

VideoProbe® 300

Operating Manual



PREFACE

Congratulations! You now have the most advanced technology available for remote visual inspection. The VP300 VideoProbe® system puts the advantages of video inspection technology into a single, convenient carrying case and is in keeping with our continuing goal to bring you the most current technology in a product that is practical in the work place. Thank you for your business.

Overview of Manual

This manual gives you the information you need to operate and maintain the VP300 system. This manual was developed for users of all levels to learn, operate and maintain their VP300 system.

This manual was designed to make operator referencing easier and quicker, and as such is restricted in scope to instruction on operation of the system. Should you have a question beyond the scope of this manual, please call your local sales representative or our customer service department (page 18).

SYSTEM SYMBOL DESCRIPTION



CAUTION: REFER TO USER'S MANUAL



CAUTION: SURFACES MAY BE HOT



FUSE INFORMATION: REPLACE ONLY WITH SAME TYPE AND RATING

DESCRIPTION DES SYMBOLES



ATTENTION : REPORTEZ-VOUS AU MANUEL DE L'UTILISATEUR



ATTENTION : LES SURFACES PEUVENT ÊTRE CHAUDES



INFORMATION SUR LE FUSIBLE : REMPLACEZ UNIQUEMENT AVEC LE MÊME TYPE ET LA MÊME CAPACITÉ.

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WARNINGS AND PRECAUTIONS

- **READ:** To ensure operator safety, be sure to read and understand this Operator's Manual before using the system.
- **POSSIBLE EXPLOSION HAZARD:** Do not use in explosive environments.
- **ACCESSORIES:** The accessories listed in the latest version of this manual are the only accessories that the manufacturer considers suitable for use with this product.
- **ELECTRICAL SHOCK HAZARD:** The top cover of the Light Source should never be removed. Electrical shock hazard exists due to high internal voltage. There are no user serviceable parts inside the Light Source except for the lamp and fuse, which are accessible through the bottom and back panel, respectively. Refer all service to listed Service Centers (see "**SERVICE**").
- **VENTILATION:** The Light Source must have adequate ventilation to prevent overheating. Do not cover or drape the Processor Light Source. To ensure adequate airflow, be sure to provide a 3 in. (7.6 cm) distance between the Light Source chassis and any solid objects. Do not place on a soft surface that can result in the bottom ventilation holes being blocked.
- **FUSES:** Replace fuses as marked. See "Fuse Replacement" section.
- **LAMP REPLACEMENT:** Use caution when replacing the lamp, it may be hot. Only use GE Inspection Technologies lamp part number: XA101 for lamp replacement. Refer to "Lamp Replacement" section.
- **DO NOT OPERATE LIGHT SOURCE WITHOUT LAMP CONNECTED TO LAMP CONNECTOR, DAMAGE TO THE LIGHT SOURCE MAY RESULT.**
- **EARTH GROUND REQUIRED / WARNING, ELECTRICAL SHOCK HAZARD:** Proper use of this product requires the presence of a protective earth ground path at the A/C power source. Use of two-conductor extension cords or any other action that may result in the loss of this ground path are in violation of the product's safe operating requirements.
- **WARNING: ULTRAVIOLET, INFRARED, AND INTENSE VISIBLE RADIATION EMITTED FROM THE LAMP SOURCE. SKIN OR EYE INJURY MAY RESULT.**
 1. Avoid exposure of eyes and skin to lamp and fiber bundle output while in operation.
 2. Do not operate the light source without the power plug/fiber optic cable installed.
 3. Turn off the light source or turn the brightness control to minimum when changing the optical tips at the end of the insertion tube.

- **WARNING:** Always turn off Light Source before disconnecting VideoProbe power plug from the Light Source to reduce risk of high Intensity light exposure to eyes!
- **WARNING:** Use of any piece of this equipment in a manner not specified by the manufacturer may impair the product's ability to protect the user from harm.
- The VP300 system may be disconnected from the AC power main supply by disconnecting the power cord from the main power source.



AVERTISSEMENTS ET PRÉCAUTIONS D'EMPLOI

- **LISEZ:** Pour assurer la sécurité de l'opérateur, prenez bien soin de lire et de comprendre ce manuel de l'utilisateur avant de vous servir de l'appareil.
- **DANGER D'EXPLOSION POSSIBLE:** N'utilisez pas dans des milieux déflagrants.
- **ACCESSOIRES:** Les accessoires énumérés dans le présent manuel sont les seuls accessoires que le fabricant considère appropriés à l'usage de ce produit.
- **DANGER DE DÉCHARGE ÉLECTRIQUE:** Le couvercle du dessus de la source de lumière et de traitement ne devrait jamais être enlevé. Il existe un danger de décharge électrique à cause d'une tension interne élevée. Il n'y a pas de parties réparables par l'utilisateur dans la source de lumière et de traitement sauf la lampe et le fusible, qui sont accessibles par les faces du dessous et de l'arrière. Confiez toutes les réparations aux Centres de services mentionnés (voir «SERVICE»).
- **VENTILATION:** La source de lumière et de traitement doit bénéficier d'une bonne ventilation pour éviter la surchauffe. Ne couvrez ou n'enveloppez pas la source de lumière et de traitement. Pour assurer un écoulement de l'air adéquat, ne manquez pas de laisser un espace de 3 po (7,6 cm) entre le boîtier de la source de lumière et tout objet solide. Ne déposez pas sur une surface molle, ce qui pourrait résulter dans un blocage des trous de ventilation du dessous.
- **FUSIBLES:** Remplacez les fusibles comme cela vous est indiqué. Reportez-vous à la section portant sur le «Remplacement du fusible».
- **REPLACEMENT DE LA LAMPE:** Faites preuve de prudence au moment de remplacer la lampe, elle pourrait être chaude. N'utilisez que le n° de pièce de lampe GE Inspection Technologies «XA101» pour son remplacement. Reportez-vous à la section portant sur le «Remplacement de la lampe».
- **NE FAITES PAS FONCTIONNER LA SOURCE DE LUMIÈRE ET DE TRAITEMENT SANS AVOIR BRANCHÉ LA LAMPE AU CONNECTEUR DE LAMPE.**

- **MISE À LA TERRE OBLIGATOIRE / AVERTISSEMENT, DANGER DE DÉCHARGE ÉLECTRIQUE:** Une utilisation appropriée du présent produit nécessite la présence d'un trajet protecteur de mise à la terre raccordé à la source de courant alternatif. L'utilisation de cordons rallonge à deux conducteurs ou toute autre action qui risque d'entraîner la disparition de ce trajet de mise à la terre enfreint les règles d'usage sécuritaire du produit.
- **ATTENTION : LES ÉMISSIONS D'ULTRAVIOLETS ET D'INFRAROUGE ET L'INTENSITÉ LUMINEUSE DU GÉNÉRATEUR DE LUMIÈRE SONT SUSCEPTIBLES DE CAUSER DES DOMMAGES AUX YEUX ET À LA PEAU.**
 1. Ne pas exposer les yeux et/ou la peau à l'éclairage de la lampe et/ou la fibre optique pendant le fonctionnement de l'appareil
 2. Ne pas mettre en route le générateur de lumière sans avoir connecté la sonde
 3. Eteindre le générateur de lumière lorsque vous voulez changer les objectifs de visualisation et/ou de métrologie à l'extrémité de la sonde caméra
- **AVERTISSEMENT:** Éteignez toujours la source de lumière et de traitement avant d'en débrancher la fiche d'alimentation VideoProbe pour réduire le risque d'exposition des yeux à la lumière à haute intensité !
- **AVERTISSEMENT:** L'utilisation de toute pièce de cet équipement d'une façon non décrite par le fabricant risque de nuire à la capacité du produit de protéger l'utilisateur contre des blessures.
- **AVERTISSEMENT:** La sonde VP300 et ses pièces d'équipement ne devraient jamais entrer en contact direct avec une source de tension ou de courant quelconque. Cela pourrait endommager l'équipement, provoquer l'électrocution de l'opérateur ou les deux événements pourraient s'ensuivre !
- La sonde VP300 peut être débranchée de l'alimentation secteur en alternatif en désaccouplant le cordon d'alimentation de la source d'alimentation secteur.

HELPFUL HINTS

- The electronic joystick has a different “feel” than the conventional mechanical knobs and a few minutes practice will enhance your understanding of its advantages. The joystick articulation is a proportionate control system. Large joystick movement results in large tip articulation and vice versa.
- Maximize articulation capability by minimizing the coiling of unused insertion tube length. Bends in the insertion tube decrease the effectiveness of the push-pull steering cable mechanism.
- Tip articulation can generally be increased by straightening the probe to its full length, holding the distal end of stiff insertion tube (just before articulation section), and shaking it vigorously to loosen lubricant throughout the tube length. Do not stress the articulation section during this operation!
- Be sure to notice the view orientation advantage of the monitor compared to an eyepiece. Regardless of how the probe has been rotated or turned, forward movement of the joystick always directs the view on the monitor up. Similarly, a backward movement always looks further down, left looks left and right looks right (Up/Down is reversed when using a side view tip). Understanding this consistent orientation of the joystick to monitor images makes manipulation of the tip much easier than it has been in the past.
- Get longer life from your Light Source lamp by avoiding frequently turning the lamp on and off.
- When using the detachable lens optics, always keep them clean, dry and properly attached. See “Cleaning” in the “Maintenance” section.
- Clean the window in the tip section (camera head) frequently. A fuzzy image may be due to dirt on the window.
- Articulating Section / Insertion Tube: Avoid pointed objects that can penetrate the tube’s outer sheath. Return probe for repair at the first sign of penetration.

NOTE: *Articulating Section: Do not pull or twist the articulating section. Doing so may result in separation from insertion tube. Reduce the possibility of damage to the articulating section by repositioning it to a neutral, forward position with the “HOME” button before withdrawing it from inspection object or storing the probe in the case. Return the probe for repair at the first sign of separation.*

SYSTEM OVERVIEW

The VP300 system has two primary components: the VideoProbe hand-piece and the Light Source. Both of these items are stored in a single case.

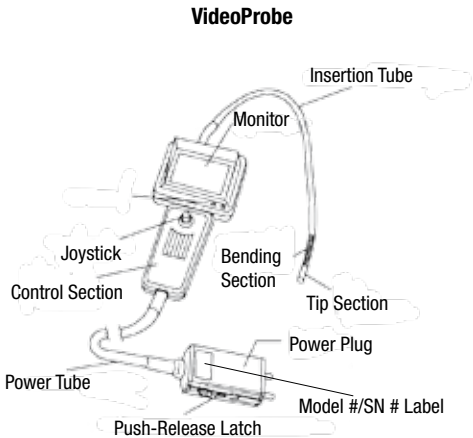


Figure 1

VP300 LSA Light Source

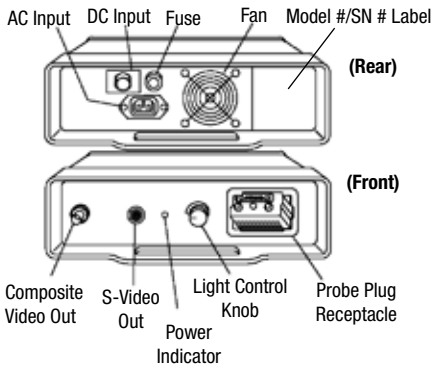


Figure 2

COMPONENTS SUMMARY

The VP300 standard system includes:

- 24W Light Source
- VideoProbe Hand-Piece
- Power Cord
- Headguard (protective tip installed on end of probe)
- XA103C Operating Manual
- Storage/Carrying Case

SYSTEM SETUP

The VP300 system comes assembled and ready to use. Remove the hand-piece and light source from the storage/carrying case, plug it in and turn it on. The system may be operated on AC or DC power. It may be operated as a stand alone system or in conjunction with a VCR, external monitor or other video peripheral equipment. The following setup directions apply to all models.

WARNING: Do not operate the VP300 system in the shipping/storage case.

1. **AC Power:** If using AC power, connect the AC power cord from the light source to 110v or 220v AC outlet.
DC Power: If using DC power, remove the light source from the case and disconnect the AC cord. Connect the DC cable from the PowerBar battery set or a compatible DC power source to the DC jack on the rear panel of the light source (see "Battery/DC Powered Operation").
2. Verify that the VP300 power plug is securely latched into the light source's probe power plug receptacle.
3. Turn on the power switch located on left side of the light source near the front panel. When system power is on, a green power indicator lamp located on the front panel will illuminate.
4. Adjust the Brightness Control knob fully counter-clockwise until it clicks into the "Auto" position.
5. An image should appear on the unit's Liquid Crystal Display (LCD).

NOTE: In temperatures below 32°F (0°C), the LCD may require a 5 to 20 minute warm-up period.

Attaching Peripheral Devices:

- **Video Output:** The VP300 system provides both Composite video and S-Video output connectors on the front panel of the PLS. Connect to the peripheral device's "Video In" input connector. Video cables are available as accessories. See Figure 3.

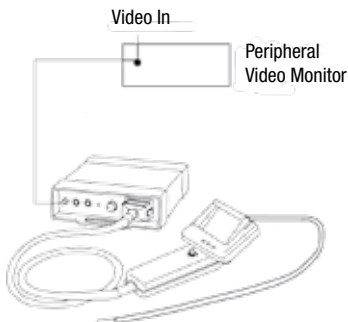


Figure 3

Detachable Tip Optics (Probe Tips):

The VP300 system contains a fixed focus optical system which is designed with a large depth of field and does not require operator focus. Depth of field, field of view and direction of view can be varied by selecting the appropriate optical tip for the probe. See "APPENDIX D" section for listing of all available tip optics and their specifications.

- **Specifications:** See "Detachable Tip Optics" section in **Appendix D**.

Caution!

Damage to the tip attachment mechanism may occur if the VideoProbe is operated without a probe tip or protective headguard in place.

CAUTION: DO NOT FORCE THE DETACHABLE LENS OPTICS ON OR OFF. TWISTING THE BENDING NECK MAY DAMAGE THE PROBE

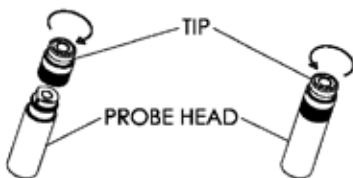
Attachment & Removal of Tip Optics

5.0mm Probes

**Please refer to the assembly instructions below for the lens optics corresponding to the table below.*

Part Number	Color Code	Direction of View
PXT550FF	None	Forward
PXT550FG	White	Forward
PXT5100FG	Black	Forward
PXT580SN	Green	Side
PXT550SG	Red	Side
PXT5100SG	Blue	Side

5 mm Forward View Tip Attachment and Removal:



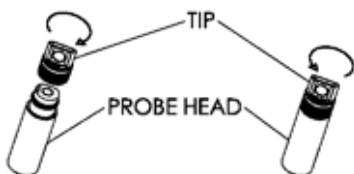
Assembly:

- Grasp head of probe and rotate the tip clockwise until it engages the first set of threads. Take care not to cross the threads. Continue to rotate the tip, pushing down gently until the second set of threads is engaged. Tighten the tip finger tight, **NEVER USE A TOOL TO TIGHTEN THE TIPS**. Pull on the tip gently to ensure it is securely attached.

Disassembly:

- Grasp head of probe and rotate the tip counterclockwise until it is free of the first set of threads. Gently pull the tip forward (away from the probe) and rotate it counterclockwise again until it is free of the probe. Take care not to cross the threads when attaching and removing these tips.

5mm Side View Tip Attachment and Removal:



Attachment & Removal of Tip Optics

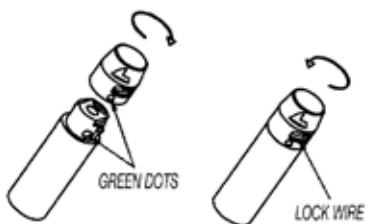
6.1 mm Probes

**Please refer to the assembly instructions below for the lens optics corresponding to the table below.*

6.1 mm Forward View Tip Attachment and Removal:

Part Number Color Code

XT650FF	None
XT6100FG	Black
XT690FF	Yellow
XT650FG	White



Assembly:

- Align the green dot on the detachable lens optics with the green dot on probe head. Gently push the detachable lens optics onto the probe head. Rotate clockwise until the locking wire snaps in place.

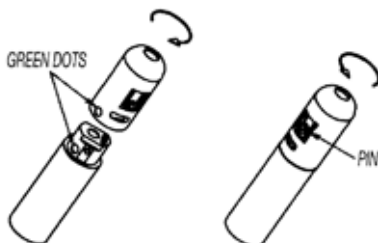
Disassembly:

- Push the locking wire toward the detachable lens optics face. Rotate counterclockwise and remove the detachable lens optics from the probe head.

6.1 mm Side View Tip Attachment and Removal:

Part Number Color Code

XT650SF	Brown
XT650SG	Green
XT680SN	Red
XT6100SG	Blue



Assembly:

- Align the green dot on the detachable lens optics with the green dot on probe head. Gently push the detachable lens optics onto the probe head, aligning the bayonet slots, and rotate gently clockwise until the lens locks in place.

Disassembly:

- To remove the detachable lens optics, slide the pin away from probe head and gently rotate counterclockwise. Remove the detachable lens optics from the probe head and store in the protective case.

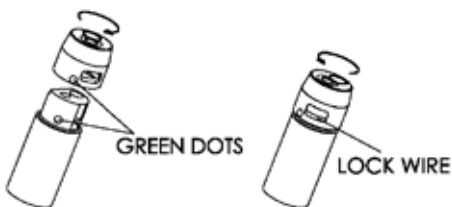
Attachment & Removal of Tip Optics

8.4mm Probes

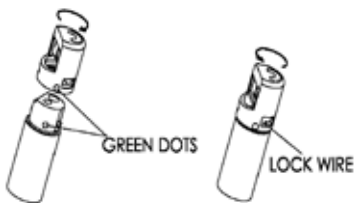
**Please refer to the assembly instructions below for the lens optics corresponding to the table below.*

Part Number	Color Code	Direction of View
XT850FF	None	Forward
XT8100FG	Black	Forward
XT890FF	Yellow	Forward
XT850FG	White	Forward
XT850SF	Brown	Side
XT850SG	Green	Side
XT8100SG	Blue	Side
XT880SN	Red	Side

8.4 mm Forward View Tip Attachment and Removal:



8.4 mm Side View Tip Attachment and Removal:



Assembly:

- Align the green dot on the detachable lens optics with the green dot on probe head. Gently push the detachable lens optics onto the probe head. Rotate clockwise until the locking wire snaps in place.

Disassembly:

- Push the locking wire toward the detachable lens optics face. Rotate counterclockwise and remove the detachable lens optics from the probe head.

OPERATION

Overview

The VP300 system is equipped with the finest video borescope technology. A fiber-optic bundle illuminates the inspection area with light generated by a state-of-the-art 24 watt Welch Allyn Sölarc® metal-halide lamp in the Light Source. A miniature camera assembly in the VideoProbe's Tip Section converts the optical image into an electronic image. This image is carried back through the probe and displayed on the color LCD monitor which is built into the VideoProbe hand-piece.

WARNING: PROBE IS GROUNDED! Do not allow the Insertion Tube and Probe Tip Section to come into contact with a source of electrical current/voltage. Doing so may result in personal injury or permanent damage to the VideoProbe or inspected equipment.

FUNCTIONAL CONTROLS

Power On/Off – System Power Control:

The system power switch is located on the left-side of the light source near the front panel. This switch both powers the system and ignites the lamp in the light source.

- NOTES:**
- If the light source is turned from on to off, and then immediately back to on, the lamp may not ignite.
 - The Sölarc® arc lamp requires approximately 90 seconds to reach full intensity and true color temperature from a “cold start.”
 - To prolong lamp life, minimize switching power on and off.

Light Control – Probe Illumination:

The intensity of the light used to illuminate the inspection object is controlled by the Light Control Knob on the front panel of the light source. Normally, this dial should be set to the “Auto” position allowing the system to automatically compensate for any change in lighting requirements. However manual adjustment may sometimes be preferred.

Joystick – Tip Articulation:

An electronic joystick points the viewing tip of the probe right where you need it. Looking at the image on the monitor, push the joystick forward to steer the view on the monitor higher, backward to view lower, right to view to the right and left to view to the left. Regardless of how the probe is rotated or path the probe has taken through the inspection area, the movement of the joystick always has the same effect on the image. You need only watch the monitor and steer the joystick in the direction you want to see. (Up/down movement is reversed when using a side-view tip adapter).

NOTE: The VP300 is designed with a high degree of tip articulation. However, as with all flexible borescopes, the degree of articulation will vary with the number of bends placed in the insertion tube. You can maximize the articulation by preventing unnecessary coils or bends in the tube during operation.

Joystick – Articulation Lock Mode:

In this mode, a position lock is applied to the probe tip immediately after each movement. The tip will hold the last position directed by the joystick until either the joystick is moved again or the LOCK mode is exited.

This mode of operation is convenient when it is desired to point the viewing tip in one direction for an extended period of time or to incrementally step the tip to a precise view. The LED indicator lamp will illuminate. To exit, press the LOCK button again, or press HOME.

Be sure the LOCK is released prior to removing the probe from your equipment.

IMPORTANT: Never turn system power off with tip articulation locked. This may result in damage to the articulation mechanism.

NOTE: Articulation LOCK will turn off after 15 consecutive minutes without joystick movement.

Return to Home:

This automatic tip centering feature is helpful when you want to reorient the probe tip to its neutral forward position, or want to center the tip for withdrawal from inspection object. During this time, the LOCK indicator LED will flash alerting the user not to make any joystick adjustments. The LOCK indicator LED will stop flashing when the tip is returned to its approximate forward position, and you may begin to articulate again.

Monitor Brightness:

The brightness of the display can be adjusted up or down with the brightness control keys below the monitor. This adjustment will be maintained until the system is turned off. When turned back on, the LCD will reset to the default brightness setting.

Focus:

The VP300 fixed focus optical system is designed with a large Depth of Field and does not require operator focus. Depth of Field, Field of View and Direction of View can be varied with different Detachable Tip Optics.

Battery/DC Powered Operation:

When AC power is not available, the VP300 can be operated from a source of DC power, such as the GE Inspection Technologies XA207 PowerBar™ Battery Set. The VP300 can be operated from a 12V power source as long as it complies with the requirements listed in the “Specifications” section of this manual.

NOTE: External DC power cord/connectors must be capable of supporting currents up to 11 amps.

Battery Set Instructions:

Remove the light source from the case, disconnect the AC power cord, and connect the DC power cord from the Powerbar to the DC jack on the rear panel of the PLS. Available as a kit, or as individual optional accessories is the the XA207 PowerBar, cable and charger. See “Optional Accessories & User Replaceable Parts” in Appendix C for part numbers.

A fully charged XA207 PowerBar battery will run the VP300 system for approximately 2 hours.

Water Tightness:

The probe Head Assembly, Bending Section and Insertion Tube may be operated in water up to a pressure of 14.7 psi (1 bar) which, is approximately 30 feet (9.1 m). After use, the probe should be wiped clean and dry before returning it to the case. The probe window and any detachable tip optics should be cleaned with alcohol and lint free cotton swab.

MAINTENANCE:

- Clean the VideoProbe system after each use.
- Wipe down the insertion tube with a 70% alcohol to water solution after each use.
- Clean the probe’s detachable tip optics with cotton swab and glass cleaner or 70% alcohol to water solution before and after each use.
- Clean the window on the tip section periodically to avoid fuzzy images. If the probe is used in a dirty environment, increase the interval as needed.
- Use a common spray window cleaner for the lens, LCD and other parts if needed.
- Never immerse or soak the light source, hand-piece or the probe power plug.

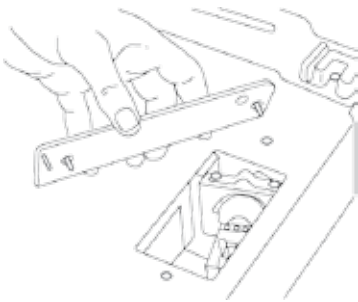
USER SERVICEABLE PARTS:

Changing the Arc Lamp

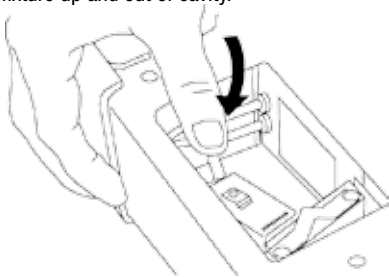
BEFORE ATTEMPTING TO REPLACE A LAMP, REMOVE POWER FROM THE UNIT BY DISCONNECTING THE AC OR DC POWER CORD FROM THE REAR PANEL OF THE LIGHT SOURCE, AND ALLOW THE LAMP TO COOL FOR A MINIMUM OF 15 MINUTES! Lamps operated at elevated temperatures will cause burns to skin if lamp is not allowed to cool for sufficient time.

Lamp Replacement:

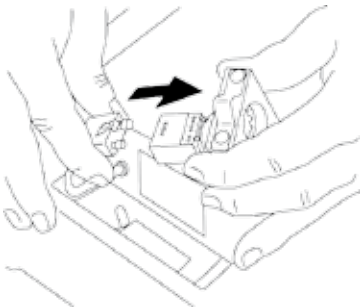
1. Turn off light source and disconnect power cord. Allow lamp to cool.
2. Open lamp cavity cover on bottom of light source by removing large slotted screws.



3. Pull back on spring clip and carefully raise lamp fixture up and out of cavity.



4. Disconnect lamp fixture from electrical connector and discard.



5. Remove protective cover from replacement lamp and connect lamp fixture to electrical connector. **Use only GE Inspection Technologies Lamp XA101!** Use of any other lamp may void the warranty.

6. Pull spring clip back and slide lamp fixture down into cavity along positional guide rails, insuring that the spring clip is between the wires. Release spring clip.



7. Replace lamp cavity cover and reconnect power cord.

Fuse Replacement:

1. Turn the Power Switch OFF and remove the Power Cord from the light source.
2. Remove the fuse from the Fuse Holder at the rear of the light source (see illustrations in Components section).
3. If a fuse is blown, replace with a new fuse of the same type. Replacement fuse is a 10 Amp 250 Volt, 1-1/4" x 1/4" Fast Blo, which is part number H8329. It is also available at most electronic stores.
4. If the light source blows the new fuse, please contact customer service.

TROUBLESHOOTING

Power

1. If the green Power indicator lamp is not on...

- a. Check power cable connections (see Setup sections)
- b. If problem only occurs in DC operation, check battery's charge and compliance with listed specifications.
- c. Check Fuse on rear of light source (see Fuse Replacement)

Image

1. If image is present, but the quality is poor...

- a. Verify adequate light transmission by adjusting the light knob to a higher level or to the "Auto" position.
- b. Verify the probe plug is properly seated and latched.
- c. Clean probe tip window and detachable tip optics (see Maintenance section).
- d. If the problem only occurs in DC operation, check battery's charge and compliance to listed specifications.
- e. Verify the lamp is properly seated in the processor/light source. Caution - the lamp may be hot! Use the process specified in "Changing the Arc Lamp" to access the lamp.

2. If you do not have an image at all and the green Power Light is lit...

- a. Try suggestions **a** and **b** in **Image** section above.
- b. Point the probe toward a bright light and see if image appears. If still no image, stop and call Service Center (see "**SERVICE**" section). If image appears, the problem is associated with lamp operation.
- c. Verify image is available on external monitor, if possible. If an external monitor is available, connect the monitor's "VIDEO IN" or "S-VIDEO IN" to the light source "VIDEO OUT" or S-VIDEO OUT" connector, and verify image.

Steering

1. If you have a steering problem and do not have an image, refer to Image section above.

2. If you have a steering problem and do have an image...

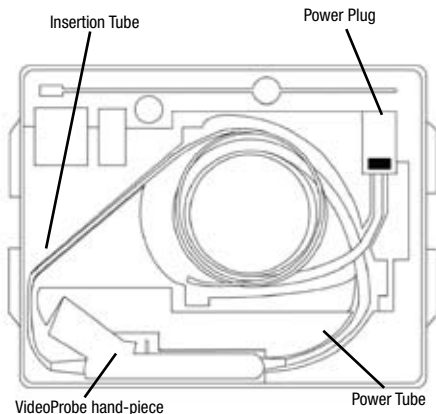
- Press "LOCK" key once or twice to ensure LOCK Mode is not activated.
- Straighten insertion tube; shake and tug vigorously on tube to free lubricant. **Do not pull on tip or articulating section!**

NOTE: If procedures on the previous page do not resolve problem, call service center. **DO NOT ATTEMPT DISASSEMBLY!** Other than lamp and fuse replacement, there are no other user serviceable components in this product.

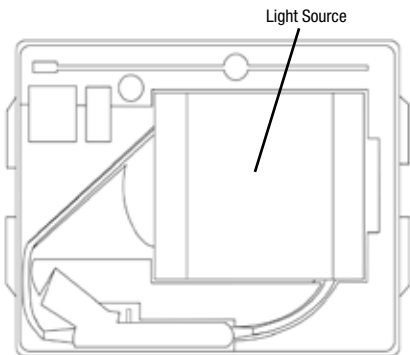
STORAGE AND SHIPMENT:

System should be packed in case, as shown below, for either storage or shipment. Probe should be completely dry. Storage should be in areas protected from extreme temperatures and high humidity.

1. Insert VideoProbe hand-piece into cut-out located at the bottom of the case.



2. Coil insertion tube and power plug into their respective cut-outs.
3. Place light source into cut-out located in center of case with front facing the right-side of the case. You do not need to disconnect the power cord from the light source before placing light source in its storage cut-out.



SERVICE

To obtain service for your system, call one of the service centers listed on the next page. If the problem cannot be resolved over the phone, you will be given a return materials authorization number for shipment to the service center.

Always contact a GE Inspection Technologies Service Center for a Return Materials Authorization (RMA) number prior to returning any product for repair.

USA

4619 Jordan Road
Skaneateles Falls, NY 13153

Tel 315 685 4142
Fax 315 685 2920

Germany

Lotzenäcker 4
72379 Hechigen

Tel +49 7471 9882 20
Fax +49 7471 9882 30

Hong Kong

Unit 1602, 16/F Sing Pao Bldg
101 King's Road
North Point, Hong Kong

Tel +852 2877 0801
Fax +852 2877 0868

WARRANTY

GE Inspection Technologies warrants the VP300 system and components, when new, to be free from defects in material and workmanship and to perform in accordance with manufacturer's specifications under normal use and service for a period of six months from the date of purchase from GE Inspection Technologies or its authorized distributors, except that, where used, servo motors in the articulation drive system are warranted for the life of this VideoProbe product.

GE Inspection Technologies's obligation under this warranty is limited to the repair or replacement of components determined by GE Inspection Technologies to be defective within the warranty period at no cost to the original purchaser, except for return shipping expenses. It shall be the purchaser's responsibility to return the product to GE Inspection Technologies or one of its authorized service centers. The warranty does not cover lamps, accessories, or optional equipment not manufactured by GE Inspection Technologies, but these items may be covered by separate manufacturers' warranties. This warranty extends to the original purchaser and cannot be assigned or transferred to any third party.

This warranty shall not apply to any damage or product failure determined by GE Inspection Technologies to have been caused by misuse, accident (including shipping damage), neglect, improper maintenance, modification or repair by someone other than GE Inspection Technologies or one of its authorized service representatives.

These express warranties are in lieu of any other warranties, express or implied, including the warranties of merchantability and fitness for a particular purpose, and no other person has been authorized to assume for GE Inspection Technologies any other liability in connection with the sale of its VideoProbe products. GE Inspection Technologies shall not be liable for any loss or damages, whether direct or indirect, incidental, or consequential, resulting from the breach of any express warranty set forth herein.

APPENDIX A

SPECIFICATIONS

Weight

Light Source	8lbs. (3.6 Kg)
Probe	5 lbs. (2.3 Kg)
Case	13.2 lbs. (6 Kg)

Dimensions (in shipping case)

Standard Case:	22.3 L x 22.0 W x 10.5 H in. (56.6 L x 55.9 W x 26.7 H cm)
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Power Requirements

AC Power	AC nominal input: 100 to 240V min. 90V, max. 250V; 50 to 400Hz; 150Watt max, 2A max
DC Power	DC nominal input: 12VDC min 11, max 14V, 11A max
Fuse	10A, 250V, Fast blo

Video Output Composite and S-Video

Operating Temperature

Insertion Tube/Tip	-13° to 176°F (-25° to 80°C) Reduced articulation below 32°F (0°C)
System	-4° to 115°F (-20° to 46°C). LCD requires warm-up period below 32°F (0°C)
Storage	-13° to 140°F (-25° to 60°C)
Relative Humidity	95%, non-condensing
Probe & Insertion Tube	Watertight to 1 bar (14.7 psig), (approximately = 30 foot depth of water)

Probe

Power Tube Length 4.9 ft. (1.5 m)

Insertion Tube Lengths & Tip Diameters

Length	Tip Diameter
1.5 m	5.0 mm (0.20 in.)
2.0 m	6.1 mm (0.24 in.)
3.0 m	8.4 mm (0.33 in.)

Articulation Capability +/-150° minimum

Imager Type 1/6 inch, Color, Super HAD™
CCD

Resolution

Resolution Data		Horizontal TV Lines		
Format	Pixels	S-video	Composite	XL-LCD
NTSC	380,000	480	460	320
PAL	440,000	480	460	320

Light Source

Dimensions	9.5 in. x 10.0 in. x 3 in. (24.1 cm x 27.6 cm x 7.6 cm)
Lamp Type	Metal-halide 24W Sölarc®
Lamp Output	1850 lumens
Color	
Temperature	5500K
Median Lamp Life	350 hours
Power	24 W

Display

Integrated 5.0 in. (12.7 cm)
active matrix TFT color LCD

APPENDIX B

AGENCY CERTIFICATIONS

EUROPEAN EQUIPMENT CLASSIFICATION:

Group 2, Class A



The CE mark on this product indicates it has been tested to and conforms with the provisions noted within the 89/336/EEC Electromagnetic Compatibility Directive. The VP300 system is in conformance with the following standards: EN61010-1, EN61326.

Declarations of Conformity are held by GE Inspection Technologies GmbH.

GE Inspection Technologies GmbH

Product Service Center

Lotzenäcker 4

72739 Hechingen Germany

Tel: +49(0) 74719882 0

Fax: +49(0) 74719882 16

SAFETY MARK

The VP300 is in compliance with the following standards: UL3101-1 and CSA C22.2 No. 1010.1

INTRINSIC SAFETY

The VP300 product is not rated for intrinsically safe operation.

STATEMENT OF FCC AGENCY COMPLIANCE

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

FCC Class B Compliance Statement

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio or television technician for help.

Caution: Any changes or modifications made to this device that are not expressly approved by GE Inspection Technologies, Inc. may void the user's authority to operate the equipment.

NOTE: *To maintain compliance with FCC Rules and Regulations, cables connected to this device must be shielded cables, in which the cable shield wire(s) have been grounded (tied) to the connector shell.*

Canadian Notice

This equipment does not exceed the Class B limits for radio noise emissions as described in the Radio Interference Regulations of the Canadian Department of Communications.

Le present appareil numerique n'emet pas de bruits radioelectriques depassant les limites applicables aux appareils numeriques de la classe B prescrites dans le Reglement sur le brouillage radioelectrique edicte par le ministere des Communications du Canada.

APPENDIX C

OPTIONAL ACCESSORIES & USER REPLACEABLE PARTS

Part Number	Description
XA110A	LCD Sun Visor
XA111	Neck Strap
XA101	Lamp – 24 Watt arc lamp
XA207SC-XL	PowerBar Battery Set with case. Includes: PoweBar battery, charger, DC power cable, belt clip, case and manual
XA207S-XL	Includes PowerBar battery, charger, DC power cable, belt clip and manual
XA207	PowerBar battery only
X207-CHAR-A	Charger for XA207 PowerBar
813019-1	PowerBar cable
VA177	10 ft. (3 m) composite video cable
VA285	12 ft. (3.6 m) S-Video cable
LA101AC	110 VAC North American Power Cord
XA165	Cable – DC Power from automotive cigarette lighter. Includes: Alligator clip adapter and 20 ft.-long cable
XA119A	Magic Arm mount
XA119S	Magic Arm kit
XA201	Mini Magic Arm mount kit
XA510	Empty 6 mm Ø tip optic case
XA511	Empty 8 mm Ø tip optic case

A complete range of guide tubes, centering devices and video accessories are available for the VP300 Inspection System. Please contact GE Inspection Technologies (see back cover) for more information.

APPENDIX D

Probe Tip Optics

5.0 mm Probe Tips

5.0 mm Forward Viewing Optical Tips

Part No.	Color Code	Field of View
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PXT550FF	None	50°
PXT550FG	White	50°
PXT580FN	Orange	80°
PXT5100FG	Black	100°

- The PXT550FF tip is a headguard that uses the system's inherent 50° field of view and far focus optics. It has low magnification and the brightest image of any 5.0 mm probe tip. Use it for general inspection at viewing distances of more than 45 mm (1.76 in.). It is standard on all 5.0 mm systems.

5.0 mm Side Viewing Optical Tips

Part No.	Color Code	Field of View
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PXT550SG	Green	50°
PXT580SN	Red	80°
PXT5100SG	Blue	100°

- The PXT550SG tip is a general use side-view tip that brings depth of field in for closer viewing and provides magnification.
- The PXT580SN tip has the closest focus and highest magnification of all any 5 mm tip.

6.1 mm Probe Tips

6.1 mm Forward Viewing Optical Tips

Part No.	Color Code	Field of View
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XT650FF	None	50°
XT650FG	White	50°
XT690FF	Yellow	90°
XT6100FG	Black	100°

- The XT650FF tip is a headguard that uses the system's inherent 50° field of view and far focus optics. It has low magnification and the brightest image of any 6.1 mm probe tip. Use it for general inspection at viewing distances of more than 45 mm (1.76 in.). It is standard on all 6.1 mm systems.

Depth of Field

50 mm (1.96 in.) to infinity

12-200 mm (0.47-7.87 in.)

3-20 mm (0.12-0.79 in.)

5-120 mm (0.20-4.72 in.)

- The PXT550FG tip provides close ups and high magnification.
- The PXT5100FG tip has the shortest focus, highest magnification, widest viewing angle and brightest image of any forward-view optical probe tip.

Depth of Field

9-160 mm (0.35-6.29 in.)

1-20 mm (0.04-0.79 in.)

4-100 mm (0.16-3.94 in.)

- The PXT5100SG tip provides excellent close ups and wide-angle viewing.

Depth of Field

50 mm (1.96 in.) to infinity

14-100 mm (0.55-3.9 in.)

20 mm (0.79 in.) to infinity

6-100 mm (0.24-3.9 in.)

- The XT650FG tip provides close ups and high magnification.
- The XT6100FG tip has the shortest focus, highest magnification, widest viewing angle and brightest image of any forward-view tip optic.

6.1 mm Side Viewing Optical Tips

Part No.	Color Code	Field of View
XT650SF	Brown	50°
XT650SG	Green	50°
XT680SN	Red	80°
XT6100SG	Blue	100°

- The XT650SF tip uses the probe's inherent 50° field of view, far focus and low magnification optics. It has the brightest image of any side-viewing tip.
- The XT650SG tip is a general use side-view tip that brings depth of field in for closer viewing and provides magnification.

8.4 mm Probe Tips

8.4 mm Forward Viewing Optical Tips

Part No.	Color Code	Field of View
XT850FF	None	50°
XT8100FG	Black	100°
XT890FF	Yellow	90°
XT850FG	White	50°

- The XT850FF tip is a headguard that uses the system's inherent 50° field of view and far focus optics. It has low magnification and the brightest image of any probe tip. Use it for general inspection at viewing distances of more than 45 mm (1.76 in.). It is standard on all 8.4 mm systems.
- The XT850FG tip provides close ups and high magnification.

8.4 mm Side Viewing Optical Tips

Part No.	Color Code	Field of View
XT850SF	Brown	50°
XT850SG	Green	50°
XT8100SG	Blue	100°
XT880SN	Red	80°

- The XT850SF tip uses the probe's inherent 50° field of view, far focus, and low magnification optics. It has the brightest image of any 8.4 mm side-viewing tip.
- The XT850SG tip is a general use side-view tip that brings depth of field in for closer viewing and provides magnification.

Depth of Field

45 mm (1.77 in.) to infinity

12-100 mm (0.47-3.94 in.)

1-15 mm (0.04-.60 in.)

6-60 mm (0.24-2.40 in.)

- The XT680SN tip has the closest focus and highest magnification of any 6.1 mm tip optic.
- The XT6100SG tip provides excellent close ups and wide-angle viewing.

Depth of Field

60 mm (2.36 in.) to infinity

6-100 mm (0.24-3.94 in.)

20 mm (0.79 in.) to infinity

14-100 mm (0.55-3.94 in.)

- The XT8100FG tip has the shortest focus, highest magnification and widest viewing angle of any forward-view 8.4 mm optical probe tip.

Depth of Field

45 mm (1.77 in.) to infinity

12-100 mm (0.47-3.94 in.)

6-60 mm (0.24-2.40 in.)

1-15 mm (0.04-0.60 in.)

- The XT8100SG tip provides excellent close ups and wide-angle viewing.
- The XT880SN tip has the closest focus and highest magnification of any 8.4 mm tip.

APPENDIX E

Chemical Compatibility

Chemical compatibility refers to the probe's ability to come into contact with various liquid substances and not be damaged. There are far too many different liquids in the industrial environment for GE Inspection Technologies to test each one, so customers must determine for themselves if the probe is compatible with their specific chemicals. However, GE Inspection Technologies has tested the VP300 to several of the more common substances and reports the results in the hope that it might be of assistance. Whatever the liquid, duration of exposure should be minimized and the probe cleaned after each use before storage. See Maintenance Section for cleaning instructions. (Note that the VP300 system is not certified for operation in explosive environments.)

SUBSTANCE	AFFECT ON PROBE
Water	Not affected
Aircraft Gasoline	Not affected
Jet-A-Fuel	Not affected
Isopropyl alcohol	Not affected
JP-4 Fuel	Not affected
Kerosene	Not affected
Synthetic Turbo Oil	Not affected
Gasoline	Not affected
Diesel Fuel	Not affected
Hydraulic Oil	Not affected
Inhibited Transformer Oil	Not affected

As a general rule of thumb, if the liquid is safe for your hand, then it is probably safe for the probe. Conversely, if it is not safe for your hand, it is probably not safe for the probe.

APPENDIX F

Environmental Compliance



The equipment that you bought has required the extraction and use of natural resources for its production. It may contain hazardous substances that could impact health and the environment.

In order to avoid the dissemination of those substances in our environment and to diminish the pressure on the natural resources, we encourage you to use the appropriate take-back systems. Those systems will reuse or recycle most of the materials of your end life equipment in a sound way.

The crossed-out wheeled bin symbol invites you to use those systems.

If you need more information on the collection, reuse and recycling systems, please contact your local or regional waste administration.

Visit www.ge.com/inspectiontechnologies for take-back instructions and more information about this initiative.

Customer Support Centers

North/South America

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Tel: 888-332-3848
315-685-4142
Email: rvi-info@ge.com

Europe

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72379 Hechingen
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101 King's Road
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www.ge.com/inspectiontechnologies

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GE Inspection Technologies

ISO 9001
REGISTERED COMPANY