# **CALSER CORPORATION**

w/ Dynisco P/T

302 N. Belt East, Swansea, IL 62226

(618) 277-0329

## TESTING MACHINE CALIBRATION DATA AND REPORT

 Customer
 University of Arkansas

 Location
 Civil Engineering

 Fayetteville, AR 72701

 Machine
 Forney 400,000lbf Model F-400F-LC1

 Serial No.
 95037

 Auxillary Equipment:
 w/ Admet Gage Buster II Digital R/O #GB2-100721-2

Report #: VN# 6664-001 Page 1 of 2

 Date of Service
 08/23/11

 Cust Order No.
 Verbal

 Order Date
 07/25/11

 Temp.
 81° F

 Date Last Done
 08/12/10

Applied Force	*	Indicated Force	Error	%	*	Indicated Force	Error	%	*	Indicated Force	Error	%
Run #1		Run #1	"As Found" (	Condition		Run #2	"As Left" Co	ondition		Run #3	"As Left"	Condition
400,000lbf Range	*	10lbf / DIV			*				*			
0	10C	0	0	0.00	10C	0	0	0.00	10C	0	0	0.00
5,000	10C	5,000	0	0.00	10C	5,000	0	0.00	10C	5,000	0	0.00
10,000	11	10,000	0	0.00	11	10,000	0	0.00	11	9,990	-10	0.10
20,000	11	19,980	-20	0.10	11	19,980	-20	0.10	11	19,920	-80	0.40
40,000	11	39,980	-20	0.05	11	39,940	-60	0.15	11	39,870	-130	0.33
60,000	12	60,050	50	0.08	12	59,930	-70	0.12	12	59,900	-100	0.17
80,000	12	80,080	80	0.10	12	79,900	-100	0.13	12	79,860	-140	0.18
100,000	12	100,080	80	0.08	12	99,800	-200	0.20	12	99,840	-160	0.16
125,000	12	125,050	50	0.04	12	124,780	-220	0.18	12	124,750	-250	0.20
150,000	12	150,060	60	0.04	12	149,740	-260	0.17	12	149,670	-330	0.22
175,000	12	175,110	110	0.06	12	174,670	-330	0.19	12	174,620	-380	0.22
200,000	12	200,030	30	0.02	12	199,540	-460	0.23	12	199,500	-500	0.25
250,000	12	250,110	110	0.04	12	249,480	-520	0.21	12	249,350	-650	0.26
300,000	12	299,770	-230	0.08	12	299,180	-820	0.27	12	299,240	-760	0.25
400,000	12	399,430	-570	0.14	12	398,600	-1,400	0.35	12	398,780	-1,220	0.31
0	12	0	160	0.00	12	0	140	0.00	12	0	40	0.00

### Notes:

Calibration in accordance with ASTM E4-09, and Calser Corporation Procedure # 1-01, Rev 1.

## **ACCURACY SUMMARY**

Capacity Range	Loading Range	Max. Error
Run 1		
400,000lbf Range	5,000 - 400,000	0.14 %
Run 2		
400,000lbf Range	5,000 - 400,000	0.35 %
D O		
Run 3		
400,000lbf Range	5,000 - 400,000	0.40 %

Calibration Technician Ronnie Agne

### \*CALIBRATION EQUIPMENT

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 Test'ing (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.

## **VERIFICATION EQUIPMENT**

7 I W 107 W						
Manufacturer	* L/C	Class A Range (in LBs)	Agency			
& Serial #		and Uncertainty (LBF)	& Date			
Interface	10C	227.26 - 10,000 lbf	Morehouse			
71145		0.568 lbf	12/14/10			
Strainsense	11	9,132.57 - 100,000 lbf	Morehouse			
30429		22.831 lbf	11/18/09			
Strainsense	12	59,870.58 - 600,000 lbf	Morehouse			
990921		149.676 lbf	11/18/09			
<u> </u>	l					

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

Form# 103-01-Rev 3

## CALSER CORPORATION 302 N. BELT EAST SWANSEA, IL 62226 (618)277-0329

## **TESTING MACHINE CERTIFICATE OF CALIBRATION**

Owner : University of Arkansas Report #: VN# 6664-001

**Location**: Civil Engineering

Fayetteville, AR 72701 Page: 2 of 2

Machine: Forney 400,000lbf Model F-400F-LC1

**Serial No.**: 95037 **Date of Service**: 08/23/11

w/ Admet Gage Buster II Digital R/O #GB2-100721-2

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 4-09.

Accuracy of all calibration devices is traceable to the National Institute of Standards and Testing (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	0.14 %
<b>Run 2</b> 400,000lbf Range	5,000 - 400,000	0.35 %
Run 3 400,000lbf Range	5,000 - 400,000	0.40 %

		Verification Equipment Used:		
Manufacturer & Serial #	Load <u>Cell #</u>	Range & <u>Uncertainty</u>	Verificiation Agency & Date	Digital <u>Serial #</u>
Interface 71145	10C	227.26 - 10,000 lbf 0.568 lbf	Morehouse 12/14/10	GB-9908261
Strainsense 30429	11	9,132.57 - 100,000 lbf 22.831 lbf	Morehouse 11/18/09	GB-9908261
Strainsense 990921	12	59,870.58 - 600,000 lbf 149.676 lbf	Morehouse 11/18/09	GB-9908261

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 reporoduced except in full, without the written approval of Calser Corporation.

**CALSER CORPORATION** 

Stown R. Kleyer

**Quality Control Director** 

Thomas R. Gagen Form # 104-01-Rev 3

# **CALSER CORPORATION**

302 N. Belt East, Swansea, IL 62226

(618) 277-0329

## TESTING MACHINE CALIBRATION DATA AND REPORT

 Customer
 University of Arkansas

 Location
 Civil Engineering

 Fayetteville, AR 72701

 Machine
 TMI 500,000lbf Model CM-5000-GB2

 Serial No.
 100317

 Auxillary Equipment:
 w/ Admet Gage Buster II Digital R/O #GBP-1004302

Report #: <u>VN# 6664-002</u> Page 1 of 2

 Date of Service
 08/23/11

 Cust Order No.
 Verbal

 Order Date
 07/25/11

 Temp.
 75° F

 Date Last Done
 08/12/10

w/ Dynisco P/T #04-08-10323273												
Applied Force	*	Indicated Force	Error	%	*	Indicated Force	Error	%	*	Indicated Force	Error	%
Run #1		Run #1	"As Found" (	Condition		Run #2	"As Left" Co	ondition		Run #3	"As Left"	Condition
500,000lbf Range	*	10lbf / DIV			*				*			
0	10C	0	0	0.00	10C	0	0	0.00	10C	0	0	0.00
5,000	10C	5,000	0	0.00	10C	5,000	0	0.00	10C	5,000	0	0.00
10,000	11	10,000	0	0.00	11	10,000	0	0.00	11	9,990	-10	0.10
20,000	11	19,970	-30	0.15	11	19,960	-40	0.20	11	19,930	-70	0.35
40,000	11	39,930	-70	0.18	11	39,910	-90	0.23	11	39,900	-100	0.25
60,000	12	59,810	-190	0.32	12	59,900	-100	0.17	12	59,890	-110	0.18
80,000	12	79,680	-320	0.40	12	79,860	-140	0.18	12	79,850	-150	0.19
100,000	12	99,520	-480	0.48	12	99,870	-130	0.13	12	99,860	-140	0.14
125,000	12	124,380	-620	0.50	12	124,880	-120	0.10	12	124,870	-130	0.10
150,000	12	149,240	-760	0.51	12	149,860	-140	0.09	12	149,850	-150	0.10
175,000	12	173,930	-1,070	0.61	12	174,850	-150	0.09	12	174,810	-190	0.11
200,000	12	198,860	-1,140	0.57	12	199,850	-150	80.0	12	199,630	-370	0.19
300,000	12	297,950	-2,050	0.68	12	299,660	-340	0.11	12	299,730	-270	0.09
400,000	12	397,320	-2,680	0.67	12	399,790	-210	0.05	12	400,170	170	0.04
500,000	12	496,740	-3,260	0.65	12	499,930	-70	0.01	12	499,930	-70	0.01
0	12	0	-10	0.00	12	0	-10	0.00	12	0	-40	0.00

#### Notes:

Calibration in accordance with ASTM E4-09, and Calser Corporation Procedure # 1-01, Rev 1.

## **ACCURACY SUMMARY**

Loading Range	Max. Error
5,000 - 500,000	0.68 %
5,000 - 500,000	0.23 %
5,000 - 500,000	0.35 %
	5,000 - 500,000 5,000 - 500,000

Calibration Technician Ronnie Agne

#### \*CALIBRATION EQUIPMENT

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 Test'ing (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.

## **VERIFICATION EQUIPMENT**

Manufacturer	* L/C	Class A Range (in LBs)	Agency
& Serial #		and Uncertainty (LBF)	& Date
Interface	10C	227.26 - 10,000 lbf	Morehouse
71145		0.568 lbf	12/14/10
Strainsense	11	9,132.57 - 100,000 lbf	Morehouse
30429		22.831 lbf	11/18/09
Strainsense	12	59,870.58 - 600,000 lbf	Morehouse
990921		149.676 lbf	11/18/09

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

Form# 103-01-Rev 3

## CALSER CORPORATION 302 N. BELT EAST SWANSEA, IL 62226 (618)277-0329

## **TESTING MACHINE CERTIFICATE OF CALIBRATION**

Owner : University of Arkansas Report #: VN# 6664-002

Location: Civil Engineering

Fayetteville, AR 72701 Page: 2 of 2

Machine: TMI 500,000lbf Model CM-5000-GB2

**Serial No.**: 100317 **Date of Service**: 08/23/11

w/ Admet Gage Buster II Digital R/O #GBP-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 4-09.

Accuracy of all calibration devices is traceable to the National Institute of Standards and Testing (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	0.68 %
<b>Run 2</b> 500,000lbf Range	5,000 - 500,000	0.23 %
<b>Run 3</b> 500,000lbf Range	5,000 - 500,000	0.35 %

		Verification Equipment Used:		
Manufacturer & Serial #	Load <u>Cell #</u>	Range & <u>Uncertainty</u>	Verificiation Agency & Date	Digital <u>Serial #</u>
Interface 71145	10C	227.26 - 10,000 lbf 0.568 lbf	Morehouse 12/14/10	GB-9908261
Strainsense 30429	11	9,132.57 - 100,000 lbf 22.831 lbf	Morehouse 11/18/09	GB-9908261
Strainsense 990921	12	59,870.58 - 600,000 lbf 149.676 lbf	Morehouse 11/18/09	GB-9908261

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 reporoduced except in full, without the written approval of Calser Corporation.

**CALSER CORPORATION** 

Stown R. Kleyer

**Quality Control Director** 

Thomas R. Gagen Form # 104-01-Rev 3