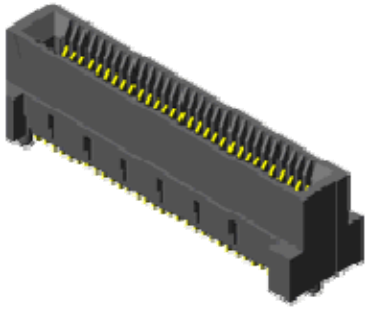
Project Number:	Tracking Code: TC0825--1819		
Requested by: Neal Patterson	Date: 6/19/2008	Product Rev: na	
Part #: HSEC8-XXX-01-S-DV-A	Lot #: na	Tech: Rodney Riley & Gary Lomax	Eng: Troy Cook
Part description: HSEC8			Qty to test: 10
Test Start: 06/19/2008	Test Completed: 7/18/2008		



Mating/Unmating Forces at Initial, 25, 50, 75, and 100 Cycles

PART DESCRIPTION

HSEC8-XXX-01-S-DV-A

CERTIFICATION

All instruments and measuring equipment were calibrated to National Institute for Standards and Technology (NIST) traceable standards according to IS0 10012-l and ANSI/NCSL 2540-1, as applicable.

SCOPE

To perform the following tests: Record mating and unmating forces at initial, 25, 50, 75, and 100 cycles on connectors with 10, 50 and 100 positions and compare data.

APPLICABLE DOCUMENTS

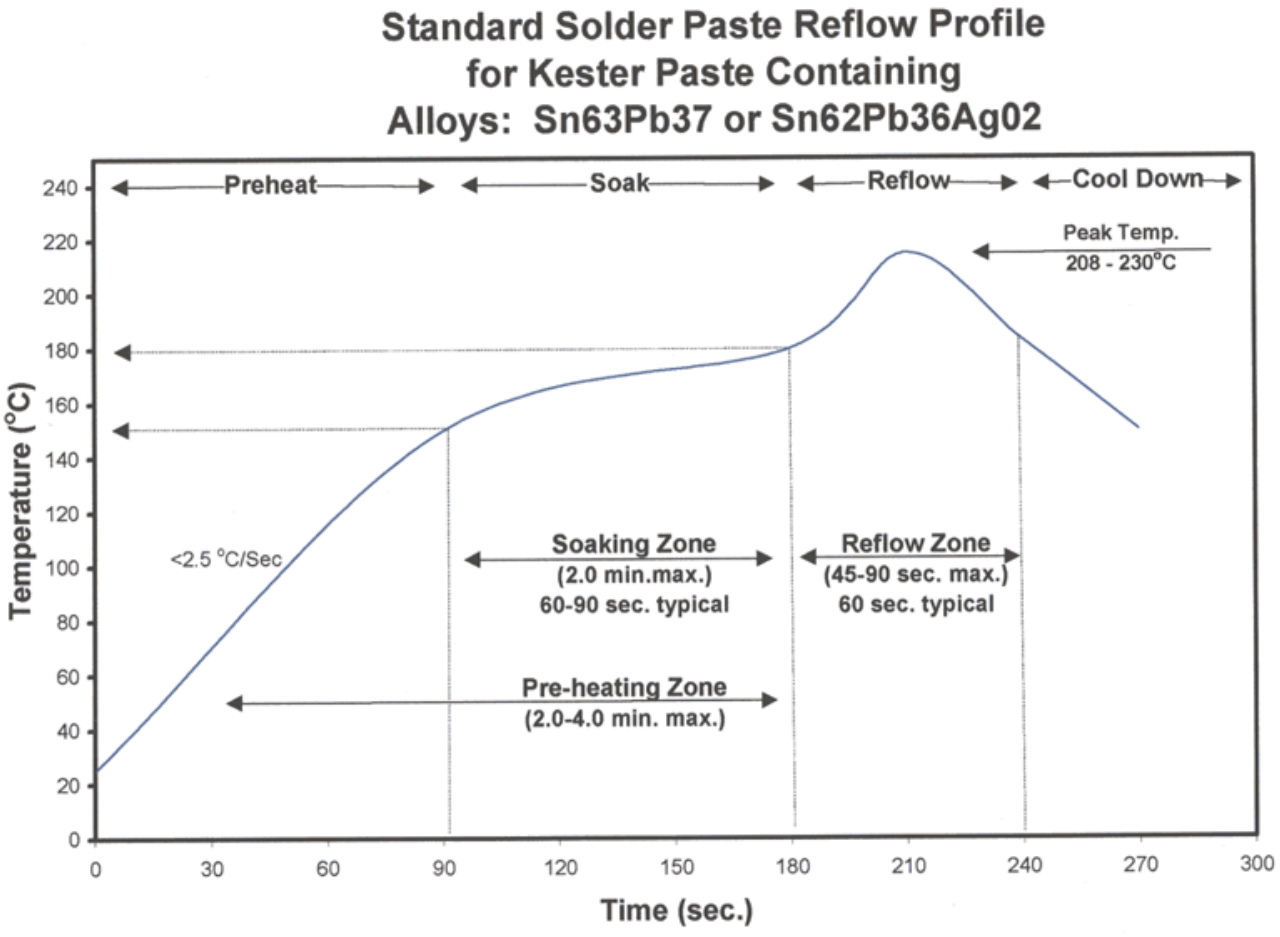
Standards: EIA Publication 364

TEST SAMPLES AND PREPARATION

1) All materials were manufactured in accordance with the applicable product specification.
2) All test samples were identified and encoded to maintain traceability throughout the test sequences.
3) After soldering, the parts to be used for LLCR and DWV/IR testing were cleaned according to TLWI-0001.
4) Either an automated cleaning procedure or an ultrasonic cleaning procedure may be used.
5) The automated procedure is used with aqueous compatible soldering materials.
6) Parts not intended for testing LLCR and DWV/IR are visually inspected and cleaned if necessary.
7) Any additional preparation will be noted in the individual test sequences.
8) Solder Information: Lead Free
9) Re-Flow Time/Temp: See accompanying profile.
10) Samtec Test PCBs used: PCB-101305-TST-XX (Hard Gold Finish).
11) 10 Panels of Test PCB:
    1.) .0600
    2.) .0615
    3.) .0615
    4.) .0615
    5.) .0610
    6.) .0620
    7.) .0610
    8.) .0615
    9.) .0605
    10.).0615

Minimum: .0600
Maximum: .0620
Average: .0612
Standard Deviation: .0006

TYPICAL OVEN PROFILE (Soldering Parts to Test Boards)



FLOWCHARTS

Mating/Unmating

TEST STEP	GROUP A 10 Boards HSEC-10 Position	GROUP B 10 Boards HSEC-50 Position	GROUP C 10 Boards HSEC-110 Position	Total Cycles
01	Mating / Unmating	Mating / Unmating	Mating / Unmating	
02	25 Cycles	25 Cycles	25 Cycles	25
03	Mating / Unmating	Mating / Unmating	Mating / Unmating	
04	25 Cycles	25 Cycles	25 Cycles	50
05	Mating / Unmating	Mating / Unmating	Mating / Unmating	
06	25 Cycles	25 Cycles	25 Cycles	75
07	Mating / Unmating	Mating / Unmating	Mating / Unmating	
08	25 Cycles	25 Cycles	25 Cycles	100
09	Mating / Unmating	Mating / Unmating	Mating / Unmating	

Mating/Un-Mating Forces = EIA-364-13

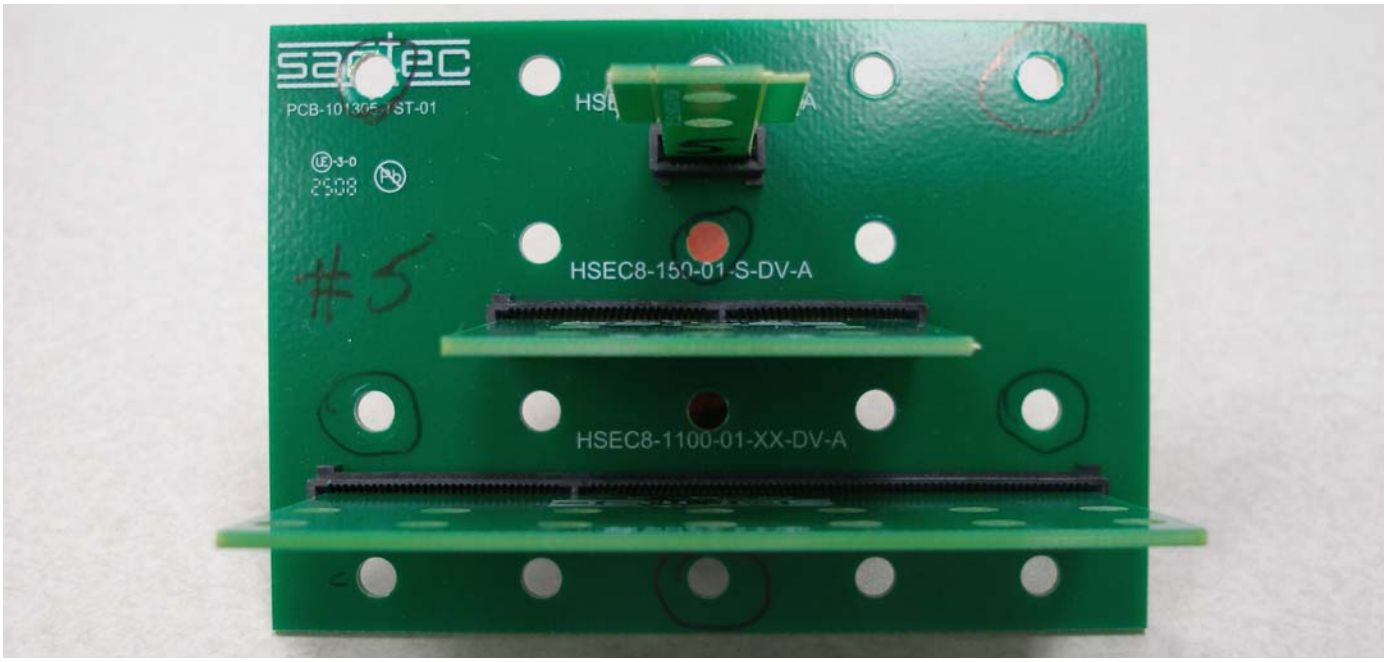
ATTRIBUTE DEFINITIONS

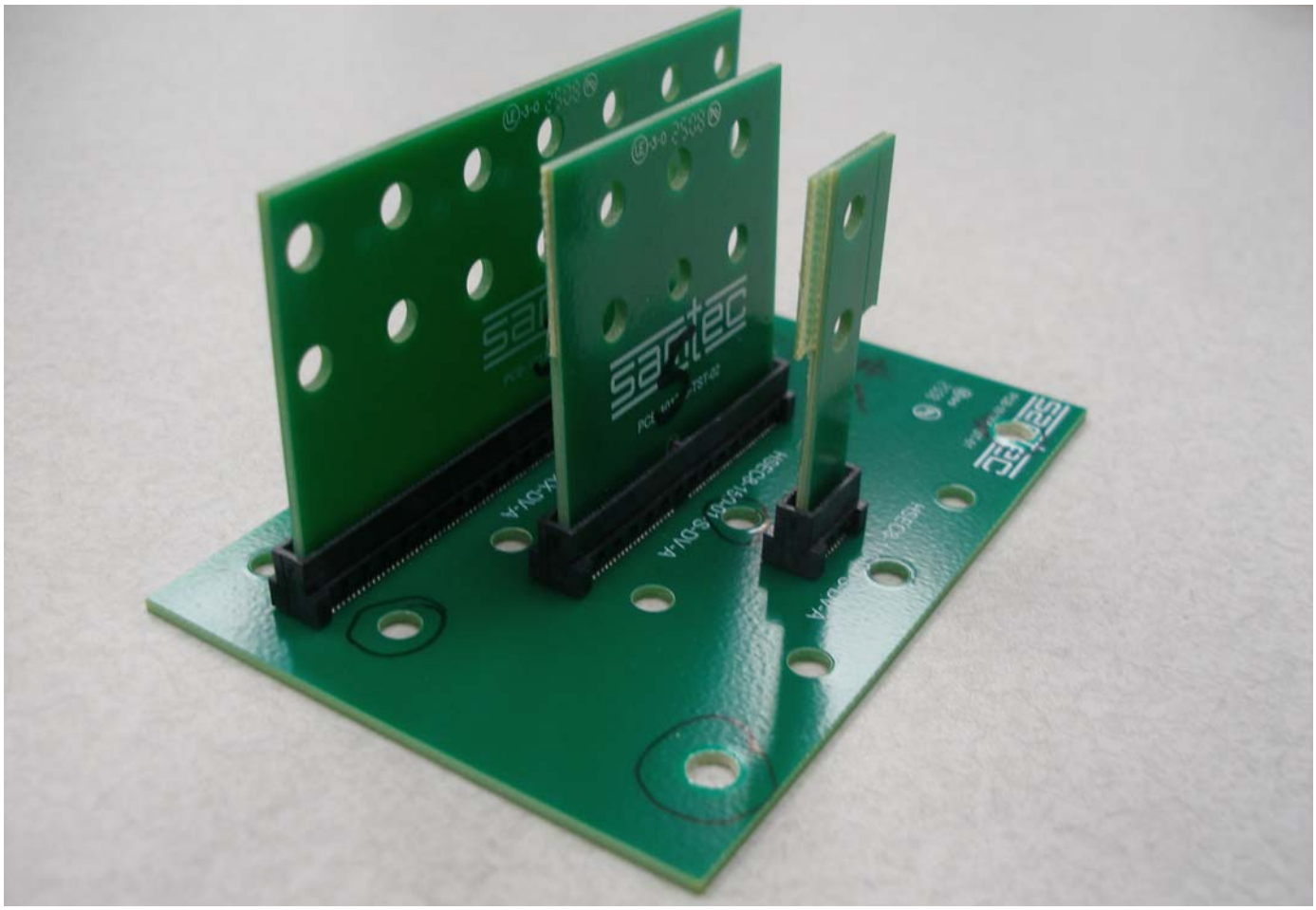
The following is a brief, simplified description of attributes.

MATING/UNMATING:

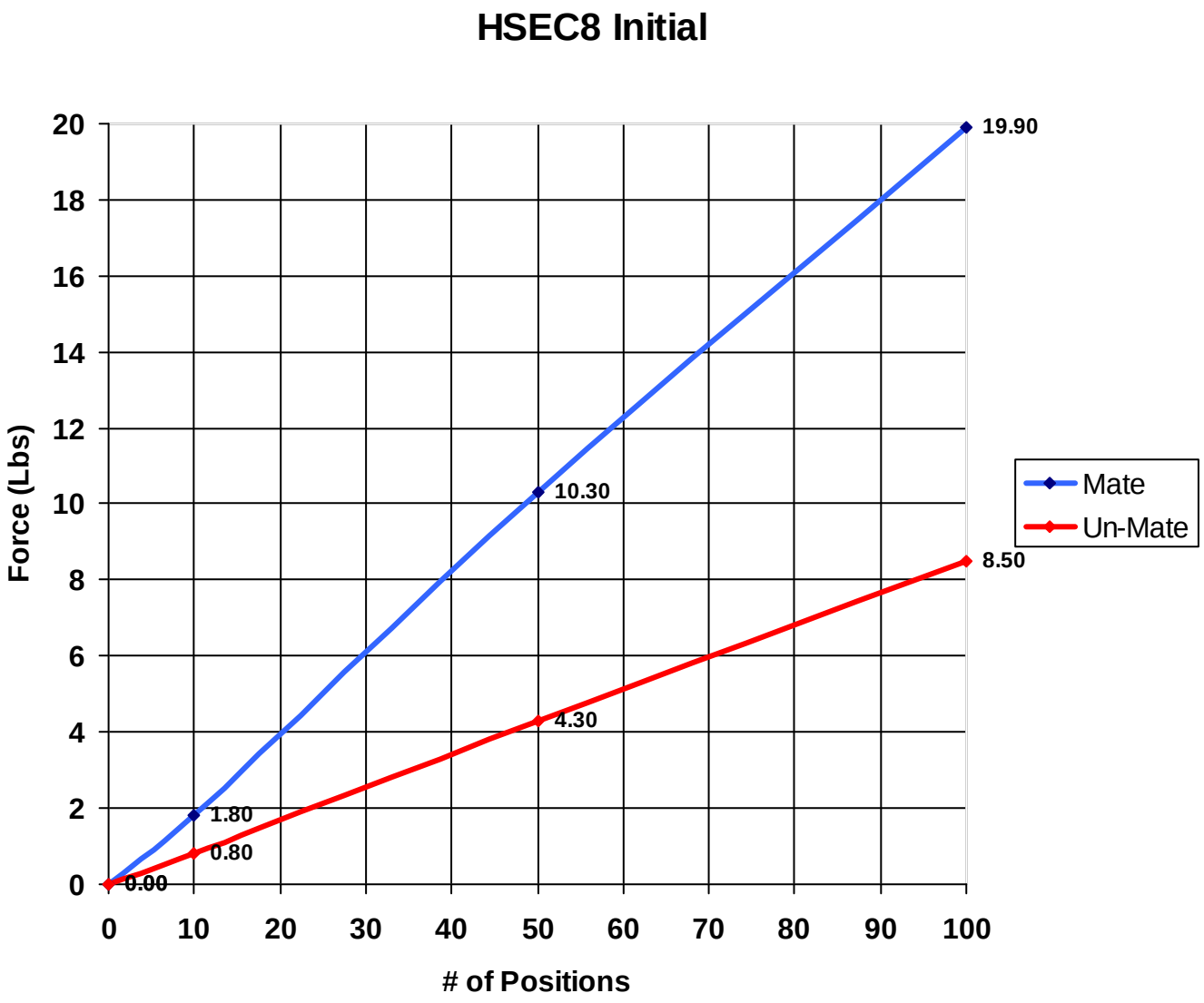
1) Reference document: EIA-364-13, *Mating and Unmating Forces Test Procedure for Electrical Connectors.*
2) The full insertion position was to within 0.003” to 0.004” of the plug bottoming out in the receptacle to prevent damage to the system under test.
3) One of the mating parts is secured to a floating X-Y table to prevent damage during cycling.

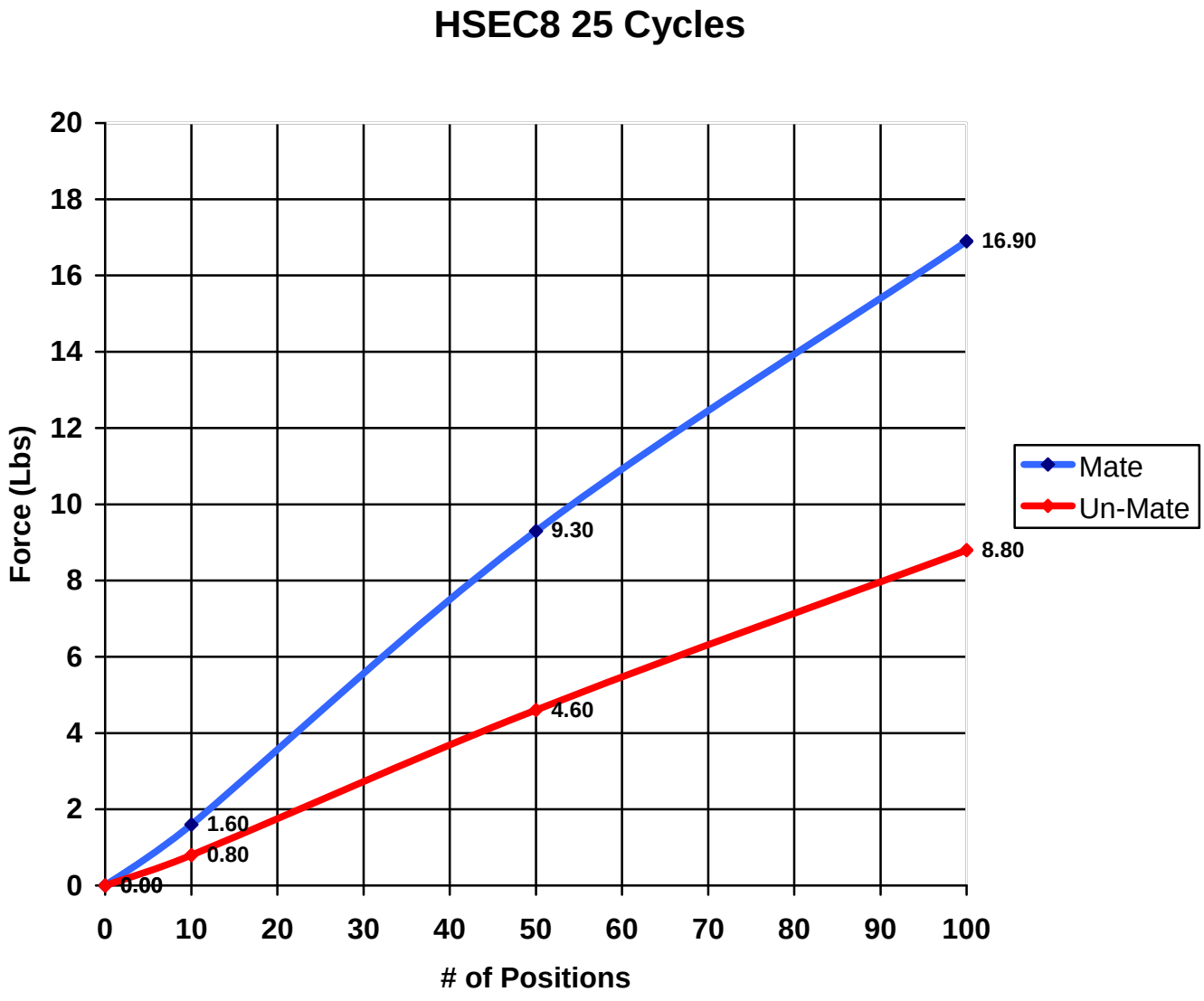
PICTURES

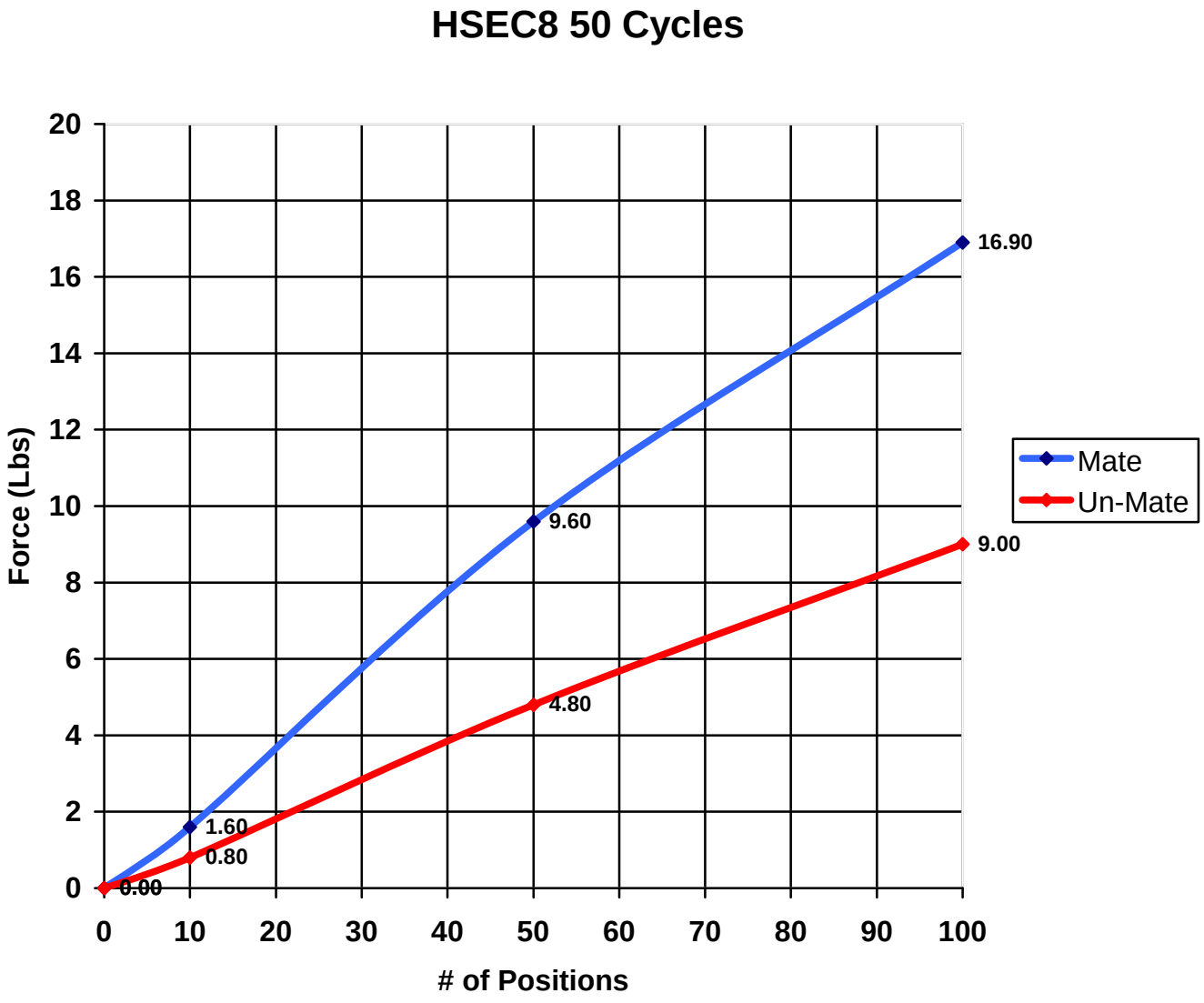


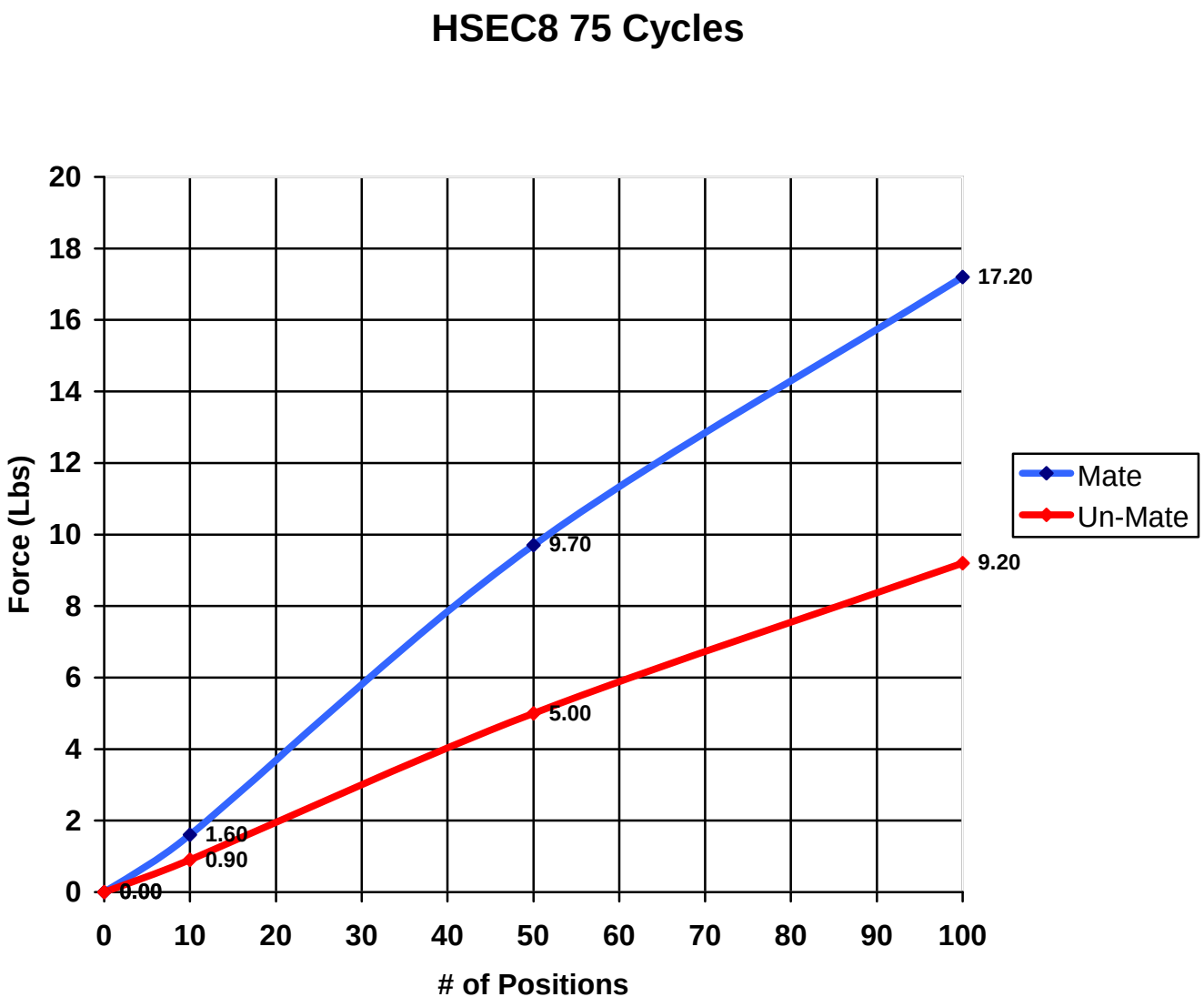


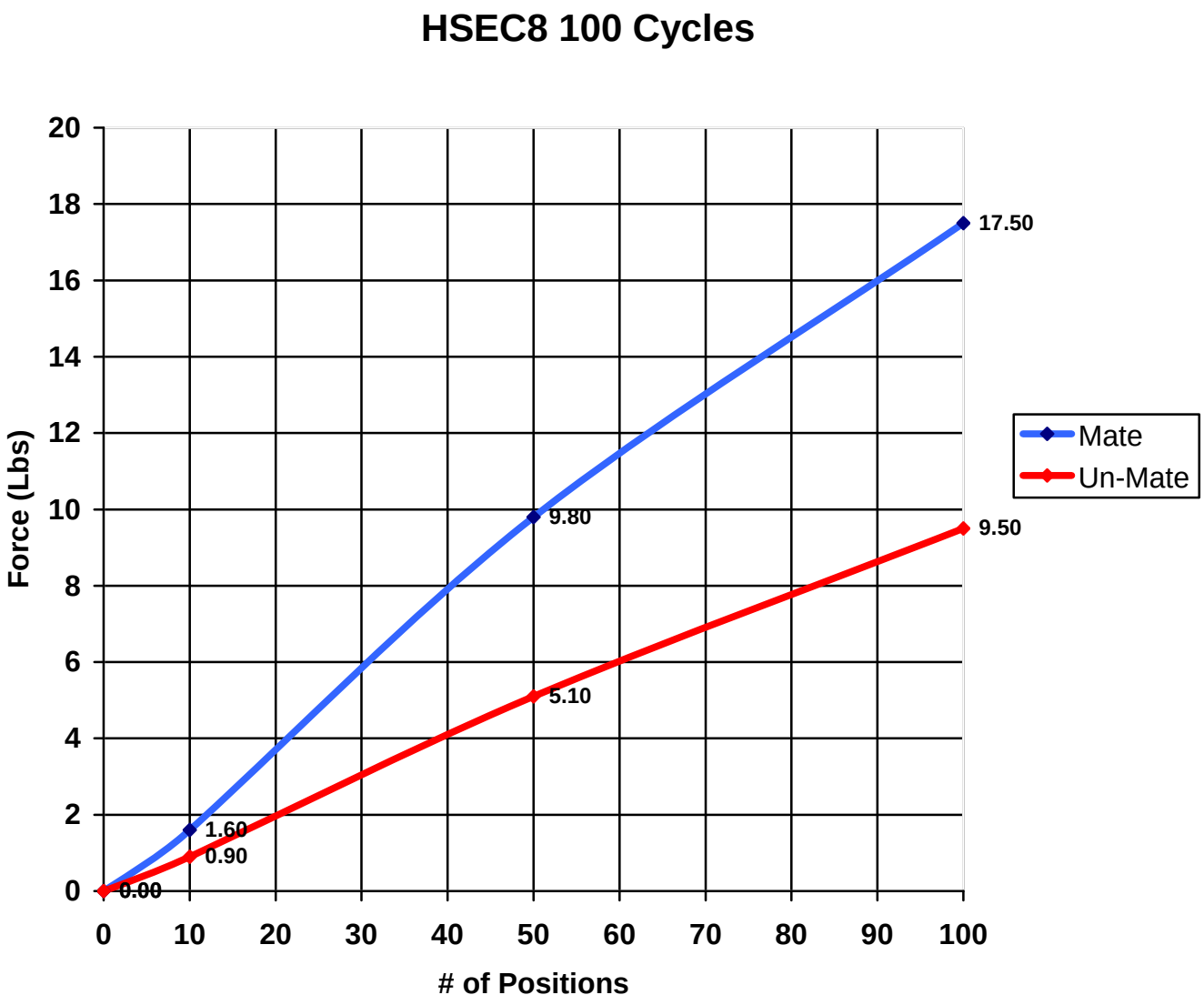
RESULTS


HSEC8 Initial
Force (Lbs)
# of Positions
Mate
Un-Mate
19.90
10.30
8.50
4.30
1.80
0.80
0.00
0
2
4
6
8
10
12
14
16
18
20
0
10
20
30
40
50
60
70
80
90
100


HSEC8 25 Cycles
Force (Lbs)
# of Positions
Mate
Un-Mate
16.90
9.30
8.80
4.60
1.60
0.80
0.00
0
2
4
6
8
10
12
14
16
18
20
0
10
20
30
40
50
60
70
80
90
100


HSEC8 50 Cycles
Force (Lbs)
# of Positions
Mate
Un-Mate
16.90
9.60
9.00
4.80
1.60
0.80
0.00
0
2
4
6
8
10
12
14
16
18
20
0
10
20
30
40
50
60
70
80
90
100


HSEC8 75 Cycles
Force (Lbs)
# of Positions
Mate
Un-Mate
17.20
9.70
1.60
0.00
9.20
5.00
0
2
4
6
8
10
12
14
16
18
20
0
10
20
30
40
50
60
70
80
90
100


HSEC8 100 Cycles
Force (Lbs)
# of Positions
Mate
Un-Mate
17.50
9.80
9.50
5.10
1.60
0.90
0.00
0
2
4
6
8
10
12
14
16
18
20
0
10
20
30
40
50
60
70
80
90
100

EQUIPMENT AND CALIBRATION SCHEDULES

Equipment #: TCT-03
Description: Dillon Quantrol TC2 Test Stand
Manufacturer: Dillon Quantrol
Model: TC2
Serial #: 02-1033-03
Accuracy: Speed Accuracy: +/- 5% of indicated speed; Displacement: +/- 5 micrometers.
… Last Cal: 5/18/07, Next Cal: 5/18/08

Equipment #: LC-500N-2
Description: 500 N icell load cell for Dillon Test Stand
Manufacturer: Mecmesin (Dillon/Quantrol)
Model: ILC
Serial #: 07-0192-12
Accuracy: .10% of Capacity
… Last Cal: 02/15/2008, Next Cal: 02/15/2009

Equipment #: Null
Description:
Manufacturer:
Model:
Serial #:
Accuracy:
… Last Cal: , Next Cal:

Equipment #: Null
Description:
Manufacturer:
Model:
Serial #:
Accuracy:
… Last Cal: , Next Cal: