

C. B.
F7I
Gunn
8/13

PRODUCT A DESCRIPTION

Use:

BASIC language computer for students, programmable calculator users, business and professional users and computer language learning.

SPECIFICATIONS:

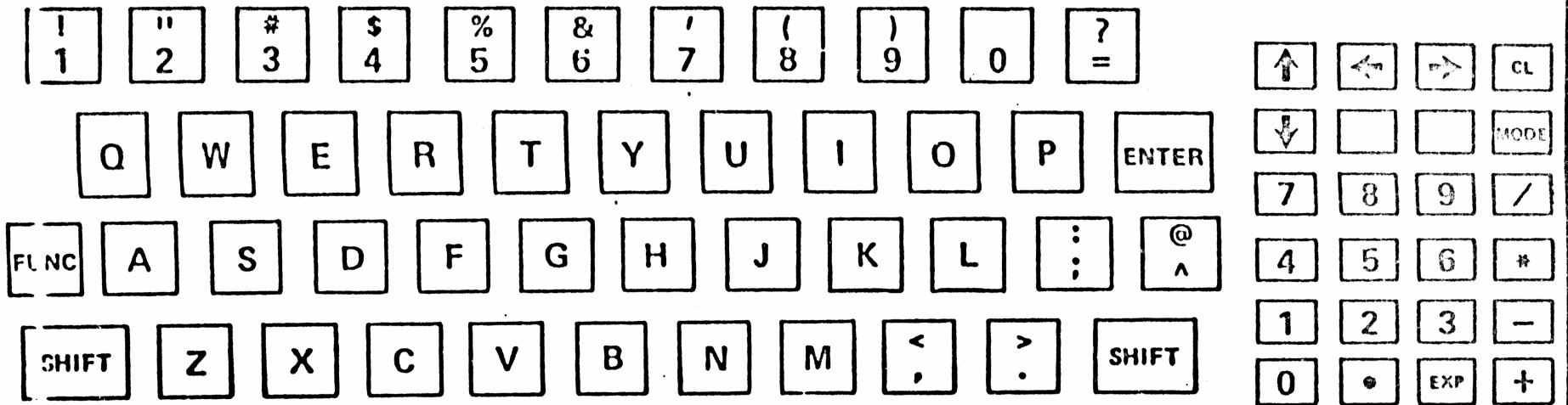
- Size: 8.0 x 3.5 x 1.0 (or wedge shaped .65 to 1.0)
Display: One line 5x5 dot matrix, 32 characters 1/10 duty cycle
Keyboard: QWERTY on .5"H x .4"V centers with separate numeric pad
Elastomer travel keyboard with overcenter "feel"
Language: BASIC built in
Speed: Equivalent to Sharp 1211 (similar to TI-59)
Memory: 1) 1K byte internal RAM with plug-in RAM expansion to 8K bytes (150 lines of BASIC to 1200 lines of BASIC) (1000 steps to 8000 steps or 125 memories to 1000 memories)
2) External plug-in ROM will be available and will provide capability for customized applications
3) Non volatile CMOS RAM modules can be used in the ROM slot to provide permanent storage of program or data
I/O: An output port similar mechanically to that on Sharp 1211 will provide peripheral connection for RS-232 adapter, printer, modem, TV display adapter, and mass storage device
Power: Thruway battery. 250 hour battery life minimum
Price: \$150
\$176

Product 'A'

TOTAL MATERIAL COST = 212.53

OFF	ON	↓	↑	"	.	()	MODE	2ND	←	→	CL	
ⁱ Q	^e W	^s E	^x R	[^] T	^u Y	[?] U	I	O	P	7	8	9	/
A	S	D	F	G	H	J	K	L	=	4	5	6	.
SHIFT	Z	X	C	V	B	N	M	SPC	ENTER	1	2	3	-
										0	1	EXP	+

PAYMENT NO. 12 = \$ 384.38
INTEREST = \$ 221.15



Product Concept 2

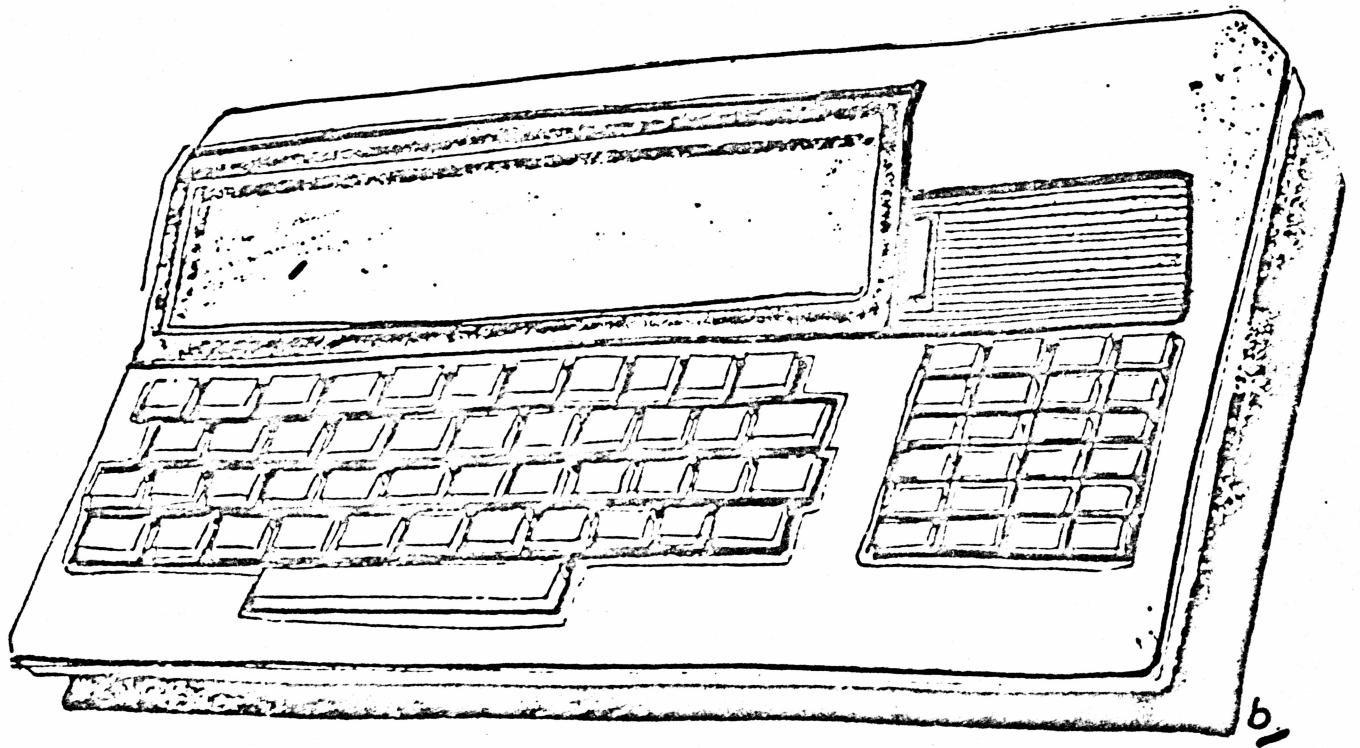
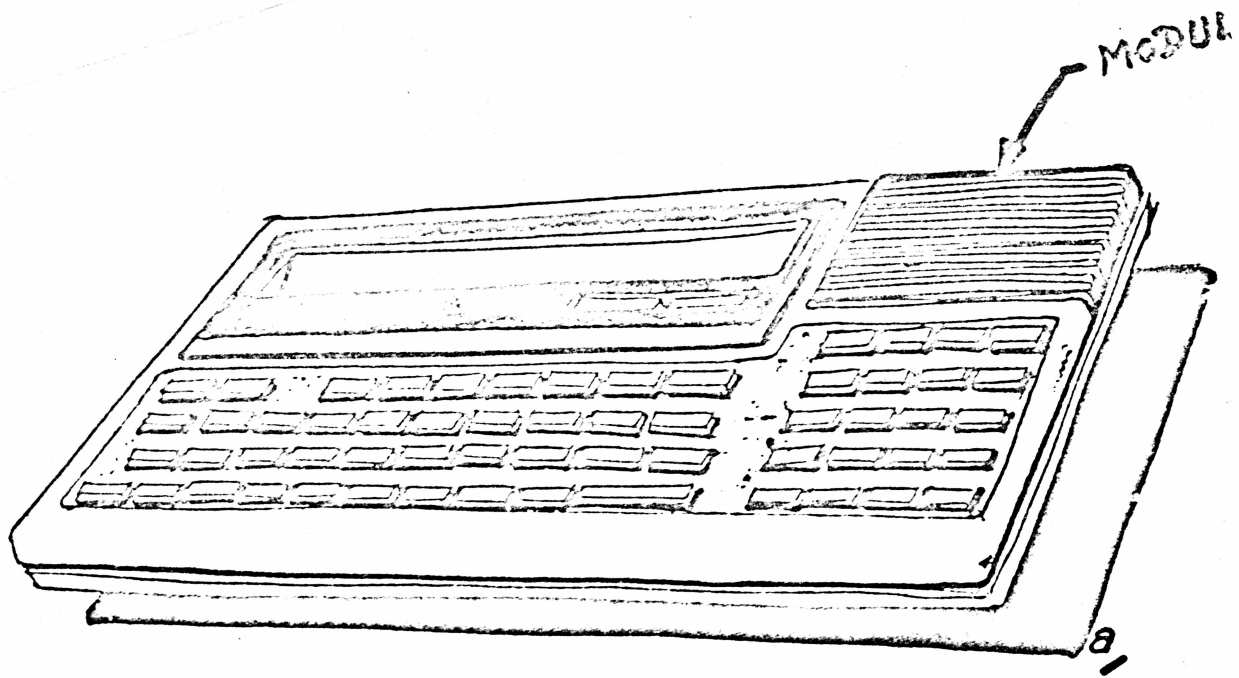
PRODUCT 'B'

Product Concept C

Product 'c'

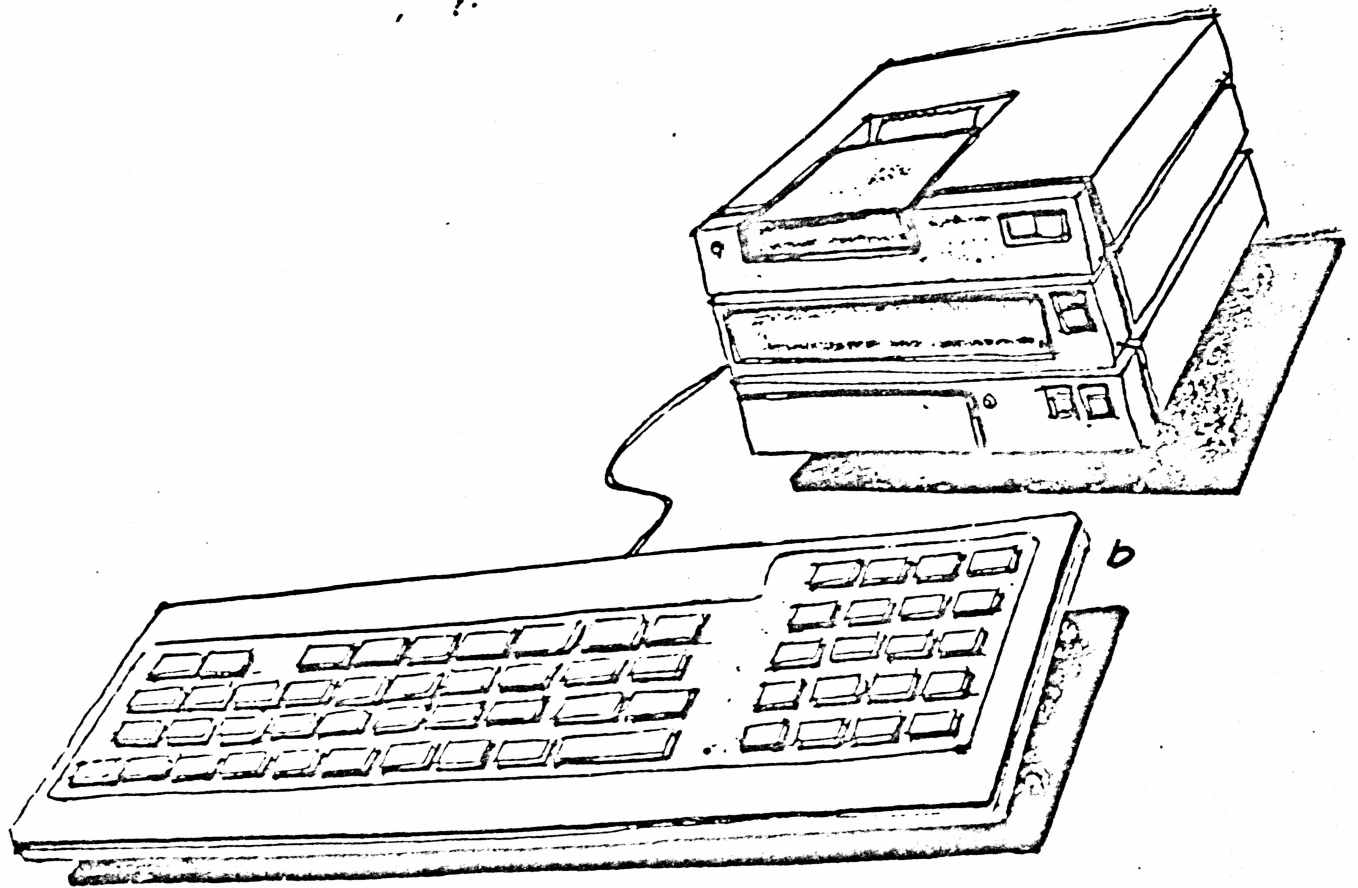
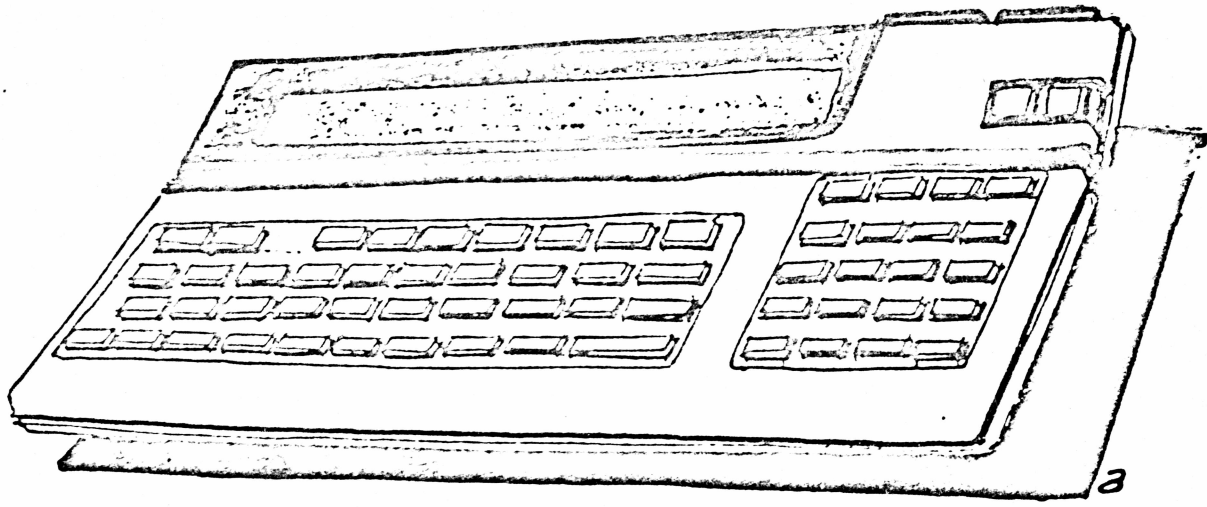
MONTH	JAN	FEB	MAR	1Q	2Q	YEAR
SALES	93.6	100.2	107.2	301	369	1485
MATL	51.1	49.3	53.2	154	180	730
OTHER	46.2	44.1	40.4	131	130	480
PROFIT	-3.7	6.8	13.6	17	59	275
PROF	-4.0	6.8	12.7	5.5	16.0	18.5

!	"	#	\$	%	&	'	()	0	?	↑	←	→	CL	
1	2	3	4	5	6	7	8	9	0	=	↓			MODE	
	Q	W	E	R	T	Y	U	I	O	P	ENTER	7	8	9	/
FUN	A	S	D	F	G	H	J	K	L	:	@	4	5	6	*
											^	1	2	3	-
SI. FT	Z	X	C	V	B	N	M	<	>	SHIFT	0	.	EXP	+	



Hand-drawn sketch

3



10

Christa Starke

CONSUMER MECHANIZATION DEPARTMENT
PRELIMINARY DESIGN REVIEW
ADVANCED LANGUAGE CALCULATOR

DEFINED DESIGN FEATURES

PREL. SIZE: 9.20 X 5.70 X .85 RECTANGULAR FLAT

DISPLAY: ONE LINE 5 X 8 DOT MATRIX, 32 CHARACTERS 1/16 DUTY CYCLE

KEYBOARD: 0 TYPEWRITER SETTING WITH SEPARATE NUMERIC PAD, ELASTOMER
KEYBOARD WITH "OVERCENTER FEEL"

0 .550"H X .500"V CENTERS

0 SPACE BAR AND LARGER SHIFT KEY

0 ELASTOMER OR MOLDED WITH PRINTED GRAPHICS ON KEY TOPPERS
(70 QTY.)

LANGUAGE: 'BASIC' BUILT-IN

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CS-6D-19

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PRELIMINARY DESIGN REVIEW
ADVANCED LANGUAGE CALCULATOR

DEFINED DESIGN FEATURES

- MEMORY: 0 2K BYTE INTERNAL RAM WITH PLUG IN RAM EXPANSION TO 16K BYTES.
TWO RAM CHIPS WITH LOW PROFILE SOCKET. (28 X .600 PACKAGE)
- 0 DROP IN MODULE FROM TOP WITH SNAP ON DOOR (ROM - CUSTOMIZED APPLICATIONS)
- 0 CMOS RAM MODULE CAN BE USED IN THE ROM SLOT TO PROVIDE PERMANENT STORAGE OF PROGRAM OR DATA.
- I/O PORT: 8-PIN SINGLE ROW FOR PERIPHERAL CONNECTION
- POWER: 2, 9V THROWAWAY BATTERIES OR 4, 'AA' RECHARGABLE BATTERIES WITH JACK

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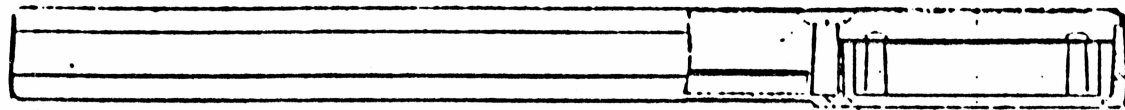
CONSUMER MECHANIZATION DEPARTMENT
PRELIMINARY DESIGN REVIEW
ADVANCED LANGUAGE CALCULATOR

DEFINED DESIGN FEATURES

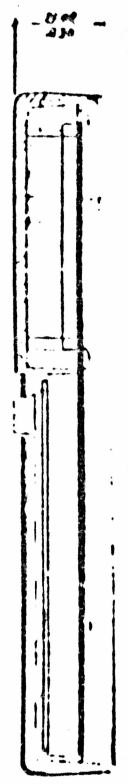
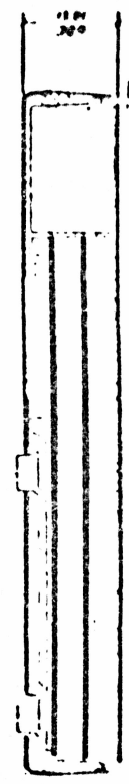
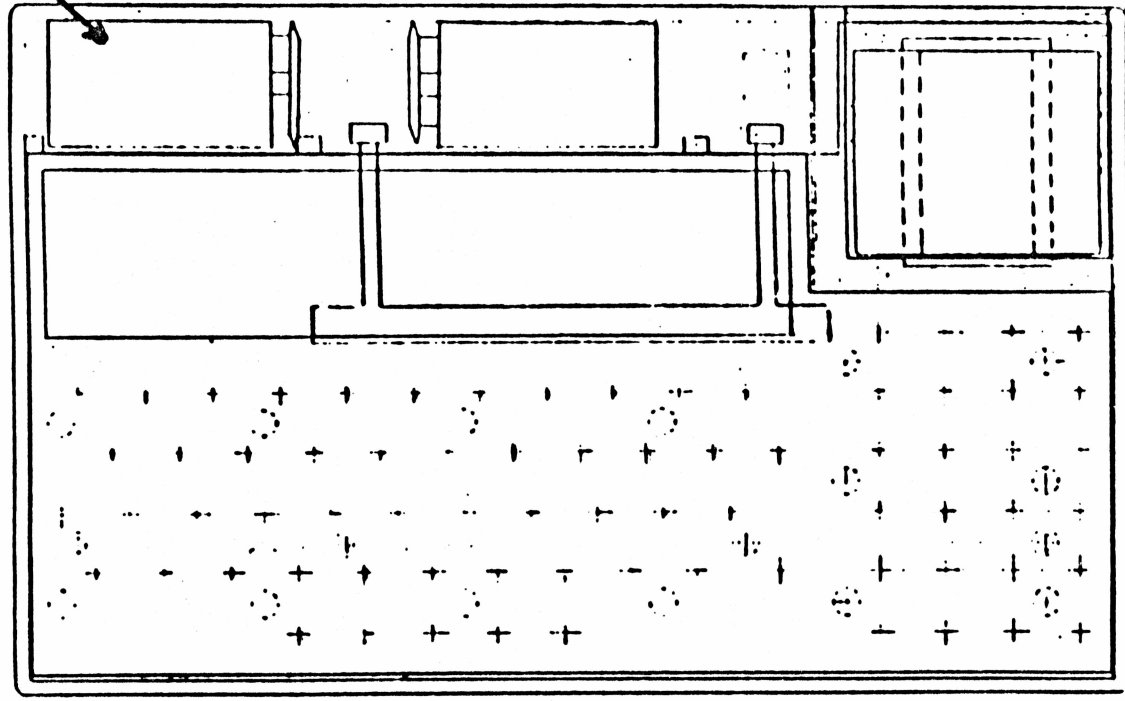
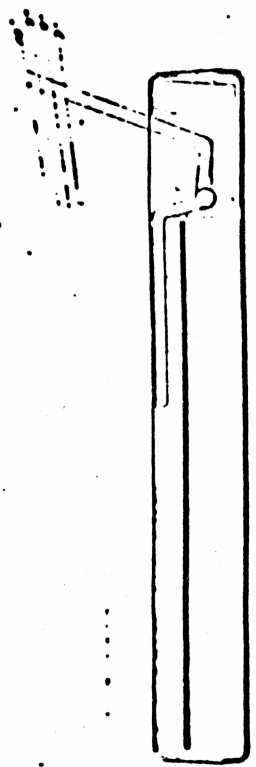
- PACKAGE:
- .024" THICK (MAY BE) METAL BOTTOM CASE
 - PLASTIC MOLDED TOP CASE WITH METAL OVERLAY FOR SUPPORT AND DECORATIONS.
 - HIGHLY DENSE TWO PCB'S.
 - SONICWELDED MODULE WITH ZEBRA STRIP AS INTERCONNECTION SYSTEM
 - TILTING MECHANISM - 10° FROM HORIZONTAL IS UNDER INVESTIGATION, STILL OPTIONAL AT THIS STAGE.
 - PLASTIC MOLDED 'CRADLE', OPTIONAL TO CUSTOMER TO ALLOW ONE PERIPHERAL CONNECTED TO CONSOLE. IT SHOULD BE PORTABLE TO CARRY IN BRIEFCASE.
 - PRICE: \$200 (DTC)
 - QUAL BUILD: NOVEMBER '82

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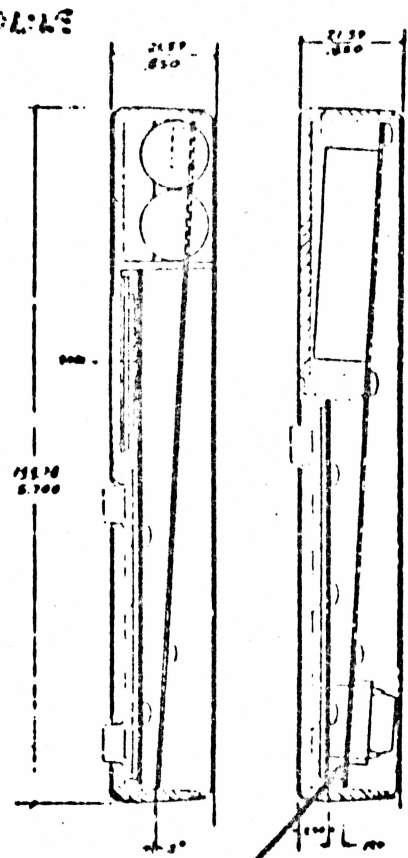
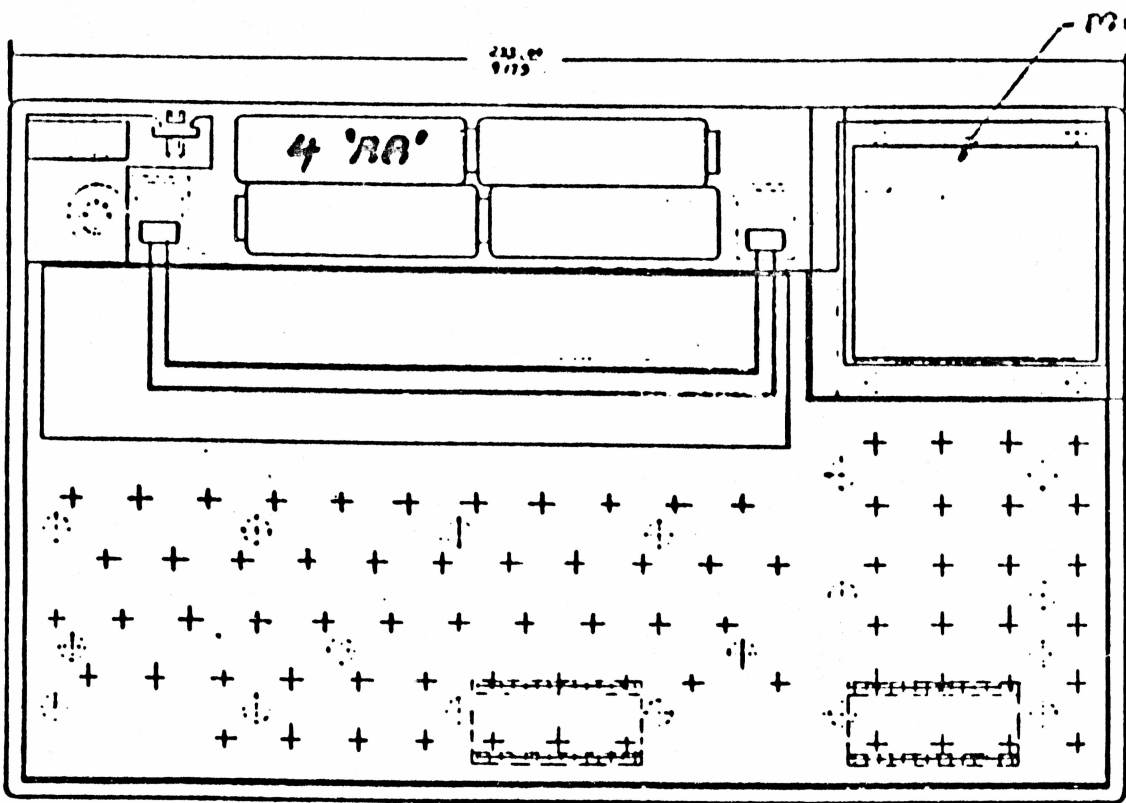
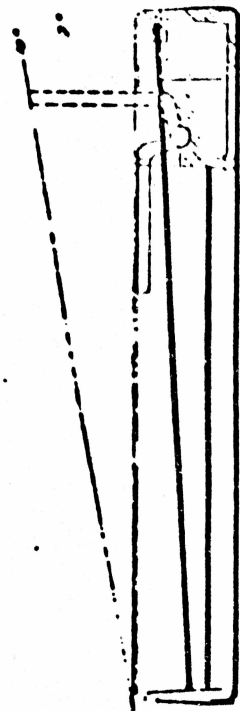
GGB 039-437



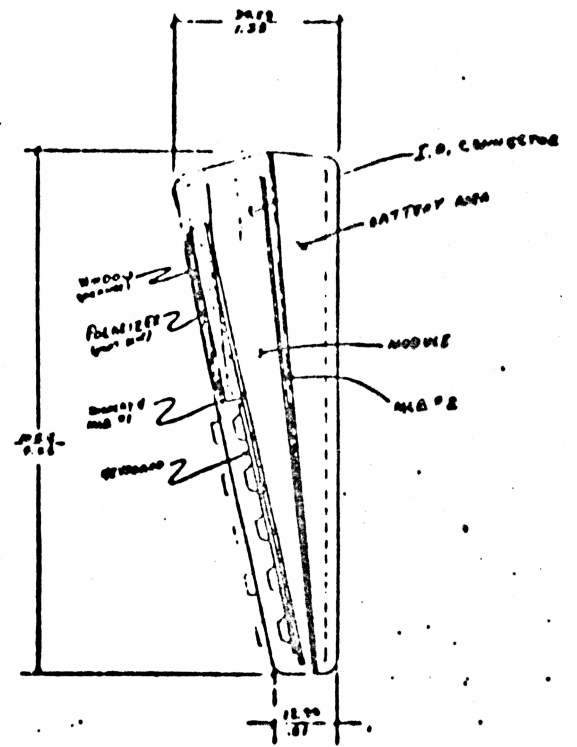
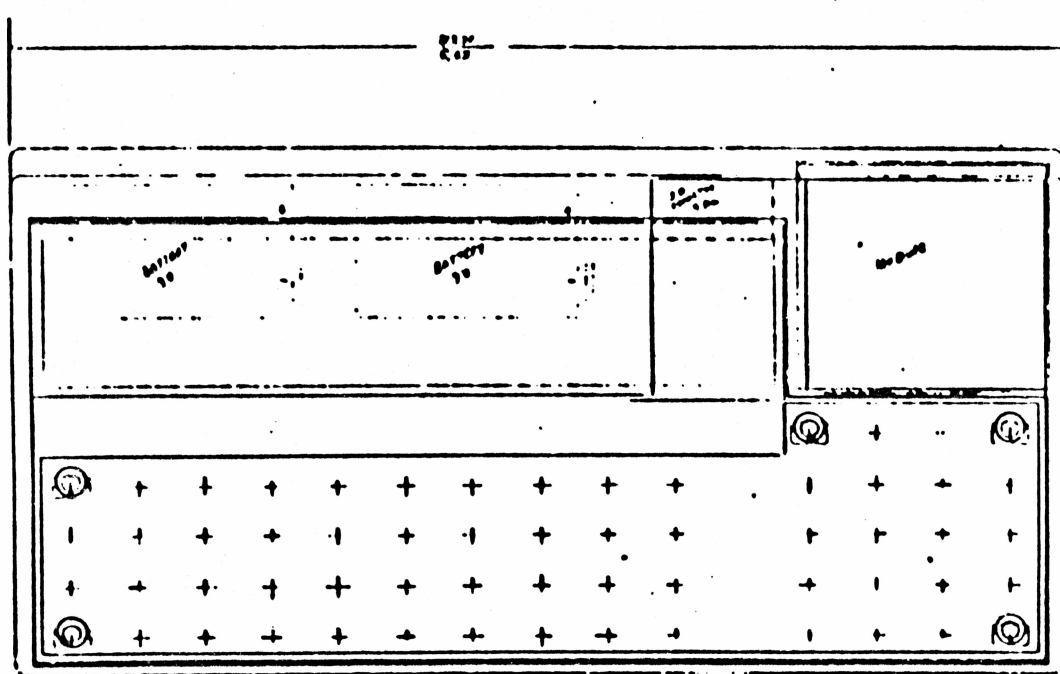
2,9V



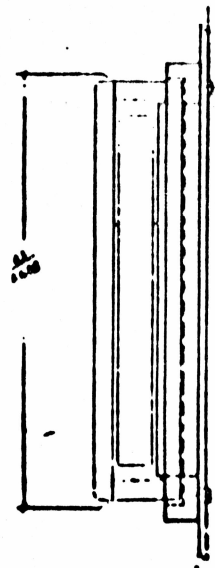
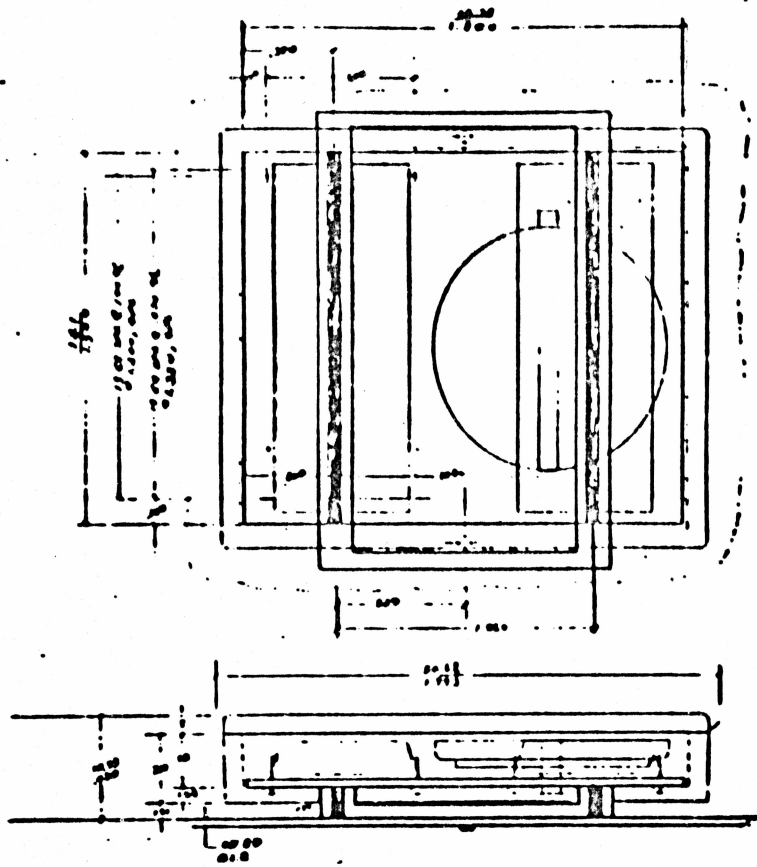
10 1000 1000
11 1000 1000
12 1000 1000
13 1000 1000
14 1000 1000
15 1000 1000
16 1000 1000
17 1000 1000
18 1000 1000
19 1000 1000
20 1000 1000



TILTED
PCB



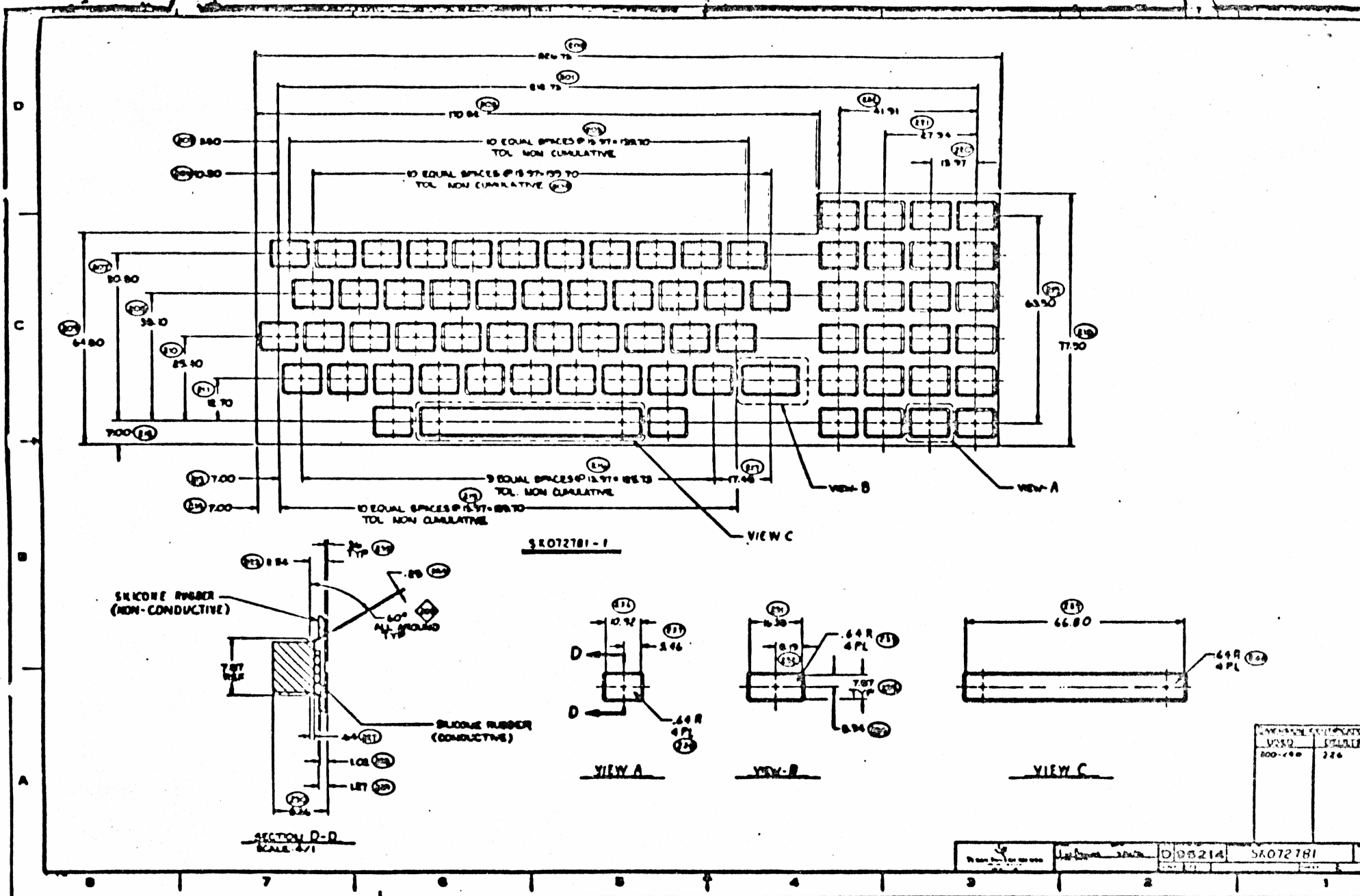
WEDGE



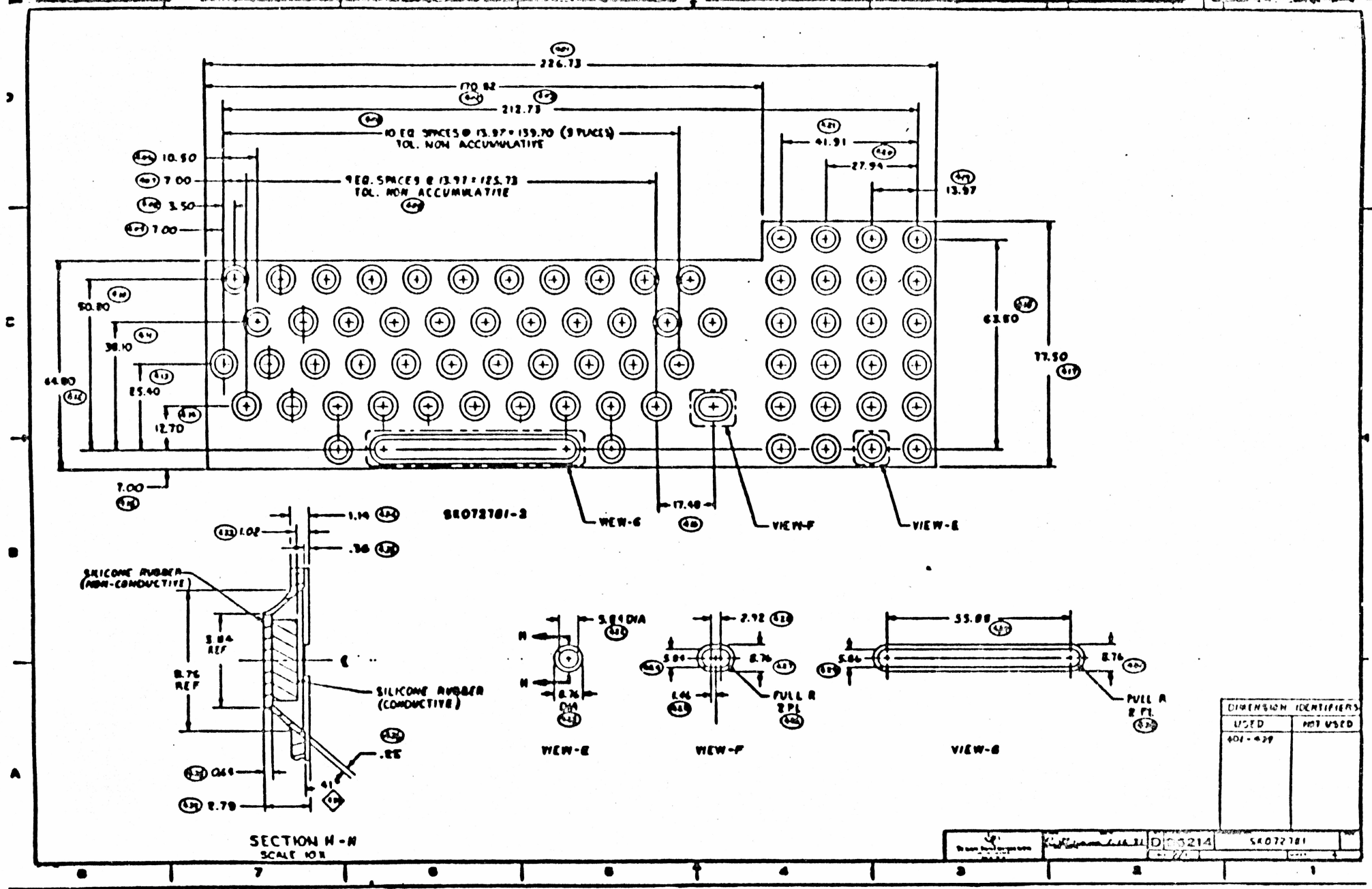
MOE ARE 22-100 700

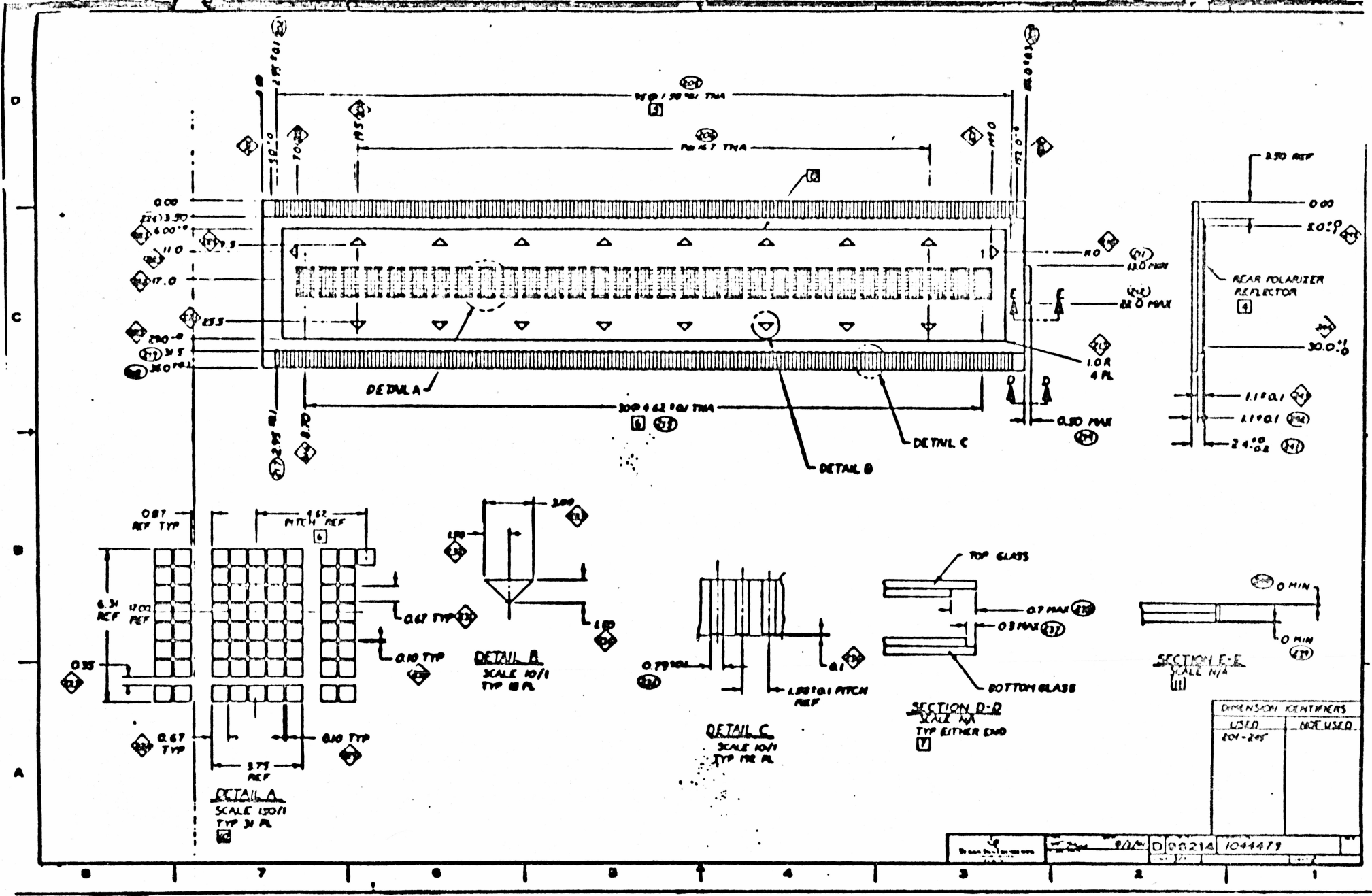
MODULE LAYOUT
 CONCEPT # 2
 DATE 6-11-81
 DES CHARLIE GARZA
 SAs GUN LAWA

MODULE

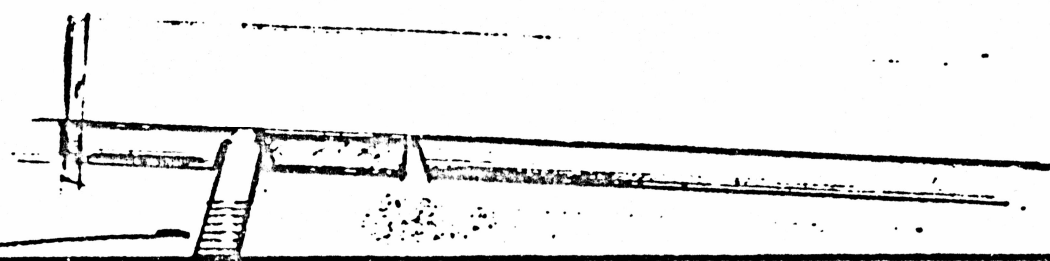


DATE	BY	CHKD	APP'D
100-440			
226			



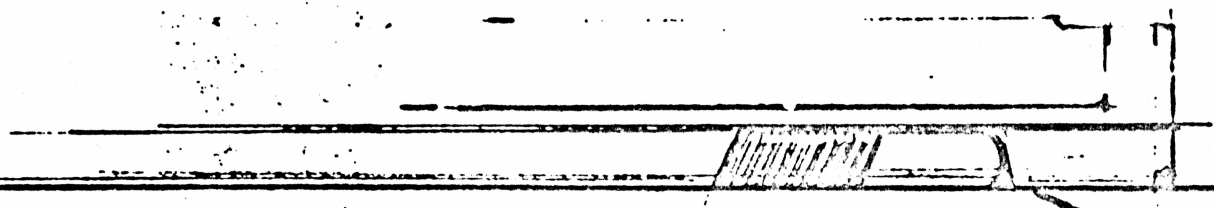


DIMENSION CENTERS	
USED	NOT USED
201-215	

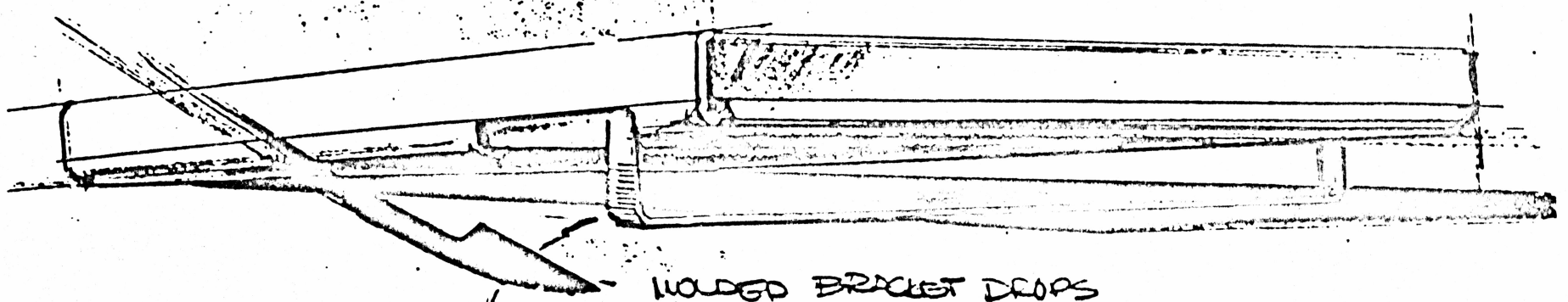


LENGTH OF BRACKET ENOUGH TO
RAISE UNIT 6"-10"

5



BRACKET SITS FLUSH TO CASE
WHEN NOT USED OR FOR
STORAGE

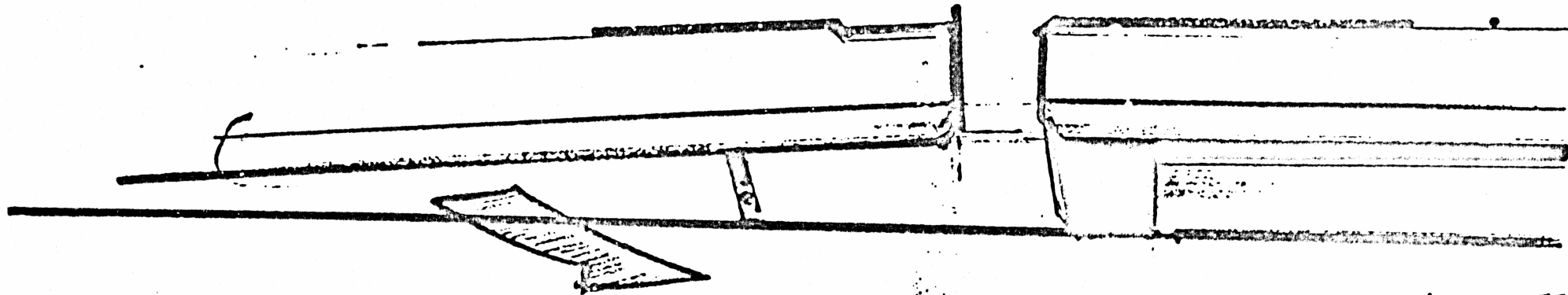


FOLDED BRACKET DROPS
AND BECOMES STAND FOR USE

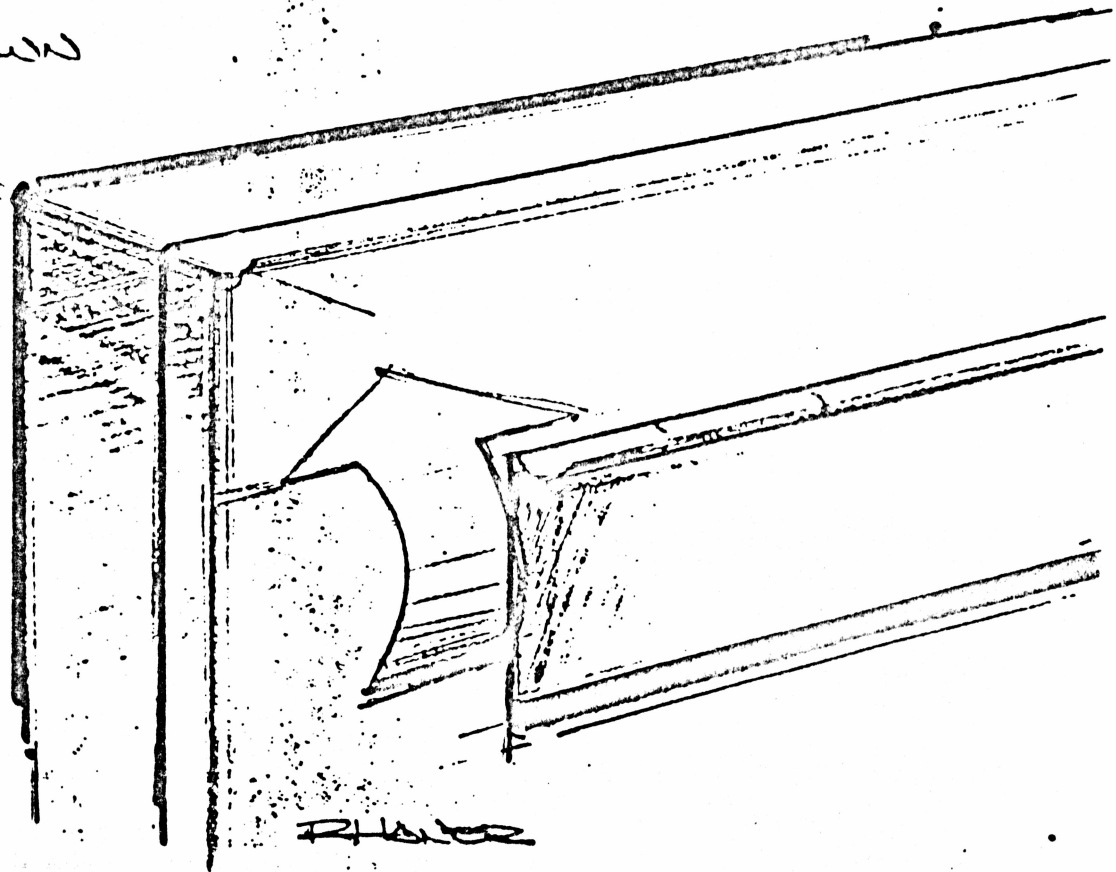
THAYER ET

SIDE VIEW

BACK VIEW



SMALL FLAP FOLDS DOWN
AND LOCKS INTO PLACE



PLATE

CONSUMER MECHANIZATION DEPARTMENT
PRELIMINARY DESIGN REVIEW
ADVANCED LANGUAGE CALCULATOR

PERIPHERAL SYSTEM

DEFINED PRODUCTS:

- 0 RS-232
- 0 MODEM
- 0 DISK DRIVE
- 0 PRINTER-32 COLUMNS (MAY BE PURCHASE ITEM)
- 0 TV-INTERFACE

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CONSUMER MECHANIZATION DEPARTMENT
PRELIMINARY DESIGN REVIEW
ADVANCED LANGUAGE CALCULATOR

PERIPHERAL SYSTEM

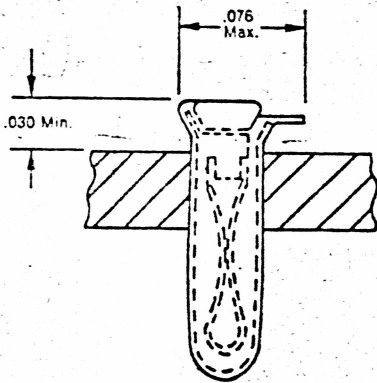
DESIGN APPROACH

- 0 MINIMUM SIZE IN ORDER TO STYLED CLOSE TO CONSOLE. (4.7 X 5.75 X 1.2, 4.7 X 5.75 X 1.7)
- 0 COMMON PLASTIC PARTS (POSSIBLY 4 TO 5 COMMON PLASTIC PARTS E.G. TOP CASE, BOTTOM CASE, BACK PLATE, ETC.)
- 0 LED AND CONTROL SYSTEM ON FRONT SIDE.
- 0 PERIPHERAL INTERCONNECTION SYSTEM SHOULD BE SIMPLE ENOUGH TO MAKE PORTABLE SYSTEM
- 0 'CRADLE' ATTACHMENT FOR ONE PERIPHERAL ONLY (RS-232 OR MODEM)
- 0 POWER SUPPLY - UNDER INVESTIGATION
- 0 QUAL BUILD - NOVEMBER '82

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CS-6D-19

Specifications

Sealed Component Socket



Application Tooling

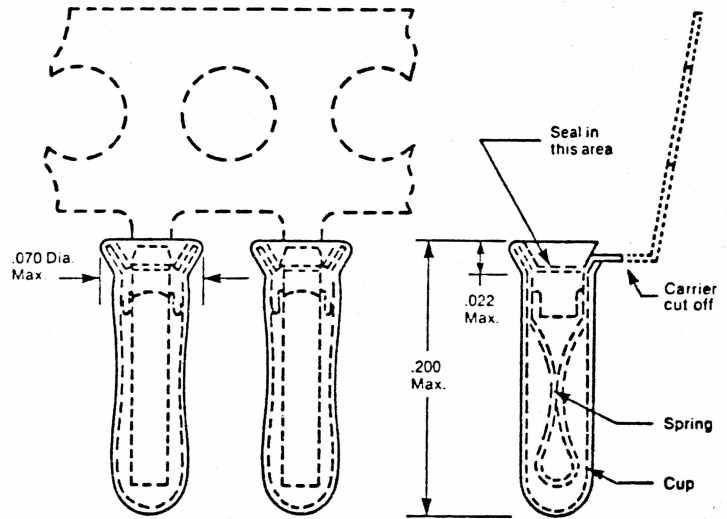
Material:

Cup — Copper (QQ-C-576), tin plate (MIL-T-10727) .000100 min. thickness

Spring — Beryllium copper (QQ-C-533), gold plate (MIL-G-45204) .000030 min.

thickness over nickel plate (QQ-N-290) .000030 min. thickness

Seal — Silicone rubber



Part Number (22,500 per reel): 116389-7

Recommended hole size: .053±.003

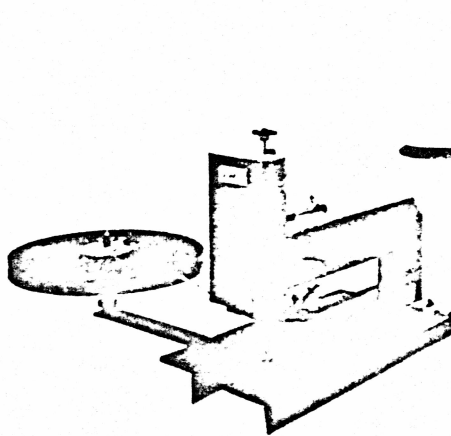
Component Socket insertion tooling consists of any applicator module that may be attached to an AMP bench mounted semi-automatic machine or with an interface to most any N/C machine in use today.

The bench mounted semi-automatic machine is capable of loading sockets into panels with pre-drilled holes of virtually any pattern configuration, spaced as close as .100" between centers at a net rate of 3000 an hour.

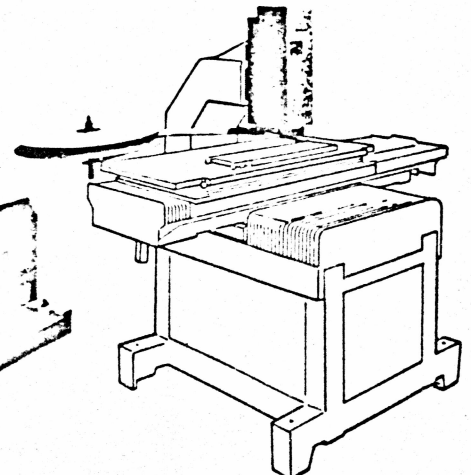
When using the applicator and

interface module coupled with a N/C machine, up to 7000 sockets per hour can be insured in virtually any pattern configuration.

Many design features are built into this tooling to offer ease of operation, eliminate extensive operator training and possible human error, plus assure long trouble-free service. These AMP features combine to enhance the economy of production by providing the assurance for highest product quality at the lowest installed cost.



Bench Machine
Applicator Module 265895-1
Base 265208-2



N/C Machine
with Applicator Module
and Interface

CONSUMER MECHANIZATION DEPARTMENT
 ADVANCED LANGUAGE CALCULATOR
 SOCKET VS. INDIVIDUAL CONTACT

<u>QTY</u>	<u>INDIVIDUAL CONTACT</u>	<u>TOTAL COST</u>	<u>SOCKET</u>	<u>TOTAL COST</u>
100K	.025 (INSTALLED)	\$1.4	.030	.060
	.020 (LOOSE)	\$1.12 + LABOR		+ LABOR
250K	.022 (INSTALLED)	\$1.24	.025	.050
	.018 (LOOSE)	\$1.01 + LABOR		+ LABOR

2K EQUIPMENT

VENDOR

AUGAT, INC.

SMK, MOLEX, AMP, ETC.

08/12/81
 CS-6D-19

66B 039-437

SCHEDULE CHART

ALC PRODUCT A

PROGRAM MANAGER

C. B. JASON

IDENT. NO.	TASKS	PROGRAM																								
		M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	
	MARKET RESEARCH		X																							
	PROCESSOR SELECTION	X																								
	KEY COMPONENT SELECTION		X	◇																						
	PRELIMINARY SYSTEM DESIGN		X	◇																						
	PRELIM FUNCTIONAL I/O SPEC		X																							
	FUNCTIONAL BREADBOARD			X																						
	CRITICAL DESIGN REVIEW			X																						
	STRINGY FLOPPY QUAL		X							X																
	PRELIMINARY STYLING	X	◇																							
	PRELIMINARY MECH/KEYBOARD	X		X																						
	MECHANICAL LAYOUT		X																							
	FINAL STYLING		X																							
	PROTO PERIPHERAL DESIGN/FAB			X					X																	
	MECH DETAIL DESIGN/PERIPH BOX			X					X																	
	PROTO ELEC EVAL/CORRECT			X					X																	
	PROD RS-232 I/F DESIGN			X					X																	
	PROD CASSETTE/S.F. DESIGN			X					X																	
	MOLD DESIGN			X					X	X																
	TOOLING FAB & PROOF			X					X														◇	X		
	TEST EQ DESIGN/FAB			X					X														◇	X		
	ASSY TOOLING DESIGN/FAB			X					X														X			

LEGEND: ▽ SCHEDULED EVENT ▽ COMPLETED EVENT ◇ REVISED SCHEDULE

4/30/81, CBW, 39-815

SCHEDULE CHART		TEXAS INSTRUMENTS		PROGRAM ALC PRODUCT A							PROGRAM MANAGER C. B. WILSON							STATUS DATE 6-17-81							
IDENT. NO.	TASKS	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A
	FINAL PWB/SYSTEM LAB TEST								X																
	FAB PWB's																								
	PREPRODUCTION (INC PERIPH)																								
	SW DESIGN (INC BASK)							X																	
	SW CODING																								
	SW TEST & DEBUG																								
	7120 & EXT Rom PRODUCTION																								
	QUALIFICATION																								

LEGEND: ▽ SCHEDULED EVENT ▽ COMPLETED EVENT ◇ REVISED SCHEDULE

4/30/81, CBW, 39-815