NABL ACCREDITATION
CERTIFICATE No.: CC-2323

Reference Precision Instruments

www.kcpindia.com

CALIBRATION CERTIFICATE OF GAUGE BLOCK	CALIBRATION CERTIFICATE NO. KCP/01/20~21/1732.	
	ULR NO: **CC2323 20 0 00003742 F**	
DATE OF CALIBRATION: 10-08-2020	PAGE: 1 of 3	NO. OF PAGES: 3

NAME & ADDRESS OF THE CUSTOMER : **M/s. METRIC MEASUREMENT TECHNOLOGIES.**
38, Spartan Avenue Thiruvalluvar Nagar, Mogappair
CHENNAI – 600 037.

CUSTOMER'S REFERENCE : DC. No: 79.
DATE OF RECEIPT : 30-07-2020

ITEM FOR CALIBRATION : TUNGSTEN CARBIDE GAUGE BLOCK SET
Type: M-13, Grade: '0',
Sr. No: 604, ID. No.: MMT-RS-17 Make: ---,

CONDITION OF ITEM : OK

DISCIPLINE: Mechanical-Dimension,
GROUP: Precision Measuring Instrument, Gauges etc.

LAB WORK ORDER NO. : 20-21/095.

CALIBRATION PROCEDURE : Determination of center deviation & parallelism Of gauge block by comparison method as per Procedure No. KCP/PCD/07-01 & as per IS 2984:2003

EQUIPMENTS / REFERENCE CALIBRATION STANDARDS : Used standards are traceable to National standards (direct/thro' NABL accredited Lab.)

Sr. No.	Type of Master equipments	I.D. No.	Calibration Report No.	Valid Up to
1.	Gauge Block set, M122/1, Gr. 'K' Material: Carbide, $\alpha = 4.7 \times 10^{-6}/^{\circ}C$	110	18/53/01/352-L/3/129	27-11-2020
2.	Gauge Block Comparator	991	KCP/04/19~20/3840	12-09-2021

ENVIRONMENTAL CONDITION : 20° ± 1° C
UNCERTAINTY OF MEASUREMENT : ± 0.08 µm for 0.5 to 25 mm length
± 0.10 µm for 25 to 100 mm length

The Uncertainty stated is the expanded uncertainty of measurement obtained by multiplying the standard uncertainty by the coverage factor K=2 corresponds to confidence level of 95.45%.

Note:

- **'ln'=Nominal length, 'lc'=Central length**
- **α = Coefficient of Thermal Expansion** ($\alpha = 4.7 \times 10^{-6}/^{\circ}C$)

NEXT CALIBRATION DUE DATE : 10-08-2022.
NOTE: Next calibration date (2 years) mentioned in the certificate is given as per customer's request.

CALIBRATED BY
V.V.SIMANT
(Quality Inspector)

K.C. PRECISION CALIBRATION LABORATORY

AUTHORISED SIGNATORY
T.V.JAMKHEDKAR
(Technical Manager)

- This certificate refers only to the particular item(s) submitted for calibration.
- The calibration results reported in this certificate are valid at the time of & under the stated condition of measurement.
- This certificate shall not be reproduced except in full, unless written permission of Quality Manager (Calibration Lab)

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CALIBRATION RESULTS

ITEM FOR CALIBRATION: Tungsten Carbide Gauge Block Set (MIC Check Set)
TYPE: M-13 **LAB WORK ORDER NO:** 20-21/095.
Sr. No: 604, ID. No.: MMT-RS-17 **MAKE:** ---.

Nominal Length (ln) 'mm'	Dev. of central Length from Nominal Length (lc-ln) 'µm'	Extreme Deviation from central length 'µm'	
		fo (+ve)	fu (- ve)
2.5	-0.22	0.30	0.00
5.1	+0.08	0.01	0.04
7.7	-0.05	0.06	0.00
10.3	-0.09	0.07	0.00
12.9	-0.08	0.10	0.00
15.0	+0.03	0.06	0.01
17.6	-0.10	0.09	0.00
20.2	+0.04	0.05	0.00
22.8	-0.29	0.21	0.00
25.0	-0.90	0.32	0.00
50.0	-0.35	0.24	0.00
75.0	-0.94	0.89	0.00
100.0	+0.09	0.14	0.04

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(Quality Inspector)

K.C. PRECISION CALIBRATION LABORATORY AURANGABAD

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KCP
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CALIBRATION CERTIFICATE OF GAUGE BLOCK	CALIBRATION CERTIFICATE NO. KCP/01/20~21/1732.	
DATE OF CALIBRATION: 10-08-2020	PAGE: 03 of 03	No. Of Pages: 03

Specifications as per IS 2984 (2003) and ISO 3650 (1998):-

Nominal length *ln* mm	Calibration Grade K		Grade 0		Grade 1		Grade 2	
	limit deviation of length at any point from nominal length ± *te* µm	tolerance for the variation in length *tv* µm	limit deviation of length at any point from nominal length ± *te* µm	tolerance for the variation in length *tv* µm	limit deviation of length at any point from nominal length ± *te* µm	tolerance for the variation in length *tv* µm	limit deviation of length at any point from nominal length ± *te* µm	tolerance for the variation in length *tv* µm
0.5 ≤ *ln* ≤ 10	0.2	0.05	0.12	0.1	0.2	0.16	0.45	0.3
10 < *ln* ≤ 25	0.3	0.05	0.14	0.1	0.3	0.16	0.6	0.3
25 < *ln* ≤ 50	0.4	0.06	0.2	0.1	0.4	0.18	0.8	0.3
50 < *ln* ≤ 75	0.5	0.06	0.25	0.12	0.5	0.18	1	0.35
75 < *ln* ≤ 100	0.6	0.07	0.3	0.12	0.6	0.2	1.2	0.35
100 < *ln* ≤ 150	0.8	0.08	0.4	0.14	0.8	0.2	1.6	0.4
150 < *ln* ≤ 200	1	0.09	0.5	0.16	1	0.25	2	0.4
200 < *ln* ≤ 250	1.2	0.1	0.6	0.16	1.2	0.25	2.4	0.45
250 < *ln* ≤ 300	1.4	0.1	0.7	0.18	1.4	0.25	2.8	0.5
300 < *ln* ≤ 400	1.8	0.12	0.9	0.2	1.8	0.3	3.6	0.5
400 < *ln* ≤ 500	2.2	0.14	1.1	0.25	2.2	0.35	4.4	0.6
500 < *ln* ≤ 600	2.6	0.16	1.3	0.25	2.6	0.4	5	0.7
600 < *ln* ≤ 700	3	0.18	1.5	0.3	3	0.45	6	0.7
700 < *ln* ≤ 800	3.4	0.2	1.7	0.3	3.4	0.5	6.5	0.8
800 < *ln* ≤ 900	3.8	0.2	1.9	0.35	3.8	0.5	7.5	0.9
900 < *ln* ≤ 1000	4.2	0.25	2	0.4	4.2	0.6	8	1

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