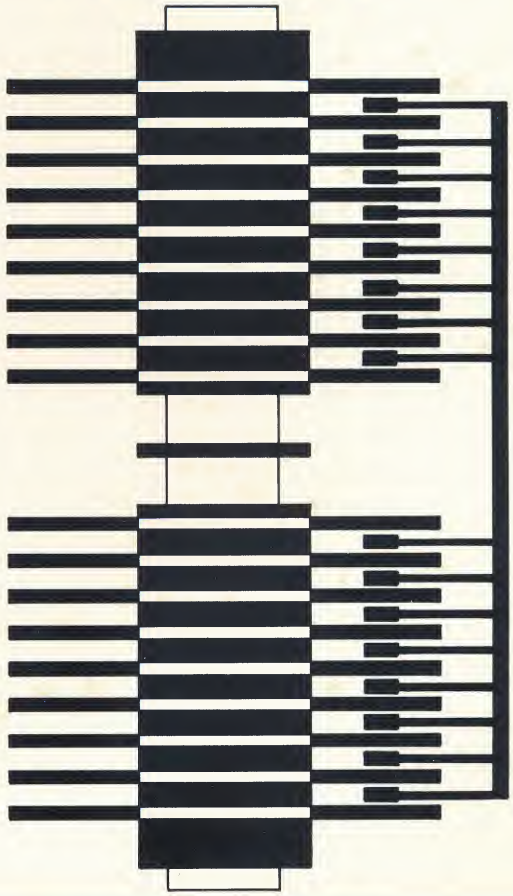
CONTROL DATA® 807/808 DISK FILES

COMPONENTS OF THE CONTROL DATA 6607/6608 DISK FILE SYSTEMS

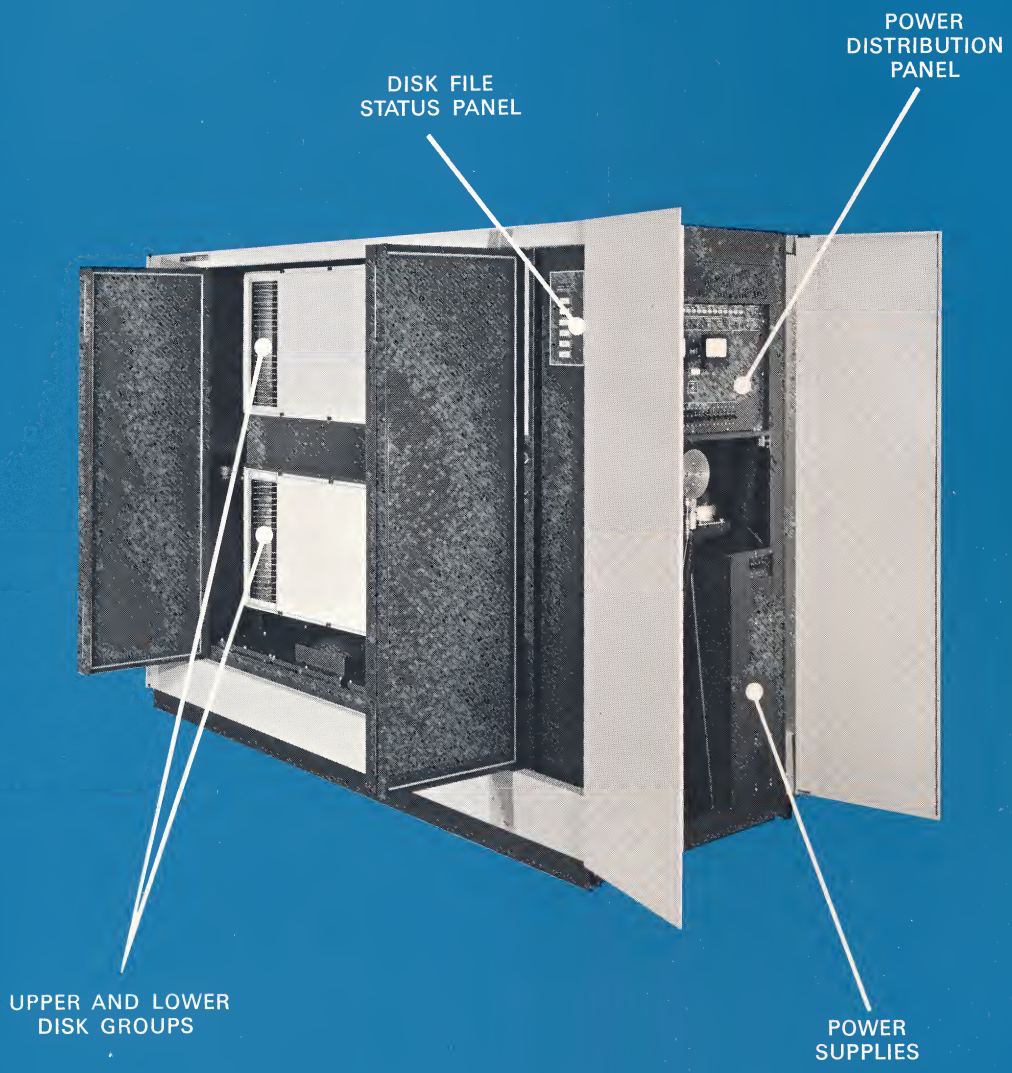


CONTROL DATA 807/808 DISK FILES

The ***Control Data*** *807/808 Disk Files are components of the 6607/6608 Disk File Systems designed for use with* ***Control Data*** *6400 and 6600 computers. The 6607 System is comprised of an 807 Disk File and a time-shared, dual-channel controller. The 6608 System contains an 808 Disk File and a time-shared, dual-channel controller. The 807/808 Disk Files are offered only as part of a complete system and are not available separately.*

The standard controller used in the 6608 System has two independent positioning controls (one for each half of the file) and one read/write control. An optional controller provides an additional read/write control and two more time-shared channels for simultaneous read/write on each half of the file. Independent positioning or read/write options are not available for the 6607 System since the 807 Disk File has only one actuator. Only one file may be operated by each controller.

The **Control Data** 807/808 Disk Files provide mass storage capabilities never before available to the computer industry. The 808 stores 168,000,000 six-bit characters on 128 disk surfaces, records data at a rate of 1.680 million characters per second, and provides the industry's fastest access to this information. Two independent hydraulic actuators provide positioning times as low as 34 milliseconds and provide for simultaneous move and read/write. The 807 has one hydraulic actuator and stores 84,000,000 characters on 64 disk surfaces. Pneumatic pressure provides consistent head loading, eliminates variations due to environmental conditions, and assures constant readback.



Control Data 808 Disk File with access doors open — the 807 is identical to the 808 with the exception that it contains an upper disk group only.

CONTROL DATA 807/808
DISK FILES

CAPACITY – Total usable storage capacity of the 808 Disk File is in excess of 168,000,000 six-bit characters (over 1 billion bits). The 807 Disk File capacity is in excess of 84,000,000 characters. By using more than one disk file, the total system capacity can be increased to match the capabilities of the computer. In multiple-unit installations, each Disk File operates independently of other units.

ACCESS TIME – The rapid access time of the 807/808 Disk Files is made possible by newly designed hydraulic actuators which precisely position the heads in a minimum of 34 milliseconds and a maximum of 100 milliseconds. Corresponding tracks on each disk, and their associated heads, are aligned vertically, one above the other. When operated in a drum cylinder mode, over 5,250,000 characters (808) and 2,625,000 characters (807) are accessible via electronic head switching only with no actuator movement required. In this mode, 1/32 of the total file capacity is available.

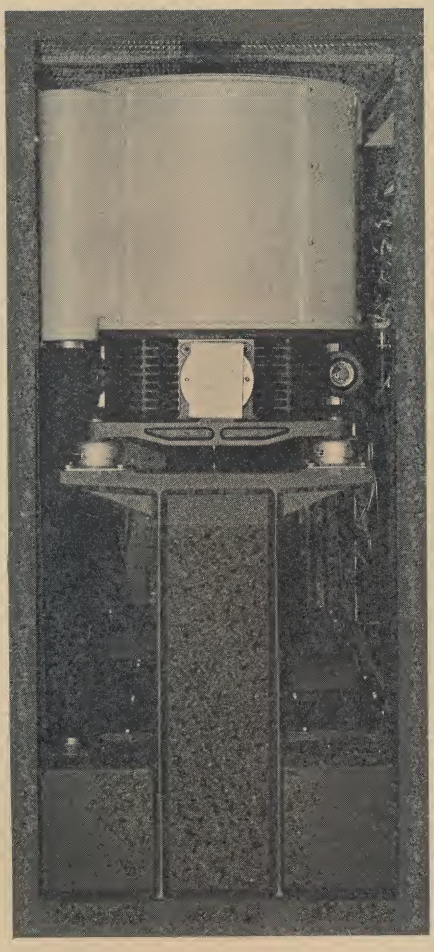
STORAGE DISKS – The 808 Disk File contains 72 aluminum disks, and the 807 contains 36 disks. These disks are 26 inches in diameter and are coated on both sides with Control Data's magnetic oxide material. The 808 Disk File utilizes 128 storage surfaces, each containing 192 tracks. The 807 Disk File utilizes 64 storage surfaces. Each track is divided into 16 sectors. Total capacity of each disk is over 2,600,000 characters.

TRANSFER RATE – The **Control Data** 807/808 Disk Files offer a transfer rate of 1.680 million characters per second. Maximum recording density is 850 bits per inch, phase modulated recorded.

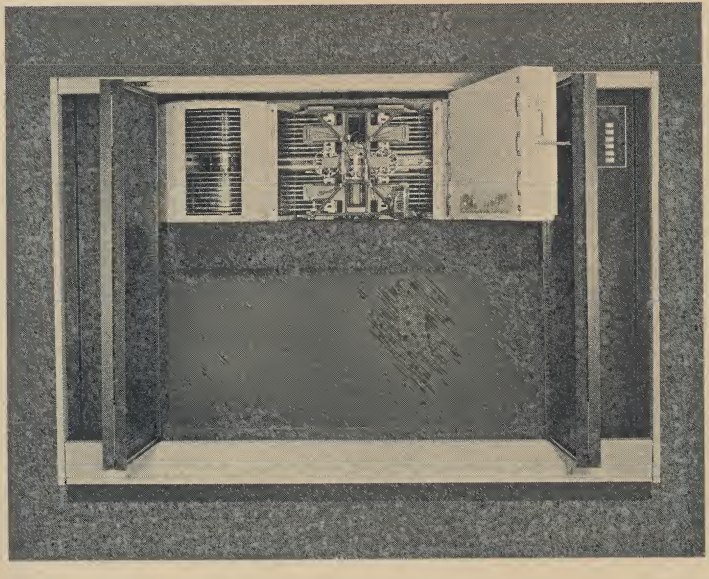
DISK SPINDLES – The **Control Data** 808 storage disks are mounted on two vertical spindle assemblies containing 36 disks apiece. Each spindle assembly contains an upper and a lower disk group, and an 1140 rpm induction drive motor. The two 807 spindle assemblies contain an upper disk group only with 18 disks each. The spindles are extensions of the drive motor shaft. This insures uniform rotational speed for all disks in each assembly. A magnetic pickup transducer monitors disk rpm and automatically retracts the heads when the rpm falls below a certain level. Visual readout of the disk speed is also provided. A pressurized disk housing minimizes disk contamination. The disks and head actuators are mounted on a frame assembly which rotates 180 degrees to provide access to all components for servicing.

ACTUATORS – The 807 Disk File contains one hydraulic actuator assembly and the 808 Disk File contains two independent hydraulic actuator assemblies which are used to position the read/write/erase heads to 32 discrete locations. Each actuator contains two groups (combs) of access arms which move in a linear radial direction during head positioning. Movement of the arms is accomplished hydraulically by a reactive proportional control servo system which eliminates mass unbalances. Each actuator on the 808 Disk File can be moved independently of the other. While one actuator is seeking, the other may be reading or writing; or both may be seeking, reading, or writing simultaneously.

READ/WRITE/ERASE HEADS – Each comb holds 16 actuator arms, and each arm contains two 6-channel flying heads mounted back-to-back; one head facing upward, the other downward. Printed circuit boards are used for electrical connections. Head loading is pneumatically controlled. This is vastly superior to spring loading which fluctuates with environmental conditions and changes with age. The heads are positioned to fly at approximately 125 microinches from the disk surface. Track spacing is 0.020 inch center-to-center. Erase width is 0.018 inch and read/write width is 0.012 inch.



END VIEW — *Sturdy frame minimizes mechanical deflection and vibration from both internal and external sources—allows precise repositioning of heads to within 0.0004 inch.*



FRONT VIEW — *The 807 hydraulic actuator assembly, located behind the hinged logic chassis, contains two groups of access arms which move in diametrically opposed directions during head positioning—mass unbalance is eliminated, settling out time is reduced.*

SPECIFICATIONS

CAPACITY
168,000,000 six-bit characters of information (808);
84,000,000 six-bit characters of information (807)
Characters per revolution (12 tracks parallel)—81,912
Characters per sector (12 tracks parallel)—5,120
Characters per disk surface—1,310,720
Characters per disk—2,621,440

POSITIONING TIME
Maximum—100 milliseconds
Minimum—34 milliseconds

RECORDING
Mode—phase modulation (erase before write)
Transfer rate—840 KC (1.20 usec/bit—12 bits parallel)
Density—850 bpi (maximum)
Read/write—12 bits parallel (2 head assemblies/arm)

DISKS
Number of disks—72 (808); 36 (807)
Usable disk surfaces—128 (808); 64 (807)
Sectors per track—16
Tracks per disk surface—192 (32 head positions)
Speed (rpm)—1140 rpm (52.5 milliseconds/revolution)
Diameter—26 inches
Coating—magnetic oxide

HEADS
Total 128 (808); 64 (807)
Heads per actuator arm—2
Actuators—hydraulically operated (808 contains two actuators; 807 contains one)
Erase width—.018 inch
Track spacing—0.020 inch, center-to-center
Read/write width—.012 inch

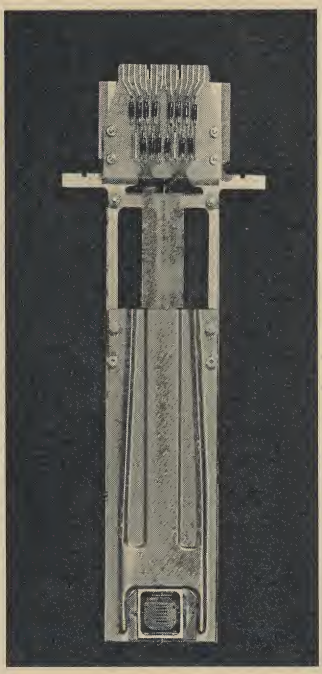
PHYSICAL

FILE:
Height—77 inches
Depth—39 inches
Width—108 inches
Weight—4,000 pounds (808)
3,350 pounds (807)
Environmental—Operational storage
Heat dissipation—13,000 watts (808)
10,000 watts (807)
(including auxiliary cabinet)

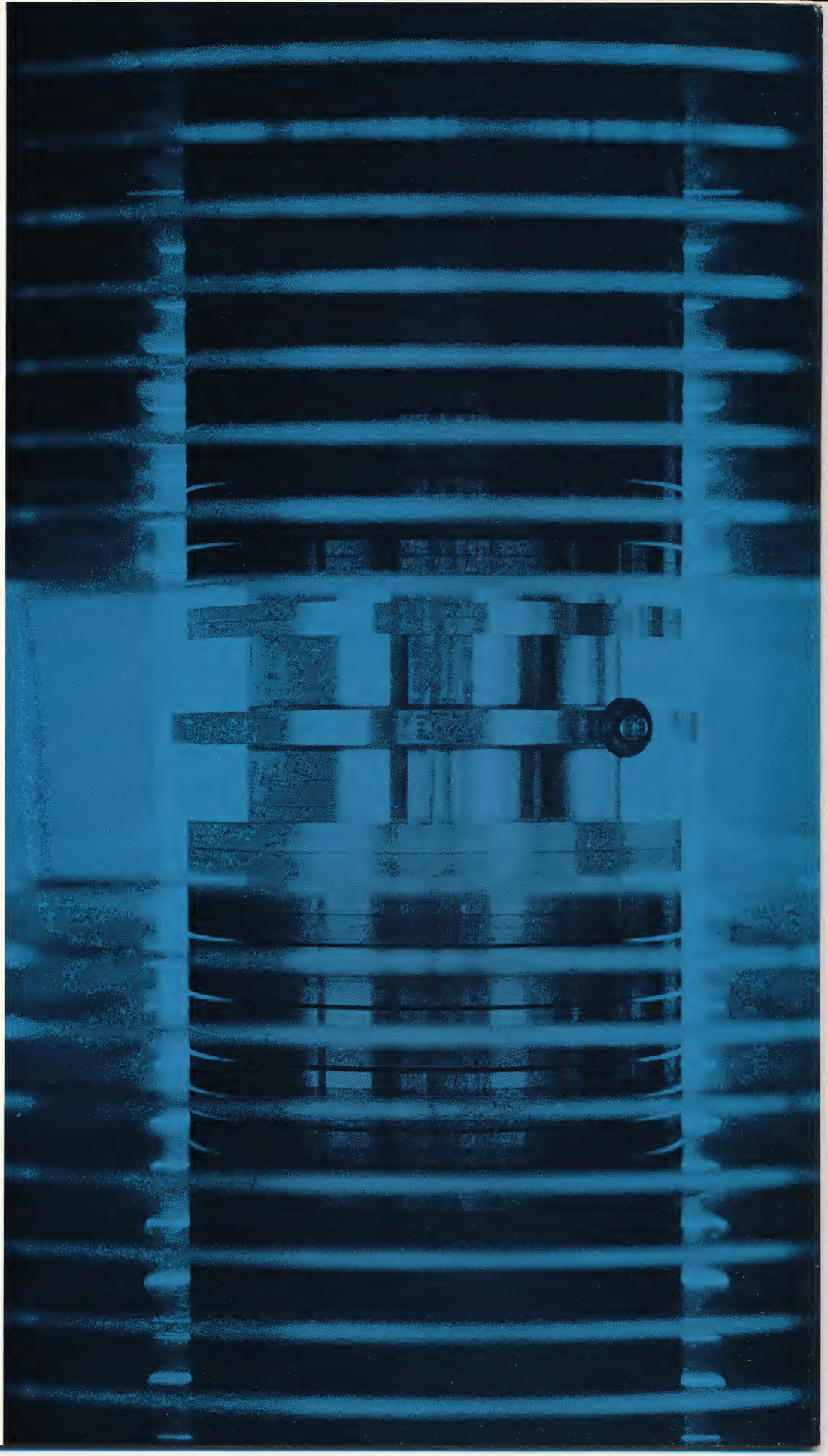
AUXILIARY CABINET:
Height—77 inches
Depth—39 inches
Width—48 inches
Weight—1,000 pounds
(The auxiliary cabinet contains the hydraulic and pneumatic supplies required for operation of the Disk File.)

ELECTRICAL
Power source—208 (±10%) VAC, 4-wire

(Specifications are subject to change without notice.)



The head assembly is mounted on a rigid frame containing three main braces—head loading is pneumatically controlled.



All disks in each grouping are mounted on a single spindle assuring uniform disk speed. The 808 contains 72 disks and the 807 contains 36 aluminum disks precision coated with Control Data's abrasion resistant magnetic oxide material.

CONTROL DATA SALES OFFICES

ALAMOGORDO • ALBUQUERQUE • ATLANTA • BILLINGS • BOSTON • CAPE CANAVERAL • CHICAGO • CINCINNATI • CLEVELAND • COLORADO SPRINGS DALLAS • DAYTON • DENVER • DETROIT • DOWNEY, CALIFORNIA • HONOLULU HOUSTON • HUNTSVILLE • ITHACA • KANSAS CITY, KANSAS • LOS ANGELES MADISON, WISCONSIN • MINNEAPOLIS • NEWARK • NEW ORLEANS • NEW YORK CITY • OAKLAND • OMAHA • PALO ALTO • PHILADELPHIA • PHOENIX PITTSBURGH • SACRAMENTO • SALT LAKE CITY • SAN BERNARDINO • SAN DIEGO • SANTA BARBARA • SEATTLE • ST. LOUIS • TULSA • WASHINGTON, D.C.

ATHENS • BOMBAY • CANBERRA • DUSSELDORF • FRANKFURT • THE HAGUE HAMBURG • JOHANNESBURG • LONDON • MELBOURNE • MEXICO CITY (REGAL ELECTRONICA DE MEXICO, S.A.) • MILAN • MONTREAL • MUNICH OSLO • OTTAWA • PARIS • STOCKHOLM • STUTTGART • SYDNEY • TEL AVIV TOKYO (C. ITOH ELECTRONIC COMPUTING SERVICE CO., LTD.) • TORONTO ZURICH

8100 34th AVE. SO., MINNEAPOLIS, MINN. 55440

CONTROL DATA
CORPORATION

40812900

LITHO IN U.S.A.