June 2016

CALIBRATION SUMMARY
GE RVI VIDEO BORESCOPES & VERIFICATION BLOCK PRODUCTS

GE VIDEO BORESCOPES WITH MEASUREMENT FEATURE

All GE VideoProbes supplied with Shadow Probe, StereoProbe or 3D Phase Measurement optical tips for performing measurements meet the factory accuracy requirements at the time they initially shipped from the GE factory. Included with every new VideoProbe system (when measurement tips are included) is a VideoProbe "Certificate of Calibration". This C of C is a record of the measurement tips which were calibrated to that VideoProbe, and which meet the GE RVI new product measurement accuracy standards. (See Appendix A for sample VideoProbe C of C).

In order to verify that the VideoProbe can perform accurate measurements, GE recommends that prior to performing any critical measurement - and immediately following, the user inserts the probe into the Measurement Verification Block (MVB) to verify the ability of the system to perform accurate measurements. If the system can perform a measurement within the tolerances listed in the product's operating manual - then the VideoProbe system is acceptable for use in performing defect measurements. However, improper care such as a severe drop or other impact to the camera head or measurement tips may cause the optical elements in the camera head or measurement tips to become mis-aligned. Because of this risk of user-induced events which could affect measurement accuracy, there is no set Calibration Period associated with the VideoProbe or its measurement tips. Again, GE recommends that prior to performing any critical measurement - and immediately following, the system's measuring accuracy is verified.

MEASUREMENT VERIFICATION BLOCK (MVB)

A MVB is included with every VideoProbe which is sold including measurement optical tips. This device is a calibrated component with a 6-year Calibration Schedule from its original date of manufacture. It is an NIST traceable calibrated test block containing a test target used to verify measurement system accuracy. When the calibration period has expired, a GE RVI customer may replace the MVB with a new block, or send their block with the expired calibration date in to the Skaneateles, NY, USA authorized GE RVI repair center for re-calibration.

The MVB is shipped in the Optical Tip Case of the GE RVI VideoProbe system, along with a "Certificate of Calibration" for that particular serialized MVB (see Appendix B). The calibration cycle for the MVB is shown on the MVB label along with its serial number (see Appendix B) as well as indicated in the MVP's C of C as "Next Calibration:" Note that the C of C for the MVB includes information related to the Standards Instruments used to verify the accuracy of the test targets of the MVB. The calibration schedule for the Standards Instruments used to test the MVB is for traceability purposes – *and is not the calibration cycle of the MVB*.

GE INSPECTION TECHNOLOGIES QUALITY MANAGEMENT SYSTEM

GE Inspection Technologies Remote Visual Inspection factory has implemented a Quality Management System which meets ISO 9001-2008 for the design, development, manufacture and repair of Remote Visual Inspection (RVI) equipment. (see appendix C for GE RVI ISO 9001:2008 Certificate).

APPENDIX A

VIDEOPROBE SAMPLE CERTIFICATE OF CALIBRATION

Certificate of Calibration

GE **Inspection Technologies** **1.866.243.2638**	Customer PO NO. or GEIT Sales Order NO.:	 817521

GE Inspection Technologies certifies that the measurement capability of the product and optical measurement tips have been tested to the product specifications, and have been found to meet or exceed those specifications. **GE Inspection Technologies** further certifies the measurement equipment used to perform these tests have been calibrated with standards traceable to ISO/IEC 17025:2005 and the National Institute of Standards and Technology (NIST) ANSI/NCSL Z540.1. Documentation of traceability to the NIST is on file at **GE Inspection Technologies**, and is available upon request. **GE Inspection Technologies** recommends the probe and tips calibration to be verified daily, prior to use of the measurement feature or after any visual indication of physical damage. See the product **Users' Manual** for instructions on how to use the verification blocks for measurement verification.

Calibrated Probe

Probe Model #	Part Description	Probe Serial #
MVIQAP6120	MENTOR VISUAL iQ PROBE 6.1MM X 2M	1634A7626

Probe to Tip Calibrated by: P. Mayberry Calibration Date: 9/23/2016

Certified by: (handwritten only) P. Mayberry Expiration Date: Defined by Customer's Use

☑ Check if the Probe has been calibrated between all Standard Tooling Calibration dates.

Calibrated Tip(s)

Tip Part #	CO#	Type of Measurement	Color	Diameter	Serial #	Pass/Fail
XL4TM61105FG		3D Phase	BLACK	6.1MM	E04	PASS
XL4TM61105SG		3D Phase	BLUE	6.1MM	BD2	PASS
XLG3TM615050SG		Stereo or 3D Stereo	BLUE	6.1MM	GU7	PASS
XLG3TM616060FG		Stereo or 3D Stereo	BLACK	6.1MM	JKU	PASS

Tooling Used at the Time of Calibration

Tooling	Description	Calibration Date - Due Date
WT.9021.05	Tip.Calibration.Station5	11/17/2015 TO 11/17/2016
WT.8002.02	6mm Calibration Block	11/10/2014 TO 11/10/2020

Temp(Fahrenheit)	72	(Celsius)	22	Humidity (%)	57

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C of C Included with Measurement VideoProbe

APPENDIX B

SAMPLE MEASUREMENT VERIFICATION BLOCK
CERTIFICATE OF CALIBRATION & MVB PART ILLUSTRATION

Certificate of Calibration

Customer Name: Address:	_____ _____ _____ _____
Customer PO NO. or GEIT Sales	_____

Calibrated by: Tim Deyo		**GE** **Inspection Technologies** **721 Visions Drive** **Skaneateles, NY 13152** **T 315-554-2000**

WO No. 20418813	GE Inspection Technologies	Calibrated: Next Calibration:	6/9/2016 6/9/2022

Calibrated Item

Part Number	Part Description	Serial Number
VER2600D	VERIFICATION SYSTEM, 6.1MM	16245940

Actual Measurement:	Side/Fwd	0.100 INCH (Inches/mm)	0.09990 / 2.53746	
	Target	1.0 MM (Inches/mm)	0.03933 / 0.99898	
	N/A	0.100 INCH (Inches/mm)	N/A / N/A	
# of Targets 1		1.0 MM (Inches/mm)	N/A / N/A	

Comments:	Temp.	69.4 dg. F.
	Temp.	20.8 dg. C.
	Relative Humidity:	36.0 %
Procedure No.:	P04102	

Standards Used

Asset No.	Model No.	Manufacturer	Description	Last Cal.	Due Cal.	Uncertainty
WT-8950-01	MVP300	OGP	SmartScope	9/16/2015	09-2016	XY = 40 µin Z = 41 µin

GE Inspection Technologies certifies that this equipment has been calibrated with standards traceable to the National Institute of Standards and Technology (NIST). Documentation of traceability to the NIST is on file at GE Inspection Technologies and available for audit upon request. This Certificate of Calibration shall not be reproduced, except in full.

Certified by: (handwritten only): Timothy Deyo 06/09/16

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Measurement Verification Block (MVB)

APPENDIX C
CURRENT GE INSPECTION TECHNOLOGIES
ISO 9001:2008 CERTIFICATE

GE RVI Quality Certificate

Visit http://www.ge-mcs.com/en/about-us/quality.html for the most current version of this certificate