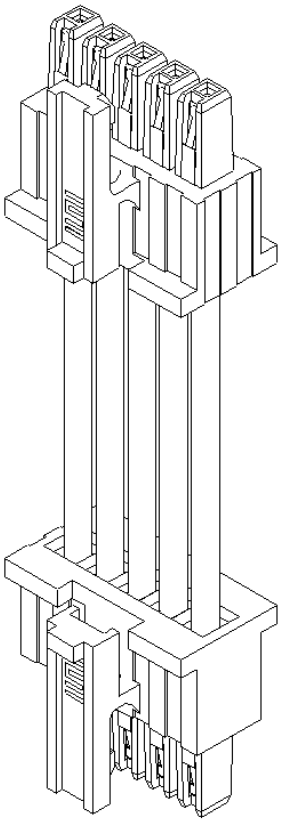
Project Number:	Tracking Code: TC067--0942		
Requested by: John Riley	Date: 2/17/2006	Product Rev: 2	
Part #: MMSS-10-20-S-12.00-D-LUS	Lot #: 145819	Tech: Troy Cook/Tony Wagoner	Eng: Dave Scopelliti
Part description: MMSS-IPL1			Qty to test: 30
Test Start: 04/14/2006	Test Completed: 5/16/2006		



MMSS-IPL1
DVT Report

MMSS-10-20-S-12.00-D-LUS
mated with IPL1-110-01-XX-S

Tracking Code: TC067--0942	Part #: MMSS-10-20-S-12.00-D-LUS
Part description: MMSS-IPL1	

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: Modified DVT to match PMSS-IPBT

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 ½ 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-100375-TST-XX

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Part description: MMSS-IPL1	

FLOWCHARTS

Current Carrying Capacity

TEST STEP	GROUP A 1 connector min 6 contacts powered
01	CCC

Tabulate calculated current at RT, 75° C, 95° C and 115° C
after derating 20% and based on 125° C
CCC, Temp rise = EIA-364-70

Mating/Unmating/Normal Force

TEST STEP	GROUP A 10 Connectors 50 Cycles	GROUP B1 5 Connectors	GROUP B2 5 Connectors
01	Contact Gaps	**Setup Approve**	**Setup Approve**
02	Mating / Unmating	Normal Force	Thermal Aging (Mated)
03	Data Review	Data Review	Normal Force
04	50 Cycles		
05	Mating / Unmating		
06	Contact Gaps		
07	Data Review		
08	Thermal Aging (Mated)		
09	Mating / Unmating		
10	Contact Gaps		
11	Data Review		
12	Humidity (Mated)		
13	Mating / Unmating		
14	Contact Gaps		

Thermal Aging = EIA-364-17, Test Condition 4, 105 deg C;
Time Condition 'B' (250 hours)
Humidity =EIA-364-31, Test Condition 'B' (240 Hours)
and Method III (+25 ° C to +65 ° C @ 90%RH to 98% RH)
ambient pre-condition and delete steps 7a and 7b
Mating/Un-Mating Forces = EIA-364-13
Normal Force = EIA-364-04
Contact Gaps/Height - No standard method. Usually measured optically

FLOWCHARTS Continued

IR / DWV

TEST STEP	GROUP A 3 Connectors Ambient	GROUP B1 3 Connectors Ambient	GROUP B2 3 Connectors Thermal	GROUP B3 3 Connectors 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			

Thermal Aging = EIA-364-17, Test Condition 4, 105 deg C;
Time Condition 'B' (250 hours)
Humidity =EIA-364-31, Test Condition 'B' (240 Hours)
and Method III (+25 ° C to +65 ° C @ 90%RH to 98% RH)
ambient pre-condition and delete steps 7a and 7b
IR = EIA-364-21
DWV = EIA-364-20

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. 75^{o} C
    c. 95^{o} C
    d. 115^{o} 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.

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Part description: MMSS-IPL1	

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 OUTSIDE THE HOUSING):

1) Reference document: EIA-364-04, *Normal Force Test Procedure for Electrical Connectors*.
2) The contacts shall be tested in the loose state, *not* inserted in connector housing.
3) The contacts shall be prepared to allow access to the spring member at the same attitude and deflection level as would occur in actual use.
4) In the event that portions of the contact prevent insertion of the test probe and/or deflection of the spring member under evaluation, said material shall be removed leaving the appropriate contact surfaces exposed.
5) In the case of multi-tine contacts, each tine shall be tested independently on separate samples as required.
6) The connector housing shall be simulated, if required, in order to provide an accurate representation of the actual contact system performance.
7) A holding fixture shall be fashioned to allow the contact to be properly deflected.
8) Said holding fixture shall be mounted on a floating, adjustable, X-Y table on the base of the Dillon TC^2, computer controlled test stand with a deflection measurement system accuracy of 5 µm (0.0002").
9) The probe shall be attached to a Dillon P/N 49761-0105, 5 N (1.1 Lb) load cell providing an accuracy of ± 0.2%.
10) The nominal deflection rate shall be 5 mm (0.2")/minute.
11) Unless otherwise noted a minimum of five contacts shall be tested.
12) The force/deflection characteristic to load and unload each contact shall be repeated five times.
13) The system shall utilize the TC^2 software in order to acquire and record the test data.
14) The permanent set of each contact shall be measured within the TC^2 software.
15) 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 5000 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).

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Part description: MMSS-IPL1	

RESULTS

Temperature Rise, CCC at a 20% de-rating

- **CCC for a 30°C Temperature Rise ----------3.6 A per contact with 6 adjacent contacts powered**

Contact Gaps

- **Initial**
  - **Min----------.0165”**
  - **Max ----------.0178”**
- **After 50 Cycles**
  - **Min----------.0168”**
  - **Max ----------.0178”**
- **Thermal**
  - **Min----------.0189”**
  - **Max ----------.0200”**
- **Humidity**
  - **Min----------.0193”**
  - **Max ----------.0210”**

Mating – Unmating Forces

- **Initial**
  - **Mating**
    - **Min ---------- 1.3 Lbs.**
    - **Max---------- 2.4 Lbs.**
  - **Unmating**
    - **Min ---------- 1.3 Lbs.**
    - **Max---------- 2.3 Lbs.**
- **After 50 Cycles**
  - **Mating**
    - **Min ---------- 1.3 Lbs.**
    - **Max---------- 2.1 Lbs.**
  - **Unmating**
    - **Min ---------- 1.3 Lbs.**
    - **Max---------- 2.3 Lbs.**
- **Thermal**
  - **Mating**
    - **Min ---------- 0.7 Lbs.**
    - **Max---------- 1.6 Lbs.**
  - **Unmating**
    - **Min ---------- 0.9 Lbs.**
    - **Max---------- 1.6 Lbs.**
- **Humidity**
  - **Mating**
    - **Min ---------- 0.7 Lbs.**
    - **Max---------- 1.1 Lbs.**
  - **Unmating**
    - **Min ---------- 0.7 Lbs.**
    - **Max---------- 1.2 Lbs.**

Tracking Code: TC067--0942	Part #: MMSS-10-20-S-12.00-D-LUS
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Normal Force at .005" deflection

- **Initial**
  - **Min----------59.5 grams Set -------.0004"**
  - **Max ----------68.8 grams Set -------.0007"**
- **Thermal**
  - **Min----------56.8 grams**
  - **Max ----------75.0 grams**

Insulation Resistance minimums, IR

- **Initial**
  - **Mated----------100,000 Meg Ω ---------- Pass**
  - **Unmated ----------100,000 Meg Ω**
- **Thermal**
  - **Mated---------- 50,000 Meg Ω**
  - **Unmated ----------100,000 Meg Ω**
- **Humidity**
  - **Mated---------- 15,000 Meg Ω**
  - **Unmated ---------- 50,000 Meg Ω**

Dielectric Withstanding Voltage minimums, DWV

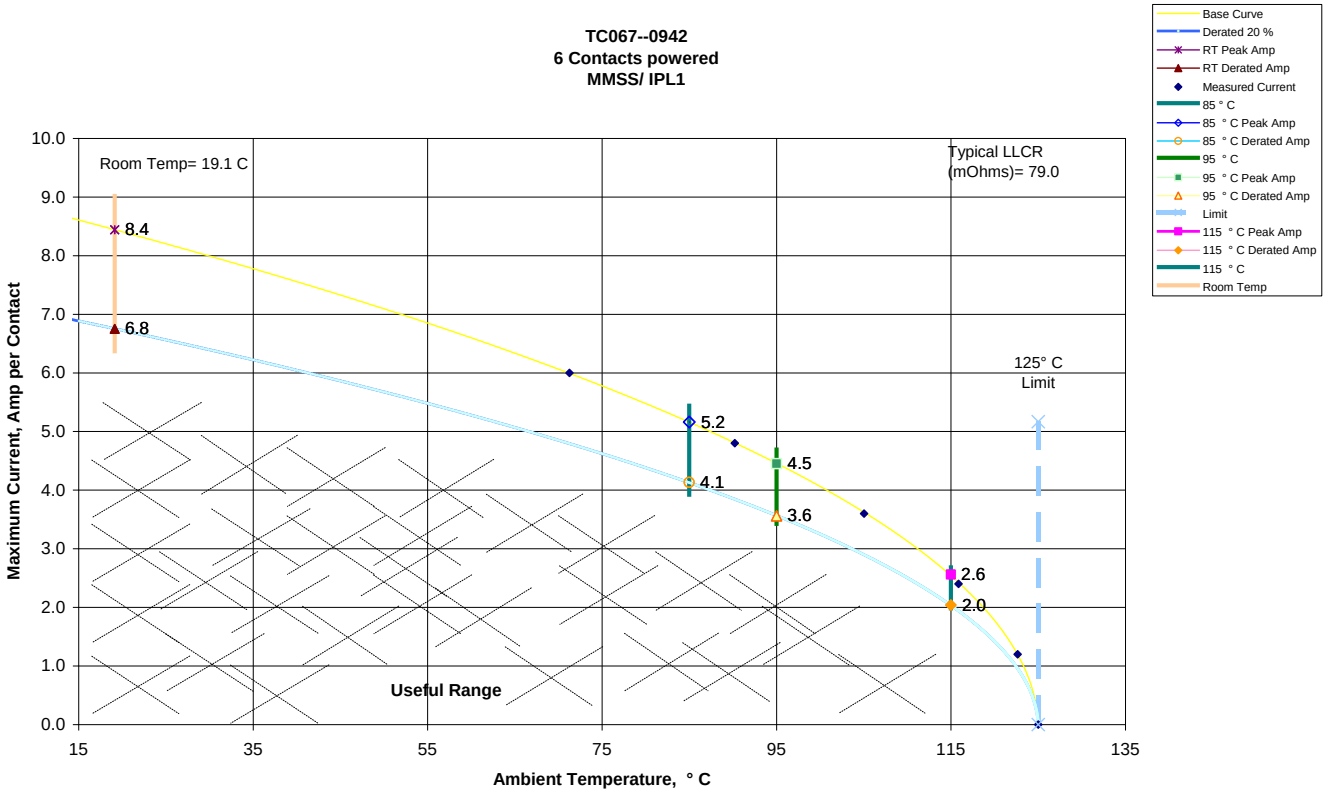
- **Initial**
  - **Breakdown**
    - **Mated ----------1,600 VAC**
    - **Unmated----------2,500 VAC**
  - **DWV**
    - **Mated ----------1,200 VAC**
    - **Unmated----------1,875 VAC**
  - **Working voltage**
    - **Mated ----------400 VAC**
    - **Unmated----------625 VAC**
- **Thermal**
  - **Breakdown**
    - **Mated ----------1,700 VAC**
    - **Unmated----------1,700 VAC**
  - **DWV**
    - **Mated ----------1,275 VAC**
    - **Unmated----------1,275 VAC**
  - **Working voltage**
    - **Mated ----------425 VAC**
    - **Unmated----------425 VAC**
- **Humidity**
  - **Breakdown**
    - **Mated ----------1,500 VAC**
    - **Unmated----------1,500 VAC**
  - **DWV**
    - **Mated ----------1,125 VAC**
    - **Unmated----------1,125 VAC**
  - **Working voltage**
    - **Mated ----------375 VAC**
    - **Unmated----------375 VAC**

Tracking Code: TC067--0942	Part #: MMSS-10-20-S-12.00-D-LUS
Part description: MMSS-IPL1	

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 (6) adjacent conductors/contacts powered



Tracking Code: TC067--0942	Part #: MMSS-10-20-S-12.00-D-LUS
Part description: MMSS-IPL1	

DATA SUMMARIES Continued

CONTACT GAPS:

Initial Measurements in inches	
Minimum	0.0165
Maximum	0.0178
Average	0.0171
St. Dev.	0.0002

After 50 Cycles Measurement in inches	
Minimum	0.0168
Maximum	0.0178
Average	0.0173
St. Dev.	0.0002

After Thermals Measurement in inches	
Minimum	0.0189
Maximum	0.0200
Average	0.0194
St. Dev.	0.0002

After Humidity Measurement in inches	
Minimum	0.0193
Maximum	0.0210
Average	0.0201
St. Dev.	0.0002

MATING/UNMATING:

	Initial				After 50 Cycles			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)
Minimum	20.0	1.25	20.0	1.25	21.3	1.33	20.0	1.25
Maximum	*38.6*	*2.4*	*36.2*	*2.3*	*34.1*	*2.1*	*37.4*	*2.3*
Average	***28.5***	***1.8***	***26.1***	***1.6***	***26.5***	***1.7***	***26.7***	***1.7***
	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	11.8	0.7	13.9	0.9	10.7	0.7	10.7	0.7
Maximum	*25.6*	*1.6*	*26.3*	*1.6*	*17.3*	*1.1*	*18.7*	*1.2*
Average	***16.3***	***1.0***	***18.1***	***1.1***	***13.9***	***0.9***	***14.7***	***0.9***

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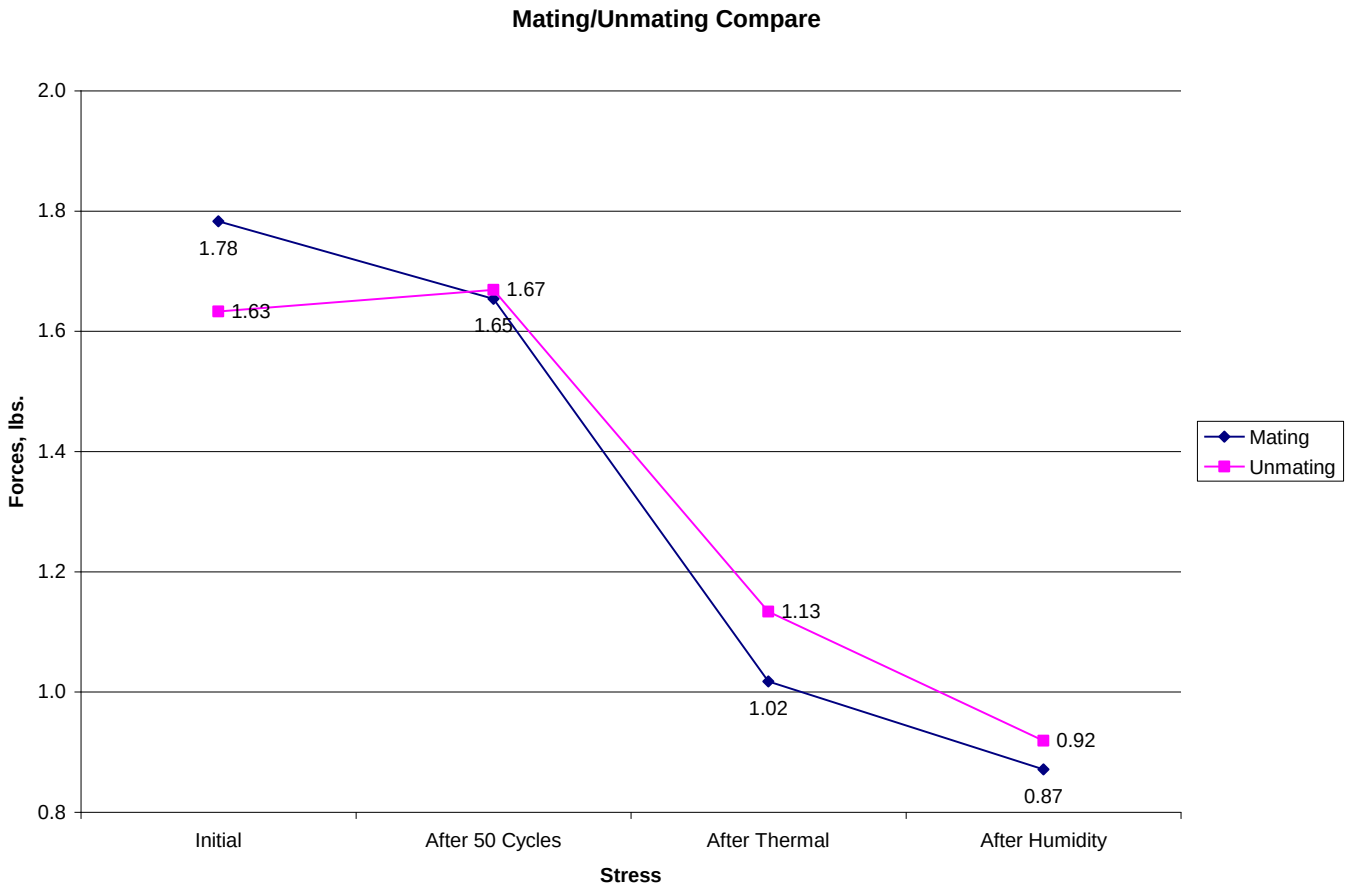
DATA SUMMARIES Continued



NORMAL FORCE (FOR CONTACTS TESTED OUTSIDE 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	Deflections in inches Forces in Grams					
	0.0010	**0.0020**	**0.0030**	**0.0040**	**0.0050**	**SET**
Averages	8.94	22.04	34.81	48.25	65.30	0.0005
Min	6.84	19.90	31.64	43.82	59.54	0.0004
Max	10.82	24.99	38.28	52.23	68.84	0.0007
St. Dev	1.42	2.07	2.77	3.16	3.45	0.0001
Count	6	6	6	6	6	6

Thermals	Deflections in inches Forces in Grams					
	0.0010	**0.0020**	**0.0030**	**0.0040**	**0.0050**	**SET**
Averages	9.90	24.49	38.48	51.69	68.61	0.0004
Min	8.90	23.60	35.85	42.93	56.80	0.0002
Max	10.80	25.70	42.00	56.60	75.00	0.0007
St. Dev	0.61	0.78	2.34	4.78	6.31	0.0002
Count	7	7	7	7	7	7

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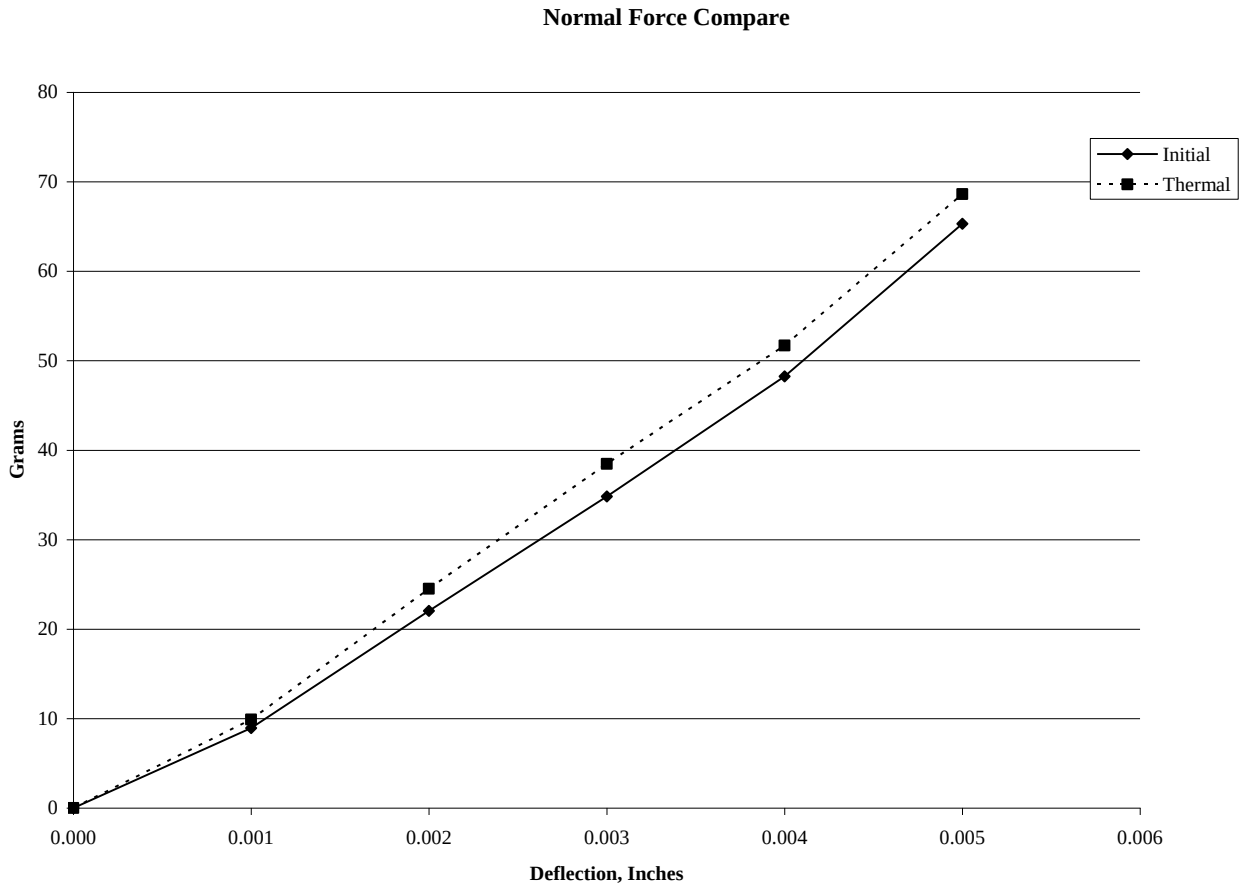
DATA SUMMARIES Continued



INSULATION RESISTANCE (IR):

	Initial, Meg Ohms			Thermal, Meg Ohms			Humidity, Meg Ohms		
		IPL1	MMSS		IPL1	MMSS		IPL1	MMSS
	Mated	Unmated	Unmated	Mated	Unmated	Unmated	Mated	Unmated	Unmated
	Insulation Resistance	Insulation Resistance	Insulation Resistance	Insulation Resistance	Insulation Resistance	Insulation Resistance	Insulation Resistance	Insulation Resistance	Insulation Resistance
Average	100000	100000	83333	83333	100000	100000	30000	83333	66667
Min	100000	100000	50000	50000	100000	100000	15000	50000	50000
Max	100000	100000	100000	100000	100000	100000	50000	100000	100000

DATA SUMMARIES Continued

DIELECTRIC WITHSTANDING VOLTAGE (DWV):

	Initial, VAC Mated			Initial, VAC Unmated MMSS			Initial, VAC Unmated IPL1		
	Breakdown Voltage	DWV	Working Voltage	Breakdown Voltage	DWV	Working Voltage	Breakdown Voltage	DWV	Working Voltage
Average	1650	1238	413	1700	1275	425	2500	1875	625
Min	1600	1200	400	1600	1200	400	2500	1875	625
Max	1700	1275	425	1900	1425	475	2500	1875	625

	Thermal, VAC Mated			Thermal, VAC Unmated MMSS			Thermal, VAC Unmated IPL1		
	Breakdown Voltage	DWV	Working Voltage	Breakdown Voltage	DWV	Working Voltage	Breakdown Voltage	DWV	Working Voltage
Average	1800	1350	450	1900	1425	475	1700	1275	425
Min	1700	1275	425	1900	1425	475	1700	1275	425
Max	1900	1425	475	1900	1425	475	1700	1275	425

	Humidity, VAC Mated			Humidity, VAC Unmated MMSS			Humidity, VAC Unmated IPL1		
	Breakdown Voltage	DWV	Working Voltage	Breakdown Voltage	DWV	Working Voltage	Breakdown Voltage	DWV	Working Voltage
Average	1550	1163	388	1633	1225	408	1950	1463	488
Min	1500	1125	375	1600	1200	400	1500	1125	375
Max	1600	1200	400	1700	1275	425	2400	1800	600

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DATA

CONTACT GAPS:

Initial

Measurements in inches

Sample#	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
1	0.0174	0.0168	0.0173	0.0172	0.0171	0.0169	0.0171	0.0169	0.0170	0.0169
2	0.0171	0.0173	0.0173	0.0169	0.0174	0.0173	0.0171	0.0168	0.0173	0.0169
3	0.0173	0.0169	0.0173	0.0169	0.0171	0.0169	0.0170	0.0170	0.0173	0.0168
4	0.0172	0.0165	0.0170	0.0167	0.0170	0.0174	0.0173	0.0171	0.0169	0.0168
5	0.0170	0.0173	0.0172	0.0168	0.0175	0.0170	0.0169	0.0171	0.0169	0.0168
6	0.0172	0.0170	0.0170	0.0168	0.0171	0.0168	0.0172	0.0168	0.0173	0.0170
7	0.0175	0.0173	0.0171	0.0171	0.0173	0.0174	0.0172	0.0173	0.0172	0.0171
8	0.0173	0.0174	0.0169	0.0168	0.0175	0.0173	0.0173	0.0172	0.0174	0.0168
9	0.0178	0.0171	0.0171	0.0169	0.0169	0.0173	0.0173	0.0172	0.0171	0.0168
10	0.0169	0.0172	0.0172	0.0169	0.0170	0.0170	0.0174	0.0171	0.0170	0.0170

After 50 Cycles

Measurements in inches

Sample#	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
1	0.0173	0.0171	0.0174	0.0174	0.0176	0.0173	0.0168	0.0172	0.0174	0.0172
2	0.0174	0.0171	0.0176	0.0168	0.0175	0.0173	0.0177	0.0168	0.0177	0.0173
3	0.0175	0.0172	0.0175	0.0172	0.0176	0.0176	0.0172	0.0168	0.0177	0.0170
4	0.0173	0.0170	0.0174	0.0172	0.0176	0.0174	0.0174	0.0171	0.0173	0.0168
5	0.0173	0.0174	0.0176	0.0172	0.0178	0.0172	0.0170	0.0171	0.0175	0.0170
6	0.0173	0.0174	0.0170	0.0172	0.0173	0.0171	0.0171	0.0173	0.0175	0.0172
7	0.0173	0.0174	0.0174	0.0174	0.0177	0.0171	0.0173	0.0174	0.0174	0.0171
8	0.0171	0.0173	0.0170	0.0170	0.0176	0.0173	0.0173	0.0174	0.0171	0.0170
9	0.0170	0.0170	0.0174	0.0173	0.0171	0.0171	0.0173	0.0173	0.0175	0.0169
10	0.0173	0.0174	0.0173	0.0175	0.0175	0.0173	0.0173	0.0168	0.0172	0.0173

After Thermals

Measurements in inches

Sample#	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
1	0.0198	0.0195	0.0194	0.0195	0.0194	0.0196	0.0194	0.0192	0.0197	0.0194
2	0.0199	0.0195	0.0191	0.0189	0.0194	0.0195	0.0195	0.0193	0.0193	0.0190
3	0.0197	0.0195	0.0191	0.0189	0.0196	0.0195	0.0194	0.0193	0.0196	0.0190
4	0.0197	0.0192	0.0192	0.0194	0.0192	0.0193	0.0198	0.0195	0.0192	0.0190
5	0.0195	0.0192	0.0191	0.0194	0.0196	0.0193	0.0194	0.0194	0.0191	0.0193
6	0.0197	0.0191	0.0193	0.0195	0.0196	0.0192	0.0195	0.0194	0.0195	0.0192
7	0.0192	0.0193	0.0190	0.0190	0.0195	0.0198	0.0198	0.0195	0.0197	0.0193
8	0.0199	0.0192	0.0192	0.0192	0.0198	0.0197	0.0198	0.0195	0.0194	0.0193
9	0.0194	0.0193	0.0191	0.0198	0.0197	0.0195	0.0194	0.0199	0.0197	0.0189
10	0.0195	0.0193	0.0193	0.0195	0.0199	0.0193	0.0195	0.0200	0.0196	0.0190

After Humidity

Measurements in inches

Sample#	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
1	0.0199	0.0202	0.0199	0.0198	0.0206	0.0200	0.0205	0.0205	0.0203	0.0205
2	0.0201	0.0200	0.0197	0.0198	0.0209	0.0197	0.0204	0.0205	0.0204	0.0199
3	0.0200	0.0204	0.0195	0.0199	0.0208	0.0198	0.0204	0.0201	0.0200	0.0198
4	0.0201	0.0208	0.0197	0.0195	0.0203	0.0199	0.0204	0.0203	0.0198	0.0196
5	0.0203	0.0201	0.0197	0.0198	0.0209	0.0197	0.0201	0.0200	0.0199	0.0200
6	0.0199	0.0198	0.0193	0.0198	0.0205	0.0199	0.0201	0.0203	0.0200	0.0201
7	0.0200	0.0203	0.0195	0.0193	0.0210	0.0198	0.0208	0.0203	0.0197	0.0195
8	0.0200	0.0200	0.0199	0.0194	0.0210	0.0196	0.0205	0.0203	0.0203	0.0199
9	0.0210	0.0199	0.0194	0.0198	0.0207	0.0198	0.0202	0.0203	0.0203	0.0200
10	0.0203	0.0204	0.0197	0.0198	0.0207	0.0200	0.0201	0.0204	0.0196	0.0200

Tracking Code: TC067--0942	Part #: MMSS-10-20-S-12.00-D-LUS
Part description: MMSS-IPL1	

DATA Continued

MATING/UNMATING:

	Initial				After 50 Cycles			
	Mating		**Unmating**		**Mating**		**Unmating**	
Sample#	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)
1	25.3	1.58	20.0	1.25	24.0	1.50	22.7	1.42
2	26.7	1.67	24.2	1.51	25.8	1.61	25.3	1.58
3	34.6	2.16	30.7	1.92	34.1	2.13	37.4	2.34
4	35.7	2.23	36.2	2.26	26.6	1.66	27.8	1.74
5	32.8	2.05	29.4	1.84	33.1	2.07	33.3	2.08
6	20.0	1.25	25.4	1.59	21.3	1.33	25.3	1.58
7	25.3	1.58	22.7	1.42	22.4	1.40	22.7	1.42
8	38.6	2.41	31.0	1.94	33.4	2.09	32.3	2.02
9	22.4	1.40	20.3	1.27	21.3	1.33	20.2	1.26
10	24.0	1.50	21.3	1.33	22.7	1.42	20.0	1.25

	After Thermal				After Humidity			
	Mating		**Unmating**		**Mating**		**Unmating**	
Sample#	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)
1	11.8	0.74	15.9	0.99	11.5	0.72	15.0	0.94
2	25.6	1.60	26.3	1.64	10.7	0.67	13.4	0.84
3	23.9	1.49	24.3	1.52	16.0	1.00	17.4	1.09
4	18.6	1.16	20.5	1.28	17.3	1.08	18.7	1.17
5	13.9	0.87	14.8	0.93	14.6	0.91	14.9	0.93
6	12.1	0.76	13.9	0.87	12.0	0.75	13.4	0.84
7	12.6	0.79	14.4	0.90	12.0	0.75	10.7	0.67
8	18.4	1.15	21.8	1.36	16.0	1.00	13.6	0.85
9	13.8	0.86	14.9	0.93	14.7	0.92	14.9	0.93
10	12.2	0.76	14.5	0.91	14.6	0.91	14.9	0.93

Tracking Code: TC067--0942	Part #: MMSS-10-20-S-12.00-D-LUS
Part description: MMSS-IPL1	

DATA Continued

NORMAL FORCE (FOR CONTACTS TESTED OUTSIDE THE HOUSING):

Initial	Deflections in inches Forces in Grams					
Sample #	0.0010	0.0020	0.0030	0.0040	0.0050	*SET*
1	8.16	20.12	31.64	43.82	62.86	0.00050
2	9.71	19.90	32.30	46.03	59.54	0.00040
3	9.71	23.44	36.73	50.24	67.29	0.00070
4	6.84	20.79	33.19	46.92	66.19	0.00040
5	10.82	24.99	38.28	52.23	68.84	0.00040
6	8.39	23.00	36.73	50.24	67.07	0.00040
7						
Thermals	**Deflections in inches Forces in Grams**					
Sample #	0.0010	0.0020	0.0030	0.0040	0.0050	*SET*
1	9.50	24.10	37.60	50.60	69.30	0.00040
2	8.90	23.60	37.60	52.50	72.30	0.00050
3	10.30	24.60	39.50	55.20	75.00	0.00040
4	10.80	25.70	42.00	56.60	73.60	0.00020
5	9.94	23.67	35.85	48.69	64.19	0.00030
6	10.16	24.55	36.07	42.93	56.80	0.00070
7	9.71	25.22	40.72	55.33	69.06	0.00040

INSULATION RESISTANCE (IR):

	Initial, Meg Ohms			Thermal, Meg Ohms			Humidity, Meg Ohms		
		IPL1	MMSS		IPL1	MMSS		IPL1	MMSS
	Mated	Unmated	Unmated	Mated	Unmated	Unmated	Mated	Unmated	Unmated
Sample #	Insulation Resistance	Insulation Resistance	Insulation Resistance	Insulation Resistance	Insulation Resistance	Insulation Resistance	Insulation Resistance	Insulation Resistance	Insulation Resistance
1	100000	100000	100000	100000	100000	100000	25000	100000	50000
2	100000	100000	50000	50000	100000	100000	50000	50000	100000
3	100000	100000	100000	100000	100000	100000	15000	100000	50000

DATA Continued

DIELECTRIC WITHSTANDING VOLTAGE (DWV):

Sample #	Initial, VAC Mated			Initial, VAC Unmated MMSS			Initial, VAC Unmated IPL1		
	Breakdown Voltage	DWV	Working Voltage	Breakdown Voltage	DWV	Working Voltage	Breakdown Voltage	DWV	Working Voltage
1	1600	1200	400	1900	1425	475			
2	1700	1275	425	1600	1200	400			
3				1600	1200	400	2500	1875	625

Sample #	Thermal, VAC Mated			Thermal, VAC Unmated MMSS			Thermal, VAC Unmated IPL1		
	Breakdown Voltage	DWV	Working Voltage	Breakdown Voltage	DWV	Working Voltage	Breakdown Voltage	DWV	Working Voltage
1	1700	1275	425	1900	1425	475			
2	1900	1425	475	1900	1425	475			
3				1900	1425	475	1700	1275	425

Sample #	Humidity, VAC Mated			Humidity, VAC Unmated MMSS			Humidity, VAC Unmated IPL1		
	Breakdown Voltage	DWV	Working Voltage	Breakdown Voltage	DWV	Working Voltage	Breakdown Voltage	DWV	Working Voltage
1	1500	1125	375	1700	1275	425			
2	1600	1200	400	1600	1200	400	1500	1125	375
3				1600	1200	400	2400	1800	600

Tracking Code: TC067--0942	Part #: MMSS-10-20-S-12.00-D-LUS
Part description: MMSS-IPL1	

EQUIPMENT AND CALIBRATION SCHEDULES

Equipment #: THL-02
Description: Temperature/Humidity Chart Recorder
Manufacturer: Dickson
Model: THDX
Serial #: 00120351
Accuracy: Temp: +/- 1C; Humidity: +/-2% RH (0 - 60%) +/- 3% RH (61 - 95%).
… Last Cal: 06/16/06, Next Cal: 06/16/07

Equipment #: MO-02
Description: Multimeter /Data Acquisition System
Manufacturer: Keithley
Model: 2700
Serial #: 0780546
Accuracy: See Manual
… Last Cal: 05/12/06, Next Cal: 05/12/07

Equipment #: MO-04
Description: Multimeter /Data Acquisition System
Manufacturer: Keithley
Model: 2700
Serial #: 0798688
Accuracy: See Manual
… Last Cal: 01/31/06, Next Cal: 01/31/07

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 #: 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: 5/12/06, Next Cal: 5/12/07

Equipment #: LC-2500N(icell)
Description: 2500 N Load Cell for Dillon Quantrol
Manufacturer: Dillon Quantrol
Model: icell
Serial #: 01-0132-01
Accuracy: .10% of capacity
… Last Cal: 6/13/06, Next Cal: 6/13/07

Equipment #: OGP-01
Description: 6"X 6" Video Measuring Machine
Manufacturer: Optical Gauging Products
Model: Smartscope 200 CFOV
Serial #: SF2001956
Accuracy: See Manual See Manual
… Last Cal: 04/12/06, Next Cal: 04/12/05

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 #: 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: 05/12/06, Next Cal: 05/12/07

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: 05/16/2006, Next Cal: 05/16/2007

Equipment #: LC-5N (icell)-2
Description: 5 Newton load cell for Dillon Quantrol test stand
Manufacturer: Dillon Quantrol
Model: icell
Serial #: 00120351
Accuracy: .10 % of capacity
… Last Cal: 5/10/2006, Next Cal: 5/10/2007

Equipment #: HPM-01
Description: Hipot Megommeter
Manufacturer: Hipotronics
Model: H306B-A
Serial #: M9905004
Accuracy: 2 % Full Scale Accuracy
… Last Cal: 5/12/06, Next Cal: 05/12/07

Tracking Code: TC067--0942	Part #: MMSS-10-20-S-12.00-D-LUS
Part description: MMSS-IPL1	

Equipment #: PS-01
Description: System Power Supply
Manufacturer: Hewlett Packard
Model: HP 6033A
Serial #: (HP) 3329A-07330
Accuracy: See Manual
… Last Cal: 05/12/06, Next Cal: 05/12/07

…