

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: 2414

Manufacturer: MOORE

Model: 200 PSI

Nomenclature: PRESSURE GAUGE

Serial Number: 1593005

SwRI No: NONE

Cal interval 12 Mo.

Remarks

Accuracy: MFGR

Procedure: MFGR

ENVIRONMENT

Temperature: 0 Humidity: 0 Location: SWRI BLDG 145

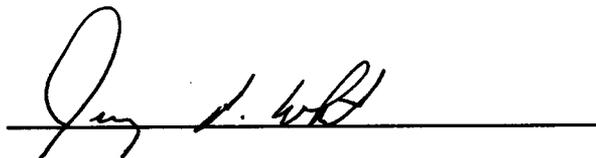
CONCLUSION

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

Standard Reading:	Unit Under Test:
10 psi	10 psi
20 psi	20 psi
30 psi	30 psi
40 psi	40 psi
50 psi	50 psi
100 psi	100 psi
150 psi	150 psi
200 psi	201 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: 00011497

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: 1593005

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: 2414

Manufacturer: MOORE

Model: 200 PSI

Nomenclature: PRESSURE GAUGE

Serial Number: 1593005

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:
200 psi	200.5 psi
150 psi	150.0 psi
100 psi	100.0 psi
50 psi	50.0 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: 00014384

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: 1593005

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**
Manufacturer: **MOORE**
Nomenclature: **PRESSURE GAUGE**
Serial Number: **1593005**
Notes:

DIV20 ,B57

Asset Number: **002414**
Model Number: **200 PSI**
SwRI/Div. I.D. #: **NONE**

ENVIRONMENTAL CONDITIONS

Temperature: **65.0F**

Relative Humidity: **65%**

CALIBRATION INFORMATION

Procedure Number: **MFGR**
Remarks:

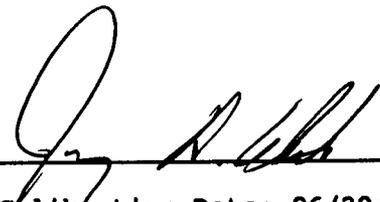
Accuracy: **MFGR SPECS**
Received IN Tolerance

**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 :



Certificate#: **17776**

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

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

WORK ORDER

CERTIFICATE # 24262 ASSET # 002414 DATE 07 FEB 97

ITEM DATA:

Manufacturer Moore Products Co. Model 0-200 PSI
Description Pressure gauge Serial # 1593005
Accessories _____

ACTION REQUESTED Cal

CUSTODIAN Div 20, Ron Green

Turned in by: Melissa Phone 2012

CHARGE # 20-9998-001 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

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

SWRI CALIBRATION LAB
(210) 522-5215
CAL 20-9998-001 BY OMW
DUE 2-10-97 ID 2014
SN 1593005

24262

CAL ENVIRONMENT:
Temperature 70°F Humidity 37%RH

CALIBRATED/REPAIRED:
By OMW Cal Procedure T03K6-4-407-1
Date 2-10-97 Accuracy Grade A
Cal Interval 12 mo Time to complete:
Next Cal due 2-10-98 Cal 1.5 Repair _____
Standards used (Asset#) 4163 5242

DATE COMPLETED _____
DATE PICKED UP 14/2/97 PICKED UP BY Melissa Hill



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. 0-200 PSI
Description: PRESSURE GAUGE
Serial Number: 1593005
Asset Number: 002414

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: 17 Feb 98

Calibration Procedure: CLCP-PI-001

Interval: 12 months

Next Calibration Due: 17 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: *Oliver Wood*

Title: *Caltech*

LAST PAGE OF REPORT
Total Pages Printed: 1

Certificate # 28588

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

WORK ORDER

CERTIFICATE # 28588 ASSET # 002414 DATE 11 Feb 98

ITEM DATA:

Manufacturer Moore Model 8931 0-100 psi
Description Pressure gauge Serial # 1593005
Accessories _____

ACTION REQUESTED Cal

CUSTODIAN Dir. 10, Don Pagan

Turned in by: Melissa Hill Phone 2012

CHARGE # 20.01 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 Part Cal

SWRI CALIBRATION LAB
(210) 522-5215
CAL 2-10-97 BY CHW
DUE 2-10-98 ID 2414
SN 1593005

CAL ENVIRONMENT:
Temperature 72°F Humidity 42%RH

CALIBRATED/REPAIRED:
By CHW Cal Procedure CCCP-PI-001
Date 2-17-98 Accuracy Grade A (1% - 2%)
Cal Interval 12 mo Reliability Code: _____
Next Cal due 2-17-99 Cal Time 1.5 Repair Time _____
Standards used (Asset#) 4163

DATE COMPLETED _____
DATE PICKED UP 2/10/98 PICKED UP BY Melissa Hill

28588

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

WORK ORDER

CERTIFICATE # 33605 ASSET # 002414 DATE 08 March 99

ITEM DATA:

Manufacturer Moore Products Co. Model 0-200 psi
Description pressure gauge Serial # 1594005
Accessories _____

ACTION REQUESTED cal

CUSTODIAN Nov. 20 Ron Green

Turned in by: Melissa Hill Phone 2636

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 MMH Date 03-08-99

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

SWRI CALIBRATION LAB
(210) 522-5215
CAL 2-17-98 BY OMW
DUE 2-17-99 ID 2414
SN 1594005

CAL ENVIRONMENT:
Temperature 68 °F Humidity 47 %RH

CALIBRATED/REPAIRED: OMW
By _____ Cal Procedure CLCP-P1-DU1 1997
Date 3-11-99 Accuracy Grade A
Cal Interval 12mo Reliability Code: _____
Next Cal due 3-11-00 Cal Time 1.5 Repair Time _____
Standards used (Asset#) 5429

DATE COMPLETED 3-11-99
DATE PICKED UP 3/11/99 PICKED UP BY Melissa Hill

33605



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

11 March 1999

Issued to: RON GREEN DIV20 B57
Manufacturer/Model: MOORE PRODUCTS 0-200 PSI
Description: PRESSURE GAUGE
Serial Number: 1593005
Asset Number: 002414

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: 68.0 Degrees Fahrenheit Humidity: 47 % RH

Calibration Date: 11 Mar 99

Calibration Procedure: CLCP-PI-001 1997

Condition as Received: IN TOLERANCE

Condition as Released: IN TOLERANCE

Remarks:

Approved by:

Jim Patterson, Supervisor of Walt Hill, Metrologist

Measurements performed by:

Mack Wood, Technician

Certificate # 33605

Page 1 of 1

SOUTHWEST RESEARCH INSTITUTE

Calibration Laboratory

WORK ORDER

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

|||||

Work Order 444041852

Arrived 12/20/00

Asset No. 002414 Manufacturer MOORE PRODUCTS

Model 0-200 PSI

Instrument Type/Class PRESSURE GAUGE

Serial No. 1593005

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
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

South Cal Lab Inc. 1997
CAL: 0071400 DUE: 0071700
AS: 000414 S#: 100000

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 [Signature]

Totals

Cal Hours 1.5

Repair Hours _____

Parts Cost _____

Standards Used 4163

Date Picked Up 1-8-01

Picked Up By [Signature]



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 0-200 PSI
Description: PRESSURE GAUGE
Serial Number: 1593005
Asset Number: 002414

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.

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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 # 444041852

m:\a2la.rpt Rev date 22 May 00

Measurements performed by:

Mack Wood, Technician

Page 1 of 1



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 0-200 PSI
Description: PRESSURE GAUGE
Serial Number: 1593005
Asset Number: 002414

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 # 444041852

mAa21a.rpt Rev date 22 May 00

Measurements performed by:

Mack Wood, Technician



SOUTHWEST RESEARCH INSTITUTE™

6220 Culebra Road, P.O. Drawer 28510
Institute Quality Systems
Institute Calibration Laboratory
Phone: 210-522-5215 Fax 210-522-3692

Certificate of Calibration

Submitted By: DIV20

Address: T1

Contact: RON GREEN

Manufacturer Model: MOORE PRODUCTS 0-200 PSI

Description: PRESSURE GAUGE

Serial No: 1593005

Asset No: 002414

Procedure: CLCP-PI-001, 6/99

Work Order: 444052550

Date Issued: Feb 24, 2003

Calibration Date: Feb 24, 2003

****Calibration Due:** Feb 24, 2004

Calibration Location: Bldg. 64

Environment: Temp. 68.0°F Hum. 40 %RH

***As Found:** IN TOLERANCE

***As Left:** IN TOLERANCE

This certificate documents traceability to the National Institute of Standards and Technology (NIST) and the International System of Units (SI). The Laboratory quality system conforms to ISO/IEC 17025, 1999 and ANSI/NC SL Z540-1-1994 which are equivalent to relevant requirements of the ISO 9000-1994 series of standards. This certificate may not be reproduced, except in full, without the written approval of the Southwest Research Institute Calibration Laboratory. The results of this calibration relate only to the individual instrument described above. This certificate shall not be used to claim product endorsement by the American Association for Laboratory Accreditation (A2LA) or any agency of the U. S. Government.

Uncertainty evaluation includes the item under test and is calculated in accordance with the ISO "Guide to the Expression of Uncertainty in Measurement" (GUM). The uncertainty represents an expanded uncertainty using a coverage factor of $k=2$ to approximate a 95% confidence level. The calibration process provides a Test Uncertainty Ratio (TUR) of less than or equal to 2.5% (4:1) of the test limit unless otherwise stated in remarks or an attachment.

*The client has sole responsibility for determination of in/out of tolerance or compliance/noncompliance. An in/out of tolerance opinion is provided for your convenience based only on the Test Instrument (TI) reading(s) and limits as reported. The reported uncertainty relates only to the results at the time of calibration and does not imply any short or long term stability of the TI.

**Calibration interval is determined by the client and does not assure the instrument will remain within tolerance until this date. Any number of factors may cause the instrument to be out of tolerance before the next calibration date.

Remarks: None

Standards Used

Asset	Manufacturer	Model	Description	Cal Due
004163	MENSOR	5014	PRESSURE CALIBRATOR	Apr 15, 03

Approved by: Walt Hill
Metrology Group Leader
m:\Non21a1.rpt Rev date 15, August 02

Measurements by: Perry Carpenter
Metrology Technician

