CALSER CORPORATION

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

TESTING MACHINE CALIBRATION DATA AND REPORT

Report #: **VN# 6855-001**

Customer	University of Arkansas
Location	700 Research Center Blvd.
	Fayetteville, AR 72701
Machine	Forney 400,000lbf F-400F-LC1
Serial No.	95037
Auxillary Equipment:	w/ Admet Gauge Buster II Digital R/O #GB2-107721-2
	w/ Dynisco Transducer

Date of Service	12/14/11
Cust Order No.	Verbal Mary Fleck
Order Date	10/24/11
Temp.	67˚ F
Date Last Done	08/23/11

Applied Force	*	Indicated Force	Error	%	*	Indicated Force	Error	%	*	Indicated Force	Error	%
Run #1		Run #1	"As Found" Condition			Run #2	"As Left" Condition			Run #3	"As Left" Condition	
400,000lbf Range	*	10lbf / DIV			*				*			
0	18	0	0	0.00	18	0	0	0.00	18	0	0	0.00
5,000	18	4,940	-60	1.20	18	4,970	-30	0.60	18	4,990	-10	0.20
10,000	18	9,920	-80	0.80	18	9,960	-40	0.40	18	9,910	-90	0.90
20,000	18	19,910	-90	0.45	18	19,960	-40	0.20	18	19,930	-70	0.35
40,000	18	39,950	-50	0.13	18	40,020	20	0.05	18	39,960	-40	0.10
60,000	18	59,850	-150	0.25	18	60,040	40	0.07	18	59,990	-10	0.02
80,000	18	79,800	-200	0.25	18	80,030	30	0.04	18	79,990	-10	0.01
100,000	18	99,770	-230	0.23	18	100,070	70	0.07	18	99,980	-20	0.02
125,000	18	124,690	-310	0.25	18	125,080	80	0.06	18	125,010	10	0.01
150,000	18	149,590	-410	0.27	18	150,040	40	0.03	18	149,990	-10	0.01
175,000	18	174,550	-450	0.26	18	175,000	0	0.00	18	174,950	-50	0.03
200,000	18	199,510	-490	0.25	18	199,970	-30	0.02	18	199,880	-120	0.06
250,000	18	249,480	-520	0.21	18	249,700	-300	0.12	18	249,640	-360	0.14
300,000	18	299,410	-590	0.20	18	299,460	-540	0.18	18	299,360	-640	0.21
400,000	14	400,630	630	0.16	14	400,500	500	0.13	14	400,690	690	0.17
0	14	0	30	0.00	14	0	60	0.00	14	0	20	0.00

Notes:

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

***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.

ACCURACY SUMMARY

Capacity Range	Loading Range	Max. Error
Run 1		
400,000lbf Range	5,000 - 400,000	1.20 %
Run 2		
400,000lbf Range	5,000 - 400,000	0.60 %
Run 3		
400,000lbf Range	5,000 - 400,000	0.90 %

VERIFICATION EQUIPMENT

Manufacturer & Serial #	* L/C	Class A Range (in LBs) and Uncertainty (LBF)	Agency & Date
Morehouse	18	14,954.03 - 300,000 lbf	Morehouse
C-8160		37.385 lbf	01/20/11
Strainsense	14	99,224.68 - 1,000,000 lbf	Morehouse
870815A		248.062 lbf	07/06/10

Calibration Technician Ronnie Agne

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

TESTING MACHINE CERTIFICATE OF CALIBRATION

Owner : University of Arkansas
Location : 700 Research Center Blvd.
Fayetteville, AR 72701
Machine : Forney 400,000lbf F-400F-LC1
Serial No. : 95037
w/ Admet Gauge Buster II Digital R/O #GB2-107721-2
w/ Dynisco Transducer

Report # : VN# 6855-001

Date of Service: 12/14/11

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.

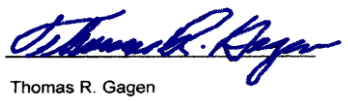
Capacity Range	Loading Range	Max. Error
Run 1 400,000lbf Range	5,000 - 400,000	1.20 %
Run 2 400,000lbf Range	5,000 - 400,000	0.60 %
Run 3 400,000lbf Range	5,000 - 400,000	0.90 %

Verification Equipment Used:

Manufacturer & Serial #	Load Cell #	Range & Uncertainty	Verificiation Agency & Date	Digital Serial #
Morehouse C-8160	**18**	14,954.03 - 300,000 lbf 37.385 lbf	Morehouse 01/20/11	GBC-0905061
Strainsense 870815A	**14**	99,224.68 - 1,000,000 lbf 248.062 lbf	Morehouse 07/06/10	GBC-0702261

CALSER CORPORATION

Quality Control Director



Thomas R. Gagen

CALSER CORPORATION

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

TESTING MACHINE CALIBRATION DATA AND REPORT

Report #: **VN# 6855-002**

Customer	University of Arkansas		
Location	700 Research Center Blvd.	Date of Service	12/14/11
	Fayetteville, AR 72701	Customer Order No.	Verbal Mary Fleck
Machine	TMI 500,000lbf CM-5000-GB2	Order Date	10/24/11
Serial No.	100317	Temp.	67˚ F
Auxiliary Equipment:	w/ Admet Gauge Buster II Digital R/O #GB2-1004302	Date Last Done	08/23/11
	w/ Dynisco Transducer #04-08-10323273		

Applied Force	*	Indicated Force	Error	%	Applied Force	*	Indicated Force	Error	%
Run #1		"As Found" Condition			Run #2		"As Left" Condition		
500,000lbf Range	*	10lbf / DIV			500,000lbf Range	*	10lbf / DIV		
0	18	0	0	0.00	0	18	0	0	0.00
5,000	18	5,000	0	0.00	5,000	18	5,000	0	0.00
10,000	18	9,990	-10	0.10	10,000	18	9,960	-40	0.40
20,000	18	19,970	-30	0.15	20,000	18	19,930	-70	0.35
40,000	18	39,990	-10	0.03	40,000	18	39,960	-40	0.10
60,000	18	59,980	-20	0.03	60,000	18	59,960	-40	0.07
80,000	18	79,970	-30	0.04	80,000	18	79,960	-40	0.05
100,000	18	99,990	-10	0.01	100,000	18	99,990	-10	0.01
125,000	18	124,990	-10	0.01	125,000	18	124,940	-60	0.05
150,000	18	150,040	40	0.03	150,000	18	150,020	20	0.01
175,000	18	175,010	10	0.01	175,000	18	175,020	20	0.01
200,000	18	200,040	40	0.02	200,000	18	199,990	-10	0.01
300,000	18	301,060	1060	0.35	300,000	18	300,090	90	0.03
400,000	14	401,610	1610	0.40	400,000	14	400,920	920	0.23
500,000	14	500,030	30	0.01	500,000	14	501,380	1380	0.28
0	14	0	0	0.00	0	14	0	80	0.00

Notes:

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

***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.

ACCURACY SUMMARY

Capacity Range	Loading Range	Max. Error
Run 1		
500,000lbf Range	5,000 - 500,000	0.40 %
Run 2		
500,000lbf Range	5,000 - 500,000	0.40 %

Verification Equipment

Manufacturer and Serial #	* L/C	Range and uncertainty	Verification Agency and Date
Morehouse	18	14,954.03 - 300,000 lbf	Morehouse
C-8160		37.385 lbf	01/20/11
Strainsense	14	99,224.68 - 1,000,000 lbf	Morehouse
870815A		248.062 lbf	07/06/10

Calibration Technician Ronnie Agne

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

TESTING MACHINE CERTIFICATE OF CALIBRATION

Owner : University of Arkansas
Location : 700 Research Center Blvd.
Fayetteville, AR 72701

Report # : VN# 6855-002
Page : 2 of 2

Date of Service: 12/14/11

Machine : TMI 500,000lbf CM-5000-GB2
Serial No. : 100317
w/ Admet Gauge Buster II Digital R/O #GB2-1004302
w/ Dynisco Transducer #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
Run 1		
500,000lbf Range	5,000 - 500,000	0.40 %
Run 2		
500,000lbf Range	5,000 - 500,000	0.40 %

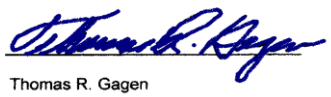
VERIFICATION EQUIPMENT

Manufacturer & Serial #	Load Cell #	Range & Uncertainty	Verificiation Agency & Date	Digital Serial #
Morehouse C-8160	**18**	14,954.03 - 300,000 lbf 37.385 lbf	Morehouse 01/20/11	GBC-0905061
Strainsense 870815A	**14**	99,224.68 - 1,000,000 lbf 248.062 lbf	Morehouse 07/06/10	GBC-0702261

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

CALSER CORPORATION

Quality Control Director



Thomas R. Gagen

Form# 102-01-Rev.3