TEST REPORT FOR 50 TONNE FORCE
VISCOUS DAMPING DEVICES
Taylor Devices Part Number 67DP-16394-01
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Taylor Devices Part Number 67DP-16394-01

Test Report 00/2/15

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<th>EMP. E. LEE 2/15/00</th>
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SIZE
A

FSCM. NO. 06742

DRAWING NO. 67DP-16394-4001

REV.

SHEET 1 OF
1.0 TEST PLAN

1.1 Test Plan Requirements
All test plan requirements are based upon customer provided specification document.

1.2 Tolerance For Acceptance
Unless otherwise noted, all parameter tolerances are at normal ambient conditions of 20°C ± 6°C.

1.3 Test Unit
One full scale prototype viscous dampers, Taylor Devices Part No.’s 67DP-16394-01 shall be tested per the requirements of this test plan, unless otherwise noted.

1.4 Calibration Requirements
All Acceptance Test equipment listed in Table 1 shall be calibrated within the current calibration periods. Test equipment calibrations shall comply with the requirements of MIL-STD-120 and MIL-STD-45662A and shall be traceable to the National Institute of Standards and Technology (NIST).

1.5 Test Location
Each test unit shall be tested at the: Taylor Devices Seismic Test Facility
90 Taylor Drive
North Tonawanda, NY 14120-0748
## TABLE 1
Test Equipment and Calibration Intervals

<table>
<thead>
<tr>
<th>Equipment Class</th>
<th>Equipment Name</th>
<th>Manufacturer</th>
<th>Model Number</th>
<th>Calibration Period</th>
<th>Remarks</th>
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<tr>
<td>Non-Standard</td>
<td>Electro-Mechanical Strain-gauge</td>
<td>National Scale</td>
<td>500,000 LB</td>
<td>12 Months</td>
<td>Calibrated By Independent Testing Firm</td>
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<td>Standard</td>
<td>8 Inch Stroke Potentiometer With Multiplier</td>
<td>TBD</td>
<td>TBD</td>
<td>Daily</td>
<td>Calibrated Against Gauge Blocks</td>
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<td>.5 Inch Gauge Block</td>
<td>Taylor Devices</td>
<td>TDM-1</td>
<td>12 Months</td>
<td>Calibrated With TDM 1 Certified Gauge Block</td>
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<tr>
<td>Standard</td>
<td>Wavestar Software</td>
<td>Tektronix</td>
<td>Version 1.2.2</td>
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<td>Calibration Not Required</td>
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<tr>
<td>Standard</td>
<td>Dual Beam Oscilloscope</td>
<td>Tektronix</td>
<td>720</td>
<td>12 Months</td>
<td>Calibrated By Independent Testing Firm</td>
</tr>
</tbody>
</table>

**NOTE:** If necessary other test equipment of comparable range, accuracy and calibration period may be substituted.
2.0 TESTS

2.1 Amplitude Related Characteristics

The unit shall be horizontally fixtured in a hydraulic tester as shown in Figure 2-1. The frequency that the unit is to be tested to is .3 Hz. The amplitudes that will be used are 5, 10, 20, 30 and 50mm. Three complete cycles shall be run at each test displacement. Force shall be measured with a 500 kip load cell, and displacement with a potentiometer. Force and displacement data shall be recorded on a dual beam, time-base oscilloscope and transferred to Wave Star software that can be used to attain digital data. The velocities shall be determined from the slope of the displacement-time curves and recorded along with their corresponding force values. Force displacement loops will be attained from the data. Force and velocity graphs shall be constructed from the data collected.

![Diagram of Test Set-Up]

Figure 2-1

2.2 Temperature Related Characteristics

The unit shall be horizontally fixtured in a hydraulic tester as shown in Figure 2-1. The frequency that the unit is to be tested to is .3 Hz. The amplitude that will be used is 20 mm. The temperatures that will be tested to are -5, 10, 20 and 40°C. Three complete cycles shall be run at each test displacement. Force shall be measured with a 500 kip load cell, and displacement with a potentiometer. Force and displacement data shall be recorded on a dual beam, time-base oscilloscope and transferred to Wave Star software that can be used to attain digital data. The velocities shall be determined from the slope of the displacement-time curves and recorded along with their corresponding force values. Temperature shall be monitored at the midstroke position of the unit. Force versus temperature graphs shall be constructed from the data collected.
2.3 Frequency Related Characteristics

The unit shall be horizontally fixtured in a hydraulic tester as shown in Figure 2-1. The frequencies that the unit is to be tested to are .2, .3, 1.0, and 2.0Hz. The amplitude that will be used is 20 mm. Force shall be measured with a 500 kip load cell, and displacement with a potentiometer. Force and displacement data shall be recorded on a dual beam, time-base oscilloscope and transferred to Wave Star software that can be used to attain digital data. The velocities shall be determined from the slope of the displacement-time curves and recorded along with their corresponding force values.

2.4 Durability Test

The unit shall be horizontally fixtured in a hydraulic tester as shown in Figure 2-1. The unit is to be cycled for a total of 200 cycles at a frequency of .3Hz and an amplitude of 10 mm. The 200 cycles will be divided into 4 groups of 50 continuous cycles. A 2 - 3 minute pause, to recharge the accumulators will be needed between each group of cycles. Force shall be measured with a 500 kip load cell, and displacement with a potentiometer. Force and displacement data shall be recorded on a dual beam, time-base oscilloscope and transferred to Wave Star software that can be used to attain digital data. The velocities shall be determined from the slope of the displacement-time curves and recorded along with their corresponding force values. No physical damage, deterioration, or visible leakage is allowable.

2.5 Random Vibration Test

The unit shall be horizontally fixtured in a hydraulic tester as shown in Figure 2-1. The test is to be a recreation of the vibration plot as received from the customer for the 1st story and the 24th story of the X-direction of a 24-story structure. Force shall be measured with a 500 kip load cell, and displacement with a potentiometer. Force and displacement data shall be recorded on a dual beam, time-base oscilloscope and transferred to Wave Star software that can be used to attain digital data. The velocities shall be determined from the slope of the displacement-time curves and recorded along with their corresponding force values.
SECTION 2.1

AMPLITUDE RELATED CHARACTERISTICS
2.1 Amplitude Related Tests

\[ F = V^{0.4} \]

![Graph showing force vs. velocity with different markers and lines for nominal, 15%, -15%, first, second, and third conditions.](image-url)
2.1: Amplitude Related Characteristics

Force = 22.88 tonnes/div
Stroke = 5 mm/div
Time = 1.5 Sec/div
Test Jd5 = .3 Hz and a peak amplitude of 5 mm
Temperature = 21.8 deg. C

1st Cycle Force = 17.14 Tonnes
2nd Cycle Force = 16.01 Tonnes
3rd Cycle Force = 16.01 Tonnes
Test 2.1: Filtered Data
Frequency (Hz) = 0.3
Peak Amplitude (mm) = 5.0
21.0°C
Test 2.1: Filtered Data

Frequency (Hz) = 0.3
Peak Amplitude (mm) = 5.0
21.0°C
2.1: Amplitude Related Characteristics

Force = 22.88 Tonnes/div
Stroke = 5mm/div
Time = 1.5 Sec/div
Test Jd6a = .3 Hz and a peak amplitude of 10 mm
Temperature = 22.3 deg. C

1st Cycle Force = 22.85 Tonnes
2nd Cycle Force = 22.26 Tonnes
3rd Cycle Force = 21.72 Tonnes

STROKE
Test 2.1: Filtered Data
Frequency (Hz) = 0.3
Peak Amplitude (mm) = 10.0
22.3°C
Test 2.1: Filtered Data

Frequency (Hz) = 0.3
Peak Amplitude (mm) = 10.0
22.3°C
2.1: Amplitude Related Characteristics
Raw Data

Force = 22.88 Tonne/div
Stroke = 10 mm/div
Time = 2 sec/div
Temperature = 20.7 deg. C
Test id7
Three cycles @ .3 Hz

1st Cycle Force = \text{32.03 Tonnes}
2nd Cycle Force = \text{30.89 Tonnes}
3rd Cycle Force = \text{29.74 Tonnes}
Test 2.1: Filtered Data
Frequency (Hz) = 0.3
Peak Amplitude (mm) = 20.0
23.5°C
Test 2.1: Filtered Data
Frequency (Hz) = 0.3
Peak Amplitude (mm) = 20.0
23.5°C
2.1: Amplitude Related Characteristics

Force = 22.88 tonnes/div
Stroke = 10 mm/div
Time = 1.5 Sec/div
Test Jd8 = 0.3 Hz and a peak amplitude of 30 mm
Temperature = 21.8 deg. C

1st Cycle Force = 37.73 Tonnes
2nd Cycle Force = 36.55 Tonnes
3rd Cycle Force = 34.29 Tonnes

STROKE
Test 2.1: Filtered Data

Frequency (Hz) = 0.3
Peak Amplitude (mm) = 30.0
21.8°C
Test 2.1: Filtered Data
Frequency (Hz) = 0.3
Peak Amplitude (mm) = 30.0
21.8°C
2.1: Amplitude Related Characteristics

Force = 22.88 tonnes/div
Stroke = 20 mm/div
Time = 1.5 Sec/div
Test Jd9 = .3 Hz and a peak amplitude of 50 mm
Temperature = 23.8 deg. C

1st Cycle Force = 45.71 Tonnes
2nd Cycle Force = 40.00 Tonnes
3rd Cycle Force = 37.73 Tonnes
Test 2.1: Filtered Data
Frequency (Hz) = 0.3
Peak Amplitude (mm) = 50.0
23.8°C
Test 2.1: Filtered Data
Frequency (Hz) = 0.3
Peak Amplitude (mm) = 50.0
23.8°C
SECTION 2.2

TEMPERATURE RELATED CHARACTERISTICS
2.2 Temperature Related Characteristic

![Temperature vs Force Graph]

- Nominal
- 15%
- -15%
- FIRST
- SECOND
- THIRD
2.2: Temperature Related Characteristics

Raw Data

Force = 22.88 Tonne/div
Stroke = 10 mm/div
Time = 2 sec/div
Temperature = -5 deg. C
Test jd7
Three cycles @ .3 Hz

1st Cycle Force = 34.32 Tonnes
2nd Cycle Force = 32.60 Tonnes
3rd Cycle Force = 31.46 Tonnes

Test Machine Input To Damper
Test 2.2: Filtered Data
Frequency (Hz) = 0.3
Peak Amplitude (mm) = 20.0
-5.0°C
Test 2.2: Filtered Data
Frequency (Hz) = 0.3
Peak Amplitude (mm) = 20.0
-5.0°C
2.2: Temperature Related Characteristics

Raw Data

Force = 22.88 Tonne/div
Stroke = 10 mm/div
Time = 2 sec/div
Temperature = 10 deg. C
Test jd7
Three cycles @ .3 Hz

1st Cycle Force = 33.75 Tonnes
2nd Cycle Force = 32.03 Tonnes
3rd Cycle Force = 30.89 Tonnes

Test Machine Stroke Input To Damper
Test 2.2: Filtered Data

Frequency (Hz) = 0.3
Peak Amplitude of (mm) = 20.0
10.0°C
Test 2.2: Filtered Data

Frequency (Hz) = 0.3
Peak Amplitude of (mm) = 20.0
10.0°C
2.1: Temperature Related Characteristics

Raw Data

Force = 22.88 Tonne/div
Stroke = 10 mm/div
Time = 2 sec/div
Temperature = 20.7 deg. C
Test jd7
Three cycles @ .3 Hz

1st Cycle Force = 32.03 Tonnes
2nd Cycle Force = 30.89 Tonnes
3rd Cycle Force = 29.74 Tonnes
Test 2.2: Filtered Data
Frequency (Hz) = 0.3
Peak Amplitude (mm) = 20.0
23.5°C
Test 2.2: Filtered Data
Frequency (Hz) = 0.3
Peak Amplitude (mm) = 20.0
23.5°C
2.2: Temperature Related Characteristics

Raw Data

Force = 22.88 Tonne/div
Stroke = 10 mm/div.
Time = 2 sec/div
Temperature = 40 deg. C
Test jd7
Three cycles @ .3 Hz

1st Cycle Force = 31.46 Tonnes
2nd Cycle Force = 30.89 Tonnes
Force 3rd cycle = 29.17 Tonnes

Test Machine Stroke Input To Damper
Test 2.2: Filtered Data
Frequency (Hz) = 0.3
Peak Amplitude (mm) = 20.0
40.0°C
Test 2.2: Filtered Data
Frequency (Hz) = 0.3
Peak Amplitude (mm) = 20.0
40.0°C
SECTION 2.3

FREQUENCY RELATED CHARACTERISTICS
2.3 Frequency Related Tests

\[ F = V^{0.4} \]
Force = 22.88 Tonne/div
Stroke = 10 mm/div
Time = 2 sec/div
Temperature = 23.7 deg. C
Test jd1
Three cycles @ .2 Hz

2.3: Frequency Related Characteristics
Raw Data

1st Cycle Force = 25.12 Tonnes
2nd Cycle Force = 23.99 Tonnes
3rd Cycle Force = 22.86 Tonnes
Test 2.3: Filtered Data

Frequency (Hz) = 0.2
Peak Amplitude (mm) = 20.0
23.5°C
Test 2.3: Filtered Data

Frequency (Hz) = 0.2
Peak Amplitude (mm) = 20.0
23.5°C
2.3: Frequency Related Characteristics

Raw Data

Force = 22.88 Tonne/div
Stroke = 10 mm/div
Time = 2 sec/div
Temperature = 20.7 deg. C
Test jd7
Three cycles @ .3 Hz

1st Cycle Force = 32.03 Tonnes
2nd Cycle Force = 30.89 Tonnes
3rd Cycle Force = 29.74 Tonnes
Test 2.3: Filtered Data
Frequency (Hz) = 0.3
Peak Amplitude (mm) = 20.0
23.5°C
Test 2.3: Filtered Data
Frequency (Hz) = 0.3
Peak Amplitude (mm) = 20.0
23.5°C
2.3: Frequency Related Characteristics

Raw Data

Test machine stroke input to damper

1st Cycle Force = 55.7 Tonnes
2nd Cycle Force = 53.8 Tonnes
3rd Cycle Force = 51.3 Tonnes
Test 2.3: Filtered Data

Frequency (Hz) = 1.0
Peak Amplitude (mm) = 20.0
19.0°C
Test 2.3: Filtered Data
Frequency (Hz) = 1.0
Peak Amplitude (mm) = 20.0
19.0°C
2.3: Frequency Related Characteristics

Raw Data

Force = 22.88 Tonne/div
Stroke = 10 mm/div
Time = .5 sec/div
Temperature = 21 deg. C
Test jd3
Three cycles @ 2Hz

1st Cycle Force = 72.1 Tonnes
2nd Cycle Force = 67.50 Tonnes
3rd Cycle Force = 60.63 Tonnes

Test Machine Stroke Input To Damper
Test 2.3: Filtered Data
Frequency (Hz) = 2.0
Peak Amplitude (mm) = 20.0
21.0°C
Test 2.3: Filtered Data
Frequency (Hz) = 2.0
Peak Amplitude (mm) = 20.0
21.0°C
SECTION 2.4

DURABILITY TEST
2.4 Durability Test

Graph showing cycles against force (in tonnes) with markers indicating nominal, 15% and -15% conditions, and crosses for force data points.
Test 2.4: Frequency (Hz) = 0.3
Peak Amplitude (mm) = 10.0
20.0°C, First 50 cycles
Test 2.4: Frequency (Hz) = 0.3
Peak Amplitude (mm) = 10.0
20.0°C, First 50 cycles
Test 2.4: Frequency (Hz) = 0.3
Peak Amplitude (mm) = 10.0
27.9°C, Second 50 cycles
Test 2.4: Frequency (Hz) = 0.3
Peak Amplitude (mm) = 10.0
27.9°C, Second 50 cycles
Test 2.4: Frequency (Hz) = 0.3
Peak Amplitude (mm) = 10.0
35.2°C, Third 50 cycles
Test 2.4: Frequency (Hz) = 0.3
Peak Amplitude (mm) = 10.0
35.2°C, Third 50 cycles
Test 2.4: Frequency (Hz) = 0.3
Peak Amplitude (mm) = 10.0
40.2°C, Last 50 cycles
Peak Temperature, 48.3°C
Test 2.4: Frequency (Hz) = 0.3
Peak Amplitude (mm) = 10.0
40.2°C, Last 50 cycles
Peak Temperature, 48.3°C
SECTION 2.5

RANDOM VIBRATION TEST
1st Story Test X-direction

Filtered Data

Data File: jst1filt.xls
1st Story (Filtered)
Actuator Stroke

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<th>Stroke (mm)</th>
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1ST STORY TEST X-DIRECTION

UNFILTERED DATA

DATA FILE: jst1unf.xls
Actuator Stroke
Test & Model - 1st Story Overlay
Force vs Stroke

Force (Tonnes)

Stroke (mm)

--- Series1
--- Series2
24th STORY TEST X-DIRECTION
FILTERED DATA

DATA FILE: jst24fil.xls
24th Story (Filtered)
24TH STORY TEST X-DIRECTION

UNFILTERED DATA

DATA FILE: jst24unf.xls
24th Story (No Filter)
CALIBRATION
CERTIFICATES
The following equipment has been calibrated to comply with ISO 10012-1, ANSI/NCSL Z540-1, and MIL-STD-45662A as required by contract.

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<th>Equipment</th>
<th>Trace Number</th>
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Test Engineer: ERIC ROTH
Gage Blocks 0-1"

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Graph Scale: +0.000001

Tolerances: +0.000004 / -0.000002
**Gage Blocks 0-1"**

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**Gage Block 2"**

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**Gage Block 3"**

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**Gage Block 4"**

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**Comments:**

"3.000 & 4.000" GAGE BLOCKS ARE NEW REPLACEMENTS (9/18/99).

Old P.O. #P009805

**MISC. GAGE BLOCKS**

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<td>.500 JAW #2</td>
<td>5.000009</td>
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We certify the equipment used for this calibration is traceable to NIST through one or more of the following numbers:

Gage Status: PASS

Next Calibration Due: 7/23/2000

Certified By: Norm Izirer  Signature: [Signature]

This certificate is not valid unless all 3 page(s) are present.
READING ARE AS FOUND UNLESS OTHERWISE DENOTED IN COMMENTS.
Gage Blocks meet or exceed Federal Specifications for the grade and accuracy applicable to these items in accordance with Federal Specification GGG-G-15C.
Calibration meets or exceeds 4 : 1 ratio, with the exception of gage blocks stated above.
**Note the recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under federal statutes.**
Certificate of Traceable Calibration

Certificate #: 130756-1-THS720-B023051-1
PO#/Contract#: P8681
Customer: TAYLOR DEVICES INC
90 TAYLOR DRIVE
NORTH TONAWANDA, NY 14120
United States

Contact: JANICE
Model: THS720
Description: OSCILLOSCOPE; TEKSCOPE, HANDHELD, BATTERYPOWERED SCOPE WITH D
Manufacturer: TEKTRONIX, INC.
Serial: B023051
Asset: -
Site of Calibration: SERVICE CENTER
Calibration Interval Source: TEKTRONIX RECOMMENDED
Customer's Equipment Location: -

Cal Date: 24-Feb-1999
Due Date: 24-Feb-2000
Temperature: 72 °F
Humidity: 34 %
Calibration Interval: 365 DAYS

Tektronix certifies that the performance of the above instrument has been verified using test equipment of known accuracy which are traceable to the U.S. National Institute of Standards and Technology (NIST). The policies and procedures at this facility are based on ANSI/NCSL Z540-1-1994 (ISO Guide 25). This certificate shall not be reproduced except in full, without the written approval of the calibration facility.

INSTRUMENT CONDITION:

Received: IN TOLERANCE

Returned: IN TOLERANCE
Certificate of Traceable Calibration

Certificate #: 130756-1-THS720-B023051-1

CALIBRATION PROCEDURE:

SCOPECAL SYSTEM SOFTWARE - MANUFACTURERS SPECIFICATIONS
PROCEDURE REVISION LEVEL: V5.30

CALIBRATION EQUIPMENT USED:

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<td>B010328</td>
<td>TEKTRONIX, INC.</td>
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<td>TEKTRONIX, INC.</td>
<td>02-Aug-1998</td>
<td>03-Aug-1999</td>
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<tr>
<td>SG5030</td>
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Issued By: [Signature]
Service Manager: BARRY FLEMING
Calibrated By: JOE HALLER
Date Issued: 24-Feb-1999
Date Printed: 24-Feb-1999
Certificate of Traceable Calibration

Certificate #: 181877-1-THS720-B035533-1
PO#/Contract#: P10126
Customer: TAYLOR DEVICES INC
90 TAYLOR DRIVE
NORTH TONAWANDA, NY 14120
United States

Contact: JANICE JAMIESON
Model: THS720
Description: OSCILLOSCOPE; TEKSCOPE, HANDHELD, BATTERYPOWERED SCOPE WITH D
Manufacturer: TEKTRONIX, INC.
Serial: B035533
Asset: TD349
Site of Calibration: SERVICE CENTER
Cal Date: 30-Aug-1999
Due Date: 30-Aug-2000
Temperature: 70 °F
Humidity: 50 %
Calibration Interval Source: TEKTRONIX RECOMMENDED
Calibration Interval: 366 DAYS
Customer’s Equipment Location: -

Tektronix certifies that the performance of the above instrument has been verified using test equipment of known accuracy which are traceable to the U.S. National Institute of Standards and Technology (NIST). The policies and procedures at this facility are based on ANSI/NCSL Z540-1-1994 (ISO Guide 25). This certificate shall not be reproduced except in full, without the written approval of the calibration facility.

INSTRUMENT CONDITION:

Received: IN TOLERANCE

Returned: IN TOLERANCE
Certificate of Traceable Calibration

Certificate #: 181877-1-THS720-B035533-1

CALIBRATION PROCEDURE:

SCOPECAL SYSTEM SOFTWARE - MANUFACTURER'S SPECIFICATION
PROCEDURE REVISION LEVEL : V5.50

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Issued By: BARRY FLEMING

Calibrated By: RONNIE MOLINA

Date Issued: 30-Aug-1999

Date Printed: 30-Aug-1999

ISO 9001 Registered, KEMA certificate number 10001.10
Certificate of Instrument Calibration and Testing

Customer Instrument
Dickson Model Number: KTx
Serial Number: 7213534
Calibration Technician: Kitty McReynolds
Calibration Date: 11/02/1999

Calibration Procedure
The customer instrument was compared to the calibration standard. Drifts and faults were determined, and any necessary mechanical or electronic adjustments were taken. The Dickson calibration system conforms to the requirements of MIL-STD-45662A, ANSI/NCSL Z540-1-1994, and ISO/IEC guide 25. Recalibration of the customer instrument is recommended within 6 months after the unit is placed into service.

Environmental Condition

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<th>Unit Specification</th>
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<td>450.0</td>
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FOR YOUR NEXT CALIBRATION
No Phone Calls Required

1. Fill out and send this form along with your instrument to Dickson.
2. Label the outside of the box with "CCM"- that is your RA#.
   That's all there is to it!

3. Please return via:
   □ Ground Freight ($10)
   □ 2nd Day Air($15)
   □ Next Day Air ($25)
   4. Ship To:

   Note: Ultima Calibration includes incoming readings
   Prices are subject to change

Dickson Calibration Services
930 South Westwood Avenue Addison, Illinois 60101 630-543-3747 Fax 630-543-5498
Certificate of Traceable Calibration

Certificate #: 228399-1-DTM900-112625-1
PO#/Contract#: P11760
Customer: TAYLOR DEVICES INC
90 TAYLOR DRIVE
NORTH TONAWANDA, NY 14120
United States

Contact: JANICE JAMIESON
Model: DTM900
Description: THERMOMETER, K-TYPE, 0.3% ACCURACY
Manufacturer: TEKTRONIX, INC.
Serial: 112625
Asset: TD4-15
Site of Calibration: SERVICE CENTER
Cal Date: 01-Feb-2000
Due Date: 01-Feb-2001
Temperature: 72 °F
Humidity: 42 %
Calibration Interval: 366 DAYS

Tektronix certifies that the performance of the above instrument has been verified using test equipment of known accuracy which are traceable to the U.S. National Institute of Standards and Technology (NIST). The policies and procedures at this facility are based on ANSI/NCSL Z540-1-1994 (ISO Guide 25). This certificate shall not be reproduced except in full, without the written approval of the calibration facility.

INSTRUMENT CONDITION:

Received: OUT OF TOLERANCE
100 DEG C @ .1 RESOLUTION MEASURED 101.4 DEG C. SPEC IS 98.8 TO 101.2 DEG C.
Returned: IN TOLERANCE
LOAD CELL CALIBRATION

LOAD CELL ____________________ (NATIONAL) 514
SCOPE SENS. ____________________ 50 mV/DV

TYPE T-C ____________________ CALIBRATED BY: M6M AE

CAPACITY ____________________ 5000 lbf

DATE ____________________ 4/8/99

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AVG

7.8

400000

(51282)

COMPRESSION / TENSION

OVER ALL AVERAGE SENSITIVITY ____________________ 50400 LB/DIV

CALIBRATED WITH: OSCILLOSCOPE TYPE THS 720 S/N T0386

FORCE GAUGE BTL TINNO'S S/N 88355

FIXTURE ____________________

AMPLIFIER BOX COOPER

DATE DUE 4-8-00
Signature JD