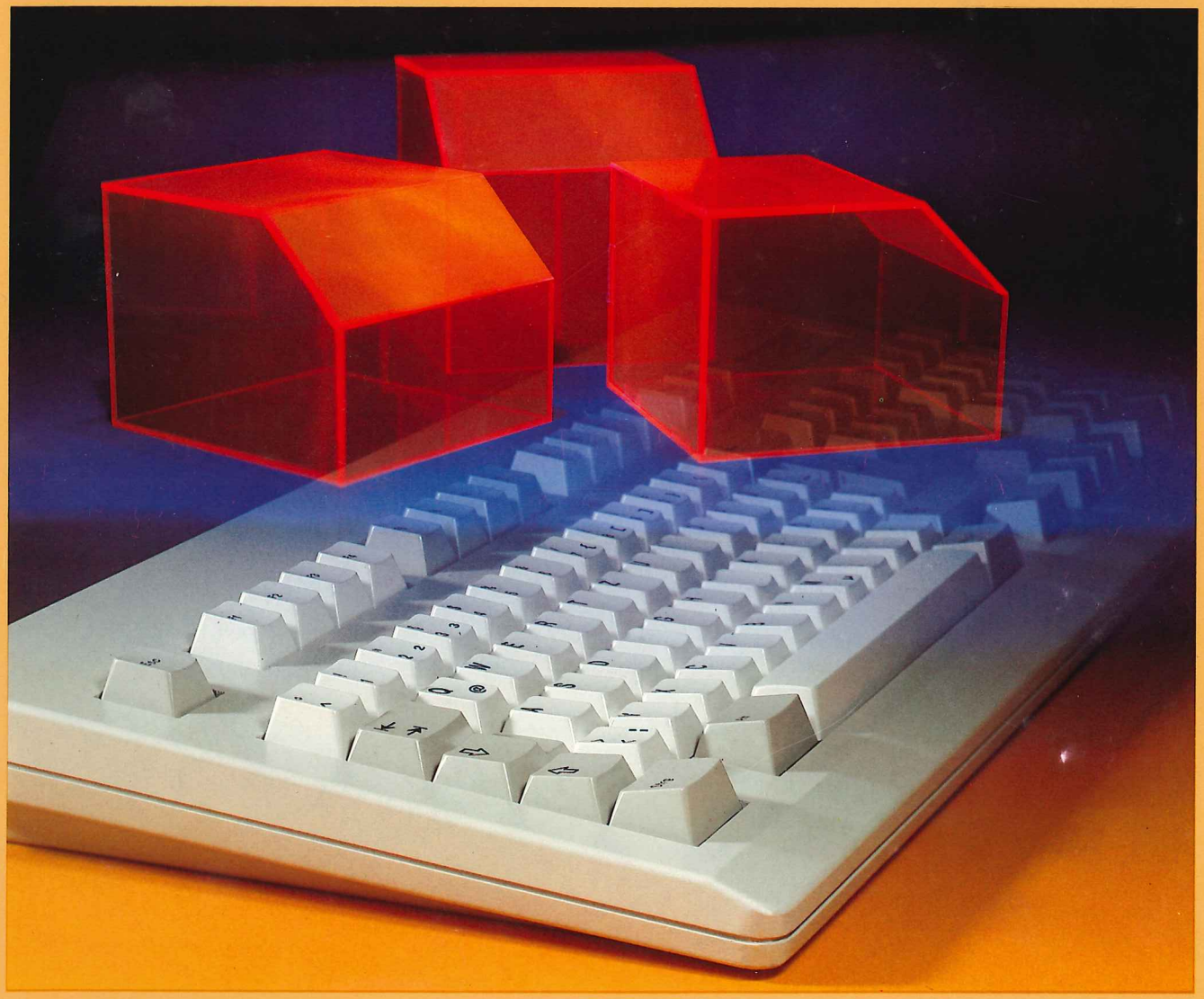
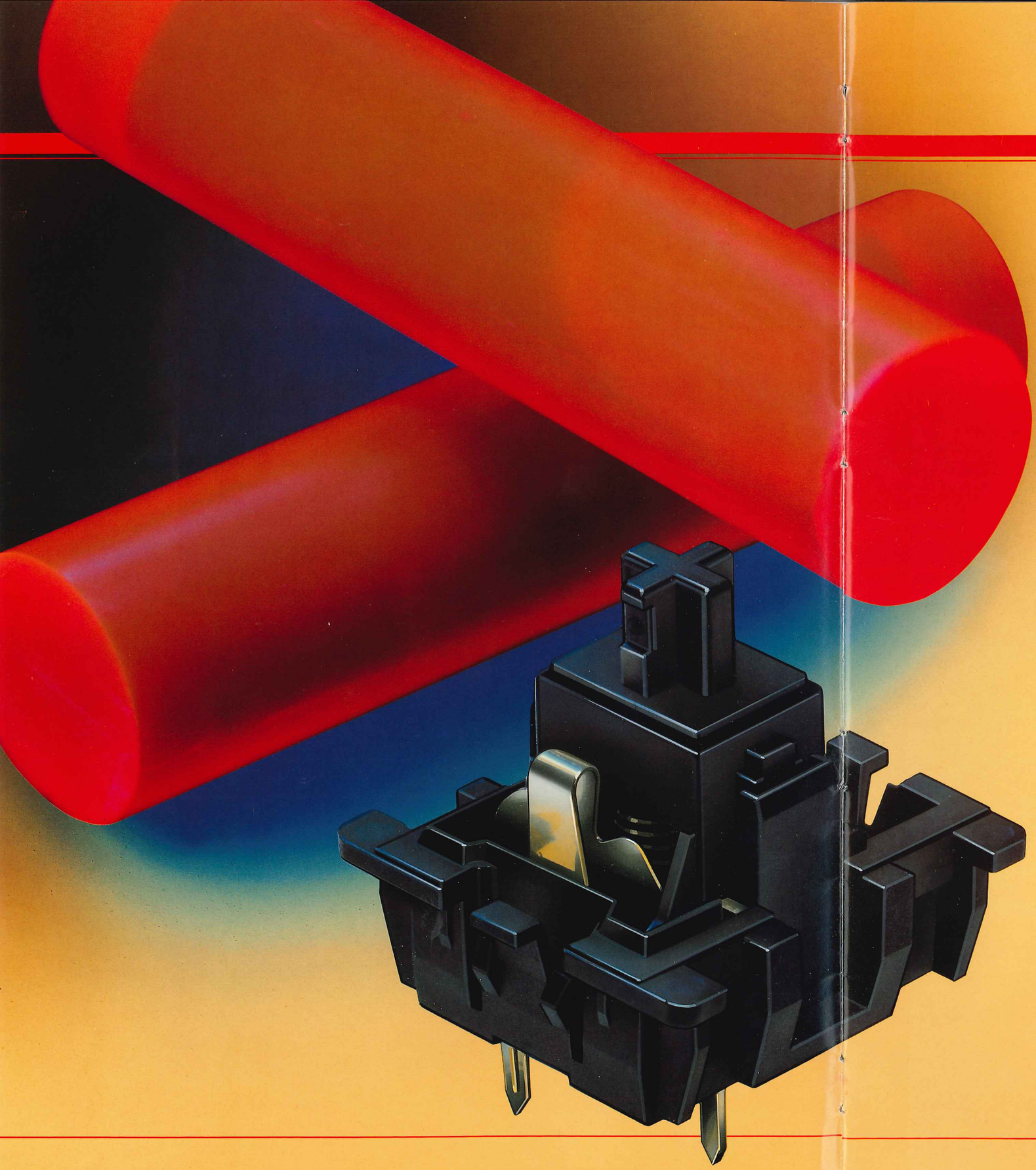
CHERRY

G 80-3000

IBM*-compatible Multi-Function Keyboard with 101 or 102 Keys. For IBM* PC, PC/XT, PC/AT, PS/2 and compatible Systems.

* IBM is the registered trademark of the IBM Corporation.





»Gold Crosspoint« Technology

Applications
The mechanical keymodules of the MX series have already proven themselves over the course of years in keyboards, being continually improved and modified in response to new experiences and requirements.

Specially developed for professional typing applications, they fully comply with all of the standards dictated by the market, offering sophisticated technology, a high degree of user comfort, and the called-for ergonomic design.

With total travel of 4 mm, this module is a full-travel keyswitch. Their size permits assembly of keyboards with standard 19.05-mm centers. Used in conjunction with the appropriate keycaps, the MX keymodules also fulfill the most recent ergonomic requirements, according to which the third keyrow of a keyboard should have a height of less than 30 mm.

Each keymodule is a complete, self-contained unit, permitting conventional assembly of modular keyboards of any desired configuration.

Design and function
The MX keymodules essentially consist of a thermoplastic housing, an actuator guided within it, a return spring, and the mechanical contact system.

In mechanical keyswitches, it is the contact system which plays the crucial role. Consequently, the contacts are nearly always made of precious metal. Gold contacts are used in the MX keymodules; these have a low contact resistance of typically 25 mΩ and exhibit favorable bounce characteristics.

By using high-quality gold alloys for the contacts and by designing them the »Crosspoint« shape, we have engineered the MX keymodules with a high contact pressure and excellent switching reliability.

This unique contact system guarantees a long life expectancy of 50×10^6 operations, an extraordinary figure for keyswitches with mechanical contact closure.

When the key is pressed, the actuator moves and the »Gold Crosspoint« contact closed by way of guides. The electrical operating position is located at almost the precise mid point of the overall path which the actuator travels. This yields another of the MX modules' outstanding attributes, since they must be depressed a significant distance for contact to occur, thus eliminating accidental actuation.

The coordinated use of high-quality thermoplastics, optimum combination of them, and the design of the pair of guides permits low wear of the actuator housing and thus a high life expectancy. Switch versions include linear and tactile feel, the latter being accomplished by means of the so-called pressure point. By individually designing the oblique guides or dividing the actuator into two parts, different MX versions are available. The **soft tactile feedback** version is available both with and without an audible **"click".**

The design principle of the MX keymodules permits integration of additional components. Addition of a decoupling diode makes the keymodule suitable for assembly of keyboards with N-key rollover. An LED can be inserted for visual feedback.

In addition, a wire jumper can be installed. By employing different coiled return springs, moreover, the operating force required to actuate the MX can be varied.

Manufacture and quality control
These keymodules are manufactured in a fully automated process in our plant in Auerbach, West Germany. In addition to the basic version, fully automated integration of additional components is also possible.

Particularly great importance is attached to quality control. Even before leaving the machine, the keymodules are subjected to a fully automated 100 % check as the last manufacturing step.

Even before the keymodules are produced, however, their constituent parts – also made by us – must pass through a production check in which extremely demanding quality standards are applied.

Third-party components used to made these products are also required to meet stringent quality standards. These have been elaborated in cooperation with our suppliers, and observance of them is watchfully monitored by us.

Main Advantages

- US-English version (101 keys) for IBM* PC, PC/XT, PC/AT, PS/2 and compatible models.
- Other language versions (102 keys) for IBM* PC, PC/XT, (with Cherry keyboard driver), PC/AT, PS/2 and compatible models.
- Sliding switch for selection of model for PC, XT or 286, AT, PS/2.
- LED indicators show selected mode.
- Superior Cherry MY keys with membrane contacts (FTSC technology).
- Reliable positive contact eliminates input errors.
- Reliability: MCBF = 1×10^9 operations.
  MTBF = 80.000 hours.
- Long Life expectancy of individual keys: $> 50 \times 10^6$ operations.
- Includes housing and cable.
- Rugged design.
- Fatigue-free operation with no risk of multiple actuation, achieved by means of ergonomic cylindrical key set.
- 4-mm full-travel keyswitches.
- "Deep dish" sculptured keycaps for the F and J index finger locations and a dimple on the 5 in the numeric pad for quick and accurate homing when touch-typing.
- 2-shot molded keycaps are matt-finished, wear-resistant and easy to clean.
- Light keycap body color with darker legends (beige-grey, white-grey).
- Materials comply with UL 94.

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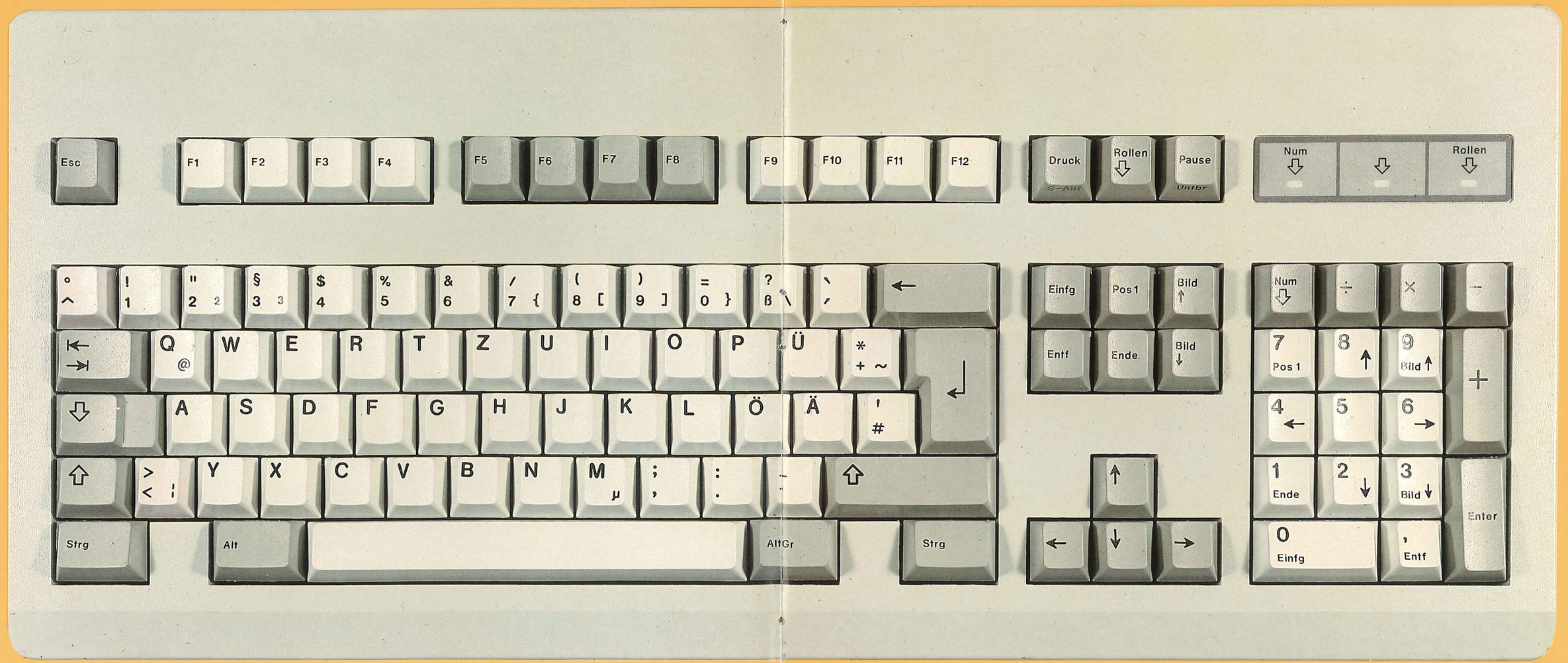


Important Features

- The alphanumeric key layout of the 102-key version conforms with the most recent German norm proposal, namely DIN 2137 Sheet 2 dated September 1986: "German keyboard for word and data processing and extensions thereof (characters for standard depiction of weights and measures)"; the international characters use the standard ASCII code in compliance with DIN 66003 and DIN 66303.
- The 101-key version utilizes international ASCII characters in compliance with DIN 66003 and DIN 66303.
- The IBM overlay fits onto the housing.
- Super low profile, minimum height.
- Height of 3rd key row is 30 mm (measured from table top with keyboard in flat position), conforming to the most recent research results on ergonomic requirements for display workstations.
  6° angled stems.
- Separate cursor pad.
- Synchronous data format.
- N-key rollover in alpha keypad (main QWERT section).
- Power supply + 5 V.
- Autorepeat, programmable from system (in AT mode only).
- Available key layouts: US-international, United Kingdom, German, French, Italian, Spanish, Swedish/Finnish, Belgian, Danish, Norwegian, Swiss (French and German), Portuguese.
  Additional versions available on request.
- Standard keycap colors: beige-grey (code U9), white-grey (code L9).
- Life expectancy of each keymodule: 50×10^6 operations.
- Electromagnetic compatibility (EMC)
  – ESD (in compliance with IEC 801-2): 15 kV
  – RFI/EMI: – Post-Vfg. 1046/1984 (VDE 0871 Class B)
  – FCC Part 15, Subpart J, Class B.
- Safety: VDE 0806/7.76
  ZH 1/618/10.80
  UL 478
  CSA C 22.2 no. 220

Technical Specifications

Power supply:
+ 5 V DC, current consumption 200 mA typ.

Interface:
Bidirectional, serial synchronous. The keyboard communicates with the system via the clock and data lines.

Data format:
Data transfer to and from the keyboard is in synchronous IBM format.
AT, PS/2 and XT 286 mode: idle state = data and clock lines HIGH.
PC, XT mode: idle state = data line LOW, clock line HIGH.

Data output:
Open-collector TTL.

Data buffer: All codes are buffered prior to output (buffer capacity 16 bytes).

Keyboard input sequence:
N-key rollover in the alpha keypad (main QWERT section).
Generation of "ghost" characters is prevented by use of a segmented input sequence lock.

Autorepeat:
All keys are equipped with automatic repeat function, except Break-key.
The delay time and rate of repetition can be programmed from the system (in AT mode only; in PC mode the output code repeats at 10 cycles per second after a delay of 500 ms).

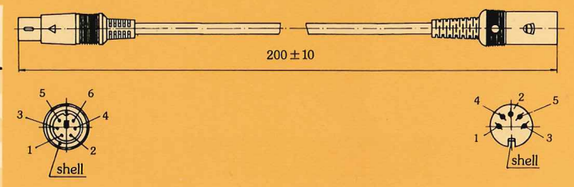
Power-up reset:
The keyboard triggers an automatic power-up reset.

Keyboard self-test:
Upon power-up or if requested by system, the keyboard performs a self-test routine. If no faults are detected, the keyboard transmits the hexadecimal code "AA". Any other code is interpreted to mean the keyboard is defective.
LED status indication for NUM LOCK, CAPS LOCK and SCROLL LOCK.

Temperature ranges:
Storage temperature: –40° C (–40° F) to + 70° C (+ 158° F).
Operating temperature: 0° C (+ 32° F) bis + 50° C (+ 122° F).

Adapter for PS/2 systems

Mini DIN plug Pin				Diode coupling Pin
1	←	DATA	→	2
2	←	FREE	→	3
3	←	GND	→	4
4	←	+ 5 V	→	5
5	←	CLOCK	→	1
6	←	FREE	→	/
shell	←	shield	→	shell

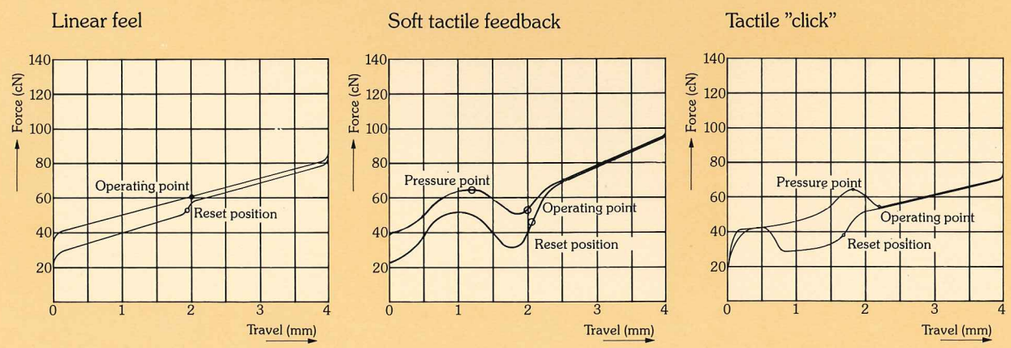


Part No. 617-0580

Operation Mode Switch

PC/XT
XT 286/AT/PS/2

Force/Travel Diagrams

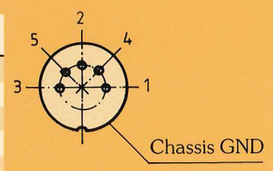


Connector Cable

2-m shielded coiled cable, stone-grey,
with 5-pin DIN connector.

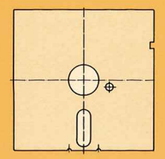
Pin Assignment

Pin	Assignment
1	CLOCK
2	DATA
3	–
4	GND
5	+ 5V



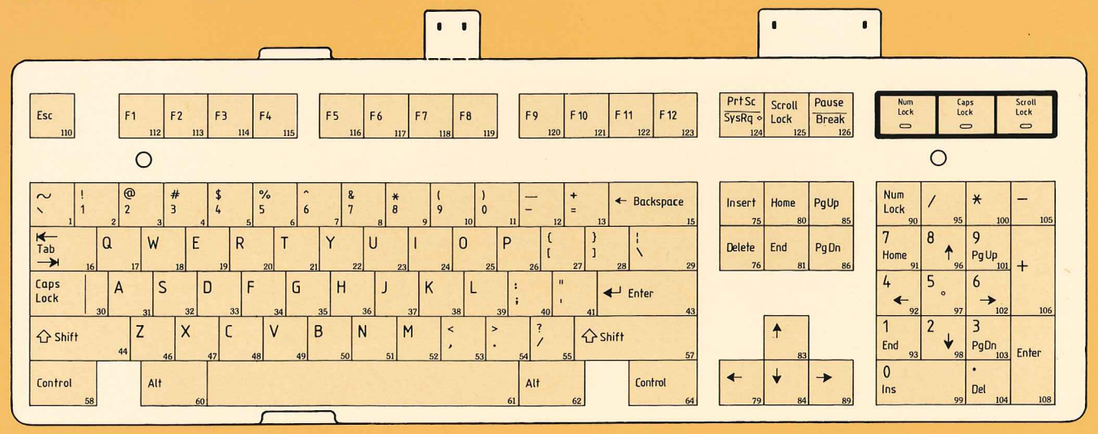
Keyboard Driver

A set of keyboard driver programs is available for PC/AT systems running under MS-DOS.

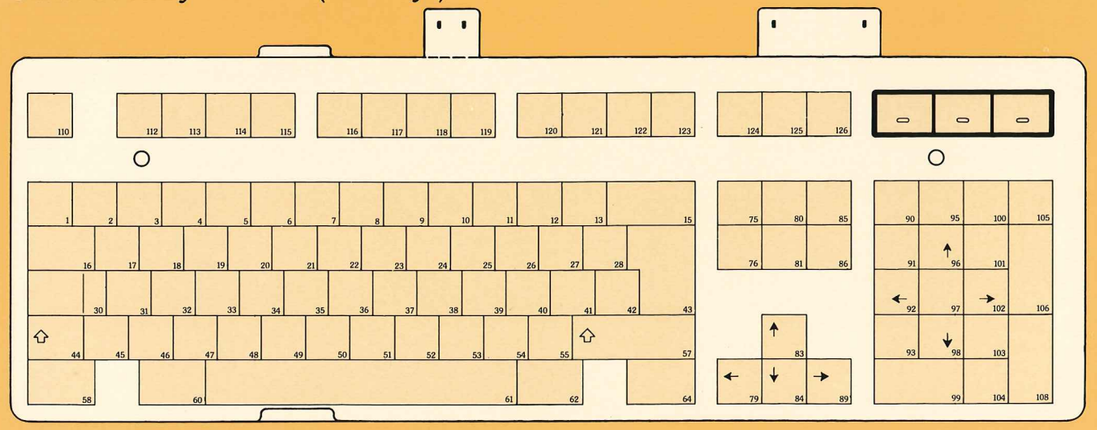


Part No. 650-0001

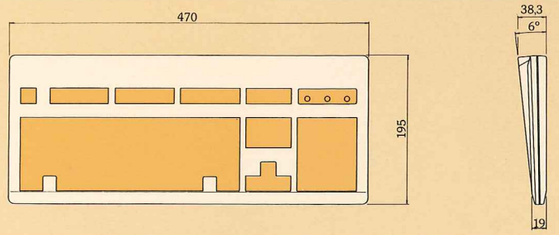
US-English Version (101 Keys)



Other Country Versions (102 Keys)



»Ergo« Housing



»Prism« Housing

Besides the modern »Ergo« housing, the equally attractive »Prism« housing is also available for Cherry 3000 keyboards. This version differs from the former in that all of the edges of the upper housing surface are beveled.

Part Numbers

Layout designation	Housing type	MX technology		
		Linear feel	Tactile feedback	Audible "click"
US-English	Ergo housing	G80-3000 HAU	G80-3000 HEU	G80-3000 HFU
German		G80-3000 HAD	G80-3000 HED	G80-3000 HFD
French		G80-3000 HAF	G80-3000 HEF	G80-3000 HFF
United Kingdom		G80-3000 HAG	G80-3000 HEG	G80-3000 HFG
Italian		G80-3000 HAI	G80-3000 HEI	G80-3000 HFI
Spanish		G80-3000 HAE	G80-3000 HEE	G80-3000 HFE
Swedish/Finnish		G80-3000 HAO	G80-3000 HEO	G80-3000 HFO
Belgian		G80-3000 HAB	G80-3000 HEB	G80-3000 HFB
Danish		G80-3000 HAM	G80-3000 HEM	G80-3000 HFM
Norwegian		G80-3000 HAN	G80-3000 HEN	G80-3000 HFN
Swiss/French and German		G80-3000 HAC	G80-3000 HEC	G80-3000 HFC
Portuguese		G80-3000 HAP	G80-3000 HEP	G80-3000 HFP

The Alternative: The Cherry 1000

With the Cherry 1000, we are offering you yet another IBM multi-function compatible keyboard that boasts all of the performance attributes of the Cherry 3000.

For more detailed information, please request the separate brochure "Cherry 1000".

G 81-3000 Membrane Technology

The Cherry 3000 is available not only with MX »Gold Crosspoint« contacts but also equipped with membrane technology.

Important Features

- Linear feel.
- Reliability: MCBF = 1×10^9 operations.
  MTBF = 80.000 hours.
- Alpha-N-Key-Rollover.
- Superior Cherry MY keys with membrane contacts (FTSC technology).
- 4 mm full-travel keyswitches.
- Long life expectancy of individual keys:
  $> 100 \times 10^6$ operations.

All parameters of this keyboard version are identical with those of the MX »Gold Crosspoint« version.

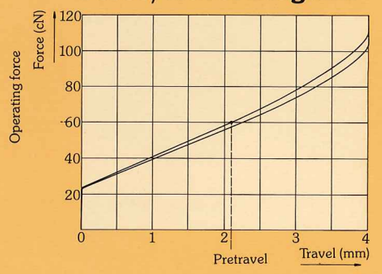
Operation Mode Switch

XT 286/AT/PS/2
PC/XT

Part Numbers

Layout designation	Housing type	FTSC technology
US-international	Ergo housing	G81-3000 HAU
German		G81-3000 HAD
French		G81-3000 HAF
United Kingdom		G81-3000 HAG
Italian		G81-3000 HAI
Spanish		G81-3000 HAE
Swedish/Finnish		G81-3000 HAO
Belgian		G81-3000 HAB
Danish		G81-3000 HAM
Norwegian		G81-3000 HAN
Swiss/French and German		G81-3000 HAC
Portuguese		G81-3000 HAP

Force/Travel Diagram

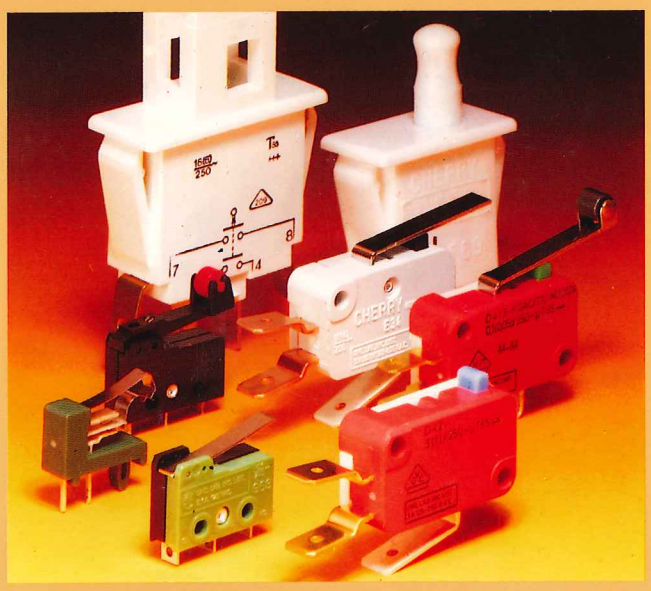


For detailled information regarding membrane technology please refer to our brochure "G 81-3000".

Cherry Program

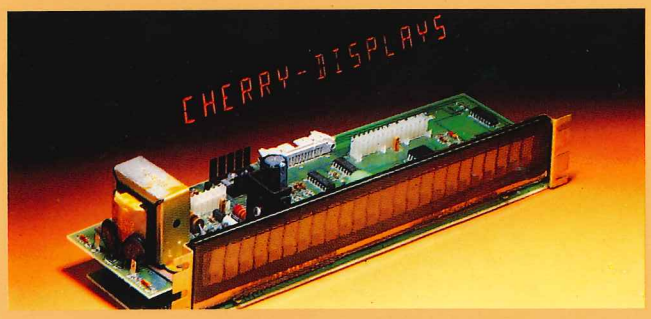
Keyboards of high technology and excellent quality.
With high switching reliability even for speed typing. Standard or customized, intelligent or non-encoded versions. Connectable to all popular EDP systems. Modern design. Harmony in colors. Variety of sizes and heights. With cable or infrared link. Ergonomic styling. With or without housing.

Selector switches with assured security and long life.
Available in many standard and customized codes. Thumbwheel, leverwheel or push version. Gang assemblies. Solderpins, connectors or plain soldering. Standard, miniature and subminiature sizes. Also illuminated by LEDs or lamps. Customized lettering and stop limitation is available.



Snap action switches for the future.
For precise switching and highest reliability. Large scale of standard and non-standard models. Many different connecting possibilities. Standard, miniature and subminiature sizes. And a large number of auxiliary actuators.

Keymodules. For high technology keyboards.
M8, M9, MX. Keyswitches with exceptional performance. High switching reliability by gold-crosspoint contacts. Low profile design. Excellent touch feeling. Variety of keycap styles and colors. Ideal for ergonomically designed keyboards.



Ready-to-use alphanumerical displays with excellent reading ability.
With absolute and continuous brightness of all letters. Stable display picture. Big lettersize. Long life. With or without housing available.

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