

WÖHLER USA

**VIS 2000
COLOR VIDEO
INSPECTION SYSTEM**

With

CABLE REEL

and

CAMERA REEL

OPERATING MANUAL

Rev 09/03



INNOVATION • QUALITY • VALUE

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1.0 Introduction

The VIS 2000 Pan & Tilt Color video inspection system is designed for a wide range of applications from the visual inspection of ventilation systems, chimneys and gas flues with a diameter in excess of 2in./55 mm to the inspections of pipelines, chambers and large boilers, Search and Rescue and Security and Surveillance. The VIS2000 camera head brings the operator the unique ability to control the viewing angle by a simple, finger touch joy stick located on the monitor. The joy stick controls the rotation of the camera lens through 360° x 180° pan and tilt.

The color monitor is protected by a quality leather case with a shoulder strap that allows the user to carry or position the monitor in front so that their hands will be free for the operation and guiding of the camera. The monitor screen is protected from incidental light by the side flaps on the monitor case. Brightness, contrast and color controls are located on the side of the monitor ensuring a clean, clear picture. These controls will need to be adjusted throughout the inspection as distance and light conditions change. Do not set and forget these important controls. They have a significant impact on the sharpness and visual clarity of the picture on the screen.

During top down inspection, the color camera head can be centered vertically in a flue by the use of the camera spring guide, a centering, telescopic roller guide or by a screw on STAR holder and a STAR brush. In horizontal ducts or vents the operator can use the Camera roller guide or the Camera wagon. For inspection from beneath, the camera head fits into the camera holder (#8680) and is attached to a 9mm VIPER rod or, with threaded adaptors, to other rods. The distance the camera has traveled inside the chimney, ventilation or waste gas system can be easily determined by reading the numerical metric markings on the video cable.

The video inspection system is battery-operated from rechargeable NiMH batteries located inside the Monitor. **These batteries are not replaceable by the user/operator.** The recharger, included with your VIS2000 Camera set, also allows for direct operation from a 110v outlet. The VIS2000 features an intelligent charging system that allows for high-speed recharging of the NiMH batteries by both the charger as well as by an optional 12 volt adaptor for the car or truck. **Note: The unit does not recharge while plugged in and in use. For best operating performance, it is strongly recommended that you fully charge the unit before using. Full charge time is approximately 6 - 7 hours.**

The Monitor has a standard, NTSC RCA analog, video-out socket for use in recording your inspections by either a conventional video recorder or camcorder that accepts video-in signals, or with a digital picture storage unit or digital camcorder that accepts and converts analog input to digital.

2.0 Specifications

Technical data:

2.1 Color camera head:

- . Focal distance: <1" to infinity
- . CCD color camera sensitivity: 5.0 lux
- . Sensor resolution: 542x586 pixels
- . Field of View: 98° x 75°
- . Focal length: 2.0 mm
- . Uniform illumination at close range via directed LED lighting (200,000 hr. rating)
- . Extra bright distance lighting via 6 LED's (200,000 hr. rating)
- . Tilt range 180°, Pan range 360°
- . Length 4"/99 mm; diameter 2"/51 mm; weight 8.5oz./240 g
- . Rugged Splash-proof (IP 64) Aluminum Camera housing
- . Replaceable, scratch-resistant, glass lens cap/dome.

2.2 Color monitor:

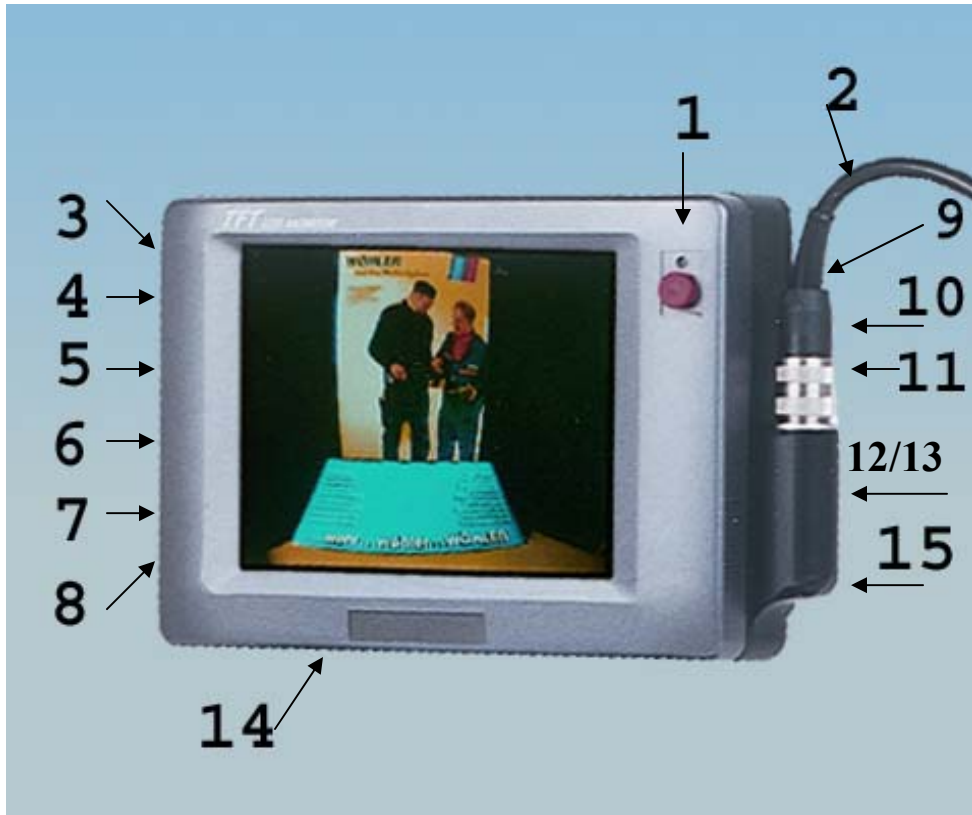
- . Dimensions: 8.3"/210 x 5.1"/130 x 2.6"/65 mm
- . TFT LCD monitor: 5.6" diag. (4.5"/117 x 3.5"/87 mm)
- . Video connection (analog) NTSC standard (PAL available)
- . Resolution: 960 x 234 pixels

2.3 General:

- . 12 V NiMH battery set 2700 mAh
- . Service life with charged batteries: ~ 2 hr
- . Charging period: 6-7 hrs
- . Power input:
 - . Battery operation: max. 9 watt
 - . 110V main operation: max. 8 watt
- . Storage temperature: 14°F/-10°C to 122°F/50°C
- . Operating temperature: 32°F/0°C to 104°F/40°C
- . Weight:
 - . Color camera head: 8.5oz. /240 g
 - . Monitor: 69oz. /1950 g
 - . Special cable: 26oz. /750 g

3.0 Controls

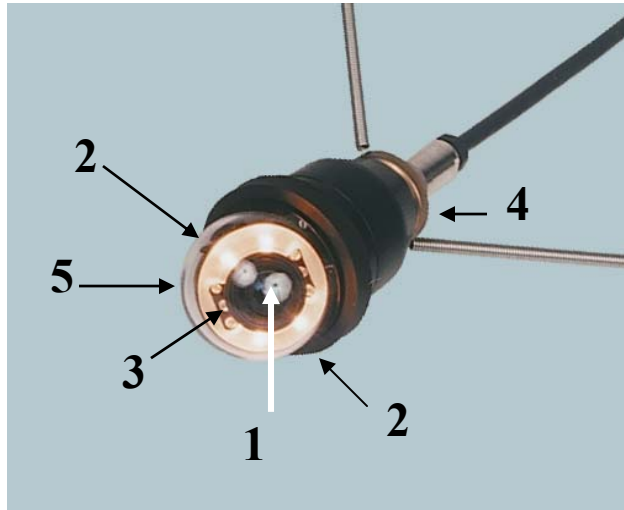
3.1 Color Monitor



- 1... Camera head control stick for Pan 360° (right/left) and Tilt 180° (up/down) or to adjust auxiliary lighting and access menu features
- 2... Video cable
- 3... **AV IN (Non functioning) DO NOT** connect or feed a signal into unit as this will damage unit.
- 4... AV OUT (non-amplified)
- 5... Video-out RCA socket
- 6... ON/OFF switch
- 7... Charger control light
- 8... Charger plug (**DC 12V Out of Service**)
- 9... Monitor Brightness control
- 10... Monitor Contrast control
- 11... Monitor Color control
- 12... Vol +/- Out of service
- 13... Headphones Out of service
- 14... TFT LCD monitor
- 15... Camera head connection socket



3.2 Color Camera Head



- 1 Camera Lens
- 2 LED lights (4) under diffuser
- 3 High beam LED lights (6)
- 4 Connection socket for camera cable or GRP Camera rod
- 5 Replaceable, scratch-resistant glass cover

4.0 Operating Procedure

4.1 Basic Camera Setup and Turn On

There are only a couple of basic steps required to use your VIS2000 camera.

1) Situate the camera monitor/Cable reel stand where you will be viewing. Please be careful to locate your equipment so that it is safe and secure. We suggest, when ever possible, particularly when working in elevated areas, that you use one of the provided shoulder straps to provide a “safety line” for the equipment should the monitor or other attached units move or slide.

2) Securely connect the appropriate cable end to the Monitor connection socket (see above). Carefully align the small slot in the camera/monitor cable housing with the ridge on the 8 pin cable, push together and screw tight the two threads. Do not force the ends together as the pins can be bent. Properly aligned, the two ends connect easily. On the Cable Reel the short cable on the back of the reel attaches to the monitor. On the GRP Camera rod the short cable on the back of the central housing attaches to the monitor. Securely connect the other end of the cable to the Camera head.

4) Turn the Monitor unit **ON** (see above). If using the recharger as the direct power source, plug the recharger into the nearest 110V wall socket and plug into the charging socket located on the Monitor’s side above the On/Off switch before switching the unit on. Fully charge the unit before using for the first time.

5) When first switched **ON** the screen will turn blue for a couple of seconds during which the name “Wöhler” the model and version numbers will appear. During this initialization phase the camera and the monitor are synchronizing signals. If you are using battery power and **if the battery is low a screen with the words “Camera Missing” may appear** either initially or during operation. To clear, turn the unit **OFF**, plug in the recharge unit, turn the monitor **ON** to restart and operate directly from the main power.

Note:

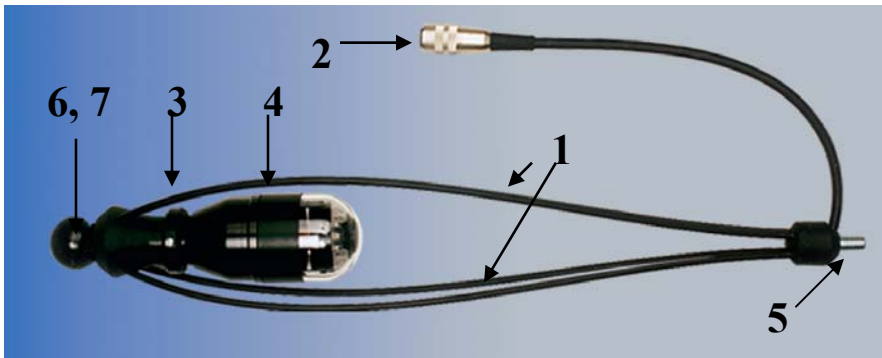
When the video inspection system is first switched on, the auxiliary lighting will be off.

4.2 Inspection from Below

To inspect a chimney or any flue from beneath you will need to attach the camera to the Camera Holder pictured below and use the VIPER or other rods. The camera is positioned looking backwards (towards the bottom). The camera holder protects and, with the appropriate sized brush, centers and stabilizes the camera for inspection purposes. Use 2 Poly STARS or 1 threaded brush for centering the Holder. The flexible plastic bars bend and compress to allow the camera to clear openings as small as 3 x 3 in.

To attach the camera head, insert between the plastic bars, turn the camera head until the small notch in the black plastic pin receiver on the camera is aligned with the metal flange on the inside casing of the 8 pin plug on the camera holder and, with the spring locking ring pulled back, push together to make a firm connection. Release the locking ring so that it returns to the top position. **The connection is tight but do not force together.**

IMPORTANT! DO NOT TURN OR TWIST THE CAMERA IN THE SOCKET HEAD AFTER IT HAS BEEN CONNECTED. THIS WILL DAMAGE THE PINS AND THE CONNECTOR.



- 1 Flexible Plastic protector arms (4)
- 2 Connecting video camera cable
- 3 Locking ring with spring and socket with female 8 pin connector
- 4 Camera head
- 5 M 10 screw connection to VIPER/rod
- 6 M 10 female connection for holding 2 28mm centering STAR brushes
- 7 Deflector ball with M 10 thread for holding 2 STAR brushes

To remove the Camera head, pull the locking ring back and carefully but firmly pull straight back on the camera head. **Avoid twisting or angling the camera off as this will damage the black plastic female pin connector on the camera housing or the pins on the camera holder.**

After attaching the camera to the camera holder and connecting the holder cable connection to the long video cable, position your monitor and VIPER suitably and start your inspection. Releasing the reel brake at the center of the Cable reel will allow for easy extension of the camera cable along with the VIPER rod. **Periodically check the 4 plastic arms (1) for wear. Replace as needed.**

4.3 Inspection from Above

For top down inspection it is important for the camera to be centered in the chimney. This will enable you to get a clear, stable view of each wall. There are two parts that can be used to center the camera: a centering STAR holder (#20302) and the adjustable Spring Guide (#8633).

The centering STAR holder screws into the base of the camera head where the cable connects. Snap the appropriate sized STAR over the two plastic arms (pinch together to remove), insert the video cable through the hole and plug into the camera, then screw the STAR holder into the base of the camera.



USE in Round or Square flues

To center using the adjustable Spring Guide screw the round threaded brass end into the base of the camera head, connect the top metal end to the camera cable by inserting the cable into the deep groove as shown and tighten the top screw to firmly pinch the metal spring against the cable. To adjust the width of the loop simply loosen the top screw and slide the unit towards the camera head (wider) or away from the camera head (narrower).



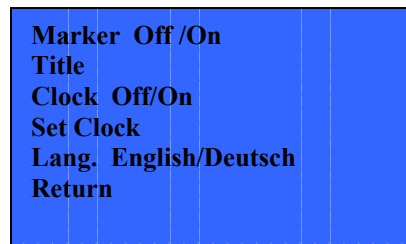
USE in Square or Rectangular flues

4.4 Operating the Menu

The quick access menu system provides for turning ON and OFF various functions and for entering data into the Title Header and the Date and Time stamp features.

To access the menu, first turn on the monitor with the camera attached. If a camera is not attached the screen will show "Camera Missing" and the menu function cannot be accessed.

To activate the menu "double click" (just like a mouse) the joy stick inwards (press straight inwards). A screen will appear that looks like this:



The active part of the menu is denoted by the flashing word. A single "click" of the joy stick on the flashing word will select that action or toggle you to the sub menu for further action. For example: if the "Marker Off" line is flashing and you single "click" the joy stick the selection will change to "Marker On".

Clicking the "Title" line will take you to the Title sub menu which shows the alphabet in Capitals, small text, numbers and special characters. The title has room for 10 alpha-numeric characters. The "space" selection is in front of the number "0" (bottom row). To navigate thru the alpha-numeric choices move the joy stick up/down/right/left. When the character you want is flashing, single "click" the joy stick. To exit the Title menu toggle down until "Return" is flashing and single "click". You will exit the menu. To reenter, simply double click again.

The Date and Time selection is in the "dd/mm/yy" and "hh/mm" (24 hr clock) format. In the flashing space

push the joy stick up to increase the number or down to decrease. Single “click” on the joy stick to select. Pressing the joy stick right will navigate across the date and time to “Return”.

Toggling on “Lang.” will switch the menu between English and German.

Turning the “Marker On” toggle will insert a small “+” on the screen. This marker is there to assist in the highlighting for on-screen documentation and presentation purposes. **Note** that while the “Marker” feature is turned **ON** the ability to turn on or off the extra White LED’s or to rotate and swivel the camera lens is suspended as the movement of the “Marker” is controlled by movement of the joy stick.

Turning the auxiliary white LED lights On and Off is done by single clicking the joy stick inwards in a vertical movement. If the joy stick is double clicked the menu screen will appear. If this occurs, simply toggle down through the menu to “Return”, single click and you will exit the menu. Press the joy stick inwards to switch off the white LEDs.

4.5 Video Recording

The VIS2000 provides a standard RCA, analog, video-out socket for documentation and recording. The socket is located beside the recharge socket on the left side of the monitor (see #5 on the monitor diagram above). From this socket it is possible to feed the video images to a TV, VCR or Camcorder (either Digital or VHS/8mm) that accepts video-in signals. It is also possible to attach the monitor’s video-out socket to other analog-to-digital capture devices. There are a wide variety of these available in the market. We suggest you check with your local electronic/computer retailers for available models that fit your needs.

When recording an inspection the on-screen menu features of a 10 digit alphanumeric title and the date and time stamp along with the “marker on or off” option shows on the recording.

Depending on the recording device used it is also possible to add an independent audio commentary to the VIS2000 video-out picture signal.

4.6 Control of the Camera Head

The VIS2000 features a camera head that pans 360° and tilts 180° all from the simple, finger tip control of the red control or joy stick located on the monitor face. The joy stick moves up/down, right/left allowing the user to easily pan and tilt the lens to perfectly view any object. The joy stick requires very little pressure to operate. Care should be taken not to exert strong, lateral pressures on the joy stick as it can be damaged.

4.7 Focusing / Aperture Brightness control

The VIS2000 has a factory set focus from approximately 1” to infinity. This allows for clear automatic viewing of both close-in and distant objects. The camera lens also has an automatic brightness adjustment feature that allows for changes in surrounding light levels. Caution: Do not aim the lens into direct sunlight as this could damage the camera sensor. You will need to periodically adjust the Brightness / Contrast and Color controls on the Monitor to ensure a good picture while scanning as conditions inside the flue change.

4.8 Cable Reel



- 1 Cable Guide
- 2 Monitor attachment flange with standard camera screw
- 3 Crank (rear side)
- 4 Connection cable
- 5 Center brake knob (rear side)
- 6 Transition cable from reel to monitor
- 7 Cable reel housing
- 8 Hinged support legs
- 9 Release knob to tilt/fold monitor attachment flange for adjusting monitor viewing angle and fold down for packing

The cable reel is a handy way to carry the video cable and to mount the monitor on. It acts like a fishing reel with a drag or brake screw located on the center hub of the wheel. The support legs fold inwards so the unit can easily fit into the optional aluminum carrying case. The legs should always be extended fully when in use. Failure to extend the legs will cause instability in the unit and it can tip over potentially damaging the monitor. The screw attached to the monitor flange screws into the appropriate hole on the bottom of the VIS2000 monitor and, with an adapter, to the SK95. To recoil the cable, ensure the brake is released and crank the wheel counter-clockwise.

If the cable is to be installed for the first time or if the cable is to be replaced, the cable reel will have to be cranked clockwise (reeled out) to its limit. When set, the cable attached to the Cable reel and the new cable can be connected and slid into the special groove on the wheel. The cable can be reeled onto the unit by cranking counter-clockwise. **The cable reel does not have to be disassembled in any way to install a cable.**

The unit comes standard with a 65 foot (20 m) cable. An optional 95 foot (30 m) cable is available and can replace the standard 65 foot on the cable reel. There is a 33 foot (10 m) extension available as well which attaches onto the end of the 65 foot cable but does not go on the reel. Maximum cable distance is 200'/60m.

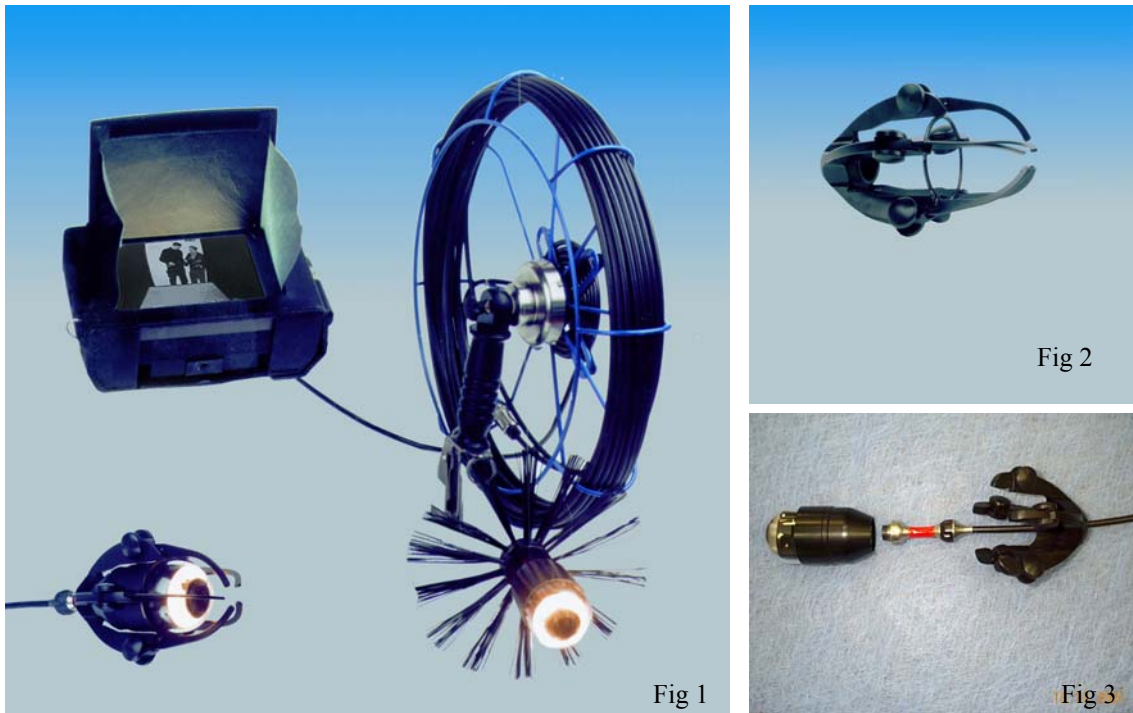
4.9 Care of and Replacing the Glass Lens Dome

The camera lens mechanism is protected by a scratch resistant glass dome with a black metal base. To clean the glass dome use a **SOFT CLOTH ONLY. NEVER USE HARSH CLEANING SOLUTIONS, DETERGENTS OR ABRASIVE MATERIALS.**

If the glass dome requires replacement you can order part # 7802. To exchange the dome, unscrew the old unit. If it is being replaced because of breakage please ensure that no glass particles remain inside the unit. When the glass dome is first removed a small black plastic ring and a fine spring which sit around the lens will extend. **DO NOT LOSE THESE. IT IS NORMAL THAT THEY WILL EXTEND UP WHEN THE GLASS DOME IS REMOVED.** Once the old glass dome is removed, carefully align the moveable lens assembly so that it is facing vertically. Gently place the small spring back into the space around the lens,

put the small black plastic ring on the spring and, holding the unit vertically so the spring and the black plastic cap are straight up, screw on the new glass dome. Tighten all the way down. Test the Pan and Tilt motion of the lens to ensure smooth travel. Due to very small variations in the manufacturing of the glass domes and the very tight design tolerances inside the unit, if the movement of the lens is not smooth, loosen the glass dome slightly. This may provide enough additional space to allow for free movement. Should there be further difficulties please contact Wöhler USA at 919-678-9809 for further assistance.

4.10 Camera Reel and Roller



The Camera Reel (6mm & 7mm) is designed to allow the operator to inspect smaller chimneys and gas vents from below and from above as well as dryer vents, ducts and any other horizontal pipes and flues. The camera rod has the video electronics imbedded inside the rod. The transmission of the video signal from the rotating rod through the non-rotating Monitor connection is through a patented central hub.

The standard 65 foot (20 m) rod is housed in a hand held **VIPER** frame. A central free-wheel brake has a one way braking action on the extension of the rod. For ease of operation there is no braking adjustment required for re-reeling the rod into the cage. You adjust the brake tension by rotating the brake knob clockwise to increase braking and counter clockwise to release.

To operate, attach the short cable on the back of the cage to the monitor as shown in Fig 1. The camera is then aligned and attached to the plug end of the flexible, red end piece shown in Fig 3. Please ensure the camera and the end connector is firmly screwed together. If the roller is to be used, slide it over the rod first before attaching the camera to the rod, then insert the camera into the roller and screw together using the large plastic screw on the end of the roller. Slip the five prong protective cage into the roller housing into the slots and turn and snap together. For centering the camera in flues there is a special removable STAR brush that attaches across the red plastic part shown in Fig 3 and is shown in Fig 1. The brush comes in 6 (#8871), 8 (#9771) and 10 (#8772) inch diameters. There is also an optional, attachable/removable metal stand (not pictured) that is available and allows the operator to stand the Camera reel upright.

4.11 Camera Case

There is an optional aluminum camera carrying case, pictured below (#7824), that will hold the cable reel and other important camera parts.



4.12 Trouble Shooting

In the event of equipment problems in the field, first check these simple corrections before calling Wöhler USA at 919-678-9809.

- The unit has been turned on but the monitor stays dark:
 - o Recharge the batteries if not running off of the main power. Your unit is charging when the red light beside the charging socket is ON. Remember, the unit does not recharge if plugged in and in operation.
- The screen is bright but fails to display an image or the screen displays a “Camera missing” message:
 - o Check that the camera is connected properly and that the connectors are screwed tightly together. Be careful not to over tighten the cable connections.
 - o “Camera Missing” can result from operation on a low battery. Turn off and charge or turn off, plug in provided 110 V power supply and restart monitor.
- The image is hazy:
 - o Use the brightness, contrast and color controls on the side of the monitor and/or use the auxiliary lighting for better illumination. Light conditions due to distance and reflection change constantly during an inspection. This requires periodic adjustments of the brightness and contrast controls to compensate.
 - o Check to ensure the Glass dome is not dirty or scratched. Clean or replace as necessary. (see Section 4.9)
 - o For first time use, the monitor is shipped with a thin plastic protective cover over the monitor’s screen. Please remove.
- The camera head will not pan and tilt and the high beams are not functioning:
 - o In the Menu screen (double click on Joy stick) check to ensure that the “Marker” function is not switched ON. If ON, switch OFF. (see Section 4.4)

IMPORTANT:

- **NEVER POINT THE CAMERA LENS DIRECTLY AT THE SUN**
- **DO NOT OPERATE/STORE THE UNIT OUTSIDE OF THE STATED OPERATING TEMPERATURES. IF EXPOSED TO EXTREME COLD OR HEAT BEYOND THE STATED TEMPERATURES, THE LCD AND OTHER SENSITIVE ELECTRONIC COMPONENTS CAN BE DAMAGED. THIS WILL VOID THE WARRANTY.**
- **THERE ARE NO OPERATOR SERVICABLE PARTS INSIDE THE MONITOR. OPENING THE MONITOR UNIT CAN BE DANGEROUS DUE TO POTENTIAL ELECTRIC SHOCK. OPENING WILL VOID THE WARRANTY.**
- **EXCEPT TO REPLACE THE GLASS DOME, THERE ARE NO OPERATOR SERVICABLE PARTS INSIDE THE CAMERA HEAD.**
- **THERE ARE NO OPERATOR SERVICABLE PARTS INSIDE THE CABLE OR ROD REELS. OPENING THESE WILL VOID THE WARRANTY.**

5.0 Warranty – Please read fully!

Warranty VIS 2000 and SK98 Video Inspection Systems

VIS2000/SK98 Hardware: WöhlerUSA Inc. warrants to the original end user (Customer) that this product will be free from defects in workmanship and materials, under normal use, for one year from the date of original purchase from WöhlerUSA Inc. or its authorized reseller. WöhlerUSA Inc.'s sole obligation under this express warranty shall be, at WöhlerUSA Inc.'s option and expense, to replace the product or part with a comparable product or part or to repair the product or part. Replacement products or parts may be new or reconditioned. WöhlerUSA Inc. warrants any repaired or replaced parts for a period of ninety (90) days from shipment or through the end of the original warranty obligation, which ever is longer. All parts or products that are replaced become the property of WöhlerUSA Inc.

The serial number of the monitor and the camera head are printed and are needed for any warranty claim. Please retain your invoice as proof of your warranty.

Expressly excluded from this VIS2000/SK98 Hardware warranty is the Glass dome that covers the lens mechanism.

Obtaining Warranty Service:

The Customer must contact WöhlerUSA Inc. during the normal business hours of 9:00 and 4:00 EST Monday through Friday, excluding statutory and other noted holiday periods, within the applicable warranty period. Dated proof of purchase, the Invoice, and the applicable serial numbers of the warranted products is required. WöhlerUSA Inc. is not responsible for Customer products returned without prior return authorization. WöhlerUSA Inc. may, at its sole option, provide advance shipment of replacement parts prior to receiving the original product or part (advance exchange). If advance exchange is not available, then the repaired product will be shipped as soon as possible. Repaired or replaced product or parts will be shipped at WöhlerUSA Inc.'s expense. Products or parts shipped by the Customer, at their risk, to WöhlerUSA Inc. must be sent prepaid and packaged appropriately for safe shipment. It is recommended that they be insured or sent by a method that provides for the tracking of the package. When advance exchange is provided and the Customer fails to return the original product or part to WöhlerUSA Inc. within fifteen (15) days from the date the warranty service authorization was issued, WöhlerUSA Inc. will charge the Customer the then current published catalog price of such product or part. To obtain warranty service please call WöhlerUSA Inc. at 919-678-9809 during the business hours mentioned above.

Warranties Exclusive:

If this product does not operate as warranted above, the Customer's sole remedy for breach of that warranty shall be replacement or repair of the product or part. To the full extent allowed by law, the foregoing warranties and remedies are exclusive and are in lieu of all other warranties, terms, or conditions, express or implied, either in fact or by operation of law, statutory or otherwise, including warranties, terms, or conditions of merchantability, fitness for a particular purpose, satisfactory quality, correspondence with description, and non-infringement, all of which are expressly disclaimed. WöhlerUSA Inc. neither assumes nor authorizes any other person to assume for it any other liability in connection with the sale, maintenance or use of its products. WöhlerUSA Inc shall not be liable under this warranty if its testing and examination of returned product shows that the alleged defect or malfunction does not exist or was caused by the Customer's or any third person's misuse, neglect, improper installation or testing, unauthorized attempts to open, repair or modify the product or any other cause beyond the range of intended use, or by accident, fire, or any other hazards or Acts of

God. This warranty does not cover physical damage to the surface of the product including cracks or scratches on the LCD screen or outside casing or the leather protective case or to any cables or video rods. This warranty does not apply when the malfunction results from the use of this product with accessories, other products, or peripheral equipment and WöhlerUSA Inc. determines that there was no fault or failure of the product itself.

Limitation of Liability: To the full extent allowed by law, WöhlerUSA Inc. also excludes for itself and its suppliers any liability, whether based on contract or Tort (Including Negligence), for incidental, consequential, indirect, special, or punitive damages of any kind for loss of business, profits, information or data or images, or other financial loss arising out of or in connection with the sale, installation, maintenance, use, performance, failure or interruption of this product, even if WöhlerUSA Inc. has been advised of the possibility of such damages, and limits it's responsibility to the replacement or repair of the product or part. This Limited Warranty is governed by the Laws of the Sate of Delaware.

WöhlerUSA Inc.
1933 Evans Road,
Cary, NC. 27513
919-678-9809

Customer Name : _____

Monitor Serial # : _____

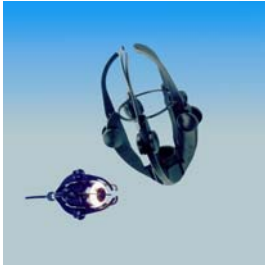
Camera Serial # : _____

Purchase Date: _____

Invoice Number: _____

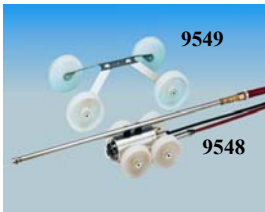
Congratulations on your purchase of a Wöhler VIS 2000. Please complete the information on this form and retain for Warranty purposes. A copy of this document and/or a copy of the original invoice must accompany any Warranty claim.
The serial number for the camera is located on the lower metal side of the camera. The serial number for the monitor is located on the right side of the monitor by the cable connector.

VIS2000 Accessories



Camera Roller: Part no. 7826 for horizontal applications (Ducts, Dryer vents)

- Use with the VIS2000/98 Pan & Tilt camera heads and the 6/7mm Camera rod
- Measures approx 3 ½ inches dia. x 5 ½ in long
- Removable front protection cage



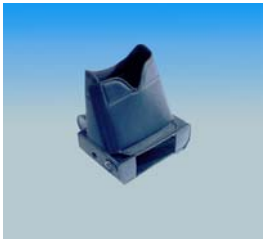
Camera Wagon: Part no. 9548/9549 for larger horizontal applications (Ducts, vents)

- Use with the VIS2000/98 Pan & Tilt camera heads and the 6/7mm Camera rod or VIPER and video cable
- Base unit (#9548) approx 6 x 5 x 5 in.
- Piggy back unit (#9549) for larger ducts approx. 14 x 7 x 5 in.



Extra Lighting Ring: Part no. 9177/9377 for the VIS2000/98 camera systems

- Use white light (#9377) for the VIS2000 Color camera
- Use red light (#9177) for the VIS98 B&W camera
- Comes with battery pack for attachment to rod.



Sun Shade Viewer: Part no. 7833 for the VIS2000 color monitor leather case

- Provides additional viewing protection for high light conditions
- Attaches to leather case with Velcro



Protection sleeve for Mini Camera: Part no. 7863

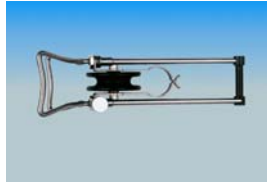
- Provides protection for Mini camera heads
- Acts as a centering device and slide for camera
- 1.6 in. dia. x 2 in. long



Stand for Video Rod VIPER: Part no. 7823

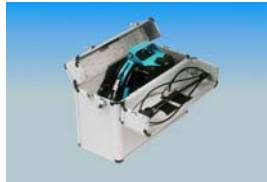
- Clip on metal stand for VIPER reels

VIS2000 Accessories



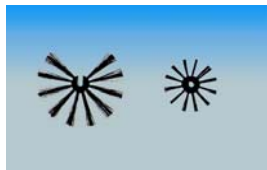
Camera Centering wheel: Part no. 5706 for vertical centering applications (Chimneys, vents)

- Use with the VIS2000/98 Pan & Tilt camera heads and video cable to act as centering pulley
- Telescopes from approx 9 inches to 16 in. to bridge most chimneys



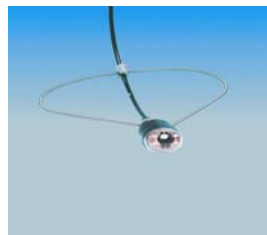
Transport Case: Part no. 7824 for packing and transporting the VIS2000 with Cable reel

- Sturdy Aluminum suitcase with two top locks
- Room to carry camera accessories, notes etc.



Lockable Centering Stars for Mini Camera: Part no. 8771/9771/8772 for the mini color camera head

- 3 sizes – 6/8/10 in.
- Easy to twist on and off
- Great to center mini camera in small ducts & dryer vents



Centering Loop: Part no. 8633 for the VIS2000 color cameras

- Centers camera head in square & rectangular chimneys for top down inspections
- Adjustable from 6 to 14 in.



Camera holder for VIPER: Part no. 8680 for attachment to VIPER or rods for bottom up viewing

- For the VIS2000/98 camera heads
- Acts as a centering device with brushes and protective slide for camera
- M10 thread

NOT PICTURED:

- Auto/Truck 12V monitor recharger: Part no. 8637
- Aluminum Transport Case XXL for Camera reel: Part no. 5824
- Stabilizing ring for use with VIS2000/98 camera head on 6/7mm camera rods: Part no. 3634
- Extension Camera Cable 33ft./10m: Part no. 8636
- Camera cable 100ft./30m: Part no. 7812
- Replacement Glass Dome for VIS2000/98: Part no. 7802
- Centering Star holder for VIS2000/98 camera: Part no. 20302