

# CALSER CORPORATION

302 N. Belt East, Swansea, IL 62226

(618) 277-0329

## TESTING MACHINE CALIBRATION DATA AND REPORT

Report #:

**VN# 10300-001**

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Customer	University of Arkansas		
Location	Civil Engineering		
	Fayetteville, AR 72701		
Manufacturer	TMI	Model	CM-5000GB2
Serial No.	100317	Capacity	500,000 lbf
Resolution	10 lbf / DIV		
Customer Asset No.	264440		
Auxiliary Equipment:	w/ Admet GB2 Digital R/O #GB2-1004302		
	w/ Dynisco P/T #04-08-10323273		

Date of Service	01/05/16
Customer Order No.	Verbal
Order Date	11/17/15
Temp.	67° F
Date Last Done	12/22/14
Calibration Next Due	01/05/17
Method of Verification	Set the Force

Applied Force	*	Indicated Force	Error	%	Applied Force	*	Indicated Force	Error	%
Run #1					Run #2				
500,000lbf Range					500,000lbf Range				
"As Found" Condition					"As Left" Condition				
10lbf / DIV					10lbf / DIV				
0	16	0	0	0.00	0	16	0	0	0.00
5,000	16	5,000	0	0.00	5,000	16	5,000	0	0.00
10,000	17	9,990	-10	0.10	10,000	17	9,990	-10	0.10
20,000	17	20,000	0	0.00	20,000	17	20,020	20	0.10
40,000	17	40,100	100	0.25	40,000	17	40,070	70	0.18
60,000	17	60,110	110	0.18	60,000	17	60,090	90	0.15
80,000	17	80,150	150	0.19	80,000	17	80,110	110	0.14
100,000	17	100,030	30	0.03	100,000	17	100,060	60	0.06
150,000	18	149,980	-20	0.01	150,000	18	150,020	20	0.01
200,000	18	200,020	20	0.01	200,000	18	199,990	-10	0.01
250,000	18	249,990	-10	0.00	250,000	18	250,030	30	0.01
300,000	18	299,980	-20	0.01	300,000	18	300,040	40	0.01
350,000	14	350,030	30	0.01	350,000	14	350,060	60	0.02
400,000	14	400,080	80	0.02	400,000	14	400,100	100	0.03
450,000	14	450,160	160	0.04	450,000	14	450,190	190	0.04
500,000	14	500,210	210	0.04	500,000	14	500,240	240	0.05
0	14	0	-20	0.00	0	14	0	10	0.00

### Notes:

### \*CALIBRATION EQUIPMENT

Calibration in accordance with ASTM E4,  
and Calser Corporation Procedure # 1-01, Rev 1.

All verification equipment-including dead weights, proving rings, load cells, etc, is  
calibrated and traceable to the latest procedures stipulated by the National Institute of  
Standards and Technology (NIST) and ASTM E74-06. All equipment is traceable under  
guidelines set forth in ISO/IEC 17025 . All instrument readings have been corrected for  
temperature where necessary.

### ACCURACY SUMMARY

### Verification Equipment

Capacity Range	Loading Range	Max. Error	Manufacturer and Serial #	* L/C	Range and uncertainty	Verification Agency and Date
<b>Run 1</b>						
500,000lbf Range	5,000 - 500,000	0.25 %	Strainsense	16	1179.18 - 12,000 lbf	Morehouse
			880610C		2.948	11/13/14
			Morehouse	17	8,862.79 - 100,000 lbf	Morehouse
<b>Run 2</b>						
500,000lbf Range	5,000 - 500,000	0.18 %	C-8160 (LO)		22.157	11/20/14
			Morehouse	18	21,926.31 - 300,000 lbf	Morehouse
			C-8160 (HI)		54.816	11/20/14
			Strainsense	14	109,029.53 - 1,000,000 lbf	Morehouse
			870815A		228.2	08/27/14

This report shall not be copied except in its entirety  
without express written approval of Calser Corp.

Calibration Technician Jerry Parker

TESTING MACHINE CERTIFICATE OF CALIBRATION

Owner : University of Arkansas  
Location : Civil Engineering  
Fayetteville, AR 72701

Report # : VN# 10300-001  
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Date of Service: 01/05/16

Manufacturer: TMI Model: CM-5000GB2  
Serial No. : 100317 Capacity: 500,000 lbf

Auxillary Equip: w/ Admet GB2 Digital R/O #GB2-1004302  
w/ Dynisco P/T #04-08-10323273

This is to certify that the testing machine listed above has been calibrated by Calser Corporation personnel.  
The method of verification and listed data are in accordance with ASTM E 4.  
Accuracy of all calibration devices is traceable to the National Institute of Standards and Technology (NIST)  
and all calculations have been corrected for temperature where applicable.

Capacity Range	Loading Range	Max. Error
<b>Run 1</b> 500,000lbf Range	5,000 - 500,000	0.25 %
<b>Run 2</b> 500,000lbf Range	5,000 - 500,000	0.18 %

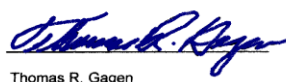
VERIFICATION EQUIPMENT

Manufacturer & Serial #	Load Cell #	Range & Uncertainty	Verification Agency & Date	Digital Serial #
Strainsense 880610C	16	1179.18 - 12,000 lbf 2.948	Morehouse 11/13/14	GBC-0905061
Morehouse C-8160 (LO)	17	8,862.79 - 100,000 lbf 22.157	Morehouse 11/20/14	GBC-0905061
Morehouse C-8160 (HI)	18	21,926.31 - 300,000 lbf 54.816	Morehouse 11/20/14	GBC-0905061
Strainsense 870815A	14	109,029.53 - 1,000,000 lbf 228.2	Morehouse 08/27/14	GBC-0905061

This certificate is issued as a statement of the fact that on the above date the listed testing machine has an accuracy as indicated. It should not be construed or regarded as a Guarantee or Warranty of any kind (in favor of the client, the client's customers, or the public at large) that the testing machine will continue to retain the same percentage (%) of accuracy or efficiency as determined on the date when the calibration, and adjustments if required, was performed and reported by "Calser Corporation" since the calibrator has absolutely no control over the future operation, damage, maintenance, repairs, and overall condition of the testing machine and hereby expressly disclaims any and all liability for damage or loss sustained by all parties arising or resulting from the deterioration, obsolescence, malfunction or substandard performance of said testing machine; which shall remain the sole responsibility of the machine's regular custodian, owner, and/or user. This certificate shall not be reproduced except in full, without the written approval of Calser Corporation.

CALSER CORPORATION

Quality Control Director

  
Thomas R. Gagen

302 N. Belt East, Swansea, IL 62226 (618) 277-0329

Report #: VN# 10300-002  
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Date of Service	01/05/16
Customer Order No.	Verbal
Order Date	11/17/15
Temperature	68° F
Date Last Done	12/22/14
Calibration Next Due	01/05/17
Method of Verification	Set the Force

**\*CALIBRATION EQUIPMENT**

Calibration in accordance with ASTM E4,  
and Calser Corporation Procedure # 1-01, Rev 1.

temperature where necessary.

## VERIFICATION EQUIPMENT

Manufacturer & Serial #	* L/C	Class A Range (in LBs) and Uncertainty (LBF)	Agency & Date
Strainsense	16	1179.18 - 12,000 lbf	Morehouse
880610C		2.948	11/13/14
Morehouse	17	8,862.79 - 100,000 lbf	Morehouse
C-8160 (LO)		22.157	11/20/14
Morehouse	18	21,926.31 - 300,000 lbf	Morehouse
C-8160 (HI)		54.816	11/20/14
Strainsense	14	109,029.53 - 1,000,000 lbf	Morehouse
870815A		228.2	08/27/14

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## TESTING MACHINE CERTIFICATE OF CALIBRATION

Owner : University of Arkansas  
 Location : Civil Engineering  
 Fayetteville, AR 72701

Report # : VN# 10300-002

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Manufacturer: Forney

Model: F-400F-LC1

Date of Service: 01/05/16

Serial No. : 95037

Capacity: 400,000 lbf

Auxillary Equip : w/ Admet GB2 Digital R/O #GB2-107721-2

This is to certify that the testing machine listed above has been calibrated by Calser Corporation personnel.

The method of verification and listed data are in accordance with ASTM E 4.

Accuracy of all calibration devices is traceable to the National Institute of Standards and Technology (NIST)  
 and all calculations have been corrected for temperature where applicable.

Capacity Range	Loading Range	Max. Error
<b>Run 1</b>		
400,000lbf Range	5,000 - 400,000	0.66 %
<b>Run 2</b>		
400,000lbf Range	5,000 - 400,000	0.20 %
<b>Run 3</b>		
400,000lbf Range	5,000 - 400,000	0.10 %

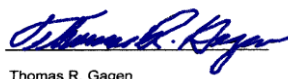
## Verification Equipment Used:

Manufacturer & Serial #	Load Cell #	Range & Uncertainty	Verification Agency & Date	Digital Serial #
Strainsense 880610C	16	1179.18 - 12,000 lbf 2.948	Morehouse 11/13/14	GBC-0905061
Morehouse C-8160 (LO)	17	8,862.79 - 100,000 lbf 22.157	Morehouse 11/20/14	GBC-0905061
Morehouse C-8160 (HI)	18	21,926.31 - 300,000 lbf 54.816	Morehouse 11/20/14	GBC-0905061
Strainsense 870815A	14	109,029.53 - 1,000,000 lbf 228.2	Morehouse 08/27/14	GBC-0905061

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Quality Control Director



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