

---

# UNITRON®

## Versamet 4

INVERTED  
METALLURGICAL  
MICROSCOPE

MANUAL



---

Öadā' dāÅ^K

 **New York  
Microscope  
Company**  
Microscope Experts since 1979



100 Lauman Lane, Suite A, Hicksville, NY 11801  
Tel: (877) 877-7274 | Fax: (516) 801-2046  
Email: [Info@nyscopes.com](mailto:Info@nyscopes.com)  
[www.microscopeinternational.com](http://www.microscopeinternational.com)



## CONTENTS

SAFETY NOTES.....	3
CARE AND MAINTENANCE .....	3
INTRODUCTION .....	4
UNPACKING AND COMPONENTS .....	4
COMPONENT DIAGRAMS .....	5-6
ASSEMBLY DIAGRAM.....	7
DETAILED ASSEMBLY .....	8-11
OPERATION	
ILLUMINATION .....	12
SELECTING THE LIGHT PATH .....	13
FOCUSING .....	13
FOCUSING TENSION .....	14
INTERPUPILLARY DISTANCE .....	14
EYEGUARDS.....	14
FIELD DIAPHRAGM.....	15
APERTURE DIAPHRAGM .....	15
BRIGHTFIELD/DARKFIELD .....	16
POLARIZER.....	16
MOUNTING A MICROSCOPY CAMERA (OPTIONAL) .....	17
DIC COMPONENTS (OPTIONAL) .....	17-18
REPLACING THE LAMP .....	18
TROUBLESHOOTING .....	19-20
MAINTENANCE.....	21
SERVICE .....	21
WARRANTY .....	21

## SAFETY NOTES

1. Open the shipping carton carefully to prevent any accessory, i.e. objectives or eyepieces, from dropping and being damaged.
2. Do not discard the molded shipping carton; the container should be retained should the microscope ever require reshipment.
3. Keep the instrument out of direct sunlight, high temperature or humidity, and dusty environments. Ensure the microscope is located on a smooth, level and firm surface.
4. If any specimen solutions or other liquids splash onto the stage, objective or any other component, disconnect the power cord immediately and wipe up the spillage. Otherwise, the instrument may be damaged.
5. All electrical connectors (power cord) should be inserted into an electrical surge suppressor to prevent damage due to voltage fluctuations.
6.  **LAMP REPLACEMENT -- CAUTION:** the glass housing of the lamp may be extremely hot. DO NOT attempt to change the lamp before it is completely cooled or without wearing adequate skin protection.
7.  **FUSE REPLACEMENT --** For safety when replacing the fuse (ONLY replace with the same size, type and rating of original fuse), be sure the main switch is in the off position, disconnect the power cord from outlet, and replace the fuse. Reconnect the power cord and turn unit on.
8. Confirm that the input voltage indicated on your microscope corresponds to your line voltage. The use of a different input voltage other than indicated will cause severe damage to the microscope.

## CARE AND MAINTENANCE

1. Do not attempt to disassemble any component including eyepieces, objectives or focusing assembly.
2. Keep the instrument clean; remove dirt and debris regularly. Accumulated dirt on metal surfaces should be cleaned with a damp cloth. More persistent dirt should be removed using a mild soap solution. Do not use organic solvents for cleansing.
3. The outer surface of the optics should be inspected and cleaned periodically using an air stream from an air bulb. If dirt remains on the optical surface, use a soft cloth or cotton swab dampened with a lens cleaning solution (available at camera stores). All optical lenses should be swabbed using a circular motion. A small amount of absorbent cotton wound on the end of a tapered stick such as cotton swabs or Q-tips, makes a useful tool for cleaning recessed optical surfaces. Avoid using an excessive amount of solvents as this may cause problems with optical coatings or cemented optics or the flowing solvent may pick up grease making cleaning more difficult. Oil immersion objectives should be cleaned immediately after use by removing the oil with lens tissue or a clean, soft cloth.
4. Store the instrument in a cool, dry environment. Cover the microscope with the dust cover when not in use.
5. UNITRON® microscopes are precision instruments which require periodic preventative maintenance to maintain proper performance and to compensate for normal wear. An annual schedule of preventative maintenance by qualified personnel is highly recommended. Your authorized UNITRON® distributor can arrange for this service.

## INTRODUCTION

Congratulations on the purchase of your new UNITRON® microscope. UNITRON® microscopes are engineered and manufactured to the highest quality standards. Your microscope will last a lifetime if used and maintained properly. UNITRON® microscopes are carefully assembled, inspected and tested by our staff of trained technicians in our New York facility. Careful quality control procedures ensure each microscope is of the highest quality prior to shipment.

## UNPACKING AND COMPONENTS

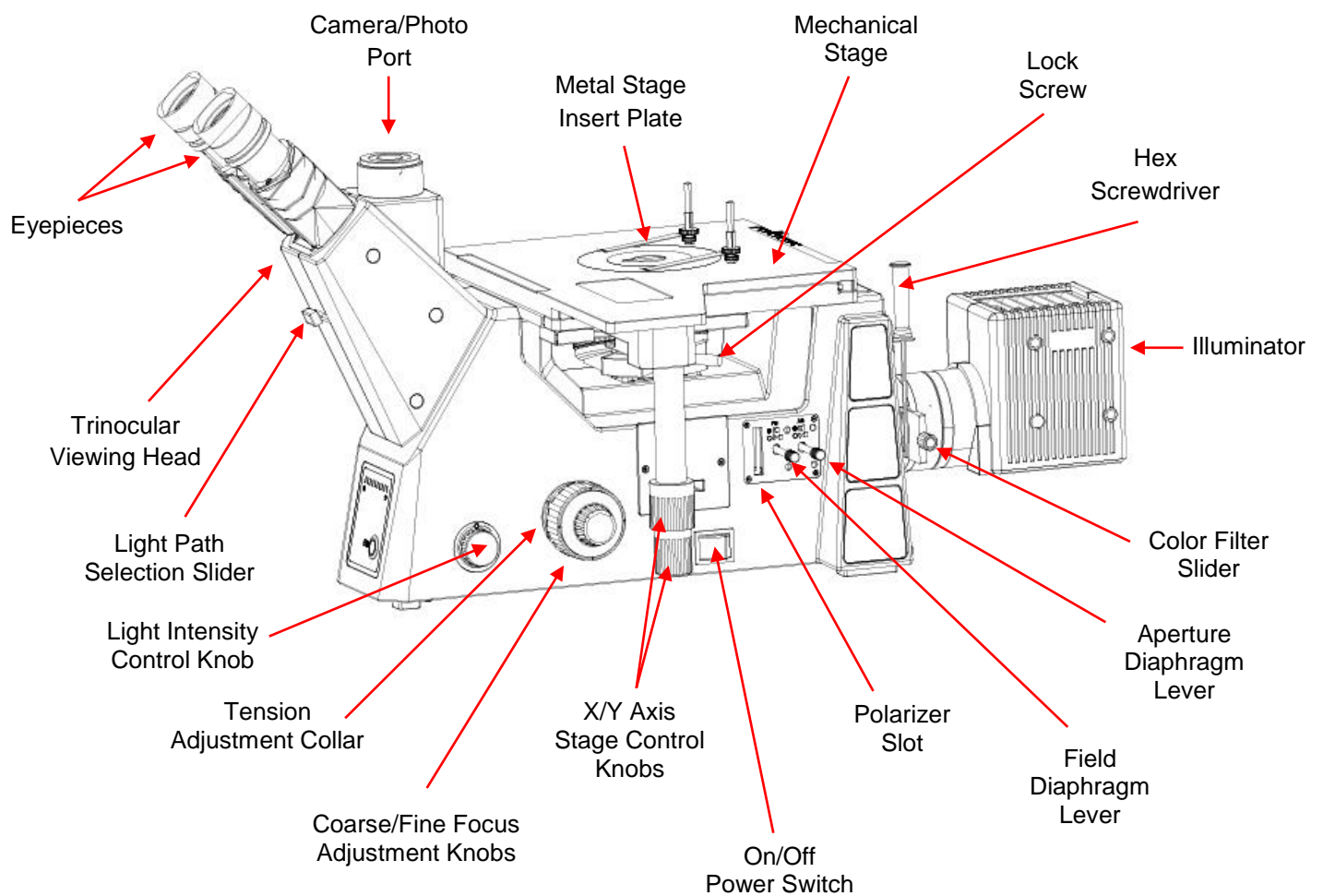
Your microscope arrived packed in a molded shipping carton. ***Do not discard the carton:*** the carton should be retained for reshipment of your microscope if needed. Avoid placing the microscope in dusty surroundings or in high temperature or humid areas as mold and mildew will form. Carefully remove the microscope from the EPE foam container by its arm and base and place the microscope on a flat, vibration-free surface. Check the components against the following standard configuration list:

- Stand, which includes the supporting arm, trinocular viewing head, and focusing mechanism
- Eyepieces as ordered
- Roll-down eyeguards
- Nosepiece
- Nosepiece lock screw
- Objectives as ordered
- Mechanical stage
- Stage plate inserts
- Stage clips (pair)
- Illuminator
- Color Filter slider
- Green, yellow and clear daylight blue
- Polarizer slider
- Analyzer slider
- 360° rotatable analyzer slider
- DIC slider (*optional*)
- 3-prong electric power cord
- Hex screwdriver
- Hex screwdriver magnetic mount
- Dust cover
- Instruction manual

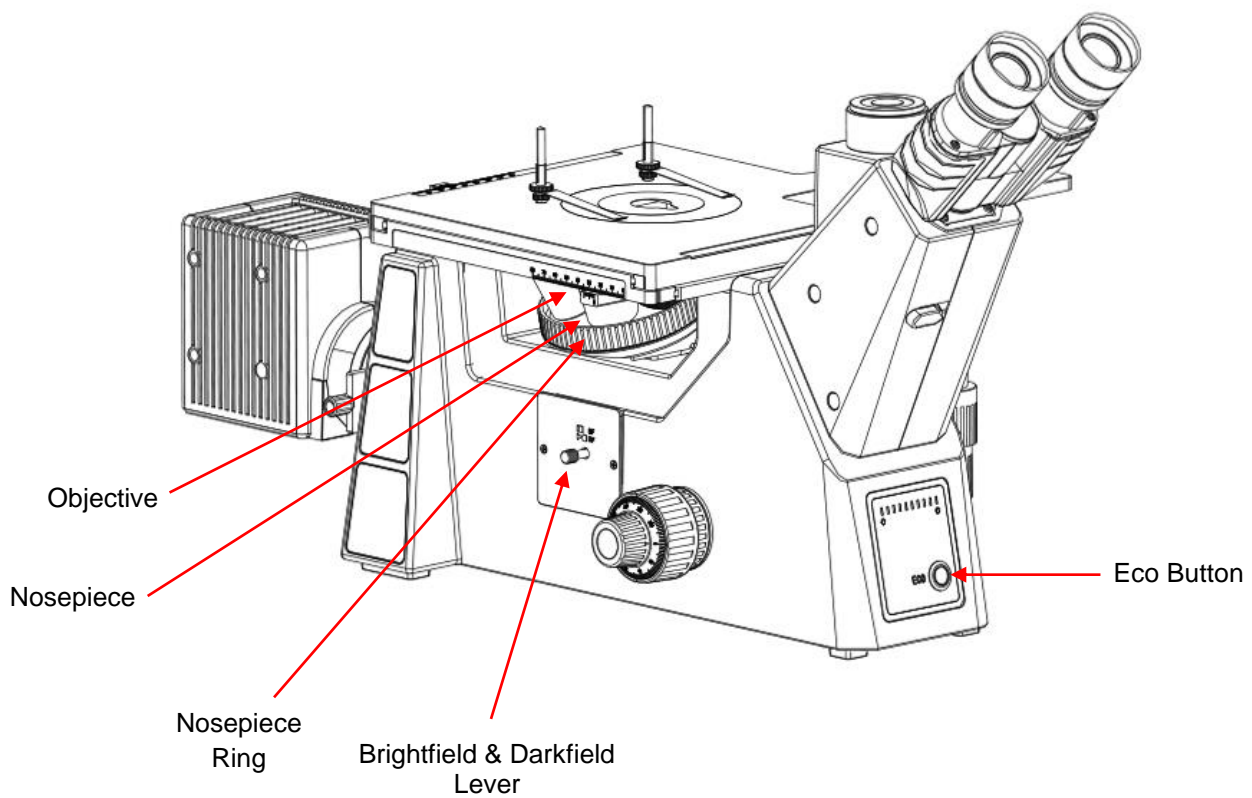
Optional accessories such as optional objectives and/or eyepieces, slides sets, etc., are not shipped as part of the standard equipment. These items, if ordered, are shipped separately.

# VERSAMET 4 INVERTED METALLURGICAL MICROSCOPE

## COMPONENTS DIAGRAM



**COMPONENTS DIAGRAM**

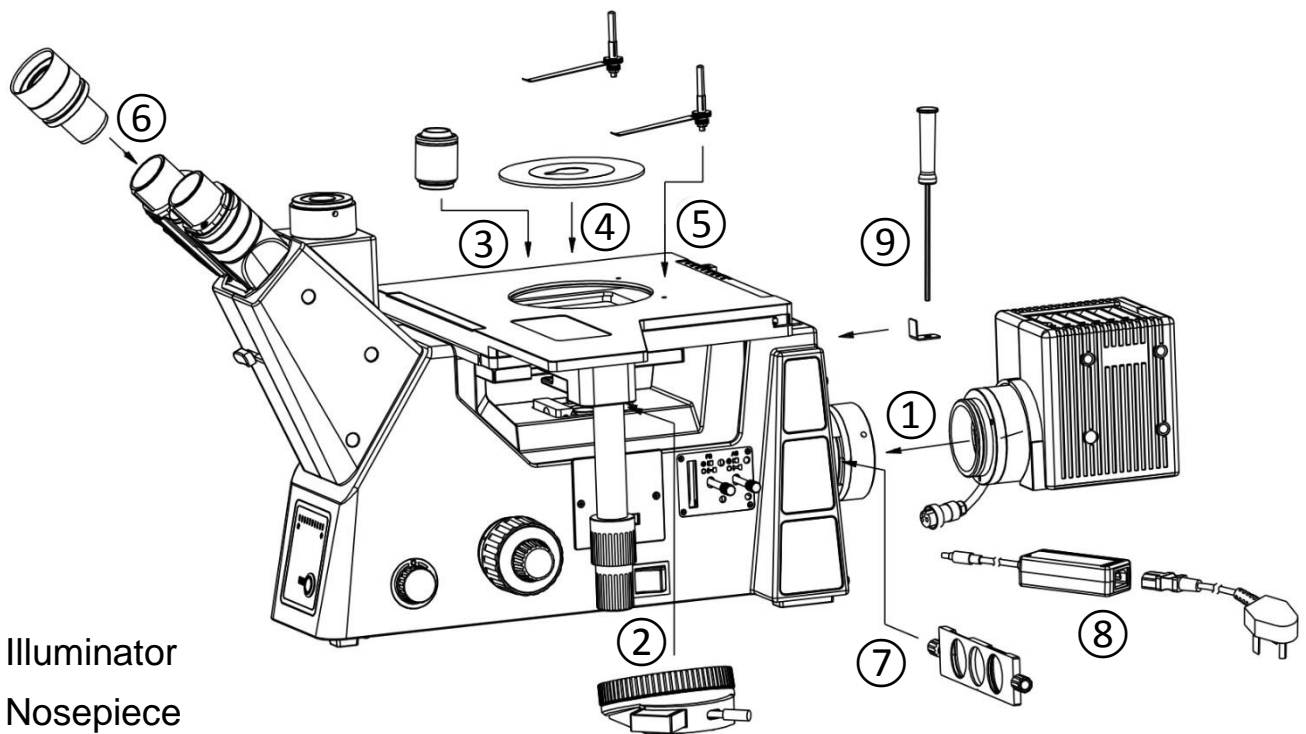


# VERSAMET 4 INVERTED METALLURGICAL MICROSCOPE

## ASSEMBLY DIAGRAM

The diagram below shows how to assemble the various components. The numbers indicate the order of assembly. Use the 1.5mm and 2mm hex wrenches that are supplied with your microscope when required. Be sure to keep these wrenches for changing out components or making adjustments.

When assembling the microscope, make sure that all parts are free of dust and dirt, and avoid scratching any parts or touching glass surfaces.



- ① Illuminator
- ② Nosepiece
- ③ Objectives
- ④ Metal Stage Insert Plate
- ⑤ Stage Clips
- ⑥ Eyepieces
- ⑦ Filter Slider
- ⑧ Power Cord
- ⑨ Hex Screwdriver



## ASSEMBLY

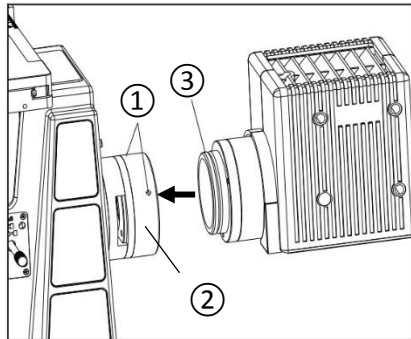


Fig. 1

### Installing the Illuminator (Fig. 1)

Using the included hex screwdriver, loosen the lock screws ① on the illuminator port ② on the back of the microscope.

Align the illuminator ③ with the illuminator port ② and gently slide the illuminator into the port.

Tighten the lock screws ①.

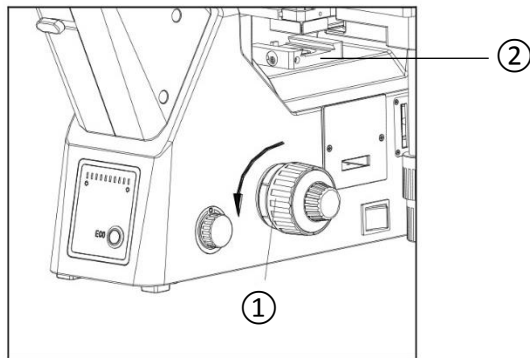


Fig. 2

### Installing the Objectives (Fig. 2, 3 & 4)

Turn the coarse adjustment knob ① (Fig. 2) until the nosepiece is at its lowest position.

Through the opening in the top of the stage (Fig. 4), remove the dust cap ② and thread the lowest magnification objective onto the nosepiece opening, then rotate the nosepiece clockwise and thread the other objectives from low to high magnification.

**NOTE:** Always rotate the nosepiece by using the knurled nosepiece ring ⑤ (Fig 3).

Keep the dust cap on any unused nosepiece openings to prevent dust and dirt from getting inside.

**NOTE:** Clean the objectives periodically.

When viewing a sample, focus the sample using the lowest magnification objective (5x or 10x). Then change to the higher magnification as desired.

When changing objectives, rotate the nosepiece until it clicks so ensure the objective is in the center of the light path.

Be sure to note the working distance of the objectives to avoid touching the specimen or stage which can cause damage to the objective lens.

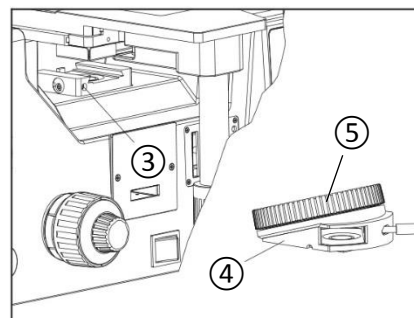


Fig. 3

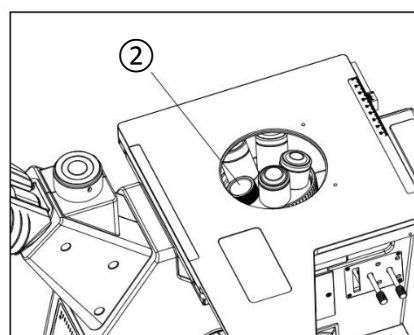


Fig. 4

## ASSEMBLY *(continued)*

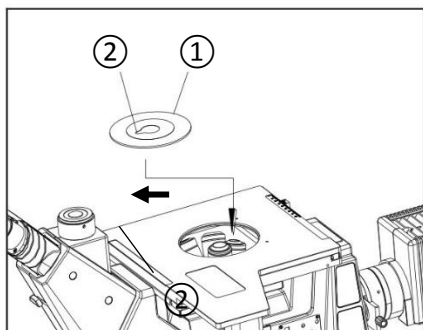


Fig. 5

### Installing the Metal Insert Stage Plate (Fig. 5)

Place the metal insert stage plate ① with the V groove ② facing the user to make it easier to check the objective.

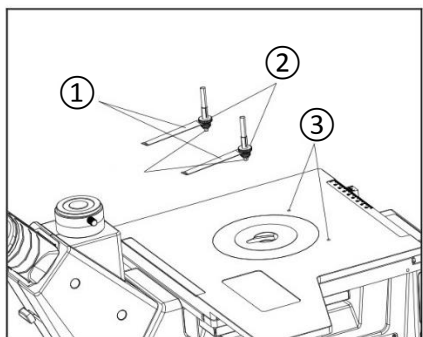


Fig. 6

### Installing the Stage Clips (Fig. 6)

Remove the clip ① from the column ② and screw the column into one of the holes ③ on the stage.

Secure the column to the stage with the screw.

Then slide the clip onto the column facing toward the user.

Repeat for the other stage clip.

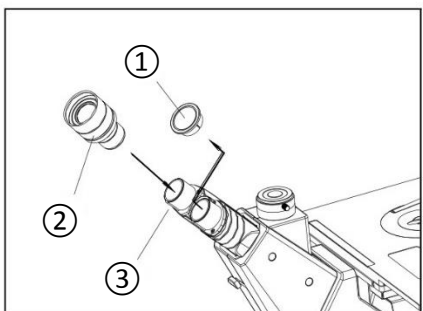


Fig. 7

### Installing the Eyepieces (Fig. 7)

Remove the eyetube caps ① and insert the eyepieces ② into the eyepiece tubes ③.

Lock in the eyepieces using the supplied 1.5mm hex wrench to tighten the lock screw on each eyepiece tube.

## ASSEMBLY *(continued)*

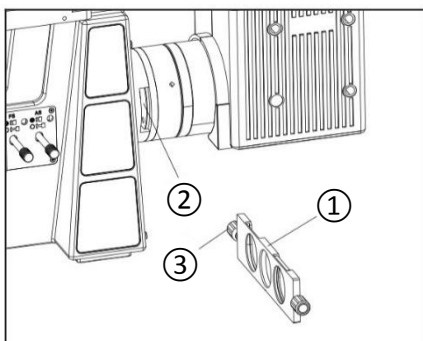


Fig. 8

### Installing the Color Filter Slider (Fig. 8)

The Versamet 4 is equipped with three filters (green, yellow and clear daylight blue), and a three position filter slider ① that is inserted into the filter slot ②.

The middle position on the filter slider is empty for brightfield observation, (or simply remove the filter slider). The other two positions are empty so that you may insert the any of the other filters into these positions.

To insert a filter into the filter slider, position the rounded side down and simply slide the filter into place.

**NOTE:** be sure to keep the filter slider in an upright position as the filters when inserted do not click into place and can slide out if the slider is turned sideways or upside down.

To insert the filter slider into the filter slot, you must remove one of the end screws ③ by turning it counterclockwise. You may then insert the filter slider into the filter slot from either side of the microscope. Once inserted, replace the end screw by turning it clockwise.

To move a filter into the light path, slide the filter slider until the desired filter is in the light path.

**NOTE:** the filters have a “Λ” groove on the bottom and you will hear/feel each “click” into place.

## ASSEMBLY *(continued)*

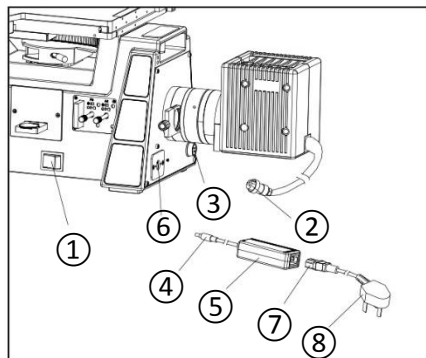


Fig. 9

### Connecting the Illuminator & Power Cords (Fig. 9)

Make sure the power switch ① is set to “OFF”.

Insert the plug ② of the illuminator into the “Output” socket ③ on the back of the microscope by aligning the notches on the plug with the two pegs on either side of the socket and then slide it on until it clicks into place.

Insert the plug ④ of the external power supply ⑤ into the “Input” socket on the back of the microscope with the flat side of the plug facing down.

Insert the female end ⑦ of the power cord into the three pronged socket on the external power supply.

Plug the other end ⑧ into a grounded (3-prong) outlet.

**NOTE:** Always use the power cord that is provided with your microscope; using a different power cord may damage your microscope. Should you need a replacement, contact your authorized UNITRON dealer or call UNITRON at 1-631-543-2000 for a dealer nearest you.

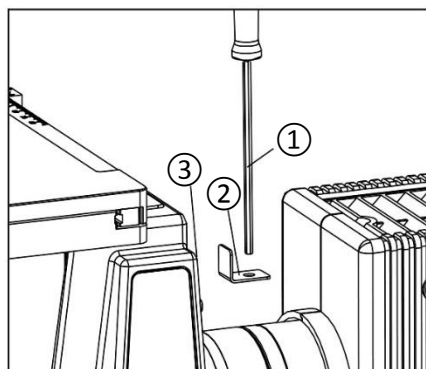


Fig. 10

### Storing the Hex Screwdriver (Fig. 10)

For convenience, you can store the hex screwdriver ① for your microscope in the magnetic “L” mount ② provided.

The mount can be attached to the magnet ③ on the back of the microscope with the hole positioned as shown.

The hex screwdriver can then be inserted into the mount’s hole as shown for storage.

## OPERATION

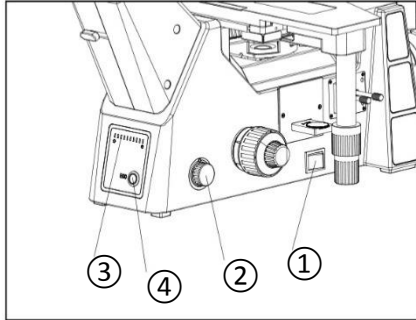


Fig. 11

### Adjusting the Illumination (Fig. 11)

Turn on “—” the power switch ①.

**NOTE:** For longer lamp life always turn the light intensity control knob ② to the lowest illumination intensity setting possible before turning the power on or off.

The light level may need adjustment depending upon the specimen density and objective magnification. Adjust the light intensity for comfortable viewing by turning the light intensity control knob clockwise to increase brightness. Turn counterclockwise to decrease brightness.

### “ECO” (Economy) Setting

The Versamet 4 is equipped with an auto shut-off feature, or “ECO” mode, to preserve the life of the bulb. ECO mode activates when the microscope is unattended for thirty (30) minutes and turns the illuminator off. It will reactivate and turn the illuminator back on when the user returns and is in front of the microscope.

To reactivate the illumination, press the ECO button ④ once (it will stay indented).

To **DISABLE** the ECO feature, PRESS the ECO button once (it will be flush with the outer ring).

To **REACTIVATE** the ECO feature, PRESS the ECO button once (it will stay indented).

## OPERATION *(continued)*

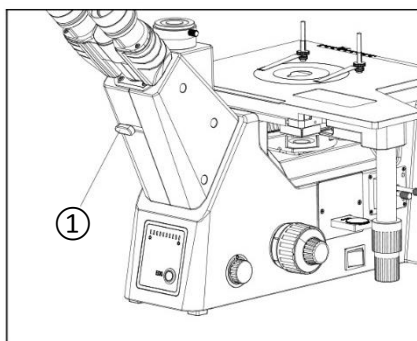


Fig. 12

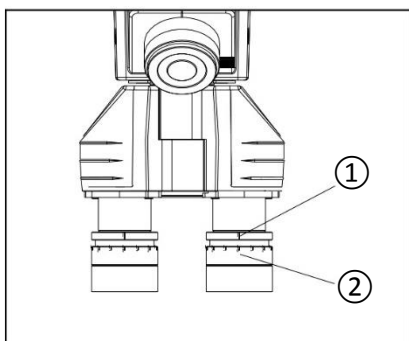


Fig 13

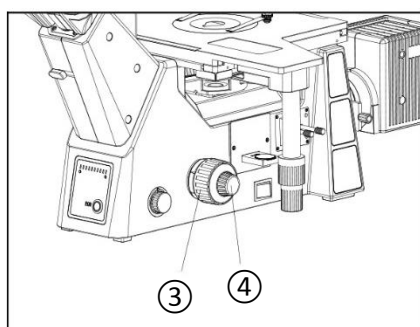


Fig 14

### Selecting the Light Path (Fig. 12)

The Versamet 4 is outfitted with a binocular viewing head with one photo port for HDMI/digital imaging. You must select the appropriate light path for observing specimens.

The light path is set to 100% to the binocular eyepieces as the default setting at our facilities where the light path selection slider ① is set to the “OUT” position (pushed all the way to the right).

Slide the light path selection slider to the left to the “IN” position. This will send 0% of the light to the binocular viewing head and 100% to the top photo port for HDMI/digital imaging and documentation.

### Adjusting the Focus (Fig. 13-14)

To ensure that you obtain sharp images with both eyes, (since eyes vary, especially for those wearing glasses) any eyesight variation can be corrected in the following manner.

Set both diopter collars ① to “0” by aligning the line on the eyepiece ② with the line on the diopter collar.

Using your left eye only and the lowest magnification objective (5x or 10X), focus your specimen by adjusting the coarse adjustment knob ③.

When the image is in view, refine the image to its sharpest focus by turning the fine adjustment knob ④.

Rotate the diopter collar to obtain the sharpest focus. To obtain the same sharp image using your right eye, do not touch the coarse or fine adjustments. Instead, rotate the right diopter collar until the sharpest image appears. Repeat several times to check.

**IMPORTANT:** DO NOT counter rotate the focusing knobs as this will cause severe problems and damage to the focusing system.

## OPERATION *(continued)*

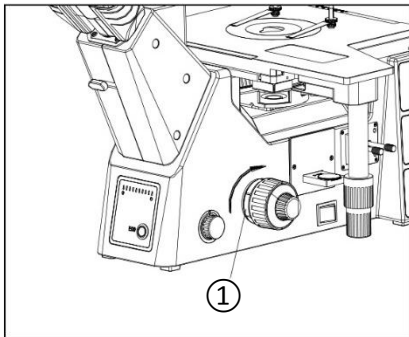


Fig. 15

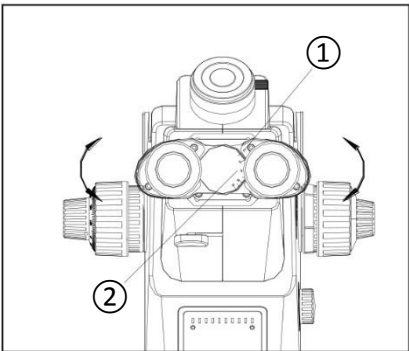


Fig 16

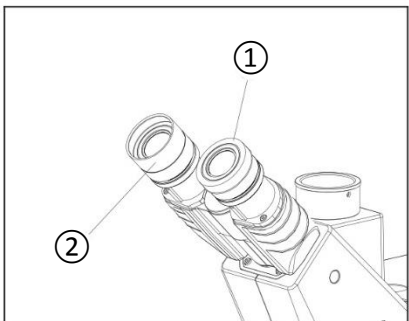


Fig 17

### Adjusting the Focusing Tension (Fig. 15)

If the feel is very heavy when focusing with the focusing knobs (Fig. 14, ③ & ④), or the specimen leaves the focus plane after focusing, adjust the tension with the tension adjustment ring ① (Fig. 15).

Turn the tension adjustment ring clockwise to loosen or counterclockwise to tighten according to user preference.

**IMPORTANT:** DO NOT counter rotate the focusing knobs as this will cause severe problems and damage to the focusing system.

### Adjusting Interpupillary Distance (Fig. 16)

To adjust the interpupillary distance, hold the left and right eyetubes while observing a specimen. Rotate the eyetubes around the central axis until the fields of view of both eyetubes coincide completely. A complete circle should be seen in the viewing field when viewing the specimen slide. An improper adjustment will cause operator fatigue and will disrupt the objective parfocality.

Where the “•” ① on the eyepiece tube lines up with the interpupillary distance scale ②, that is the number for your interpupillary distance.

The range is 50-75mm. Be sure to write down you interpupillary number for future operation.

### Adjusting the Eyepiece Eyeguards (Fig. 17)

The Versamet 4 eyepieces come standard with roll-down eyeguards.

The eyeguards should be rolled down ① for users wearing eyeglasses to prevent them from being too far from observing through the eyepieces. Or, not rolled down ② for those who don't wear glasses to prevent extraneous light from entering the eyepiece which may interfere with specimen observation.

## OPERATION *(continued)*

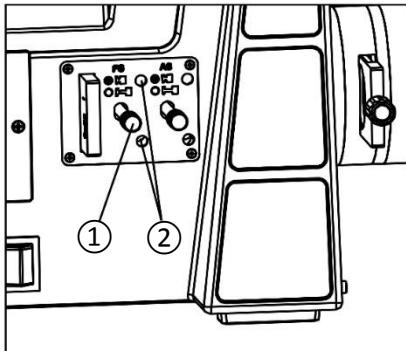


Fig. 18

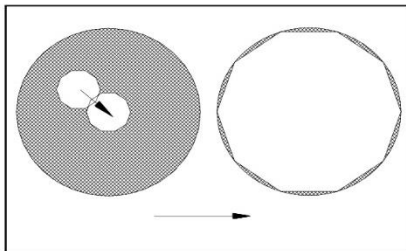


Fig. 19

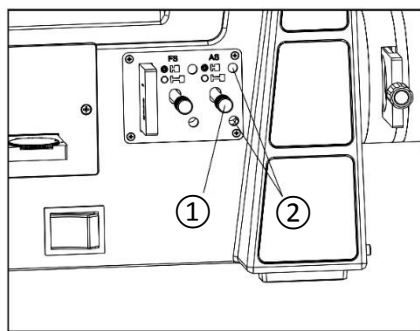


Fig. 20

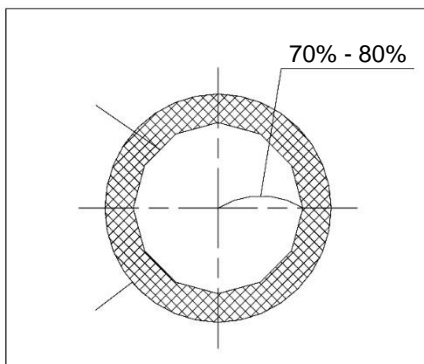


Fig. 21

### Adjusting the Field Diaphragm (Fig. 18-19)

By limiting the diameter of the light entering the condenser, the field diaphragm can prevent stray light and improve the image contrast. When the image is just on the edge of the field of view, the objective can show the best performance and obtain the clearest image.

Move the field diaphragm lever (FS) ① in or out to adjust the field diaphragm.

The image of the field diaphragm can be seen when observing through the eyepiece.

The field diaphragm was pre-centered prior to shipment. If the field diaphragm needs to be adjusted, adjust the right and left centering screws ② using the hex screwdriver until the field diaphragm is centered in the field of view.

### Using the Aperture Diaphragm (Fig. 20-21)

The iris diaphragm determines the numerical aperture (N.A.) of the illumination system in bright field observation. When the N.A. of the objective and the illumination system match, you can obtain higher image resolution and contrast, as well as an increased depth of focus.

Move the aperture diaphragm lever (AS) ① in or out to adjust the aperture diaphragm so that the aperture diaphragm image covers 70% to 80% of the pupil of the objective.

To properly adjust the aperture diaphragm adjust the right and left centering screws ② using the hex screwdriver until the aperture diaphragm is centered in the field of view.



## OPERATION *(continued)*

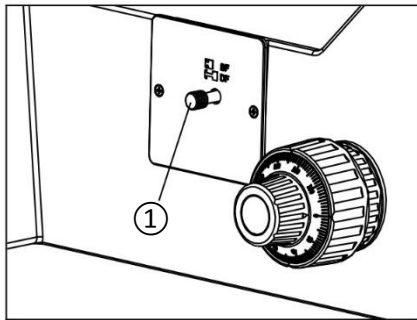


Fig. 22

### Changing from Brightfield To Darkfield Observation (Fig. 22)

The Versamet 4 allows users to easily change from brightfield observation to darkfield observation by sliding the brightfield (BF) & darkfield (DF) lever ①.

For brightfield observation, push the lever all the way in (BF).

For darkfield observation, open both the aperture diaphragm and field diaphragm levers to fully open, and pull the brightfield & darkfield lever all the way out (DF).

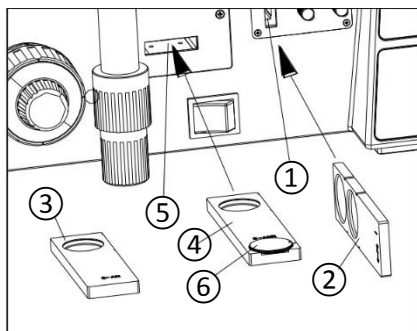


Fig. 23

### Using the Simple Polarizer (Fig. 23)

The simple polarizer includes the polarizer and analyzer.

To use, remove the dust plug from the polarizer slot ① and insert the polarizer slider ② into the slot as shown. The polarizer is moved into the light path when you hear it the second click.

**NOTE:** when using the polarizer, remove the color filter slider.

There are two analyzers: one fixed ③ and the other 360° rotatable analyzer ④.

To use one of the analyzers, remove the dust plug from the analyzer slot ⑤ and insert an analyzer slider into the slot as shown.

The polarizer and analyzer are orthogonal when the 360° rotating analyzer slider is zero adjusted or the fixed analyzer slider is used.

With the 360° rotating analyzer slider, you can change the orthogonal state of the polarized light by turning the dial ⑥.

## OPERATION *(continued)*

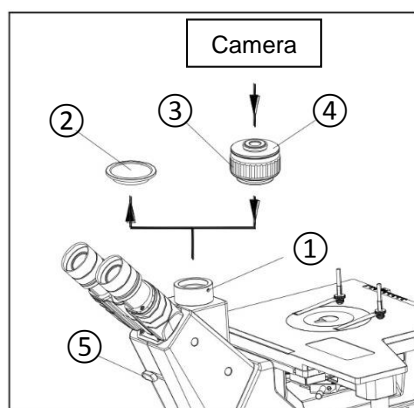


Fig. 24

### Mounting a Microscopy Camera *(Optional)* (Fig. 24)

#### Installing Couplers

Loosen the lock screw (1) and remove the dust cap (2) on the camera/photo port.

Loosen the lock screw (1) until it is flush with the inside of the photo port.

Remove the dust caps from both ends of the c-mount (3) and from your camera lens and attach the top opening (4) on the c-mount to the threaded mount on your camera.

Attach the bottom threaded mount of the c-mount (with the mounted camera) onto the camera/photo port and tighten the lock screw (1).

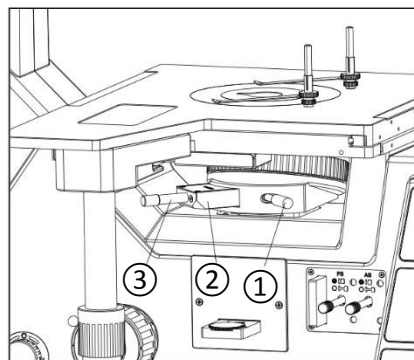


Fig. 25

### Selecting the Light Path for Observation With a Camera

Refer to page 13.

*Slide the light path selection slider (5) to the left to the "IN" position. This will send 0% of the light to the binocular viewing head and 100% to the top photo port for HDMI/digital imaging and documentation.*

### Using the DIC Components (Fig. 25)

While in brightfield observation, focus a specimen with the 10x or 20x objective.

Push the polarizer and the analyzer into the light path and ensure they are both orthogonal (the field of view is the darkest).

Loosen the lock screw (1) on the nosepiece, remove the dust plug from the DIC slot and insert the DIC slider (2) until it stops. Tighten the lock screw.

Rotate the fine adjustment knob (3) on the DIC slider to combine the interference colors in the field of view, then choose the suitable background interference color to attain the best effect of differential interference contrast image (the embossed effect is the most obvious).

## OPERATION *(continued)*

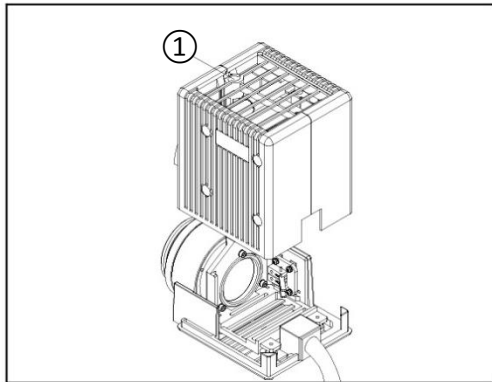


Fig. 26

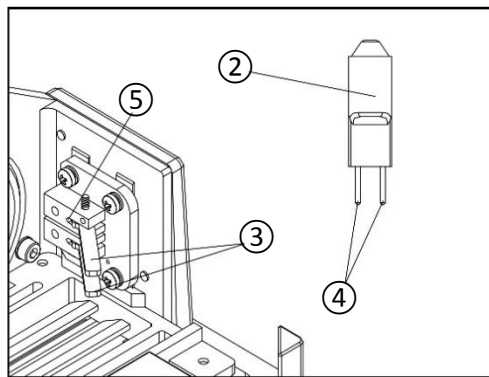


Fig. 27



**LAMP REPLACEMENT -- CAUTION:** the glass housing of the lamp may be extremely hot. **DO NOT** attempt to change the lamp before it is completely cooled or without wearing adequate skin protection.

**Replacement Lamp:** Catalog # 150-30-100  
(12volt 100 watt halogen)

### Using the DIC Components (Fig. 25) *(continued)*

The fine adjustment knob ③ can control the background interference color change from gray to mauve.

**NOTE:** Adjusting the aperture diaphragm at the same time will provide the best contrast.

Since the differential interference contrast is very sensitive, there should not be any dirt or dust on the surface of the sample.

Birefringent materials cannot reach the effect of differential interference contrast in microscopical examination.

### Replacing the Lamp (Fig. 26-27)

The halogen lamp was installed by our factory technicians prior to shipment. Should you need to change the lamp, following the instructions below.

**NOTE:** *When handling the halogen lamp, handle it only using lint-free gloves, cloth or tissue. Touching the lamp with your fingers or other type of material can damage the bulb.*

Turn the power switch to OFF and UNPLUG the microscope power cord; allow the lamp to cool.

Using the hex screwdriver supplied with your microscope, loosen the lock screw ① and remove the black illuminator housing cover by sliding it upwards as shown.

Using a lint-free glove, cloth or tissue, gently grasp the lamp ② and push the lamp release lever ③ back to release the lamp; pull the lamp out.

Using a lint-free glove, cloth or tissue, gently grasp the replacement lamp, push the lamp release lever back and insert the lamp pins ④ into the jack ⑤ closest to the hinge of the lamp release lever, then release the lever; the lamp should be horizontal after installation.

Replace the illuminator housing cover and tighten the lock screw.

## TROUBLESHOOTING

Under certain conditions, performance of this unit may be adversely affected by factors other than defects. If a problem occurs, please review the following list and take remedial action as needed. If you cannot solve the problem after checking the entire list, please contact your local dealer for assistance.

### OPTICAL

PROBLEM	CAUSE	SOLUTION
The illumination is on, but the field of view is dark.	The bulb is burnt out.	Replace it with a new one
	The brightness is set too low	Set it to the appropriate position
	The field diaphragm is not open enough or closed  Too many filters are in the optical path	Open the field diaphragm  Reduce them to the minimum required number
The edge of the field of view is obscured or not evenly illuminated.	The nosepiece is not in the located position	Turn the nosepiece into the position where you can hear it engaged
	Dirt or dust has accumulated on the lens (objective or eyepieces)	Clean the lens
	Light path selection slider is not in the right position The color filter, polarizer or analyzer is not inserted fully	Pull it into the right position  Push it in all the way
Dirt or dust is visible in the field of view	Dirt/dust on the specimen Dirt/dust on the eyepiece	Replace with a clean specimen Clean the eyepieces
The image is not clear	Cover glass on the specimen slide	Clean the specimen
	The specimen is not vertical to the objective	Adjust it
	The nosepiece is not in the correct position	Turn the nosepiece into the correct position
	The aperture diaphragm is not open correctly	Adjust it
	The light path selection slider is not in the correct position	Push it into the correct position
Visibility is poor  ● Image is not sharp ● Contrast is poor ● Details are indistinct	The objective is not correctly engaged in the light path the aperture diaphragm is opened or stopped down too far in brightfield observation The lens (condenser, objective, eyepieces) are dirty	Turn the nosepiece into the engaged position  adjust the aperture diaphragm properly  Clean it thoroughly
One side of the image is dark, blurred or it moves while focusing	The objective is not in the center of the light path The specimen is not correctly positioned on the stage	Insure the nosepiece is in the "clicked" position  Reposition the specimen on the stage
The eyes tire easily; the right field of view doesn't superimpose with the left	Interpupillary distance is incorrect	Adjust the interpupillary distance
	Diopter adjustment is incorrect	Adjust the diopter
	The eyepiece for the right eye is different from the left one	Use the same eyepieces

## TROUBLESHOOTING *(continued)*

### MECHANICAL PART

PROBLEM	CAUSE	SOLUTION
The coarse adjustment knob is too difficult to rotate	The tension adjustment ring is tightened too much	Loosen it
The image goes out of focus during observation or the stage drops by itself	The tension adjustment collar is too loose	Tighten it

### ELECTRICAL SYSTEM

PROBLEM	CAUSE	SOLUTION
The lamp doesn't light	No power to the lamp	Check the power cord is connected correctly
	The lamp is not installed correctly	Install it correctly
	The lamp burns out	Replace the lamp
The light intensity is not enough	The light intensity control knob is not set properly	Adjust the light intensity control knob
	The wrong lamp is used	Replace the lamp with the correct one
The lamp keeps burning out	The wrong lamp is used	Replace the lamp with the correct one
The lamp flickers or the brightness is not stable	The lamp will burn out soon	Replace the lamp
	The power supply doesn't connect well	Connect the power supply correctly

### MISCELLANEOUS

When using a camera and viewing on a monitor, a reflection from a window or indoor lighting is seen in the image	The stray light entered through the eyepieces or viewfinder is reflected	Cover both eyepieces to prevent stray light from entering
--	--	---

## MAINTENANCE

Please remember to **never** leave the microscope with any of the objectives or eyepieces removed and always protect the microscope with the dust cover when not in use.

## SERVICE

UNITRON® microscopes are precision instruments which require periodic servicing to keep them performing properly and to compensate for normal wear. A regular schedule of preventative maintenance by qualified personnel is highly recommended. Your authorized UNITRON® distributor can arrange for this service. Should unexpected problems be experienced with your instrument, proceed as follows:

1. Contact the UNITRON® distributor from whom you purchased the microscope. Some problems can be resolved simply over the telephone.
2. If it is determined that the microscope should be returned to your UNITRON® distributor or to UNITRON® for warranty repair, pack the instrument in its original Styrofoam shipping carton. If you no longer have this carton, pack the microscope in a crush-resistant carton with a minimum of three inches of a shock absorbing material surrounding it to prevent in-transit damage. The microscope should be wrapped in a plastic bag to prevent Styrofoam dust from damaging the microscope. Always ship the microscope in an upright position; **NEVER SHIP A MICROSCOPE ON ITS SIDE**. The microscope or component should be shipped prepaid and insured.

### LIMITED MICROSCOPE WARRANTY

This microscope is warranted to be free from defects in material and workmanship for a period of five (5) years for mechanical and optical components and one (1) year for LED bulb and electrical components from the date of invoice to the original (end user) purchaser. This warranty does not cover damage caused in-transit, misuse, neglect, abuse or damage resulting from improper servicing or modification by other than UNITRON® approved service personnel. This warranty does not cover any routine maintenance work or any other work, which is reasonably expected to be performed by the purchaser. Normal wear is excluded from this warranty. No responsibility is assumed for unsatisfactory operating performance due to environmental conditions such as humidity, dust, corrosive chemicals, deposition of oil or other foreign matter, spillage or other conditions beyond the control of Unitron Ltd. This warranty expressly excludes any liability by UNITRON Ltd. for consequential loss or damage on any grounds, such as (but not limited to) the non-availability to the End User of the product(s) under warranty or the need to repair work processes. Should any defect in material, workmanship or electronic component occur under this warranty contact your UNITRON® distributor or UNITRON® at (631) 543-2000. This warranty is limited to the continental United States of America. All items returned for warranty repair must be sent freight prepaid and insured to Unitron Ltd., 73 Mall Drive, Commack, NY 11725 – USA. All warranty repairs will be returned freight prepaid to any destination within the continental United States of America. For all foreign warranty repairs, return freight charges are the responsibility of the individual/company who returned the merchandise for repair.

UNITRON® is a registered trademark of UNITRON, Ltd., Commack, NY 11725