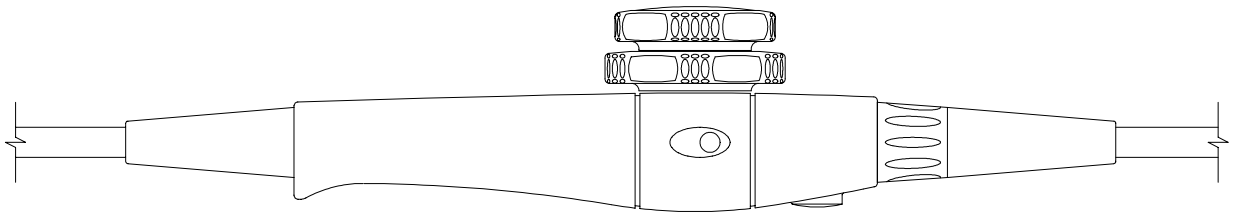


OPERATION MANUAL

SERIES 128000

VIDEOSCOPE



ITI | INSTRUMENT
TECHNOLOGY, INC.

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33 Airport Road, Westfield, MA 01085

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INTRODUCTION

Thank you for selecting Instrument Technology, Inc. (ITI) to fulfill your remote viewing needs.

Since 1967, ITI has been the Leader in Remote Viewing. The only company of its type doing all its manufacturing in the United States, ITI consistently provides cutting edge technology to customers world-wide.

ITI specializes in the design, development and manufacture of Remote Viewing Instruments (RVI) and systems including Borescopes, Fiberscopes and Videoscopes.

ITI offers over 2,000 standard products as well as products custom designed for unique applications. No matter which ITI product is used, our customers find they are able to observe hostile and difficult to reach environments never dreamed possible before. Though ITI products can solve many remote viewing problems, it is always best to select the proper instrument for any given application. Only then can success be assured.

Your satisfaction is guaranteed with all products purchased from Instrument Technology, Inc. Feel free to contact ITI or your local ITI Representative with any questions.

WARRANTY

Instrument Technology, Inc. warrants that the equipment is fit for the purposes described herein for a period of one year after the date of shipment when used in accordance with the directions for use, and agrees to repair or replace any such defective component part at no cost to the customer.

There are no other express or implied warranties. ITI's sole obligation and purchaser's exclusive remedy for breach of any warranty shall be limited to repair or replacement of the product at the option of ITI. This warranty does not cover, and ITI will not be liable for any resulting direct, proximate, incidental or consequential damages. This warranty does not apply if the product has been subject to misuse, negligence, accident or improper application, nor shall ITI be responsible for work done or repairs made by others.

PRODUCT SPECIFICATIONS

	<u>128008</u>	<u>128012</u>	<u>128016</u>
Diameter	8.5mm (0.34")	12.5mm (0.5")	16mm (0.63")
COMMON FEATURES			
Working Length	3M (10') – 4.5M (15') – 6M (20')		
Articulation – 4 Way	U/D & L/R 120° ± 10°		
Field of View			
Scope Only			30 ± 5°
50° Head	50 ± 5°		50 ± 5°
100° Head	100 ± 10°		100 ± 10°
Depth of Focus			
Scope Only			3.0" - ∞
50° Head	0.5" - ∞		0.5" - ∞
100° Head	0.5" - ∞		0.3" - ∞
CAMERA FEATURES			
Effective Pixel Number			
Horizontal	768 pixels		768 pixels
Vertical	494 pixels		494 pixels
Resolution			
Horizontal	470+ lines		470+ lines
Vertical	350+ lines		350+ lines
Min Illumination	5 lux		15 lux
S/N Ratio	46 dB or more		
Electronic Shutter	Variable from 1/60 - 1/10,000s		
Operating Temp	-10 to 40° C [14 to 104°F]		
Operating Humidity	30 to 90%		

OPERATING INSTRUCTIONS

OVERVIEW OF APPLICATIONS

ITI Series 128000 Videoscopes are long, small diameter, flexible tubes containing a high resolution color camera chip with lenses at the distal tip. The chip camera carries video signals by wires that terminate in a multi-pin connection extending from the operation handle. The flexible tube also contains:

- 1) 4-way articulation wires enabling distal tip movement.
- 2) Fiber optics for illumination.

The flexible tube is composed of stainless steel jacket for mechanical protection and a plastic layer for sealing.

Videoscopes are normally used to view or inspect into inaccessible or hazardous environments when only limited access is available. The articulation control enables the operator to move the tip around for general observation and/or inspection.

The Videoscopes can either be connected to ITI's Series 161000, MI-IV for complete Video Image Processing, or can be connected to individual components for less demanding requirements.

INSTALLATION

CAUTION

DO NOT PLUG VIDEOSCOPE INTO CAMERA CONTROL UNIT (CCU) UNLESS ALL POWER HAS BEEN SHUT "OFF", OR DAMAGE MAY RESULT TO THE CAMERA CHIP.

BEFORE CONNECTING VIDEOSCOPE TO CCU, SET ALL CCU & MONITOR POWER SWITCHES TO "OFF" POSITION.

1. Connect Videoscope to CCU.
Connect video cord from Videoscope handpiece into camera connector on CCU. Connect power to CCU, and then connect video monitor to CCU.
2. Connect Light Cable.
The fiber optic cable is the other cable on the Videoscope's handpiece. Connect to light source, and turn light source "ON". See Light Source manual.
3. Adjust Camera Control Unit (CCU).
See CCU manual.

PICTURE QUALITY

Adjust light output to accommodate inspection area. Highly reflective surfaces require minimal illumination, see Light Source manual. To adjust CCU Controls, see CCU Manual. To adjust Monitor Controls, see Monitor Manual.

FOCUS (12.5MM & 16MM MODELS ONLY, SEE INSERT FOR 8.5MM)

Start with the Videoscope out of focus. Rotate Focus Ring so that focus is achieved and continue past clear focus. Rotate Focus Ring in opposite direction to re-establish clear focus. The Videoscope may require refocusing after an articulation movement.

ARTICULATION

CAUTION

DO NOT ATTEMPT TO ARTICULATE VIDEOSCOPE IN THE COILED STATE, CATASTROPHIC FAILURE TO THE ARTICULATION SYSTEM WILL OCCUR FROM ADDED STRESSES PLACED ON THE SYSTEM. THE WORKING LENGTH OF THE INSTRUMENT SHOULD BE IN THE ELONGATED STATE AT-ALL-TIMES WHEN ARTICULATING THE INSTRUMENT.

The Videoscope has four-way articulation (up, down, left and right). Knobs on the handpiece control articulation, see figure. Rotate one knob to articulate up/down, and rotate the second knob to articulate left/right.

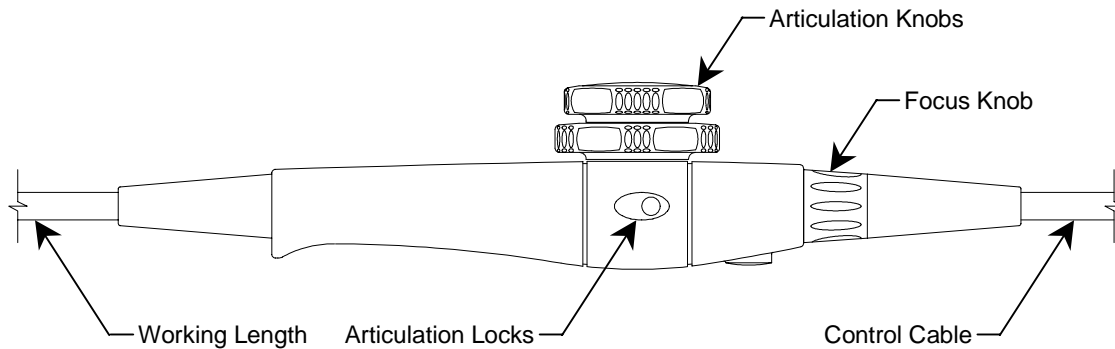
The Videoscope articulation system is considered at its “neutral position” when the distal end is lying in line with the working length. When neutral, the neutral dots on the Articulation Knobs should be in line with each other and the white neutral indicator line on the rear body housing. **The scope should always be returned to this position prior to withdrawal from area being viewed.**

ARTICULATION LOCKS

Once object has been acquired in field of view, line of sight may be maintained by using articulation locks. Locks are oval rocking levers located to the side of knobs. Each knob has its own color coded lock to switch on or off.

When “ON”, the ratchet style locking system engages, while the “OFF” position allows Videoscope to articulate freely. The ratchet system holds the line of sight. It can also be overpowered by turning the knob to the next locking position. The operator will hear a click as the knob is advanced from position to position. This is the ratchet mechanism at work.

NOTE: Always unlock and straighten Videoscope before withdrawal. Failure to do so may result in catastrophic failure. Scope is straight when the knobs are returned to their neutral position.

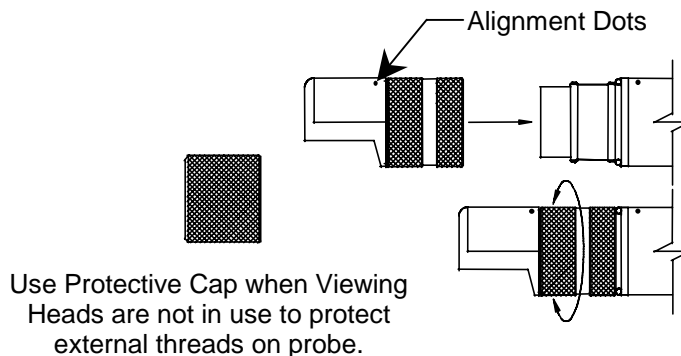


INTERCHANGEABLE VIEWING HEADS

The Videoscope offers Interchangeable Viewing Heads that allow the operator a choice of standard (50°) or wide (100°) fields of view. The Videoscope without an interchangeable head will produce a narrow (30°) field of view [use with Protective Cap to protect the threads].

Align dots to assure head is properly oriented during attachment of head to scope (the Protective Cap has no dot because it is not keyed). Once the dots are aligned the head is screwed successfully through both thread sets until secured against the O-ring seal, see figure. Replace damaged O-rings prior to use. The distal tip has two sets of threads. The second set captivates the head in the event it loosens, thus allowing the operator to extract the scope, head attached, without losing the head. A loss of focus control will be evident if a head loosens.

NOTE: Do not handle the Viewing Heads with dirty hands - the seal and lens quality may be compromised. Take care not to allow any debris to get into the threads.



INSTRUMENT CARE

CLEANING AFTER USE

Wipe instrument after use with a soft, clean cloth. If instrument is soiled, use a non-abrasive, neutral detergent on a damp cloth to clean it. Always store the instrument in a protective case.

NOTE: DO NOT IMMERGE INSTRUMENT IN LIQUID unless it has been specifically manufactured for underwater applications.

CLEANING OF OPTICS

Should cleaning of external surfaces be necessary, blow off dust with a triple-filtered, high pressure optical quality dusting spray. Wipe surface with a clean cotton swab moistened with laboratory grade alcohol. Excess alcohol can be blown away with the spray.

ITI Model 126110 RVI Cleaning Kit may be used.

PRECAUTIONS

Do not use beyond recommended temperatures:

Maximum 104° F (40° C)
Minimum 32° F (0° C)

Do not allow instrument to contact live or exposed wiring. It is an excellent conductor.

REPAIR POLICY

If your equipment requires factory attention, contact ITI's Customer Service Dept. at (413) 562-3606 for a Return Authorization Number. Please be prepared to furnish your model and serial numbers. Return the equipment to ITI, freight prepaid.

Ship to:

Instrument Technology, Inc.
33 Airport Road
Westfield, MA 01085-1357

Please note Return Authorization Number on Purchase Orders, and all shipping documents.

Upon receipt of your equipment, ITI will assess its condition to determine if repairs are needed. If repairs are required, we will quote repair costs and a schedule for repairs. Your options at this point are:

1) **Accept Repair**

To proceed with the repair, ITI will require a purchase order for the full quoted repair price.

2) **Decline Repair - Upgrade to a New Instrument**

Choosing this option requires a purchase order for the new equipment at its quoted price. ITI will ship out the next available unit.

3) **Decline Repair**

Please Note - Most repair evaluations require a partial or complete disassembly of the equipment. **Once disassembled, it is impossible to return it to the customer in "as received" condition.** At the customer's option, ITI will either return your equipment in its disassembled state, or dispose of it.