THE NEW LOOK IN PROGRAMMING

P9000 Production
Eprom Programmer

How to achieve higher throughput

With the rapid increase in Eprom storage capacity, it is inevitable that a greater complexity of programming and Data transmission formats are necessary. Therefore, to improve throughput there is an increasing demand for faster and more efficient programming equipment.

To meet this demand GP have developed an exciting new range of competitively-priced programmers, specially designed for high speed device handling. With their attractive and efficient styling they offer a choice of British-made programmers that are reliable, efficient and extremely versatile.

- Internal 64K bit static ram buffer expandable to 256K bit (32K × 8 bytes).

- 16 character alphanumeric display in bright green.

- Over 10 different fault detection features plus an automatic self test.

- RS232 serial interface with speeds of up to 19K2 Baud, Handshaking facilities and 12 different I/0 formats.

The P9000 range is available in 3 different models to meet varying requirements, each of them programming a wide range of Eprom devices up to and including the new 512K bit devices. Many of the features available in the P9000 range are normally only obtained in far more expensive programmers. The P9000 programmers include such features as a menu driven function and device selection, label printing facility, RS232 serial interface, powerful editing commands, failsafe system and device tests, and high speed programming algorithms.

- Centronics printer interface for printing labels or producing a hex dump.

- Powerful editor enables fast and easy data modifications.

- 16 bit programming capabilities and a selection of high-speed programming Algorithms.

- Handles all standard devices without the need for personality cards or other modules.

27512

| 27256 | 27C256 |

| 27128 | 27128A |

| 2764 | 2764A | 27C64 |

| 2564 |

| 2732 | 2732A | 27C32 | 87C32 |

| 2532 |

| 2816 | 2815 | 48016 | 6716 | 5213 |

| 2716 | 2516 | 27C16 | 8716 |

| 2758A | 2758B | 2508 |

(see GP's cross reference for a complete list of devices).

HIGH SPEED ALGORITHMS

To reduce the programming time of large capacity EPROM devices, several high-speed programming algorithms have been developed. These can cut programming time by up to 90% over the standard 50 ms pulse method. The P9000 range features all of these algorithms as standard. They are: 50 ms pulse (standard), Intel (I, II, III), Fujitsu's Quick Pro and AMD's interactive programming method. GP will offer software updates as and when new algorithms become available.

COMPREHENSIVE CHECKING SYSTEM

To ensure a greater reliability in programming, the P9000 range include various failsafe checking features for machine protection and data integrity. These include a constant power supply check and address and data line monitoring, device misinsertion check, Rom and Ram checks, and control port check.

Added to these are other special checks coupled to hardware protection circuits to ensure no harm can come to either device or programmer.

P9030 FEATURES

The P9030 provides an editing facility to enable fast and easy Data manipulation using commands such as insert, delete, fill, copy, search, change. The print command allows a hex-dump from the centronics port or initiates the label printing feature.

In addition to the editing facilities, the P9030 has a range of special keys which allow the following functions to be carried out on any length Ram

block starting at a given address: checksum, cyclic redundancy check, store, program, verify, illegal bit check, split, merge.

RS232 SERIAL INTERFACE

Both the P9020 and P9030 include an RS232 serial interface capable of handling high-speed Data transfers of up to 19K2 Baud. The fully handshaked, bi-directional data port can communicate in a wide range of I/0 formats including Intel ascii hex, Mostek hex, Binary etc. This port can be connected to a computer to receive or transmit program Data and may be used for remote control.

CENTRONICS PARALLEL INTERFACE

The P9030 also includes a centronics parallel interface for connecting to a parallel printer. Using the special label printing facility, any number of Eprom labels can be printed using specially designed UV-opaque metal foil labels.
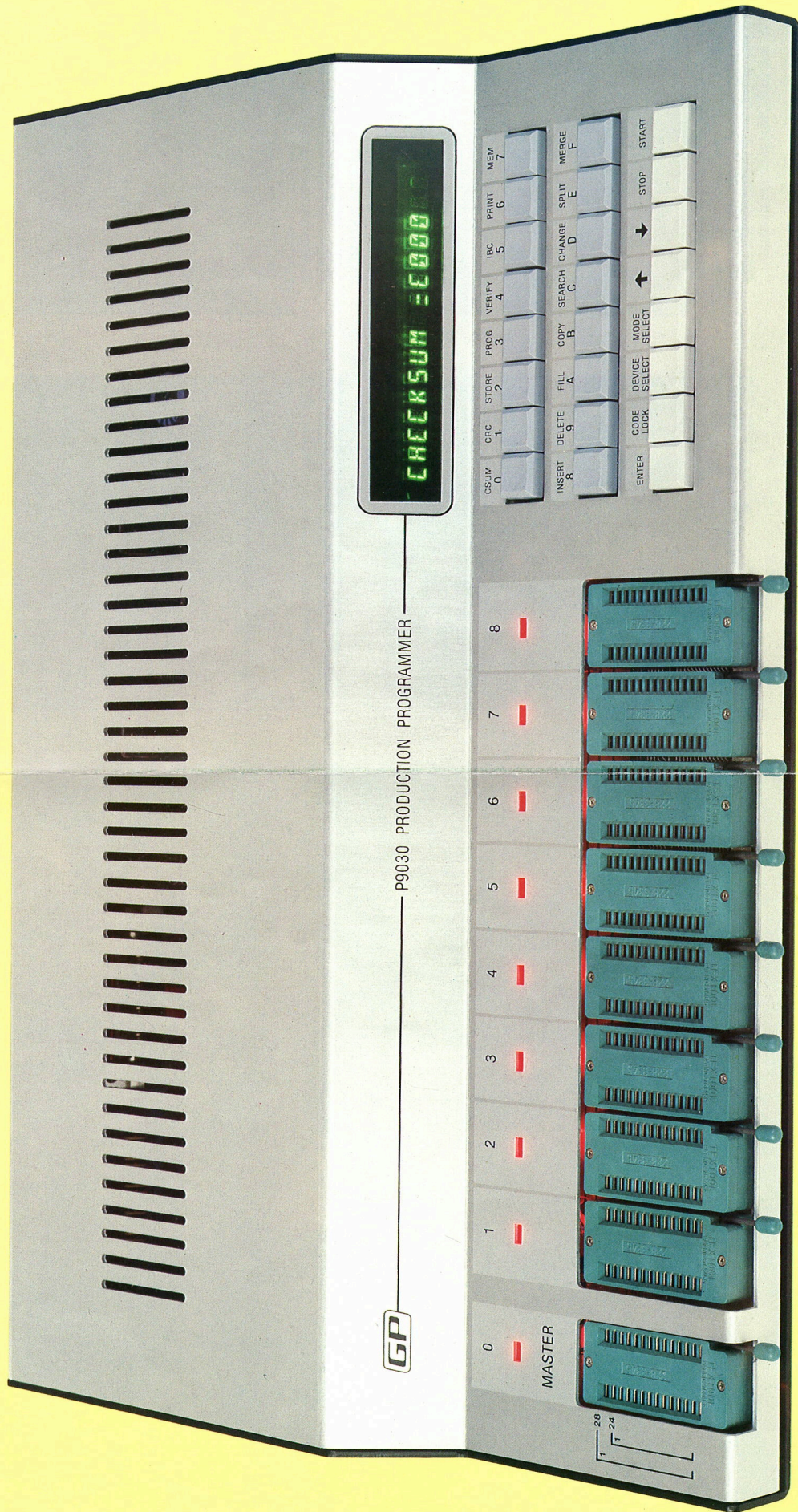
3 VERSIONS

The P9000 is available in 3 versions: P9010 is a low-cost duplicator. P9020 a mid-range machine including serial interface for downloading from development system. 8 different interface formats are supported and the internal Ram buffer is expandable to 32k byte (8k supplied). P9030 Programmer is top of the range with serial interface; 16 formats; speeds up to 19.2 kilo baud; label printing facility; editing functions; internal Ram buffer is expandable to 32k byte (8k supplied); Remote control from a computer or development system.

Both the P9020 and P9030 include RS232 interface connection to a development system or computer. High-speed data transfer up to 19K2 baud is possible. A variety of I/0 formats is provided as standard including Ascii hex, Motorola Exorciser, Tekhex, binary, Ascii Hex-space, dump list format etc.

Device handling can be speeded up with the special label printing facility. The operator can fix labels during programming. FAIL labels are printed for programming failures.

GP — P9030 PRODUCTION PROGRAMMER

MASTER
0 1 2 3 4 5 6 7 8

CHECKSUM =C000

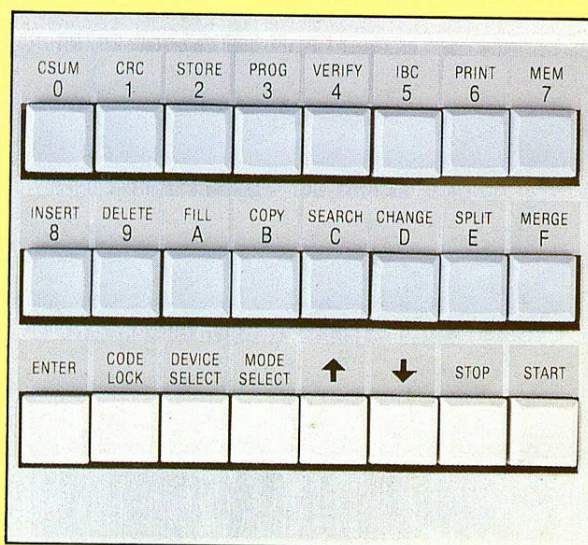| CSUM | CRC 1 | STORE 2 | PROG 3 | VERIFY 4 | IBC 5 | PRINT 6 | MEM 7 | | START |
| INSERT | DELETE 9 | FILL A | COPY B | SEARCH C | CHANGE D | SPLIT E | MERGE F | | STOP |
| ENTER | CODE LOCK | DEVICE SELECT | MODE SELECT | ← | → | | | |

Designed for simple operation

There are only six keys to operate the P9010 and P9020 machines, therefore they are quick and simple to use. After keying 'MODE' the ↑ and ↓ keys will step the display through the mode menu. Likewise after keying 'DEVICE' the same two keys will step through the device type menu until a selection is made. The 'START' key initiates the action required after a high-speed socket and power test.

The P9030 has 24 keys which have been carefully and skilfully designed for easy operation. However, the code lock key automatically locks out the RAM editor functions leaving only the device, mode and ↑, ↓, stop and start keys. This can then program up to eight devices with data from either the master socket or the serial port. When the keyboard is unlocked, the powerful Ram editor functions come into action.
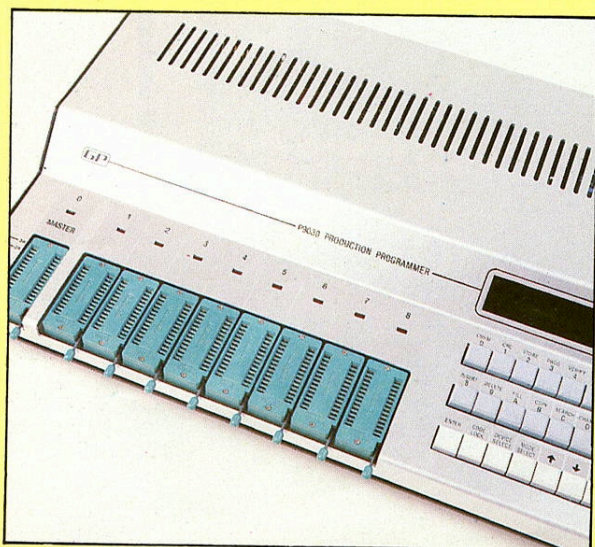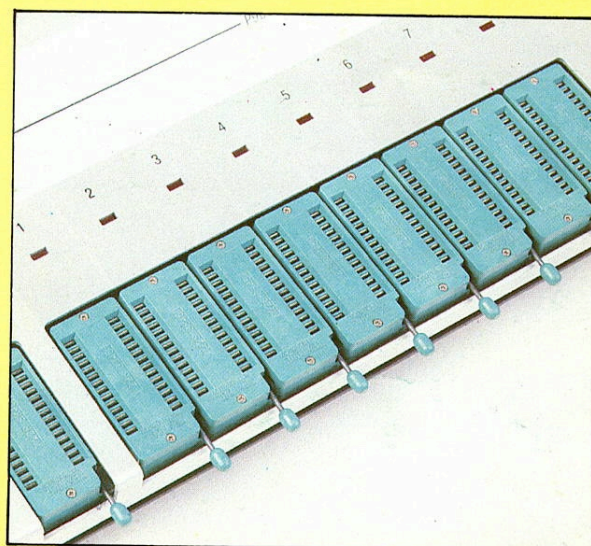

The bright, 16 character fluorescent display clearly shows the selected mode and device type. It is also used to show address, data, commands, pass/fail information and error messages.

P9030 keyboard. Powerful, error-free editing and special Ram function commands coupled with a comprehensive mode and device menu.

The P9030 is flexible. It can function as a stand-alone EPROM copier also linked to a computer to receive program data. It can also be remote controlled and will work in conjunction with GP's 64K × 8 EPROM emulation module.

Up to eight devices may be programmed simultaneously using high-speed algorithms, Individual socket indicators provide simple pass/fail information.

SPECIFICATIONS

CPU: Z80A
System Memory: 16k byte ROM, 2k cmos Ram.
Buffer Ram: 8k byte static Ram, expandable to 32k byte (not P9010)
Display: 16 character, green, vacuum flourescent (14 segments)
Power Supply: AC 220, 240V, 50/60hz optional 110V
Dimensions: W = 395, D = 270, H = 60 (mm)
Weight: 3Kg (6.6 lb)

Display & Indicators
16 character vacuum fluorescent display shows selected mode & device, error messages, checksum etc. Individual device socket LEDs give PASS/FAIL information.
Beeper signals start/end of a cycle/operator error/device faults.

Programmable devices
27512, 27256, 27C256, 27128, 27128A, 2764, 2764A, 27C64, 2732, 2732A, 27C32, 2532, 2816, 2815, 48016, 6716, 5213, 2716, 2516, 27C16, 2508, 2758A, 2758B.

Operating modes
Illegal bit check, checksum, cyclic redundancy check, program, verify, self test, erase EEPROM.

Programming method
Programs up to 8 devices simultaneously, using high speed programming algorithms where applicable. Data is copied from the master socket and on the P9020, P9030, the RS232 port and programs according to the following sequence – checksum Ram or master, illegal bit check copy sockets, program devices, verify and checksum all devices against Ram or master and display result.

Serial interface (P9020, P9030)
Baud rates: 110, 300, 600, 1200, 2400, 4800, 9600, 19k2
Transfer formats: Intel Ascii Hex, MOTOROLA Exorciser, TEKHEX, SIGNETICS, MOSTECHNOLOGY, GP BINARY, DEC BINARY, LIST, BINARY, BHLF, BPNF, BIOF and ASCII Hex, space, comma, apostrophe, percent
Handshaking: on or off
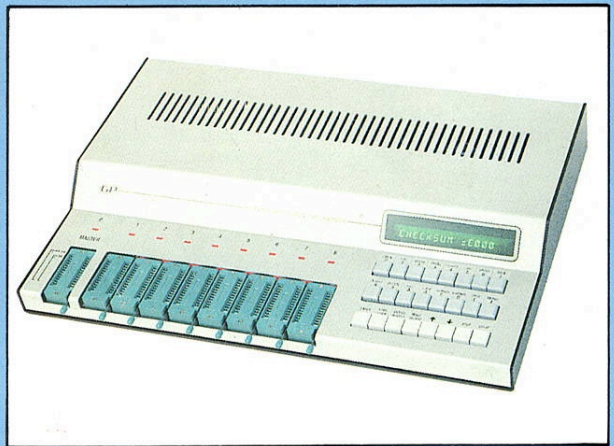**Parity:** odd, even or off
Connector: standard 25 pin D

Editing Facilities (P9030)
INSERT – insert new data at any address
DELETE – delete data at any address
FILL – fill data between two addresses with any byte
COPY – copy block to any address
SEARCH – find first and subsequent occurrence of any data string
CHANGE – change any number of data strings to a new string
MENU – display the data at any memory address and enable data modification
PRINT – Send any length data block to the centronics port, or print EPROM labels
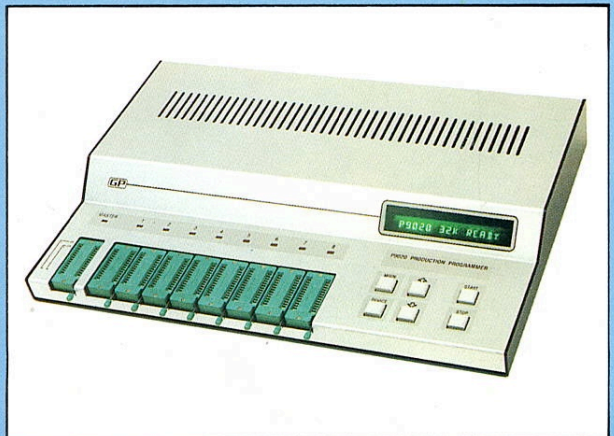
Special Functions (P9030)
    – operate on the Ram at any address in conjunction with the master and copy sockets
CHECKSUM – checksum any length Ram block
STORE – copies the master EPROM to any RAM address, then verifies
PROGRAM – programs the 8 copy socket devices starting at any address with specified Ram block data – then verifies master and copy with Ram data
VERIFY – compares master and copy with Ram data – any length block starting at any address
ILLEGAL BIT CHECK – checks any Ram block with any EPROM block for programmability – including the master
SPLIT – divides the Ram into 2 blocks each containing data at 'odd' and 'even' addresses
MERGE – (shuffle) combines 'odd' and 'even' address data into single block
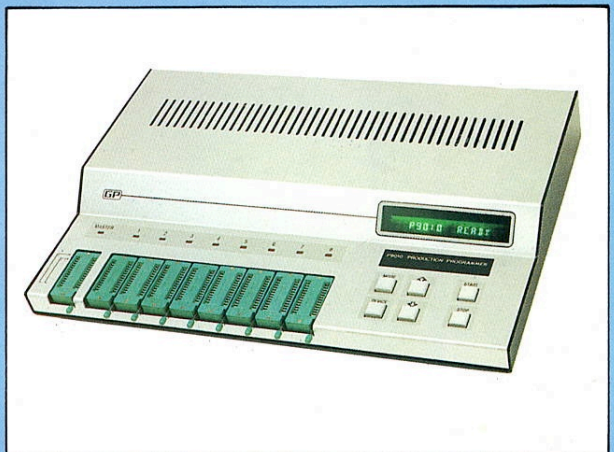
Specification subject to change without notice.

P9030
Top of the range, powerful programmer. Editing commands, RS232 interface, centronics port for label printing and data dumps 8k × 8 Ram as standard expandable to 32k × 8.

P9020
Easy to use machine, programming up to 8 devices with data from the master socket or RS232 port. 8k × 8 standard Ram, expandable to 32k × 8.

P9010
Low cost versatile EPROM copier – copies up to 8 devices with data from the master socket – includes all the check features of the top of the range P9030.

GP

GP Industrial Electronics Ltd.

Unit E, Huxley Close, Newnham Industrial Estate, Plympton, Plymouth PL7 4JN.
Telephone: (0752) 332961   Telex: 42513