



Pine AFG1 Gyratory Compactor Service/Calibration Record

- ☒ Pine AFG1A (115 V)
☐ Pine AFG1C (220 V)

1429
Serial Number

Mark Downing 4-3-12
Technician (sign and date)

UNIVERSITY OF ARK
SGC Owner (Company Name)

FAYETTEVILLE PA
SGC Location (City and State)

Status of Compactor Prior to Calibration Change

54.3 Machine Hours 9-25-07 Previous SGC Calibration Date 9-25-07 Previous SGC Verification Date PCS Previous Service Provider (if known)

Speed of Gyration (30 ± 0.5 GPM)

Ultimate Stop Watch 9921 Serial Number

Gyrations	"As Found"	"As Left"
15	<u>30.01</u> s	<u>30.01</u> s

(15 gyrations in 30 ± 0.5 seconds is 30 ± 0.5 GPM)

Internal Angle of Gyration (AASHTO TP71)

Pine AFLS1 (RAM) Internal Angle Device 005 Serial Number

10/06/2011 Calibration Date PCS Mold Identification

Angle Parameter	"As Found"	"As Left"
Top Angle	<u>1.17</u> °	<u>1.16</u> °
Bottom Angle	<u>1.15</u> °	<u>1.16</u> °
Internal Angle	<u>1.16</u> °	<u>1.16</u> °

Consolidation Pressure (Force Measurement)

Pine AFGCLRO5C Load Ring Model 1280 Serial Number

01/10/2012
Calibration Date

Force (N)	Dial (±1 % Range)	Dial "As Found"	Dial "As Left"
5000	<u>111.8 - 114.1</u>	<u>112</u>	<u>112.2</u>
10500	<u>233.6 - 238.3</u>	<u>236.4</u>	<u>236.4</u>

Angle Sensor Verification

Pine AFG1A07
Gage Model

Angle Parameter	"As Found"	"As Left"
Dial Reading 1	<u>150</u> "	<u>152</u> "
Dial Reading 2	<u>709</u> "	<u>709</u> "
Difference	<u>559</u> "	<u>557</u> "
Range	<u>553-563</u> "	<u>551-561</u> "
Offset	<u>13.350</u> "	<u>13.350</u> "

Specimen Height (Position Measurement)

Pine AFG123C Gage Block Model 1280-1A, 1B, 2A, 2B Serial Number(s)

01/12/2012
Block Calibration Date

Height mm (inches)	"As Found"	"As Left"
<u>152.4 mm (6")</u>	<u>152.42</u> mm	<u>152.40</u> mm

Machine Display (External) Angle of Gyration

Angle Parameter	"As Found"	"As Left"
Unloaded	<u>1.22</u> °	<u>1.22</u> °
Loaded	<u>1.19</u> °	<u>1.19</u> °

Pine AFG1 Gyrotory Compactor Service/Calibration Record

- ☒ Pine AFG1A (115 V)
☐ Pine AFG1C (220 V)

1429
 Serial Number

71 °F
 Temperature

4-3-12
 Date

Machine Settings

Parameter	"As Found"	"As Left"
Mold Diameter	<u>150</u> mm	<u>150</u> mm
Compaction Mode	<u>75</u> <input checked="" type="checkbox"/> gyr <input type="checkbox"/> mm	<u>75</u> <input checked="" type="checkbox"/> gyr <input type="checkbox"/> mm
Angle of Gyration	<u>1.16</u> ° <input checked="" type="checkbox"/> int <input type="checkbox"/> ext	<u>1.16</u> ° <input checked="" type="checkbox"/> int <input type="checkbox"/> ext
Squaring Delay	<u>0</u> s	<u>0</u> s

Service Lubrication

<input checked="" type="checkbox"/>	Ram Foot (daily, anti-seize lube)
<input checked="" type="checkbox"/>	Actuator Bearings (annual, MoS ₂ grease)
<input checked="" type="checkbox"/>	Ball Screw Bearings (annual, MoS ₂ grease)
<input checked="" type="checkbox"/>	Ball Screw (annual, MoS ₂ grease)
<input checked="" type="checkbox"/>	Mold Clamp Pivots (annual, anti-seize)
<input checked="" type="checkbox"/>	Mold Top Clamps (annual, anti-seize)

Service Inspection

<input checked="" type="checkbox"/>	Overall Operation & Appearance
<input checked="" type="checkbox"/>	Electrical Ground, VAC input
<input checked="" type="checkbox"/>	E-Stop Interlock
<input checked="" type="checkbox"/>	Door Switch Interlock
<input checked="" type="checkbox"/>	Battery Change (AA annual, Lithium 5 yr)
<input checked="" type="checkbox"/>	Date / Time Correct
<input checked="" type="checkbox"/>	Mold Top
<input checked="" type="checkbox"/>	Mold Top Clamps
<input checked="" type="checkbox"/>	Mold Top Proximity Switch
<input checked="" type="checkbox"/>	Mold Clamps
<u>.003</u> "	Swivel Frame Bearing Clearance ≤ 0.012 "
<input checked="" type="checkbox"/>	Ram Foot and Retaining Ring Tight
<input checked="" type="checkbox"/>	Ram Key / Plate
<input checked="" type="checkbox"/>	Ram Drive Belt Tension
<input checked="" type="checkbox"/>	Actuator Crankshaft Clamp Screws
<input checked="" type="checkbox"/>	Floppy Disk Functional
<input checked="" type="checkbox"/>	Printer Port Functional
<input checked="" type="checkbox"/>	Serial Port Functional
<input checked="" type="checkbox"/>	Calibration Data Backup Saved

Notes

REPLACED RAM DRIVER BOARD
 UPGRADED SOFTWARE

**Gyratory Compactor Certificate of Calibration
and Traceability to the United States
National Institute of Standards and Technology**

Gyratory Compactor Information

PINE AFG1 1429 UNIVERSITY OF ARK FAYETTEVILLE 70
Manufacturer and Model Serial Number SGC Owner (Company Name) and Location AR Temperature

Rate of Gyration

- ☐ Calibration service for the rate of gyration **was not** performed.
☒ The rate of gyration was standardized to 30.0 ± 0.5 gyrations per minute using a digital stopwatch.

Consolidation Pressure

- ☐ Calibration service for the consolidation pressure was not performed.
☒ The consolidation pressure measurement system was calibrated to within $\pm 1.0\%$ by calibrating the applied force, using the following apparatus:

☒ Pine AFGCLR05C load ring (5000 lbf) SN 1280 Calibration Date 01/10/2012
NIST # 822/255038-95
☐ Interface 1210BDE-5K load cell (5000 lbf) SN 151809A Calibration Date 10/06/2011
with Newport INFCS-000 A/E meter SN 4015069 NIST # 822/255038-95

Specimen Height Measurement

- ☐ Calibration service for the specimen height measurement system was not performed.
☒ The specimen height measurement system was calibrated to within ± 0.05 mm (± 0.002 in) using the following apparatus:

☒ Pine AFG123 Gage Block Set SN 1280-1A, Calibration Date 01/12/2012
1B, 2A, 2B NIST # 08A014.9501
☐ Pine AFGBA04 Calibration Tube SN 040942 Calibration Date 10/06/2011
NIST # 08A014.9501

Angle of Gyration

- ☐ Calibration service for the angle of gyration **was not** performed.
☐ The external angle of gyration was calibrated under simulated loading conditions to $1.25 \pm 0.02^\circ$ per equipment manufacturer instructions.
☒ The internal angle of gyration was calibrated to $1.16 \pm 0.02^\circ$ per AASHTO TP71 / ASTM D7115 Standard Test Method for Measurement of Superpave Gyratory Compactor (SGC) Internal Angle of Gyration Using Simulated Loading with a room temperature mold.

Pine AFLS1 Rapid Angle Measurement Device SN 005 Calibration Date 10/06/2011
NIST # 08A014.9501

Calibration Service Provider

I hereby certify the standardization services have been performed properly, and that I am an authorized representative of a service organization authorized by Pine Instrument Company.

Mark Downing 4-3-12 Pine Test Equipment, LLC., Grove City, PA, (724) 458-6391
Technician (sign here) Date Service Organization (name and location)