CONTROL DATA® CYBER 170 SERIES MODEL 175 COMPUTER SYSTEM
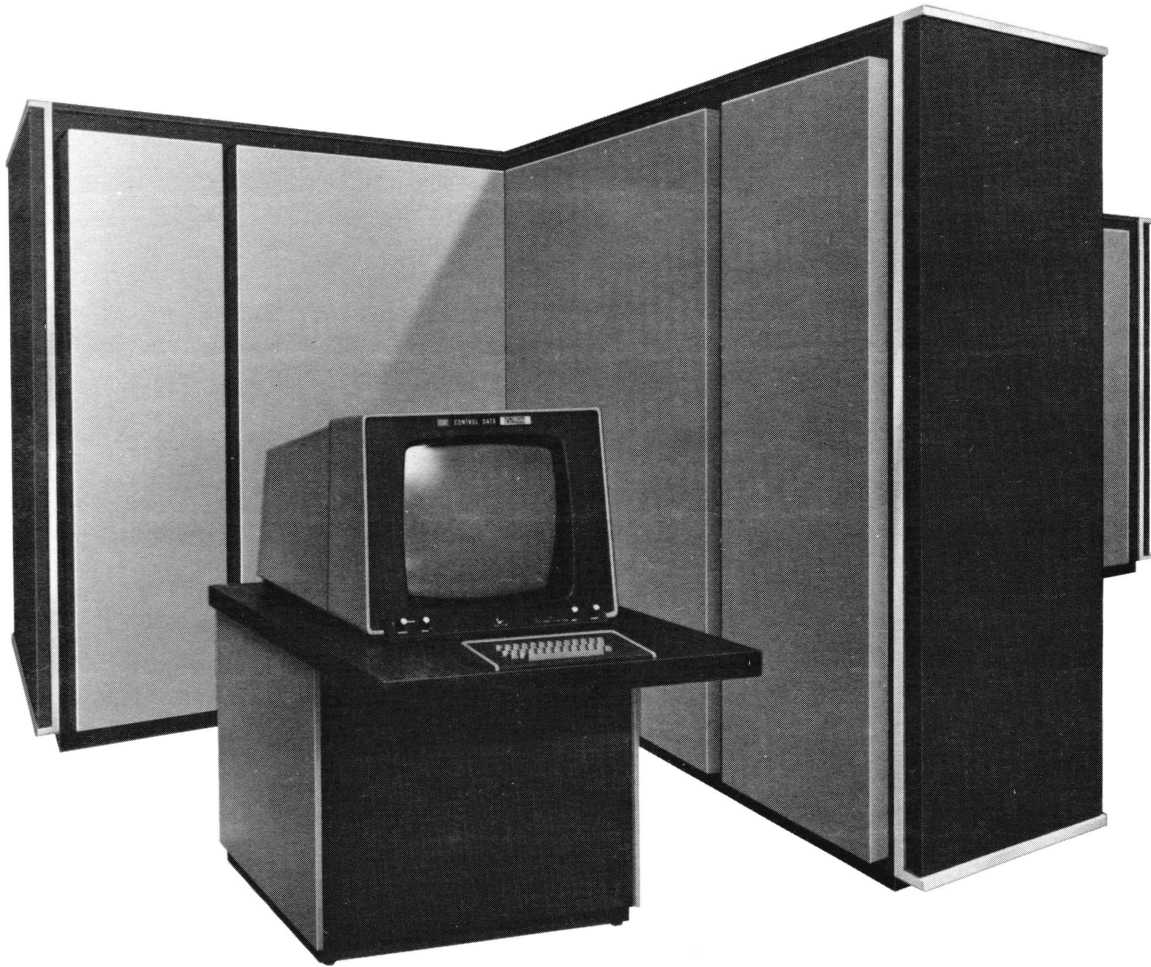
The Model 175 is the most powerful member of the CDC¨ CYBER 170 family of compatible computers. This system can be used as a central computer for batch operations and/or as the nucleus for networks of interactive terminals.

Advanced circuit technology such as large-scale integration (LSI) and emitter-coupled logic (ECL) is used in the Model 175. Central memory also uses a metallic-oxide semiconductor (MOS) random access memory chip, which enables considerable size reduction in the overall system.

The basic mainframe includes:
- Central Processor Unit
- Central Memory Control
- Central Memory
- One or two Peripheral Processor Subsystems (ten peripheral processors each)

Central Processor
The Model 175's central processor unit (CPU) consists of nine, phased, functional units and a fast-access instruction stack. The nine functional units operate as independent specialized arithmetic units which perform all computations. Data moves in and out of the functional units through the internal operating registers.

Central Memory Control
Central memory control is the system's control center, providing orderly flow of data between central memory and the requesting elements of the system.

Central Memory/Extended Core Storage
A wide selection of central memory (CM) and extended core storage (ECS) options are available to the Model 175 user. CM is composed of 16 independently phased banks of MOS memory. It also includes eight single-error correction, double-error detection (SECDED) check bits per 60-bit word. Minimum CM is 65K 60-bit words; however, it may be field upgraded to 98K, 131K, 196K or 262K words. The transfer rate between ECS and central memory is up to 10 million 60-bit words per second, where at least 500K words are available. ECS is available in sizes from 125K words to 2 million words and can be shared by separate CDC CYBER 170 Systems.

Peripheral Processor Subsystem

The peripheral processor subsystem (PPS) consists of 10, 14, 17 or 20 peripheral processor units (PPUs). Each unit has its own 4K 12-bit word MOS memory, and is programmable to handle peripheral and input/output operations. Twelve to twenty-four data channels are serviced by the peripheral processors, and each bi-directional data channel has a maximum data rate of 4 million characters per second.

The following peripheral equipment is available for use with the CDC CYBER 170/Model 175:

- Magnetic Tape Transports
- Line Printers
- Console Displays
- Rotating Mass Storage
- Communication Interfaces
- Card Readers
- Card Punches
- Graphic Terminals
- Interactive Terminals
- Remote Batch Terminals

Interfacing equipment used with mass-storage devices and communication subsystems have independent memory facilities and are programmable via controlware (vendor installed software). This allows distribution of control functions to these subsystems.

Software

All members of the CDC CYBER 170 family are supported by the CDC CYBER 170 Network Operating System — a single, powerful, multimode operating system. This system operates with an extensive software product set which includes: COMPASS (assembler language), FORTRAN, COBOL, ALGOL, APL, SORT/MERGE, BASIC, GPSS,SIMSCRIPT, APT (numerical control for machine tools), and a comprehensive set of basic data management software.

SPECIFICATIONS

Central Processor —
- Twenty-four operating registers
- Nine functional units
- Central exchange jump
- Real-time clock
- CDC CYBER 70 compatible
- Address parity
- Data parity, with single-error correction, double-error detection (SECDED)
- I/O channel parity

Programmable Peripheral Processors —
- 4K words (12-bit) memory
- Status and control register

Central Memory Options —
- 98K, 131K, 196K and 262K 60-bit words

Extended Core Storage —
- 10 million word-per-second transfer rate
- 125K to 2 million words in ECS
- Distributive data path (DDP) — up to 4 peripheral processor units per DDP access to ECS. A 480-bit data path connects the input/output to ECS.

One data path is standard in the ECS configuration, with expansion to four paths per DDP unit for simultaneous data transfer to one ECS controller port. Multiple DDP units (with up to four data paths per unit) can be configured in one CDC CYBER 170 System.