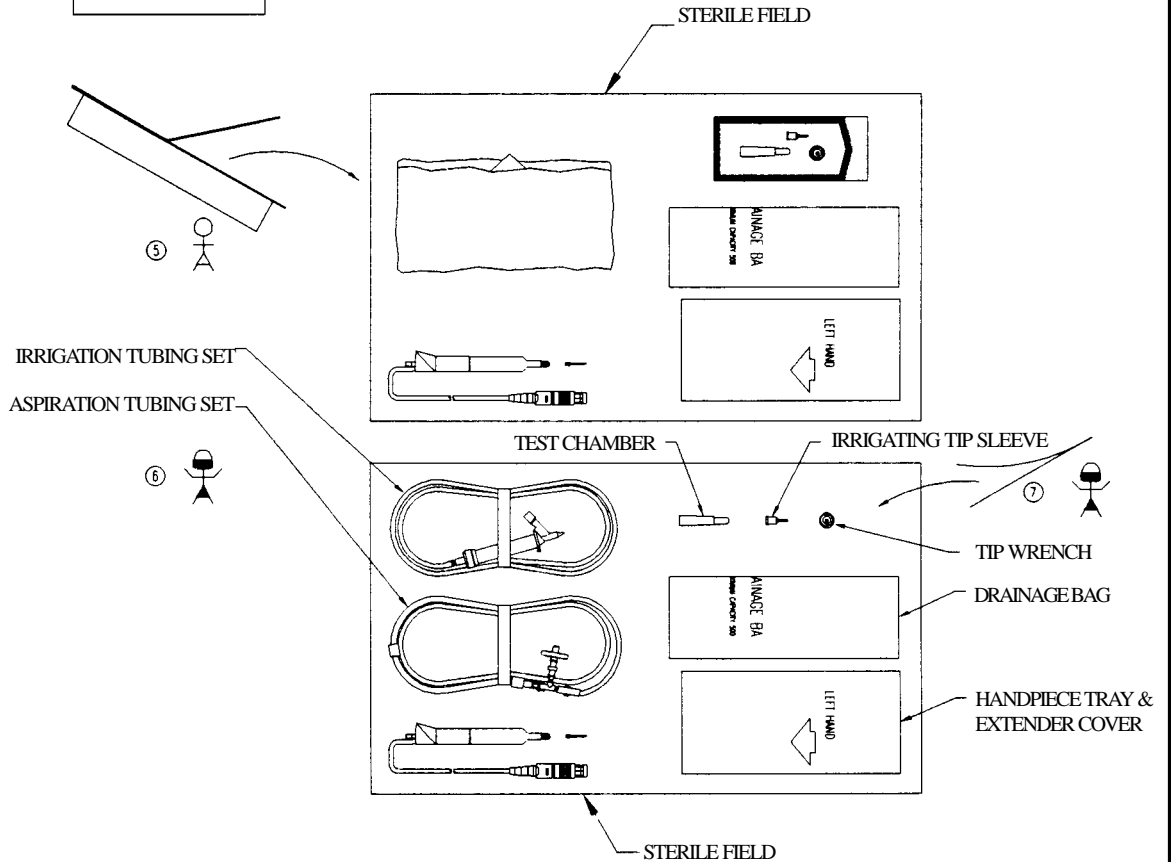
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TUBING KIT - KPE 230


**WARNING!**  
USE OF A TUBING KIT OTHER THAN THIS TUBING KIT MAY AFFECT SYSTEM PERFORMANCE & CREATE POTENTIAL HAZARDS



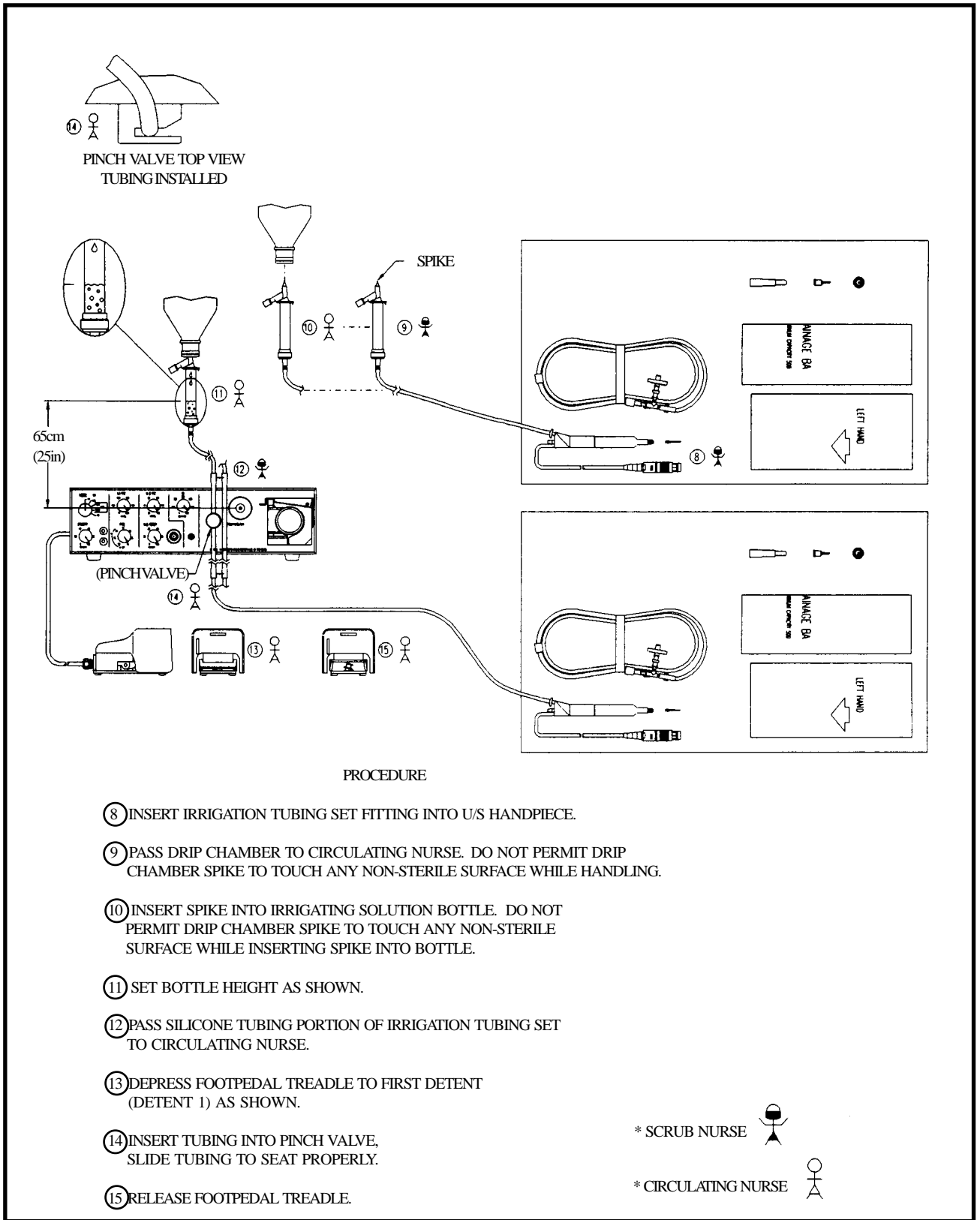
PROCEDURE

- ⑤ PEEL LID FROM TUBING KIT TRAY. PLACE CONTENTS IN STERILE FIELD. DO NOT PERMIT ANY NON-STERILE SURFACE TO TOUCH ANY COMPONENTS IN THE STERILE FIELD.
- ⑥ UNWRAP TUBING SETS. DISCARD WRAP.
- ⑦ PEEL INNER POUCH TO FREE CONTENTS. DISCARD POUCH.

\* SCRUB NURSE 

\* CIRCULATING NURSE 

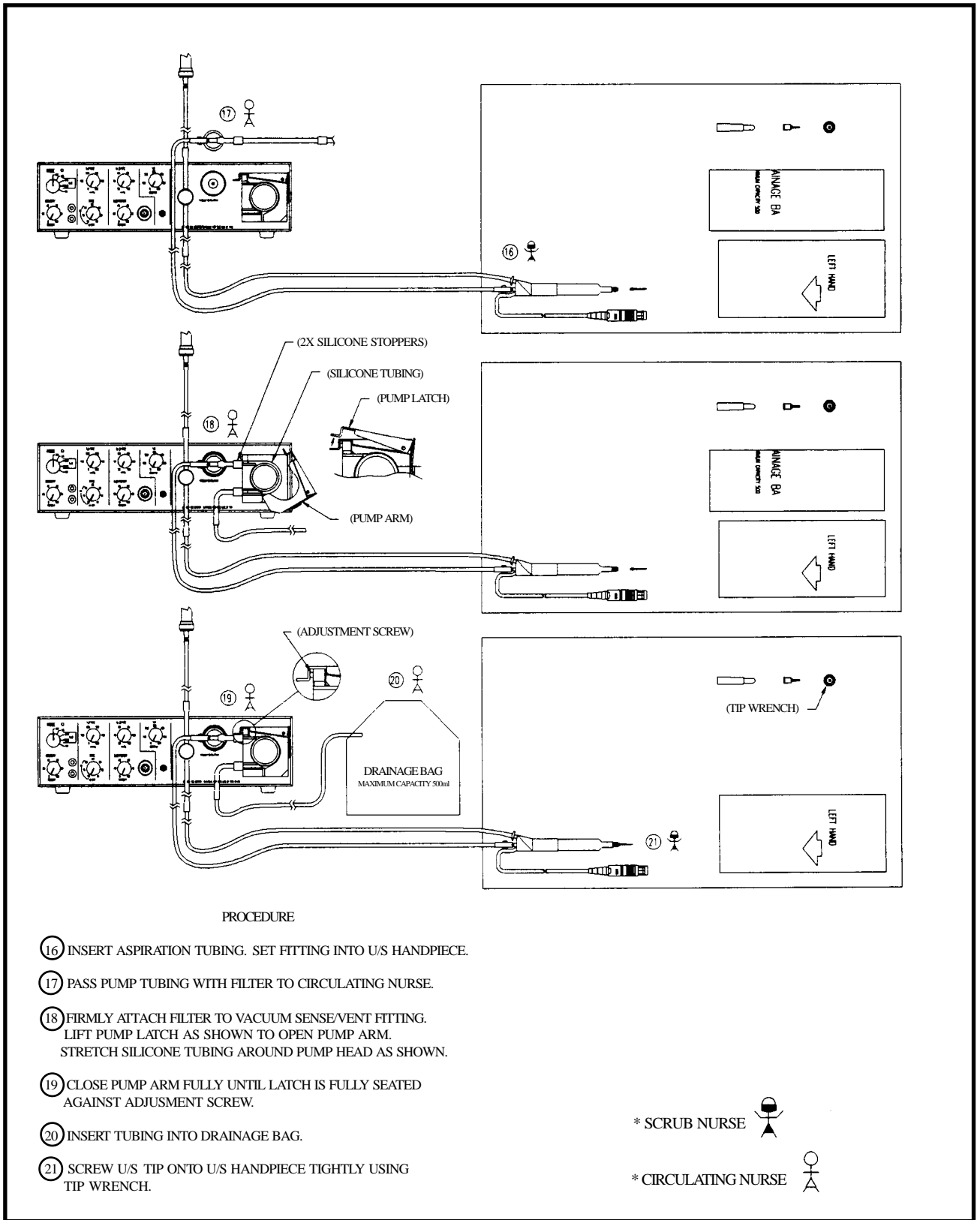
**U/S HANDPIECE  
SYSTEM SETUP (TUBING KIT PREPARATION)  
FIGURE 9**



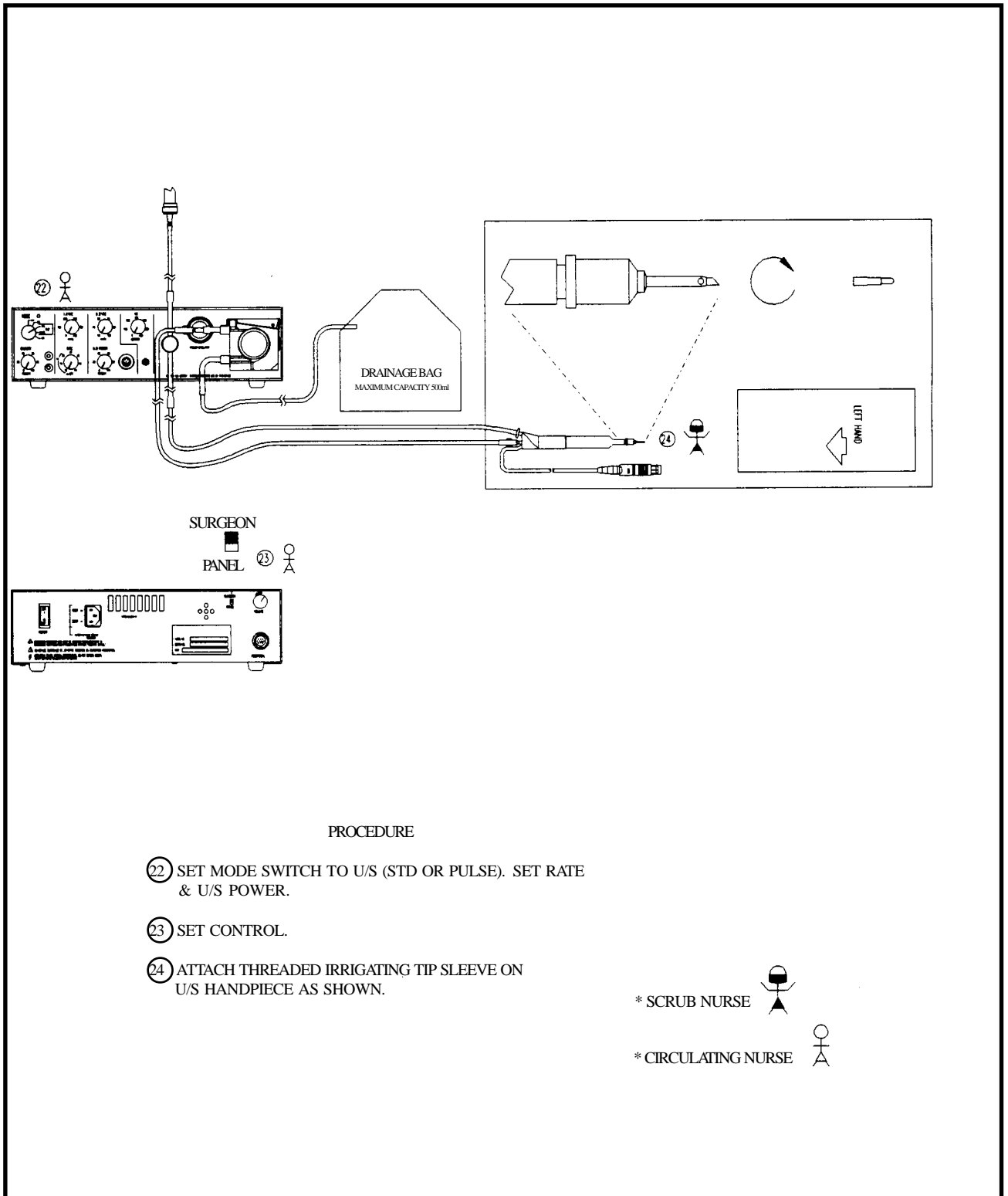
**U/S HANDPIECE  
SYSTEM SETUP (IRRIGATION TUBING SET)**

**FIGURE 10**

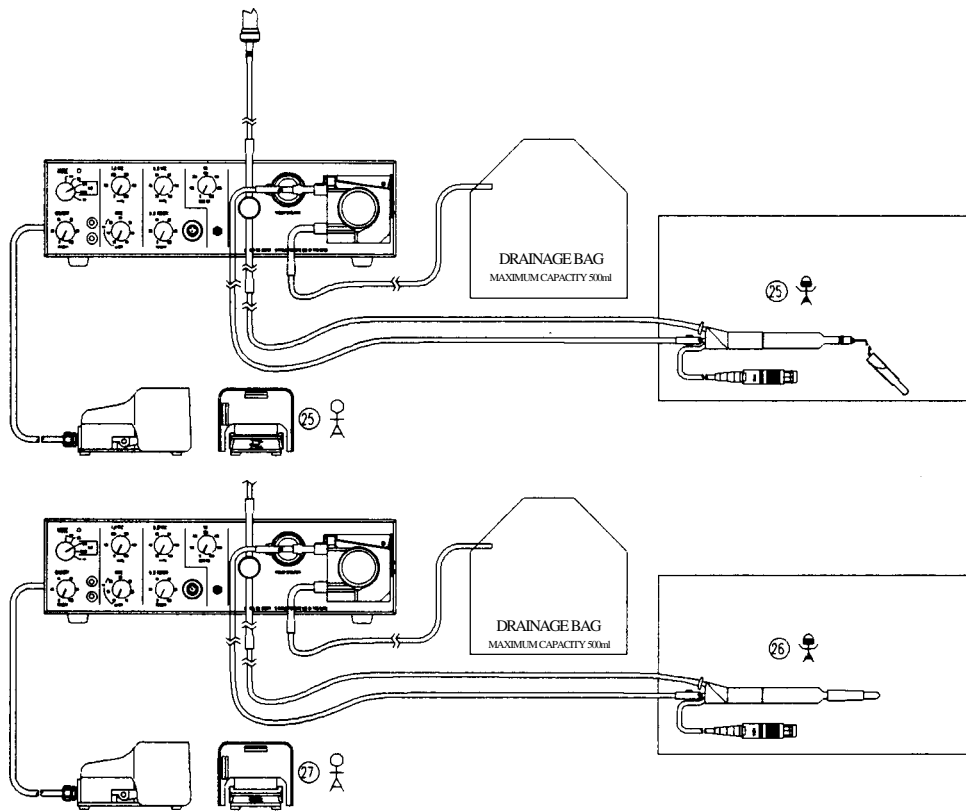
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**U/S HANDPIECE  
SYSTEM SETUP (ASPIRATION TUBING SET)  
FIGURE 11**



**U/S HANDPIECE  
SYSTEM SETUP (SET CONSOLE)  
FIGURE 12**





**WARNING!**  
 ALWAYS PERFORM THE SYSTEM TEST  
 IMMEDIATELY BEFORE USE ON A PATIENT.

**PROCEDURE**

- 25) DEPRESS FOOTPEDAL TREADLE TO FIRST DETENT (DETENT 1) AS SHOWN (IRRIGATION ONLY) AND HOLD UNTIL TEST CHAMBER IS FILLED ~3/4 FULL.
- 26) PLACE TEST CHAMBER ON U/S HANDPIECE.
- 27) DEPRESS FOOTPEDAL TREADLE TO SECOND DETENT (DETENT 2) AS SHOWN (IRRIGATION & ASPIRATION) AND HOLD UNTIL ALL TUBING IS PRIMED AND FREE OF BUBBLES.

28. PERFORM SYSTEM TEST (FIG 14-16)

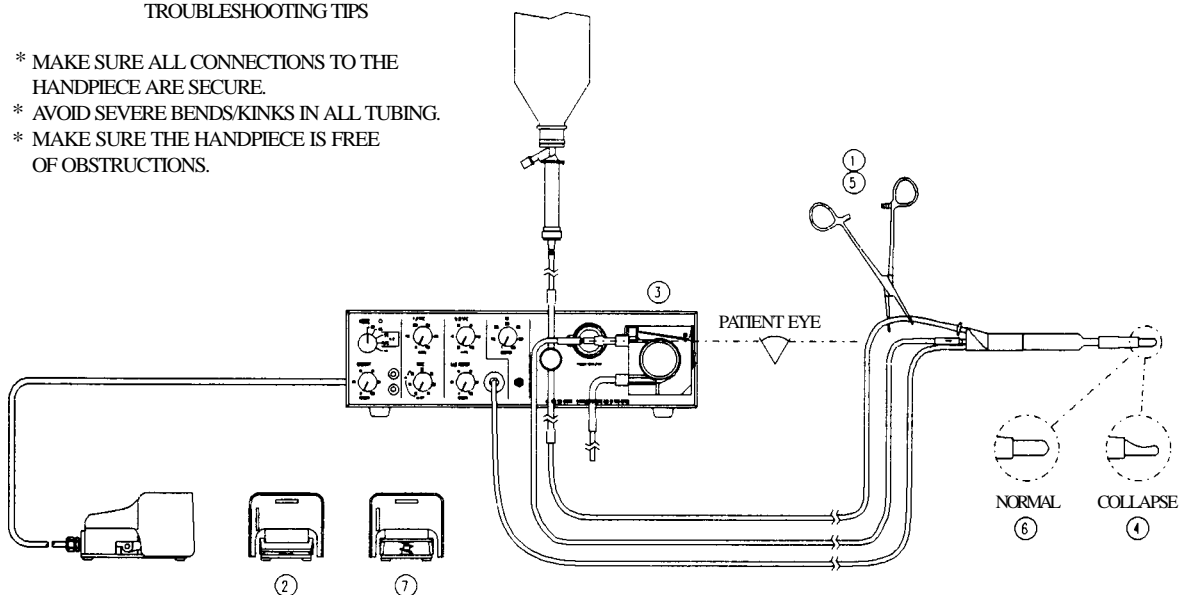
\* SCRUB NURSE   
 \* CIRCULATING NURSE 

**U/S HANDPIECE  
 SYSTEM SETUP (PRIME)  
 FIGURE 13**

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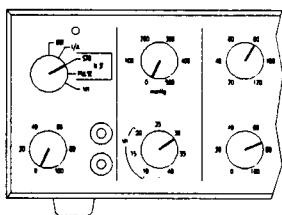
TROUBLESHOOTING TIPS

- \* MAKE SURE ALL CONNECTIONS TO THE HANDPIECE ARE SECURE.
- \* AVOID SEVERE BENDS/KINKS IN ALL TUBING.
- \* MAKE SURE THE HANDPIECE IS FREE OF OBSTRUCTIONS.



WARNING!

SET CONSOLE TO U/S MODE (EITHER STD OR PULSE) PER SURGEONS INSTRUCTIONS. U/S VAC & RATE SETTINGS FOR SYSTEM TEST REPRESENT THE MAXIMUM THAT THE SURGEON WILL USE DURING SURGERY. IF THESE SETTINGS ARE INCREASED DURING SURGERY AND/OR THE IRRIGATION CONTAINER IS LOWERED, THE SYSTEM TEST MUST BE REPEATED IN ORDER TO GUARANTEE SAFE OPERATING CONDITIONS.



PROCEDURE

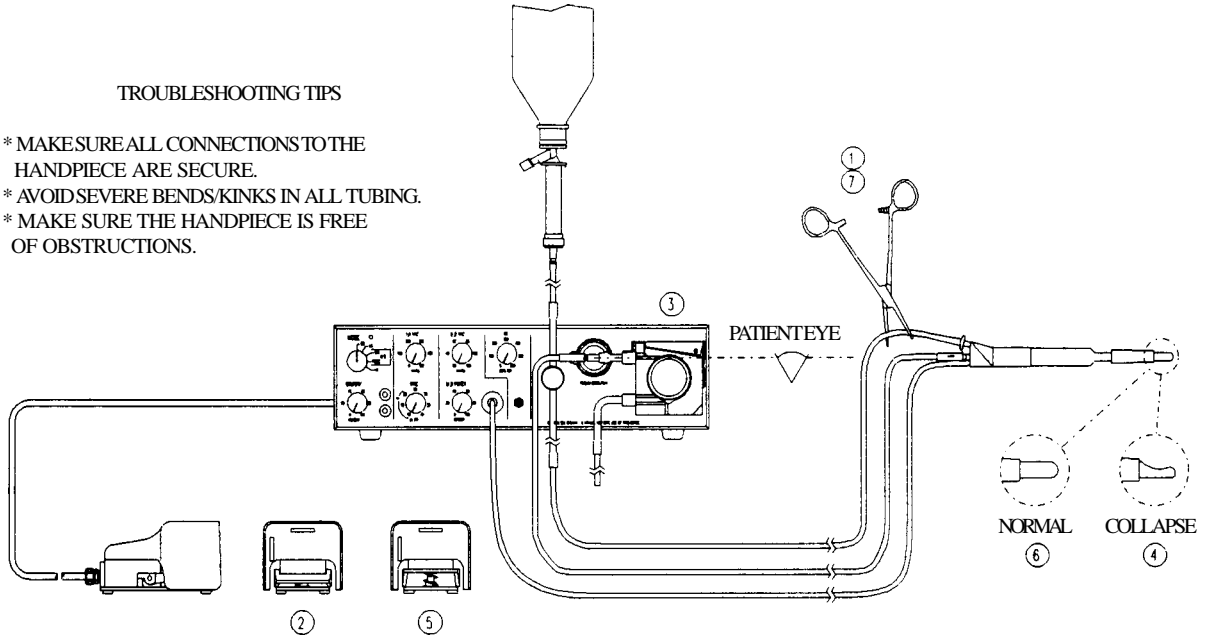
- ① PINCH IRRIGATION TUBING WITH CLAMP (HEMOSTAT).
- ② DEPRESS FOOTPEDAL TREADLE TO SECOND DETENT (DETENT 2) AS SHOWN.
- ③ NOTE PUMP START AND STOP MOTION. IF PUMP DOES NOT REMAIN STOPPED OR THERE IS INTERMITTENT MOTION, STOP. DO NOT PROCEED UNTIL PUMP REMAINS STOPPED FOR > 10 SEC.
- ④ NOTE TEST CHAMBER COLLAPSE. DO NOT RELEASE FOOTPEDAL TREADLE. IF NO COLLAPSE, STOP. DO NOT PROCEED UNTIL COLLAPSE IS OBSERVED.
- ⑤ RELEASE CLAMP (HEMOSTAT).
- ⑥ NOTE REINFLATION OF TEST CHAMBER. IF THERE IS NO REINFLATION, STOP. DO NOT PROCEED UNTIL REINFLATION IS OBSERVED.
- ⑦ RELEASE FOOTPEDAL TREADLE.

**U/S HANDPIECE  
SYSTEM TEST (IRRIGATION FLOW)  
FIGURE 14**

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TROUBLESHOOTING TIPS

- \* MAKE SURE ALL CONNECTIONS TO THE HANDPIECE ARE SECURE.
- \* AVOID SEVERE BENDS/KINKS IN ALL TUBING.
- \* MAKE SURE THE HANDPIECE IS FREE OF OBSTRUCTIONS.



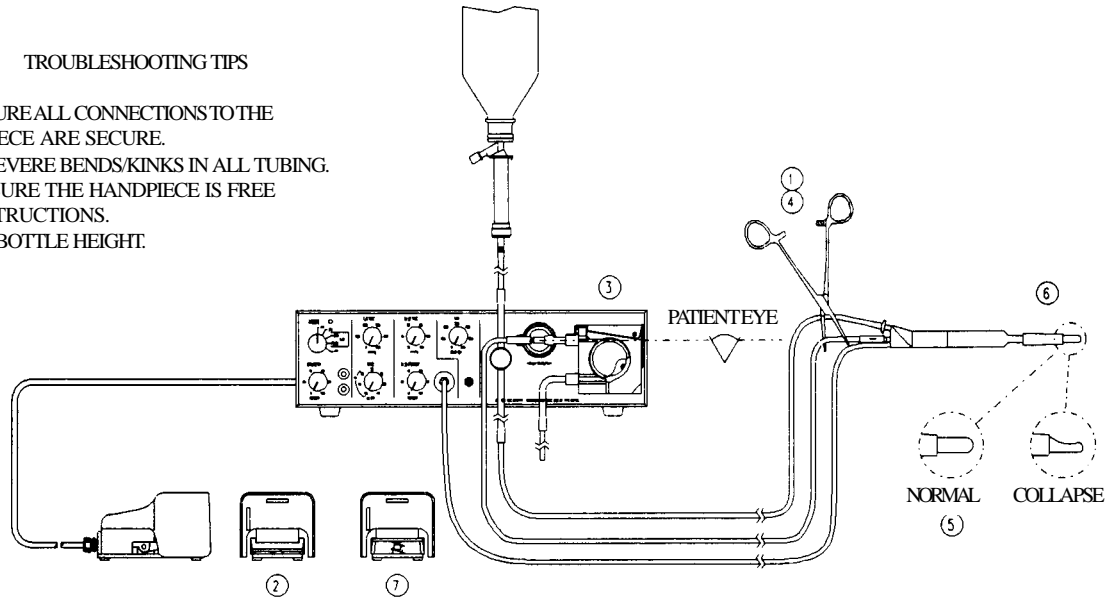
PROCEDURE

- ① PINCH IRRIGATION TUBING WITH CLAMP (HEMOSTAT).
- ② DEPRESS FOOTPEDAL TREADLE TO SECOND DETENT (DETENT 2) AS SHOWN.
- ③ NOTE PUMP START AND STOP MOTION. IF PUMP DOES NOT REMAIN STOPPED OR THERE IS INTERMITTENT MOTION, STOP, DO NOT PROCEED UNTIL PUMP REMAINS STOPPED FOR > 10 SEC.
- ④ NOTE TEST CHAMBER COLLAPSE. DO NOT RELEASE FOOTPEDAL TREADLE. IF NO COLLAPSE, STOP. DO NOT PROCEED UNTIL COLLAPSE IS OBSERVED.
- ⑤ RELEASE FOOTPEDAL TREADLE.
- ⑥ NOTE REINFLATION OF TEST CHAMBER. IF THERE IS NO REINFLATION, STOP. DO NOT PROCEED UNTIL REINFLATION IS OBSERVED.
- ⑦ RELEASE CLAMP (HEMOSTAT)

**U/S HANDPIECE  
SYSTEM TEST (ASPIRATION VENT)  
FIGURE 15**

TROUBLESHOOTING TIPS

- \* MAKE SURE ALL CONNECTIONS TO THE HANDPIECE ARE SECURE.
- \* AVOID SEVERE BENDS/KINKS IN ALL TUBING.
- \* MAKE SURE THE HANDPIECE IS FREE OF OBSTRUCTIONS.
- \* CHECK BOTTLE HEIGHT.

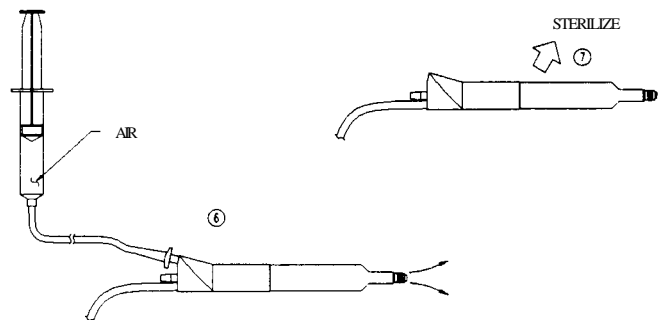
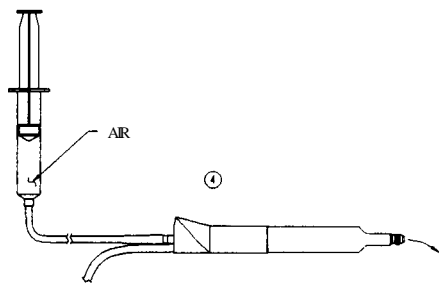
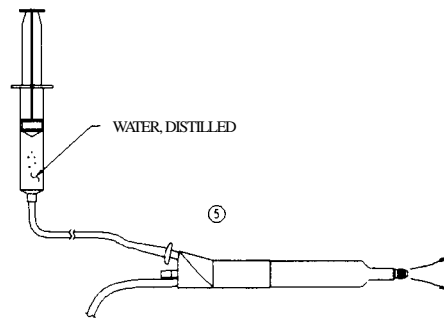
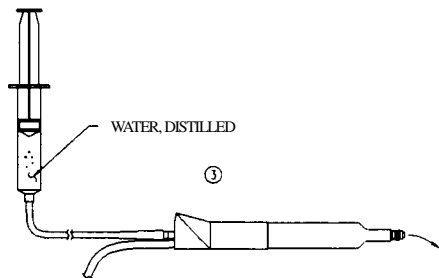
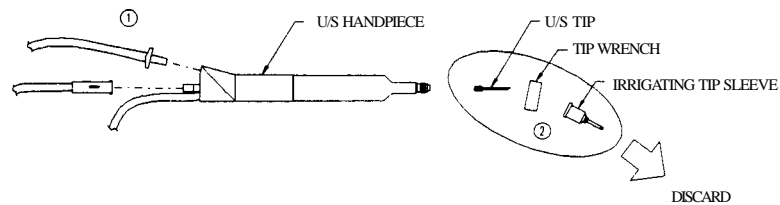


PROCEDURE

- ① PINCH IRRIGATION TUBING WITH CLAMP (HEMOSTAT). LOCATE CLAMP AS CLOSE TO THE HANDPIECE AS POSSIBLE.
- ② DEPRESS FOOTPEDAL TREADLE TO SECOND DETENT (DETENT 2) AS SHOWN.
- ③ NOTE PUMP START AND STOP MOTION. IF PUMP DOES NOT REMAIN STOPPED OR THERE IS INTERMITTENT MOTION, STOP, DO NOT PROCEED UNTIL PUMP REMAINS STOPPED FOR > 10 SEC.
- ④ RELEASE CLAMP (HEMOSTAT).
- ⑤ NOTE NO CHANGE IN TEST CHAMBER. IF COLLAPSE OCCURS, STOP.
- ⑥ REMOVE TEST CHAMBER. SYSTEM IS NOW READY FOR SURGERY.
- ⑦ RELEASE FOOTPEDAL TREADLE.

**U/S HANDPIECE  
SYSTEM TEST (IOP MAINTENANCE)  
FIGURE 16**





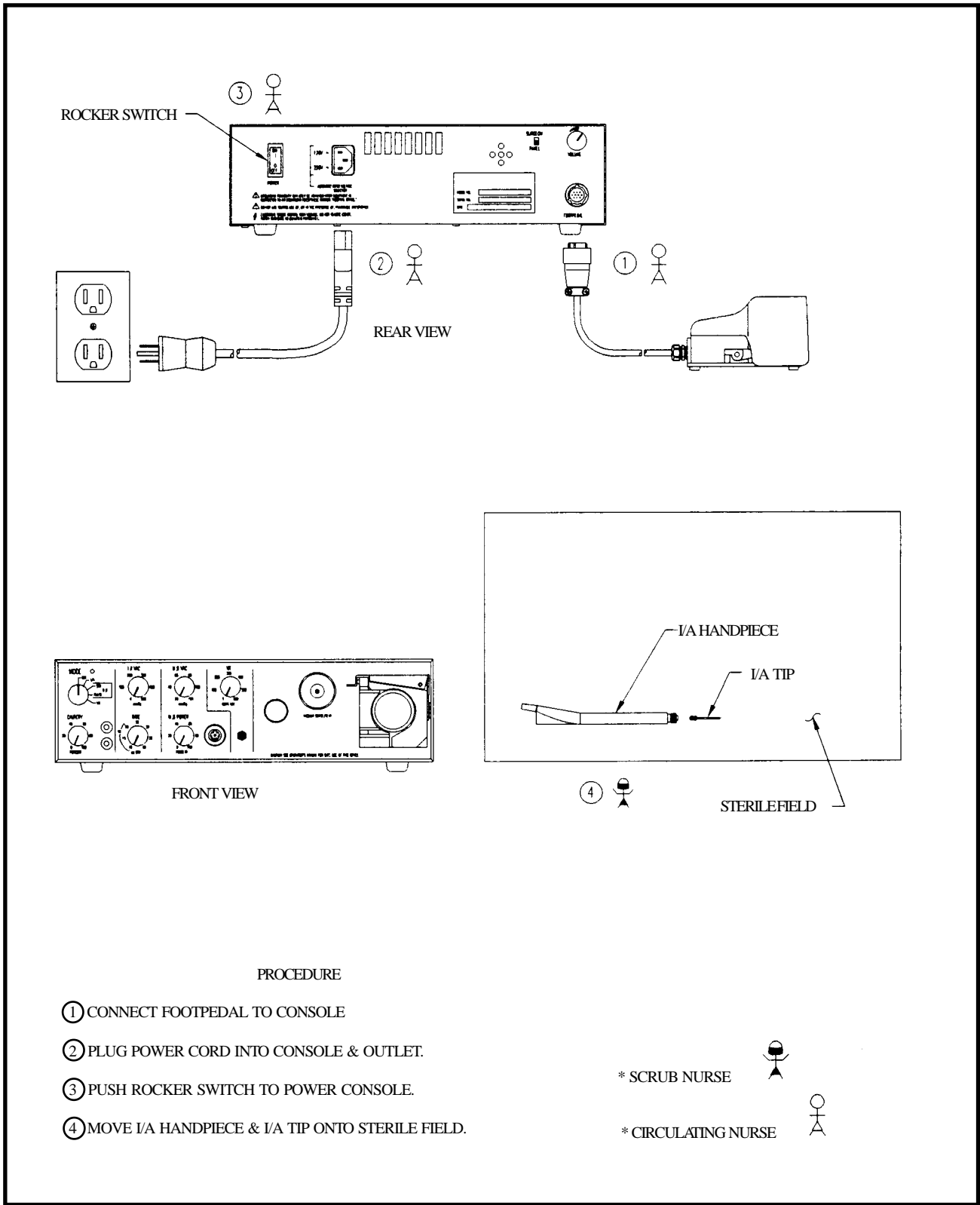
**PROCEDURE**

- ① DISCONNECT TUBING.
- ② REMOVE U/S TIP & IRRIGATING TIP SLEEVE FROM U/S HANDPIECE & DISCARD.
- ③ CONNECT SYRINGE TO ASPIRATION FITTING OF U/S HANDPIECE AS SHOWN, FORCEFULLY PUSH SYRINGE PLUNGER.
- ④ REPEAT STEP 3 WITH AIR.
- ⑤ CONNECT SYRINGE TO IRRIGATION FITTING OF U/S HANDPIECE. FORCEFULLY PUSH SYRINGE PLUNGER
- ⑥ REPEAT STEP 5 WITH AIR.
- ⑦ STERILIZE U/S HANDPIECE PER ACCEPTED HOSPITAL/FACILITY PRACTICE.

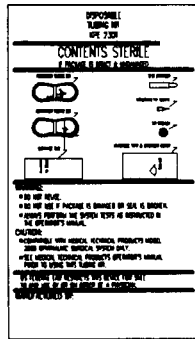
**WARNINGS!**

- \* IF CLEANING IS NOT PERFORMED AFTER EACH SURGICAL PROCEDURE, SALT & DEBRIS MAY COLLECT ALONG THE INNER WALLS OF THE HANDPIECE. THIS COLLECTION OF SALT & DEBRIS WILL COMPROMISE THE SURGICAL PROCEDURE BY INCREASING THE FLUID RESISTANCE AND LIKELY RISK IOP MAINTENANCE.
- \* DO NOT AUTOCLAVE ANY HANDPIECES UNTIL ALL SALT & DEBRIS HAS BEEN REMOVED.
- \* NEVER USE WIRE CLEANING INSTRUMENTS OR STEEL BRUSHES TO CLEAN ANY PART OF THE HANDPIECE.

**U/S HANDPIECE  
CLEANING  
FIGURE 17**

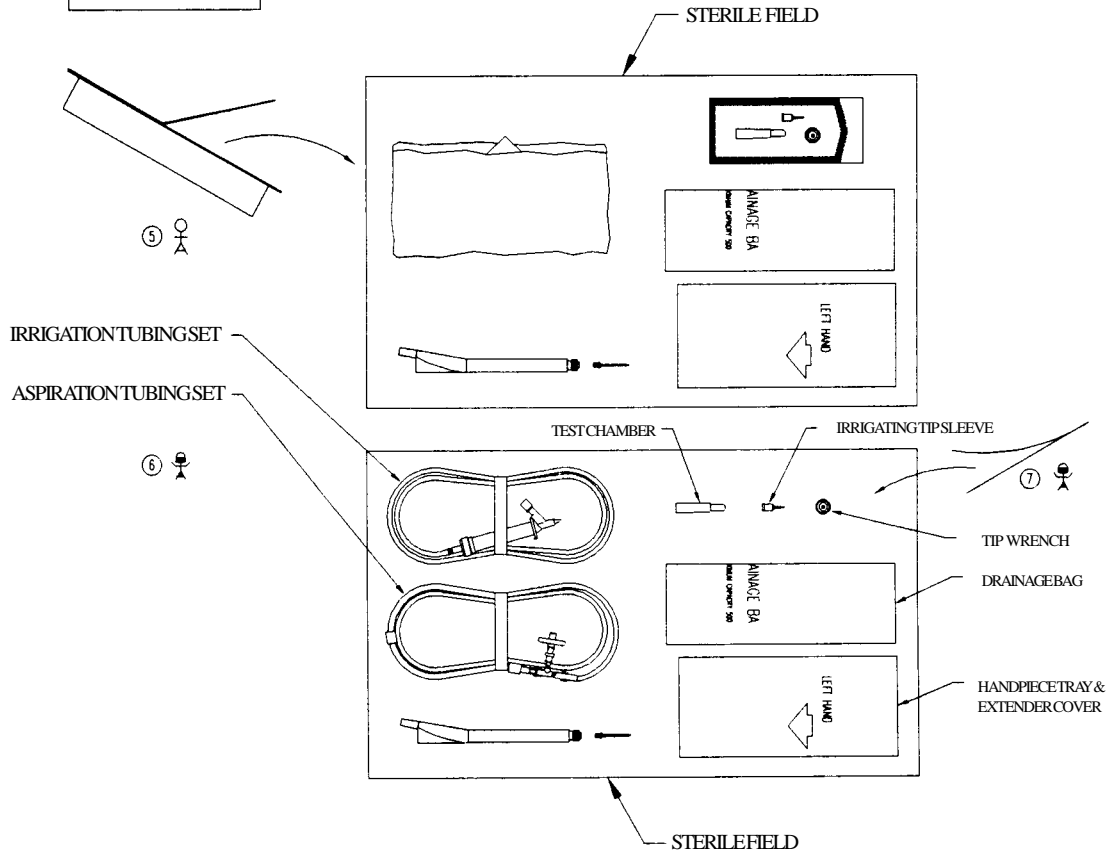


**U/S HANDPIECE  
SYSTEM SETUP (CONSOLE CONNECTIONS)  
FIGURE 18**



TUBING KIT - KPE 230

**WARNING!**  
 USE OF A TUBING KIT  
 OTHER THAN THIS TUBING KIT  
 MAY AFFECT SYSTEM PERFORMANCE  
 & CREATE POTENTIAL HAZARDS.



PROCEDURE

- ⑤ PEEL LID FROM TUBING KIT TRAY. PLACE CONTENTS IN STERILE FIELD. DO NOT PERMIT ANY NON-STERILE SURFACE TO TOUCH ANY COMPONENTS IN THE STERILE FIELD.
- ⑥ UNWRAP TUBING SETS. DISCARD WRAP.
- ⑦ PEEL INNER POUCH TO FREE CONTENTS. DISCARD POUCH.

\* SCRUB NURSE

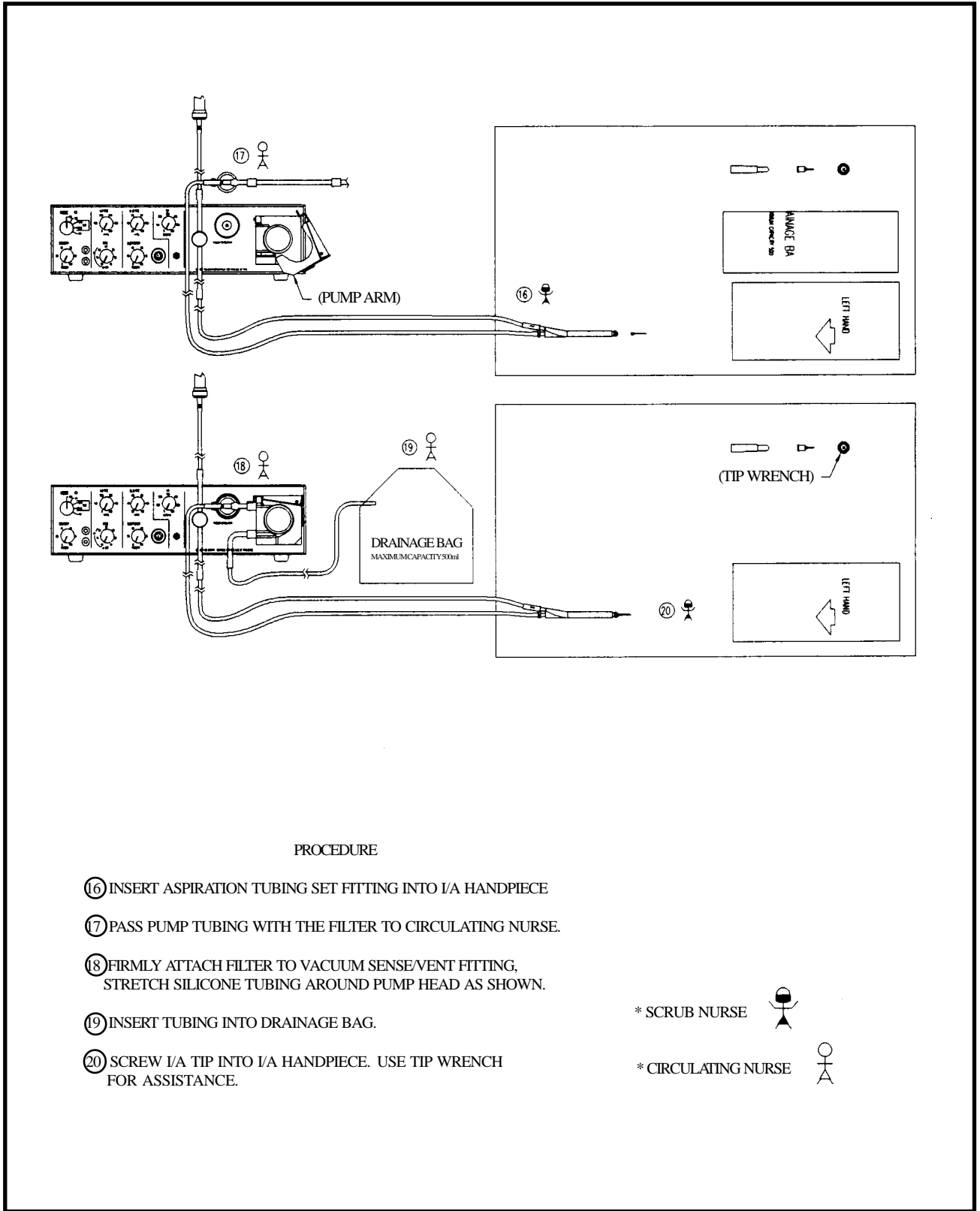


\* CIRCULATING NURSE




**I/A HANDPIECE  
 SYSTEM SETUP (TUBING KIT PREPARATION)  
 FIGURE 19**






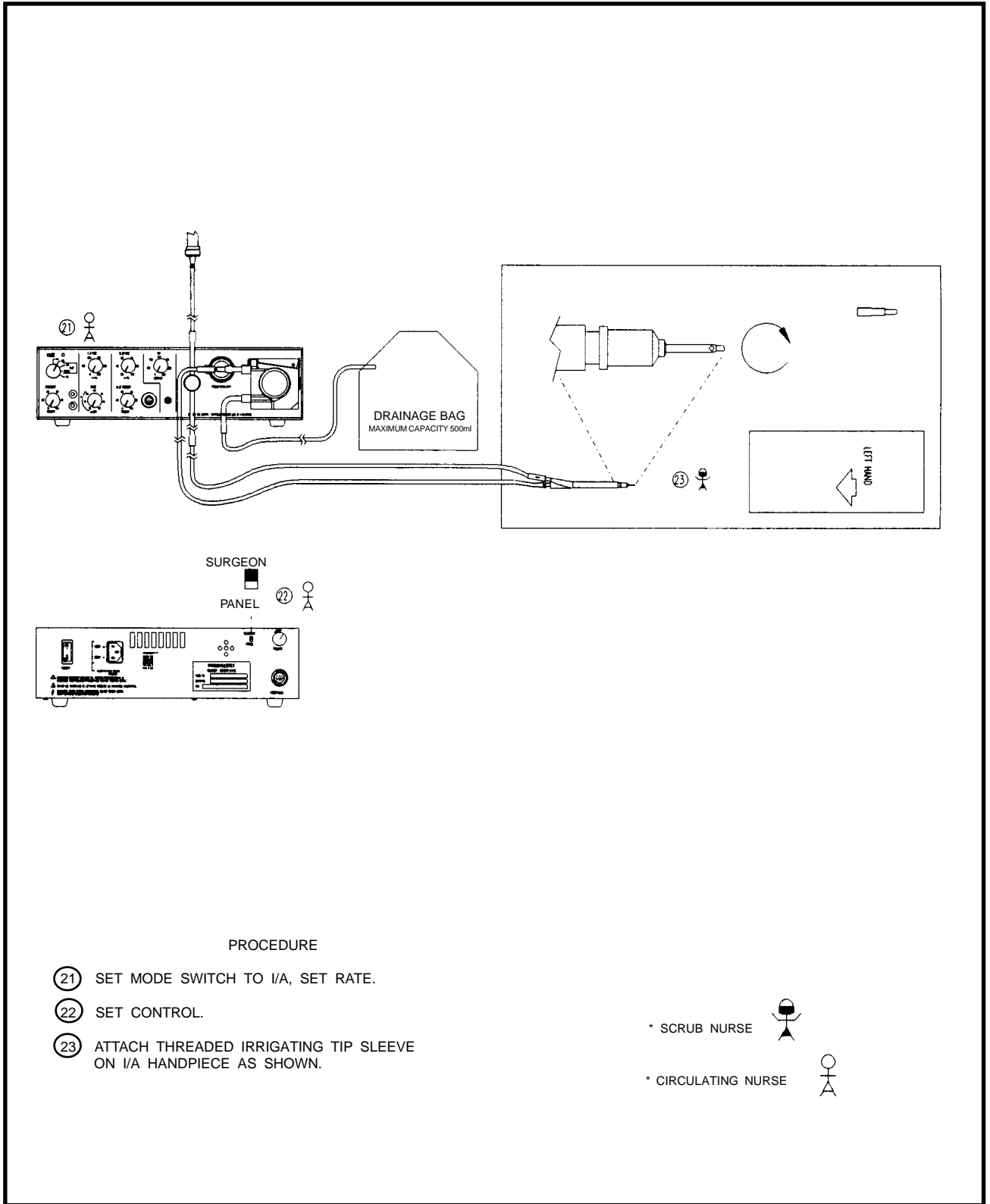
PROCEDURE

- ①⑥ INSERT ASPIRATION TUBING SET FITTING INTO I/A HANDPIECE
- ①⑦ PASS PUMP TUBING WITH THE FILTER TO CIRCULATING NURSE.
- ①⑧ FIRMLY ATTACH FILTER TO VACUUM SENSE/VENT FITTING, STRETCH SILICONE TUBING AROUND PUMP HEAD AS SHOWN.
- ①⑨ INSERT TUBING INTO DRAINAGE BAG.
- ②⑩ SCREW I/A TIP INTO I/A HANDPIECE. USE TIP WRENCH FOR ASSISTANCE.

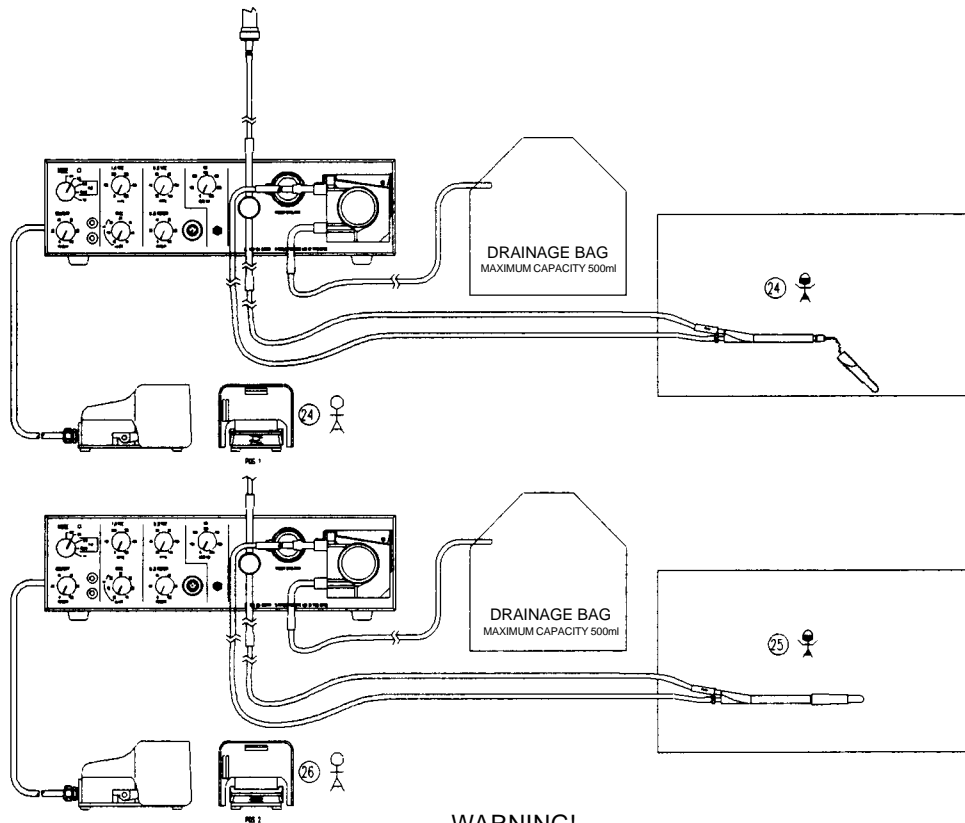
\* SCRUB NURSE 

\* CIRCULATING NURSE 

**I/A HANDPIECE  
SYSTEM SETUP (ASPIRATION TUBING SET)  
FIGURE 21**



**I/A HANDPIECE  
SYSTEM SETUP (SET CONSOLE)  
FIGURE 22**





**WARNING!**

ALWAYS PERFORM THE SYSTEM TEST IMMEDIATELY BEFORE USE ON A PATIENT.

PROCEDURE

- 24. DEPRESS FOOTPEDAL TREADLE TO FIRST DETENT (DETENT 1) AS SHOWN (IRRIGATION ONLY) AND HOLD UNTIL TEST CHAMBER IS FILLED ~3/4 FULL.
- 25. PLACE TEST CHAMBER ON I/A HANDPIECE
- 26. DEPRESS FOOTPEDAL TREADLE TO SECOND DETENT (DETENT 2) AS SHOWN (IRRIGATION & ASPIRATION) AND HOLD UNTIL ALL TUBING IS PRIMED AND FREE OF BUBBLES.
- 27. RELEASE FOOTPEDAL TREADLE
- 28. PERFORM SYSTEM TEST (FIG. 24 - 26).

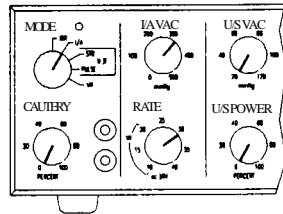
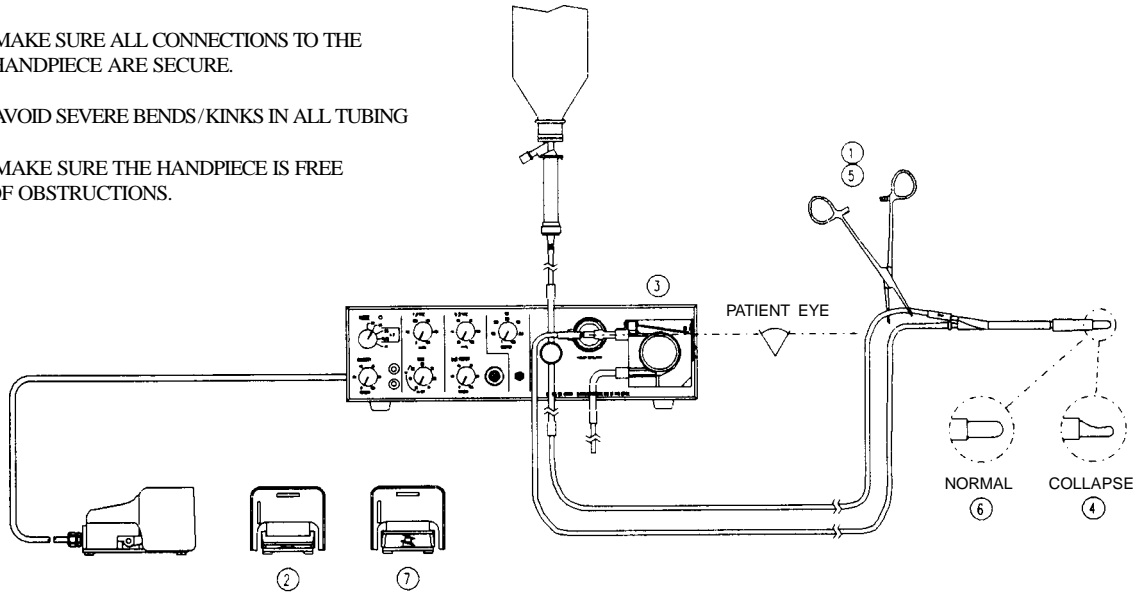
\* SCRUB NURSE   
 \* CIRCULATING NURSE 

**I/A HANDPIECE  
 SYSTEM SETUP (PRIME)  
 FIGURE 23**

PhacoJack®  
 THE Phacosystem

TROUBLESHOOTING TIPS

- \* MAKE SURE ALL CONNECTIONS TO THE HANDPIECE ARE SECURE.
- \* AVOID SEVERE BENDS / KINKS IN ALL TUBING
- \* MAKE SURE THE HANDPIECE IS FREE OF OBSTRUCTIONS.



WARNING!

SET CONSOLE TO I/A MODE PER SURGEONS INSTRUCTIONS. I/A VAC & RATE SETTINGS FOR SYSTEM TEST REPRESENT THE MAXIMUM THAT THE SURGEON WILL USE DURING SURGERY. IF THESE SETTINGS ARE INCREASED DURING SURGERY AND/ OR THE IRRIGATION CONTAINER IS LOWERED, THE SYSTEM TEST MUST BE REPEATED IN ORDER TO GUARANTEE SAFE OPERATING CONDITIONS.

PROCEDURE

- ① PINCH IRRIGATION TUBING WITH CLAMP (HEMOSTAT).
- ② DEPRESS FOOTPEDAL TREADLE TO SECOND DETENT (DETENT 2) AS SHOWN.
- ③ NOTE PUMP START AND STOP MOTION. IF PUMP DOES NOT REMAIN STOPPED OR THERE IS INTERMITTENT MOTION, STOP. DO NOT PROCEED UNTIL PUMP REMAINS STOPPED FOR > 10 SEC.
- ④ NOTE TEST CHAMBER COLLAPSE. DO NOT RELEASE FOOTPEDAL TREADLE. IF NO COLLAPSE, STOP. DO NOT PROCEED UNTIL COLLAPSE IS OBSERVED.
- ⑤ RELEASE CLAMP (HEMOSTAT)
- ⑥ NOTE REINFLATION OF TEST CHAMBER. IF THERE IS NO REINFLATION, STOP. DO NOT PROCEED UNTIL REINFLATION IS OBSERVED.
- ⑦ RELEASE FOOTPEDAL TREADLE.

**I/A HANDPIECE  
SYSTEM TEST (IRRIGATION FLOW)  
FIGURE 24**

PhacoJack®  
THE Phacosystem

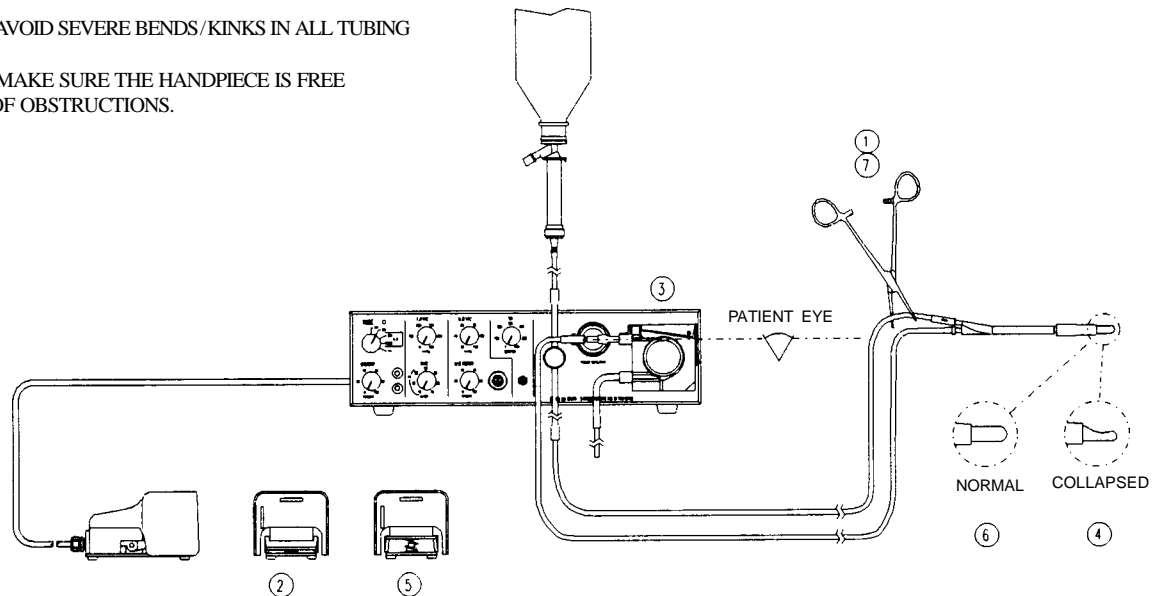


### TROUBLESHOOTING TIPS

\* MAKE SURE ALL CONNECTIONS TO THE HANDPIECE ARE SECURE.

\* AVOID SEVERE BENDS/KINKS IN ALL TUBING

\* MAKE SURE THE HANDPIECE IS FREE OF OBSTRUCTIONS.



### PROCEDURE

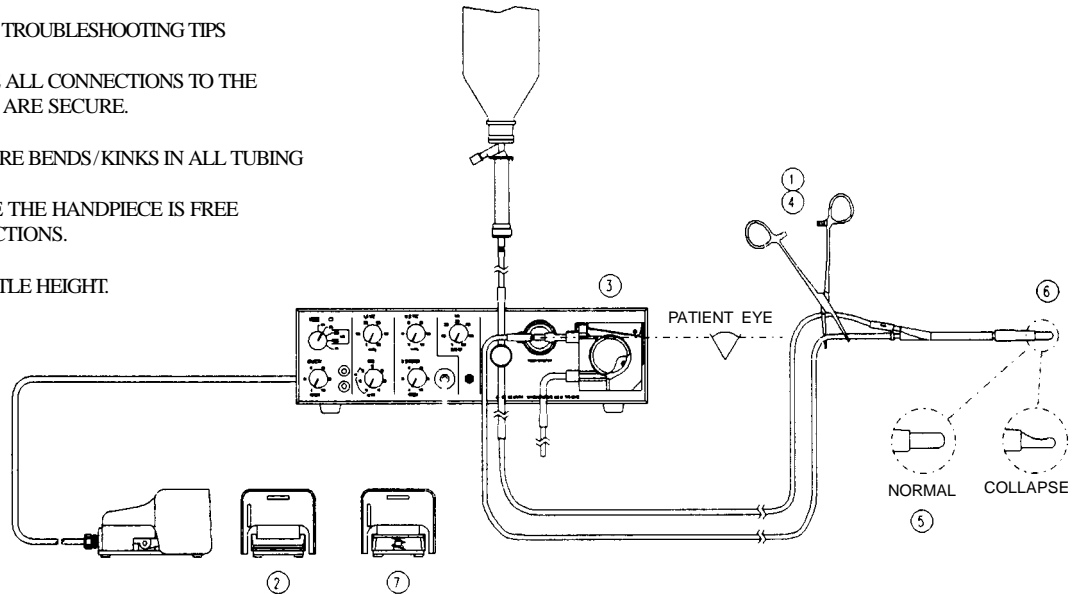
- ① PINCH IRRIGATION TUBING WITH CLAMP (HEMOSTAT).
- ② DEPRESS FOOTPEDAL TREADLE TO SECOND DETENT (DETENT 2) AS SHOWN.
- ③ NOTE PUMP START AND STOP MOTION. IF PUMP DOES NOT REMAIN STOPPED OR THERE IS INTERMITTENT MOTION, STOP. DO NOT PROCEED UNTIL PUMP REMAINS STOPPED FOR > 10 SEC.
- ④ NOTE TEST CHAMBER COLLAPSE. IF NO COLLAPSE OCCURS, STOP. DO NOT PROCEED UNTIL COLLAPSE IS OBSERVED.
- ⑤ RELEASE FOOTPEDAL TREADLE.
- ⑥ NOTE REINFLATION OF TEST CHAMBER. IF THERE IS NO REINFLATION, STOP. DO NOT PROCEED UNTIL REINFLATION IS OBSERVED.
- ⑦ RELEASE CLAMP (HEMOSTAT).

## I/A HANDPIECE SYSTEM TEST (ASPIRATION VENT) FIGURE 25

PhacoJack®  
THE Phacosystem

#### TROUBLESHOOTING TIPS

- \* MAKE SURE ALL CONNECTIONS TO THE HANDPIECE ARE SECURE.
- \* AVOID SEVERE BENDS/KINKS IN ALL TUBING
- \* MAKE SURE THE HANDPIECE IS FREE OF OBSTRUCTIONS.
- \* CHECK BOTTLE HEIGHT.

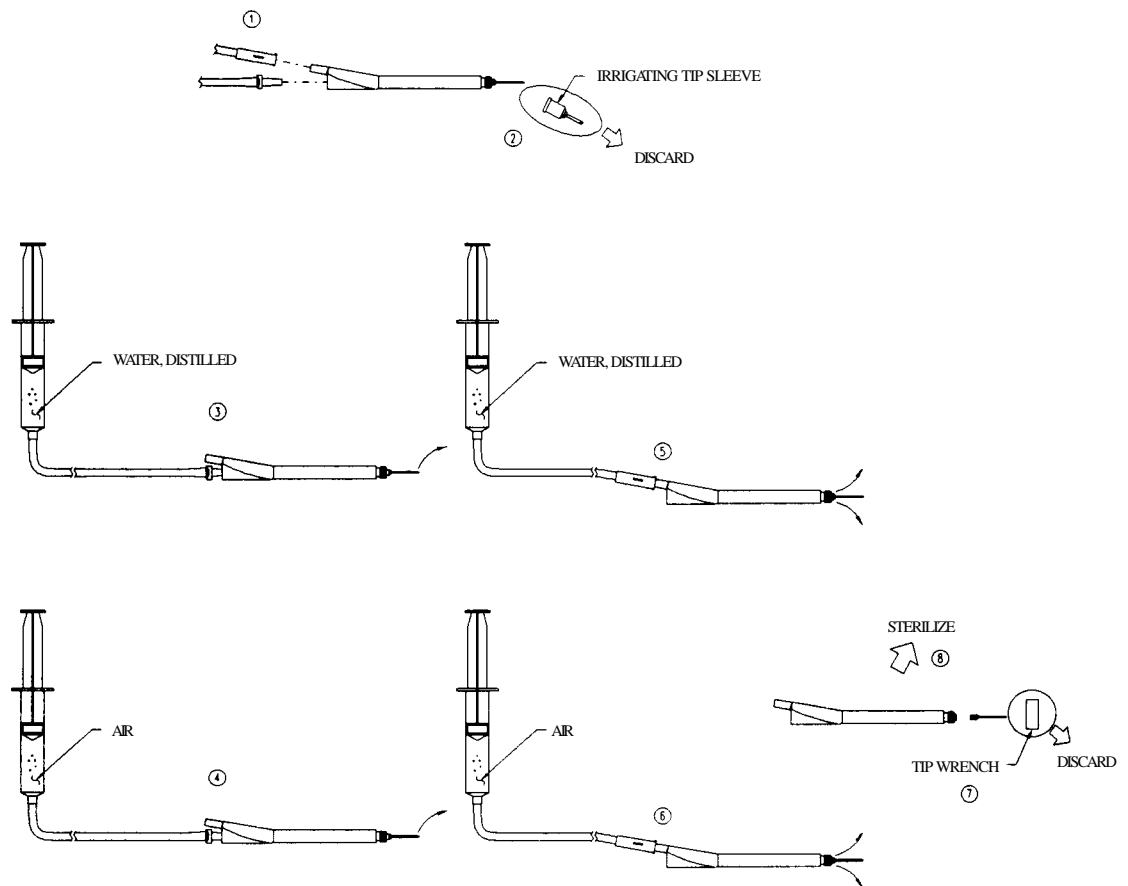


#### PROCEDURE

- ① PINCH IRRIGATION TUBING WITH CLAMP (HEMOSTAT), LOCATE CLAMP AS CLOSE TO THE HANDPIECE AS POSSIBLE.
- ② DEPRESS FOOTPEDAL TREADLE TO SECOND DETENT (DETENT 2) AS SHOWN.
- ③ NOTE PUMP START AND STOP MOTION. IF PUMP DOES NOT REMAIN STOPPED OR THERE IS INTERMITTENT MOTION, STOP. DO NOT PROCEED UNTIL PUMP REMAINS STOPPED FOR > 10 SEC.
- ④ RELEASE CLAMP (HEMOSTAT)
- ⑤ NOTE NO CHANGE IN TEST CHAMBER. IF COLLAPSE OCCURS, STOP.
- ⑥ REMOVE TEST CHAMBER. SYSTEM IS NOW READY FOR SURGERY.
- ⑦ RELEASE FOOTPEDAL TREADLE.

### I/A HANDPIECE SYSTEM TEST (IOP MAINTENANCE) FIGURE 26

PhacoJack®  
THE Phacosystem



**PROCEDURE**

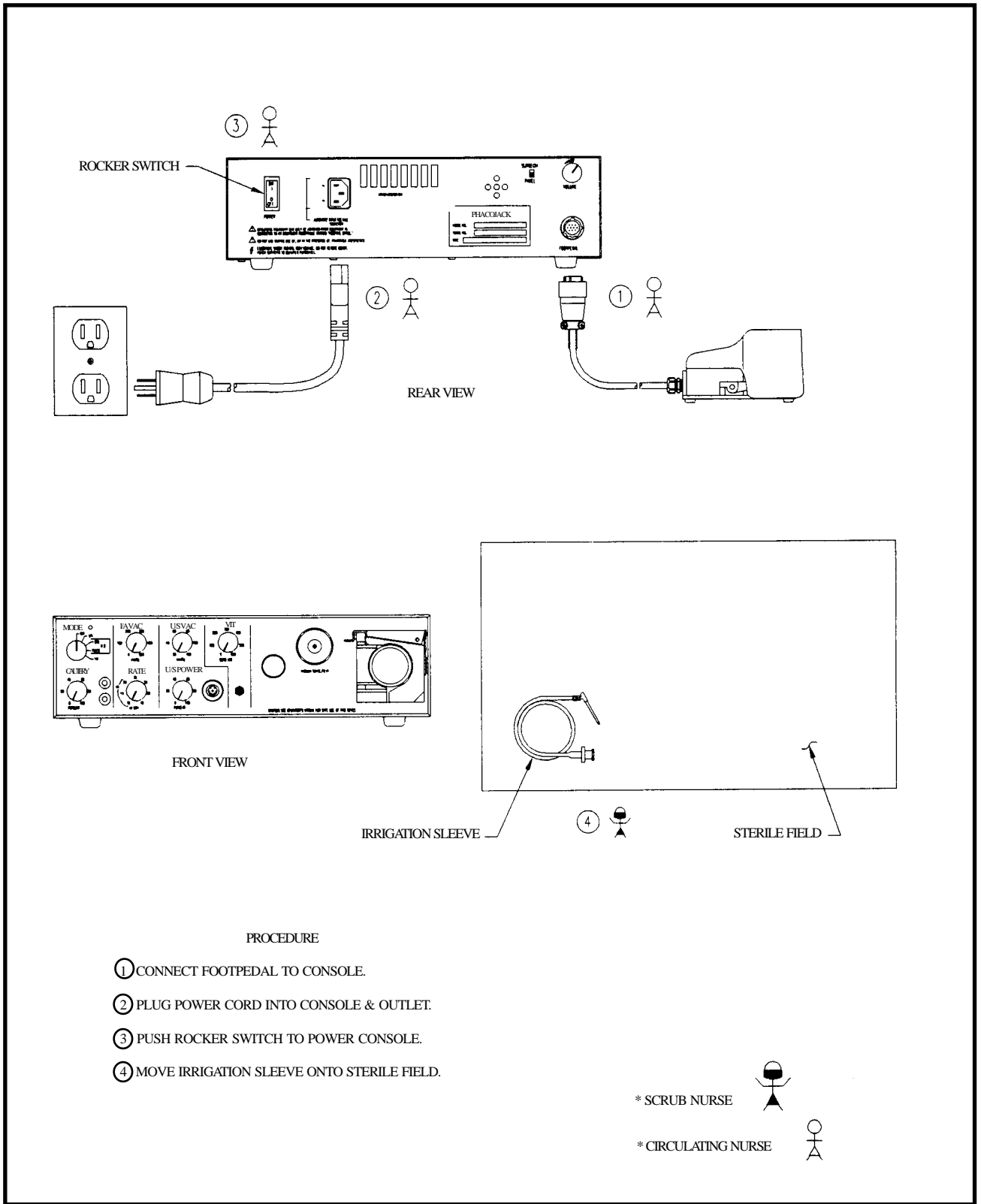
- ① DISCONNECT TUBING.
- ② REMOVE THE IRRIGATING TIP SLEEVE FROM I/A HANDPIECE & DISCARD.
- ③ CONNECT SYRINGE TO ASPIRATION FITTING OF I/A HANDPIECE AS SHOWN. FORCEFULLY PUSH SYRINGE PLUNGER.
- ④ REPEAT STEP 3 WITH AIR.
- ⑤ CONNECT SYRINGE TO IRRIGATION FITTING OF I/A HANDPIECE. FORCEFULLY PUSH SYRINGE PLUNGER.
- ⑥ REPEAT STEP 5 WITH AIR.
- ⑦ REMOVE I/A TIP WITH TIP WRENCH.
- ⑧ STERILIZE I/A HANDPIECE PER ACCEPTED HOSPITAL/FACILITY PRACTICE.

**WARNINGS!**

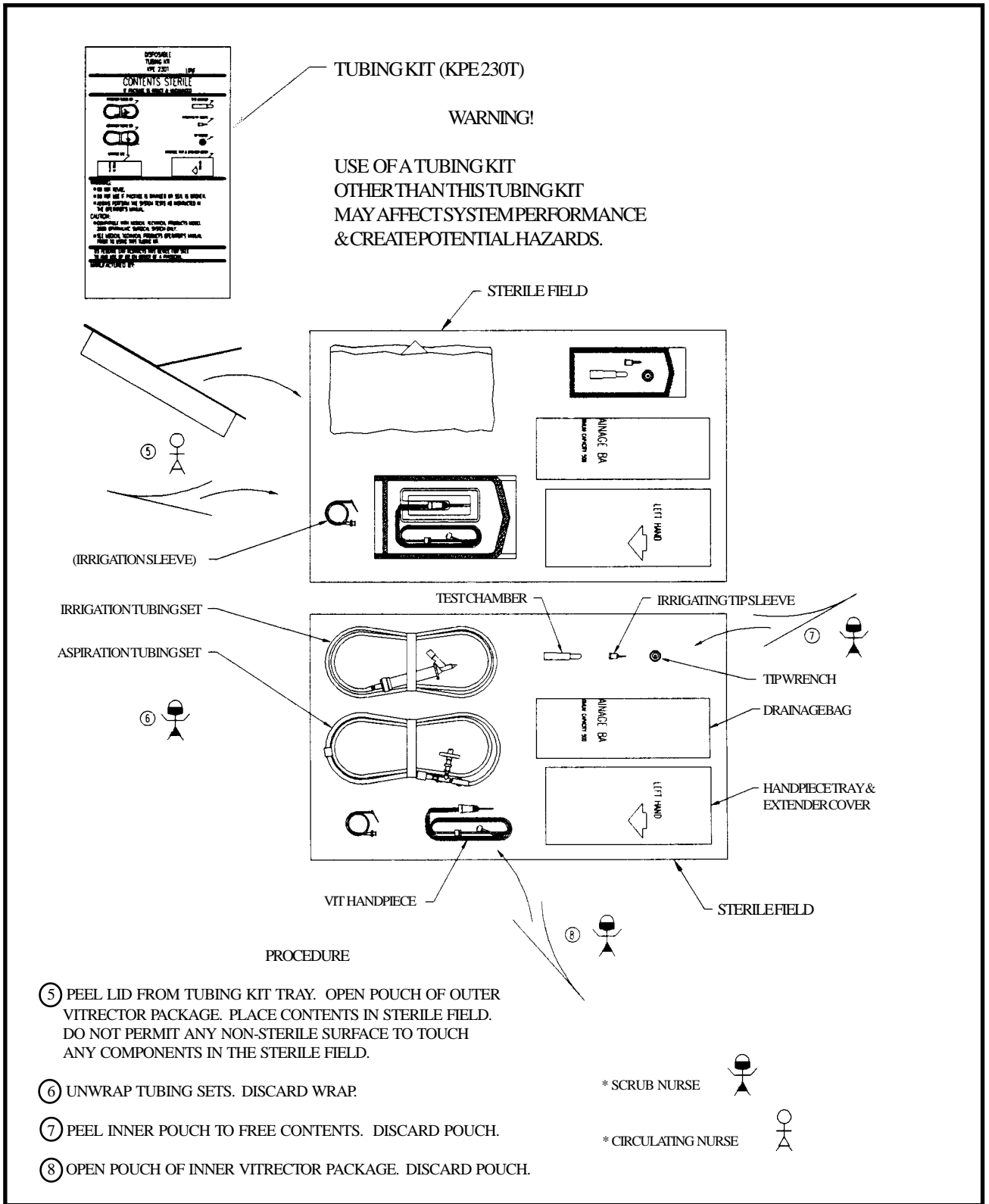
- \* IF CLEANING IS NOT PERFORMED AFTER EACH SURGICAL PROCEDURE, SALT & DEBRIS MAY COLLECT ALONG THE INNER WALLS OF THE HANDPIECE. THIS COLLECTION OF SALT & DEBRIS WILL COMPROMISE THE SURGICAL PROCEDURE BY INCREASING THE FLUID RESISTANCE AND LIKELY RISK IOP MAINTENANCE.
- \* DO NOT AUTOCLAVE ANY HANDPIECES UNTIL ALL SALT & DEBRIS HAS BEEN REMOVED.
- \* NEVER USE WIRE CLEANING INSTRUMENTS OR STEEL BRUSHES TO CLEAN ANY PART OF THE HANDPIECE.

**I/A HANDPIECE  
CLEANING  
FIGURE 27**

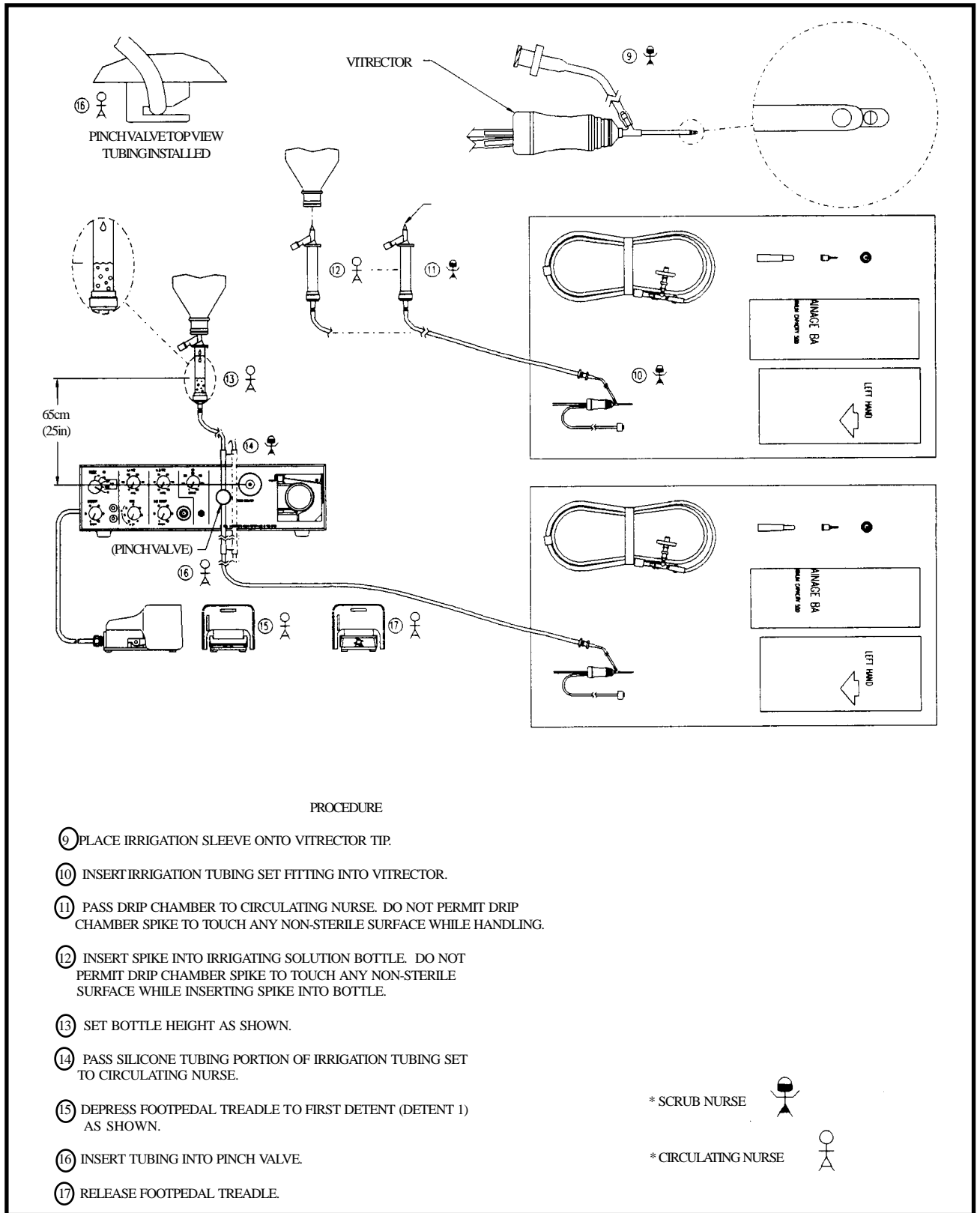
PhacoJack®  
THE Phacosystem



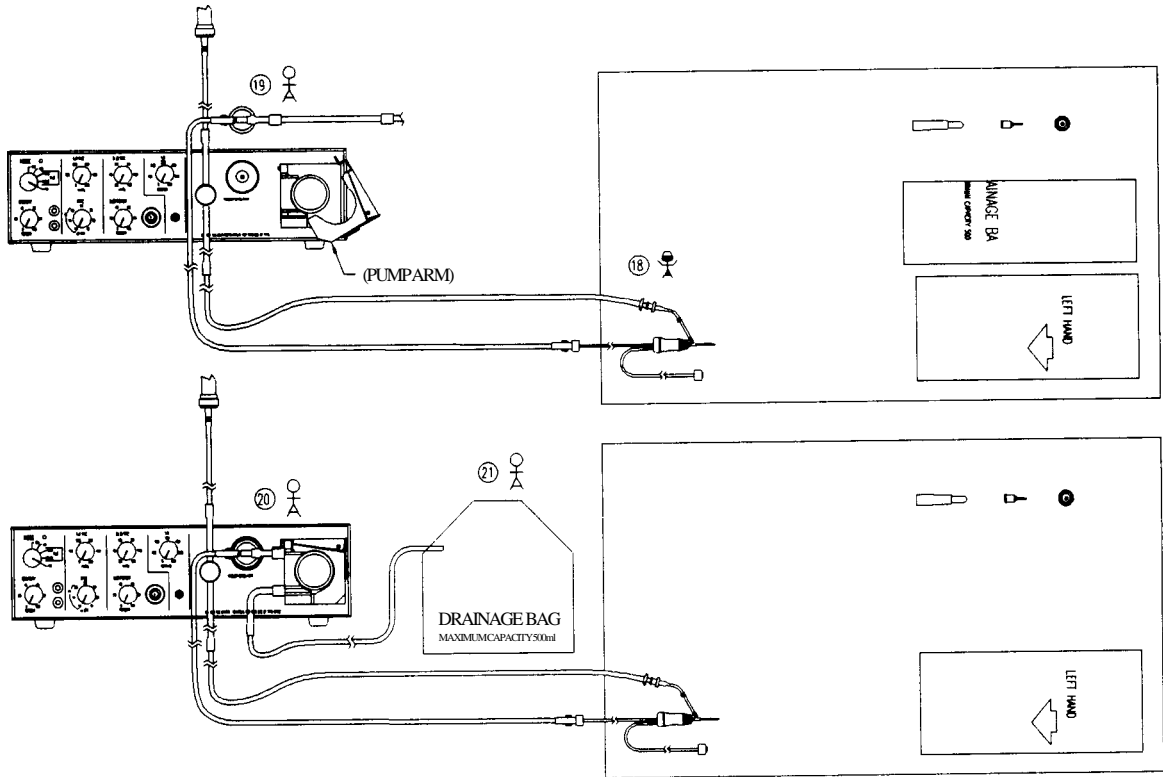
**VITRECTOR  
SYSTEM SETUP (CONSOLE CONNECTIONS)  
FIGURE 28**



**VITRECTOR  
SYSTEM SETUP (TUBING KIT PREPARATION)  
FIGURE 29**



**VITRECTOR  
SYSTEM SETUP (IRRIGATION TUBING SET)  
FIGURE 30**



PROCEDURE

- ⑱ INSERT ASPIRATION TUBING SET FITTING ONTO VITRECTOR.
- ⑲ PASS PUMP TUBING WITH FILTER TO CIRCULATING NURSE.
- ⑳ FIRMLY ATTACH FILTER TO VACUUM SENSE/VENT FITTING. STRETCH SILICONE TUBING AROUND PUMP HEAD AS SHOWN. CLOSE PUMP ARM.
- ㉑ INSERT TUBING INTO DRAINAGE BAG.

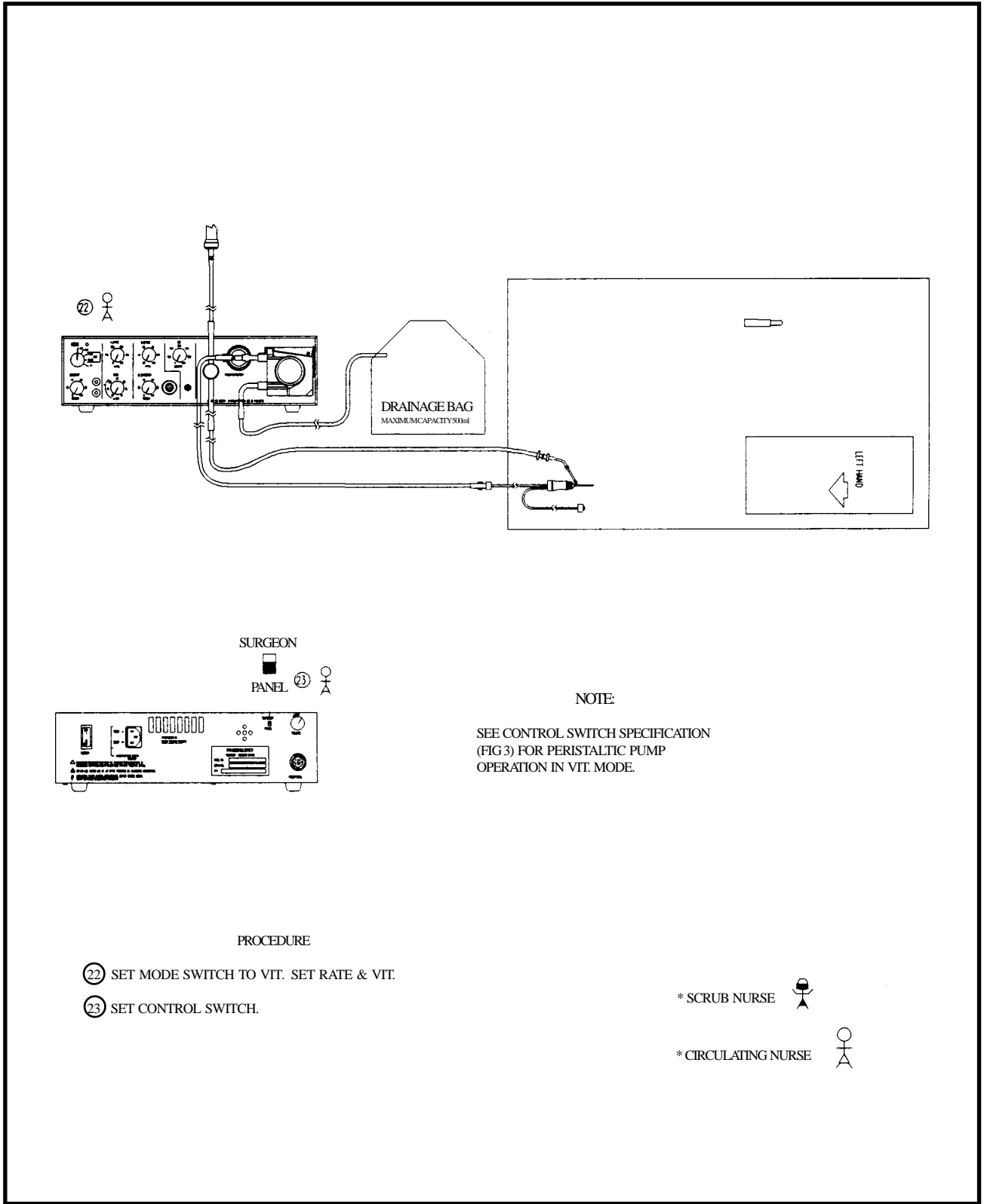
\* SCRUB NURSE



\* CIRCULATING NURSE

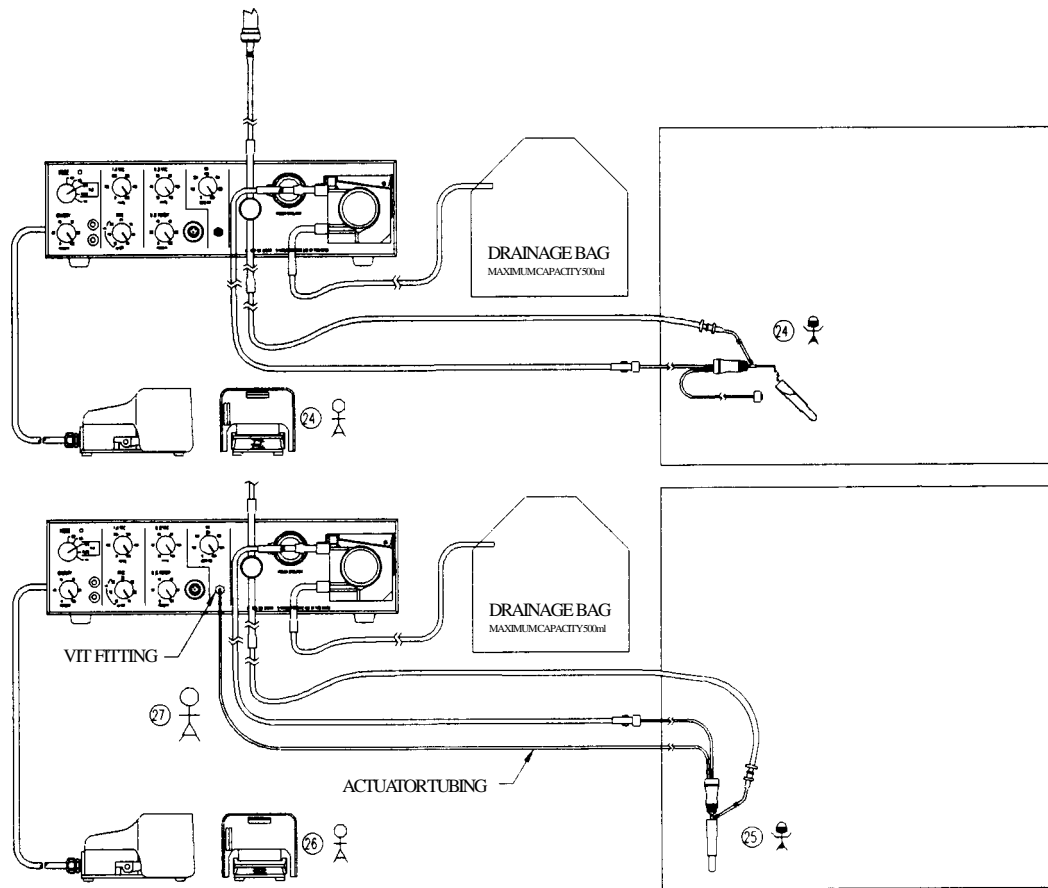


**VITRECTOR  
SYSTEM SETUP (ASPIRATION TUBING SET)  
FIGURE 31**



**VITRECTOR  
SYSTEM SETUP (SET CONSOLE)  
FIGURE 32**





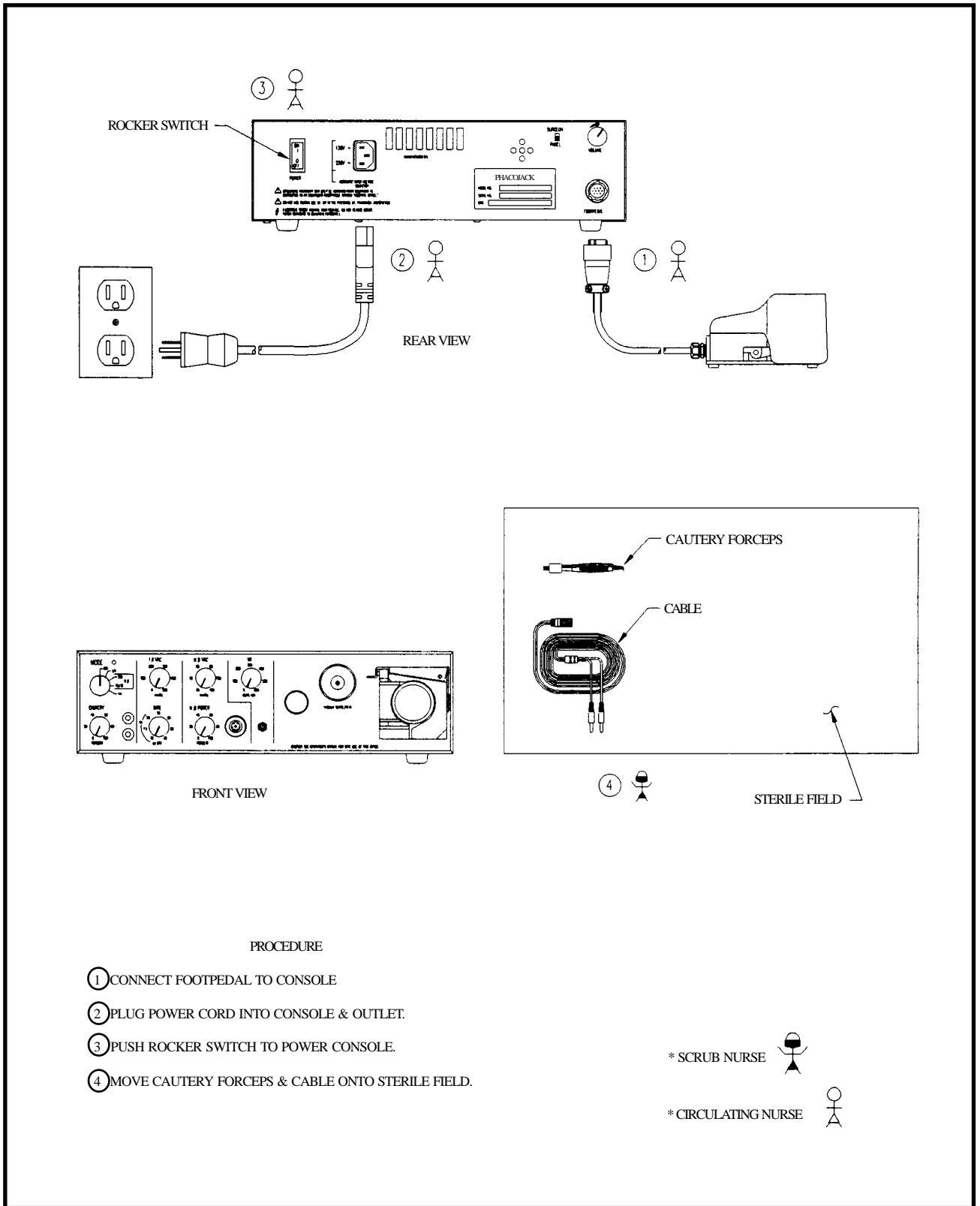
PROCEDURE

- 24 DEPRESS FOOTPEDAL TREADLE TO FIRST DETENT (DETENT 1) AS SHOWN (IRRIGATION ONLY) AND HOLD UNTIL TEST CHAMBER IS FILLED ~ 3/4 FULL.
- 25 PLACE TEST CHAMBER ON VITRECTOR.
- 26 DEPRESS FOOTPEDAL TREADLE TO SECOND DETENT (DETENT 2) AS SHOWN (IRRIGATION & ASPIRATION) AND HOLD UNTIL ALL TUBING IS PRIMED.
- 27 CONNECT ACTUATOR TUBING TO CONSOLE AS SHOWN.
- 28. RELEASE FOOTPEDAL TREADLE.

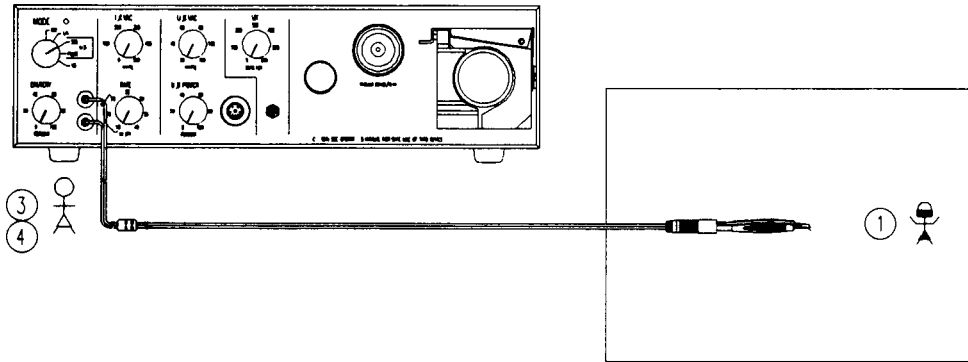
\* SCRUB NURSE 

\* CIRCULATING NURSE 

**VITRECTOR  
SYSTEM SETUP (PRIME)  
FIGURE 33**




**CAUTERY  
SYSTEM SETUP (CONSOLE CONNECTIONS)  
FIGURE 34**



PROCEDURE

- ① CONNECT FORCEPS TO CABLE.
2. PASS CABLE TO CIRCULATING NURSE.
- ③ INSERT PLUGS INTO CONSOLE AS SHOWN.
- ④ SET CAUTERY.

\* SCRUB NURSE 

\* CIRCULATING NURSE 

**CAUTERY  
SYSTEM SETUP (SET CONSOLE)  
FIGURE 35**