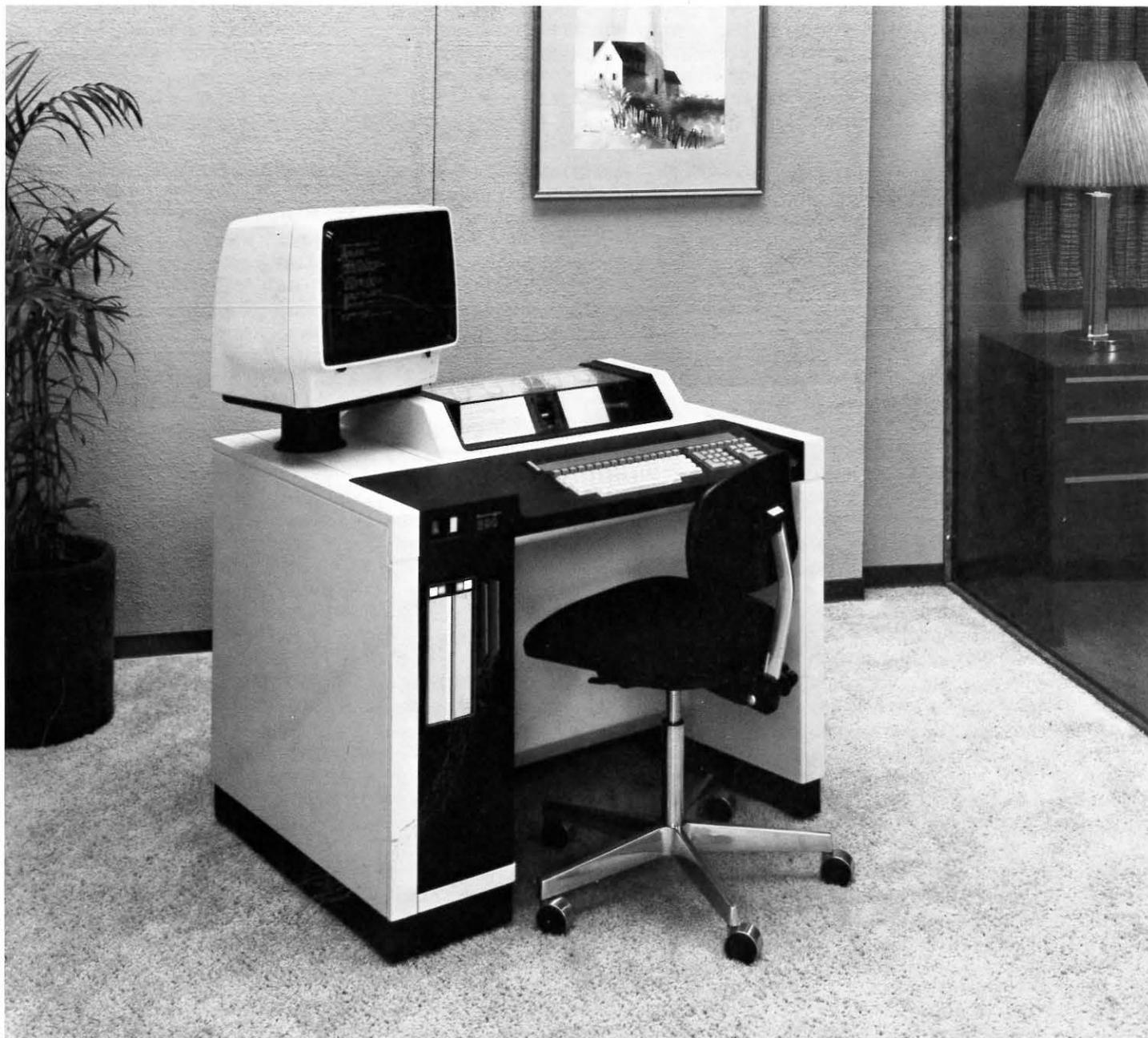


# Burroughs B 90 Series

# The B 91S



Burroughs B 91S is a compact, general-purpose computer which can be used as a freestanding system, a terminal computer within a data communications network, and a host computer system with its own network of local and/or remote terminals.

The excellent cost/performance ratio of the B 91S results largely from its outstanding hardware design and its advanced operating system — the

Master Control Program (MCP) — which utilizes the computer to its greatest potential.

The significant hardware features of the B 91S include:

- A high-speed 2 MHz Processor.
- A system display capable of displaying either 256 or 1,920 characters.
- A bi-directional matrix printer featuring multi-density print at speeds up to 230 characters per second.
- Main memory up to 512KB.
- In-built mini-disk availability.
- Burroughs Super Mini-Disk II — the 3/6 MB mini-disk subsystem or Burroughs Super Mini-Disk — the 1MB mini-disk subsystem.
- A variety of freestanding disk storage subsystems.
- Data Communications capabilities.

Combined with Burroughs Computer Management System (CMS), these hardware features provide an exceptionally versatile and powerful data processing system.

## Processor

The B 91S Central Processor utilizes state-of-the-art advances in Large Scale Integrated Circuitry (LSIC). This technology allows the processor to be packaged with minimum space requirements, yet offers the processing power of larger computer systems.

The major processor characteristics include:

- Clock speed of 2 MHz.
- "Look Ahead" and "Overlap" of the fetch and execution of micro instructions. The processor operates under the control of microinstructions stored in the memory. Portions of the processor's logic continuously fetch and decode microinstructions into control signals which cause processor functions. Buffers in the decode logic enable an overlapping of these functions, allowing more than one function in a single processor cycle which contributes to significantly enhancing throughput.
- One microinstruction can have the capability of multiple character transfers. Data movement and processor efficiency are greatly enhanced by this feature.
- Through hardware interrupt, the processor takes the time to service an I/O port only when it is actually needed. This feature enhances the processor performance because "scanning" of the I/O ports is not required.
- Up to eight (8) I/O channels.

Minimum main memory for the CMS B 91S systems is 256KB. Main memory consists of Metallic Oxide Semiconductors (MOS) which contain:

- 4KB Read Only Memory (ROM) containing routines for loading interpreters and customer confidence routines.
- 252KB Random Access Memory (RAM) for the Master Control Program (MCP); interpreters; utilities; and user programs.

Memory is expandable up to 512KB in increments of 128KB.

## On-Board Diagnostics

On-board diagnostics are designed to contribute to optimum B 91S performance. This series of Maintenance Test Routines assists the Burroughs Customer Service Engineer in analyzing faults in the system and detecting degraded performance of a component before a fault occurs.

They perform tests on the entire system, including peripherals, with the results printed in simple, easy-to-read statements on the hard copy journal or on the console display. These on-board diagnostics facilitate faster repairs and assist in reducing unscheduled maintenance.

## Keyboard

Each B 91S system includes a standard, user-friendly designed console input keyboard. The following features are standard:

- Keyboard buffering permits data entry at an operator's pace when the printer and processor are in use.
- Standard alphanumeric keyboard.
- Ten-key numeric data input keyboard.
- Four operation control key functions are duplicated on both the alphanumeric and ten-key keyboard for operator convenience.
- Programmatic indicator lights for operator guidance.
- Twenty-four (24) program select keys to simplify operator use of the system.

## Printer and Forms Handler

The unique in-built printer and forms handler of the B 91S are designed for flexibility and throughput.

Characteristics include:

- 230 character-per-second bi-directional serial matrix printer.

No. of Copies	Print Speed
1-2	230 Char./Sec.
3-4	205 Char./Sec.
5-6	180 Char./Sec.

- 15.3 inch wide print line with adjustable form handler, will print on forms with a minimum width of 3 inches and a maximum of 18.70 inches.

- Optional dual pinfeed drive has a minimum width for each form of 3 inches, a maximum sum of two forms of 17.70 inches, and a maximum width for a single form of 16.14 inches.
- Multi-density print: 10, 12 1/2, or 16 2/3 characters per inch, operator selectable.
- 1/6-inch or 1/8-inch forms spacing.

## Disk Storage Subsystems

The B 91S may be configured with up to two disk subsystems from a wide range of magnetic disk storage devices, which include the following:

- Burroughs Super Mini-Disk subsystems
  - 1MB/266ms average access time single drive inbuilt (BSMD)
  - 2MB/266ms average access time dual drive freestanding (BSMD)
  - 6MB/157ms average access time dual drive inbuilt (BSMD II)
- Burroughs cartridge disk subsystems
  - 4.6MB/146ms average access time
  - 9.2MB/100ms average access time
- Burroughs fixed disk subsystems
  - 18.8MB/55ms average access time
  - 19.2MB/55ms average access time
  - 38.6MB/55ms average access time
  - 77.2MB/55ms average access time

## Further Input/Output Capabilities (Optional)

- Industry-compatible mini-disk drive of 243KB per single drive.
- Operator system display.
- A choice of line printers.
- Data communications.

## Data Communications Characteristics

Up to two (2) synchronous or asynchronous communication channels, in any combination, are available with the following capabilities:

- Asynchronous Modem Connect.
- Asynchronous Direct Connect.
- Synchronous and Bisynchronous Modem Connect.

## Burroughs Computer Management System (CMS)

Burroughs Computer Management System (CMS) is an integrated system of operating and application software; high-level language compilers for application program development; data communications; interpreters; and utility programs. CMS is the key to the ability to expand B 90 systems throughout their range of configurations and to move to larger CMS B 900 and B 1900 systems. CMS includes:

Master Control Program.

- CMS REPORTER and CMS On-Line REPORTER.
- DOMAIN program products.
- CANDE
- ARCS
- RPG-Edit
- ODESYS
- On-Board High-Level Language Compilers (COBOL, RPG, NDL, and MPL II).
- Microprogrammed interpreters.
- Business Management Systems.
- Utility programs.
- GEMCOS
- SUPERSTART

## Master Control Program (MCP)

The B 91S MCP is a comprehensive operating system designed to simplify operation and control of the system. It increases productivity by automatically directing many functions which would ordinarily be handled by an operator or a programmer. Principal MCP features include:

- Operator Communication.  
The MCP provides for two-way communication between operators and the system. MCP output messages are simple, easy to understand, and available in most local languages.
- Dynamic Multiprogramming.  
One of the main benefits of this comprehensive operating system is its ability to execute many programs simultaneously. Multiprogramming combines high-speed processing and instant information access with the flexibility of manual systems.

- Dynamic Resource Allocation.  
The MCP maintains an inventory of the system's resources and maximizes productivity by allocating these resources to meet job requirements. Among these resources are:
  - Available Memory.
  - Peripheral Assignments.
  - Disk Storage Space.
  - Program Priority Assignments.

Additional resources are recognized automatically by the MCP when they become available so that optimum system efficiency and throughput can be achieved without reprogramming.

- Input/Output Control  
The MCP handles all physical I/O operations and also controls the operation of I/O devices. These activities include:
  - Shared files.
  - Indexed file handling.
  - Printer backup
  - Locating files
  - Data transfer.
  - Buffer management.
  - Automatic label recognition
  - Error monitoring
  - Automatic retry on error detection.

Because these functions are handled automatically by the MCP, program logic for these functions does not have to be included in user programs. This not only simplifies writing of application programs, but also reduces the size of the programs.

- Virtual Memory  
The MCP provides for a virtual memory system which enables the B 91S to run programs which are larger than the available memory size. This same facility enables the MCP to maximize memory utilization in a multiprogramming environment.
- Workflow  
The use of CMS Automatic Run Control System (ARCS) allows automatic execution of predefined sequences of commands and programs of a repetitive nature from one simple statement. Some of the benefits of ARCS are:
  - Correct Procedure Execution.
  - Operator Time Saving.
  - Simplification of Installation.

ARCS is typically used to sequence backup routines, batch-file updates, print routines and compilations and helps to provide for unattended system operations.

## CMS Reporter

CMS REPORTER provides a simple method of describing and obtaining repetitive or one-time reports. A questionnaire technique simplifies report description and data to be reported can be selected according to:

- Record type
- Ranges of records
- Conditions
- Run time supplied data
- Formatting, computed values, statistical and summary information may be specified in defining the report.
- Eliminates the need for a business to have an in-house programmer to generate new reports as requirements dictate.

## CMS On-Line REPORTER

CMS On-Line REPORTER provides the functional capabilities of CMS REPORTER, plus the user may interactively define reports, extract required information from a data file and then immediately have the information displayed and printed. Reports can also be stored on disk for convenient access and selective browsing. Use of On-Line REPORTER can eliminate the need for multiple distribution of large reports and reduce associated paper storage and handling costs.

## CMS DOMAIN™

CMS DOMAIN provides a method for quickly developing file maintenance and inquiry programs via attached display terminals. DOMAIN will perform the following activities:

- Create a disk file
- Add/delete/maintain disk records
- Inquire into records in a disk file

## CMS CANDE

CMS CANDE (Command AND Edit Program) provides a timely, effective means for interactive creation maintenance and text editing of program source files for COBOL, MPL II, and ARCS programming. This enables the user to maintain and create source files for program development and maintenance.

## CMS RPG-EDIT

RPG-EDIT provides timely, effective means for interactive creation, maintenance and text editing of program source files for RPG programming. This helps the user in the creation and maintenance of RPG source files.

## CMS ODESYS

CMS ODESYS (On-Line Data Entry System) is designed for the user requiring a comprehensive data entry and verification system via attached display terminals.

Because of its audit facilities, ODESYS is able to produce batches of error-free data for input to application packages, thus saving a great deal of program development effort by eliminating conventional input control programs.

## High-Level Languages and Compilers

- On-board COBOL compiler.
- On-board Report Program Generator (RPG) compiler.
- On-board Network Definition Language (NDL) compiler simplifies the implementation of data communications networks and allows for changes in the network to be made quickly and easily.
- On-board Message Processing Language II (MPL II) compiler generates programs to process, edit, collect, verify, route and audit messages in a data communications network.

## Microprogrammed Interpreters

Microprogrammed interpreters provide multiple virtual machines within a single B 91S system. This technique allows the B 91S to adapt to each high-level programming language (COBOL, MPL II, etc.) and execute applications written in those languages in a very efficient manner.

## Business Management Systems

Burroughs Library of Program Products includes Business Management Systems and specialized application program products. They permit newly-installed systems to become readily productive. Burroughs program products have been fully proven in thousands of customer installations. They offer substantial savings compared with developing and maintaining your own programs.

## Utility Programs

Sort, merge, file load, file dump, and file copy are just a few of the many Burroughs Utility Programs which can assist the user in obtaining maximum productivity from the flexibility of the B 91S system.

## GEMCOS

CMS Generalized Message Control System (GEMCOS) is a parameter-driven generator for the creation, implementation and maintenance of a Message Control System (MCS) which manages the flow of messages between the network control program and application programs.

## Superstart (For Terminal Environments Only)

Ease of use is enhanced on the B 91S system by SUPERSTART, a Menu Management System. SUPERSTART provides the capability for CMS terminal systems users without programming experience to create a customized menu structure, relating all daily operations and application programs together in a meaningful, simple manner through use of menus.

SUPERSTART's interactive facilities also include:

- Menu creation
- Menu maintenance
- Help Screen capabilities

## Physical Characteristics

Width: 39 inches (99cm)  
Height: 47.5 inches (121cm)  
Depth: 29 inches (74cm)  
Weight: 360 pounds (163kg) uncrated  
440 pounds (200kg) crated

## Electrical Specifications

Nominal Line Voltages: 110V, 115V, 120V  
Nominal Line Frequency: 60HZ