CALIBRATED BY TRANSCAT CERTIFICATE OF CALIBRATION

Customer: PINZUAR LTDA
CALLE 18 NO 103 B-72
BOGOTA DC,

PO Number: WIRE PMT

ANAB ACCREDITED ISO/IEC 17025 ANSI/NCSL Z540-1
ANAB AC-2489.06

ilac-MRA

Certificate/SO Number: 15-C3O9V-20-1 Revision 0

Manufacturer: Mitutoyo
Model Number: 516-938-26
Description: Gage Block Set, 112 pcs.
Serial Number: 1607684
ID: NONE

As-Found: In Tolerance
As-Left: In Tolerance

Issue Date: Jun 28, 2019
Calibration Date: Jun 27, 2019
Due Date: Jun 27, 2020

Calibrated To: Manufacturer Specification
Calibration Procedure: 1-AC35939-2

Transcat Calibration Laboratories have been audited and found in compliance with ISO/IEC 17025:2017. Accredited calibrations performed within the Lab's Scope of Accreditation are indicated by the presence of the Accrediting Body's Logo and Certificate Number. Any measurements on an accredited calibration not covered by that Lab's Scope of Accreditation are listed in the notes section of the certificate. SCC, NRC, CLAS or ANAB do not guarantee the accuracy of an individual calibration by accredited laboratories.

Transcat calibrations, as applicable, are performed in compliance with the requirements of the Transcat Quality Manual QAC-P01-000 Revision 2.0, the customer's Purchase Order and/or Quality Agreement requirements, ISO 9001:2015, ANSI/NCSL Z540.1-1994 (R2002) or NQA-1, as applicable. Complete records of work performed are maintained by Transcat and are available for inspection. Laboratory standards used in the performance of this calibration are listed on this certificate.

Transcat documents the traceability of measurements to the SI units through the National Institute of Standards and Technology (NIST), or the National Research Council of Canada (NRC), or other national measurement institutes (NMI) that are signatories to the CIPM Mutual Recognition Arrangement, or accepted fundamental and/or natural physical constants, or by the use of specified methods, consensus standards or ratio type measurements. Documentation supporting traceability information is available for review upon written request at a Transcat facility. The measured quantity and the measurement uncertainty are required for further dissemination of traceability.

A binary decision rule, utilizing simple acceptance, and simple rejection criteria is used for the determination of compliance. When compliance statements are present, they are reported without factoring in the effects of uncertainty and comply with the guidelines established by ASME B89.7.3.1-2001 (R2011) as follows:
-The acceptance zone is defined as: less than or equal to the high limit, and/or greater than or equal to the low limit. The rejection zones are defined as greater than the high limit and/or less than the low limit.
-Single measurement results in the acceptance zone are be identified as in-tolerance. Single measurement results in the rejection zone are identified as out-of-tolerance (OOT).
-When all measurement results are in the acceptance zone for repeated measurements, for the same characteristic, the test is identified as in-tolerance. For repeated characteristic measurements, a single measurement result in the rejection zone, will cause the test to be identified as out-of-tolerance (OOT).

Uncertainties are reported with a coverage factor k=2, providing a level of confidence of approximately 95%. All calibrations have been performed using processes having a TUR of 4:1 or better (3:1 for mass calibrations), unless otherwise noted. The Test Uncertainty Ratio (TUR) is calculated in accordance with NCSL International RP-18. For mass calibrations: Conventional mass referenced to 8.0 g/cm³.

The results in this report relate only to the item calibrated or tested. Recorded calibration data is valid at the time of calibration within the stated uncertainties at the environmental conditions noted. The determination of compliance to the specification is specific to the model/serial no./ID no. referenced above based on the tolerances shown; these tolerances are either the original equipment manufacturers (OEM's) warranted specifications or the client's requested specifications. This certificate may not be reproduced except in full, without the written approval of Transcat. Additional information, if applicable may be included on separate report(s).

Notes:

See attached supplemental data report for measured values. This set meets grade 0 tolerance specifications.

CALIBRATED BY TRANSCAT CERTIFICATE OF CALIBRATION

Customer: PINZUAR LTDA
CALLE 18 NO 103 B-72
BOGOTA DC,

PO Number: WIRE PMT

ANAB ACCREDITED ISO/IEC 17025 ANSI/NCSL Z540-1
ANAB AC-2489.06

ilac-MRA

Certificate/SO Number: 15-C3O9V-20-1 Revision 0

As Found/As Left Data

Description	Setpoints	Accuracy	Low Limit	High Limit	As Found / As Left	OOT	TUR
Function Check							
External Data Verification			P	P	P		

Field not applicable.

Traceable Standards

Asset	Manufacturer	Model Number	Description	Cal Date	Due Date	Traceability Number	Use
21083	Mahr Federal Inc	130B-38	Comparator, Gage Block, 0-4 in	4-Dec-18	31-Dec-19	DL20181204084512	AF/AL
FW0096	Mitutoyo	516-438-22	Gage Block Set, 112 pcs.	21-Jan-19	31-Oct-19	974679	AF/AL
M1780	Instrulab, Inc.	3312A (400 & TX-10674)	Thermometer w/8 Surface Thermistor Probes	6-Feb-19	31-Aug-19	15-&M1780-5-1	AF/AL

The use of the standard is defined as: AF - used for as-found readings, AL - used for as-left readings.

Environmental Data

Temperature	Relative Humidity	Temp/ RH Asset
67.25°F /19.58°C	44.00%	M1321

Calibrated At:
2056 S. Alex Road
West Carrollton, OH 45449

Facility Responsible:
2056 S. Alex Road
West Carrollton, OH 45449
800-828-1470

Calibrated By:
Electronically Signed By:
Sean Barrowcliff
Sean Barrowcliff — Jun 27, 2019
Calibration Technician — 14:27:39 -04:00

Reviewed By:
Electronically Signed By:
Shane Smith for
Derek Atkinson — Jun 28, 2019
Lab Manager — 05:30:17 -04:00

Unit Barcode: 0900B211894

Date Received: June 25, 2019
Service Level : R6

Customer Number: 1-609079-000

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SUPPLEMENTAL REPORT

CALIBRATION LAB DATA AS FOUND/AS LEFT

Customer Name: Pinzuar LTDA

Certificate/SO Number: C3O9V-20-1

Manufacturer: Mitutoyo / MN: 516-938-26
Set Serial Number: 1607684 / ID: None
Grade: 0M, ASME B89.1.9 (2002)
Set Size: 112
Block Shape: Rectangular

Calibration Date: 27-Jun-19

Serial Number	Material	Type	Nom (mm)	Dev (um)	OOT	ViL (um)	OOT	Dev Pt1	Dev Pt2	Dev Pt3	Dev Pt4	Unc (um)	Comment
165107	Steel	Work	0.500000	-0.07		0.04		-0.07	-0.08	-0.08	-0.04	0.07	
165524	Steel	Work	1.000000	0.06		0.03		0.06	0.06	0.09	0.09	0.08	
165087	Steel	Work	1.000500	-0.04		0.02		-0.02	-0.04	-0.03	-0.04	0.08	
165058	Steel	Work	1.001000	-0.07		0.02		-0.06	-0.05	-0.06	-0.07	0.08	
165079	Steel	Work	1.002000	0.07		0.04		0.04	0.06	0.06	0.08	0.08	
162326	Steel	Work	1.003000	-0.03		0.04		-0.03	-0.04	0	-0.03	0.08	
165165	Steel	Work	1.004000	0.02		0.04		0.01	0.04	0.02	0.05	0.08	
165131	Steel	Work	1.005000	0.05		0.02		0.05	0.06	0.07	0.07	0.08	
160445	Steel	Work	1.006000	-0.07		0.04		-0.07	-0.09	-0.05	-0.07	0.08	
162083	Steel	Work	1.007000	-0.07		0.06		-0.05	-0.08	-0.09	-0.03	0.08	
165056	Steel	Work	1.008000	0.03		0.03		0.02	0.02	0	0.03	0.08	
162399	Steel	Work	1.009000	-0.02		0.02		0	-0.02	-0.02	-0.02	0.08	
163259	Steel	Work	1.010000	-0.02		0.01		-0.02	-0.01	-0.02	-0.01	0.08	
165362	Steel	Work	1.020000	-0.07		0.02		-0.08	-0.07	-0.08	-0.06	0.08	
165137	Steel	Work	1.030000	-0.06		0.03		-0.08	-0.05	-0.06	-0.05	0.08	
165384	Steel	Work	1.040000	-0.06		0.03		-0.07	-0.05	-0.04	-0.05	0.08	
165243	Steel	Work	1.050000	-0.02		0.02		0	-0.02	-0.02	-0.02	0.08	
162864	Steel	Work	1.060000	0.01		0.04		0.03	-0.01	0.02	-0.01	0.08	
165395	Steel	Work	1.070000	-0.04		0.03		-0.02	-0.05	-0.03	-0.03	0.08	
165236	Steel	Work	1.080000	0.01		0.02		-0.01	0	0	0.01	0.08	
165270	Steel	Work	1.090000	0.01		0.05		0.04	-0.01	0.01	0	0.08	
165322	Steel	Work	1.100000	0.04		0.05		0.04	0.02	0.07	0.07	0.08	
165230	Steel	Work	1.110000	-0.05		0.04		-0.05	-0.06	-0.03	-0.02	0.08	
162383	Steel	Work	1.120000	0.03		0.02		0.05	0.04	0.03	0.04	0.08	
165191	Steel	Work	1.130000	-0.02		0.03		-0.03	-0.04	-0.05	-0.03	0.08	
165078	Steel	Work	1.140000	-0.01		0.04		0.01	-0.01	-0.03	-0.01	0.08	
165084	Steel	Work	1.150000	0.03		0.02		0.03	0.03	0.03	0.05	0.08	
165256	Steel	Work	1.160000	-0.04		0.03		-0.04	-0.05	-0.03	-0.02	0.08	
165318	Steel	Work	1.170000	-0.01		0.07		0.06	0	0	0	0.08	
165261	Steel	Work	1.180000	0.01		0.03		0.04	0.01	0.02	0.02	0.08	
165338	Steel	Work	1.190000	0.01		0.04		0.01	0.05	0.02	0.02	0.08	
165648	Steel	Work	1.200000	-0.02		0.02		0	-0.02	-0.02	-0.01	0.08	
165277	Steel	Work	1.210000	0.01		0.04		0.03	-0.01	0	0	0.08	
165182	Steel	Work	1.220000	-0.06		0.03		-0.05	-0.06	-0.08	-0.07	0.08	
165091	Steel	Work	1.230000	-0.03		0.01		-0.03	-0.02	-0.03	-0.02	0.08	
162371	Steel	Work	1.240000	0.05		0.02		0.03	0.04	0.03	0.05	0.08	
165355	Steel	Work	1.250000	-0.05		0.04		-0.04	-0.06	-0.02	-0.06	0.08	
165267	Steel	Work	1.260000	-0.05		0.02		-0.05	-0.03	-0.05	-0.04	0.08	
165057	Steel	Work	1.270000	0.02		0.03		0	0.02	0.03	0.02	0.08	
165248	Steel	Work	1.280000	0.02		0.02		0.01	0.01	0	0	0.08	
165354	Steel	Work	1.290000	0.03		0.04		0.05	0.04	0.04	0.01	0.08	
162924	Steel	Work	1.300000	-0.06		0.02		-0.06	-0.04	-0.06	-0.05	0.08	
162245	Steel	Work	1.310000	-0.04		0.03		-0.04	-0.04	-0.05	-0.02	0.08	
165352	Steel	Work	1.320000	0.00		0.02		0	-0.01	0.01	0	0.08	

Note: X exceeds tolerance **XX exceeds tolerance + uncertainty** **XXX exceeds 2x tolerance**

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SUPPLEMENTAL REPORT

CALIBRATION LAB DATA AS FOUND/AS LEFT

Customer Name: Pinzuar LTDA

Certificate/SO Number: C3O9V-20-1

Manufacturer: Mitutoyo / MN: 516-938-26
Calibration Date: 27-Jun-19
Set Serial Number: 1607684 / ID: None
Grade: 0M, ASME B89.1.9 (2002)
Set Size: 112
Block Shape: Rectangular

Serial Number	Material	Type	Nom (mm)	Dev (um)	OOT	ViL (um)	OOT	Dev Pt1	Dev Pt2	Dev Pt3	Dev Pt4	Unc (um)	Comment
165476	Steel	Work	1.330000	0.00		0.02		0	0.01	0	0.02	0.08	
162508	Steel	Work	1.340000	-0.01		0.03		0	-0.01	0.02	-0.01	0.08	
165234	Steel	Work	1.350000	-0.01		0.04		-0.01	-0.03	-0.05	-0.02	0.08	
165511	Steel	Work	1.360000	0.05		0.02		0.04	0.06	0.04	0.04	0.08	
165553	Steel	Work	1.370000	0.06		0.02		0.04	0.05	0.06	0.05	0.08	
162173	Steel	Work	1.380000	-0.03		0.02		-0.02	-0.03	-0.02	-0.04	0.08	
165472	Steel	Work	1.390000	-0.02		0.02		-0.02	-0.02	-0.01	0	0.08	
162349	Steel	Work	1.400000	-0.03		0.01		-0.04	-0.03	-0.03	-0.03	0.08	
162151	Steel	Work	1.410000	0.02		0.02		0.01	0.02	0.02	0.03	0.08	
162166	Steel	Work	1.420000	-0.01		0.02		0	-0.02	-0.01	0	0.08	
162544	Steel	Work	1.430000	-0.05		0.01		-0.04	-0.04	-0.05	-0.04	0.08	
165432	Steel	Work	1.440000	0.01		0.01		0	0.01	0	0.01	0.08	
162162	Steel	Work	1.450000	-0.09		0.01		-0.08	-0.09	-0.08	-0.08	0.08	
165395	Steel	Work	1.460000	-0.02		0.02		-0.02	-0.02	0	-0.01	0.08	
165525	Steel	Work	1.470000	0.01		0.03		0.01	-0.01	0	0.02	0.08	
162262	Steel	Work	1.480000	-0.07		0.02		-0.07	-0.06	-0.07	-0.05	0.08	
162255	Steel	Work	1.490000	0.03		0.02		0.05	0.03	0.04	0.04	0.08	
162596	Steel	Work	1.500000	-0.09		0.02		-0.07	-0.09	-0.09	-0.07	0.08	
165802	Steel	Work	2.000000	-0.07		0.03		-0.05	-0.05	-0.04	-0.05	0.08	
162154	Steel	Work	2.500000	-0.07		0.02		-0.06	-0.08	-0.07	-0.06	0.08	
166384	Steel	Work	3.000000	-0.07		0.02		-0.06	-0.07	-0.06	-0.08	0.08	
162253	Steel	Work	3.500000	0.01		0.04		0.02	0	0	0.04	0.08	
162725	Steel	Work	4.000000	0.07		0.06		0.11	0.07	0.07	0.05	0.08	
162163	Steel	Work	4.500000	0.00		0.05		-0.01	0	-0.05	0	0.08	
162922	Steel	Work	5.000000	0.00		0.03		0.01	0	-0.02	0	0.08	
162335	Steel	Work	5.500000	0.00		0.02		0	0	-0.02	0	0.08	
165806	Steel	Work	6.000000	0.01		0.02		0.02	0	0	0.02	0.08	
161835	Steel	Work	6.500000	0.04		0.03		0.06	0.03	0.05	0.06	0.08	
163269	Steel	Work	7.000000	0.05		0.01		0.05	0.05	0.04	0.04	0.08	
161805	Steel	Work	7.500000	-0.04		0.00		-0.04	-0.04	-0.04	-0.04	0.08	
163660	Steel	Work	8.000000	0.05		0.02		0.06	0.04	0.04	0.06	0.08	
161738	Steel	Work	8.500000	0.05		0.01		0.05	0.04	0.04	0.04	0.08	
163660	Steel	Work	9.000000	0.01		0.03		0.02	0.03	0.03	0.04	0.08	
161806	Steel	Work	9.500000	0.04		0.01		0.05	0.04	0.04	0.05	0.08	
167191	Steel	Work	10.000000	0.05		0.01		0.05	0.05	0.04	0.05	0.08	
161151	Steel	Work	10.500000	0.09		0.06		0.11	0.05	0.06	0.08	0.08	
161814	Steel	Work	11.000000	0.08		0.01		0.07	0.07	0.08	0.07	0.08	
161031	Steel	Work	11.500000	-0.02		0.01		-0.03	-0.03	-0.02	-0.02	0.08	
161896	Steel	Work	12.000000	0.08		0.06		0.08	0.11	0.05	0.1	0.08	
161263	Steel	Work	12.500000	0.05		0.04		0.05	0.06	0.03	0.07	0.08	
161664	Steel	Work	13.000000	0.02		0.05		0.01	0.02	0.01	0.06	0.08	
161254	Steel	Work	13.500000	0.05		0.02		0.05	0.05	0.04	0.06	0.08	
161819	Steel	Work	14.000000	0.10		0.02		0.09	0.1	0.08	0.09	0.08	
161249	Steel	Work	14.500000	0.11		0.03		0.11	0.1	0.08	0.1	0.08	

Note: X exceeds tolerance **XX exceeds tolerance + uncertainty** **XXX exceeds 2x tolerance**

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SUPPLEMENTAL REPORT

CALIBRATION LAB DATA AS FOUND/AS LEFT

Customer Name: Pinzuar LTDA

Certificate/SO Number: C3O9V-20-1

Manufacturer: Mitutoyo / MN: 516-938-26
Calibration Date: 27-Jun-19
Set Serial Number: 1607684 / ID: None
Grade: 0M, ASME B89.1.9 (2002)
Set Size: 112
Block Shape: Rectangular

Serial Number	Material	Type	Nom (mm)	Dev (um)	OOT	ViL (um)	OOT	Dev Pt1	Dev Pt2	Dev Pt3	Dev Pt4	Unc (um)	Comment
162712	Steel	Work	15.000000	0.06		0.05		0.07	0.06	0.07	0.11	0.08	
160975	Steel	Work	15.500000	0.08		0.03		0.07	0.06	0.07	0.09	0.08	
161780	Steel	Work	16.000000	0.02		0.01		0.02	0.01	0.02	0.02	0.08	
160946	Steel	Work	16.500000	0.05		0.03		0.04	0.04	0.03	0.06	0.08	
161393	Steel	Work	17.000000	0.07		0.01		0.06	0.07	0.07	0.07	0.08	
161205	Steel	Work	17.500000	0.11		0.01		0.1	0.11	0.1	0.11	0.08	
161434	Steel	Work	18.000000	0.08		0.01		0.08	0.08	0.08	0.07	0.08	
160998	Steel	Work	18.500000	0.09		0.01		0.1	0.09	0.09	0.1	0.08	
161448	Steel	Work	19.000000	0.09		0.02		0.1	0.09	0.08	0.1	0.08	
161208	Steel	Work	19.500000	0.09		0.01		0.09	0.08	0.08	0.08	0.08	
165331	Steel	Work	20.000000	0.11		0.02		0.12	0.11	0.12	0.13	0.08	
161144	Steel	Work	20.500000	0.06		0.02		0.07	0.05	0.05	0.05	0.08	
161466	Steel	Work	21.000000	0.05		0.00		0.05	0.05	0.05	0.05	0.08	
161052	Steel	Work	21.500000	0.02		0.02		0.02	0.02	0	0.02	0.08	
161514	Steel	Work	22.000000	-0.01		0.02		0	-0.01	-0.01	0.01	0.08	
161213	Steel	Work	22.500000	0.05		0.06		0.06	0.04	0.02	0.08	0.08	
161445	Steel	Work	23.000000	0.02		0.02		0.03	0.01	0.02	0.03	0.08	
161165	Steel	Work	23.500000	0.02		0.02		0.02	0.01	0	0.01	0.08	
161686	Steel	Work	24.000000	0.06		0.04		0.08	0.07	0.04	0.06	0.08	
161222	Steel	Work	24.500000	0.05		0.02		0.06	0.04	0.04	0.05	0.08	
163993	Steel	Work	25.000000	0.04		0.02		0.05	0.05	0.03	0.05	0.08	
163353	Steel	Work	50.000000	0.09		0.03		0.09	0.1	0.07	0.09	0.12	
161631	Steel	Work	75.000000	0.14		0.07		0.15	0.16	0.09	0.16	0.15	
162785	Steel	Work	100.000000	0.13		0.05		0.14	0.13	0.1	0.15	0.19	

Note: X exceeds tolerance **XX exceeds tolerance + uncertainty** **XXX exceeds 2x tolerance**