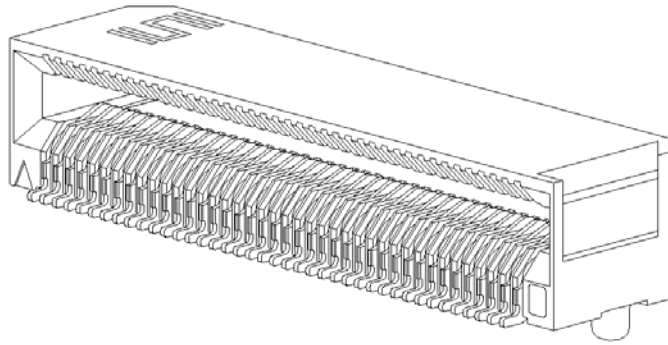




Project Number:		Tracking Code: TC069--0954	
Requested by: Richie Gimmel		Date: 2/27/2006	Product Rev: 2/27/06
Part #: NR-MEC6-150-02-LM-D-RA1		Lot #: 2/27/06	Tech: Troy Cook Eng: Dave Scopelliti
Part description: MEC6-RA1			Qty to test: 50
Test Start: 03/08/2005		Test Completed: 4/14/2006	



**MEC6-XX-02-XX-D-RA1
DVT Test Report**

CERTIFICATION

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

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SCOPE

To perform the following tests: See the flowchart located at:

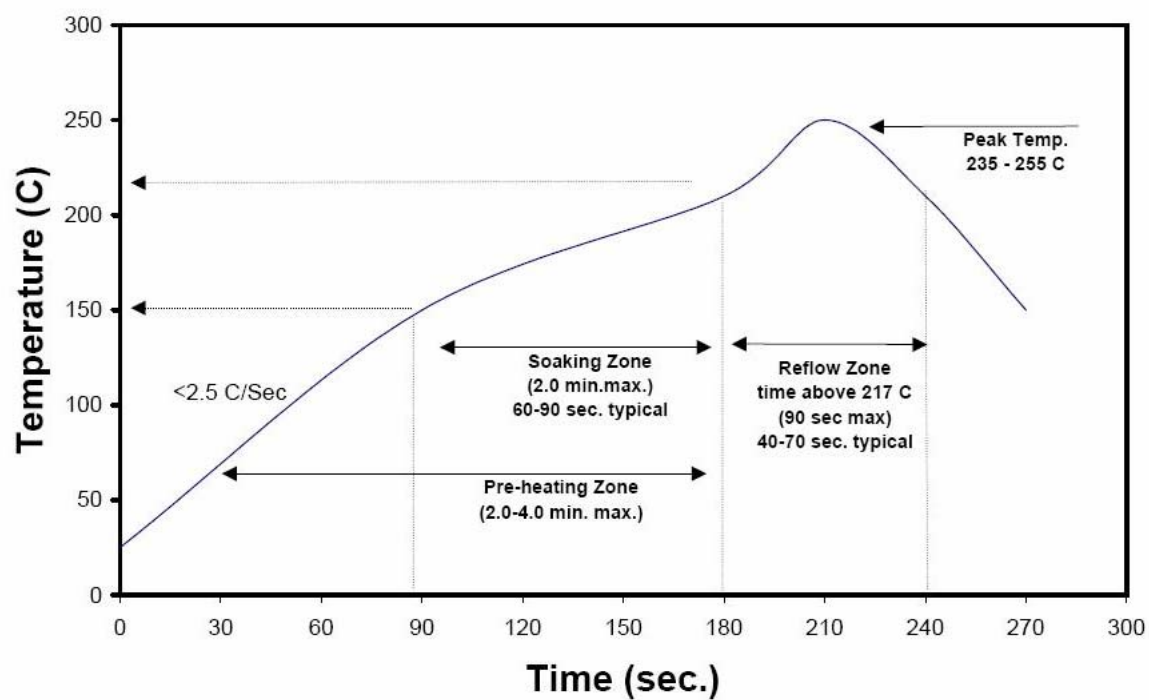
F:\DWG\APPLICAT\NPDOCS\EPMS\Projects\pt635\MEC6\Test\MEC6-RA062405.xls

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) The ultrasonic procedure can be used with either aqueous or non-aqueous soldering components and follows:
 - a. Sample test boards are to be ultrasonically cleaned after test lead attachment, preparation and/or soldering.
 - b. Sample test boards are immersed into Branson 3510 cleaner containing Kyzen Ionox HC1 (or equivalent) with the following conditions:
 - i. Temperature: -----55° C +/- 5° C
 - ii. Frequency:-----40 KHz
 - iii. Immersion Time: ---5 to 10 Minutes
 - c. Sample test boards are removed and placed into the Branson 3510 cleaner containing deionized water with the following conditions:
 - i. Temperature: -----55° C +/- 5° C
 - ii. Frequency:-----40 KHz
 - iii. Immersion Time: ---5 to 10 Minutes
 - d. Sample test boards are removed and placed in a beaker positioned on a hot plate with a magnetic stirrer containing deionized water warmed to 55° C +/- 5° C for 1/2 to 1 minute.
 - e. Upon removal, the sample boards are rinsed for 1/2 to 1 minute at room temperature with free flowing deionized water.
 - f. After the final rinse, the sample test boards are dried in an air-circulating oven for 10 to 15 minutes at 50° C +/- 5° C.
 - g. Sample test boards are then allowed to set and recover to room ambient condition prior to testing.
- 7) Parts not intended for testing LLCR and DWV/IR are visually inspected and cleaned if necessary.
- 8) Any additional preparation will be noted in the individual test sequences.
- 9) Solder Information:
- 10) Re-Flow Time/Temp: See accompanying profile.
- 11) Internal Test PCBs used: PCB-100368-TST-XX

OVEN PROFILE (Soldering Parts to Test Boards)**Kester Lead Free Reflow Profile**
Alloys: Sn96.5/Ag3.0/Cu0.5 and Sn96.5/Ag3.5

Tracking Code: TC069--0954	Part #: NR-MEC6-150-02-LM-D-RA1
Part description: MEC6-RA1	

FLOWCHARTS

Current Carrying Capacity

1 Piece	
TEST STEP	GROUP 1
	6 Adjacent Positions Powered
01	CCC

Mating/Unmating/Normal Force

TEST STEP	GROUP A	GROUP B1	GROUP B2
	10 Boards 100 Cycles	Individual Contacts (30) min	Individual Contacts (30) min
01	Contact Gaps	Setup Approve	Setup Approve
02	Mating / Unmating	Normal Force Upper Row	Thermal Aging (Mated)
03	Measure Board Thick	Normal Force Lower Row	Normal Force Upper Row
04	Data Review	Data Review	Normal Force Lower Row
05	100 Cycles		
06	Mating / Unmating		
07	Contact Gaps		
08	Data Review		
09	Thermal Aging (Mated)		
10	Mating / Unmating		
11	Contact Gaps		
12	Data Review		
13	Humidity (Mated)		
14	Mating / Unmating		
15	Contact Gaps		

IR / DWV

TEST STEP	GROUP A	GROUP B1	GROUP B2	GROUP B3
	2 Boards Ambient	2 Boards Ambient	2 Boards Thermal	2 Boards Humidity
01	IR	DWV/Working Voltage	Thermal Aging	Humidity
02	Data Review		DWV/Working Voltage	DWV/Working Voltage
03	Thermal Aging			
04	IR			
05	Data Review			
06	Humidity			
07	IR			

Tracking Code: TC069--0954	Part #: NR-MEC6-150-02-LM-D-RA1
Part description: MEC6-RA1	

FLOWCHARTS Continued

Durability/Thermal Age/Cyclic Humidity

TEST STEP	GROUP A 200 Points 100 Cycles
01	LLCR-1
02	Data Review
03	100 Cycles
04	LLCR-2
05	Data Review
06	Thermal Age
07	LLCR-3
08	Data Review
09	Cyclic Humidity
10	LLCR-4

ATTRIBUTE DEFINITIONS

The following is a brief, simplified description of attributes.

THERMAL:

- 1) EIA-364-17, *Temperature Life with or without Electrical Load Test Procedure for Electrical Connectors*.
- 2) Test Condition 4 at 105° C.
- 3) Test Time Condition B for 250 hours.
- 4) Connectors are sometimes mated and all samples are pre-conditioned at ambient.

HUMIDITY:

- 1) Reference document: EIA-364-31, *Humidity Test Procedure for Electrical Connectors*.
- 2) Test Condition B, 240 Hours.
- 3) Method III, +25° C to + 65° C, 90% to 98% Relative Humidity excluding sub-cycles 7a and 7b.
- 4) Connectors are sometimes mated and all samples are pre-conditioned at ambient.

TEMPERATURE RISE (Current Carrying Capacity, CCC):

- 1) EIA-364-70, *Temperature Rise versus Current Test Procedure for Electrical Connectors and Sockets*.
- 2) When current passes through a contact, the temperature of the contact increases as a result of I^2R (resistive) heating.
- 3) The number of contacts being investigated plays a significant part in power dissipation and therefore temperature rise.
- 4) The size of the temperature probe can affect the measured temperature.
- 5) Copper traces on PC boards will contribute to temperature rise:
 - a. Self heating (resistive)
 - b. Reduction in heat sink capacity affecting the heated contacts
- 6) A de-rating curve, usually 20%, is calculated.
- 7) Calculated de-rated currents at three temperature points are reported:
 - a. Ambient
 - b. 80° C
 - c. 95° C
 - d. 115° C
- 8) Typically, neighboring contacts (in close proximity to maximize heat build up) are energized.
- 9) The thermocouple (or temperature measuring probe) will be positioned at a location to sense the maximum temperature in the vicinity of the heat generation area.
- 10) A computer program, *TR 803.exe*, ensures accurate stability for data acquisition.
- 11) Hook-up wire cross section is larger than the cross section of any connector leads/PC board traces, jumpers, etc.
- 12) Hook-up wire length is longer than the minimum specified in the referencing standard.

CONTACT GAPS:

- 1) Contact Gaps were measured before and after stressing the contacts (e.g. thermal aging, mechanical cycling, etc.).
- 2) Typically, all contacts on the connector are measured.

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.

NORMAL FORCE (FOR CONTACTS TESTED IN THE HOUSING):

- 1) Reference document: EIA-364-04, *Normal Force Test Procedure for Electrical Connectors*.
- 2) The contacts shall be tested in the connector housing.
- 3) If necessary, a "window" shall be made in the connector body to allow a probe to engage and deflect the contact at the same attitude and distance (plus 0.05 mm [0.002"]) as would occur in actual use.
- 4) The connector housing shall be placed in a holding fixture that does not interfere with or otherwise influence the contact force or deflection.
- 5) Said holding fixture shall be mounted on a floating, adjustable, X-Y table on the base of the Dillon TC², computer controlled test stand with a deflection measurement system accuracy of 5.0 μ m (0.0002").
- 6) The nominal deflection rate shall be 5 mm (0.2")/minute.
- 7) Unless otherwise noted a minimum of five contacts shall be tested.
- 8) The force/deflection characteristic to load and unload each contact shall be repeated five times.
- 9) The system shall utilize the TC² software in order to acquire and record the test data.
- 10) The permanent set of each contact shall be measured within the TC² software.
- 11) The acquired data shall be graphed with the deflection data on the X-axis and the force data on the Y-axis and a print out will be stored with the Tracking Code paperwork.

INSULATION RESISTANCE (IR):

To determine the resistance of insulation materials to leakage of current through or on the surface of these materials when a DC potential is applied.

- 1) PROCEDURE:
 - a. Reference document: EIA-364-21, *Insulation Resistance Test Procedure for Electrical Connectors*.
 - b. Test Conditions:
 - i. Between Adjacent Contacts
 - ii. Electrification Time 2.0 minutes
 - iii. Test Voltage (500 VDC) corresponds to calibration settings for measuring resistances.
- 2) MEASUREMENTS:
- 3) When the specified test voltage is applied (VDC), the insulation resistance shall not be less than 100 megohms.

DIELECTRIC WITHSTANDING VOLTAGE (DWV):

To determine if the sockets can operate at its rated voltage and withstand momentary over potentials due to switching, surges, and other similar phenomenon. Separate samples are used to evaluate the effect of environmental stresses so not to influence the readings from arcing that occurs during the measurement process.

- 1) PROCEDURE:
 - a. Reference document: EIA-364-20, *Withstanding Voltage Test Procedure for Electrical Connectors*.
 - b. Test Conditions:
 - i. Between Adjacent Contacts
 - ii. Rate of Application 500 V/Sec
 - iii. Test Voltage (VAC) until breakdown occurs

2) MEASUREMENTS/CALCULATIONS

- a. The breakdown voltage shall be measured and recorded.
- b. The dielectric withstanding voltage shall be recorded as 75% of the minimum breakdown voltage.
- c. The working voltage shall be recorded as one-third (1/3) of the dielectric withstanding voltage (one-fourth of the breakdown voltage).

LLCR:

- 1) EIA-364-23, *Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets*.
- 2) A computer program, *LLCR 221.exe*, ensures repeatability for data acquisition.
- 3) The following guidelines are used to categorize the changes in LLCR as a result from stressing
 - a. $\leq +5.0$ mOhms: ----- Stable
 - b. $+5.1$ to $+10.0$ mOhms: ----- Minor
 - c. $+10.1$ to $+15.0$ mOhms: ----- Acceptable
 - d. $+15.1$ to $+50.0$ mOhms: ----- Marginal
 - e. $+50.1$ to $+2000$ mOhms: ----- Unstable
 - f. $>+2000$ mOhms: ----- Open Failure

RESULTS**Temperature Rise, CCC at a 20% de-rating**

- CCC for a 30°C Temperature Rise-----3.2 A per contact with 6 adjacent contacts powered

Contact Gap

- Initial
 - Min-----.881 mm
 - Max-----.951 mm
- After 100 Cycles
 - Min-----.973 mm
 - Max-----1.120 mm
- Thermal
 - Min-----1.165 mm
 - Max-----1.301 mm
- Humidity
 - Min-----1.188 mm
 - Max-----1.279 mm

Mating – Unmating Forces

- Initial
 - Mating
 - Min-----10.5 Lb.
 - Max-----15.0 Lb.
 - Unmating
 - Min-----6.8 Lb.
 - Max-----10.2 Lb.
- After 100 Cycles
 - Mating
 - Min-----11.4 Lb.
 - Max-----16.6 Lb.
 - Unmating
 - Min-----9.7 Lb.
 - Max-----15.2 Lb.
- Thermal
 - Mating
 - Min-----6.6 Lb.
 - Max-----10.7 Lb.
 - Unmating
 - Min-----5.3 Lb.
 - Max-----10.4 Lb.
- Humidity
 - Mating
 - Min-----5.4 Lb.
 - Max-----7.7 Lb.
 - Unmating
 - Min-----2.9 Lb.
 - Max-----5.1 Lb.

Normal Force at .015” (.381 mm) deflection

- Initial
 - Min-----94.1 grams Set ----- .0007” (.018 mm)
 - Max-----176.0 grams Set ----- .0039” (.099 mm)
- Thermal
 - Min-----102.6 grams
 - Max-----185.8 grams

Insulation Resistance minimums, IR

- **Initial**
 - **Mated**-----100,000 Meg Ω ----- Pass
 - **Unmated** -----100,000 Meg Ω
- **Thermal**
 - **Mated**-----100,000 Meg Ω
 - **Unmated** -----100,000 Meg Ω
- **Humidity**
 - **Mated**-----100,000 Meg Ω
 - **Unmated** -----100,000 Meg Ω

Dielectric Withstanding Voltage minimums, DWV

- **Initial**
 - **Breakdown**
 - **Mated**-----780 VAC
 - **Unmated**-----1,100 VAC
 - **DWV**
 - **Mated**-----525 VAC
 - **Unmated**-----825 VAC
 - **Working voltage**
 - **Mated**-----195 VAC
 - **Unmated**-----275 VAC
- **Thermal**
 - **Breakdown**
 - **Mated**-----550 VAC
 - **Unmated**-----1,000 VAC
 - **DWV**
 - **Mated**-----413 VAC
 - **Unmated**-----750 VAC
 - **Working voltage**
 - **Mated**-----138 VAC
 - **Unmated**-----250 VAC
- **Humidity**
 - **Breakdown**
 - **Mated**-----720 VAC
 - **Unmated**-----1,000 VAC
 - **DWV**
 - **Mated**-----540 VAC
 - **Unmated**-----750 VAC
 - **Working voltage**
 - **Mated**-----180 VAC
 - **Unmated**-----250 VAC

LLCR Durability (200 LLCR test points)

- **Initial**----- 18.3 mOhms Max
- **Durability, 100 Cycles**
 - **<= +5.0 mOhms** -----200 Points ----- Stable
 - **+5.1 to +10.0 mOhms** -----0 Points ----- Minor
 - **+10.1 to +15.0 mOhms** -----0 Points ----- Acceptable
 - **+15.1 to +50.0 mOhms** -----0 Points ----- Marginal
 - **+50.1 to +2000 mOhms** -----0 Points ----- Unstable
 - **>+2000 mOhms** -----0 Points ----- Open Failure

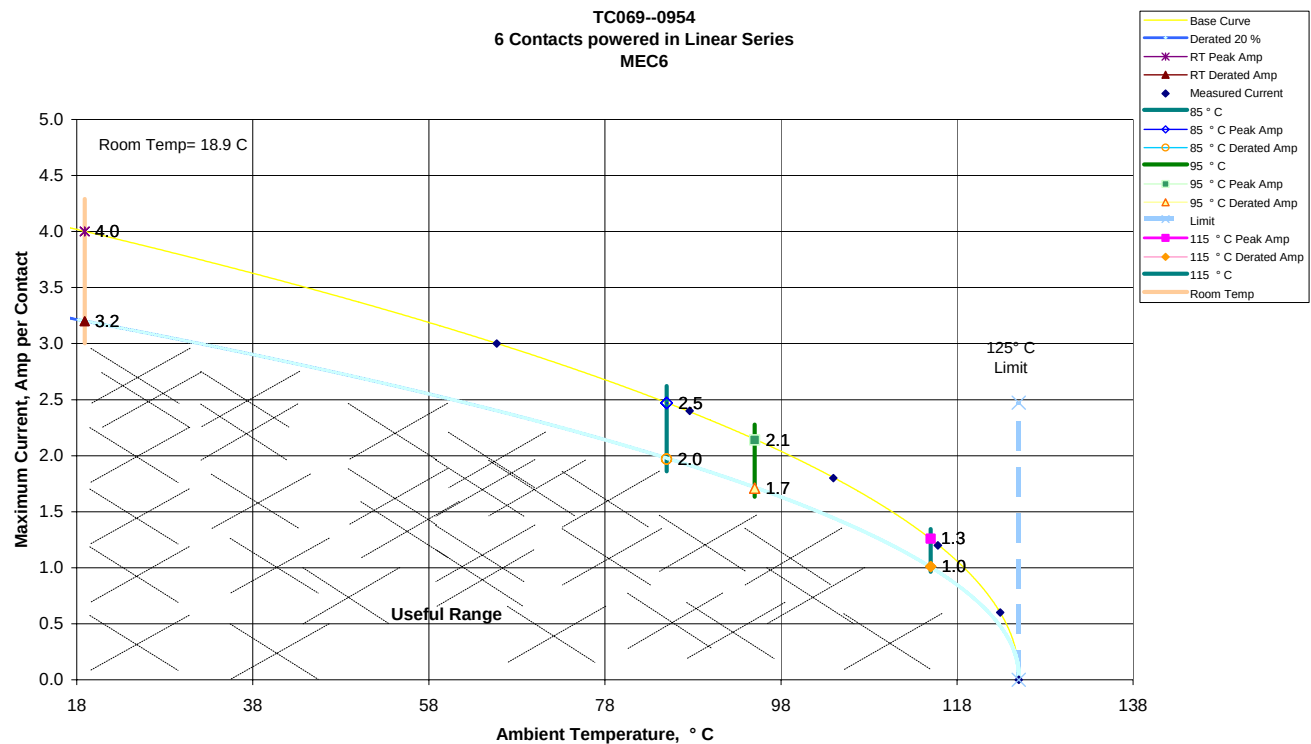
Tracking Code: TC069--0954	Part #: NR-MEC6-150-02-LM-D-RA1
Part description: MEC6-RA1	

- **Thermal**
 - o <= +5.0 mOhms -----200 Points ----- Stable
 - o +5.1 to +10.0 mOhms -----0 Points ----- Minor
 - o +10.1 to +15.0 mOhms -----0 Points ----- Acceptable
 - o +15.1 to +50.0 mOhms -----0 Points ----- Marginal
 - o +50.1 to +2000 mOhms -----0 Points ----- Unstable
 - o >+2000 mOhms -----0 Points ----- Open Failure
 - o
- **Humidity**
 - o <= +5.0 mOhms -----193 Points ----- Stable
 - o +5.1 to +10.0 mOhms -----3 Points ----- Minor
 - o +10.1 to +15.0 mOhms -----4 Points ----- Acceptable
 - o +15.1 to +50.0 mOhms -----0 Points ----- Marginal
 - o +50.1 to +2000 mOhms -----0 Points ----- Unstable
 - o >+2000 mOhms -----0 Points ----- Open Failure

DATA SUMMARIES

TEMPERATURE RISE (Current Carrying Capacity, CCC):

- 1) High quality thermocouples whose temperature slopes track one another were used for temperature monitoring.
- 2) The thermocouples were placed at a location to sense the maximum temperature generated during testing.
- 3) Temperature readings recorded are those for which three successive readings, 15 minutes apart, differ less than 1° C (computer controlled data acquisition).
- 4) Adjacent contacts were powered:
 - a. Linear configuration with six adjacent conductors/contacts powered



DATA SUMMARIES Continued

CONTACT GAPS:

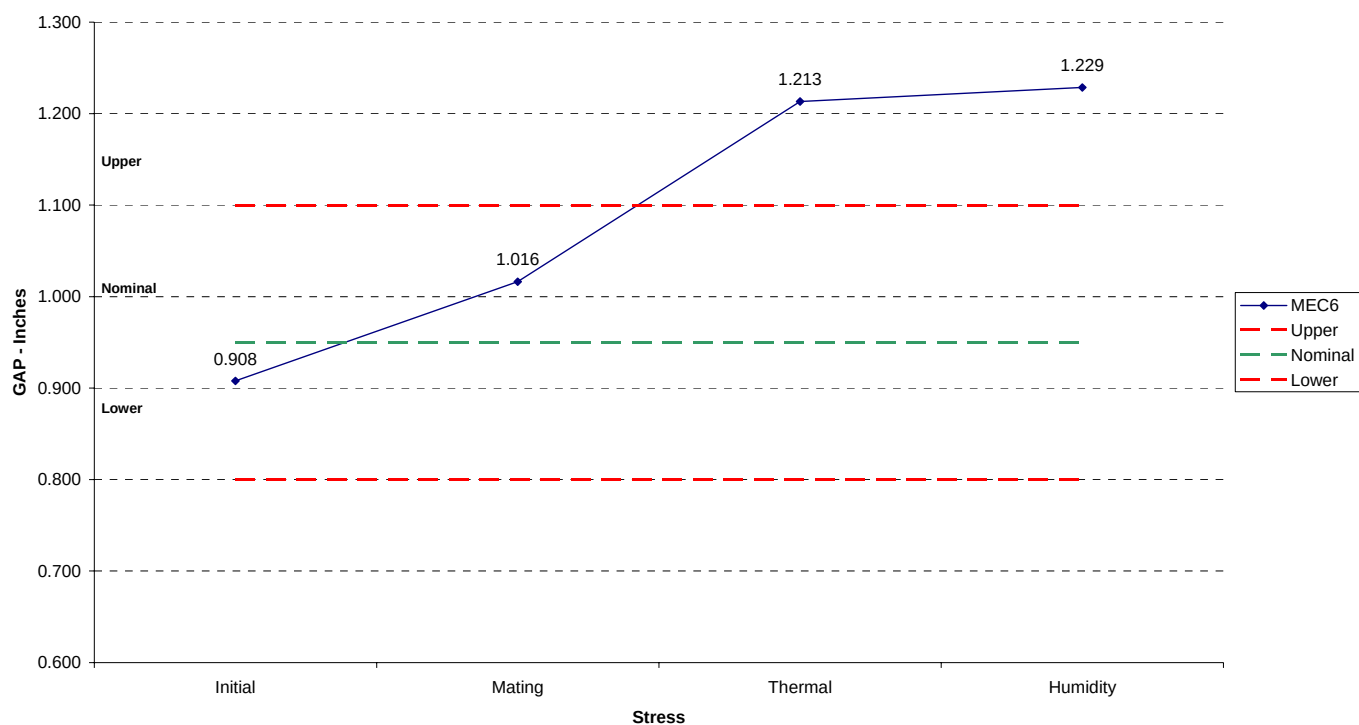
Initial	
Measurements in mm	
Minimum	0.8814
Maximum	0.9509
Average	0.9079
St. Dev.	0.0109
Count	500

After 100 Cycles	
Measurements in mm	
Minimum	0.9726
Maximum	1.1201
Average	1.0162
St. Dev.	0.0256
Count	500

After Thermal	
Measurements in mm	
Minimum	1.1650
Maximum	1.3009
Average	1.2133
St. Dev.	0.0133
Count	500

After Humidity	
Measurements in mm	
Minimum	1.1880
Maximum	1.2790
Average	1.2286
St. Dev.	0.0116
Count	500

Height Measurements

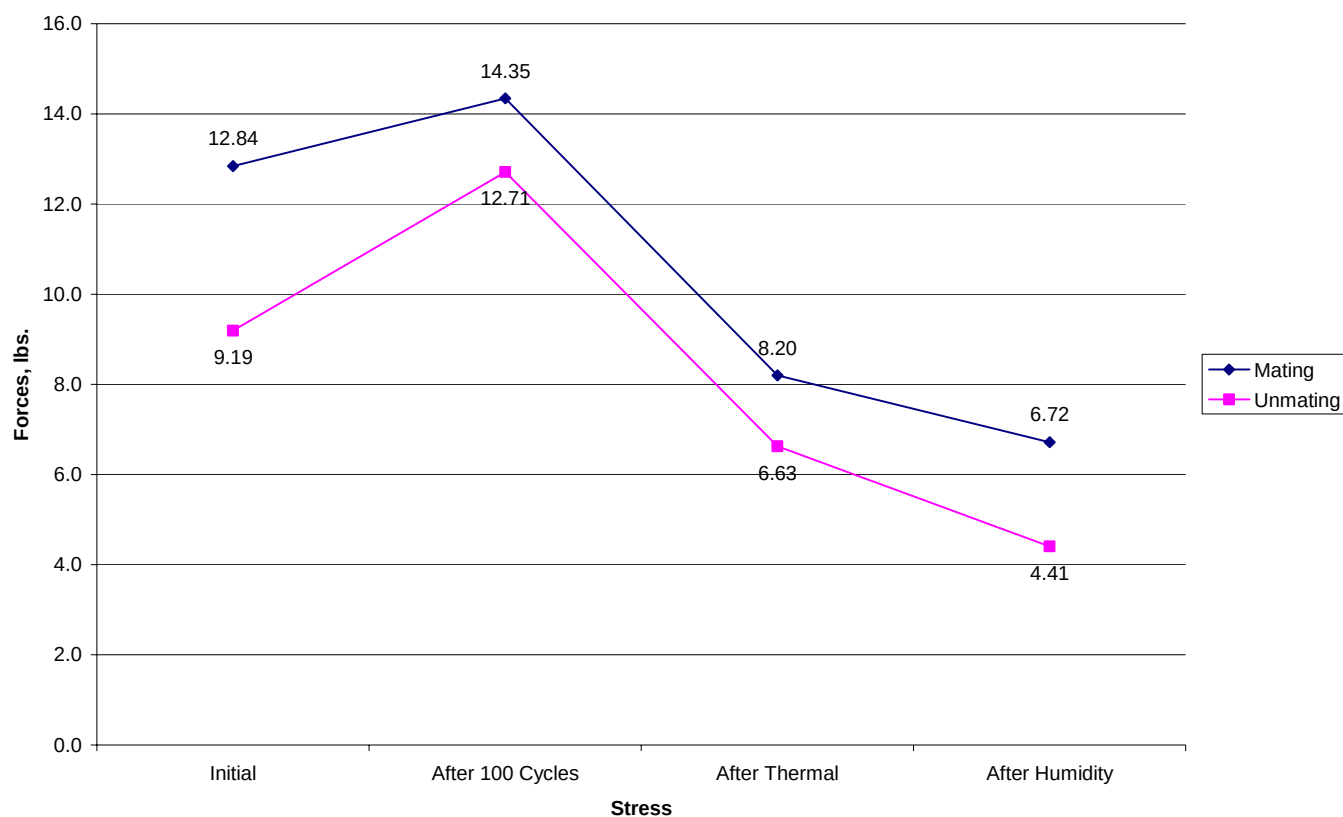


DATA SUMMARIES Continued

MATING/UNMATING:

	Initial				After 100 Cycles			
	Mating		Unmating		Mating		Unmating	
	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)
Minimum	168.3	10.52	108.5	6.78	182.7	11.42	154.6	9.66
Maximum	240.6	15.0	163.8	10.2	266.2	16.6	242.6	15.2
Average	205.4	12.8	147.1	9.2	229.5	14.3	203.4	12.7
	After Thermal				After Humidity			
	Mating		Unmating		Mating		Unmating	
	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)
Minimum	105.1	6.6	84.5	5.3	86.6	5.4	46.1	2.9
Maximum	171.3	10.7	166.4	10.4	122.6	7.7	81.3	5.1
Average	131.2	8.2	106.0	6.6	107.5	6.7	70.5	4.4

Mating/Unmating Compare



DATA SUMMARIES Continued**NORMAL FORCE (FOR CONTACTS TESTED IN THE HOUSING):**

- 1) Calibrated force gauges are used along with computer controlled positioning equipment.
- 2) Typically, 8-10 readings are taken and the averages reported.

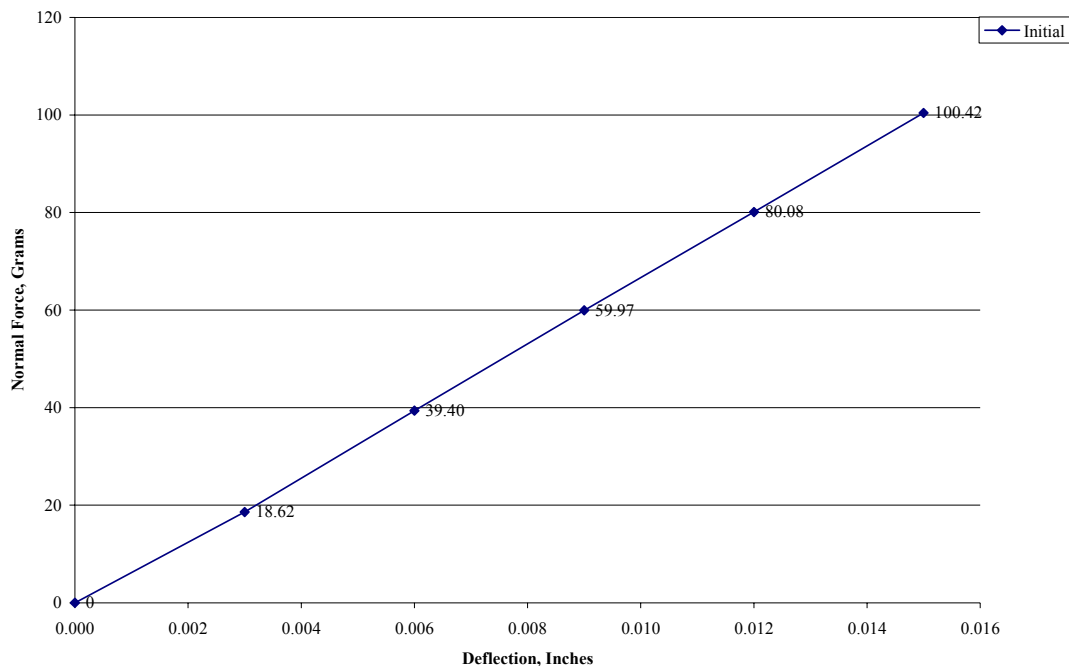
Initial Top	Deflections in inches Forces in Grams					
	<u>0.0030</u>	<u>0.0060</u>	<u>0.0090</u>	<u>0.0120</u>	<u>0.0150</u>	<u>SET</u>
Ave.	18.62	39.40	59.97	80.08	100.42	0.0008
Min	17.30	36.50	56.10	75.30	94.10	0.0007
Max	20.60	42.80	64.60	85.60	107.70	0.0009
St. Dev	1.47	2.62	3.75	4.85	6.05	0.0001
Count	6	6	6	6	6	6

Initial Bottom	Deflections in inches Forces in Grams					
	<u>0.0030</u>	<u>0.0060</u>	<u>0.0090</u>	<u>0.0120</u>	<u>0.0150</u>	<u>SET</u>
Ave.	44.48	89.72	129.40	157.03	172.07	0.0036
Min	40.60	85.60	126.40	146.00	165.50	0.0030
Max	46.80	92.30	132.10	161.00	176.00	0.0039
St. Dev	2.17	2.70	1.98	5.57	3.79	0.0003
Count	6	6	6	6	6	6

Thermal Top	Deflections in inches Forces in Grams					
	<u>0.0030</u>	<u>0.0060</u>	<u>0.0090</u>	<u>0.0120</u>	<u>0.0150</u>	<u>SET</u>
Ave.	18.97	39.43	60.73	81.12	103.85	0.0003
Min	18.10	38.30	59.00	79.20	102.60	0.0001
Max	19.40	40.50	61.90	82.40	105.40	0.0004
St. Dev	0.58	0.74	1.18	1.16	1.11	0.0001
Count	6	6	6	6	6	6

Thermal Bottom	Deflections in inches Forces in Grams					
	<u>0.0030</u>	<u>0.0060</u>	<u>0.0090</u>	<u>0.0120</u>	<u>0.0150</u>	<u>SET</u>
Ave.	46.20	95.05	144.10	172.13	183.30	0.0036
Min	44.20	93.80	141.40	169.80	180.10	0.0035
Max	46.80	95.90	153.30	174.40	185.80	0.0036
St. Dev	1.06	0.96	4.53	1.47	2.06	0.0001
Count	6	6	6	6	6	6

Average Top Normal Force Initial



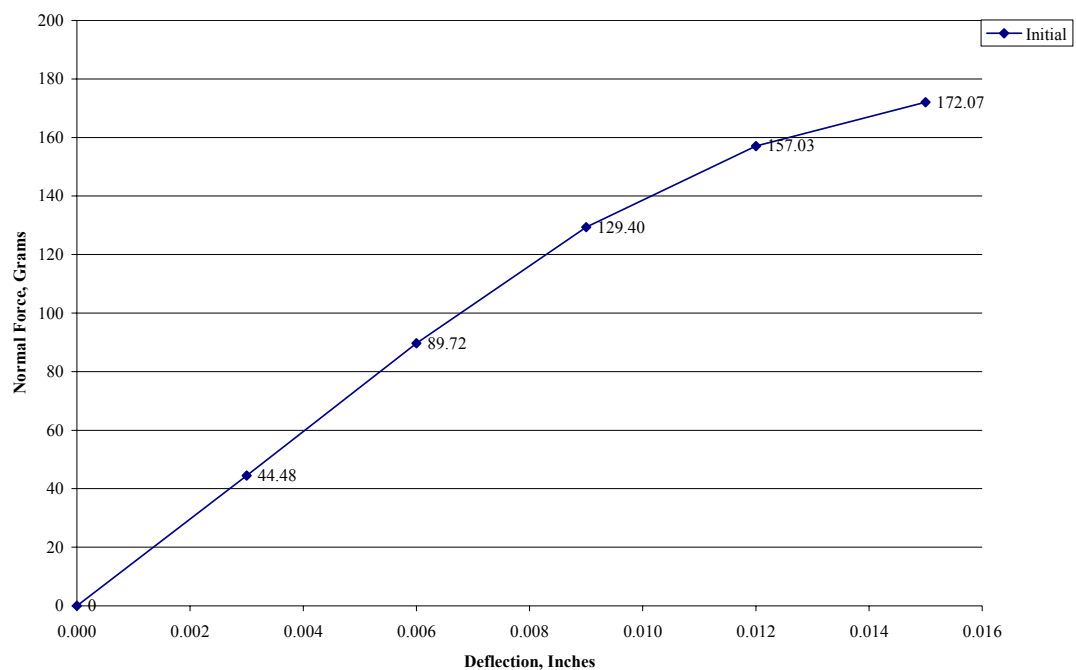
Tracking Code: TC069--0954

Part #: NR-MEC6-150-02-LM-D-RA1

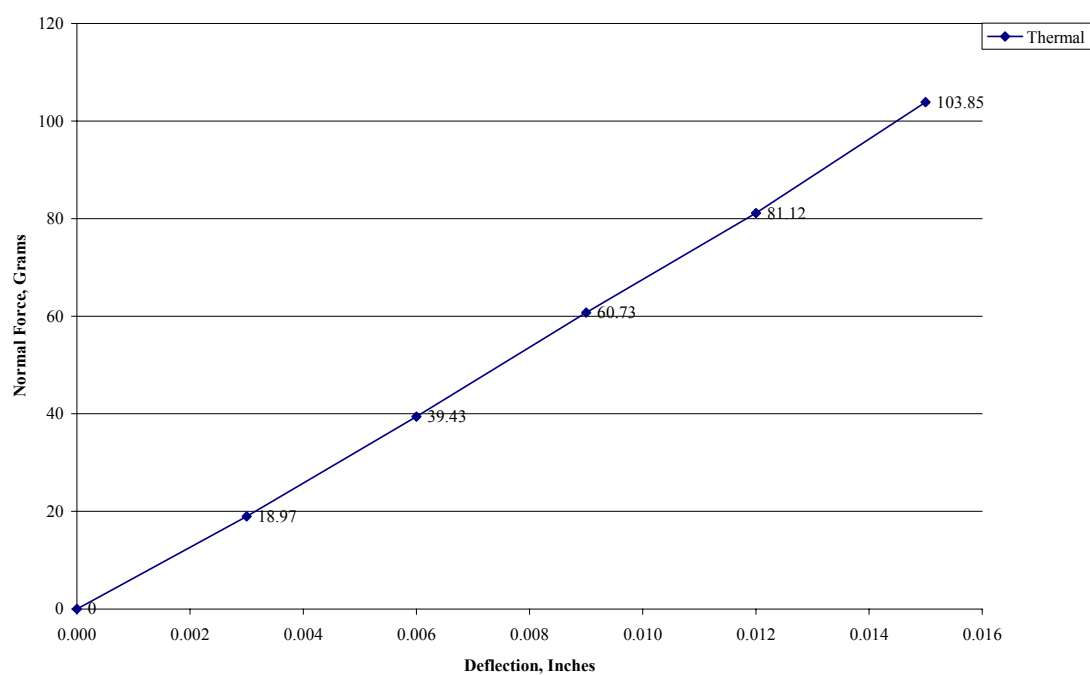
Part description: MEC6-RA1

DATA SUMMARIES Continued

Average Bottom Normal Force Initial

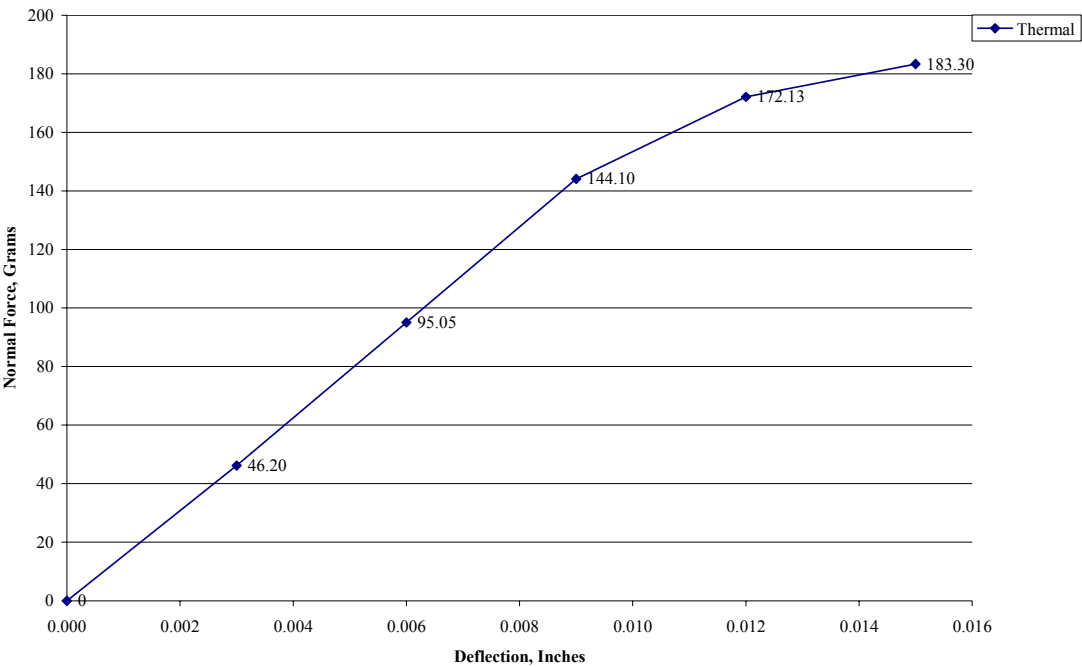


Average Top Normal Force After Thermals



DATA SUMMARIES Continued

Average Bottom Normal Force After Thermals



INSULATION RESISTANCE (IR):

	Initial, Meg Ohms		Thermal, Meg Ohms		Humidity, Meg Ohms	
	Mated	Unmated	Mated	Unmated	Mated	Unmated
	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>
Average	100000	100000	100000	100000	100000	100000
Min	100000	100000	100000	100000	100000	100000
Max	100000	100000	100000	100000	100000	100000

DATA SUMMARIES Continued**DIELECTRIC WITHSTANDING VOLTAGE (DWV):**

	Initial, VAC Mated			Initial, VAC Unmated		
	<u>Breakdown Voltage</u>	<u>DWV</u>	<u>Working Voltage</u>	<u>Breakdown Voltage</u>	<u>DWV</u>	<u>Working Voltage</u>
Average	780	585	195	1100	825	275
Min	780	585	195	1100	825	275
Max	780	585	195	1100	825	275

	Thermal, VAC Mated			Thermal, VAC Unmated		
	<u>Breakdown Voltage</u>	<u>DWV</u>	<u>Working Voltage</u>	<u>Breakdown Voltage</u>	<u>DWV</u>	<u>Working Voltage</u>
Average	550	413	138	1000	750	250
Min	550	413	138	1000	750	250
Max	550	413	138	1000	750	250

	Humidity, VAC Mated			Humidity, VAC Unmated		
	<u>Breakdown Voltage</u>	<u>DWV</u>	<u>Working Voltage</u>	<u>Breakdown Voltage</u>	<u>DWV</u>	<u>Working Voltage</u>
Average	720	540	180	1000	750	250
Min	720	540	180	1000	750	250
Max	720	540	180	1000	750	250

LLCR:

- 1) A total of 200 points were measured.
- 2) EIA-364-23, *Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets*.
- 3) A computer program, *LLCR 221.exe*, ensures repeatability for data acquisition.
- 4) The following guidelines are used to categorize the changes in LLCR as a result from stressing.
 - a. $\leq +5.0$ mOhms: ----- Stable
 - b. $+5.1$ to $+10.0$ mOhms: ----- Minor
 - c. $+10.1$ to $+15.0$ mOhms: ----- Acceptable
 - d. $+15.1$ to $+50.0$ mOhms: ----- Marginal
 - e. $+50.1$ to $+2000$ mOhms ----- Unstable
 - f. $>+2000$ mOhms: ----- Open Failure

Date	Mar. 09 2006	Mar. 10 2006	Mar. 23 2006	Apr. 07 2006
Room Temp C	23	24	20	21
RH	34%	34%	20%	32%
Name	Troy Cook	Troy Cook	Terry Spine	Troy Cook
mOhm values	Actual	Delta 100 Cycles	Delta Thermal	Delta Humidity
Average	13.9	0.1	0.5	1.3
St. Dev.	2.4	0.7	0.7	2.0
Min	11.2	-1.8	-1.7	-1.3
Max	18.3	2.3	2.4	13.5
Count	200	200	200	200

DATA

CONTACT GAPS:

Initial		Measurements in mm								
Sample#	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
1	0.9258	0.9274	0.9299	0.9305	0.9509	0.9413	0.9349	0.9258	0.9241	0.9236
2	0.9325	0.9260	0.9347	0.9192	0.9386	0.9277	0.9345	0.9198	0.9334	0.9232
3	0.9300	0.9217	0.9347	0.9228	0.9317	0.9358	0.9265	0.9254	0.9343	0.9217
4	0.9171	0.9132	0.9282	0.9172	0.9293	0.9324	0.9216	0.9146	0.9317	0.9180
5	0.9154	0.9129	0.9162	0.9159	0.9280	0.9167	0.9111	0.9142	0.9199	0.9168
6	0.9110	0.9044	0.9137	0.9084	0.9128	0.9235	0.9101	0.9095	0.9038	0.9052
7	0.9119	0.9067	0.9136	0.9083	0.9145	0.9218	0.9090	0.9069	0.9065	0.9067
8	0.9140	0.9119	0.9121	0.9114	0.9093	0.9182	0.9148	0.9035	0.9070	0.9089
9	0.9086	0.9077	0.9125	0.9109	0.9061	0.9144	0.9092	0.9078	0.9129	0.9101
10	0.9038	0.9004	0.9145	0.9047	0.9061	0.9172	0.9016	0.9068	0.9185	0.9063
11	0.9017	0.9020	0.9071	0.9051	0.9039	0.9021	0.9022	0.8942	0.9052	0.8997
12	0.8978	0.8940	0.9033	0.9036	0.9034	0.9034	0.8940	0.8913	0.9026	0.8938
13	0.8993	0.8946	0.9080	0.9035	0.9107	0.9137	0.9060	0.9030	0.9032	0.8947
14	0.9021	0.8890	0.9077	0.9036	0.9043	0.9092	0.8944	0.8987	0.9124	0.8993
15	0.9007	0.8934	0.9009	0.8954	0.9054	0.9106	0.8959	0.9010	0.9005	0.8982
16	0.8825	0.8956	0.9059	0.8975	0.9022	0.9161	0.8914	0.8929	0.8978	0.8964
17	0.8992	0.8894	0.9011	0.8952	0.9042	0.9081	0.8986	0.8965	0.8998	0.8973
18	0.8936	0.8922	0.9057	0.9043	0.9065	0.9134	0.8893	0.9002	0.9000	0.9056
19	0.8917	0.8986	0.9061	0.8961	0.9112	0.9026	0.8941	0.8981	0.9001	0.8980
20	0.8958	0.8965	0.9021	0.8993	0.9042	0.8995	0.8891	0.8911	0.9010	0.8903
21	0.8943	0.8941	0.9032	0.8980	0.9014	0.9015	0.8842	0.9003	0.8986	0.8968
22	0.8981	0.9006	0.9060	0.9025	0.9052	0.9141	0.8889	0.8986	0.9079	0.8988
23	0.9014	0.9060	0.9077	0.9109	0.9054	0.9103	0.8927	0.8994	0.9117	0.8973
24	0.9027	0.8965	0.8974	0.8993	0.8968	0.9062	0.8814	0.8933	0.8951	0.8961
25	0.9025	0.8948	0.9095	0.9057	0.9135	0.9069	0.8908	0.9071	0.9096	0.8971
26	0.9022	0.8940	0.9137	0.9014	0.9128	0.9066	0.9092	0.9011	0.9110	0.8979
27	0.8992	0.8982	0.9076	0.9089	0.9012	0.9054	0.8970	0.9025	0.9016	0.8973
28	0.9155	0.9145	0.9207	0.9208	0.9160	0.9214	0.9094	0.9081	0.9148	0.9138
29	0.9119	0.9137	0.9151	0.9172	0.9151	0.9163	0.9068	0.9149	0.9198	0.9180
30	0.9185	0.9125	0.9075	0.9179	0.9182	0.9188	0.9107	0.9152	0.9195	0.9056
31	0.9247	0.9290	0.9364	0.9247	0.9249	0.9320	0.9253	0.9244	0.9279	0.9234
32	0.9254	0.9346	0.9259	0.9335	0.9248	0.9421	0.9224	0.9174	0.9311	0.9242
33	0.9022	0.9158	0.9132	0.9242	0.9194	0.9165	0.9108	0.9129	0.9269	0.9125
34	0.9013	0.9132	0.9131	0.9168	0.9059	0.9127	0.9034	0.9001	0.9247	0.9071
35	0.8983	0.9047	0.8973	0.9005	0.9006	0.9017	0.8950	0.8882	0.9083	0.8970
36	0.8900	0.8986	0.8941	0.8967	0.9031	0.9006	0.8962	0.8922	0.9056	0.8985
37	0.8856	0.8943	0.8892	0.9008	0.9028	0.9000	0.9045	0.9033	0.9075	0.8978
38	0.9010	0.9034	0.9014	0.9029	0.9021	0.9025	0.9029	0.9020	0.9115	0.9048
39	0.8942	0.9031	0.8934	0.9091	0.9033	0.9048	0.8994	0.8972	0.9028	0.8980
40	0.8915	0.8984	0.8941	0.9024	0.8978	0.8969	0.8942	0.8939	0.9026	0.8925
41	0.8901	0.8975	0.8894	0.8975	0.8997	0.8980	0.9038	0.8981	0.9015	0.8925
42	0.8915	0.9049	0.8906	0.9123	0.9145	0.9035	0.9043	0.9046	0.9176	0.9024
43	0.8975	0.9084	0.8968	0.9166	0.9146	0.9095	0.8981	0.9014	0.9075	0.9041
44	0.8983	0.9079	0.8912	0.9111	0.9195	0.9071	0.9040	0.8994	0.9150	0.9040
45	0.8961	0.8972	0.8951	0.9100	0.9176	0.9005	0.9126	0.9064	0.9146	0.9041
46	0.8868	0.9014	0.8958	0.9169	0.9117	0.9076	0.8988	0.9041	0.9107	0.8986
47	0.8967	0.9199	0.9029	0.9197	0.9063	0.9155	0.9030	0.9094	0.9077	0.9093
48	0.9056	0.9143	0.9089	0.9231	0.9061	0.9114	0.9135	0.9145	0.9199	0.9208
49	0.9064	0.9192	0.9080	0.9149	0.9302	0.9231	0.9256	0.9161	0.9256	0.9155
50	0.9097	0.9207	0.9149	0.9179	0.9326	0.9269	0.9186	0.9256	0.9247	0.9230

DATA Continued

After 100 Cycles										
Measurements in mm										
Sample#	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
1	1.0346	1.0490	1.0360	1.0551	1.0346	1.0367	1.0266	1.0312	1.0223	1.0467
2	1.0052	1.0273	1.0174	1.0469	1.0162	1.0319	1.0381	1.0281	1.0299	1.0233
3	0.9929	1.0156	1.0068	1.0437	1.0055	1.0325	1.0326	1.0308	1.0243	1.0101
4	0.9898	1.0032	1.0069	1.0334	1.0039	1.0297	1.0268	1.0261	1.0197	1.0045
5	0.9851	1.0025	1.0017	1.0263	0.9995	1.0239	1.0133	1.0245	1.0054	0.9998
6	0.9842	0.9958	0.9955	1.0234	0.9874	1.0259	1.0153	1.0155	0.9980	0.9916
7	0.9871	0.9967	0.9996	1.0163	0.9900	1.0215	1.0132	1.0125	0.9948	0.9879
8	0.9904	0.9968	0.9951	1.0107	0.9848	1.0220	1.0176	1.0118	0.9945	0.9926
9	0.9858	0.9922	0.9922	1.0045	0.9842	1.0200	1.0126	1.0123	0.9989	0.9923
10	0.9841	0.9878	0.9898	0.9976	0.9828	1.0222	1.0074	1.0089	1.0009	0.9876
11	0.9802	0.9873	0.9829	0.9978	0.9808	1.0117	1.0000	1.0054	0.9902	0.9834
12	0.9821	0.9836	0.9869	0.9945	0.9726	1.0140	1.0052	1.0052	0.9849	0.9792
13	0.9813	0.9840	0.9803	0.9941	0.9807	1.0194	1.0109	1.0097	0.9909	0.9838
14	0.9878	0.9808	0.9839	0.9888	0.9753	1.0159	1.0004	1.0067	0.9893	0.9861
15	0.9828	0.9848	0.9876	0.9886	0.9834	1.0170	1.0017	1.0092	0.9945	0.9841
16	0.9736	0.9880	0.9747	0.9837	0.9747	1.0128	0.9992	1.0043	0.9952	0.9861
17	0.9876	0.9904	0.9841	0.9871	0.9766	1.0119	1.0033	1.0038	0.9942	0.9872
18	0.9874	0.9921	0.9860	0.9917	0.9818	1.0176	1.0003	1.0105	0.9982	0.9954
19	0.9831	0.9952	0.9862	0.9850	0.9806	1.0098	1.0053	1.0058	1.0007	0.9845
20	0.9813	0.9871	0.9817	0.9901	0.9757	1.0076	1.0008	1.0087	1.0027	0.9880
21	0.9808	0.9927	0.9798	0.9875	0.9769	1.0074	0.9997	1.0109	1.0022	0.9932
22	0.9849	0.9969	0.9904	0.9902	0.9774	1.0100	1.0108	1.0071	1.0050	0.9931
23	0.9847	1.0014	0.9900	0.9978	0.9795	1.0100	1.0135	1.0099	1.0146	0.9931
24	0.9960	0.9957	0.9917	0.9927	0.9761	1.0108	1.0148	1.0146	1.0076	0.9975
25	1.0001	1.0019	0.9966	1.0029	0.9912	1.0172	1.0107	1.0259	1.0159	1.0033
26	0.9981	1.0048	0.9933	1.0067	0.9845	1.0140	1.0250	1.0227	1.0175	1.0090
27	1.0001	1.0063	0.9933	1.0064	0.9895	1.0128	1.0094	1.0200	1.0201	1.0081
28	1.0149	1.0166	1.0060	1.0119	1.0013	1.0279	1.0238	1.0360	1.0293	1.0172
29	1.0184	1.0216	1.0067	1.0148	1.0038	1.0198	1.0227	1.0414	1.0327	1.0249
30	1.0234	1.0217	1.0101	1.0186	1.0064	1.0262	1.0208	1.0450	1.0362	1.0213
31	1.0297	1.0325	1.0212	1.0247	1.0126	1.0299	1.0339	1.0549	1.0457	1.0347
32	1.0104	1.0169	1.0091	1.0086	0.9985	1.0249	1.0135	1.0530	1.0236	1.0146
33	1.0009	1.0053	0.9868	1.0155	0.9998	1.0115	1.0053	1.0550	1.0229	1.0095
34	1.0046	1.0148	0.9939	1.0030	0.9905	1.0109	1.0048	1.0327	1.0222	1.0112
35	1.0058	1.0076	0.9884	0.9989	0.9922	1.0046	1.0134	1.0300	1.0169	1.0028
36	1.0073	1.0009	0.9958	1.0041	0.9920	1.0044	1.0131	1.0274	1.0161	1.0082
37	1.0089	1.0089	0.9923	1.0068	1.0022	1.0059	1.0055	1.0322	1.0203	1.0081
38	1.0245	1.0256	1.0126	1.0151	1.0013	1.0121	1.0190	1.0285	1.0273	1.0196
39	1.0236	1.0235	1.0149	1.0215	1.0039	1.0080	1.0207	1.0260	1.0239	1.0156
40	1.0291	1.0293	1.0145	1.0243	1.0049	1.0129	1.0210	1.0271	1.0262	1.0167
41	1.0264	1.0285	1.0211	1.0263	1.0110	1.0197	1.0224	1.0276	1.0263	1.0218
42	1.0367	1.0409	1.0318	1.0379	1.0256	1.0275	1.0295	1.0367	1.0283	1.0235
43	1.0460	1.0443	1.0468	1.0422	1.0286	1.0323	1.0546	1.0441	1.0384	1.0367
44	1.0524	1.0569	1.0500	1.0506	1.0373	1.0398	1.0419	1.0457	1.0407	1.0413
45	1.0516	1.0591	1.0538	1.0523	1.0392	1.0432	1.0697	1.0421	1.0455	1.0437
46	1.0642	1.0674	1.0628	1.0688	1.0350	1.0536	1.0445	1.0542	1.0467	1.0479
47	1.0788	1.0745	1.0638	1.0721	1.0715	1.0764	1.0571	1.0663	1.0566	1.0552
48	1.0812	1.0877	1.0851	1.0789	1.0562	1.0714	1.0658	1.0737	1.0602	1.0619
49	1.0928	1.0823	1.0960	1.0842	1.0652	1.0854	1.1201	1.0751	1.0766	1.0688
50	1.1022	1.1066	1.0977	1.0956	1.0624	1.0816	1.0714	1.0814	1.0782	1.0750

Tracking Code: TC069--0954

Part #: NR-MEC6-150-02-LM-D-RA1

Part description: MEC6-RA1

DATA Continued

After Thermal										
Measurements in mm										
Sample#	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
1	1.2148	1.2351	1.2106	1.2480	1.2246	1.2326	1.2144	1.2326	1.1957	1.2244
2	1.1974	1.2149	1.1995	1.2423	1.2227	1.2243	1.2326	1.2330	1.2126	1.2079
3	1.1934	1.2064	1.2023	1.2369	1.2220	1.2258	1.2281	1.2361	1.2091	1.2089
4	1.1963	1.2014	1.2006	1.2308	1.2263	1.2266	1.2259	1.2405	1.2045	1.2094
5	1.2045	1.2055	1.1990	1.2272	1.2190	1.2276	1.2195	1.2431	1.2033	1.2105
6	1.2011	1.1981	1.1966	1.2215	1.2130	1.2237	1.2220	1.2387	1.1957	1.2021
7	1.2105	1.2035	1.1964	1.2219	1.2214	1.2207	1.2182	1.2329	1.1965	1.2008
8	1.1997	1.2014	1.1976	1.2213	1.2154	1.2227	1.2241	1.2347	1.1951	1.2069
9	1.1996	1.1975	1.1981	1.2188	1.2190	1.2247	1.2244	1.2293	1.1942	1.2101
10	1.2016	1.1994	1.1986	1.2148	1.2205	1.2282	1.2173	1.2277	1.1946	1.2068
11	1.1851	1.1989	1.1924	1.2192	1.2172	1.2222	1.2339	1.2255	1.1875	1.2079
12	1.1938	1.1985	1.1971	1.2149	1.2166	1.2230	1.2200	1.2265	1.1872	1.2056
13	1.1859	1.1957	1.1946	1.2147	1.2194	1.2237	1.2233	1.2267	1.1887	1.2058
14	1.1830	1.1985	1.1947	1.2203	1.2208	1.2235	1.3009	1.2282	1.1892	1.2083
15	1.1941	1.2014	1.1966	1.2136	1.2264	1.2151	1.2222	1.2293	1.1924	1.2104
16	1.1799	1.1998	1.2024	1.2091	1.2188	1.2243	1.2121	1.2257	1.1889	1.2059
17	1.1847	1.2016	1.1921	1.2066	1.2193	1.2244	1.2220	1.2242	1.1897	1.2045
18	1.1765	1.2029	1.1929	1.2114	1.2190	1.2271	1.2197	1.2263	1.1892	1.2071
19	1.1766	1.2051	1.1942	1.2103	1.2161	1.2222	1.2231	1.2275	1.1909	1.2083
20	1.1760	1.2019	1.1906	1.2073	1.2130	1.2257	1.2562	1.2282	1.1896	1.2048
21	1.1725	1.2005	1.1845	1.2082	1.2129	1.2241	1.2148	1.2313	1.1872	1.2043
22	1.1716	1.2063	1.1893	1.2163	1.2118	1.2266	1.2090	1.2263	1.2367	1.2069
23	1.1719	1.2082	1.1857	1.2159	1.2151	1.2227	1.2115	1.2279	1.1947	1.2073
24	1.1775	1.2031	1.1896	1.2051	1.2124	1.2259	1.2117	1.2303	1.1850	1.2089
25	1.2106	1.2015	1.1935	1.2184	1.2148	1.2238	1.2135	1.2351	1.1941	1.2096
26	1.1823	1.2061	1.2712	1.2100	1.2135	1.2186	1.2170	1.2321	1.1926	1.2102
27	1.1754	1.2009	1.1819	1.2062	1.2090	1.2177	1.2091	1.2282	1.1900	1.2056
28	1.1836	1.2044	1.1960	1.2091	1.2103	1.2197	1.2157	1.2327	1.1935	1.2053
29	1.1946	1.2047	1.1919	1.2058	1.2011	1.2140	1.2067	1.2315	1.1922	1.2098
30	1.1932	1.2008	1.1840	1.2089	1.2079	1.2178	1.2118	1.2323	1.1925	1.2102
31	1.1885	1.2067	1.1974	1.2135	1.2060	1.2144	1.2092	1.2392	1.1967	1.2136
32	1.1710	1.1925	1.1650	1.2031	1.2035	1.2141	1.2082	1.2397	1.1826	1.1958
33	1.1707	1.1886	1.1759	1.2020	1.2022	1.2076	1.1978	1.2454	1.1794	1.1969
34	1.1731	1.1900	1.1806	1.2063	1.2048	1.2102	1.1961	1.2378	1.1889	1.2061
35	1.1784	1.1975	1.1782	1.2016	1.2026	1.2113	1.2087	1.2356	1.1860	1.2074
36	1.1825	1.1964	1.1836	1.2128	1.2037	1.2110	1.2041	1.2380	1.1893	1.2094
37	1.1872	1.2094	1.1913	1.2213	1.2089	1.2172	1.2048	1.2392	1.1892	1.2134
38	1.1939	1.2140	1.2045	1.2233	1.2052	1.2196	1.2042	1.2408	1.1986	1.2195
39	1.1954	1.2164	1.1983	1.2299	1.2100	1.2208	1.2038	1.2417	1.1953	1.2177
40	1.2026	1.2200	1.2054	1.2278	1.2081	1.2188	1.2045	1.2384	1.2003	1.2183
41	1.2015	1.2183	1.2058	1.2312	1.2091	1.2190	1.2070	1.2368	1.2034	1.2200
42	1.2028	1.2215	1.2118	1.2386	1.2134	1.2238	1.2222	1.2373	1.2040	1.2239
43	1.2091	1.2225	1.2221	1.2368	1.2196	1.2275	1.2154	1.2469	1.2064	1.2271
44	1.2061	1.2250	1.2202	1.2413	1.2199	1.2305	1.2247	1.2439	1.2087	1.2265
45	1.2114	1.2306	1.2243	1.2427	1.2277	1.2318	1.2276	1.2401	1.2108	1.2262
46	1.2137	1.2336	1.2293	1.2523	1.2177	1.2358	1.2232	1.2451	1.2092	1.2263
47	1.2213	1.2351	1.2297	1.2527	1.2217	1.2372	1.2325	1.2513	1.2166	1.2286
48	1.2289	1.2398	1.2372	1.2541	1.2295	1.2451	1.2338	1.2607	1.2215	1.2353
49	1.2310	1.2570	1.2396	1.2521	1.2345	1.2506	1.2342	1.2604	1.2235	1.2342
50	1.2441	1.2594	1.2453	1.2598	1.2316	1.2546	1.2292	1.2620	1.2282	1.2447

DATA Continued

After Humidity Measurements in mm										
Sample#	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
1	1.245	1.252	1.231	1.265	1.242	1.244	1.257	1.258	1.212	1.248
2	1.227	1.234	1.216	1.260	1.242	1.236	1.245	1.252	1.233	1.229
3	1.224	1.224	1.216	1.257	1.237	1.235	1.243	1.255	1.229	1.225
4	1.221	1.219	1.214	1.248	1.237	1.237	1.239	1.257	1.225	1.226
5	1.224	1.218	1.211	1.245	1.236	1.235	1.233	1.261	1.223	1.227
6	1.224	1.209	1.207	1.244	1.231	1.233	1.231	1.258	1.218	1.221
7	1.223	1.215	1.205	1.238	1.234	1.232	1.233	1.254	1.214	1.218
8	1.224	1.214	1.207	1.239	1.230	1.231	1.239	1.252	1.212	1.225
9	1.219	1.214	1.208	1.238	1.235	1.234	1.233	1.247	1.212	1.228
10	1.215	1.213	1.208	1.235	1.233	1.238	1.232	1.247	1.211	1.226
11	1.205	1.214	1.203	1.235	1.231	1.232	1.231	1.245	1.204	1.222
12	1.205	1.212	1.206	1.232	1.232	1.233	1.231	1.244	1.204	1.221
13	1.200	1.210	1.205	1.229	1.233	1.234	1.231	1.246	1.205	1.222
14	1.204	1.212	1.206	1.232	1.237	1.234	1.232	1.245	1.208	1.224
15	1.204	1.216	1.207	1.230	1.240	1.237	1.231	1.247	1.207	1.227
16	1.191	1.212	1.204	1.226	1.234	1.235	1.228	1.243	1.206	1.222
17	1.202	1.216	1.205	1.226	1.233	1.235	1.232	1.244	1.207	1.220
18	1.198	1.217	1.203	1.229	1.233	1.238	1.228	1.244	1.205	1.222
19	1.193	1.219	1.204	1.227	1.237	1.232	1.230	1.245	1.209	1.222
20	1.194	1.216	1.205	1.226	1.233	1.236	1.229	1.244	1.211	1.220
21	1.192	1.216	1.200	1.227	1.230	1.233	1.226	1.246	1.208	1.217
22	1.192	1.220	1.204	1.227	1.227	1.234	1.222	1.242	1.212	1.217
23	1.193	1.221	1.204	1.228	1.230	1.232	1.225	1.243	1.213	1.220
24	1.199	1.216	1.204	1.226	1.226	1.233	1.225	1.246	1.206	1.222
25	1.203	1.219	1.207	1.231	1.230	1.234	1.227	1.251	1.214	1.224
26	1.203	1.221	1.204	1.230	1.228	1.232	1.230	1.247	1.214	1.226
27	1.196	1.219	1.201	1.228	1.222	1.228	1.224	1.249	1.213	1.223
28	1.207	1.223	1.210	1.231	1.226	1.233	1.225	1.253	1.215	1.226
29	1.204	1.223	1.205	1.227	1.218	1.228	1.223	1.252	1.214	1.226
30	1.204	1.219	1.206	1.228	1.221	1.233	1.222	1.256	1.214	1.226
31	1.211	1.224	1.206	1.231	1.219	1.231	1.224	1.262	1.219	1.234
32	1.192	1.211	1.197	1.226	1.218	1.227	1.223	1.261	1.206	1.219
33	1.194	1.212	1.196	1.226	1.218	1.219	1.217	1.262	1.207	1.217
34	1.196	1.213	1.198	1.227	1.222	1.224	1.219	1.257	1.210	1.222
35	1.197	1.212	1.197	1.226	1.216	1.221	1.218	1.253	1.209	1.221
36	1.199	1.214	1.204	1.231	1.219	1.221	1.221	1.256	1.212	1.224
37	1.188	1.223	1.204	1.236	1.221	1.226	1.226	1.255	1.213	1.227
38	1.210	1.226	1.215	1.238	1.222	1.227	1.226	1.257	1.219	1.233
39	1.211	1.227	1.216	1.244	1.222	1.230	1.228	1.258	1.218	1.232
40	1.225	1.231	1.218	1.240	1.222	1.228	1.228	1.256	1.221	1.232
41	1.247	1.231	1.220	1.247	1.222	1.230	1.230	1.256	1.222	1.236
42	1.251	1.232	1.226	1.252	1.231	1.235	1.234	1.259	1.224	1.241
43	1.229	1.235	1.234	1.253	1.235	1.238	1.237	1.265	1.227	1.242
44	1.232	1.235	1.232	1.259	1.236	1.242	1.236	1.264	1.225	1.243
45	1.234	1.238	1.236	1.259	1.234	1.242	1.240	1.260	1.227	1.243
46	1.239	1.244	1.241	1.268	1.236	1.247	1.238	1.266	1.224	1.242
47	1.245	1.246	1.238	1.268	1.239	1.250	1.244	1.270	1.231	1.245
48	1.249	1.249	1.247	1.269	1.243	1.258	1.246	1.279	1.235	1.250
49	1.252	1.258	1.247	1.268	1.248	1.265	1.249	1.275	1.242	1.248
50	1.261	1.265	1.250	1.274	1.245	1.268	1.248	1.277	1.239	1.254

DATA Continued**MATING/UNMATING**

Sample#	Initial				After 100 Cycles			
	Mating		Unmating		Mating		Unmating	
	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)
1	168.3	10.52	134.4	8.40	182.7	11.42	157.8	9.86
2	191.7	11.98	159.0	9.94	219.5	13.72	201.6	12.60
3	192.6	12.04	145.6	9.10	217.3	13.58	206.1	12.88
4	214.7	13.42	147.2	9.20	228.8	14.30	211.2	13.20
5	200.3	12.52	158.1	9.88	227.2	14.20	216.3	13.52
6	221.8	13.86	144.6	9.04	259.2	16.20	242.6	15.16
7	240.6	15.04	155.5	9.72	266.2	16.64	211.2	13.20
8	203.2	12.70	153.9	9.62	238.7	14.92	217.3	13.58
9	212.5	13.28	163.8	10.24	240.6	15.04	215.7	13.48
10	208.6	13.04	108.5	6.78	215.0	13.44	154.6	9.66
Sample#	After Thermal				After Humidity			
	Mating		Unmating		Mating		Unmating	
	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)
1	121.3	7.58	87.3	5.46	86.6	5.41	46.1	2.88
2	105.1	6.57	94.7	5.92	113.4	7.09	81.3	5.08
3	135.2	8.45	99.2	6.20	113.9	7.12	79.2	4.95
4	127.6	7.98	100.6	6.29	105.3	6.58	71.0	4.44
5	139.0	8.69	98.4	6.15	115.0	7.19	74.6	4.66
6	137.5	8.60	106.1	6.63	101.4	6.34	62.4	3.90
7	141.6	8.85	108.6	6.79	106.9	6.68	68.6	4.29
8	121.8	7.61	114.4	7.15	111.5	6.97	79.7	4.98
9	171.3	10.71	166.4	10.40	122.6	7.66	78.6	4.91
10	111.3	6.96	84.5	5.28	98.1	6.13	63.4	3.96

MATING/UNMATING TEST CARD THICKNESSES:

Board#	English (in)	Metric (mm)
1	0.0615 - 0.0618	1.56 - 1.57
2	0.0616 - 0.0619	1.56 - 1.57
3	0.0619 - 0.0621	1.57 - 1.58
4	0.0622 - 0.0626	1.58 - 1.59
5	0.062 - 0.0626	1.57 - 1.59
6	0.0627 - 0.0628	1.59 - 1.60
7	0.0621 - 0.0627	1.58 - 1.59
8	0.0625 - 0.0628	1.59 - 1.60
9	0.0625 - 0.0629	1.59 - 1.60
10	0.0627 - 0.0628	1.59 - 1.60

DATA Continued**NORMAL FORCE (FOR CONTACTS TESTED IN THE HOUSING):**

Initial - Top	Deflections in inches Forces in Grams					
Sample #	0.0030	0.0060	0.0090	0.0120	0.0150	SET
1	20.30	42.80	64.60	85.60	107.70	0.00090
2	17.30	37.60	56.80	75.30	94.10	0.00080
3	18.10	38.00	57.60	76.70	97.00	0.00070
4	18.10	39.10	60.50	82.70	104.40	0.00070
5	17.30	36.50	56.10	75.30	94.10	0.00080
6	20.60	42.40	64.20	84.90	105.20	0.00080

Initial - Bottom	Deflections in inches Forces in Grams					
Sample #	0.0030	0.0060	0.0090	0.0120	0.0150	SET
1	40.60	85.60	130.00	161.00	165.50	0.00360
2	44.70	91.30	132.10	160.50	176.00	0.00390
3	45.30	91.30	130.00	157.40	171.30	0.00380
4	45.80	90.70	130.00	158.40	174.40	0.00350
5	46.80	92.30	127.90	158.90	174.40	0.00360
6	43.70	87.10	126.40	146.00	170.80	0.00300

Thermal - Top	Deflections in inches Forces in Grams					
Sample #	0.0030	0.0060	0.0090	0.0120	0.0150	SET
1	19.10	39.90	61.60	82.40	104.50	0.00030
2	19.40	40.50	60.60	81.10	103.20	0.00010
3	18.40	39.20	59.70	80.50	102.90	0.00030
4	19.40	39.20	61.90	81.40	104.50	0.00030
5	18.10	38.30	59.00	79.20	102.60	0.00040
6	19.40	39.50	61.60	82.10	105.40	0.00030

Thermal - Bottom	Deflections in inches Forces in Grams					
Sample #	0.0030	0.0060	0.0090	0.0120	0.0150	SET
1	46.80	94.40	153.30	169.80	180.10	0.00360
2	46.80	95.90	142.90	172.40	183.20	0.00360
3	45.80	93.80	142.20	174.40	185.80	0.00350
4	44.20	94.40	141.40	172.40	185.30	0.00360
5	46.80	95.90	142.40	171.90	182.70	0.00350
6	46.80	95.90	142.40	171.90	182.70	0.00350

DATA Continued**INSULATION RESISTANCE (IR):**

<u>Sample #</u>	<u>Initial, Meg Ohms</u>	
	<u>Mated</u>	<u>Unmated</u>
	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>
1	100000	100000
2	100000	100000

<u>Sample #</u>	<u>Thermal, Meg Ohms</u>	
	<u>Mated</u>	<u>Unmated</u>
	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>
1	100000	100000
2	100000	100000

<u>Sample #</u>	<u>Humidity, Meg Ohms</u>	
	<u>Mated</u>	<u>Unmated</u>
	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>
1	100000	100000
2	100000	100000

DIELECTRIC WITHSTANDING VOLTAGE (DWV):

<u>Sample #</u>	<u>Initial, VAC Mated</u>			<u>Initial, VAC Unmated</u>		
	<u>Breakdown Voltage</u>	<u>DWV</u>	<u>Working Voltage</u>	<u>Breakdown Voltage</u>	<u>DWV</u>	<u>Working Voltage</u>
1	780	585	195	1100	825	275

<u>Sample #</u>	<u>Thermal, VAC Mated</u>			<u>Thermal, VAC Unmated</u>		
	<u>Breakdown Voltage</u>	<u>DWV</u>	<u>Working Voltage</u>	<u>Breakdown Voltage</u>	<u>DWV</u>	<u>Working Voltage</u>
1	550	413	138	1000	750	250

<u>Sample #</u>	<u>Humidity, VAC Mated</u>			<u>Humidity, VAC Unmated</u>		
	<u>Breakdown Voltage</u>	<u>DWV</u>	<u>Working Voltage</u>	<u>Breakdown Voltage</u>	<u>DWV</u>	<u>Working Voltage</u>
1	720	540	180	1000	750	250

DATA Continued**LLCR:**

Date		Mar. 09 2006	Mar. 10 2006	Mar. 23 2006	Apr. 07 2006
Room Temp C		23	24	20	21
RH		34%	34%	20%	32%
Name		Troy Cook	Troy Cook	Terry Spin3	Troy Cook
mOhm values		Actual	Delta	Delta	Delta
		Initial	100 Cycles	Thermal	Humidity
Average		13.9	0.1	0.5	1.3
St. Dev.		2.4	0.7	0.7	2.0
Min		11.2	-1.8	-1.7	-1.3
Max		18.3	2.3	2.4	13.5
Count		200	200	200	200
mOhm values		Actual	Delta	Delta	Delta
Board	Position	Initial	100 Cycles	Thermal	Humidity
1	P1	17.6	-1.7	-0.9	-0.9
1	P2	16.9	-1.1	-0.7	-0.5
1	P3	17.6	-1.4	-1.5	-1.0
1	P4	17.6	-1.8	-0.9	-1.2
1	P5	17.8	-0.7	0.6	-0.9
1	P6	12.5	-0.6	0.3	-0.1
1	P7	11.9	-0.4	0.4	1.2
1	P8	11.8	-0.4	0.4	0.9
1	P9	11.9	-0.5	0.0	0.5
1	P10	11.7	-0.2	0.1	0.9
1	P11	11.7	-0.4	0.1	-0.1
1	P12	11.8	-0.5	-0.1	0.0
1	P13	11.8	-0.3	0.0	4.0
1	P14	11.7	-0.4	0.3	9.3
1	P15	11.8	-0.4	0.1	0.3
1	P16	11.9	-0.2	0.1	0.4
1	P17	12.3	-0.4	-0.2	0.3
1	P18	12.1	-0.2	-0.1	0.9
1	P19	11.7	0.0	0.2	1.4
1	P20	11.6	-0.1	0.2	0.4
1	P21	17.7	-1.0	-0.8	-0.6
1	P22	17.0	-0.8	0.5	0.0
1	P23	18.2	-1.7	-1.6	-0.9
1	P24	17.9	-0.9	-1.7	-1.2
1	P25	18.3	-1.6	-0.6	-1.3
2	P1	16.3	0.1	0.8	0.6
2	P2	16.0	-0.1	1.1	1.1
2	P3	15.9	0.2	1.1	1.6
2	P4	15.8	0.1	1.0	2.6
2	P5	16.4	-0.3	0.1	-0.1

Tracking Code: TC069--0954

Part #: NR-MEC6-150-02-LM-D-RA1

Part description: MEC6-RA1

2	P6	12.1	0.6	0.8	0.7
2	P7	11.2	0.3	0.5	0.7
2	P8	11.4	0.2	0.6	1.0
2	P9	11.4	0.0	0.2	0.7
2	P10	11.3	0.3	0.6	0.5
2	P11	11.5	0.4	0.5	0.5
2	P12	11.4	0.2	0.3	0.6
2	P13	11.4	0.1	0.3	0.7
2	P14	11.6	0.0	0.2	0.5
2	P15	11.6	0.1	0.1	0.4
2	P16	11.7	0.1	0.0	0.1
2	P17	11.6	0.1	0.3	0.6
2	P18	11.6	0.0	0.2	0.3
2	P19	11.7	0.1	0.1	0.2
2	P20	11.8	-0.2	0.0	0.2
2	P21	16.6	1.2	1.2	1.0
2	P22	16.3	0.7	0.5	0.3
2	P23	16.0	1.2	0.6	0.4
2	P24	16.0	1.6	0.5	0.4
2	P25	16.8	0.4	0.7	0.7
3	P1	15.9	0.9	0.7	0.7
3	P2	16.2	0.7	0.4	-0.1
3	P3	15.9	1.3	0.7	0.6
3	P4	15.8	1.2	0.9	0.4
3	P5	15.9	1.2	1.3	2.3
3	P6	12.1	1.1	1.0	0.6
3	P7	12.0	0.9	0.9	0.4
3	P8	11.9	1.0	0.9	0.4
3	P9	12.0	0.7	0.4	0.2
3	P10	11.9	0.7	0.7	0.3
3	P11	12.0	0.6	0.8	0.0
3	P12	11.5	1.0	1.2	0.4
3	P13	11.6	1.1	1.0	0.5
3	P14	11.5	1.2	1.2	0.6
3	P15	11.6	1.1	0.8	0.4
3	P16	11.9	1.1	0.9	0.6
3	P17	11.6	1.0	1.1	0.5
3	P18	11.5	0.9	1.4	0.4
3	P19	11.8	1.0	0.8	0.5
3	P20	11.6	1.0	1.4	0.7
3	P21	16.4	0.7	0.8	0.6
3	P22	15.8	1.0	1.1	1.3
3	P23	16.0	0.5	0.8	0.3
3	P24	16.1	0.5	0.9	0.5
3	P25	16.5	0.5	0.8	0.7
4	P1	16.3	0.3	0.9	1.0
4	P2	16.5	-0.2	0.2	0.6
4	P3	16.9	-0.5	-0.1	0.8
4	P4	16.5	0.0	0.4	1.2
4	P5	16.3	0.5	1.0	2.4

Tracking Code: TC069--0954

Part #: NR-MEC6-150-02-LM-D-RA1

Part description: MEC6-RA1

4	P6	13.4	-1.0	0.4	-0.5
4	P7	11.8	0.2	1.7	1.3
4	P8	11.9	0.0	1.6	0.8
4	P9	12.0	0.0	0.9	0.5
4	P10	11.9	0.2	1.3	0.7
4	P11	11.9	0.1	1.4	1.5
4	P12	12.5	-0.3	0.8	1.9
4	P13	11.6	0.3	1.5	1.8
4	P14	11.8	0.2	1.4	1.8
4	P15	11.8	0.2	1.2	0.9
4	P16	12.0	0.1	1.0	2.0
4	P17	11.9	0.5	1.8	2.3
4	P18	11.7	0.5	2.1	2.0
4	P19	11.6	0.5	2.3	2.9
4	P20	11.6	0.5	2.4	1.2
4	P21	16.9	0.5	0.8	0.4
4	P22	16.5	0.6	1.2	1.1
4	P23	16.7	0.5	0.7	0.7
4	P24	16.4	0.9	1.4	0.8
4	P25	17.0	0.4	0.8	0.7
5	P1	18.0	-1.5	0.7	-0.4
5	P2	16.5	0.5	1.9	0.9
5	P3	16.7	0.6	1.7	1.4
5	P4	16.7	0.0	0.7	0.6
5	P5	16.6	0.2	1.5	0.7
5	P6	13.2	-0.5	1.3	-0.3
5	P7	12.4	-0.2	1.7	0.3
5	P8	12.4	-0.2	0.8	0.2
5	P9	11.7	0.1	0.9	0.5
5	P10	12.0	-0.2	0.5	0.3
5	P11	12.0	-0.2	0.7	1.4
5	P12	12.0	0.1	1.1	1.9
5	P13	12.1	0.0	0.8	3.3
5	P14	12.1	0.0	0.6	1.0
5	P15	12.2	0.0	0.5	1.2
5	P16	12.5	0.0	0.4	0.6
5	P17	12.4	-0.1	0.3	0.4
5	P18	12.1	0.2	0.5	0.2
5	P19	12.0	0.2	0.4	0.4
5	P20	12.2	0.3	0.5	0.7
5	P21	17.0	0.0	0.7	1.0
5	P22	16.7	1.3	2.2	1.3
5	P23	16.4	0.5	2.1	1.2
5	P24	16.5	0.1	2.3	0.6
5	P25	16.9	0.0	1.2	0.7
6	P1	16.2	-0.2	0.0	0.7
6	P2	16.3	-0.8	0.4	1.3
6	P3	16.0	1.5	0.2	1.3
6	P4	16.1	1.1	0.2	0.6
6	P5	16.1	1.3	-0.1	1.1

Tracking Code: TC069--0954

Part #: NR-MEC6-150-02-LM-D-RA1

Part description: MEC6-RA1

6	P6	12.3	0.2	0.7	1.3
6	P7	13.1	-1.8	0.2	1.5
6	P8	12.0	-0.3	0.1	2.1
6	P9	12.1	-0.7	0.0	2.5
6	P10	11.9	-0.6	0.3	2.1
6	P11	12.0	-0.4	0.0	3.0
6	P12	11.9	-0.2	0.2	11.2
6	P13	11.9	-0.6	0.7	6.4
6	P14	11.9	0.1	0.3	3.1
6	P15	12.1	-0.5	0.3	3.8
6	P16	12.1	-0.1	0.9	13.5
6	P17	11.8	-0.5	1.2	1.2
6	P18	11.7	-0.3	1.8	12.4
6	P19	12.0	-0.3	0.7	6.9
6	P20	12.1	-0.3	2.2	10.4
6	P21	16.4	1.6	0.4	1.4
6	P22	15.9	2.3	0.4	1.2
6	P23	16.2	1.5	0.2	0.8
6	P24	16.4	0.8	0.5	0.8
6	P25	16.5	1.3	0.2	1.7
7	P1	17.1	0.0	-0.2	1.7
7	P2	17.2	-0.5	-0.2	2.8
7	P3	16.9	-0.3	-0.2	1.0
7	P4	16.7	-0.4	-0.2	0.6
7	P5	17.0	-0.3	-0.2	1.0
7	P6	12.7	0.4	0.0	2.2
7	P7	12.0	-0.4	-0.4	1.2
7	P8	11.8	-0.1	-0.2	1.7
7	P9	11.6	-0.1	0.2	1.4
7	P10	11.5	0.2	0.2	1.1
7	P11	11.7	-0.2	0.3	1.5
7	P12	11.7	-0.2	0.2	1.2
7	P13	11.7	-0.2	0.3	1.6
7	P14	11.6	-0.1	0.3	1.4
7	P15	11.7	-0.2	0.2	1.2
7	P16	12.0	0.0	0.2	1.0
7	P17	12.0	-0.1	-0.3	0.2
7	P18	11.8	-0.2	-0.2	0.5
7	P19	12.0	-0.4	-0.3	0.0
7	P20	12.1	-0.3	0.0	-0.1
7	P21	17.0	0.3	-0.1	0.8
7	P22	17.0	0.1	-0.2	0.6
7	P23	16.9	-0.2	-0.3	0.5
7	P24	17.2	-0.2	-0.1	0.5
7	P25	17.1	-0.3	-0.2	0.6
8	P1	16.6	-0.1	0.3	1.2
8	P2	16.4	0.3	0.7	1.6
8	P3	16.7	0.0	0.2	0.8
8	P4	16.6	0.0	0.3	1.0
8	P5	17.2	-0.4	0.0	0.5

Tracking Code: TC069--0954	Part #: NR-MEC6-150-02-LM-D-RA1
Part description: MEC6-RA1	

8	P6	13.2	-0.6	1.0	-0.1
8	P7	12.6	-0.5	0.2	2.0
8	P8	12.2	-0.2	0.6	1.8
8	P9	12.3	0.1	0.7	1.3
8	P10	12.4	-0.3	0.5	5.6
8	P11	12.3	-0.3	0.5	2.0
8	P12	12.4	-0.3	2.0	2.7
8	P13	12.3	-0.1	0.7	1.9
8	P14	12.3	-0.3	0.5	2.4
8	P15	12.6	-0.4	0.6	0.9
8	P16	12.8	-0.4	0.2	0.4
8	P17	12.3	-0.3	0.4	1.2
8	P18	12.7	-0.7	-0.4	0.5
8	P19	12.4	-0.3	-0.1	1.7
8	P20	12.4	-0.4	0.0	1.8
8	P21	17.2	0.1	0.8	1.5
8	P22	17.0	0.1	1.4	1.5
8	P23	16.7	0.1	0.8	2.2
8	P24	16.9	0.3	0.9	1.7
8	P25	17.2	-0.2	0.9	1.5

EQUIPMENT AND CALIBRATION SCHEDULES**Equipment #:** OGP-01**Description:** 6"X 6" Video Measuring Machine**Manufacturer:** Optical Gauging Products**Model:** Smartscope 200 CFOV**Serial #:** SF2001956**Accuracy:** See Manual

... Last Cal: 04/12/05, Next Cal: 04/12/06

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: 5/12/05, Next Cal: 5/12/06

Equipment #: LC-250N (icell)**Description:** 250 Newton load cell for Dillon Quantrol test stand**Manufacturer:** Dillon Quantrol**Model:** icell**Serial #:** 04-0020-08**Accuracy:** .10 % of Capacity

... Last Cal: 4/19/2005, Next Cal: 4/19/2006

Equipment #: OV-03**Description:** Cascade Tek Forced Air Oven**Manufacturer:** Cascade Tek**Model:** TFO-5**Serial #:** 0500100**Accuracy:** Temp. Stability: +/- .1C/C change in ambient

... Last Cal: 05/12/05, Next Cal: 05/12/06

Equipment #: THC-01**Description:** Temperature/Humidity Chamber**Manufacturer:** Thermotron**Model:** SM-8-7800**Serial #:** 30676**Accuracy:** See Manual

... Last Cal: 7/15/2005, Next Cal: 8/15/2006

Equipment #: TCT-04**Description:** Dillon Quantrol TC21 25-1000 mm/min series test stand**Manufacturer:** Dillon Quantrol**Model:** TC2 I series test stand**Serial #:** 04-1041-04**Accuracy:** Speed Accuracy: +/- 5% of indicated speed; Speed Accuracy: +/- 5% of indicated speed;

... Last Cal: 4/28/2005, Next Cal: 4/28/2006

Equipment #: MO-02**Description:** Multimeter /Data Acquisition System**Manufacturer:** Keithley**Model:** 2700**Serial #:** 0780546**Accuracy:** See Manual See Manual

... Last Cal: 05/12/05, Next Cal: 05/12/06

Equipment #: MO-04**Description:** Multimeter /Data Acquisition System**Manufacturer:** Keithley**Model:** 2700**Serial #:** 0798688**Accuracy:** See Manual

... Last Cal: 6/12/05, Next Cal: 6/12/06

Equipment #: PS-01**Description:** System Power Supply**Manufacturer:** Hewlett Packard**Model:** HP 6033A**Serial #:** (HP) 3329A-07330**Accuracy:** See Manual

... Last Cal: 05/12/05, Next Cal: 05/12/06

Equipment #: TC090601-103/105**Description:** IC Thermocouple-103/105**Manufacturer:** Samtec**Model:****Serial #:** TC090601-103/105**Accuracy:** +/- 1 degree C

... Last Cal: , Next Cal:

Equipment #: HPM-01**Description:** Hipot Megommeter**Manufacturer:** Hipotronics**Model:** H306B-A**Serial #:** SF2001956**Accuracy:** 2 % Full Scale Accuracy

... Last Cal: 5/12/05, Next Cal: 05/12/06

Equipment #: MO-01**Description:** Micro-Ohmmeter**Manufacturer:** Keithley**Model:** 580**Serial #:** 0772740**Accuracy:** See Manual

... Last Cal: 05/12/05, Next Cal: 05/12/06

Tracking Code: TC069--0954	Part #: NR-MEC6-150-02-LM-D-RA1
Part description: MEC6-RA1	

Equipment #: MO-03
Description: Multimeter /Data Acquisition System
Manufacturer: Keithley
Model: 2700
Serial #: 0791975
Accuracy: See Manual
... Last Cal: 05/12/05, Next Cal: 05/12/06