

S O U T H W E S T R E S E A R C H I N S T I T U T E

Department of Quality Assurance
Calibration Laboratory

CERTIFICATE OF CALIBRATION

Issued to: DIV20 B57 NARASI SRIDHAR

Device No: 2415

Manufacturer: MOORE

Model: 15 PSI

Nomenclature: PRESSURE GAUGE

Serial Number: 1593009

SwRI No: NONE

Cal interval 12 Mo.

Remarks

Accuracy: MFGR

Procedure: MFGR

ENVIRONMENT

Temperature: 0 Humidity: 0 Location: SWRI BLDG 145

CONCLUSION

Tolerance/Remarks: Received into the system, introduced or reactivated

Standard Reading:	Unit Under Test:
5 psi	4.5 psi
10 psi	9.5 psi
15 psi	14.5 psi

Calibration was in accord with requirements of MIL-STD-45662A. Measurements are traceable to the National Institute of Standards and Technology. Inspection and test data are on file and available for inspection.

Signed _____

Calibration Date: 06/09/93

Cal interval: 12 Months

Record Number: 00011500

Next Calibration Due: 06/09/94

S O U T H W E S T R E S E A R C H I N S T I T U T E

Department of Quality Assurance
Calibration Laboratory

Device Serial No: 1593009

Calibration Date: 06/09/93

STANDARDS

Standard No: 1554 Manufacturer: AMETEK

Model: RK-300

Nomenclature: DEADWEIGHT TESTER

Serial No: 82167

Cal.Due: 03/26/94

Cal.Rec.No: 00010846

S O U T H W E S T R E S E A R C H I N S T I T U T E

Department of Quality Assurance
Calibration Laboratory

CERTIFICATE OF CALIBRATION

Issued to: DIV20 B57 RON GREEN

Device No: 2415

Manufacturer: MOORE

Model: 15 PSI

Nomenclature: PRESSURE GAUGE

Serial Number: 1593009

SwRI No: NONE

Cal interval 12 Mo.

Remarks

Accuracy: MFGR

Procedure: MFGR

ENVIRONMENT

Temperature:

Humidity:

Location: SWRI DIV04 BLDG. 145

CONCLUSION

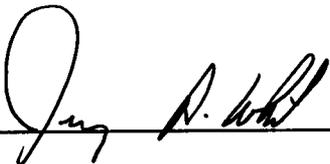
Tolerance/Remarks: Received in tolerance, no adjustments made

Room Temperature.

Standard Reading:	Unit Under Test:
15 psi	15.0 psi
10 psi	9.9 psi
5 psi	4.9 psi
0 psi	0 psi

Calibration was in accord with requirements of MIL-STD-45662A. Measurements are traceable to the National Institute of Standards and Technology. Inspection and test data are on file and available for inspection.

Signed



Calibration Date: 06/16/94

Cal interval: 12 Months

Record Number: 00014383

Next Calibration Due: 06/16/95

S O U T H W E S T R E S E A R C H I N S T I T U T E

Department of Quality Assurance
Calibration Laboratory

Device Serial No: 1593009

Calibration Date: 06/16/94

STANDARDS

Standard No: 1554 Manufacturer: AMETEK

Model: RK-300

Nomenclature: DEADWEIGHT TESTER

Serial No: 82167

Cal.Due: 02/18/95

Cal.Rec.No: 00013739

SOUTHWEST RESEARCH INSTITUTE

**Department of Quality Assurance
Calibration Laboratory**

**CERTIFICATE OF CALIBRATION
06/21/95**

Issued to: **RON GREEN** **DIV20** **,B57**
Manufacturer: **MOORE**
Nomenclature: **PRESSURE GAUGE**
Serial Number: **1593009**
Notes:

Asset Number: **002415**
Model Number: **15 PSI**

SwRI/Div. I.D. #: **NONE**

ENVIRONMENTAL CONDITIONS

Temperature: **65.0F**

Relative Humidity: **65%**

CALIBRATION INFORMATION

Procedure Number: **MFGR**
Remarks: **ERROR IS LESS THAN +/-0.25PSI**

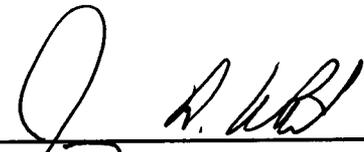
Accuracy: **MFGR SPECS**
Received IN **Tolerance**

**Calibration was in accordance with requirements of MIL-STD-45662A.
Measurements are traceable to the National Institute of Standards and Tech-
nology. Inspection and test data are on file and available for inspection.**

STANDARDS USED FOR CERTIFICATION

Asset #	Serial #	Mfg	Model #	Nomenclature	Cal Date	Int.	Cal Due
001554	82167	AMETE	RK-300	DEADWEIGHT TESTER	03/02/95	12	03/02/96

Certified by :



Calibration Date: **06/20/95**
Interval: **12 months**
Next Calibration Due: **06/20/96**

Certificate#: **17778**

SOUTHWEST RESEARCH INSTITUTE
Department of Quality Assurance
Calibration Laboratory • 522-5215

WORK ORDER

CERTIFICATE # 24260 ASSET # 002415 DATE 07 Feb. 97

ITEM DATA:

Manufacturer Mono Products Co Model 3189-5
Description pressure gauge Serial # 1593009
Accessories _____

ACTION REQUESTED cal

CUSTODIAN Div. 20, Ron Green

Turned in by: Melissa Phone 2012

CHARGE # 70-9998-001 Date Required _____

INSTRUMENT USED ON: NUCLEAR DOD NASA GLP SPPE
 OTHER _____

COPY OF CALIBRATION CERTIFICATE Yes No

CONDITION RECEIVED: _____ Out of tolerance, repaired to specifications
_____ In tolerance, minor adjustments/repairs made
 In tolerance, no adjustments/repairs
_____ Out of tolerance, adjusted to specifications
_____ Received into system, introduced or reactivated
_____ Calibration internal
_____ Realibility code

SWRI CALIBRATION LAB
(210) 522-5215
CAL 20 Feb 97 BY AW
DUE 20 Feb 98 ID 2415
SN 1593009

ACTION TAKEN: (Calibration/Repair/Parts) 5 point Cal

24260

CAL ENVIRONMENT:
Temperature 70°F Humidity 37%RH

CALIBRATED/REPAIRED:
By AW Cal Procedure T033K6-4-427-1
Date 2-10-97 Accuracy Grade A
Cal Interval 12 mo Time to complete: _____
Next Cal due 2-10-98 Cal 1.5 hr Repair _____
Standards used (Asset#) 4163 5242

DATE COMPLETED 2-11-97
DATE PICKED UP 14/2/97 PICKED UP BY Melissa Fier



Southwest Research Institute
6220 Culebra Road
San Antonio, TX 78238
Department of Quality Assurance
Calibration Laboratory

Certificate of Calibration

18 February 1998

Issued to: RON GREEN DIV20 B57
Manufacturer/Model: MOORE PRODUCTS CO. 0-15 PSI
Description: PRESSURE GAUGE
Serial Number: 1593009
Asset Number: 002415

Environmental Conditions

Temperature: 72.00 Deg. F

Humidity: 42 % RH

Calibration Information

Calibration was in accordance with requirements of MIL-STD-45662A and ANSI/NCSL Z540-1-1994. Measurements are traceable to the National Institute of Standards and Technology (NIST). This report may not be reproduced except in full without written approval of the originator. Inspection and test data are on file and available for inspection.

The uncertainty of the calibration was sufficient to determine that the instrument met the manufacturer's specifications.

Calibration Date: 16 Feb 98

Calibration Procedure: CLCP-PI-001

Interval: 12 months

Next Calibration Due: 16 Feb 99

Received: In Tolerance

Remarks:

Standards Used

Asset	MFR	Model	Description	Serial No.	Due Cal
004163	MENSOR	5014	FIELD PRESSURE STANDARD (3	340119A	18 Mar 98

Signed: 

Title: 

LAST PAGE OF REPORT
Total Pages Printed: 1

Certificate # 28587

SOUTHWEST RESEARCH INSTITUTE
Department of Quality Assurance
Calibration Laboratory • 522-5215

WORK ORDER

CERTIFICATE # 28587 ASSET # 002415 DATE 11 Feb 98

ITEM DATA:

Manufacturer Moo... Model 91001 3/875 0.15-150
Description pressure gauge Serial # 1593009
Accessories _____

ACTION REQUESTED Cal

CUSTODIAN Div. 10 Ken Green

Turned in by: Melissa 11.11 Phone 2012

CHARGE # 20-011 Date Required _____

INSTRUMENT USED ON: DOD/NASA NUCLEAR GLP SPPE ISO
OTHER _____

COPY OF CALIBRATION CERTIFICATE Yes No

NEW WORK Yes No If yes, an evaluation shall be made to verify capabilities.
By _____ Date _____

CONDITION RECEIVED: _____ (F) Out of tolerance, repaired to specifications
_____ (G) In tolerance, minor adjustments/repairs made
 (J) In tolerance, no adjustments/repairs
_____ (K) Out of tolerance, adjusted to specifications
_____ (S) Received into system, introduced or reactivated

ACTION TAKEN: (Calibration/Repair/Parts) 5 Point Cal

SWRI CALIBRATION LAB
(210) 522-5215
CAL 2-10-97 BY cmw
DUE 2-10-98 ID 2415
SN 1593009

CAL ENVIRONMENT:
Temperature 72 °F Humidity 42 %RH

CALIBRATED/REPAIRED: By AM Ward Cal Procedure CLCP-PI-001
Date 2-16-98 Accuracy Grade A (1% - 2%)
Cal Interval 12 mo Reliability Code: _____
Next Cal due 2-16-99 Cal Time 1.5 Repair Time _____
Standards used (Asset#) 4163

DATE COMPLETED _____
DATE PICKED UP 02/10/98 PICKED UP BY Melissa Ni

28587

PRESSURE CALIBRATION CHECK FORM

Date 2-16-98 Work Order 28587 Technician JM Went
 Inst Cust. Ron Green Ext _____ Charge # 20-0751-006 time 1.5

A) Unit Under Test Moore Pressure Gage
 Model _____ Serial No. 1593009 Asset No. 2415
 Range 0-15 psi Uncertainty Grade A (1%-2%) Std Unc _____
(rect)

B) Calibration Standard (1) Mensor Dig ind
 Model 5014 Serial No. 4463 Asset No. 4163
 Uncertainty ±0.03 psi (rect) 340119A Std Unc _____

C) Calibration Standard (2) N/A
 Model _____ Serial No. _____ Asset No. _____
 Uncertainty _____ Std Unc _____
 Comb Unc (rss B&C) 0.03 psi TUR (A Unc/Comb Unc) 5/1

If less than 4:1, Total combined calibration Unc (kXrss) _____
 k= _____ Explanation _____
 Env: Room Temp. 72°F Humidity 42 Baro Press. 29.17419
 Conversion Factor(s) N/A

STANDARD	INCREASING	DECREASING	TOLERANCE: ±0.15/0.3	
UNITS: PSIG	UNITS: PSIG	UNITS: PSIG	UNITS: PSIG	
AS FOUND			MIN	MAX
3	3.0	3.0	2.7	3.3
6	5.9	6.0	5.85	6.15
9	8.9	8.9	8.85	9.15
12	11.9	11.9	11.7	12.3
15	15.0	15.0	14.7	15.3
F.A.T.O.L.				
AS DELIVERED				

SOUTHWEST RESEARCH INSTITUTE
Department of Quality Assurance
Calibration Laboratory • 522-5215

WORK ORDER

CERTIFICATE # 33158 ASSET # 2415 DATE 02 FEB 99

ITEM DATA:

Manufacturer MOORE PRODUCTS Model 15 PSI
Description PRESSURE GAUGE Serial # 1593009
Accessories _____

ACTION REQUESTED _____

CUSTODIAN DIV 20 RON GREEN

Turned in by: _____ Phone 2012

CHARGE # 20-04 Date Required _____

INSTRUMENT USED ON: (DOD/NASA) (NUCLEAR) (GLP) (SPPE) (ISO)
 OTHER _____

COPY OF CALIBRATION CERTIFICATE (Yes) (No)

NEW WORK Yes No If yes, an evaluation shall be made to verify capabilities.

By _____ Date _____

Work involves proprietary/confidential information or equipment (Yes) (No)

CONDITION RECEIVED: _____ (F) Out of tolerance, repaired to specifications
_____ (G) In tolerance, minor adjustments/repairs made
 (J) In tolerance, no adjustments/repairs
_____ (K) Out of tolerance, adjusted to specifications
_____ (S) Received into system, introduced or reactivated

ACTION TAKEN: (Calibration/Repair/Parts) 5 Point Cal

2-16-98

SWRI CALIBRATION LAB
(210) 522-5215
CAL 2-16-98 BY OmW
DUE 2-16-99 ID 2415
SN 1593009

CAL ENVIRONMENT:

Temperature 68 °F Humidity 41 %RH

CALIBRATED/REPAIRED: OmW

By _____ Cal Procedure CCCP-P1-001

Date 2-3-99 Accuracy Grade A

Cal Interval 12mo Reliability Code: _____

Next Cal due 2-3-00 Cal Time 1.5h Repair Time _____

Standards used (Asset#) 4163

DATE COMPLETED 2-3-99

DATE PICKED UP 2/4/99 PICKED UP BY Y. Zill

33158



Southwest Research Institute
6220 Culebra Road
San Antonio, TX 78238
(210) 522-5215
Department of Quality Assurance
Calibration Laboratory

Accredited



Certificate #
0972-01

Certificate of Calibration

3 February 1999

Issued to: RON GREEN DIV20 B57
Manufacturer/Model: MOORE PRODUCTS 0-15 PSI
Description: PRESSURE GAUGE
Serial Number: 1593009
Asset Number: 002415

This certifies the above item was calibrated in compliance with MIL-STD-45662A and ANSI/NCSL Z540-1-1994. Standards used in this calibration, described in the referenced calibration procedure with associated uncertainties or tolerances, are traceable to the National Institute of Standards and Technology (NIST). Supporting documentation relative to traceability is on file and is available for examination upon request. This certificate is not to be reproduced, except in full, without the written approval of the Southwest Research Institute Department of Quality Assurance Calibration Laboratory.

This laboratory is accredited by the American Association for Laboratory Accreditation (A2LA) and the results of this calibration certificate were determined in accordance with the terms of accreditation unless stated otherwise below.

The uncertainty of the calibration was sufficient to determine that the item met the manufacturer's published specifications unless stated otherwise below.

Ambient Conditions: Temperature: 68. Degrees Fahrenheit Humidity: 41 % RH

Calibration Date: 3 Feb 99 **Calibration Procedure:** CLCP-PI-001 1997

Condition as Received: IN TOLERANCE

Condition as Released: IN TOLERANCE

Remarks:

Mack Wood / Technician

SOUTHWEST RESEARCH INSTITUTE

Calibration Laboratory

WORK ORDER

Processed by RCRUZ at 2:46:41PM on 12/20/00

1 10000 0000 0000 0000 0000 0000 0000

Work Order 444041851

Arrived 12/20/00

Asset No. 002415 Manufacturer MOORE PRODUCTS

Model 0-15 PSI

Instrument Type/Class PRESSURE GAUGE

Serial No. 1593009

Accessory No. Calibration Procedure CLCP-PI-001, 6/99

Location B57

Div/Client DIV20

Custodian RON GREEN

Mail Stop B57

Tel. 5305

Charge/Project No. 20.00751.006

Delivered By / Telephone TROY MAXWELL X2012

IN4CAL

Special Instructions _____

WORK NOTES

Date	Hours	Remarks/Notes
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

SWRI Cal Lab BY: RCRUZ
CAL: 02/03/00 DUE: 02/03/00
AN: 002415 SN: 1593009

REPAIR PARTS

Date	Hours	Part Name	Part Number	Failure Description	Cost
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

WORK SUMMARY

Failure Description _____

Repair Action _____

Calibration Procedure _____

Temp 68 F

Hum. 40 %

Tech RCRUZ

Totals

Cal Hours 1.5

Repair Hours _____

Parts Cost _____

Standards Used 4163

Date Picked Up 1-8-01

Picked Up By Troy Maxwell



Southwest Research Institute
6220 Culebra Road
San Antonio, TX 78238
(210) 522-5215
Department of Quality Assurance
Calibration Laboratory



Certificate #
0972-01

Certificate of Calibration

4 January 2001

Issued to: RON GREEN DIV20 B57
Manufacturer/Model: MOORE PRODUCTS 0-15 PSI
Description: PRESSURE GAUGE
Serial Number: 1593009
Asset Number: 002415

This certifies the above item was calibrated in compliance with MIL-STD-45662A and ANSI/NC SL Z540-1-1994. The results of this calibration relate only to the individual item as described above. Standards used in this calibration, described in the referenced calibration procedure with associated uncertainties or tolerances, are traceable to the National Institute of Standards and Technology (NIST). Supporting documentation relative to traceability is on file and available for examination upon request. This certificate is not to be reproduced, except in full, without the written approval of the Southwest Research Institute Department of Quality Assurance Calibration Laboratory.

This laboratory is accredited by the American Association for Laboratory Accreditation (A2LA) and the results of this calibration certificate were determined in accordance with the terms of accreditation unless stated otherwise below.

The uncertainty of the calibration was sufficient to determine that the item met the manufacturer's published specifications unless stated otherwise below.

Ambient Conditions: Temperature: 68.0 Degrees Fahrenheit Humidity: 40 % RH

Calibration Date: 4 Jan 01 **Calibration Procedure:** CLCP-PI-001, 6/99

Condition as Received: IN TOLERANCE

Condition as Released: IN TOLERANCE

Remarks:

Approved by:

Jim Patterson, Supervisor, or Walt Hill, Metrologist

Certificate # 444041851

m\A2la.rpt Rev date 22 May 00

Measurements performed by:

Mack Wood, Technician