



OPTON “V-Notch” Standard Machine



NABL Calibration Certificate

CALIBRATION CERTIFICATE

Issued By :

ACCURATE CALIBRATION & TESTING CENTER

Regd. Office & Lab : 168, B-Wing, 1st Floor, Jai Ganesh Vision, Akurdi, Pune - 411 035.
Phone : (020) 46779163, E-mail : sales.actc@gmail.com

NABL ACCREDITED CALIBRATION LABORATORY NO. C-0503



Certificate No. : 2015/05/361

Date of Calibration :	Next Calibration Due date:	Page	No. of Pages
13/05/2015	13/05/2016	1	5
NAME & ADDRESS OF CUSTOMER	: M/s. MAGNA CASTING & MACHINE WORKS PVT. LTD., METALLURGICAL LAB, At & Post: Velu, Gat No: 778, Tal: Bhar, Dist: Pune -412 205. (Through: Fine I.T. Solutions (India) Pvt. Ltd., Pune)		
WORK ORDER NO.	: 16/5139		
GAUGE FOR CALIBRATION	: VISION MEASURING MACHINE CODE NO.: MC-A-05 Model No : Opton -V Notch-S SR.NO. : 2015/001 MAKE : Fine I.T. Solutions		
CONDITION OF ITEM & DATE OF RECEIPT	: O.K. 12/05/2015		
REF. I.S. STANDARD	: --		
CALIBRATION PROCEDURE NO.	: 1) Linear accuracy in X & Y axis is determined by direct comparison with precision linear glass scale. As per procedure No. ACTC/WI/88 2) Angular Accuracy is determined by direct comparison with angle gauges As per procedure No. ACTC/WI/88		
EQUIPMENT & MASTERS USED FOR CALIBRATION	: 1. Linear Glass Scale ID No - ACTC-EQP-24, valid upto May-2017 2. Angle Gauge Blocks, Make - Mikronix, ID.No. - ACTC-EQP-12, valid upto Oct.-2016		
TRACEABILITY	: 1.Traceable to National Standards through NABL Lab. No.C-0307, Vide Certificate No.:CGIL/2014/0503/A-002 calibrated on 10th May-2014. 2.Traceable to National Standards through NABL Lab. No.C-0057, Vide Certificate No.:AG 100859 calibrated on 6th Oct-2013		
ENVIRONMENTAL CONDITION	: Temperature : 20°C ±1°C		



V Notch Inspection System

- **First ever Computerized V-Notch inspection** system for Impact samples in India
- **ASTM E23 compliant**
- Single system for V-Notch and Tensile sample inspection
- **Multiple Magnification Optics** (3 step Magnifications)
- **NABL Calibrated** with glass scale (Accurate Labs, Pune)
- Commissioned successfully at Magna Casting Lab, Pune
 - Lab accredited for NABL by Auditor
 - Special Positive Remarks by Auditor for Computerized V-Notch Inspection System



Multiple Magnifications

- 7 X Magnification
 - Tensile Sample Inspection
 - Field of View – 4“ x 1.2“
 - Measurement Resolution – 0.002”
 - Measurement in inches as per standard
- 10 X Magnification
 - Impact Charpy Sample Inspection
 - Field of View – 75 mm x 30 mm
 - Measurement Resolution – 0.02 mm < 20 mm and 0.04 mm > 20 mm
- 130 X Magnification
 - Impact Charpy – V-Notch Inspection
 - Field of View – 4.5 mm x 3.5 mm
 - Measurement Resolution – 0.002 mm
 - Angular Resolution – 0.2 degrees (12 minutes of Arc)



Charpy Sample Measurement Tolerances

V-Notch Sample Parameters (2 Variants as per Specimen Width)

Parameter Name	Required Values	Measurement Resolution of system
Specimen Length	55 mm (+0, -2.5 mm)	0.04 mm
Specimen Width	10 mm (+/-0.075 mm) 5 mm (+/-0.05 mm)	0.02 mm 0.01 mm
V-Notch Position	27.5 mm (+/-1 mm)	0.04 mm
Specimen Thickness	10 mm (+/-0.075 mm)	0.02 mm
V-Notch Angle	45 deg (+/-1 deg)	0.2 deg
V-Notch Radius	0.25 mm (+/-0.025 mm)	0.005 mm
V-Notch Depth	2 mm (+/-0.025 mm)	0.005 mm
Depth below V-Notch	8 mm (+/-0.025 mm)	0.005 mm



Tensile Sample Measurement Tolerances

Tensile Sample parameters (3 variants as per Diameter)		
Parameter Name	Required Values	Measurement Resolution of system
Diameter	0.5 " +/- 0.01" 0.35" +/- 0.007" 0.25" +/- 0.005"	0.002"
Gauge Length	2" +/- 0.005" 1.4" +/- 0.005" 1" +/- 0.005"	0.002"
Radius of fillet	0.375" min. 0.25" min. 0.1875" min.	0.002"
Length of reduced section	2.25" min. 1.75" min. 1.25" min	0.002"



System Features

- Software Features
 - Component Type Selection (V-Notch / Tensile)
 - Part identification data-entry for Reporting purpose
 - Live image display from camera
 - Measure selected dimensions as per Workflow
 - Search old Sample Test records
 - Print test report in NABL format as required by client
 - Auto-detection of proper placement of the component for better Accuracy
 - Calibration Facility – Linear and Angular as per scale
- Special Fixtures
 - Component specific fixtures
 - Charpy V-Notch Sample
 - Charpy sub-size V-Notch Sample
 - Tensile Sample
 - Tensile Sub Sample



Machine Photos



V-Notch Inspection System
with NABL Calibration
commissioned at Magna
Casting Lab, Pune



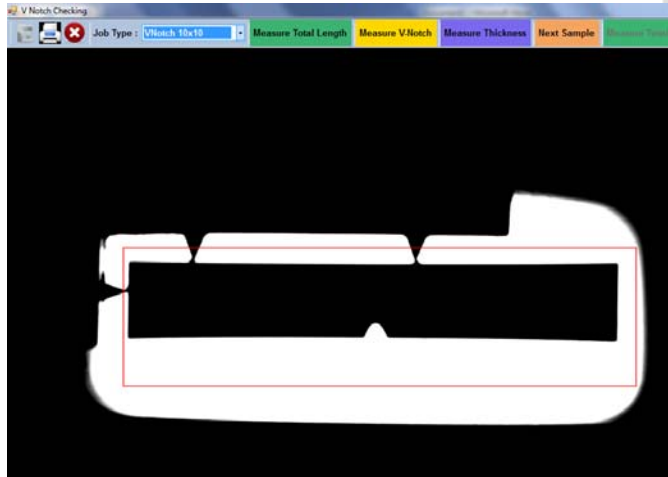
Machine Photos Contd...



Fixtures for
V-Notch Sample
V-Notch Sub sample
Tensile Sample
Tensile Sub Sample



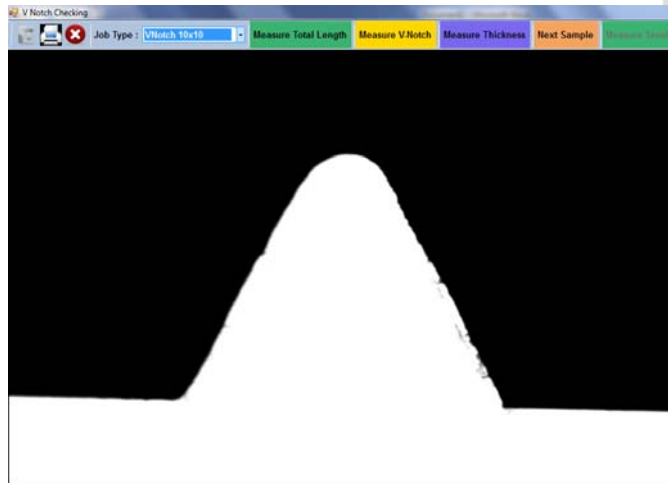
V-Notch Sample Images



V-Notch 10x10x55 mm and 5x10x55 mm Sample

Total Length, Width, V-Notch Position Measurement

Magnification – 10 X



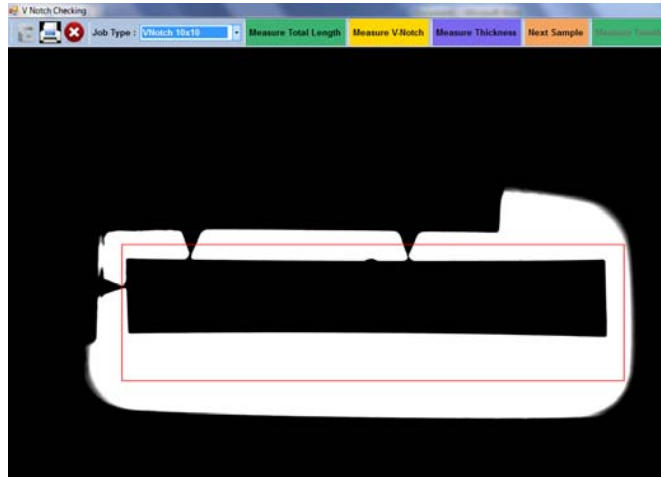
- V-Notch 10x10x55 mm and 5x10x55 mm Sample

- V-Notch Radius, Notch Depth, Notch Angle Measurement

- Magnification – 130 X

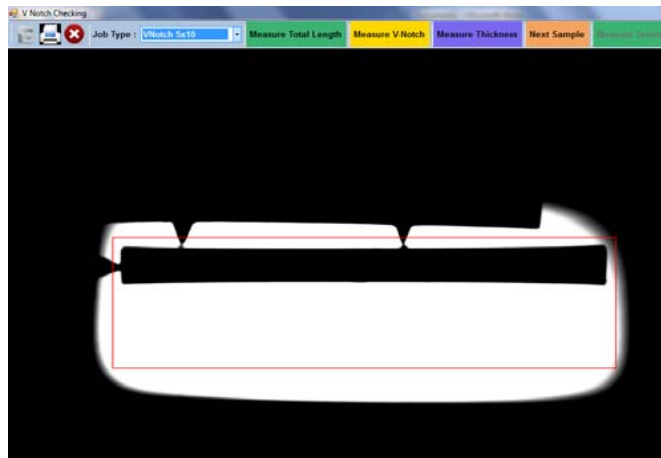


V-Notch Sample Images Contd....



V-Notch 10x10x55 mm

Specimen Thickness Measurement
Magnification – 10 X



- V-Notch 5x10x55 mm
 - Specimen Thickness Measurement
 - Magnification – 10 X



Customer Appreciation




Tue 19-May-15 5:06 PM

Ramchandra Ghalsasi <ramchandrag@magnumpune.com>

NABL ACCREDITATION

To: 'Shardul Kulkarni'; 'S M Engineers'

Cc: 'GHARPURE SIR'; shailendrat@magnumpune.com; sales@finegrouptest.com

 You forwarded this message on 23-May-15 12:11 PM.

Dear Shardul / Mr. Mahajan

We are happy to inform you that, we have been recommended for NABL accreditation of our lab. We are very much thankful to you for your kind support throughout the audit process.

Once again thanks to your team. Hoping to have your same co-operation in future also.

Thanks,

Ghalsasi R.M.

General Manager



A 100% E.O.U.

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