CHERRY KEYBOARDS

CHERRY ... over 25 years

CHERRY IS: Products available world-wide from Cherry manufacturing facilities, sales offices, distributors and licensees in major world markets.

CHERRY IS: Field Sales Representatives conveniently located to provide fast, efficient, personal service. **See listing on pages 32-33.**

CHERRY IS: Five manufacturing locations around the world to service you better.

Cherry Electrical Products Corp. (Headquarters) .... **U.S.A.**
3600 Sunset Avenue., Waukegan, Illinois
2205 Krueger Drive., Waukegan, Illinois

Cherry Semiconductor Corp. .... **U.S.A.**
99 Bald Hill Road, Cranston, Rhode Island
60 Walnut Grove Avenue, Cranston, Rhode Island

Cherry Electrical Products Ltd.................. **United Kingdom**
St. Albans Road, Sandridge, Hertfordshire, England

Cherry Mikroschalter GmbH .... **Germany**
8580 Bayreuth, Bavaria, Weiherstrasse 26
8572 Auerbach, Bavaria, Industriestrasse 19

Hirose Cherry Precision Co., Ltd. .... **Japan**
2139 Shukugawara, Kawasaki

G. W. Engineering
A Division of Actrol Industries, Pty. Ltd. .... Australasia
(Licensee)
70-76 Captain Cook Drive, Caringbah, N.S.W. 2229, Australia
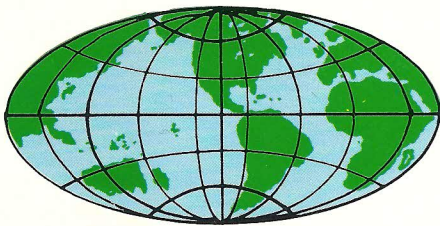
CHERRY IS: **Keyboards and Keyboard Switches ... plus the following, growing product line:**

Digital and Linear Integrated Circuits
Lighted Pushbutton Switches
PLASMALUX Gas Discharge Displays
LEVERWHEEL and Thumbwheel Switches
ROTOCODE Rotary Switches With Coded Output
Matrix Selector Switches
Low Energy Gold Crosspoint Contact Switches
Precision Snap Action Switches

See pages 34-35.

CHERRY IS: **Precision Engineered Quality Electrical and Electronic Components**

All Cherry's products are designed and manufactured under the technical guidance of an experienced staff of mechanical, electrical, tool, industrial and manufacturing engineers. Personnel trained in many skills operate advanced assembly and fabrication machinery to provide Cherry customers with the highest quality at prices that are truly competitive.

serving the needs of a growing industry.

KEYBOARDS AND KEYBOARD SWITCHES

CHERRY IS:
The solid, responsible source for all your Keyboard needs.

When it comes to keyboards, Cherry can be your cost-effective headquarters. Cherry, long the leader in hard contact technology and innovation through 25 years of specialization, has become a major source of keyboards since the original success of our low energy switching units in 1967.

The creative engineering that first introduced gold crosspoint contacts to keyboard switches is working to bring new product developments to you. The latest is a new low profile Solid State Keyboard which utilizes capacitive switching technology.

At Cherry we manufacture virtually all the components used in our products. We do our own printed circuit board fabrication . . . metal stamping . . . plating and molding, including 2 and 3 shot keycaps. This vertical integration enables Cherry to control quality at every step in the manufacturing process.

The result is a quality product . . . at lowest possible cost . . . delivered on schedule.

Specially designed machines and state-of-the-art equipment provide efficient, high speed, volume production so important to achievement of cost savings. In our modern world headquarters plant — which is even now undergoing massive expansion — we have made effective use of the latest manufacturing technology, including computer scheduling, tape and digital controlled stamping, micro processor controlled drilling, and automated precision plating.

The best way for you to evaluate our total capability is to schedule a visit to our plant. For those who can't do this at present, we invite you to check through this Keyboard Catalog. Then, contact the nearest Cherry Field Sales Representative (see listing on **page 32**) or call our special Keyboard Sales Group.

CUSTOM

Whatever your keyboard problem . . . Cherry will provide a solid state or hard contact solution. Our Keyboard Sales Group is ready and waiting to provide application and engineering assistance.

Cherry specializes in custom designed units and we make all our keycaps, standard or sculptured, in matte or smooth top finish. We also manufacture the switches, printed circuit boards and hardware. Our keyboard electronics utilize a scanning technique which readily adapts to any keyboard configuration or format.

Because of this in-house capability, we can provide a custom designed keyboard to meet your application requirements, often at less than the cost of a standard unit.

HOW TO GET CUSTOM DESIGNED ASSISTANCE

Just provide Cherry with your specs and we'll be glad to quote. To help you get started, we have included a handy, tear-out **Keyboard Designers' Work Sheet** on pages 7 and 8. It's specifically designed to make it easy for you to organize your specifications and to tell us what you want your keyboard to do and how you want it to do it. But first, take a look at pages 13 thru 23 where the standard keyboards available are described. If you don't see the keyboard you want among these standard units, a Cherry custom design may be appropriate.

WHEN SHOULD YOU CONSIDER A CUSTOM DESIGN?

As you probably know, custom designed keyboards are economically practical when purchased in production quantities. But, even if your quantity need is small we'll work with you and assist in evaluation.

After all, we have solved so many keyboard problems over the years that the "custom" you need just might be an "almost standard" for us!

A straightforward way out of the standard versus custom dilemma is to consider your keyboard requirements early in your design program, aiming toward the most cost-effective use of a Cherry standard keyboard in your application. We carry many keyboards as off-the-shelf items and, of course, there are no design or tooling charges involved.

Assuming, however, that you've decided on a custom designed keyboard, you may then expect to participate in a down-to-earth series of steps leading to production of your specific keyboard.

DESIGNED KEYBOARDS

FIVE STEPS TO A CUSTOM KEYBOARD

1. **Contact Cherry** . . . either our Cherry Keyboard Sales Group or your local Cherry Sales Representative.

2. **Get down to specifics** with a technical discussion between you and Cherry engineers aimed at establishing a complete understanding of your application requirements.

3. **Cherry submits a formal quotation** including unit prices at various quantities, tool and design charges, if any, and a statement as to contract duration.

4. **Cherry builds a prototype** proving out two things: Your spec and your design. Prototypes are rigorously evaluated by you before we at Cherry start actual production.

5. **Production and delivery of keyboards begins.**

HARD CONTACT OR SOLID STATE?

A question we are often asked is: "Should I use a hard contact gold crosspoint keyboard . . . or a solid state keyboard?"

Our answer is always the same: Use the keyboard that is best for your particular application . . . the keyboard that will do the job best . . . the one that is most cost-effective for you and your product.

How do you make the **specific** decision? Ask your Cherry Representative or the Cherry Keyboard Sales Group. Since Cherry makes **both** hard contact and solid state keyboards, we are in the ideal position to help you make the decision intelligently, efficiently, quickly.

This is in sharp contrast to most other keyboard manufacturers who make **only** solid state . . . or **only** hard contact units. Naturally, they know their products well. But, they may not know the capabilities, features and specific advantages that just might make "the other type" your best selection for your particular application.

HOW TO WORK WITH YOUR LOCAL CHERRY REPRESENTATIVE
(See pages 32-33 for listing.)
This, too, is simple. Just give him the story from the beginning. Describe in as much detail as possible what your keyboard objectives are. He will then work closely with you and the Cherry factory in coordinating samples, technical information and pricing.

ABOUT THE CHERRY KEYBOARD SALES GROUP
Our Keyboard Sales Group consists of inhouse keyboard specialists who are able and ready to (1) advise you what type of keyboard will prove to be the most efficient for your specific application, (2) offer design assistance, (3) provide price quotes and (4) provide every possible customer service. They guarantee fast response to your inquiries and requests.

HOW TO REACH THE KEYBOARD SALES GROUP
It's as easy as filling out and mailing the **Keyboard Designers' Work Sheet** on the following pages.

Or, better yet, call the Keyboard Sales Group at this special, direct telephone number:

312/689-7612

Either way — by writing or telephoning — you'll get informative, helpful response . . . and you'll get it **fast**.

keyboard designers' work sheet

Company _____ Date _____

Company Contact _____

Title _____

Company Address _____

Phone _____ Ext. _____

City-State _____ Zip _____

Switching Technology

- [ ] Mechanical (Hard Contact)
- [ ] Solid State (Capacitive)

No. of Modes _____   No. of Bits _____
Specify 1-2-3-4, etc.   Specify 6-7-8, etc.

No. of Encoded Keys (Include Spacebar)
(Show hexidecimal code on keycap dwg.) _____

No. of Non-Encoded Keys (Function)
(Show positions on keycap dwg.) _____

No. of Non-Encoded De-Bounced Keys
(Show positions on keycap dwg.) _____

Keyboard Termination:

- [ ] Header (3M or equiv.)
- [ ] P.C. Board Edge Fingers

    Tin-Lead (re-flowed)

    Gold

- [ ] Other (specify) _____

Keycap Top Finish:

- [ ] Smooth
- [ ] Matte

Key Arrangements:

- [ ] Slope
- [ ] Sculptured
- [ ] Stepped

Estimated Annual Volume: 1st year _____ 2nd year _____ 3rd year _____

Prototype Required: Quantity _____ Date _____

1st Production Delivery Required: Quantity _____ Date _____

Mechanical Layout: [ ] Attached   [ ] Not Available   [ ] Sketch Attached

Keycap Drawing: [ ] Attached   [ ] Not Available   [ ] Sketch Attached

Output Code Chart: [ ] Attached   [ ] Not Available

Electrical Spec: [ ] Attached   [ ] Not Available

Power Available to Keyboard:

+5.0 VDC ± _____% @ _____ milliamps

−12 VDC ± _____% @ _____ milliamps

Other (specify) _____

Output:

Parallel (Standard) _____ Serial _____

Logic Output:

- [ ] Negative (Ground True) Resting High
- [ ] Positive Logic Resting Low
- [ ] Negative Logic Resting Low
- [ ] Positive Logic Resting High
- [ ] Output data may toggle, as long as they are stable when strobe occurs
- [ ] Latched data output to last key depression.

DETACH HERE

7

work sheet continued

Data Output:

☐ Active Pull-Up

☐ Open Collector

☐ Tri-State

☐ CMOS Compatible

☐ Other (specify) _____

Logic Loading

☐ 1 Load TTL 7400 Series

☐ 10 Load

☐ 30 Load

☐ Other (specify) _____

Parity:

Odd_____ Even_____ None_____

Rollover/Lockout:

2 Key Lockout_____ N-Key Rollover_____

Strobe:

☐ Pulsed (Width _____ μSec)

☐ Level (2 Key Lockout Only)

☐ Positive Active

☐ Negative Active

☐ Handshake (specify) _____

☐ Other (specify) _____

Shiftlock:

☐ Mechanical

  ☐ Alternate Action

  ☐ Alternate Action Lighted

  ☐ Left-Hand "Shift" Release

☐ Electronic (specify) _____

_____

_____

_____

Output Pin Assignment:

☐ By Cherry

☐ By Customer

Spring Pressure:

☐ 2½ oz.

☐ 3 oz.

☐ 6 oz.

☐ Other (specify) _____
(show on keycap dwg.)

No. of Lighted Keys (show location on keycap dwg.)

_____

Lamp Driver:

☐ Provided by Customer

☐ Provided by Cherry

Keycap Lighting:

☐ Lens

  ☐ 5 VDC Incandescent

  ☐ LED

  Top (Incandescent Only)

Repeat:

☐ None

☐ Key

☐ Auto. With Time Delay

Repeat Freq. Oscillator:

☐ On Keyboard

☐ External-Supplied to Keyboard

No. of Automatic Repeating Keys (show
location on keycap dwg.) _____

Repeat Operation (specify)_____

_____

_____

_____

_____

Other Comments:_____

_____

_____

8

CHERRY SOLID STATE CAPACITIVE KEYBOARDS

Solid state keyboards from a good solid source — CHERRY

BROADEST APPLICATION

This, the latest addition to the Cherry line of keyboards, is a solid state unit featuring capacitive keyswitches that provide a keyboard with unique capabilities. It gives you a keyboard ideal for any and all high speed data entry such as key-to-disc, key-to-tape, key-to-card, word processing and photo typesetting. The result? Cherry solid state keyboards are the ideal cost-effective answer to a broad range of applications.

STANDARD FEATURES

1. Low, low profile . . . measures .360" from bottom of face plate to bottom of PC board.

2. High reliability . . . long life.

3. Contactless design.

4. Custom designed NMOS encoder chip.

5. Up to 110 keys, 4 key modes, 10 output codes per mode.

6. Unique static discharge protection circuitry.

7. Readily expandable beyond 110 keys via additional circuitry.

8. Unique noise immunity circuit discriminates between a valid key depression and noise.

9. Scan time externally adjustable to as low as 10 micro seconds per key.

10. Electronic hysteresis circuit eliminates keyswitch "teasing".

11. Burst rate speed capability of 1000 key depressions per second.

12. Only one power supply requirement (+5 VDC).

13. Low stand-by current.

14. TTL compatible.

15. Encoder has capability of working with either solid state (capacitive) or mechanical (hard contact) switches.

PLUS options like these at little or no additional cost.

1. N key rollover or lockout.

2. Selection of rollover or lockout by use of remote signal is available.

3. Repeat may be furnished on all keys . . . no keys . . . selected keys with a repeat rate of up to 900 Hz.

4. Shift and Control available as either output or input.

5. External complement control.

6. Output flag or level whenever any key is depressed (AKO).
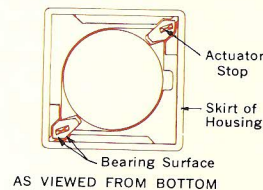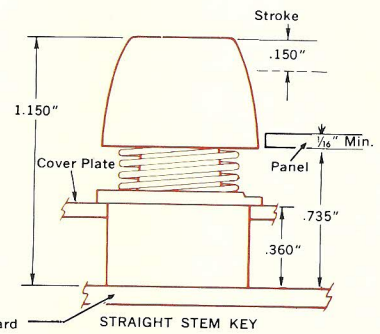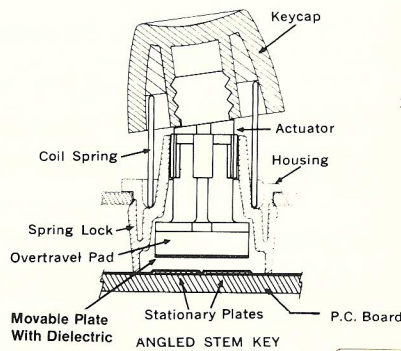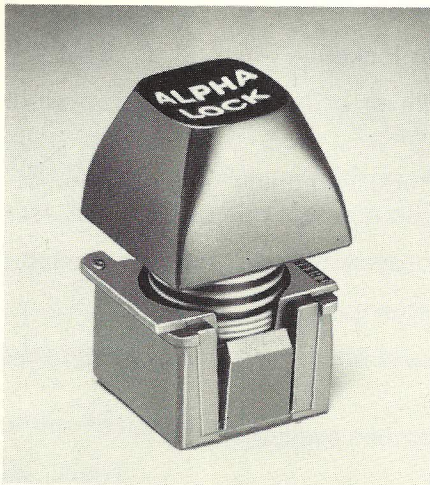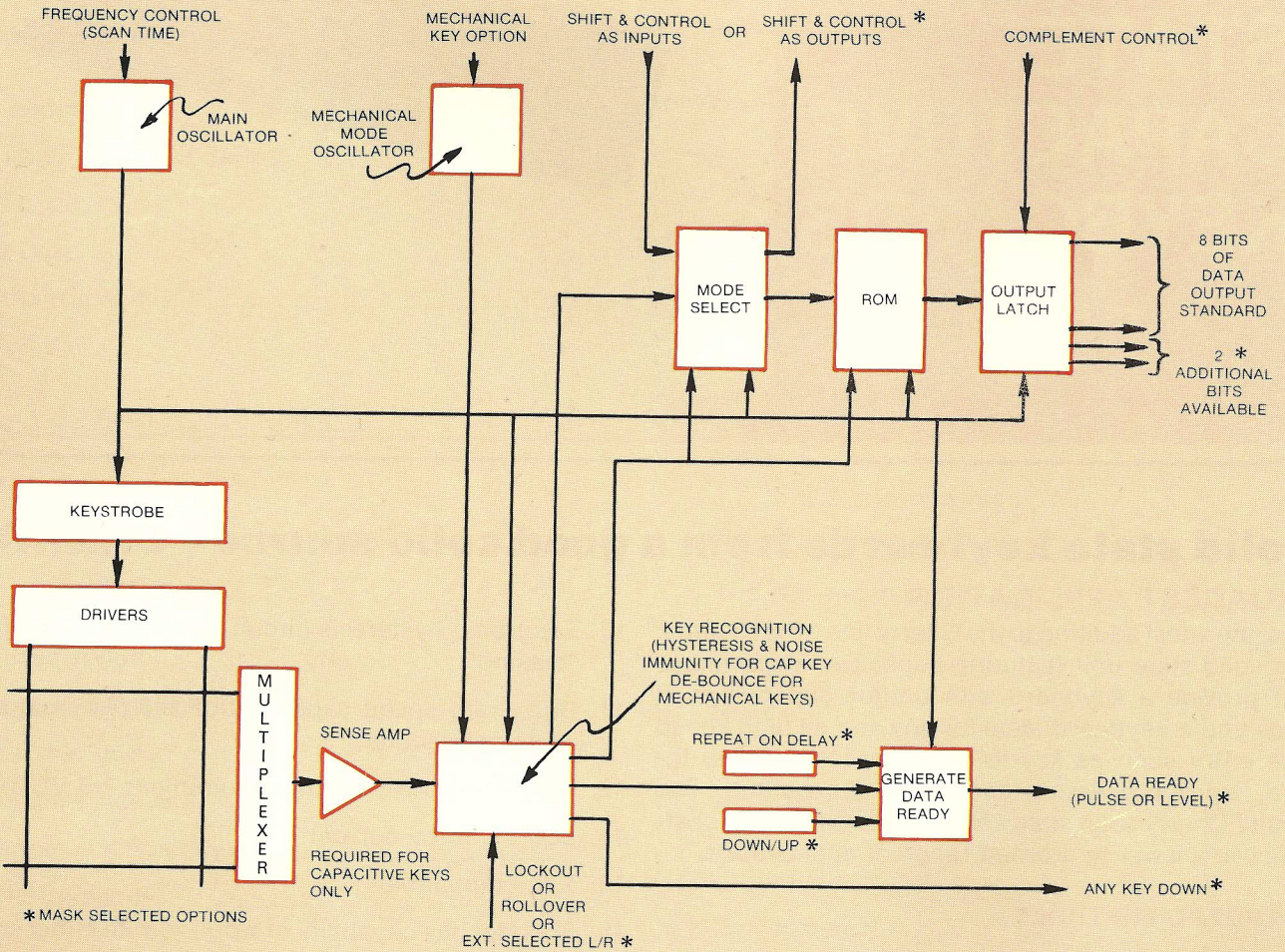
7. Pulse or level strobes available.

As indicated on the block diagram, the Cherry encoder is designed to be used with either Cherry gold crosspoint contact switches or with Cherry solid state capacitive key-switchers.

The keyswitches (either type) are connected in a 10 × 11 matrix. Each key switch couples a signal from one of the drivers thru the multiplexer and the sense amplifier (required for capacitive keys only) and into the key recognition circuit.

Data corresponding to that particular key is stored in the ROM. As the main oscillator has stepped pulses thru the keyswitch matrix, this oscillator has also stepped thru the address in the ROM. Now when the key recognition circuit has found a valid key, the data at that address in the ROM is transferred to the output latches and immediately after, a data ready (strobe) signal is also generated.

For each address in the ROM corresponding to a key-switch there are actually four possible data addresses, or modes. These modes are controlled by either external input signals or by the first two keys in the matrix (usually referred to as shift and control).

FREQUENCY CONTROL (SCAN TIME)

MAIN OSCILLATOR

MECHANICAL KEY OPTION

MECHANICAL MODE OSCILLATOR

SHIFT & CONTROL AS INPUTS   OR   SHIFT & CONTROL * AS OUTPUTS

COMPLEMENT CONTROL*

MODE SELECT

ROM

OUTPUT LATCH

8 BITS OF DATA OUTPUT STANDARD

2 * ADDITIONAL BITS AVAILABLE

KEYSTROBE

DRIVERS

MULTIPLEXER

SENSE AMP

REQUIRED FOR CAPACITIVE KEYS ONLY

KEY RECOGNITION (HYSTERESIS & NOISE IMMUNITY FOR CAP KEY DE-BOUNCE FOR MECHANICAL KEYS)

REPEAT ON DELAY *

DOWN/UP *

GENERATE DATA READY

DATA READY (PULSE OR LEVEL) *

ANY KEY DOWN *

LOCKOUT OR ROLLOVER OR EXT. SELECTED L/R *

* MASK SELECTED OPTIONS

Keycap

Actuator

Coil Spring

Housing

Spring Lock

Overtravel Pad

Movable Plate With Dielectric

Stationary Plates

P.C. Board

ANGLED STEM KEY

Stroke

.150"

1.150"

1/16" Min.

Cover Plate

Panel

.735"

.360"

STRAIGHT STEM KEY

Actuator Stop

Skirt of Housing

Bearing Surface

AS VIEWED FROM BOTTOM

CHERRY GOLD CROSSPOINT CONTACT KEYBOARD

A UNIQUELY SIMPLE DESIGN, OFFERING:

- Low Cost
- Long Life
- Wire-"OR"-ability
- Low power consumption

Why are Cherry keyboards so reliable? One reason is our uniquely simple design that combines the most advanced technology with a minimum of component parts. This yields a product whose susceptibility to field failure is inherently low. This is substantiated by the remarkable record Cherry Gold Crosspoint Contact Keyboards have achieved in all kinds of environments and demanding applications.

Another reason is the Cherry Gold Crosspoint Contacts. Still another reason for excellent field performance is that we build our keyboards from scratch. And, Cherry keyboards draw low power — both quiescent and in use — and generate clean IC logic signals. They are not temperature or humidity sensitive and can be designed to meet your specific requirements at surprisingly low cost.

STANDARD KEYBOARD UNITS INCLUDE:

66 Key Tri Mode ASCII, negative logic (with provision to add 4 extra keys).
53 Key Quad Mode ASCII (ASR33), positive logic.
12 Key Numeric, straight output.
16 Key Numeric, straight output.

SPECIAL FEATURES AVAILABLE

Positive or negative logic resting low or high outputs.

Open collector buffer outputs for hard wire-"OR"-ing available at no extra cost.

Buffer output capable of driving terminated twisted pair or 90 ohm coaxial is optional.

Pulse or level strobe available.

Key locations may be geographically mixed.

Special mono mode encoded keys may be added to configuration.

Any parity and/or data outputs may be later changed for modest revision charges.

THE KEYBOARD SWITCH WITH A "HEART OF GOLD"

Cherry's unique Gold Crosspoint Contact Switch. For details, see page 24.

11

Keyboard Electronics Utilizes Scanning Technique

The keyboard encoding is based on a scanning technique employing an 8 bit counter, a multiplexer and a 4 to 16 line decoder. Encoded keys form a crosspoint matrix with each key connected to the decoder output and the multiplexer input. The decoder is addressed by the 4 least significant bits and the multiplexer by the 3 most significant bits of the counter.

When a key is depressed a matrix connection between the decoder and multiplexer is accomplished. When the counter reaches the appropriate key code, the multiplexer output goes high and a retriggerable one-shot is fired on the trailing edge of the counter clock stopping the counter. The one-shot is continually refreshed until the key is released. The bit-shift logic translates the counter address into an upper case data word if the shift and/or control key is depressed.
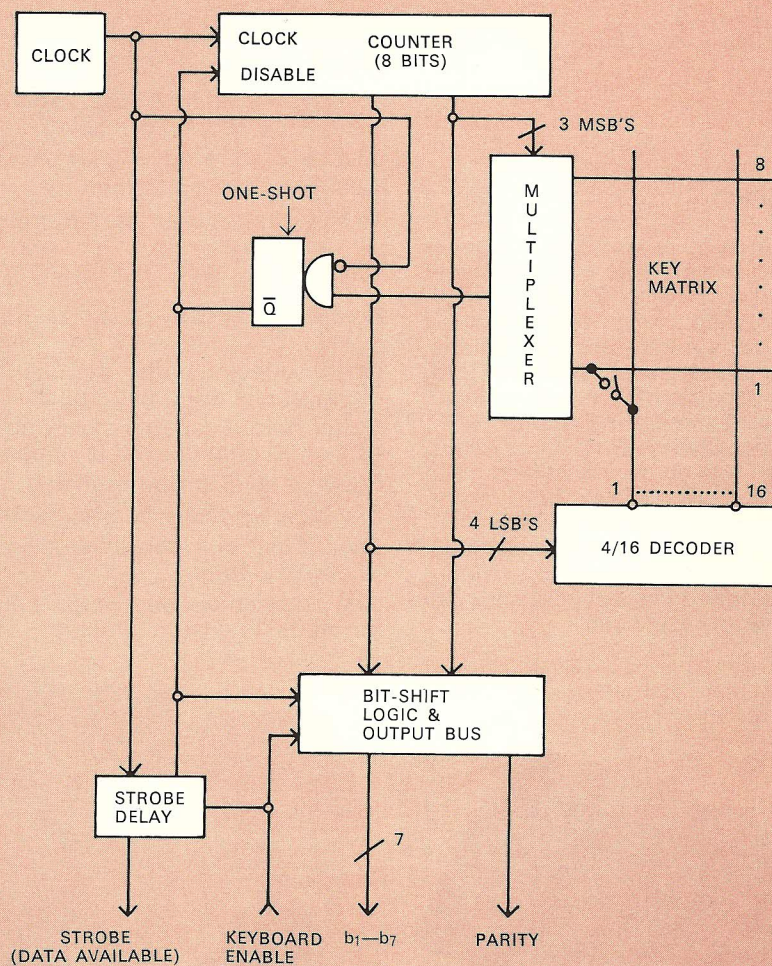
CHERRY STANDARD KEYBOARDS

5 Basic Types of Keyboards in 24 Variations to Fill Most — or ALL — of Your Keyboard needs

solid state keyboard
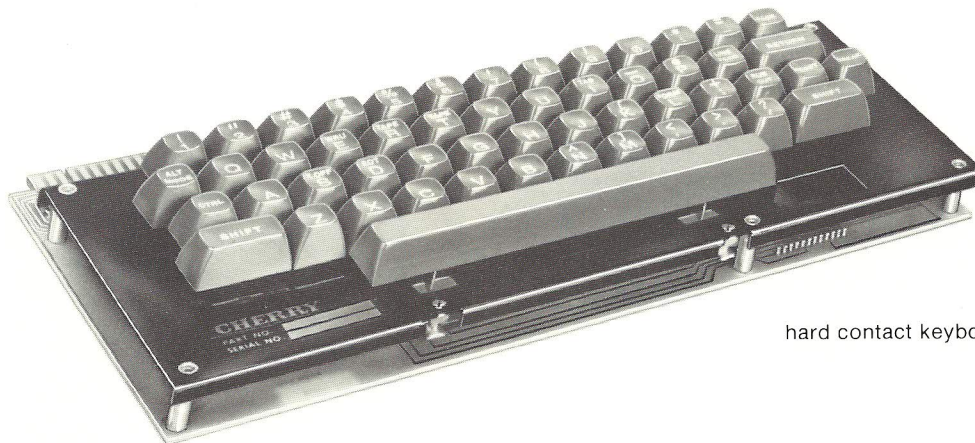
hard contact keyboard

CHOICE OF SOLID STATE . . . OR HARD CONTACT

All available with many optional features at little or no additional cost. All available without tooling, artwork or set-up charges. Many available with or without housings, encoded or non-encoded, a wide variety of modes, etc. Many also available off-the-shelf.

From **CHERRY** : Industry's most

B70 ASR 33 Series
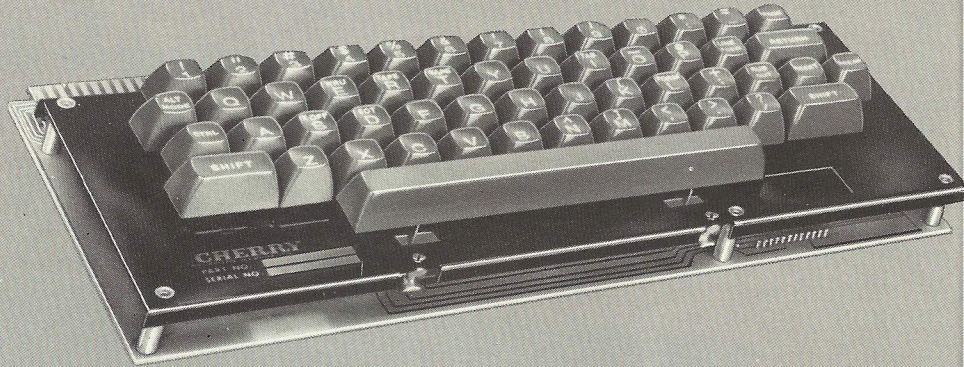
B80 ASCII Series

B70 "PRO" Series

CB80 SOLID STATE Series

B65 NON-ENCODED Series
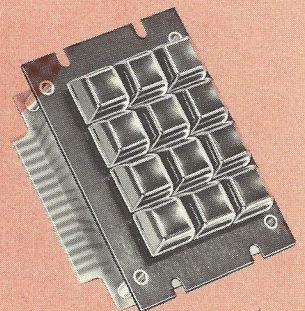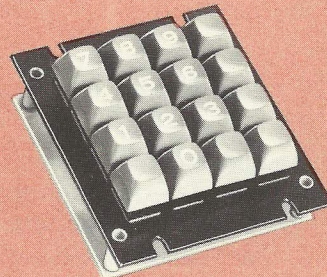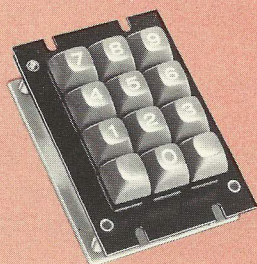
complete line of standard keyboards

KEYBOARD HOUSINGS

As shown in the Standard Keyboard Specifications Chart on the following page, most Cherry keyboards are available with an associated housing. This housing converts your keyboard to an attractive, stand-alone desk instrument, suitable for office or lab use. Color is clear anodized aluminum with unfinished walnut end-caps. The operating surface is sloped approximately 10° to the desk top.

HOUSING

PART NO.	DIM. "A"
B99-18AF	14-1/4"
B99-19AF	19-3/4"
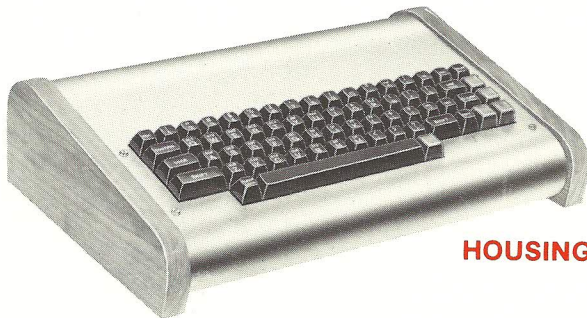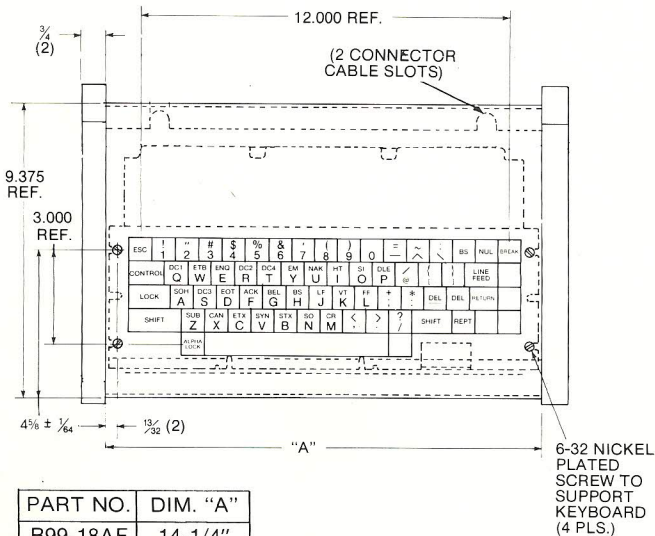
All dimensions shown above, except for Dim. "A," are the same for both housing sizes.
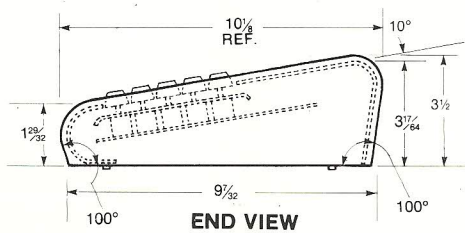
HOUSING DIMENSIONS

Your choice of four KEY ARRANGEMENTS
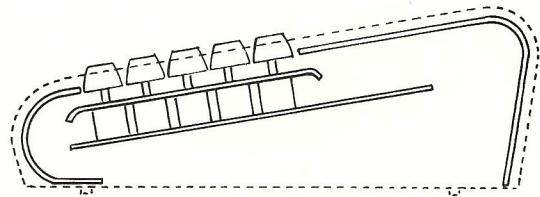
SLOPED
with straight plunger stem
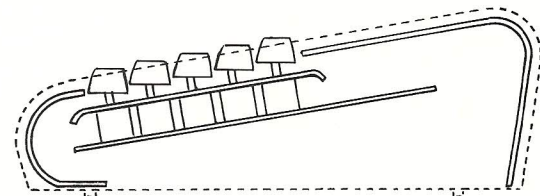
STEPPED
with 10° angle plunger stem
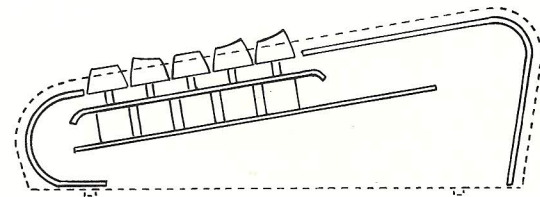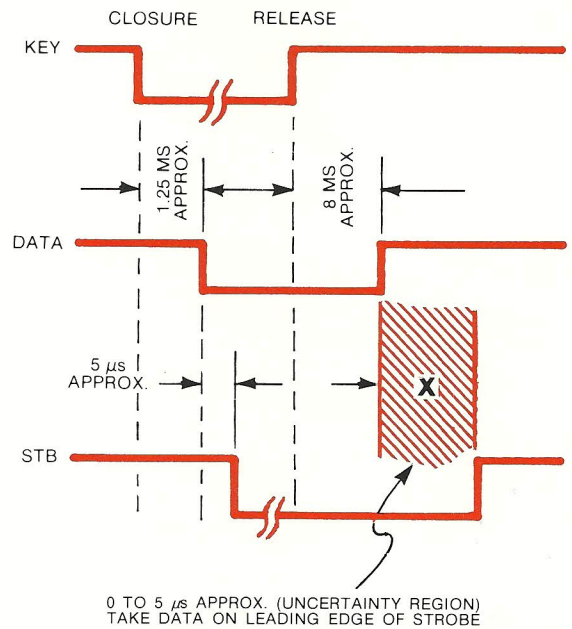

SCULPTURED
with straight plunger stem
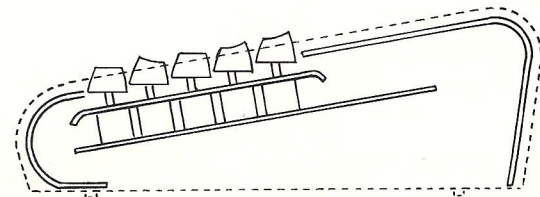
SCULPTURED
with 10° angle plunger stem

KEYBOARD TIMING CHARTS

TIMING DIAGRAM NO. 1

0 TO 5 μs APPROX. (UNCERTAINTY REGION)
TAKE DATA ON LEADING EDGE OF STROBE

TIMING DIAGRAM NO. 2

0 TO 5 μs APPROX. (UNCERTAINTY REGION)
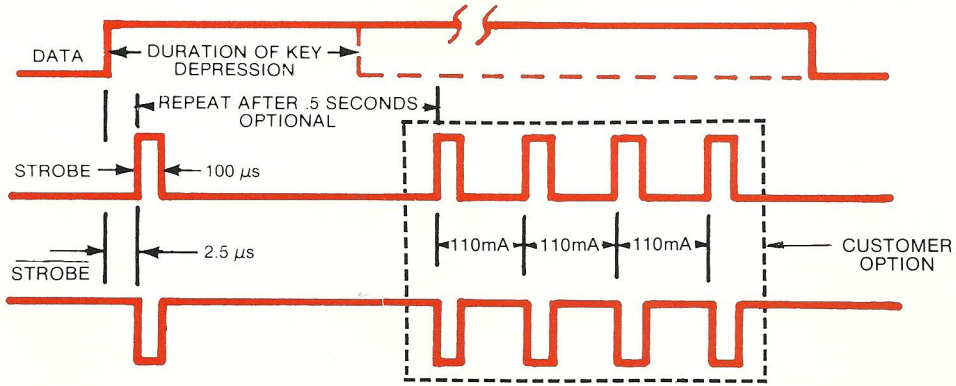TAKE DATA ON LEADING EDGE OF STROBE
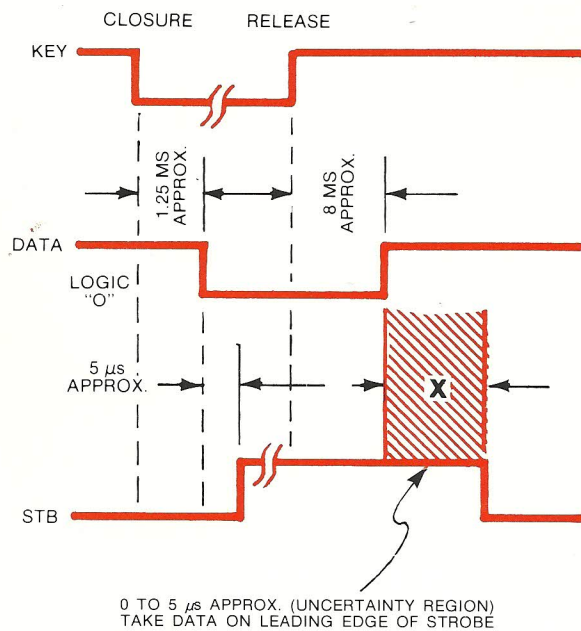
STANDARD KEYBOARDS

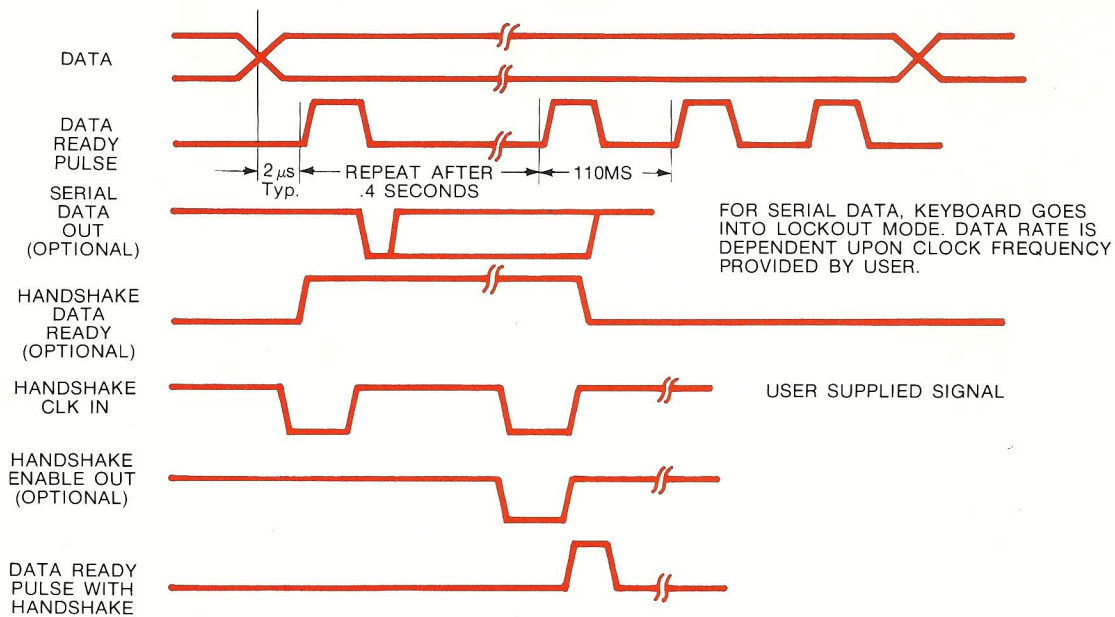| Keyboard No.	Timing Diag. No.	No. of Keys	Sloped (SL) Stepped (ST)	Associated Housing	Type of Code	No. of Modes	Data Bits	Strobe Goes	Logic Output	
B70-4753	1	53	SL	B99-64AF	Teletypewriter	4	7	High	Positive Resting High	
B70-60AA	1	53	ST	B99-64AF	Teletypewriter	4	7	High	Positive Resting High	
B70-4754	1	53	SL	B99-64AF	Teletypewriter	4	7	High	Positive Resting High	
B80-3766	2	66	SL	B99-66AF	ASCII	3	7	Low	Negative Resting High	
B80-3767	2	66	SL	B99-66AF	ASCII	3	7	Low	Negative Resting High	
B80-48AA	2	66	ST	B99-67AF	ASCII	3	7	Low	Negative Resting High	
B80-65AA	2	67(R)	SL	B99-66AF	ASCII	3	7	Low	Negative Resting High	
B65-1712	—	12	SL	—	None	—	—	—	—	
B65-1716	—	16	SL	—	None	—	—	—	—	
B65-64AB	—	12	SL	—*	None	—	—	—	—	
B70-05AB	3	67	SL	B99-18AF*	ASCII	4	7	1 High 1 Low	Positive Resting Low	
CB80-12AA	4	96	SL	B99-69AF	ASCII#	4	8	1 High 1 Low	Positive Logic Latched Outputs	
CB80-07AA	4	95	SL	B99-69AF	ASCII##	4	8	1 High 1 Low	Positive Logic Latched Outputs	

R = Repeat Key (Repeat Frequency 12 Hz.)   #Communications standard ##Typewriter standard

*When B70-05AB and B65-64AB are combined the housing number is B99-19AF.
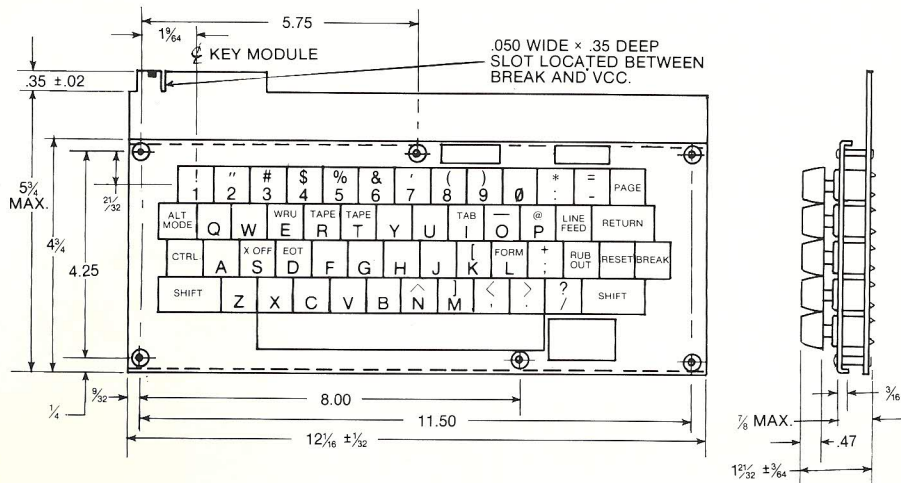
16

TIMING DIAGRAM NO. 3

DATA — DURATION OF KEY DEPRESSION

REPEAT AFTER .5 SECONDS OPTIONAL

STROBE — 100 μs

STROBE — 2.5 μs

110mA — 110mA — 110mA

CUSTOMER OPTION

TIMING DIAGRAM NO. 4

DATA

DATA READY PULSE

2 μs Typ. — REPEAT AFTER .4 SECONDS — 110MS

SERIAL DATA OUT (OPTIONAL)

FOR SERIAL DATA, KEYBOARD GOES INTO LOCKOUT MODE. DATA RATE IS DEPENDENT UPON CLOCK FREQUENCY PROVIDED BY USER.

HANDSHAKE DATA READY (OPTIONAL)

HANDSHAKE CLK IN — USER SUPPLIED SIGNAL

HANDSHAKE ENABLE OUT (OPTIONAL)

DATA READY PULSE WITH HANDSHAKE

SPECIFICATIONS CHART

	Power Req.	Drive Capability	Rollover (RO) Lockout (LO)	Connection Mates With	Switching Technology	Keycap Finish	Schematic No.
	5V 350mA	10 STD TTL Loads	2 Key (LO)	Cinch 250-15-30-170	GC	S	120-0032
	5V 350mA	10 STD TTL Loads	2 Key (LO)	Cinch 250-15-30-170	GC	S	120-0032
	5V 350mA	10 STD TTL Loads	2 Key (LO)	Cinch 250-15-30-170	GC	M	120-0032
	5V 350mA	10 STD TTL Loads	2 Key (LO)	Cinch 250-22-30-211	GC	S	120-0044
	5V 350mA	10 STD TTL Loads	2 Key (LO)	Cinch 250-22-30-211	GC	M	120-0044
	5V 350mA	10 STD TTL Loads	2 Key (LO)	Cinch 250-22-30-211	GC	S	120-0044
	5V 350mA	10 STD TTL Loads	2 Key (LO)	Cinch 250-22-30-211	GC	S	120-0044
	—	—	—	Cinch 250-15-30-170	GC	S	
	—	—	—	Cinch 250-18-30-170	GC	S	
	—	—	—	Cinch 50-44C-10	GC	S	120-0153
	5V 350mA	10 STD TTL Load	2 Key (LO)	Cinch 50-44S-20	GC	M	120-0186
	5VDC 200mA	10 STD TTL Loads	2 Key (LO) or N Key (RO)	Cinch 50-44S-20	C	M	120-0233
	5VDC 200mA	10 STD TTL Loads	2 Key (LO) or N Key (RO)	Cinch 50-44S-20	C	M	120-0233

GC = Gold Crosspoint   S = Smooth Finish Keycaps

C = Capacitive   M = Matte Finish Keycaps

B70 Teletypewriter Series
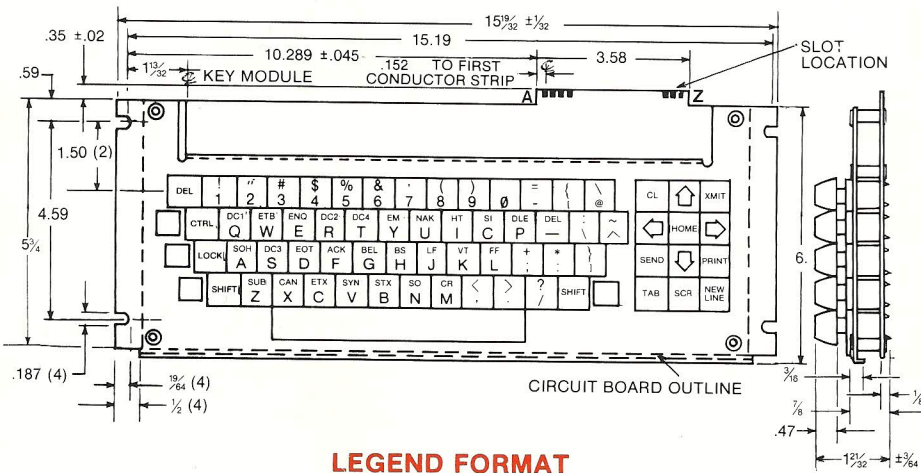## Cherry 53-Key Special Quad Mode Keyboards

LEGEND FORMAT

OUTPUT CODE

CONNECTOR PIN ASSIGNMENT

CONDUCTOR STRIP PIN IDENTIFICATION		
PIN		OUTPUT
1	A	PAGE
2	B	RESET
3	C	BREAK
4	D	VCC
5	E	VCC
6	F	STB
7	H	SHIFT
8	J	GND
9	K	bit 7
10	L	bit 6
11	M	bit 5
12	N	bit 4
13	P	bit 3
14	R	bit 2
15	S	bit 1

B80 ASCII Series

Mechanical Drawings

.35 ±.02   15 19/32 ±1/32
10.289 ±.045   15.19   3.58
1 13/32   .152 TO FIRST CONDUCTOR STRIP
KEY MODULE   A   Z   SLOT LOCATION
.59
1.50 (2)
4.59
5 3/4
.187 (4)   19/64 (4)   1/2 (4)
CIRCUIT BOARD OUTLINE
3/16
7/8   1/8
.47   1 21/32 ±3/64
6.

LEGEND FORMAT

7F DEL	31 1	32 2	33 3	34 4	35 5	36 6	37 7	38 8	39 9	30 (	2D −	1B ESC	00 NUL
7F DEL	21 !	22 "	23 #	24 $	25 %	26 &	27 '	28 (	29)	30)	3D −	7B {	60 `
7F DEL	31 1	32 2	33 3	34 4	35 5	36 6	37 7	38 8	39 9	30 0	2D −	5B [	40 @

CTRL	11 DC1	17 ETB	05 ENQ	12 DC2	14 DC4	19 EM	15 NAK	09 HT	0F SI	10 DLE	1F US	1C FS	1E RS
	51 Q	57 W	45 E	52 R	54 T	59 Y	55 U	49 I	4F O	50 P	7F DEL	7C		7E ~
	71 q	77 w	65 e	72 r	74 t	79 y	75 u	69 i	6F o	70 p	5F _	5C \	5E ↑

LOCK	01 SOH	13 DC3	04 EOT	06 ACK	07 BEL	08 BS	0A LF	0B VT	0C FF	3B ;	3A :	1D GS
	41 A	53 S	44 D	46 F	47 G	48 H	4A J	4B K	4C L	3B +	2A *	7D }
	61 a	73 s	64 d	66 f	67 g	68 h	6A j	6B k	6C l	3B ;	3A :	5D]

SHIFT	1A SUB	18 CAN	03 ETX	16 SYN	02 STX	0E SO	0D CR	2C ,	2E .	2F /	SHIFT
	5A Z	58 X	43 C	56 V	42 B	4E N	4D M	3C <	3E >	3F ?	
	7A z	78 x	63 c	76 v	62 b	6E n	6D m	2C ,	2E .	2F /	

CONTROL 20
SHIFTED 20 } SPACE BAR
UNSHIFTED 20

OUTPUT CODE

CONNECTOR PIN ASSIGNMENT

CONDUCTOR STRIP PIN IDENTIFICATION			
PIN	OUTPUT	PIN	OUTPUT
1	bit 6	A	bit 6
2	bit 7	B	bit 7
3	bit 5	C	bit 5
4	b8 PARITY	D	b8 PARITY
5	K.B. ENABLE	E	K.B. ENABLE
6	STB	F	STB
7		H	
8	+5V	J	+5V
9	bit 1	K	bit 1
10	bit 4	L	bit 4
11	bit 2	M	bit 2
12	bit 3	N	bit 3
13	GND	P	GND
14		R	CL
15		S	←
16		T	SEND
17		U	TAB
18		V	↑
19		W	HOME
20	NEW LINE	X	↓
21	PRINT	Y	CSR
22	→	Z	XMIT
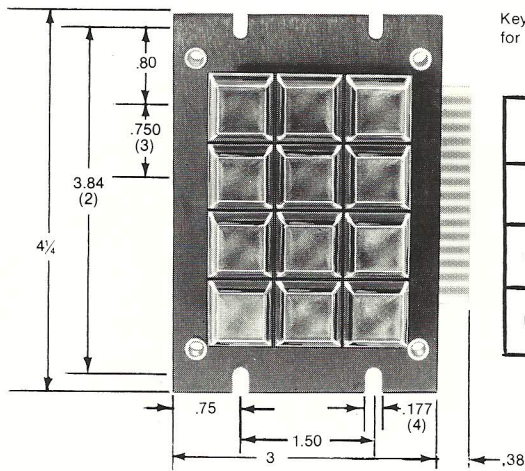
Key positions are shown for identification only.

A1	A2	A3
B1	B2	B3
C1	C2	C3
D1	D2	D3

EDGE CONNECTOR IDENTIFICATION			
COMPONENT (TOP) SIDE		SOLDER (BOTTOM) SIDE	
PAD #	SIGNAL	PAD #	SIGNAL
A	SPARE	1	SPARE
B	NOT USED	2	NOT USED
C	NOT USED	3	NOT USED
D	NOT USED	4	(A1)
E	NOT USED	5	(A1)
F	NOT USED	6	(A2)
H	NOT USED	7	(A3)
J	(A3)	8	(A2)
K	NOT USED	9	NOT USED
L	(C1)	10	(B1)
M	(C1)	11	(B1)
N	(C2)	12	(B2)
P	(C2)	13	(B3)
R	NOT USED	14	NOT USED
S	NOT USED	15	(B2)
T	(D1)	16	(B3)
U	(D1)	17	(C3)
V	(D2)	18	(C3)
W	(D2)	19	(D3)
X	NOT USED	20	(D3)
Y	NOT USED	21	NOT USED
Z	SPARE	22	SPARE

PC BOARD WILL ACCEPT 3M 44 PIN HEADER
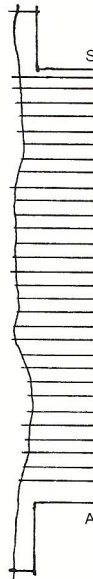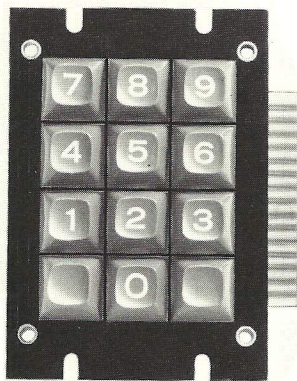
EDGE CONNECTOR IDENTIFICATION	
PAD #	SIGNAL
15	9
14	—
13	COM
12	—
11	8
10	7
9	6
8	5
7	4
6	3
5	2
4	1
3	BLANK RIGHT KEY
2	0
1	BLANK LEFT KEY
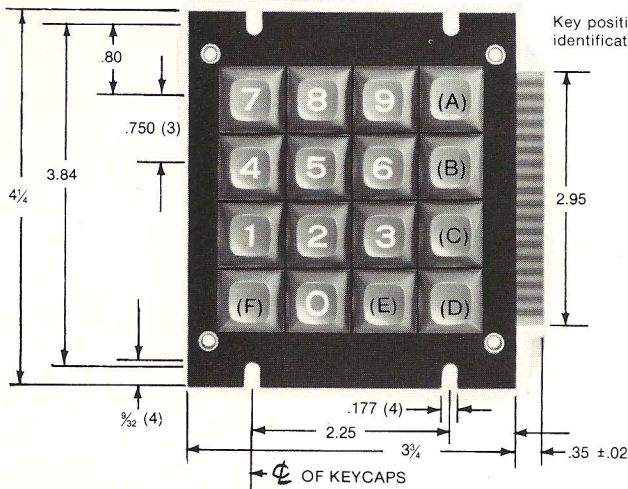
Key positions A-F are shown for identification only. Keycaps are blank.

COM.
OPEN
A
9
8
7
B
6
5
4
C
3
2
1
D
E
0
F
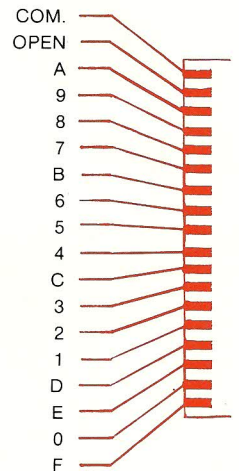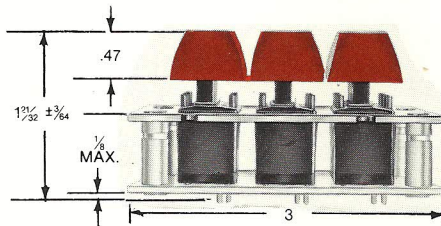
B70 "PRO" Series

A versatile, reliable PROfessional style keyboard. Ideal for personal computer and hobbyist applications. Modifiable to add total obsolescence protection. Versatile enough to grow as your system grows.

NOTE: Request brochure PRO-977-2 for detailed information and specs.

UNIQUE STANDARD FEATURES

- **Full 67 key array**
- **Five user-definable spare keys** with keycaps that have "quick change" clear plastic tops. These keyswitches are not connected electrically, but can be conveniently hard-wired so as to output any code.
- **Only one power supply voltage required:** +5 volts at 325 ma. max.
- **TTL and DTL compatible output circuitry.**
- **Positive logic with outputs resting low.**
- **Four mode keyboard** offers (1) lower case mode, (2) upper case mode, (3) control case mode and (4) teletypewriter alpha lock configuration (alpha lock depressed).

UNIQUE SPECIAL FEATURES
that are easily accomplished at your location.

1. **Negative Logic** in which the output code will be the complement of the code shown.
2. **Tri State - Positive Logic** to let you use two or more PRO keyboards in parallel.
3. **High voltage output** — CMOS compatible.
4. **Non Encoded Outputs.**
5. **Encoded Outputs.**
6. **Flexible key assignments** lets you change the code of a key which came factory wired.
7. **Provisions for an auxiliary keyboard.**
8. **Auxiliary keyboards available** from Cherry.
9. **Automatic repeat.**
10. **Strobe pulse width** can be varied.
11. **Optional parity bit.**
12. **Output latch** can be provided by an auxiliary circuit.
13. **Optional Shift-Control mode** can be added external to the keyboard.

LEGEND FORMAT

OUTPUT CODE

CONNECTOR PIN ASSIGNMENT

PIN NO.	MAIN CONNECTOR J1		MATRIX EXPANSION CONNECTOR J2
1	BIT 1	(OUT)	SPARE
2	BIT 2		E6
3	BIT 3		E4
4	BIT 4		E2
5	BIT 5		E9 (1)
6	BIT 6		E11 (3)
7	BIT 7		E13 (5)
8	BIT 8		SPARE
9	STROBE	(OUT)	SPARE
10	REPEAT	(IN/OUT)	+5 VDC
11	+5 VDC	(IN)	E14 (6)
12	NOT USED		E1
13	GROUND	(IN)	D0
14	SPARE		D2
15	SPARE		GROUND
16	STROBE	(OUT)	D15 (F)
17	CONTROL	(IN/OUT)	D13 (D)
18	K.B. LOCKOUT	(IN)	D11 (B)
19	SPARE		D4
20	SPARE		D6
21	SHIFT	(IN/OUT)	D8
22	BREAK	(OUT)	D10 (A)
A	SPARE		SPARE
B			E7
C			E5
D			E3
E			E8 (0)
F			E10 (2)
H			E12 (4)
J			SPARE
K			SPARE
L	SPARE		+5 VDC
M	+5 VDC	(IN)	SPARE
N	NOT USED		E15 (7)
P	GROUND	(IN)	E0
R	SPARE		D1
S			GROUND
T			SPARE
U			D14 (E)
V			D12 (C)
W			D3
X			D5
Y			D7
Z	SPARE		D9

G, I, O and Q PIN DESIGNATIONS ARE NOT USED.

CB80-12AA
COMMUNICATIONS

LEGEND FORMAT

17.625 ± .030
16.600 ± .030
2.44 ± .030
1.900 ± .030
1.313
11.812
.79 ± .02
.360
.47 TYP.
6.700 ± .030
1.125
3.650 ± .030
3.563 ± .030
5.250 ± .030
3.375 (2)
.18 (4)
.35 (4)
³⁄₁₆ ± ¹⁄₃₂ (2)

ESCAPE	! 1	" 2	# 3	$ 4	% 5	& 6	7	8	9	0	=	~ ^	\	BS	NUL
CONTROL	DC1 Q	ETB W	ENQ E	DC2 R	DC4 T	EM Y	NAK U	HT I	SI O	DLE P	` @	\	}]	LINE FEED
LOCK	SOH A	DC3 S	EOT D	ACK F	BEL G	BS H	LF J	VT K	FF L	+ ;	* :	RETURN	DEL
ALPHA LOCK	SHIFT	SUB Z	CAN X	ETX C	SYN V	STX B	SO N	CR M	< ,	> .	? /	SHIFT	BREAK	DEL

7	8	9
4	5	6
1	2	3
0	.

OUTPUT CODE

OPTIONAL FEATURE PROVISION:
In place of single key, two separate outputs may be obtained with proper connections. Consult factory.

CONNECTOR PIN ASSIGNMENT CB80-12AA and CB80-07AA	
PIN	OUTPUT
*1	UART CLK IN
2	bit 7
3	bit 6
4	bit 5
5	bit 4
6	bit 3
7	bit 2
8	bit 1
9	bit 0
10	
*11	HANDSHAKE DATA READY
*12	HANDSHAKE DATA READY
*13	UART SERIAL DATA OUT
14	ROLLOVER/ LOCKOUT
*15	HANDSHAKE ENABLE OUT
16	
*17	HANDSHAKE CLK IN
18	ALPHA LOCK LEVEL
19	ANY KEY DOWN LEVEL
20	
21	GROUND
22	+5 VDC

* = OPTION

Cherry Fully Encoded Solid State Capacitive Keyboards

CB80-07AA
SECRETARIAL

LEGEND FORMAT

CONNECTOR PIN ASSIGNMENT
CB80-12AA and CB80-07AA

PIN	OUTPUT
A	
B	
C	
D	
E	
F	
H	
J	
K	
L	
M	
N	
*P	PULSE DATA READ INHIBIT
R	
S	ALPHA LOCK LEVEL
T	ANY KEY DOWN LEVEL
U	PULSE DATA READY
V	PULSE DATA READY
*W	BREAK
X	DATA BUS CONTROL
Y	GROUND
Z	+5 VDC

* = OPTION

OUTPUT CODE

CHERRY
GOLD CROSSPOINT
KEYBOARD SWITCHES

ABOUT THE KEY MODULE: This is another Cherry design first: A Gold "Crosspoint" Contact Switch — two gold prisms at right angles to each other. This design has provided highly reliable keyboard switching for nearly 10 years in tens of thousands of the most sophisticated, most demanding applications.

The proven design concept — crossed knife edge contact configuration — provides high force per unit of contact area and virtually eliminates contact closure interference by contaminates. Precious metal contact material (W/E Alloy #1) consists of 69% gold, 25% silver and 6% platinum. Contact interfaces are inert to chemical action with resultant low contact resistance (typically 25 milliohms). The key module measures only 3/4" and reduces overall keyboard height to 1-1/2" from key top to printed circuit board.

CHERRY LOW PROFILE KEY SWITCHES WITH GOLD "CROSSPOINT" CONTACTS

ACTUAL SIZE

- Two-shot molded ABS key cap
- Delrin key plunger
- Nylon enclosure
- Gold crosspoint contacts
- Spring
- Terminals
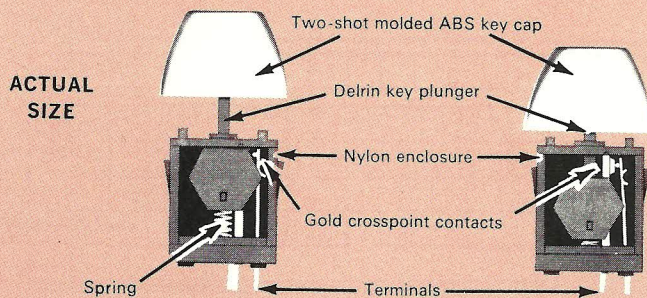
CONTACT INNOVATION

Cross Section of Contact

gold alloy

W/E #1 (69% Gold, 25% Silver, 6% Platinum)

Crosspoint Configuration
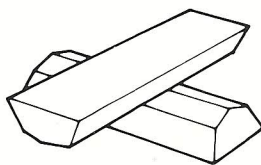
A proven design concept—the new gold "crosspoint" contact innovation provides positive switching of low energy solid state circuits.

Contacts are normally held apart for greatest shock resistance. No microphonics or bounce during turn-off or at rest.

CHERRY GOLD CROSSPOINT ELECTRICAL AND MECHANICAL SPECIFICATIONS
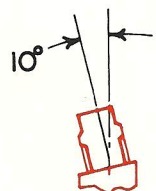
MECHANICAL

Operating Force . . . 2½ oz. ± ½ oz. Std. (Also available in forces from 2 oz. and higher)

Pretravel . . . . . . .085 ± .030 Std. (Alternate action version pretravel .030" to .065")

Total Travel . . . . .160 ± .020 Std.

Key Module Case Material . . . . . . Thermoplastic (Nylon)

External Terminal . . . . Tin Plated Brass Alloy

Temperature
Operating . . . . 0°/60°C
Storage . . . . −35°C/75°C

ELECTRICAL

Contact Rating (Form A contacts)
DC Resistive . . . . .3W max.
AC Resistive . . . . .3VA max.
Current . . . . .0.125 amp. max. switching
0.5 amp. max. carry
Voltage . . . . 28V max.

Initial Contact Resistance . . . . 200 milliohms max.
(typically 24 milliohms)

10° OFFSET KEY STEM

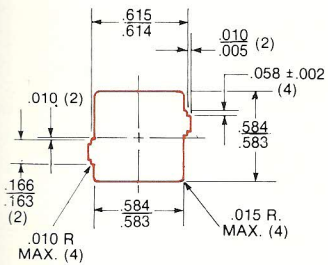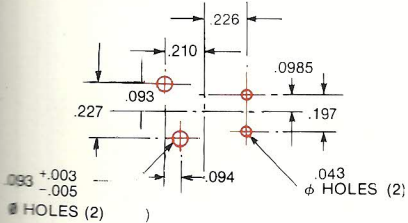for Stepped Keyboards
(OPTIONAL)

10°

STANDARD MODULE

LIGHTED MODULES

.715 SQUARE
.47
25/32 REF.
.085
5/16
.063 PANEL
.685 ± .015
3/16 ± 1/32
.063 CIRCUIT BOARD

.715 SQUARE
.47
25/32 REF.
5/16
.160
.40
.063 PANEL MOUNTING THICKNESS
.685 ± .015
1/16 CIRCUIT MOUNTING THICKNESS
3/16 ± 1/32

T-1 BI-PIN TYPE LAMP
.350 ± .030
.160
.130D MAX.
.020D (2)
± .001
.050
LAMP DETAIL

M41-0103

OF MODULE CUTOUT
.093 +.005 -.003 Ø HOLES (TYP.)
.210
.094
.093
.093
.227
.227
.094
.210
USED WITH DP MODULES ONLY

PC BOARD LAYOUT A

OPTIONAL LOCATION OF LAMP TERMINAL HOLES.
.210
.093
.227
.310
.135
.135
.310
.093 +.003 -.005 (REF.) Ø HOLES (2)
.125
.315
.042 ±.002 Ø HOLES (2)
REF. LAMP TERMINAL HOLES

FOR EITHER LAMP LOCATION PC BOARD LAYOUT B

.680 +.005 -.000
.614 ±.002
.350 (2)
.010 R MAX (2)
.176 ±.002
.013 .018
.035 (2)
.289 .293
.594 .581
.352
.058 ±.002
.126 .358 ±.002
.063 ±.002
.716 +.005 -.000
.015 R MAX. (2)
.010 .005
.013 .018
.307 REF.

FOR EITHER LAMP LOCATION PANEL CUTOUT B

.615 .614
.010 .005 (2)
.010 (2)
.058 ±.002 (4)
.584 .583
.166 .163 (2)
.584 .583
.015 R. MAX. (4)
.010 R MAX. (4)

PANEL CUTOUT DETAIL A

.210
.094
.093
.227
.135
.310
.093 +.003 -.005 (REF.) Ø HOLES (2)
.125
.315
.042 ±.002 Ø HOLES (2)
REF. LAMP TERMINAL HOLES

FOR LOWER RIGHT LAMP LOCATION PC BOARD LAYOUT C

.680 +.005 -.000
.614 ±.002
.350 (2)
.013 .018
.584
.176 ±.002
.289 .293
.584 .581
.352
.058 ±.002
.056
.063 ±.002
.035
.358 ±.002
.010 MAX. (2)
.010 .005
.013 .018
.015 R. MAX. (2)
.307 REF.

FOR LOWER RIGHT LAMP LOCATION PANEL CUTOUT C

.615 .614
.010 .005 (2)
.010 (2)
.058 ±.002 (4)
.584 .583
.166 .163 (2)
.584 .583
.015 R. MAX. (4)
.010 R MAX. (4)

PANEL CUTOUT DETAIL E

.226
.210
.0985
.093
.197
.227
.093 +.003 -.005 Ø HOLES (2)
.094
.043 Ø HOLES (2)

PC BOARD LAYOUT E

.210
.125
.094
.093
.227
.310
.135
.042 ±.002 LAMP TERM. HOLE
.093 +.003 -.005 (REF.) Ø HOLES (2)
.315

FOR UPPER RIGHT LAMP LOCATION PC BOARD LAYOUT D

.680 +.005 -.000
.614 ±.002
.350 (2)
.013 .018
.584
.289 .293
.584 .581
.352
.056
.058 ±.002
.176 ±.002
.063 ±.002
.358 ±.002
.035
.176
.010 R MAX. (2)
.015 R. MAX. (2)
.010 .005
.013 .018
.307 REF.

FOR UPPER RIGHT LAMP LOCATION PANEL CUTOUT D

25

CHERRY®
ORDERING INFORMATION FOR
GOLD CROSSPOINT KEYBOARD SWITCHES

| Style	Part No.	Stem Design	Operating Force	Stem Angle	Contact Style	Operating Style	Comment	Figure†
	M61-0120	T	2½ oz. nom.	0°	1A	momentary	non-lighted	A
	M51-0182	T	2½ oz. nom.	10°	1A	momentary	non-lighted	A
	M51-0143	T	6 oz. nom.	0°	1A	momentary	non-lighted	A
	M51-0226	T	6 oz. nom.	10°	1A	momentary	non-lighted	A
	M62-0900	straight	2-4½ oz.	0°	1A-1B	momentary	non-lighted	A
	M62-0100	straight	2-4½ oz.	0°	2A	momentary	non-lighted	A
Spacebar	M51-0106	straight	2½-4½ oz.	0°	1A	momentary	(paddle type)*	A
Spacebar	M51-0107	straight	2½-4½ oz.	10°	1A	momentary	(paddle type)*	A
Spacebar mech.	B99-0003	straight	1×6 thru 1×10				(paddle type)*	‡
Spacebar mech.	B99-0004	10° stems	1×6 thru 1×10				(paddle type)*	‡
Spacebar mech.	B99-0005	straight	1×3 only				(paddle type)*	‡
Spacebar mech.	B99-0006	10° stems	1×3 only				(paddle type)*	‡
Spacebar	M51-0227	T	2½-4½ oz.	0°	1A	momentary	(wire form type)	A
Spacebar	M51-0228	T	2½-4½ oz.	10°	1A	momentary	(wire form type)	A
Spacebar mech.	B99-29AF	1×3 0°					(wire form type)	‡
Spacebar mech.	B99-40AF	1×3 10°					(wire form type)	‡
Spacebar mech.	B99-32AF	1×6 0°					(wire form type)	‡
Spacebar mech.	B99-43AF	1×6 10°					(wire form type)	‡
Spacebar mech.	B99-35AF	1×8 0°					(wire form type)	‡
Spacebar mech.	B99-46AF	1×8 10°					(wire form type)	‡
	M61-0800	straight	2-4½ oz.	0°	1A	alt. action	non-lighted	A
	M61-0810	straight	2-4½ oz.	10°	1A	alt. action	non-lighted	A
	M61-0805	straight	6 oz. nom.	0°	1A	alt. action	non-lighted	A
	M61-0806	straight	6 oz. nom.	10°	1A	alt. action	non-lighted	A
Tactile	M51-0229	T	3 oz. nom.	0°	1A	momentary	non-lighted	A
Shift	M61-0025	straight	2½ oz. nom.	0°	1A	momentary	non-lighted	A
Shift	M61-0026	straight	2½ oz. nom.	10°	1A	momentary	non-lighted	A
Shift lock	M61-0027	straight	2½ oz. nom.	0°	1A	momentary	non-lighted	A
Shift lock	M61-0028	straight	2½ oz. nom.	10°	1A	momentary	non-lighted	A
Shift lock kit	B99-51AF	3/16 offset						‡
Shift lock kit	B99-52AF	3/8 offset						‡
Lighted	M41-0103	round	2½ oz. nom.	0°	1A	momentary	full top lighted *†	B*
Lighted	M41-0802	round	2-4½ oz.	0°	1A	alt. action	full top lighted *†	B*
Lighted	M71-0037	dual	2-4 oz.	0°	1A	momentary	top & sides lighted	E
Lighted	M41-0064	straight	2½ oz. nom.	0°	1A	momentary	lens lighted**	B
Lighted	M41-0104	straight	2½ oz. nom.	10°	1A	momentary	lens lighted**	B
Lighted	M41-0822	straight	2-4½ oz.	0°	1A	alt. action	lens lighted**	B
Lighted	M41-0803	straight	2-4½ oz.	10°	1A	alt. action	lens lighted**	B
Lighted	M41-0125	straight	2½ oz. nom.	0°	1A	momentary	lens or top lighted	C
Lighted	M41-0126	straight	2½ oz. nom.	0°	1A	momentary	lens or top lighted	D
Lighted	M41-0127	straight	2½ oz. nom.	10°	1A	momentary	lens or top lighted	C
Lighted	M41-0128	straight	2½ oz. nom.	10°	1A	momentary	lens or top lighted	D

*Discontinued — listed for replacement purposes only.

**Light Source not included.

‡ Hardware only. No module included.

† See preceding page.

KEYCAP ASSEMBLY DRAWINGS

1×1 KEYCAP

1 UNIT (.75) / 1 UNIT (.75) / .715 / .715 / .715
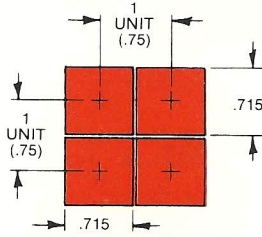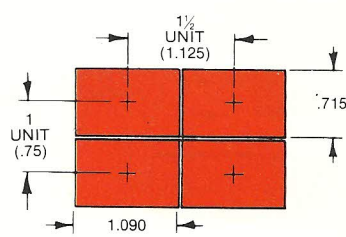
AVAILABLE IN 1ST, 2ND, 3RD OR 4TH ROW SCULPTURE. (RELEGENDABLE IN 3RD ROW SCULPTURED ONLY) CAPACITIVE OR GOLD CROSS POINT. STRAIGHT OR 10° STEM MATTE OR GLOSS FINISH.
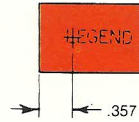
1 × 1¼ KEYCAP
BLANK ONLY NO LEGEND AVAILABLE
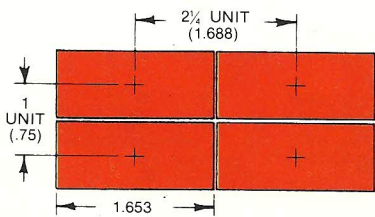
1¼ UNIT (.938) / 1 UNIT (.75) / .715 / .903
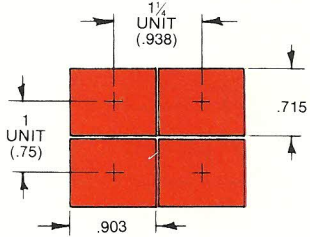
AVAILABLE IN 1ST, 2ND, 3RD AND 4TH ROW SCULPTURE. CAPACITIVE OR GOLD CROSS POINT. STRAIGHT OR 10° STEM MATTE OR GLOSS FINISH.

1 × 1½ KEYCAP
RELEGENDABLE APPLICATION IN 3RD ROW GLOSS, OR MATTE

1½ UNIT (1.125) / 1 UNIT (.75) / .715 / 1.090

AVAILABLE IN 1ST, 2ND, 3RD, OR 4TH ROW SCULPTURE, GLASS CAPACITIVE OR GOLD CROSS POINT. STRAIGHT OR 10° STEM MATTE OR GLOSS FINISH.

1 × 1½ ALTERNATE DESIGN

LEGEND / .357

AVAILABLE IN 1ST, 2ND, 3RD, OR 4TH ROW SCULPTURE. GOLD CROSS POINT ONLY. STRAIGHT OR 10° STEM MATTE OR GLOSS FINISH. REPLACEMENT ONLY!

1 × 1¾ KEYCAP

1¾ UNIT (1.313) / 1 UNIT (.75) / .715 / 1.278

AVAILABLE IN 1ST, 2ND, 3RD, OR 4TH ROW SCULPTURE. CAPACITIVE OR GOLD CROSS POINT. STRAIGHT OR 10° STEM MATTE OR GLOSS FINISH.

ADDITIONAL SOCKET LOCATIONS

LEGEND / .282

AVAILABLE IN 1ST, 2ND, 3RD OR 4TH ROW SCULPTURE. GOLD CROSS POINT ONLY. STRAIGHT OR 10° STEM MATTE OR GLOSS FINISH. REPLACEMENT ONLY!

1 × 2 KEYCAP

2 UNIT (1.50) / 1 UNIT (.75) / .715 / 1.465
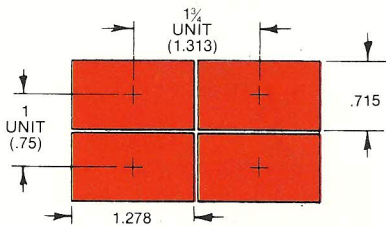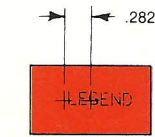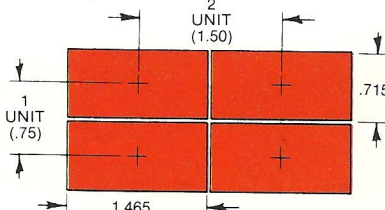
1 × 2 KEYCAP
RELEGENDABLE APPLICATION—3RD ROW GLOSS

1 UNIT (.75) / .750 / .750 / .375 / .375 / 1 UNIT (.75) / 1.465

AVAILABLE IN 3RD ROW SCULPTURE ONLY. CAPACITIVE OR GOLD CROSS POINT. STRAIGHT OR 10° STEM MATTE OR GLOSS FINISH.

ADDITIONAL SOCKET LOCATIONS
1 × 2 KEYCAP

.375 / .375

AVAILABLE IN 3RD ROW SCULPTURE ONLY. GOLD CROSS POINT ONLY. STRAIGHT OR 10° STEM MATTE OR GLOSS FINISH. REPLACEMENT ONLY!
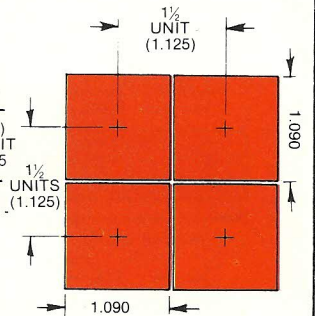
1 × 2¼ KEYCAP

2¼ UNIT (1.688) / 1 UNIT (.75) / 1.653

AVAILABLE IN 3RD ROW SCULPTURE ONLY. CAPACITIVE OR GOLD CROSS POINT. STRAIGHT OR 10° STEM MATTE FINISH.

2¼ UNIT (1.688) / .715 / .469 / .938 / .469 / .938 / 1.653

1½ × 1½ KEYCAP
BLANK ONLY NO LEGEND AVAILABLE

1½ UNIT (1.125) / (1) UNIT .75 / 1½ UNITS (1.125) / 1.090 / 1.090
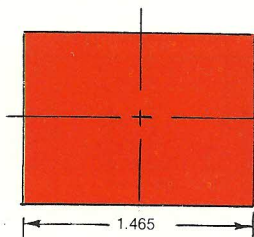
AVAILABLE IN 3RD ROW SCULPTURE ONLY. GOLD CROSS POINT ONLY. STRAIGHT OR 10° STEM GLOSS FINISH ONLY. (PROTOTYPE QUANTITIES ONLY).
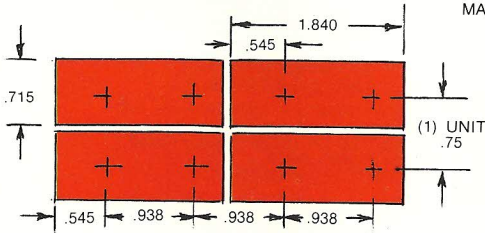
1 × 2½ KEYCAP
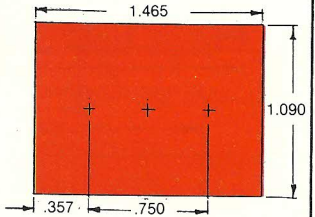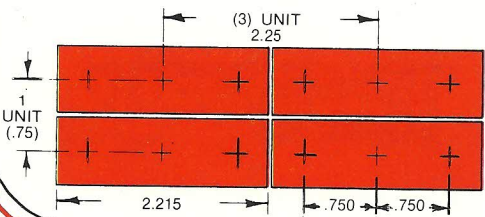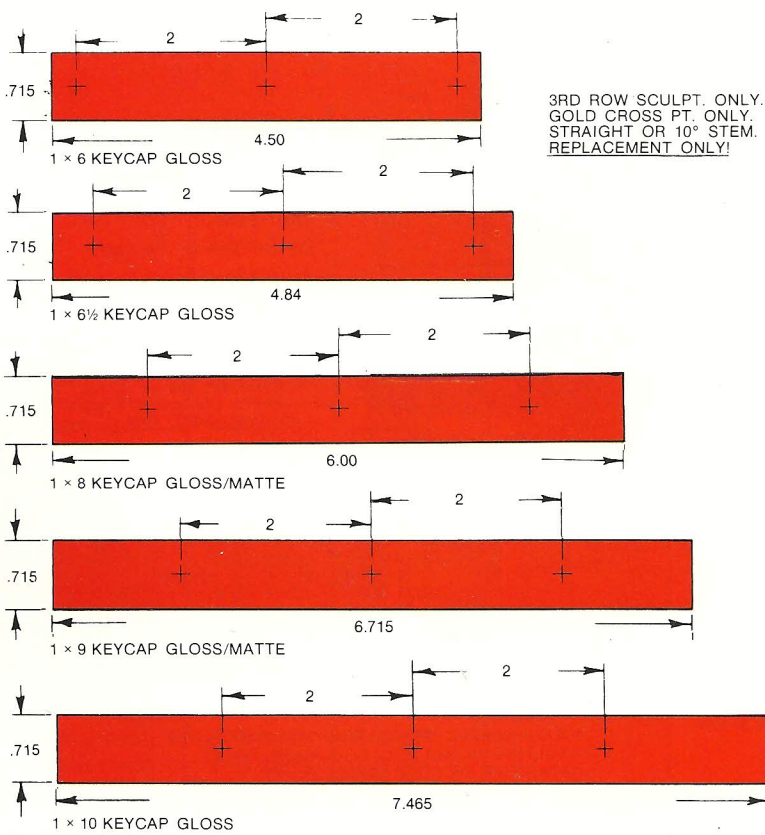
1.840 / .545 / .715 / (1) UNIT .75 / .545 / .938 / .938 / .938

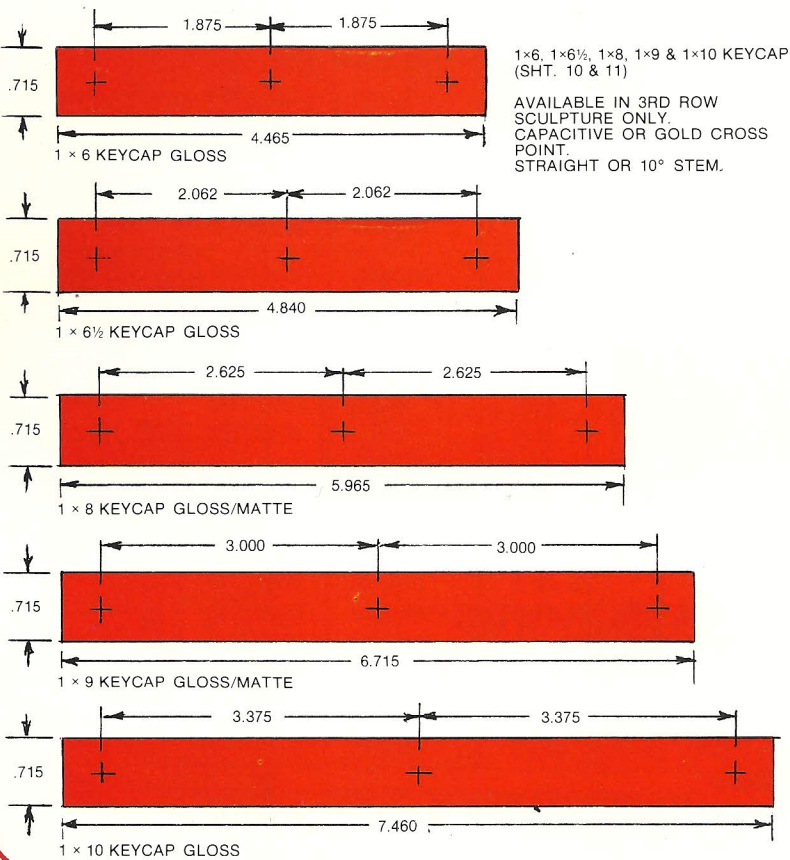AVAILABLE IN 3RD ROW SCULPTURE ONLY. CAPACITIVE OR GOLD CROSS POINT. STRAIGHT OR 10° STEM MATTE OR GLOSS FINISH.

1½ × 2 KEYCAP
2 SHOT

.357 / .750 / 1.090 / 1.465 / 1.465

AVAILABLE IN 3RD ROW SCULPTURE ONLY. CAPACITIVE OR GOLD CROSS POINT. STRAIGHT OR 10° STEM MATTE FINISH ONLY.

1½ × 2

1.465 / 1.090 / .357 / .750

(ENG. REF. 028-9000)

2 SHOT AVAILABLE IN 3RD ROW SCULPTURE ONLY. GOLD CROSS POINT ONLY. STRAIGHT OR 10° STEM MATTE FINISH ONLY. REPLACEMENT ONLY!
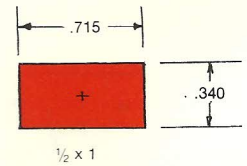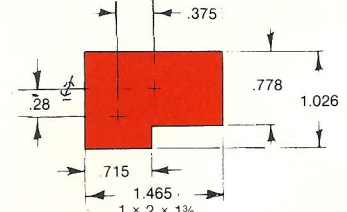
1 × 3 KEYCAP

(3) UNIT 2.25 / 1 UNIT (.75) / .715 / 2.215 / .750 / .750

1 OR 2 SWITCHES ONLY, SPACE BAR MECHANISM

AVAILABLE IN 3RD ROW SCULPTURE ONLY. CAPACITIVE OR GOLD CROSS POINT. STRAIGHT OR 10° STEM MATTE OR GLOSS FINISH.

KEYCAP ASSEMBLY DRAWINGS

2   2

.715

4.50

1 × 6 KEYCAP GLOSS

3RD ROW SCULPT. ONLY.
GOLD CROSS PT. ONLY.
STRAIGHT OR 10° STEM.
REPLACEMENT ONLY!

2   2

.715

4.84

1 × 6½ KEYCAP GLOSS

2   2

.715

6.00

1 × 8 KEYCAP GLOSS/MATTE

2   2

.715

6.715

1 × 9 KEYCAP GLOSS/MATTE

2   2

.715

7.465

1 × 10 KEYCAP GLOSS

1.875   1.875

.715

4.465

1 × 6 KEYCAP GLOSS

1×6, 1×6½, 1×8, 1×9 & 1×10 KEYCAP
(SHT. 10 & 11)

AVAILABLE IN 3RD ROW
SCULPTURE ONLY.
CAPACITIVE OR GOLD CROSS
POINT.
STRAIGHT OR 10° STEM.

2.062   2.062

.715

4.840

1 × 6½ KEYCAP GLOSS

2.625   2.625

.715

5.965

1 × 8 KEYCAP GLOSS/MATTE

3.000   3.000

.715

6.715

1 × 9 KEYCAP GLOSS/MATTE

3.375   3.375

.715

7.460

1 × 10 KEYCAP GLOSS

.715

.340

½ × 1

AVAILBLE IN 3RD ROW SCULPTURE ONLY.
GOLD CROSS POINT ONLY.
STRAIGHT OR 10°
MATTE FINISH ONLY.

1.090

.715

.357   .357

STEM OFFSET
1 × 1½
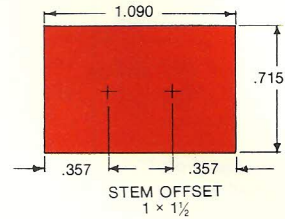
(ENG. REF. 028-851)

AVAILABLE IN 1ST ROW SCULPTURE ONLY
GOLD CROSS POINT ONLY.
STRAIGHT OR 10° STEM.
MATTE FINISH ONLY.
REPLACEMENT ONLY!

1.090

.715

.357
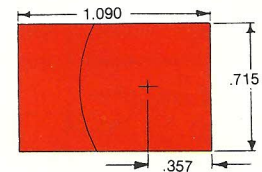
1 × 1½
**END STEPPED
SHIFT KEY**
ALSO 1 × 2 KEY (1.465)
STEM SAME POSITION
(ENG. REF. 028-1251)

AVAILABLE IN 3RD ROW SCULPTURE ONLY.
GOLD CROSS POINT ONLY.
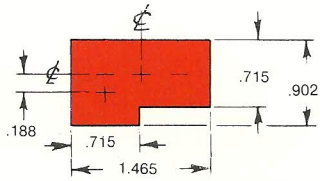MATTE OR GLOSS FINISH.
STRAIGHT OR 10° STEM.

.375

.28   .778   1.026

.715

1.465

1 × 2 × 1⅜
"L" SHAPED KEYCAP
(.250 "⅓ UNIT" OFFSET)

(ENG. REF. 028-2860)

AVAILABLE IN 3RD ROW SCULPTURE ONLY.
CAPACITIVE OR GOLD CROSS POINT.
GLOSS FINISH ONLY.
STRAIGHT OR 10° STEM.

.375   .375

.715   .902
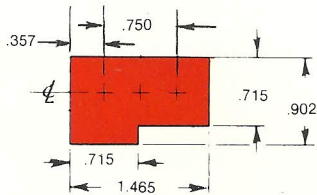
.188

.715

1.465

1¼ × 2 × 1
"L" SHAPED KEYCAP
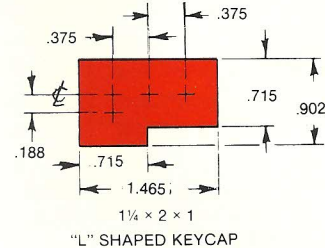
AVAILABLE IN 3RD ROW SCULPTURE ONLY.
GOLD CROSS POINT ONLY.
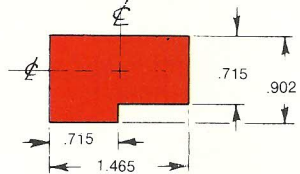STRAIGHT STEM ONLY.
MATTE OR GLOSS FINISH.
REPLACEMENT ONLY!

KEYCAP ASSEMBLY DRAWINGS

.715 .902 .188 .715 1.465
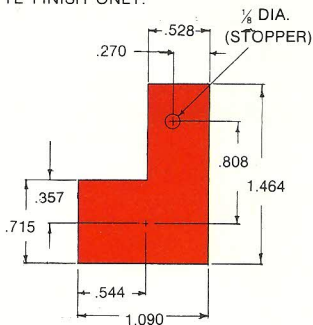
1¼ × 2 × 1 "L" SHAPED KEYCAP
AVAILABLE IN 3RD ROW SCULPTURE ONLY.
CAPACITIVE OR GOLD CROSS POINT.
STRAIGHT STEM ONLY.
MATTE OR GLOSS FINISH.

.357 .750 .715 .902 .715 1.465

1¼ × 2 × 1 "L" SHAPED KEYCAP
AVAILABLE IN 3RD ROW SCULPTURE ONLY.
CAPACITIVE OR GOLD CROSS POINT.
STRAIGHT STEM ONLY.
MATTE OR GLOSS FINISH.

.715 .902 .715 1.465

1¼ × 2 × 1 "L" SHAPED KEYCAP
AVAILABLE IN 2ND & 3RD ROW SCULPTURE.
CAPACITIVE OR GOLD CROSS POINT.
STRAIGHT STEM ONLY.
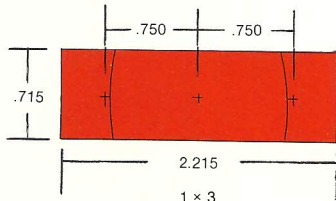MATTE OR GLOSS FINISH.

1.090 .357 .715 .738 1.454 .357 .357 .903
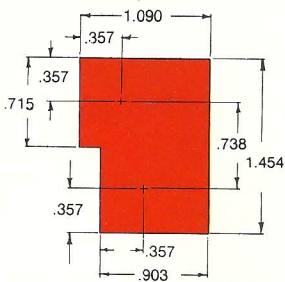
"L" SHAPED SCULPTURED 2ND & 3RD ROW
1¼ × 2 × 1½
(ENG. REF. 023-5452)
AVAILABLE IN 2ND & 3RD ROW SCULPTURE ONLY.
CAPACITIVE OR GOLD CROSS POINT.
10° STEM ONLY.
MATTE FINISH ONLY.

⅛ DIA.
(STOPPER)
.528 .270 .808 1.464 .357 .715 .544 1.090

"L" SHAPED SCULPTURED 2ND & 3RD ROW
1½ × 2 × ¾
(ENG. REF. 023-5001)
AVAILABLE IN 2ND & 3RD ROW SCULPTURE ONLY.
CAPACITIVE OR GOLD CROSS POINT.
10° STEM.
MATTE FINISH ONLY.

.715 .357 1.278
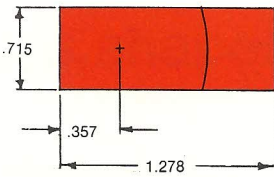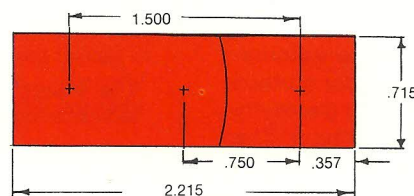
1 × 1¾ SCULPTURED END STEPPED
(ROW 3)
AVAILABLE IN 3RD ROW SCULPTURE ONLY.
CAPACITIVE OR GOLD CROSS POINT.
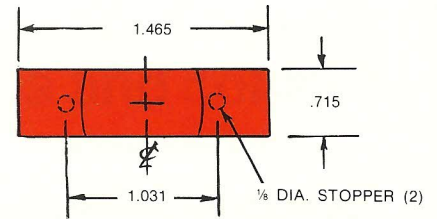STRAIGHT OR 10° STEM.
MATTE OR GLOSS FINISH.

.750 .750 .715 2.215

1 × 3
RELEGENDABLE
STYLE I
AVAILABLE IN 3RD ROW SCULPTURE ONLY.
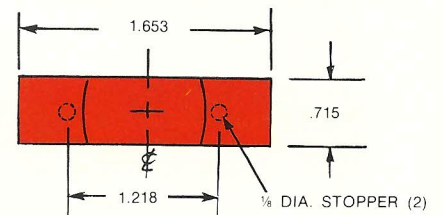CAPACITIVE OR GOLD CROSS POINT.
STRAIGHT OR 10° STEM.
GLOSS FINISH ONLY.

.715 2.215
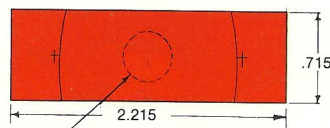
NO STEM
DETAIL IN
POSITIONS
SHOWN
.400 DIA. MIN.
.200 DEEP MIN.

STYLE II

1 × 3 CENTER
STEPPED

3RD ROW SCULPTURE ONLY.
GOLD CROSS POINT ONLY.
STRAIGHT OR 10° STEM.
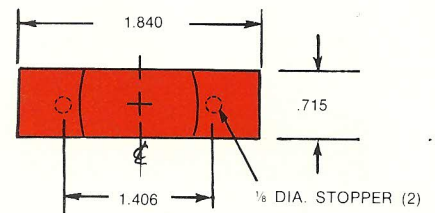GLOSS FINISH ONLY.
REPLACEMENT ONLY!

1.500 .715 .750 .357 2.215

1 × 3 END STEPPED

3RD ROW SCULPTURE ONLY.
CAPACITIVE OR GOLD CROSS POINT.
MATTE FINISH ONLY.
STRAIGHT OR 10° STEM.

1.465 .715 1.031 ⅛ DIA. STOPPER (2)

1 × 2 CENTER
STEPPED
AVAILABLE IN 2ND OR 4TH ROW SCULPTURE.
CAPACITIVE OR GOLD CROSS POINT.
STRAIGHT OR 10° STEM.
MATTE OR GLOSS FINISH.

1.653 .715 1.218 ⅛ DIA. STOPPER (2)
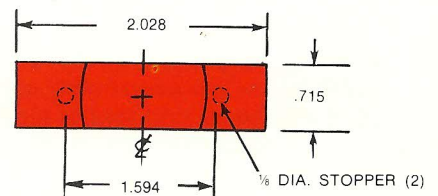
1 × 2¼ CENTER STEPPED

AVAILABLE IN 2ND OR 4TH ROW SCULPTURE.
CAPACITIVE OR GOLD CROSS POINT.
STRAIGHT OR 10° STEM.
MATTE OR GLOSS FINISH.

1.840 .715 1.406 ⅛ DIA. STOPPER (2)

1 × 2½ CENTER
STEPPED
AVAILABLE IN 3RD ROW SCULPTURE ONLY.
CAPACITIVE OR GOLD CROSS POINT.
STRAIGHT OR 10° STEM.
MATTE & GLOSS FINISH.

2.028 .715 1.594 ⅛ DIA. STOPPER (2)

1 × 2¾ CENTER STEPPED

AVAILABLE IN 3RD ROW SCULPTURE ONLY.
CAPACITIVE OR GOLD CROSS POINT.
STRAIGHT OR 10° STEM.
MATTE & GLOSS FINISH.

Cherry has two-shot and three-shot molded keycaps in a variety of sizes, shapes, colors and legends to fill any need you can name. If your application calls for a "special", we have in-house design plus fabrication facilities to fill your most demanding needs.

There are scores of standard — plus custom — characters, sizes and shapes in the Cherry "library" of keycaps. Available in a broad selection of colors for both buttons and legends.

ABOUT TWO AND THREE COLOR MOLDING

The best way to make keycaps in two or three colors is to automatically mold them. This technique is called two-shot or three-shot molding, which provides a permanent smooth legend. At Cherry, several different keycaps are molded simultaneously in a multi-cavity mold and the machine attendant devotes full time to inspecting and sorting the output. The process is 100% automatic through the ejection step.
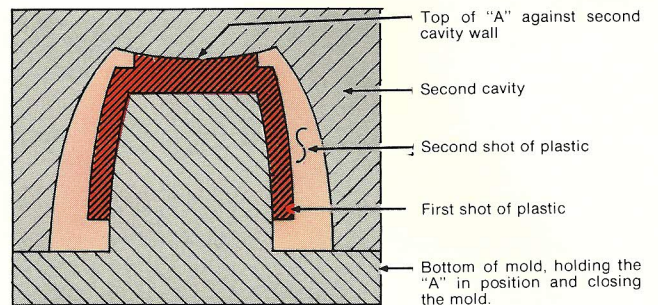
A two color keycap consists of two molded parts . . . the inner part — the character itself — and the outer part — which envelopes all but the very top surface of the character.
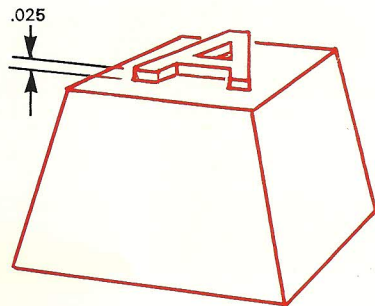
This is a simplified view of an inner or first shot. The "A" is raised about .025" from the surface around it. The pyramid-like portion is completely hollow, with walls about .020" thick.

After molding the "A", the two-shot machine automatically inserts it into a second cavity. The upper surface of the letter is pushed tightly against the top of the cavity to keep the second shot of plastic from covering it. The second shot enters the cavity, enveloping all of the part except the top of the "A".

SIMPLIFIED VIEW OF SECOND SHOT BEING MOLDED

- Top of "A" against second cavity wall
- Second cavity
- Second shot of plastic
- First shot of plastic
- Bottom of mold, holding the "A" in position and closing the mold.

HOW CHERRY TOOLS A NEW LEGEND

New legends for two-shot keycaps require new legend artwork and insert tooling which is quickly accomplished in the following steps:

1. An artist prepares an art master at four-to-one scale.

2. A technician photographically converts the art to a template, still at four-to-one scale.

3. A machinist, using a 3-dimensional pantagraph mill, transfers the legend from the template to a small steel block, reducing the legend in the process by a factor of four. The small steel block is called an insert.

4. The insert is hardened and ground.

5. The insert is mounted in a universal first shot mold which is designed to accept replaceable legends.

MOLDED KEYCAPS

...in a "library" of sizes, shapes, legends and colors

Your Cherry representative or the Cherry Keyboard Sales Group can quickly determine if we have tooling available for a particular legend. In many cases, an appropriate legend can be found among the 5,000 we have tooled in the Cherry "library". If it is necessary to tool a new one, your Cherry representative can quickly supply you with a cost quotation.
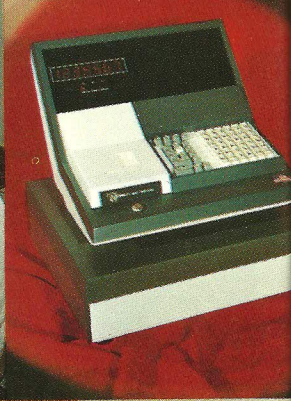
CHERRY KEYBOARDS are already

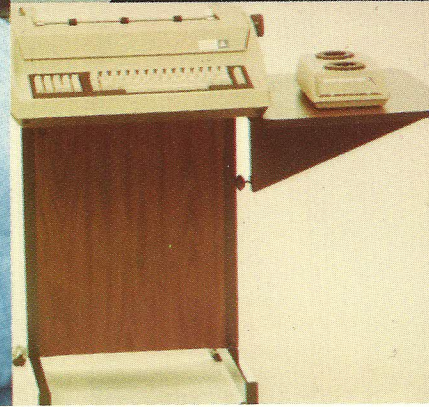Applied Digital Data Systems Inc.'s Regent 200 CRT Terminal.   R. C. Allen 900 Series Cash Register

Tektronix 4051 Graphic System.

Anderson Jacobson AJ 832 Keyboard Printer Terminal.   Control Data Terminal.

YOUR NEARBY CHERRY SALES REPRESENTATIVE is ready

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IDAHO
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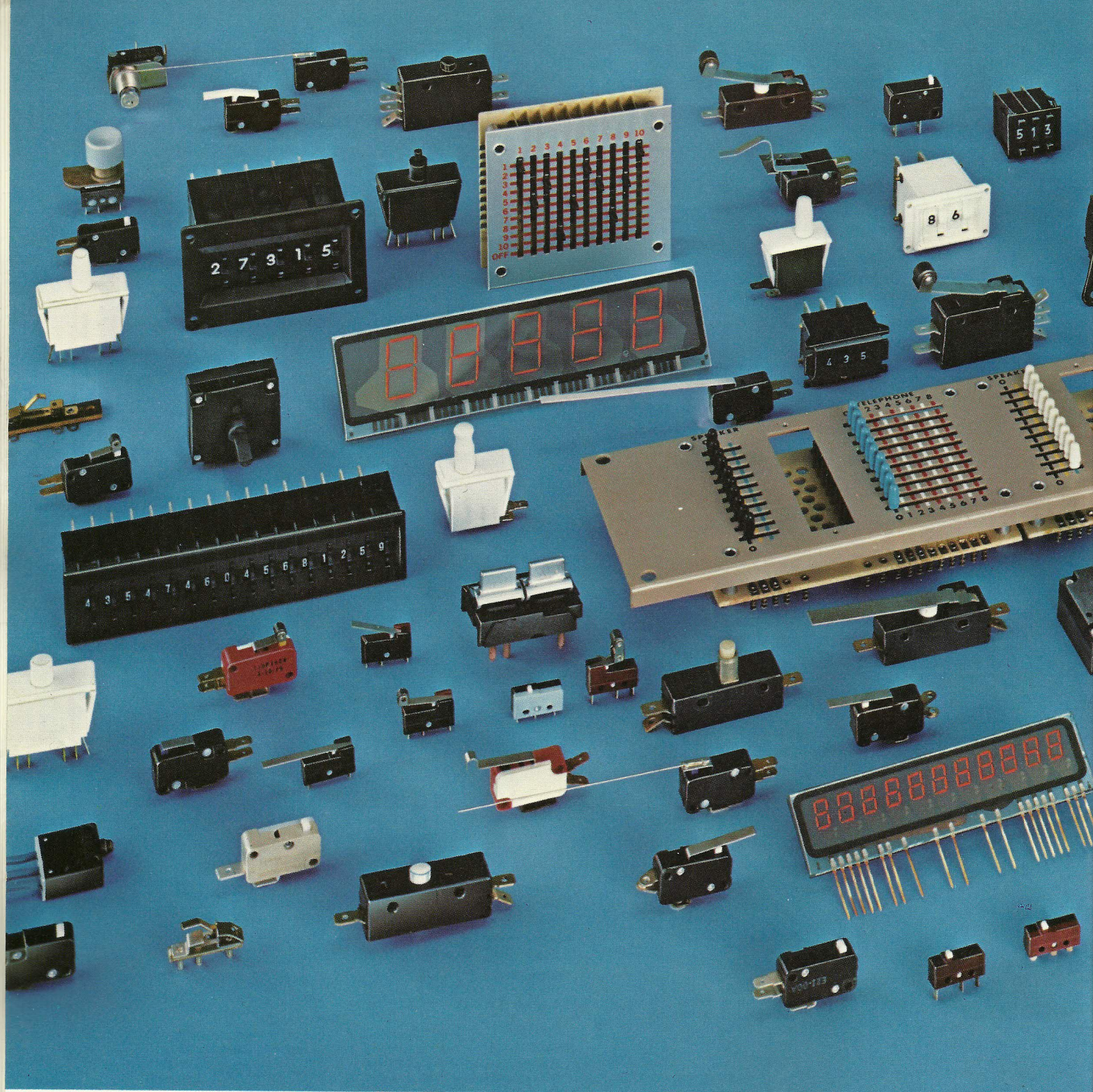10855 W. Potter Rd.
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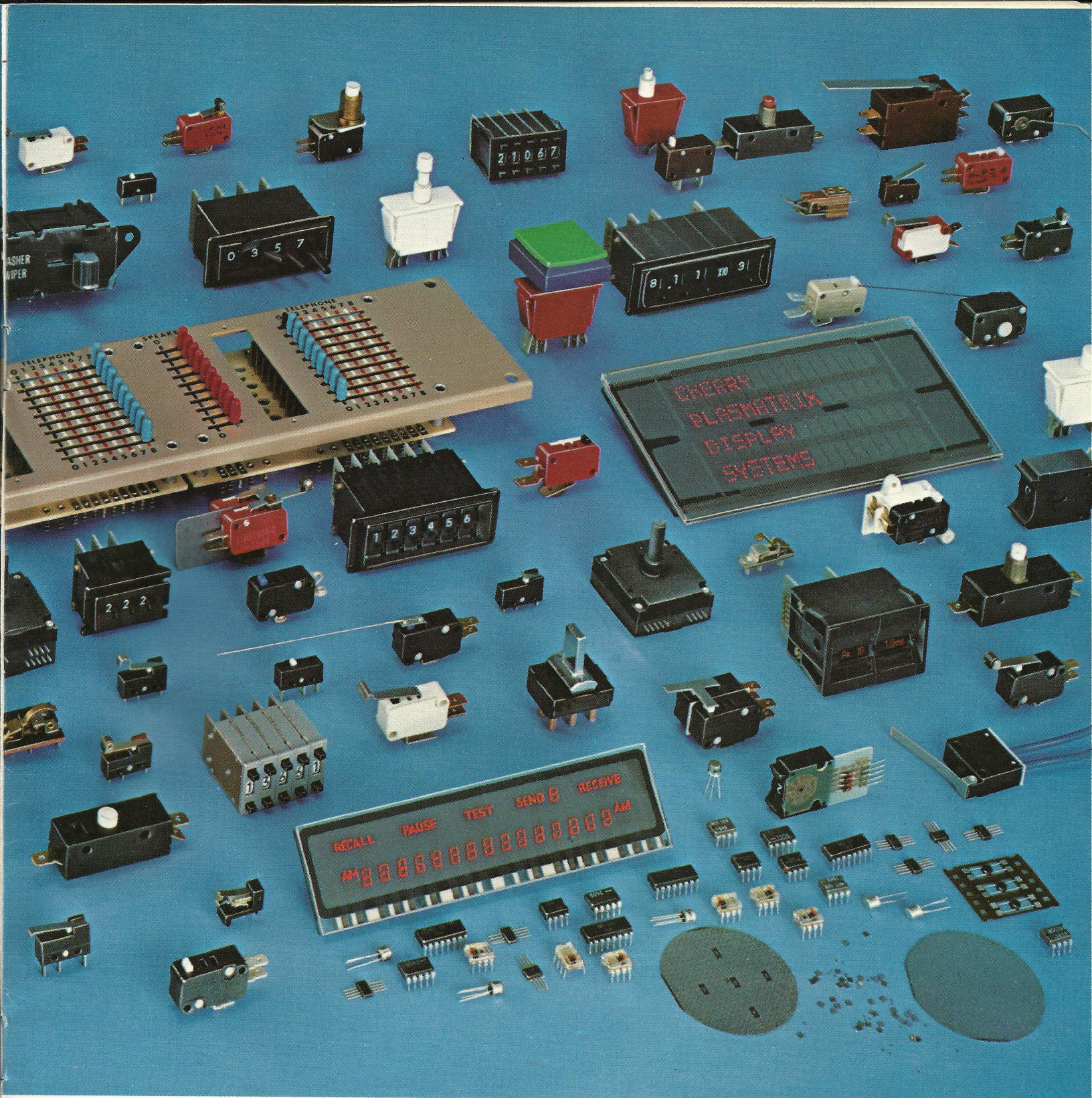(414) 258-0529

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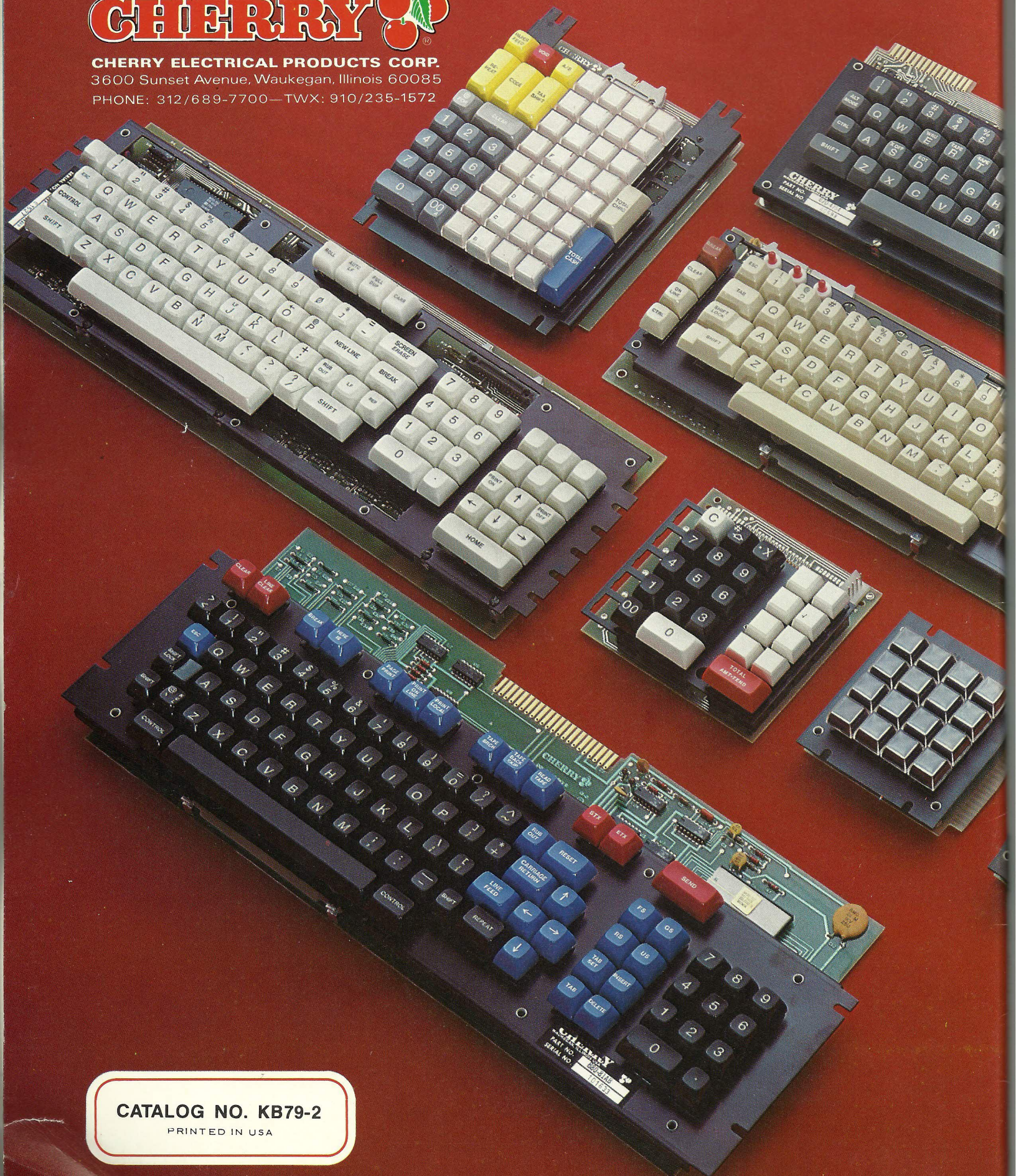(416) 844-6721

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