

Certificate of Calibration

and Traceability to the
United States National Institute of Standards & Technology

Pine Instrument Company
5,000 lbf Capacity Proving Ring

Model No.: AFGCLR05C

Serial No.: 1320

The above identified instrument was calibrated as a limited load instrument according to ASTM specification E74-95, "Standard Practice of Calibration of Force-Measuring Instruments for Verifying the Force Indication of Testing Machines."

Following are the units and loads of force applied to the instrument during three separate calibration runs, the deflection in divisions as read on the indicator for each applied load, and the average deflection in divisions for each load.

Compression Mode Indicator Readings

Applied Force N	(LBF)	Run 1 DIV	Run 2 DIV	Run 3 DIV	Average DIV
0	0	0.0	0.0	0.0	0.0
1500	(337.2)	33.9	33.9	33.9	33.9
3000	(674.4)	68.8	68.7	68.7	68.7
5000	(1124.1)	113.9	113.2	113.6	113.6
6000	(1348.9)	135.9	135.5	135.5	135.6
7500	(1686.1)	170.0	169.9	169.9	169.9
9000	(2023.3)	203.8	203.4	203.6	203.6
10500	(2360.5)	238.4	238.1	238.1	238.2
12000	(2697.7)	273.9	273.3	273.5	273.6
13500	(3034.9)	308.5	308.1	308.1	308.2
14500	(3259.7)	331.1	331.1	331.0	331.1
16500	(3709.4)	377.1	377.0	377.0	377.0
18000	(4046.6)	411.1	411.0	411.0	411.0
20018	(4500.2)	457.9	457.2	457.2	457.4
22242	(5000.2)	509.9	509.8	509.8	509.8

Temperature At Calibration: 22 C
Relative Humidity: 46 %

Calibration Date: 10/2/2007
Recalibration Due: 10/1/2009

Transfer Standard: 5000 Lbf. Load Cell, S/N 98474

Calibrated: 12/29/2006

NIST No.: 822/274427-07

Uncertainty: +/-0.02%

Calibrator: K.G.

Approved By: Bruce Bernstein

PROVING RING SERIAL NUMBER: 1320

CALIBRATION DATE: 10/2/2007

GYRATORY COMPACTOR CALIBRATION DATA POINTS

Newton	lbf	Dial (actual)	Dial - 1%	Dial + 1%	Dial - 3%	Dial + 3%
0	0.0	0.0	0.0	0.0	0.0	0.0
500	112.4	11.3	11.2	11.4	11.0	11.6
1000	224.8	22.6	22.4	22.8	21.9	23.3
1500	337.2	33.9	33.6	34.2	32.9	34.9
2000	449.6	45.5	45.1	46.0	44.1	46.9
2500	562.0	57.1	56.6	57.7	55.4	58.8
3000	674.4	68.7	68.0	69.4	66.7	70.8
3500	786.8	79.9	79.1	80.7	77.5	82.3
4000	899.2	91.2	90.2	92.1	88.4	93.9
4500	1011.6	102.4	101.3	103.4	99.3	105.4
5000	1124.1	113.6	112.4	114.7	110.2	117.0
5500	1236.5	124.6	123.4	125.8	120.9	128.3
6000	1348.9	135.6	134.3	137.0	131.6	139.7
6500	1461.3	147.1	145.6	148.5	142.7	151.5
7000	1573.7	158.5	156.9	160.1	153.7	163.3
7500	1686.1	169.9	168.2	171.6	164.8	175.0
8000	1798.5	181.2	179.3	183.0	175.7	186.6
8500	1910.9	192.4	190.5	194.3	186.6	198.1
9000	2023.3	203.6	201.6	205.6	197.5	209.7
9500	2135.7	215.1	213.0	217.3	208.7	221.6
10000	2248.1	226.7	224.4	228.9	219.9	233.5
10500	2360.5	238.2	235.8	240.6	231.1	245.3
11000	2472.9	250.0	247.5	252.5	242.5	257.5
11500	2585.3	261.8	259.2	264.4	253.9	269.6
12000	2697.7	273.6	270.8	276.3	265.4	281.8
12500	2810.1	285.1	282.3	288.0	276.6	293.7
13000	2922.5	296.7	293.7	299.6	287.8	305.6
13500	3034.9	308.2	305.2	311.3	299.0	317.5
14000	3147.3	319.7	316.5	322.8	310.1	329.2
14500	3259.7	331.1	327.8	334.4	321.1	341.0
15000	3372.2	342.6	339.1	346.0	332.3	352.8
15500	3484.6	354.1	350.5	357.6	343.4	364.7
16000	3597.0	365.5	361.9	369.2	354.6	376.5
16500	3709.4	377.0	373.3	380.8	365.7	388.3
17000	3821.8	388.4	384.5	392.3	376.7	400.0
17500	3934.2	399.7	395.7	403.7	387.7	411.7
18000	4046.6	411.0	406.9	415.1	398.7	423.4