Stanford Applied Engineering
Advanced Packaging Division

TITLE	NUMBER
DESIGN VERIFICATION TEST PROCEDURE AND REPORT ELECTRICAL TESTS 7000 SERIES P/C CONNECTORS	TD-1007
	PROJECT "7000 SERIES"

APPLICABLE DOCUMENTS	REV.	DATE	REV.	DATE	CODE IDENT. NO.
MIL-C-21097 C	A	9/6/74			31514
	B	9/9/74			TOTAL PAGES

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INITIAL APPROVALS

PREPARED	DATE	APPROVED	DATE
R.L. Andrews	9/5/74	R. Thallmayer	9/6/74
CHECKED	DATE	APPROVED	DATE
D. Block	9/6/74	L. Evans	9/6/74

SAE FORM 74723I

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TEST SEQUENCE

Test No:	Test Description
	Specimen Preparation and Examination of Products
#1	Insulation Resistance
#2	Contact Resistance Contact to P/C Board

SPECIMEN PREPARATION

1. Load 7000-100 Series Connector Insulator with H7000-750 contacts using standard manufacturing and assembly methods, fixtures and tools.

2. Fabricate and identify test specimens as follows:

   a) Specimen No. DAP #1

      Assemble Diallyl Phthalate Insulator with.000050 gold plated contacts.

   b) Specimen No. Phenolic #1

      Assemble Phenolic Insulator with .000050 gold plated contacts.

   c) Specimen No. Valox #1

      Assemble Valox (Thermoplastic Polyester) Insulator with .000050 gold plated contacts.

   d) Specimen No. Gold #1

      Assemble Insulator with .000050 gold plated contacts.

   e) Specimen No. 90/10 #1

      Assemble Insulator with 90/10 tin/lead contacts.

   f) Specimen No. 60/40 #1

      Assemble Insulator with 60/40 tin/lead contacts.

3. Submit all specimens to Final Inspection for conventional "per print" inspection.

TEST #2 - CONTACT RESISTANCE (CONTACT TO P/C BOARD)

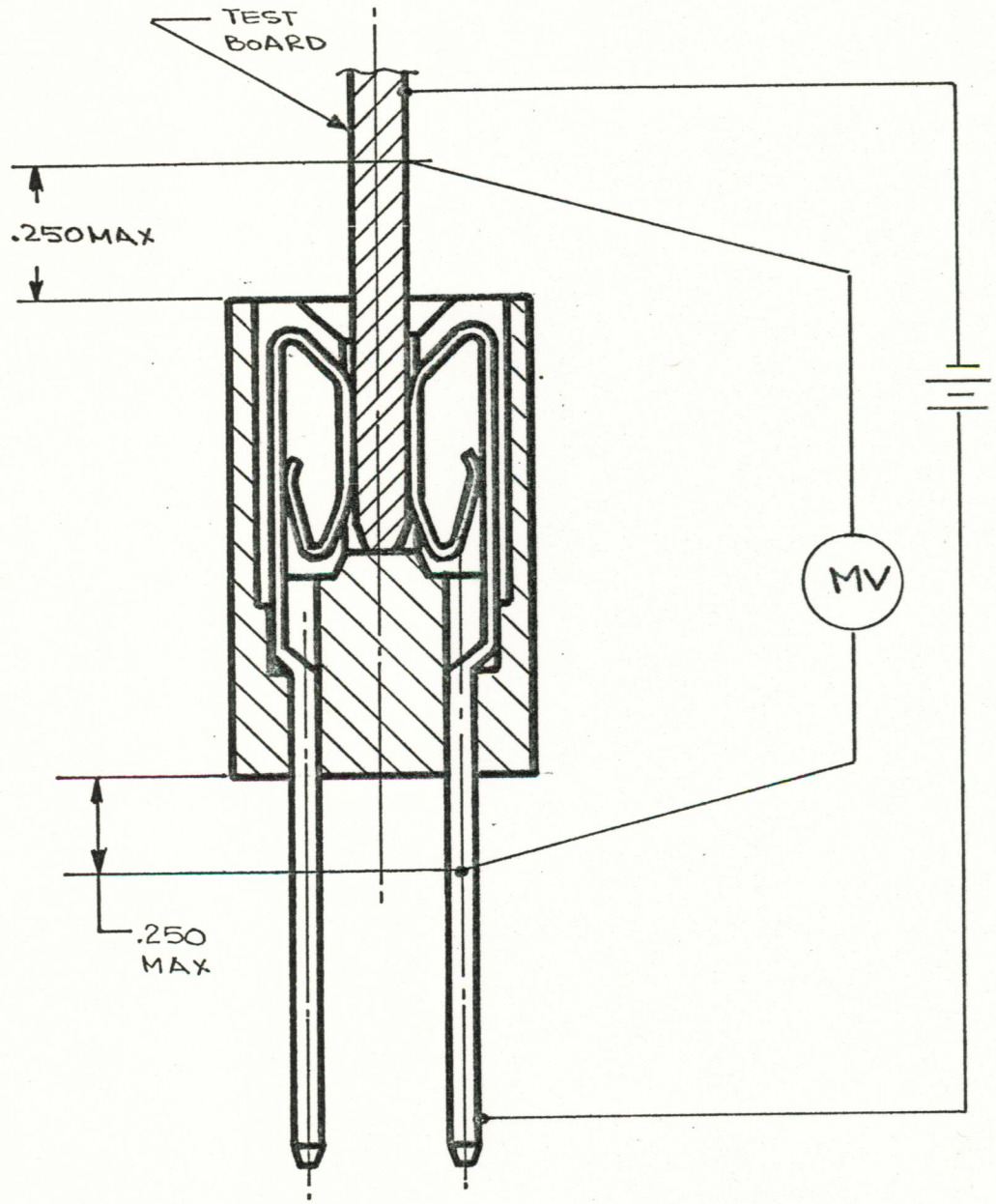

FIG 1

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TEST 31. -- INSULATION RESISTANCE

Test Procedure:

The insulation resistance between ten (10) individual pairs of adjacent contacts shall be measured at a potential of 100 volts DC Min. applied for a period of 60 seconds. This test shall be repeated until all contacts are checked.

Test Results:

The insulation resistance between individual pairs of adjacent contacts shall be greater than the specified minimum of 5000 megohms. (See next page(s) for actual test results.)

Test Specimen Number:

Dap #1 Phenolic #1 & Valox #1

Test Equipment:

Megohmeter, Industrial Instruments

Model L-17
Ogden Lab Control #1001
Calibration Due Date 1/17/75

TEST #1. -- ACTUAL TEST DATA (megohms)

Contact Positions	Test Specimen		
	DAP#1	PHENOLIC #1	VALOX #1
Pins #2-4	390K	>500K	480K
6-8	280K	>500K	450K
10-12	490K	>500K	>500K
14-16	485K	400K	420K
18-20	380K	300K	480K
22-24	390K	500K	>500K
26-28	400K	400K	>500K
30-32	300K	500K	420K
34-36	>500K	400K	480K
38-40	>500K	300K	>500K

TEST #2. -- CONTACT RESISTANCE - CONTACT TO PC BOARD

Test Procedure:

Each sample shall be mated with an appropriately dimensioned printed circuit board conforming to Figure 1 of MIL-C-21097. A steady-state current of 1.0 ampere DC shall be passed through ten (10) individual contacts in each sample. The voltage drop across the mated contacts shall be measured and recorded with the voltmeter probes positioned on the pad of the printed circuit board, immediately adjacent to the insulator, and on the contact tail.

Test Results:

All measured values of contact resistance shall be less than the specified maximum average of 7 milliohms. (See next page(s) for actual test results.)

Test Specimen Number:

Gold #1, 90/10 #1 & 60/40 #1

Test Equipment:

D.C. Power Supply, Kepco Model CK18-3M Serial No. H38741
Ogden Laboratories Control No. 330
Calibration Due Date 5-9-74

D.C. Volt-Ammeter, Hewlett-Packard Type 4304B
Calibrated 8-12-74

0-3 D.C. Ammeter, Simpson
Ogden Laboratories Control No. 202
Calibration Due Date 1-14-74

Ohmite 10 OHM Load Resistor

TEST #2. -- ACTUAL TEST DATA (Milliohms)

Contact Number	Test Specimen		
	Gold #1	9/10 #1	60/40 #1
1	6.3	5.0	4.2
2	6.6	5.2	5.2
3	6.4	5.6	6.4
4	6.5	5.6	6.7
5	6.2	6.0	6.7
6	6.4	4.4	6.4
7	6.7	5.2	6.3
8	6.4	5.6	6.0
9	6.3	6.7	5.0
10	6.3	6.4	4.0

Stanford Applied Engineering
Advanced Packaging Division

TITLE	NUMBER
CONTACT DURABILITY (PLATING WEAR) TEST REPORT	TD-1017
	PROJECT: 8100 & 7000 P/C CONNECTORS

APPLICABLE DOCUMENTS	REV.	DATE	REV.	DATE
	N/C	6/27/75		

CODE IDENT. NO. 31514

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INITIAL APPROVALS

PREPARED	DATE	APPROVED	DATE
R.G. Mallery	6/27/75		
CHECKED	DATE	APPROVED	DATE

SAE FORM 747231

1. SCOPE

THE PURPOSE OF THE HEREIN DESCRIBED DURABILITY TEST IS TO DETERMINE THE AMOUNT OF PLATING WEAR ON P/C CONNECTOR CONTACTS RESULTING FROM REPEATED P/C BOARD INSERTIONS AND WITHDRAWALS.

2. TEST PROCEDURE

A) SUBJECT TEST SPECIMEN TO TWENTY-FIVE (25) CYCLES OF ENGAGEMENT AND WITHDRAWAL USING .062 THICK P/C BOARDS.

B) REMOVE TWO (2) CONTACTS (ONE OPPOSING PAIR) CHECK AND RECORD THICKNESS OF GOLD PLATING.

C) REPEAT STEP A & B FOR A TOTAL OF 500 CYCLES PER SPECIMEN AND P/C BOARD

3. TEST SPECIMEN

SPECIMEN #1 & #2

P/C CONNECTOR WITH SEMI-BELLOWS CONTACTS. CONNECTOR SIZE; 50 POSITION/ 100 CONTACTS. CONTACT PLATING; GOLD PLATED PER MIL-G-45204, TYPE II (.000010 MIN THICK) OVER NICKEL PLATE PER QQ-N-290 (.000050 THICK).

SPECIMEN #3 & #4

P/C CONNECTOR WITH SEMI-BELLOWS CONTACTS. CONNECTOR SIZE; 50 POSITION/ 100 CONTACTS. CONTACT PLATING; GOLD PLATED PER MIL-G-45204, TYPE II CLASS 0, (.000030 MIN THICK) OVER NICKEL PLATE PER QQ-N-290 (.000050 THICK).

SPECIMEN #5 & #6

P/C CONNECTOR WITH SEMI-BELLOWS CONTACTS. CONNECTOR SIZE; 50 POSITION/ 100 CONTACTS. CONTACT PLATING; GOLD PLATED PER MIL-G-45204, TYPE II, CLASS I (.000050 MIN THICK) OVER NICKEL PLATE PER QQ-N-290 (.000050 THICK).

4. P/C TEST BOARDS

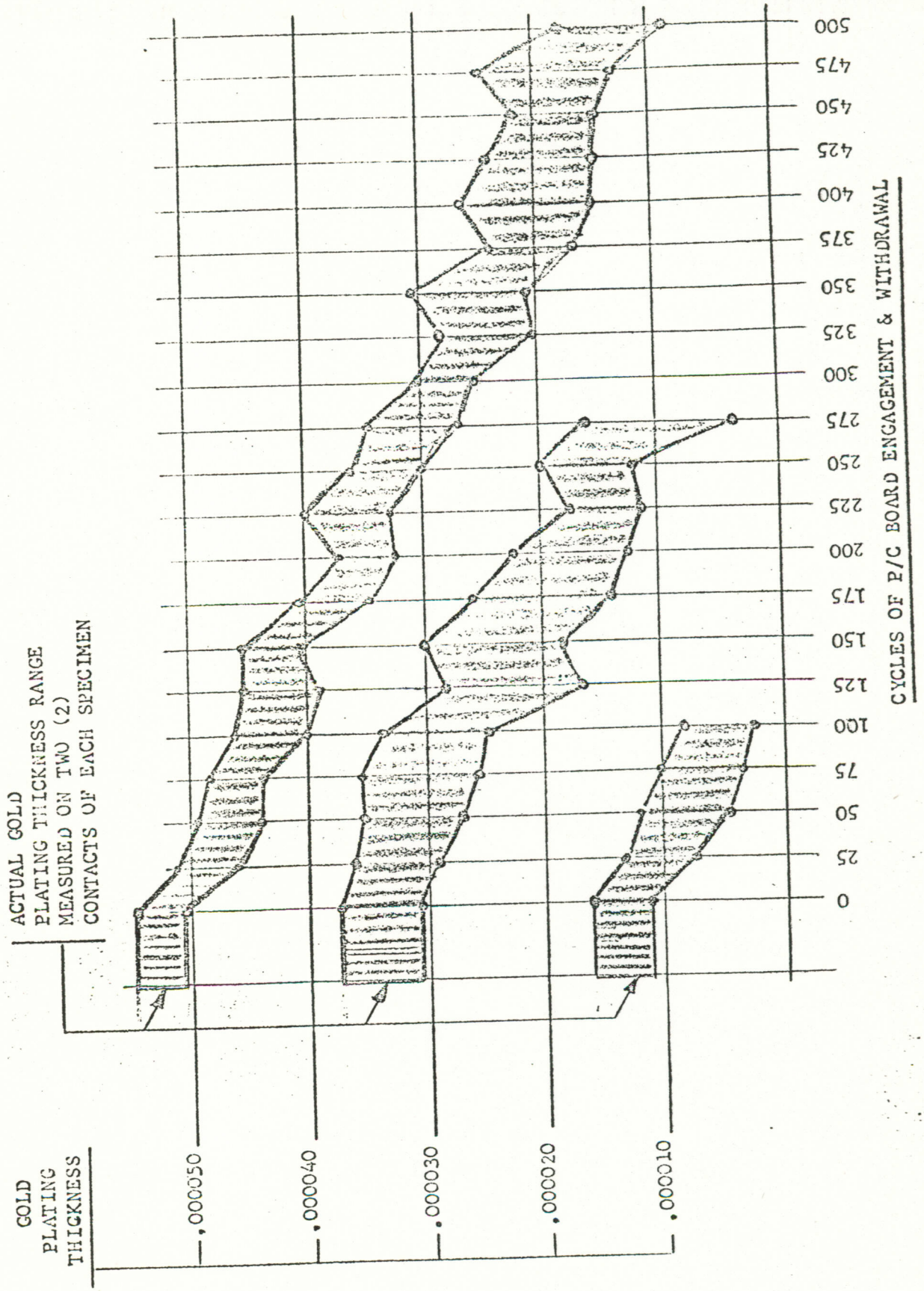
.062 THICK MULTI-LAYER LAMINATED BOARD WITH .015 x 45° LEAD-IN CHAMFERS AND GOLD PLATED CONTACT FINGERS (MIL-G-45204, TYPE II, CLASS I, .000050 THICK OVER ONE (1) OZ. COPPER PLATING.

5. TEST EQUIPMENT

MICRO-DERM MODEL #4, CALIBRATED 4/2/75

6. TEST RESULTS

SEE PAGES 2 THRU 6



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SPECIMEN #1 & #2

CONTACTS GOLD PLATED PER MIL-G-45204, TYPE II,
(.000010 MIN THICK) OVER NICKEL PLATE PER
QQ-N-290 (.000050 THICK)

NUMBER OF CYCLES INSERTION & WITHDRAWAL	GOLD PLATING THICKNESS MEASURED (AVERAGE)	GOLD PLATING THICKNESS RANGE (MEASURED ON 4 CONTACTS)
0	.000013	.000011 - .000016
25	.000010	.000008 - .000012
50	.000008	.000005 - .000011
75	.000007	.000004 - .000010
100	.000006	.000003 - .000008

SPECIMEN #3 & #4

CONTACTS GOLD PLATED PER MIL-G-45204, TYPE II, CLASS 0, (.000030 MIN THICK) OVER NICKEL PLATE PER QQ-N-290 (.000050 THICK)

NUMBER OF CYCLES INSERTION & WITHDRAWAL	GOLD PLATING THICKNESS MEASURED (AVERAGE)	GOLD PLATING THICKNESS RANGE (MEASURED ON 4 CONTACTS)
0	.000034	.000031 - .000037
25	.000032	.000029 - .000036
50	.000031	.000027 - .000035
75	.000031	.000026 - .000036
100	.000028	.000024 - .000032
125	.000022	.000016 - .000028
150	.000024	.000018 - .000030
175	.000019	.000013 - .000025
200	.000017	.000012 - .000022
225	.000014	.000011 - .000017
250	.000016	.000012 - .000020
275	.000009	.000003 - .000015

SPECIMEN #5 & #6

CONTACTS GOLD PLATED PER MIL-G-45204, TYPE II, CLASS I (.000050 MIN THICK)

OVER NICKEL PLATE PER QQ-N-290 (.000050 THICK)

NUMBER OF CYCLES INSERTION & WITHDRAWAL	GOLD PLATING THICKNESS MEASURED (AVERAGE)	GOLD PLATING THICKNESS RANGE (MEASURED ON 4 CONTACTS)
0	.000052	.000050 - .000054
25	.000048	.000046 - .000051
50	.000046	.000043 - .000049
75	.000045	.000043 - .000047
100	.000043	.000040 - .000046
125	.000042	.000039 .000045
150	.000043	.000041 - .000045
175	.000037	.000034 - .000040
200	.000034	.000032 - .000036
225	.000036	.000032 - .000040
250	.000032	.000030 - .000034
275	.000030	.000027 - .000033
300	.000028	.000026 - .000030
325	.000024	.000020 - .000028
350	.000026	.000021 - .000031
375	.000020	.000017 - .000023
400	.000022	.000016 - .000028
425	.000019	.000016 - .000022
450	.000018	.000015 - .000021
475	.000019	.000013 - .000025
500	.000012	.000008 - .000016

Stanford Applied Engineering
Advanced Packaging Division

TITLE	NUMBER
DESIGN VERIFICATION TEST PROCEDURE AND REPORT MECHANICAL TESTS 7000 SERIES P/C CONNECTORS	TD-1006
	PROJECT: "7000 SERIES"

APPLICABLE DOCUMENTS	REV.	DATE	REV.	DATE	CODE IDENT. NO.
MIL-C-21097C	A	7/17/75			31514
					TOTAL PAGES: 10

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PREPARED	DATE	APPROVED	DATE
MIKE KRAUSER, ENG.	July 17, 1975	R. G. Thalley	7/18/75
CHECKED: R. L. Andrews	DATE: 7-18-75	APPROVED	DATE

SAE FORM 747231

1.0 TITLE: DESIGN VERIFICATION TEST PROCEDURE AND REPORT, MECHANICAL TEST 7000 SERIES P/C CONNECTOR.

2.0 SAMPLE PREPARATION: FOUR SAMPLE CONNECTORS WERE WITHDRAWN FROM STOCK:

SAMPLE NO.	1A	PART NO.	MPH7000-72
"	1B	"	"
"	2A	"	"
SAMPLE NO.	2B	PART NO.	MPH7000-72

3.0 TEST PROCEDURE: THE FOLLOWING TESTS WERE PERFORMED IN SEQUENCE AS SHOWN:

3.1 Test blades used (see Fig.1) were attached to a "Chatillon" gauge which was mounted on a press (see Fig. 2).

3.2 The forces to insert and withdraw the test blades were required.

3.3 Individual contact pair withdrawal forces were obtained by using a weight attached to a test blade (see Fig.3).

3.4 Contact pairs were selected at random:

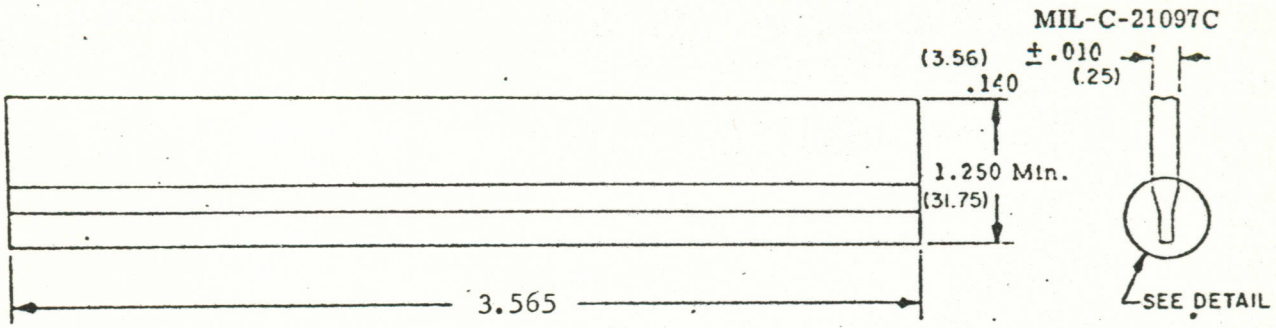
a)

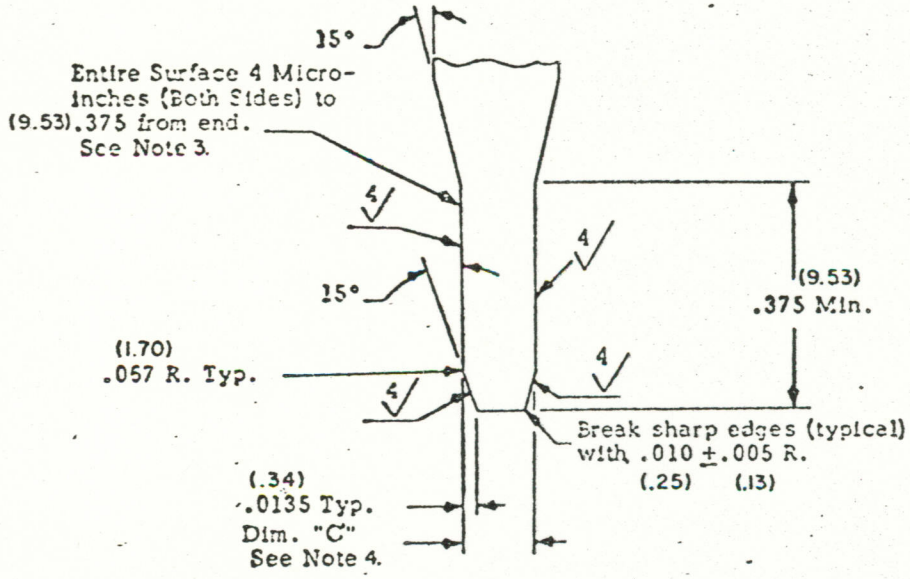
TEST NO.	1	TOTAL	INSERTION	FORCE	.054	BLADE	(Fig.1)
"	2	"	"	"	.062	"	"
"	3	"	"	"	.070	"	"
"	4	"	WITHDRAWAL	"	.054	"	"
"	5	"	"	"	.062	"	"
"	6	"	"	"	.070	"	"
"	7	INDIVIDUAL	INSERTION	FORCE	.054	"	(Fig.3)
"	8	"	"	"	.062	"	"
"	9	"	"	"	.070	"	"
"	10	"	WITHDRAWAL	"	.054	"	"
"	11	"	"	"	.062	"	"
"	12	"	"	"	.070	"	"

b) After test numbers 1 thru 12 were completed samples were subjected to fifty cycles of durability using an .070 blade.

c) After durability cycle test 1 thru 12 were repeated.

4.0 TEST RESULTS:





Detail

TEST NO.	DIM C
1 & 4	.054
2 & 5	.062
3 & 6	.070

FIG. 1

NOTES:
1. Dimensions are in inches.
2. Unless otherwise specified, tolerance is ±.005 (.13 mm) for three place decimals.
3. Only the working surfaces designated 4 shall be finished.
4. .002 (.05 mm) TIR warpage permitted for full length of dimension A.
5. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.
6. Millimeters are in parentheses.
7. For .156 (3.96 mm) size for other sizes see 3.1.)

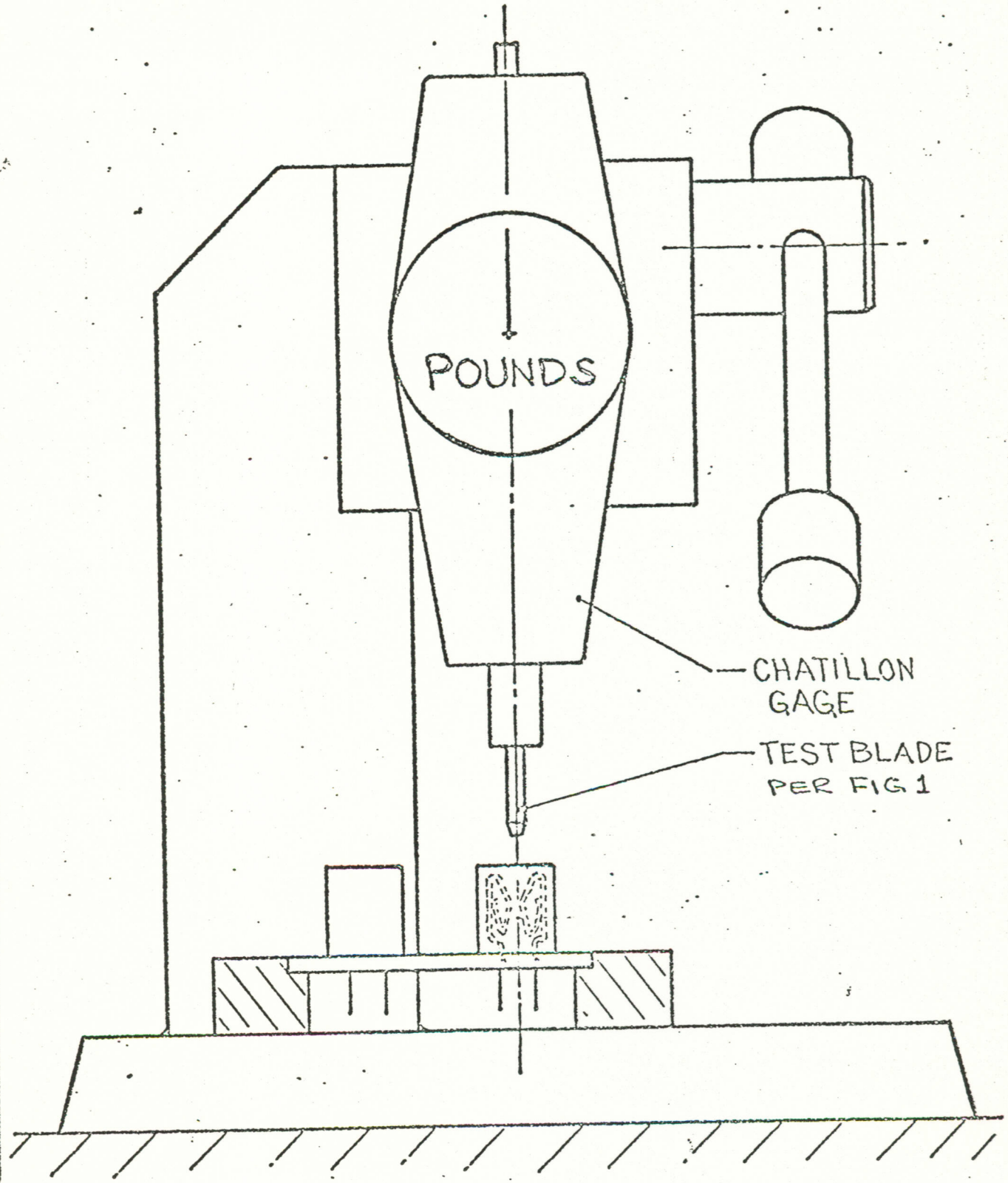
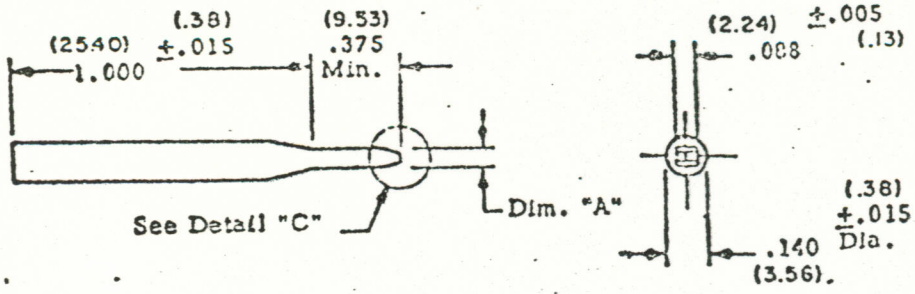
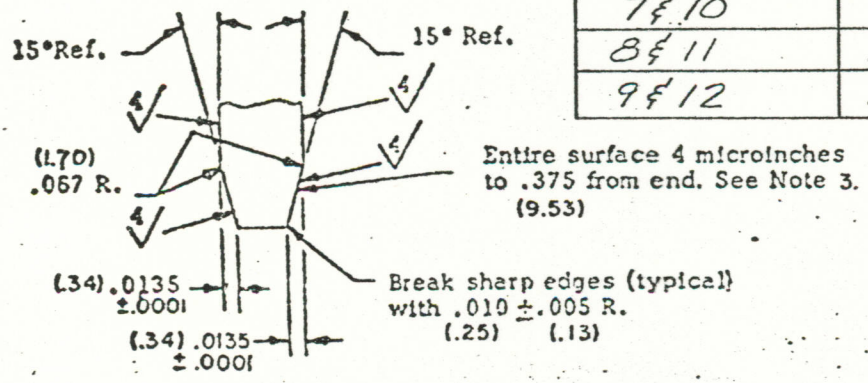


FIG. 2



TEST NO.	DIM A
7 & 10	.054
8 & 11	.062
9 & 12	.070



Detail "C"

INCHES	MM
.005	.13
.010	.25
.0135	.34
.015	.38
.067	1.70
.088	2.24
.140	3.56
.375	9.54
1.000	25.40

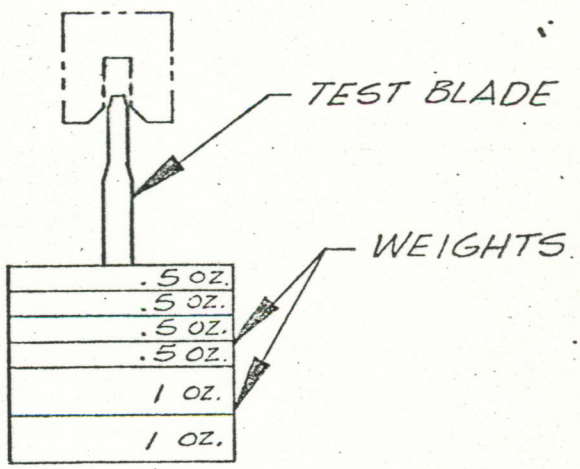


FIG. 3

NOTES:
1. Dimensions are in inches.
2. Unless otherwise specified, tolerance is ±.005 (.13 mm) for three place decimals.
3. Only the working surfaces designated 4 shall be finished.
4. Millimeters are in parentheses.
5. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.
6. Rockwell hardness 'C' 50-55.

	TOTAL INSERTION FORCE			TOTAL WITHDRAWAL FORCE		
SAMPLE NO.	TEST 1 .054	TEST 2 .062	TEST 3 .070	TEST 4 .054	TEST 5 .062	TEST 6 .070
1	7.5	10.5	13.5	3.5	6	7.5
2	7.5	10.5	13.5	3.5	6	7.5
3	7	10	13	3.5	6	7
4	8	9.5	14	4	6	8
AVERAGE	7.5	10.1	13.5	3.6	6	7.5

TEST NO. 7

CONTACT PAIRS	INDIVIDUAL INSERTION FORCE .054							
	SAMPLE 1		SAMPLE 2		SAMPLE 3		SAMPLE 4	
	OZ.	GRAMS	OZ.	GRAMS	OZ.	GRAMS	OZ.	GRAMS
1	3	85.0	3.2	90.72	3	85.0	3	85.0
2	3.5	99.2	3.4	96.39	3.4	96.39	3	85.0
3	3.5	99.2	3.4	96.39	3.6	102.	2.8	79.38
4	3.	85.	3.	85.0	3.4	96.39	3.4	96.39
AVERAGE	3.2	92.1	3.2	92.1	3.3	94.9	3.	86.4

TEST NO. 8

CONTACT PAIRS	INDIVIDUAL INSERTION FORCE .062							
	SAMPLE 1		SAMPLE 2		SAMPLE 3		SAMPLE 4	
	OZ.	GRAMS	OZ.	GRAMS	OZ.	GRAMS	OZ.	GRAMS
1	5.5	155.9	6	170.1	6.	170.1	5.4	153.0
2	5.2	147.4	5.2	147.4	6.	170.1	5.8	164.4
3	5.8	164.4	5.	141.7	5.8	164.4	5.	141.7
4	5.	141.7	5.	141.7	5.8	164.4	6.	141.7
AVERAGE	5.3	152.3	5.3	150.2	5.9	167.2	5.5	150.2

TEST NO. 9

CONTACT PAIRS	INDIVIDUAL INSERTION FORCE .070							
	SAMPLE 1		SAMPLE 2		SAMPLE 3		SAMPLE 4	
	OZ.	GRAMS	OZ.	GRAMS	OZ	GRAMS	OZ.	GRAMS
1	8.6	243.8	9.4	266.4	9.4	266.4	8.6	243.8
2	8.8	249.4	9.2	260.	8.8	249.4	9.0	255.1
3	8.8	249.4	9.0	255.1	9.0	255.1	9.0	255.1
4	9.0	255.1	9.2	260.	8.4	238.1	8.6	243.8
AVERAGE	8.8	249.4	9.2	260.3	8.9	252.2	8.8	249.4

TEST NO. 10

CONTACT PAIRS	INDIVIDUAL WITHDRAWL FORCE .054							
	SAMPLE 1		SAMPLE 2		SAMPLE 3		SAMPLE 4	
	OZ.	GRAMS	OZ.	GRAMS	OZ.	GRAMS	OZ.	GRAMS
1	1.5	42.5	2	56.7	2	56.7	1.5	42.5
2	2.5	70.8	2	56.7	2	56.7	2.5	70.8
3	2.0	56.7	2	56.7	2	56.7	2	56.7
4	2.0	56.7	2	56.7	2	56.7	2	56.7
AVERAGE	2	67.3	2	56.7	2	56.7	2	56.7

TEST NO. 11

CONTACT PAIRS	INDIVIDUAL WITHDRAWL FORCE .062							
	SAMPLE 1		SAMPLE 2		SAMPLE 3		SAMPLE 4	
	OZ.	GRAMS	OZ.	GRAMS	OZ.	GRAMS	OZ	GRAMS
1	3	85.0	3	85.0	3	85.0	3	85.0
2	3	85.0	3	85.0	3	85.0	3	85.0
3	2.5	70,8	3.5	99.2	3.5	99.2	3	85.0
4	3	85.0	3.5	99.2	3	85.0	3	85.0
AVERAGE	2.8	81.4	3.2	92.1	3.1	88.5	3	85.0

TEST NO. 12

CONTACT PAIRS	INDIVIDUAL WITHDRAWAL FORCE							
	SAMPLE 1		SAMPLE 2		SAMPLE 3		SAMPLE 4	
	OZ.	GRAMS	OZ.	GRAMS	OZ.	GRAMS	OZ.	GRAMS
1	5.5	155.9	5	141.75	5.5	155.9	5.5	155.9
2	5.5	155.9	5	141.75	5.5	155.9	5.5	155.9
3	5.5	155.9	4.5	127.5	5.5	155.9	5.5	155.9
4	5.5	155.9	5.5	155.9	5.5	155.9	5.5	155.9
AVERAGE	5.5	155.9	5	141.5	5.5	155.9	5.5	155.9

*RESULTS AFTER DURABILITY

	TOTAL INSERTION FORCE			TOTAL WITHDRAWAL FORCE		
SAMPLE NO.	TEST 1 .054	TEST 2 .062	TEST 3 .070	TEST 4 .054	TEST 5 .062	TEST 6 .070
1	7	10.	11.	3.5	6.	7.5
2	7	9.5	11.	3.5	6.	7
3	7.5	9.5	11.	3.5	5.5	7
4	7.5	9.5	11.5	3.5	5.5	7.5
AVERAGE	7.2	9.6	11.1	3.5	5.7	7.2

TEST NO.7

CONTACT PAIRS	INDIVIDUAL INSERTION FORCE .054							
	SAMPLE 1		SAMPLE 2		SAMPLE 3		SAMPLE 4	
	OZ.	GRAMS	OZ.	GRAMS	OZ.	GRAMS	OZ.	GRAMS
1	3	85.0	2	56.7	2	56.7	1.8	51
2	2.8	79.3	2	56.7	2	56.7	2.2	62.3
3	2.8	79.3	2.4	68	1.8	51.	2.0	56.7
4	2.6	73.7	2.6	73.7	1.8	51.	20	56.7
AVERAGE	2.8	80.7	2.2	63.7	1.9	53.8	2	56.6

TEST NO.8

CONTACT PAIRS	INDIVIDUAL INSERTION FORCE .062							
	SAMPLE 1		SAMPLE 2		SAMPLE 3		SAMPLE 4	
	OZ.	GRAMS	OZ.	GRAMS	OZ.	GRAMS	OZ.	GRAMS
1	5.	141.7	5.4	153.	5.	141.7	5.0	141.7
2	5.2	147.4	5.	141.7	5.8	164.4	5.2	147.4
3	4.8	136.	5.2	147.4	5.8	164.4	5.2	147.4
4	5.0	141.7	5.6	158.7	6.	170.1	5.8	164.4
AVERAGE	5.	141.7	5.3	150.2	5.6	160.1	5.3	150.2

TEST NO. 9

*RESULTS AFTER DURABILITY

CONTACT PAIRS	INDIVIDUAL INSERTION FORCE .070							
	SAMPLE 1		SAMPLE 2		SAMPLE 3		SAMPLE 4	
	OZ.	GRAMS	OZ.	GRAMS	OZ	GRAMS	OZ.	GRAMS
1	8	226.8	9	255.1	8.8	249.4	8	226.8
2	7.8	221.1	8.8	249.4	8.6	243.8	8	226.8
3	8	226.8	8.4	238.1	8	226.8	8.4	238.1
4	7.6	215.4	8.4	238.1	8	226.8	8.4	238.1
AVERAGE	7.8	225.5	8.6	245.1	8.3	235.9	8.2	232.4

TEST NO. 10

CONTACT PAIRS	INDIVIDUAL WITHDRAWL FORCE .054							
	SAMPLE 1		SAMPLE 2		SAMPLE 3		SAMPLE 4	
	OZ.	GRAMS	OZ.	GRAMS	OZ.	GRAMS	OZ.	GRAMS
1	1	28.3	2	56.7	1.5	42.5	1	28.3
2	1.5	42.5	2	56.7	1.5	42.5	1.5	42.5
3	1.5	42.5	1.5	42.5	1.5	42.5	2.	56.7
4	1.5	42.5	1.5	42.5	1.5	42.5	2.	56.7
AVERAGE	1.3	28.9	1.7	49.6	1.5	42.5	1.6	46.

TEST NO. 11

CONTACT PAIRS	INDIVIDUAL WITHDRAWL FORCE .062							
	SAMPLE 1		SAMPLE 2		SAMPLE 3		SAMPLE 4	
	OZ.	GRAMS	OZ.	GRAMS	OZ.	GRAMS	OZ	GRAMS
1	2	56.7	2	56.7	2.5	70.8	2	56.7
2	2.5	70.8	2	56.7	2.	56.7	2	56.7
3	2.5	70.8	2	56.7	2.	56.7	2	56.7
4	2.5	70.8	2.5	70.8	2	56.7	2	56.7
AVERAGE	2.3	67.2	2.1	60.2	2.1	60.2	2	56.7

RESULTS
*AFTER DURABILITY

TEST NO. 12

CONTACT PAIRS	INDIVIDUAL WITHDRAWAL FORCE							
	SAMPLE 1		SAMPLE 2		SAMPLE 3		SAMPLE 4	
	OZ.	GRAMS	OZ.	GRAMS	OZ.	GRAMS	OZ.	GRAMS
1	5.	141.7	4.5	127.5	5.5	155.9	5	141.7
2	5.	141.7	5	141.1	4.5	127.5	5	141.7
3	5.	141.7	5	141.7	5	141.7	5	141.7
4	4.5	127.5	5	141.7	5	141.7	5	141.7
AVERAGE	4.8	138.1	4.8	138.1	5	141.7	5	141.7

Stanford Applied Engineering

QUOTATION

QUOTE NO.: AP3940

DATE: August 18, 1977

R.F.Q. NO.:

TERMS: ½% – 10 NET 30

Mattel, Inc.
Toy Division
5150 Rosecrans
Hawthorne, California 90250

Attn: Dr. Chandler

F.O.B. POINT OF SHIPMENT
Out of State – Specify Carrier

QUOTE VALID FOR 30 DAYS

☐ 340 Martin Ave., Santa Clara, CA 95050, Tel: (408) 243-9200
☐ 11 Northeastern Blvd., Nashua, New Hampshire 03060, Tel: (603) 889-2866
☐ 2500 Maryland Dr., Willow Grove, PA 19090, Tel: (215) 657-4810
☐ 17900 Sky Park Circle, Suite #205, Irvine, CA 92714, Tel: (714) 751-9162
☐ 4840 North 63rd St., Boulder, CO 80301, Tel: (303) 449-9100
☐ 13616 Gamma Rd., Suite #102, Dallas, TX 75240, Tel: (214) 661-9112
☐ 7701 Normandale Rd., Suite #108, Minneapolis, MN 55435, Tel: (612) 835-2179
☒ 3080 Airway Dr., Costa Mesa, CA 92626, Tel: (714) 540-9256
☐ 48 Cabot St., West Babylon, NY 11704, Tel: (516) 420-8111
☐ 1750 N. Kimball Ave., Chicago, IL 60647, Tel: (312) 235-5030

SAE is pleased to quote on your requirements as follows:

ITEM	QTY	DESCRIPTION	UNIT PRICE
1.	100,000	CPH7000-44TV-R23 P/C Connector	$1.22
	200,000		1.16
		NOTE: Deduct 10¢/each for tin plating	
		Quoted with thru-hole mounting; not tapped insert	
		Enclosure: Sample (1)	

Thank you for this opportunity to quote on your requirements. (When placing an order, please refer to the quotation number above.) If we can be of further assistance, please let us hear from you.

Very truly yours,

A. R. Moyer, General Manager
STANFORD APPLIED ENGINEERING, INC.

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