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Data General

USER'S MANUAL

INSTALLATION DATA SHEETS AND CONFIGURATION WORKSHEETS

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The Problem

These configuration worksheets and data sheets provide the information and instructions you need to plan the packaging of a Data General computer system. We assume that you are an experienced systems or sales engineer thoroughly familiar with the Data General price list.

The following questions define the packaging problem more precisely:

1. Have you ordered enough computer expansion chassis to accommodate all the printed circuit boards?

2. How should the boards you ordered be arranged in the computer chassis?

3. Have you ordered enough cabinets to accommodate all the chassis?

4. How do you arrange the chassis into these cabinets?

5. How long should the cables be to interconnect all these pieces?

6. What are the requirements of the computer room?

7. How do you unpack, cable, jumper, and install each subsystem?

The Solution

We have provided two sets of documents to help you answer these questions. They are called, respectively, *Configuration Worksheets, and Installation Data Sheets.*

The Data Sheets

The Installation Data Sheets give necessary facts concerning the equipment you are using in your system. The data sheets organize by *subsystem,* loosely defined as a collection of *components* which team up to perform a common function. Components may be *major components, cables,* or *terminators.* For example, the 92 megabyte disc subsystem consists of the drive unit, the adapter, and the controller board as the major components, along with device cables, internal cables and a ground strap.

The beginning (usually page one) of the data sheets for each subsystem gives the packaging information which you need to answer *questions one through six.* Here you will find the necessary specifications of the components of each subsystem, such as the current draw of a controller, or the maximum length of a device cable. The back pages of the data sheets answer *question seven* by telling you how to unpack, cable, jumper, and install each subsystem into an existing system.

The Worksheets

The information at the beginning of the data sheets has been incorporated in Configuration Worksheets. These answer questions about the computer room and should help you to order the right number of chassis cabinets and cables. There are four types of worksheets:

Master Configuration Worksheet

With this worksheet, you break each model number of the system into its major components. Major components are classified as: free-standing or table-top, such as cabinets, large disc drives or displays; chassis, like the diskette or the 10mb drive; boards, like the 4231 controller; and finally, the external cables which connect all the others together. Then you record against each component all the statistics you need to configure it into your system.

Chassis Worksheet

Currently, there is one worksheet for the NOVA 3 and the ECLIPSE line of computers and their expansion chassis. With this worksheet, you use the numbers from the master worksheet to assign each board to a slot and record the dc current drawn by the boards from each chassis.

Use of this work sheet is optional and only need be filled out if a specific board to slot assignment is desired. In all other cases, DGC will configure the chassis according to standard guidelines.

Cabinet Worksheet

Here you arrange the chassis into the cabinet so as not to exceed the space, current, weight, and power dissipation (heat) capacities of each bay of the cabinet. Heat dissipation, usually the limiting factor, is often misunderstood. Computer equipment gets hot and has to be cooled. When it is sitting in a cabinet, it is cooled by the cabinet's fans, which force air from the room, past the equipment and back out to the room. The temperature inside the cabinet, which should not exceed 100degF, is a function of the ambient room temperature (the cooling air) and the amount of power being dissipated by the equipment. DGC assumes a worst-case ambient room temperature of 80degF, which means its cabinets can dissipate about 2000W per bay without overheating. (See the T/P graphs in the data sheets.) If your computer room is maintained at a lower temperature (say 68degF) you can add more equipment to each bay, but you must submit your order on a CCIS Form □ 10-030-028 or it may be declared invalid if it exceeds the 80degF guideline.

Room Worksheet

Here you arrange all the freestanding and table-top components into your room. You will complete the cable list and check that the room will be able to support your system with enough space, power, air-conditioning, lighting, etc.

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TABLE I-1
PRICE LIST WORKSHEET

ITEM	QTY	DESCRIPTION	MTLY.MAINT UNIT PRICE $	MTLY.MAINT TOTAL PRICE $	UNIT LIST PRICE $	DISC. %	UNIT NET PRICE $	TOTAL $	PREREQUISITE MODEL/FEATURE NUMBER
8600-N	1	C/330 W/256KB CORE IN/EXPAN CHAS			61,000				—
4231A	1	92MB DISC-ADAPTER AND DRIVE			25,600				4231 CONTROLLER
4231	1	92MB CONTROLLER			4,000				CPU
6042-D	1	DASHER 300CPS NOTE D							
		SUPPLY OBTAINED FROM TERMINALS CONFIGURATOR P&P.L.			24,000				ANY ASYNC CONTROLLER
4077	1	20MA CURRENT LOOP ASYNC LINE CONTROLLER			150				4075
4075	1	I/O INTERFACE SUBASSEMBLY			200				CPU
6012-C	1	CRT			2,700				ANY ASYNC CONTROLLER
4077	1	ASYNC LINE CONTROLLER-20MA			150				4075
4075	1	I/O INTERFACE SUBASSEMBLY			200				CPU
4079	1	REAL TIME CLOCK			400				4075
6030	1	DUAL DISKETTE SUBSYSTEM			3900				ANY CPU
6021	1	9TRK MAG TAPE SUBSYSTEM			9,900				CPU
4215	1	600LPM DCH PRINTER SUBSYSTEM			18,000				CPU
4217	1	PROG. INT. TIMER			900				4215
4251	1	4 SLOT COMM CHASSIS			1,800				ECLIPSE
4255	1	8 LINE ALM 8			2,000				4251
6012-E	4	CRTS FOR ALM CONNECTION			10,800				4255
		EXTRA LENGTH 30 FT.							
	4	CRT CABLES - 20' X $0.50/FT X 4			40				6012
4231C	1	ONE 92MB DISC PACK			990				4231A
1119-B	1	DASHER RIBBONS (QTY 10)			100				6042
6050-F	1	DG CARTRIDGE DISC							
		ADD-ON TO DISKETTE SUBSYSTEM			9,600				6030
1012-H	1	CABINET - 3 BAY			2990				—

STEP 1

Complete Table I-1 for your system. The model numbers, descriptions, prerequisites and prices are given in the Data General Price List.

Be careful that your systems are functionally complete--that all prerequisites are satisfied. The Price List is not always consistent in the way it assigns model numbers to subsystems. For example, the model 4321A 92 MB disc system does not include a controller, but the model 6030 diskette subsystem does.

STEP 2

Complete Table I-2. Consider the main frame (the main computer chassis and any expansion chassis that are included in a single model number) as just a chassis with available slots and +5V current. Record the available current and slots in the *Available in Mainframe* column on the right-hand side of Table I-2. Then, list the model numbers across the top and the relevant data for each in the columns below. Begin with the main frame. Combine model numbers in a column when it makes sense; i.e., the 4231A with the 4231 as in the example. Draw a vertical line between model numbers or combinations of model numbers.

At this point you probably won't know how many more expansion chassis or cabinet bays to include, or how much power the cabinets will draw. These numbers will be derived in the next few steps.

STEP 3

Calculate the number of expansion chassis required as follows:

a. Sum up the total +5V current drawn by boards in the computer chassis (Line 27, Table I-2).

b. Sum up the total number of computer chassis slots required to accommodate these boards (Line 26, Table I-2). *Don't make the mistake of including boards that belong to other chassis, like the communications chassis.*

c. Add as many expansion chassis as needed to supply enough +5V DC current and slots for these boards.

d. **YOU MUST** check to see that you have not:

1. Violated any of the slot assignment rules in the data sheets -- particularly S/230 and C/330's.

2. Put more than 10 controllers on the I/O bus without adding an I/O bus repeater.

e. **OPTIONALLY** you can recheck your conclusion with the Chassis Configuration Worksheet by assigning each board to its chassis and by calculating the actual current drawn from each chassis by the boards. *Normally this worksheet is not used unless a specific ordering of boards in CPU slots is desired.*

STEP 4

Calculate the number of cabinet bays required as follows:

a. Sum up the cabinet resources required by all chassis, i.e., the total height, power dissipation and AC current drawn.

b. Add enough bays until all chassis are accommodated. Note that a cabinet cannot ordinarily dissipate more than 2000 watts without overheating. Detailed instructions are found in the Cabinet Configuration Worksheet.

c. **YOU MUST** check your conclusions on the Cabinet Configuration Worksheet. This step is essential because the previous calculations are rough and do not account for the preferred locations and service clearances of many chassis. These considerations may force you to add another bay or two. This worksheet also helps you to determine the lengths of cables which interconnect devices in and between cabinets.

STEP 5

YOU MUST complete the Room Layout Worksheet. It is particularly important to do this to compute the cable lengths needed to connect free-standing and table top devices to the system.

IMPORTANT

1. A third bay was required due to power dissipation.

2. Extra length cables were added for the CRT's to connect to the ALM.

TABLE I-2
CONFIGURATION WORKSHEET

DO SECOND — NOTE that 8600-N also includes a Memory Expansion Chassis

DO LAST

01	MODEL NO.		8600-N *	4231A and 4831	6042-D	4077+4075	6018-C	4075/4077/4079	6030	6021			
02	DESCRIPTION		MAIN FRAME	92MB HDD PT + DRIVE + Controller	DASHER	RSIAC Board	CRT	RSIAC Board	DUAL DISKETTE	9TRK MAG TAPE	CABINET		
03	QUANTITY		1	1	1	1	1	1	1	1			
04	FREE STANDING			DRIVE	TERMINAL		CRT					TOTALS [1]	AVAILABLE IN ROOM
05	WEIGHT (LBS.)			700	60		35						
06	PRIMARY POWER	WATTS		1,300	200		145						
07		BTU/HR		4,550	682		495						
08		AMPS		8.5	1.7		1.2						
09		VOLTS		208	120		120						
10		HZ		60	60		60						
11		PHASE		3	1		1						
12		CONDUCTOR		-	2WG		2WG						
13	POWER CABLE LENGTH			6 FT.	6 FT.		6 FT.						
14	POWER CABLE CONNECTOR			3521	515P		515P						
15	MATING RECEPTACLE ON POWER DROP			3523	515R		515R						
16	MATING RECEPTACLE ON WALL			3523	515R		515R						
17	CHASSIS		ECLIPSE	ADAPTER					DISKETTE	TRANSPORT		TOTALS	AVAILABLE IN CABINET
18	CABINET AREAS REQUIRED		MAIN 6 EXP 6	4					4	14			
19	AC POWER	AMPS	MAIN 9.6 EXP 5	2					3.8	8			
20		WATTS	MAIN 1150 EXP 600	240					475	900			
21		VOLTS	120	120					120	120			
22		HZ	60	60					60	60			
23	PREFERRED LOCATION WITHIN CABINET OR REMARKS		9-15 MAIN EXP. MOUNTS BELOW MAIN	NONE					6-9	TOP OF CABINET			
24	BOARDS			CONTROLLER		I/O SUBASSY		I/O SUBASSY	CONTROLLER	CONTROLLER		TOTALS	AVAILABLE IN MAINFRAME [2]
25	LOCATION			MAIN		MAIN		MAIN	MAIN	MAIN			
26	CHASSIS SLOTS REQUIRED			1		1		1	1	1		NEXT →	11
27	+5VDC CURRENT DRAW	EACH BOARD		4		.7+.25=.95		.25+.7+.25	4	2.6			
		TOTAL		4		.95		1.2	4	2.6		NEXT →	+22
28	MAXIMUM ALLOWABLE LATENCY	DCH (µS)		19.8		—		—	128	25			
29		I/O		—		15MS		15MS	—	—			
30		PRIORITY LIST											
31	EXTERNAL CABLES			DEVICE	DEVICE A+B+Gnd Strap	DEVICE		DEVICE	DEVICE	DEVICE			
32	CONNECTING	AND	MAIN-EXP CHAS	COMP-ADAPT	ADAPT-DRIVE	CPU-TERM		CPU-CRT	CPU-1ST DRIVE	DISK-TRANSPORT			
33	LENGTH	STANDARD	HARD-WIRED			25		10	10	10			
34		MAX		10	30	500		500	?	50 (DAISY CHAIN)			
35		REQUIRED											
36	NOTES		-								NEXT PAGE →		

NOTES

[1] ADD SEPARATELY, THE CURRENT DRAWN FROM EACH PRIMARY POWER SOURCE, I.E., 120, 208, ETC.

DO FIRST

[2] AVAILABLE SLOTS AND +5V CURRENT ARE FOUND IN THE PRICE LIST UNDER THE MAINFRAME MODEL NUMBER

TABLE I-2
CONFIGURATION WORKSHEET

DO SECOND ▼ (MAIN FRAME)

DO LAST ▼

01	MODEL NO.		4215/4217	4251	4255	6012-E	4231-C	1119-B	6050-F		1012-M	
02	DESCRIPTION	MAIN FRAME	600 LPM SobSYS	Comm Chas	ALM 8	CRT	DISC PACK	DASHER	DG CART.		CABINET	
03	QUANTITY		1 w/R.I.T.	1	1	4	92mB	RIBBONS	DISC ADDOV		1-3 BAY	
04	**FREE STANDING**		PRINTER			CRT					CABINET	TOTALS 1 / AVAILABLE IN ROOM
05	WEIGHT (LBS.)		370			4(35)					2400	
06	PRIMARY POWER	WATTS	680			4(145)					4215	
07		BTU/HR	2335			4(495)					4215X3.4	
08		AMPS	5.6			4(1.2)					36.3÷2	
09		VOLTS	120			120					240	
10		HZ	60			60					60	
11		PHASE	1			1					1	
12		CONDUCTOR	3(2WG)			2WG					3WG	
13	POWER CABLE LENGTH		10			6					9	
14	POWER CABLE CONNECTOR		315P			515P					14-50P	
15	MATING RECEPTACLE ON POWER DROP		515R			515R					14-50R	
16	MATING RECEPTACLE ON WALL		515R			515R					14-50R	
17	**CHASSIS**			Comm Chas					ADAPT/DRIVE			TOTALS / AVAILABLE IN CABINET
18	CABINET AREAS REQUIRED	MAIN ____ EXP ____		3					6			31 / 90
19	AC POWER	AMPS MAIN ____ EXP ____		3					4.9			36.3 / 90
20		WATTS MAIN ____ EXP ____		350					500			4215 / 6000
21		VOLTS		120					120			↑ NEED 3BAY CABINET
22		HZ		60					60			
23	PREFERRED LOCATION WITHIN CABINET OR REMARKS			ABOVE COMPUTER					3-8 and 9-14			
24	**BOARDS**		CONTR. w/R.I.T.		ALM BOARD				Shares DISCFEE CONTROLLER			TOTALS / AVAILABLE IN MAINFRAME 2
25	LOCATION		MAIN		Comm Chas							
26	CHASSIS SLOTS REQUIRED		1		1 in Comm Chas							6 / 11
27	+5VDC CURRENT DRAW	EACH BOARD	3=2.5+.5		2.8							
		TOTAL	3		2.8							15.75 / +22
28	MAXIMUM ALLOWABLE LATENCY	DCH (μS)	σ		-							
29		I/O										
30		PRIORITY LIST										
31	**EXTERNAL CABLES**		DEVICE	EXT. I/O BUS	-	DEVICE(4)			DEVICE			
32	CONNECTING AND		CPU-PRINTER	COMP-COMM CHAS		ALM-CRT			CPU-DRIVE			
33	LENGTH	STANDARD	30	15		10			10			
34		MAX	30	15		500			40			
35		REQUIRED				30						
36	NOTES				NOT INCLUDED IN MAIN CURRENT	ORDER EXTRA LENGTH (BOFT)						

NOTES

1 ADD SEPARATELY, THE CURRENT DRAWN FROM EACH PRIMARY POWER SOURCE, I.E., 120, 208, ETC.

SLOTS AND DC AMPS FROM MAPS PRICE LIST.

DO FIRST ▲

2 AVAILABLE SLOTS AND +5V CURRENT ARE FOUND IN THE PRICE LIST UNDER THE MAINFRAME MODEL NUMBER

CHASSIS CONFIGURATION—WORKSHEET II
(OPTIONAL NOVA AND ECLIPSE COMPUTER CHASSIS)

STEP 1

☐ **Begin to complete Table II-1 for the specification of the main computer chassis by filling in the Allowed (Slot Chart) column, the Data Channel Speeds Available, and Max +5V Current Available.** Fill in the specifications for each known expansion chassis.

The boards you have decided to use may be categorized as follows: **CPU options, memory boards, and I/O boards.** *There is one data sheet which gives the specifications of the various memory boards and options.*

An I/O board (any board on the I/O bus) may be an I/O controller board for a peripheral device or one of several kinds of communications boards, such as the DCU-50, the Interprocessor Bus (IPB) board, the Multiprocessor Communications Adapter (MCA) board, or the I/O bus switch card. The NOVA Floating Point Unit is configured as an I/O board, although it is a CPU option. Notice that several controllers may be located on the same board, so all these are assigned to the same slot. For example, an I/O interface board has provisions for a display interface, the Real Time Clock, and the paper tape reader and punch controllers.

STEP 2

☐ **Order the I/O boards according to their position in the priority chains as established in Table I-2.**

The I/O Priority Chain

Ordering the I/O boards in the chassis is important because it is advantageous to have some boards closer to the CPU than others. ("Closer" means the **lower** *slots in each chassis.) Wherever two or more I/O devices request service at the same time, the CPU will handle immediately the device whose I/O board is closest. Many devices can only wait a finite amount of time before their information will be lost (discs, for example). Those devices which need quick service should receive a high priority and appear close to the CPU. The data sheets for each device indicate a precise maximum allowable latency figure.*

Follow these rules for making your Priority Chain:

The **high-speed data channel** *device which has the* **shortest** *maximum allowable data channel latency time should be assigned priority 1 in line 30 of Table I-2. The rest of the high-speed data channel boards, with the maximum latency figure increasing each time, should be assigned priorities 2, 3, 4, etc.*

Next, consider the boards which take only **standard speed data channels.** *(If your computer chassis does not handle high-speed data channels, then all data channel devices will operate at standard speed.) Order them on the list so that the device with the shortest maximum allowable data channel latency time has the highest priority, etc.*

Finally, arrange the I/O boards which are **programmed I/O only** *(no data channel) in order below the data channel boards according to the maximum programmed I/O latency for each board. The shortest latency deserves the highest rank. Thus, the last item on the list should be the programmed I/O device which has the longest maximum allowable latency.*

NOTE The maximum allowable programmed I/O latencies marked with a "+" on the data sheet must not be exceeded or data will be lost. If the latencies not so marked are not met, there will be no data loss, but the subsystem will be operating inefficiently.

Problems with the Ordering

- *There are some I/O boards which have an infinite maximum allowable (data channel) latency time. This is indicated by an infinity symbol (∞) on the data sheet. However, it is often more efficient to place these boards in a higher priority in the data channel group. These boards include the DCU-50 and the MCA board. The correct placement depends upon its particular application within your system. In general, the more important it is to your system, the higher priority it should have. For more detailed information, we direct you to the Interface Designer's Reference Manual (015-000031), or to the technical reference for the particular device.*

- *The I/O Bus Switch control card should be positioned in the computer chassis as though it had a latency figure equal to the most sensitive device in the bus switch chassis.*

- *The Nova Floating Point Unit should be the standard-speed data channel board of least priority.*

- *If a board is listed with both a maximum data channel latency and a maximum programmed I/O latency, (some A/D converters, for example) use the data channel latency.*

CHASSIS CONFIGURATION—WORKSHEET II (OPTIONAL NOVA AND ECLIPSE COMPUTER CHASSIS)

STEP 3

☐ **Assign the CPU to its reserved slot(s) in the main chassis.**

Every time you assign a board to a slot, enter the board type and its +5V current draw into columns 2 and 3 of the appropriate block of Table II-1. You may use the column between blocks to keep a running subtotal of the current draw. The subtotal must not exceed the maximum current available to that chassis. Also, when you "assign" a board, check the "allowed" column to see if that assignment is legal.

☐ **Assign the CPU options which have their own boards to their reserved slots.** No other boards may be assigned to these slots in place of the CPU options.

☐ **Assign any of the I/O controllers (such as a teletype controller) to their preferred slots as indicated on the slot assignment table.**

Preferred slots for controllers are not mandatory and need not be restricted to that controller if doing so would interfere with the desired priority structure.

STEP 4

☐ **If only the main computer chassis (and NOT the expansion chassis) has high speed data channel capacity, assign as many high speed data channel I/O boards as possible (if any) to the main computer chassis in their proper order and place. (See Using the Priority List.)** Otherwise, skip this step if all or none of your chassis run on high speed data channels, or if you have no high speed I/O boards.

Using the Priority List

Follow these steps for placing the maximum amount of I/O boards into a given main or expansion chassis:

1. *Consider boards one by one from the top of this list.*
2. *Add the current draw for each board to the cumulative current draw for that chassis. Check that board off the list and proceed to the next board.*
3. *Include as many boards as possible without exceeding the maximum +5V current draw for that chassis.*
4. *Then assign them as an ordered group to the TOP slots in the chassis, placing the highest priority I/O board closest to the BOTTOM of the chassis.*
5. *Proceed to the next expansion chassis if all the I/O boards are not yet assigned.*

STEP 5

☐ **Assign the memory boards following the relevant slot assignment rules on the data sheets for each CPU.**

STEP 6

☐ **Assign the I/O boards following the relevant slot assignment rules on the data sheets for each CPU.**

Final Checklist

☐ Do all your board assignments agree with what is allowed for each chassis?

☐ Are all the I/O boards in their proper order in each chassis, with the higher priorities in the lower slots?

☐ Do all your current draws add up correctly, and is this total not in excess of the maximum available for each chassis?

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TABLE II-1
CHASSIS CONFIGURATION WORKSHEET

MAIN CHASSIS

DATA CHANNEL SPEEDS AVAILABLE: STANDARD ☐ HIGH SPEED ☐

SLOT	ALLOWED (SLOT CHART)	ASSIGNED	+5V CURRENT DRAW	Current Subtotal
16				
15				
14				
13				
12				
11				
10				
09				
08				
07				
06				
05				
04				
03				
02				
01				

TOTAL +5V CURRENT DRAW _____

MAX +5V CURRENT AVAILABLE ☐

+5V CURRENT SURPLUS _____

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FIRST EXPANSION CHASSIS

DATA CHANNEL SPEEDS AVAILABLE: STANDARD ☐ HIGH SPEED ☐

SLOT	ALLOWED (SLOT CHART)	ASSIGNED	+5V CURRENT DRAW	Current Subtotal
16				
15				
14				
13				
12				
11				
10				
09				
08				
07				
06				
05				
04				
03				
02				
01				

TOTAL +5V CURRENT DRAW _____

MAX +5V CURRENT AVAILABLE ☐

+5V CURRENT SURPLUS _____

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SECOND EXPANSION CHASSIS

DATA CHANNEL SPEEDS AVAILABLE: STANDARD ☐ HIGH SPEED ☐

SLOT	ALLOWED (SLOT CHART)	ASSIGNED	+5V CURRENT DRAW	Current Subtotal
16				
15				
14				
13				
12				
11				
10				
09				
08				
07				
06				
05				
04				
03				
02				
01				

TOTAL +5V CURRENT DRAW _____

MAX +5V CURRENT AVAILABLE ☐

+5V CURRENT SURPLUS _____

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CABINET CONFIGURATION—WORKSHEET III

STEP 1

☐ **Record in Table III-4 the characteristics of the primary power available at your site.**

☐ **Record in Table III-4 the maximum ambient room temperature you will allow your room to reach during normal operation.** These tables may have to be altered by the requirements of your configuration.

You should be aware that for each cabinet system (one, two, or three bays, meaning Cabinets 1012K-M), you have a choice of either 120V, 60Hz or 240V, 50Hz for internal use. This is distinguished by the suffix "-2" on the model number for the 240-volt variety. The "primary power" column for every cabinet-mounted component should agree with your choice of internal voltage.

Also, check the external power required by your choice of a cabinet model, and alter the "Primary Power Available" in Table III-4, if necessary.

STEP 2 - Cabinet Capacities

Record the cabinet capacities using the cabinet data sheets (the "Cabinet Specifications" table) by marking the following bar charts:

☐ **LINE CURRENT - Make an indication on the bar charts for the maximum internal usable current** *for each individual bay.*

The "Maximum Internal Cabinet Usable Current" is NOT the current available for each bay. It is the total current draw for all bays in your system. For the individual breakdown of current draw per bay, see the "Internal Cabling" pages of the cabinet data sheets. Find your particular model, add up the current figures for the outlets in each bay, and mark them on your bar charts.

Here you must make a rough guess as to how many bays you need. If you find later that you actually need a different number of bays in your system, re-examine the current specifications for your new model.

☐ **Record on the bar charts the amount of current drawn by each blower unit. (1.5 AMPS)**

☐ **POWER DISSIPATION - Make an indication on the bar charts of the maximum allowable power dissipation.**

Heat Dissipation

Running the equipment too close to its maximum operating temperature shortens the expected lifetime of the machine. So, Data General recommends that cabinets not exceed 100degF (38degC) regardless of the maximum operating temperatures of the equipment they contain. The temperatures inside a cabinet will be the ambient room temperature plus the temperature rise caused by the machinery dissipating power within the cabinet.

Therefore, to find the maximum allowable **power dissipation** *within each bay,*

1. *Calculate the maximum allowable temperature rise (100degF or 38degC) minus the ambient room temperature. You may wish to change your ambient room temperature figure on Table III-4.*
2. *Use the Temperature vs Power Dissipation graph (on the data sheet for the appropriate cabinet) to find the equivalent maximum allowable power dissipation (50Hz or 60Hz refers to the ac frequency of the chassis).*
3. *Data General assumes 80degF (27degC) here. If you assume a lower temperature, you must submit your order with CCIS special request special request form number 10-03-028.*

☐ **Record on the bar charts the amount of power dissipated by each cooling unit. (140 WATTS)**

STEP 3 - Configuration

☐ **Assign the primary computer chassis with its expansion chassis to their preferred areas in Bay A.** Record on the bar charts the additional current draw, and heat dissipation. Each time you assign a new component, record on Table III-5.

Leave at least 1 area (1.75 inch) between separate chassis for clearances.

☐ **Assign the rest of the chassis to the cabinets until you reach a successful configuration.** None of the bar chart accumulations should exceed those capacities established in step 2. If you want to change the number of bays that you previously estimated, be sure to recheck the maximum current draw figures for the new model.

In most cases power dissipation will be the limiting factor. You may want to leave room in the cabinets for add-on equipment to be purchased later.

STEP 4 - Cables

☐ **Transfer the configuration to the rear view diagram of the cabinets.**

☐ **Draw the cable connections on the rear view diagram.** Include the cables which run to freestanding components for use during room configuration. Cables internal to the cabinet bay need not be drawn.

☐ **Record on Table I-2 the required cable lengths according to the given rules:**

1. *Cables that interconnect chassis in adjacent bays (e.g. models 1012L and 1012M) on systems configured at Data General, are provided at no extra charge; they are always of the required length.*
2. *All other cables are provided at their standard length unless they are ordered at extra charge. These include cables interconnecting separate cabinets to one-another, and additions to existing systems. Calculate the required lengths of such cables as follows:*

   Add 3 feet (1 1/2 at either end) to each cable to allow it to slide out of its rack for servicing.

   For cables which connect chassis in different bays, which are not bolted together, add 5 or 7 feet to each end, 5 feet if a chassis is in the middle or lower part of the cabinet, 7 feet if it is in the upper portion. Add the desired distances between cabinets.

☐ **Check that no required cable lengths exceed the maximum allowed length.** If it does, then the cabinet must be reconfigured. Otherwise, go on to the Room Configuration Worksheet.

TABLE III-1
BAY C

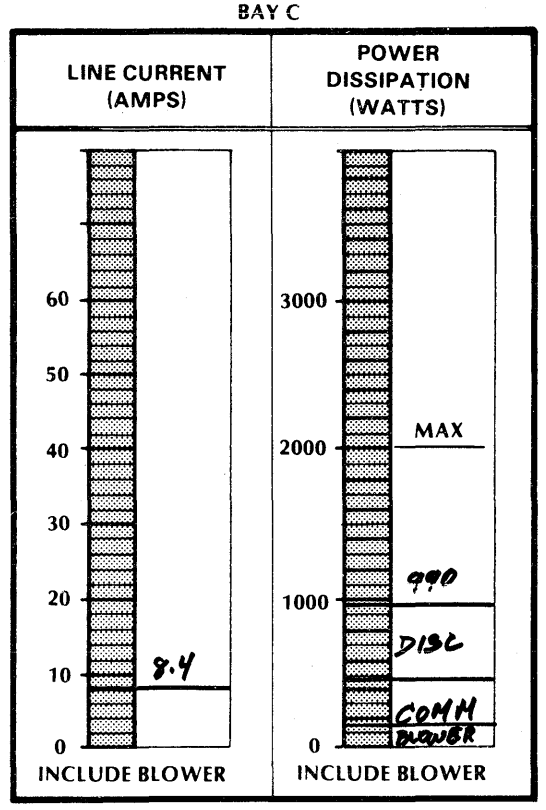


TABLE III-2
BAY B

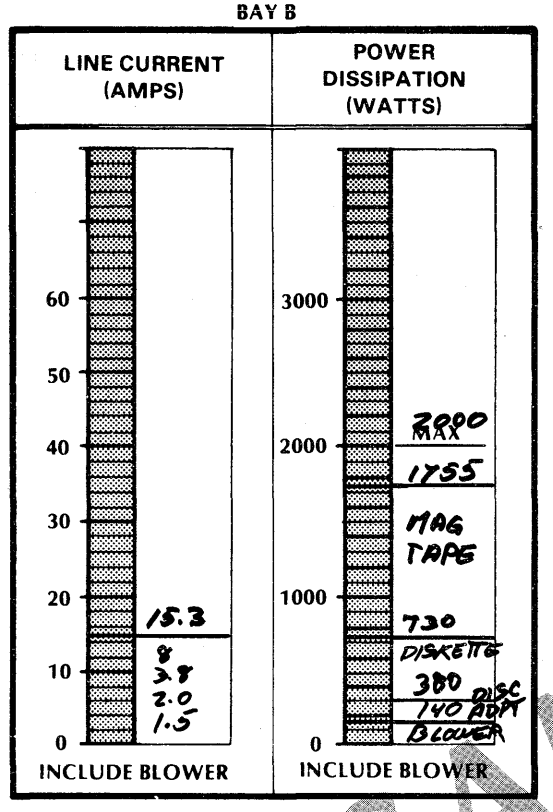


TABLE III-3
BAY A

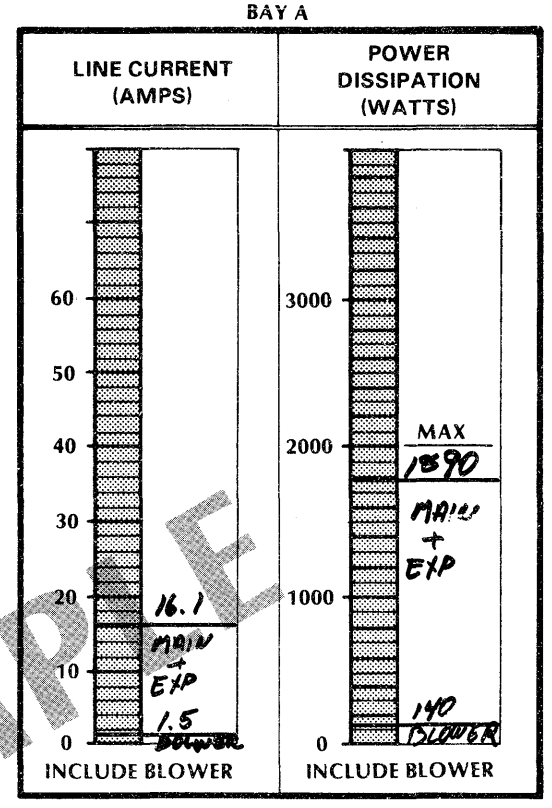


TABLE III-4

MAXIMUM AMBIENT ROOM TEMPERATURE					
80 °F ____ °C					
PRIMARY POWER AVAILABLE					
	VOLTS	HZ	PHASE	COND	AMPS
A	120	60	1	2w/G	200
B	240	60	1	3w/G	200

REAR VIEW

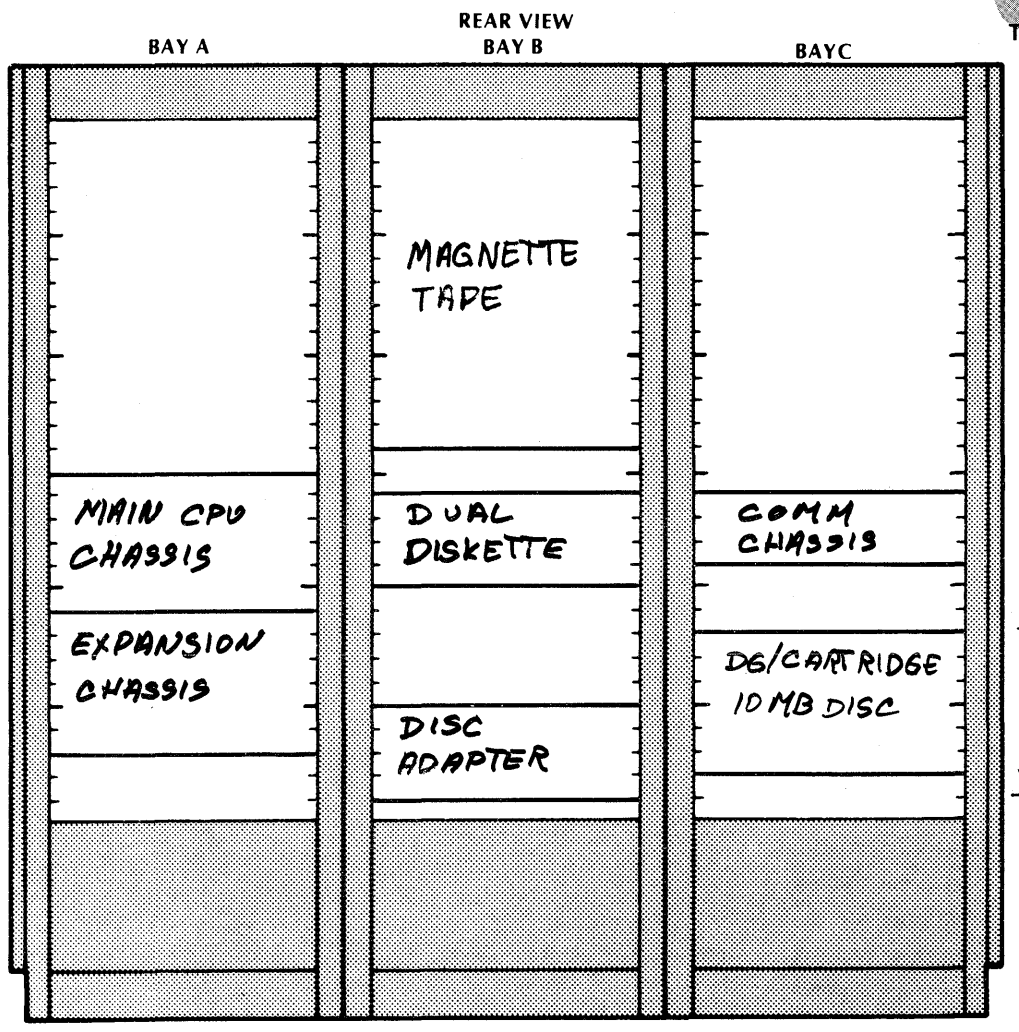
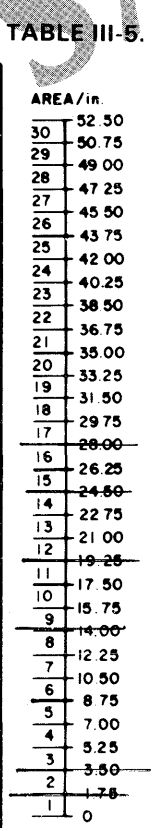
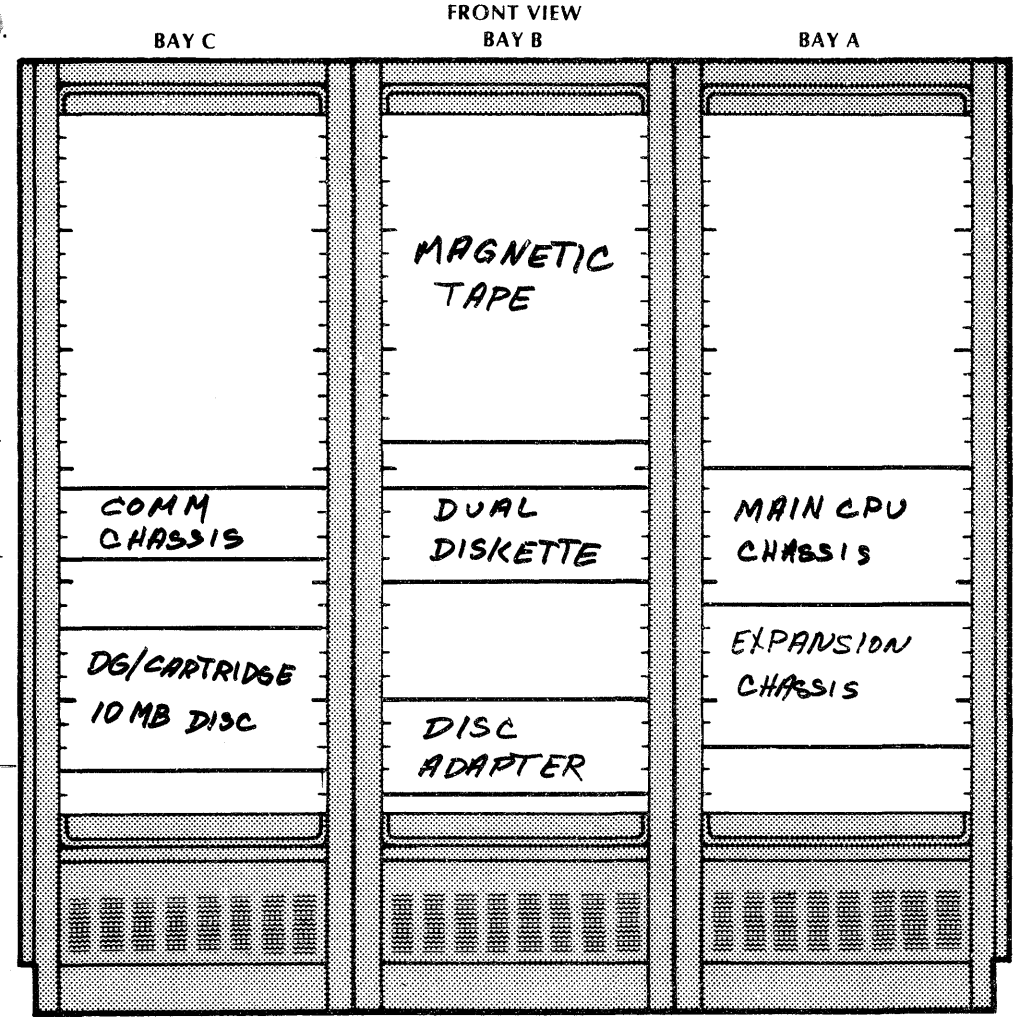


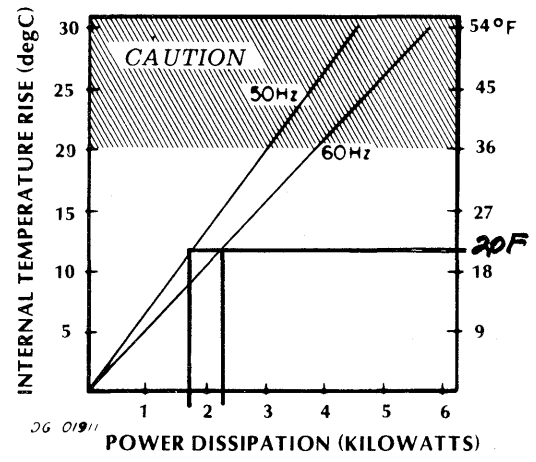
TABLE III-5.



FRONT VIEW



TEMPERATURE vs POWER DISSIPATION
1012K-1012P CABINETS
(DIRTY FILTER ASSUMED)



INDUSTRIAL ENCLOSURES SERIES 1079
CONFIGURATION WORKSHEET

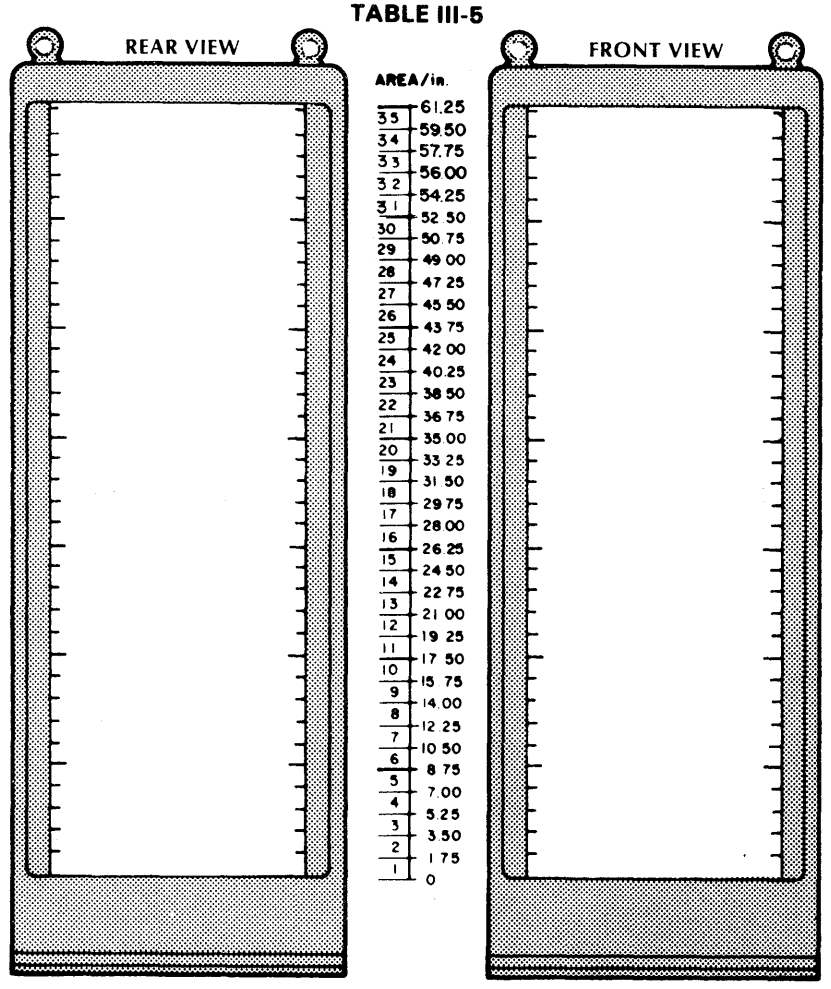
TABLE III-1

LINE CURRENT (AMPS)	POWER DISSIPATION (WATTS)
60 50 40 30 20 10 0	3000 2000 MAX 1000 0
INCLUDE BLOWER	INCLUDE BLOWER

TABLE III-4

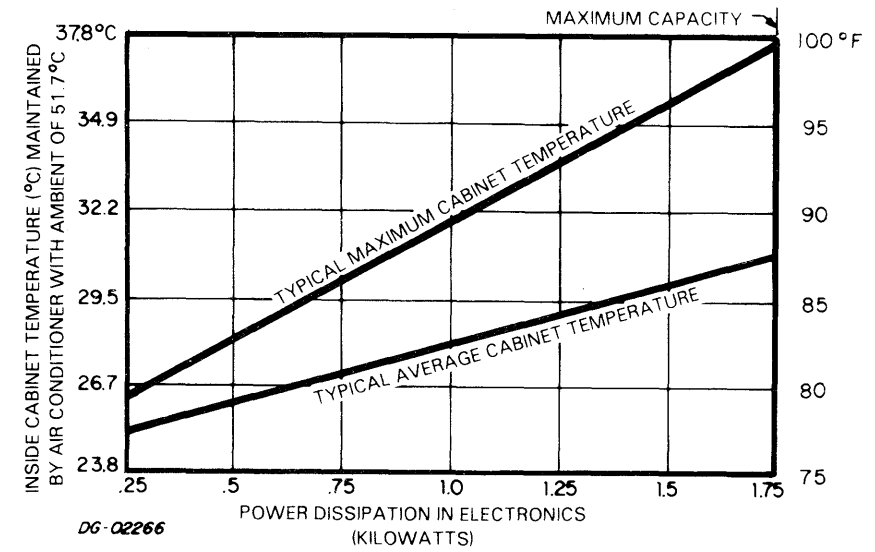
MAXIMUM AMBIENT ROOM TEMPERATURE					
_____ °F _____ °C					
PRIMARY POWER AVAILABLE					
	VOLTS	HZ	PHASE	COND	AMPS
A					
B					

TABLE III-5

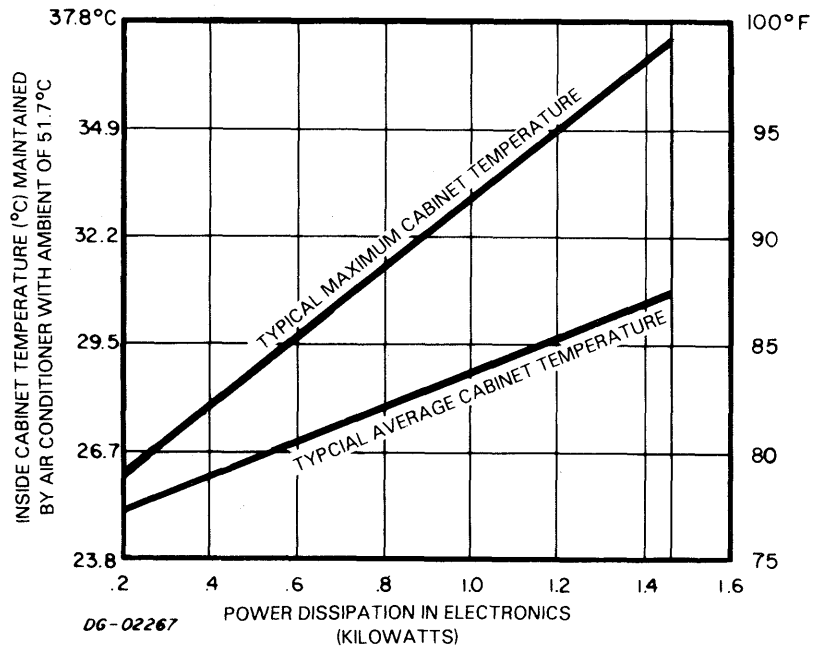


COOLING PERFORMANCE
INTERNAL TEMPERATURE RISE vs.
INTERNAL EQUIPMENT POWER DISSIPATION

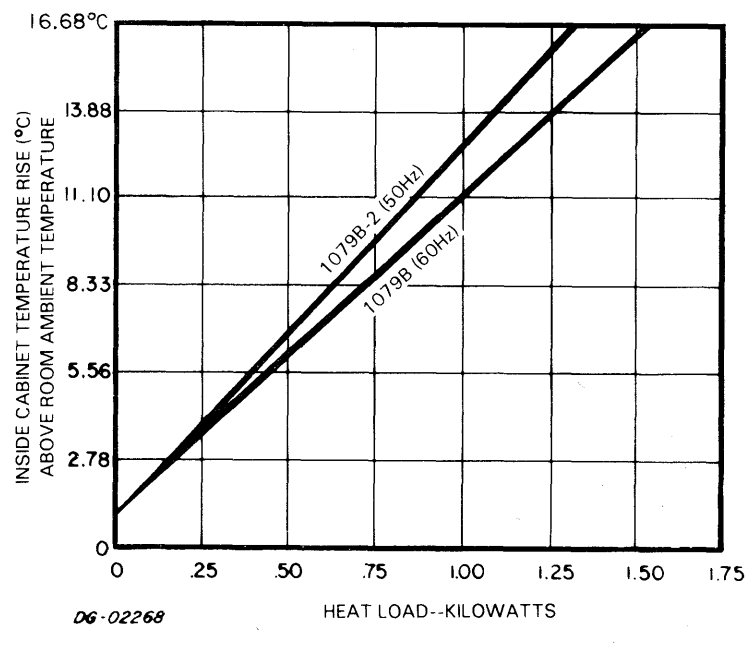
1079A (60 Hz)



1079A-2 (50 Hz)



1079B SERIES



ROOM CONFIGURATION—WORKSHEET IV

STEP 1

☐ **Draw the room outline on the attached room layout grid.** A convenient scale is 1/4 inch per foot.

STEP 2 - Room Configuration

Repeat these steps until you reach a satisfactory arrangement.

☐ **Arrange all of your equipment in its desired locations on the Room Layout Grid.** Use the service clearance drawings for the proper dimensions.

☐ **Reserve sufficient space** for data storage areas, work tables, chairs, and operations personnel. Show windows and doors.

☐ **Check that the cable lengths required (see Room Cable Routing) for each component in this layout do not exceed the maximum allowable length.**

☐ **Enter the required cable lengths on Table I-2 of the Master Configuration Worksheet** and if extra length cables are required, enter the additional incremental charges for them in Table I-1.

STEP 3 - Room Checklist

☐ Check the **floor loading** (pounds per square foot) for compliance with local building codes. Use the fully-loaded weights of the cabinets.

☐ Provide adequate **lighting** arrangements for the room. Minimum suggested level is 40 foot-candles measured 30 inches above the floor. Too high a light level, such as direct sunlight, makes it difficult to read indicator lamps.)

☐ Calculate the **total heat output** of all heat sources in the room, including lights and personnel. Determine the relative humidity range required. Consult with an air conditioning specialist to determine the type and capacity of any required air conditioning equipment. (There are 3.41 BTUs generated for each watt of power dissipated by the equipment.)

☐ Consult with a power engineer to determine the locations, types, and ratings of the **power outlets** required for the room. Power cord lengths are given on the data sheets, their connectors and the mating receptacles are identified by their NEMA designators, and the maximum current draw at the specified voltage is listed.

☐ Add any equipment, such as fire extinguishers or non-conducting floor coverings, to insure a **safe installation.** (Electrical equipment constitutes a class C fire hazard. If a sprinkler system is used, it should be of the dry pipe variety.)

☐ Examine the **path from the receiving area** to the computer room to determine if any restrictions must be placed on the sizes of the equipment shipped.

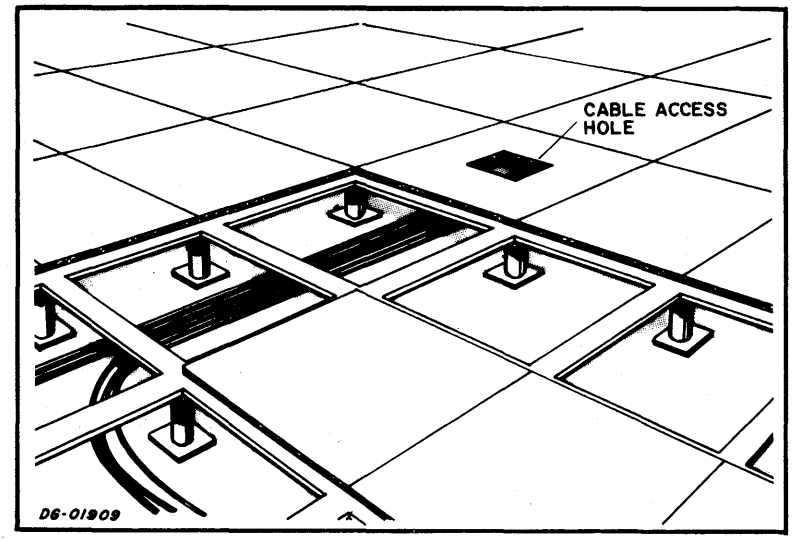


FIGURE 1
FREE ACCESS TYPE FLOOR

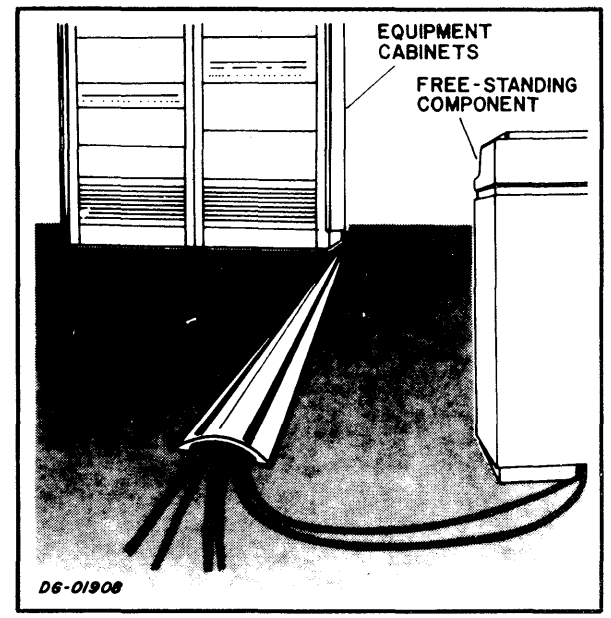


FIGURE 3
ABOVE FLOOR CABLE RAMP

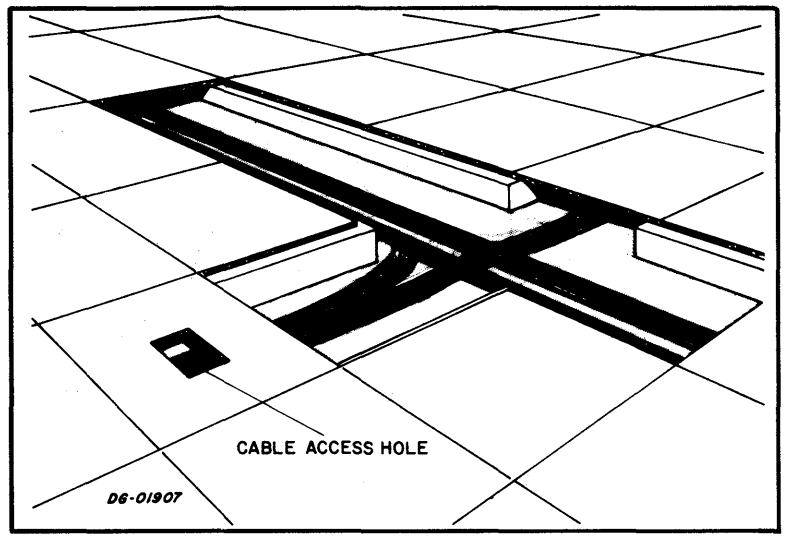


FIGURE 2
RACEWAY TYPE FLOOR

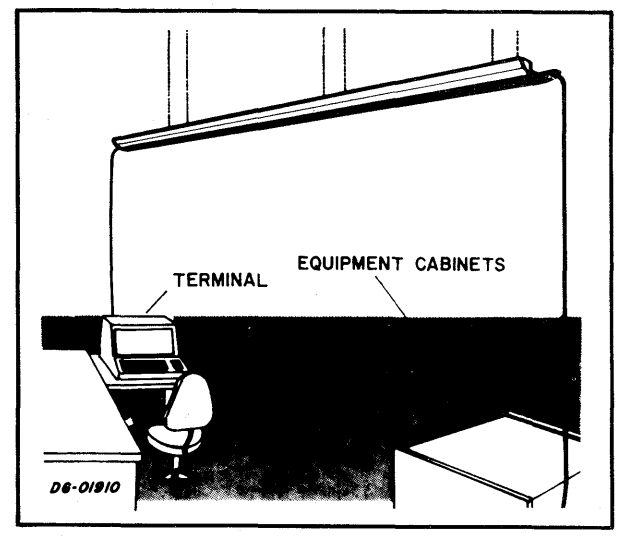
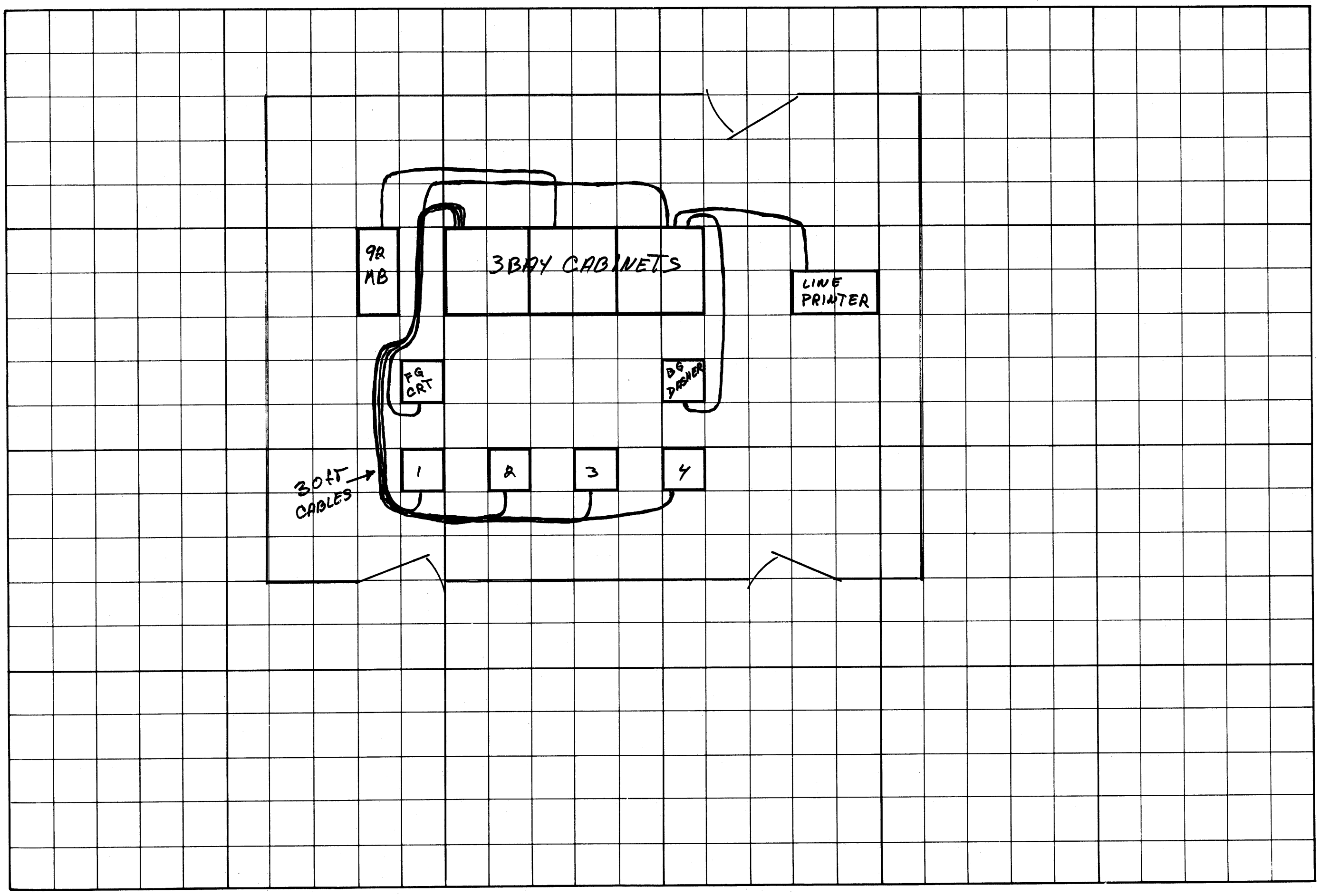


FIGURE 4
OVERHEAD CABLE CHANNEL

Room Cable Routing

You should not leave external cables (those connecting freestanding or table top components to each other or to the equipment cabinets) where they can be damaged. Some methods of protecting cables are: (1) routing the cables under a raised floor, either the free access or raceway type (see Figures 1 and 2); (2) routing them under a cable ramp installed on the existing floor (see Figure 3); or (3) routing them along channels raised above head level (see Figure 4).

When determining the required cable lengths, you must make allowances for routing the cables in any of the four methods shown. The amount of this allowance ranges from 0 extra feet (for the cable ramp above the floor) to approximately 16 extra feet (for overhead channels). Also, include the length required to reach from the floor level to chassis in the cabinet (6 1/2 or 8 1/2 feet depending on if the chassis is located in the upper part of the cabinet or not).


9R
MB
3 BAY CABINETS
LINE
PRINTER
FG
CRT
BG
PRINTER
30+T
CABLES
1
2
3
4

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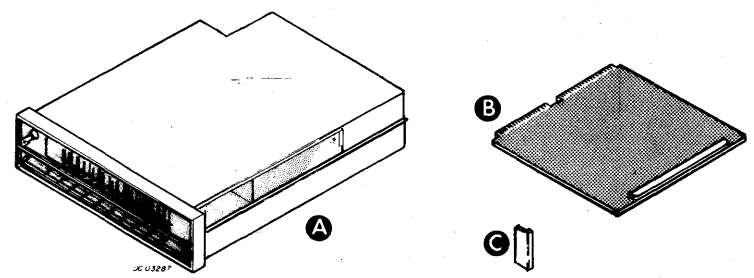
NOVA 2/4

SUBSYSTEM COMPONENT BREAKDOWN



MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	NOVA 2/4	CABINET	
B	CPU BOARD	CHASSIS	

DG-02672

TERMINATOR

Item	Terminator	Location	Notes
C	DCG TERMINATOR	LAST DEVICE OF I/O	

DG-02673

SLOT ASSIGNMENTS

Data Channel Speeds Available: Standard ☒ High Speed ☒

Slot	Allowed (Slot Chart)	Assigned	+5V Current Draw
4	MEMORY OR I/O		
3	MEMORY OR I/O *		
2	MEMORY OR MULT/DIV		
1	CPU		

Total +5V Current draw _____

Max +5V Current Available ☐

+5V Current Surplus _____

DG-01915

* IF TTY, PTR, PTP ARE ORDERED, THEY MUST BE CONFIGURED IN SLOT 3.

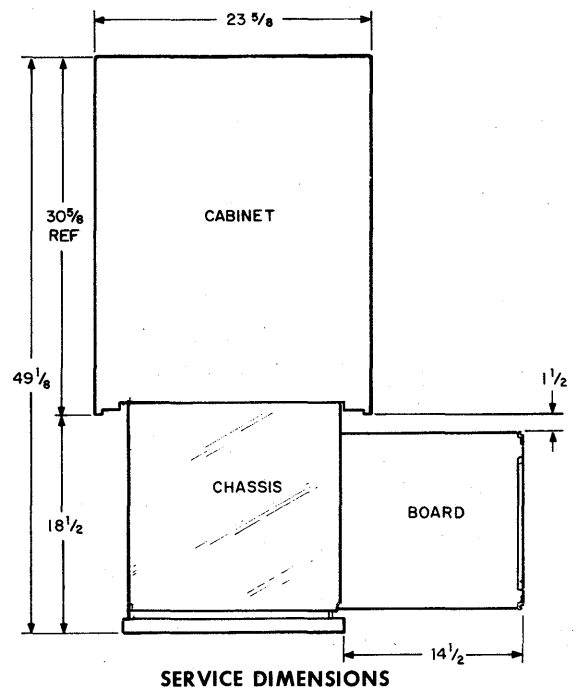
SPECIFICATIONS OF CABINET-MOUNTED COMPONENTS

Item	Component	Number in Sub-system	Maximum Operating Temperature: Component °F / °C	Maximum Operating Temperature: Media °F / °C	Primary Power: Current (nom) Draw (Amp)	Primary Power: Voltage ±ΔV	Primary Power: Frequency	Cabinet Height Required: Area	Cabinet Height Required: in.	Cabinet Height Required: cm	Weight: lbs / kg	Power Dissipation (Max Watts)	Preferred Location or Remarks	Operating Humidity (Relative): min % / max
A	NOVA 2/4 115V		130 / 54.4		2.5	115±20%	47-63Hz	3	5¼	13.34	50 / 22.5	300	AREA 14-16	20 / 90
	NOVA 2/4 230V		130 / 54.4		1.2	230±20%	47-63Hz	3	5¼	13.34	50 / 22.5	300	AREA 14-16	20 / 90

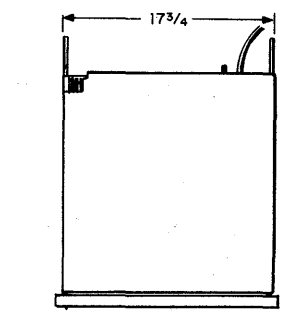
DG-01914

Voltage	Power Cable Length ft	Power Cable Length m	Power Cable Plug	Mating Receptacle on Power Drop	Mating Receptacle in Wall
115V	6	1.8	NEMA 5- 15P	NEMA 5- 15R	NEMA 5- 15R
230V	6	1.8	NEMA 6- 15P	NEMA 6- 15R	NEMA 6 15R

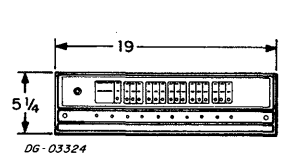
DG-02717



SERVICE DIMENSIONS

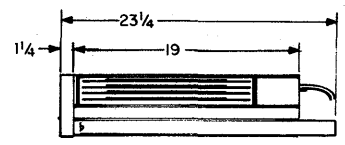


TOP VIEW



DG-03324

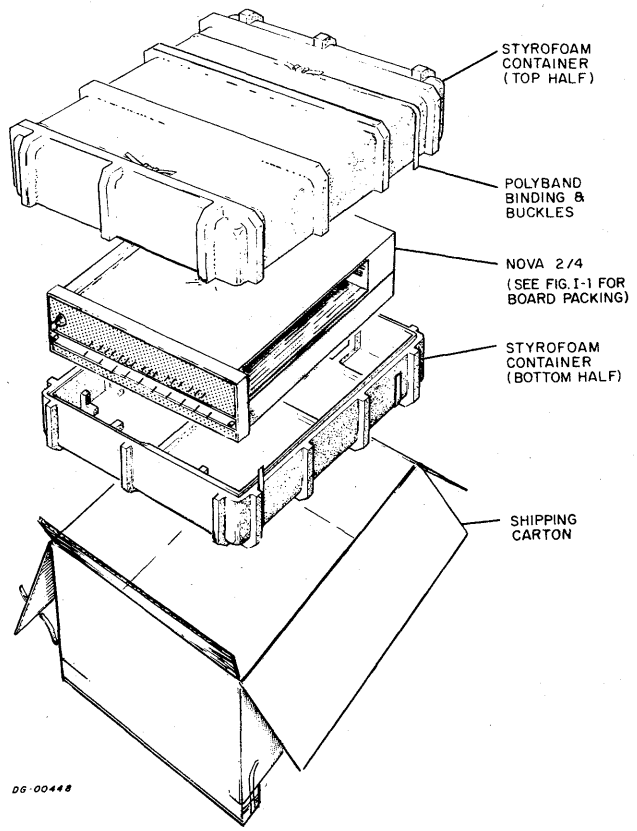
FRONT VIEW



SIDE VIEW

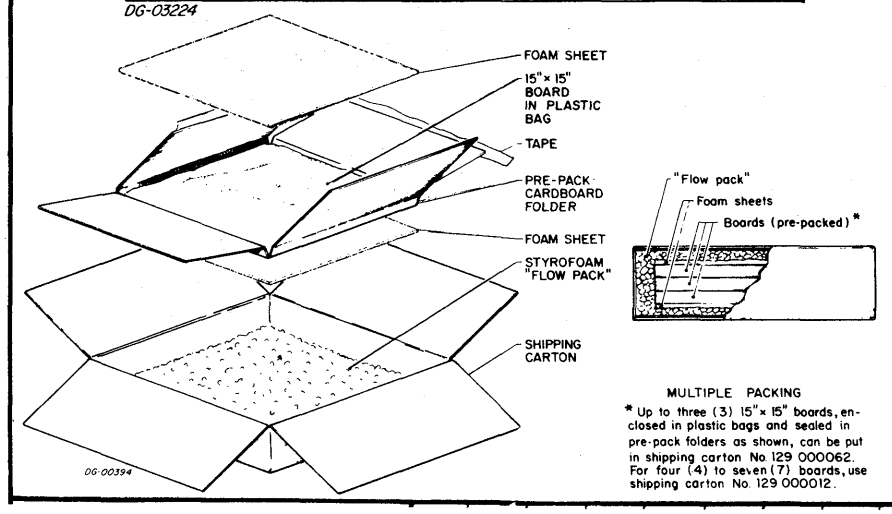
CHASSIS NOVA 2/4

PACKING KIT



SHIPPING AND PACKAGE DATA					
Outside Dimensions			Weight (Gross)	Volume	Density
Length	Width	Depth			
in. / cm	in. / cm	in. / cm	lbs. / kg	cu ft. / cu m	lbs/cu ft. / kg/cu m
33½ / 85.1	24 / 61	17½ / 58.6	79 / 35.8	8.1 / 0.23	9.75 / 155
SHIPPING SPECIFICATIONS			STORAGE SPECIFICATIONS		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-40 to +160 / -40 to +71	0% to 80%	50,000 ft 15,200 m	-40 to +160 / -40 to +71	0% to 80%	90 days

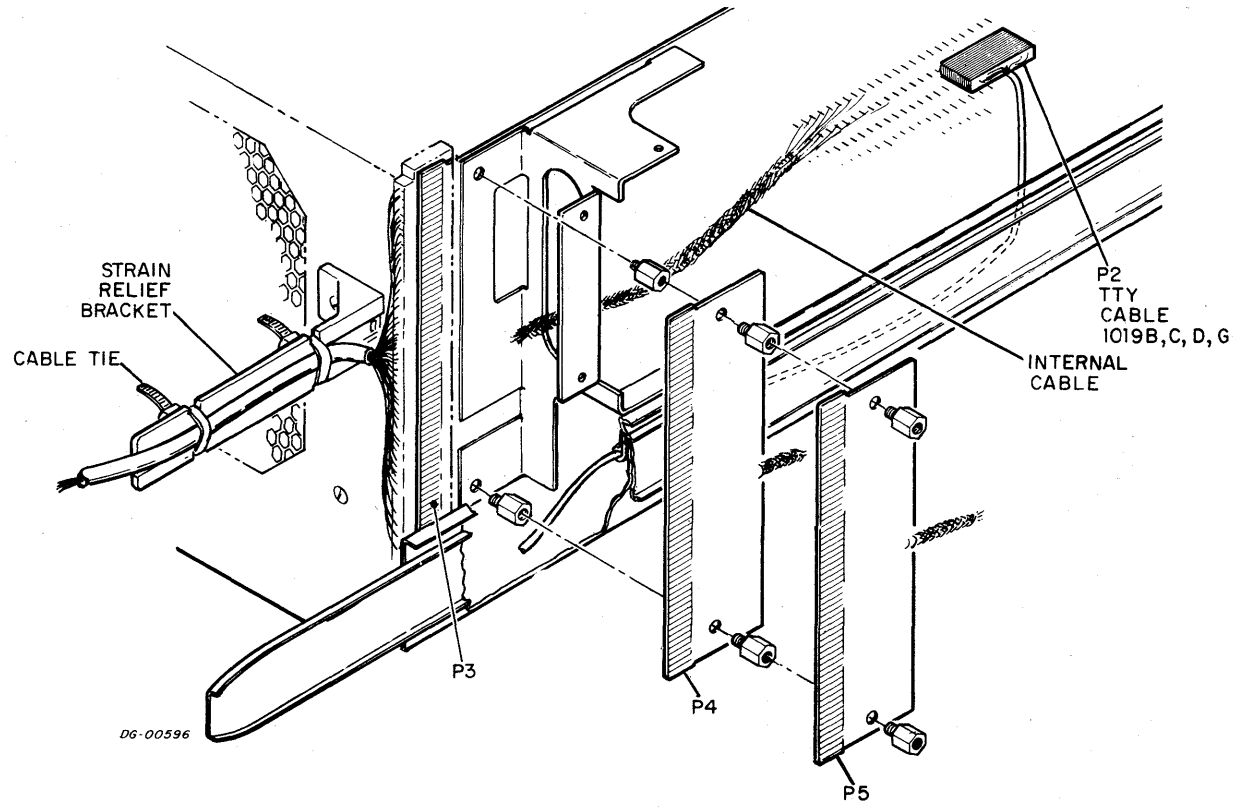
DG-03224



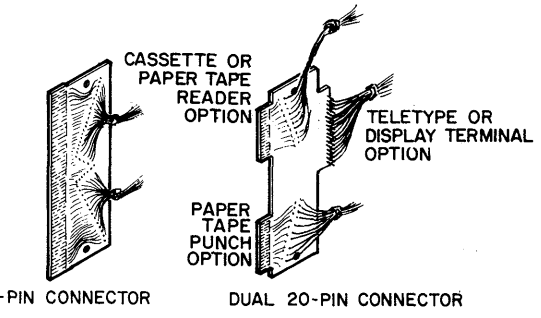
MULTIPLE PACKING

* Up to three (3) 15" × 15" boards, enclosed in plastic bags and sealed in pre-pack folders as shown, can be put in shipping carton No 129 000062. For four (4) to seven (7) boards, use shipping carton No 129 000012.

INTERNAL / EXTERNAL CABLING

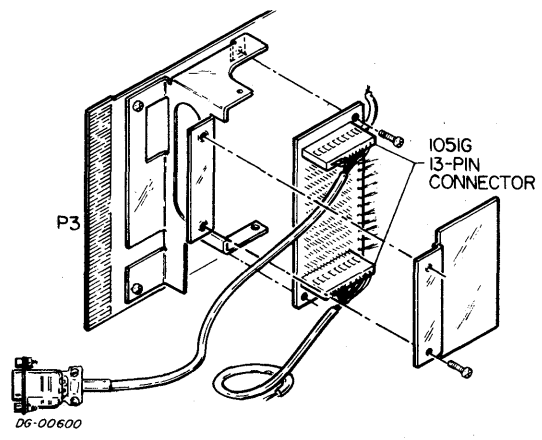


BACKPANEL CONNECTORS

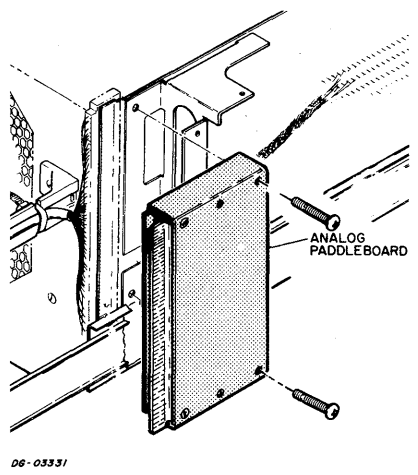


P3 PIN CONNECTOR	BACK PANEL PIN	SIGNAL NAME
1 THRU 50		GND
A		GND
B	A3	PWR ON (+5V)
C	A38	$\overline{MSKO}$
D	A40	INTA
E	A42	DATIB
F	A44	DATIA
H	A46	$\overline{DS3}$
J	A48	DATOC
K	A50	CLR
L	A52	STRT
M	A54	DATIC
N	A56	DATOB
P	A58	DATOA
R	A60	$\overline{DCHA}$
S	A62	$\overline{DS4}$
T	A64	$\overline{DS5}$
U	A66	$\overline{DS2}$
V	A68	$\overline{DS1}$
W	A70	IORST
X	A72	$\overline{DS0}$
Y	A74	IO PLS
Z	A80	$\overline{SELD}$
a	A82	$\overline{SELB}$
b	3-10 A93	$\overline{DCHP\ OUT}$
c	3-10 A95	$\overline{INTP\ OUT}$
d	B17	$\overline{DCHM0}$
e	B21	$\overline{DCHM1}$
f	B29	$\overline{INTR}$
h	B33	$\overline{DCHO}$
j	B35	$\overline{DCHR}$
k	B37	$\overline{DCH1}$
l	B39	OVFLO
m	B41	$\overline{RQENB}$
n	B55	$\overline{DATA7}$
p	B56	$\overline{DATA14}$
r	B57	$\overline{DATA5}$
s	B58	$\overline{DATA11}$
t	B59	$\overline{DATA12}$
u	B60	$\overline{DATA8}$
v	B61	$\overline{DATA4}$
w	B62	$\overline{DATA0}$
x	B63	$\overline{DATA9}$
y	B64	$\overline{DATA13}$
z	B65	$\overline{DATA1}$
AA	B66	$\overline{DATA15}$
AB	B73	$\overline{DATA3}$
AC	B75	$\overline{DATA10}$
AD	B82	$\overline{DATA2}$
AE	B95	$\overline{DATA6}$
AF		GND

4083 OPTION CONNECTOR

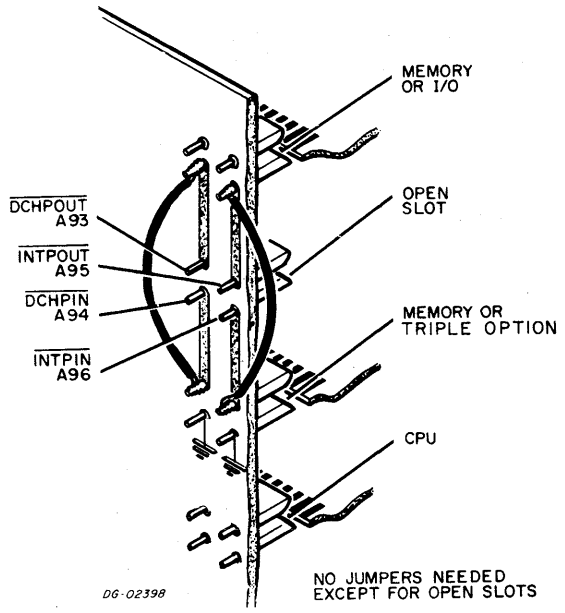


ANALOG PADDLEBOARD

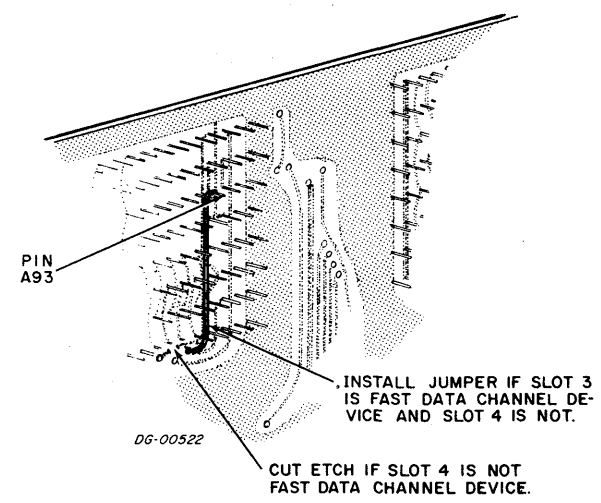


TAILORING

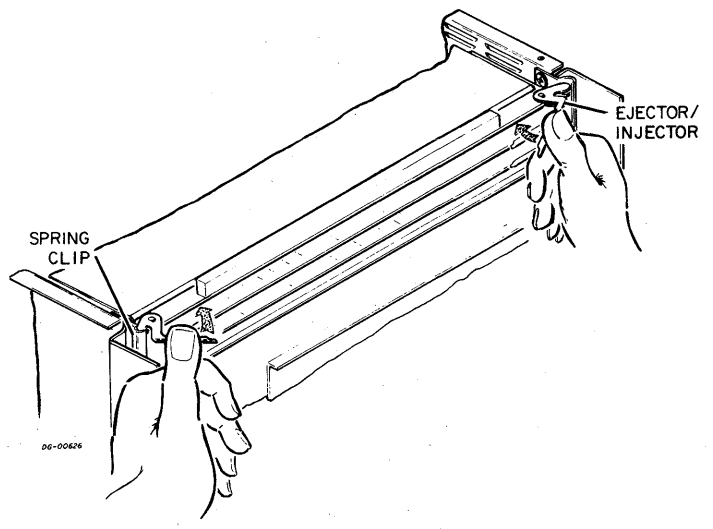
JUMPERING BACKPANEL



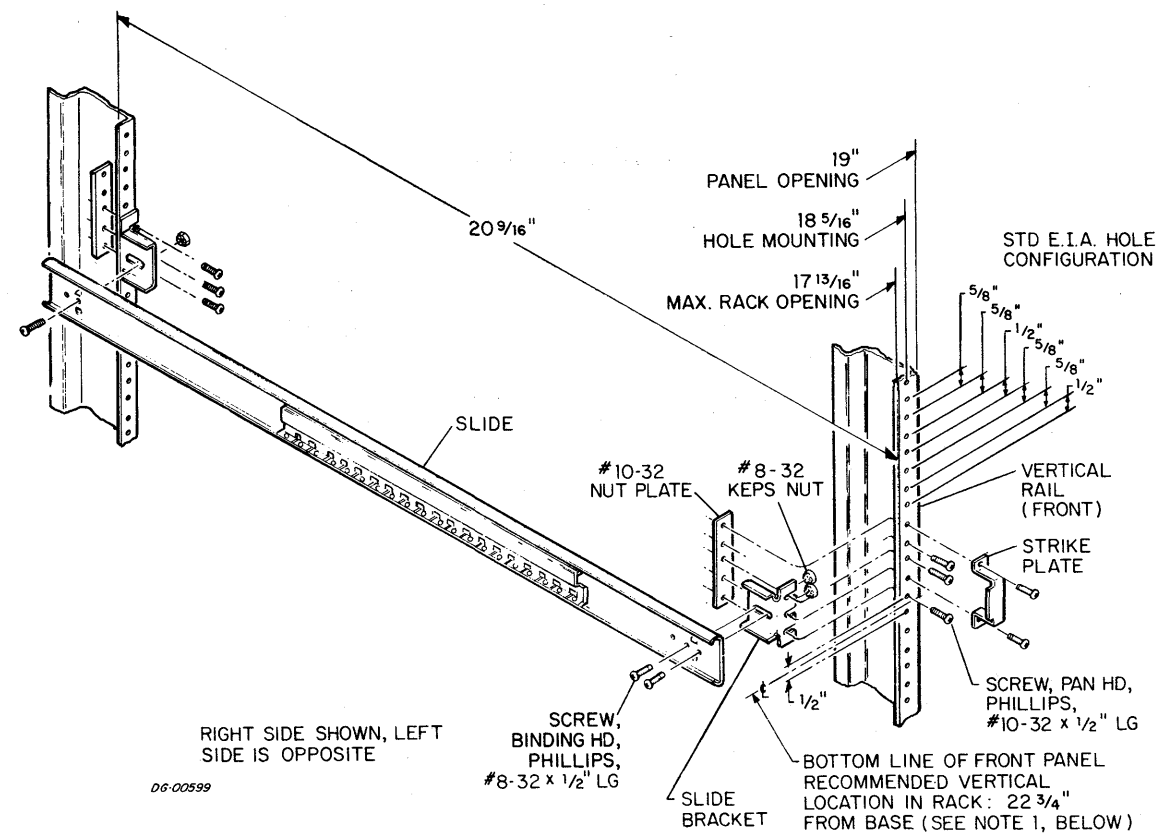
JUMPERING FOR FAST CHANNEL MODIFICATION

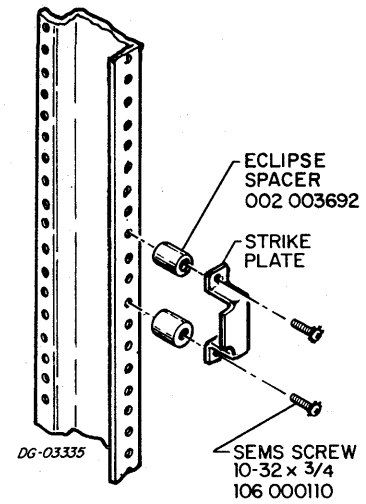


INSERTING PC BOARD



SLIDE RAILS



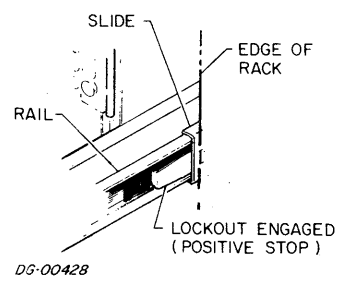


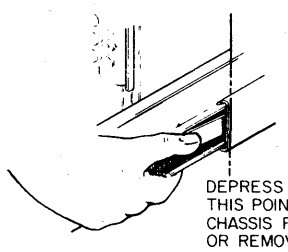
RIGHT SIDE SHOWN; LEFT SIDE OPPOSITE.
HARDWARE IDENTICAL TO NOVA EXCEPT AS SHOWN ABOVE.

RACK MOUNTING PROCEDURE

1. MEASURE AND MARK 22 3/4 INCHES (TYPICAL) UP FROM THE BASE. INSTALL SLIDE ASSEMBLIES AND STRIKE PLATES AS SHOWN.
2. GUIDE RAILS ON BOTH SIDES OF THE CHASSIS INTO THE SLIDES AND PUSH THE NOVA 2/4 ALL THE WAY INTO THE CABINET.
3. ENGAGE THE STRIKE PLATES WITH THE QUARTER-TURN FASTENERS ON THE FRONT PANEL TO LOCK THE NOVA 2/4 IN PLACE.
4. FROM REAR ACCESS, CABLE AS REQUIRED, MAKING SURE TO LEAVE SUFFICIENT SLACK TO ALLOW THE CHASSIS TO BE PULLED FORWARD WITHOUT STRAINING THE CABLES.

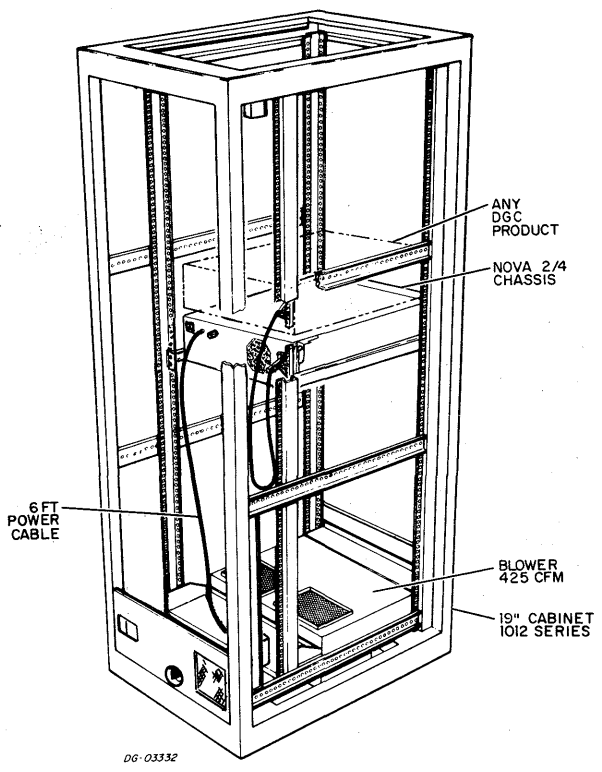
LATCH RELEASE





DEPRESS LOCKOUT AT THIS POINT TO RELEASE CHASSIS FOR INSTALLATION OR REMOVAL.

CABINET MOUNTING



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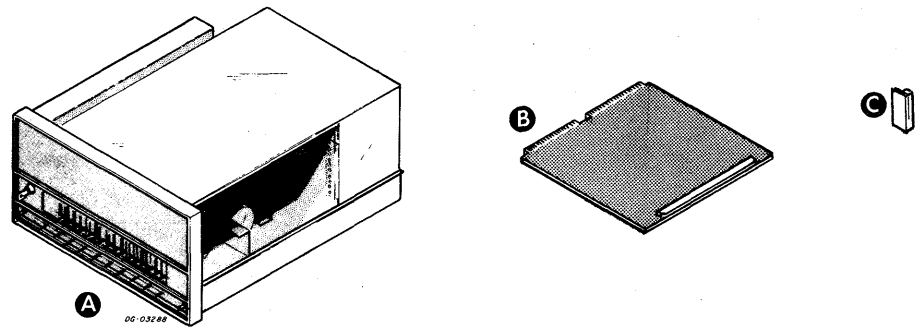
SUBSYSTEM COMPONENT BREAKDOWN



MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	NOVA 2/10	CABINET	
B	CPU BOARD	CHASSIS	

DG-02672

Item	Terminator	Location	Notes
C	DGC TERMINATOR	LAST DEVICE OF I/O	

SLOT ASSIGNMENTS

Data Channel Speeds Available: Standard ☑ High Speed ☑

Slot	Allowed (Slot Chart)	Assigned	+5V Current Draw
10	I/O		
9	I/O *		
8	I/O		
7	I/O		
6	MEMORY OR I/O		
5	MEMORY OR I/O		
4	MEMORY OR I/O		
3	MEMORY OR I/O **		
2	MEMORY OR MULT/DIV		
1	CPU		

Total +5V Current draw _____

Max +5V Current Available [ ]

+5V Current Surplus _____

DG-01915

* SLOT 9 IS CONNECTED BY WEY OF ETCH TO CONNECTOR P4 AND IS NORMELLY LEFT OPEN FOR CUSTEMER EXPANSION.

** IF TTY, PTR OR PTP OPTIONS ARE ORDERED, THEY MUST BE CONFIGURED IN SLOT 3.

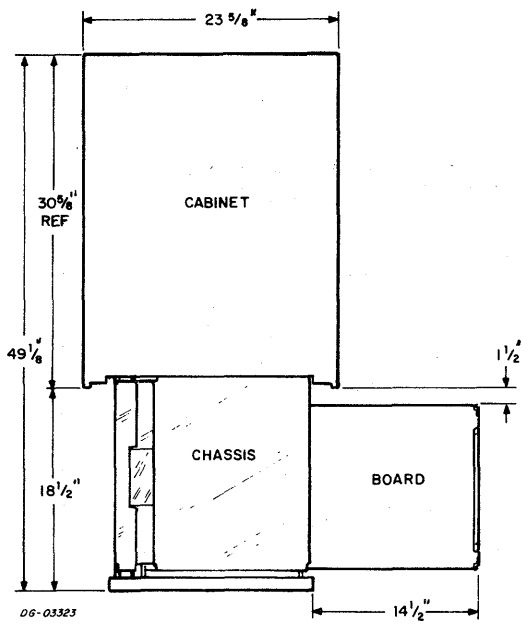
SPECIFICATIONS OF CABINET-MOUNTED COMPONENTS

Item	Component	Number in Sub-system	Maximum Operating Temperature Component °F/°C	Maximum Operating Temperature Media °F/°C	Primary Power Current (nom) Draw (Amp)	Primary Power Voltage ±ΔV	Primary Power Frequency	Cabinet Height Required Area	Cabinet Height Required in.	Cabinet Height Required cm	Weight lbs/kg	Power Dissipation (Max Watts)	Preferred Location or Remarks	Operating Humidity (Relative) min %/max
A	NOVA 2/10 115V		130/54.4		6.1	115±20%	50±1Hz	6	10½	27	115/52	725	AREAS 11-16	20/90
	NOVA 2/10 230V		130/54.4		6.1	230±20%	50±1Hz	6	10½	27	115/52	725	AREAS 11-16	20/90
	NOVA 2/10 115V		130/54.4		5	115±20%	60±1Hz	6	10½	27	115/52	725	AREAS 11-16	20/90
	NOAV 2/10 230V		130/54.4		3	230±20%	60±1Hz	6	10½	27	115/52	725	AREAS 11-16	20/90

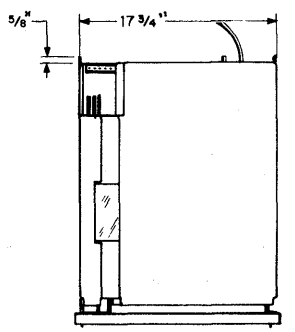
DG-01914

Voltage	Power Cable Length ft	Power Cable Length m	Power Cable Plug	Mating Receptacle on Power Drop	Mating Receptacle in Wall
115V	6	1.8	NEMA 5-15P	NEMA 5-15R	NEMA 5-15R
230V	6	1.8	NEMA 6-15P	NEMA 6-15R	NEMA 6-15R

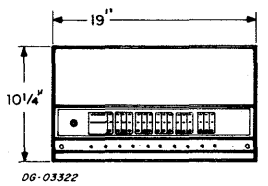
DG-02717



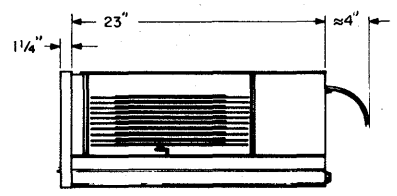
SERVICE DIMENSIONS



TOP VIEW



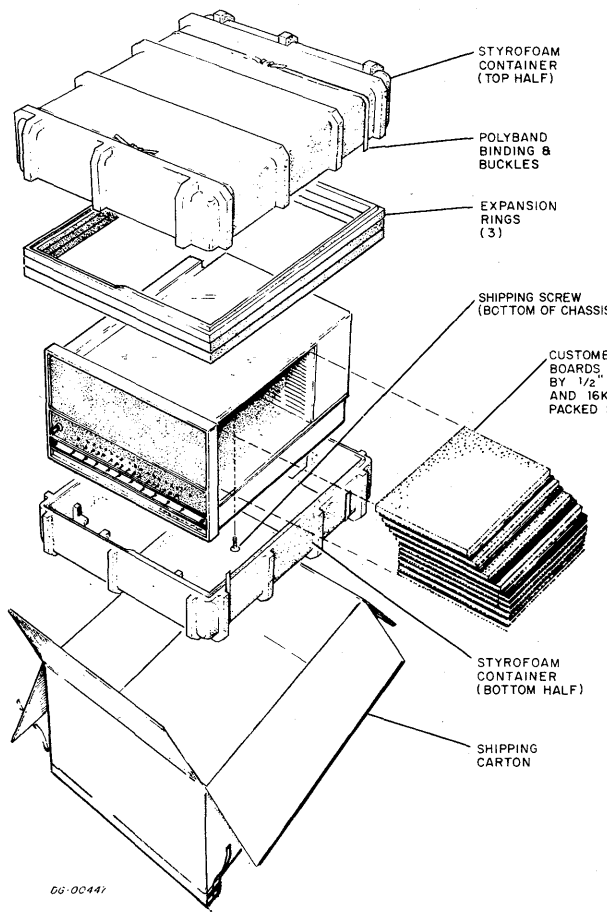
FRONT VIEW



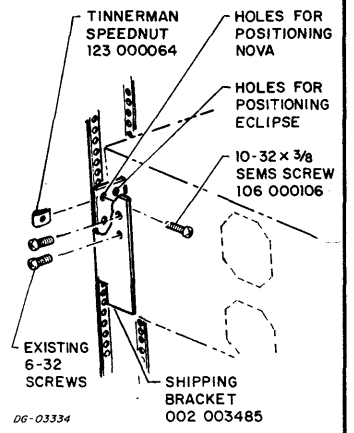
SIDE VIEW

CHASSIS NOVA 2/10

PACKING KIT

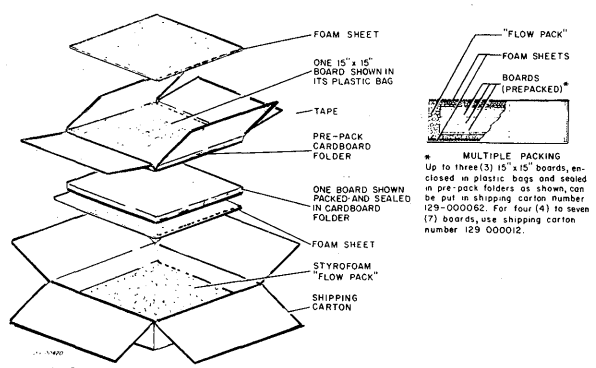


SHIPPING BRACKET



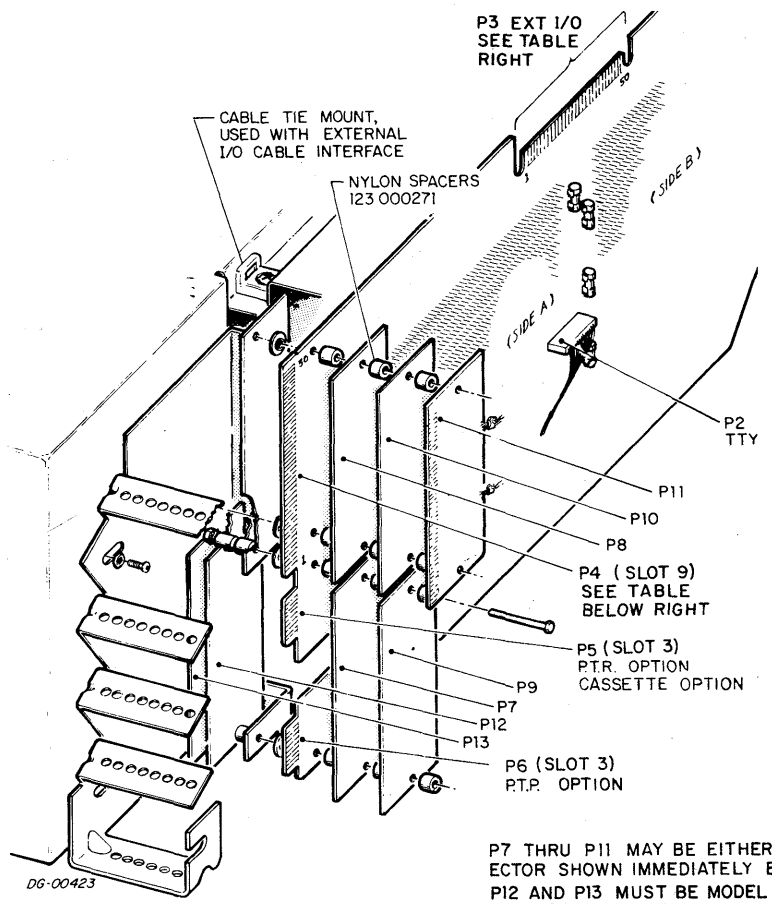
SHIPPING AND PACKAGE DATA					
Outside Dimensions			Weight (Gross)	Volume	Density
Length	Width	Depth			
in. / cm	in. / cm	in. / cm	lbs. / kg	cu ft. / cu m	lbs/cu ft. / kg/cu m
33½ / 85.1	24 / 61	22 / 55.9	105 / 47.6	10.2 / 0.29	10.29 / 164.1
SHIPPING SPECIFICATIONS			STORAGE SPECIFICATIONS		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-40 to +160 / -40 to +71	0% to 80%	50,000 ft 15,2000 m	-40 to +160 / -40 to +71	0% to 80%	90 days

DG-03224



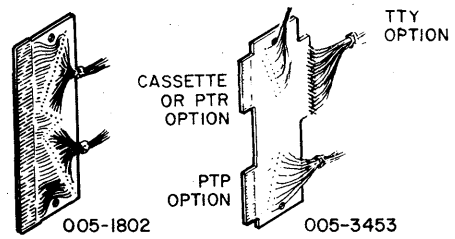
INTERNAL CABLING

BACKPANEL CONNECTORS



P3 PIN CONNECTOR	BACK PANEL PIN	SIGNAL NAME
1 THRU 50		GND
A		GND
B	A3	PWR ON (+5V)
C	A38	MSKO
D	A40	INTA
E	A42	DATIB
F	A44	DATIA
H	A46	DS3
J	A48	DATOC
K	A50	CLR
L	A52	STRT
M	A54	DATIC
N	A56	DATOB
P	A58	DATOA
R	A60	DCHA
S	A62	DS4
T	A64	DS5
U	A66	DS2
V	A68	DS1
W	A70	IORST
X	A72	DS0
Y	A74	IO PLS
Z	A80	SELD
a	A82	SELB
b	3-10 A93	DCHP OUT
c	3-10 A95	INTP OUT
d	B17	DCHM0
e	B21	DCHM1
f	B29	INTR
h	B33	DCHO
j	B35	DCHR
k	B37	DCHI
l	B39	OVFLO
m	B41	RQENB
n	B55	DATA7
p	B56	DATA14
r	B57	DATA5
s	B58	DATA11
t	B59	DATA12
u	B60	DATA8
v	B61	DATA4
w	B62	DATA0
x	B63	DATA9
y	B64	DATA13
z	B65	DATA1
AA	B66	DATA15
AB	B73	DATA3
AC	B75	DATA10
AD	B82	DATA2
AE	B95	DATA6
AF		GND

P7 THRU P11 MAY BE EITHER CONNECTOR SHOWN IMMEDIATELY BELOW. P12 AND P13 MUST BE MODEL 4192. DUAL 20-PIN CONNECTOR MUST ALWAYS BE THE OUTSIDE CONNECTOR.

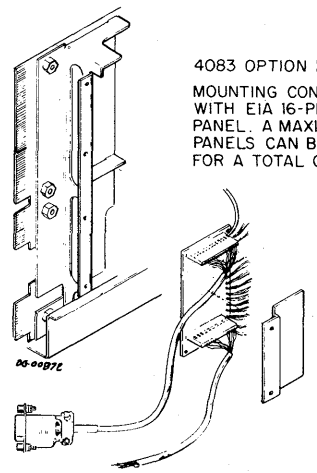


DUAL 20-PIN CONNECTOR

NOTE:
EARLIER MACHINES MAY HAVE SLIGHTLY DIFFERENT PADDLEBOARDS.

P4 NUMBER SIDE	P4 LETTER SIDE A THRU AF GND	BACK PANEL SLOT-SIDE-PIN No.
1		GND
2		9 A 92
3		9 A 91
4		9 A 78
5		9 A 77
6		9 A 76
7		9 A 75
8		9 A 73
9		9 A 71
10		9 A 69
11		9 A 67
12		9 A 65
13		9 A 63
14		9 A 61
15		9 A 59
16		9 A 57
17		9 A 47
18		9 A 49
19		9 A 79
20		9 A 81
21		9 A 84
22		9 A 83
23		9 A 86
24		9 A 85
25		9 A 88
26		9 A 87
27		9 A 89
28		9 A 90
29		9 B 6
30		9 B 11
31		9 B 13
32		9 B 15
33		9 B 19
34		9 B 23
35		9 B 25
36		9 B 27
37		9 B 31
38		9 B 34
39		9 B 36
40		9 B 38
41		9 B 40
42		9 B 48
43		9 B 49
44		9 B 51
45		9 B 52
46		9 B 53
47		9 B 54
48		9 B 67
49		9 B 69
50		RESERVED

4083 OPTION

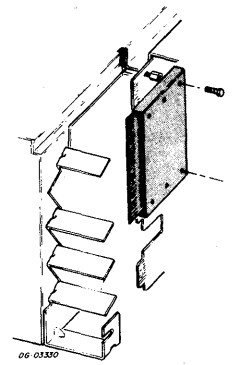


4083 OPTION BRACKET

MOUNTING CONFIGURATION WITH EIA 16-PIN JUNCTION PANEL. A MAXIMUM OF TWO PANELS CAN BE MOUNTED FOR A TOTAL OF 32 LINES.

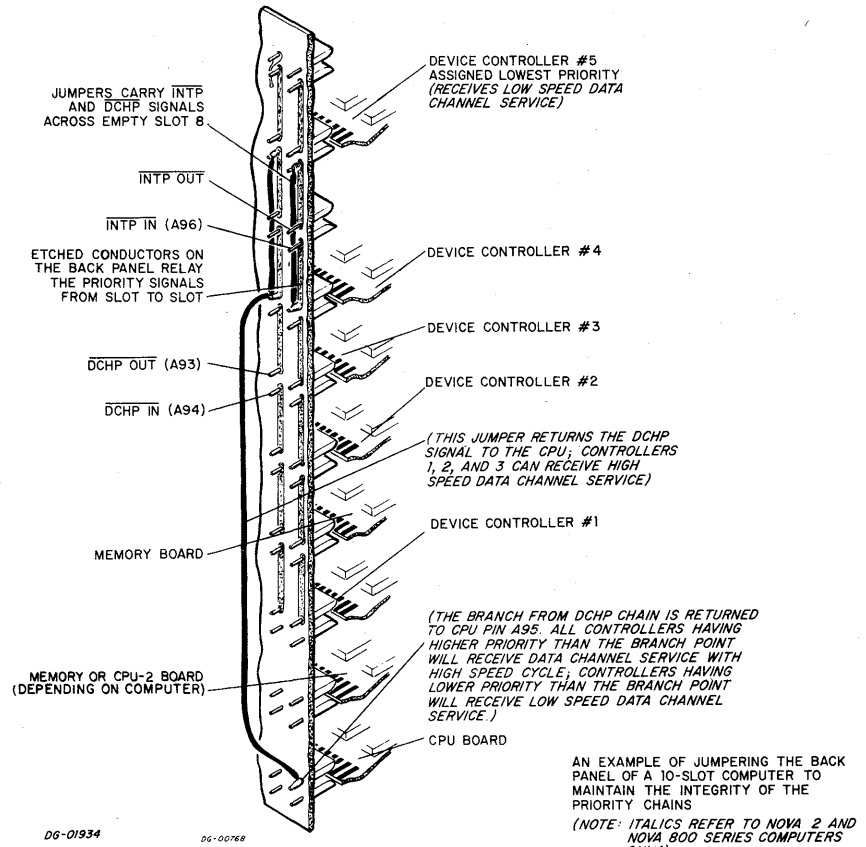
NO ADDITIONAL CONNECTORES CAN BE MOUNTED ON THE OUTSIDE OF THE 4083

ANALOG PADDLEBOARD



TAILORING

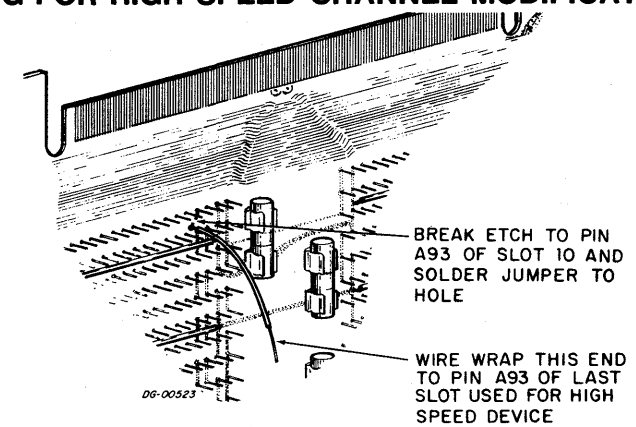
JUMPERING BACKPANEL



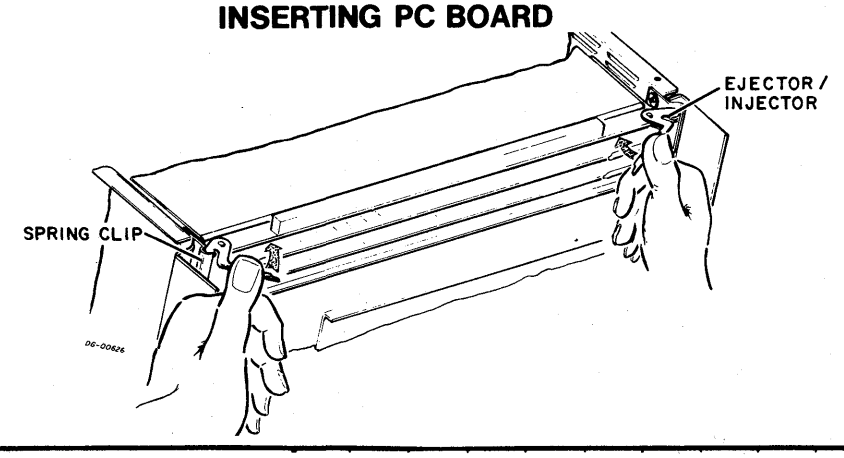
AN EXAMPLE OF JUMPERING THE BACK PANEL OF A 10-SLOT COMPUTER TO MAINTAIN THE INTEGRITY OF THE PRIORITY CHAINS

(NOTE: ITALICS REFER TO NOVA 2 AND NOVA 800 SERIES COMPUTERS ONLY)

JUMPERING FOR HIGH SPEED CHANNEL MODIFICATION

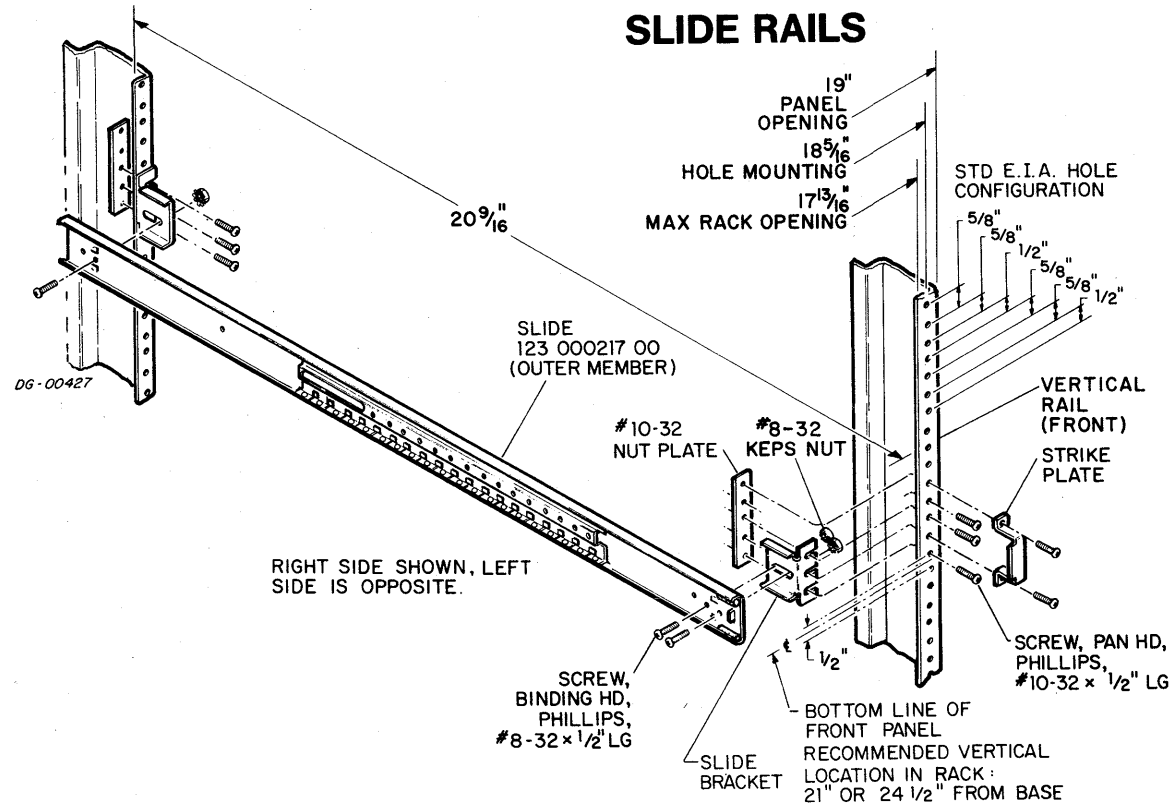


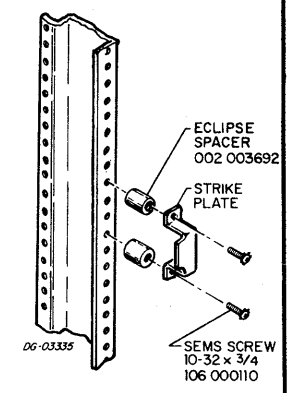
INSERTING PC BOARD



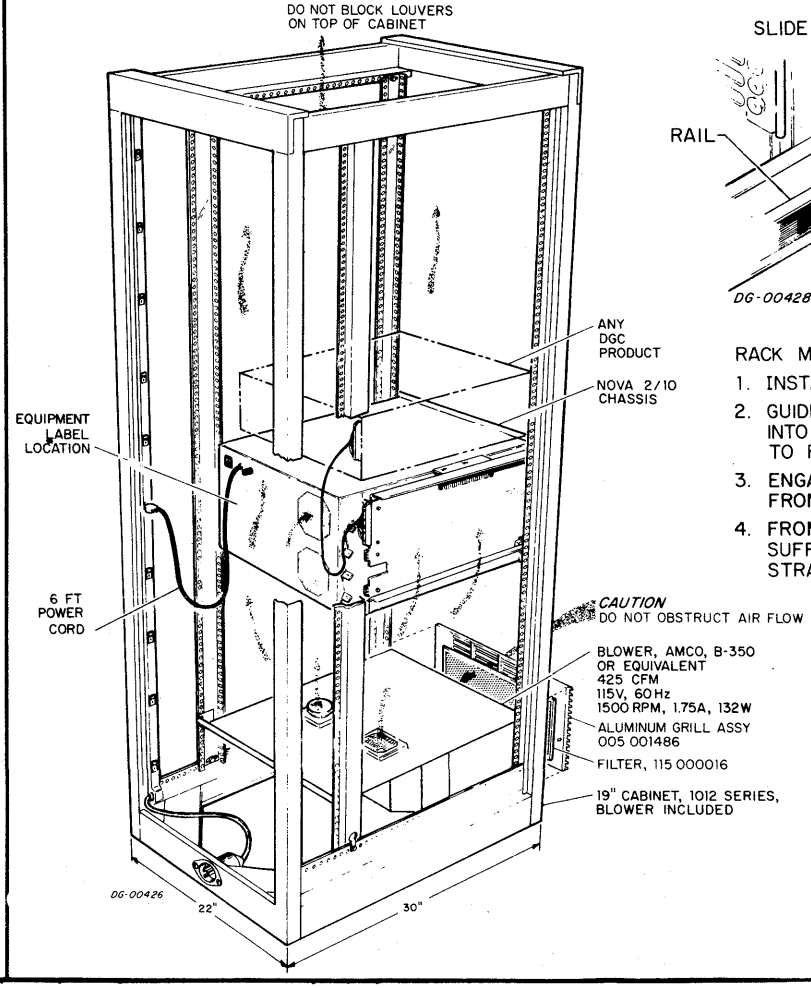
CABINET MOUNTING

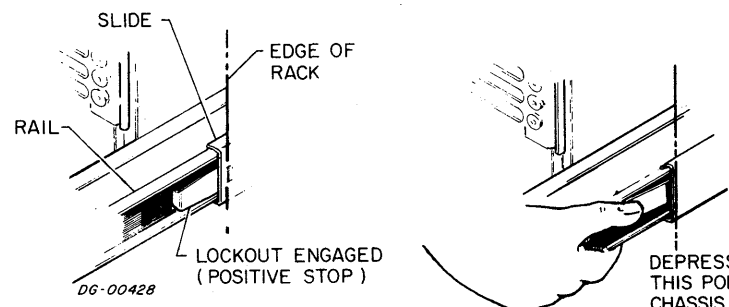
SLIDE RAILS





RIGHT SIDE SHOWN; LEFT SIDE OPPOSITE. HARDWARE IDENTICAL TO NOVA EXCEPT AS SHOWN ABOVE.

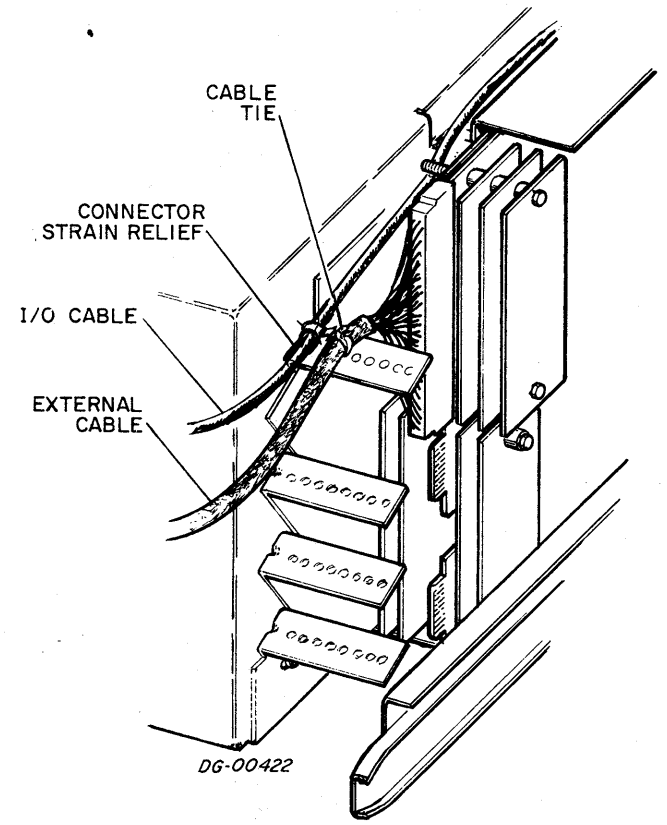




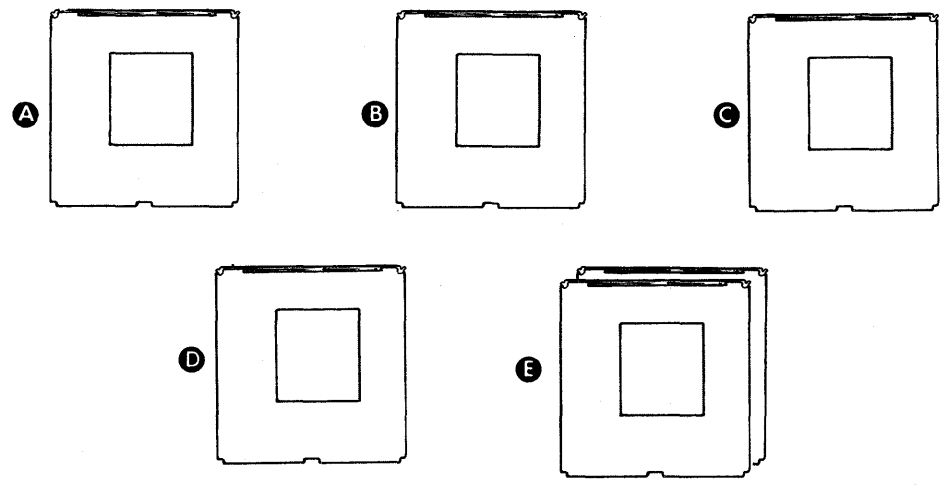
RACK MOUNTING PROCEDURE:

1. INSTALL SLIDE ASSEMBLY AS SHOWN.
2. GUIDE THE RAILS (INNER SLIDE MEMBERS) ON BOTH SIDES OF THE CHASSIS INTO THE SLIDES UNTIL THE LOCKOUTS ENGAGE. DEPRESS THE LOCKOUTS TO RELEASE, AND PUSH THE NOVA 2 INTO THE CABINET.
3. ENGAGE THE STRIKE PLATES WITH THE QUARTER-TURN FASTENERS ON THE FRONT PANEL TO LOCK THE NOVA 2 IN PLACE.
4. FROM THE REAR ACCESS, CABLE AS REQUIRED, MAKING SURE TO LEAVE SUFFICIENT SLACK TO ALLOW THE CHASSIS TO BE PULLED FORWARD WITHOUT STRAIN ON THE CABLES.

EXTERNAL CABLING



SUBSYSTEM COMPONENTS BREAKDOWN



MAJOR COMPONENT

Item	Component	Mounting Location	Notes	Model
A	4K CORE MEMORY	NOVA 2/4, 2/10 CHASSIS	1 4K BOARD	8300
B	8K CORE MEMORY	NOVA 2/4, 2/10 CHASSIS	1 8K BOARD	8301
C	16K CORE MEMORY	NOVA 2/4, 2/10 CHASSIS	1 16K BOARD	8302
D	MULTIPLY/DIVIDE OPTION	NOVA 2/4, 2/10 CHASSIS		8307
E	FLOATING POINT OPTION	NOVA 2/10 ONLY		8020

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SPECIFICATIONS OF THE CHASSIS-MOUNTED COMPONENTS

Item	Component	No. of Slots Required	Total +5V Current Draw (Amps)	Remarks
A	4K MEMORY	1	1.5	
B	8K MEMORY	1	1.5	
C	16K MEMORY	1	1.5	
D	MULT/DIV	1	2.0	
E	FPU	2	6.6	NOVA 2/10 ONLY

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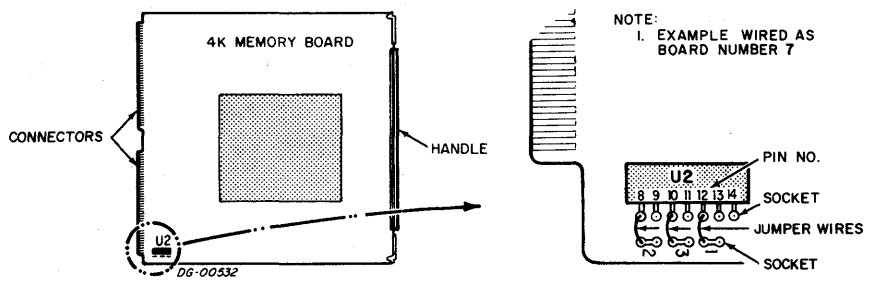
TAILORING

Memory Board Selection

The Data General NOVA 2 computer can address any one of 32K memory locations (words). Memory boards, however, are available covering 4K, 8K, or 16K segments. In order to configure a number of boards to cover a larger segment of memory, without overlapping, it is necessary to be able to assign each board to a unique segment of memory. This is accomplished through the memory select logic on each board. Every memory address consists of fifteen bits. The high-order bits are used to select a particular memory board (i. e., a segment of memory), while the remaining lower order bits select an address within that segment, or on that board. A 16K board uses the highest order bit for board selection; an 8K uses the two highest and a 4K the three highest order bits for board selection. (Note that the highest order bit of a memory address is equivalent to bit 1 of a word in storage). In order to assign a board to a particular segment of memory, the memory select logic must be wired so that the board responds only to addresses within the assigned memory segment; that is, only to addresses which have the proper highest order bits set. The memory select logic accomplishes this by ANDing the proper high-order bits in either their normal state (as sent by the processor) or after inverting them. A board is assigned to a particular segment of memory by wiring it so that the proper bits are inverted. The output from the AND gate then, will be true only for an address that has the proper high-order bits set.

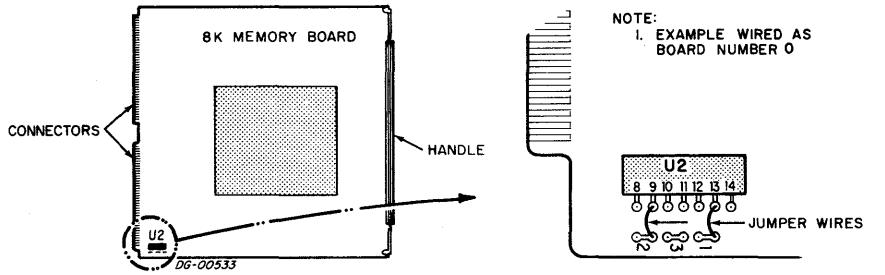
Jumpers are used to connect either the normal or the inverted side of the proper high-order bits of the memory address bus to the "and" gate. The jumpers are forced into points on the board located on the logic side of the board along the contact edge.

Each such selection must be unique to a particular memory board. If there is a mixture of boards of different capacities (i. e., 4K, 8K, 16K) it is best to assign the largest boards to lowest core, and use smaller boards for higher memory segments. In this way, there will not be any gaps in the system's core map. Figures A, B, and C show how the memory segment is selected on the various boards.



MA BITS JUMPERED 1	2	3	BOARD NUMBER	ADDRESSES ENABLED (OCTAL)	JUMPER WIRE PLACEMENT (3 WIRES) CONNECT SOCKET OF U2 TO SOCKET DIRECTLY OPPOSITE		
0	0	0	0	00000-07777	13-1,	9-2,	11-3
0	0	1	1	10000-17777	13-1,	9-2,	10-3
0	1	0	2	20000-27777	13-1,	8-2,	11-3
0	1	1	3	30000-37777	13-1,	8-2,	10-3
1	0	0	4	40000-47777	12-1,	9-2,	11-3
1	0	1	5	50000-57777	12-1,	9-2,	10-3
1	1	0	6	60000-67777	12-1,	8-2,	11-3
1	1	1	7	70000-77777	12-1,	8-2,	10-3

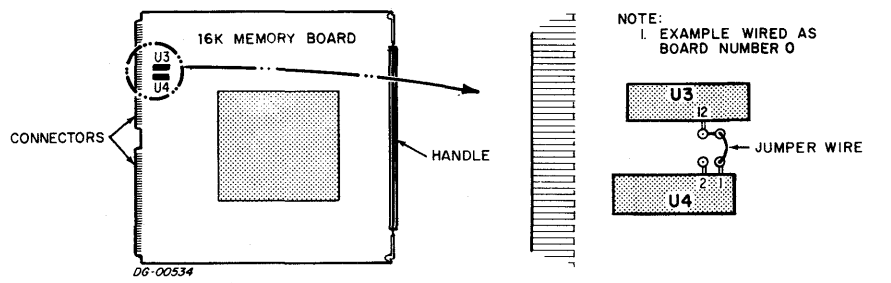
FIGURE A Wiring the Select Logic of NOVA 2 4K Memory Boards



MA BITS JUMPERED 1	2	BOARD NUMBER	ADDRESSES ENABLED (OCTAL)	JUMPER WIRE PLACEMENT (2 WIRES) CONNECT JUMPER FROM SOCKET OF U2 TO SOCKET DIRECTLY OPPOSITE	
0	0	0	00000-17777	13-1,	9-2
0	1	1	20000-37777	13-1,	8-2
1	0	2	40000-57777	12-1,	9-2
1	1	3	60000-77777	12-1,	8-2

(NOTE: Position 3, i.e., U2 pins 10 and 11, should not be jumpered).

FIGURE B Wiring the Select Logic of NOVA 2 8K Memory Boards



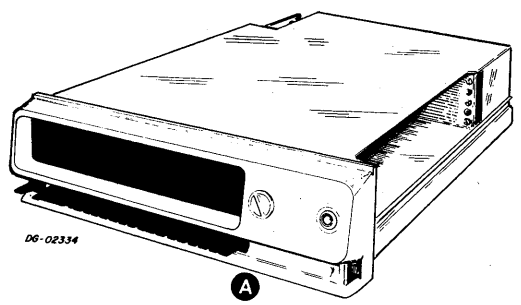
MA BITS JUMPERED 1	BOARD NUMBER	ADDRESSES ENABLED (OCTAL)	JUMPER WIRE PLACEMENT (1 WIRE)
0	0	00000-37777	12-1
1	1	40000-77777	12-2

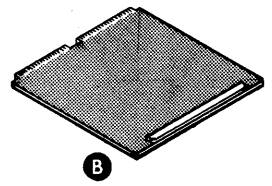
FIGURE C Wiring the Select Logic of NOVA 2 16K Memory Boards

NOVA 2 External Memory Signals

$\overline{\text{MAB 1-15}}$	Memory Address bus--communicates from the CPU to the memory the address of the next word to be referenced.
$\overline{\text{DATA 0,15}}$	Bidirectional bus which transfers data between the CPU and the memory.
$\overline{\text{INH SELECT}}$	Inhibits selection of the memory module.
$\overline{\text{B MEMEN}}$	Issued by the CPU to start a memory cycle.
$\overline{\text{WRITE}}$	Causes the memory to write data into core.
$\overline{\text{BRMW}}$	Issued by the CPU--causes the memory to pause between the read and write halves of its cycle.
$\overline{\text{WE}}$	Issued by the CPU--allows a memory to complete its cycle after a read-modify-write (BRMW).
$\overline{\text{SYNC ENABLE}}$	When low, allows the memory to halt the processor until the read cycle is complete.
$\overline{\text{RELOAD DISABLE}}$	Inhibits loading of the memory buffer.
$\overline{\text{WAIT}}$	Issued by a memory to prevent operation of any other memory boards until it has completed its write cycle.
MEM CLK	Basic timing information supplied to the memories by the CPU.
$\overline{\text{EXTERNAL SELECT}}$	Allows a particular board to be selected regardless of what high-order bits are set in the memory address.
EXT MBLD	Allows data to be stored in the memory buffer without actually causing a memory cycle.

SUBSYSTEM COMPONENT BREAKDOWN





MAJOR COMPONENT

	Component	Mounting Location	Notes
A	MAIN CHASSIS (NOVA 3/4)	CABINET	
B	CPU	MAIN CHASSIS	

DG-02672

SLOT ASSIGNMENTS

Data Channel Speeds Available: Standard ☑ High Speed ☐

Slot	Allowed (Slot Chart)	Assigned	+5V Current Draw
17			
16			
15			
14			
13			
12			
11			
10			
9			
8			
7			
6			
5			
4	MEMORY or I/O		
3	MEMORY or I/O (TTY CONN)		
2	MEMORY or TRIPLE OPTION		
1	CPU		

Total +5V Current draw _____

Max +5V Current Available 20A

+5V Current Surplus _____

DG-01915

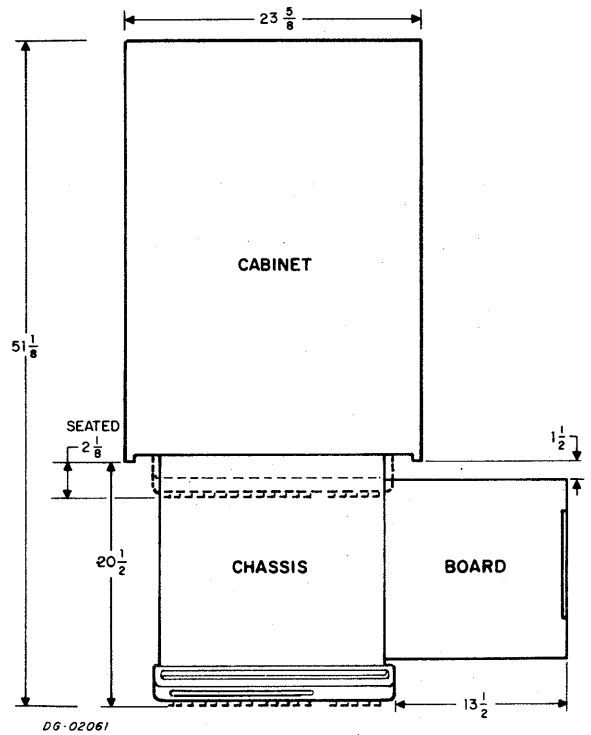
SPECIFICATIONS OF THE CABINET-MOUNTED COMPONENTS

Item	Component	Number in Subsystem	Maximum Operating Temperature °F/°C Component	Maximum Operating Temperature °F/°C Media	Primary Power Current (nom) Draw (Amp)	Primary Power Voltage ±ΔV	Primary Power Frequency ±Δf	Cabinet Height Required Area	Cabinet Height Required in.	Cabinet Height Required cm	Weight lbs/kg	Power Dissipation (Max Watts)	Preferred Location or Remarks	Operating Humidity (Relative) min%/max%
A	NOVA 3/4 100V		131/55		3.75	100^{+10}_{-15}	47 Hz ±3 63 Hz ±3	3	5¼	13.3	85/38.6	375	AREAS 14–16	20/90
	NOVA 3/4 120V		131/55		3.13	120^{+12}_{-18}	47 Hz ±3 63 Hz ±3	3	5¼	13.3	85/38.6	375	AREAS 14–16	20/90
	NOVA 3/4 220V		131/55		1.7	220^{+22}_{-33}	47 Hz ±3 63 Hz ±3	3	5¼	13.3	85/38.6	375	AREAS 14–16	20/90
	NOVA 3/4 240V		131/55		1.56	240^{+24}_{-36}	47 Hz ±3 63 Hz ±3	3	5¼	13.3	85/38.6	375	AREAS 14–16	20/90

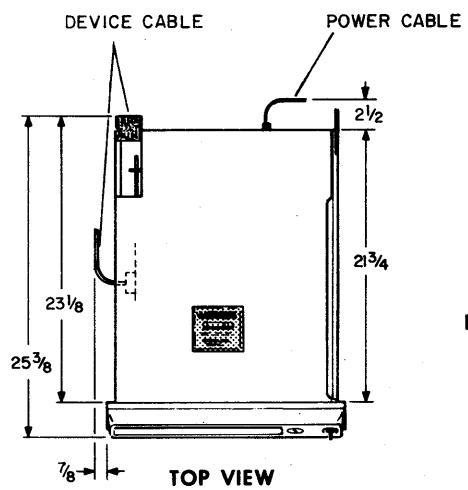
DG-01914

Voltage	Power Cable Length ft	Power Cable Length m	Power Cable Plug	Mating Receptacle on Power Drop	Mating Receptacle in Wall
100V	6	1.8	NEMA 5-15P	NEMA 5-15R	NEMA 5-15R
120V	6	1.8	NEMA 5-15P	NEMA 5-15R	NEMA 5-15R
220V	6	1.8	NEMA 6-15P	NEMA 6-15R	NEMA 6-15R
240V	6	1.8	NEMA 6-15P	NEMA 6-15R	NEMA 6-15R

DG-02717

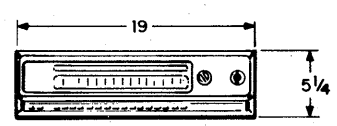


SERVICE DIMENSIONS

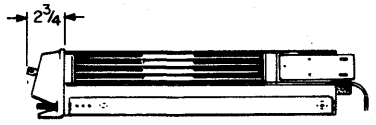


TOP VIEW

NOVA 3/4



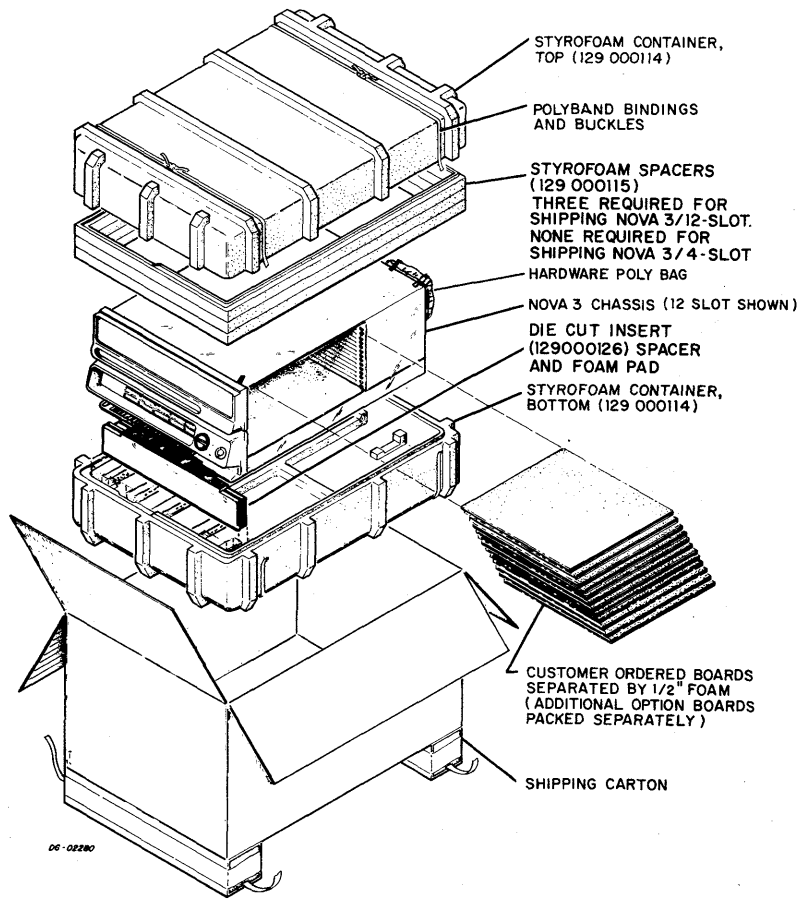
FRONT VIEW



SIDE VIEW

PACKING KIT

NOVA 3/4 CHASSIS



Shipping Specifications			
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	
-40 to +185° / -40 to +85°	0 to 85 %	50,000 ft	

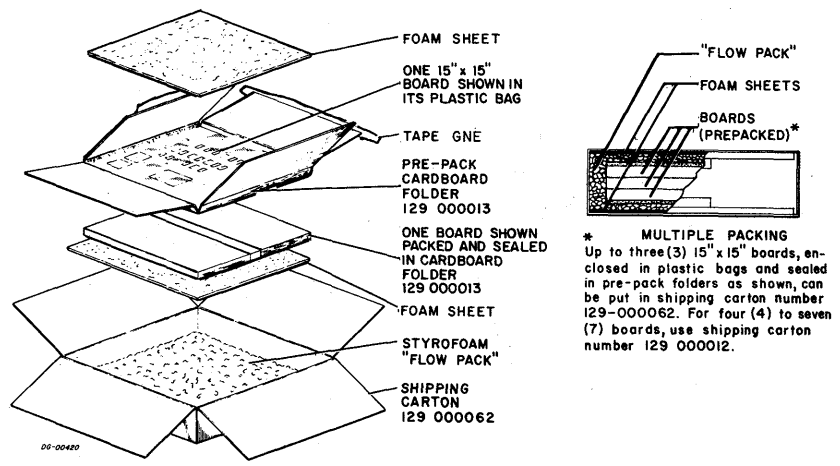
DG-02063

Storage Specifications			
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period	
-40 to +185° / -40 to +85°	0 to 85 %	90 days	

DG-02062

SEPARATE BOARDS

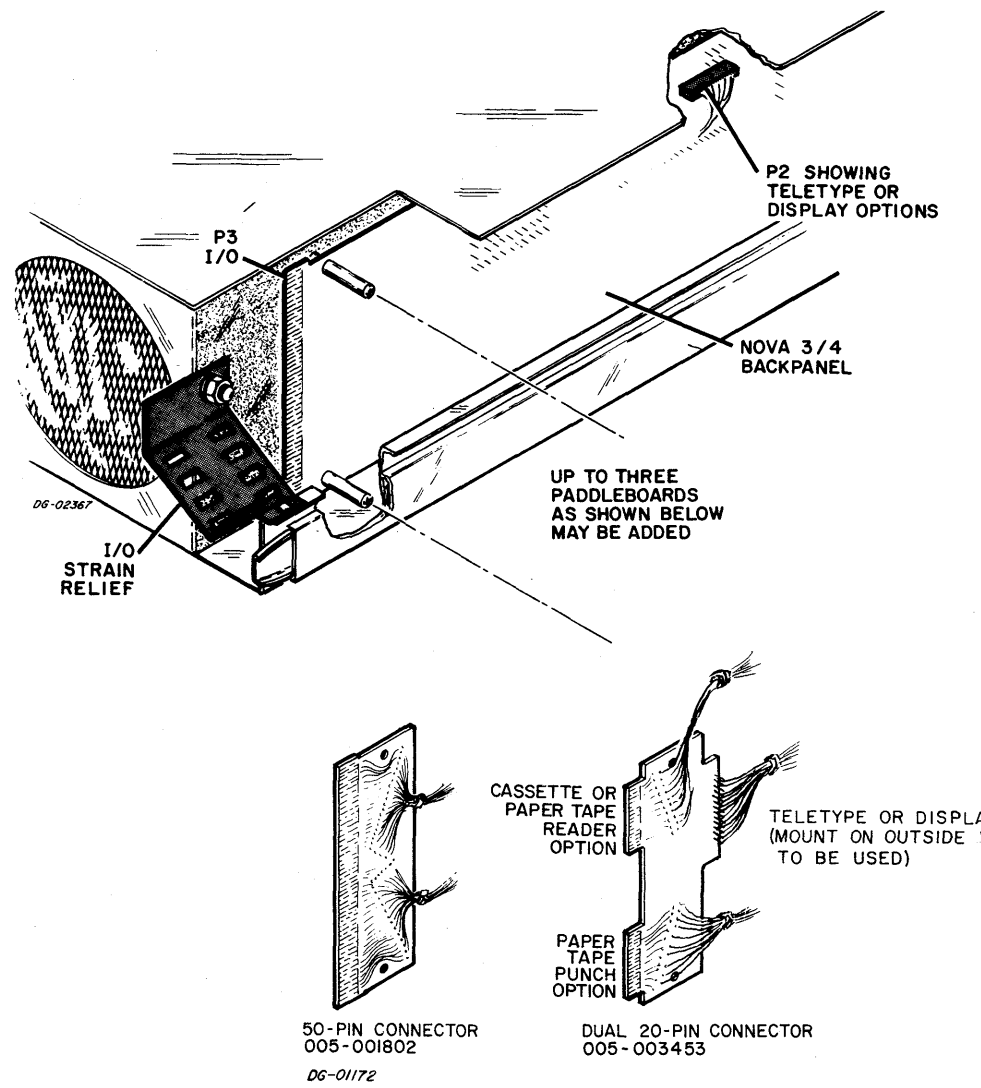
METHOD 'A'



* MULTIPLE PACKING
Up to three (3) 15" x 15" boards, enclosed in plastic bags and sealed in pre-pack folders as shown, can be put in shipping carton number 129-000062. For four (4) to seven (7) boards, use shipping carton number 129 000012.

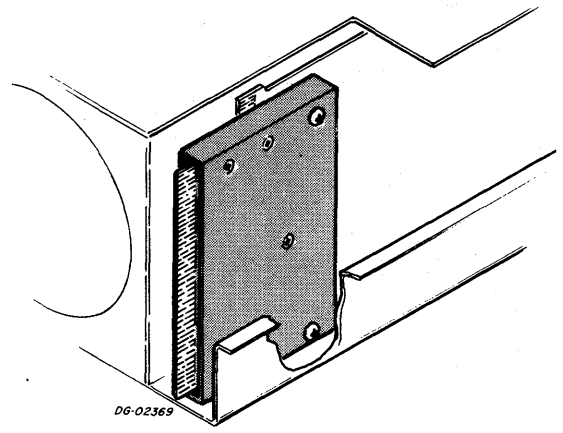
INTERNAL CABLING

BACKPANEL CONNECTORS



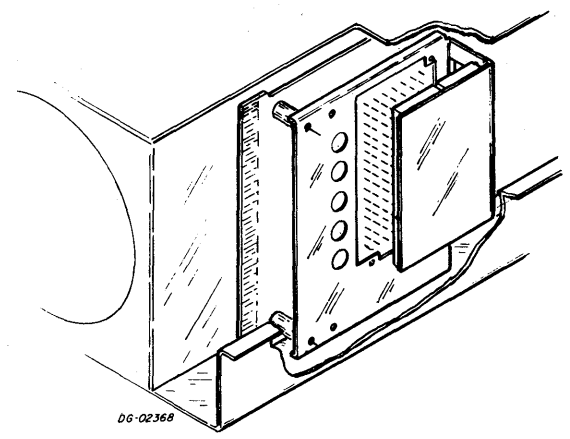
ANALOG PADDLEBOARD

005 001371



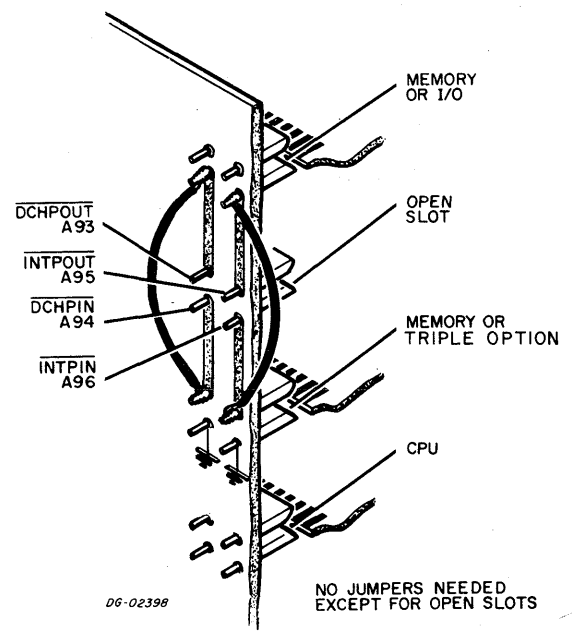
4083 OPTION CONNECTOR

005 006040

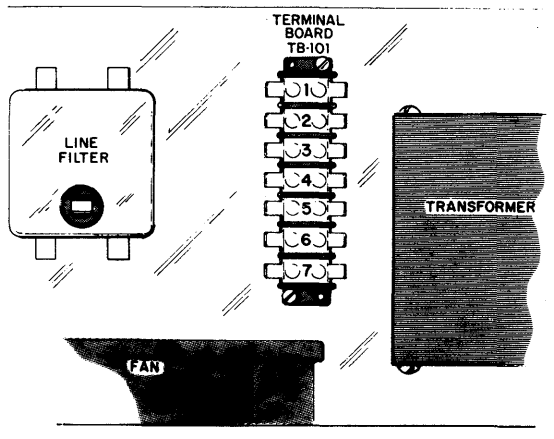


JUMPERS

JUMPERING BACKPANEL



JUMPERING TRANSFORMER



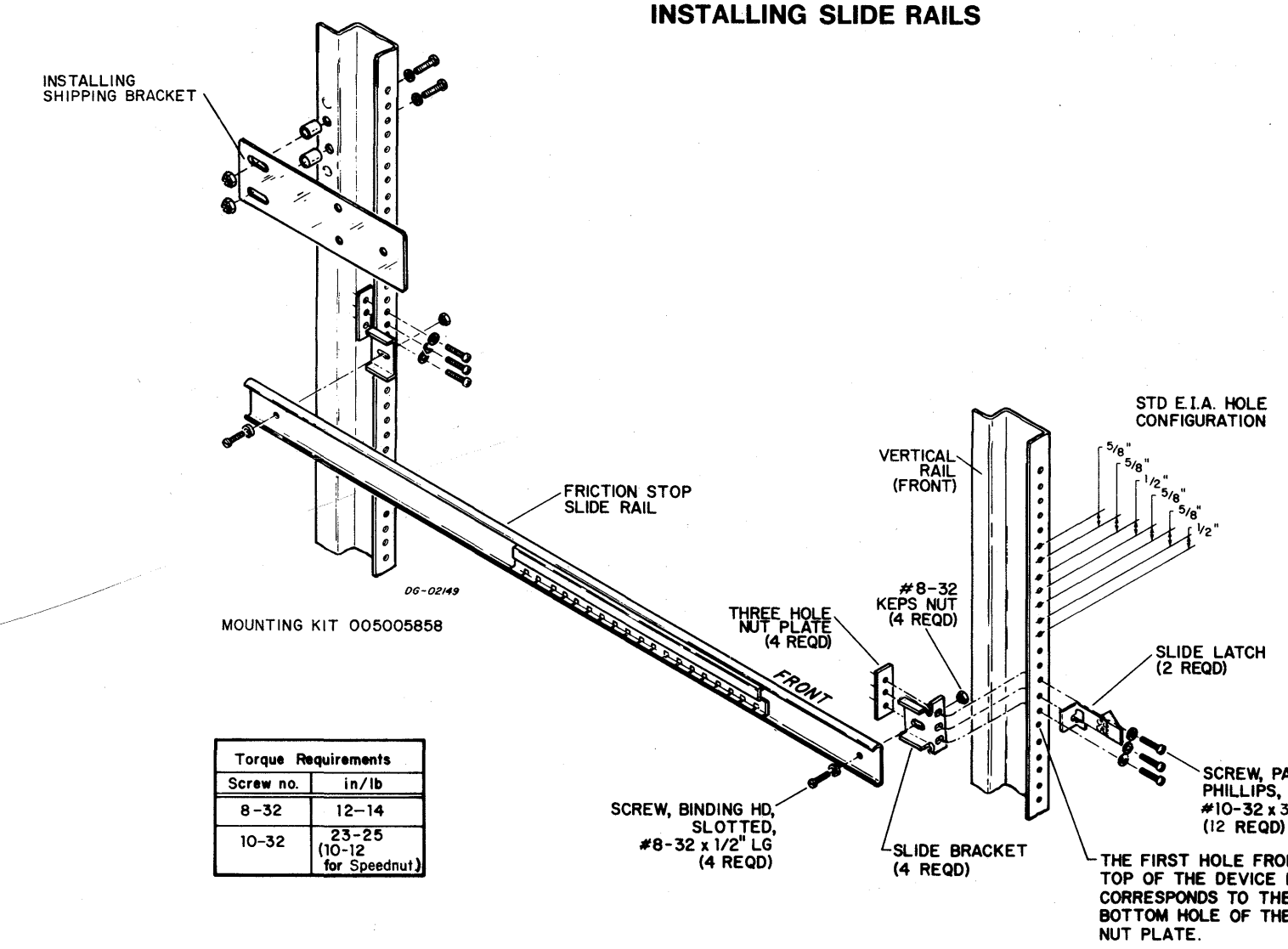
DG-02328 TB-101 SHOWN WITH ALL WIRING REMOVED FOR CLARITY IN IDENTIFYING CONNECTOR NUMBERS

TERMINAL BOARD JUMPERS TB-101 FOR TRANSFORMER

100 VAC	1-5, 2-6
120	1-4, 3-6
200	2-5
220	2-4
240	3-4

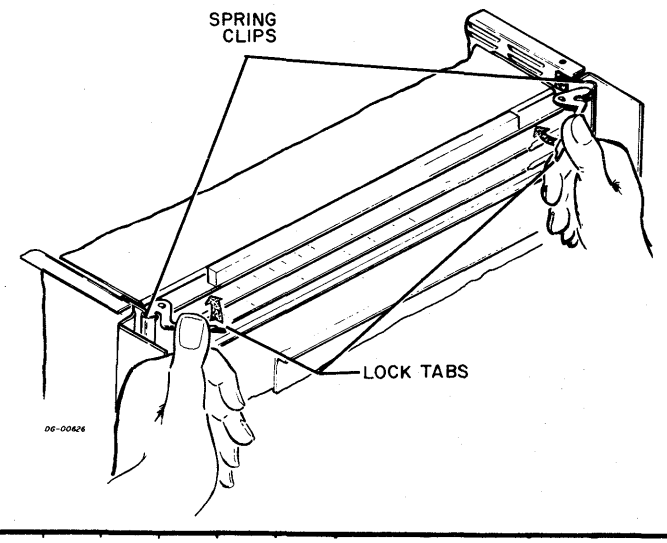
SLIDE RAILS

INSTALLING SLIDE RAILS

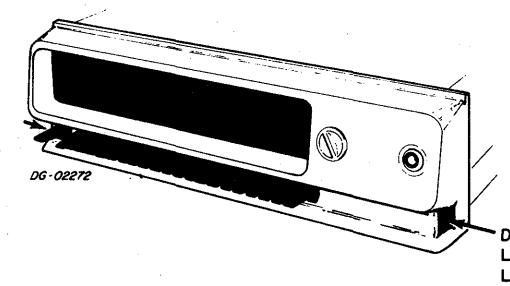


Torque Requirements	
Screw no.	in/lb
8-32	12-14
10-32	23-25 (10-12 for Speednut)

INSERTING PC BOARD

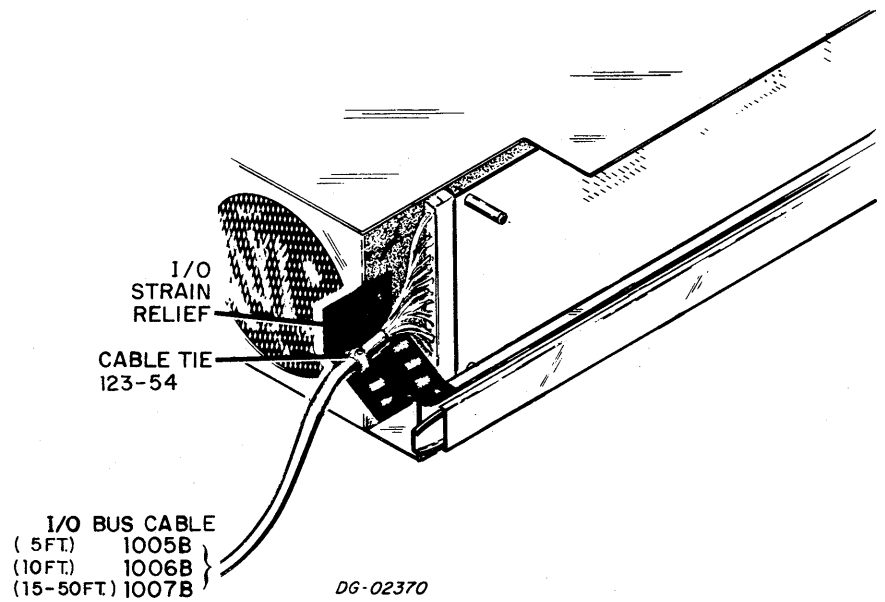


LATCH RELEASE

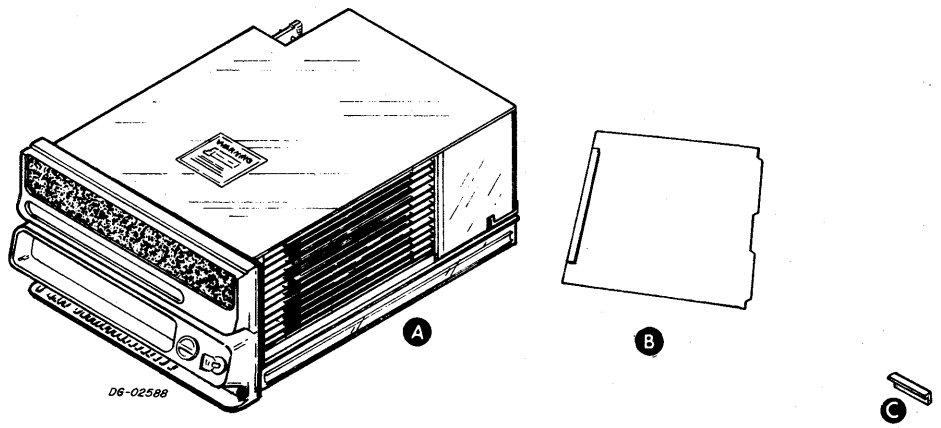


EXTERNAL CABLING

I/O BUS CABLE



SUBSYSTEM COMPONENT BREAKDOWN



DG-02588

MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	MAIN CHASSIS (NOVA 3/12)	CABINET	
B	CPU	MAIN CHASSIS	

DG-02672

TERMINATOR

Item	Terminator	Location	Notes
C	NOVA 3 TERMINATOR	P3 CONNECTOR	

CHASSIS SLOT ASSIGNMENTS

SLOT ASSIGNMENT RULES

1. A NOVA 3 Bus Repeater must be added to the main chassis if there are more than 10 I/O boards in the system.

2. Never put more than 10 I/O boards in the main chassis, or 10 I/O boards in the expansion chassis.

Corollary.
Any system with more than 10 I/O boards must include an expansion chassis.

Data Channel Speeds Available: Standard ☑

Slot	Allowed (Slot Chart)	Assigned	+5V Current Draw
12	MEMORY or I/O		
11			
10			
9			
8			
7			
6			
5			
4	MEMORY or I/O(tty conn)		
3	MEMORY or I/O		
2	MEMORY or TRIPLE OPTION		
1	CPU		

Total +5V Current draw _____

Max +5V Current Available 40A

+5V Current Surplus _____

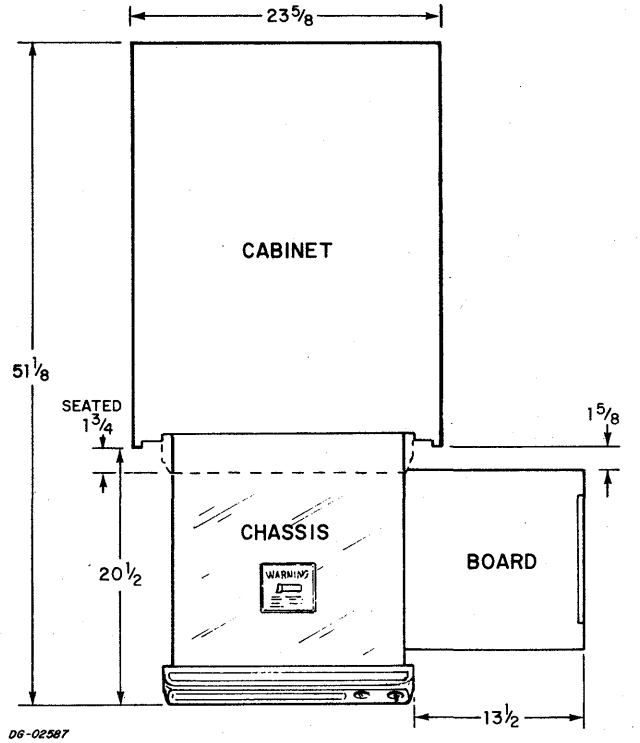
SPECIFICATIONS OF THE CABINET-MOUNTED COMPONENTS

Item	Component	Number in Subsystem	Maximum Operating Temperature: Component °F / °C	Maximum Operating Temperature: Media °F / °C	Primary Power: Current Draw (Amp)	Primary Power: Voltage ±ΔV	Primary Power: Frequency	Cabinet Height Required: Area	Cabinet Height Required: in.	Cabinet Height Required: cm	Weight: lbs / kg	Power Dissipation (Max Watts)	Preferred Location or Remarks	Operating Humidity (Relative): min % / % max
A	NOVA 3/12 100V		13 / 55		3.75	100 +10 −15	47-63Hz	6	10.5	26.67	130 / 58.96	600	AREAS 11-16	20 / 90
	120V				3.15	120 +12 −18								
	220V				1.7	220 +22 −33								
	240V				1.56	240 +24 −36								

DG-01914

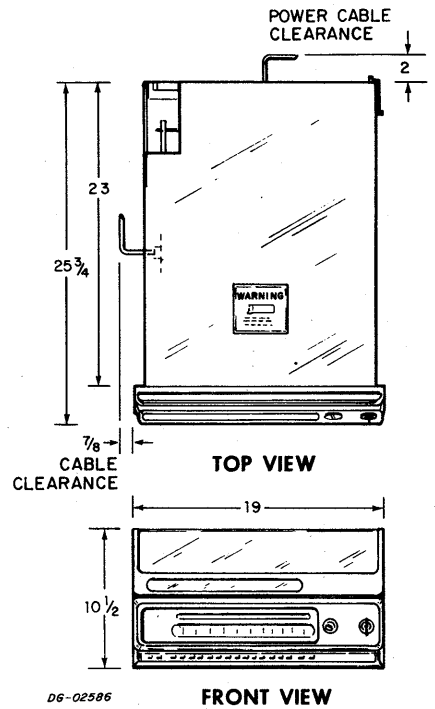
Voltage	Power Cable Length ft	Power Cable Length m	Power Cable Plug	Mating Receptacle on Power Drop	Mating Receptacle in Wall
100	6	1.8	5-15P	5-15R	5-15R
120	6	1.8	5-15P	5-15R	5-15R
220	6	1.8	6-15P	6-15R	6-15R
240	6	1.8	6-15P	6-15R	6-15R

DG-02717



DG-02587

SERVICE DIMENSIONS



DG-02586

NOVA 3/12

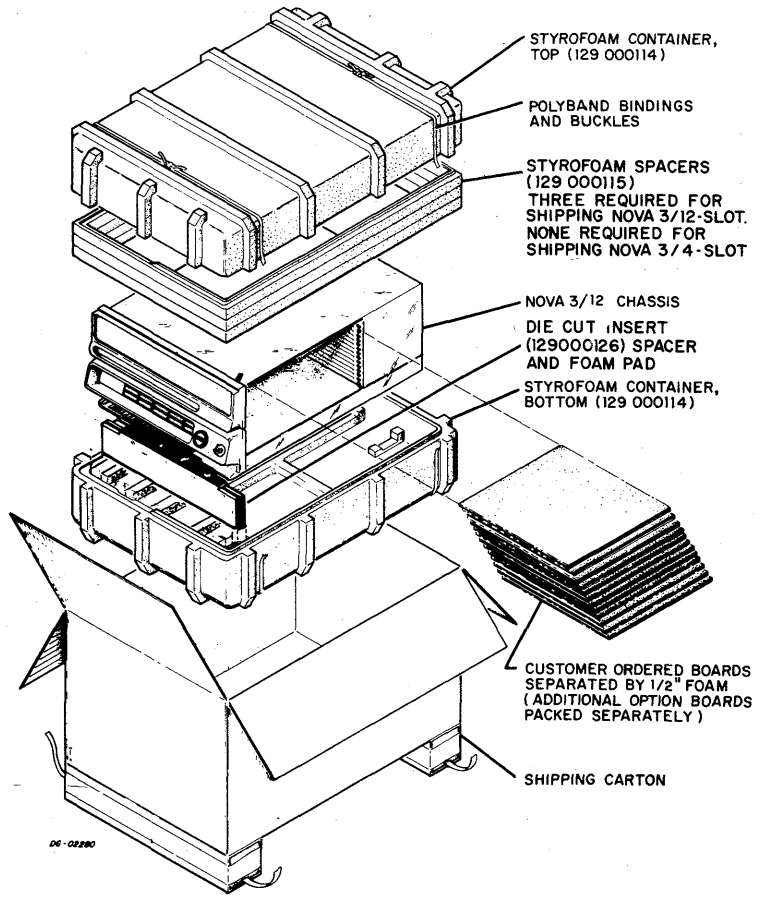
TOP VIEW

FRONT VIEW

SIDE VIEW

SHIPPING

NOVA 3/12 CHASSIS



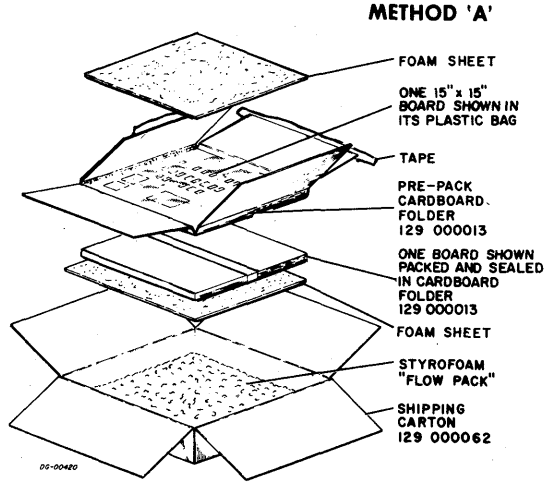
Shipping Specifications			
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	—
-32 to +158 / -35 to +70	0–95%	50,000 ft.	—

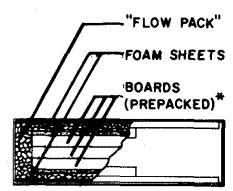
DG-02063

Storage Specifications		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-32 to +158 / -35 to +70	0–95%	90 days

DG-02062

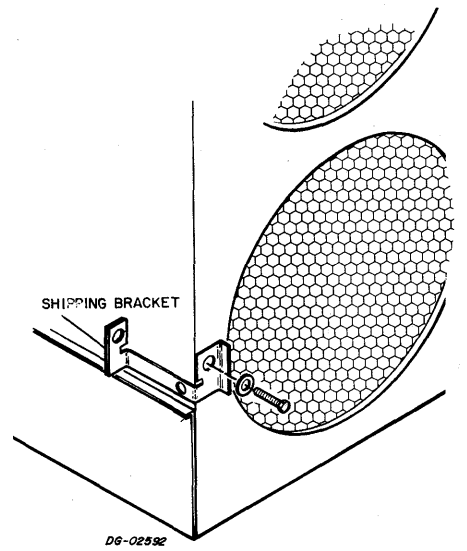
SEPARATE BOARDS
METHOD 'A'



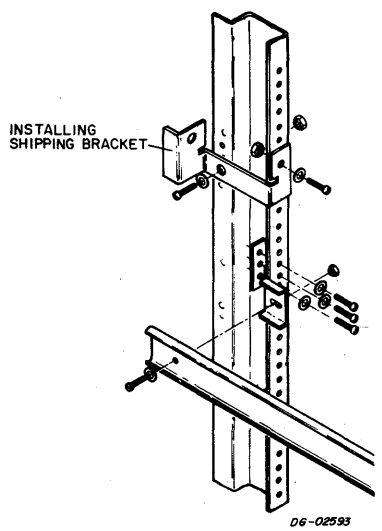


* MULTIPLE PACKING
Up to three (3) 15" x 15" boards, enclosed in plastic bags and sealed in pre-pack folders as shown, can be put in shipping carton number 129-000062. For four (4) to seven (7) boards, use shipping carton number 129 000012.

MOUNTING SHIPPING BRACKET TO CHASSIS

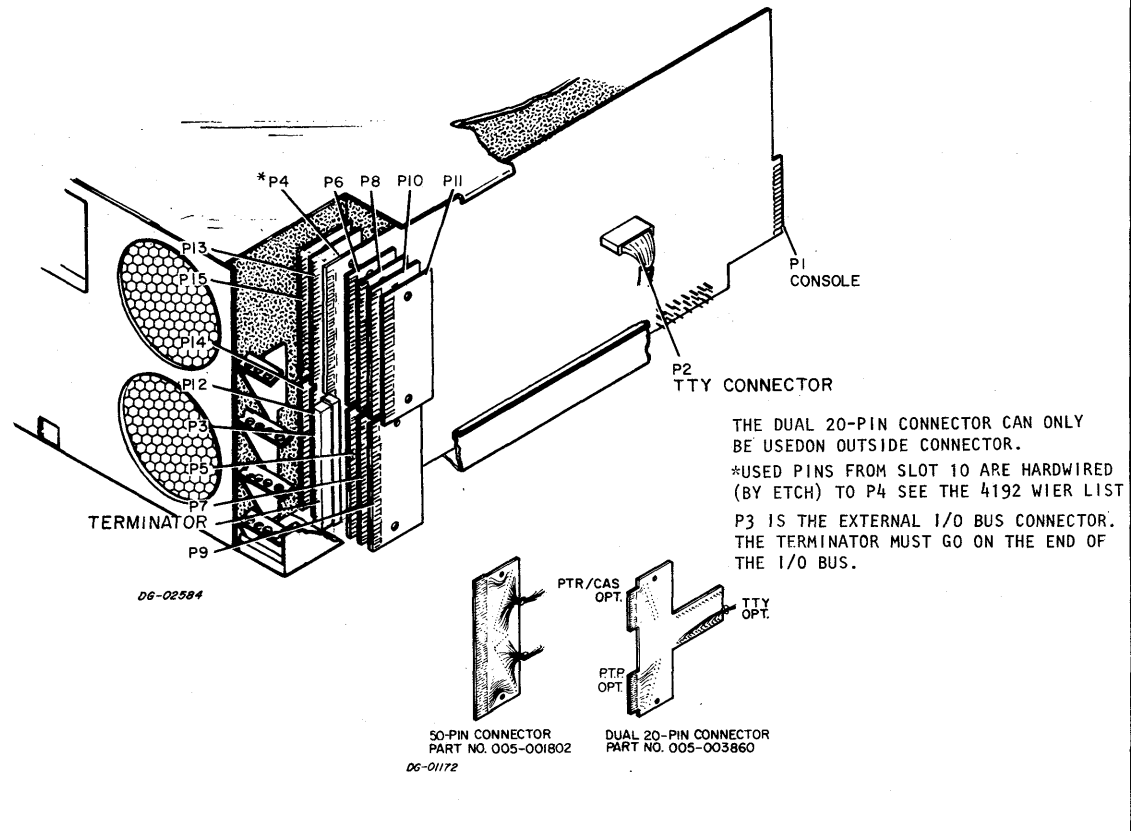


MOUNTING SHIPPING BRACKET TO RAILS



INTERNAL CABLING

BACKPANEL CONNECTORS

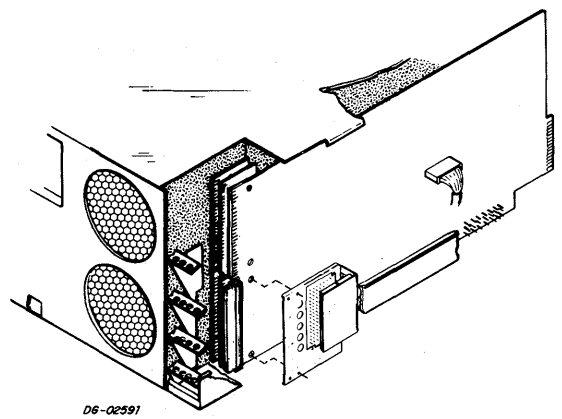


THE DUAL 20-PIN CONNECTOR CAN ONLY BE USEDON OUTSIDE CONNECTOR.

*USED PINS FROM SLOT 10 ARE HARDWIRED (BY ETCH) TO P4 SEE THE 4192 WIER LIST

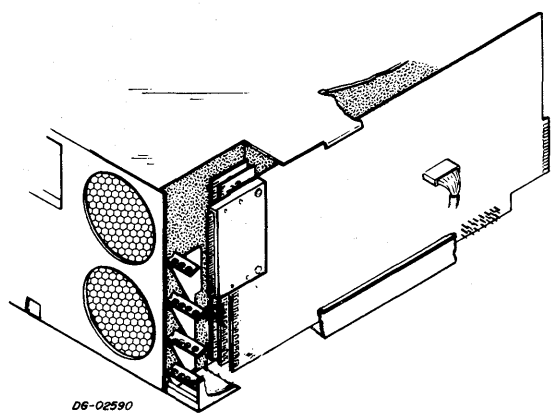
P3 IS THE EXTERNAL I/O BUS CONNECTOR. THE TERMINATOR MUST GO ON THE END OF THE I/O BUS.

4083 OPTION CONNECTOR
005 006040



CONNECTOR CAN BE MOUNTED ON TOP OR BOTTOM, ON PADDLEBOARD.

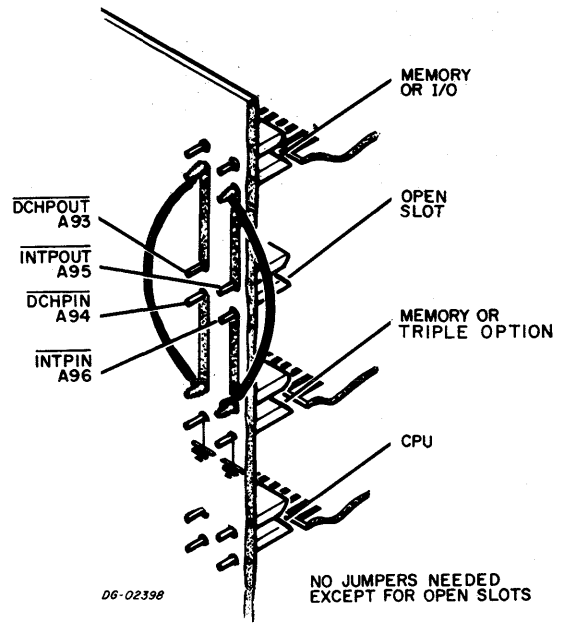
ANALOG PADDLEBOARD
005 001371



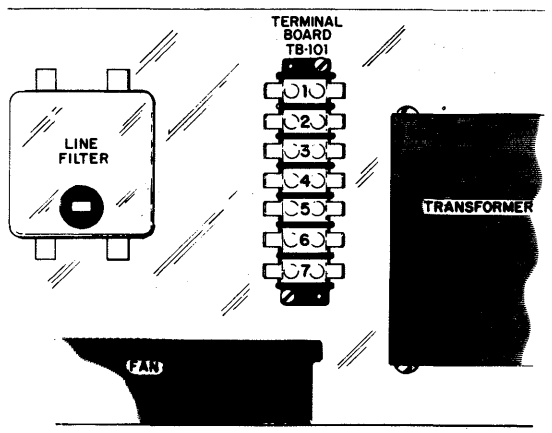
ANALOG CAN BE MOUNTED ON TOP OF P6, P8, AND P10.

JUMPERS

JUMPERING BACKPANEL



JUMPERING TRANSFORMER

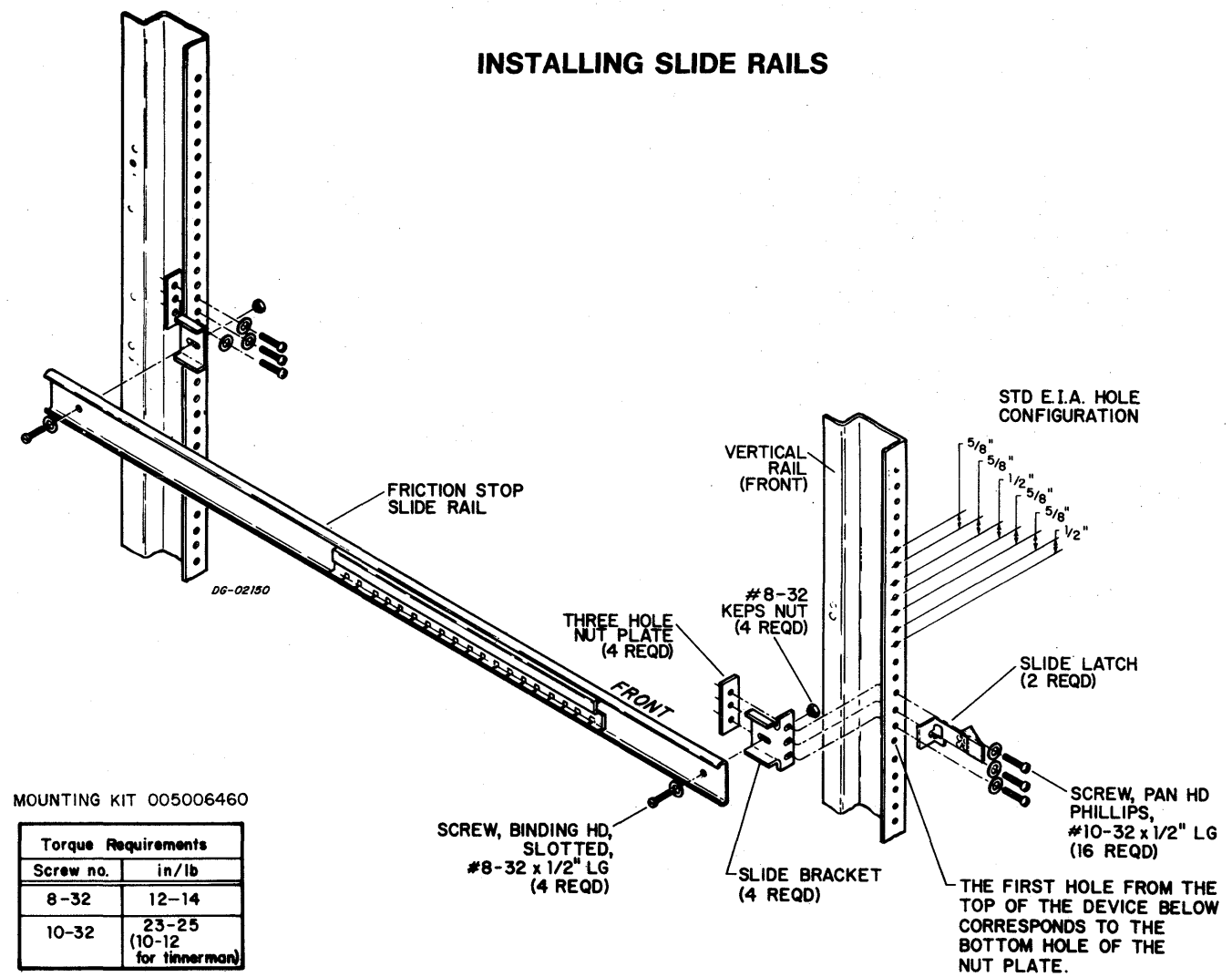


TERMINAL BOARD JUMPERS TB-101 FOR TRANSFORMER

100 VAC	1-5, 2-6
120	1-4, 3-6
200	2-5
220	2-4
240	3-4

CABINET-MOUNTING

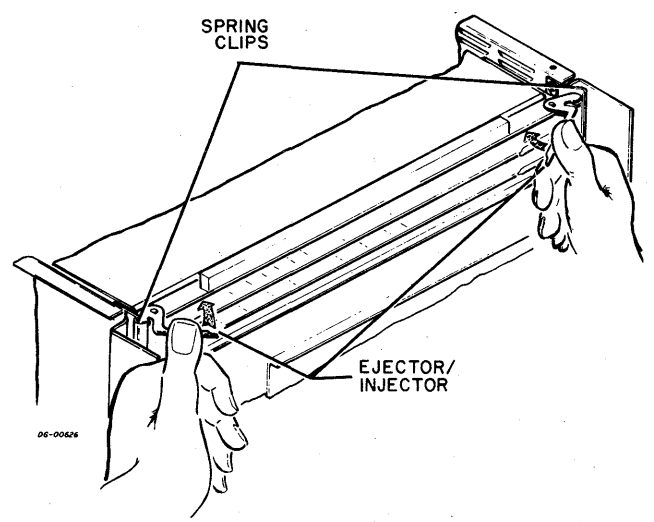
INSTALLING SLIDE RAILS



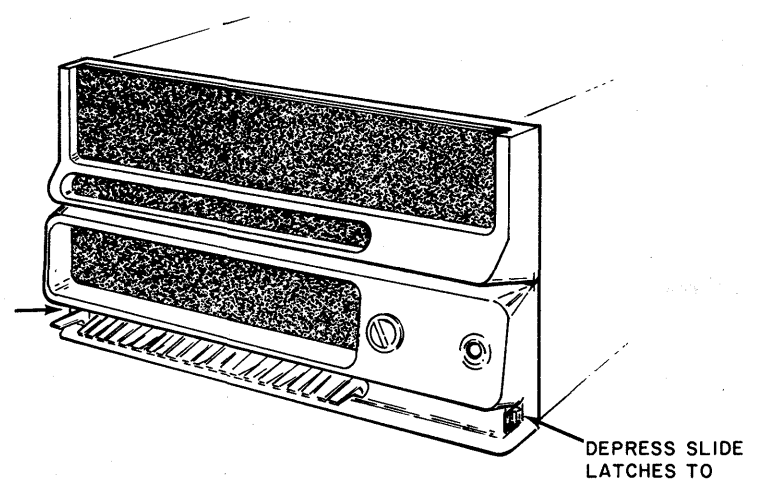
MOUNTING KIT 005006460

Torque Requirements	
Screw no.	in/lb
8-32	12-14
10-32	23-25 (10-12 for tinnerman)

INSERTING PC BOARD

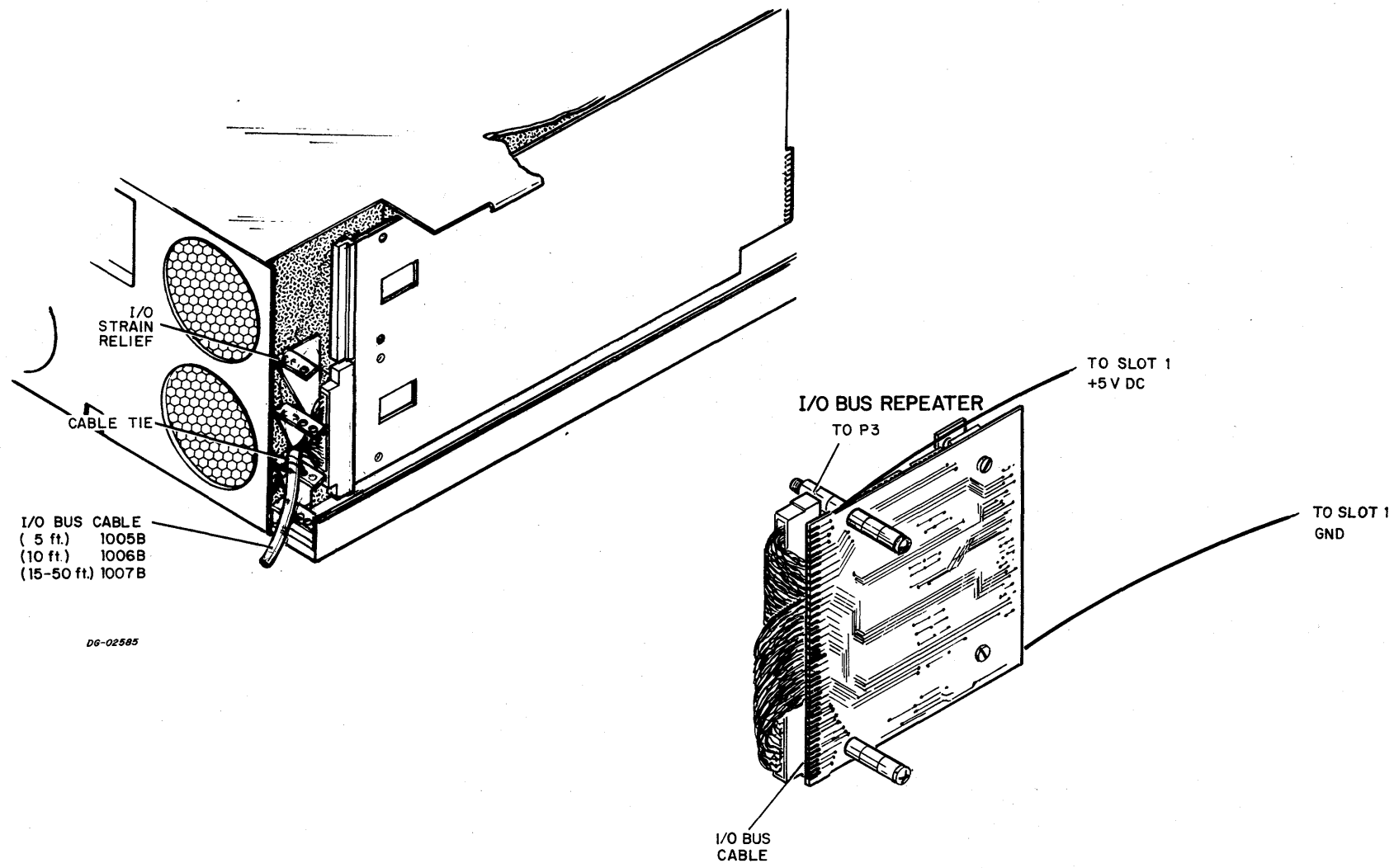


LATCH RELEASE

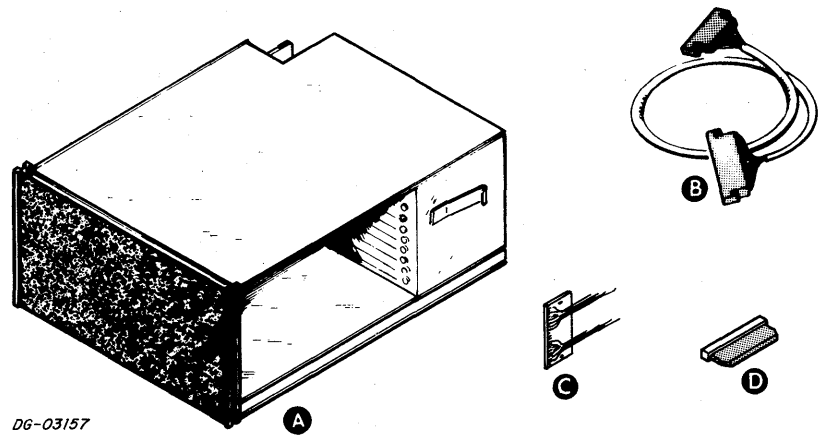


EXTERNAL CABLING

I/O BUS CABLE



SUBSYSTEM COMPONENT BREAKDOWN



DG-03157

MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	EXPANSION CHASSIS	CABINET	

DG-02672

CABLE

Item	Cable	Connecting	Max Allowed Lg ft / m	Notes
B	DAISY CHAIN CA	MAIN CHASSIS and EXP CHASSIS	5 / 1.52	
	OR	EXP CHASSIS 1 "EXP CHASSIS 2	5 / 1.52	
	OPTIONAL I/O CA			
		IF EXPANSION CHASSIS CONTAINS ONLY STANDARD CONTROLLERS, THE MAXIMUM DAISY CHAIN LENGTH FROM MAIN CHASSIS IS 50 FT (15.24m).		
C	INT CABLE	MAIN CHASSIS and EXP CHASSIS		

Item	Terminator	Location	Notes
D	NOVA 3 EXP CHASSIS TERMINATOR	EXP CHASSIS PX12 EXT I/O PADDLEBOARD	

DG-02674

SLOT ASSIGNMENTS

SLOT ASSIGNMENT RULES

1. Do not operate controllers in this chassis in high speed data channel mode.

2. More than 10 I/O controllers in the system require a bus repeater. No more than 10 I/O controllers c can go into this expansion chassis.

Data Channel Speeds Available: Standard ☑

Slot	Allowed (Slot Chart)	Assigned	+5V Current Draw
X12	I/O		
X11			
X10			
X9			
X8			
X7			
X6			
X5			
X4			
X3			
X2			
X1	I/O		

Total +5V Current draw ____

Max +5V Current Available 40A

+5V Current Surplus ____

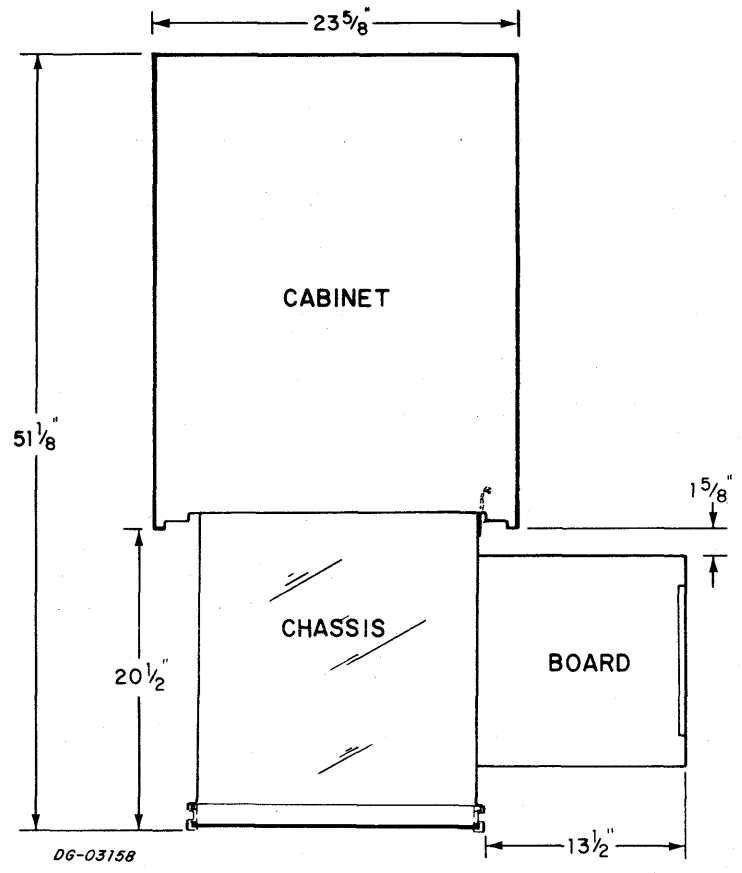
SPECIFICATIONS OF THE CABINET-MOUNTED COMPONENTS

Item	Component	Number in Subsystem	Maximum Operating Temperature: Component °F / °C	Media °F / °C	Primary Power: Current (nom) Draw (Amp)	Voltage ±ΔV	Frequency	Cabinet Height Required: Area	in.	cm	Weight lbs / kg	Power Dissipation (Max Watts)	Preferred Location or Remarks	Operating Humidity (Relative) min % / % max
A	100V		131 / 55		6.5	100 +10 -15	47-63Hz	6	10.5	26.7	130 / 58.96	650	FIRST EXPANSION CHASSIS IS MOUNTED ABOVE THE MAIN CHASSIS. A MAXIMUM OF TWO EXPANSION CHASSIS ARE AVAILABLE PER MAIN CHASSIS.	20 / 90
	120V		131 / 55		5.5	120 +12 -18	47-63Hz	6	10.5	26.7	130 / 58.96	650		20 / 90
	220V		131 / 55		3.0	220 +22 -33	47-63Hz	6	10.5	26.7	130 / 58.96	650		20 / 90
	240V		131 / 55		2.8	240 +24 -36	47-63Hz	6	10.5	26.7	130 / 58.96	650		20 / 90

DG-01914

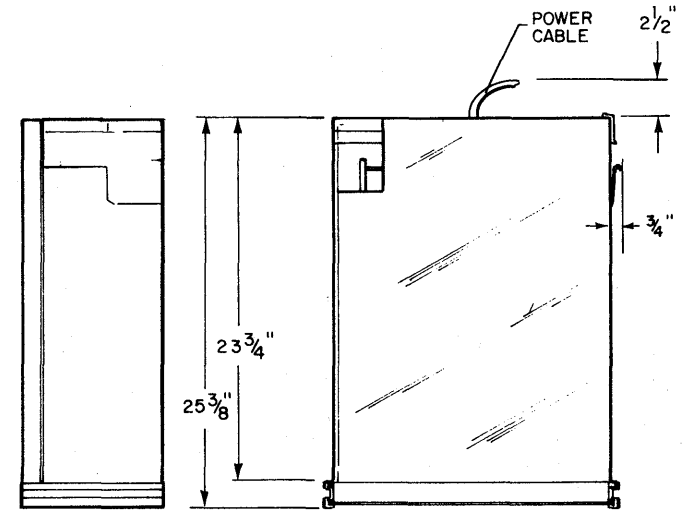
Voltage	Power Cable Length ft	m	Power Cable Plug	Mating Receptacle on Power Drop	Mating Receptacle in Wall
100	6	1.8	5-15P	5-15R	5-15R
120	6	1.8	5-15P	5-15R	5-15R
220	6	1.8	6-15P	6-15R	6-15R
240	6	1.8	6-15P	6-15R	6-15R

DG-02717

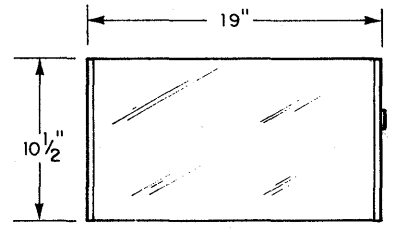


DG-03158

SERVICE DIMENSIONS



SIDE VIEW TOP VIEW

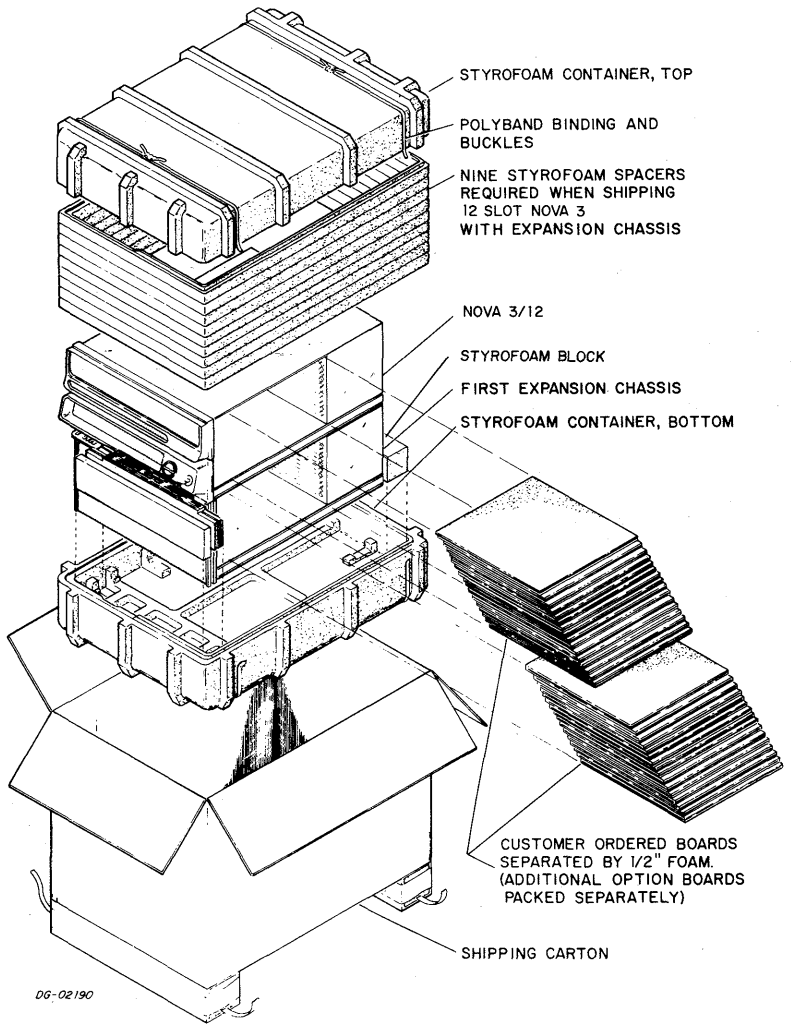


DG-03159

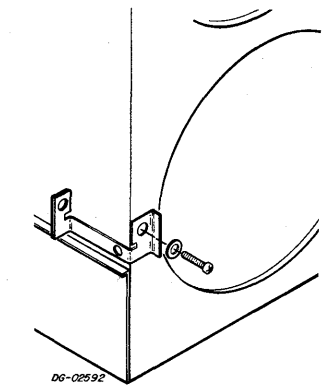
FRONT VIEW

SHIPPING

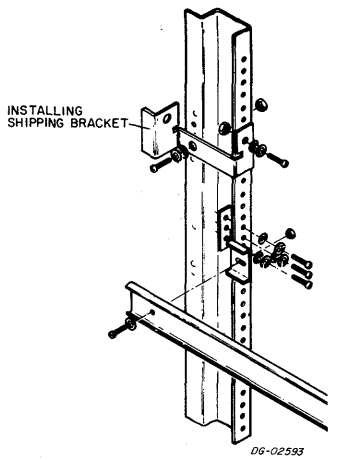
NOVA 3/12 ON EXPANSION CHASSIS



MOUNTING SHIPPING BRACKET TO CHASSIS



MOUNTING SHIPPING BRACKET TO RAILS



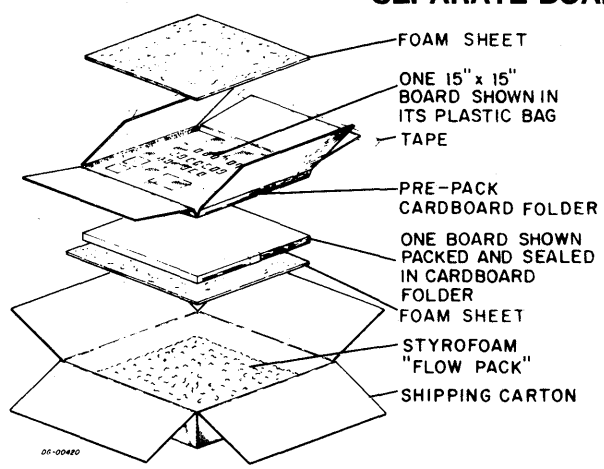
Shipping Specifications			
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	—
-40 to +185 / -40 to +85	0–85%	50,000 ft	—

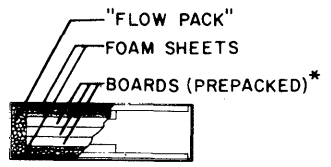
DG-02063

Storage Specifications		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-40 to +185 / -40 to +85	0–85%	90 days

DG-02062

SEPARATE BOARDS

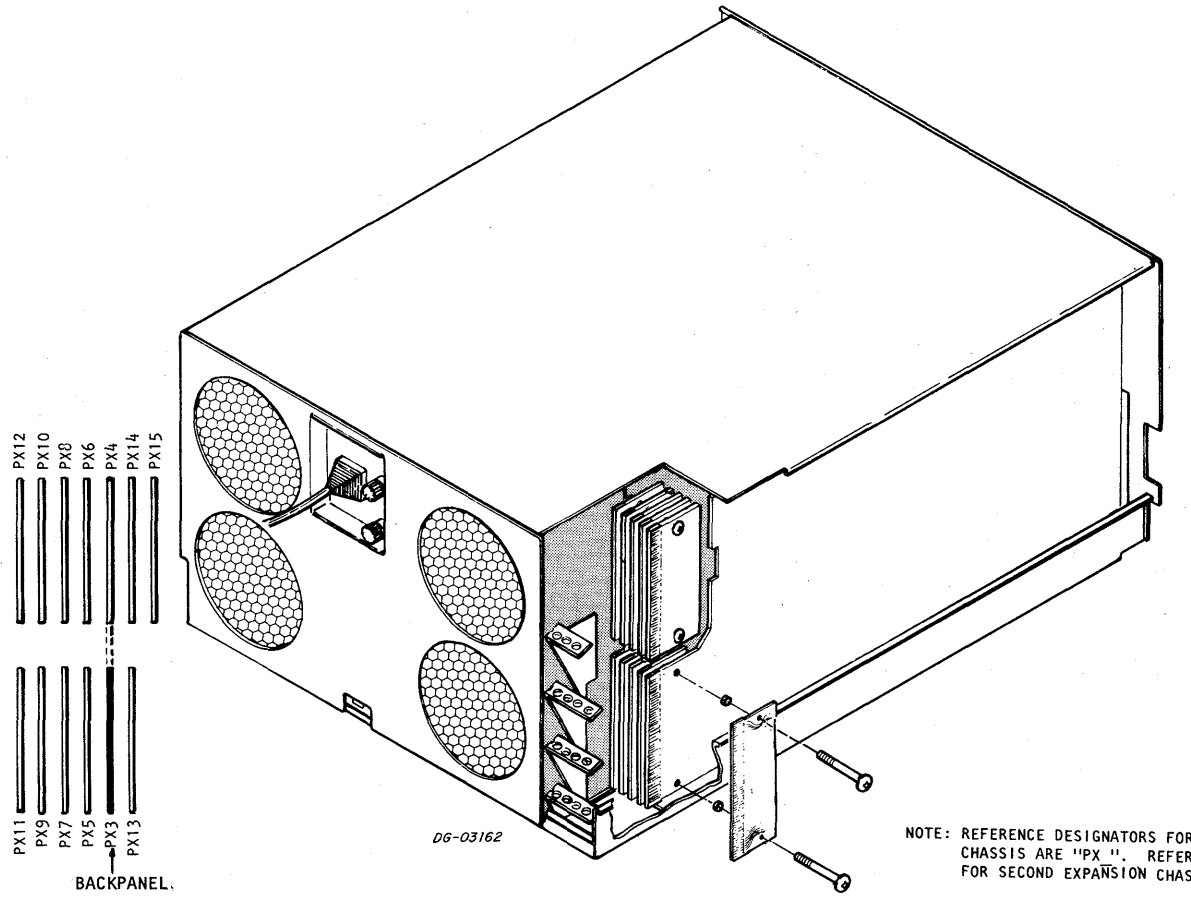




* MULTIPLE PACKING
Up to three(3) 15"x15" boards, enclosed in plastic bags and sealed in pre-pack folders as shown, can be put in shipping carton number 129-000062. For four (4) to seven (7) boards, use shipping carton number 129 000012.

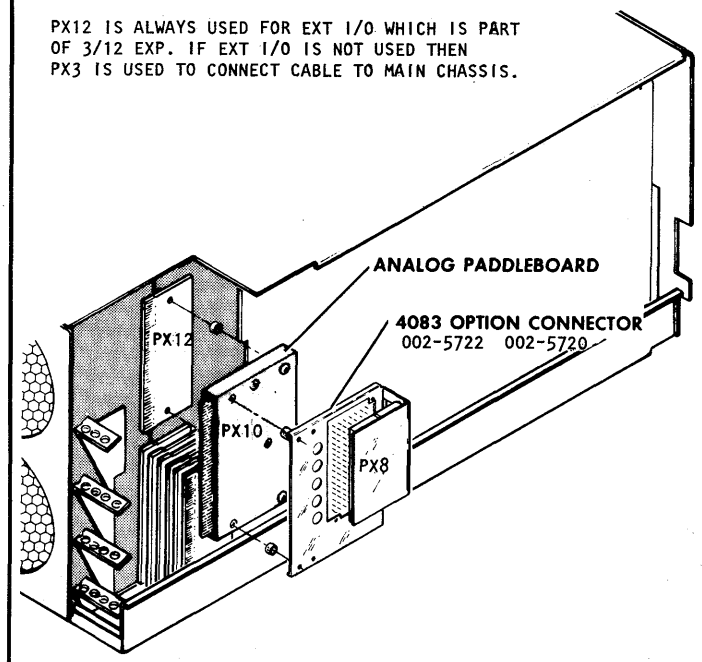
INTERNAL CABLING

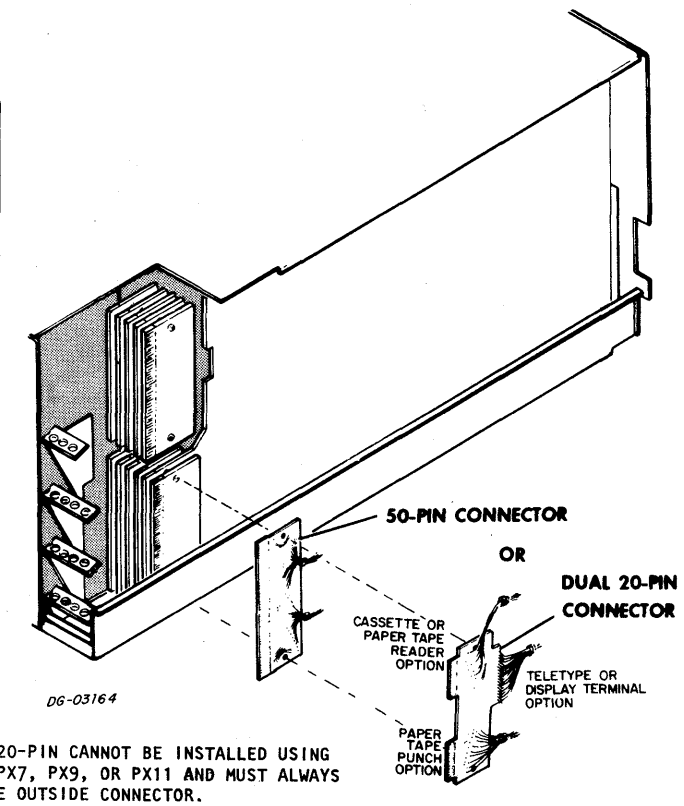
BACKPANEL CONNECTOR



NOTE: REFERENCE DESIGNATORS FOR FIRST EXPANSION CHASSIS ARE "PX_". REFERENCE DESIGNATORS FOR SECOND EXPANSION CHASSIS ARE "PXX_".

PX12 IS ALWAYS USED FOR EXT I/O WHICH IS PART OF 3/12 EXP. IF EXT I/O IS NOT USED THEN PX3 IS USED TO CONNECT CABLE TO MAIN CHASSIS.

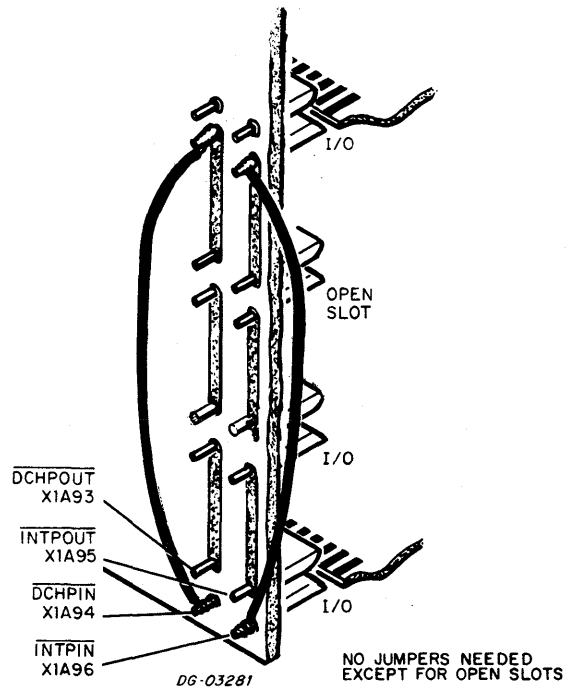




DUAL 20-PIN CANNOT BE INSTALLED USING PX5, PX7, PX9, OR PX11 AND MUST ALWAYS BE THE OUTSIDE CONNECTOR.

TAILORING

JUMPERING BACKPANEL



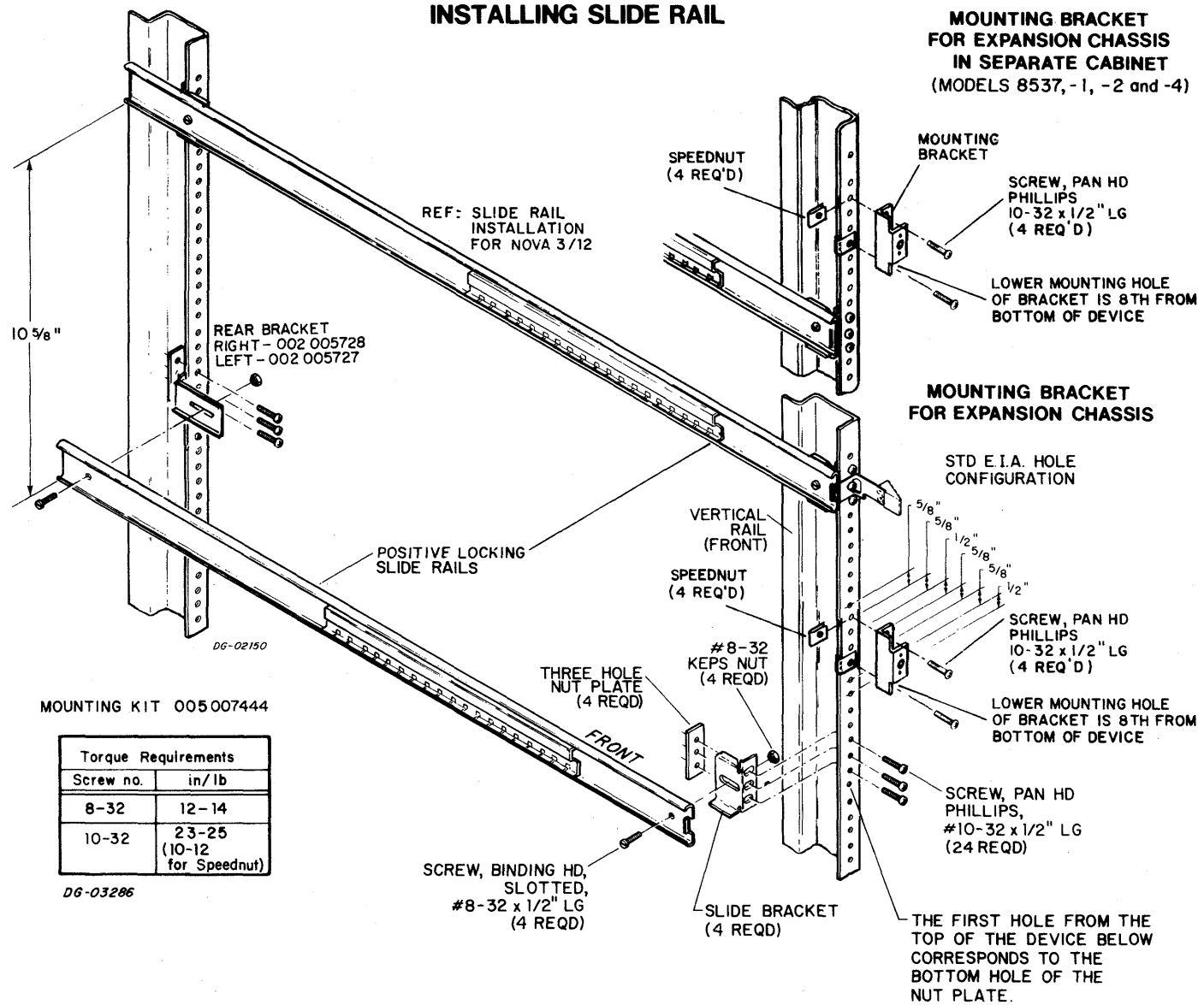
START AT SLOT 1 (X1A96 & X1A94) AND WIRE TO FIRST USED SLOT (X_A95 & X_A93).

AC VOLTAGE DETERMINED BY SELECTING LINE CORD

	PART NO.	MODEL NO.
100 VAC	109 000239	1118G
120 VAC	109 000238	1118D
220 VAC	109 000237	1118E
240 VAC	109 000240	1118F

INSTALLATION IN A CABINET

INSTALLING SLIDE RAIL

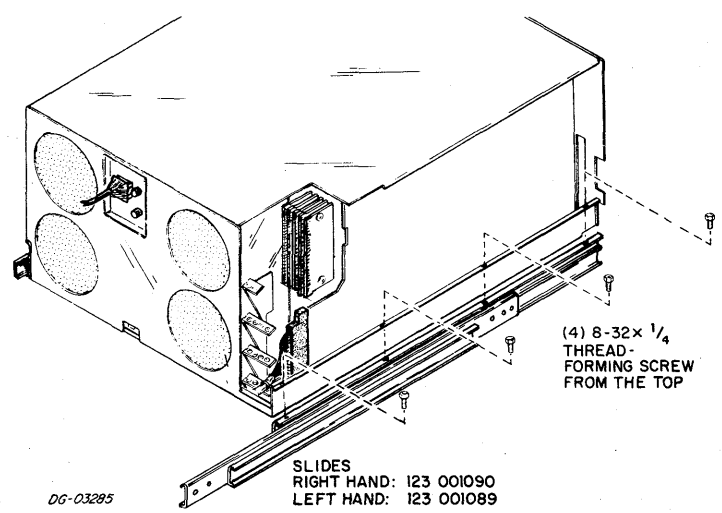


MOUNTING KIT 005007444

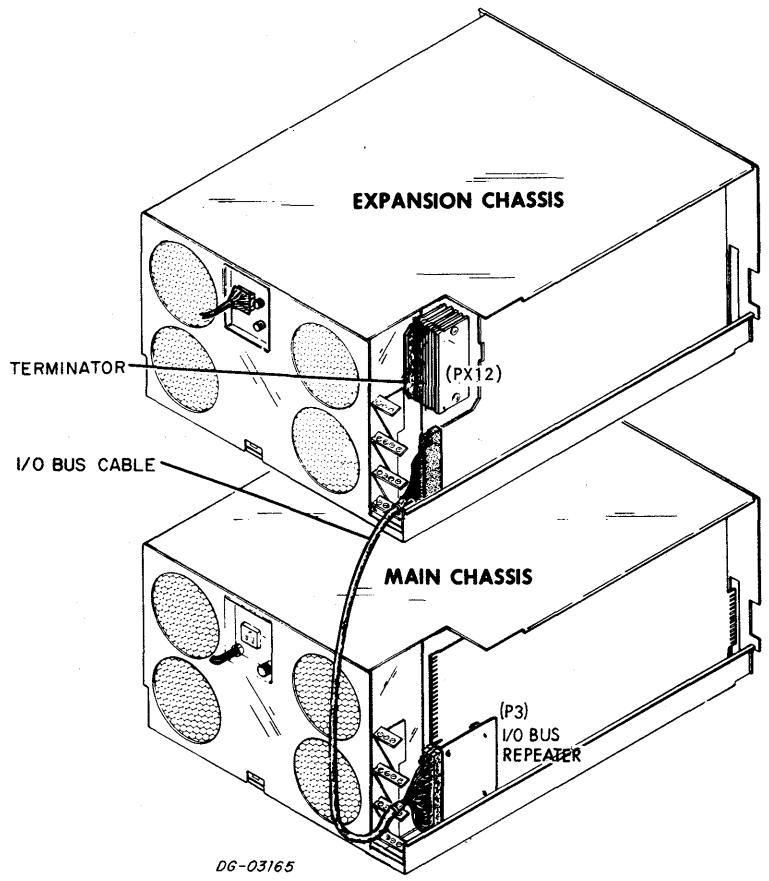
Torque Requirements	
Screw no.	in/lb
8-32	12-14
10-32	23-25 (10-12 for Speednut)

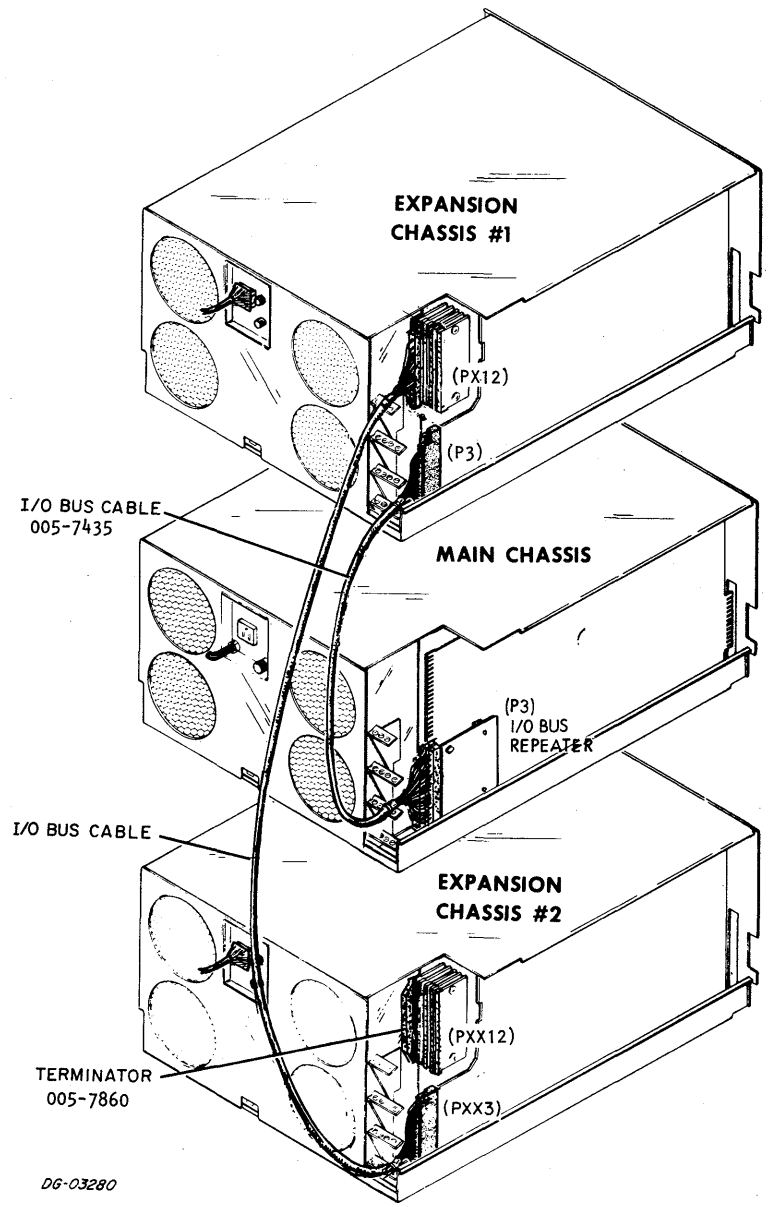
DG-03286

MOUNTING SLIDE ON CHASSIS



EXTERNAL CABLING



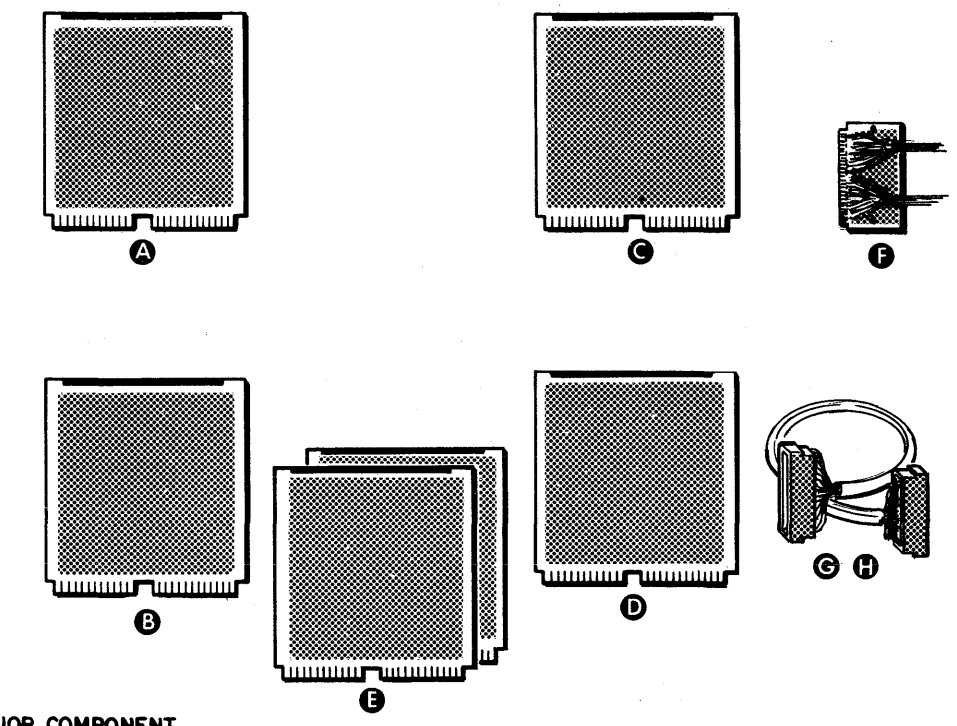


THIS CONFIGURATION ALLOWED ONLY IF CABINET HAS SUFFICIENT POWER.

NOTE: EXTERNAL I/O CONNECTIONS WHICH ARE NORMALLY AVAILABLE ON THE MAIN CHASSIS (P3), BECOME AVAILABLE ON THE EXPANSION CHASSIS (ON PX12 FOR A ONE-EXPANSION CHASSIS SUBSYSTEM, OR ON PXX12 ON A TWO-EXPANSION CHASSIS SUBSYSTEM).

THIS BUS REPEATER REQUIRED IF THERE ARE MORE THAN 10 I/O CONTROLLERS IN THE SYSTEM. OTHERWISE, THE I/O BUS CABLE GOES DIRECTLY TO P3.

SUBSYSTEM COMPONENT BREAKDOWN



MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	OPTION SUBASSEMBLY BOARD (8533)	SLOT 2	MMPU, MMU, MUL/DIV, AND/OR PARITY AVAIL FOR NOVA 3/12
			MUL/DIV AND/OR PARITY AVAIL FOR NOVA 3/4
B	4K,8K,16K,32K SC MEMORY BOARD	SLOTS 2-4 NOVA 3/4 SLOTS 2-12 NOVA 3/12	
C	8K or 16K CORE MEMORY BOARD	SLOTS 2-4 NOVA 3/4 SLOTS 2-12 NOVA 3/12	
D	CPU W/PROGRAM LOAD AND/OR AUTO-RESTRT	SLOT 1	
E	FPU-1, FPU-2	I/O SLOT OF COMP CHASSIS	CANNOT BE USED WITH NOVA 3/4

CABLES

Item	Cable	Connecting	Max Allowed Lg ft / m	Notes
F	FPU INTERNAL CABLE	SLOT 2 TO CONNECTOR OF MAIN CHASSIS		2 REQUIRED W/EXPANSION CHASSIS IS IN SYSTEM
G	FPU EXTERNAL CABLE	MAIN CHASSIS TO EXPANSION CHASSIS	5 / 1.75	1 REQUIRED W/EXPANSION CHASSIS IS IN SYSTEM
H	EXTERNAL I/O CABLE	MAIN CHASSIS TO EXTERNAL I/O CHASSIS		

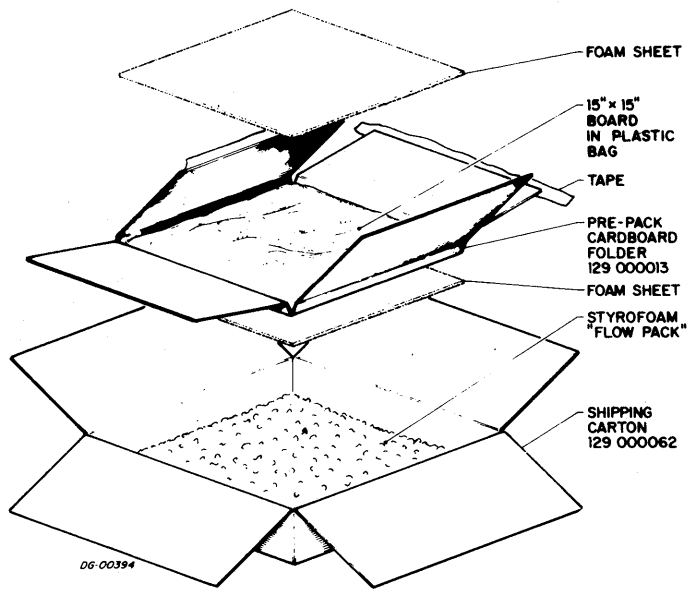
SPECIFICATIONS OF CHASSIS MOUNTED COMPONENTS

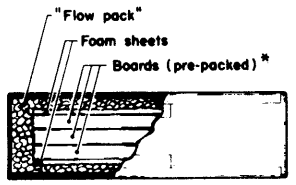
Item	Component	No. of Slots Required	Total +5V Current Draw (Amps)	Remarks
A	MMU	1	3	
	MUL/DIV		1	
	PARITY		0.5	
	MMPU	1	4	MMPU AVAILABLE ON NOVA 3/D
B	4, 8, 16K SC MEMORY	1	3.5	
	32K SC MEMORY	1	2	SLOT 7 AND BELOW } WITH BATTERY BACKUP
			3.5	SLOT 8 AND ABOVE }
			3.5	WITHOUT BATTERY BACKUP
C	8 OR 16K MEMORY CORE	1	1.5	
D	CPU & PROGRAM LOAD	1	10.5	
	CPU & AUTO RESTART	1	10.5	
	CPU & PROGRAM LD & AUTORST	1	10.5	

Item	Component	Chassis	Slots Required	Max Allowable Data Channel Latency (μ sec)	Type of Data Channel Service Desired: High Speed	Type of Data Channel Service Desired: Standard	Controller's +5 Volt Current Draw (Amps)
E	FPU-1&2 (8539)	COMPUTER	2	*SEE NOTE	✓	✓	6.6

FPU SHOULD HAVE LOWEST DCH PRIORITY.
IF EXPANSION CHASSIS IS IN SYSTEM,
USE SLOTS X11 AND X12 FOR FPU1 AND
FPU2, RESPECTIVELY.

SHIPPING





MULTIPLE PACKING

* Up to three (3) 15"x 15" boards, enclosed in plastic bags and sealed in pre-pack folders as shown, can be put in shipping carton No. 129 000062. For four (4) to seven (7) boards, use shipping carton No. 129 000012.

Storage Specifications		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-40 to +160 / -40 to +71	0-85%	90 days

DG-02062

Shipping Specifications			
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period	—
-40 to +160 / -40 to +71	0-85%	50,000 ft. 15,200m	—

DG-02063

TAILORING

JUMPERS and SWITCHES

BOARD ASSIGNMENT RULES:

1. Largest capacity memory boards are assigned to lowest available addresses.
2. An XK board (where X = 4, 8, 16 or 32) is assigned a board number according to the number of XK address segments below it.

   NOTE: Maximum number of memory boards in a NOVA 3 computer system is eight.

EXAMPLE:

Assume, in a 108K system, there are the following boards: two 32K boards, one 16K board, three 8K, and one 4K board.

1st board: By rule (1), one 32K board is assigned to the lowest 32K addresses, and by rule (2), this is 32K board 0.

2nd board: By rule (1), the other 32K board is assigned to the next 32K addresses, and by rule (2), this is 32K board 1.

3rd board: By rule (1), the 16K board is assigned to the next 16K addresses, and by rule (2), this is 16K board 5.

4th board: By rule (1), one 8K board is assigned to the next 8K addresses, and by rule (2), this is 8K board 11.

5th board: By rule (1), one 8K board is assigned to the next 8K addresses, and by rule (2), this is 8K board 12.

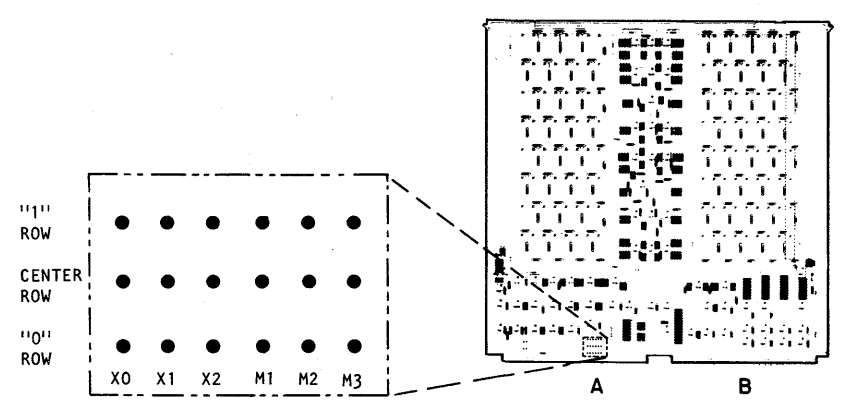
6th board: By rule (1), the last 8K board is assigned to the next 8K addresses, and by rule (2), this is 8K board 13.

7th board: By rule (1), the 4K board is assigned to the highest 4K addresses, and by rule (2), this is 4K board 27.

NOTE:

MAXIMUM PHYSICAL MEMORY SPACE=128K.

DGC SEMICONDUCTOR BOARDS



Ref DGC 107 000625 Rev. 02

FOR "OPEN", CONNECT NO JUMPER

FOR A "1", INSERT JUMPER CONNECTING "1" ROW AND CENTER ROW

FOR A "0", INSERT JUMPER CONNECTING "0" ROW AND CENTER ROW

4K SEMICONDUCTOR MEMORY BOARDS						
	JUMPER ASSIGNMENTS					
BD No.	X0	X1	X2	M1	M2	M3
0	OPEN	0	0	0	0	0
1		0	0	0	0	1
2		0	0	0	1	0
3		0	0	0	1	1
4		0	0	1	0	0
5		0	0	1	0	1
6		0	0	1	1	0
7		0	0	1	1	1
8		0	1	0	0	0
9		0	1	0	0	1
10		0	1	0	1	0
11		0	1	0	1	1
12		0	1	1	0	0
13		0	1	1	0	1
14		0	1	1	1	0
15		0	1	1	1	1
16		1	0	0	0	0
17		1	0	0	0	1
18		1	0	0	1	0
19		1	0	0	1	1
20		1	0	1	0	0
21		1	0	1	0	1
22		1	0	1	1	0
23		1	0	1	1	1
24		1	1	0	0	0
25		1	1	0	0	1
26		1	1	0	1	0
27		1	1	0	1	1
28		1	1	1	0	0
29		1	1	1	0	1
30		1	1	1	1	0
31	OPEN	1	1	1	1	1

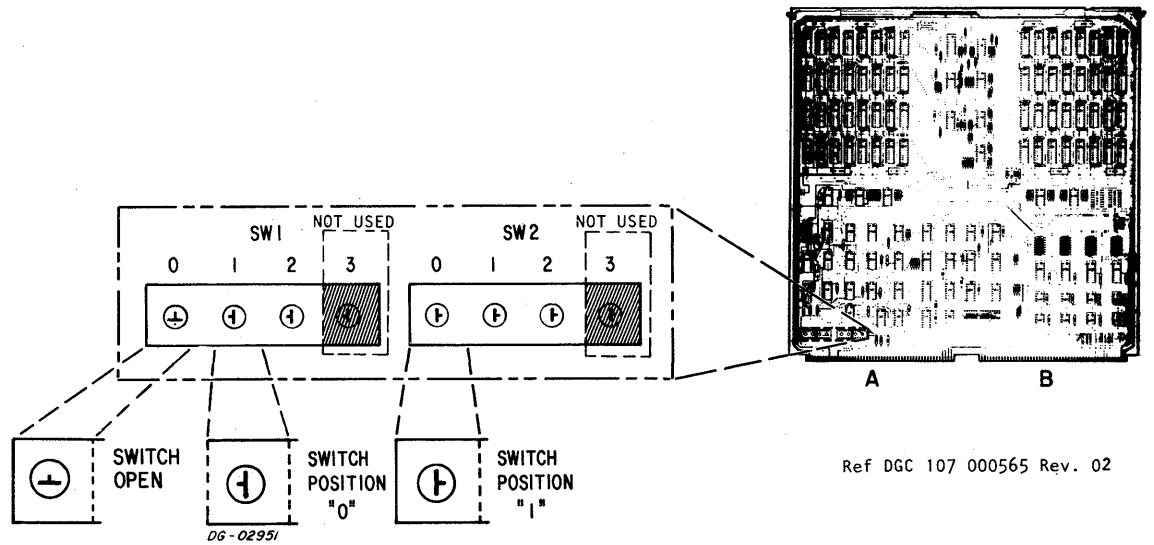
8K SEMICONDUCTOR BOARDS						
BD No.	X0	X1	X2	M1	M2	M3
0	OPEN	0	0	0	0	OPEN
1		0	0	0	1	
2		0	0	1	0	
3		0	0	1	1	
4		0	1	0	0	
5		0	1	0	1	
6		0	1	1	0	
7		0	1	1	1	
8		1	0	0	0	
9		1	0	0	1	
10		1	0	1	0	
11		1	0	1	1	
12		1	1	0	0	
13		1	1	0	1	
14		1	1	1	0	
15	OPEN	1	1	1	1	OPEN

16K SEMICONDUCTOR BOARDS						
BD No.	X0	X1	X2	M1	M2	M3
0	OPEN	0	0	0	OPEN	
1		0	0	1		
2		0	1	0		
3		0	1	1		
4		1	0	0		
5		1	0	1		
6		1	1	0		
7	OPEN	1	1	1	OPEN	

32K SEMICONDUCTOR BOARDS						
BD No.	X0	X1	X2	M1	M2	M3
0	OPEN	0	0	OPEN		
1		0	0			
2		1	0			
3		1	1			

JUMPERS and SWITCHES (CONT)

DGC SEMICONDUCTOR MEMORY BOARDS



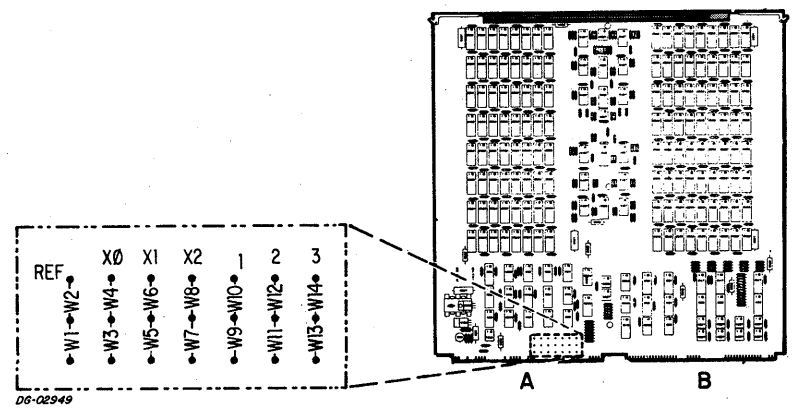
Ref DGC 107 000565 Rev. 02

4K SEMICONDUCTOR MEMORY BOARDS						
	SWITCH ASSIGNMENTS					
	SW1			SW2		
BOARD NUMBER	0	1	2	0	1	2
0	OPEN	0	0	0	0	0
1		0	0	0	0	1
2		0	0	0	1	0
3		0	0	0	1	1
4		0	0	1	0	0
5		0	0	1	0	1
6		0	0	1	1	0
7		0	0	1	1	1
8		0	1	0	0	0
9		0	1	0	0	1
10		0	1	0	1	0
11		0	1	0	1	1
12		0	1	1	0	0
13		0	1	1	0	1
14		0	1	1	1	0
15		0	1	1	1	1
16		1	0	0	0	0
17		1	0	0	0	1
18		1	0	0	1	0
19		1	0	0	1	1
20		1	0	1	0	0
21		1	0	1	0	1
22		1	0	1	1	0
23		1	0	1	1	1
24		1	1	0	0	0
25		1	1	0	0	1
26		1	1	0	1	0
27		1	1	0	1	1
28		1	1	1	0	0
29		1	1	1	0	1
30		1	1	1	1	0
31	OPEN	1	1	1	1	1

8K SEMICONDUCTOR MEMORY BOARDS						
	SWITCH ASSIGNMENTS					
	SW1			SW2		
BOARD NUMBER	0	1	2	0	1	2
0	OPEN	0	0	0	0	OPEN
1		0	0	0	1	
2		0	0	1	0	
3		0	0	1	1	
4		0	1	0	0	
5		0	1	0	1	
6		0	1	1	0	
7		0	1	1	1	
8		1	0	0	0	
9		1	0	0	1	
10		1	0	1	0	
11		1	0	1	1	
12		1	1	0	0	
13		1	1	0	1	
14		1	1	1	0	
15	OPEN	1	1	1	1	OPEN

16K SEMICONDUCTOR MEMORY BOARDS						
	SWITCH ASSIGNMENTS					
	SW1			SW2		
BOARD NUMBER	0	1	2	0	1	2
0	OPEN	0	0	0	OPEN	
1		0	0	1		
2		0	1	0		
3		0	1	1		
4		1	0	0		
5		1	0	1		
6		1	1	0		
7	OPEN	1	1	1	OPEN	

SECOND SOURCE SEMICONDUCTOR MEMORY BOARDS



Ref DGC 107 000592 Rev. 04

"SECOND SOURCE" 4K SEMICONDUCTOR MEMORY BOARDS												
	JUMPER ASSIGNMENTS											
BD No.	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14
0	0	0	1	0	1	0	1	0	1	0	1	0
1	0	0	1	0	1	0	1	0	1	0	0	1
2	0	0	1	0	1	0	1	0	0	1	1	0
3	0	0	1	0	1	0	1	0	0	1	0	1
4	0	0	1	0	1	0	0	1	1	0	1	0
5	0	0	1	0	1	0	0	1	1	0	0	1
6	0	0	1	0	1	0	0	1	0	1	1	0
7	0	0	1	0	1	0	0	1	0	1	0	1
8	0	0	1	0	0	1	1	0	1	0	1	0
9	0	0	1	0	0	1	1	0	1	0	0	1
10	0	0	1	0	0	1	1	0	0	1	1	0
11	0	0	1	0	0	1	1	0	0	1	0	1
12	0	0	1	0	0	1	0	1	1	0	1	0
13	0	0	1	0	0	1	0	1	1	0	0	1
14	0	0	1	0	0	1	0	1	0	1	1	0
15	0	0	1	0	0	1	0	1	0	1	0	1
16	0	0	0	1	1	0	1	0	1	0	1	0
17	0	0	0	1	1	0	1	0	1	0	0	1
18	0	0	0	1	1	0	1	0	0	1	1	0
19	0	0	0	1	1	0	1	0	0	1	0	1
20	0	0	0	1	1	0	0	1	1	0	1	0
21	0	0	0	1	1	0	0	1	1	0	0	1
22	0	0	0	1	1	0	0	1	0	1	1	0
23	0	0	0	1	1	0	0	1	0	1	0	1
24	0	0	0	1	0	1	1	0	1	0	1	0
25	0	0	0	1	0	1	1	0	1	0	0	1
26	0	0	0	1	0	1	1	0	0	1	1	0
27	0	0	0	1	0	1	1	0	0	1	0	1
28	0	0	0	1	0	1	0	1	1	0	1	0
29	0	0	0	1	0	1	0	1	1	0	0	1
30	0	0	0	1	0	1	0	1	0	1	1	0
31	0	0	0	1	0	1	0	1	0	1	0	1

JUMPERS and SWITCHES (CONT)

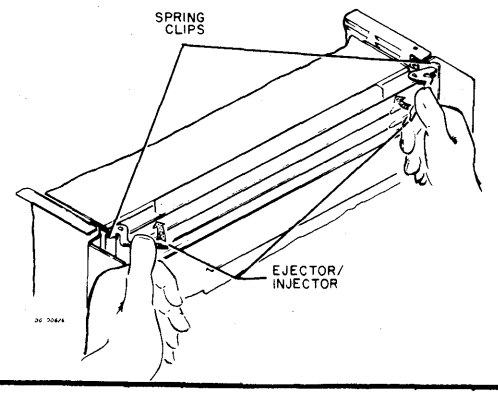
SECOND SOURCE SEMICONDUCTOR MEMORY BOARDS (CONT)

"SECOND SOURCE" 8K SEMICONDUCTOR MEMORY BOARDS												
	JUMPER ASSIGNMENTS											
BD No.	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14
0	0	0	1	0	1	0	1	0	1	0	0	0
1	0	0	1	0	1	0	1	0	0	1	0	0
2	0	0	1	0	1	0	0	1	1	0	0	0
3	0	0	1	0	1	0	0	1	0	1	0	0
4	0	0	1	0	0	1	1	0	1	0	0	0
5	0	0	1	0	0	1	1	0	0	1	0	0
6	0	0	1	0	0	1	0	1	1	0	0	0
7	0	0	1	0	0	1	0	1	0	1	0	0
8	0	0	0	1	1	0	1	0	1	0	0	0
9	0	0	0	1	1	0	1	0	0	1	0	0
10	0	0	0	1	1	0	0	1	1	0	0	0
11	0	0	0	1	1	0	0	1	0	1	0	0
12	0	0	0	1	0	1	1	0	1	0	0	0
13	0	0	0	1	0	1	1	0	0	1	0	0
14	0	0	0	1	0	1	0	1	1	0	0	0
15	0	0	0	1	0	1	0	1	0	1	0	0

"SECOND SOURCE" 16K SEMICONDUCTOR MEMORY BOARDS												
	JUMPER ASSIGNMENTS											
BD No.	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14
0	0	0	1	0	1	0	1	0	0	0	0	0
1	0	0	1	0	1	0	0	1	0	0	0	0
2	0	0	1	0	0	1	1	0	0	0	0	0
3	0	0	1	0	0	1	0	1	0	0	0	0
4	0	0	0	1	1	0	1	0	0	0	0	0
5	0	0	0	1	1	0	0	1	0	0	0	0
6	0	0	0	1	0	1	1	0	0	0	0	0
7	0	0	0	1	0	1	0	1	0	0	0	0

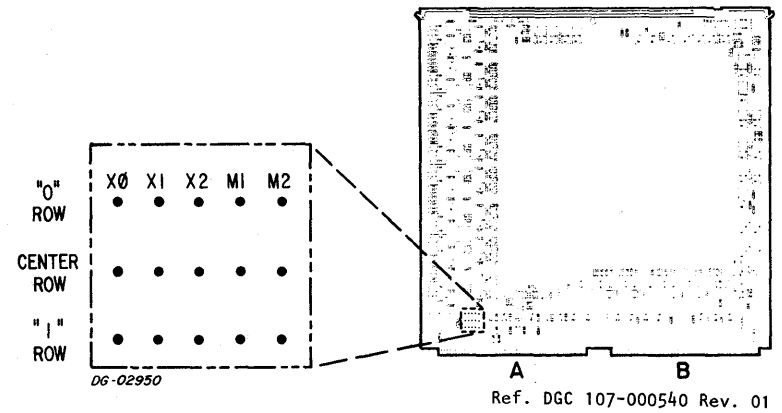
"SECOND SOURCE" 32K SEMICONDUCTOR MEMORY BOARDS												
	JUMPER ASSIGNMENTS											
BD No.	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14
0	0	0	1	0	1	0	0	0	0	0	0	0
1	0	0	1	0	0	1	0	0	0	0	0	0
2	0	0	0	1	1	0	0	0	0	0	0	0
3	0	0	0	1	0	1	0	0	0	0	0	0

INSERTING PC BOARD



8K CORE MEMORY BOARDS

8K CORE MEMORY BOARDS					
	JUMPER ASSIGNMENTS				
BD No.	X0	X1	X2	M1	M2
0	OPEN	0	0	0	0
1		0	0	0	1
2		0	0	1	0
3		0	0	1	1
4		0	1	0	0
5		0	1	0	1
6		0	1	1	0
7		0	1	1	1
8		1	0	0	0
9		1	0	0	1
10		1	0	1	0
11		1	0	1	1
12		1	1	0	0
13		1	1	0	1
14		1	1	1	0
15		1	1	1	1



Ref. DGC 107-000540 Rev. 01

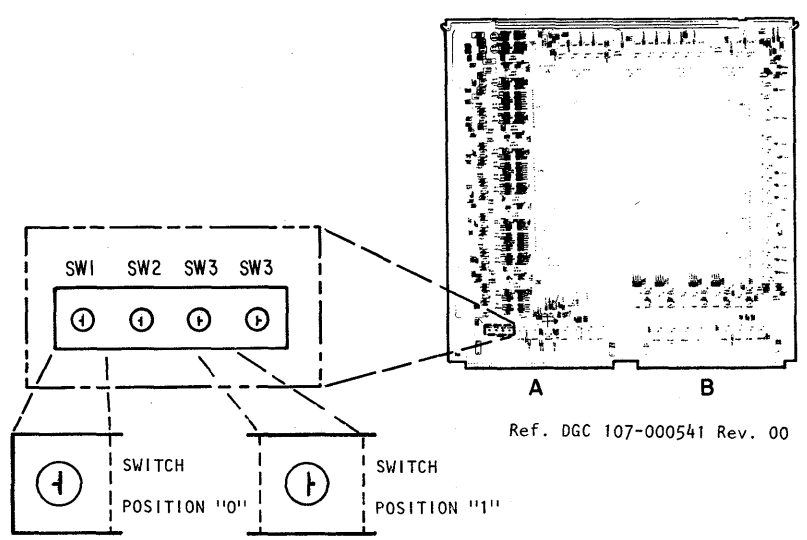
FOR A "0" INSERT JUMPER CONNECTING "0" ROW AND CENTER ROW.

FOR A "1" INSERT JUMPER CONNECTING "1" ROW AND CENTER ROW.

FOR "OPEN" INSERT NO JUMPER.

16K COAR MEMORY BOARDS WITH SWITCHES

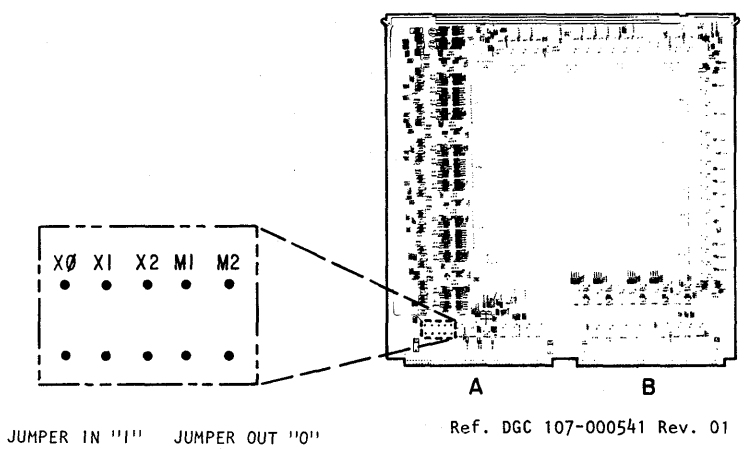
16K CORE MEMORY BOARDS				
	SWITCH ASSIGNMENTS			
BD No.	SW1	SW2	SW3	SW4
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1



Ref. DGC 107-000541 Rev. 00

16K CORE MEMORY BOARDS WITH JUMPERS

16K CORE MEMORY BOARDS					
	JUMPER ASSIGNMENTS				
BD No.	X0	X1	X2	M1	M2
0	0	0	0	0	0
1	0	0	0	1	0
2	0	0	1	0	0
3	0	0	1	1	0
4	0	1	0	0	0
5	0	1	0	1	0
6	0	1	1	0	0
7	0	1	1	1	0



JUMPER IN "1" JUMPER OUT "0"

Ref. DGC 107-000541 Rev. 01

BATTERY BACK-UP OPTION

I. INSTALLATION - BATTERY BACK-UP PCB TO NOVA 3/4 OR NOVA 3/12 MAIN FRAME
(KIT 005-006029)

A. TOP COVER NEED NOT BE REMOVED TO INSTALL PCB.

B. INSERT GOLD FINGER OF BATTERY BACK-UP PCB (005-006029) INTO "J-1" (15 DUAL CONNECTOR) LOCATED INSIDE MAIN FRAME LOWER LEFT SIDE OF BACK PANEL.

C. SECURE PCB TO STANDOFF ON BASE WITH (1) 6-32 X 5/16 SOCKET HEAD CAP SCREW (106-000483).

D. REMOVE OR CUT OUT THE FOLLOWING RESISTORS LOCATED ON THE SOLDER SIDE OF BACK PANEL.

NOVA 3/4 - R4, R26 and R27 QTY (3)
NOVA 3/12 - R2, R3 and R7 QTY (3)

E. PREPARE AND INSTALL BATTERIES PER INSTRUCTION II AND III, OR EXTENSION CABLE PER INSTRUCTION IV.

NOTE: USE 15" PCB IN TOP SLOT TO SET GUIDE DISTANCE BEFORE SECURING TOP COVER (IF REMOVAL IS NECESSARY). NO OTHER ALIGNMENT IS REQUIRED.

II. PREPARATION - BATTERIES AND BATTERY CABLE
(SAME FOR BOTH NOVA 3/4, MTG KIT 005-006028, AND NOVA 3/12, MTG KIT 005-006473).

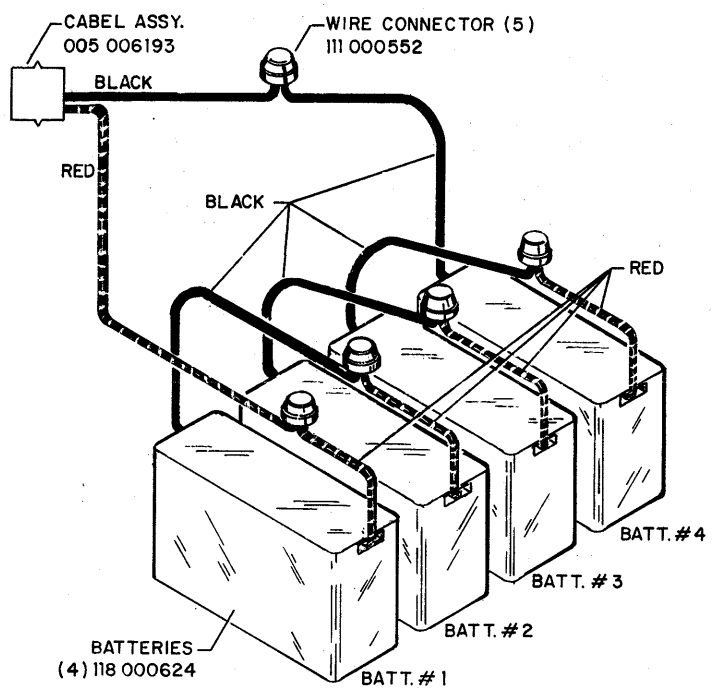
CAUTION: DO NOT SHORT BATTERY LEADS

THIS IS A SERIES HOOK-UP FOR A TOTAL OF 24 VOLTS.

A. PLACE (4) BATTERIES 118-000- IN A ROW WITH BLACK AND RED LEADS UP AND TOWARD THE OPERATOR.

B. STRIP LEADS ON BATTERIES, ASSEMBLE AND SECURE TOGETHER WITH SET SCREW TYPE WIRE CONNECTOR 111-000552.

FROM	TO	COMMENT
BATT #1 BLACK	BATT #2 RED	CUT LEADS TO 3/4"; STRIP LEAD 3/8" AND SECURE TOGETHER WITH CONN WIRE 111-000552
BATT #2 BLACK	BATT #3 RED	CUT LEADS TO 8 1/2"; STRIP LEAD 3/8" AND SECURE TOGETHER WITH CONN WIRE 111-000552
BATT #3 BLACK	BATT #4 RED	CUT LEADS TO 3/4"; STRIP LEAD 3/8" AND SECURE TOGETHER WITH CONN WIRE 111-000552
BATT #4 BLACK	CABLE 005-0006193 BLACK	STRIP LEAD 3/8" AND SECURE TOGETHER WITH 111-000552 DO NOT CUT BLACK BATTERY LEAD.
BATT #1 RED	CABLE 005-005-006193 RED	CUT BATT LEAD TO 8 1/2"; STRIP 3/8" AND SECURE TOGETHER WITH 111-000552



III. INSTALLATION - BATTERY BACK-UP
(PREREQUISITE: BATTERY BACK-UP PCB CARD 005-006029)

CAUTION: DO NOT SHORT BATTERY LEADS

NOVA 3/4 (MGT KIT 005-006028)

A. REMOVE TOP COVER AND BRACKET HOLDING CAPACITORS DOWN.

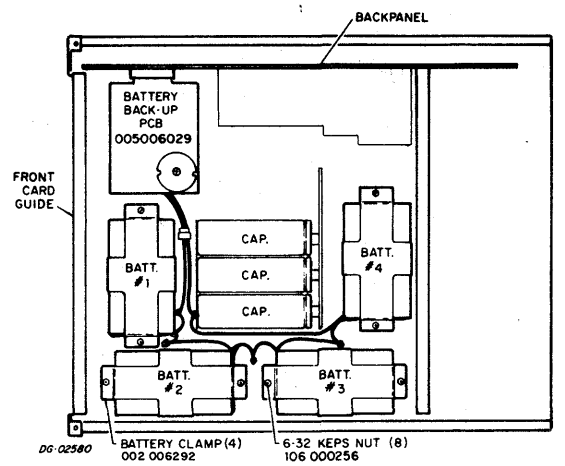
B. PLACE (4) BATTERIES ASSEMBLED IN INSTRUCTION II IN BOTTOM OF MAIN FRAME BASE, AS PER ILLUSTRATION.

C. DRESS LEADS CLOSE TO BATTERIES AND ASSEMBLE (4) BATTERY CLAMPS (002-006292) over each one. SECURE EACH WITH (2) 6-32 KEPS NUTS 106-000256 . SECURE BATTERY #1 AND #4 BEFORE #2 AND #3.

D. PLUG BATTERY CABLE CONNECTOR INTO PCB CONNECTOR PLUG AND DRESS LEADS ALONG BATTERIES.

E. REPLACE CAPACITOR BRACKET HOLDDOWN.

F. REPLACE TOP COVER. USE 15" PCB IN TOP SLOT TO SET GUIDE DISTANCE BEFORE SECURING TO COVER.



BATTERY BACK-UP INSTALLATION — NOVA 3/4

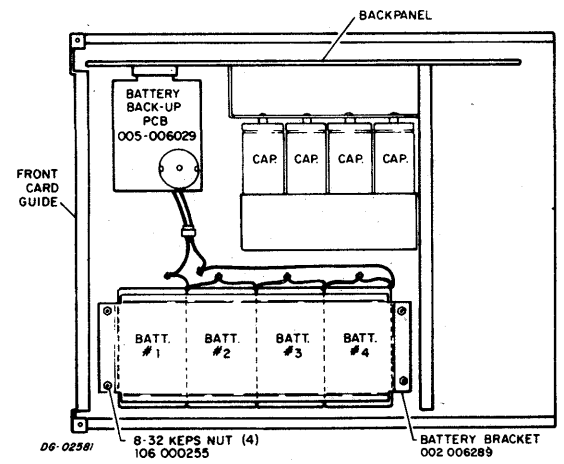
NOVA 3/12 (MTG KIT 005-006473)

A. TOP COVER NEED NOT BE REMOVED TO INSTALL BATTERIES.

B. PLACE BATTERIES ON SIDE AS SHOWN IN ILLUSTRATION. ASSEMBLE BATTERY BRACKET 002-006289 OVER BATTERIES AND SECURE WITH (4) SCREWS 8-32 KEPS NUTS (106-000255).

C. DRESS BATTERY LEADS DOWN CENTER ALONG BATTERIES.

D. PLUG BATTERY CABLE CONNECTOR INTO PCB CONNECTOR PLUG.



BATTERY BACK-UP INSTALLATION — NOVA 3/12

IV. INSTALLATION - BATTERY BACK-UP EXTENSION CABLE
005-006454 TO NOVA 3/4 AND NOVA 3/12 MAIN FRAME. (PREREQUISITE: BATTERY BACK-UP PCB CARD.)

NOVA 3/4

A. REMOVE TOP COVER.

B. ASSEMBLE CABLE END (CONNECTOR WITH EARS) THROUGH THE RECTANGULAR OPENING ABOVE THE TRANSFORMER IN THE AC POWER SUPPLY.

C. RUN CABLE TO RIGHT OR LEFT OF TRANSFORMER, THROUGH OPENING IN REAR CARD GUIDE AND ALONG BOTTOM OF BASE TO BATTERY PCB CARD. PLUG CABLE END INTO PCB CONNECTOR PLUG.

D. REPLACE COVER. USE 15" PCB IN TOP SLOT TO SET GUIDE DISTANCE BEFORE SECURING.

NOVA 3/12

A. REMOVE REAR FAN PANEL.

B. ASSEMBLE CABLE END (CONNECTOR WITH EARS) THROUGH THE RECTANGULAR OPENING TO REAR OF THE TRANSFORMER (PART OF AC POWER SUPPLY BRACKET).

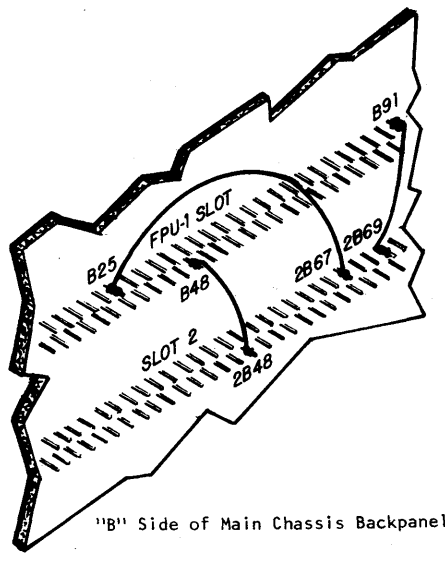
C. RUN CABLE ALONG LEFT SIDE OF TRANSFORMER, THROUGH OPENING IN REAR CARD GUIDE AND DOWN MIDDLE OF BASE TO BATTERY PCB CARD. PLUG CABLE END INTO PCB CONNECTOR PLUG.

D. REPLACE REAR FAN PANEL.

FLOATING POINT UNIT INTERNAL AND EXTERNAL CABLING

1. If the floating point option is installed in a system without an expansion chassis, slot 2 of the main chassis is wire-wrapped to the slot accommodating FPU1 according to the following table:

MMU	FPU1
2B48	B48
2B67	B25
2B69	B91



"B" Side of Main Chassis Backpanel

2. If the floating point option is installed in a system with an expansion chassis the following procedure is preferred:

   a. Install FPU1 and FPU2 in slots X11 and X12, respectively.
   b. Install an internal cable connecting slot X11 of expansion chassis to connector PX10 as specified in Table I.
   c. Install an internal cable connecting slot 2 of the main chassis to connector P5, as specified in Table II.
   d. Install cable 005-7435 that connects PX10 to P5.

Table I
FPU Internal Cable - Expansion Chassis

Signal Name	Paddleboard Edge Connector Pin No's.	Destination Pins
GND	1	XA1
GND / FPDCH	1 / 17	XB1 / XB48
GND / RESETFP	1 / 18	XB2 / XB25
GND / FPSEL	1 / 38	XB50 / XB91

Note: Brackets indicate twisted pairs. Remove all excess wires from connector assembly.

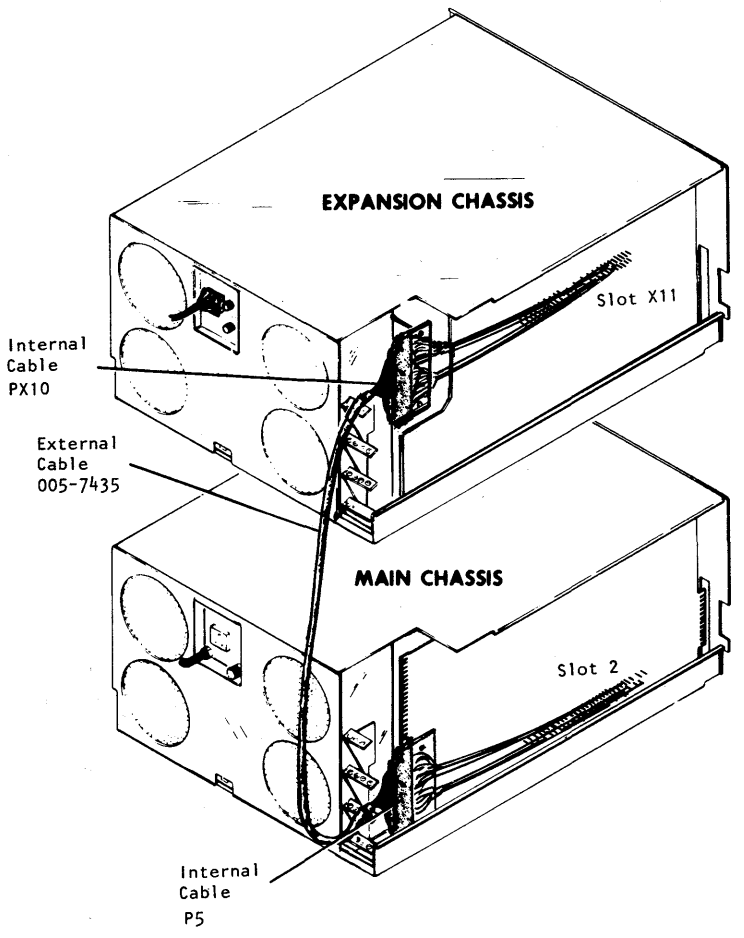
3. If the floating point option is installed in a system with an expansion chassis and FPU1 and FPU2 are to be installed in expansion chassis slots other than X11 abd X12, perform the following procedure:

   a. Install FPU1 and FPU2 in d desired expansion chassis slots.
   b. Install an internal cable connecting the slot accommodating FPU1 to the desired connector, as specified in Table I.
   c. Install an internal cable connecting slot 2 of the main chassis to the desired connector as specified in Table II.
   d. Install cable 005-7435 which connects the desired expansion chassis connector to the desired main chassis connector.

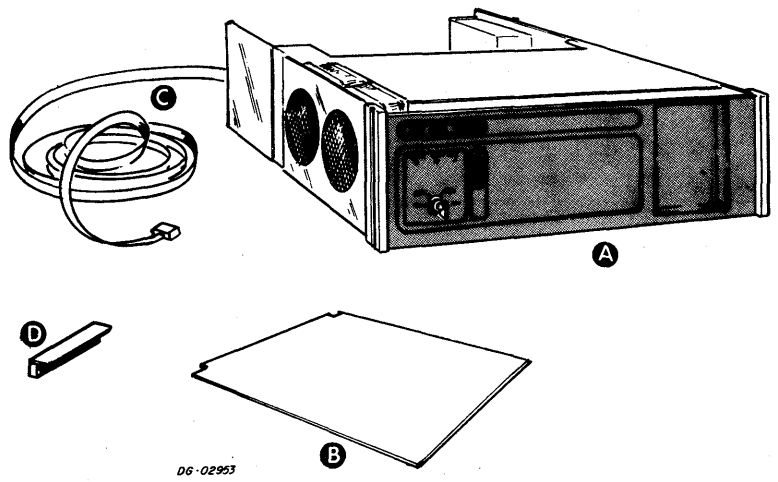
Table II
FPU Internal Cable - Main Chassis

Signal Name	Paddleboard Edge Connector Pin No's.	Destination Pins
GND	1	2A1
GND / FPDCM	1 / 17	2B1 / 2B48
GND / RESETFP	1 / 18	2B2 / 2B67
GND / FPSEL	1 / 38	2B50 / 2B69

Note: Brackets indicate twisted pairs. Remove all excess wires from connector assembly.



SUBSYSTEM COMPONENT BREAKDOWN



DG-02953

MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	9-SLOT CPU CHASSIS	CABINET	
B	CPU, 4K RAM BOARD	CHASSIS	

DG-02672

CABLE

Item	Cable	Connecting	Max Allowed Lg ft / m	Notes
C	EXTERNAL I/O	CPU CHASSIS and EXTERNAL CHASSIS	100 / 30.5	REQUIRED FOR EXPANSION OF I/O BUS

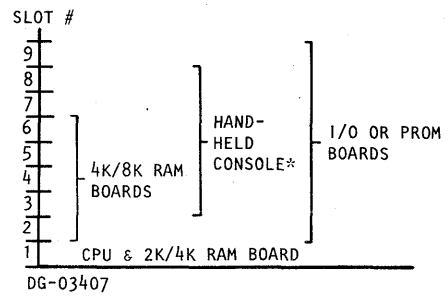
DG-02673

TERMINATOR

Item	Terminator	Location	Notes
D	I/O BUS	TOP OF BACKPANEL ASSEMBLY	SLOT 8- PINS 1,3,5,7,9,11,13,15 SLOT 9- PINS 2,4,6,8,10,12,14,16

DG-02674

SLOT ASSIGNMENTS



DG-03407

* IT IS RECOMMENDED THAT THE HAND-HELD CONSOLE BE INSERTED INTO SLOT 8 TO AID IN PROPER CABLE DRESSING INTO THE FRONT PANEL.

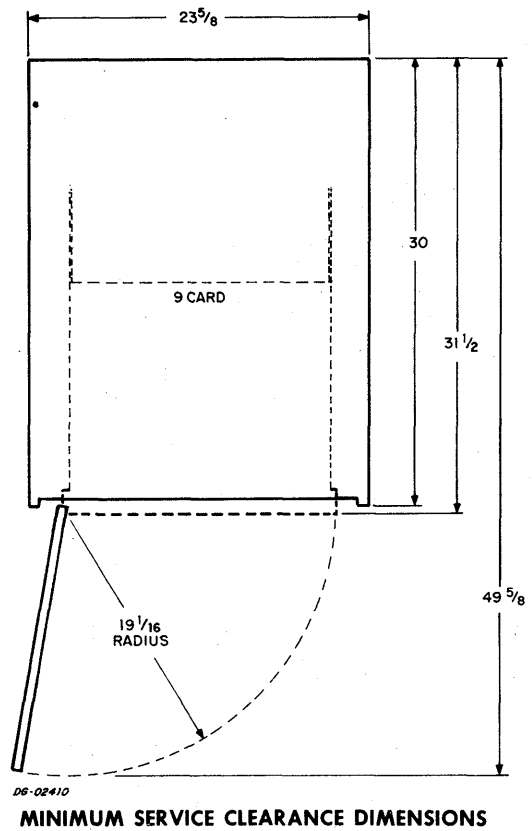
MAX +5V CURRENT AVAILABLE = 12A

SPECIFICATIONS OF THE CABINET-MOUNTED COMPONENTS

Item	Component	Number in Subsystem	Maximum Operating Temperature °F/°C: Component	Media	Primary Power: Volts	Hz	Phase	Cond	Amps	Cabinet Height Required: Area	in.	cm	Weight lbs/kg	Power Dissipation (Max Watts)	Preferred Location or Remarks: 1012K	1012N	Operating Humidity (Relative) min%/max
A	microNOVA 8561	1	131/55		100	60	1	3	3	3	5.25	13.3	52/23.4	300	AREA 18-20	AREA 9-11	20/80
			" "		120	60	1	3	2.6	"	"	"	" "	312	"	"	" "
			" "		220	50	1	3	1.4	"	"	"	" "	308	"	"	" "
			" "		240	50	1	3	1.2	"	"	"	" "	288	"	"	" "

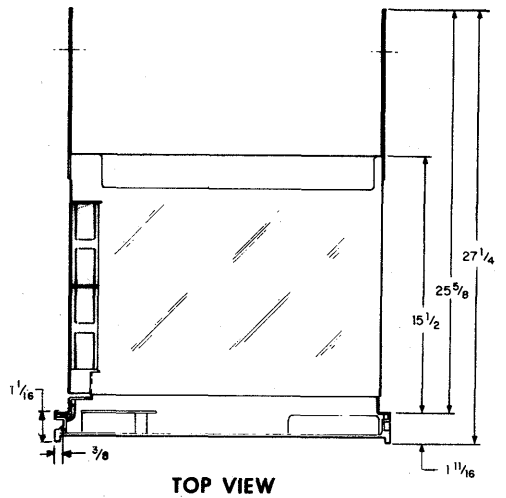
Voltage	Power Cable Length ft	m	Power Cable Plug	Mating Receptacle on Power Drop	Mating Receptacle in Wall
100Vac	6	1.83	5-15P	5-15R	5-15R
120Vac	6	1.83	5-15P	5-15R	5-15R
220Vac	6	1.83	6-15P	6-15R	6-15R
240Vac	6	1.83	6-15P	6-15R	6-15R

DG-02717

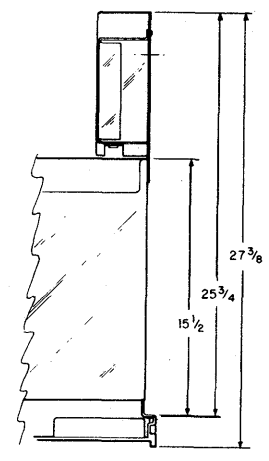


DG-02410

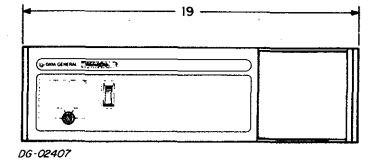
MINIMUM SERVICE CLEARANCE DIMENSIONS



TOP VIEW

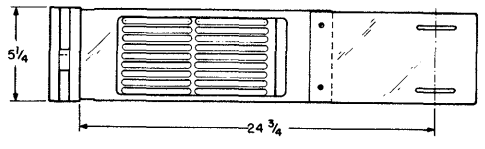


TOP VIEW (WITH BATTERY BACKUP OPTION)



DG-02407

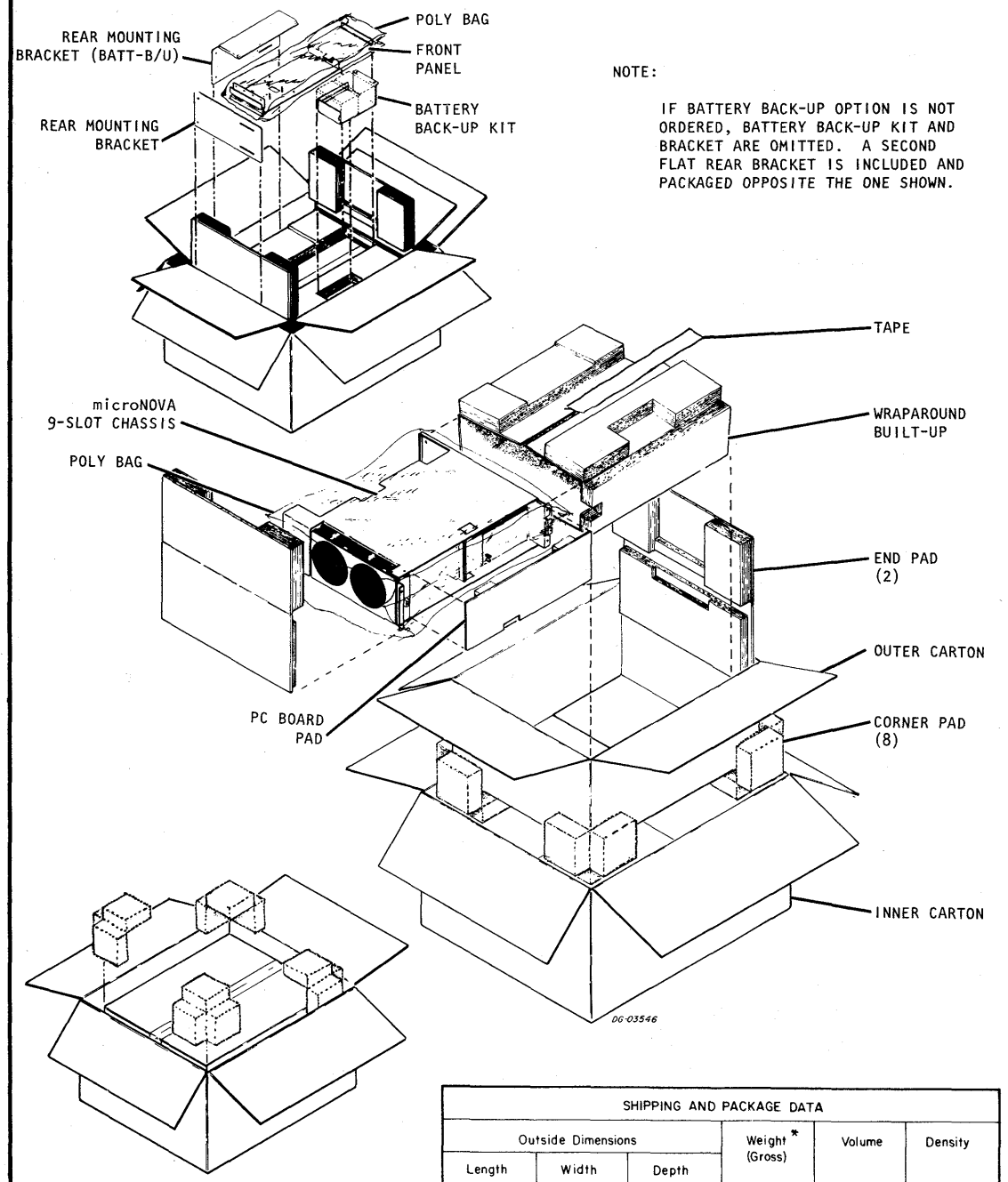
FRONT VIEW



SIDE VIEW

SHIPPING

microNOVA CHASSIS



NOTE:

IF BATTERY BACK-UP OPTION IS NOT ORDERED, BATTERY BACK-UP KIT AND BRACKET ARE OMITTED. A SECOND FLAT REAR BRACKET IS INCLUDED AND PACKAGED OPPOSITE THE ONE SHOWN.

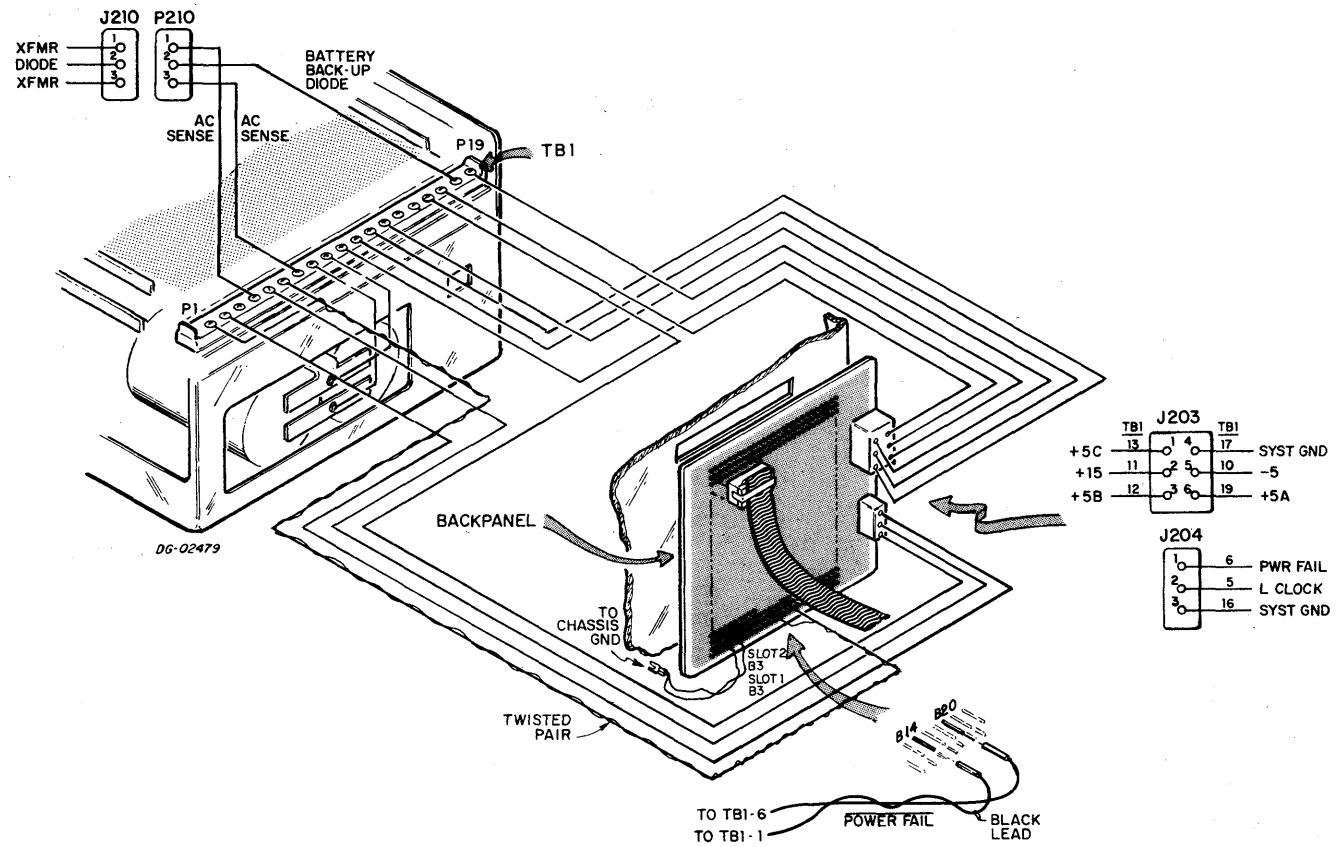
SHIPPING AND PACKAGE DATA					
Outside Dimensions			Weight * (Gross)	Volume	Density
Length	Width	Depth			
in. / cm	in. / cm	in. / cm	lbs. / kg	cu ft. / cu m	lbs/cu ft. / kg/cu m
26 / 66	22 / 56	14 / 36	45 / 20.4	4.6 / 0.13	9.8 / 156.9
SHIPPING SPECIFICATIONS			STORAGE SPECIFICATIONS		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-40 to +160 / -40 to +71	0% - 80%	50,000 ft. 15,200m	-40 to +160 / -40 to +71	0% - 80%	90 days

DG-03224

* INCLUDES BATTERY BACK-UP

INTERNAL CABLING

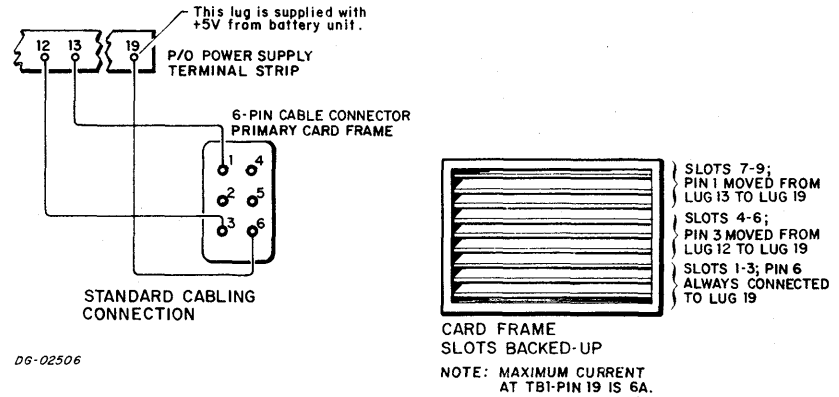
TERMINAL STRIP CONNECTIONS



CARDFRAME PIN ASSIGNMENTS

	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59
ODD	MCLOCK	GND	$\overline{BIO1}$	INTP OUT	$\overline{BDCINT}$	GND	BIO2	$\overline{BIOCLOCK}$		INTPOUT	DCHPOUT	BDATA15	BSP1	BDATA14	DATAXFER	BDATA13	BDATA12		BDATA11		BDATA10		BDATA9	$\overline{BSAE}$	BDATA8	$\overline{BOTEN}$	GND	+15V	VCC	VCC
EVEN	MCLOCK	BIO1	$\overline{CLEAR}$	$\overline{BEXTINT}$	$\overline{LOCK}$	$\overline{BIO2}$	GND	BIOCLOCK	VCC	INTPIN	DCHPIN	BDATA7	BP	BDATA6	$\overline{FDCHR}$	BDATA5	BDATA4	GND	BDATA3		BDATA2	BSP2	BDATA1	$\overline{BWE}$	BDATA0	PHIL	GND	+15V	-5V	VCC
	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60

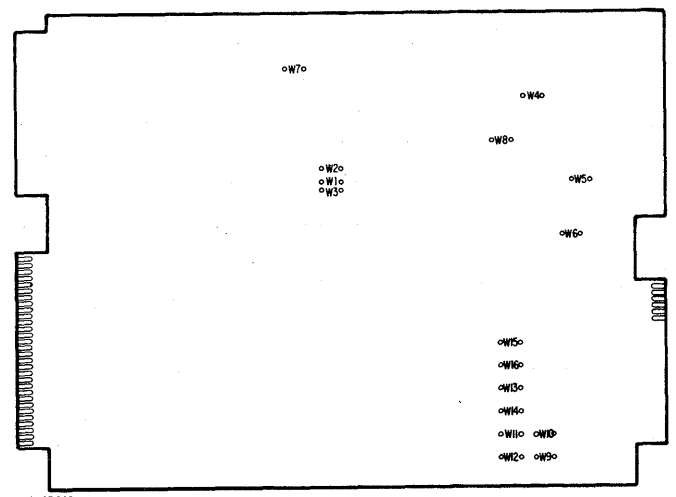
CABLE CONNECTIONS FOR BATTERY BACK-UP PROTECTION



NOTE: MAXIMUM CURRENT AT TB1-PIN 19 IS 6A.

TAILORING

CPU



DG-03029

CPU PC BOARD, DGC PART NO. 107-000533-02

JUMPER WORD ADDRESS

ADDRESS	INSERT JUMPER
077776_8	W5
077777_8	W6

IF W5 IS INSERTED, MEMORY ADDRESS 077776_8 SHALL CONTAIN THE CONTENTS OF THE JUMPER WORD REGISTER WITH THE DEVICE ADDRESS OF THE APL OPTION.

IF W6 IS INSERTED, MEMORY ADDRESS 077777_8 SHALL CONTAIN THE CONTENTS OF THE JUMPER WORD REGISTER WITH THE STARTING ADDRESS.

ADDRESS SELECTION JUMPERS

BIT POSITIONS OF STARTING ADDRESS	1	2	3
INSERT JUMPER TO SPECIFY 1	W1	W2	W3

JUMPERS W1-W3 DETERMINE WHICH 4K ADDRESS GROUP OUT OF 32K IS RESIDENT ON THE CPU BOARD. BECAUSE OF HARDWARE RESTRICTIONS, IT IS NOT RECOMMENDED THAT ON BOARD MEMORY BE ASSIGNED THE HIGHEST 4K POSITION.

OTHER JUMPERS

JUMPER	FUNCTION
W4	INSERT JUMPER TO ENABLE JUMPER WORD REGISTER.
W7	INSERT JUMPER TO DISABLE AUTO-RESTART AFTER A POWER FAILURE IF POWER IS NOT BEING SUPPLIED BY BATTERY BACK-UP.
W8	INSERT JUMPER TO ENABLE 64 WORDS OF LOCAL ROM ASSOCIATED WITH ADDRESSES $077700-077777_8$, INSERTED FOR APL.

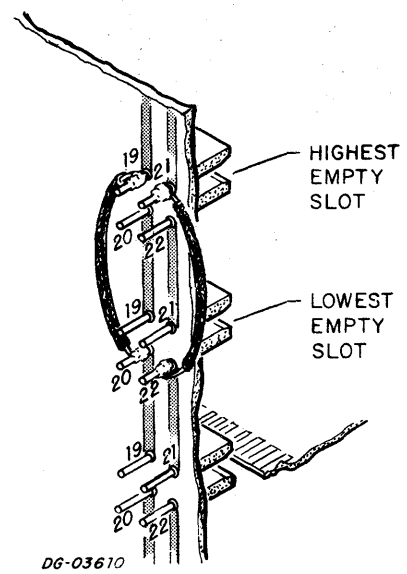
JUMPER WORD REGISTER

BIT POSITION	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
CONTENTS (INSERT JUMPER TO SPECIFY 1)	W9	W10	W11	W12	W13	W14	W15	W16	0	0	0	0	0	0	0	0	1
APL OPTION	*		DS0	DS1	DS2	DS3	DS4	DS5	0	0	0	0	0	0	0	0	1
STARTING LOCATION	A0	A1	A2	A3	A4	A5	A6	A7	0	0	0	0	0	0	0	0	1

* IN FOR DCH DEVICE

FUNCTION	W4	W5	W6	W8
APL OPTION	IN	IN	OUT	IN
STARTING ADDRESS	IN	OUT	IN	OUT
HHC OR CONSOLE DEBUG OPTION	OUT	---	---	---

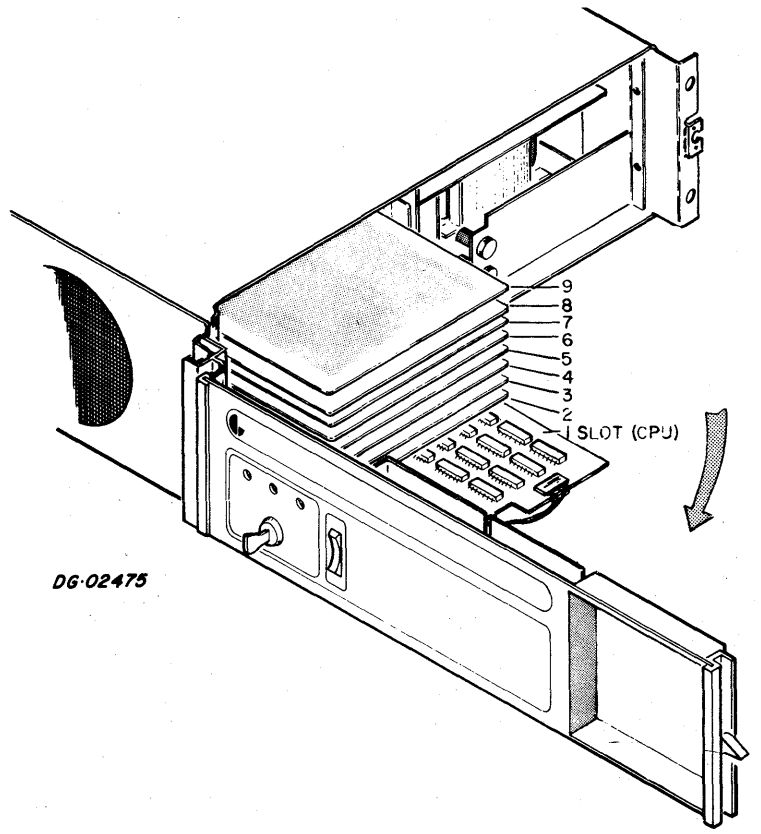
BACKPANEL



DG-03610

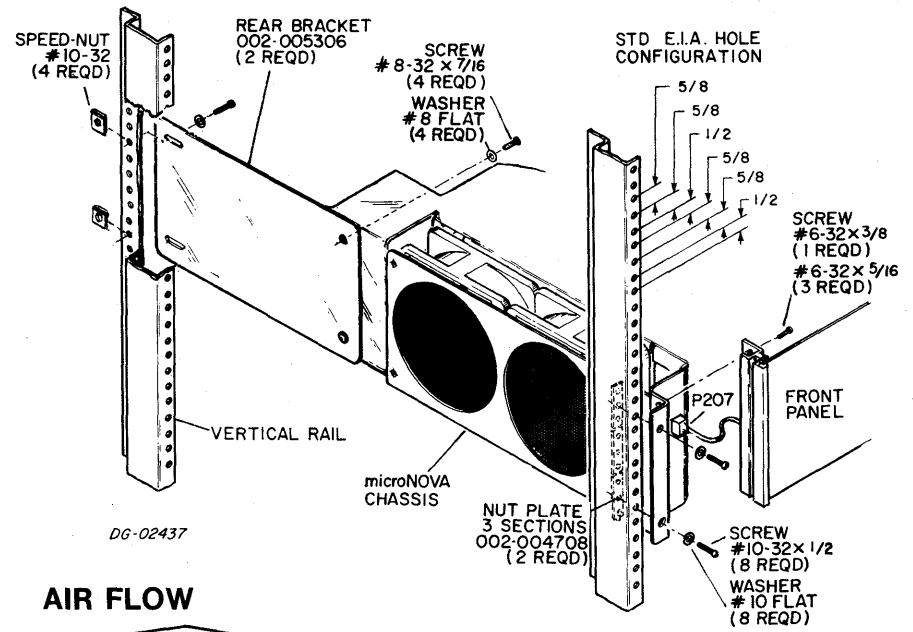
A 9-SLOT CARDFRAME, HAVING EMPTY SLOTS BETWEEN SYSTEM MODULES, MUST HAVE PRIORITY JUMPERS INSTALLED ACROSS THOSE SLOTS AS FOLLOWS: PINS 20 AND 22 OF THE LOWEST EMPTY SLOT SHOULD BE CONNECTED TO PINS 19 AND 21, RESPECTIVELY, OF THE HIGHEST EMPTY SLOT. THE HIGHEST AND LOWEST EMPTY SLOT MAY BE THE SAME. NO JUMPERS ARE REQUIRED IF THE GROUP OF EMPTY SLOTS INCLUDE SLOT 9. THE HIGHEST LEVEL PRIORITY BOARD IS THE ONE NEAREST THE CPU SLOT.

BOARD PLACEMENT IN SLOT

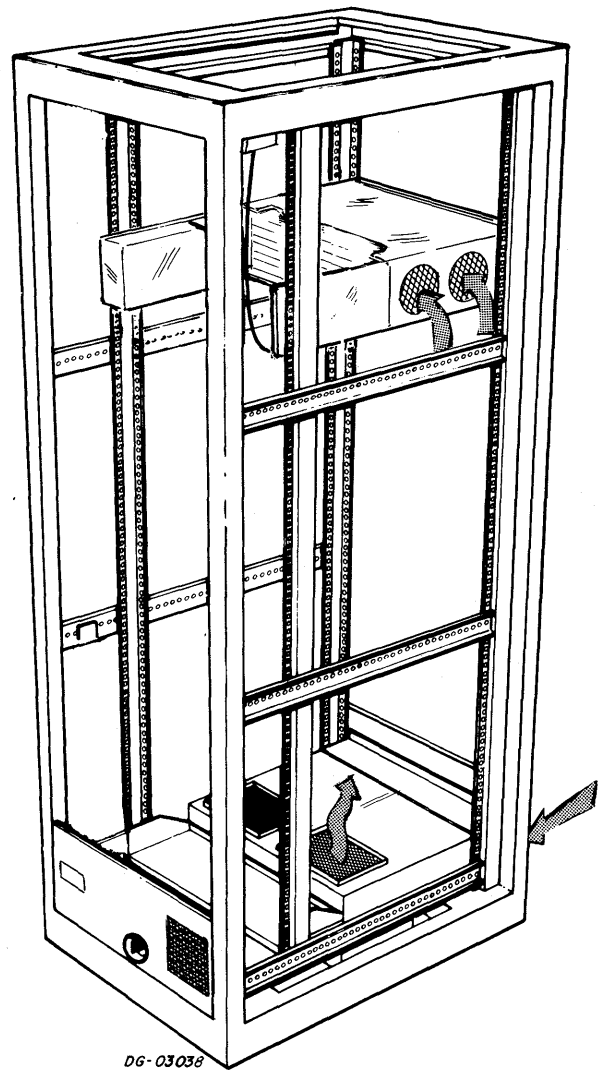


DG-02475

CABINET MOUNTING



AIR FLOW



Torque Screw Size	Requirements in/lb
6-32	7 - 8
8-32	12 - 14
10-32	23 - 25 (10 - 12 for speednuts)

MOUNTING PROCEDURE

THE FOLLOWING PROCEDURE REQUIRES THE USE OF MOUNTING KIT #005-7029.

1. MOUNT THE CARDFRAME CHASSIS TO THE FRONT OF THE CABINET, USING (4) 10-32 X 3/8 SEMS SCREWS, WITH FLAT WASHERS, AND 2 NUT PLATES (002-5030).

2. MOUNT THE TWO REAR SUPPORT PANELS TO THE CARDFRAME CHASSIS AND THE SIDES OF THE CABINET.

   a) USE (2) 8-32 X 7/16 SEMS SCREWS, WITH FLAT WASHERS, TO MOUNT EACH SIDE PANEL TO THE CARDFRAME.

   b) USE (2) 10-32 X 1/2 SEMS SCREWS, WITH FLAT WASHERS, TO MOUNT EACH SUPPORT PANEL TO THE SIDE OF THE CABINET. TWO 10-32 SPEED NUTS ARE REQUIRED ON EACH SIDE RAIL OF THE CABINET, FOR THE SEMS SCREW HARDWARE.

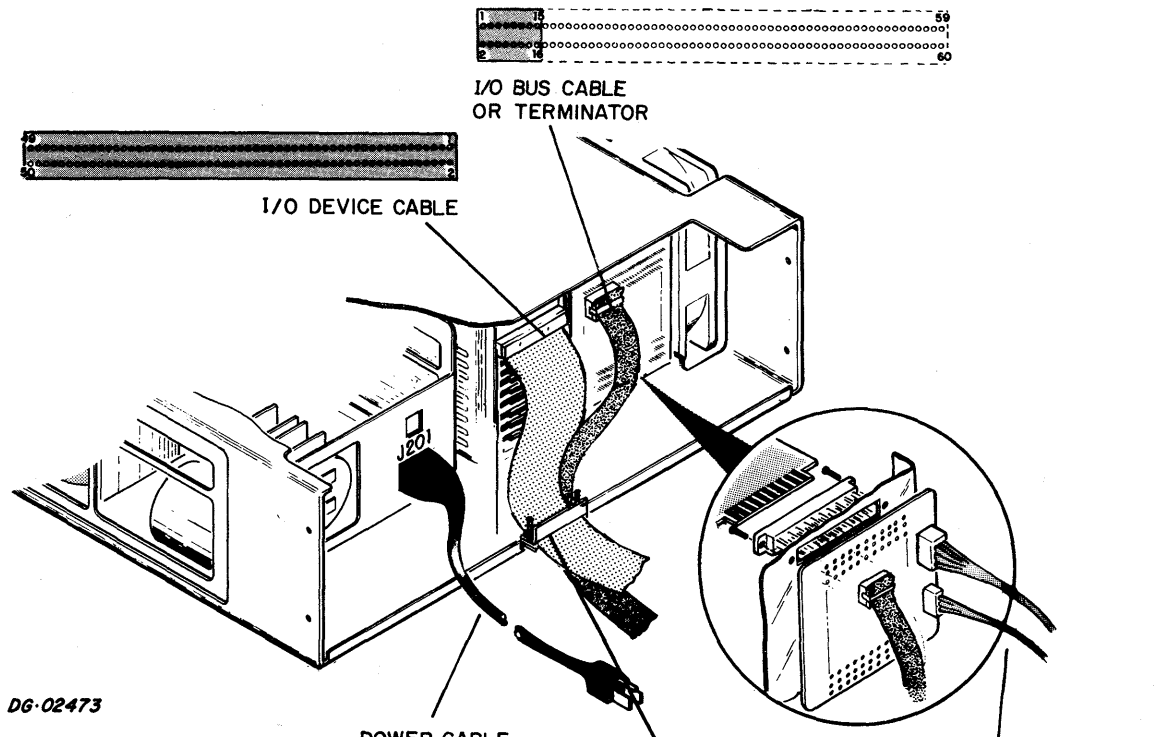
3. WHEN MOUNTING THE FRONT PANEL, THE HARDWARE IN ITEM 1 (ABOVE) MAY HAVE TO BE LOOSENED TO FACILITATE ADJUSTMENT OF THE CARDFRAME CHASSIS FOR FRONT PANEL ALIGNMENT.

4. USE (3) 6-32 X 5/16 SEMS SCREWS, WITH FLAT WASHERS, IN THE TOP THREE FRONT PANEL SUPPORT LOCATIONS.

5. USE (1) 6-32 X 3/8 SEMS SCREW WITH A FLAT WASHER IN THE BOTTOM SUPPORT LOCATION. A CABLE TIE, SUPPORTING THE FRONT PANEL TO CPU BOARD CABLE, WILL BE MOUNTED UNDER THIS SCREW.

6. PLUG IN : P205-CABLE TO CPU BOARD AND P207-POWER CABLE TO FRONT PANEL.

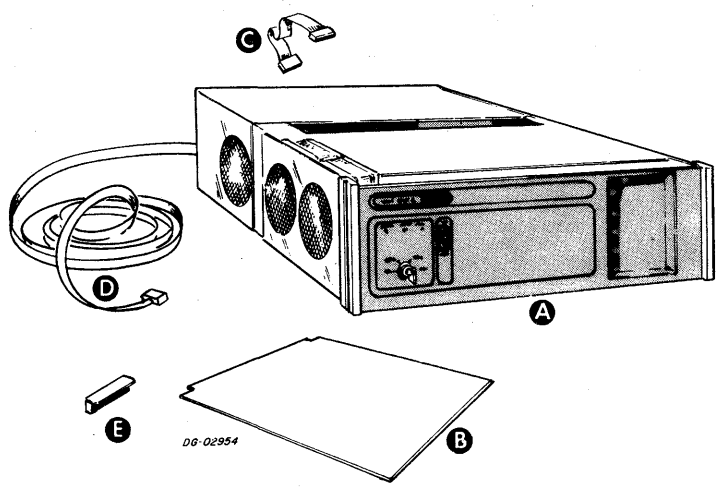
EXTERNAL /INTERNAL CABLING



MODEL №	POWER CABLE ASSY
1118G	100V
1118D	120V
1118E	220V
1118F	240V

(1)	U-BOLT;	002-005734
(1)	BRACKET;	002-005735
(1)	RETAINER;	002-005736
(2)	WASHER, FLAT, #8;	106-000264
(2)	KEPS NUT, #8-32;	106-000255

SUBSYSTEM COMPONENT BREAKDOWN



MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	18-SLOT CPU CHASSIS	CABINET	
B	CPU, 4K RAM BOARD	CHASSIS	

DG-02672

CABLE

Item	Cable	Connecting		Max Allowed Lg ft / m	Notes
C	INTERNAL I/O	9-SLOT CPU BACKPANEL	and 9-SLOT EXP BACKPANEL		
D	EXTERNAL I/O	9-SLOT EXP BACKPANEL	" EXTERNAL BACKPANEL		

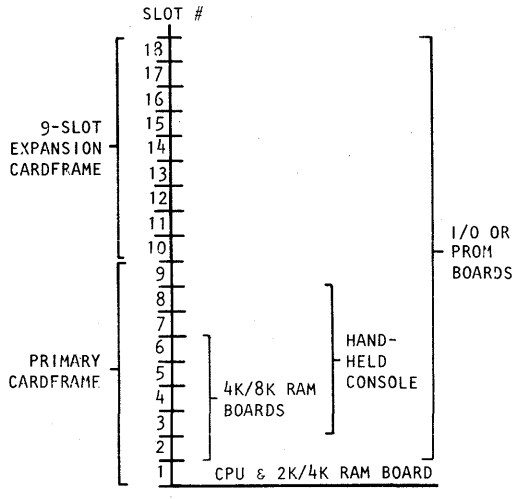
DG-02673

TERMINATOR

Item	Terminator	Location	Notes
E	I/O BUS	TOP OF EXPANSION BACKPANEL	SLOT 8- PINS 1,3,5,7,9,11,13,15 SLOT 9- PINS 2,4,6,8,10,12,14,16

DG-02674

SLOT ASSIGNMENTS



NOTES:

1. IT IS RECOMMENDED THAT THE HAND-HELD CONSOLE BE INSERTED INTO SLOT 8 TO AID IN PROPER CABLE DRESSING INTO THE FRONT PANEL.
2. ASYNCHRONOUS CONTROLLER WITH CONSOLE DEBUG MUST BE INSTALLED IN PRIMARY CARDFRAME (SLOTS 1-9): WITHOUT DEBUG, IT MAY BE INSTALLED IN ANY I/O SLOT.

MAX +5V CURRENT AVAILABLE = 12A

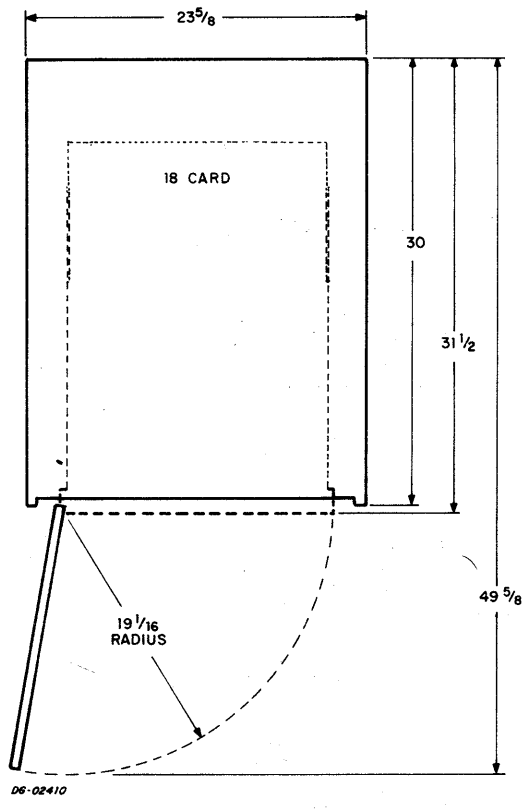
SPECIFICATIONS OF THE CABINET-MOUNTED COMPONENTS

Item	Component	Number in Subsystem	Maximum Operating Temperature: Component °F / °C	Maximum Operating Temperature: Media °F / °C	Primary Power: Volts	Hz	Phase	Cond	Amps	Cabinet Height Required: Area	in.	cm	Weight lbs / kg	Power Dissipation (Max Watts)	Preferred Location or Remarks: 1012 K	1012 N	Operating Humidity (Relative) min %/max
A	8560	1	131 / 55		100	60	1	3	3.5	3	5.25	13.3	84 / 37.8	350	AREA 18-20	AREA 9-11	20 / 80
			131 / 55		120	60	1	3	3.0	3	5.25	13.3	84 / 37.8	360	AREA 18-20	AREA 9-11	20 / 80
			131 / 55		220	50	1	3	1.6	3	5.25	13.3	84 / 37.8	352	AREA 18-20	AREA 9-11	20 / 80
			131 / 55		240	50	1	3	1.5	3	5.25	13.3	84 / 37.8	360	AREA 18-20	AREA 9-11	20 / 80

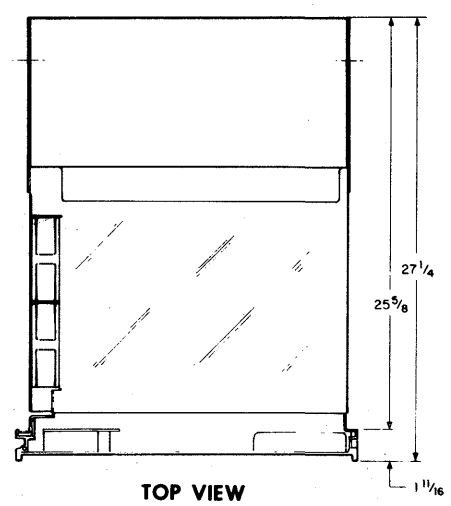
DG-01914

Voltage	Power Cable Length ft	Power Cable Length m	Power Cable Plug	Mating Receptacle on Power Drop	Mating Receptacle in Wall
100Vac	6	1.83	5-15P	5-15R	5-15R
120Vac	6	1.83	5-15P	5-15R	5-15R
220Vac	6	1.83	6-15P	6-15R	6-15R
240Vac	6	1.83	6-15P	6-15R	6-15R

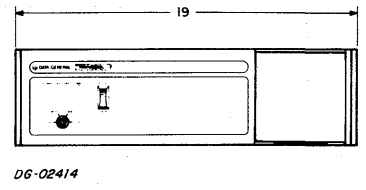
DG-02717



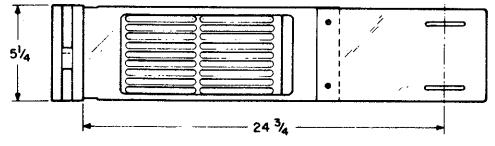
MINIMUM SERVICE CLEARANCE DIMENSIONS



TOP VIEW



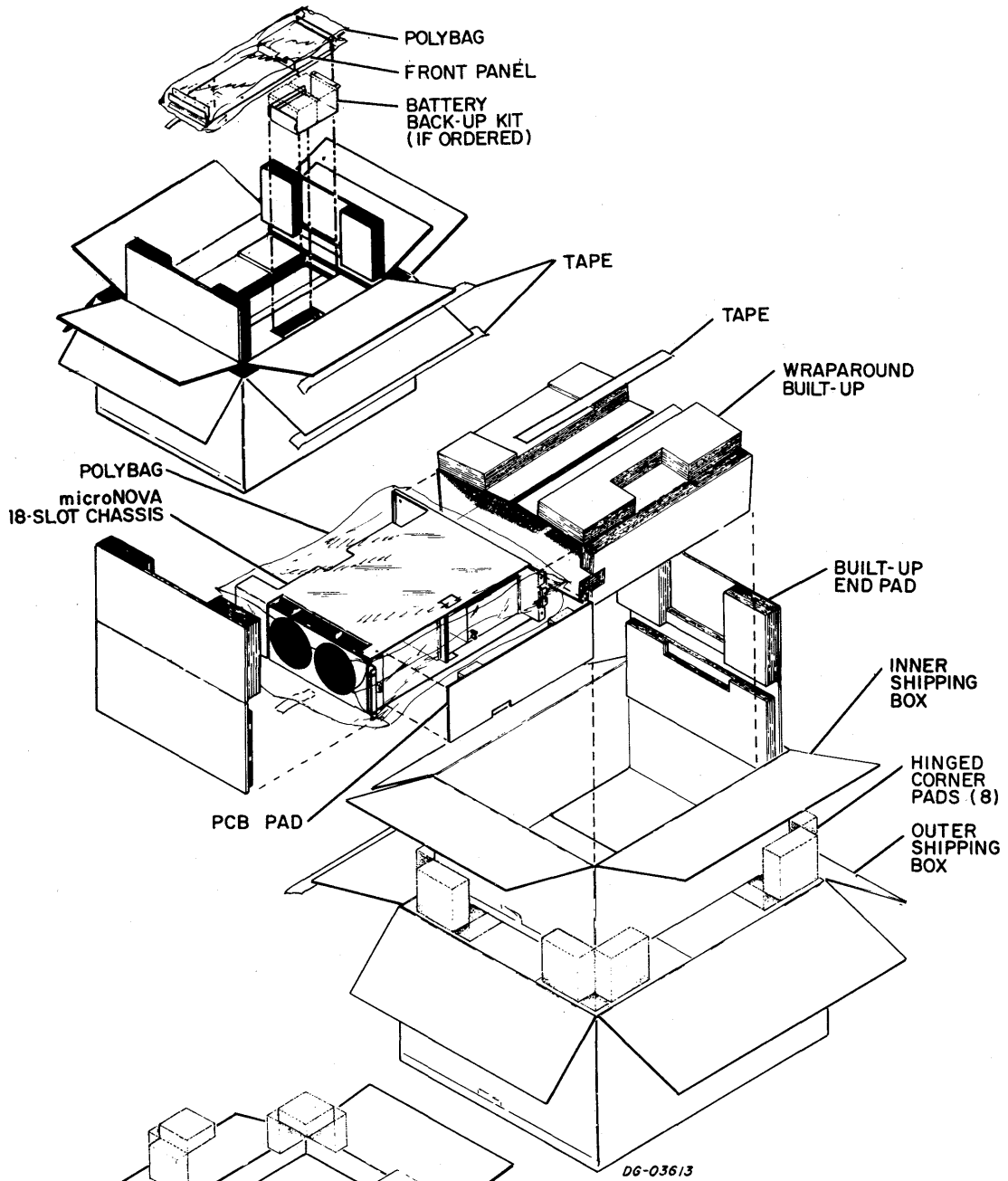
FRONT VIEW



SIDE VIEW

SHIPPING

18-SLOT CHASSIS

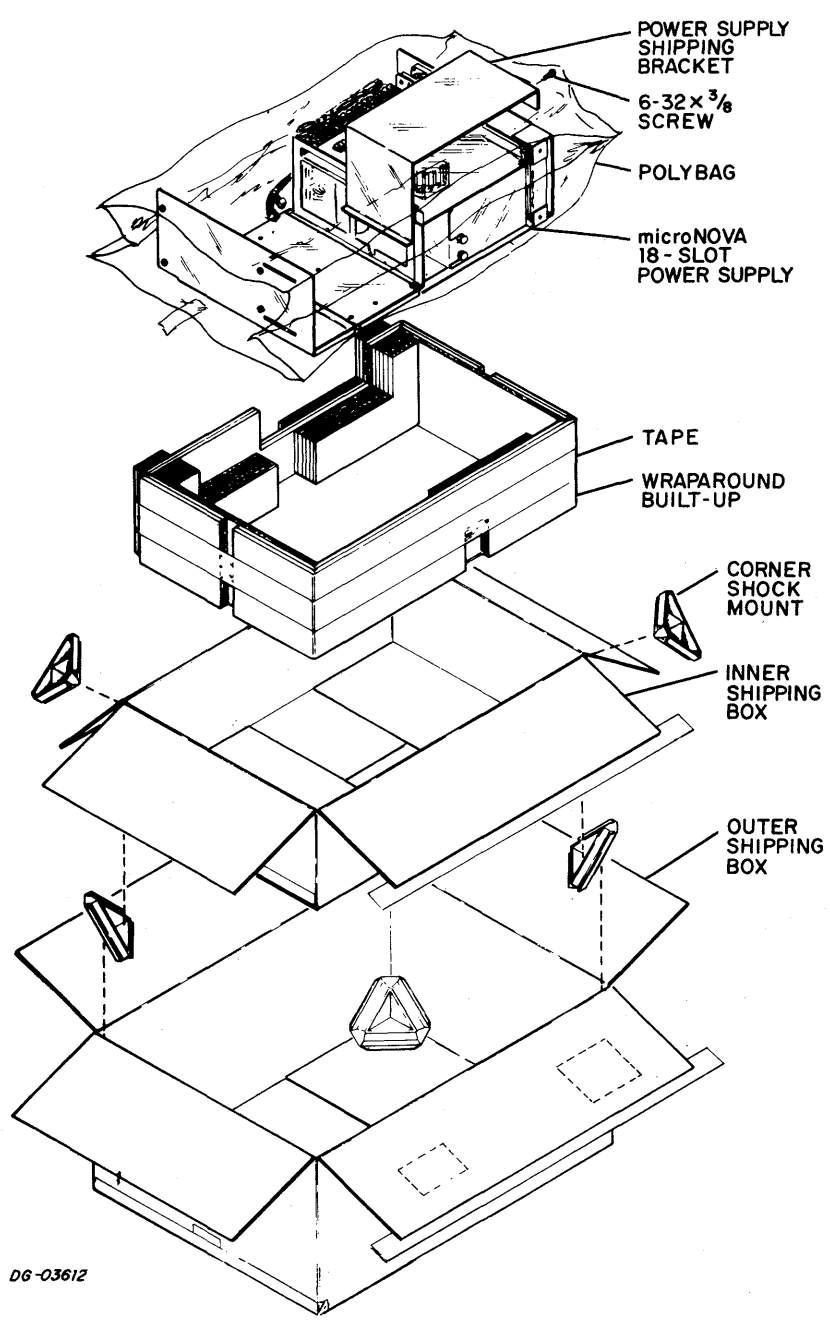


DG-03613

SHIPPING AND PACKAGE DATA					
Outside Dimensions			Weight * (Gross)	Volume	Density
Length	Width	Depth			
in. / cm	in. / cm	in. / cm	lbs. / kg	cu ft. / cu m	lbs/cu ft. / kg/cu m
26 / 66	22 / 56	14 / 36	45 / 20.4	4.6 / 0.13	9.8 / 156.9
SHIPPING SPECIFICATIONS			STORAGE SPECIFICATIONS		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-40 to +160 / -40 to +71	0%-80%	50,000 ft. 15,200m	-40 to +160 / -40 to +71	0%-80%	90 days

DG-03224 * INCLUDES BATTERY BACK-UP

18-SLOT POWER SUPPLY



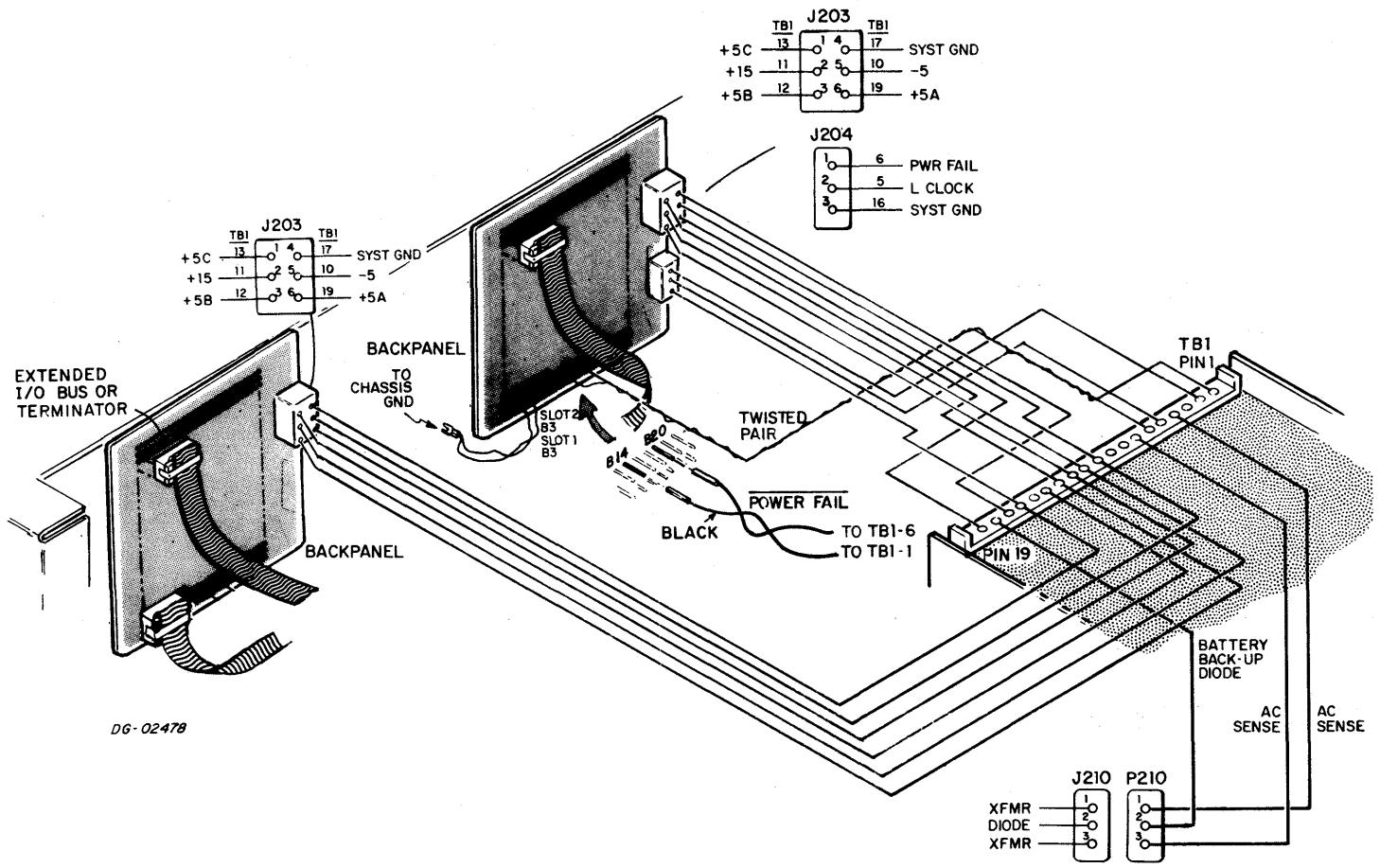
DG-03612

SHIPPING AND PACKAGE DATA					
Outside Dimensions			Weight (Gross)	Volume	Density
Length	Width	Depth			
in. / cm	in. / cm	in. / cm	lbs. / kg	cu ft. / cu m	lbs/cu ft. / kg/cu m
23.5 / 59.7	17.6 / 44.7	9.9 / 25.1	33 / 14.9	2.4 / 0.07	13.8 / 212.9
SHIPPING SPECIFICATIONS			STORAGE SPECIFICATIONS		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-40 to +160 / -40 to +71	0%-80%	50,000 ft 15,200m	-40 to +160 / -40 to +71	0%-80%	90 days

DG-03224

INTERNAL CABLING

TERMINAL STRIP CONNECTIONS

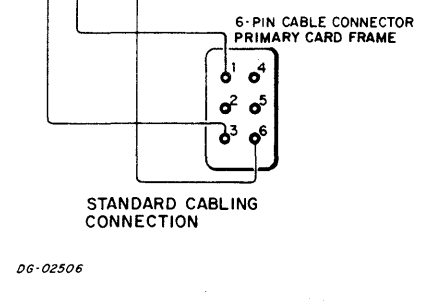


DG-02478

CARDFRAME PIN ASSIGNMENTS

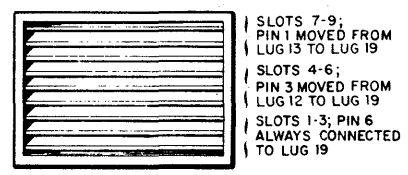
	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59
ODD	MCLOCK	GND	BIO1	INTP OUT	BDCINT	GND	BIO2	BIOCLOCK		INTPOUT	DCHPOUT	BDATA15	BSP1	BDATA14	DATAXFER	BDATA13	BDATA12		BDATA11		BDATA10		BDATA9	BSAE	BDATA8	BOTEN	GND	+15V	VCC	VCC
EVEN	MCLOCK	BIO1	CLEAR	BEXTINT	LOCK	BIO2	GND	BIOCLOCK	VCC	INTPIN	DCHPIN	BDATA7	BP	BDATA6	FDCHR	BDATA5	BDATA4	GND	BDATA3		BDATA2	BSP2	BDATA1	BWE	BDATA0	PHIL	GND	+15V	-5V	VCC
	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60

CABLE CONNECTIONS FOR BATTERY BACK-UP PROTECTION



STANDARD CABLING CONNECTION

DG-02506

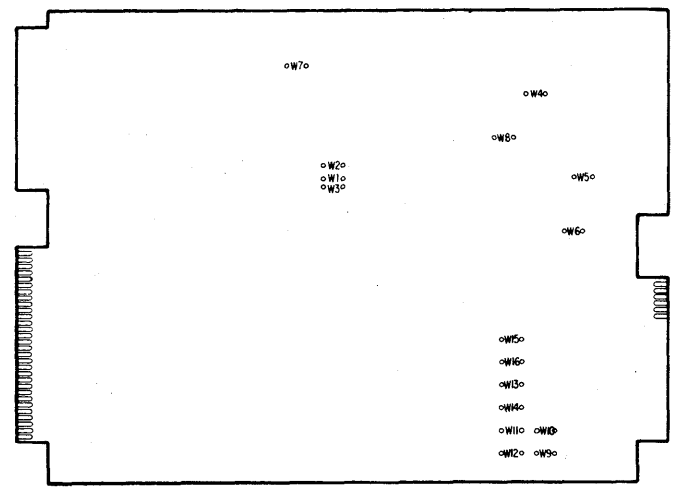


CARD FRAME SLOTS BACKED-UP

NOTE: MAXIMUM CURRENT AT TB1-PIN 19 IS 6A.

TAILORING

CPU



DG-03029

CPU PC BOARD, DGC PART NO. 107-000533-02

JUMPER WORD ADDRESS

ADDRESS	INSERT JUMPER
077776_8	W5
077777_8	W6

IF W5 IS INSERTED, MEMORY ADDRESS 077776_8 SHALL CONTAIN THE CONTENTS OF THE JUMPER WORD REGISTER WITH THE DEVICE ADDRESS OF THE APL OPTION.

IF W6 IS INSERTED, MEMORY ADDRESS 077777_8 SHALL CONTAIN THE CONTENTS OF THE JUMPER WORD REGISTER WITH THE STARTING ADDRESS.

ADDRESS SELECTION JUMPERS

BIT POSITIONS OF STARTING ADDRESS	1	2	3
INSERT JUMPER TO SPECIFY 1	W1	W2	W3

JUMPERS W1-W3 DETERMINE WHICH 4K ADDRESS GROUP OUT OF 32K IS RESIDENT ON THE CPU BOARD. BECAUSE OF HARDWARE RESTRICTIONS, IT IS NOT RECOMMENDED THAT ON BOARD MEMORY BE ASSIGNED THE HIGHEST 4K POSITION.

OTHER JUMPERS

JUMPER	FUNCTION
W4	INSERT JUMPER TO ENABLE JUMPER WORD REGISTER.
W7	INSERT JUMPER TO DISABLE AUTO-RESTART AFTER A POWER FAILURE IF POWER IS NOT BEING SUPPLIED BY BATTERY BACK-UP.
W8	INSERT JUMPER TO ENABLE 64 WORDS OF LOCAL ROM ASSOCIATED WITH ADDRESSES $077700-077777_8$, INSERTED FOR APL.

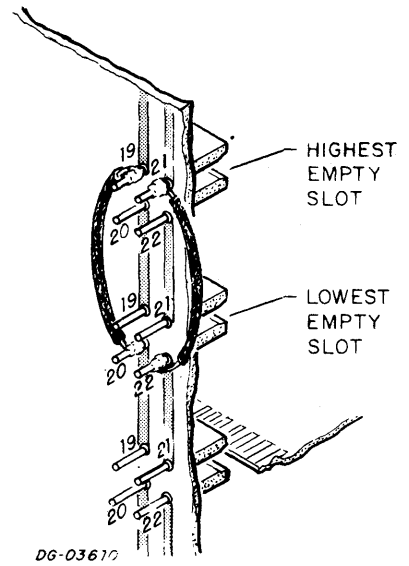
JUMPER WORD REGISTER

BIT POSITION	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
CONTENTS (INSERT JUMPER TO SPECIFY 1)	W9	W10	W11	W12	W13	W14	W15	W16	0	0	0	0	0	0	0	0	1
APL OPTION	*		DS0	DS1	DS2	DS3	DS4	DS5	0	0	0	0	0	0	0	0	1
STARTING LOCATION	A0	A1	A2	A3	A4	A5	A6	A7	0	0	0	0	0	0	0	0	1

* IN FOR DCH DEVICE

FUNCTION	W4	W5	W6	W8
APL OPTION	IN	IN	OUT	IN
STARTING ADDRESS	IN	OUT	IN	OUT
HHC OR CONSOLE DEBUG OPTION	OUT	---	---	---

BACKPANEL



DG-03670

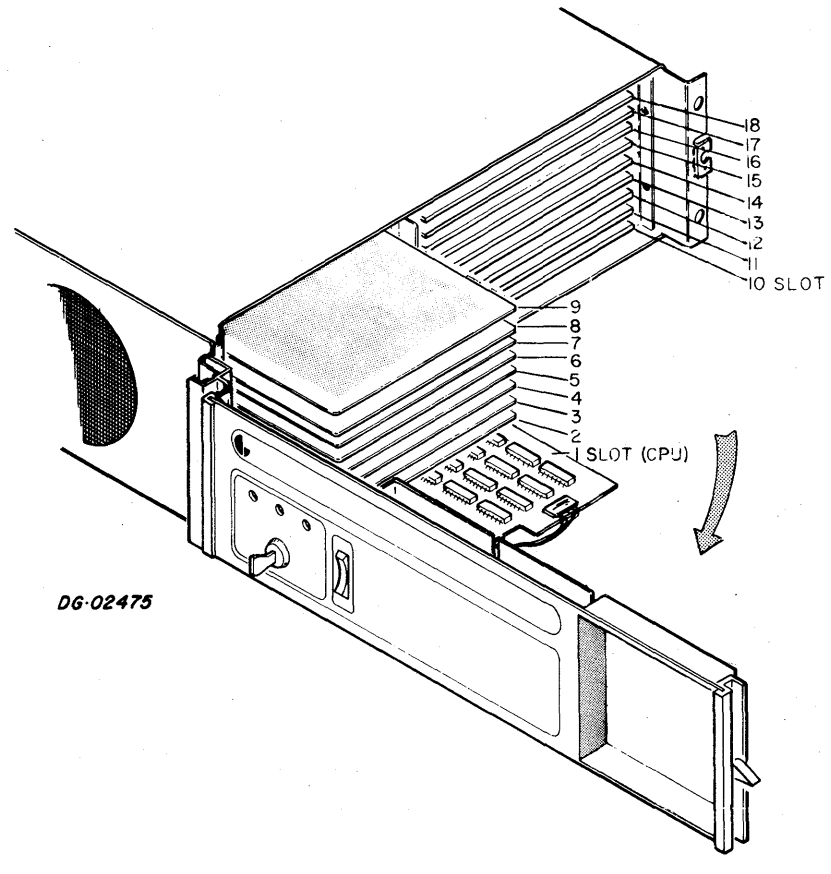
AN 18-SLOT CPU CONTAINS TWO CARDFRAMES. THE LEFT CARDFRAME (LOOKING AT THE FRONT OF THE microNOVA) IS THE PRIMARY CARDFRAME, CONTAINING THE THE CPU. ALL EMPTY SLOTS BETWEEN SYSTEM MODULES, OR INCLUDING SLOT 9, MUST HAVE PRIORITY LEVEL JUMPERS INSTALLED ACROSS THOSE SLOTS AS FOLLOWS: PINS 20 AND 22 OF THE LOWEST EMPTY SLOT SHOULD BE CONNECTED TO PINS 19 AND 21, RESPECTIVELY, OF THE HIGHEST EMPTY SLOT. THE HIGHEST AND LOWEST EMPTY SLOT MAY BE THE SAME.

EMPTY SLOTS IN THE RIGHT HAND CARDFRAME SHOULD BE JUMPERED, USING THE SAME METHOD. IF THE GROUP OF EMPTY SLOTS INCLUDE SLOT 9, JUMPERING IS UNNECESSARY.

NO JUMPERS SHOULD CONNECT THE LEFT AND RIGHT CARDFRAMES, EACH BEING JUMPERED INDEPENDENTLY. THE INTERNAL I/O CABLE CONNECTS THE TWO CARDFRAMES.

BOARDS IN THE LEFT CARDFRAME HAVE HIGHER PRIORITY THAN THOSE IN THE RIGHT HAND CARDFRAME. IN EITHER CARDFRAME ANY BOARD HAS HIGHER PRIORITY THAN THE ONE ABOVE IT, AND LOWER PRIORITY THAN THE ONE BELOW IT.

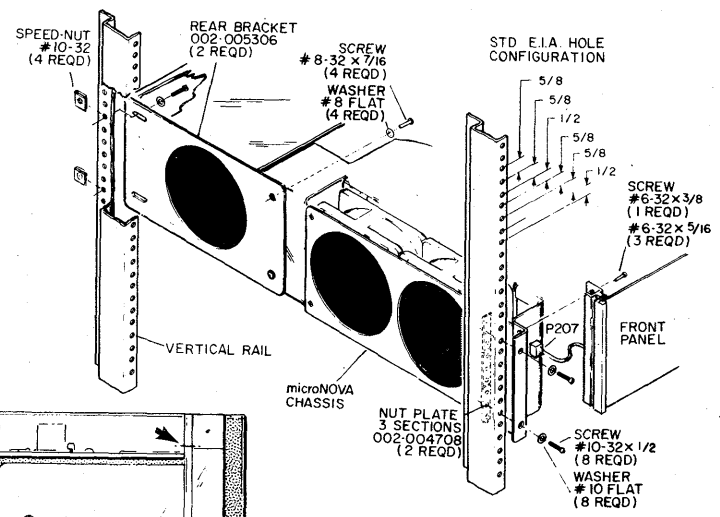
BOARD PLACEMENT IN SLOTS

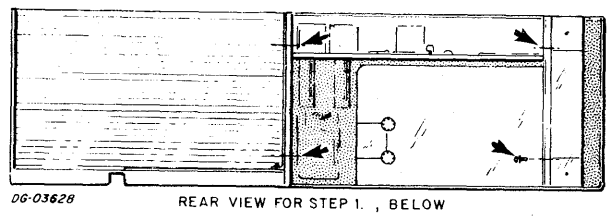


DG-02475

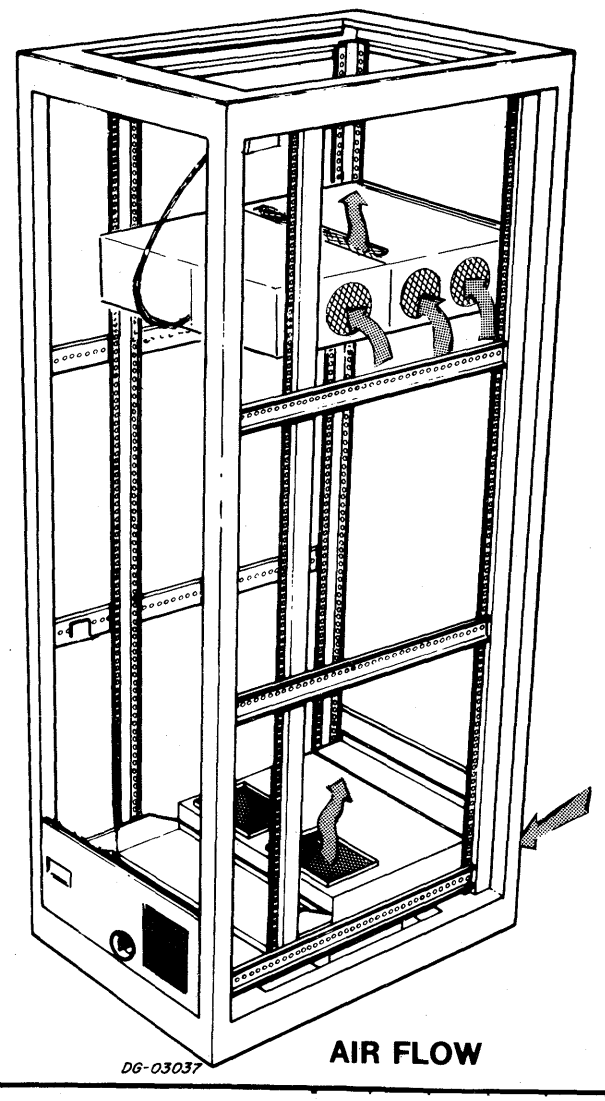
CABINET MOUNTING

Torque Requirements	
Screw Size	in/lb
6-32	7 - 8
8-32	12 - 14
10-32	23 - 25 (10 - 12 for speednuts)





DG-03628 REAR VIEW FOR STEP 1. , BELOW



DG-03037 **AIR FLOW**

MOUNTING PROCEDURE

The following procedure requires the use of mounting kit # 7029.

1) Disassemble the power supply unit from the rear support chassis. (Remove (4) - 4/40 x 3/16" SEMS screws with flat washers.)

2) Disassemble the rear support chassis, opposite the power supply support section. (Remove (3) - 6/32 x 5/16" SEMS screws with flat washers.)

3) Mount the cardframe chassis to the front of the cabinet, using (4) - 10/32 x 3/8" SEMS screws, with flat washers, and 2 nut plates (002-5030).

4) Mount the two rear support panels to the cardframe chassis and the sides of the cabinet.

   a) Use (2) - 8/32 x 7/16" SEMS screws, with flat washers, to mount each side panel to the cardframe.

   b) Use (2) - 10/32 x 1/2" SEMS screws, with flat washers, to mount each support panel to the side of the cabinet. Two 10/32 speed nuts are required on each side rail of the cabinet, for the SEMS screw hardware.

5) Join the two rear chassis support sections together with the hardware of item 2 (above).

6) Plug in the power supply cable connectors:

   P203, P204, P205 (shown on sheet 2)
   P208, 2-pin connector to the rear fan, and,
   P202, located over the AC input plug.

   Connect the Power Fail pair per sheet 2 of this drawing and the Battery Backup option per drawing 010-000126 or 000127 (if applicable).

7) Mount the power supply, using the hardware from item 1 (above).

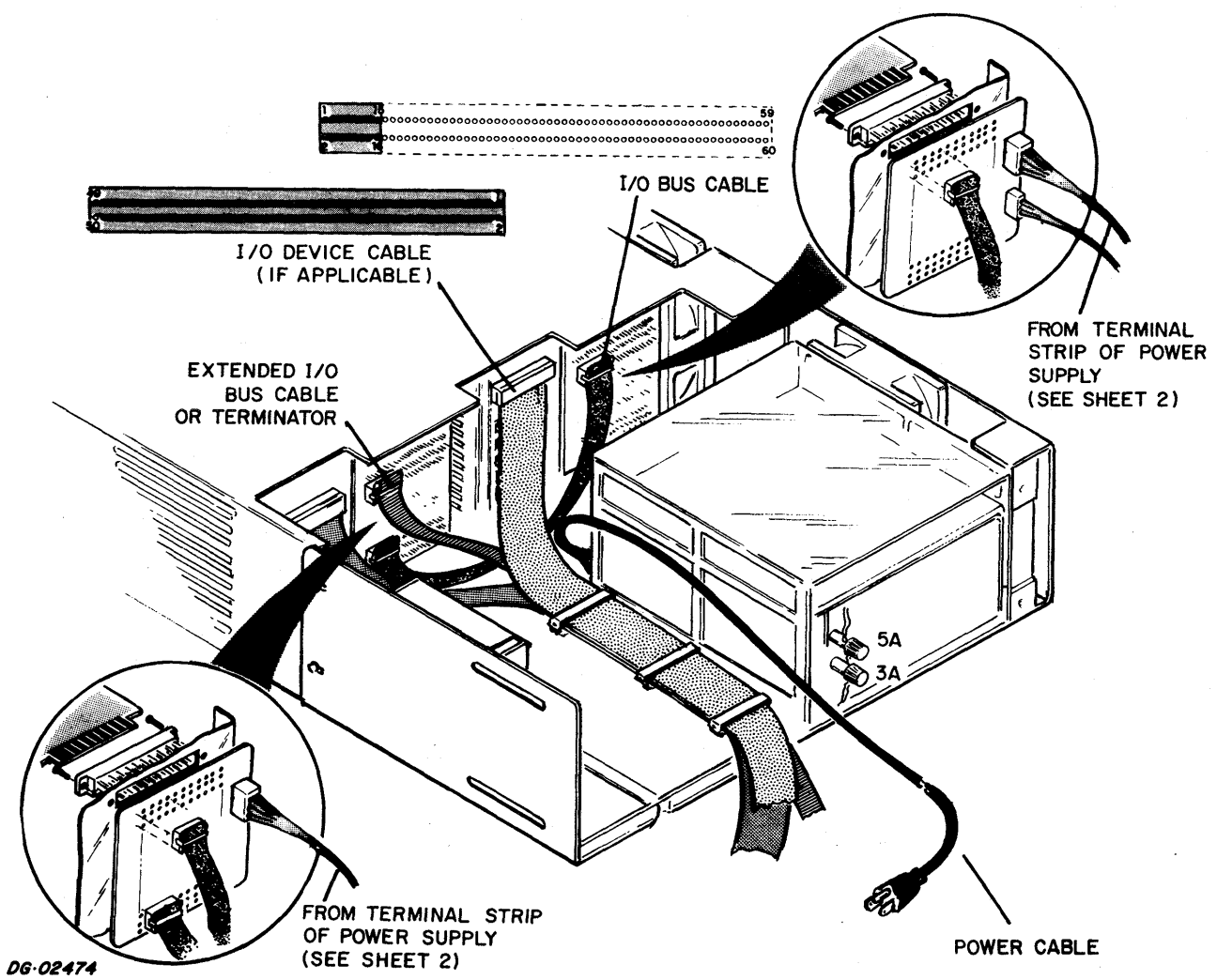
8) When mounting the front panel, the hardware in item 3 (above) may have to be loosened to facilitate adjustment of the cardframe chassis for front panel alignment.

9) Use (3) - 6/32 x 5/16" SEMS screws, with flat washers, in the top three support locations for the front panel.

10) Use (1) - 6/32 x 3/8" SEMS screw with a flat washer in the bottom support location. A cable tie, supporting the front panel to CPU board cable, will be mounted under this screw.

11) Plug in: P205 - Cable to CPU board and P207 - Power cable to front panel.

EXTERNAL/INTERNAL CABLING



DG-02474

MODEL NO.	POWER CABLE ASSY
1118G	100V
1118D	120V
1118E	220V
1118F	240V

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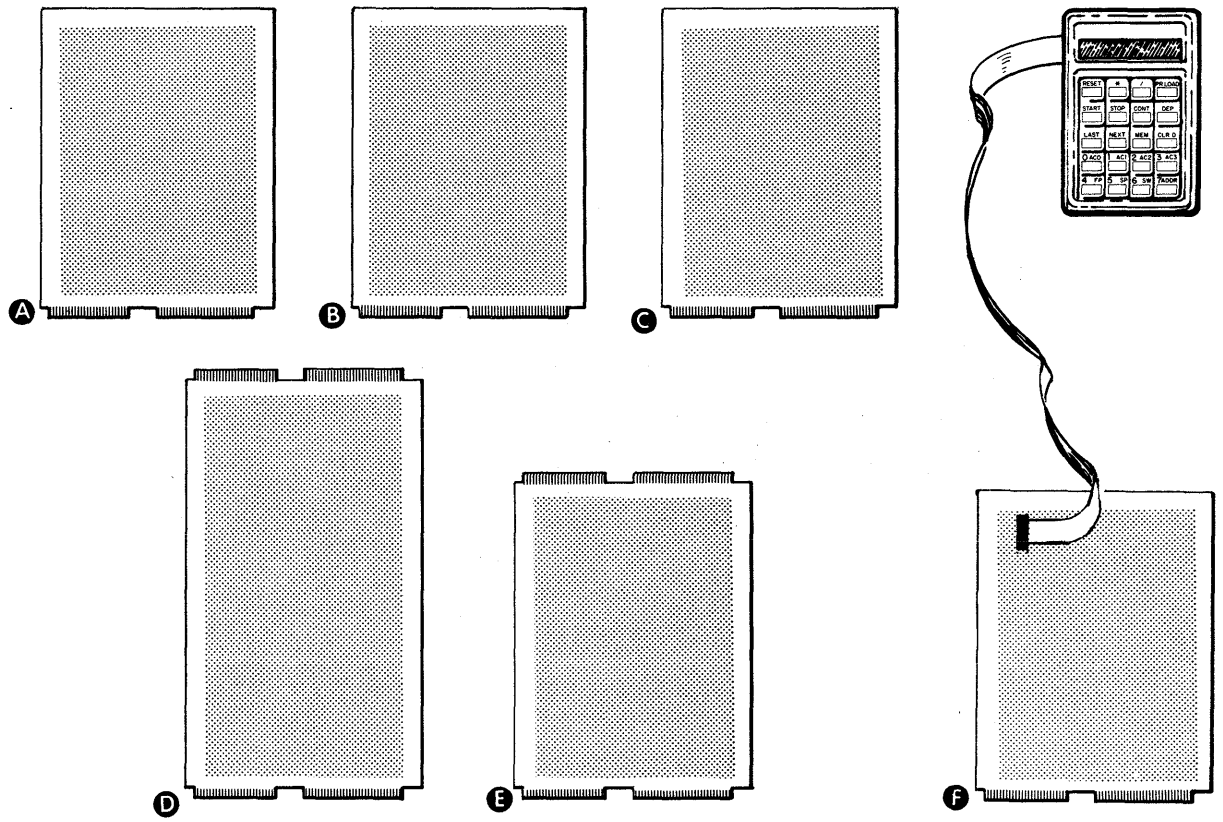
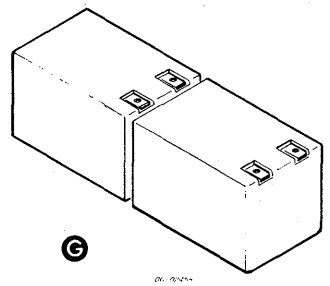
SUBSYSTEM COMPONENT BREAKDOWN





MAJOR COMPONENT

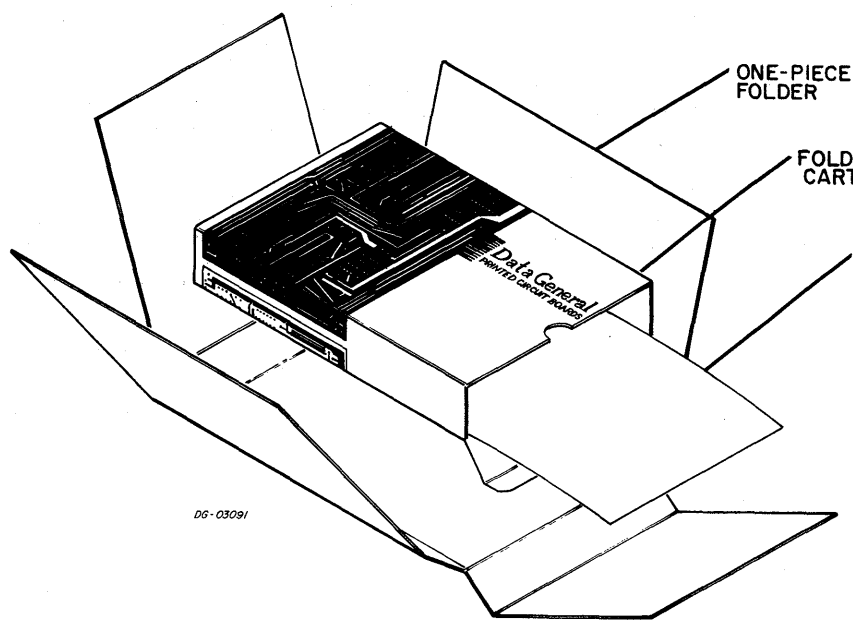
Item	Component	Mounting Location	Notes
A	RANDOM ACCESS MEMORY	SLOTS 2 - 9	
B	PROGRAMMABLE READ-ONLY MEMORY	SLOTS 2 - 9	
C	ASYNCHRONOUS INTERFACE	WITH CONSOLE DEBUG OPTION, MUST BE IN SLOTS 2 - 9; WITHOUT OPTION, MAY BE ANY I/O SLOT.	
D	PROM PROGRAMMER	SLOTS 2 - 9	PROM BOARD INSERTED INTO PROGRAMMER BOARD
E	GENERAL PURPOSE INTERFACE	SLOTS 2 - 9 (9-SLOT) SLOTS 2 - 18 (18-SLOT)	
F	HAND-HELD CONSOLE	HAND-HELD CONSOLE MOUNTS IN FRONT PANEL. CONTROLLER BOARD PREFERRED LOCATION: SLOT 8	
G	BATTERY BACK-UP	CHASSIS	

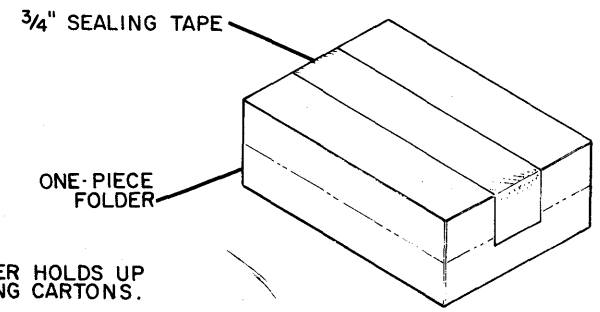
DG-02672

SPECIFICATIONS OF THE CHASSIS-MOUNTED COMPONENTS

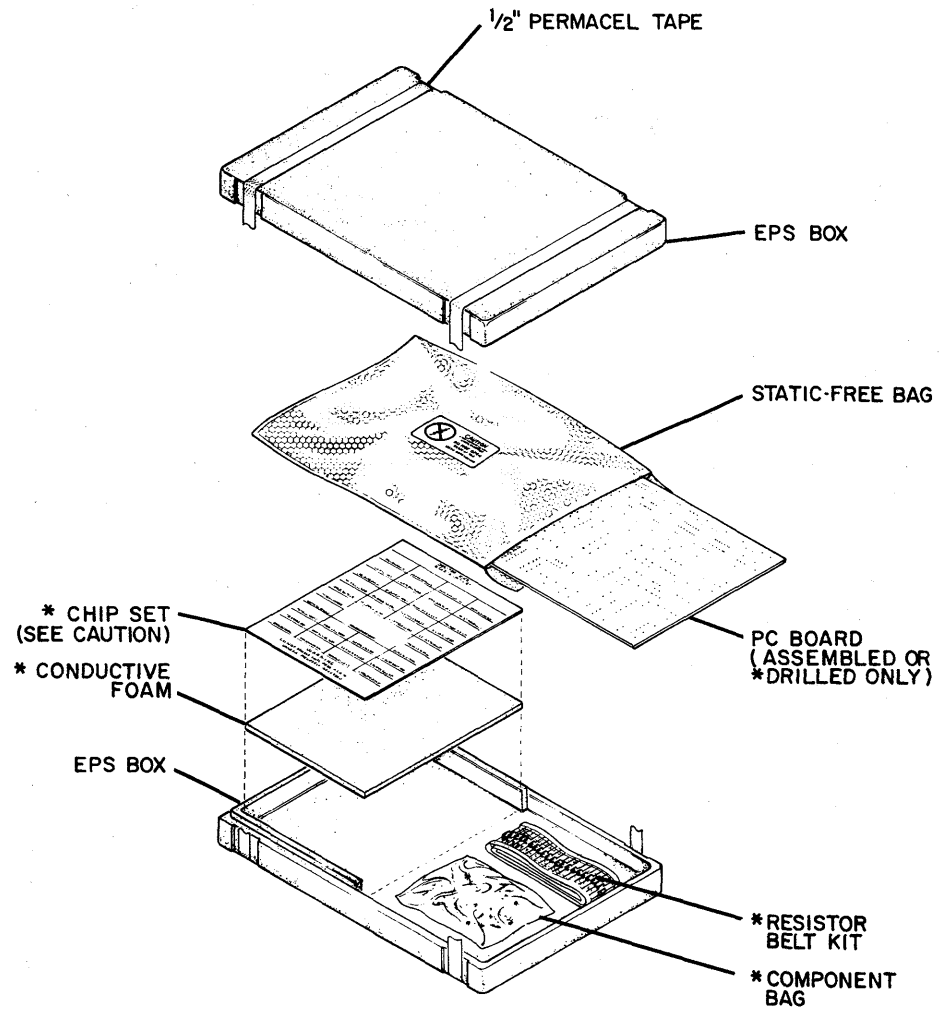
Item	Component	No. of Slots Required	Total +5V Current Draw (Amps)	Remarks
A	RANDOM ACCESS MEMORY	1	0.6	+15V - 0.4 -5V - 0.2
B	PROGRAMMABLE READ-ONLY MEMORY	1	1.0	
C	ASYNCHRONOUS INTERFACE	1	0.7	+15V - 0.14 -5V - 0.03
D	PROM PROGRAMMER	1	1.7	+15V - 0.17 -5V - 0.03
E	GENERAL PURPOSE INTERFACE	1	0.6	+15V - 0.1 -5V - 0.03
F	HAND-HELD CONSOLE	1	2.4	+15V - 0.09 -5V - 0.03
G	BATTERY BACK-UP	——	——	

SHIPPING





NOTE:
ONE-PIECE FOLDER HOLDS UP TO THREE FOLDING CARTONS.



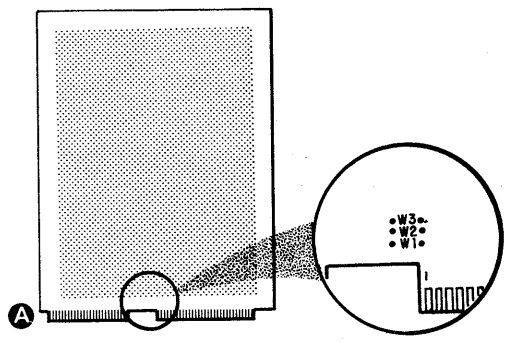
CAUTION:
IN ORDER TO PREVENT STATIC ELECTRICITY BUILD UP, ALWAYS KEEP ONE FINGER ON LABEL WHEN INSERTING OR REMOVING CHIPS AND ALWAYS WORK AT APPROVED WORK STATION.

*STARRED REFERENCES PERTAIN ONLY TO THOSE CASES WHERE THE CUSTOMER WILL ASSEMBLE HIS OWN BOARD.

TAILORING

RANDOM ACCESS MEMORY

REF: DGC P/N 107-000624-01



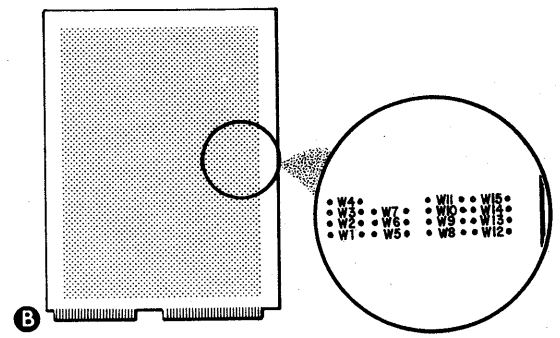
ADDRESS SELECTION JUMPERS

BIT POSITIONS OF STARTING ADDRESS	1	2	3
INSERT JUMPER TO SPECIFY 1	W1	W2	W3 *

*Jumper W3 is ignored on the 8K RAM board.

PROGRAMMABLE READ-ONLY MEMORY

REF: DGC P/N 107-000593-03



PROM SIZE JUMPERS

SIZE OF PROM CHIPS	INSERT JUMPERS
256 x 4 bits	W1, W3, W6
512 x 4 bits	W2, W4, W5, W7

ADDRESS SELECTION JUMPERS

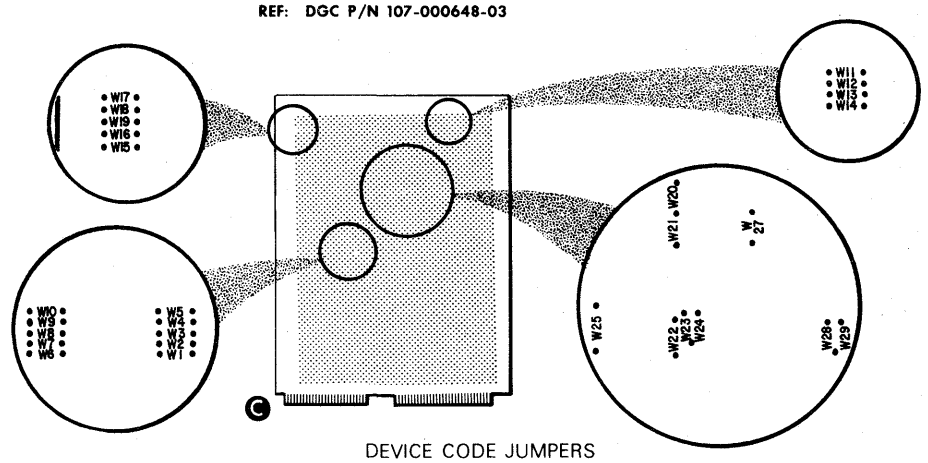
BIT POSITIONS OF STARTING ADDRESS	1	2	3	4*
INSERT JUMPER TO SPECIFY 1	W13	W15	W11	W9
INSERT JUMPER TO SPECIFY 0	W12	W14	W10	W8

*Jumpers W8 and W9 are removed on the 4K PROM board.

NOTE: All of the address selecton jumpers must be removed when the board is being programmed with the microNOVA PROM programmer.

ASYNCHRONOUS INTERFACE

REF: DGC P/N 107-000648-03



DEVICE CODE JUMPERS

BIT POSITIONS OF DEVICE CODE (insert jumper to specify 1)	0	1	2 **	3	4	5
RECEIVER	W1	W2	W3	W4	W5	0*
TRANSMITTER	W6	W7	W8	W9	W10	1*

*The low-order bit of the device code of the receiver is 0, and the low-order bit of the device code of the transmitter is 1.
**First controller device code.

BAUD RATE JUMPERS

BAUD RATE	W14	W13	W12	W11	DGC MODELS
50	in	in	out	in	
75	in	in	out	out	
110	out	out	out	out	4010
134.5	in	out	in	in	
150	out	out	out	in	
200	in	out	in	out	
300	out	out	in	out	6042-6043
600	in	out	out	in	6040-6041
1200	out	in	out	out	
1800	out	in	out	in	
2400	out	out	in	in	
4800	out	in	in	out	6012H
9600	out	in	in	in	
19,200	in	in	in	out	

STOP BIT JUMPERS

NUMBER OF STOP BITS	W16	DGC MODELS
1	in	4010
2	out	OTHERS

CHARACTER LENGTH JUMPERS

LENGTH OF CHARACTER	W18	W19	DGC MODELS
5 bits	in	in	
6 bits	out	in	
7 bits	in	out	
8 bits	out	out	ALL

PARITY JUMPERS

TYPE OF PARITY	W17	W15	DGC MODELS
EVEN	out	in	
ODD	in	in	
NONE	out	out	ALL

TYPE OF TRANSMISSION JUMPERS

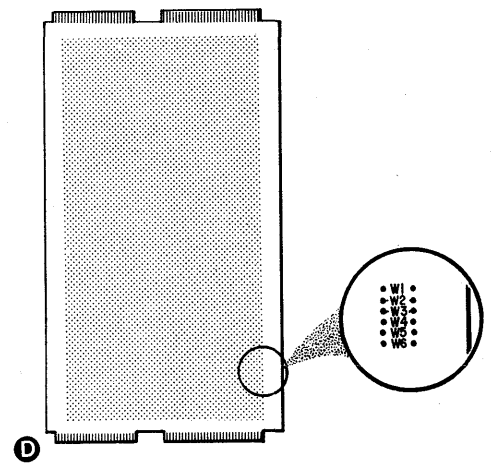
TYPE OF TRANSMISSION	INSERT JUMPERS	DGC MODELS
20mA Current Loop	W20,W22,W23,W25	4010
EIA RS232-C	W21,W24	OTHERS

OTHER JUMPERS

JUMPER	FUNCTION	DGC MODELS
W26	Insert jumper to enable the console debug option memory.	
W27	Insert jumper to disable the use of the modern status signal Clear To Send.	All but 6040, 6041
W28	Insert for console debug address space 77400-77777.	
W29	Insert for console debug address space 77000-77377.	

PROM PROGRAMMER

REF: DGC P/N 107-000641-01



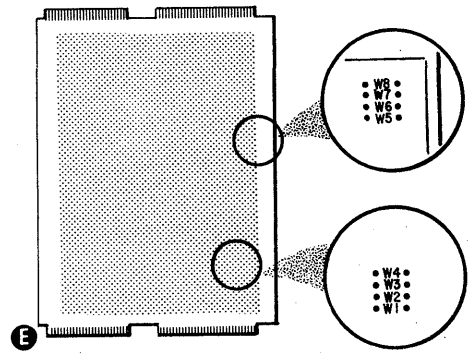
DEVICE CODE JUMPERS

BIT POSITIONS OF DEVICE CODE	0	1	2	3	4	5
INSERT JUMPER TO SPECIFY 1	W1	W2	W3	W4*	W5	W6*

*Normal Device Code

GENERAL PURPOSE INTERFACE

REF: DGC P/N 107-000642-04



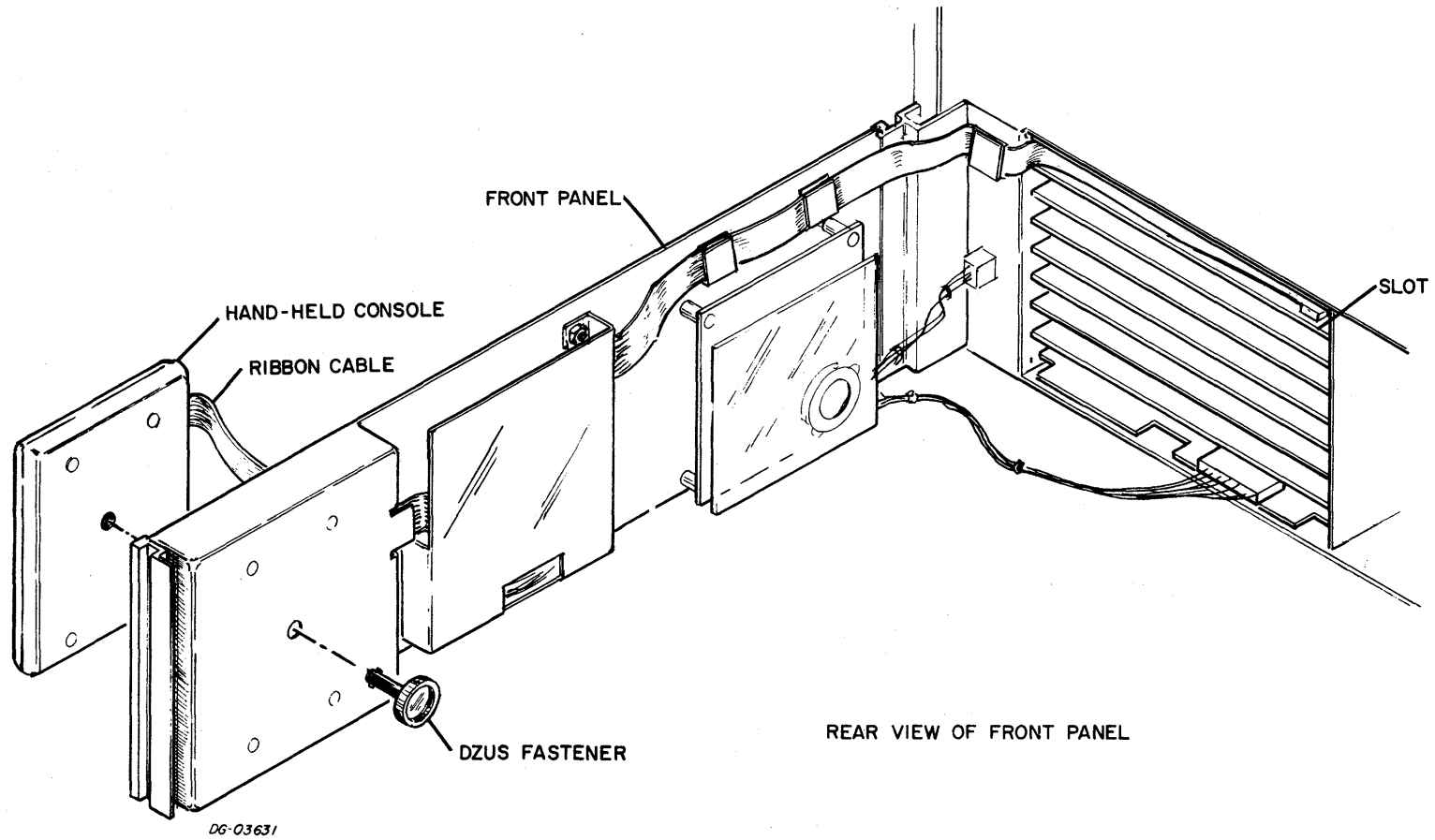
DEVICE CODE JUMPERS

BIT POSITIONS OF DEVICE CODE	10	11	12	13	14	15
INSERT JUMPER TO SPECIFY 1	W3	W2	W1	W6	W7	W8

OTHER JUMPERS

JUMPER	NAME	FUNCTION
W4	EXTERNAL	Omit jumper if the address and register internal to the IOC is to be used in the data channel operations and with the DIB instruction.
W5	POLARITY	Insert jumper if positive logic is to be used in interfacing to the IOC.

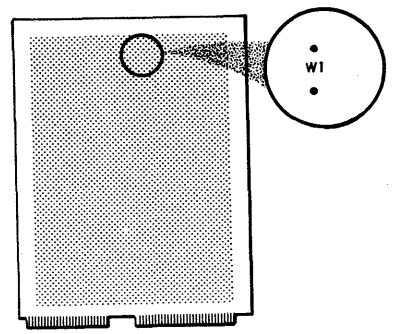
HAND-HELD CONSOLE



REAR VIEW OF FRONT PANEL

HAND-HELD CONSOLE CONTROLLER

REF: DGC P/N 107-000660-04

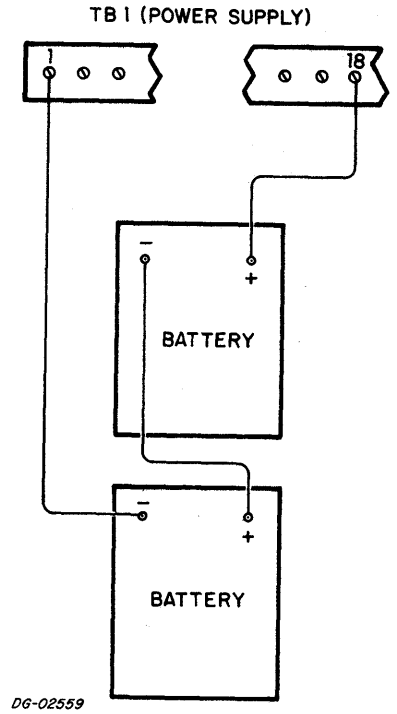


W1	Function
IN	When bus signal $\overline{\text{LOCK}}$ is active, all keys are program disabled.
OUT	All keys are program enabled.

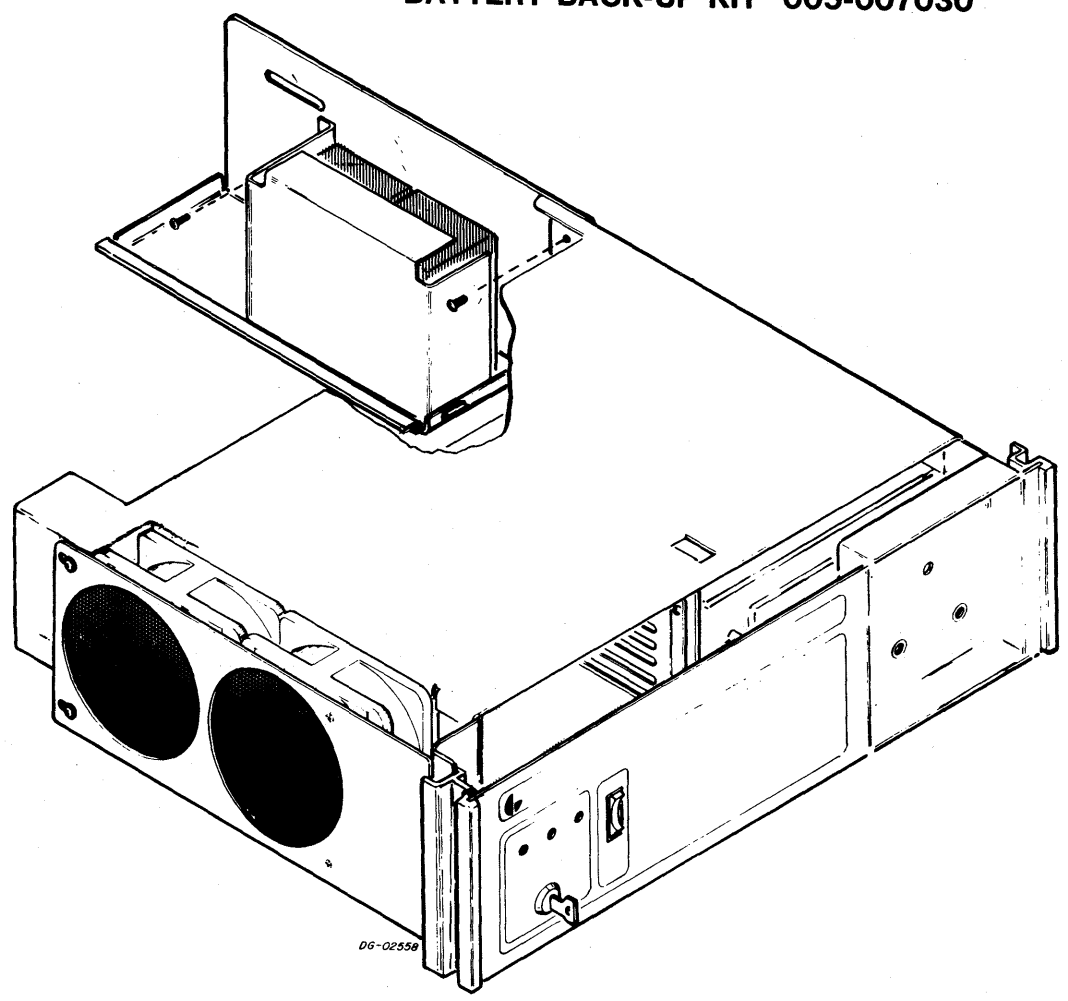
BATTERY BACKUP OPTION

9 SLOT

BATTERY WIRING



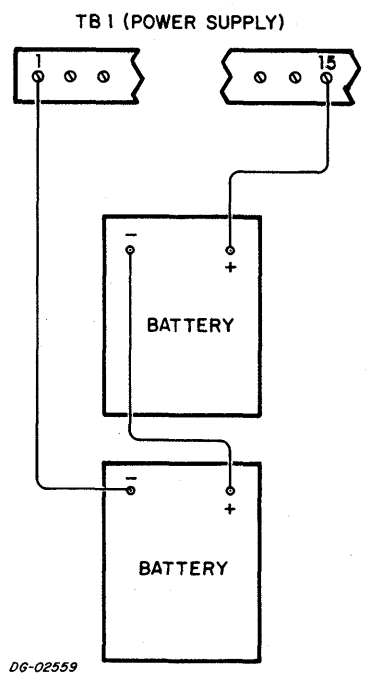
BATTERY BACK-UP KIT 005-007030



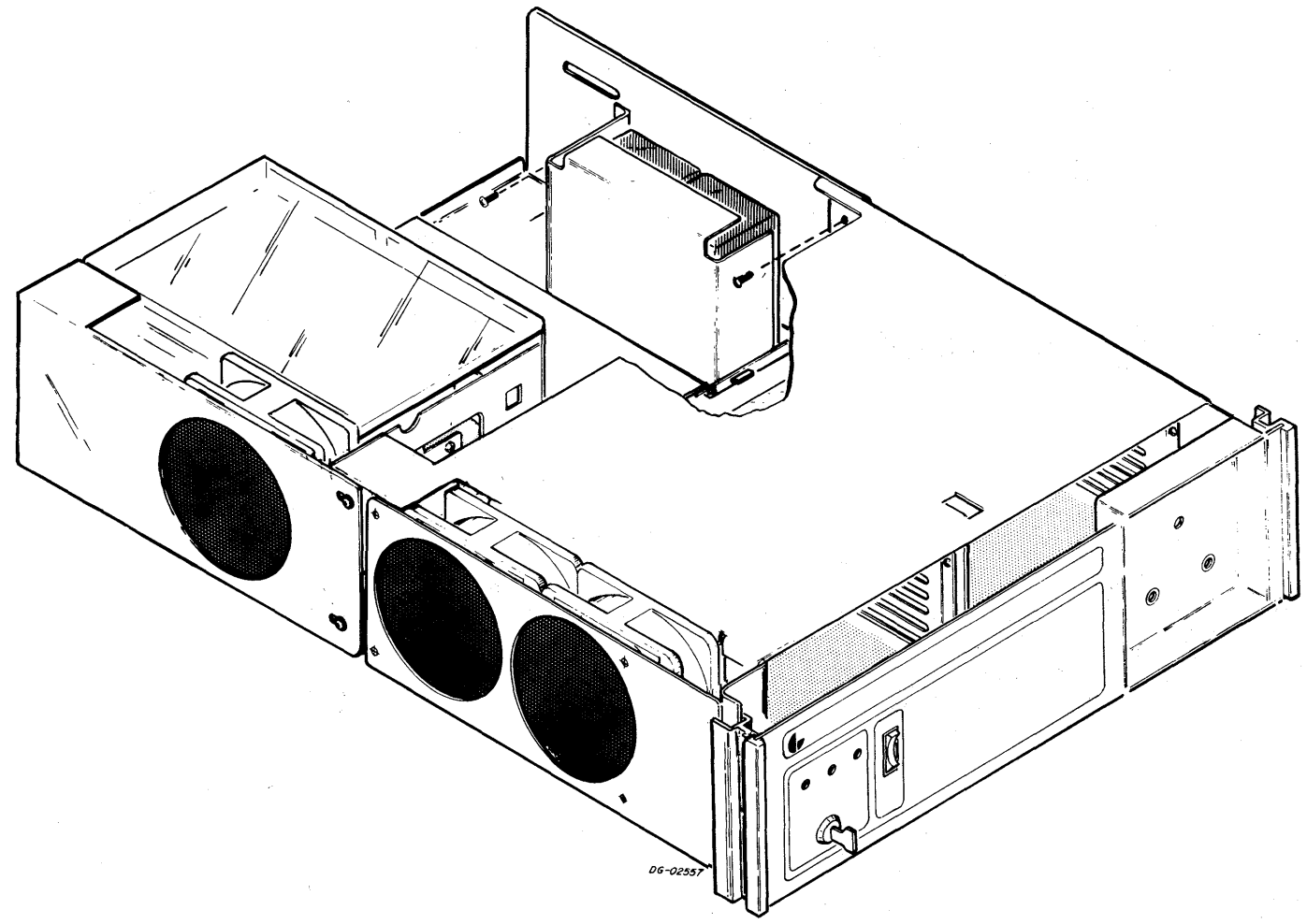
BATTERY BACKUP OPTION

18 SLOT

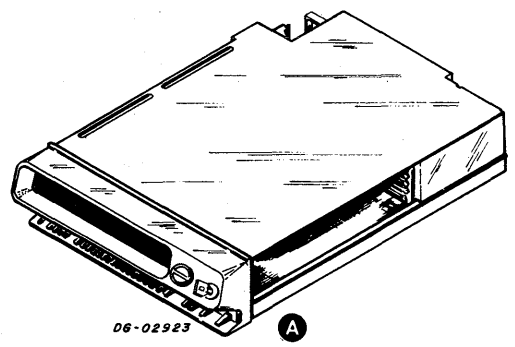
BATTERY WIRING



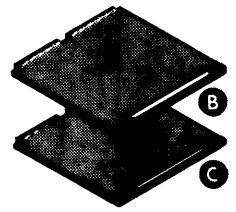
BATTERY BACK-UP KIT 005-007030



SUBSYSTEM COMPONENT BREAKDOWN



DG-02923



MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	MAIN CHASSIS (S/100)	CABINET	
B	CPU-1	MAIN CHASSIS	
C	CPU-2	MAIN CHASSIS	

DG-02672

SLOT ASSIGNMENTS

Data Channel Speeds Available: Standard ☐ High Speed ☐

Slot	Allowed (Slot Chart)	Assigned	+5V Current Draw
7	MEMORY or I/O		
6	"		
5	4010,4075 PREF		
4	MEMORY or I/O		
3	"		
2	CPU-2		
1	CPU-1		

Total +5V Current draw _____

Max +5V Current Available 40A

+5V Current Surplus _____

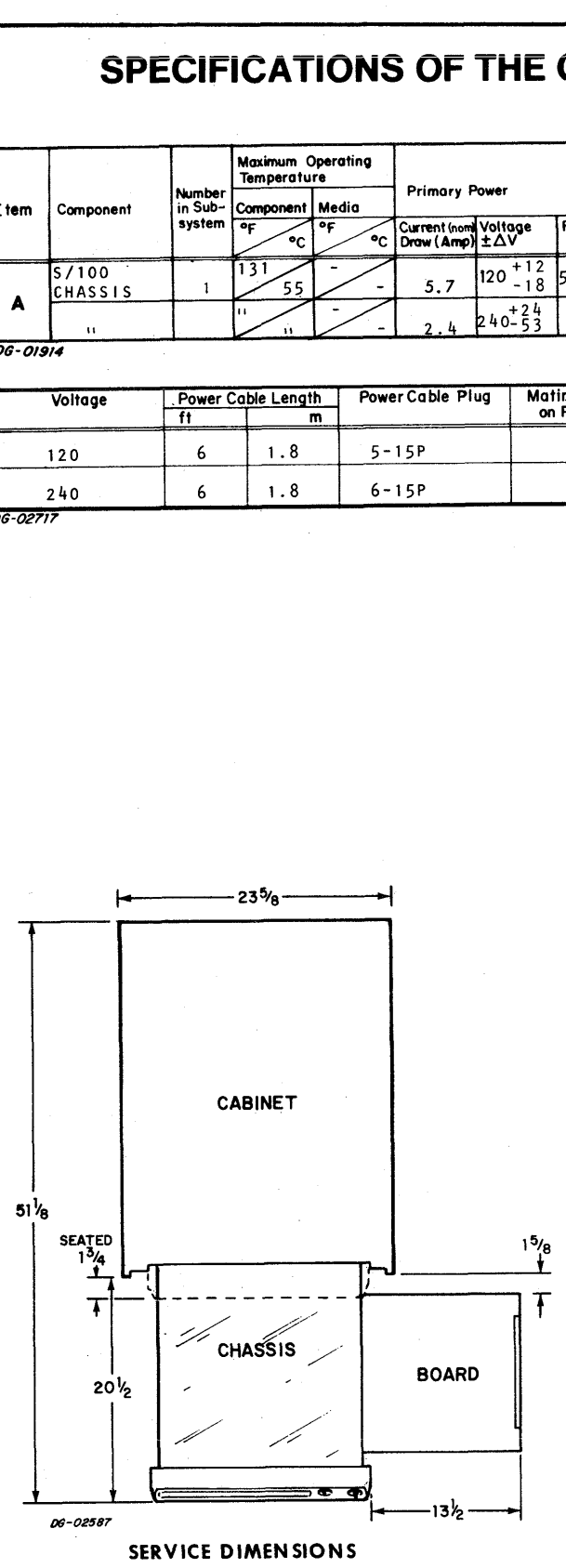
SPECIFICATIONS OF THE CABINET-MOUNTED COMPONENTS

Item	Component	Number in Sub-system	Maximum Operating Temperature: Component °F/°C	Maximum Operating Temperature: Media °F/°C	Primary Power: Current (nom) Draw (Amp)	Primary Power: Voltage ±ΔV	Primary Power: Frequency	Cabinet Height Required: Area	Cabinet Height Required: in.	Cabinet Height Required: cm	Weight lbs/kg	Power Dissipation (Max Watts)	Preferred Location or Remarks	Operating Humidity (Relative) min%/max
A	S/100 CHASSIS	1	131/55	-/-	5.7	120^{+12}_{-18}	50/60±1	3	5.25	13.3	140/63.6	575	9-15	20/90
	"		"/"	-/-	2.4	240^{+24}_{-53}	50±1	"	"	"	"/"	"	"	"/"

DG-01914

Voltage	Power Cable Length ft	Power Cable Length m	Power Cable Plug	Mating Receptacle on Power Drop	Mating Receptacle in Wall
120	6	1.8	5-15P	5-15R	5-15R
240	6	1.8	6-15P	6-15R	6-15R

DG-02717



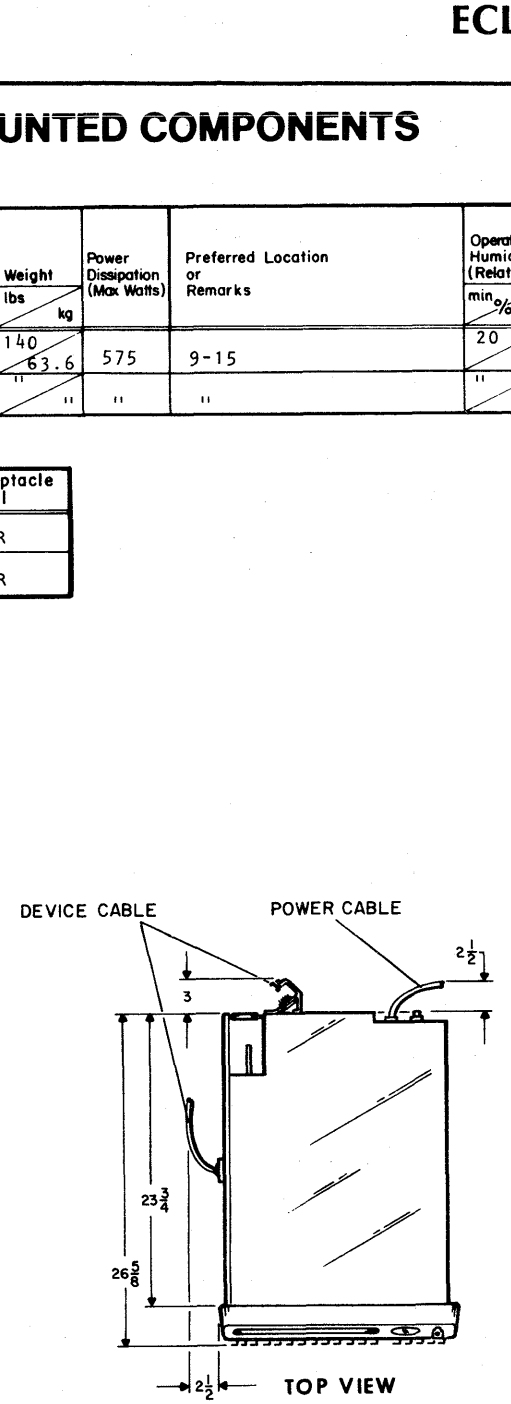
DG-02587

SERVICE DIMENSIONS

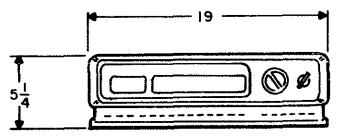
SIDE VIEW

ECLIPSE S/100

DG-01660



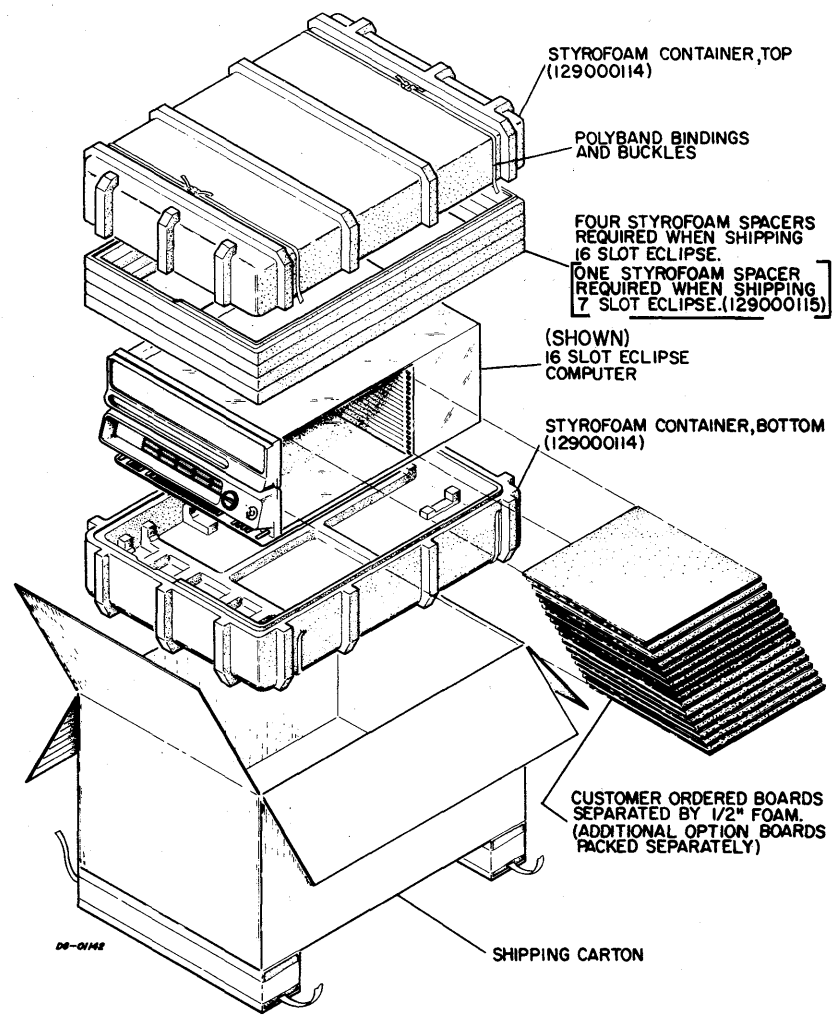
TOP VIEW



FRONT VIEW

SHIPPING

S/100 CHASSIS



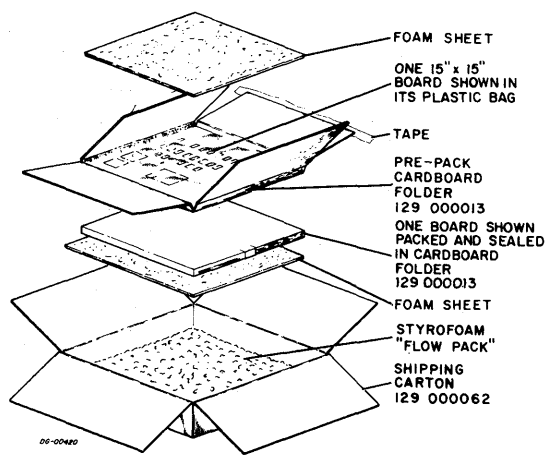
Storage Specifications		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-40 TO +185.0 / -40 TO +85	0-85%	90 days

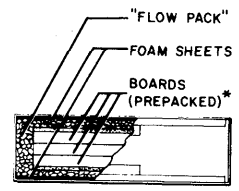
DG-02062

Shipping Specifications			
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	———
-40 TO +185.0 / -40 TO +85	0-85%	15,000 ft.	———

DG-02063

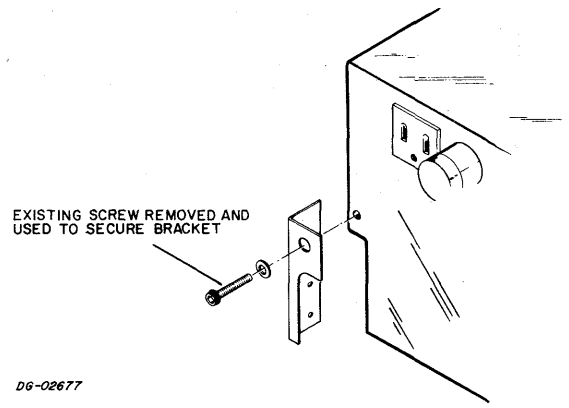
SEPARATE BOARDS



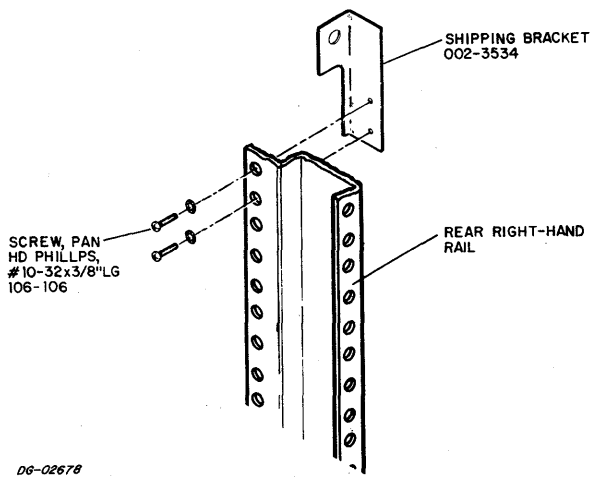


* MULTIPLE PACKING
Up to three(3) 15" x 15" boards, enclosed in plastic bags and sealed in pre-pack folders as shown, can be put in shipping carton number 129-000062. For four (4) to seven (7) boards, use shipping carton number 129 000012.

MOUNTING SHIPPING BRACKET TO CHASSIS

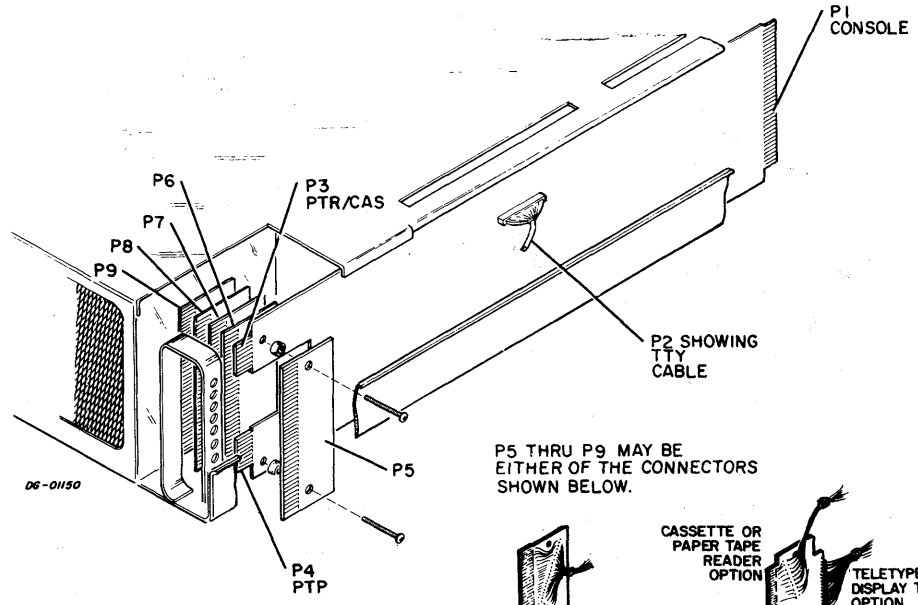


MOUNTING SHIPPING BRACKET TO RAIL

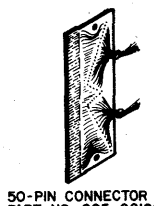


INTERNAL CABLING

BACKPANEL CONNECTORS

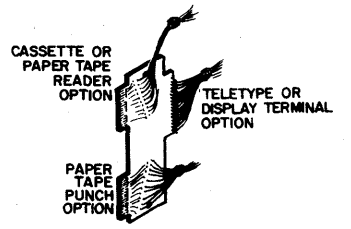


P5 THRU P9 MAY BE EITHER OF THE CONNECTORS SHOWN BELOW.



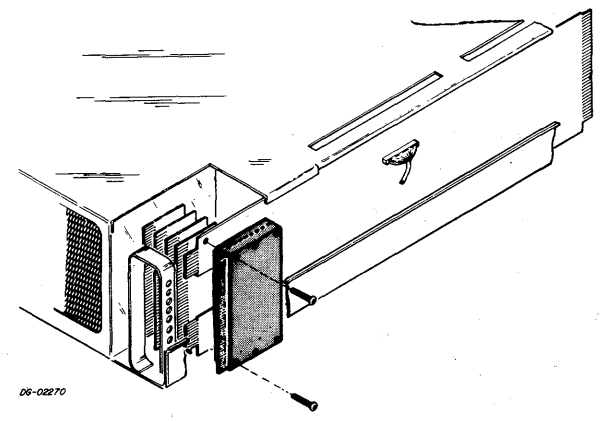
50-PIN CONNECTOR PART NO. 005-001802

DG-01172

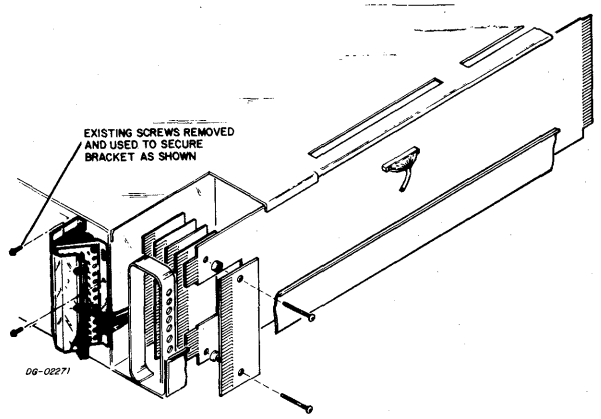


DUAL 20-PIN CONNECTOR 005-003453
(ONLY P5 CAN BE USED FOR 20-PIN CONNECTOR)

ANALOG PADDLEBOARD

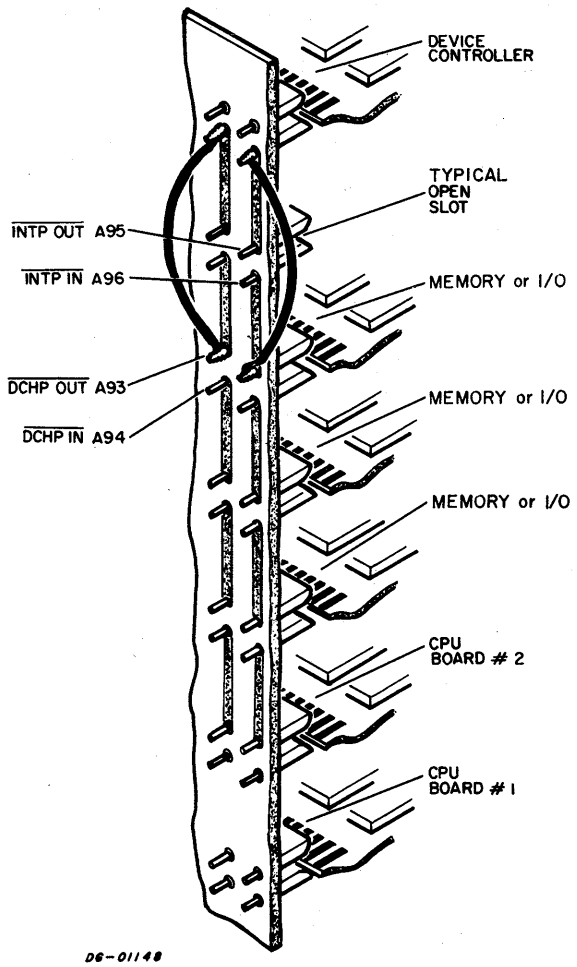


4083 OPTION CONNECTOR



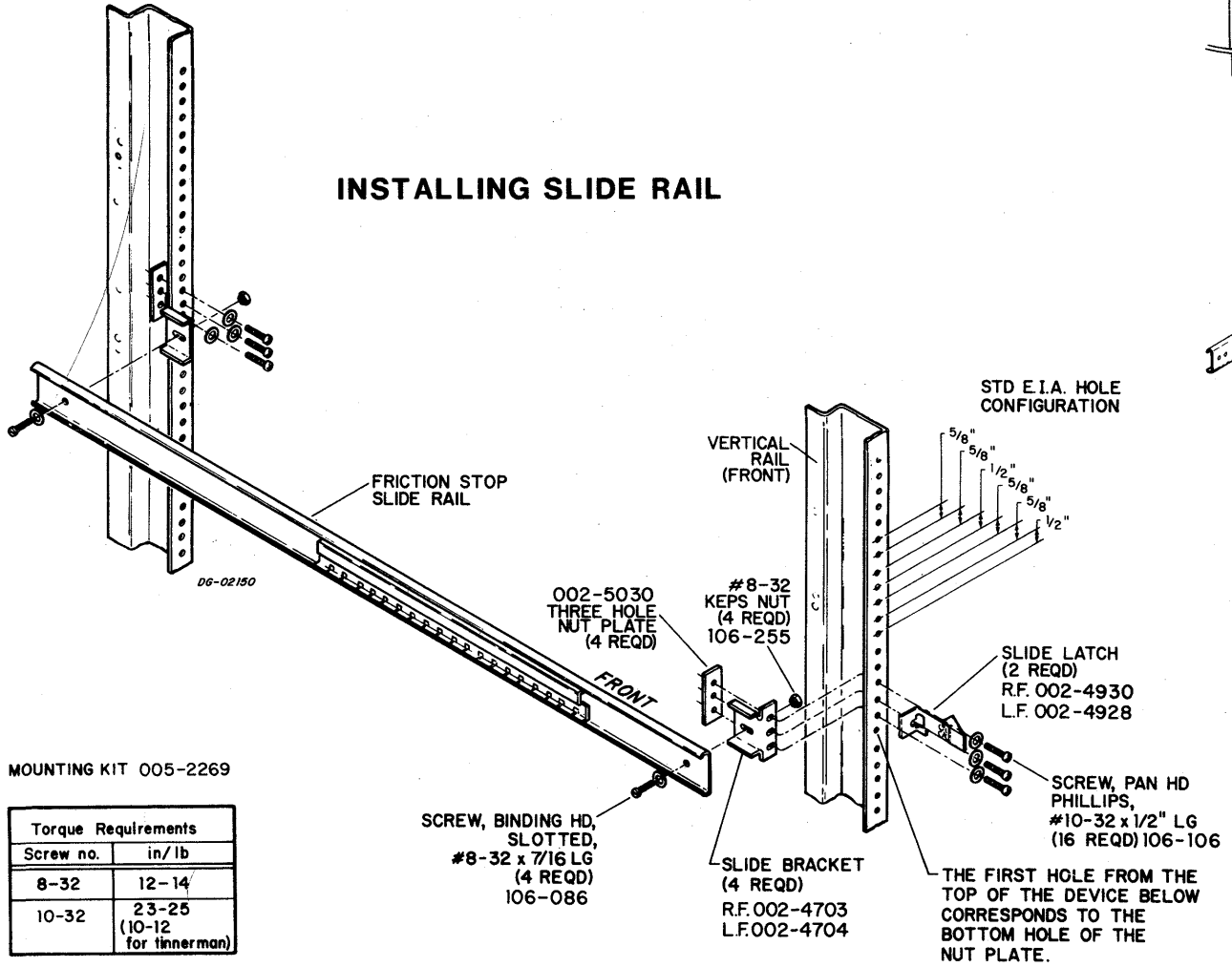
JUMPERS

JUMPERING BACKPANEL



CABINET MOUNTING

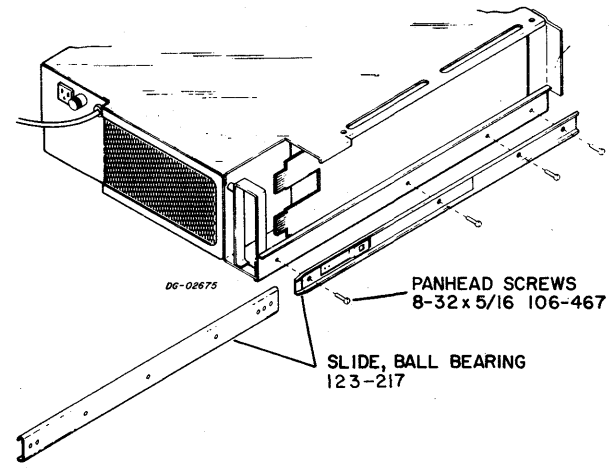
INSTALLING SLIDE RAIL



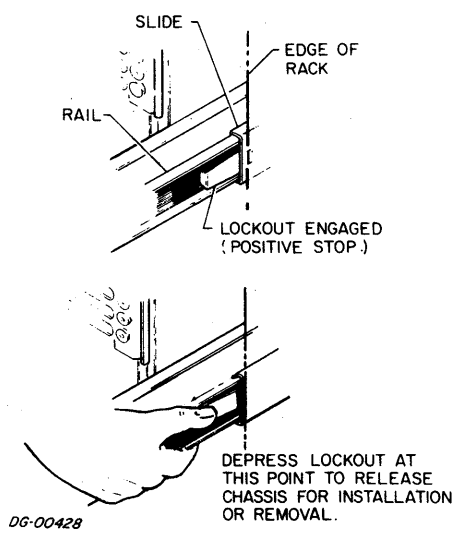
MOUNTING KIT 005-2269

Torque Requirements	
Screw no.	in/lb
8-32	12-14
10-32	23-25 (10-12 for tinnerman)

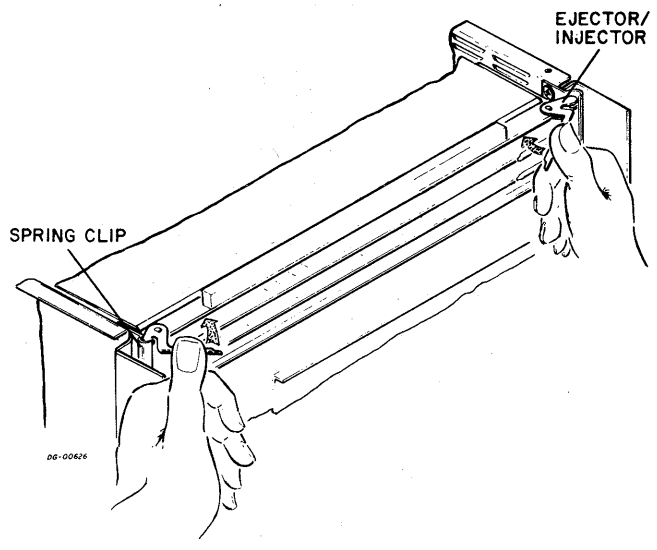
MOUNTING SLIDE ON CHASSIS



SLIDE LOCKOUT

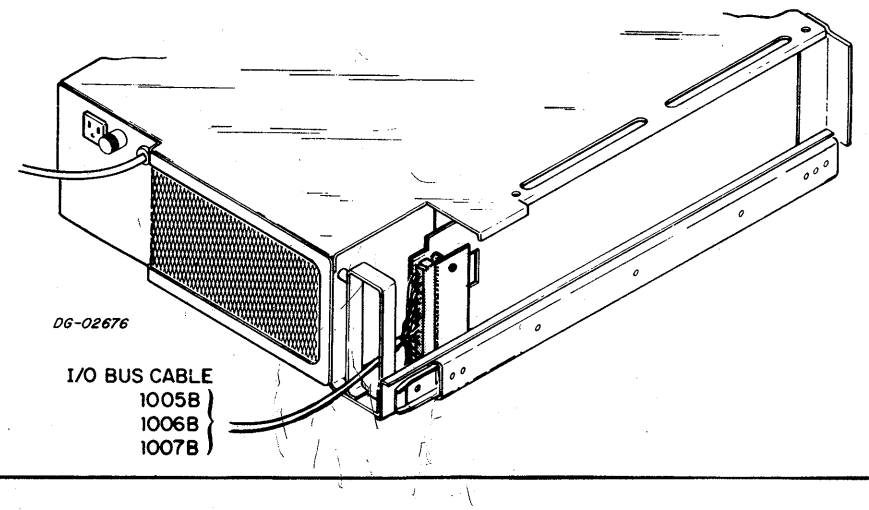


CPU PLACEMENT IN SLOT



EXTERNAL CABLING

I/O BUS CABLE



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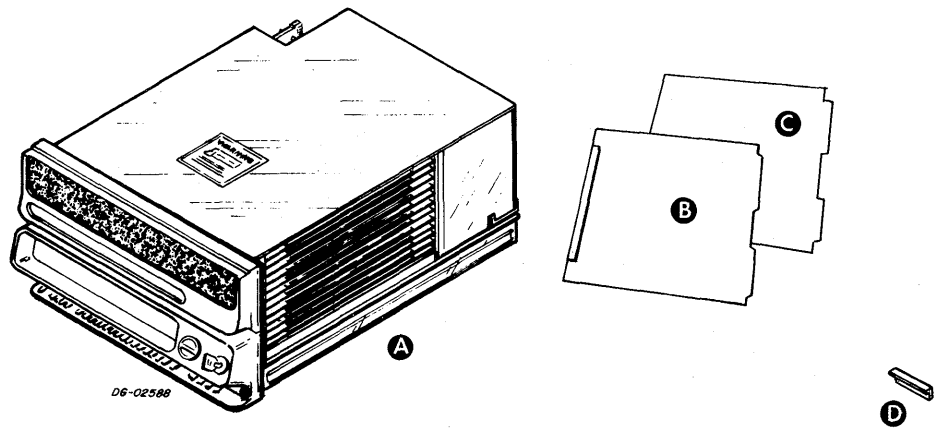
SUBSYSTEM COMPONENT BREAKDOWN



MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	MAIN CHASSIS	CABINET	
B	CPU-1	MAIN CHASSIS	
C	CPU-2	MAIN CHASSIS	

Item	Terminator	Location	Notes
D	I/O BUS PADDLE BOARD TERMINATOR	BACKPANEL	PLACED ON P2 OF BACKPANEL WHEN NO I/O CABLE CONNECTED TO P2

CHASSIS SLOT ASSIGNMENTS

Data Channel Speeds Available: Standard ☑

Slot	Allowed (Slot Chart)	Assigned	+5V Current Draw
12	MEMORY or I/O		
11	↓		
10			
9			
8	MEMORY or I/O		
7	4010, 4075 PREF		
6	MEMORY or I/O		
5	MEMORY or I/O		
4	MEMORY or I/O		
3	MMPU I		
2	CPU-2		
1	CPU-1		

Total +5V Current draw _____

Max +5V Current Available 60A

+5V Current Surplus _____

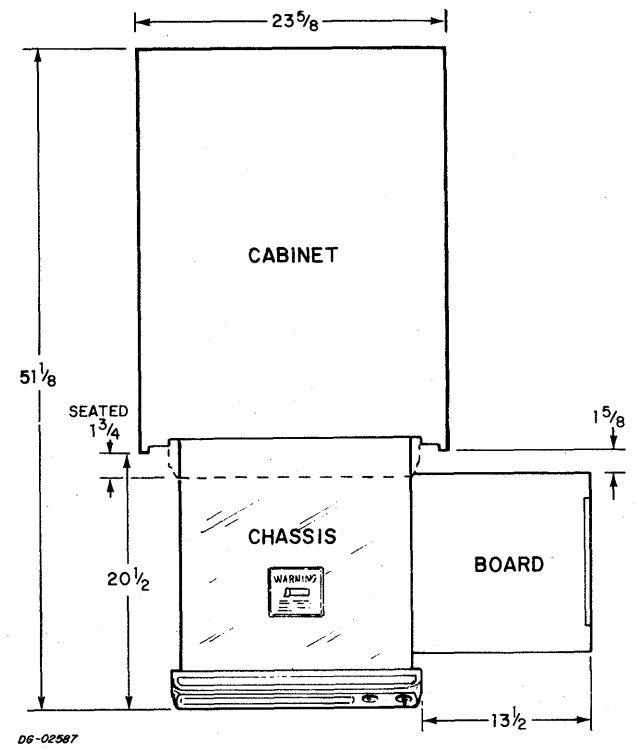
SPECIFICATIONS OF THE CABINET-MOUNTED COMPONENTS

Item	Component	Number in Subsystem	Maximum Operating Temperature: Component °F/°C	Maximum Operating Temperature: Media °F/°C	Primary Power: Volts	Hz	Phase	Cond	Amps	Cabinet Height Required: Area	in.	cm	Weight: lbs/kg	Power Dissipation (Max Watts)	Preferred Location or Remarks	Operating Humidity (Relative): min %/% max
A	S/130 100V		110 / 45		100 +10 -15	47-63	1	3	10.5	6	10.5	26.67	130 / 58.96	1050	AREAS 11-16	20 / 90
	120V				120 +10 -15				8.75							
	220V				220 +10 -15				4.77							
	240V				240 +10 -15				4.38							

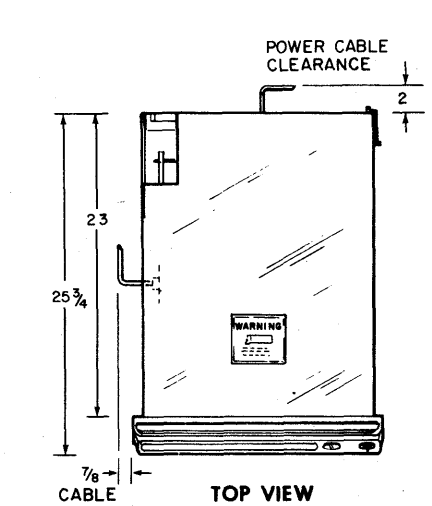
DG-01914

Voltage	Power Cable Length ft	Power Cable Length m	Power Cable Plug	Mating Receptacle on Power Drop	Mating Receptacle in Wall
100	6	1.8	5-15P	5-15R	5-15R
120	6	1.8	5-15P	5-15R	5-15R
220	6	1.8	6-15P	6-15R	6-15R
240	6	1.8	6-15P	6-15R	6-15R

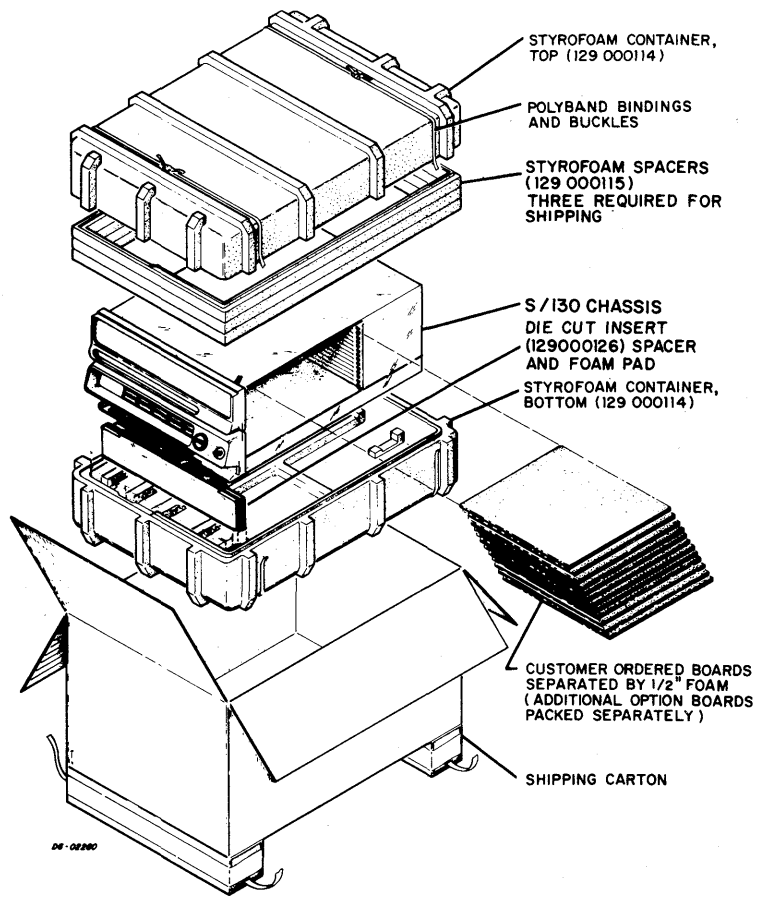
DG-02717



SERVICE DIMENSIONS



SHIPPING



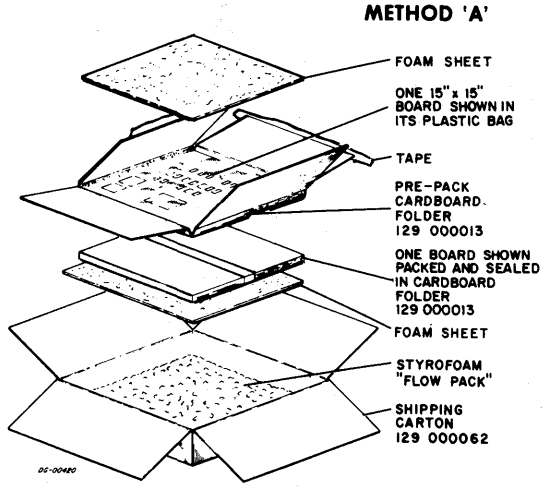
Shipping Specifications			
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	———
-32 to +158 / -35 to +70	0–95%	50,000 ft.	———

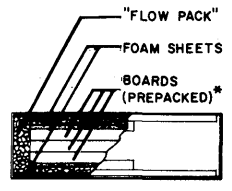
DG-02063

Storage Specifications		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-32 to +158 / -35 to +70	0–95%	90 days

DG-02062

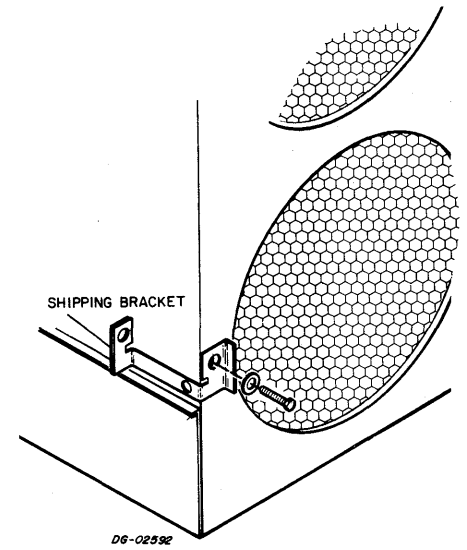
SEPARATE BOARDS
METHOD 'A'



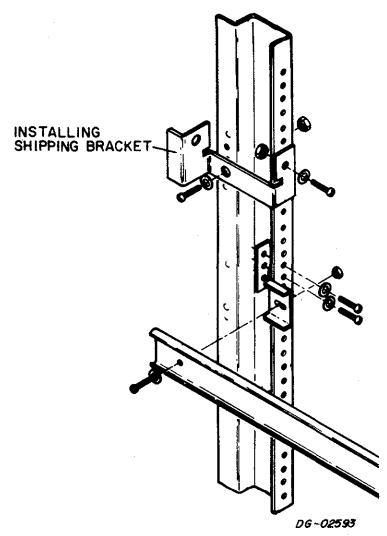


* MULTIPLE PACKING
Up to three(3) 15" x 15" boards, enclosed in plastic bags and sealed in pre-pack folders as shown, can be put in shipping carton number 129-000062. For four (4) to seven (7) boards, use shipping carton number 129 000012.

MOUNTING SHIPPING BRACKET TO CHASSIS

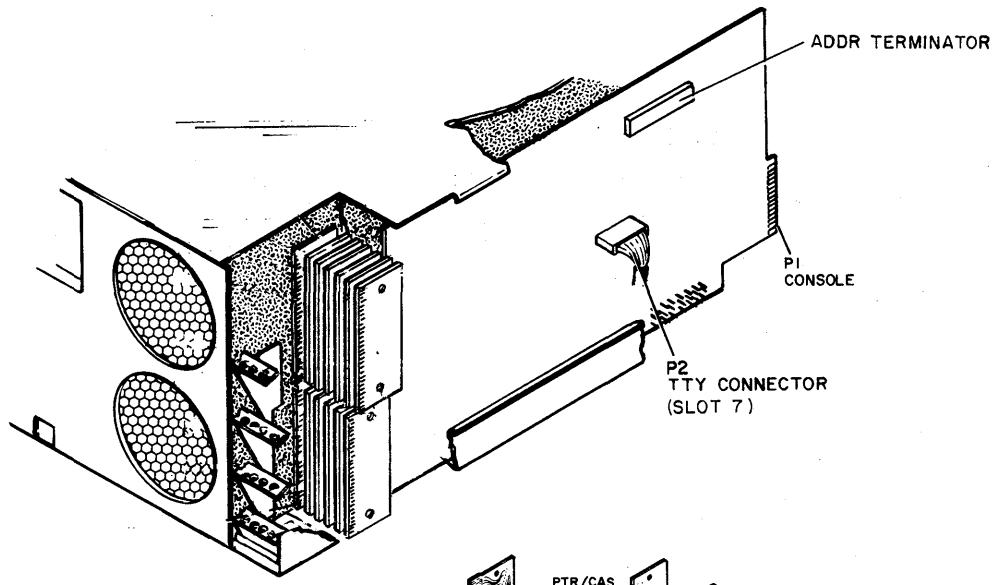


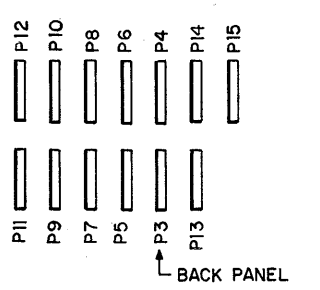
MOUNTING SHIPPING BRACKET TO RAILS

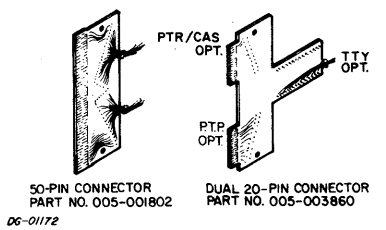


INTERNAL CABLING

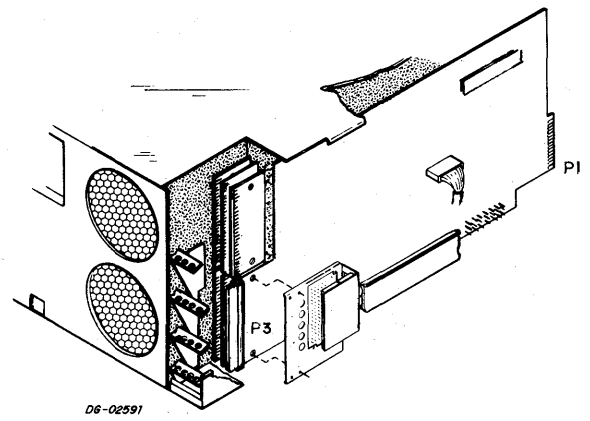
BACKPANEL CONNECTORS





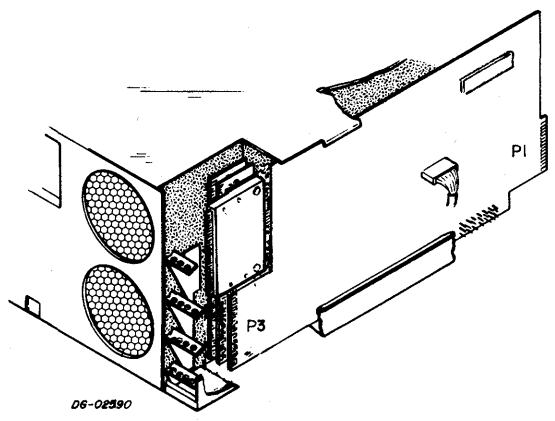


4083 OPTION CONNECTOR
005 006040



CONNECTOR CAN BE MOUNTED ON TOP OR BOTTOM, ON PADDLEBOARD.

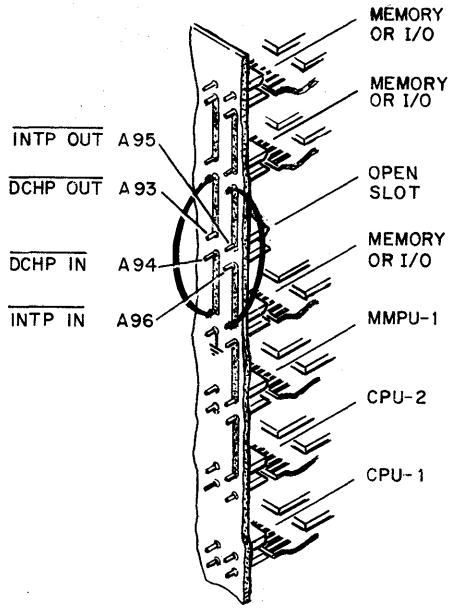
ANALOG PADDLEBOARD
005 001371



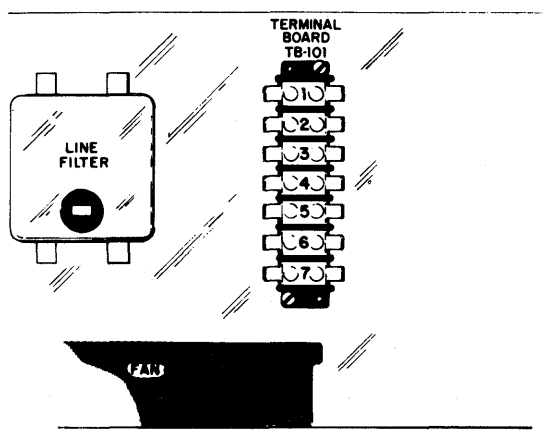
ANALOG CAN BE MOUNTED AS SHOWN

JUMPERS

JUMPERING BACKPANEL



JUMPERING TRANSFORMER



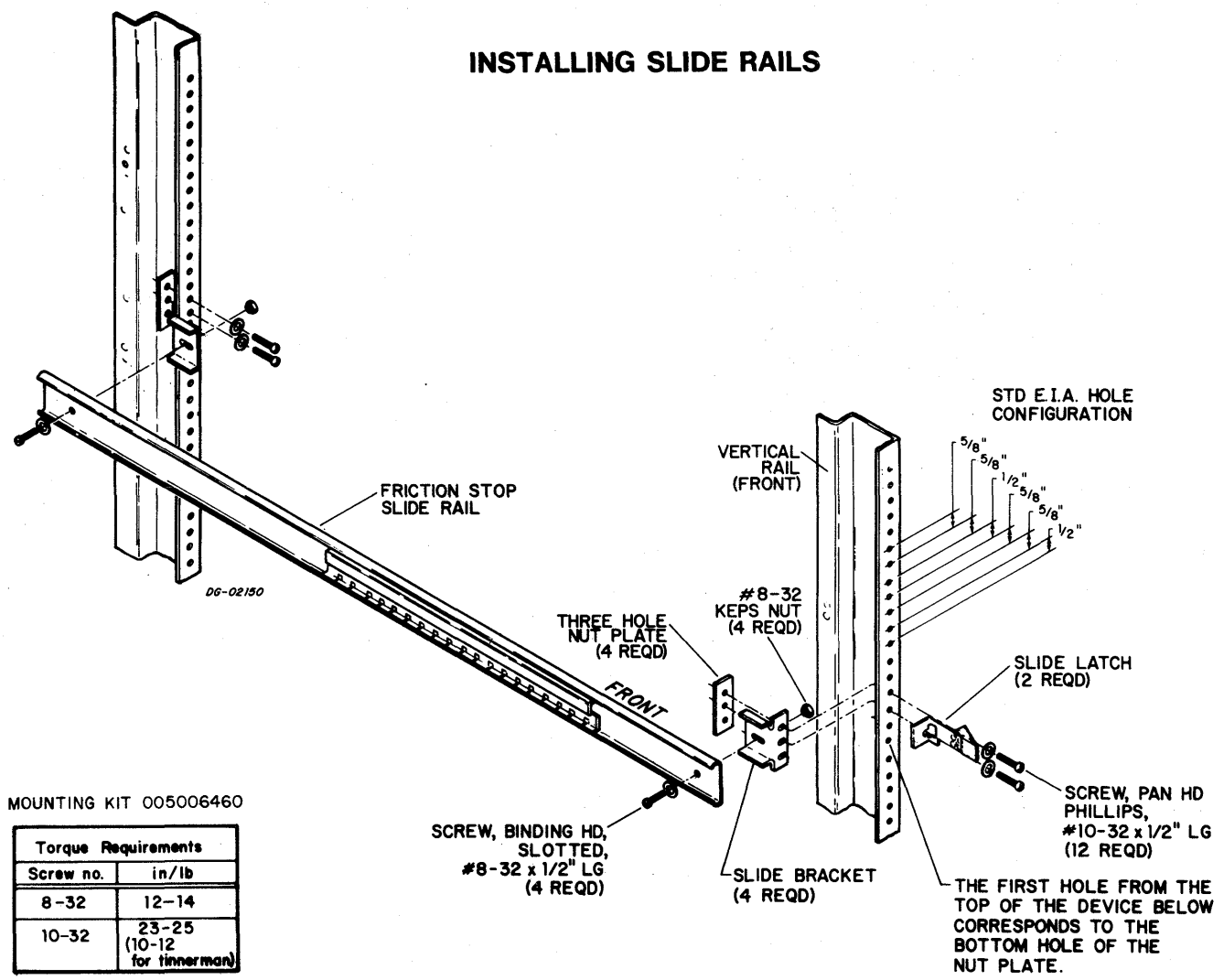
DG-02328 TB-101 SHOWN WITH ALL WIRING REMOVED FOR CLARITY IN IDENTIFYING CONNECTOR NUMBERS

TERMINAL BOARD JUMPERS TB-101 FOR TRANSFORMER

100 VAC	1-5, 2-6
120	1-4, 3-6
200	2-5
220	2-4
240	3-4

CABINET-MOUNTING

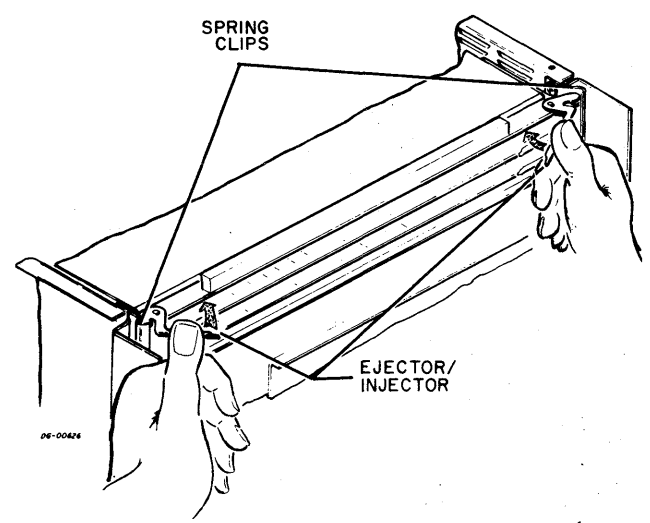
INSTALLING SLIDE RAILS



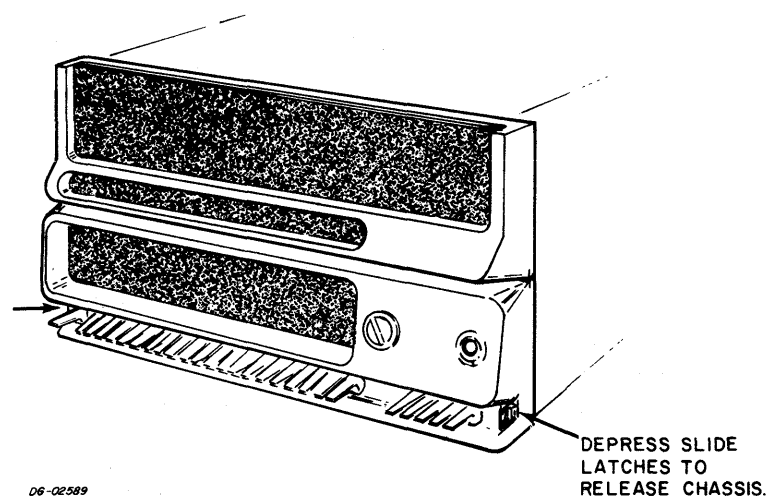
MOUNTING KIT 005006460

Torque Requirements	
Screw no.	in/lb
8-32	12-14
10-32	23-25 (10-12 for tinnerman)

INSERTING PC BOARD

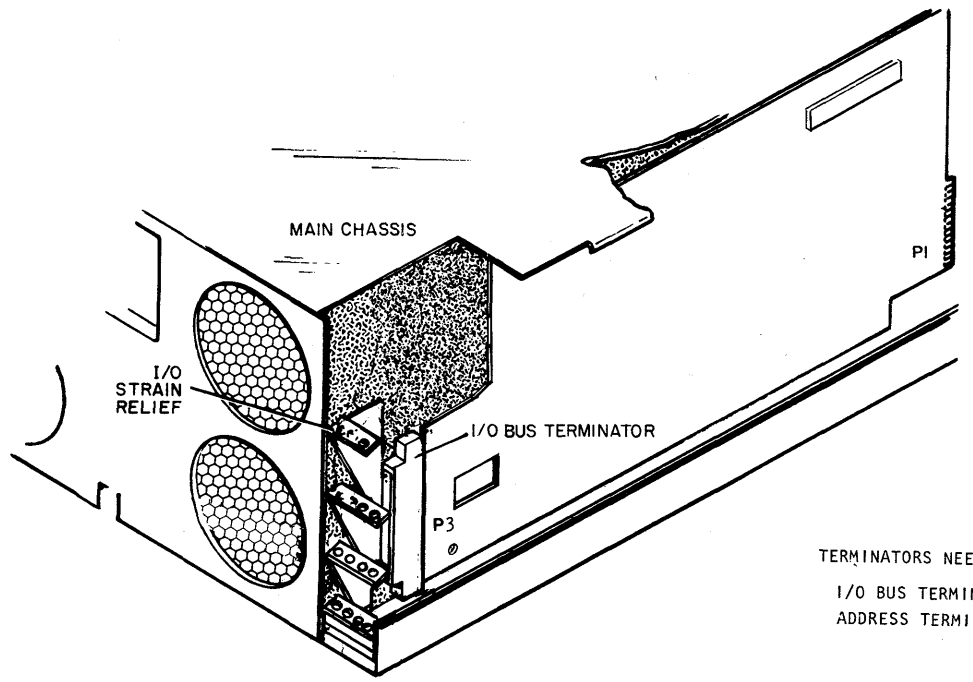


LATCH RELEASE



EXTERNAL CABLING

I/O BUS CABLE



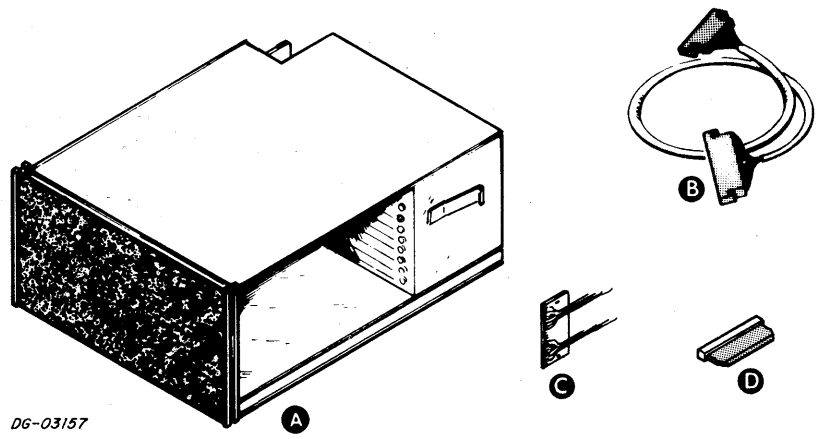
TERMINATORS NEEDED:

I/O BUS TERMINATOR ON P3 OF BACK PANEL
ADDRESS TERMINATOR ON B SIDE SLOT 12

DG-02585

IF I/O BUS IS TO BE EXTENDED FROM THE MAIN CHASSIS TO AN EXTERNAL I/O DEVICE, I.E. COMMUNICATIONS CHASSIS OR I/O EXPANSION CHASSIS, I/O BUS TERMINATOR IS REMOVED AND AN I/O CABLE IS PLUGGED ONTO P3 OF THE MAIN CHASSIS BACK PANEL AND CONNECTED TO THE I/O DEVICE.

SUBSYSTEM COMPONENT BREAKDOWN



DG-03157

MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	EXPANSION CHASSIS	CABINET	

DG-02672

CABLE

Item	Cable	Connecting	Max Allowed Lg ft / m	Notes
B	DAISY CHAIN CA	MAIN CHASSIS and EXP CHASSIS	5 / 1.52	
	OR	EXP CHASSIS 1 "EXP CHASSIS 2	5 / 1.52	
	OPTIONAL I/O CA	IF EXPANSION CHASSIS CONTAINS ONLY STANDARD CONTROLLERS, THE MAXIMUM DAISY CHAIN LENGTH FROM MAIN CHASSIS IS 50 FT (15.24m).		
C	INT CABLE	MAIN CHASSIS and EXP CHASSIS		

Item	Terminator	Location	Notes
D	S/130 EXP CHASSIS TERMINATOR	EXP CHASSIS PX12 EXT I/O PADDLEBOARD	

DG-02674

SLOT ASSIGNMENTS

Data Channel Speeds Available: Standard ☑

Slot	Allowed (Slot Chart)	Assigned	+5V Current Draw
X12	I/O		
X11			
X10			
X9			
X8			
X7			
X6			
X5			
X4			
X3			
X2			
X1	I/O		

Total +5V Current draw ____

Max +5V Current Available 40A

+5V Current Surplus ____

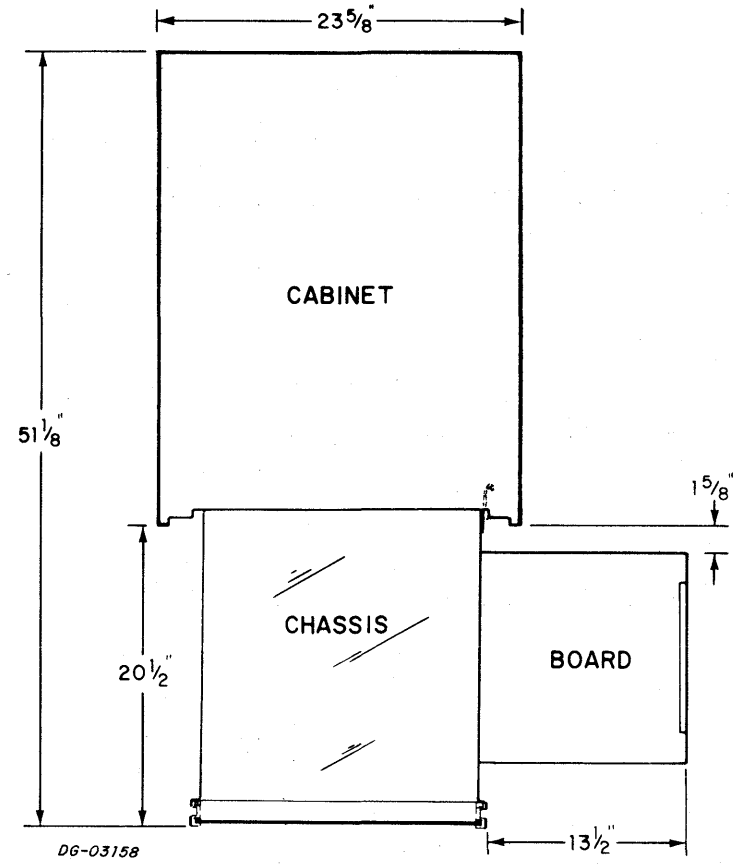
SPECIFICATIONS OF THE CABINET-MOUNTED COMPONENTS

Item	Component	Number in Subsystem	Maximum Operating Temperature: Component °F / °C	Maximum Operating Temperature: Media °F / °C	Primary Power: Current (nom) Draw (Amp)	Primary Power: Voltage ±ΔV	Primary Power: Frequency	Cabinet Height Required: Area	Cabinet Height Required: in.	Cabinet Height Required: cm	Weight lbs / kg	Power Dissipation (Max Watts)	Preferred Location or Remarks	Operating Humidity (Relative) min % / % max
A	100V		131 / 55		6.5	100 +10 -15	47-63Hz	6	10.5	26.7	130 / 58.96	650	FIRST EXPANSION CHASSIS IS MOUNTED ABOVE THE MAIN CHASSIS. A MAXIMUM OF TWO EXPANSION CHASSIS ARE AVAILABLE PER MAIN CHASSIS.	20 / 90
	120V		131 / 55		5.5	120 +12 -18	47-63Hz	6	10.5	26.7	130 / 58.96	650		20 / 90
	220V		131 / 55		3.0	220 +22 -33	47-63Hz	6	10.5	26.7	130 / 58.96	650		20 / 90
	240V		131 / 55		2.8	240 +24 -36	47-63Hz	6	10.5	26.7	130 / 58.96	650		20 / 90

DG-01914

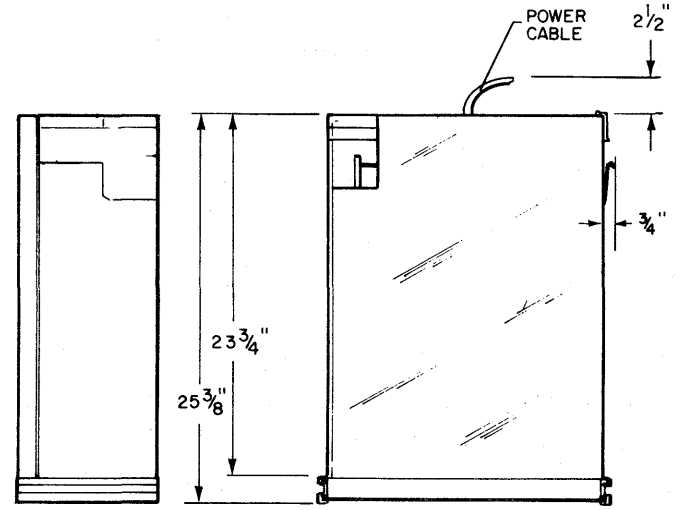
Voltage	Power Cable Length ft	Power Cable Length m	Power Cable Plug	Mating Receptacle on Power Drop	Mating Receptacle in Wall
100	6	1.8	5-15P	5-15R	5-15R
120	6	1.8	5-15P	5-15R	5-15R
220	6	1.8	6-15P	6-15R	6-15R
240	6	1.8	6-15P	6-15R	6-15R

DG-02717

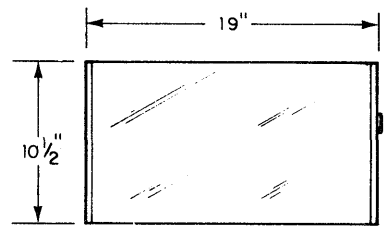


DG-03158

SERVICE DIMENSIONS



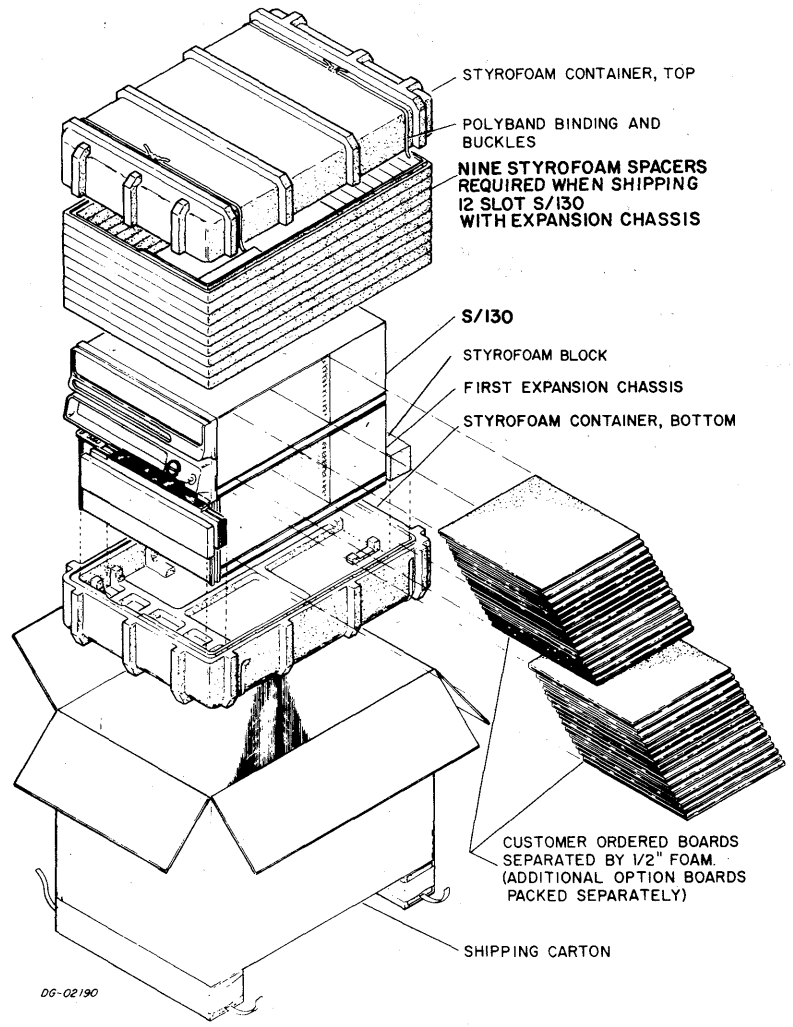
SIDE VIEW TOP VIEW



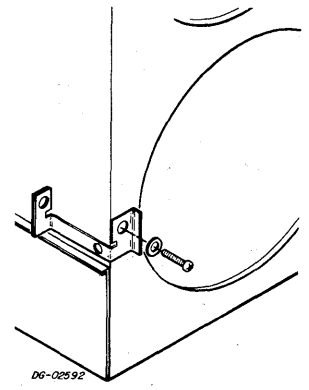
DG-03159

FRONT VIEW

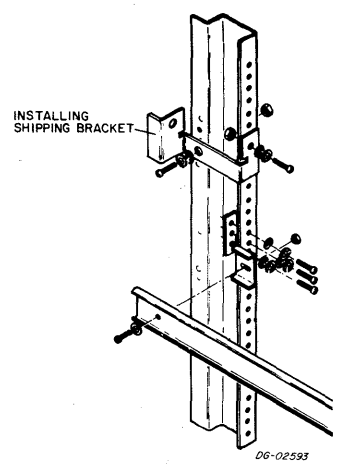
SHIPPING



MOUNTING SHIPPING BRACKET TO CHASSIS



MOUNTING SHIPPING BRACKET TO RAILS



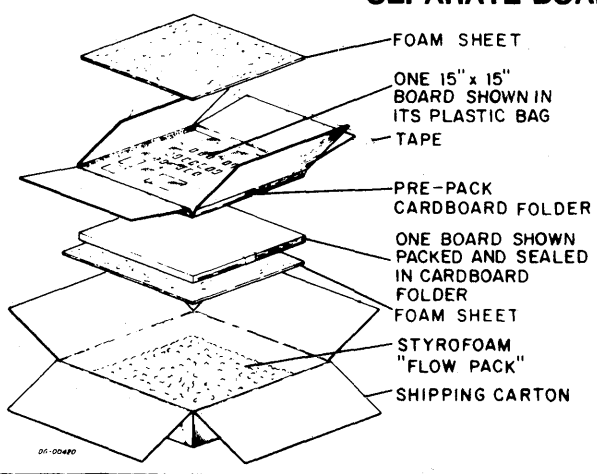
Shipping Specifications			
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	—
-40 to +185 / -40 to +85	0–85%	50,000 ft.	—

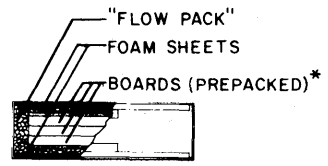
DG-02063

Storage Specifications		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-40 to +185 / -40 to +85	0–85%	90 days

DG-02062

SEPARATE BOARDS

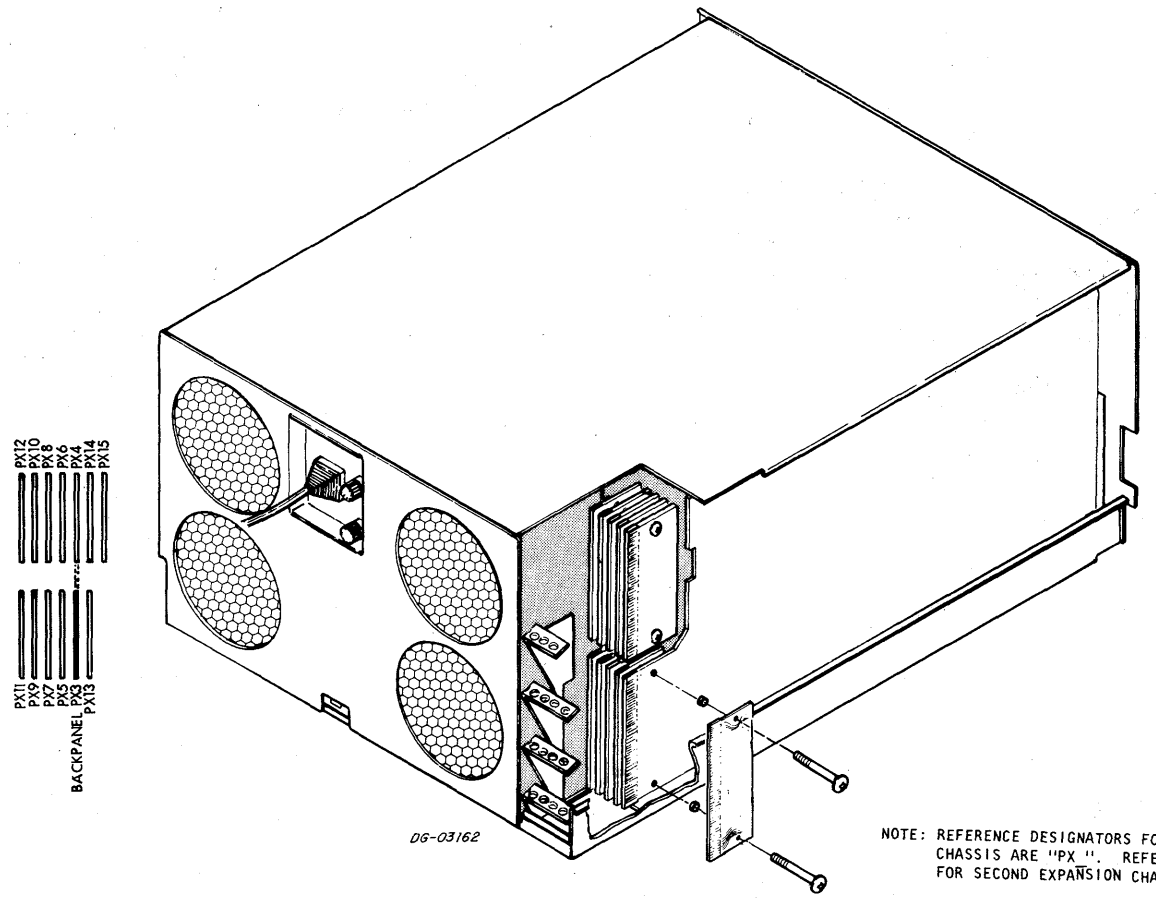




* MULTIPLE PACKING
Up to three (3) 15" x 15" boards, enclosed in plastic bags and sealed in pre-pack folders as shown, can be put in shipping carton number 129-000062. For four (4) to seven (7) boards, use shipping carton number 129 000012.

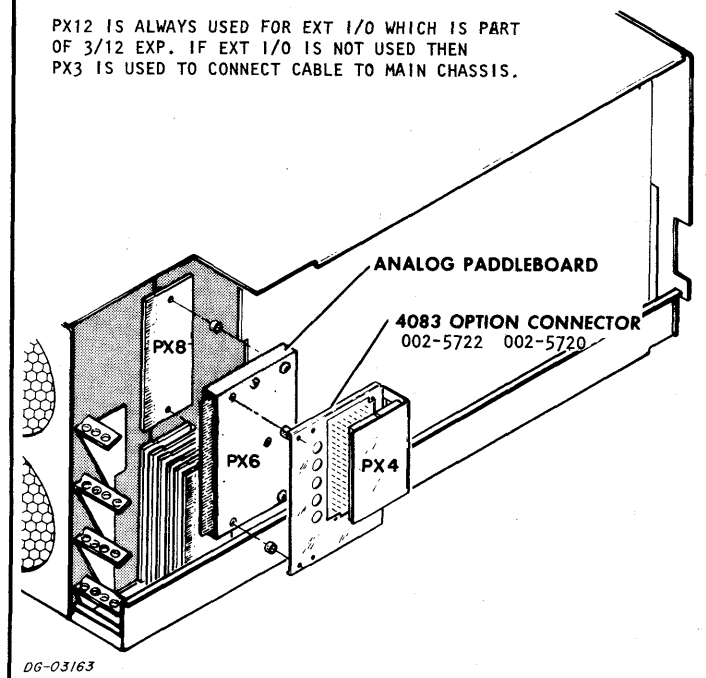
INTERNAL CABLING

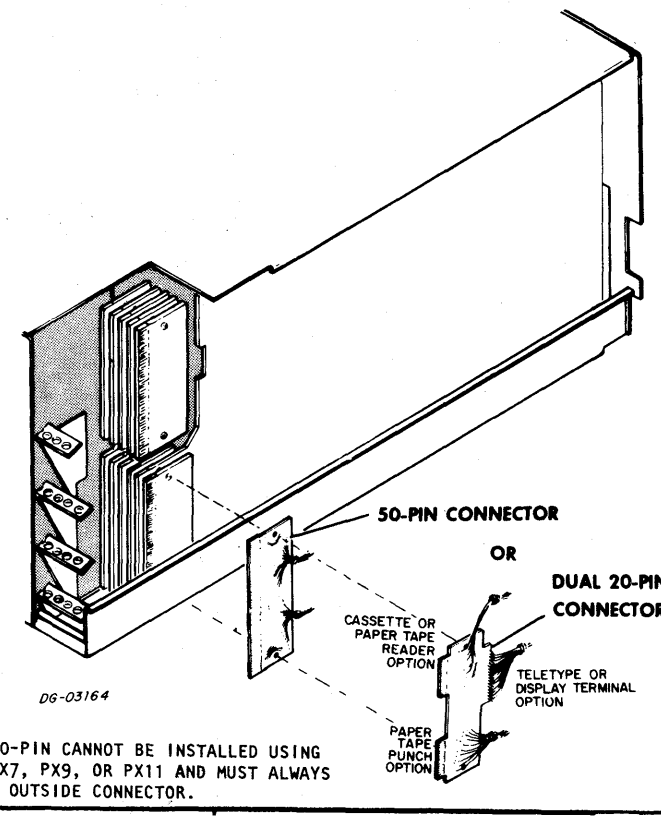
BACKPANEL CONNECTOR



NOTE: REFERENCE DESIGNATORS FOR FIRST EXPANSION CHASSIS ARE "PX_". REFERENCE DESIGNATORS FOR SECOND EXPANSION CHASSIS ARE "PXX_".

PX12 IS ALWAYS USED FOR EXT I/O WHICH IS PART OF 3/12 EXP. IF EXT I/O IS NOT USED THEN PX3 IS USED TO CONNECT CABLE TO MAIN CHASSIS.

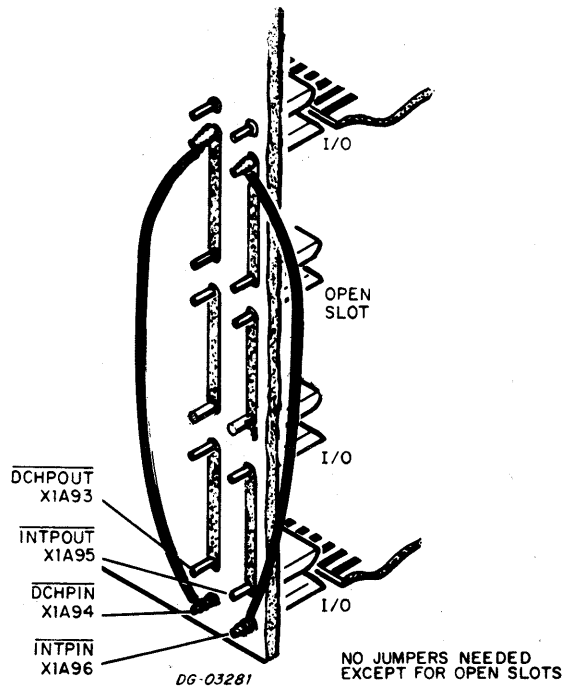




DUAL 20-PIN CANNOT BE INSTALLED USING PX5, PX7, PX9, OR PX11 AND MUST ALWAYS BE THE OUTSIDE CONNECTOR.

TAILORING

JUMPERING BACKPANEL



NO JUMPERS NEEDED EXCEPT FOR OPEN SLOTS

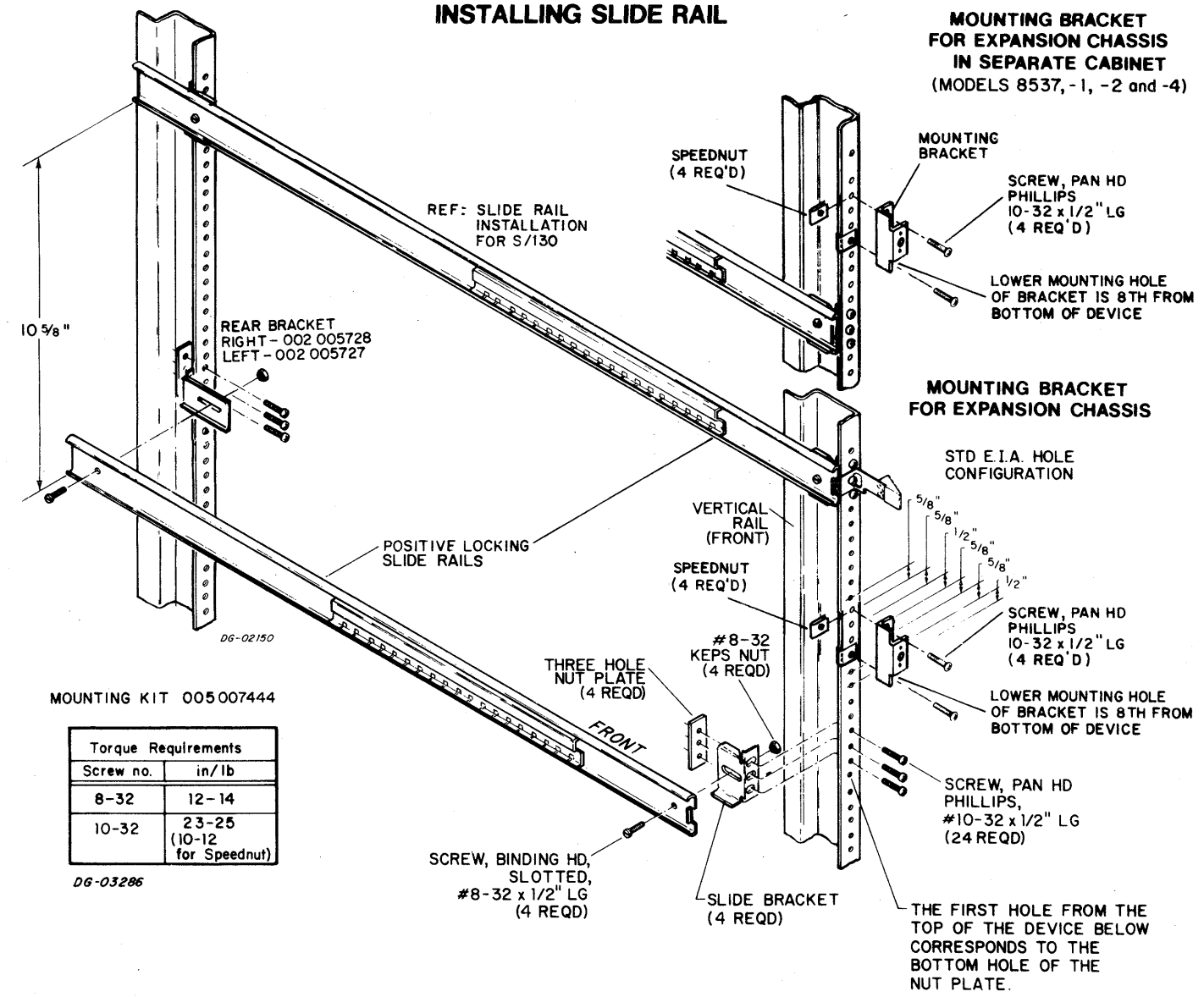
START AT SLOT 1 (X1A96 & X1A94) AND WIRE TO FIRST USED SLOT (X A95 & X A93).

AC VOLTAGE DETERMINED BY SELECTING LINE CORD

	PART NO.	MODEL NO.
100 VAC	109 000239	1118G
120 VAC	109 000238	1118D
220 VAC	109 000237	1118E
240 VAC	109 000240	1118F

INSTALLATION IN A CABINET

INSTALLING SLIDE RAIL

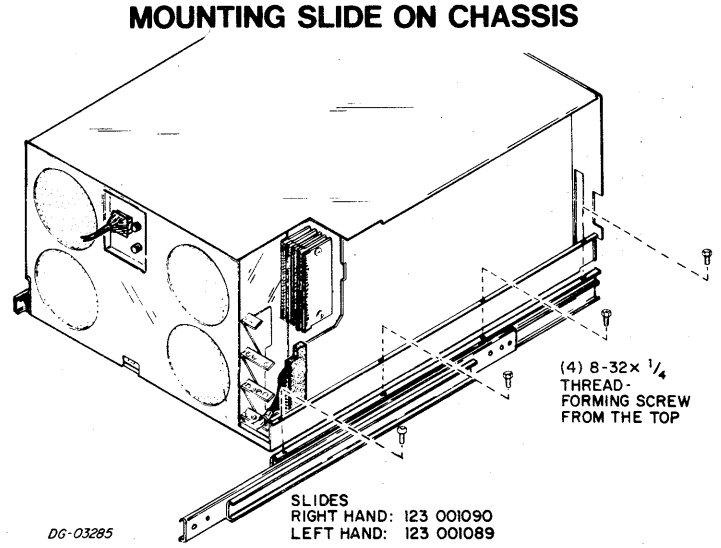


MOUNTING KIT 005007444

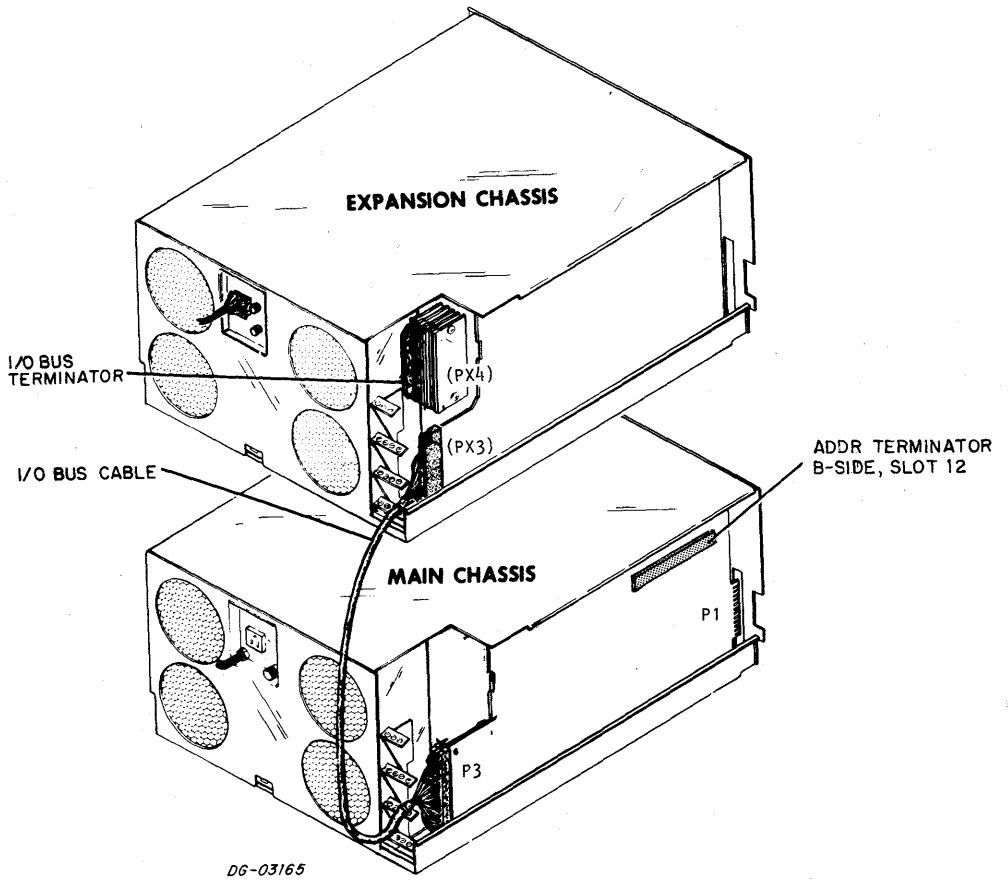
Torque Requirements	
Screw no.	in/lb
8-32	12-14
10-32	23-25 (10-12 for Speednut)

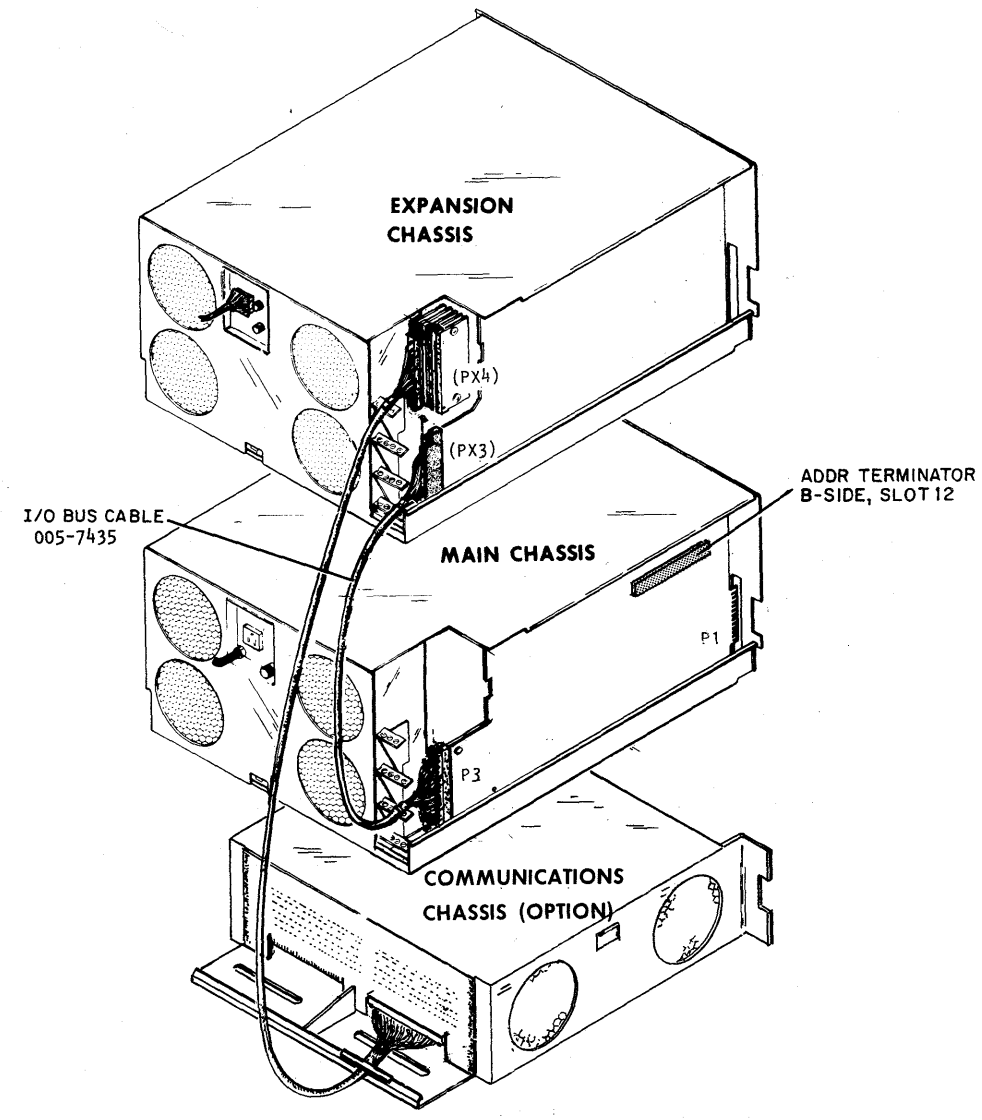
DG-03286

MOUNTING SLIDE ON CHASSIS



EXTERNAL CABLING

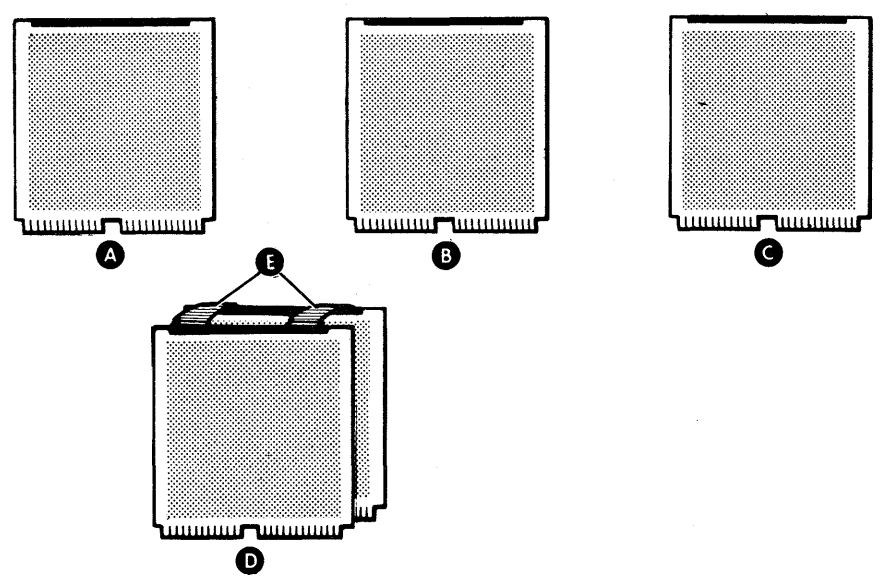




THIS CONFIGURATION ALLOWED ONLY IF CABINET HAS SUFFICIENT POWER.

NOTE: EXTERNAL I/O CONNECTIONS WHICH ARE NORMALLY AVAILABLE ON THE MAIN CHASSIS (P3), BECOME AVAILABLE ON THE EXPANSION CHASSIS (ON PX12 FOR A ONE-EXPANSION CHASSIS SUBSYSTEM.

SUBSYSTEM COMPONENT BREAKDOWN



MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	32KB CORE MEMORY	MAIN CHASSIS	WITHOUT ERCC
B	64KB SC MEMORY	MAIN CHASSIS	WITH ERCC
C	256KB MAP BOARD	MAIN CHASSIS	
*D	CPU-1 & CPU-2	MAIN CHASSIS	*WITH OR WITHOUT WCS,FPI,CIS and/or ERCC

CABLE

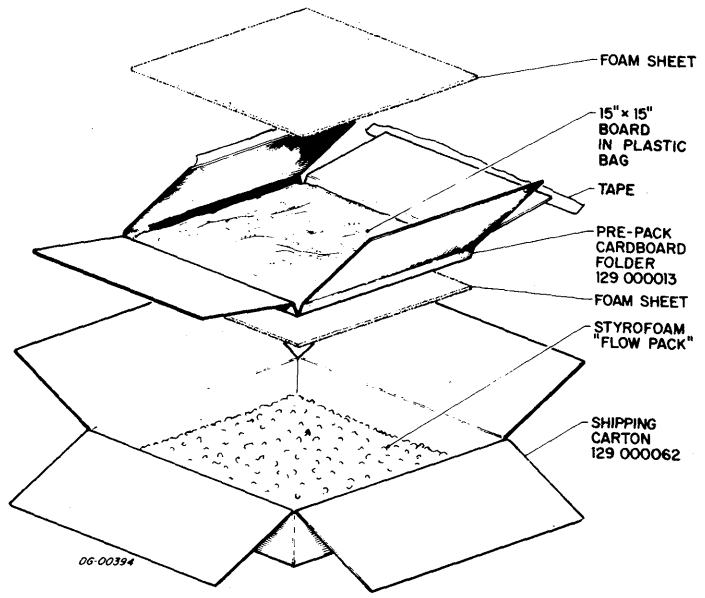
Item	Cable	Connecting	Max Allowed Lg ft / m	Notes
E	CPU INTERBOARD CABLE	CPU-1 and CPU-2	1.5 / .5	2 REQUIRED

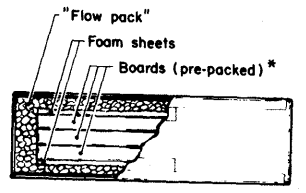
* WCS (WRITEABLE CONTROL STORE)
FPI (FLOATING POINT INSTRUCTION SET)
CIS (CHARACTER INSTRUCTION SET)
ERCC (ERROR CHECKING AND CORRECTION)

SPECIFICATIONS OF CHASSIS MOUNTED COMPONENTS

Item	Component	No. of Slots Required	Total +5V Current Draw (Amps)	Remarks
A	32 KB CORE MEMORY	1	1.8	
B	64KB SC MEMORY	1	4.5	Requires ERCC on CPU-2
C	256KB MAP BOARD	1	5	
D	CPU-1 & CPU-2	2	12.4	
	CPU-1, 2 & ERCC	2	15.4	
	CPU-1, 2 & CIS	2	13.8	
	CPU-1, 2 & FPI	2	18.6	
	CPU-1, 2 & WCS	2	21.1	
	CPU-1, 2 & WCS, FPI	2	25	
	CPU-1, 2 & CIS, FPI	2	18.6	
	CPU-1, 2 & WCS, FPI, ERCC	2	28	
	CPU-1, 2 & ERCC, CIS	2	16.8	
	CPU-1, 2 & WCS, CIS	2	24.5	
	CPU-1, 2 & FPI, ERCC	2	21.6	
	CPU-1, 2 & WCS, ERCC	2	24.1	
	CPU-1, 2 & FPI, WCS, CIS	2	25	
	CPU-1, 2 & ERCC, CIS FPI	2	21.6	
	CPU-1, 2 & WCS, CIS, ERCC	2	27.5	
	CPU-1, 2 & FPI, WCS, CIS, ERCC	2	28.0	

SHIPPING





MULTIPLE PACKING

* Up to three (3) 15"x 15" boards, enclosed in plastic bags and sealed in pre-pack folders as shown, can be put in shipping carton No. 129 000062. For four (4) to seven (7) boards, use shipping carton No. 129 000012.

Storage Specifications		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-40 to +185 / -40 to +85	0-85%	90 days

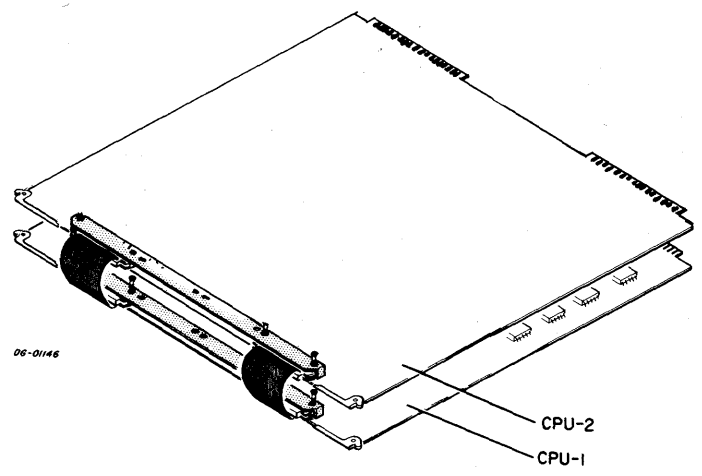
DG-02062

Shipping Specifications			
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	—
-40 to +185 / -40 to +85	0-85%	50,000 ft.	—

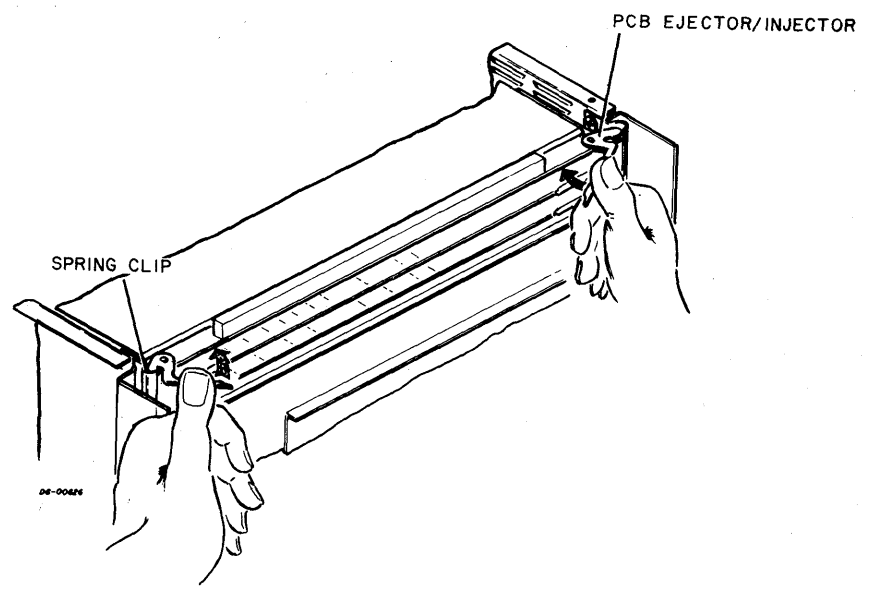
DG-02063

INTERNAL CABLING

CPU-1 AND CPU-2 ARE CABLED TOGETHER AS SHOWN BELOW.



INSTALLING PC BOARD



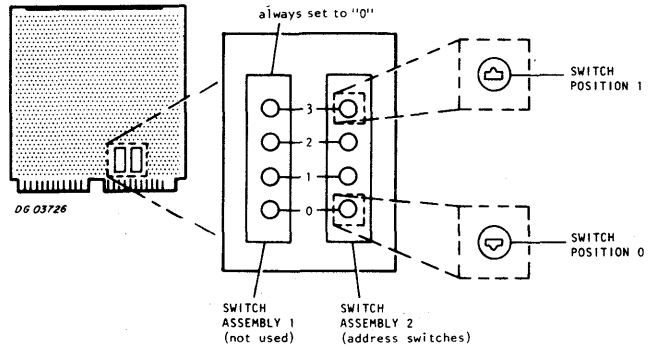
TAILORING and SWITCHES

16K CORE MEMORIES

ADDRESS selection is determined on ECLIPSE 16K core boards by switch positions. Proceed as follows to assign switch positions.

1. Assign each memory board a (unique) number 0-7.
2. Select the address switches for each board from the following table. The "Memory Select Switch Positions" figure illustrates where each switch is positioned on a board.

Address Switch Position for Each Board				
	SWITCH ASSEMBLY 2			
Board Number	SWITCH 3	SWITCH 2	SWITCH 1	SWITCH 0
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1



MEMORY SELECT SWITCH POSITIONS

The memory select switches, as shown above, are arranged in two assemblies, four switches per assembly. Switches 0-3 in switch assembly 2 select the board number (0-7). Switch assembly 1 is not used and its four switches should always be in the 0 position. Each switch has two positions, 0 and 1. These positions are selected by inserting a screwdriver in the switch notch and rotating the switch.

32Kx21 BIT SC MEMORIES

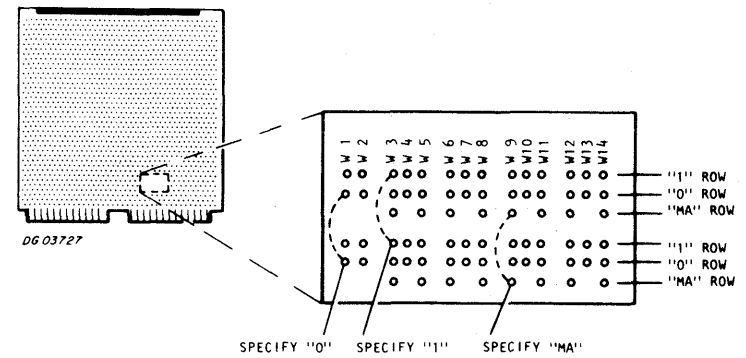
Interleaving and address selection is determined on ECLIPSE 32K X 21 SC boards by jumper positions. Proceed as follows to assign jumper positions.

1. Assign each memory board a (unique) number from 0-3.
2. Assign each from the table below the appropriate level of interleaving for each board.

Assigned Levels of Interleaving		
Total Number of Memory Boards	Board Numbers	Assigned Level of Interleaving
1	0	none
2	0,1	2
3	0,1	2
	2	none
4	0,1,2,3	4

3. Select the corresponding jumper-positions for each board from the table below. The "Memory Select Jumper Positions" figure illustrates where each jumper goes.

JUMPER POSITIONS FOR BOARD NUMBERS					
	Board Number Jumpers				
	Jumper Assignments				
Board Number	W1 to W4	W5,W8	W6,W7	W10	W13
0	0	MA	0	0	0
1	0	MA	0	0	1
2	0	MA	0	1	0
3	0	MA	0	1	1



MEMORY SELECT JUMPER POSITIONS

Each of the jumper positions crosses six rows. Specifying a "1" at a jumper position is done by inserting a jumper from the top "1" row to the bottom "1" row. A "0" is specified by inserting a jumper from the top "0" row to the bottom "0" row. A bit used in interleaving is specified by inserting a jumper from the top "MA" row to the bottom "MA" row. Examples of the three basic jumper positions are shown in the figure above.

4. Select the interleaving jumpers for each board from the following table, and install these into their corresponding MA positions illustrated in the above figure.

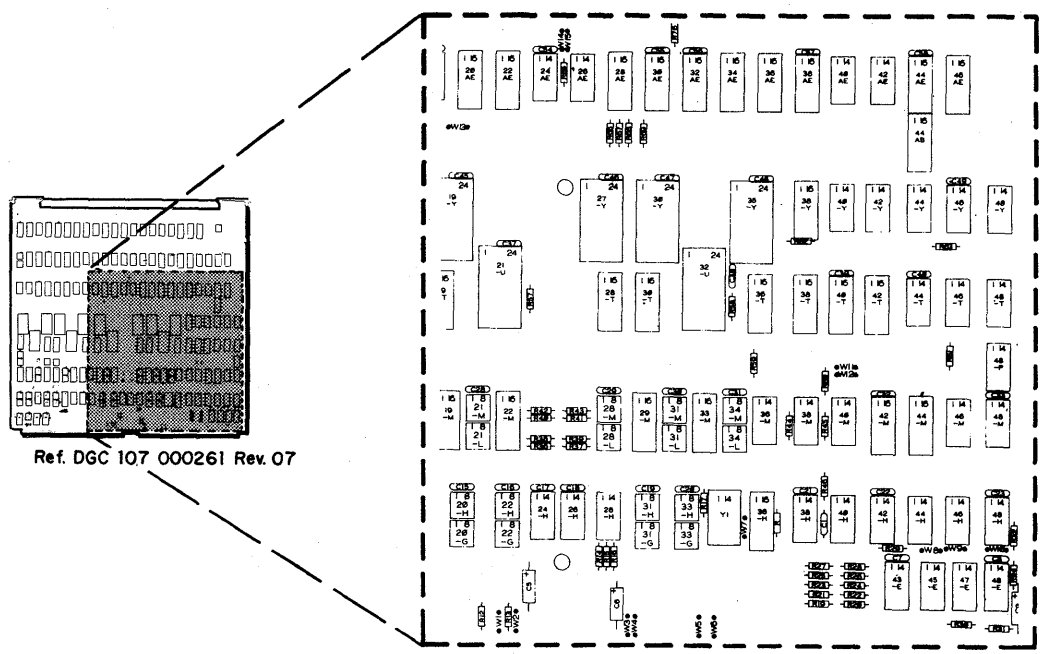
Level of Interleaving Jumpers	
Level of Interleaving	Jumpers Inserted
none	W11 W14
2	W11 W12
4	W9 W12

5. There remains open one jumper position in each of the following pairs: W9/W11 and W12/W14. Install these two jumpers on each board by matching them to jumpers already installed according to the table below.

Gate-Enable Jumpers	
Pair	Match
W9/W11	W10
W12/W14	W13

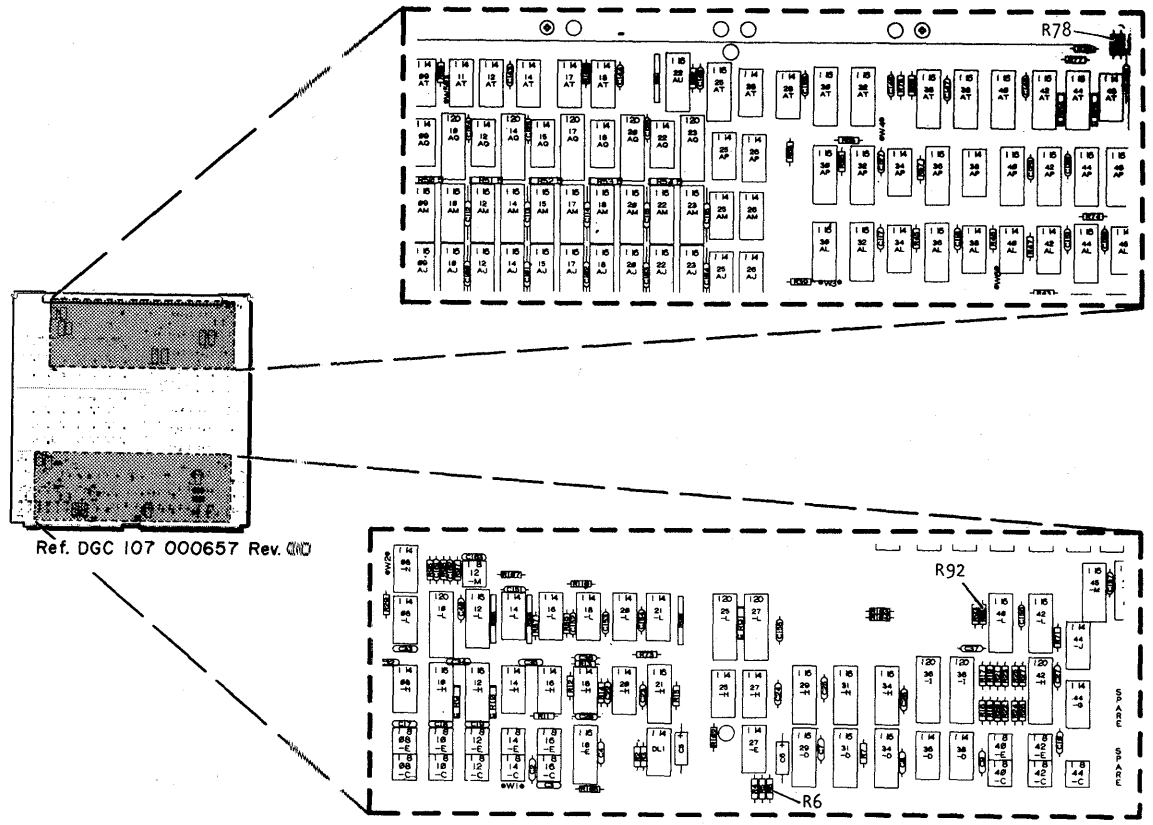
TAILORING and SWITCHES (CONT.)

CPU-1 JUMPERS



CPU-1 JUMPER POSITIONS	
JUMPER	
W1	NORMALLY OUT
W2	NORMALLY OUT
W3	NORMALLY IN
W4	NORMALLY IN
W5	NORMALLY OUT
W6	NORMALLY OUT
W7	NORMALLY IN
W8	NORMALLY IN
W9	IN FOR AN UNMAPPED MACHINE OUT FOR A MAPPED MACHINE
W10	NORMALLY IN
W11	NORMALLY IN
W12	NORMALLY IN
W13	NORMALLY OUT
W14	NORMALLY OUT
W15	NORMALLY IN

CPU-2 JUMPERS

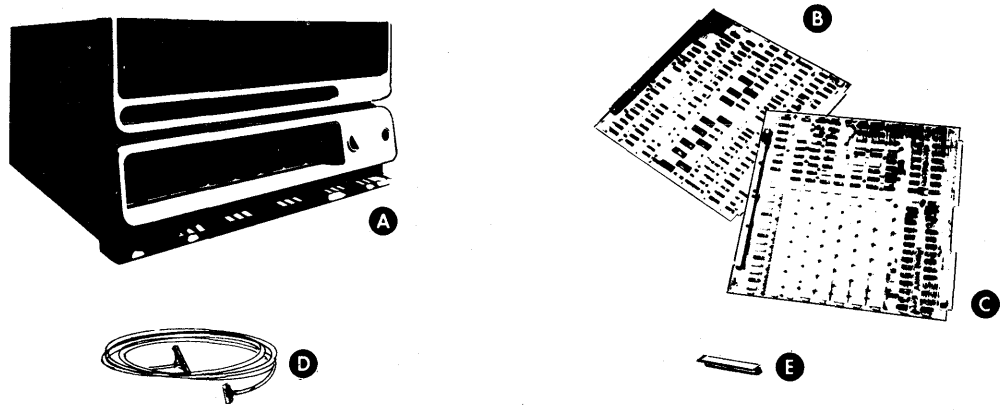


CPU-2 JUMPER POSITIONS	
JUMPER	
W1	NORMALLY IN
W2	NORMALLY OUT
*W3	POWER FAIL RESTART
*W4	POWER FAIL RESTART
W5	NORMALLY OUT
W6	**IN IF WCS/UCS OPT INSTL
R6	**OUT IF ERCC OPT INSTL
R78	**IN IF FIS/CIS OPT INSTL
R92	NORMALLY IN

*W3	*W4	IF POWER SWITCH IS IN LOCKED POSITION
OUT	OUT	NORMAL AUTO RESTART
OUT	IN	HALT
IN	OUT	AUTO REBOOT DEVICE 33
IN	IN	AUTO REBOOT DEVICE 73

**WCS - WRITEABLE CONTROL STORE
UCS - USER CONTROL STORE
ERCC - ERROR CHECKING AND CORRECTION
FIS - FLOATING POINT INSTRUCTION SET (FPI)
CIS - CHARACTER INSTRUCTION SET

SUBSYSTEM COMPONENT BREAKDOWN



MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	MAIN CHASSIS	CABINET	
B	CPU-1	MAIN CHASSIS	
C	CPU-2	MAIN CHASSIS	

DG-02672

CABLE

Item	Cable	Connecting	Max Allowed Lg ft / m	Notes
D	EXT I/O BUS	MAIN CHAS and EXT I/O DEVICE	50 / 15.3	

DG-02673

TERMINATOR

Item	Terminator	Location	Notes
E	A-MEM BUS	BACK PANEL	USED WHEN EXPANSION CHASSIS IS NOT PRESENT

DG-02674

CHASSIS SLOT ASSIGNMENTS

Data Channel Speeds Available: Standard ☑ High Speed ☐

Slot	Allowed (Slot Chart)	Assigned	+5V Current Draw
17			
16	MEMORY or I/O		
15			
14			
13			
12			
11			
10			
9			
8			
7	MEMORY or I/O		
6	4010, 4075 Pref.		
5	MAP		
4	FPU-2		
3	FPU-1		
2	CPU-2		
1	CPU-1		

Total +5V Current draw _____

Max +5V Current Available 60 A

+5V Current Surplus _____

DG-01915

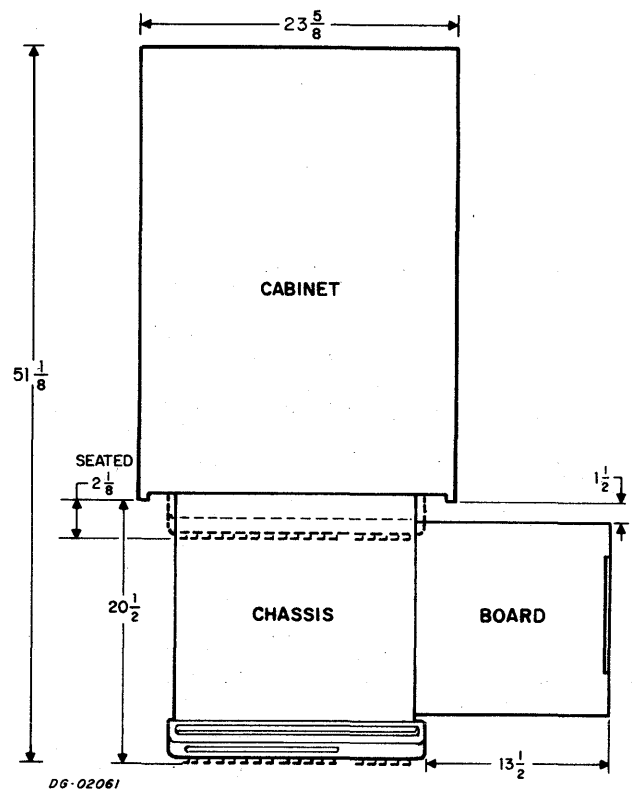
SPECIFICATIONS OF THE CABINET-MOUNTED COMPONENTS

Item	Component	Number in Subsystem	Maximum Operating Temperature: Component °F / °C	Media °F / °C	Primary Power: Current Draw (Amp)	Voltage ±ΔV	Frequency ±Δf	Cabinet Height Required: Area	in.	cm	Weight lbs / kg	Power Dissipation (Max Watts)	Preferred Location or Remarks	Operating Humidity (Relative) min / max
A	CHASSIS	1	131 / 55		9.6	120 +12 −18	50/60 ±1	6	10.5	26.45	110 / 50	1150	9-15	20 / 90
					4.8	240 +24 −53	50 ±1							

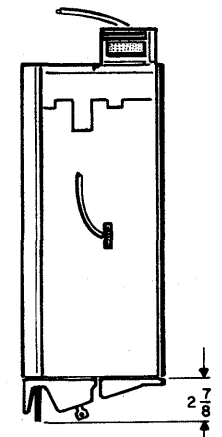
DG-01914

Voltage	Power Cable Length ft	m	Power Cable Plug	Mating Receptacle on Power Drop	Mating Receptacle in Wall
120V	6	1.8	NEMA 5-15P	NEMA 5-15R	NEMA 5-15R
240V	6	1.8	NEMA 6-15P	NEMA 6-15R	NEMA 6-15R

DG-02717



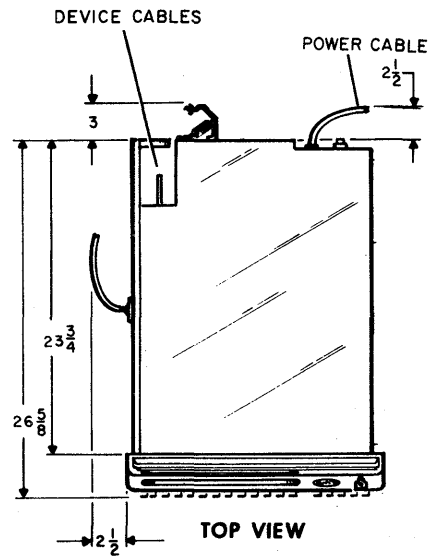
SERVICE DIMENSIONS



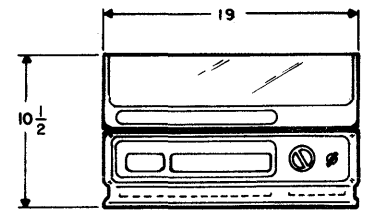
SIDE VIEW

ECLIPSE S/200

DG-01659



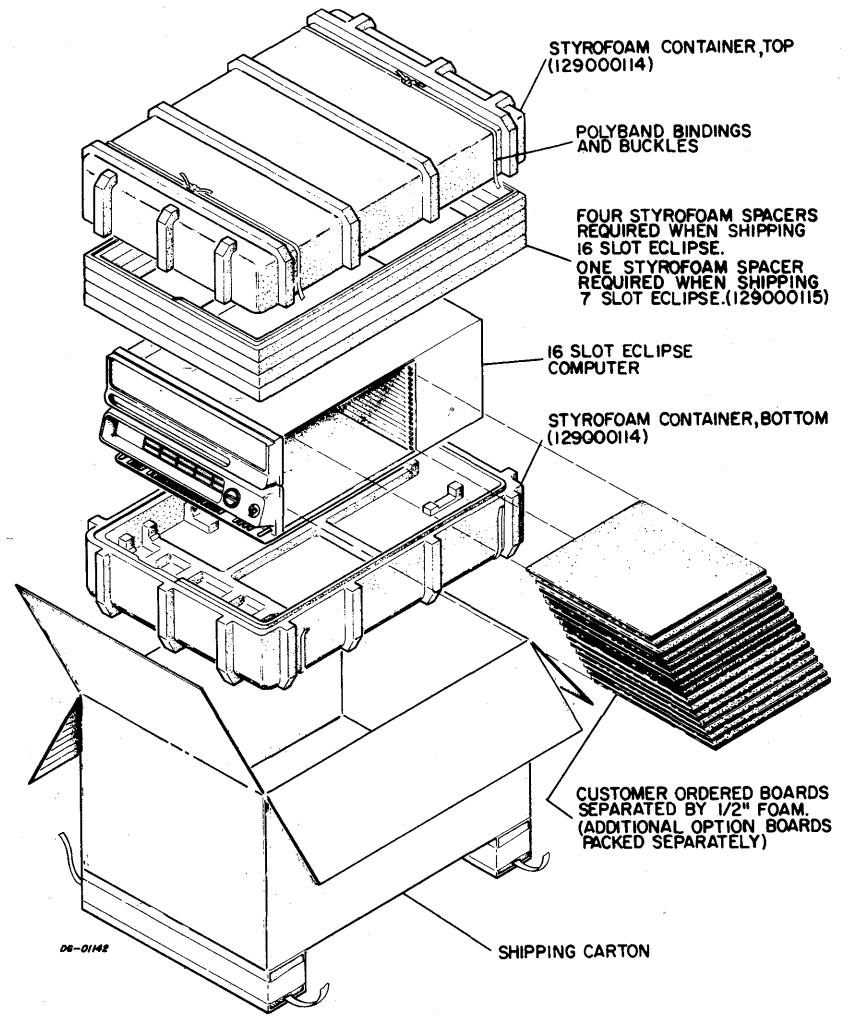
TOP VIEW



FRONT VIEW

PACKING KIT

S/200 CHASSIS



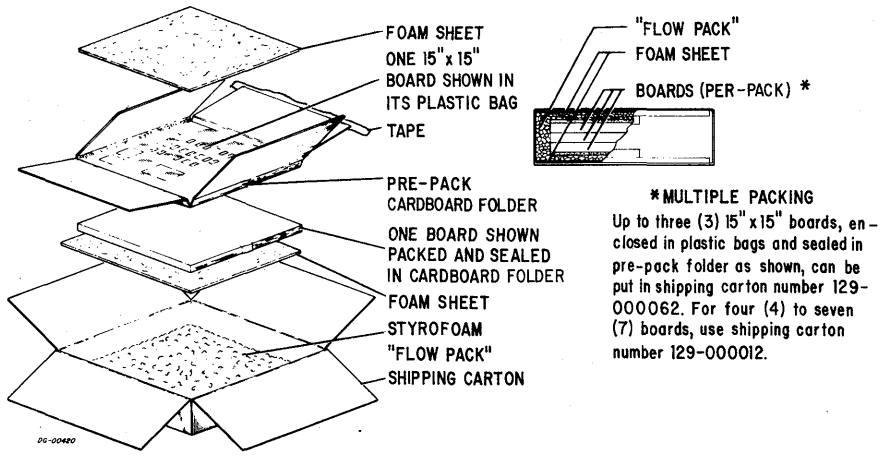
Storage Specifications		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
−40 TO +185 / −40 TO +85	0–85%	90 days

DG-02062

Shipping Specifications			
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	
−40 TO +185 / −40 TO +85	0–85%	50,000 ft.	——

DG-02063

SEPARATE BOARDS

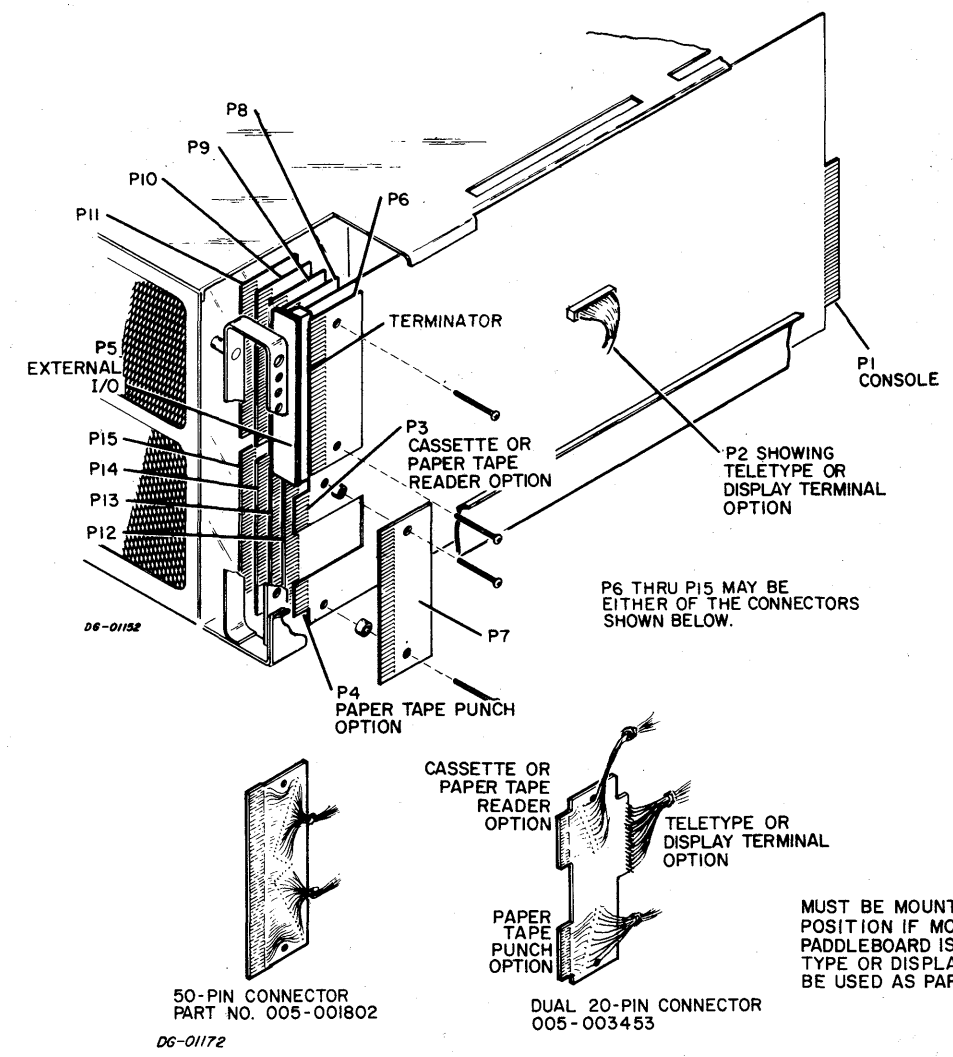


*MULTIPLE PACKING

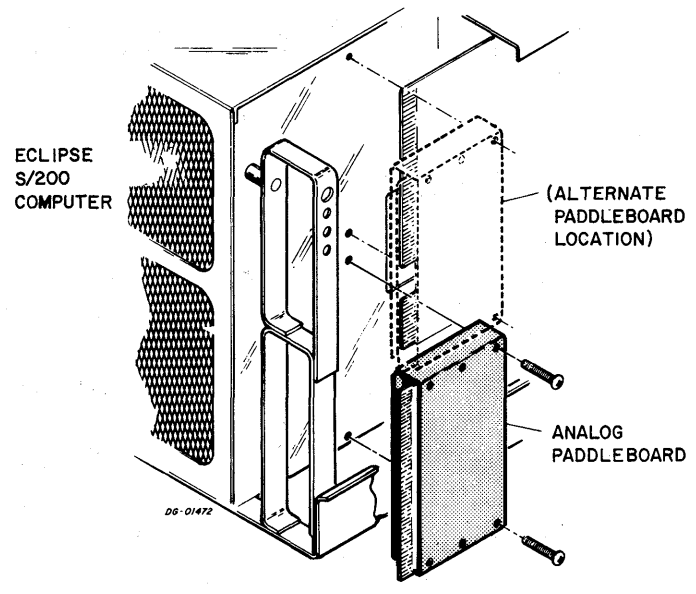
Up to three (3) 15"x15" boards, enclosed in plastic bags and sealed in pre-pack folder as shown, can be put in shipping carton number 129-000062. For four (4) to seven (7) boards, use shipping carton number 129-000012.

INTERNAL CABLING

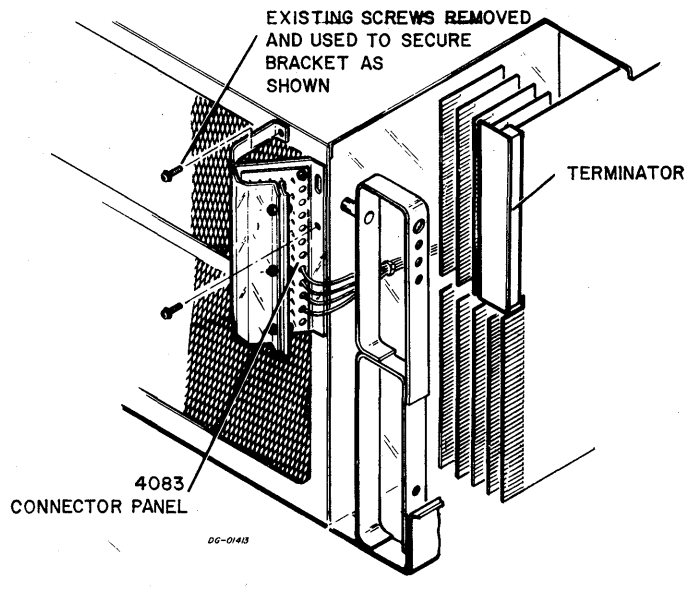
BACKPANEL CONNECTORS



ANALOG PADDLEBOARD

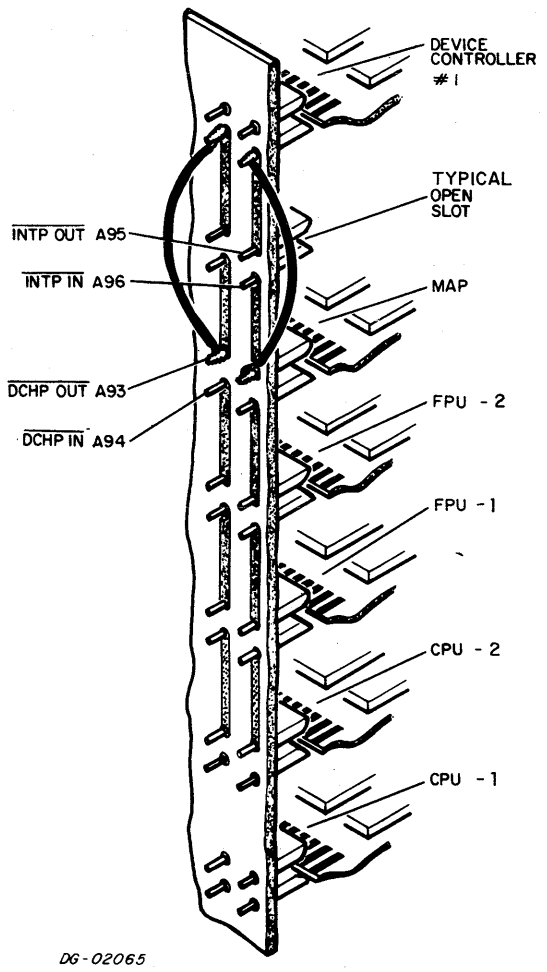


4083 OPTION CONNECTOR



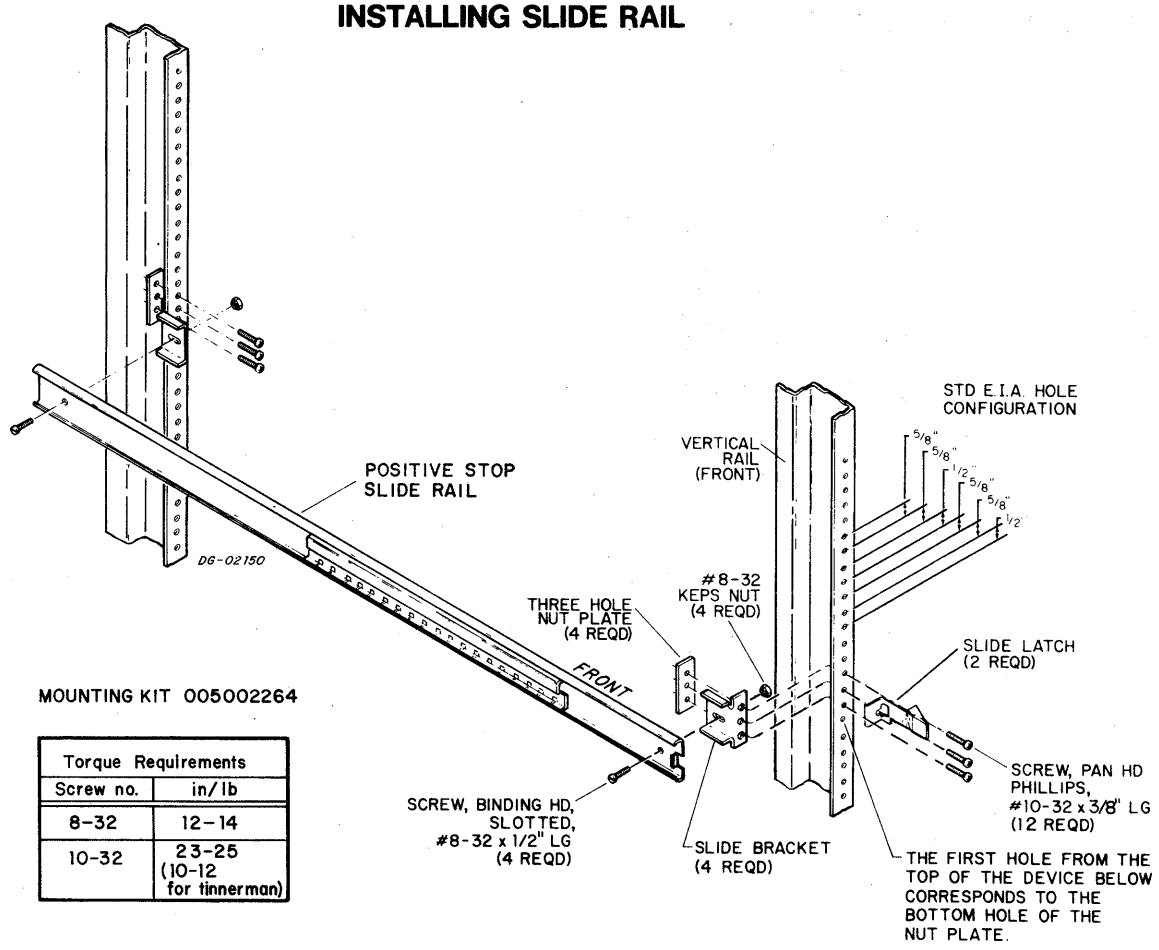
JUMPERS

JUMPERING BACKPANEL



SLIDE RAILS

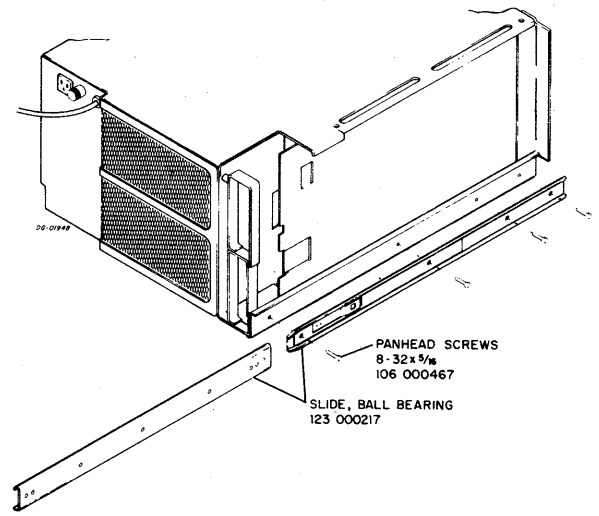
INSTALLING SLIDE RAIL



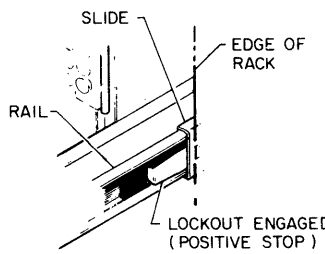
MOUNTING KIT 005002264

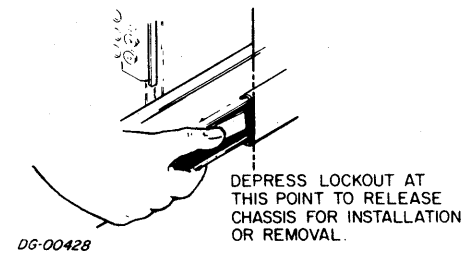
Torque Requirements	
Screw no.	in/lb
8-32	12-14
10-32	23-25 (10-12 for tinnerman)

MOUNTING SLIDE ON CHASSIS

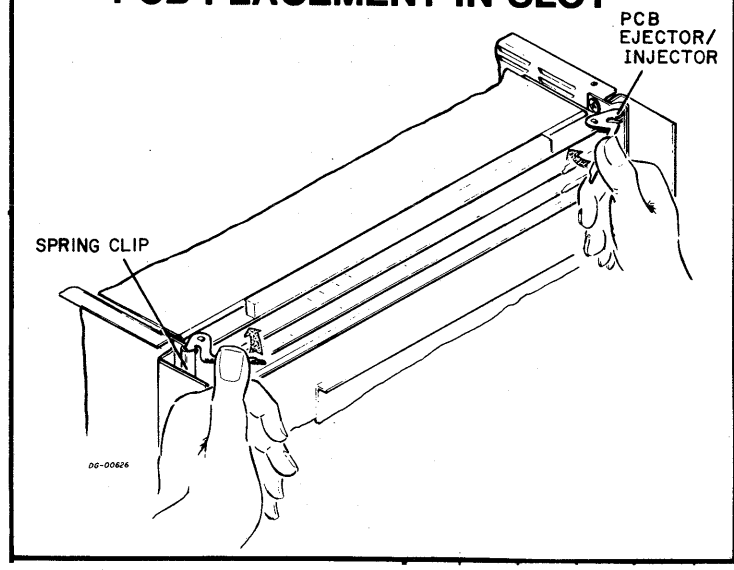


SLIDE LOCKOUT



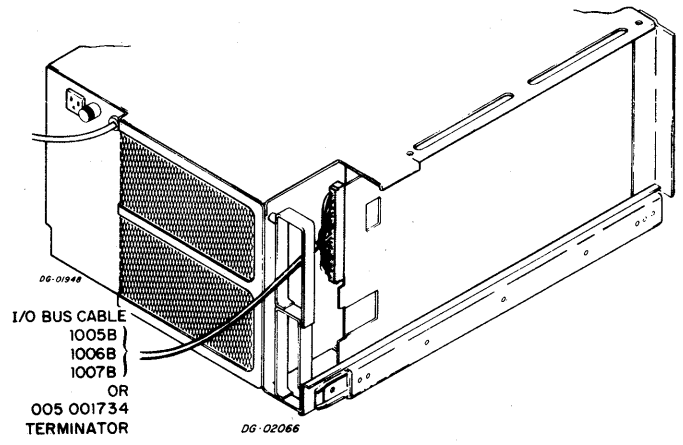


PCB PLACEMENT IN SLOT



EXTERNAL CABLING

I/O BUS CABLE



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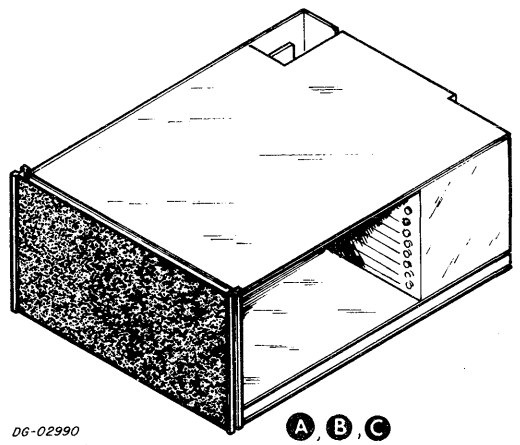
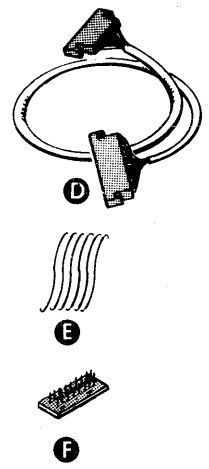
SUBSYSTEM COMPONENT BREAKDOWN



DG-02990



MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A,B,C	EXPANSION CHASSIS	CABINET	A-MEMORY AND or I/O B-MEMORY ONLY C-I/O ONLY

CABLE DG-02672

Item	Cable	Connecting		Max Allowed Lg ft	Max Allowed Lg m	Notes
D	EXT I/O BUS	EXP CHAS	and MAIN CHAS	10	3	USED TO CONN MAIN CHAS TO I/O ONLY EXP CHAS
E	EXP W/L ASSY	MAIN CHAS	" EXPANSION CHAS	-	-	USED FOR EXP CHAS MEM-MEM AND/OR I/O

TERMINATOR

Item	Terminator	Location	Notes
F	MEM BUS	B/P (EXP CHASSIS)	WHEN EXT I/O IS USED
	A-MEM/ I/O BUS	"	WHEN NO EXT I/O IS USED
	B-ADDR/ I/O BUS	"	WHEN NO EXT I/O IS USED IN A MAPPED MACHINE
	B-I/O BUS	"	USED WHEN NO EXT I/O IS USED IN AN UNMAPPED MACH
	B-ADDR BUS	"	USED WHEN EXT I/O IS USED IN A MAPPED MACHINE

DG-02674

SLOT ASSIGNMENTS

MEMORY AND or I/O

Data Channel Speeds Available: 8414 — Standard ☑ High Speed ☐

Slot	Allowed (Slot Chart)	Assigned	+5V Current Draw
17			
16	MEMORY		
15	MEMORY or I/O		
14	↑		
13			
12			
11			
10			
9			
8			
7			
6			
5			
4			
3	↓		
2	MEMORY or I/O		
1	MEMORY		

Total +5V Current draw _____
Max +5V Current Available 60A
+5V Current Surplus _____

DG-01915

MEMORY ONLY

Data Channel Speeds Available: 8414-A — Standard ☑ High Speed ☐

Slot	Allowed (Slot Chart)	Assigned	+5V Current Draw
17			
16	MEMORY		
15	↑		
14			
13			
12			
11			
10			
9			
8			
7			
6			
5			
4			
3			
2	↓		
1	MEMORY		

Total +5V Current draw _____
Max +5V Current Available 60A
+5V Current Surplus _____

DG-01915

I/O ONLY

Data Channel Speeds Available: 8414-B — Standard ☑ High Speed ☐

Slot	Allowed (Slot Chart)	Assigned	+5V Current Draw
17			
16	I/O		
15	↑		
14			
13			
12			
11			
10			
9			
8			
7			
6			
5			
4			
3			
2	↓		
1	I/O		

Total +5V Current draw _____
Max +5V Current Available 60A
+5V Current Surplus _____

DG-01915

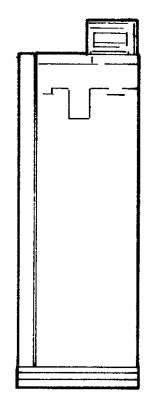
SPECIFICATIONS OF CABINET-MOUNTED COMPONENTS

Item	Component	Number in Subsystem	Maximum Operating Temperature Component °F/°C	Maximum Operating Temperature Media °F/°C	Primary Power Current Draw (Amp)	Primary Power Voltage ±ΔV	Primary Power Frequency	Cabinet Height Required Area	Cabinet Height Required in.	Cabinet Height Required cm	Weight lbs/kg	Power Dissipation (Max Watts)	Preferred Location or Remarks	Operating Humidity (Relative) min/max
A	MEMORY AND or I/O	1	113/45	—/—	9.6	120 +12 -18	50/60±1	6	10.5	26.45	110/50	1150	FIRST EXPANSION CHASSIS MOUNTS BELOW MAIN CHASSIS.	20/90
B	MEMORY ONLY	1	113/45	—/—	4.8	240 +24 -53	50/60±1	6	10.5	26.45	110/50	1150	SECOND MOUNTS ABOVE MAIN CHASSIS, MAXIMUM NUMBER OF TWO EXPANSION CHASSIS.	20/90
C	I/O ONLY	1	113/45	—/—				6	10.5	26.45	110/50	1150		20/90

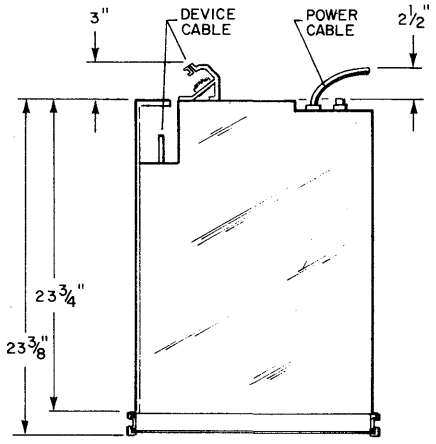
DG-01914

Voltage	Power Cable Length ft	Power Cable Length m	Power Cable Plug	Mating Receptacle on Power Drop	Mating Receptacle in Wall
EXPANSION CHASSIS 120	10	3	NEMA 5-15P	NEMA 5-15R	NEMA 5-15R
EXPANSION CHASSIS 240	10	3	NEMA 6-15P	NEMA 6-15R	NEMA 6-15R

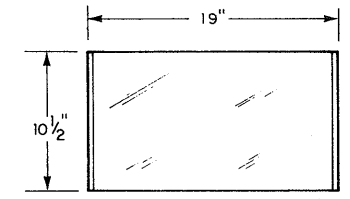
DG-02717



SIDE VIEW



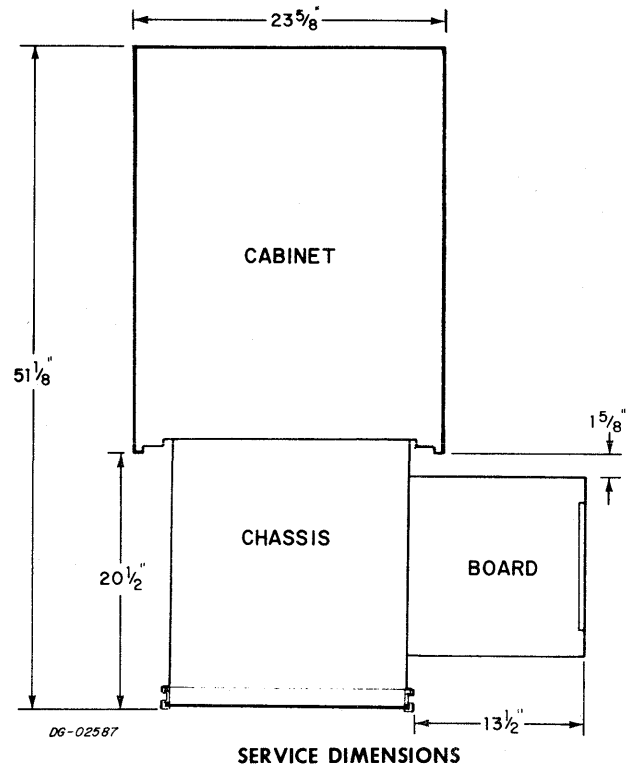
TOP VIEW



DG-02991

FRONT VIEW

ECLIPSE EXPANSION CHASSIS

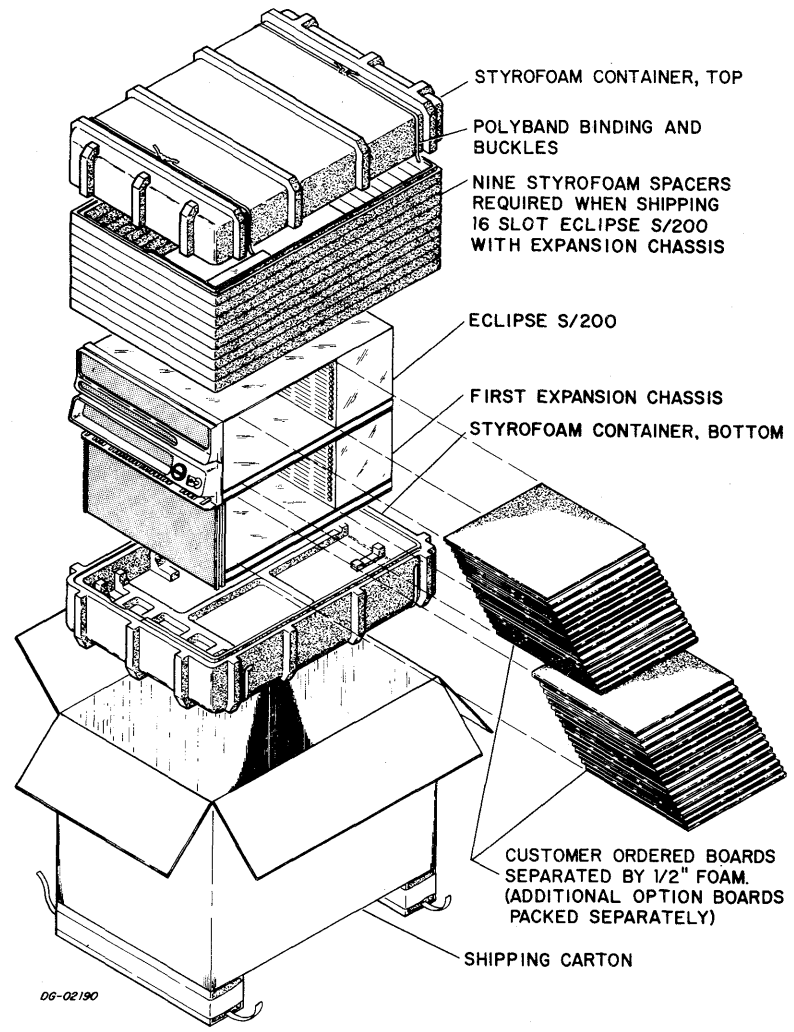


DG-02587

SERVICE DIMENSIONS

SHIPPING

ECLIPSE S/200 ON EXPANSION CHASSIS



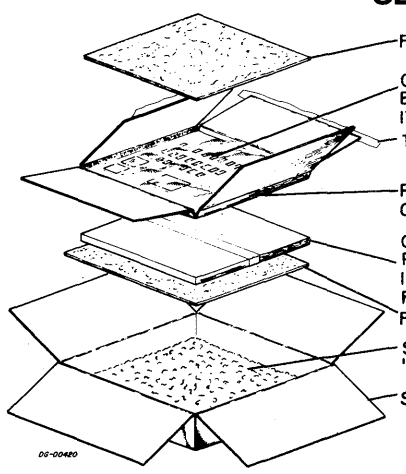
Shipping Specifications			
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	—
-40 to +185 / -40 to +85	0–85%	50,000 ft	—

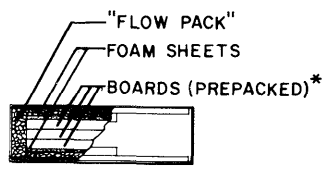
DG-02063

Storage Specifications		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-40 to +185 / -40 to +85	0–85%	90 days

DG-02062

SEPARATE BOARDS

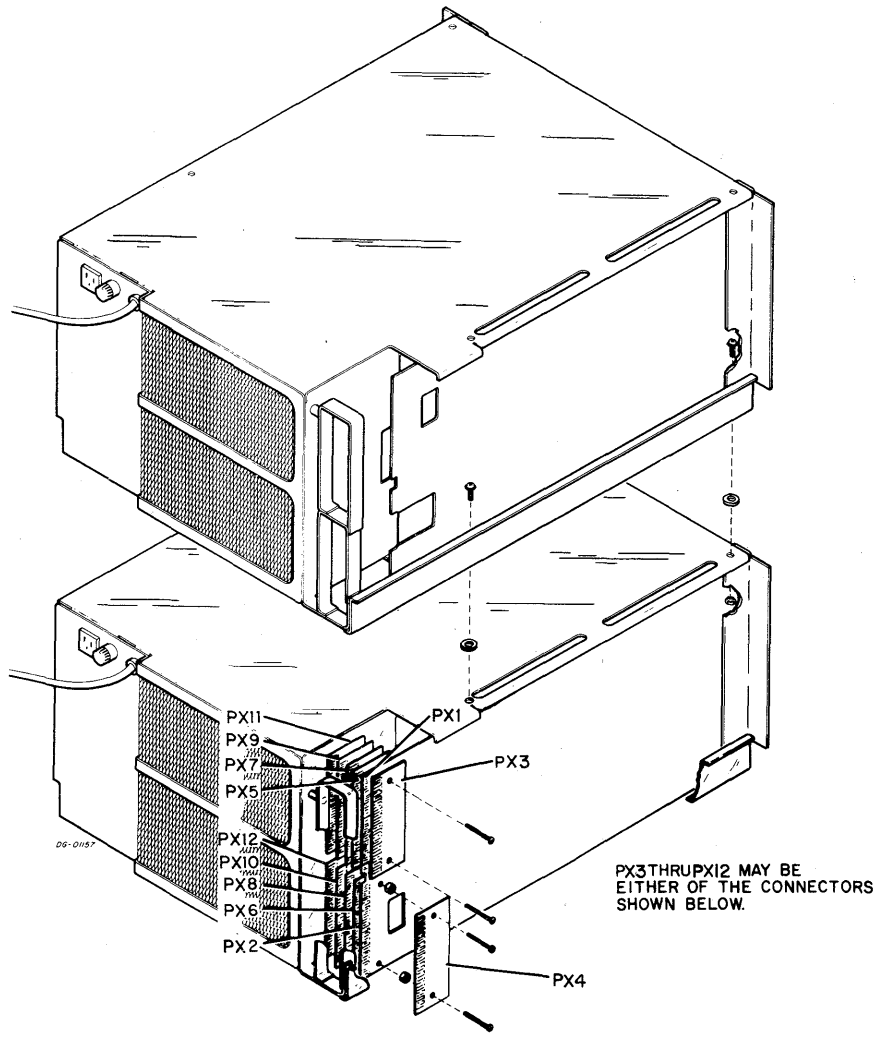




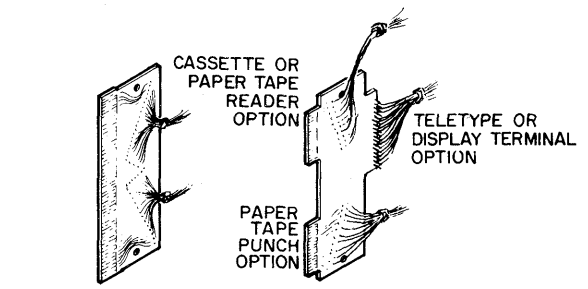
* MULTIPLE PACKING
Up to three (3) 15" x 15" boards, enclosed in plastic bags and sealed in pre-pack folders as shown, can be put in shipping carton number 129-000062. For four (4) to seven (7) boards, use shipping carton number 129 000012.

INTERNAL CABLING

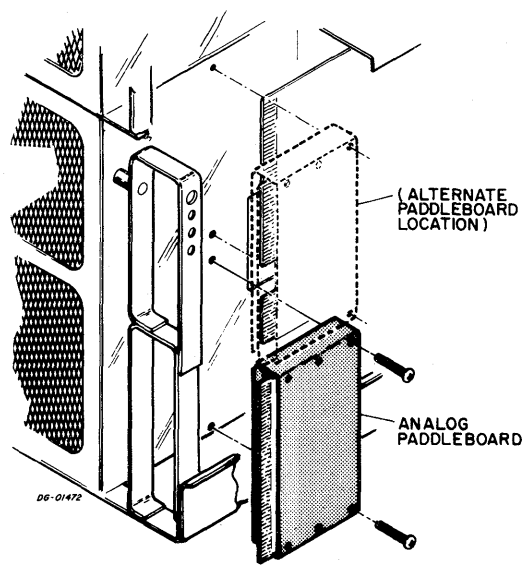
BACKPANEL CONNECTOR



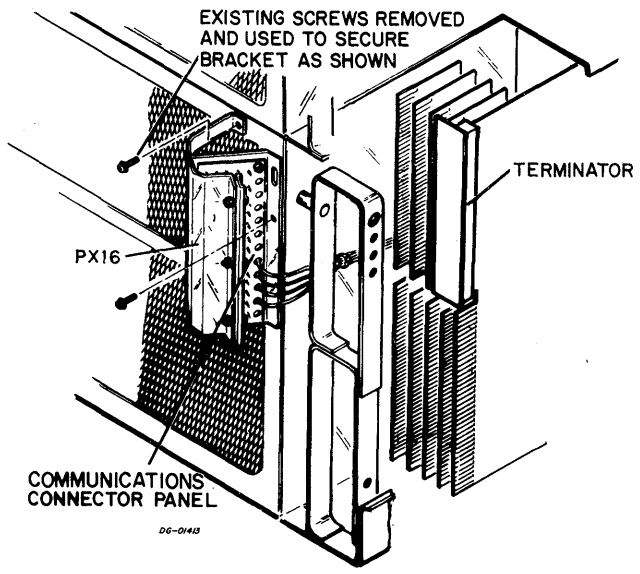
PX3 THRU PX12 MAY BE EITHER OF THE CONNECTORS SHOWN BELOW.



ANALOG PADDLEBOARD

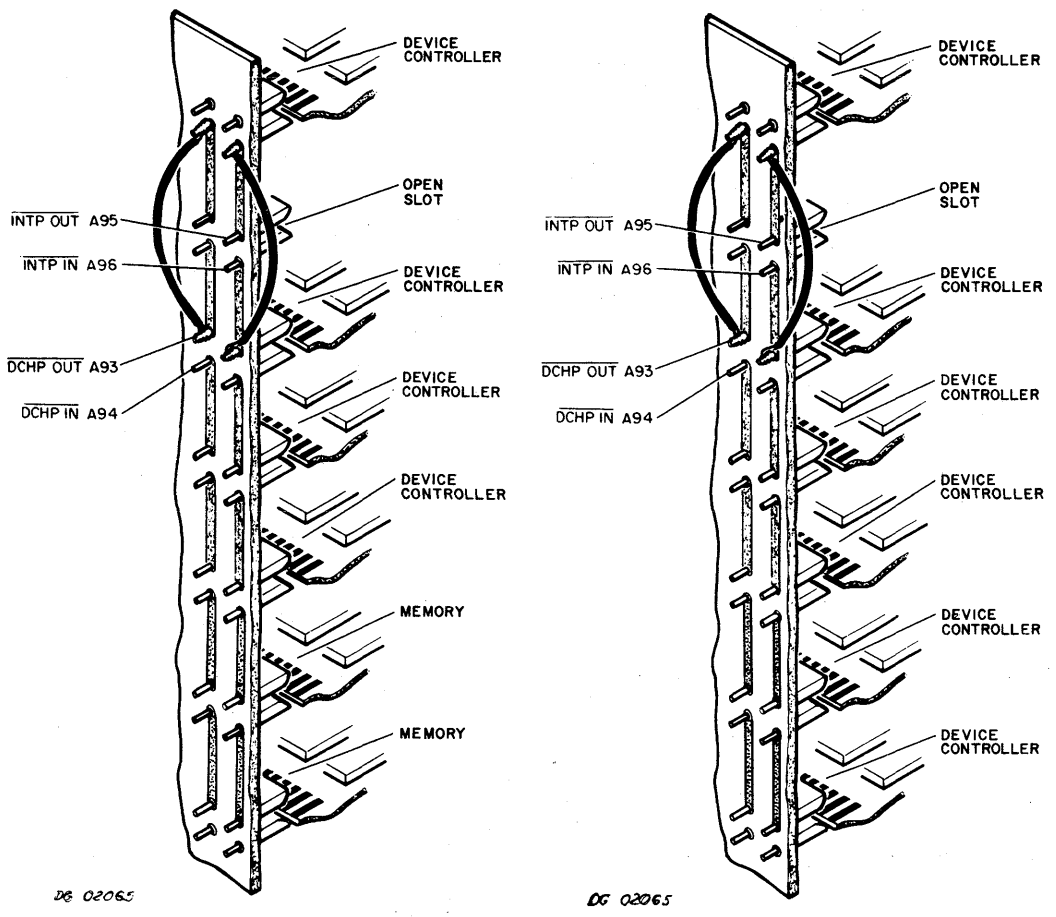


COMMUNICATIONS CONNECTOR

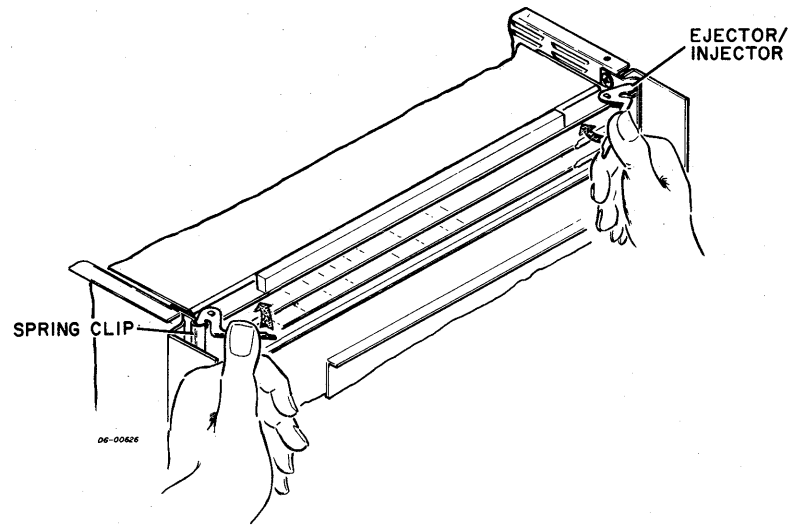


JUMPERS

JUMPERING BACKPANEL

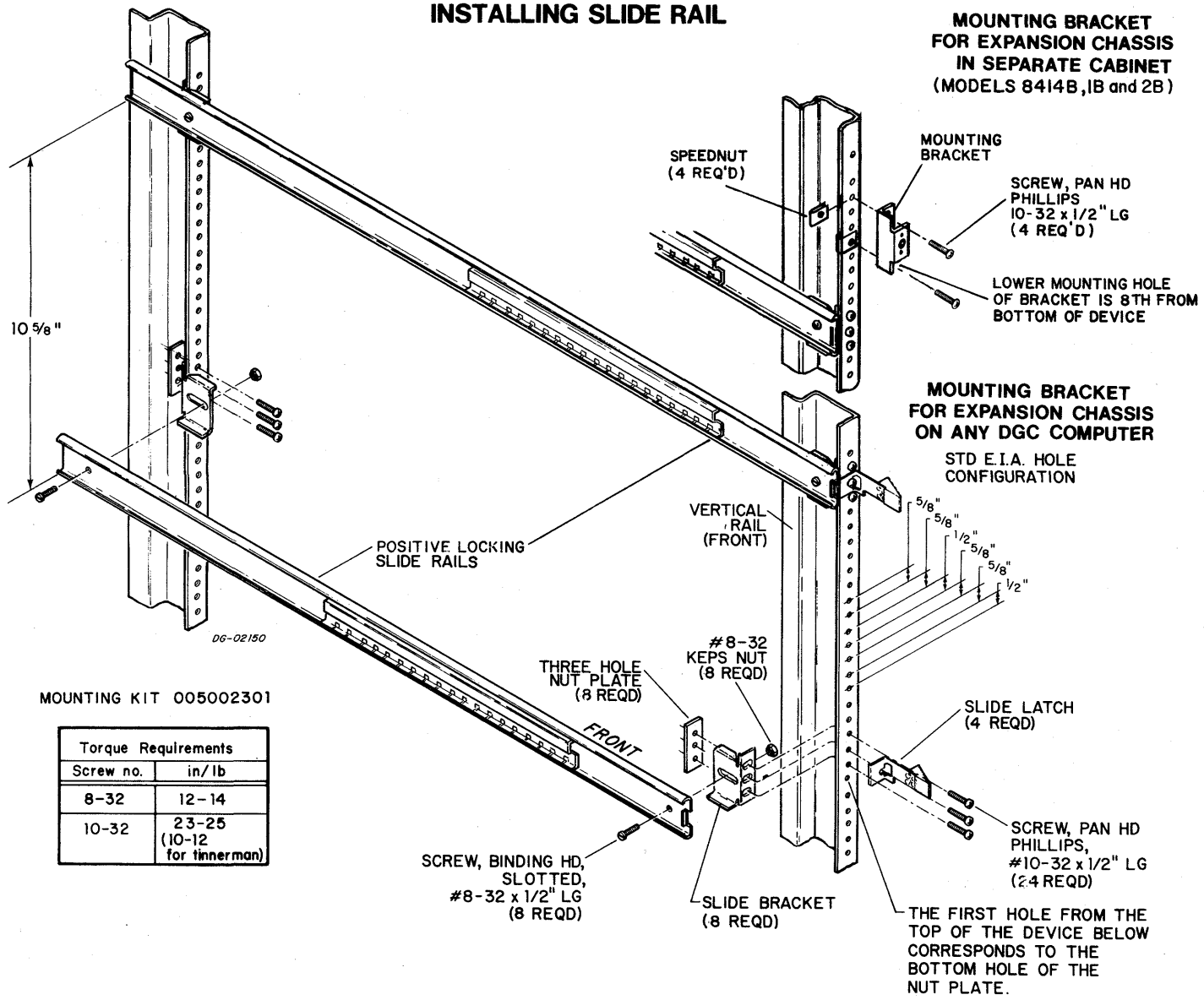


INSERTING PC BOARD



CABINET MOUNTING

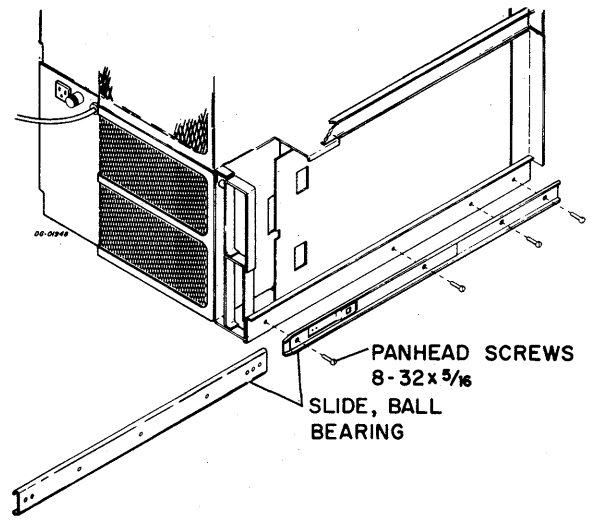
INSTALLING SLIDE RAIL



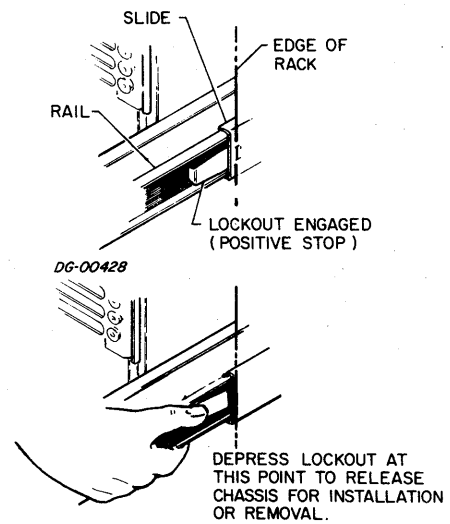
MOUNTING KIT 005002301

Torque Requirements	
Screw no.	in/lb
8-32	12-14
10-32	23-25 (10-12 for tinnerman)

MOUNTING SLIDE ON CHASSIS

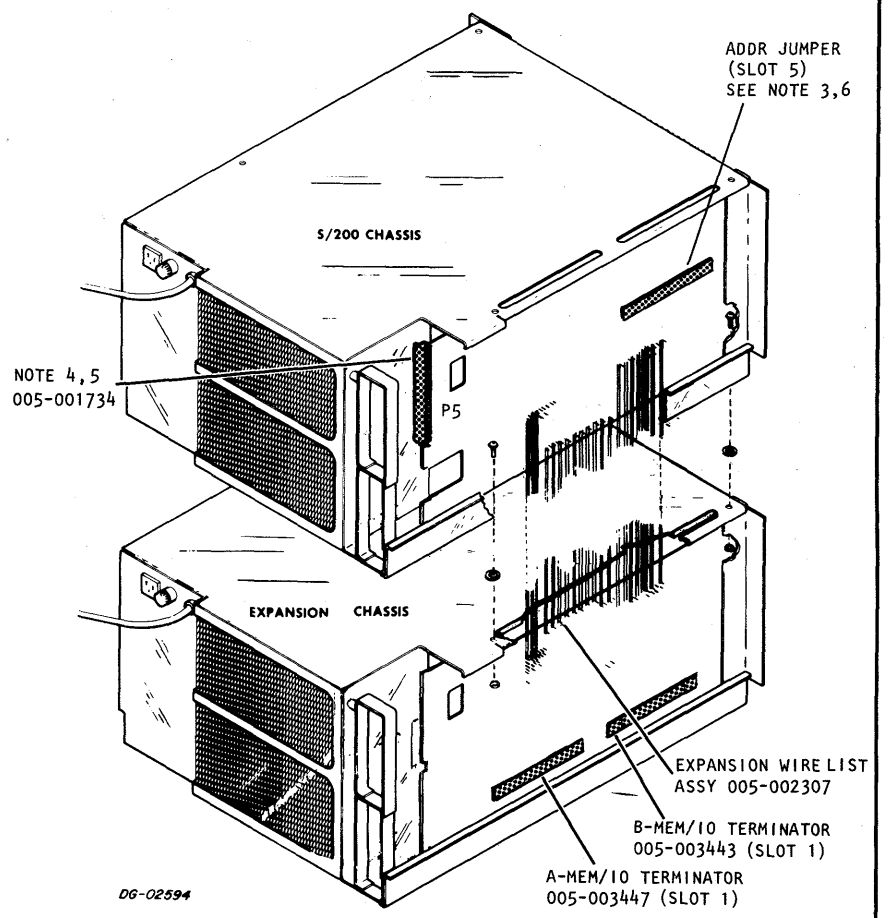


SLIDE LOCKOUT

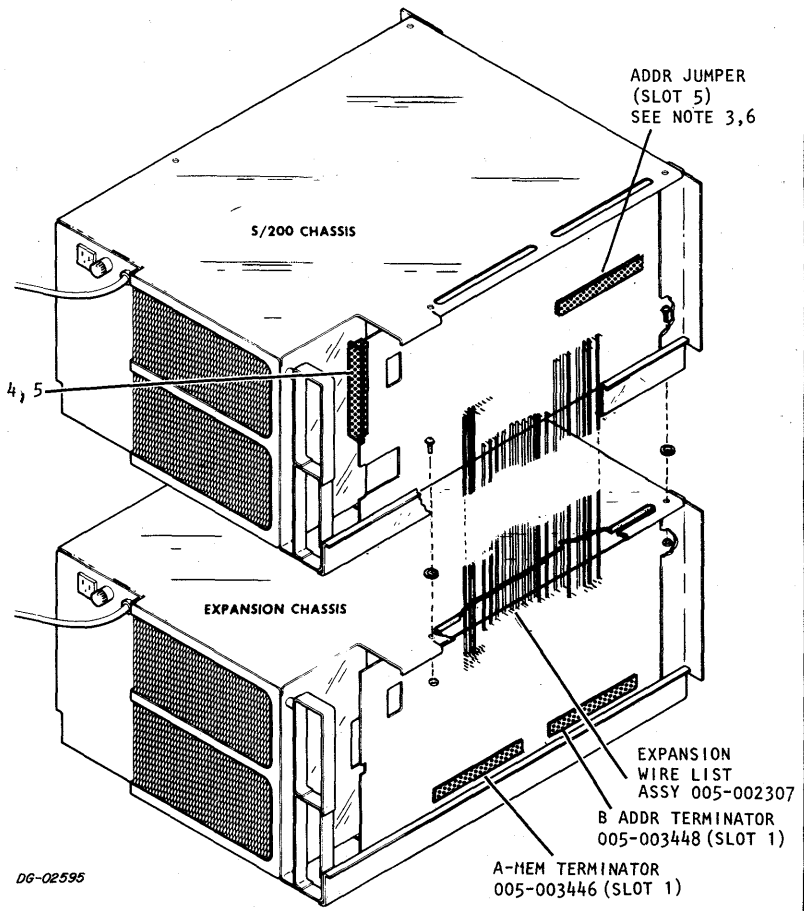


EXTERNAL CABLING

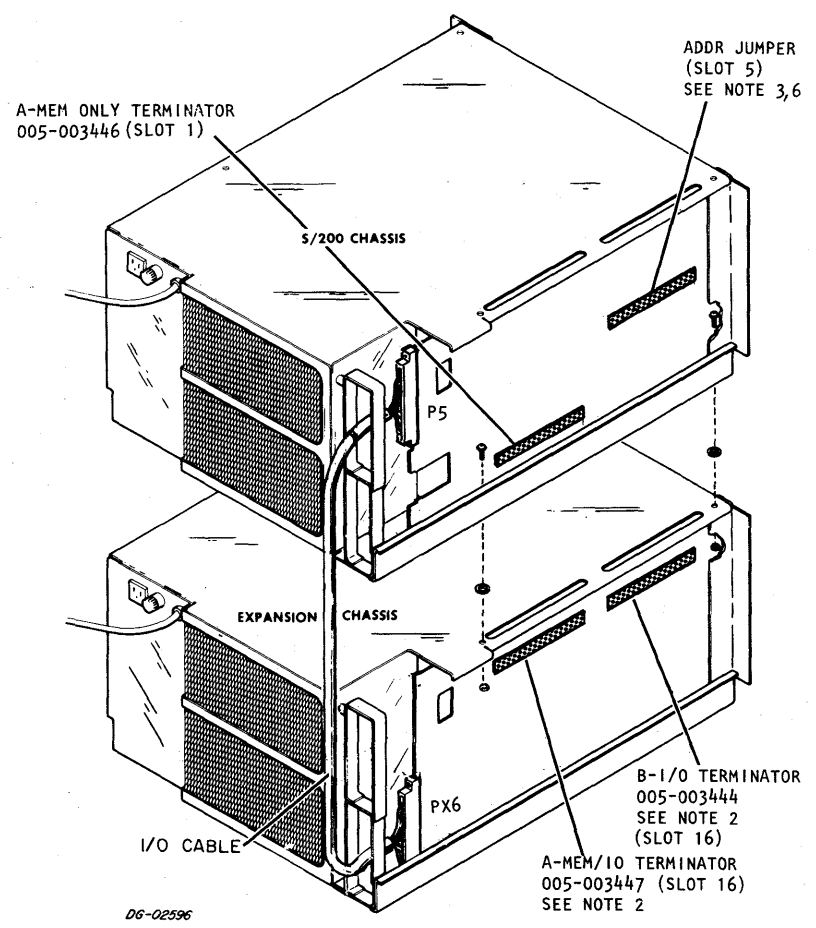
MEMORY or I/O



MEMORY ONLY



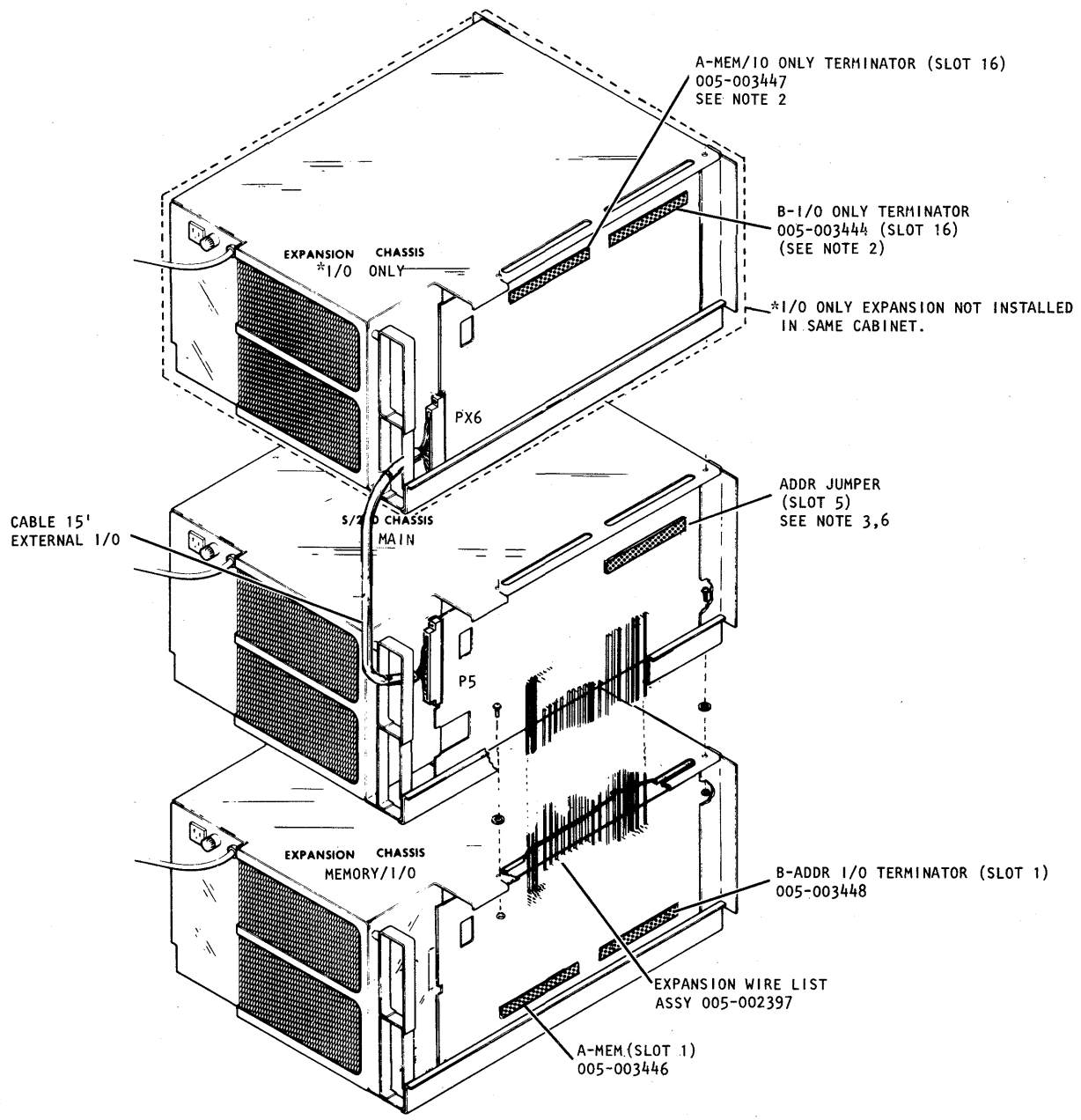
I/O ONLY



NOTE

1. THE PADDLE BOARD IS WRAPPED TO SLOT 1 OF I/O EXPANSION BOX. WIRE LIST 008-000791 MUST BE USED FOR THIS APPLICATION ONLY.
2. IF EXTERNAL I/O BUS IS CONNECTED THEN TERMINATORS A-MEM/IO AND B-I/O ON SLOTS 16 OF I/O EXPANSION MUST BE REMOVED. THE EXTERNAL I/O BUS MUST ALWAYS BE TERMINATED USING DGC 005-001734 TERMINATOR BOARD. TO CONNECT EXTERNAL I/O BUS USE WIRE LIST 008-000891.
3. ADDR JUMPER USED ONLY WHEN MAP BOARD NOT INSTALLED IN SYSTEM (SLOT 5, MAIN CHASSIS.
4. THE EXTERNAL I/O BUS MUST ALWAYS BE TERMINALED.
5. EXTERNAL I/O BUS MUST ALWAYS BE TERMINATED WITH DGC 005-001734 TERMINATOR BOARD AT P5 UNLESS I/O IS CONNECTED.
6. WHEN MAP IS INSTALLED, ALSO INSTALL JUMPERS OFF WIRE LIST 008-000654.

EXTERNAL CABLING



NOTES:

1. THE PADDLE BOARD IS WRAPPED TO SLOT 1 OF I/O EXPANSION BOX. WIRE LIST 008-000791 MUST BE USED FOR THIS APPLICATION ONLY.
2. IF EXTERNAL I/O BUS IS CONNECTED THEN TERMINATORS A-MEM/IO AND B-I/O ON SLOTS 16 OF I/O EXPANSION MUST BE REMOVED. THE EXTERNAL I/O BUS MUST ALWAYS BE TERMINATED USING DGC 005-001734 TERMINATOR BOARD. TO CONNECT EXTERNAL I/O BUS USE WIRE LIST 008-000891. ALSO ORDER 8411
3. ADDR JUMPER USED ONLY WHEN MAP BOARD NOT INSTALLED IN SYSTEM (SLOT 5, MAIN CHASSIS.
4. THE EXTERNAL I/O BUS MUST ALWAYS BE TERMINALED.
5. EXTERNAL I/O BUS MUST ALWAYS BE TERMINATED WITH DGC 005-001734 TERMINATOR BOARD AT P5 UNLESS I/O IS CONNECTED.
6. WHEN MAP IS INSTALLED, ALSO INSTALL JUMPERS OFF WIRE LIST 008-000654.

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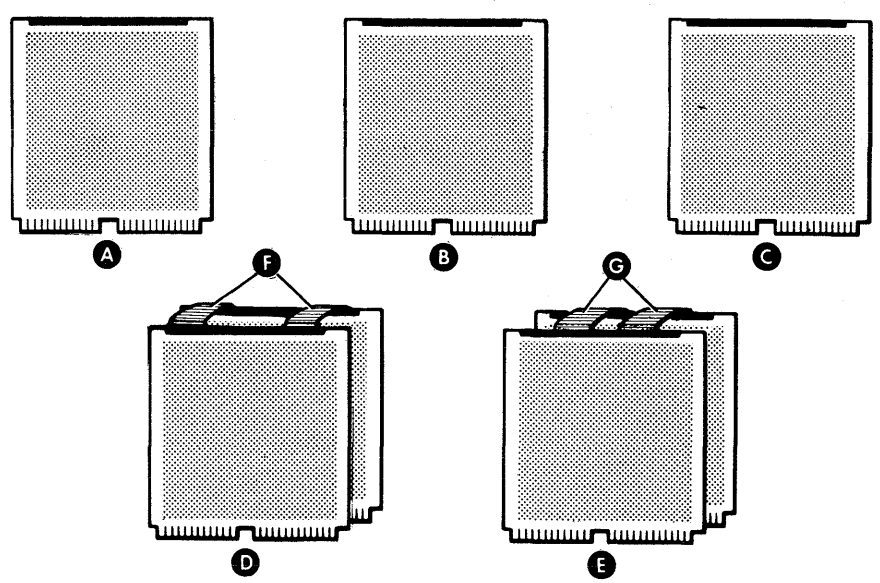
SUBSYSTEM COMPONENT BREAKDOWN



MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	16KB CORE MEMORY	ECLIPSE CHASSIS (MAIN or EXPANSION)	WITH or WITHOUT ERCC
	32KB CORE MEMORY	ECLIPSE CHASSIS (MAIN or EXPANSION)	WITHOUT ERCC
B	16KB SC MEMORY	ECLIPSE CHASSIS (MAIN or EXPANSION)	WITH or WITHOUT ERCC
	64KB SC MEMORY	ECLIPSE CHASSIS (MAIN or EXPANSION)	WITH ERCC
C	256or512KB MAP BOARD	MAIN CHASSIS	CANNOT BE USED IN S/100
D	CPU-1 & CPU-2	MAIN CHASSIS	WITH or WITHOUT WCS and/or ERCC
E	FPU-1 & FPU-2	MAIN CHASSIS	CANNOT BE USED IN S/100

DG-02672

CABLE

Item	Cable	Connecting	Max Allowed Lg ft / m	Notes
F	CPU INTERBOARD CABLE	CPU-1 and CPU-2	1.5 / .5	2 REQUIRED
G	FPU INTERBOARD CABLE	FPU-1 " FPU-2	1.5 / .5	2 REQUIRED

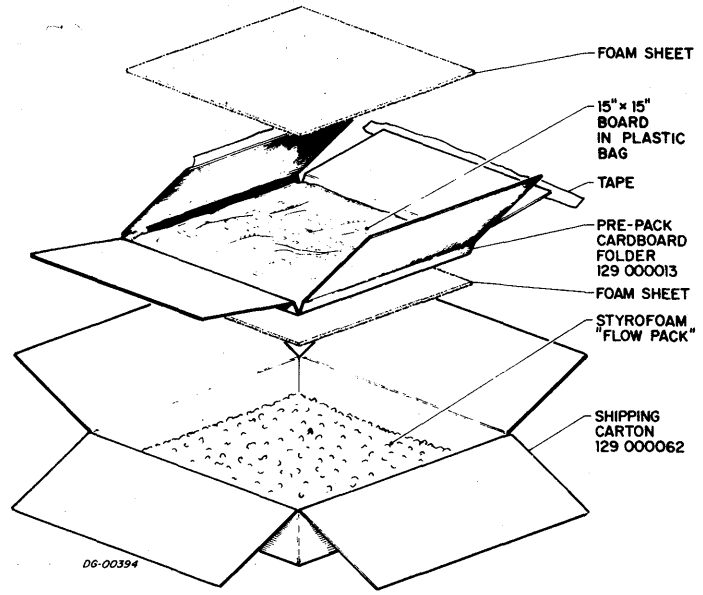
DG-02673

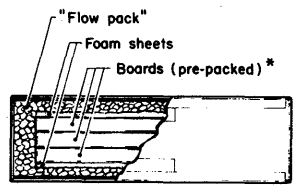
SPECIFICATIONS OF CHASSIS MOUNTED COMPONENTS

Item	Component	No. of Slots Required	Total +5V Current Draw (Amps)	Remarks
A	16KB CORE MEMORY	1	1.6	
	16KB CORE & ERCC	1	2.6	Requires ERCC on CPU-2
	32KB CORE MEMORY	1	1.8	
B	16KB SC MEMORY	1	4.1	
	16KB SC MEM&ERCC	1	4.1	Requires ERCC on CPU-2
	64KB SC MEMORY	1	4.5	Requires ERCC on CPU-2
C	256KB MAP BOARD	1	5	S200 and C300 only
	512KB MAP BOARD	1	6	S230 and C330 only
D	CPU-1 & CPU-2	2	16	
	CPU-1, 2, & ERCC	2	17.6	ERCC adds 1.6A @ +5V to CPU-2
	CPU-1, 2, WCS & ERCC	2	23.8	WCS adds 6.2A @ +5V to CPU-2
E	FPU-1, & FPU-2	2	16	

DG-02193

SHIPPING





MULTIPLE PACKING

* Up to three (3) 15"x 15" boards, enclosed in plastic bags and sealed in pre-pack folders as shown, can be put in shipping carton No. 129 000062. For four (4) to seven (7) boards, use shipping carton No. 129 000012.

Storage Specifications		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-40 to+185 / -40 to +85	0-85%	90 days

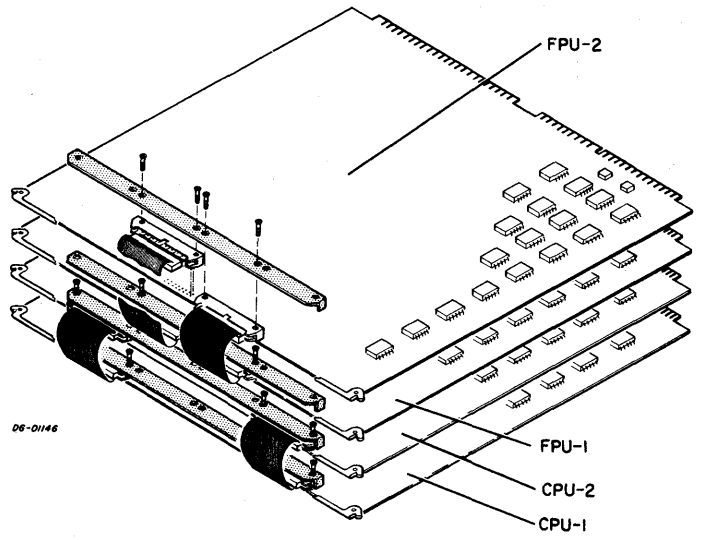
DG-02062

Shipping Specifications			
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period	—
-40 to+185 / -40 to+85	0-85%	50,000 ft.	—

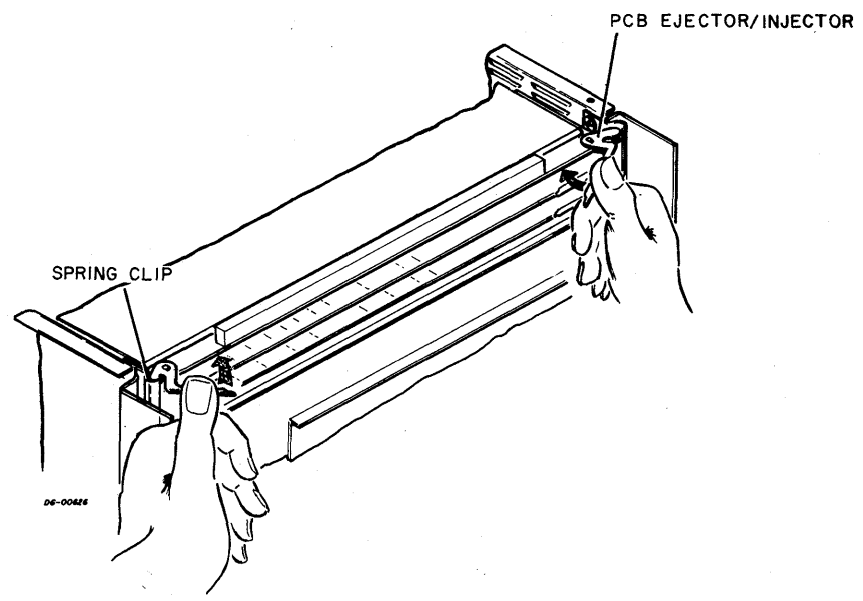
DG-02063

INTERNAL CABLING

FPU-1 and FPU-2; CPU-1 and CPU-2 are cabled together as shown below.



INSTALLING PC BOARD



TAILORING and SWITCHES

COMPUTERS WITH ONE SIZE MEMORIES

MEMORIES

Interleaving and address selection is determined on core and semiconductor boards by jumpers or switches, depending on when the board was manufactured. In either case, proceed as follows:

1. Assign each memory board a (unique) number from 0-15.

2. Assign from the table below the appropriate level of interleaving for each board.

3. If a board uses switches, go to step 7 otherwise, proceed to step 4.

4. Select the corresponding jumper-positions for each board from the table below: The "Memory Select Jumper Positions" figure illustrates where each jumper goes on the board.

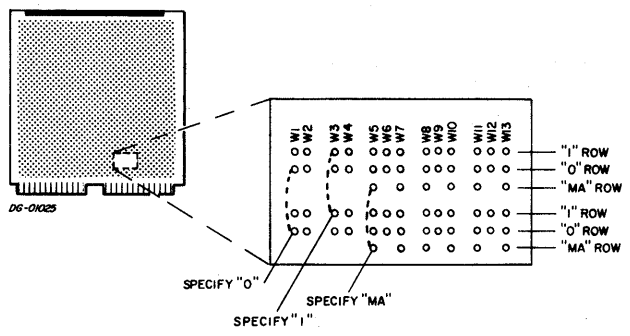
Assigned Levels of Interleaving		
Total Number of Memory Boards	Board Numbers	Assigned Level of Interleaving
1	0	none
2	0,1	2
3	0,1 2	2 none
4	0,1,2,3	4
5	0,1,2,3 4	4 none
6	0,1,2,3 4,5	4 2
7	0,1,2,3 4,5 6	4 2 none
8	0,1,2,3,4,5,6,7	8
9	0,1,2,3,4,5,6,7 8	8 none
10	0,1,2,3,4,5,6,7 8,9	8 2
11	0,1,2,3,4,5,6,7 8,9 10	8 2 none
12	0,1,2,3,4,5,6,7 8,9,10,11	8 4
13	0,1,2,3,4,5,6,7 8,9,10,11 12	8 4 none
14	0,1,2,3,4,5,6,7 8,9,10,11 12,13	8 4 2
15	0,1,2,3,4,5,6,7 8,9,10,11 12,13 14	8 4 2 none
16	0,1,2,3,4,5,6,7 8,9,10,11,12,13,14,15	8 8

DG-01183

JUMPER POSITIONS FOR BOARD NUMBERS					
Board Number Jumpers					
	Jumper Assignments				
Board Number	W1 and W2	W3 and W4	W6	W9	W12
0	0	0	0	0	0
1	0	0	0	0	1
2	0	0	0	1	0
3	0	0	0	1	1
4	0	0	1	0	0
5	0	0	1	0	1
6	0	0	1	1	0
7	0	0	1	1	1
8	0	1	0	0	0
9	0	1	0	0	1
10	0	1	0	1	0
11	0	1	0	1	1
12	0	1	1	0	0
13	0	1	1	0	1
14	0	1	1	1	0
15	0	1	1	1	1

DG-01184

MEMORY SELECT JUMPER POSITIONS



DG-01025

Each of the jumper positions crosses six rows. Specifying a "1" at a jumper position is done by inserting a jumper from the top "1" row to the bottom "1" row. A "0" is specified by inserting a jumper from the top "0" row to the bottom "0" row. A bit used in interleaving is specified by inserting a jumper from the top "MA" row to the bottom "MA" row. Examples of the three basic jumper positions are shown in the figure above.

5. Select the interleaving jumpers for each board from the following table, and install these into their corresponding position illustrated in the above figure.

Level of Interleaving Jumpers	
Level of Interleaving	Jumpers Inserted
none	W7, W10, W13
2	W7, W10, W11
4	W7, W8, W11
8	W5, W8, W11

6. There remains open one jumper position in each of the following pairs: W5/W7, W8/W10 and W11/W13. Install these three jumpers on each board by matching them to jumpers already installed according to the table below. The board is ready to be installed in its chassis.

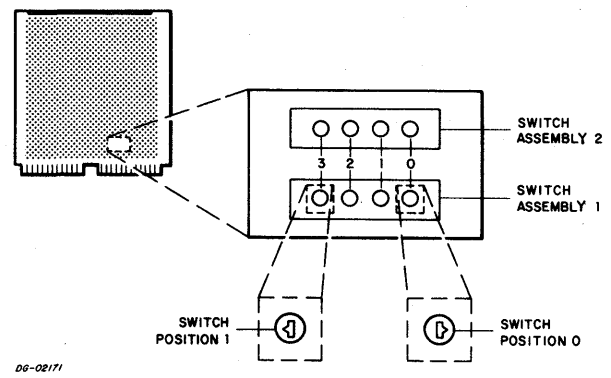
Gate-Enable Jumpers	
Pair	Match
W5/W7	W6
W8/W10	W9
W11/W13	W12

7. Select the address switches for each board from the following table. The "Memory Select Switch Positions" figure illustrates where each switch is positioned on a board.

Address Switch Position for Each Board				
Board Number	Switch Assembly 2			
	Switch 3	Switch 2	Switch 1	Switch 0
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1

DG-02233

MEMORY SELECT SWITCH POSITIONS



DG-02171

The memory select switches, as shown above, are arranged in two assemblies; four switches per assembly. Switches 0-3 in switch assembly 2 select the board number (0-15). Switches 0-2 in switch assembly 1 select the level of interleaving (none, 2-, 4-, or 8-way) for the board. Each switch has two positions 0 and 1. These positions are selected by inserting a screwdriver in the switch notch and rotating the switch.

8. Select the interleaving switches for each board from the following table.

SWITCH POSITIONS FOR INTERLEAVING				
Level of Interleaving	Switch Assembly 1			
	Switch 3	Switch 2	Switch 1	Switch 0
none	0	0	0	0
2-Way	0	0	0	1
4-Way	0	0	1	1
8-Way	0	1	1	1

DG-02194

Note:
16 KB Cache SC memories cannot be interleaved with any other type of Eclipse memory.

COMPUTERS WITH MIXED SIZE MEMORIES

1. 8K, 16K AND 32K WORD MEMORIES CAN BE MIXED IN THE SAME SYSTEM.

2. INTERLEAVING OF MEMORIES IS POSSIBLE IN A SYSTEM WITH MIXED SIZED MEMORIES AS LONG AS THE DIFFERENT SIZE MEMORIES ARE NOT INTERLEAVED WITH ONE ANOTHER. ONLY THE SAME SIZE MEMORIES CAN BE INTERLEAVED WITH ONE ANOTHER.

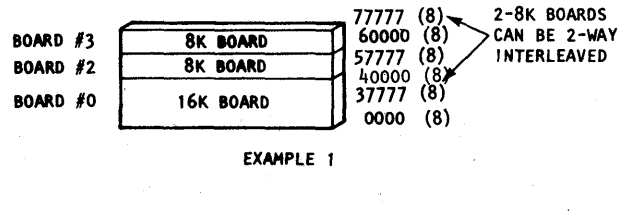
3. ONLY 16 MEMORY BOARDS OF ANY SIZE AND MIXTURE MAY BE USED IN ANY ONE SYSTEM.

BOARD NUMBER ASSIGNMENTS IN MIXED MEMORY SYSTEMS

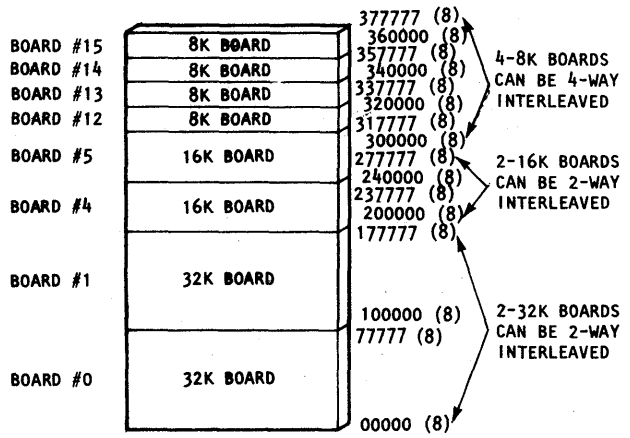
1. IT IS RECOMMENDED THAT THE LARGEST SIZE MEMORIES BE CONFIGURED TO HAVE THE LOWEST ADDRESSES OF THE SYSTEM.

FOR EXAMPLE:

(ASSIGNMENT OF BOARD NUMBERS IS EXPLAINED IN STEP 5)

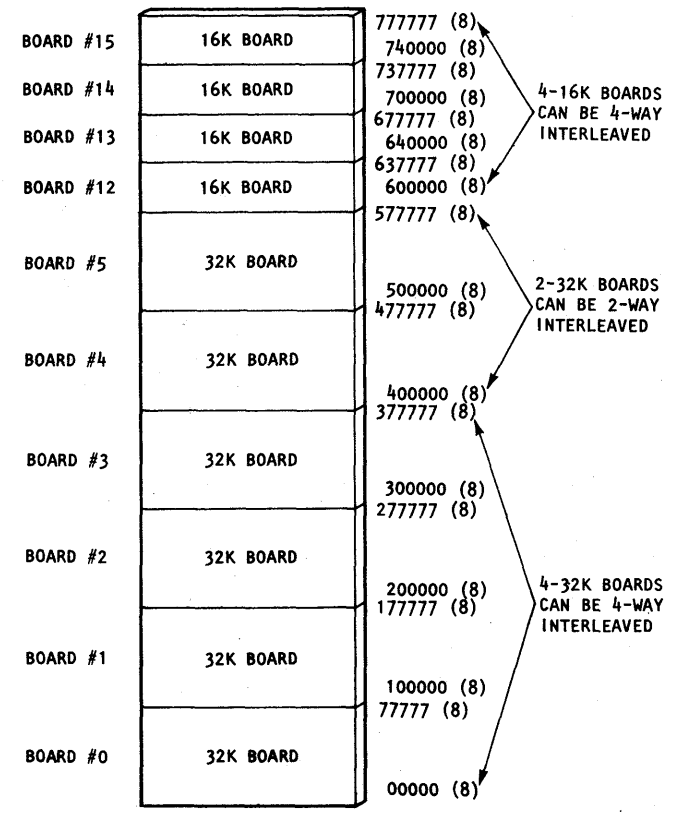


EXAMPLE 1



DG-03548

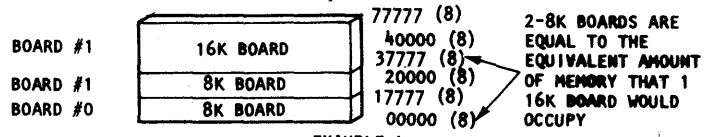
EXAMPLE 2



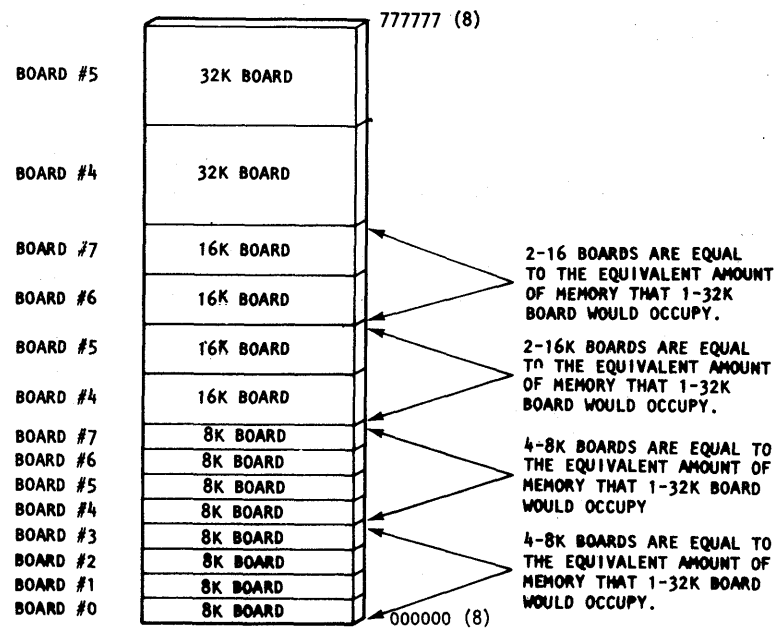
DG-03549

EXAMPLE 3

2. IT IS POSSIBLE TO HAVE THE SMALLER SIZE MEMORY BOARDS CONTAIN THE LOWER MEMORY LOCATIONS IN A MIXED MEMORY SYSTEM. TO DO SO REQUIRES THAT THE SIZE OF THE SMALLER MEMORIES ADD UP TO AN INTEGRAL AMOUNT OF THE SIZE OF THE LARGER MEMORIES.



EXAMPLE 4



DG-03550

EXAMPLE 5

3. IN MIXED MEMORY SYSTEMS HAVING MORE THAN 128K WORDS OF MEMORY AND USING 8K MEMORY BOARDS, IT IS NECESSARY TO ASSIGN THE 8K BOARD NUMBERS SO THAT THE MEMORY ADDRESSES ASSOCIATED WITH THEM ARE NOT GREATER THAN 377777 (8) (IN THE LOWER 128K OF MEMORY).

4. THE INTERLEAVING JUMPERS ON MEMORIES USED IN A MIXED MEMORY SYSTEM ARE CONFIGURED IN THE SAME MANNER AS IS DESCRIBED IN THE MEMORY JUMPERING SECTION FOR SYSTEMS USING ONE SIZE OF MEMORY BOARDS.

5. THE FOLLOWING PROCEDURE IS RECOMMENDED FOR USE IN DETERMINING THE BOARD NUMBERS OF THE DIFFERENT SIZE MEMORY BOARDS USED IN A MIXED MEMORY SYSTEM.

a. DRAW A DIAGRAM LIKE THE ONE USED FOR THE TWO EXAMPLES BELOW.

b. FILL IN THE RIGHT HAND COLUMN OF THE DIAGRAM WITH THE SIZE OF EACH MEMORY BOARD USED IN YOUR SYSTEM. BEGIN AT THE BOTTOM AND FILL IN THE DIAGRAM CONTIGUOUSLY.

c. CIRCLE THE NUMBER IN ONE OF THE THREE LEFT HAND COLUMNS THAT CORRESPONDS TO THE SIZE OF MEMORY YOU HAVE PLACED IN THE RIGHT HAND COLUMN. THE CIRCLED NUMBERS ARE THE BOARD NUMBER TO BE ASSIGNED TO THE CORRESPONDING MEMORY BOARD.

d. REFER TO THE SECTION FOR SYSTEMS USING ONE SIZE MEMORY BOARDS TO SELECT THE JUMPER POSITIONS FOR THE MEMORY BOARD NUMBERS DETERMINED BY YOUR DIAGRAM.

BOARD NUMBERS ASSIGNED FOR			
32K BOARD	16K BOARD	8K BOARD	BOARDS USED IN SYSTEM
7	15	*	
		*	
	14	*	
		*	
6	13	*	
		*	
	12	*	
		*	
5	11	*	
		*	
	10	*	
		*	
4	9	*	
		*	
	8	*	
		*	
3	7	(15)	8K BOARD
		(14)	8K BOARD
	6	(13)	8K BOARD
		(12)	8K BOARD
2	(5)	11	16K BOARD
		10	
	(4)	9	16k BOARD
		8	
(1)	3	7	
		6	32K BOARD
	2	5	
		4	
(0)	1	3	
		2	32K BOARD
	0	1	
		0	

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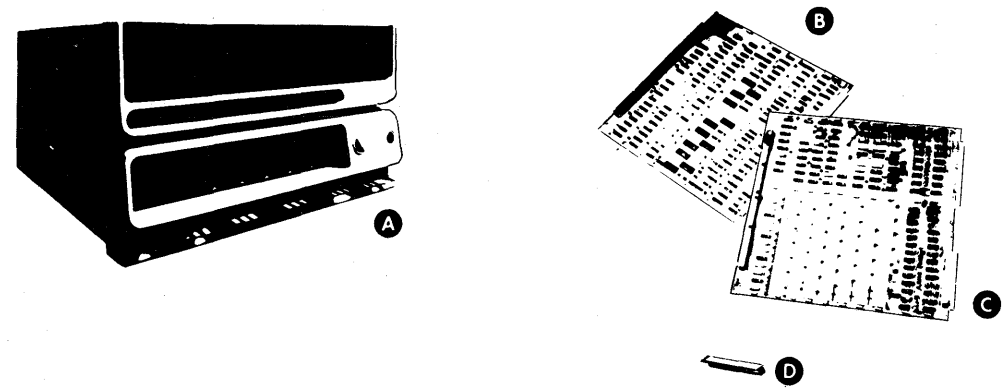
EXAMPLE 6

BOARD NUMBERS ASSIGNED FOR			
32K BOARD	16K BOARD	8K BOARD	BOARDS USED IN SYSTEM
7	(15)	*	16K BOARD
		*	
	(14)	*	16K BOARD
		*	
6	(13)	*	16K BOARD
		*	
	(12)	*	16K BOARD
		*	
(5)	11	*	32K BOARD
		*	
	10	*	
		*	
(4)	9	*	32K BOARD
		*	
	8	*	
		*	
(3)	7	15	32K BOARD
		14	
	6	13	
		12	
(2)	5	11	32K BOARD
		10	
	4	9	
		8	
(1)	3	7	32K BOARD
		6	
	2	5	
		4	
0	1	(3)	8K BOARD
		(2)	8K BOARD
	0	(1)	8K BOARD
		(0)	8K BOARD

DG-03552

EXAMPLE 7

SUBSYSTEM COMPONENT BREAKDOWN



MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	MAIN CHASSIS S/230 C/330	CABINET	
B	CPU-1	MAIN CHASSIS	
C	CPU-2	MAIN CHASSIS	

DG-02672

TERMINATOR

Item	Terminator	Location	Notes
D	A-MEM BUS	BACK PANEL	USED WHEN EXPANSION CHASSIS IS NOT PRESENT

DG-02674

CHASSIS SLOT ASSIGNMENTS

RULES

IN GENERAL

Never assign more than 4 memory boards to a main chassis. Systems with more than 4 memory boards must have an 8414-A expansion chassis and all memory boards (including the first 4) must go into that chassis.

IN PARTICULAR

1. On systems with 4 or less memory boards, assign those boards to the main chassis from slot 16 down. On systems with more than 4 memory boards, do not assign any to the main chassis; assign them all to the 8414-A expansion chassis.

2. Assign I/O boards to the main chassis from slot 6 up. If the main chassis cannot accomodate all I/O boards, add an 8414-B expansion chassis. Do not place I/O boards in the 8414-A memory expansion chassis, nor memory boards in the 8414-B expansion chassis.

Data Channel Speeds Available: Standard ☑ High Speed ☐

Slot	Allowed (Slot Chart)	Assigned	+5V Current Draw
17			
16	MEMORY or I/O		
15	↕ ↕		
14	↕ ↕		
13	MEMORY		
12			
11			
10			
9			
8			
7	I/O		
6	4010, 4075 Pref.		
5	MMPU1		
4	FPU/EAU-2		
3	FPU/EAU-1		
2	CPU-2		
1	CPU-1		

Total +5V Current draw _____

Max +5V Current Available 60 A

+5V Current Surplus _____

DG-01915

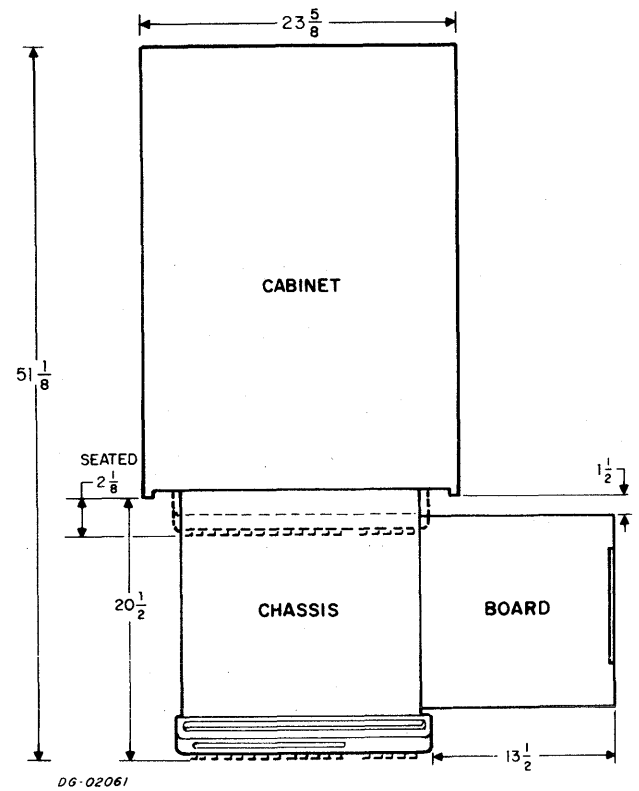
SPECIFICATIONS OF THE CABINET-MOUNTED COMPONENTS

Item	Component	Number in Sub-system	Maximum Operating Temperature: Component °F / °C	Maximum Operating Temperature: Media °F / °C	Primary Power: Current Draw (Amp)	Primary Power: Voltage ±ΔV	Primary Power: Frequency ±Δf	Cabinet Height Required: Area	Cabinet Height Required: in.	Cabinet Height Required: cm	Weight: lbs / kg	Power Dissipation (Max Watts)	Preferred Location or Remarks	Operating Humidity (Relative): min % / % max
A	MAIN CHASSIS	1	121 / 55		9.6	120 +12 −18	50/60 ±1	6	10.5	26.45	110 / 50	1150	II-16	20 / 90
					4.8	240 +24 −53	50 ±1							

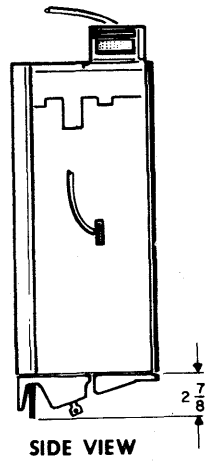
DG-01914

Voltage	Power Cable Length ft	Power Cable Length m	Power Cable Plug	Mating Receptacle on Power Drop	Mating Receptacle in Wall
120V	6	1.8	NEMA 5-15P	NEMA 5-15R	NEMA 5-15R
240V	6	1.8	NEMA 6-15P	NEMA 6-15R	NEMA 6-15R

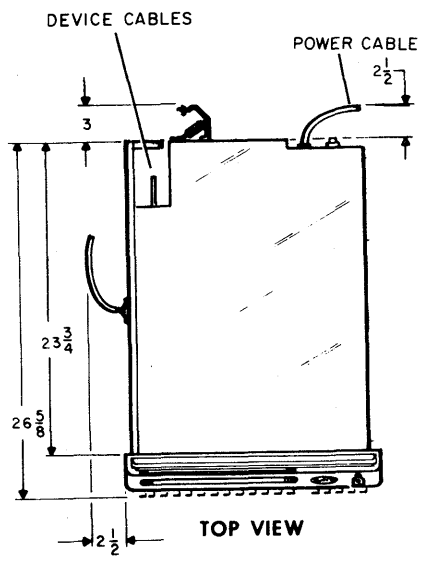
DG-02717



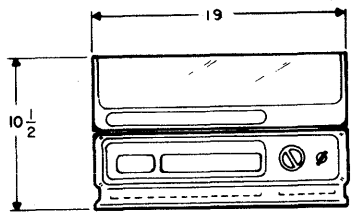
SERVICE DIMENSIONS



SIDE VIEW



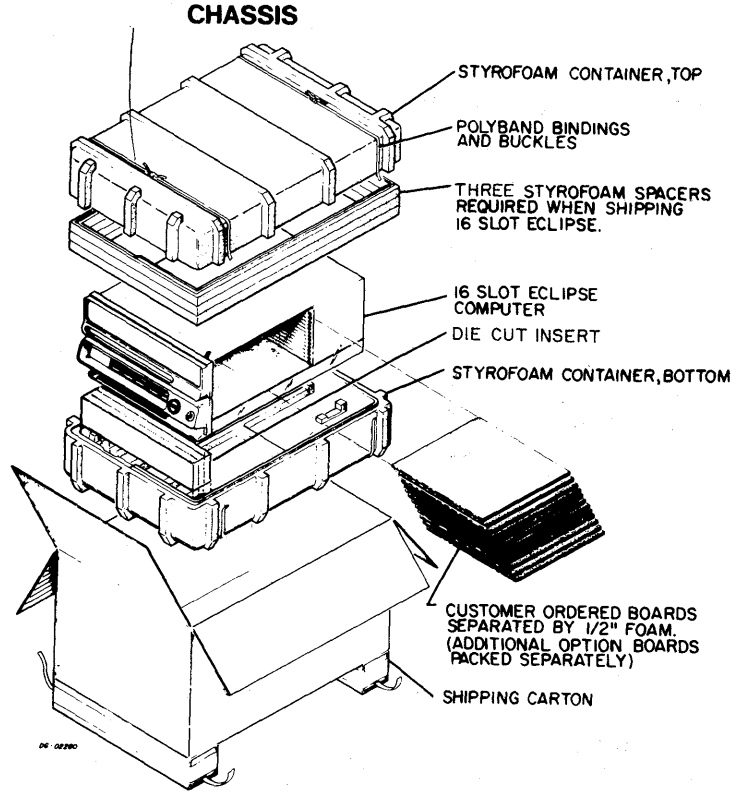
TOP VIEW



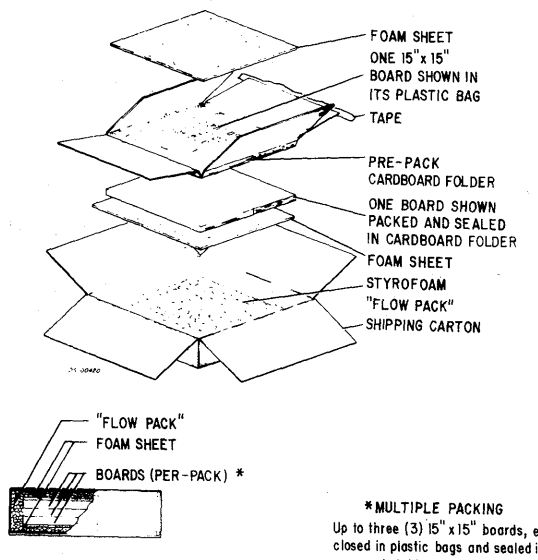
FRONT VIEW

SHIPPING

CHASSIS



SEPARATE BOARDS



*MULTIPLE PACKING
Up to three (3) 15"x15" boards, enclosed in plastic bags and sealed in pre-pack folder as shown, can be put in shipping carton number 129-000062. For four (4) to seven (7) boards, use shipping carton number 129-000012.

SHIPPING AND PACKAGE DATA

Outside Dimensions			*Weight (Gross)	Volume	Density
Length	Width	Depth			
in. / cm	in. / cm	in. / cm	lbs. / kg	cu ft. / cu m	lbs/cu ft. / kg/cu m
33.6 / 85.3	24 / 61	21 / 53.3	115 / 52.2	9.8 / 0.28	11.7 / 186.4

SHIPPING SPECIFICATIONS			STORAGE SPECIFICATIONS		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-40 to +160 / -40 to +71	0%/80%	50,000ft. 15,200m	-40 to +160 / -40 to +71	0%/30%	90 days

DG-03224

*WT. VARIES WITH NO. OF BOARDS. AVG. WT. GIVEN

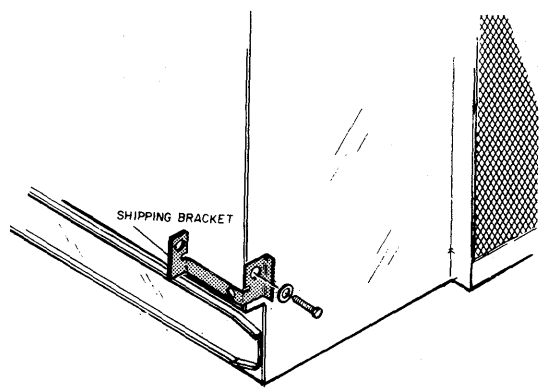
*SHIPPING AND PACKAGE DATA

Outside Dimensions			Weight (Gross)	Volume	Density
Length	Width	Depth			
in. / cm	in. / cm	in. / cm	lbs. / kg	cu ft. / cu m	lbs/cu ft. / kg/cu m
18 / 45.7	18 / 45.7	4 / 10.2	10 / 4.5	0.75 / 0.02	13.3 / 225

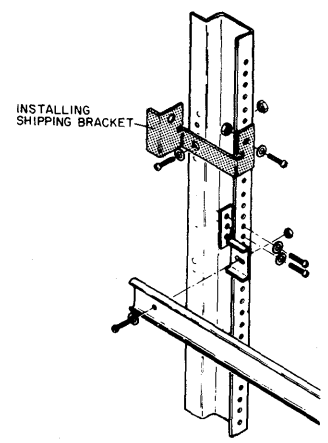
SHIPPING SPECIFICATIONS			STORAGE SPECIFICATIONS		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-40 to +160 / -40 to +71	0%/80%	50,000ft 15,200m	-40 to +160 / -40 to +71	0%/30%	90 days

*DATA GIVEN IS FOR A THREE BOARD PACKAGE OF AVG. WT.

MOUNTING SHIPPING BRACKET TO CHASSIS

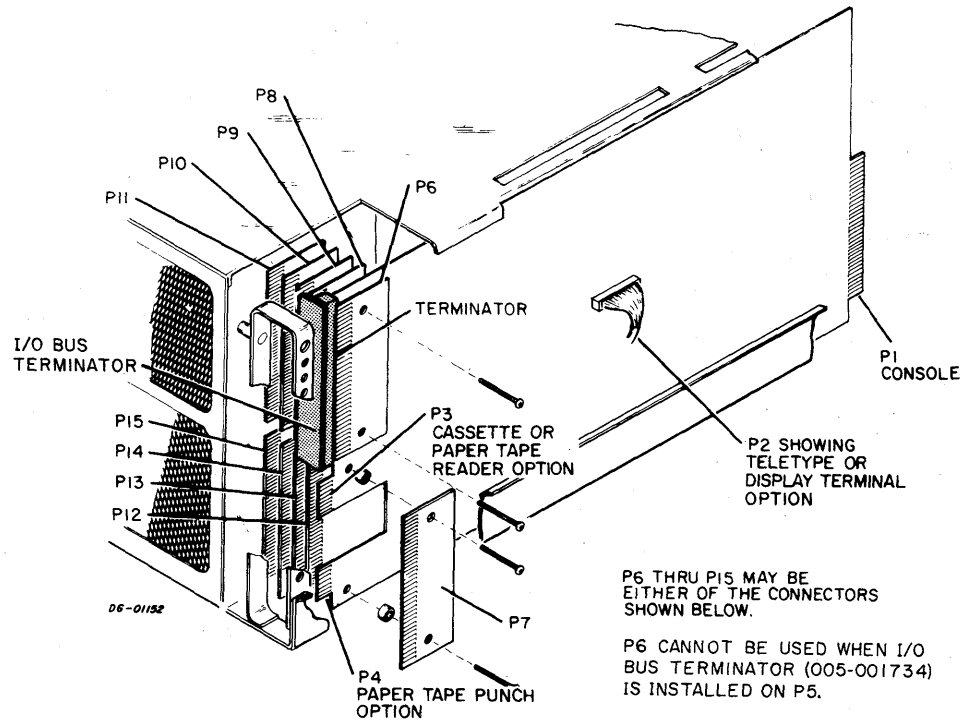


MOUNTING SHIPPING BRACKET TO RAILS



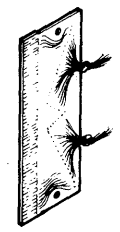
INTERNAL CABLING

BACKPANEL CONNECTORS



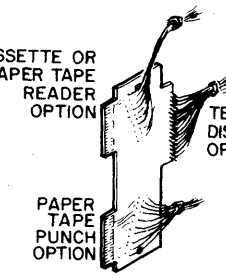
P6 THRU P15 MAY BE EITHER OF THE CONNECTORS SHOWN BELOW.

P6 CANNOT BE USED WHEN I/O BUS TERMINATOR (005-001734) IS INSTALLED ON P5.



50-PIN CONNECTOR
PART NO. 005-001802

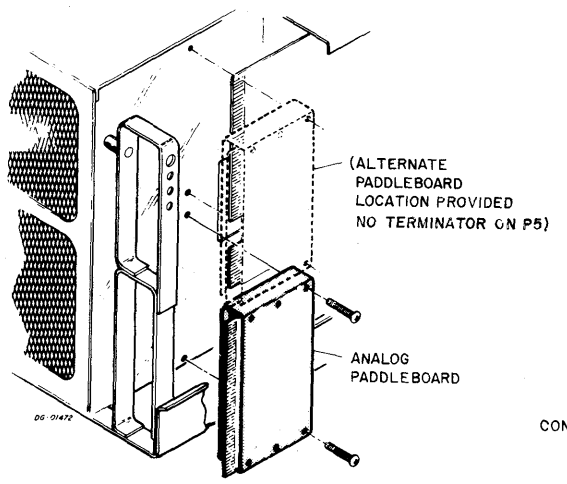
DG-01172



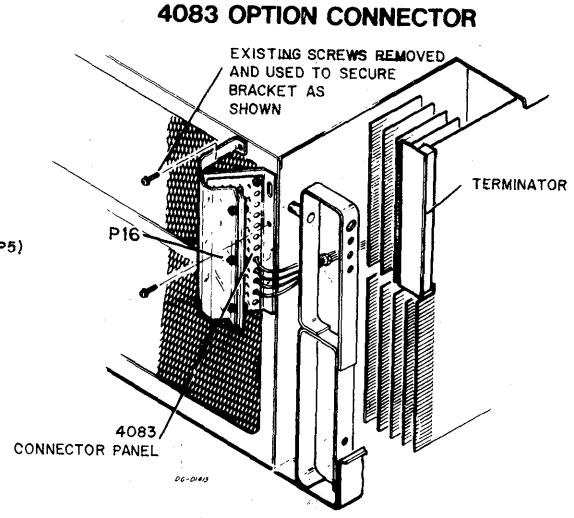
DUAL 20-PIN CONNECTOR
005-003453

MUST BE MOUNTED TO OUTSIDE POSITION IF MORE THAN ONE (1) PADDLEBOARD IS USED AND TELETYPE OR DISPLAY OPTION IS TO BE USED AS PART OF CONNECTOR.

ANALOG PADDLEBOARD

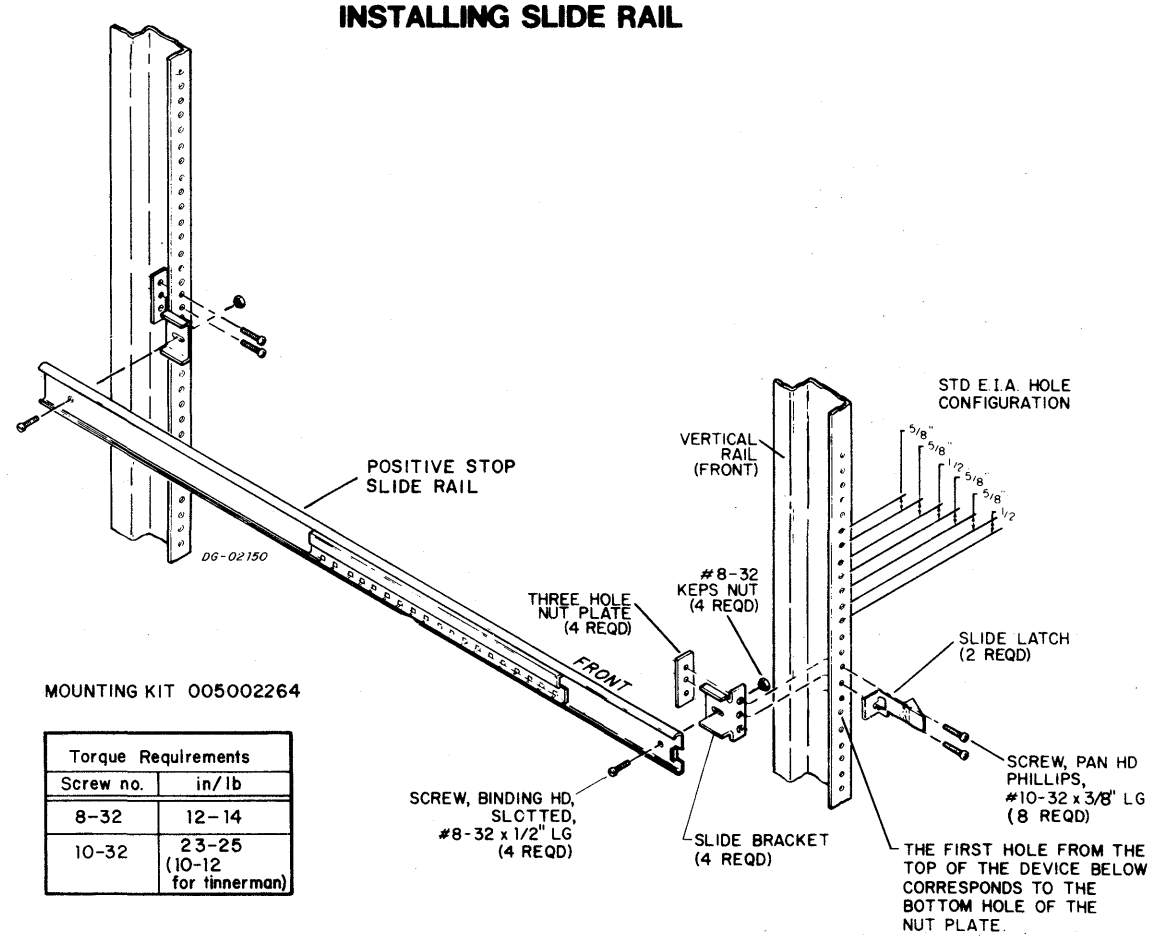


4083 OPTION CONNECTOR



INSTALLATION IN A CABINET

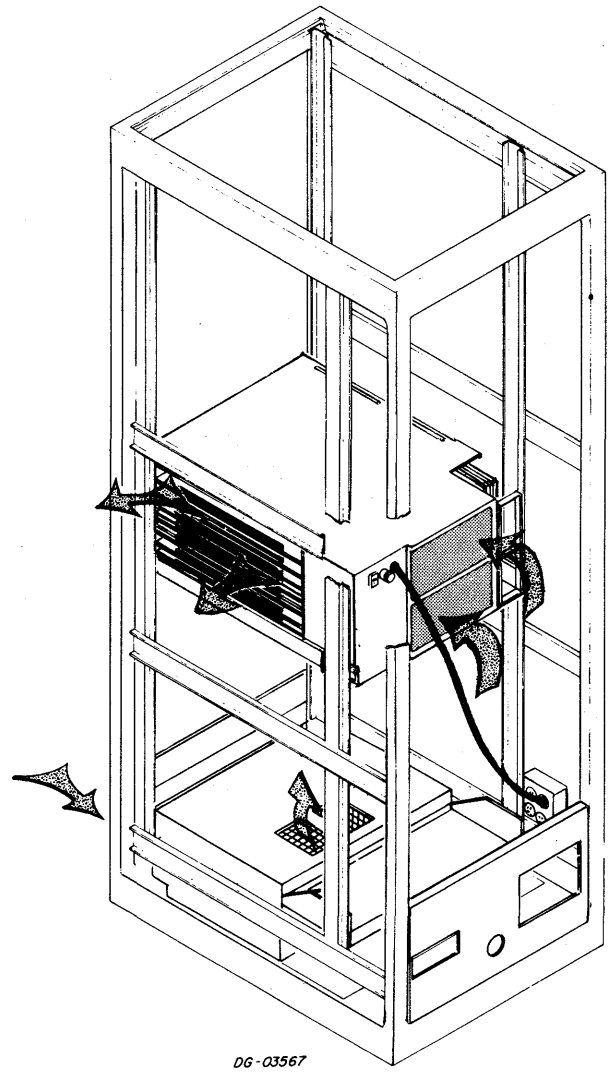
INSTALLING SLIDE RAIL



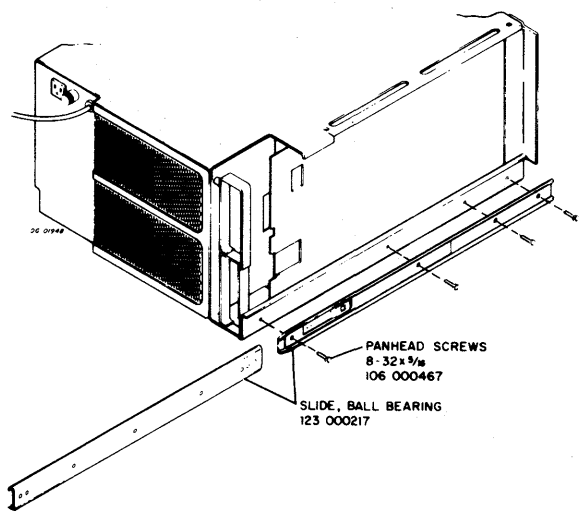
MOUNTING KIT 005002264

Torque Requirements	
Screw no.	in/lb
8-32	12-14
10-32	23-25 (10-12 for tinnerman)

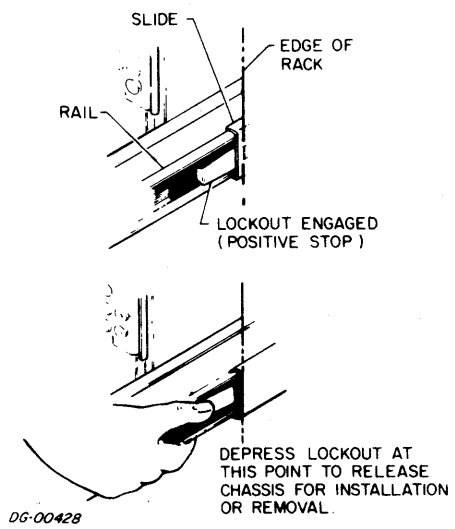
AIR FLOW



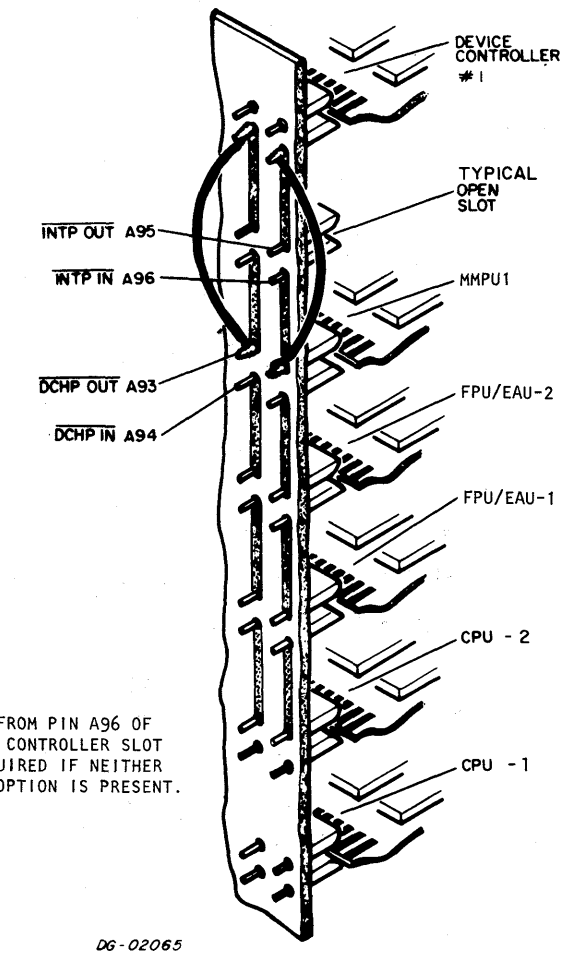
MOUNTING SLIDE ON CHASSIS



SLIDE LOCKOUT



PRIORITY CHAIN JUMPERS

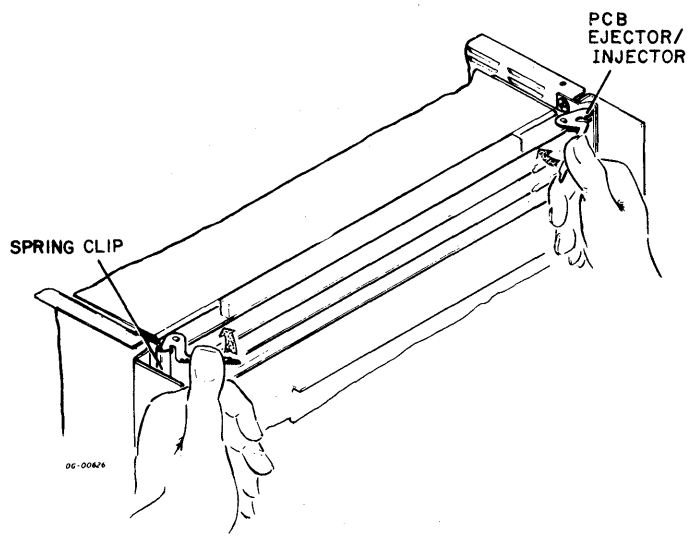


NOTE: A JUMPER FROM PIN A96 OF THE FIRST DEVICE CONTROLLER SLOT TO GROUND IS REQUIRED IF NEITHER THE WCS OR ERCC OPTION IS PRESENT.

DG-02065

NOTE:
JUMPER W2 ON CPU-1 PC BOARD IS REMOVED WHEN THE MAP OPTION (MMPU-1) IS INSTALLED.

PCB PLACEMENT IN SLOT



TAILORING

JUMPERS, TERMINATORS

IN GENERAL

A basic Eclipse computer system is contained in a 16 slot main chassis. The system must be expanded to include an 8414-A expansion chassis if more than four memory boards are required. The system may also be expanded to include an 8414-B expansion chassis if additional room for I/O boards is required.

The 8414-A is a memory expansion chassis that is bolted to the bottom of a main chassis. The 8414-B is an I/O expansion chassis that is cabled to the main chassis.

In configuring an Eclipse computer system with or without an expansion chassis, certain slots and parts of the back panel must be jumpered and the I/O and Mem bus must be terminated.

The procedures for cabling and terminating are dependent on the kind of chassis used and the configuration of the system.

IN PARTICULAR

This figure shows how a main chassis without any expansion chassis is terminated. For configuration rules of systems having an I/O only expansion chassis (Model 8414-A) and/or a memory only expansion chassis (Model 8414-B), see Expansion Chassis, 010-000137

TERMINATORS NEEDED:

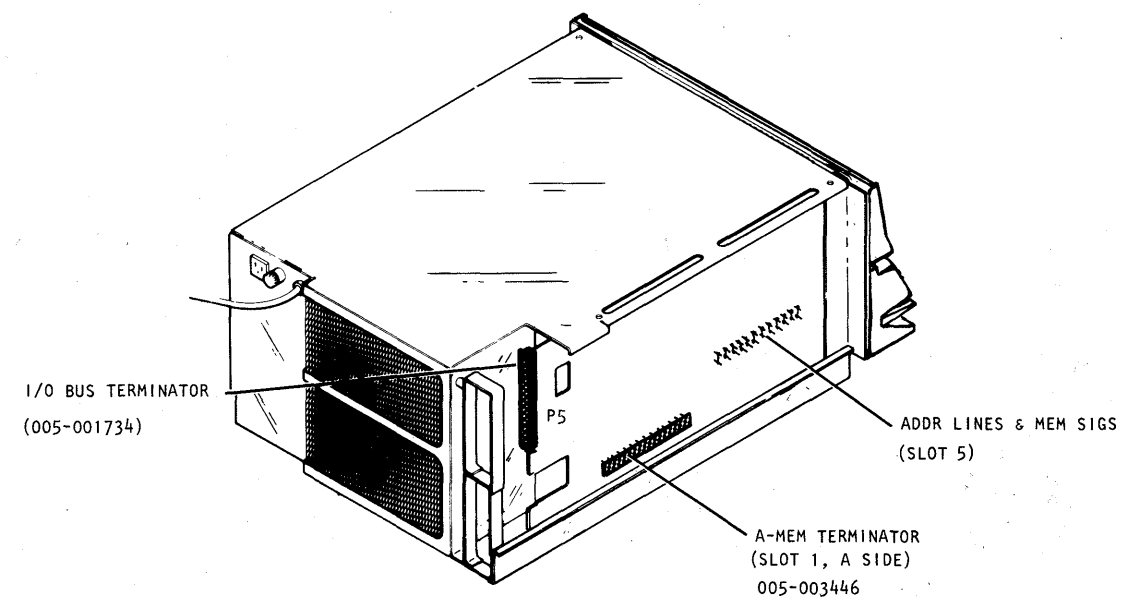
I/O Bus terminator (005-001734) for P5 main chassis

A-Mem terminator (005-003446) for slot 1 main chassis

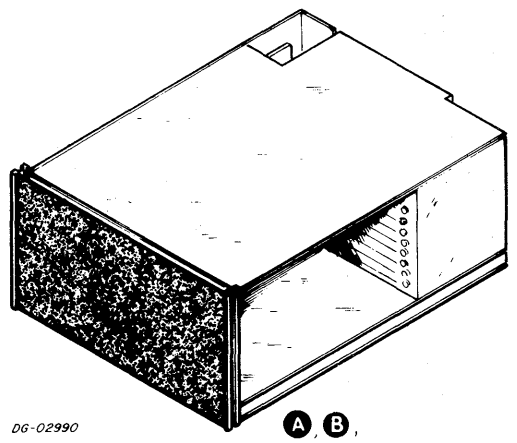
I/O bus terminator (005-001734)on P5 must be removed if an I/O cable is connected between P5 and an external I/O device; e.g. communications chassis, I/O only expansion chassis (8414-B).

If MMPU1 board is not present in slot 5, use wire list 008-000655 to jumper memory control signals and address lines.

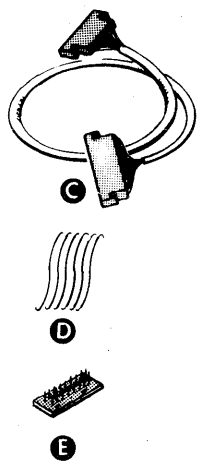
If MMPU1 board is present in slot 5, use wire list 008-000654 to connect control signals to MMPU1 back panel slot.



SUBSYSTEM COMPONENT BREAKDOWN



DG-02990



MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A,B	EXPANSION CHASSIS	CABINET	A-MEMORY ONLY B-I/O ONLY

CABLE DG-02672

Item	Cable	Connecting		Max Allowed Lg ft / m	Notes
C	EXT I/O BUS	MAIN CHAS	and EXPANSION CHAS	15 / 4.56	
D	EXP W/L ASSY	MAIN CHAS	" EXPANSION CHAS	- / -	USED FOR EXP CHAS MEM ONLY

TERMINATOR

Item	Terminator	Location	Notes
E	MEM BUS	B/P (EXP CHASSIS)	WHEN EXT I/O IS USED
	A-MEM/ I/O BUS	"	WHEN NO EXT I/O IS USED
	B-ADDR/ I/O BUS	"	WHEN NO EXT I/O IS USED IN A MAPPED MACHINE
	B-I/O BUS	"	USED WHEN NO EXT I/O IS USED IN AN UNMAPPED MACH
	B-ADDR BUS	"	USED WHEN EXT I/O IS USED IN A MAPPED MACHINE

DG-02674

SPECIFICATIONS OF CABINET-MOUNTED COMPONENTS

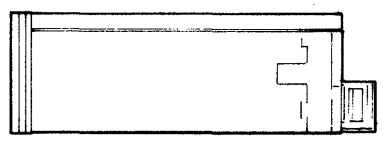
Item	Component	Number in Sub-system	Maximum Operating Temperature Component °F / °C	Media °F / °C	Primary Power Current Draw (Amp)	Voltage ±ΔV	Frequency	Cabinet Height Required Area	in.	cm	Weight lbs / kg	Power Dissipation (Max Watts)	Preferred Location or Remarks	Operating Humidity (Relative) min / max
A	MEMORY ONLY	1	113 / 45	— —	9.6 *	120 +12 -18	50 60 1	6	10.5	26.45	110 / 50	1150 *	FIRST EXPANSION CHASSIS MOUNTS BELOW MAIN CHASSIS.	20 / 90
B	I/O ONLY	1	113 / 45	— —	4.8	240 +24 -53	50 60 1	6	10.5	26.45	110 / 50	1150	SECOND EXPANSION CHASSIS MOUNTS IN SEPARATE CABINET.	20 / 90
				— —										

DG-01914

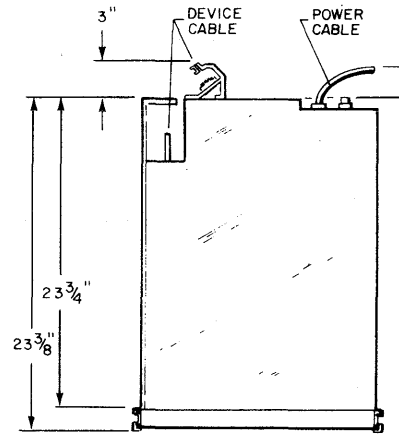
* THE MAIN CHASSIS AND FIRST EXPANSION CHASSIS TOGETHER DRAW ONLY 16A AND DISSIPATE 1920 WATTS.

Voltage	Power Cable Length ft	m	Power Cable Plug	Mating Receptacle on Power Drop	Mating Receptacle in Wall
EXPANSION CHASSIS 120	10	3	NEMA 5-15P	NEMA 5-15R	NEMA 5-15R
EXPANSION CHASSIS 240	10	3	NEMA 6-15P	NEMA 6-15R	NEMA 6-15R

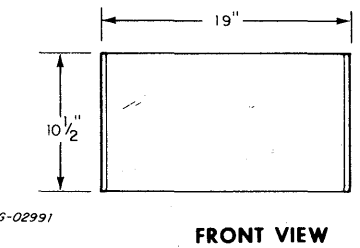
DG-02717



SIDE VIEW



TOP VIEW



DG-02991

FRONT VIEW

SLOT ASSIGNMENTS

RULES

IN GENERAL

Use an 8414-A expansion chassis if the system has more than 4 memory boards. In this case, put all the memory boards in this expansion chassis. Use an 8414-B expansion chassis if the main chassis cannot accomodate all the I/O boards.

IN PARTICULAR

1. If there are 8 memory boards or less place them in every second slot of the 8414-A chassis.

2. If the 8414-B expansion chassis has the B-I/O (005-003444) and A-Mem I/O (005-003447) terminators of slot 16, then that slot of the 8414-B chassis cannot accomodate a board which requires a wire-wrapped internal cable.

MEMORY ONLY

Data Channel Speeds Available — Standard ☑ — 8414-A — High Speed ☐

Slot	Allowed (Slot Chart)	Assigned	+5V Current Draw
17			
16	MEMORY		
15	↑		
14			
13			
12			
11			
10			
9			
8			
7			
6			
5			
4			
3			
2	↓		
1	MEMORY		

Total +5V Current draw _____

Max +5V Current Available 60 A

+5V Current Surplus _____

I/O ONLY

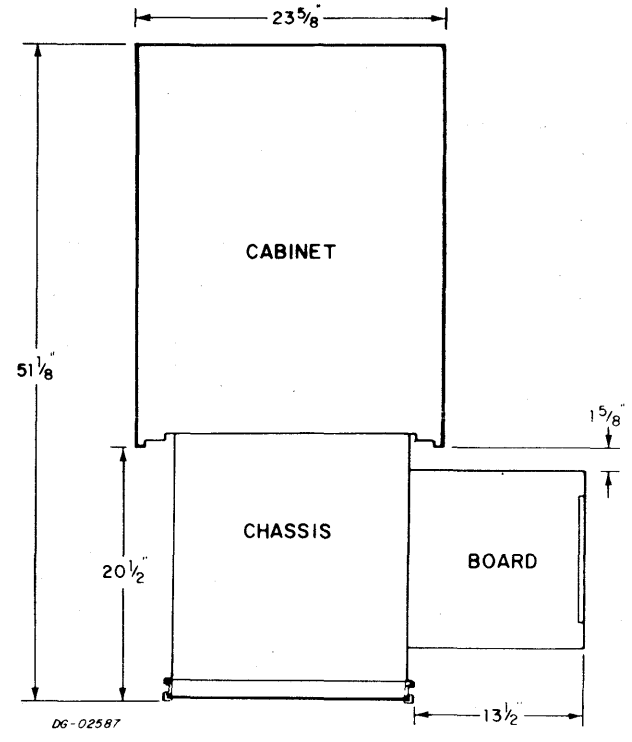
Data Channel Speeds Available — Standard ☑ — 8414-B — High Speed ☐

Slot	Allowed (Slot Chart)	Assigned	+5V Current Draw
17			
16	I/O		
15	↑		
14			
13			
12			
11			
10			
9			
8			
7			
6			
5			
4			
3			
2	↓		
1	I/O		

Total +5V Current draw _____

Max +5V Current Available 60 A

+5V Current Surplus _____



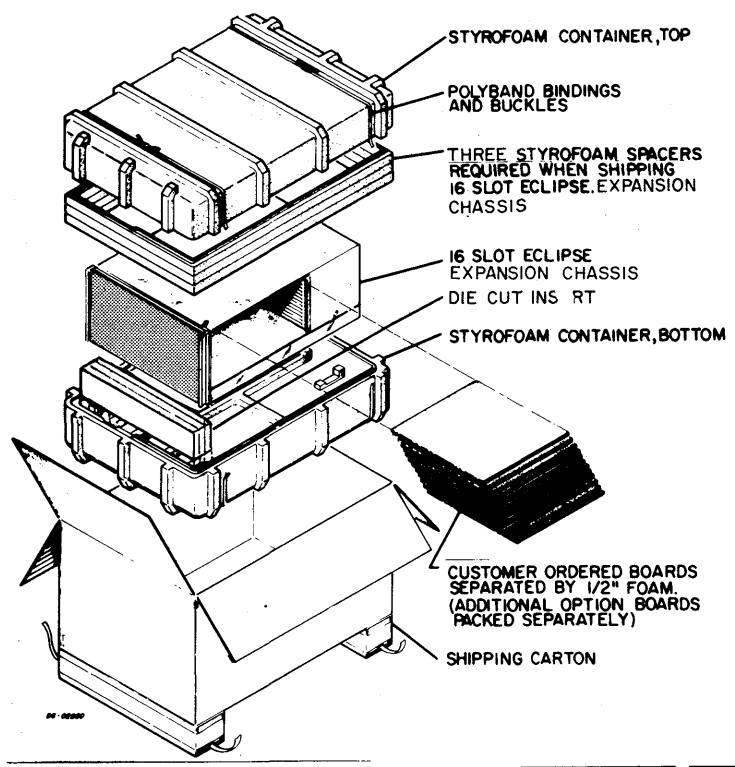
DG-02587

SERVICE DIMENSIONS

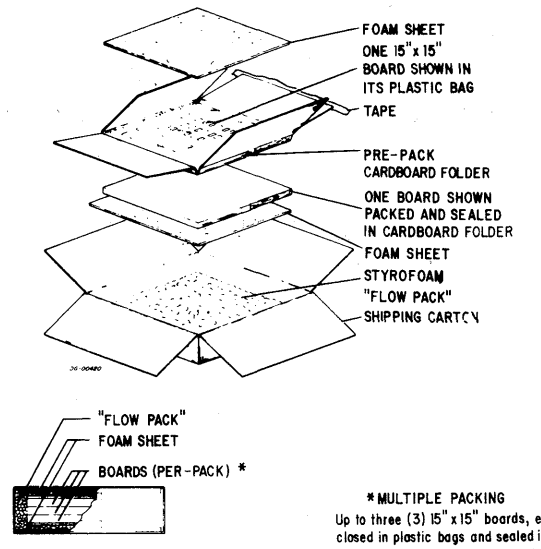
ECLIPSE S/230 C/330 EXPANSION CHASSIS

SHIPPING

CHASSIS



SEPARATE BOARDS



*MULTIPLE PACKING
Up to three (3) 15"x15" boards, enclosed in plastic bags and sealed in pre-pack folder as shown, can be put in shipping carton number 129-000062. For four (4) to seven (7) boards, use shipping carton number 129-000012.

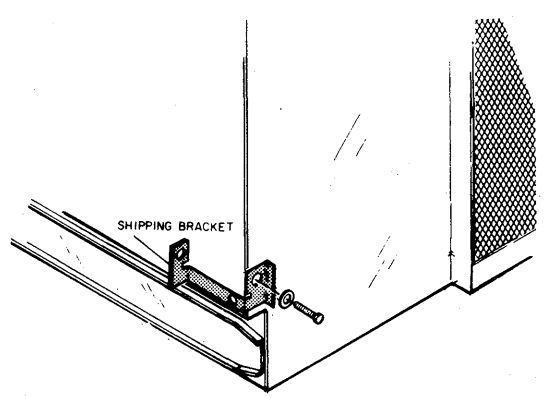
SHIPPING AND PACKAGE DATA					
Outside Dimensions			Weight (Gross)	Volume	Density
Length	Width	Depth			
in. / cm	in. / cm	in. / cm	lbs. / kg	cu ft. / cu m	lbs/cu ft. / kg/cu m
33.6 / 85.3	24 / 61	21 / 53.3	75 / 34	9.8 / 0.28	7.7 / 121.4
SHIPPING SPECIFICATIONS			STORAGE SPECIFICATIONS		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-40 to +160 / -40 to +71	0%/80%	50,000ft. 15,200m	-40 to +160 / -40 to +71	0%/80%	90 days

DG-03224

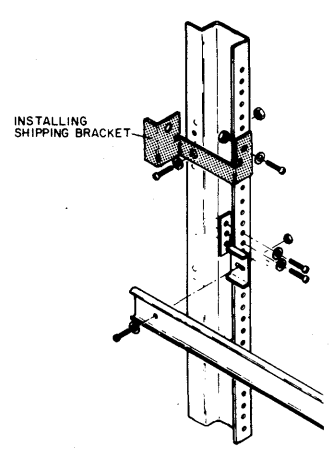
SHIPPING AND PACKAGE DATA *					
Outside Dimensions			Weight (Gross)	Volume	Density
Length	Width	Depth			
in. / cm	in. / cm	in. / cm	lbs. / kg	cu ft. / cu m	lbs/cu ft. / kg/cu m
18 / 45.7	18 / 45.7	4 / 10.2	10 / 4.5	0.75 / 0.02	13.3 / 225
SHIPPING SPECIFICATIONS			STORAGE SPECIFICATIONS		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-40 to +160 / -40 to +71	0%/80%	50,000ft. 15,200m	-40 to +160 / -40 to +71	0%/80%	90 days

*DATA GIVEN IS FOR A THREE BOARD PACKAGE OF AVG. WT.

MOUNTING SHIPPING BRACKET TO CHASSIS

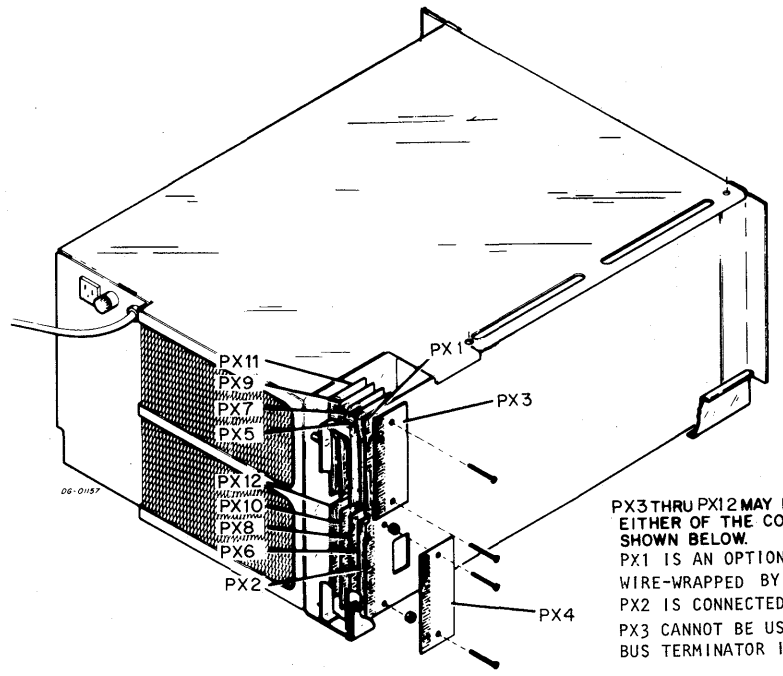


MOUNTING SHIPPING BRACKET TO RAILS

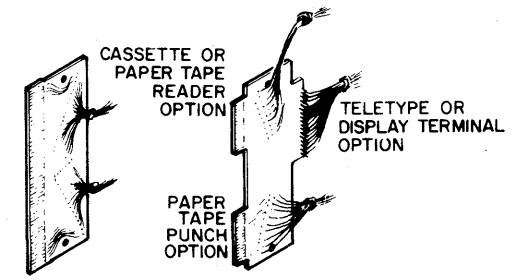


INTERNAL CABLING

BACKPANEL CONNECTOR



PX3 THRU PX12 MAY BE EITHER OF THE CONNECTORS SHOWN BELOW.
PX1 IS AN OPTIONAL PADDLE BOARD WIRE-WRAPPED BY THE USER.
PX2 IS CONNECTED TO THE I/O BUS.
PX3 CANNOT BE USED WHEN THE I/O BUS TERMINATOR IS INSTALLED.

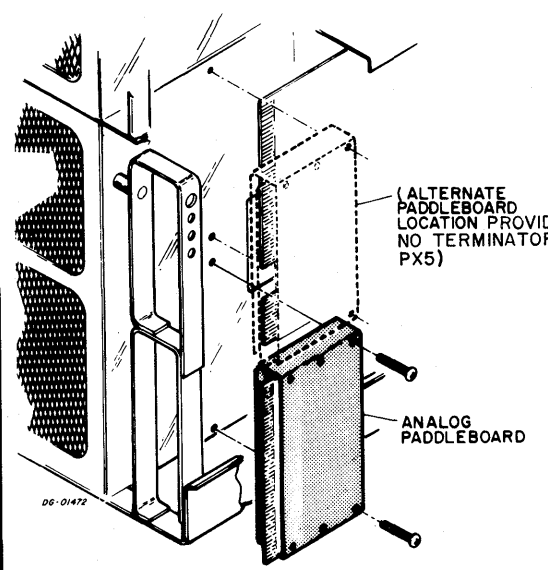


50-PIN CONNECTOR PART NO. 005-001802

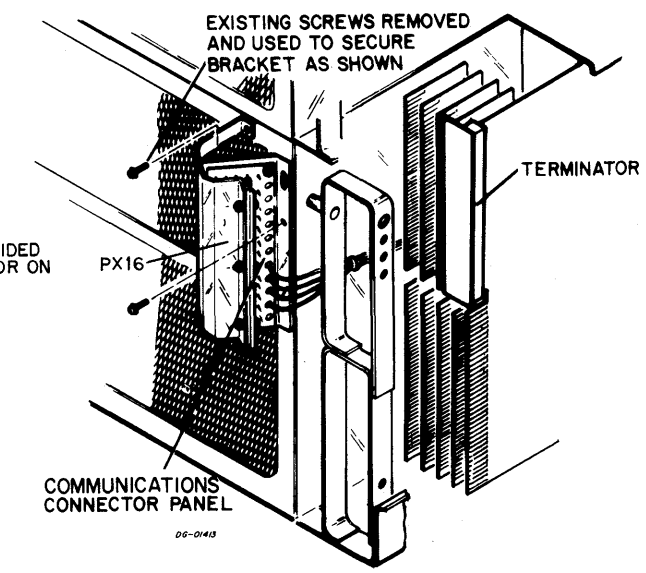
DUAL 20-PIN CONNECTOR 005-003453

DG-01172

ANALOG PADDLEBOARD

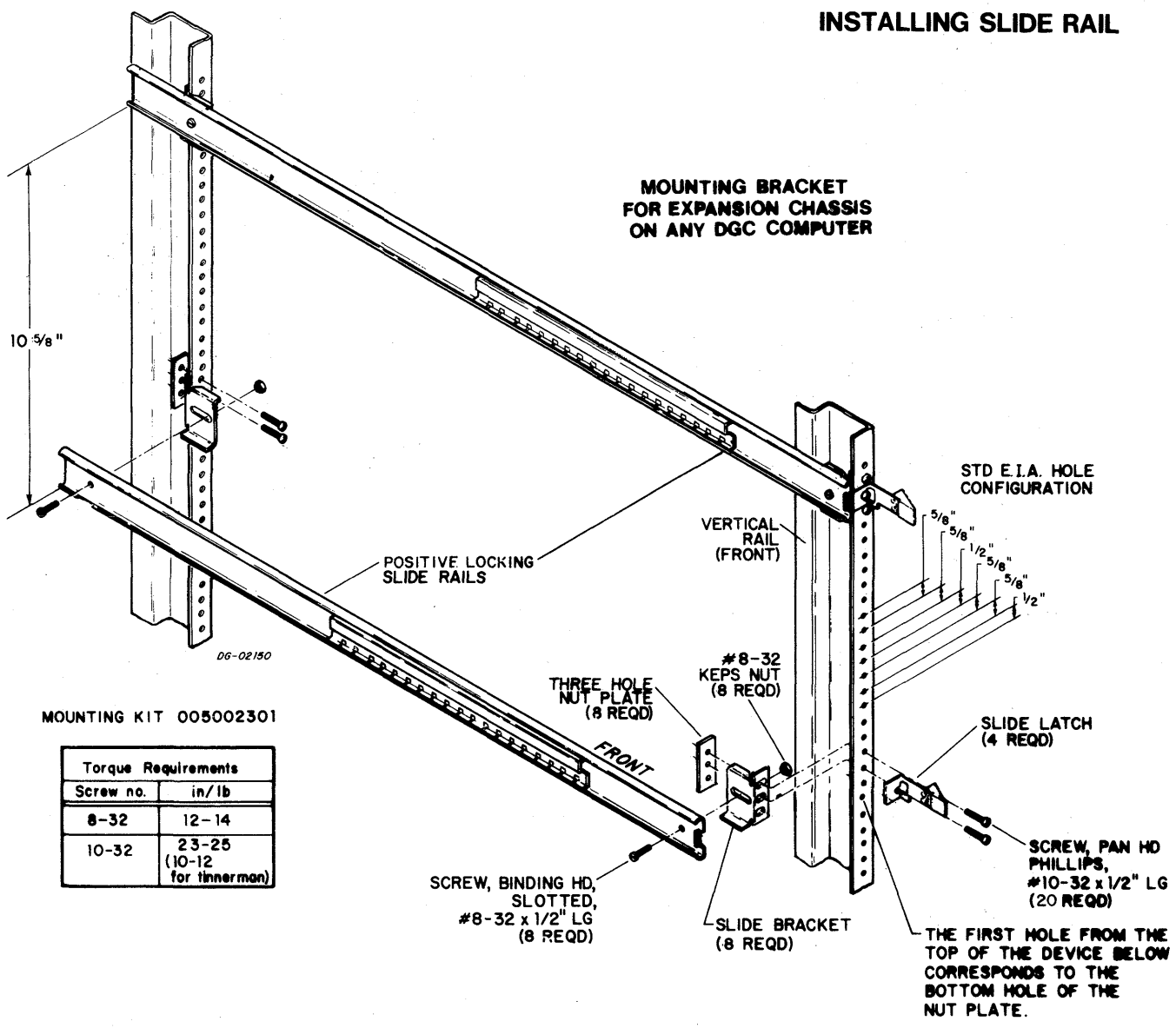


COMMUNICATIONS CONNECTOR



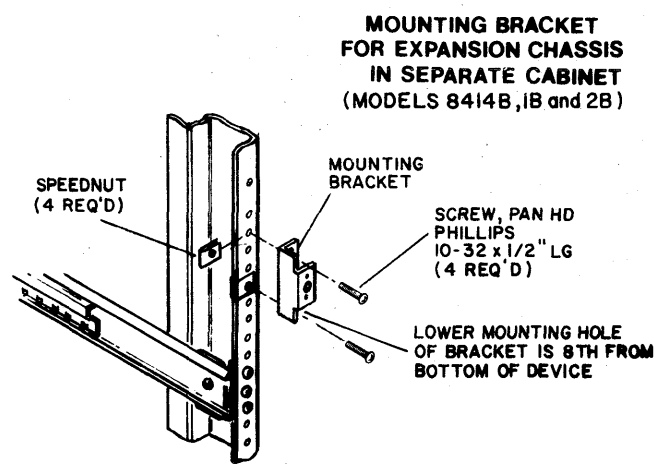
CABINET MOUNTING

INSTALLING SLIDE RAIL

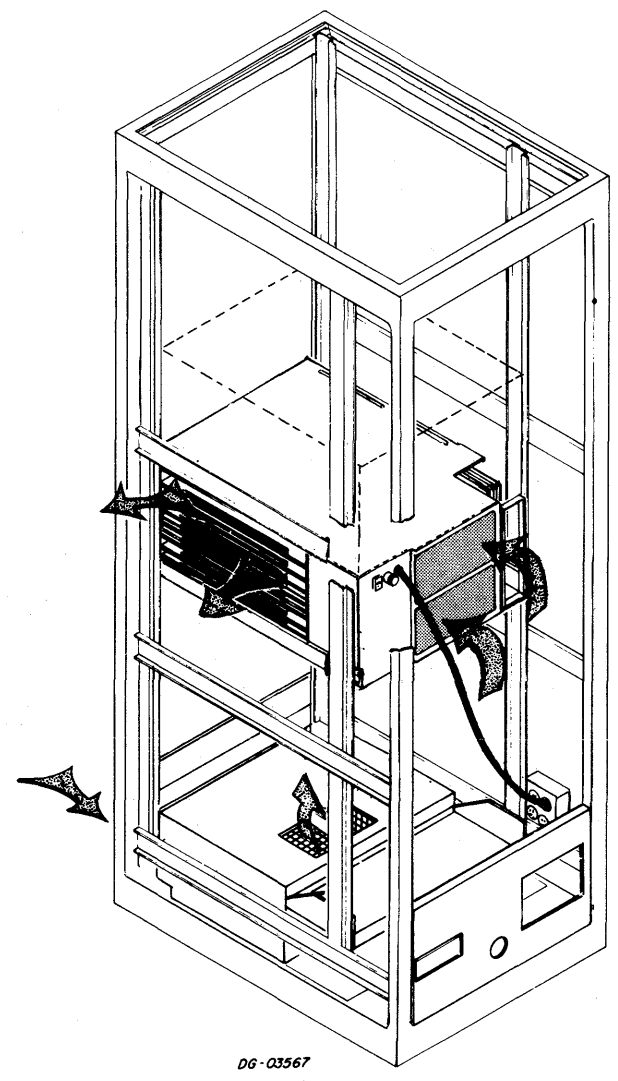


MOUNTING KIT 005002301

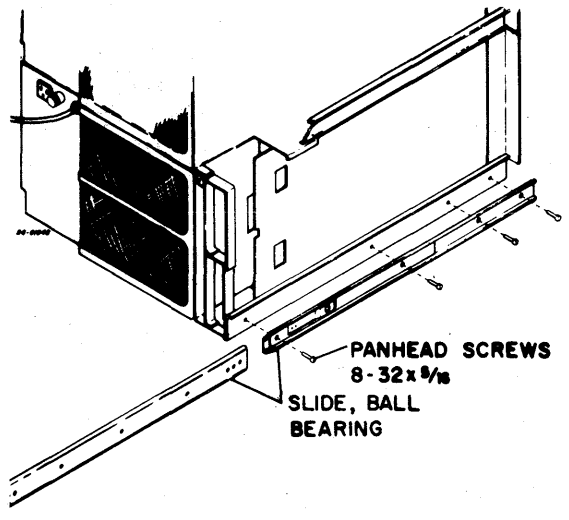
Torque Requirements	
Screw no.	in/lb
8-32	12-14
10-32	23-25 (10-12 for tinnerman)



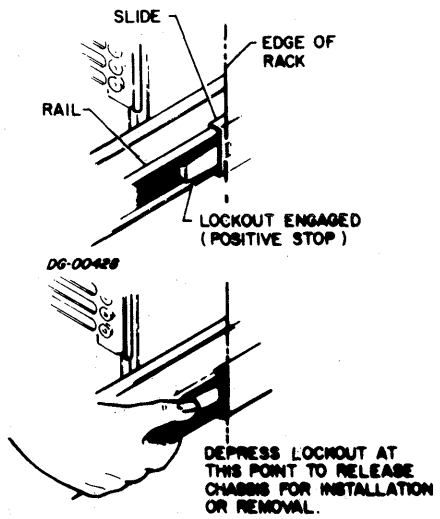
AIR FLOW



MOUNTING SLIDE ON CHASSIS

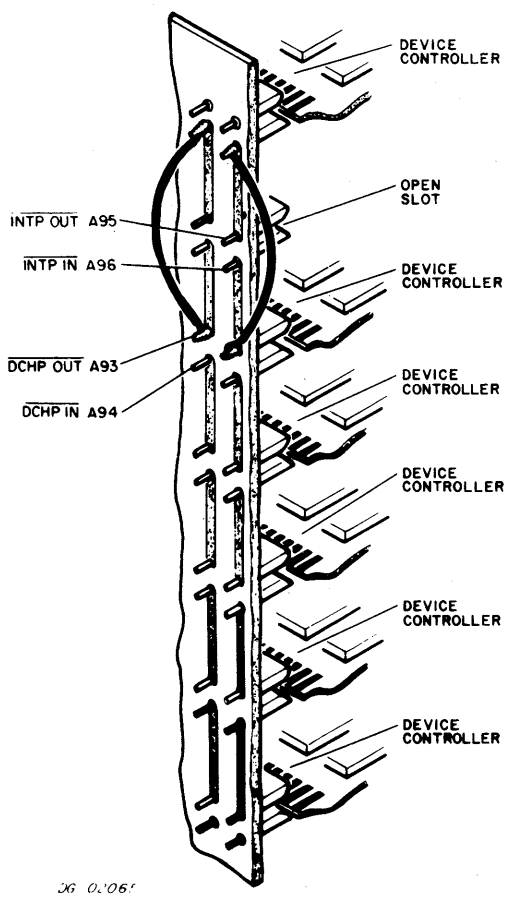


SLIDE LOCKOUT

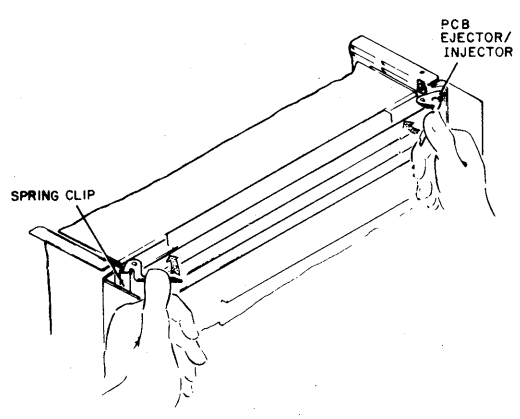


TAILORING AND EXTERNAL CABLING

PRIORITY CHAIN JUMPERS



PCB PLACEMFNT IN SLOT



MAIN CHASSIS WITH MEMORY ONLY EXPANSION CHASSIS (model 8414-A)

Terminators Needed:

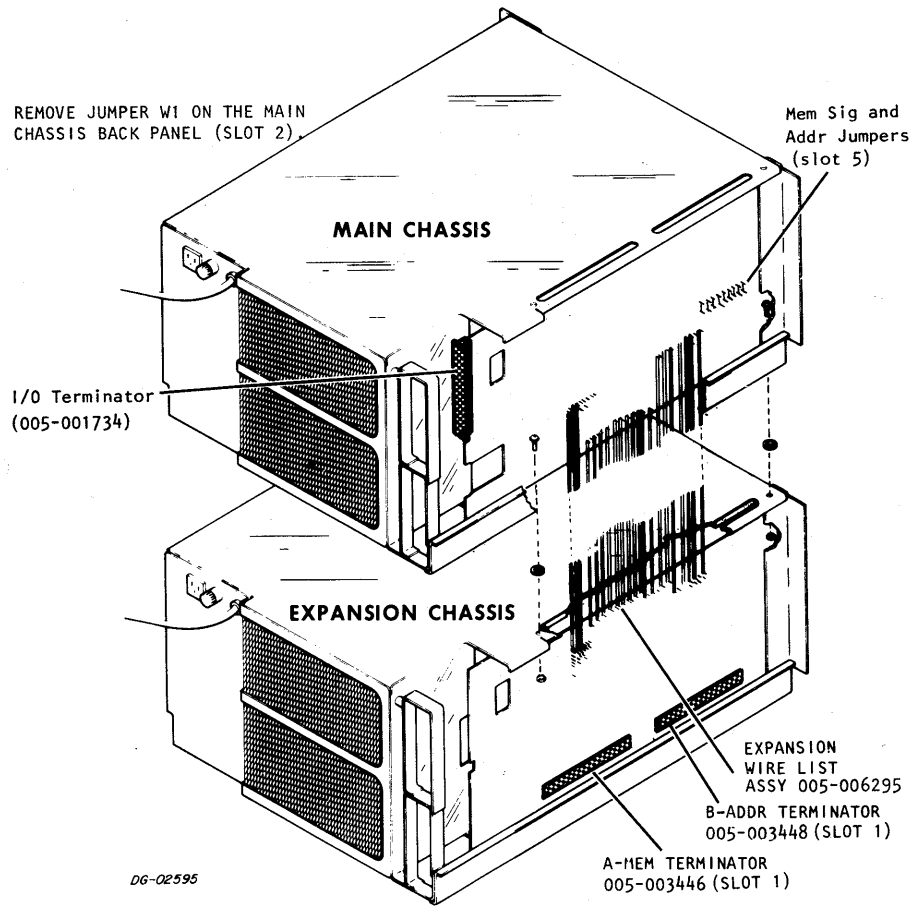
I/O Bus terminator (005-001734) for P5 main chassis
A-Mem terminator (oo5-003446) for slot 1 of 8414-A
B-Addr terminator (005-003448) for slot 1 of 8414-A

I/O bus terminator (005-001734) on P5 must be removed if an I/O cable is connected to P5 and an external I/O device; e.g. communications chassis or I/O expansion chassis (Model 8414-B).

If MMPU1 board is not present in slot 5, use wire list 008-000655 to jumper memory control signals and address lines.

If MMPU1 board is present in slot 5, use wire list 008-000654 to connect control signals to MMPU1 back panel slot.

Chassis are bolted together. Use wire list 005-006295 to connect Mem Bus, Addr Bus and necessary control signals between main chassis and memory only expansion chassis 8414-A.



MAIN CHASSIS WITH I/O ONLY EXPANSION CHASSIS (model 8414-B)

Terminators Needed:

A-Mem terminator (005-003446) for slot 1 of main chassis

B-Addr terminator (005-003448) for slot 1 of main chassis

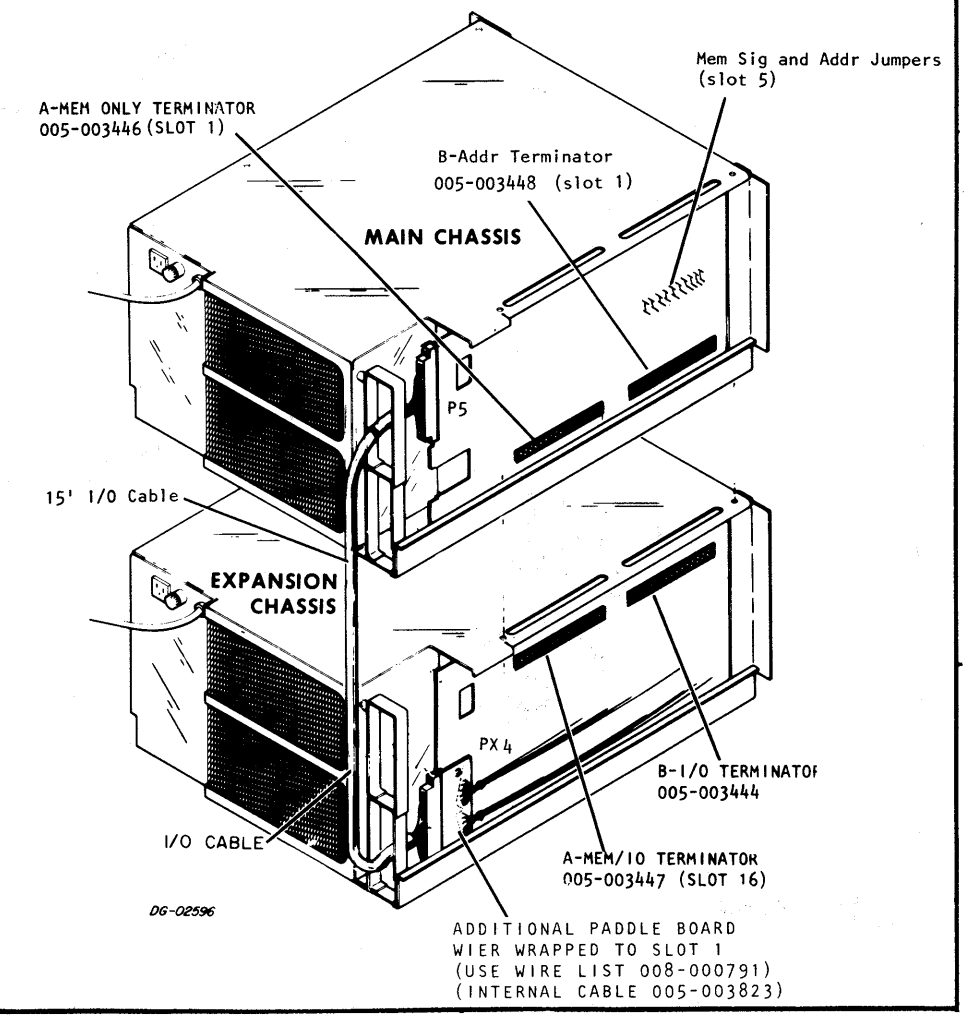
A-Mem/IO terminator (005-003447) for slot 16 Of 8414-B

B-I/O terminator (005-003444) for slot 16 of 8414-B

If MMPU1 board is not present in slot 5, use wire list 008-000655 to jumper memory control signals and address lines.

If MMPU1 board is present in slot 5, use wire list 008-000654 to connect control signals to MMPU1 back panel slot.

To connect an I/O cable from an additional paddle board of 8414-B to an I/O device, e.g. communication chassis, use wire list 008-000791 and internal cable 005-003823. Also remove A-Mem/I/O terminator (005-003447) and B-I/O terminator (005-003444) from slot 16 of 8414-B.



EXTERNAL CABLING

MAIN CHASSIS WITH I/O ONLY (model 8414-B) AND MEMORY ONLY (model 8414-A) EXPANSION CHASSIS

Terminators Needed:

A-Mem/IO terminator (005-003447) for slot 16 Of 8414-B

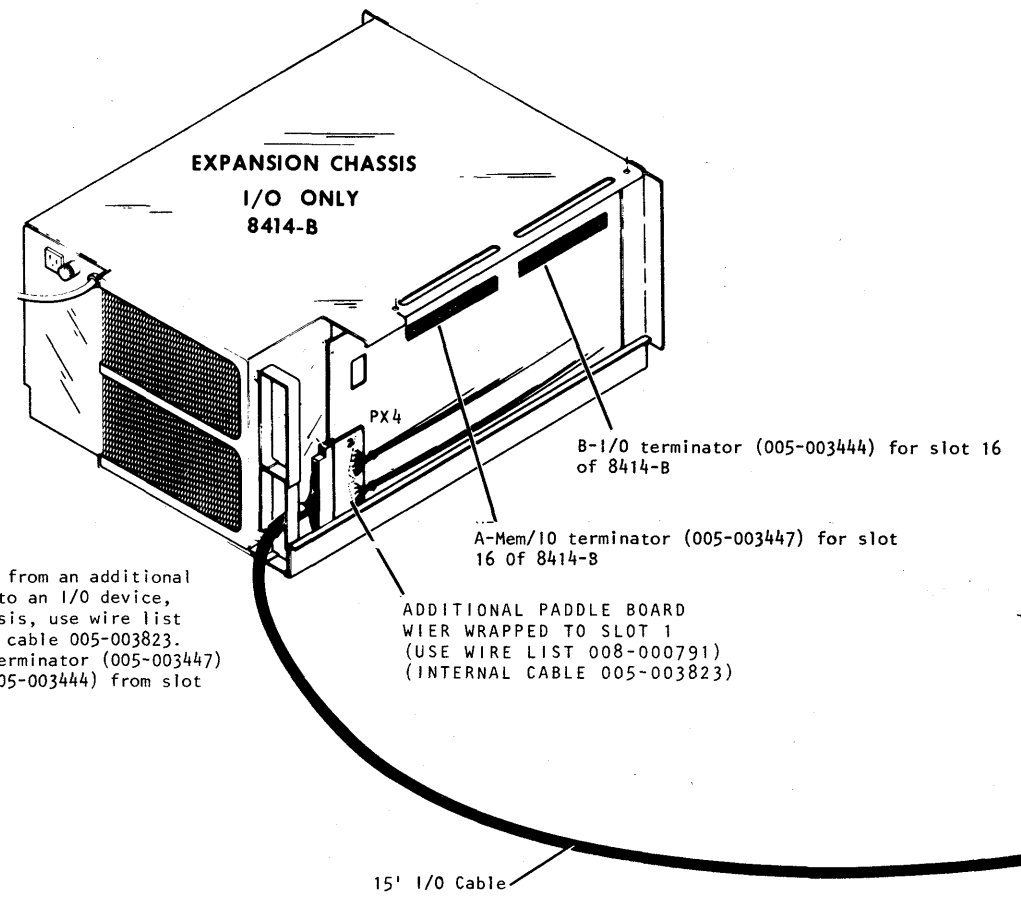
B-I/O terminator (005-003444) for slot 16 of 8414-B

A-Mem terminator (005-003446) for slot 1 of 8414-A.

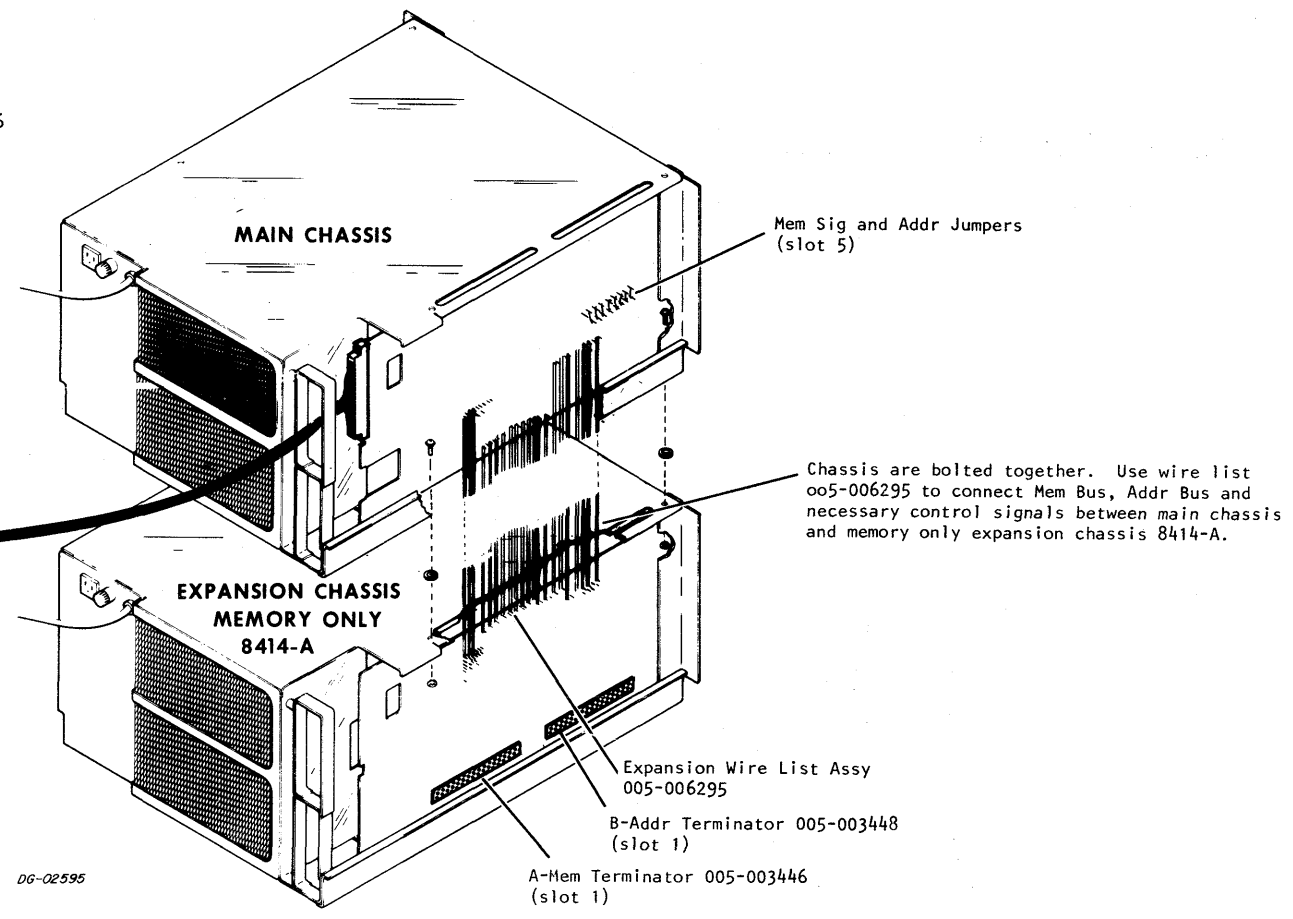
B-Addr terminator (005-003448) for slot 1 of 8414-B.

If MMPU1 board is not present in slot 5, use wire list 008-000655 to jumper memory control signals and address lines.

If MMPU1 board is present in slot 5, use wire list 008-000654 to connect control signals to MMPU1 back panel slot.



To connect an I/O cable from an additional paddle board of 8414-B to an I/O device, e.g. communication chassis, use wire list 008-000791 and internal cable 005-003823. Also remove A-Mem/I/O terminator (005-003447) and B-I/O terminator (005-003444) from slot 16 of 8414-B.



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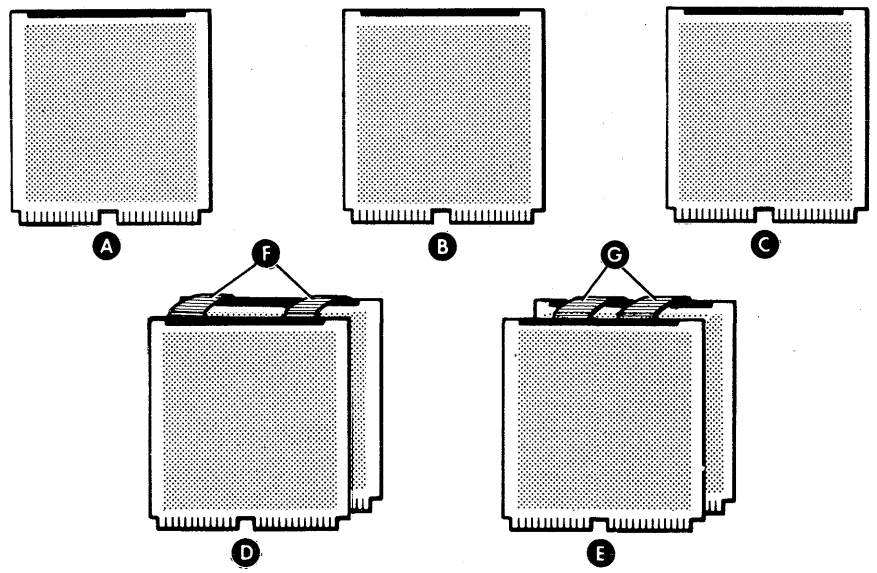
SUBSYSTEM COMPONENT BREAKDOWN



MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	16KB CORE MEMORY	ECLIPSE CHASSIS (MAIN or EXPANSION)	WITH or WITHOUT ERCC
	32KB CORE MEMORY	ECLIPSE CHASSIS (MAIN or EXPANSION)	WITHOUT ERCC
B	64KB SC MEMORY	ECLIPSE CHASSIS (MAIN or EXPANSION)	WITH ERCC
C	512KB MAP BOARD	MAIN CHASSIS	
D**	CPU-1 & CPU-2	MAIN CHASSIS	WITH or WITHOUT WCS and/or ERCC
E*	EAU-1 & EAU-2 OR FPU-1 & FPU-2	MAIN CHASSIS	FLOATING POINT PROCESSOR

CABLE

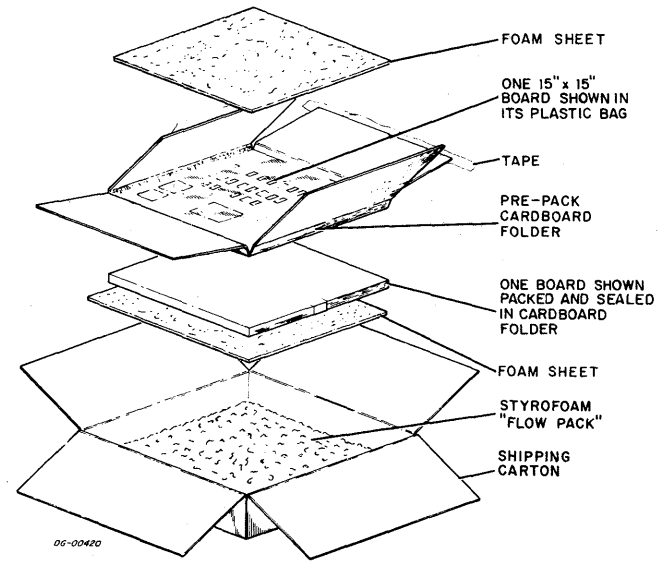
Item	Cable	Connecting	Max Allowed Lg ft / m	Notes
F	CPU INTERBOARD CABLE	CPU-1 and CPU-2	1.5 / .5	2 REQUIRED
G*	FPU INTERBOARD CABLE	FPU-1 " FPU-2	1.5 / .5	2 REQUIRED

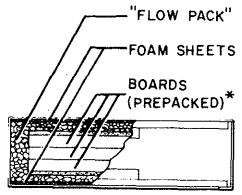
* STANDARD WITH C/330 COMPUTER.
** WCS OPTION NOT AVAILABLE WITH C/330.

SPECIFICATIONS OF CHASSIS MOUNTED COMPONENTS

Model #	Item	Component	No. of Slots Required	Total +5V Current Draw (Amps)	Remarks
8418	A	16KB CORE MEMORY	1	1.6	
8416		16KB CORE & ERCC	1	2.6	Requires ERCC on CPU-2
8603		32KB CORE MEMORY	1	1.8	
8602	B	64KB SC MEMORY	1	4.5	Requires ERCC on CPU-2
8601	C	512KB MAP BOARD	1	6	
**	D	CPU-1 & CPU-2	2	16	
		CPU-1, 2, & ERCC	2	17.6	ERCC adds 1.6A @ +5V to CPU-2
		CPU-1, 2, WCS & ERCC	2	23.8	WCS adds 6.2A @ +5V to CPU-2
8313*	E	FPU-1, FPU-2 or EAU-1, EAU-2	2	16	Floating Point Processor

SHIPPING



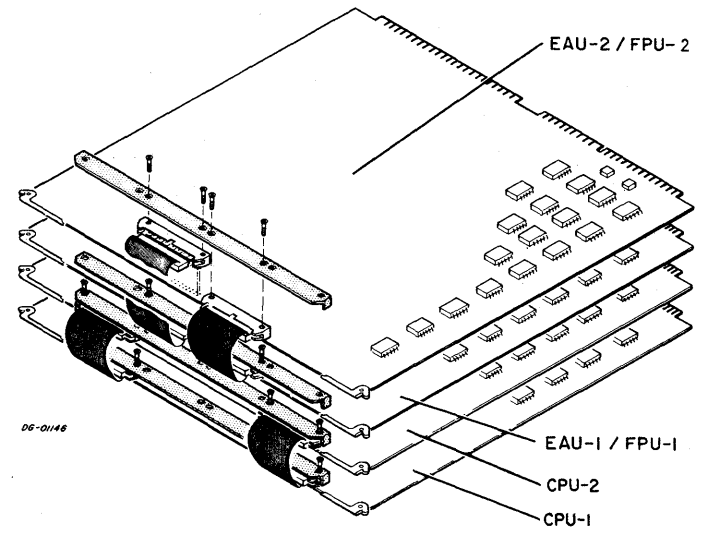


* MULTIPLE PACKING
Up to three(3) 15"x15" boards, enclosed in plastic bags and sealed in pre-pack folders as shown, can be put in shipping carton number 129-000062. For four(4) to seven (7) boards, use shipping carton number 129 000012.

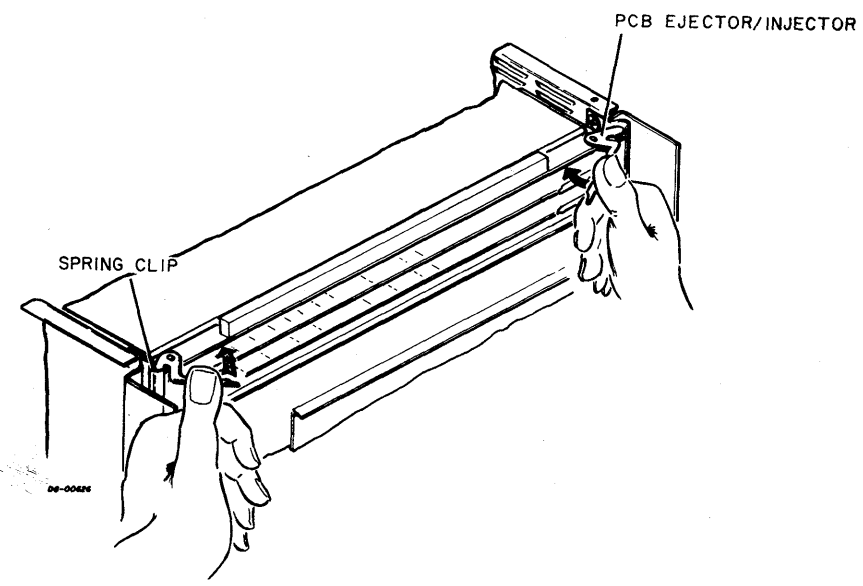
SHIPPING AND PACKAGE DATA					
Outside Dimensions			Weight (Gross)	Volume	Density
Length	Width	Depth			
in. / cm	in. / cm	in. / cm	lbs. / kg	cu ft. / cu m	lbs/cu ft. / kg/cu m
SHIPPING SPECIFICATIONS			STORAGE SPECIFICATIONS		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-40to+160 / -40 to+71	0%/80%	50,000ft. 15,200m	-40to+160 / -40 to+71	0%/80%	90 days

INTERNAL CABLING

EAU-1/FPU-1 and EAU-1/FPU-2; CPU-1 and CPU-2 are cabled together as shown below.



INSTALLING PC BOARD



TAILORING and SWITCHES

MEMORIES

Interleaving and address selection is determined on core and semiconductor boards by jumpers or switches, depending on when the board was manufactured. In either case, proceed as follows:

1. Assign each memory board a (unique) number from 0-15.

2. Assign from the table below the appropriate level of interleaving for each board.

3. If a board uses switches, go to step 7 otherwise, proceed to step 4.

4. Select the corresponding jumper-positions for each board from the table below: The "Memory Select Jumper Positions" figure illustrates where each jumper goes on the board.

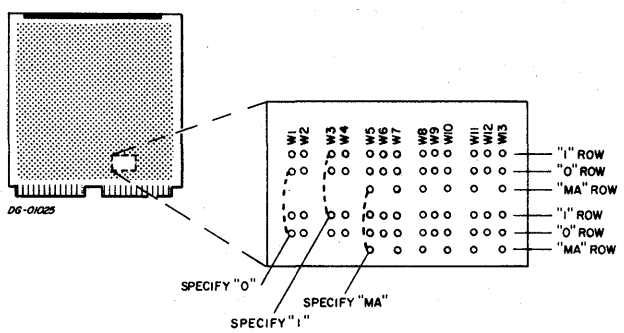
Assigned Levels of Interleaving		
Total Number of Memory Boards	Board Numbers	Assigned Level of Interleaving
1	0	none
2	0,1	2
3	0,1 2	2 none
4	0,1,2,3	4
5	0,1,2,3 4	4 none
6	0,1,2,3 4,5	4 2
7	0,1,2,3 4,5 6	4 2 none
8	0,1,2,3,4,5,6,7	8
9	0,1,2,3,4,5,6,7 8	8 none
10	0,1,2,3,4,5,6,7 8,9	8 2
11	0,1,2,3,4,5,6,7 8,9 10	8 2 none
12	0,1,2,3,4,5,6,7 8,9,10,11	8 4
13	0,1,2,3,4,5,6,7 8,9,10,11 12	8 4 none
14	0,1,2,3,4,5,6,7 8,9,10,11 12,13	8 4 2
15	0,1,2,3,4,5,6,7 8,9,10,11 12,13 14	8 4 2 none
16	0,1,2,3,4,5,6,7 8,9,10,11,12,13,14,15	8 8

DG-01183

JUMPER POSITIONS FOR BOARD NUMBERS					
Board Number Jumpers					
	Jumper Assignments				
Board Number	W1 and W2	W3 and W4	W6	W9	W12
0	0	0	0	0	0
1	0	0	0	0	1
2	0	0	0	1	0
3	0	0	0	1	1
4	0	0	1	0	0
5	0	0	1	0	1
6	0	0	1	1	0
7	0	0	1	1	1
8	0	1	0	0	0
9	0	1	0	0	1
10	0	1	0	1	0
11	0	1	0	1	1
12	0	1	1	0	0
13	0	1	1	0	1
14	0	1	1	1	0
15	0	1	1	1	1

DG-01184

MEMORY SELECT JUMPER POSITIONS



DG-01025

Each of the jumper positions crosses six rows. Specifying a "1" at a jumper position is done by inserting a jumper from the top "1" row to the bottom "1" row. A "0" is specified by inserting a jumper from the top "0" row to the bottom "0" row. A bit used in interleaving is specified by inserting a jumper from the top "MA" row to the bottom "MA" row. Examples of the three basic jumper positions are shown in the figure above.

5. Select the interleaving jumpers for each board from the following table, and install these into their corresponding position illustrated in the above figure. Note that core and semiconductor memories cannot be interleaved with one another.

Level of Interleaving Jumpers	
Level of Interleaving	Jumpers Inserted
none	W7, W10, W13
2	W7, W10, W11
4	W7, W8, W11
8	W5, W8, W11

6. There remains open one jumper position in each of the following pairs: W5/W7, W8/W10 and W11/W13. Install these three jumpers on each board by matching them to jumpers already installed according to the table below. The board is ready to be installed in its chassis.

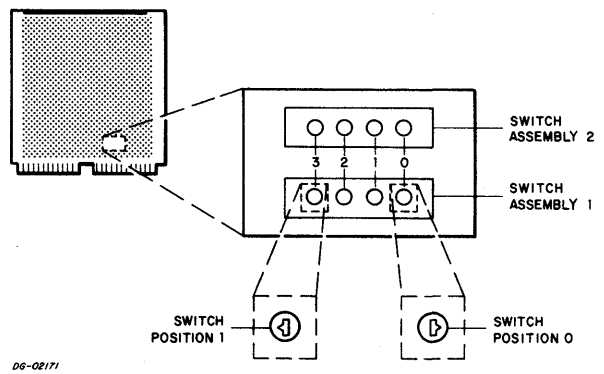
Gate-Enable Jumpers	
Pair	Match
W5/W7	W6
W8/W10	W9
W11/W13	W12

7. Select the address switches for each board from the following table. The "Memory Select Switch Positions" figure illustrates where each switch is positioned on a board.

Address Switch Position for Each Board				
Board Number	Switch Assembly 2			
	Switch 3	Switch 2	Switch 1	Switch 0
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1

DG-02233

MEMORY SELECT SWITCH POSITIONS



DG-02171

The memory select switches, as shown above, are arranged in two assemblies; four switches per assembly. Switches 0-3 in switch assembly 2 select the board number (0-15). Switches 0-2 in switch assembly 1 select the level of interleaving (none, 2-, 4-, or 8-way) for the board. Each switch has two positions 0 and 1. These positions are selected by inserting a screwdriver in the switch notch and rotating the switch.

8. Select the interleaving switches for each board from the following table. Note that core and semiconductor memories cannot be interleaved with one another.

SWITCH POSITIONS FOR INTERLEAVING				
Level of Interleaving	Switch Assembly 1			
	Switch 3	Switch 2	Switch 1	Switch 0
none	0	0	0	0
2-Way	0	0	0	1
4-Way	0	0	1	1
8-Way	0	1	1	1

DG-02194

COMPUTERS WITH MIXED SIZE MEMORIES

1. 8K AND 16K WORD CORE MEMORIES CAN BE MIXED IN THE SAME SYSTEM. (NON-ERCC MEMORIES)

2. INTERLEAVING OF MEMORIES IS POSSIBLE IN A SYSTEM WITH MIXED SIZED MEMORIES AS LONG AS THE DIFFERENT SIZE MEMORIES ARE NOT INTERLEAVED WITH ONE ANOTHER. ONLY THE SAME SIZE MEMORIES CAN BE INTERLEAVED WITH ONE ANOTHER.

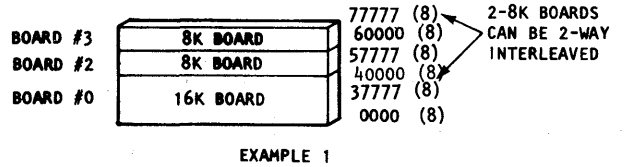
3. ONLY 16 MEMORY BOARDS OF ANY SIZE AND MIXTURE MAY BE USED IN ANY ONE SYSTEM.

BOARD NUMBER ASSIGNMENTS IN MIXED MEMORY SYSTEMS

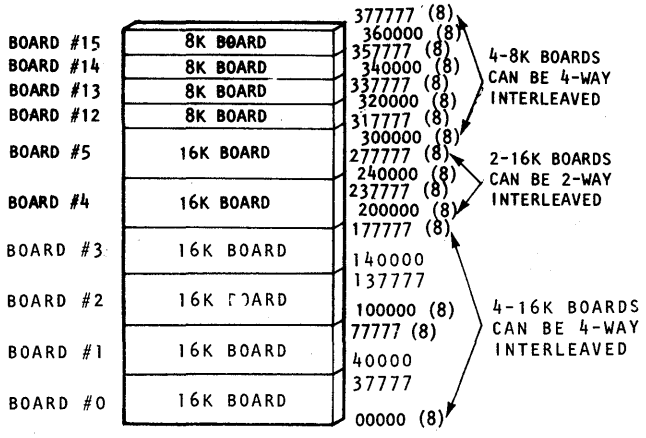
1. IT IS RECOMMENDED THAT THE 16K WORD MEMORIES BE CONFIGURED TO HAVE THE LOWEST ADDRESSES OF THE SYSTEM.

FOR EXAMPLE:

(ASSIGNMENT OF BOARD NUMBERS IS EXPLAINED IN STEP 5)

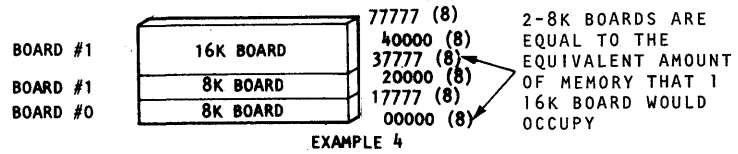


EXAMPLE 1

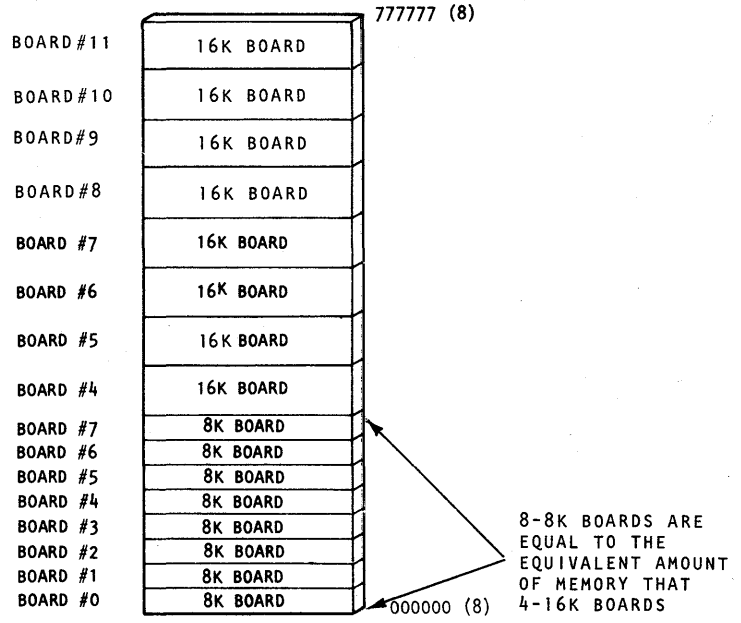


EXAMPLE 2

2. IT IS POSSIBLE TO HAVE THE 8K BOARDS CONTAIN THE LOWER MEMORY LOCATIONS IN A MIXED MEMORY SYSTEM. TO DO SO REQUIRES THAT THE SIZE OF THE SMALLER MEMORIES ADD UP TO AN INTEGRAL AMOUNT OF THE SIZE OF THE LARGER MEMORIES.



EXAMPLE 4



EXAMPLE 5

3. IN MIXED MEMORY SYSTEMS HAVING MORE THAN 128K WORDS OF MEMORY AND USING 8K MEMORY BOARDS, IT IS NECESSARY TO ASSIGN THE 8K BOARD NUMBERS SO THAT THE MEMORY ADDRESSES ASSOCIATED WITH THEM ARE NOT GREATER THAN 377777 (8) (IN THE LOWER 128K OF MEMORY).

4. THE INTERLEAVING JUMPERS ON MEMORIES USED IN A MIXED MEMORY SYSTEM ARE CONFIGURED IN THE SAME MANNER AS IS DESCRIBED IN THE MEMORY JUMPERING SECTION FOR SYSTEMS USING ONE SIZE OF MEMORY BOARDS.

5. THE FOLLOWING PROCEDURE IS RECOMMENDED FOR USE IN DETERMINING THE BOARD NUMBERS OF THE DIFFERENT SIZE MEMORY BOARDS USED IN A MIXED MEMORY SYSTEM.

a. DRAW A DIAGRAM LIKE THE ONE USED FOR THE TWO EXAMPLES BELOW.

b. FILL IN THE RIGHT HAND COLUMN OF THE DIAGRAM WITH THE SIZE OF EACH MEMORY BOARD USED IN YOUR SYSTEM. BEGIN AT THE BOTTOM AND FILL IN THE DIAGRAM CONTIGUOUSLY.

c. CIRCLE THE NUMBER IN ONE OF THE TWO LEFT HAND COLUMNS THAT CORRESPONDS TO THE SIZE OF MEMORY YOU HAVE PLACED IN THE RIGHT HAND COLUMN. THE CIRCLED NUMBERS ARE THE BOARD NUMBER TO BE ASSIGNED TO THE CORRESPONDING MEMORY BOARD.

d. REFER TO THE SECTION FOR SYSTEMS USING ONE SIZE MEMORY BOARDS TO SELECT THE JUMPER POSITIONS FOR THE MEMORY BOARD NUMBERS DETERMINED BY YOUR DIAGRAM.

BOARD NUMBERS ASSIGNED FOR		
16K BOARD	8K BOARD	BOARDS USED IN SYSTEM
15	*	
	*	
14	*	
	*	
13	*	
	*	
12	*	
	*	
11	*	
	*	
10	*	
	*	
9	*	
	*	
8	*	
	*	
7	(15)	8K BOARD
	(14)	8K BOARD
6	(13)	8K BOARD
	(12)	8K BOARD
(5)	11	16K BOARD
	10	
(4)	9	16k BOARD
	8	
(3)	7	16K BOARD
	6	
(2)	5	16K BOARD
	4	
(1)	3	16K BOARD
	2	
(0)	1	16K BOARD
	0	

EXAMPLE 6

BOARD NUMBERS ASSIGNED FOR		
16K BOARD	8K BOARD	BOARDS USED IN SYSTEM
(15)	*	
	*	
(14)	*	
	*	
(13)	*	16K BOARD
	*	
(12)	*	16K BOARD
	*	
(11)	*	16K BOARD
	*	
(10)	*	16K BOARD
	*	
(9)	*	16K BOARD
	*	
(8)	*	16K BOARD
	*	
(7)	15	16K BOARD
	14	
(6)	13	16K BOARD
	12	
(5)	11	16K BOARD
	10	
(4)	9	16K BOARD
	8	
(3)	7	16K BOARD
	6	
(2)	5	16K BOARD
	4	
1	(3)	8K BOARD
	(2)	8K BOARD
0	(1)	8K BOARD
	(0)	8K BOARD

EXAMPLE 7

TAILORING AND SWITCHES (CONT)

16K CORE MEMORIES

Interleaving and address selection is determined on ECLIPSE 16K core boards by switch positions. Proceed as follows to assign switch positions.

1. Assign each memory board a (unique) number from 0-15.

2. Assign from the table below the appropriate level of interleaving for each board.

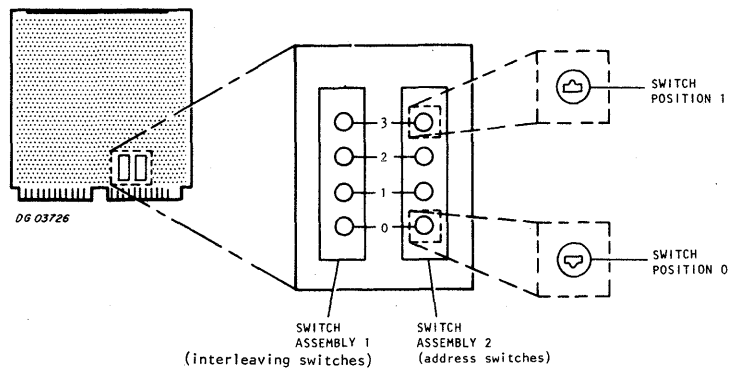
Assigned Levels of Interleaving		
Total Number of Memory Boards	Board Numbers	Assigned Level of Interleaving
1	0	none
2	0,1	2
3	0,1 2	2 none
4	0,1,2,3	4
5	0,1,2,3 4	4 none
6	0,1,2,3 4,5	4 2
7	0,1,2,3 4,5 6	4 2 none
8	0,1,2,3,4,5,6,7	8
9	0,1,2,3,4,5,6,7 8	8 none
10	0,1,2,3,4,5,6,7 8,9	8 2
11	0,1,2,3,4,5,6,7 8,9 10	8 2 none
12	0,1,2,3,4,5,6,7 8,9,10,11	8 4
13	0,1,2,3,4,5,6,7 8,9,10,11 12	8 4 none
14	0,1,2,3,4,5,6,7 8,9,10,11 12,13	8 4 2
15	0,1,2,3,4,5,6,7 8,9,10,11 12,13 14	8 4 2 none
16	0,1,2,3,4,5,6,7 8,9,10,11,12,13,14,15	8 8

DG-01183

3. Select the address switches for each board from the following table. The Memory Select Switch Positions figure illustrates where each switch is positioned on a board.

Address Switch Position for Each Board				
Board Number	Switch Assembly 2			
	Switch 3	Switch 2	Switch 1	Switch 0
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1

DG-02233



MEMORY SELECT SWITCH POSITIONS

The memory select switches as shown above, are arranged in two assemblies; four switches per assembly. Switches 0-3 in switch assembly 2 select the board number (0-15). Switches 0-2 in switch assembly 1 select the level of interleaving (none, 2-, 4-, or 8-way) for the board. Each switch has two positions 0 and 1. These positions are selected by inserting a screwdriver in the switch notch and rotating the switch.

4. Select the interleaving switches for each board from the following table.

SWITCH POSITIONS FOR INTERLEAVING				
Level of Interleaving	Switch Assembly 1			
	Switch 3	Switch 2	Switch 1	Switch 0
none	0	0	0	0
2-Way	0	0	0	1
4-Way	0	0	1	1
8-Way	0	1	1	1

DG-02194

32Kx21 BIT SC MEMORIES

Interleaving and address selection is determined on ECLIPSE 32K X 21 SC boards by jumper positions. Proceed as follows to assign jumper positions.

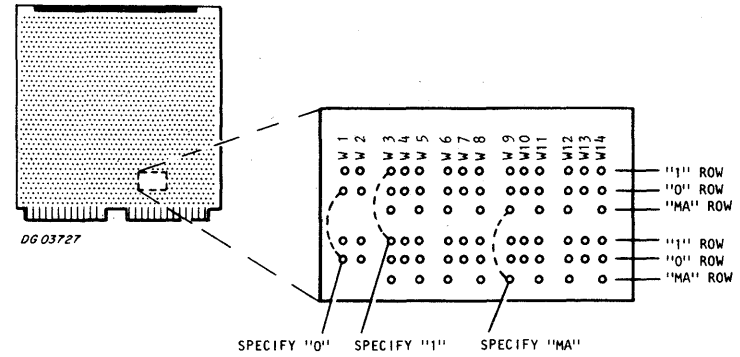
1. Assign each memory board a (unique) number from 0-7.

2. Assign each from the table below the appropriate level of interleaving for each board.

Assigned Levels of Interleaving		
Total Number of Memory Boards	Board Numbers	Assigned Level of Interleaving
1	0	none
2	0,1	2
3	0,1 2	2 none
4	0,1,2,3	4
5	0,1,2,3 4	4 none
6	0,1,2,3 4,5	4 2
7	0,1,2,3 4,5 6	4 2 none
8	0,1,2,3,4,5,6,7	8

3. Select the corresponding jumper-positions for each board from the table below: The "Memory Select Jumper Positions" figure illustrates where each jumper goes.

JUMPER POSITIONS FOR BOARD NUMBERS					
	Board Number Jumpers				
	Jumper Assignments				
Board Number	W1 to W4	W5	W7	W10	W13
0	0	MA	0	0	0
1	0	MA	0	0	1
2	0	MA	0	1	0
3	0	MA	0	1	1
4	0	MA	1	0	0
5	0	MA	1	0	1
6	0	MA	1	1	0
7	0	MA	1	1	1



MEMORY SELECT JUMPER POSITIONS

Each of the jumper positions crosses six rows. Specifying a "1" at a jumper position is done by inserting a jumper from the top "1" row to the bottom "1" row. A "0" is specified by inserting a jumper from the top "0" row to the bottom "0" row. A bit used in interleaving is specified by inserting a jumper from the top "MA" row to the bottom "MA" row. Examples of the three basic jumper positions are shown in the figure above.

4. Select the interleaving jumpers for each board from the following table, and install these into their corresponding MA positions illustrated in the above figure.

Level of Interleaving Jumpers	
Level of Interleaving	Jumpers Inserted
none	W8 W11 W14
2	W8 W11 W12
4	W8 W9 W12
8	W6 W9 W12

5. There remains open one jumper position in each of the following pairs: W6/W8, W9/W11 and W12/W14. Install these three jumpers on each board by matching them to jumpers already installed according to the table below.

Gate-Enable Jumpers	
Pair	Match
W6/W8	W7
W9/W11	W10
W12/W14	W13

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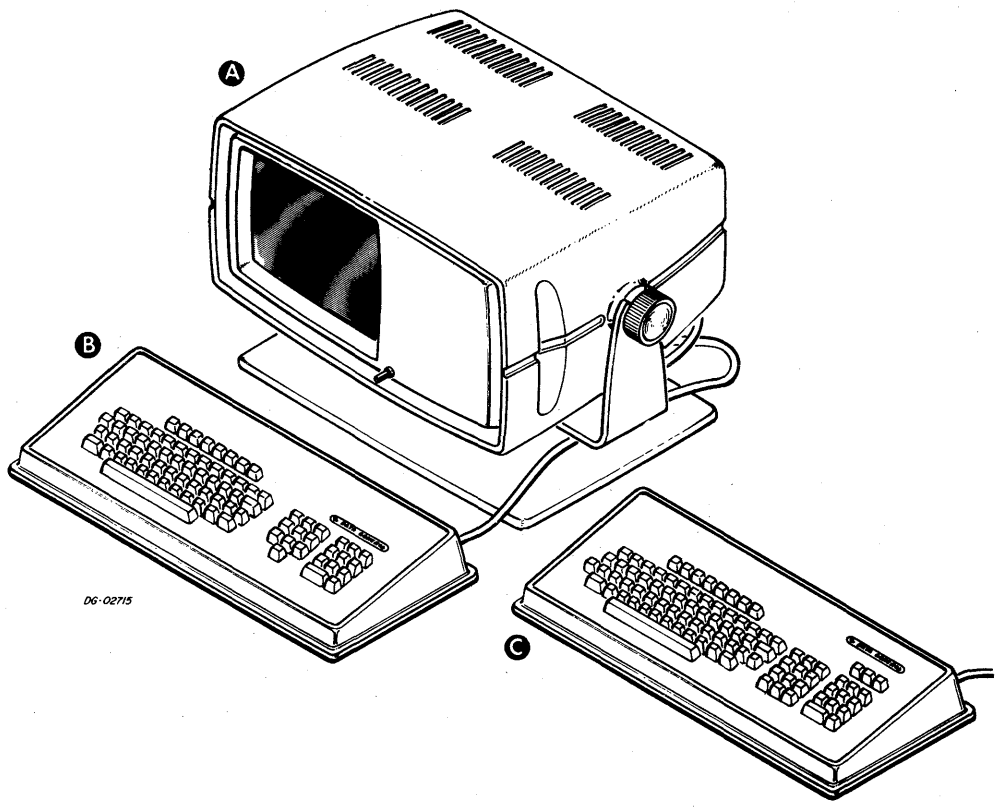
SUBSYSTEM COMPONENT BREAKDOWN



MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	DISPLAY	FREE-STANDING	
B	KEYBOARD BASIC	FREE-STANDING	CONNECTED TO DISPLAY BY INTEGRAL CABLE
C	KEYBOARD ENHANCED	FREE-STANDING	

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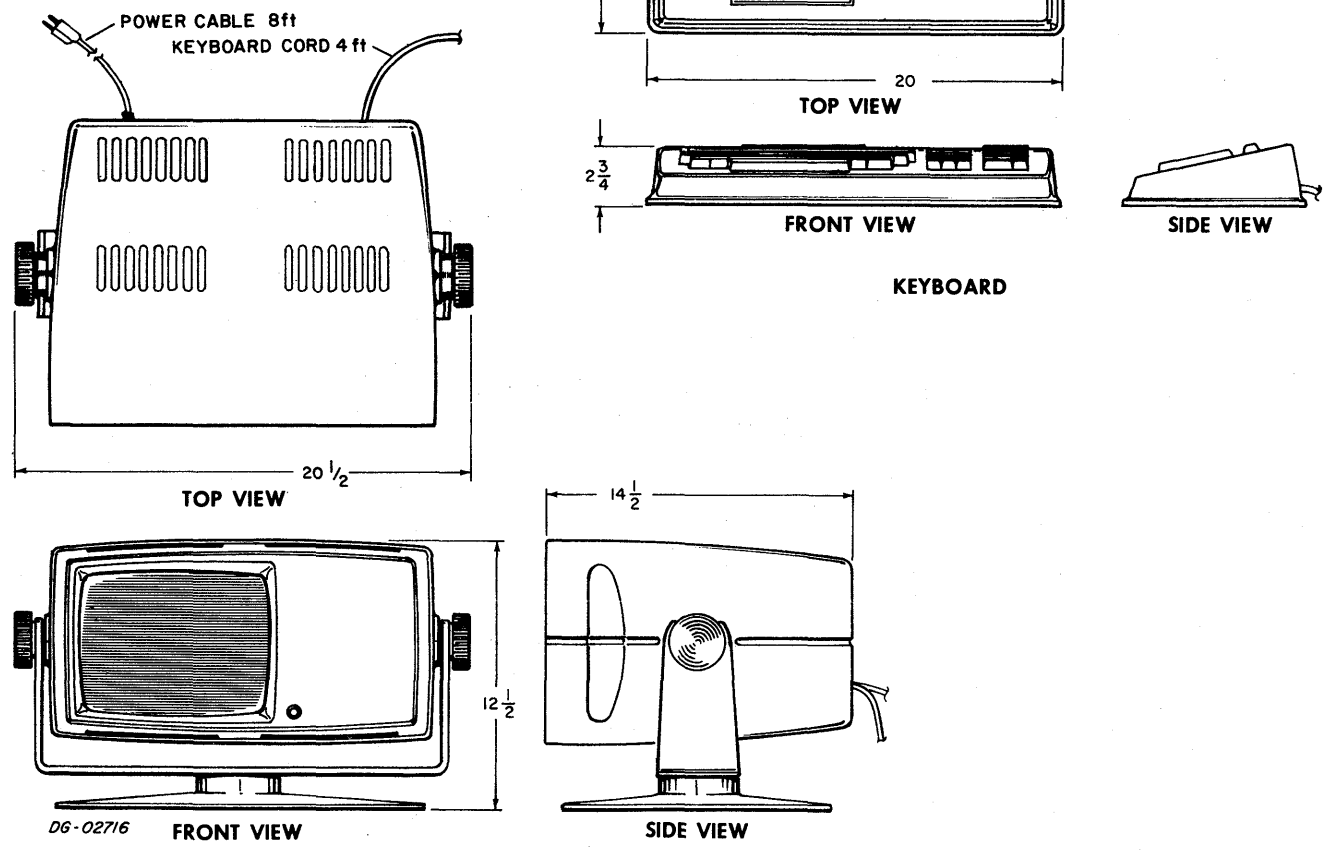
NOTE:
CONTROLLER BOARD REQUIRED

SPECIFICATIONS OF FREE-STANDING COMPONENTS

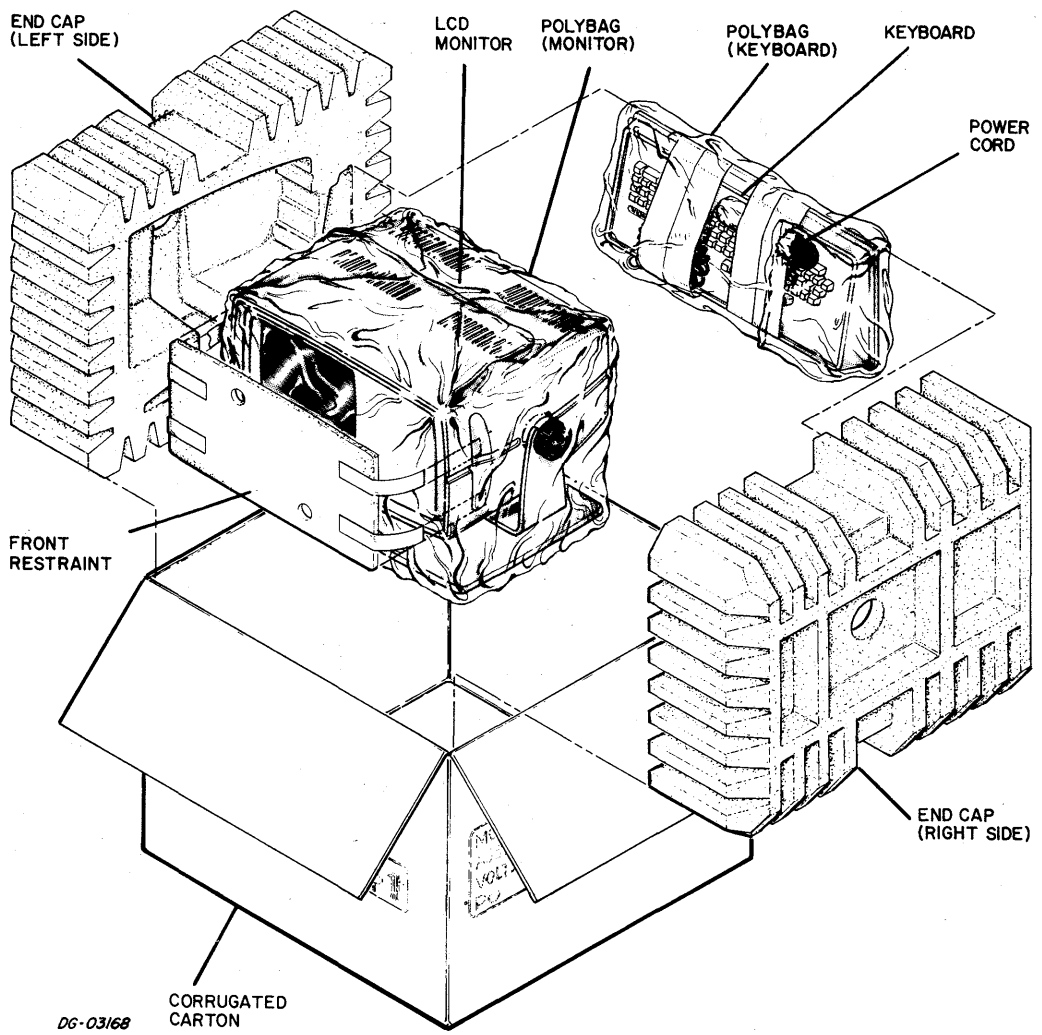
Item	Component	Number in Subsystem	Weight lbs / kg	Operating Humidity (Relative) min / max	Maximum Operating Temperature Component °F / °C	Maximum Operating Temperature Media °F / N A °C	Power Dissipation (Watts)	BTUs/hr (3.41 x Watts)	Primary Power Volts +10 -15%	Primary Power Hz	Primary Power Phase	Primary Power Cond	Primary Power Amps	Power Cable Length ft / m	Power Cable Connector	Power Drop Mating Power Receptacle	Wall Mating Power Receptacle
A	DISPLAY	1	45 / 20.4	10 / 95	113 / 45		100	341	100	50 ±2	1	3	1.0	8 / 2.4	NEMA 5-15P	NEMA 5-15R	NEMA 5-15R
		1	45 / 20.4	10 / 95	113 / 45		100	341	120	60 ±2	1	3	0.8	8 / 2.4	NEMA 5-15P	NEMA 5-15R	NEMA 5-15R
		1	45 / 20.4	10 / 95	113 / 45		100	341	220	50 ±2	1	3	0.5	8 / 2.4	NEMA 6-15P	NEMA 6-15R	NEMA 6-15R
		1	45 / 20.4	10 / 95	113 / 45		100	341	240	50 ±2	1	3	0.4	8 / 2.4	NEMA 6-15P	NEMA 6-15R	NEMA 6-15R
B	KEYBOARD BASIC	1	7 / 3.2	10 / 95	113 / 45												
C	KEYBOARD ENHANCED	1	7 / 3.2	10 / 95	113 / 45												

DG-01917



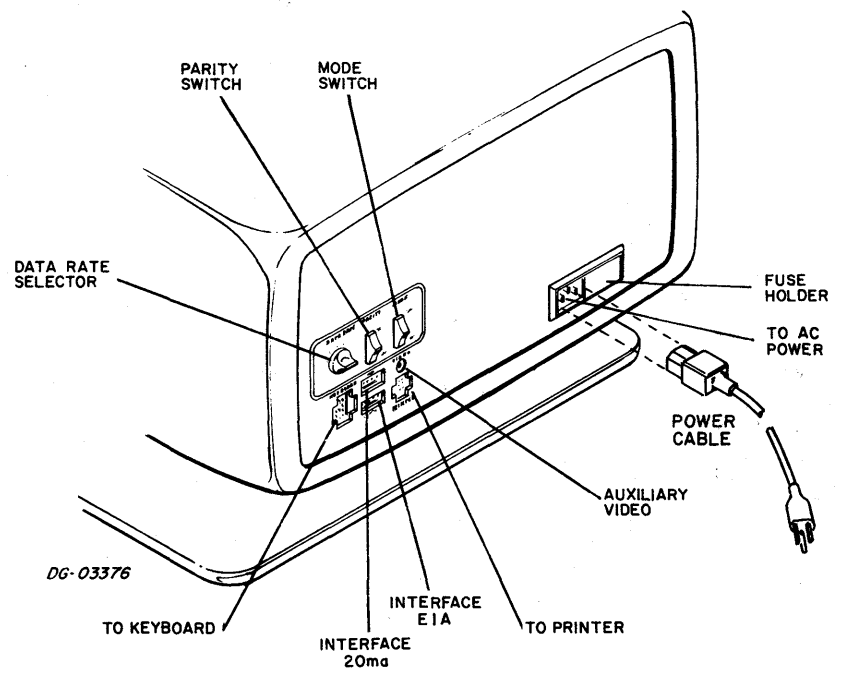
ALL DIMENSIONS IN INCHES

SHIPPING



SHIPPING AND PACKAGE DATA					
Outside Dimensions			Weight (Gross)	Volume	Density
Height	Width	Depth			
in. / cm	in. / cm	in. / cm	lbs. / kg	cu ft / cu m	lbs/cu ft / kg/cu m
19 1/2 / 50	25 1/2 / 65	25 / 64	57 / 26	7.2 / 0.2	8 / 130
SHIPPING SPECIFICATIONS			STORAGE SPECIFICATIONS		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-40 to 104 / -40 to +40	0%-80%	50,000ft	-40 to 104 / -40 to +40	0%-80%	90 DAYS

EXTERNAL CABLING



COMPUTERS	CABLE ASSY
NOVA 2,3,820, 1220,ECLIPSE	005-7428
NOVA 800,830, 840,1200	005-1077 005-7428 005-7426 005-7638
microNOVA	005-7428
NOT CPU SENSITIVE	005-7428 005-8181 005-7636 005-7637

INTERFACE REQUIREMENTS

20ma CURRENT LOOP INTERFACE

DEVICE CABLE PIN NUMBER	SIGNAL NAME
P1-1	DATA OUT
P1-2	DATA OUT
P1-3	DATA IN
P1-4	DATA IN

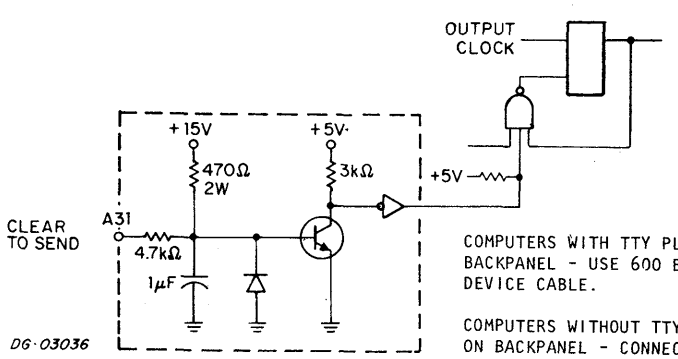
ELECTRICAL REQUIREMENTS

	TERMINAL TRANSMITTING	TERMINAL RECEIVING
MARK SENSE	I_{max} = 40mA	I = 10-60mA
SPACE SENSE	V_{max} =40V	I < 5mA

EIA INTERFACE (RS-232-C)

DEVICE CABLE PIN NUMBER	SIGNAL NAME (EIA STANDARD)	CIRCUIT NAME (EIA STANDARD)	PIN ASSIGNMENT (EIA STANDARD)
P2-1	TRANSMITTED DATA	BA	2
P2-4	RECEIVED DATA	BB	3
P2-5	DATA TERMINAL READY	CD	20
P2-6	SIGNAL GROUND	AB	7

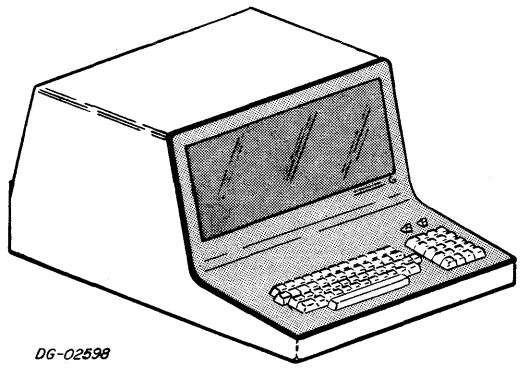
ADDITIONAL CIRCUIT REQUIRED ON MODEL 4010 CONTROLLER USED WITH MODELS 6052, 6053 OPERATING AT 600 BAUD.



COMPUTERS WITH TTY PLUG ON BACKPANEL - USE 600 BAUD DEVICE CABLE.

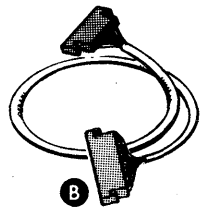
COMPUTERS WITHOUT TTY PLUG ON BACKPANEL - CONNECT INTERNAL CABLE WIRE TO A31 INSTEAD OF B69.

SUBSYSTEM COMPONENT BREAKDOWN

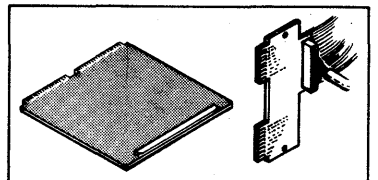


DG-02598

Ⓐ



Ⓑ



*SEE ASYNCHRONOUS CONTROLLER DATA SHEETS FOR I/O CONTROLLER AND INTERNAL CABLE. (CABLE IS REQUIRED EITHER FOR 2ND DISPLAY OR WHEN PREFERRED SLOT IS NOT USED.)

MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	DGC DISPLAY	FREE-STANDING	

DG-02672

CABLE

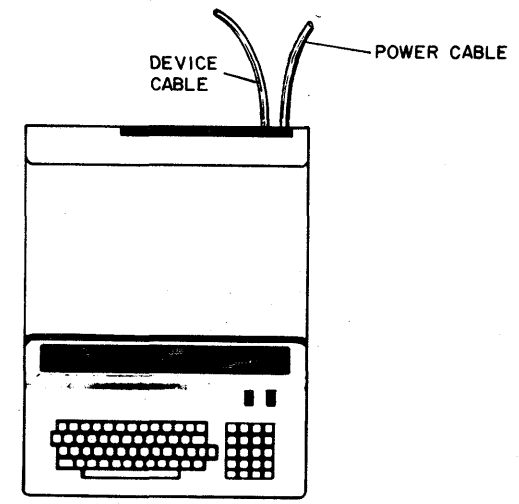
Item	Cable	Connecting	Max Allowed Lg ft / m	Notes
B	DEVICE CABLE (EIA) OR	COMPUTER and DISPLAY	50 / 15.3	
	DEVICE CABLE (20mA)	COMPUTER " DISPLAY	500 / 153	

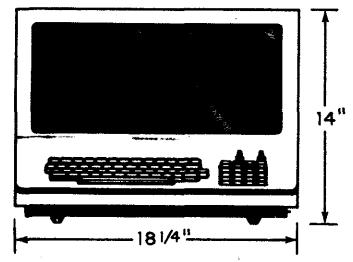
DG-02673

SPECIFICATIONS OF FREE-STANDING COMPONENTS

Item	Component	Number in Subsystem	Weight lbs / kg	Operating Humidity (Relative) min / max	Maximum Operating Temperature Component °F / °C	Maximum Operating Temperature Media °F / °C	Power Dissipation (Watts)	BTUs/hr (3.41 x Watts)	Primary Power Current (Amps)	Primary Power Voltage ±ΔV	Primary Power Frequency ±Δf	Power Cable Length ft / m	Power Cable Connector	Power Drop Mating Power Receptacle	Wall Mating Power Receptacle
A	DGC DISPLAY	1	35 / 77	10% / 95%	113 / 45	- / -	145	495	1.2	+10 120-20	50/60 ±1	6 / 1.8	5-15P (NEMA)	5-15R (NEMA)	5-15R (NEMA)
	DGC DISPLAY	1	35 / 77	10% / 95%	113 / 45	- / -	145	495	.6	+29 240-10	50±1	" / "	6-15P (NEMA)	6-15R (NEMA)	6-15R (NEMA)

DG-01917





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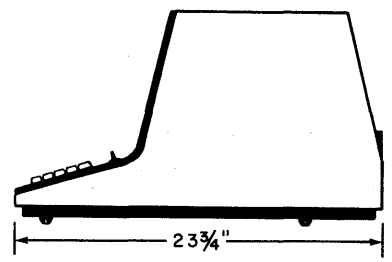
FRONT VIEW

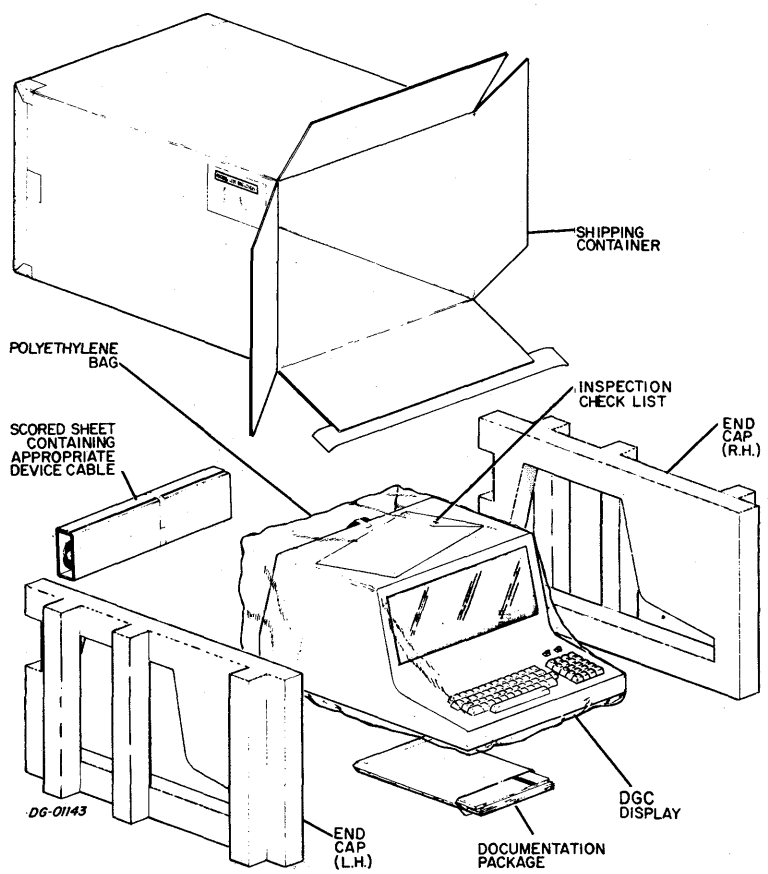


SIDE VIEW

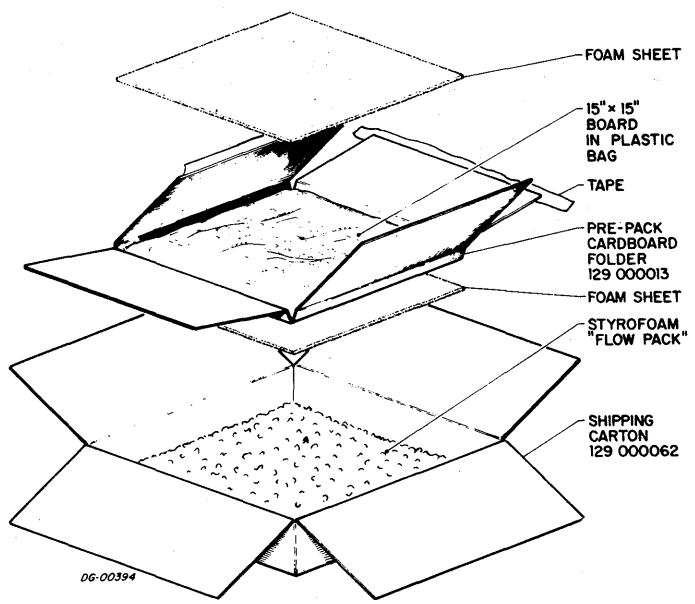
TOP VIEW

DGC DISPLAY

SHIPPING



SEPARATE BOARDS



Shipping Specifications		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude
-32 to +158 / -35 to +70	0–95%	50,000 ft.

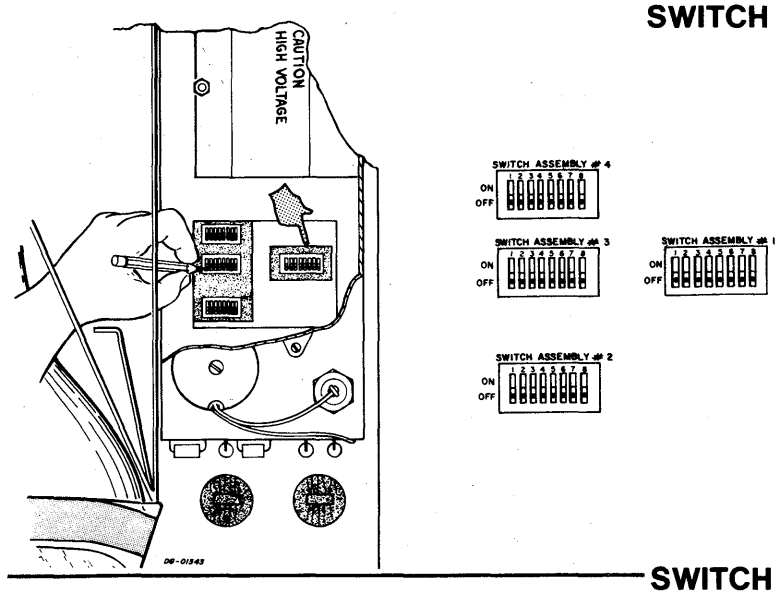
DG-02063

Storage Specifications		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-32 to +158 / -35 to +70	0–95%	90 days

DG-02062

SELECTION SWITCHES

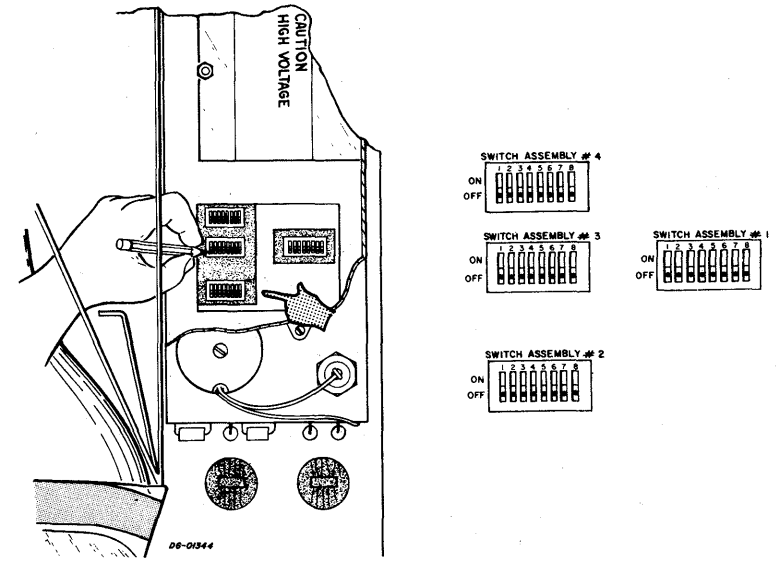
SWITCH ASSEMBLY #1



Switch Assembly #1	
Function	ON/OFF Position
Select the EIA voltage loop	ON position 3, 6, 7 OFF position 1, 2, 4, 5, 8
Select the 20mA current loop	ON position 1, 2, 5, 8 OFF position 3, 4, 6, 7
Select the 60mA current loop	ON position 1, 2, 4, 5, 8 OFF position 3, 6, 7

DG-01335

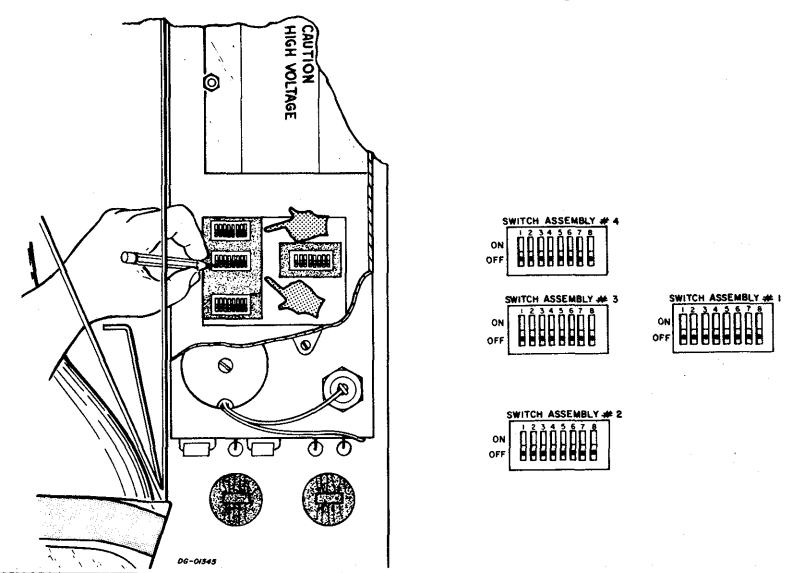
SWITCH ASSEMBLY #2



Switch Assembly #2	
Function	ON/OFF Position
Select operation at both 50Hz and 60Hz	ON position 1
Select odd parity	ON position 3
Select even parity	OFF position 3
Select 5 data bits per character for code	ON position 4, 5
Select 6 data bits per character for code	ON position 5 OFF position 4
Select 7 data bits per character for code	ON position 4 OFF position 5
Select 8 data bits per character for code	OFF position 4, 5
Select 1 stop bit	ON position 6
Select 2 stop bit	OFF position 6
Eliminate the parity bit in transmitted and received codes (mark state for parity)	OFF position 7
Enable switch settings	OFF position 2, 8
Note: The display is designed to operate with 7 data bits per character.	

DG-01336

SWITCH ASSEMBLY #3 and #4



Switch Assemblies #3 and #4			
Function	ON/OFF Position	Switch #3	Switch #4
Select 110 baud rate	ON position OFF position	6, 8 1, 2, 3, 4, 5, 7	3, 6 1, 2, 4, 5, 7, 8
Select 150 baud rate	ON position OFF position	5, 6, 8 1, 2, 3, 4, 7	5 1, 2, 3, 4, 6, 7, 8
Select 300 baud rate	ON position OFF position	4, 8 1, 2, 3, 5, 6, 7	4, 6 1, 2, 3, 5, 7, 8
Select 600 baud rate	ON position OFF position	1, 4, 6 2, 3, 5, 7, 8	4, 5, 6 1, 2, 3, 7, 8
Select 1200 baud rate	ON position OFF position	1, 6 2, 3, 4, 5, 7, 8	6 1, 2, 3, 4, 5, 7, 8
Select 2400 baud rate	ON position OFF position	6, 7 1, 2, 3, 4, 5, 8	6 1, 2, 3, 4, 5, 7, 8
Select 4800 baud rate	ON position OFF position	1, 4, 5 2, 3, 6, 7, 8	4 1, 2, 3, 5, 6, 7, 8

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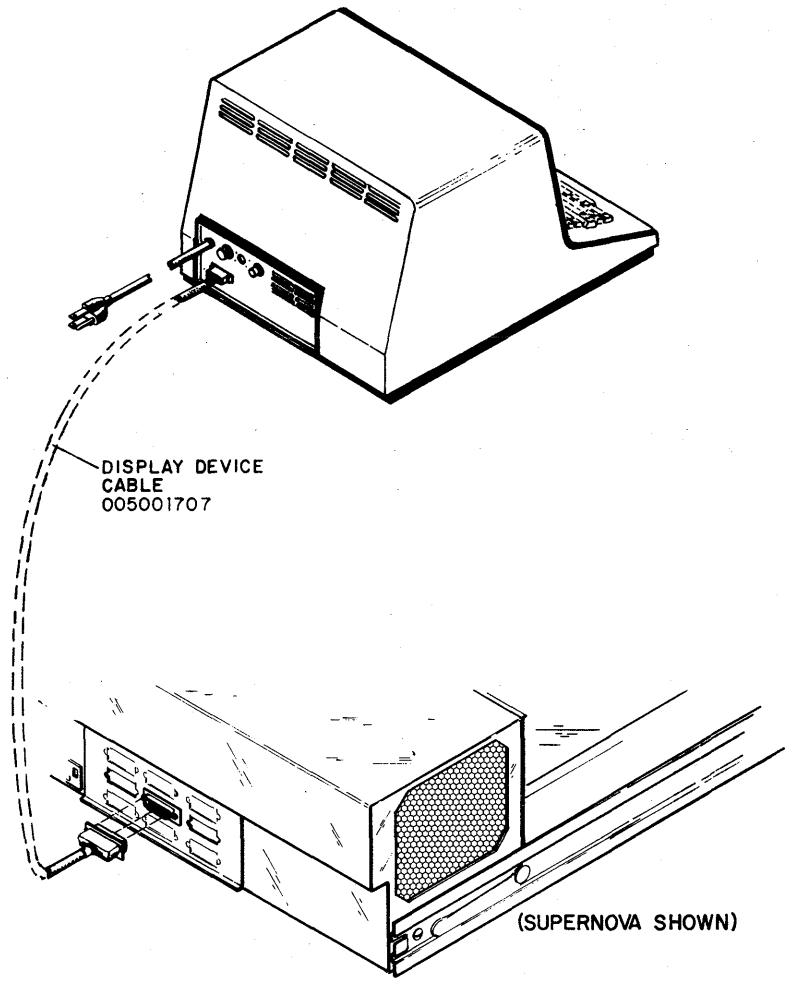
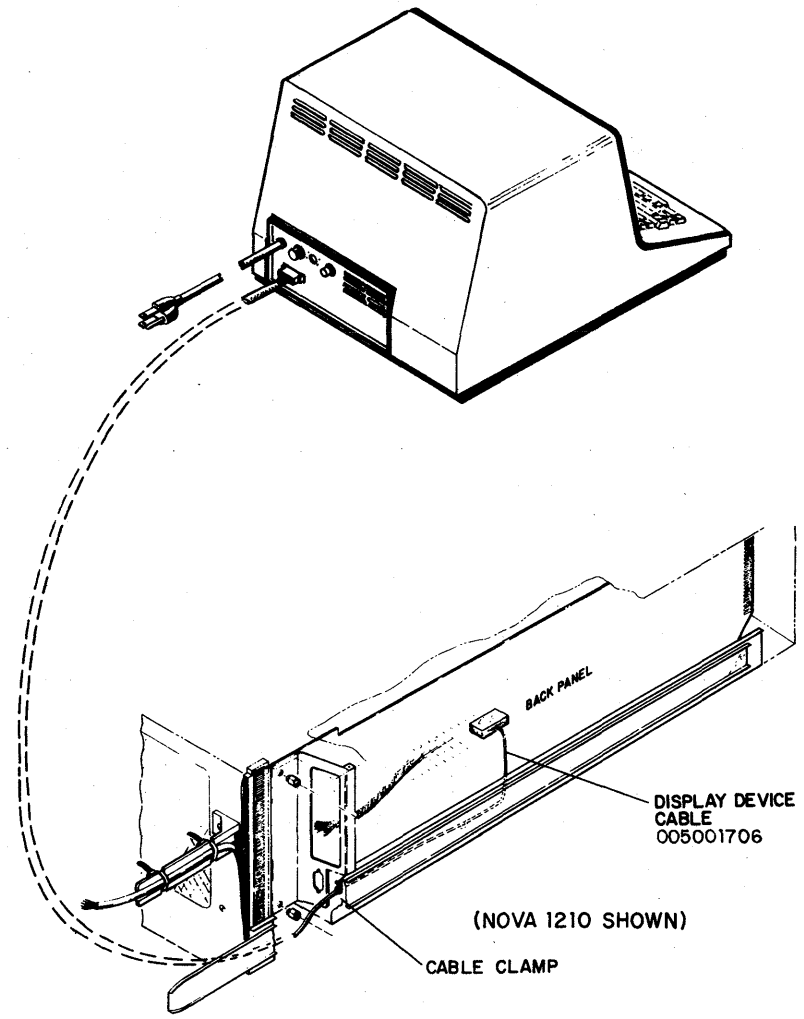
EXTERNAL CABLING

NOVA AND SUPERNOVA



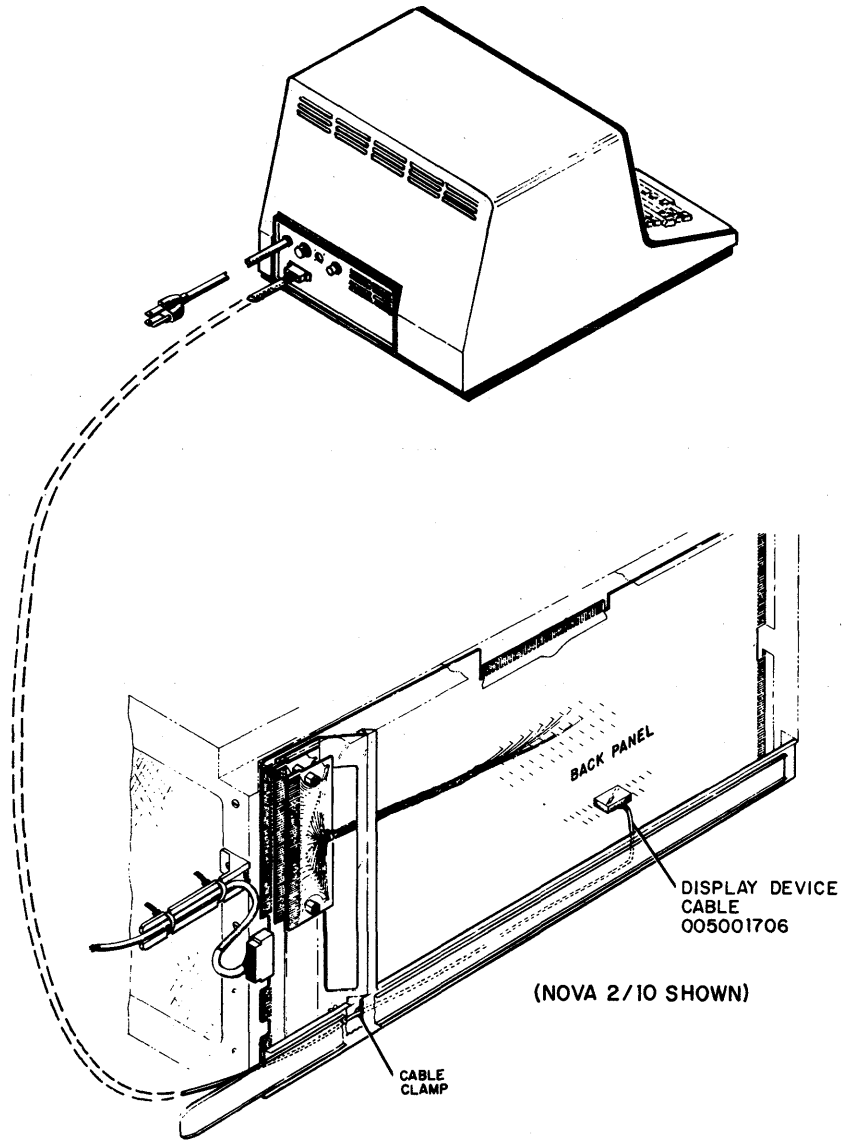
DG-02599

NOVA 2/4, 3/4, AND 1210 COMPUTERS BACK PANEL



DG-02600

NOVA 820,1220,2/10,3/12, AND ECLIPSE LINE COMPUTERS BACK PANEL



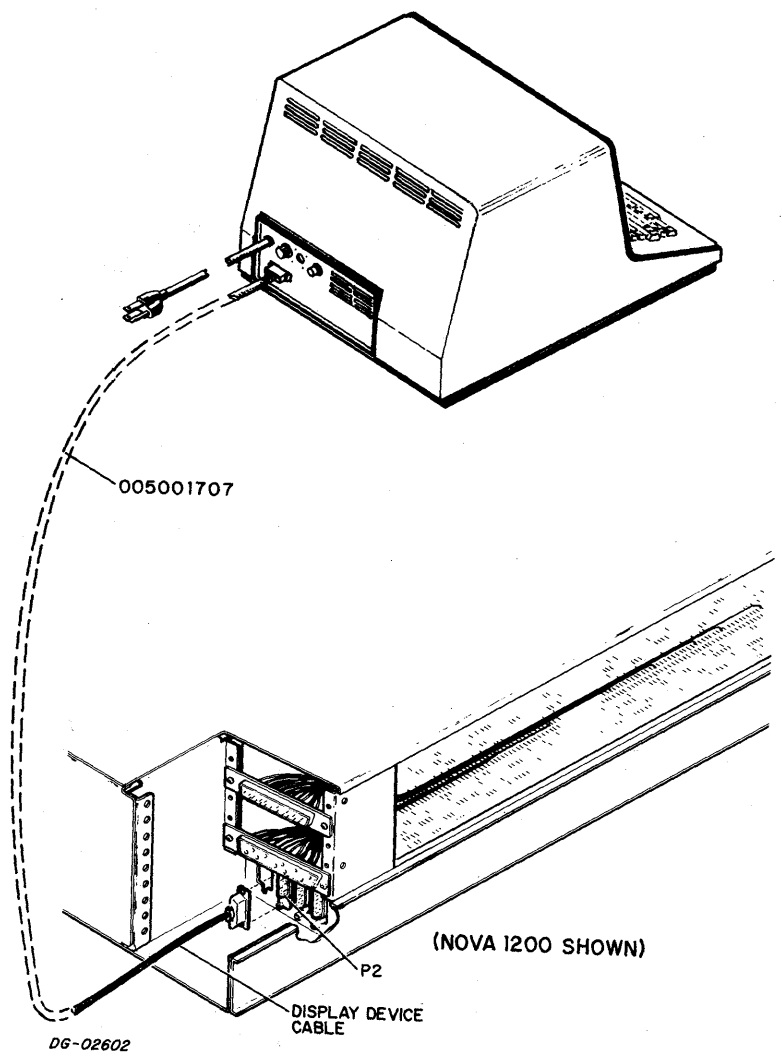
DG-02601

THE CABLE ASSEMBLY IS DETERMINED NOT ONLY BY CPU TYPE BUT BY INTERFACE TYPE.

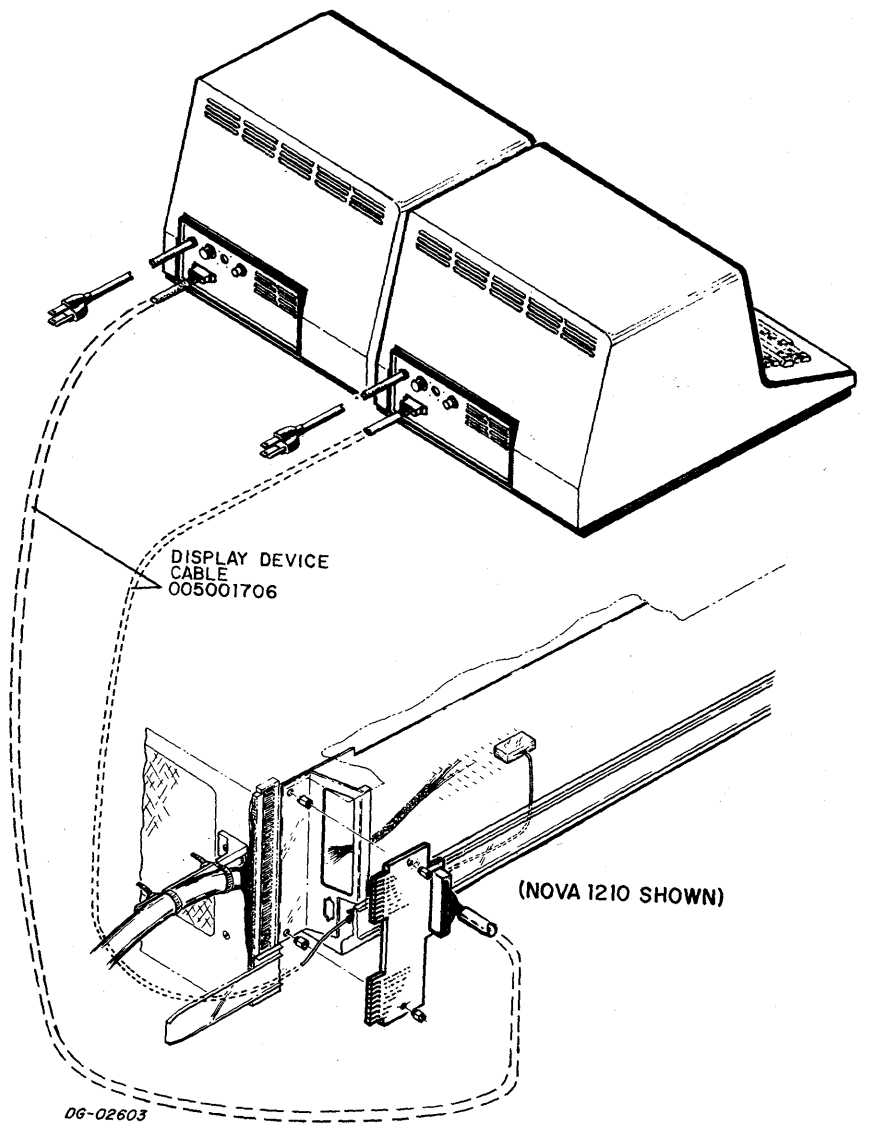
	microNOVA	NOVA 800/7, 800/17, 1200/7, 1200/17, 830, 840	NOVA 3/4, 3/12, 2/4, 2/10, 820/10, S and C series, 1210/4, 1220/10	NOT CPU SENSITIVE
6012		005 001707	005 001706	
6012-A		005 001708		
6012-B				005 001706
6012-C		005 001707	005 001706	
6012-D				005 001706
6012-E				005 005272
6012-F		005 005803		005 005273
6012-G				
6012-H	005 008165			

EXTERNAL CABLING (Cont)

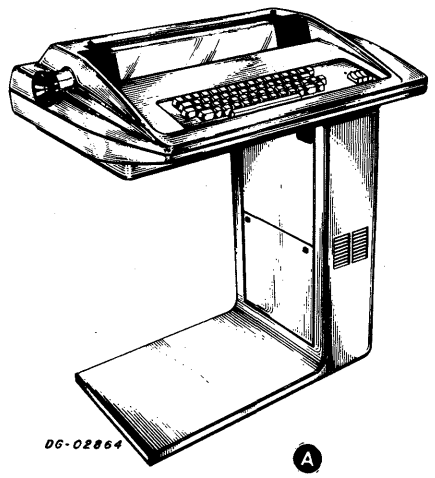
NOVA 800,830, 840 AND 1200 COMPUTERS BACK PANEL

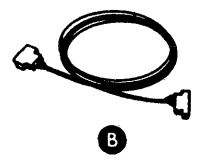


SECOND TERMINAL ON A PADDLEBOARD TYPE COMPUTER



SUBSYSTEM COMPONENT BREAKDOWN





MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	DATA TERMINAL	FREE-STANDING	PLUG-COMPATIBLE WITH 20mA OR EIA INTERFACE

DG-02672

CABLE

Item	Cable	Connecting	Max Allowed Lg ft / m	Notes
B	DEVICE CABLE (20mA)	20mA INTFCE " CONNECTOR " DATA TERMINAL	1500 / 457	DEV CABLE VARIES WITH:
	DEVICE CABLE (EIA)	EIA INTFCE " CONNECTOR " DATA TERMINAL	20 / 6.1	1) COMPUTER
		"		2) BAUD RATE 3) INTERFACE

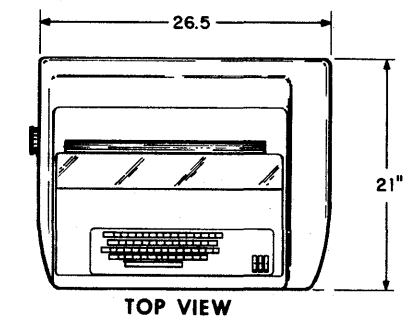
DG-02673

SPECIFICATIONS OF FREE-STANDING COMPONENTS

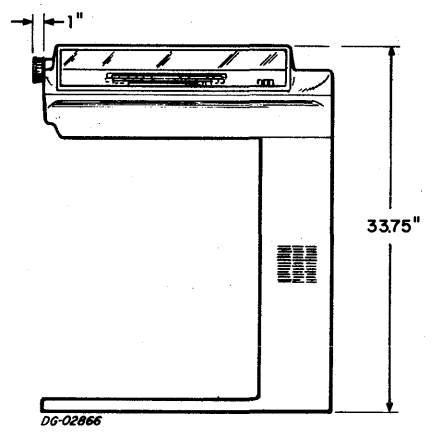
Item	Component	Number in Subsystem	Weight lbs / kg	Operating Humidity (Relative) min / max	Maximum Operating Temperature Component °F / °C	Maximum Operating Temperature Media °F / °C	Power Dissipation (Watts)	BTUs/hr (3.41 x Watts)	Primary Power Current (Amps)	Primary Power Voltage ± ΔV	Primary Power Frequency	Power Cable Length ft / m	Power Cable Connector	Power Drop Mating Power Receptacle	Wall Mating Power Receptacle
A	100V	N/A	60 / 27	10% / 90%	104* / 40*	N/A	200	682	2.0	100 +10 −15	47-63	6 / 1.82	5-15P	5-15R	5-15R
	120V	N/A							1.7	120 +12 −18	"	6 / 1.82	5-15P	5-15R	5-15R
	220V	N/A							0.9	220 +22 −33	"	6 / 1.82	6-15P	6-15R	6-15R
	240V	N/A							0.8	240 +24 −36	"	6 / 1.82	6-15P	6-15R	6-15R

DG-01917

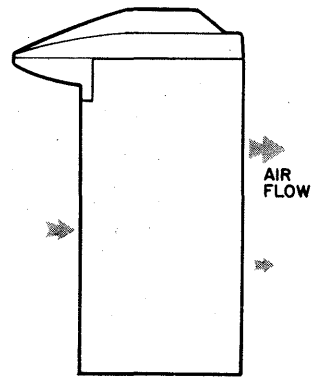
*MINIMUM OPERATING TEMPERATURE: 50°F/10°C



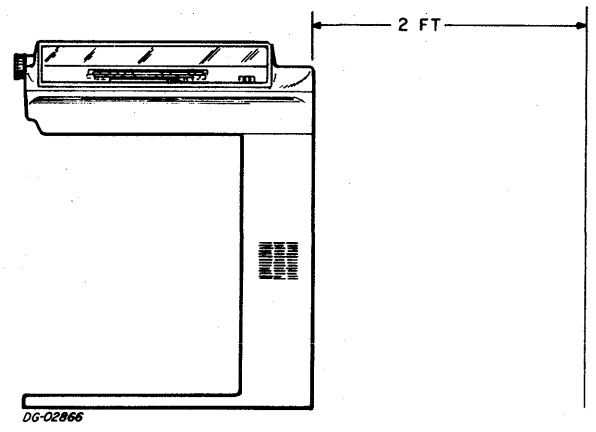
TOP VIEW



FRONT VIEW



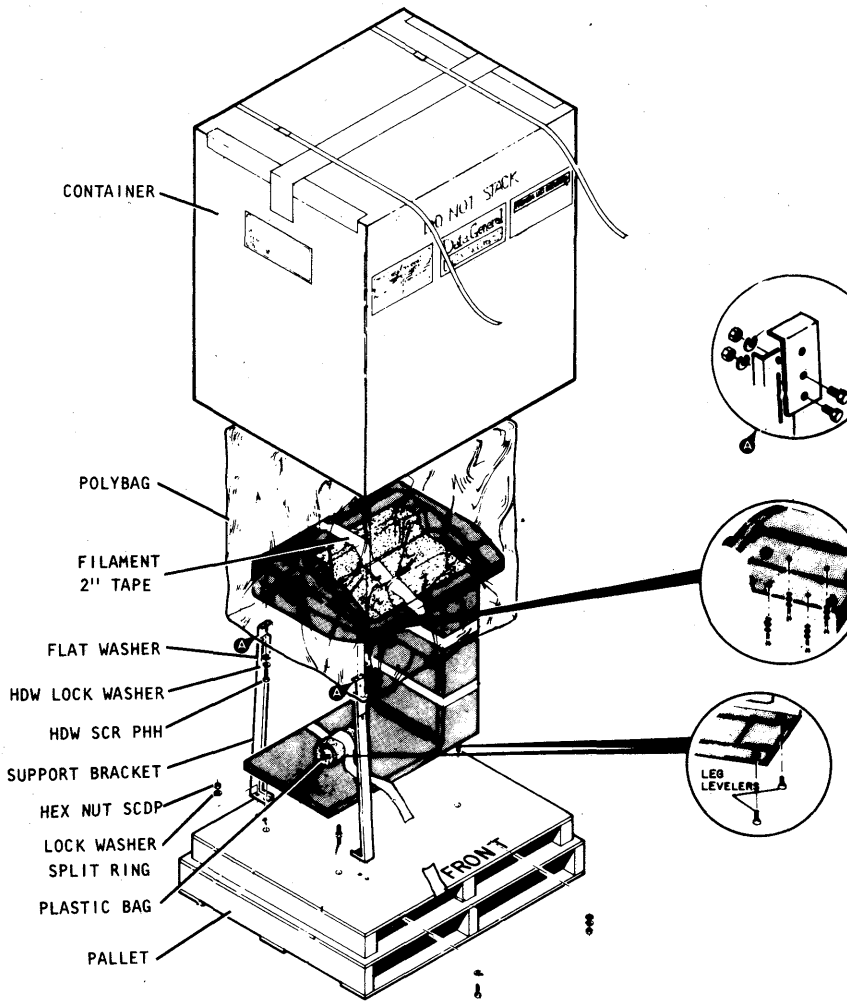
SIDE VIEW



MINIMUM SERVICE CLEARANCE

NOTE: REAR OF UNIT MUST BE AT LEAST 6" FROM WALL OR OTHER OBSTRUCTION TO PROVIDE COOLING AIR FLOW.

SHIPPING



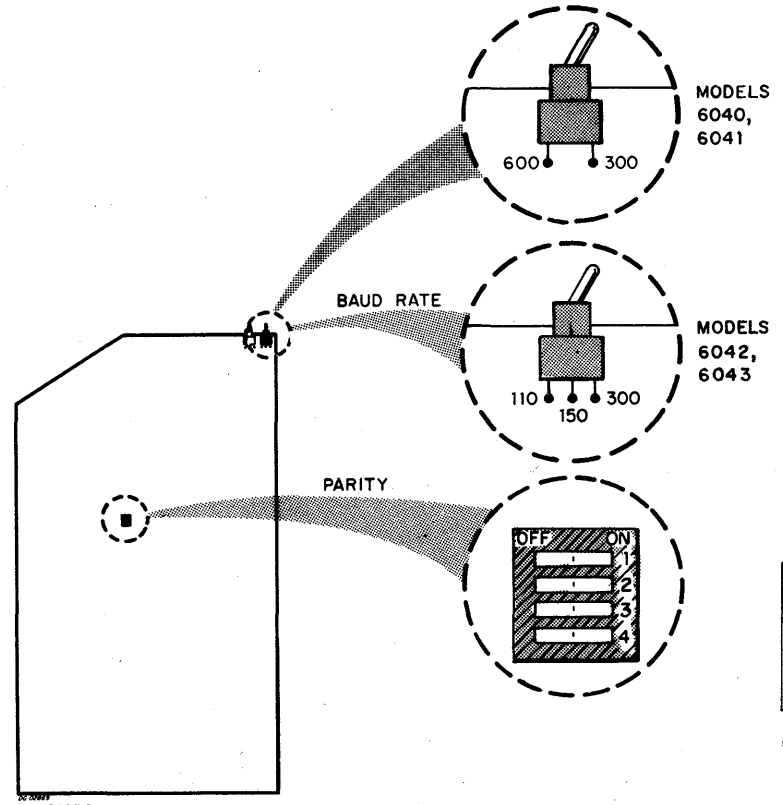
DG-03289

SHIPPING AND PACKAGE DATA					
Outside Dimensions			Weight (Gross)	Volume	Density
Length	Width	Depth			
in. / cm	in. / cm	in. / cm	lbs. / kg	cu ft. / cu m	lbs/cu ft. / kg/cu m
37 / 94	32.5 / 82.6	50 / 127	165 / 74	34.8 / .98	3.7 / 60.2
SHIPPING SPECIFICATIONS			STORAGE SPECIFICATIONS		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-40 +160 / -49 +71	0%/80%	50,000ft. 15,200m	-40 +160 / -40 +71	0%/80%	90 days

DG-03224

TAILORING

SWITCHES



DG-02930

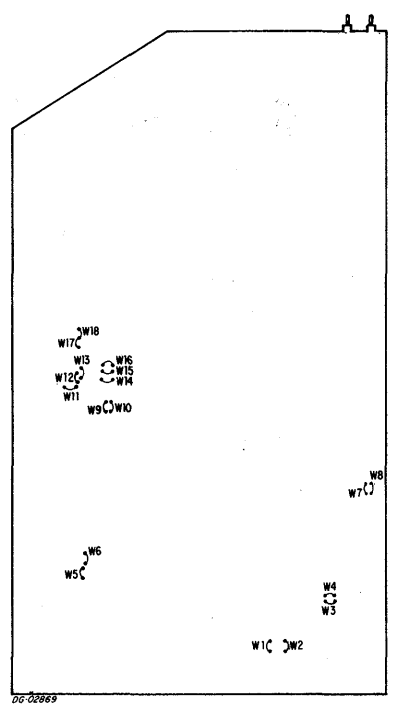
REF. DGC BOARD No. 107 000609 rev.00

PARITY	SWITCH CONFIGURATION 1	2	3	4
EVEN	OFF	ON	RESERVED FOR FUTURE USE.	
ODD	ON	ON		
NONE	X	OFF		

"X" INDICATES THAT SETTING IS IRRELEVANT.

NOTE: STANDARD SWITCH CONFIGURATION IS FOR EVEN PARITY OPERATION.

JUMPERS



DG-02869

MODELS 6042, 6043 (110, 150 or300 BAUD)

INTERFACE		20mA			EIA		
NUMBER OF PRINTABLE CHARACTERS		64	95	124	64	95	124
JUMPER POSITIONS *	W1	1	1	1	1	1	1
	W2	0	0	0	0	0	0
	W3	1	1	1	0	0	0
	W4	0	0	0	1	1	1
	W5	0	0	0	0	0	0
	W6	1	1	1	1	1	1
	W7	0	0	0	1	1	1
	W8	1	1	1	0	0	0
	W9	0	1	1	0	1	1
	W10	1	0	0	1	0	0
	W11	1	1	1	1	1	1
	W12	0	0	0	0	0	0
	W13	0	0	0	0	0	0
	W14	1	1	1	1	1	1
	W15	0	0	0	0	0	0
	W16	1	1	1	1	1	1
	W17	0	0	1	0	1	1
	W18	1	1	0	1	1	0

* 1 INDICATES JUMPER WIRE IN
0 INDICATES JUMPER WIRE OUT

NOTE: STANDARD JUMPER CONFIGURATION IS FOR 95 CHARACTER, 20mA OPERATION.

MODELS 6040, 6041 (300 or 600 BAUD)

INTERFACE		20mA			EIA		
NUMBER OF PRINTABLE CHARACTERS		64	95	124	64	95	124
JUMPER POSITIONS *	W1	0	0	0	0	0	0
	W2	1	1	1	1	1	1
	W3	1	1	1	0	0	0
	W4	0	0	0	1	1	1
	W5	1	1	1	1	1	1
	W6	0	0	0	0	0	0
	W7	0	0	0	1	1	1
	W8	1	1	1	0	0	0
	W9	0	1	1	0	1	1
	W10	1	0	0	1	0	0
	W11	0	1	0	0	0	0
	W12	1	1	1	1	1	1
	W13	1	1	1	1	1	1
	W14	0	0	0	0	0	0
	W15	1	1	1	1	1	1
	W16	0	0	0	0	0	0
	W17	0	0	1	0	0	1
	W18	1	1	0	1	1	0

* 1 INDICATES JUMPER WIRE IN
0 INDICATES JUMPER WIRE OUT

NOTE: STANDARD JUMPER CONFIGURATION IS FOR 95 CHARACTER, 20mA OPERATION.

REF. DGC BOARD No. 107 000609 rev.00

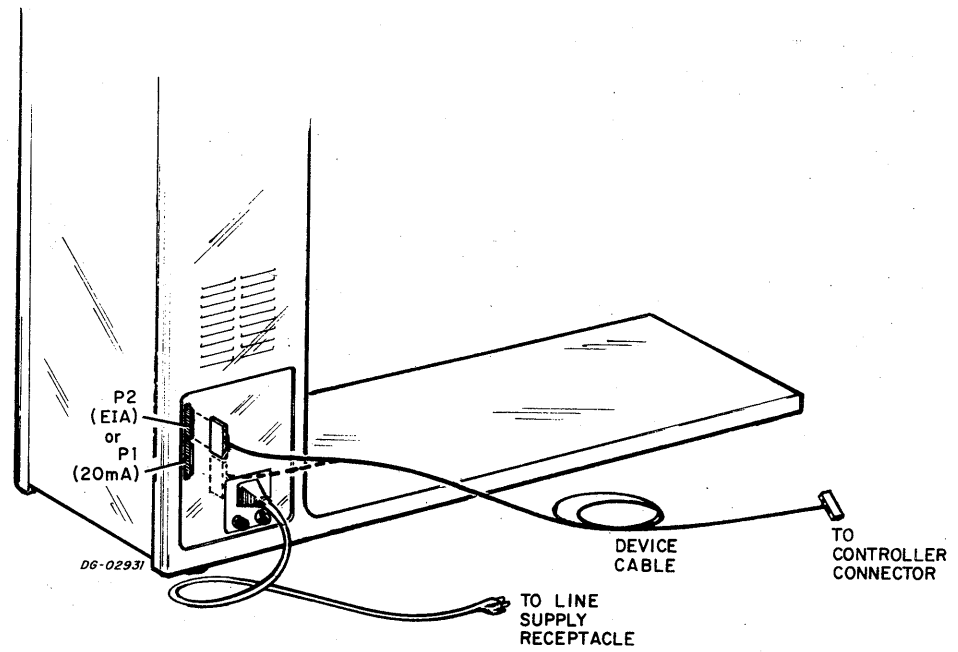
EXTERNAL CABLING

6040,6041
(60 CPS)

COMPUTERS	CABLE ASSY	ALPHA DESIGNATOR
NOVA 2,3,820, 1220,ECLIPSE	005-7888	A
NOVA 800,830, 840,1200	005-7889	A,H
microNOVA	005-7888	I
NOT CPU SENSITIVE	005-8181 005-7636 005-7637	F G J

6042,6043
(30 CPS)

COMPUTERS	CABLE ASSY	ALPHA DESIGNATOR
NOVA 2,3,820, 1220,ECLIPSE	005-7428	A,D
NOVA 800,830, 840,1200	005-7426 005-1077 005-7428 005-7636	A B D H
microNOVA	005-7428	I
NOT CPU SENSITIVE	005-7428 005-8181 005-7636 005-7637	C,E F G J



INTERFACE REQUIREMENTS

20mA CURRENT LOOP INTERFACE

DEVICE CABLE PIN NUMBER	SIGNAL NAME
P1-1	DATA OUT
P1-2	DATA OUT
P1-3	DATA IN
P1-4	DATA IN

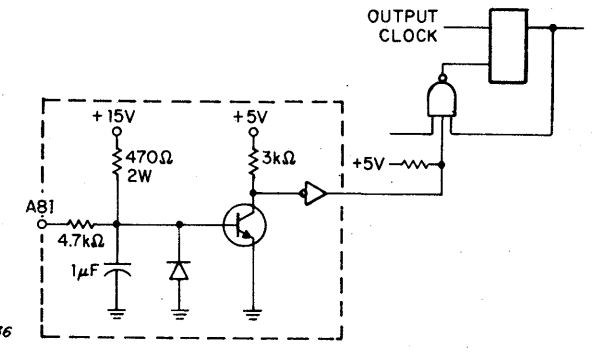
ELECTRICAL REQUIREMENTS

	TERMINAL TRANSMITTING	TERMINAL RECEIVING
MARK SENSE	V_{max}= 40V I_{max}= 40mA	I = 10-60mA
SPACE SENSE	V_{max}=40V	I < 5mA

EIA INTERFACE (RS-232-C)

DEVICE CABLE PIN NUMBER	SIGNAL NAME (EIA STANDARD)	CIRCUIT NAME (EIA STANDARD)	PIN ASSIGNMENT (EIA STANDARD)
P2-1	TRANSMITTED DATA	BA	2
P2-4	RECEIVED DATA	BB	3
P2-5	DATA TERMINAL READY	CD	20
P2-6	SIGNAL GROUND	AB	7

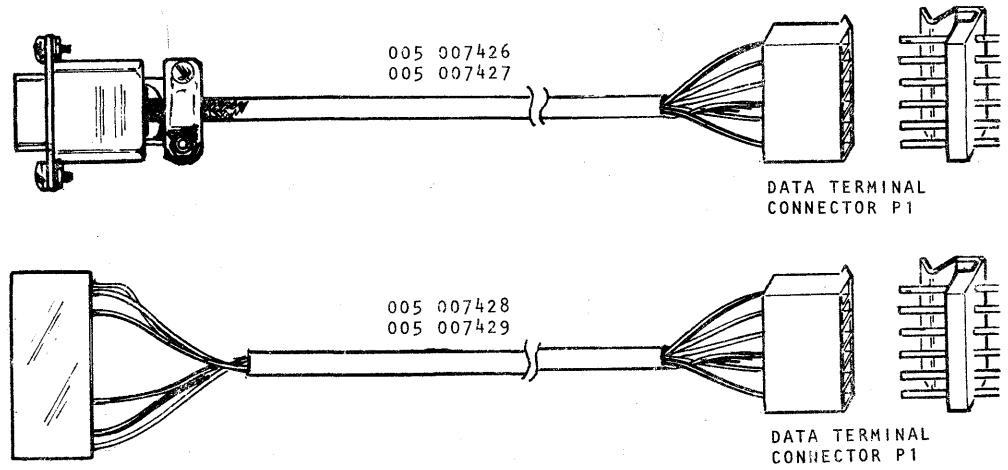
ADDITIONAL CIRCUIT REQUIRED ON MODEL 4010 CONTROLLER USED WITH MODELS 6040, 6041 OPERATING AT 600 BAUD.



COMPUTERS WITH TTY PLUG ON BACKPANEL - USE 600 BAUD DEVICE CABLE.
COMPUTERS WITHOUT TTY PLUG ON BACKPANEL - CONNECT BACKPANEL PIN A81 TO SOCKET CONNECTOR PIN 5.
USE 600-BAUD DEVICE CABLE.

DEVICE CABLE (20mA)

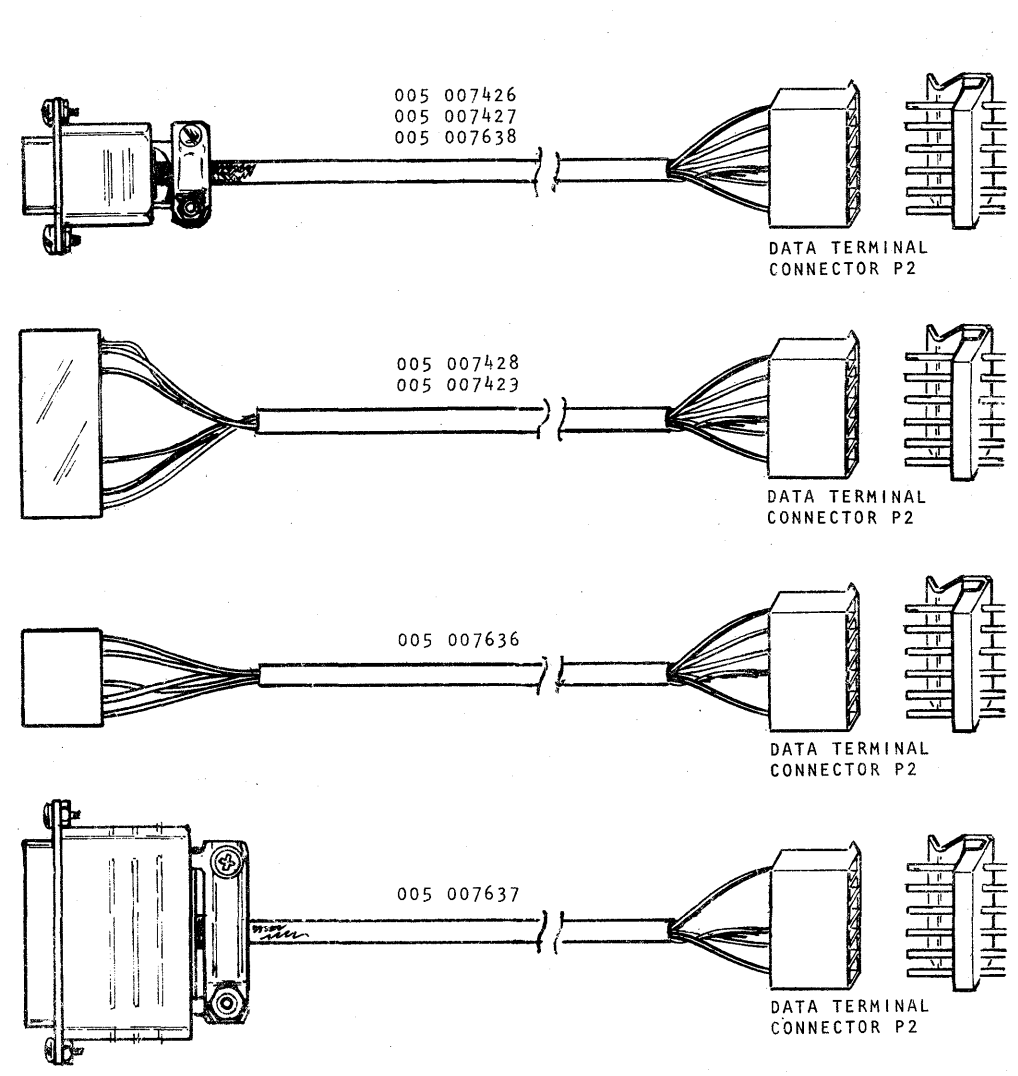
CONTROLLER



PART NO.	CONNECTING			NOTES
005 007426	9-CONDUCTOR SOCKET CONNECTOR	AND	DATA TERMINAL CONNECTOR P1	USE WITH ANY DGC 20mA INTERFACE EXCEPT MODEL 4010 OPERATING AT 110 BAUD.
005 007427	9-CONDUCTOR SOCKET CONNECTOR	AND	DATA TERMINAL CONNECTOR P1	USE WITH MODEL 4010 INTERFACE OPERATING AT 110 BAUD.
005 007428	12-CONDUCTOR PIN CONNECTOR	AND	DATA TERMINAL CONNECTOR P1	USE WITH ANY DGC 20mA INTERFACE EXCEPT MODEL 4010 OPERATING AT 110 BAUD.
005 007429	12-CONDUCTOR PIN CONNECTOR	AND	DATA TERMINAL CONNECTOR P1	USE WITH MODEL 4010 INTERFACE OPERATING AT 110 BAUD

DEVICE CABLE (EIA)

CONTROLLER



PART NO.	CONNECTING			NOTES
005 007426	9-CONDUCTOR SOCKET CONNECTOR	AND	DATA TERMINAL CONNECTOR P2	USE WITH ANY DGC EIA INTERFACE EXCEPT MODEL 4023 OPERATING AT 110 BAUD AND MODELS 4062, 4029, AND 4063.
005 007427	9-CONDUCTOR SOCKET CONNECTOR	AND	DATA TERMINAL CONNECTOR P2	USE WITH MODEL 4023 INTERFACE OPERATING AT 110 BAUD.
005 007638	9-CONDUCTOR SOCKET CONNECTOR	AND	DATA TERMINAL CONNECTOR P2	USE WITH MODEL 4062 INTERFACE.
005 007428	12-CONDUCTOR PIN CONNECTOR	AND	DATA TERMINAL CONNECTOR P2	USE WITH ANY DGC EIA INTERFACE EXCEPT MODEL 4062 AND MODEL 4023 OPERATING AT 110 BAUD.
005 007429	12-CONDUCTOR PIN CONNECTOR	AND	DATA TERMINAL CONNECTOR P2	USE WITH MODEL 4023 INTERFACE OPERATING AT 110 BAUD.
005 007636	6-CONDUCTOR PIN CONNECTOR	AND	DATA TERMINAL CONNECTOR P2	USE WITH 16-LINE ASYNCHRONOUS LINE MULTIPLEXORS, MODELS 4257, 4258, 4260, AND 4261.
005 007637	25-CONDUCTOR SOCKET CONNECTOR (EIA STANDARD)	AND	DATA TERMINAL CONNECTOR P2	USE WITH EIA STANDARD MODEM INTERFACE.

DEVICE CABLES, PIN ASSIGNMENTS

005 007426

TERMINAL CONNECTOR		WIRE 109-086	CONTROLLER CONNECTOR	I/O CABLE FOR:
6-PIN MOLEX (1) 111-565 (5) 111-578 PINS	TTI+/TX DATA TTI- TTO+ TTO-/RC DATA GND	1→3 2→4 3→7 4→6 5 6→9	9-PIN CANNON (1) PLUG: 111-331 (1) SHELL: 111-019 (2) SCREWS: 111-023 (5) PINS: 111-146	NOVA 800, 1200, 1200 JUMBO, 830, 840, MODELS 4010, 4023 4060, 4061/4050, 4075 EXCEPT 10 CPS WITH 4010, 4023

005 007427

TERMINAL CONNECTOR		WIRE 109-086	CONTROLLER CONNECTOR	I/O CABLE FOR:
6-PIN MOLEX (1) 111-565 (5) 111-578 PINS	TTI+/TX DATA TTI- TTO+ TTO-/RC DATA GND	1→3 2→4 3→7 4→6 5→8 6→9	9-PIN CANNON (1) PLUG: 111-331 (1) SHELL: 111-019 (2) SCREWS: 111-023 (6) PINS: 111-146	NOVA 800, 1200, 1200 JUMBO, 830, 840 MODELS 4010, 4023 10 cps

005 007428

TERMINAL CONNECTOR		WIRE 109-086	CONTROLLER CONNECTOR	I/O CABLE FOR:
6-PIN MOLEX (1) 111-565 (6) 111-578 PINS	TTI+/TX DATA TTI- TTO+ TTO-/RC DATA DTR GND	1→11 2→12 3→1 4→2 5→7 6→9 KEY→10	12-PIN AMP (1) HOUSING: 111-114 (6) PINS: 111-058 (1) KEY: 111-148	NOVA 1210, 1220, 2/4, 2/10, S100, S200, MODELS 4010, 4023, 4075, 4104, 4105, 4029, 4063, 4255, 4256 EXCEPT 10 CPS

005 007429

TERMINAL CONNECTOR		WIRE 109-086	CONTROLLER CONNECTOR	I/O CABLE FOR:
6-PIN MOLEX (1) 111-565 (5) 111-578 PINS	TTI+/TX DATA TTI- TTO+ TTO-/RC DATA GND	1→11 2→12 3→1 4→2 5→3 6→9 KEY→10	12-PIN AMP (1) HOUSING: 111-114 (6) PINS: 111-058 (1) KEY: 111-148	NOVA 1210, 1220, 2/4, 2/10, S100, S200, MODELS 4010, 4023 10 cps

005 007638

TERMINAL CONNECTOR		WIRE 109-086	CONTROLLER CONNECTOR	I/O CABLE FOR:
6-PIN MOLEX (1) 111-565 (3) 111-578 PINS	TTI+/TX DATA TTO-/RC DATA GND	1→3 2 3 4→6 5 6→1	9-PIN CANNON (1) PLUG: 111-331 (1) SHELL: 111-019 (1) SCREWS: 111-023 (3) PINS: 111-146	NOVA 800, 1200, 1200 JUMBO, 830, 840 WITH MODEL 4062

005 007636

TERMINAL CONNECTOR		WIRE 109-086	CONTROLLER CONNECTOR	I/O CABLE FOR:
6-PIN MOLEX (1) 111-565 (5) 111-578 PINS	TTI+/TX DATA TTI- TTO+ TTO-/RC DATA DTR GND	1→2 2→6 3→5 4→1 5 6→4	6-PIN AMP (1) HOUSING: 111-454 (5) PINS: 111-058	ALM 16 4257 4260 4258 4261

005 007637

TERMINAL CONNECTOR		WIRE 109-086	CONTROLLER CONNECTOR	I/O CABLE FOR:
6-PIN MOLEX (1) 111-565 (4) 111-578 PINS	BA TX DATA BB RC DATA CD DTR AB GND	1→2 2 3 4→3 5→20 6→7	25-PIN CANNON (1) PLUG: 111-333 (1) SHELL: 111-020 (2) SCREWS: 111-024 (4) PINS: 111-146	TERMINAL TO MODEM EIA INTERFACE

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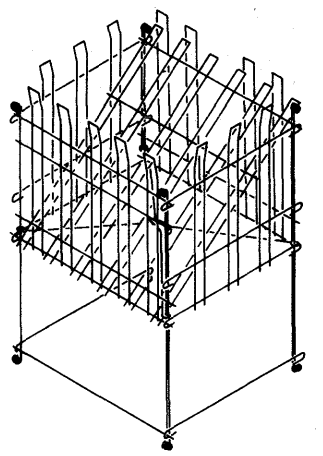
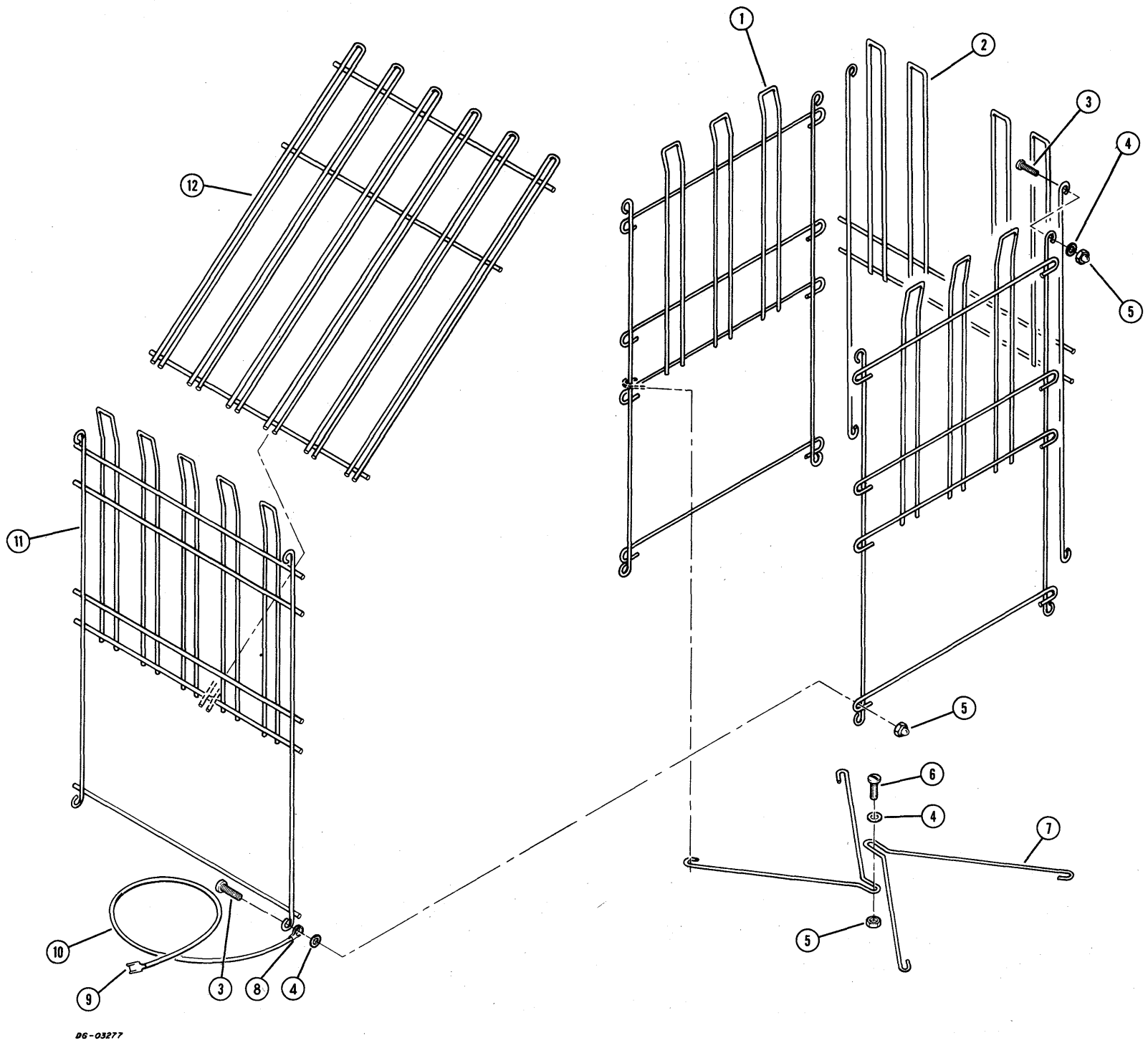
FORMS RECEIVER OPTION





DG-03277

FORMS RECEIVER			
QTY	DESCRIPTION	QTY	PART NO.
1	SIDE, FORMS RECEIVER	2	002006018
2	REAR, FORMS RECEIVER	1	002006020
3	SCREW, SLTD 1/4-20 x 5/8	8	106000489
4	WASHER, FLAT SCDP 1/4	9	106000445
5	NUT, CAP SCDP 1/4-20	9	106000900
6	SCREW, PHH 1/4-20 x 1/2	1	106000547
7	BRACE, CROSS	2	002006084
8	TERMINAL RTNG 250 STUD 16-14	1	111000422
9	FAST-ON 1/4	1	111000034
10	WIRE 16GA, 16"	1	109000022
11	FRONT, FORMS RECEIVER	1	002006019
12	TRAY, FORMS	1	002006017

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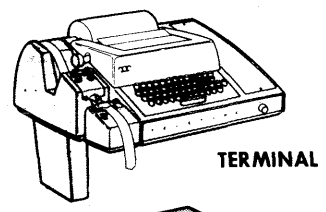
SUBSYSTEM COMPONENT BREAKDOWN

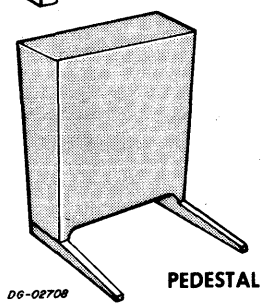


TERMINAL

Ⓑ

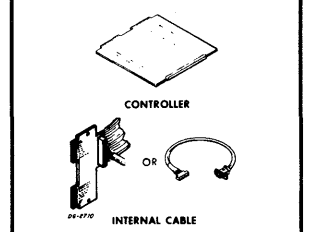
DEVICE CABLE

Ⓓ, Ⓔ

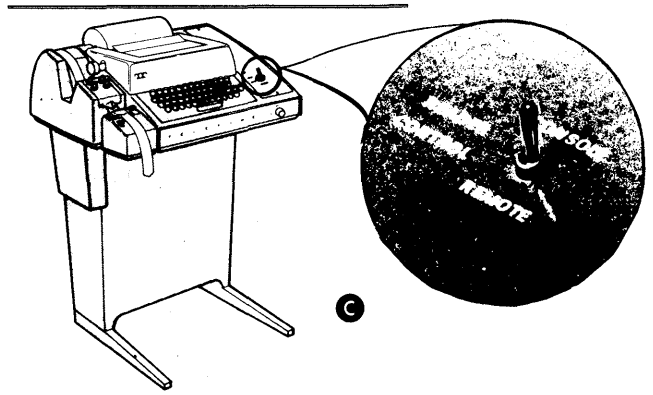


PEDESTAL

DG-02708



FOR I/O CONTROLLER AND INTERNAL CABLE, SEE DATA SHEETS FOR ASYNCHRONOUS CONTROLLER.



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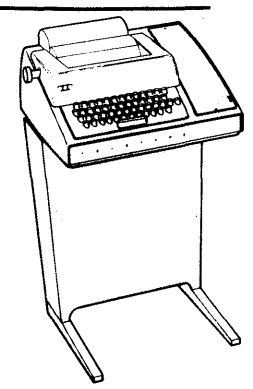

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MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	33KSR	PEDESTAL OR TABLE-TOP	
B	33ASR	PEDESTAL OR TABLE-TOP	
C	33ASR TDT	PEDESTAL OR TABLE-TOP	

CABLE

Item	Cable	Connecting			Max Allowed Lg ft / m	Notes
D	DEVICE	CPU	and	TTY	500 / 153	FOR PADDLEBOARD CONNECTED CPUs
E	DEVICE	CPU	"	TTY	500 / 153	FOR SOCKET CONNECTED CPUs

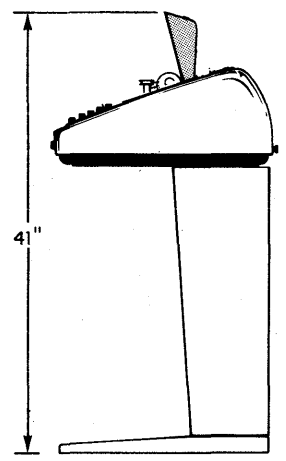
SPECIFICATIONS OF FREE-STANDING COMPONENT

Item	Component	Number in Subsystem	Weight lbs / kg	Operating Humidity (Relative) min / max	Maximum Operating Temperature Component °F / °C	Maximum Operating Temperature Media °F / °C	Power Dissipation (Watts)	BTUs/hr (3.41 x Watts)	Primary Power Current (Amps)	Primary Power Voltage ± ΔV	Primary Power Frequency	Power Cable Length ft / m	Power Cable Connector	Power Drop Mating Power Receptacle	Wall Mating Power Receptacle
B	33ASR	1	44 / 96.8	/ 96	110 / 44		128	436.5	1.9	120	60	10 / 3.06	NEMA 5-15P	NEMA 5-15R	17252
	33ASR	1	44 / 96.8	/ 96	110 / 44		130	443.3	1.9	120	50	10 / 3.06	NEMA 5-15P	NEMA 5-15R	17252
	33ASR	1	44 / 96.8	/ 96	110 / 44		130	443.3	1.9	240	50	10 / 3.06	NEMA 5-15P	(1)	(1)
C	33ASR TDT	1	44 / 96.8	/ 96	110 / 44		128	436.5	1.9	120	60	10 / 3.06	NEMA 5-15P	NEMA 5-15R	17252
	33ASR TDT	1	44 / 96.8	/ 96	110 / 44		130	443.5	1.9	120	50	10 / 3.06	NEMA 5-15P	NEMA 5-15R	17252
	33ASR TDT	1	44 / 96.8	/ 96	110 / 44		130	443.5	1.9	240	50	10 / 3.06	NEMA 5-15P	(1)	(1)
A	33KSR	1	40 / 88	/ 96	110 / 44		128	436.5	1.9	120	60	10 / 3.06	NEMA 5-15P	NEMA 5-15R	17252
	33KSR	1	40 / 88	/ 96	110 / 44		130	443.3	1.9	120	50	10 / 3.06	NEMA 5-15P	NEMA 5-15R	17252
	33KSR	1	40 / 88	/ 96	110 / 44		130	443.3	1.9	240	50	10 / 3.06	NEMA 5-15P	(1)	(1)
	33 PEDESTAL	1	12 / 26.4	– / –	–		–	–	–	–	–	– / –	-	-	-

DG-01917

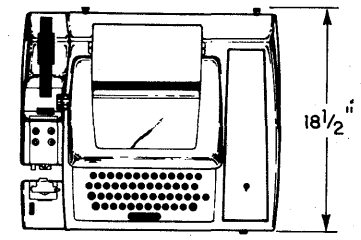
(1) 240V UNITS PLUG INTO A DGC-SUPPLIED 220/115V STEP-DOWN TRANSFORMER. THE TRANSFORMER HAS A 6-FT CABLE WITHOUT A CONNECTOR. THE CONNECTOR IS SUPPLIED BY THE USER.

TOP VIEW



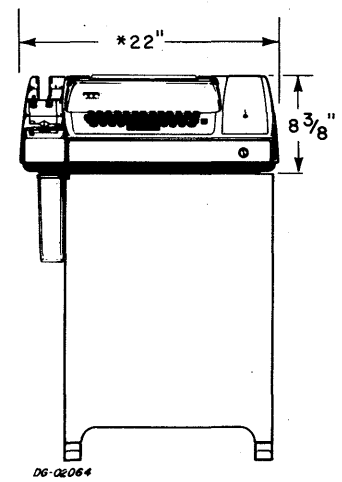
SIDE VIEW

SERVICE DIMENSIONS



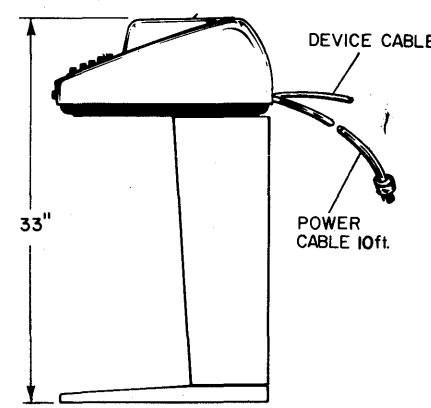
TOP VIEW

33 DATA TERMINAL



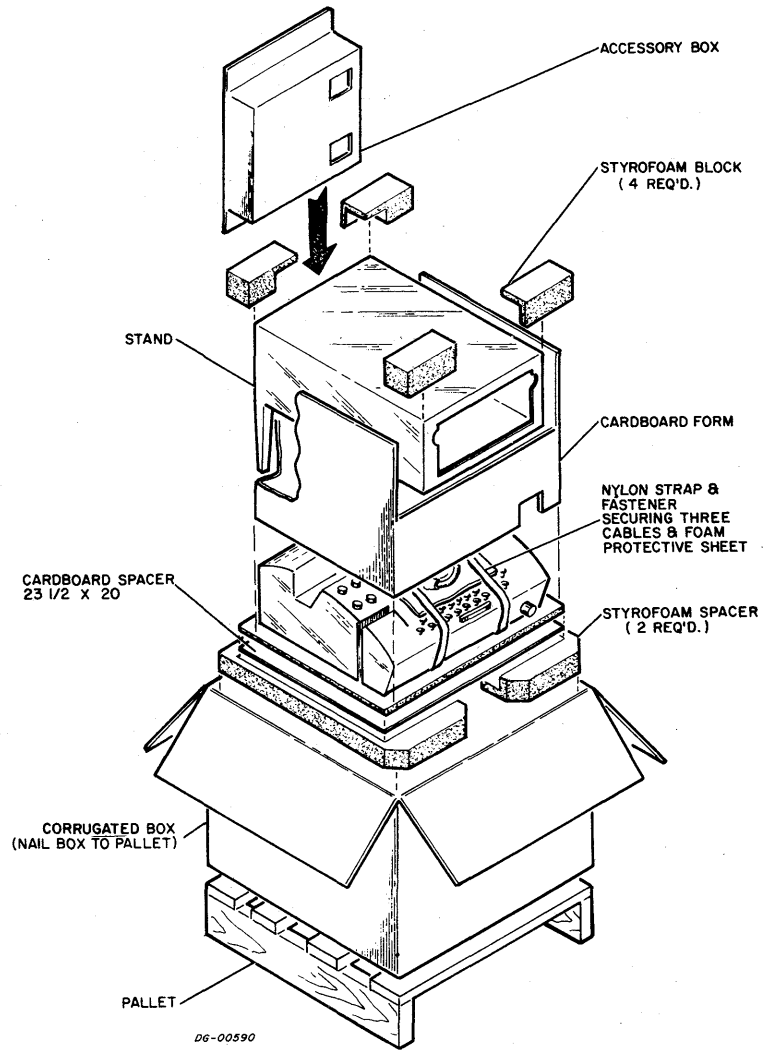
FRONT VIEW

* $18\frac{5}{8}$" – 33KSR DATA TERMINAL



SIDE VIEW

SHIPPING



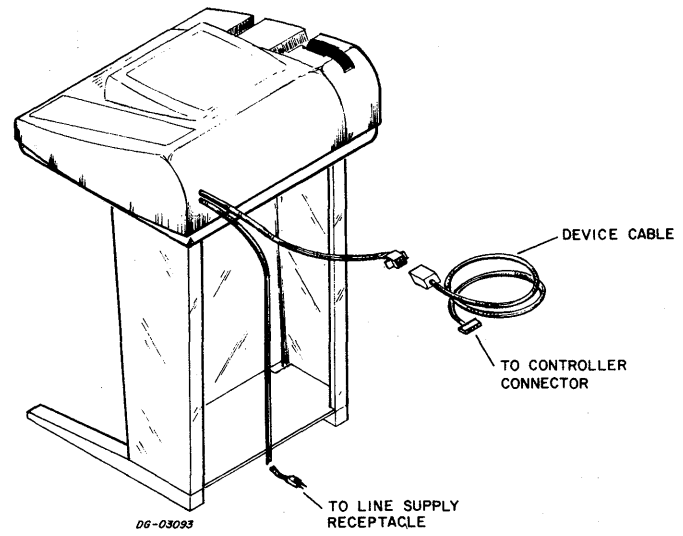
Shipping Specifications			
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	
-40 to +104 / -40 to +40	0% - 80%	50,000 FT	

DG-02063

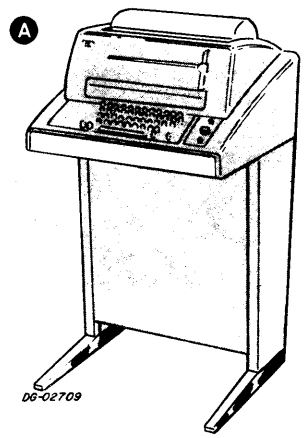
Storage Specifications		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-40 to +104 / -40 to +40	0% - 80%	90 DAYS

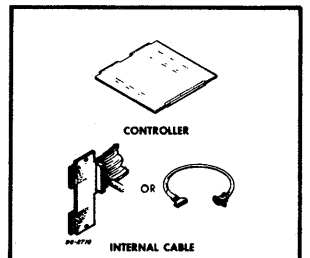
DG-02062

EXTERNAL CABLING



SUBSYSTEM COMPONENT BREAKDOWN





FOR I/O CONTROLLER AND INTERNAL CABLE, SEE DATA SHEETS FOR ASYNCHRONOUS CONTROLLER.

MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	35KSR	FREE-STANDING	TTY AND PEDESTAL ARE ONE UNIT

CABLE

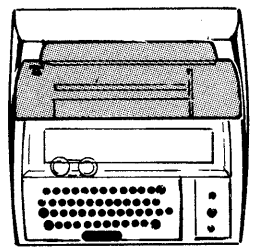
Item	Cable	Connecting			Max Allowed Lg ft / m	Notes
B	DEVICE	CPU	and	TTY	500 / 153	FOR PADDLEBOARD CONNECTED CPUs
C	DEVICE	CPU	"	TTY	500 / 153	FOR SOCKET CONNECTED CPUs

SPECIFICATIONS OF FREE-STANDING COMPONENT

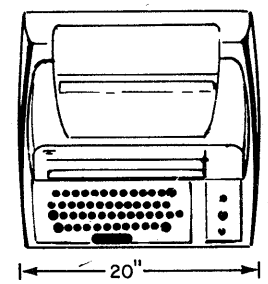
Item	Component	Number in Subsystem	Weight lbs / kg	Operating Humidity (Relative) min / max	Maximum Operating Temperature Component °F / °C	Maximum Operating Temperature Media °F / °C	Power Dissipation (Watts)	BTUs/hr (3.41 x Watts)	Primary Power Current (Amps)	Primary Power Voltage ± ΔV	Primary Power Frequency ± Δf	Power Cable Length ft / m	Power Cable Connector	Power Drop Mating Power Receptacle	Wall Mating Power Receptacle
A	35KSR	1	136 / 299.4	/ 95	110 / 44		250	852.5	8.0	120	60	6 / 1.83	NEMA 5-15P	NEMA 5-15P	17252
	35KSR	1	136 / 299.4	/ 95	110 / 44		250	852.5	8.0	120	50	6 / 1.83	NEMA 5-15P	NEMA 5-15P	17252
	35KSR	1	136 / 299.4	/ 95	110 / 44		250	852.5	8.0	240	50	6 / 1.83	NEMA 5-15P	NEMA (1)	(1)

DG-01917

(1) 240V UNITS PLUG INTO A DGC-SUPPLIED 220/115V STEP-DOWN TRANSFORMER. THE TRANSFORMER HAS A 6-FT CABLE WITHOUT A CONNECTOR. THE CONNECTOR IS SUPPLIED BY THE USER.

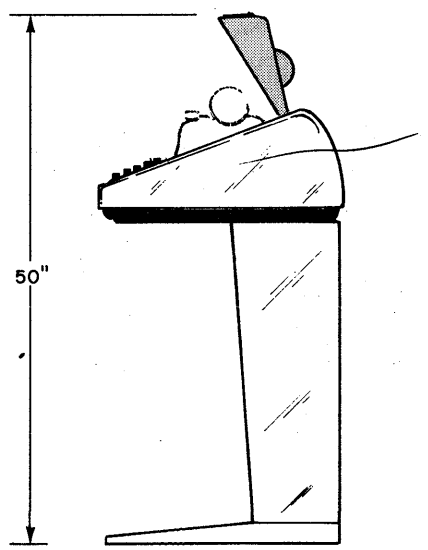


TOP VIEW



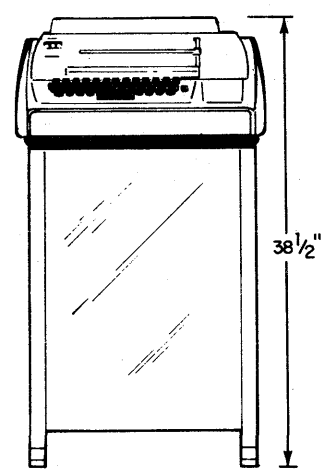
TOP VIEW

35 DATA TERMINAL

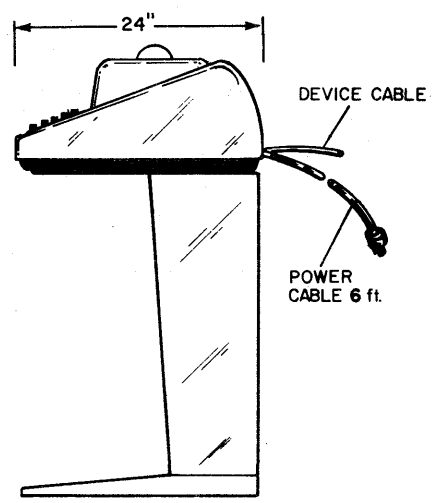


SIDE VIEW

SERVICE DIMENSIONS

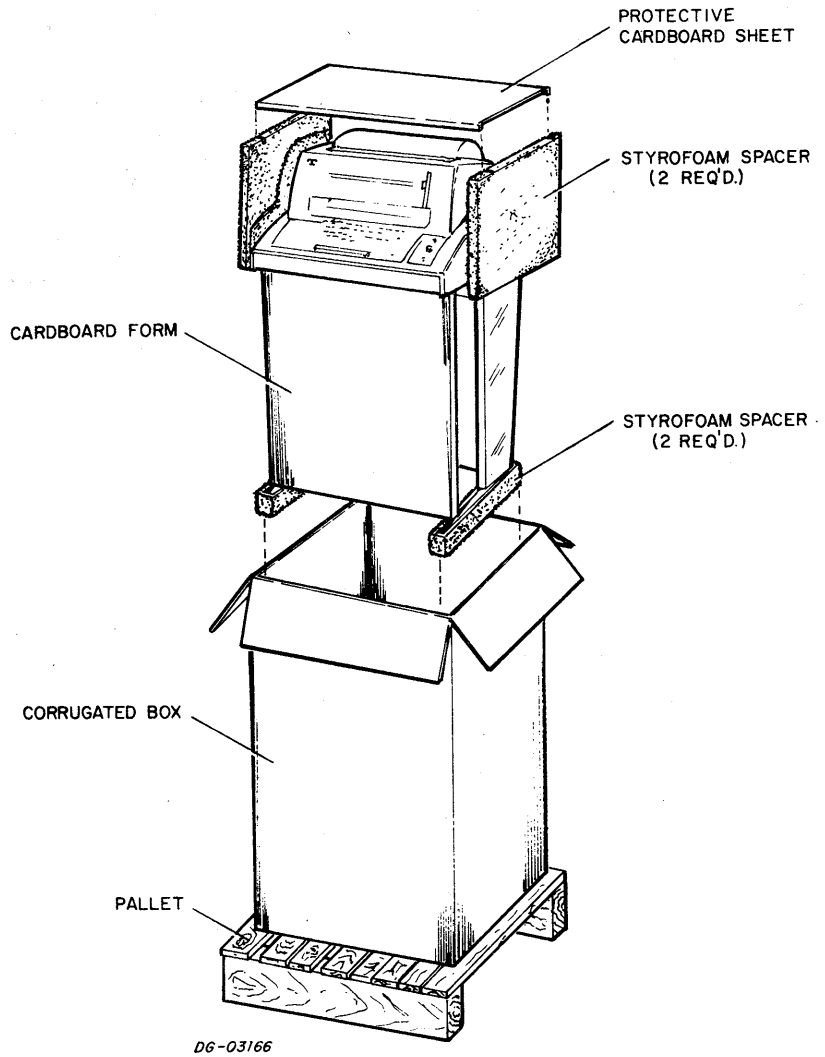


FRONT VIEW



SIDE VIEW

SHIPPING



DG-03166

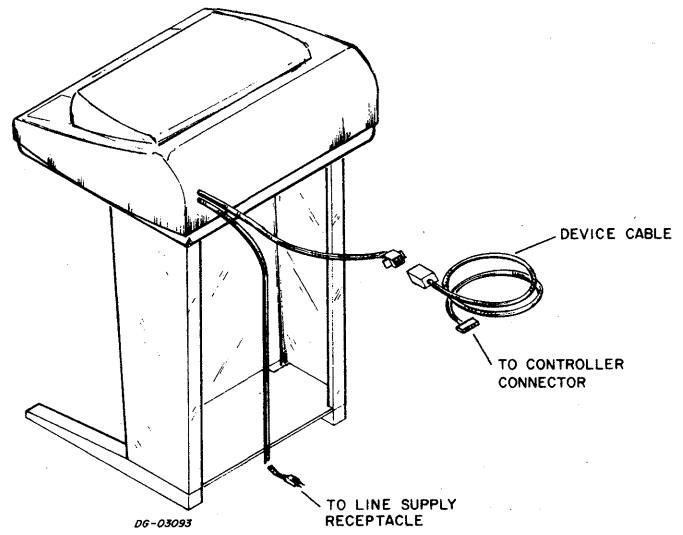
Shipping Specifications			
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	
-40 to +104 / -40 to +40	0% - 80%	50,000 FT	

DG-02063

Storage Specifications		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-40 to +104 / -40 to +40	0% - 80%	90 DAYS

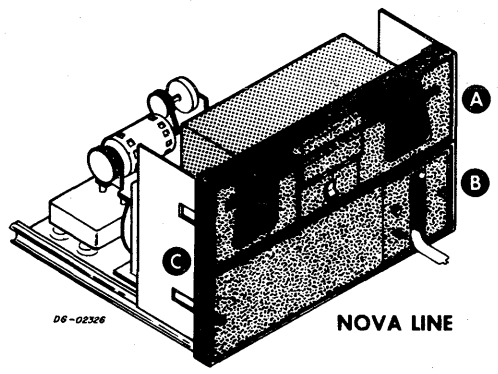
DG-02062

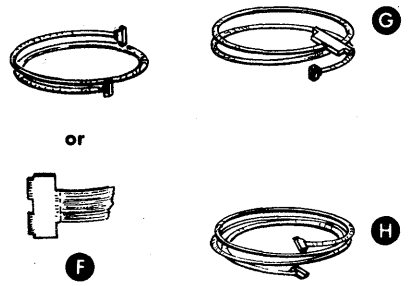
EXTERNAL CABLING

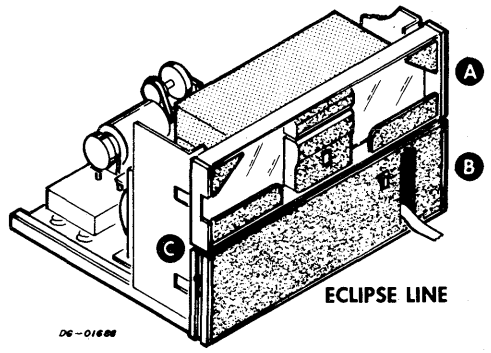


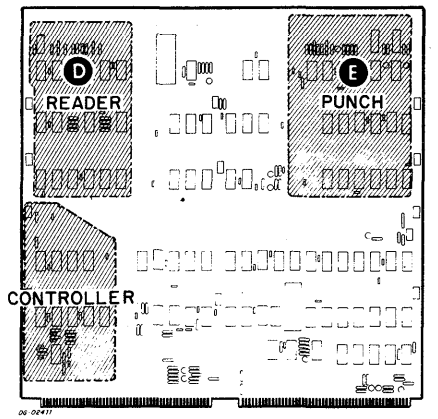
DG-03093

SUBSYSTEM COMPONENT BREAKDOWN









MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	PAPER TAPE READER	CABINET	
B	PAPER TAPE PUNCH	CABINET	
C	PAPER TAPE READER/PUNCH	CABINET	READER MOUNTS ON TOP OF PUNCH
D	READER CONTROL	COMPUTER CHASSIS	EACH CONTROLLER IS MOUNTED ON THE BASIC I/O INTERFACE
E	PUNCH CONTROL	COMPUTER CHASSIS	BOARD (INDIVIDUALLY OR TOGETHER)

DG-02672

CABLE

Item	Cable	Connecting			Max Allowed Lg ft / m	Notes
F	INTERNAL CA	COMPUTER B/P	and	COMPUTER B/P CONN	- / -	
G	DEVICE CABLE (READER)	COMPUTER B/P CONN	"	READER	50 / 15.2	
H	DEVICE CABLE (PUNCH)	COMPUTER B/P CONN	"	PUNCH	50 / 15.2	

DG-02673

SPECIFICATIONS OF THE CHASSIS MOUNTED COMPONENTS

Item	Component	Chassis	Slots Required	Max Allowable Data Channel Latency (μ sec)	Type of Data Channel Service Desired: High Speed	Type of Data Channel Service Desired: Standard	Max Allowable Programmed I/O Latency +	Controller's +5 Volt Current Draw (Amps)
E, D	CONTROLLER	COMPUTER	1	— / —	—	—	11.3 ms for punch / 100 μsec for reader	.85*

* SUBTRACT .30 IF EITHER THE LOGIC READER OR PUNCH CONTROL IS NOT ON THE CONTROLLER BOARD.
DG-01912

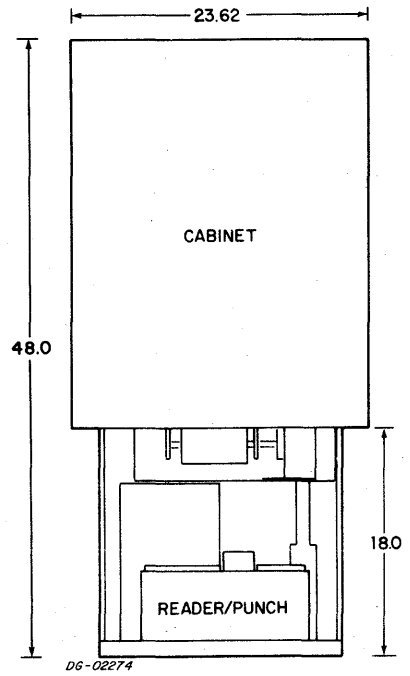
SPECIFICATIONS OF THE CABINET-MOUNTED COMPONENTS

Item	Component	Number in Subsystem	Maximum Operating Temperature: Component °F / °C	Maximum Operating Temperature: Media °F / °C	Primary Power: Current Draw (Amp)	Primary Power: Voltage ± %	Primary Power: Frequency ±Δf	Cabinet Height Required: Area	Cabinet Height Required: in.	Cabinet Height Required: cm	Weight: lbs / kg	Power Dissipation (Max Watts)	Preferred Location or Remarks	Operating Humidity (Relative): min / max
A	READER	1	185 / 85		1.8 / .1	120 +10% −15% / 240 +10% −15%	60±3 / 50±3	4	7	17.8	19 / 8.6	240	17-20	10 / 90%
B	PUNCH	1	185 / 85		2.1 / .95	120 +10% −15% / 240 +10% −15%	60±3 / 50±3	8	14	35.6	60 / 27	215	17-24	10 / 90%
C	READER/PUNCH	1	185 / 85		3.9 / 1.95	120 +10% −15% / 240 +10% −15%	60±3 / 50±3	8	14	35.6	79 / 35.6	455	17-24	10 / 90%

DG-01914

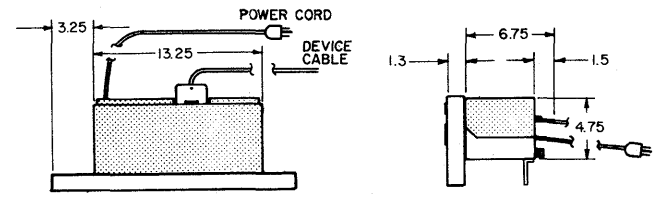
Voltage	Power Cable Length ft	Power Cable Length m	Power Cable Plug	Mating Receptacle on Power Drop	Mating Receptacle in Wall
READER 120V	5	1.5	5-15P	5-15R	5-15R
READER 240V	5	1.5	6-15P	6-15R	6-15R
PUNCH 120V	5	1.5	5-15P	5-15R	5-15R
PUNCH 240V	5	1.5	6-15P	6-15R	6-15R

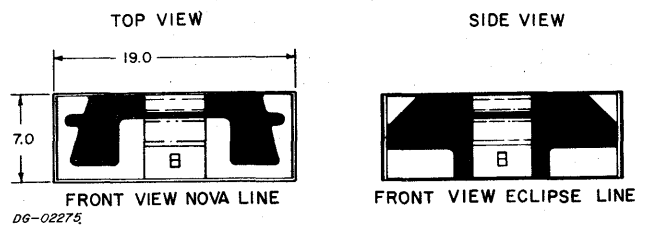
DG-02717



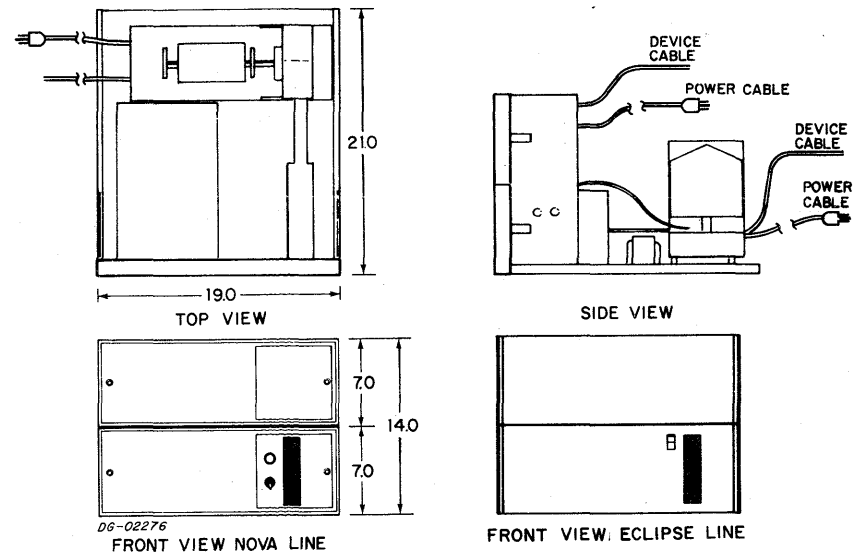
SERVICE DIMENSIONS

PAPER TAPE READER



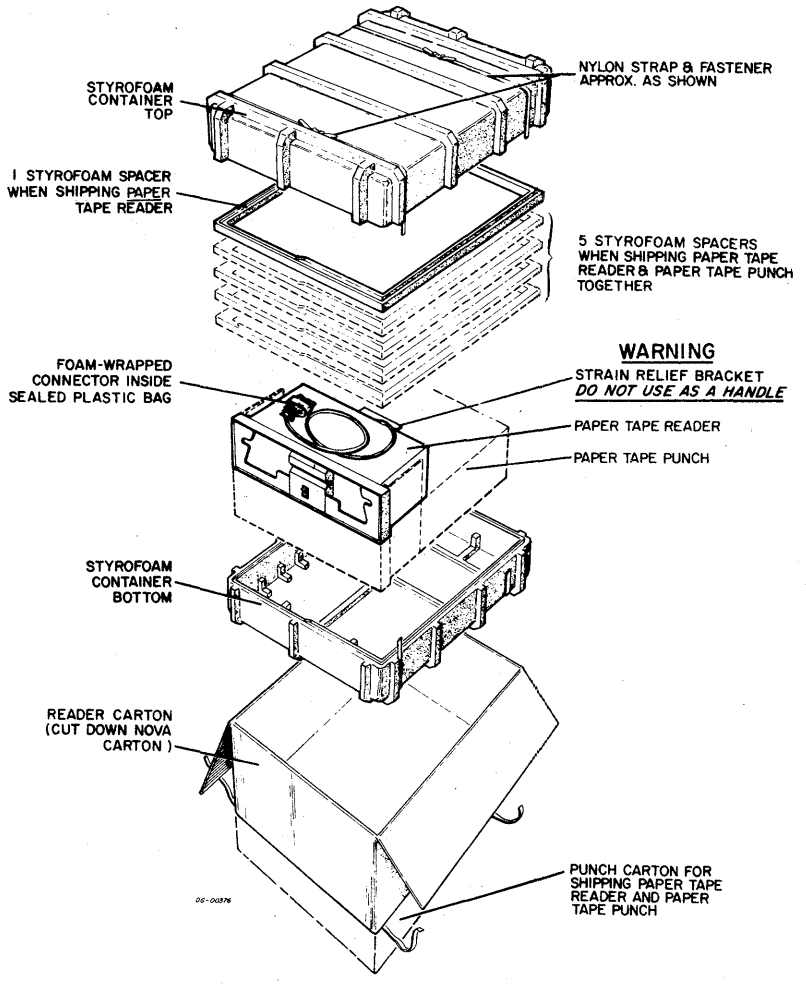


PAPER TAPE PUNCH



PACKING KIT

PAPER TAPE READER/PUNCH



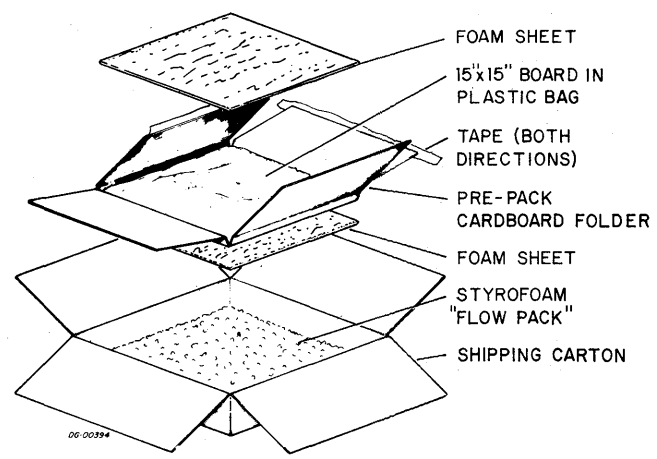
Shipping Specifications			
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	———
-40 to +185 / -40 to +85	90%	50,000	———

DG-02063

Storage Specifications		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-40 to +185 / -40 to +85	90%	90 DAYS

DG-02062

CONTROLLER BOARD



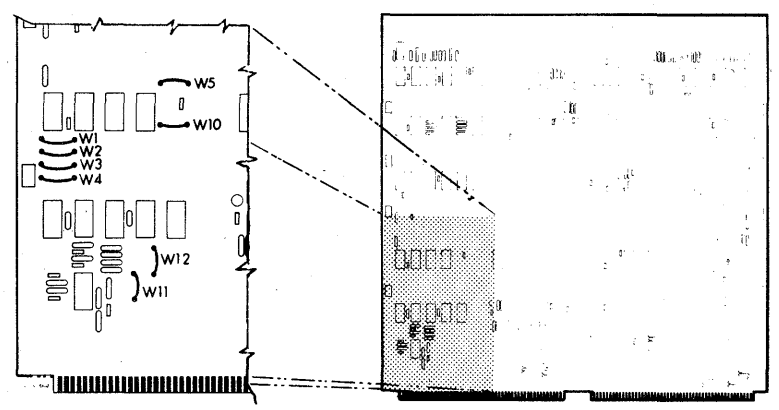
INTERNAL CABLING

Internal Cable Connections			
Signal Name	Paddleboard Edge Connector Pin Numbers	Destination Pins on Back Panel (NOVA and ECLIPSE Line Paper Tape Reader/Punch)	Socket Connector Pin Numbers
+5V	A1 PTP	B3	17
PCH 3	A2	B67	4
PCH FEED	A3	B23	10
PICK UP-	A4	B13	12
PCH 7	A6	B25	8
OUT OF TAPE	A7	B36	15
PCH 5	A8	B40	2
PCH 1	A9	B49	6
GND	A10	B1	13
FEED HOLE	AB	B27	9
PICK UP+	AC	B15	18
PICK UP SHLD	AD	B2	11
PWR ON	AE	B11	19
PCH 2	AF	B34	5
PCH 6	AH	B38	1
PCH 4	AJ	B48	3
PCH 0	AK	B51	7
not used	A5		
not used	AA		
not used	AG		
CH 8	C2 RDR	A49	8
CH 7	C4	A57	7
CH 5	C5	A61	5
CH 4	C6	A63	4
CH 2	C7	A67	2
STOP	C8	A71	12
RD RDY	C9	A75	11
GND	C10	A1	14
GND	CC	A47	10
CH 6	CD	A59	6
CH 3	CH	A65	3
CH 1	CJ	A69	1
FWD & STOP	CK	A73	13
SPKT	CL	A77	9
not used	C1	A3	
not used	C3		
not used	CA	A3	
not used	CB	A12	
not used	CE	A1	
not used	CF	A2	
not used	CG		

Computer	Primary Dev		Secondary Dev	
	PTP	RDR	PTP	RDR
ECLIPSE NOVA 2/4, 2/10, 1210, 820, 1220	none required	none required	005-3453	005-3453
NOVA 3/4, 3/12	005-3453	005-3453		
NOVA 800, 840, 1200	005-0321	005-0322	005-02344	005-02343

DG-02277

JUMPERS

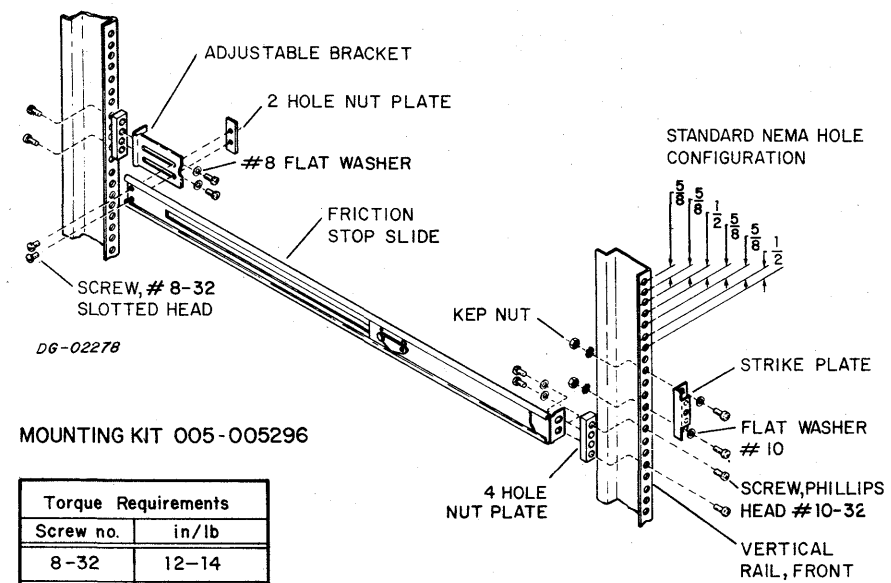


Ref. DGC 107 000063 REV. 00-06

Function	Jumpers
Select the primary device codes - 12_8 for the reader, and 13_8 for the punch.	Install jumpers W2, W3, W10, W11 Omit jumpers W1, W4, W5, W12
Select the secondary device codes - 52_8 for the reader, and 53_8 for the punch.	Install jumpers W1, W3, W5, W10, W11 Omit jumpers W2, W4, W12

CABINET MOUNTING

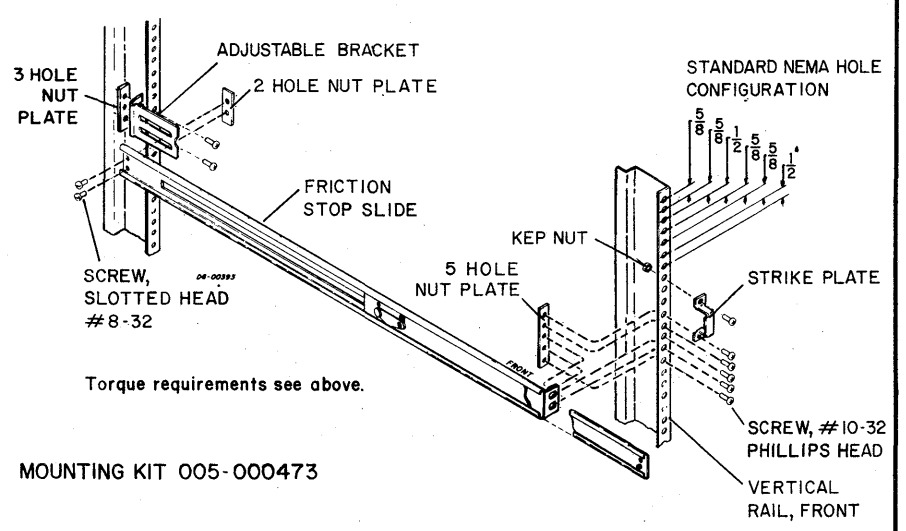
SLIDE RAILS IN THE ECLIPSE LINE CABINETS



MOUNTING KIT 005-005296

Torque Requirements	
Screw no.	in/lb
8-32	12-14
10-32	23-25 (10-12 for Speednut)

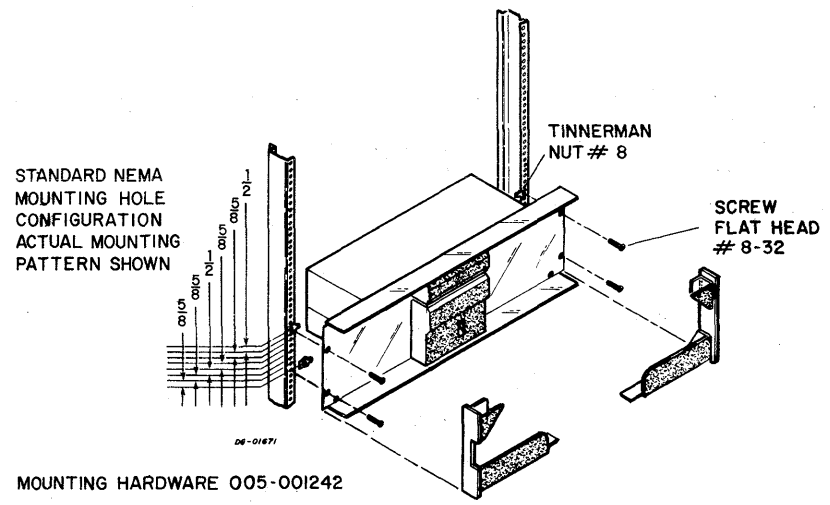
SLIDE RAILS IN THE NOVA LINE CABINETS



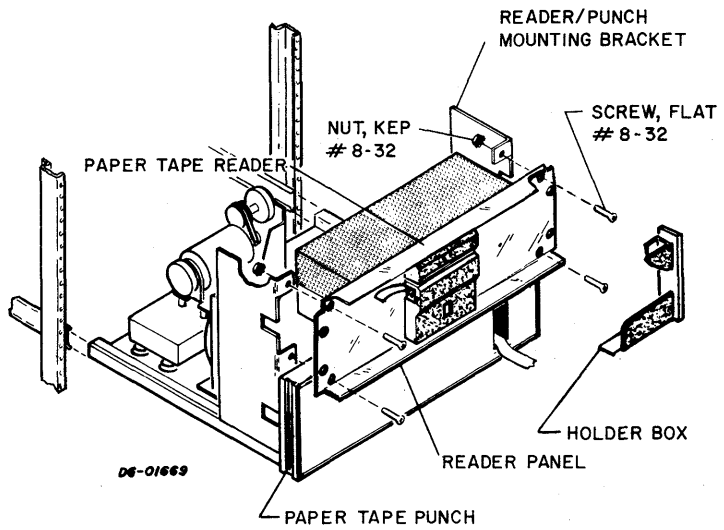
Torque requirements see above.

MOUNTING KIT 005-000473

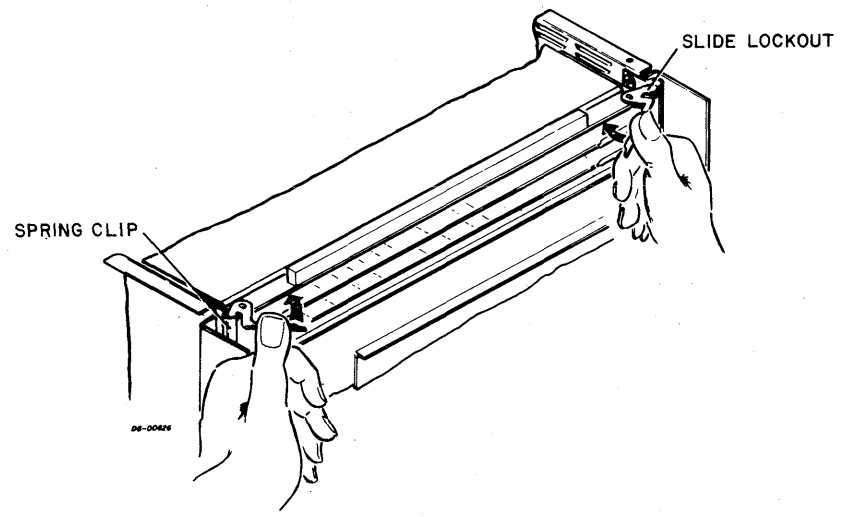
RACK MOUNTING THE PAPER TAPE READER



MOUNTING THE PAPER TAPE READER ON THE PUNCH

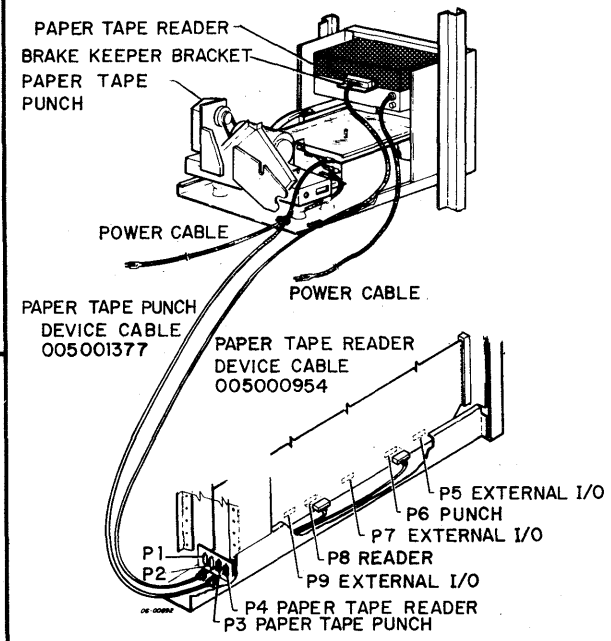


CONTROLLER PLACEMENT IN SLOT

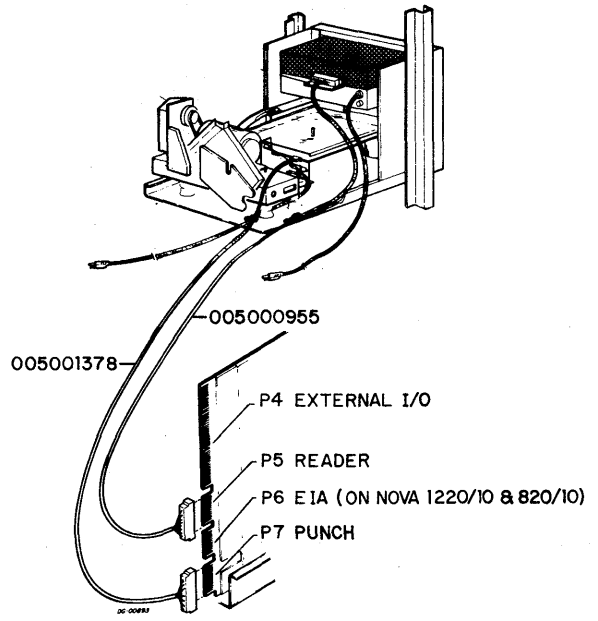


EXTERNAL CABLING

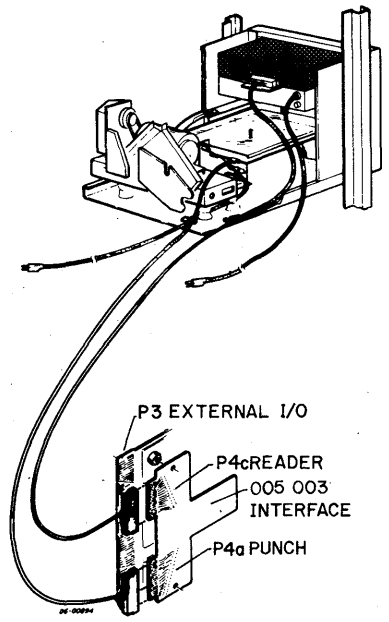
NOVA 1200/7, 1200/17, 800/7, 800/17, 840/17



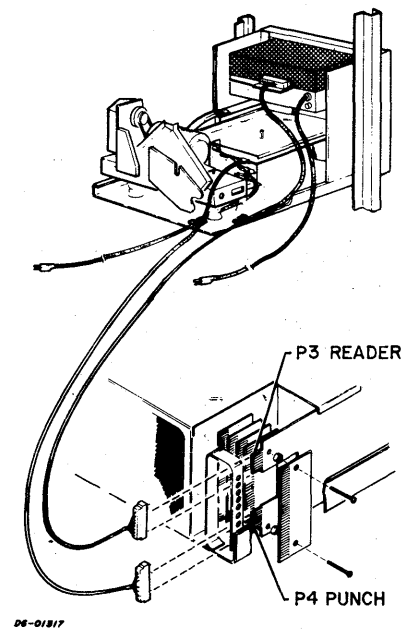
NOVA 1220/10, 820/10, 2/10



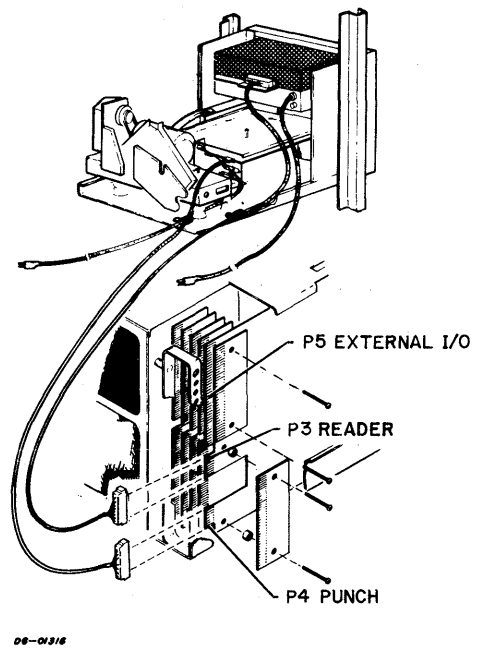
NOVA 2/4, 1210/4



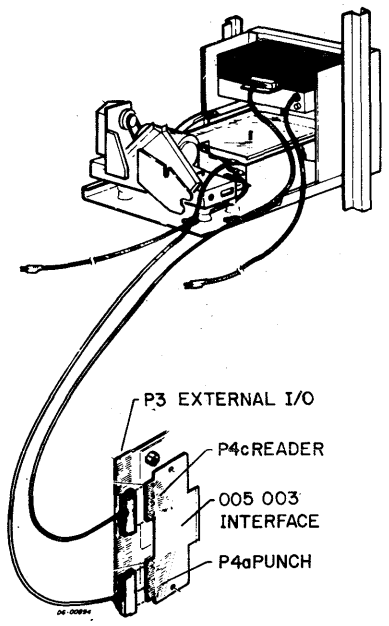
ECLIPSE S/100



ECLIPSE S/200 C/300



NOVA 3/4, 3/12



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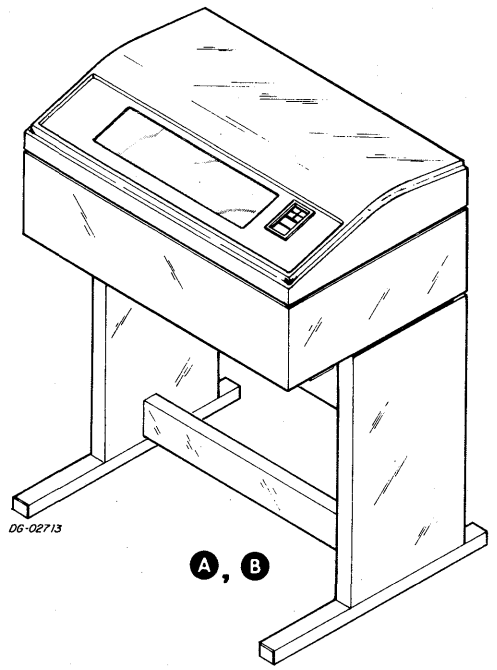
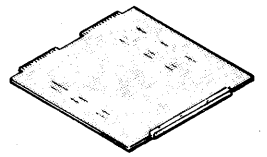
SUBSYSTEM COMPONENT BREAKDOWN

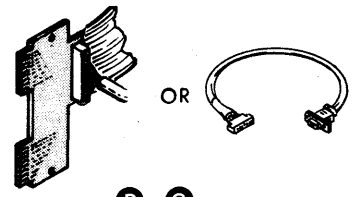


Ⓐ, Ⓑ



Ⓒ

Ⓗ, Ⓙ



Ⓓ-Ⓖ

MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	4034G/ 4218 LINE PRINTER	FREE STANDING	64 CHARA DRUM 300 LPM
B	4034H/ 4219 LINE PRINTER	FREE STANDING	96 CHARA DRUM 240 LPM
C	CONTROLLER	CPU CHASSIS	PART OF I/O INTERFACE SUBASSEMBLY PCB

CABLE

Item	Cable	Connecting	Max Allowed Lg ft / m	Notes
D	INTERNAL DEVICE	BP WW PINS and SOCKET CONN	1.5 / .46	NOVA SUPER NOVA
E	"	BP WW PINS " SOCKET CONN	1.5 / .46	800,830,840,1200
F	"	PB WW PINS " EDGE CONN	1.5 / .46	820,1210,1220
G	"	BP WW PINS " EDGE CONN	1.5 / .46	NOVA 2/4 NOVA2/10 ECLIPSE S/7,S/16
H	EXTERNAL DEVICE	BP SOCKET CONN " PRINTER	20 / 6	NOVA,SUPN,800,830, 840,1200
J	"	BP EDGE CONN " PRINTER	20 / 6	820,1210,1220,N2/4, N2/10,N3,ECLS/7,S/16

SPECIFICATIONS OF THE CHASSIS-MOUNTED COMPONENTS

Component	Chassis	Slots Required	Type of Data Channel Service Desired: High Speed	Type of Data Channel Service Desired: Standard	Max Allowable Programmed I/O Latency +	Controller's +5 Volt Current Draw (Amps)
CONTROLLER	COMP	1			2.5ms/LINE	4.0

DG-01912

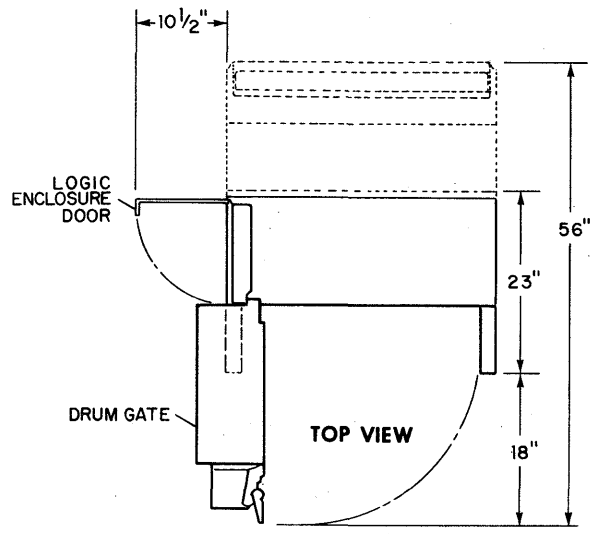
+ = TO MAINTAIN MAX PRINT RATE

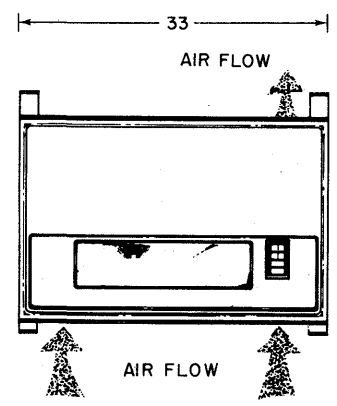
SPECIFICATIONS OF FREE-STANDING COMPONENTS

Item	Component	Number in Subsystem	Weight lbs / kg	* Operating Humidity (Relative) min / max	Maximum Operating Temperature ** Component °F / °C	Maximum Operating Temperature ** Media °F / °C	Power Dissipation (Watts)	BTUs/hr	Primary Power: Current (Amps)	Primary Power: Voltage ± ΔV	Primary Power: Frequency	Power Cord Length ft / m	Power Cord Connector	Power Drop Mating Power Receptacle	Wall Mating Power Receptacle
A,B	LINE PRINTER 300/240 LPM	1	340 / 154	30 / 90	100 / 38		525	1800	4.4	120^{+12}_{-18}	50±3	10 / 3	5-15P	5-15R	5-15R
		1	340 / 154	30 / 90	100 / 38		700	2387	5.8	120^{+12}_{-18}	60±3	10 / 3	5-15P	5-15R	5-15R
		1	340 / 154	30 / 90	100 / 38		700	2387	2.9	240^{+24}_{-36}	50±3	10 / 3	6-15P	6-15R	6-15R

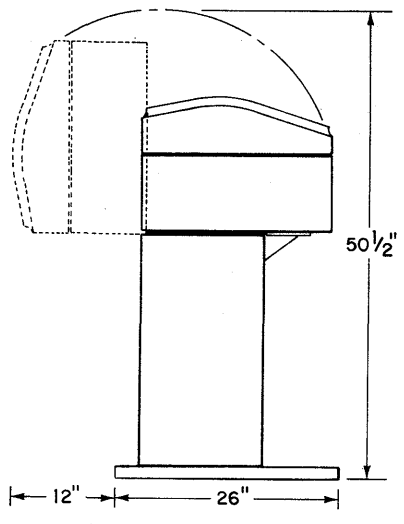
DG-01917

* NON CONDENSATING
** MINIMUM OPERATING TEMPERATURE = 50°F/10°C

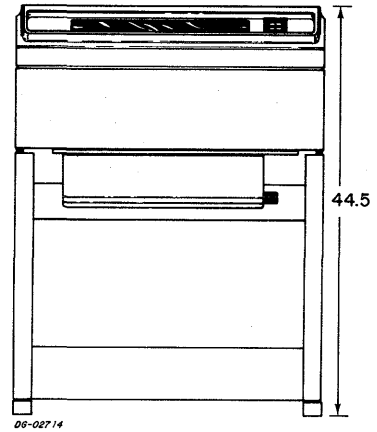




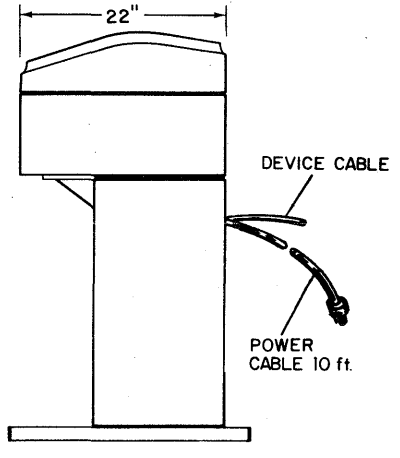
TOP VIEW



SERVICE DIMENSIONS



FRONT VIEW



SIDE VIEW

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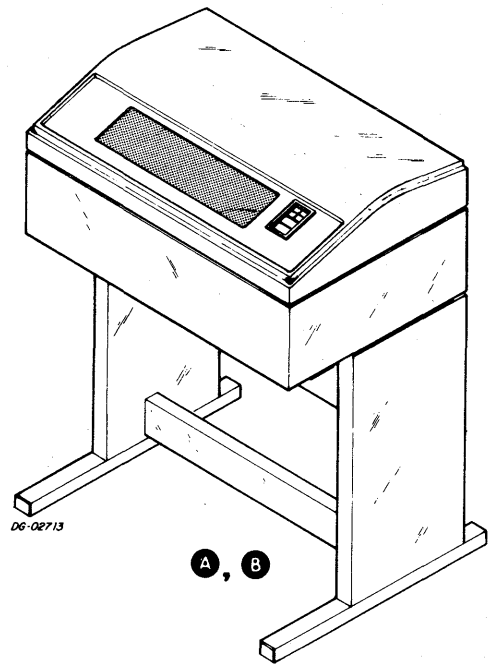
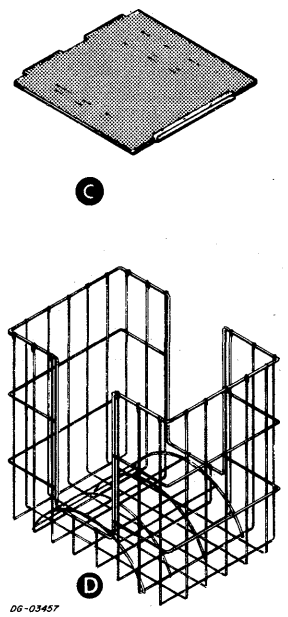
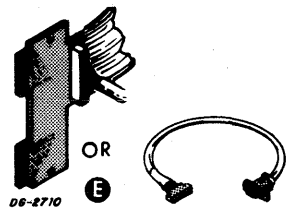
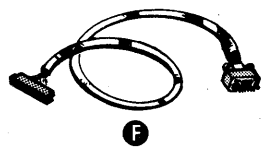
SUBSYSTEM COMPONENT BREAKDOWN









MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	Line Printer	Free-Standing	64 Char. drum 600 LPM
B	Line Printer	Free-Standing	96 Char. drum 436 LPM
C	Controller	CPU Chassis	
D	Paper Receptacle	Free Standing	Grounded to line printer with ground strap

CABLE

Item	Cable	Connecting	Max Allowed Lg ft / m	Notes
E	Internal	BPww Pins and Comp Conn	1.5 / .46	Varies w/CPU type
F	Device	Comp Conn " Printer	30 / 9.1	Varies w/CPU type
G	Ground Strap	Paper Receptacle " Printer	1 / .2	

SPECIFICATIONS OF THE CHASSIS-MOUNTED COMPONENTS

Component	Chassis	Slots Required	Max Allowable Data Channel Latency (μ sec)	Type of Data Channel Service Desired: High Speed	Type of Data Channel Service Desired: Standard	Max Allowable Programmed I/O Latency +	Controller's +5 Volt Current Draw (Amps)
Line Printer Controller	CPU	1	*		✓	N/A	2.5

* There is no maximum data channel latency figure for the subsystem per se, however, in order to maintain maximum print rate , a line of data and a control character must be transferred within 2.5 ms after the initial demand assertion.

SPECIFICATIONS OF FREE-STANDING COMPONENTS

Item	Component	Number in Subsystem	Weight lbs / kg	Operating Humidity (Relative) min / max	Maximum Operating Temperature Component °F / °C	Maximum Operating Temperature Media °F N/A °C	Power Dissipation (Watts)	BTUs/hr (3.41 x Watts)	Primary Power Volts +10-15%	Hz ± %	Phase	Cond	Amps	Power Cable Length ft / m	Power Cable Connector	Power Drop Mating Power Receptacle	Wall Mating Power Receptacle
AB	Line Prntr 436 LPM	1	370 / 168	10 / 90	100 / 38		680	2335	115	60 2	1φ	3	5.6	10 / 3	NEMA 515P	515R	515R
	Line Prntr 600 LPM	1	370 / 168	10 / 90	100 / 38		680	2335	115	60 2	1φ	3	5.6	10 / 3	NEMA 515P	515R	515R
	Line Prntr 436 LPM	1	370 / 168	10 / 90	100 / 38		680	2335	100	50 2	1φ	3	6.8	10 / 3	NEMA 515P	515R	515R
	Line Prntr 600 LPM	1	370 / 168	10 / 90	100 / 38		680	2335	100	50 2	1φ	3	6.8	10 / 3	NEMA 515P	515R	515R
	Line Prntr 436 LPM	1	370 / 168	10 / 90	100 / 38		680	2335	220	50 2	1φ	3	3.1	10 / 3	NEMA 615P	615R	615R
	Line Prntr 600 LPM	1	370 / 168	10 / 90	100 / 38		680	2335	220	50 2	1φ	3	3.1	10 / 3	NEMA 615P	615R	615R
	Line Prntr 436 LPM	1	370 / 168	10 / 90	100 / 38		680	2335	240	50 2	1φ	3	2.9	10 / 3	NEMA 615P	615R	615R
	Line Prntr 600 LPM	1	370 / 168	10 / 90	100 / 38		680	2335	240	50 2	1φ	3	2.9	10 / 3	NEMA 615P	615R	615R

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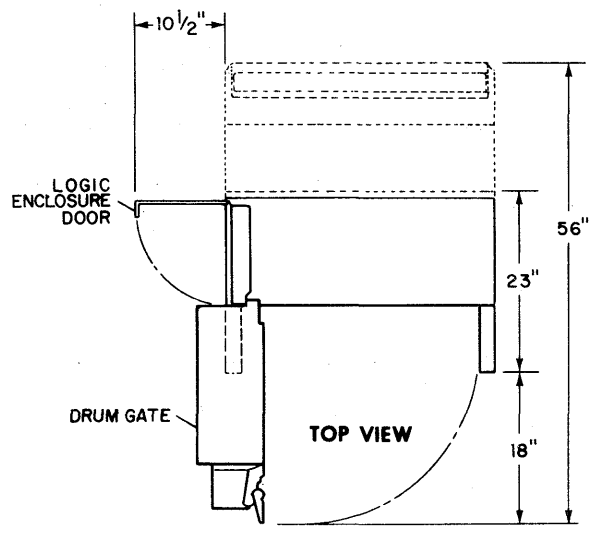
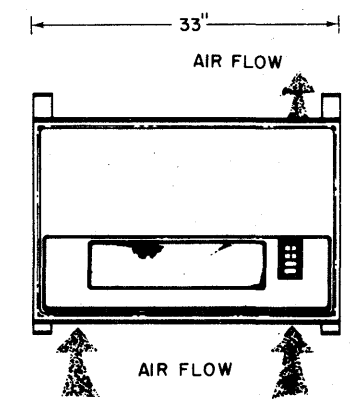
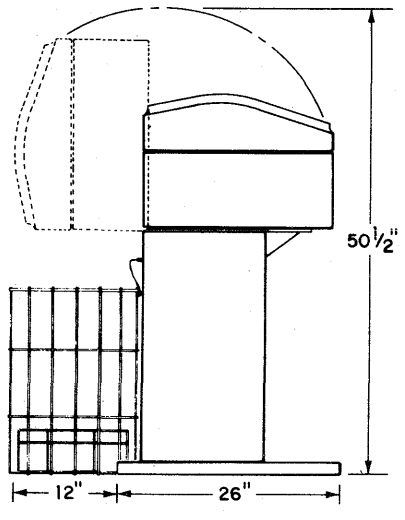
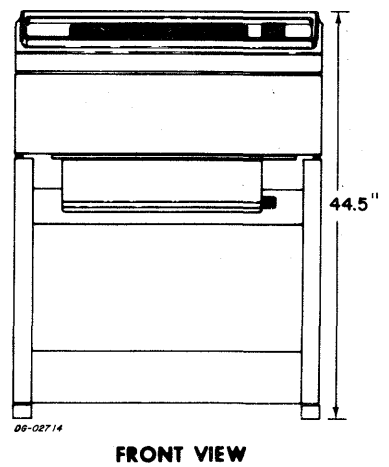




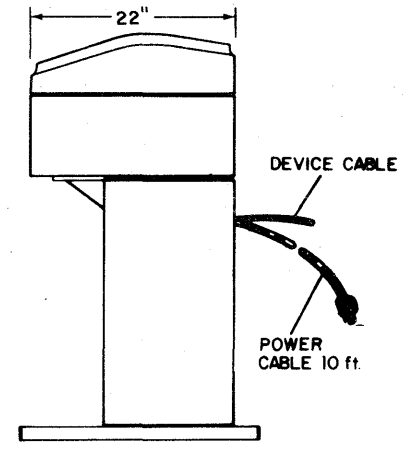
TOP VIEW



SERVICE DIMENSIONS

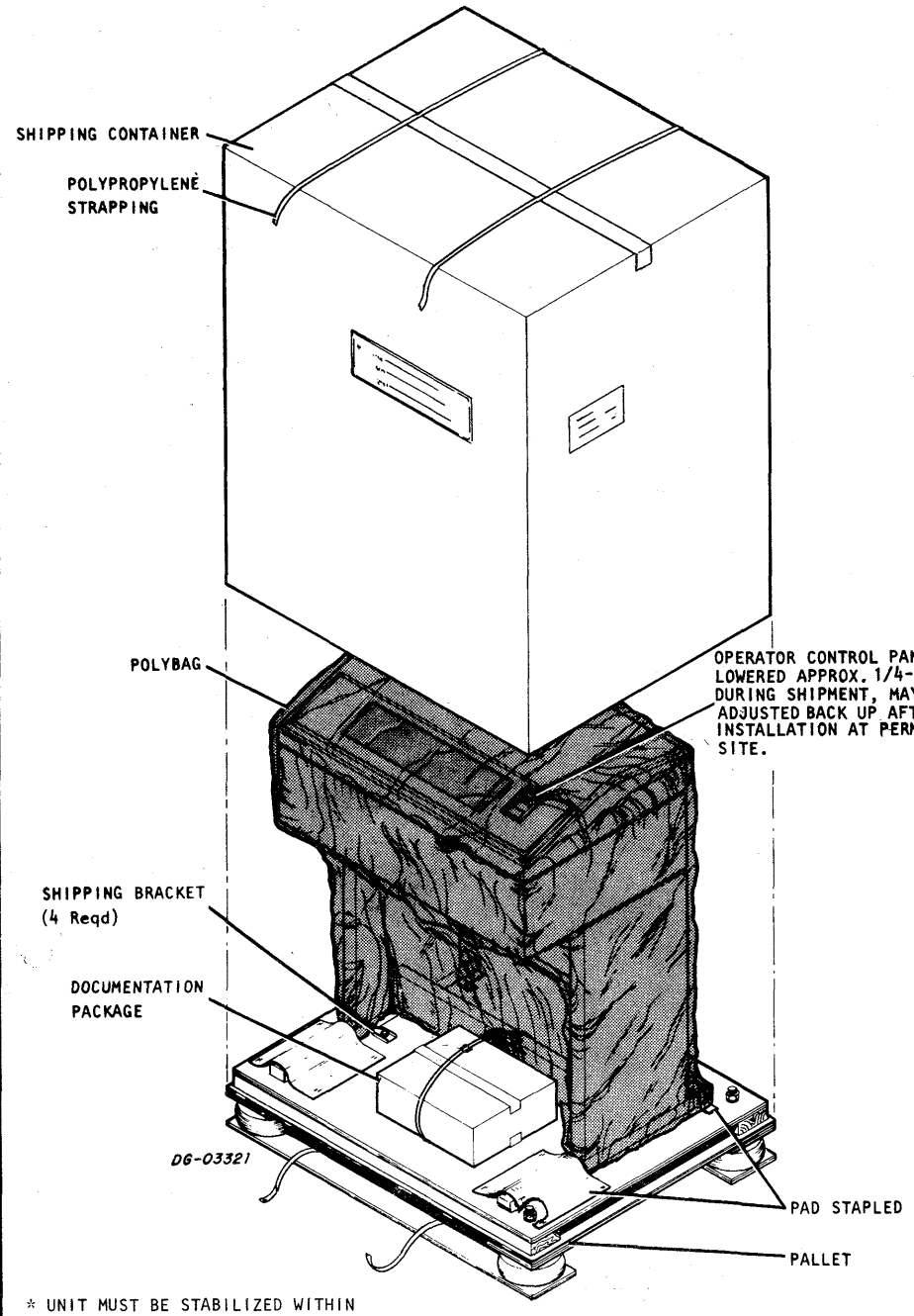


FRONT VIEW



SIDE VIEW

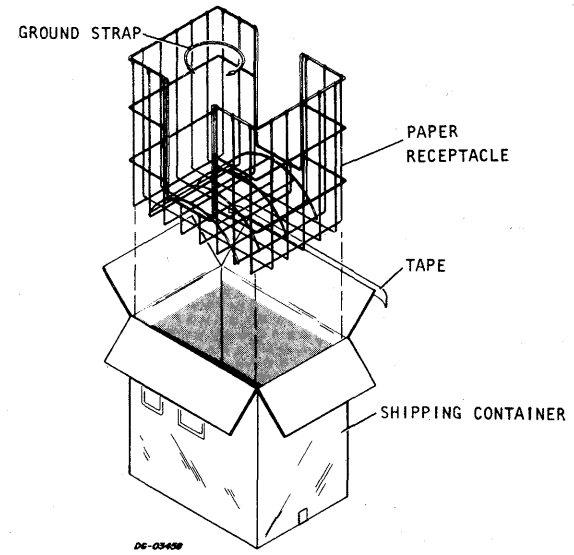
SHIPPING



* UNIT MUST BE STABILIZED WITHIN THE OPERATING TEMPERATURE RANGE FOR 15 MINUTES BEFORE APPLYING POWER

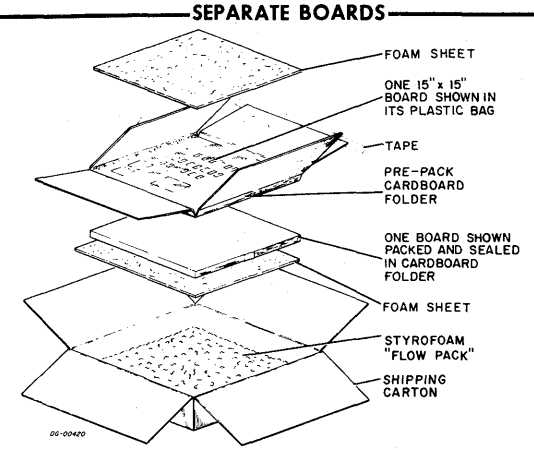
SHIPPING AND PACKAGE DATA						
Outside Dimensions			Weight (Gross)	Volume	Density	
Length	Width	Depth				
in. / cm	in. / cm	in. / cm	lbs. / kg	cu ft. / cu m	lbs/cu ft. / kg/cu m	
41 / 104	33 / 84	54 / 137	424 / 192	42 / 1.176	10 / 163	
SHIPPING SPECIFICATIONS			STORAGE SPECIFICATIONS			
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period	
0 to +150 / -18 to +66	5%/95%	40,000ft. 12,150m	* 0 to +150 / -18 to +66	5 to 95%	90 days	

DG-03224



SHIPPING AND PACKAGE DATA						
Outside Dimensions			Weight (Gross)	Volume	Density	
Length	Width	Depth				
in. / cm	in. / cm	in. / cm	lbs. / kg	cu ft. / cu m	lbs/cu ft. / kg/cu m	
SHIPPING SPECIFICATIONS			STORAGE SPECIFICATIONS			
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period	
-40to+160 / -40 to +71	0%/80%	50,000ft. 15,200m	-40to+160 / -40 to +71	0%/30%	90 days	

SEPARATE BOARDS



SHIPPING AND PACKAGE DATA						
Outside Dimensions			Weight (Gross)	Volume	Density	
Length	Width	Depth				
in. / cm	in. / cm	in. / cm	lbs. / kg	cu ft. / cu m	lbs/cu ft. / kg/cu m	
18 / 45	18 / 45	4 / 10	8 / 3.8	.75 / .02	10.7 / 180	
SHIPPING SPECIFICATIONS			STORAGE SPECIFICATIONS			
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period	
-40to+160 / -40 to +71	0%/80%	50,000ft. 15,200m	-40to+160 / -40 to +71	0%/30%	90 days	

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INTERNAL CABLING

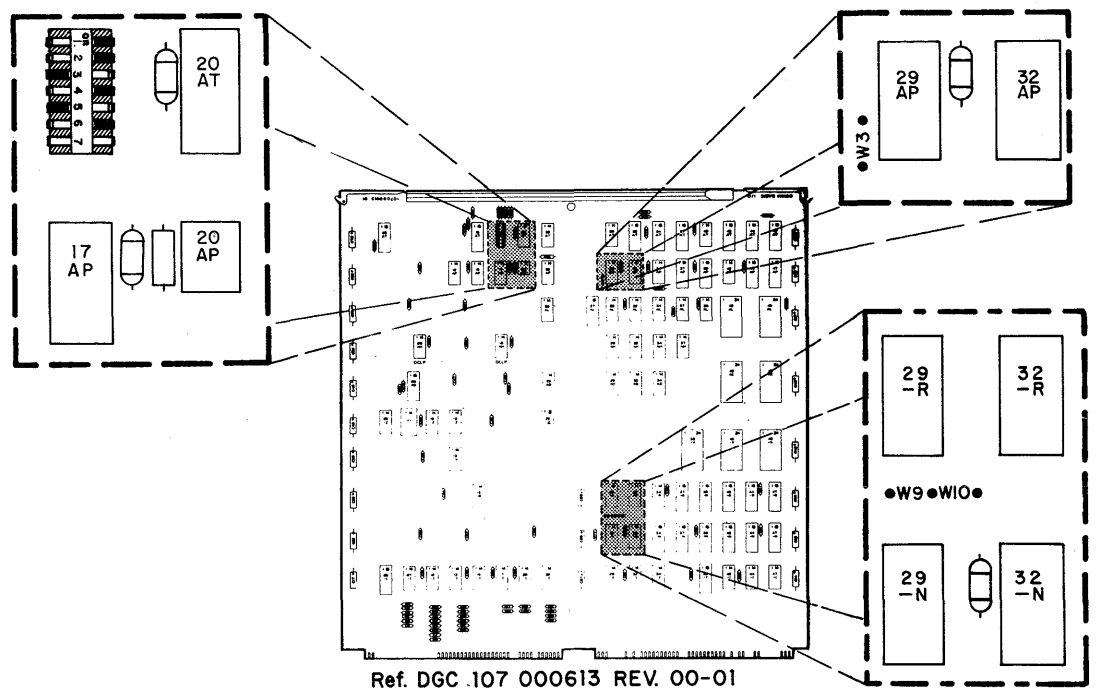
Signal Names	Paddleboard Edge Connector Pin Numbers	Destination Pins on Backpanel (NOVA & ECLIPSE Line Computers)	Socket Connector Pin Numbers
READY	33	B 19	1
DEMAND	34	B 23	3
STROBE	35	B 25	5
DATA 1	36	B 27	7
DATA 2	37	B 31	9
DATA 3	38	B 34	11
DATA 4	39	B 36	13
DATA 5	40	B 38	15
DATA 6	41	B 40	17
DATA 7	42	B 48	19
ON LINE	32	B 15	21
PAPER INST.	43	B 49	23

Computer	Internal Cable Part No.
NOVA 2 Series, NOVA 3 Series ECLIPSE line computers	005-001802
NOVA 820, 1210 and 1220 Computers	005-001802
NOVA 840, 1200 and 800 Jumbo Computers	* 005-000384
NOVA 800 and 1200 Computers	* 005-000384
NOVA, SUPERNOVA Computers	* 005-000384
NOVA 830 Computer	* 005-000384

* IMPORTANT NOTE:
USE WIRE LIST 008-990 WHEN INSTALLING THIS CABLE.

TAILORING

JUMPERING



Ref. DGC 107 000613 REV. 00-01

DG-03382

JUMPERS			FUNCTION
W3	Always In		Provides column counter resync for a paper feed or form feed
	W9* In	W10 Out	Selects Positive Assertion for LPT STROBE signal
	W9* Out	W10 In	Selects Negative Assertion for LPT STROBE signal

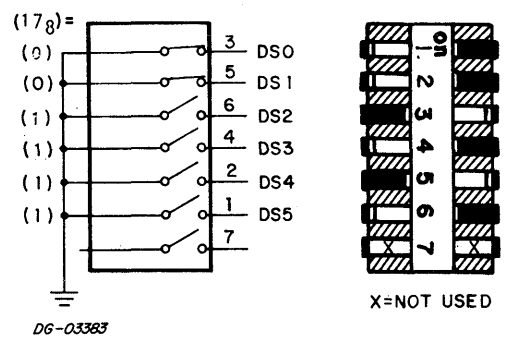
*Jumper W9 is always in for Model 4215, 4216, 4218 and 4219 Subsystems

DEVICE CODE SWITCHES

The data channel line printer controller has individually settable device code switches which may be set to any of the 64 possible codes. Typically this device will use the code 17_8

The switches use negative assertion logic which means that when a switch is in the OFF position, a logic one will be asserted. The switches may be pushed into the desired positions with a stylus or pen tip.

The device code 17_8 would be selected as shown below:



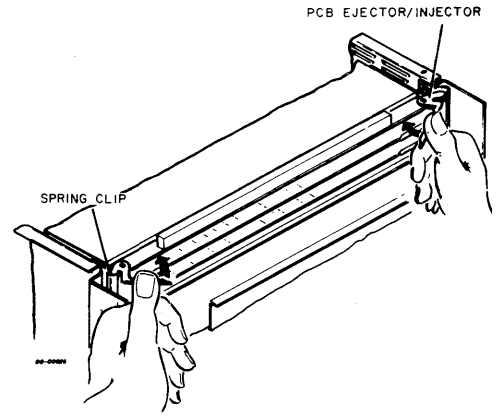
DG-03383

LINE VOLTAGE SELECTION

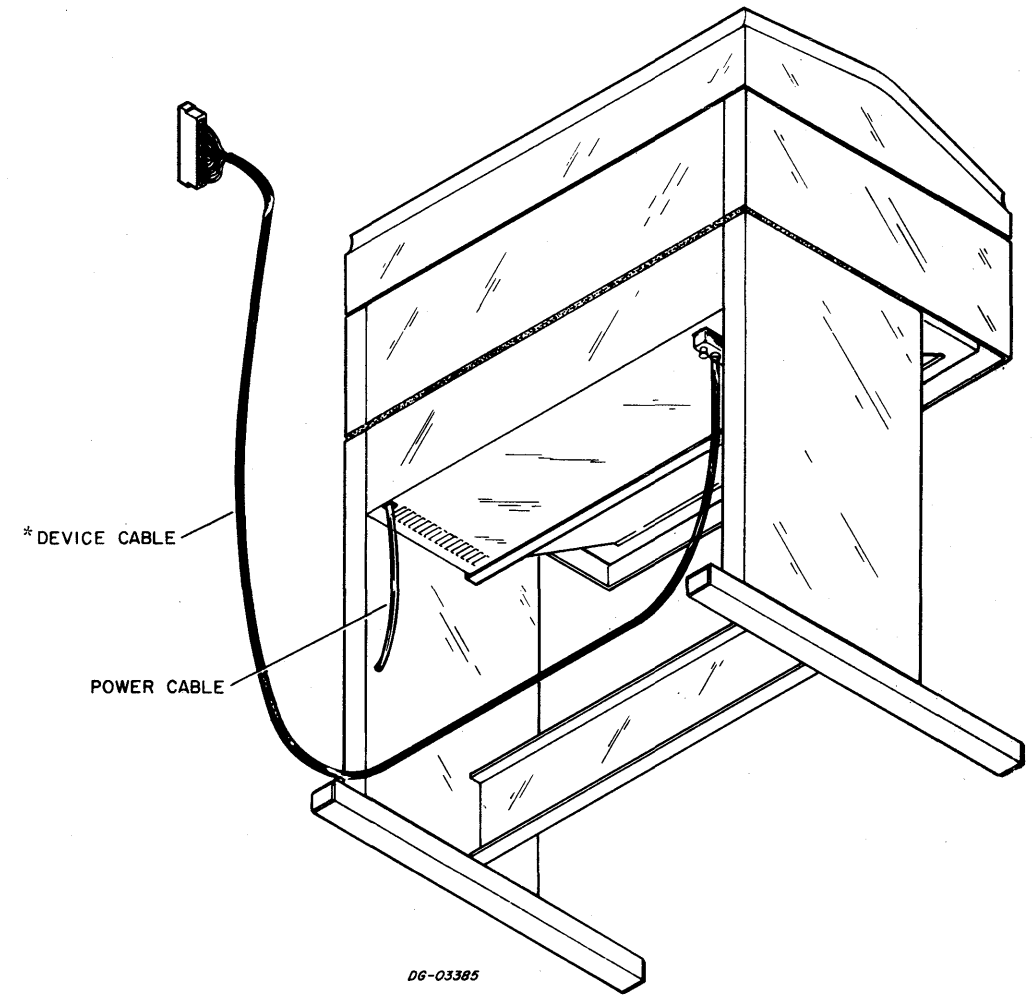
LINE VOLTAGE	100	115	125	200	220	240
BLACK WIRE TO X FORMER TERMINAL	12	13	14	15	16	17

(TO ACCESS: REMOVE LOWER REAR PRINTER UNIT CAVER)

INSTALLING PC BOARD



EXTERNAL CABLING



DG-03385

BOTTOM VIEW

*005-7874 for use with 005-1802 internal cable (shown above)
005-7925 for use with 005-384 internal cable

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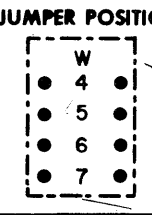
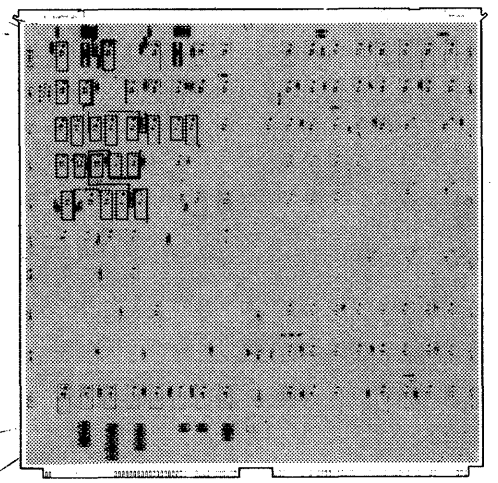
PROGRAMMABLE INTERVAL TIMER

JUMPER POSITION



Jumper Position	Select 1 MHz	Select 100 KHz	Select *10 Khz	Select 1 KHz
W4	out	out	out	in
W5	out	out	in	out
W6	in	out	out	out
W7	out	in	out	out

* IN MOST INSTALLATIONS, 10KHZ WILL BE SELECTED: W5 INSTALLED; W4, W6, AND W7 LEFT OUT.



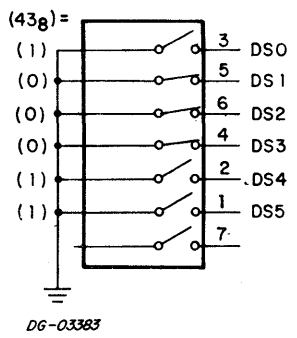
Ref. DGC 107 000613 REV. 01

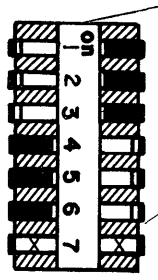
DEVICE CODE SWITCHES

The programmable interval timer has individually settable device code switches which may be set to any of the 64 possible codes. Typically this device will use the code 43_8.

The switches use negative assertion logic which means that when a switch is in the OFF position, a logic one will be asserted. The switches may be pushed into the desired positions with a stylus or pen tip.

The device code 43_8 would be selected as shown below:





X=NOT USED

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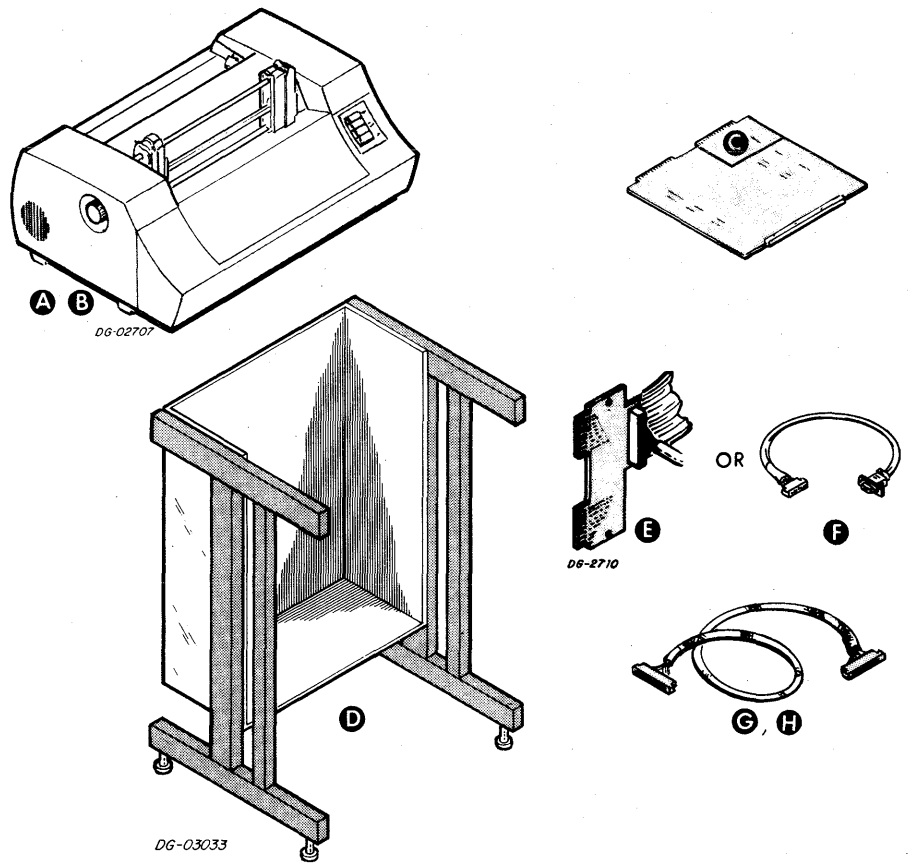
SUBSYSTEM COMPONENT BREAKDOWN



MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	LINE PRINTER 4034C	TABLETOP	5X7 DOT MATRIX
B	LINE PRINTER 4034D	TABLETOP	7x9 DOT MATRIX
C	CONTROLLER 4014/4193	CPU CHASSIS	PART OF I/O INTERFACE SUBASSEMBLY BOARD
D	PEDESTAL 4034E	FLOOR	OPTIONAL FOR LINE PRINTERS

CABLE

Item	Cable	Connecting			Max Allowed Lg ft / m	Notes
E	INTERNAL DEVICE	B/P WIRE-WRAP PINS	and	B/P SOCKET CONN	1.5 / 0.46	NOVA & SUPERNOVA
	"	B/P WIRE-WRAP PINS	"	B/P SOCKET CONN	1.5 / 0.46	800,830,840,1200
	"	B/P WIRE-WRAP PINS	"	B/P EDGE CONN	1.5 / 0.46	820,1210,1220
F	"	B/P WIRE-WRAP PINS	"	B/P EDGE CONN	1.5 / 0.46	N2/4,N2/10 ECLIPSE/7,/16
G	EXTERNAL DEVICE	B/P SOCKET CONN	"	DOT MATRIX LINE PRINT	25 / 7.4	NOVA,SUPERNOVA 800, 830,840,1200
H	"	B/P EDGE CONN	"	DOT MATRIX LINE PRINT	25 / 7.4	820,1210,1220,N2/4, N2/10,ECL/7,/16

SPECIFICATIONS OF THE CHASSIS-MOUNTED COMPONENTS

Item	Component	Chassis	Slots Required	Type of Data Channel Service Desired: High Speed	Standard	Max Allowable Programmed I/O Latency +	Controller's +5 Volt Current Draw (Amps)
C	CONTROLLER	COMP	1	N/A	N/A	12ms/CHARA	.75

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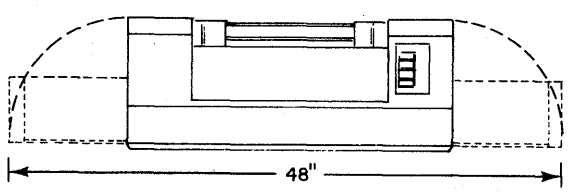
+ = TO MAINTAIN MAX PRINT RATE

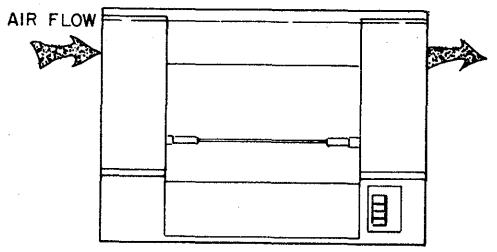
SPECIFICATIONS OF FREE-STANDING COMPONENTS

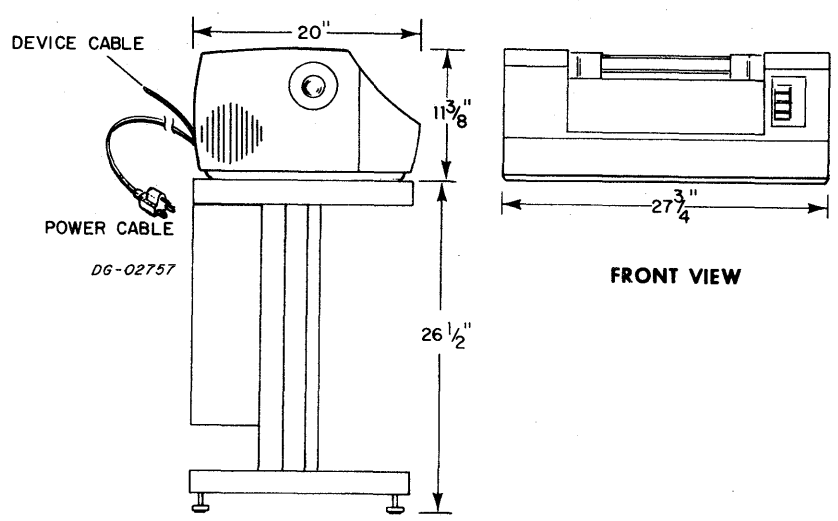
Item	Component	Number in Subsystem	Weight lbs / kg	Operating Humidity (Relative) min / max	Maximum Operating Temperature: Component °F / °C	Media °F / °C	Power Dissipation (Watts)	BTUs/hr (3.41 x Watts)	Primary Power: Current (Amps)	Voltage ±ΔV	Frequency ±Δf	Power Cable Length ft / m	Power Cable Connector	Power Drop Mating Power Receptacle	Wall Mating Power Receptacle
A,B	DOT MATRIX PRINTER	1	118 / 54	5 / 90	100 / 38		600	2046	5	120 +10 -15	57-63	8 / 2.4	5-15P	5-15R	5-15R
			118 / 54	5 / 90	100 / 38		600	2046	5	120 +10 -15	47-53	8 / 2.4	5-15P	5-15R	5-15R
			118 / 54	5 / 90	100 / 38		600	2046	2 1/2	240 +10 -15	47-53	8 / 2.4	5-15P	5-15R	5-15R



SERVICE DIMENSIONS

SERIAL MATRIX PRINTERS





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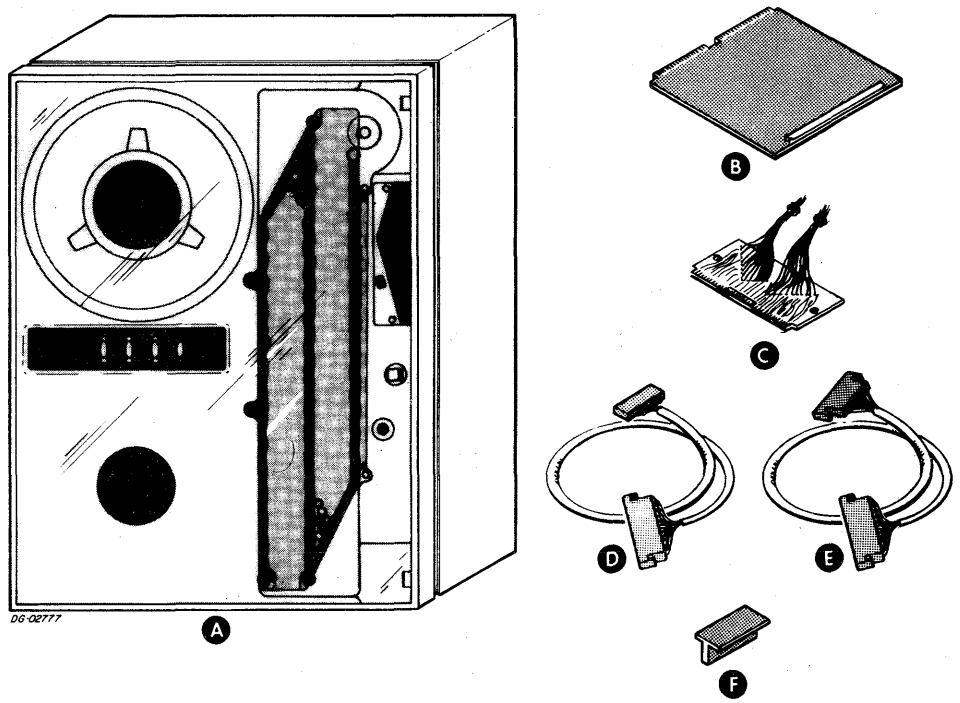
SUBSYSTEM COMPONENT BREAKDOWN



MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	TAPE TRANSPORT	CABINET	
B	TAPE CONTROLLER	COMPUTER CHASSIS	

DG-02672

CABLE

Item	Cable	Connecting	Max Allowed Lg ft / m	Notes
C	INT CABLE	B/P and DEVICE CONNECTOR		
D	DEVICE CABLE	DEVICE CONNECTOR " TRANSPORT	*	SUM OF DEVICE AND INTERDEVICE
E	INTERDEVICE CABLE	TRANSPORT " TRANSPORT	*	CANNOT EXCEED 50FT

DG-02673

TERMINATOR

Item	Terminator	Location	Notes
F	NRZI TERMINATOR	LAST DRIVE	

DG-02674

SPECIFICATIONS OF THE CHASSIS-MOUNTED COMPONENTS

Item	Component	Chassis	Slots Required	Max Allowable Data Channel Latency (μ sec)	Type of Data Channel Service Desired: High Speed	Standard	Controller's +5 Volt Current Draw (Amps)
B	CONTROLLER	COMPUTER	1	12.5	X	X	3

DG-01912

SPECIFICATIONS OF CABINET-MOUNTED COMPONENTS

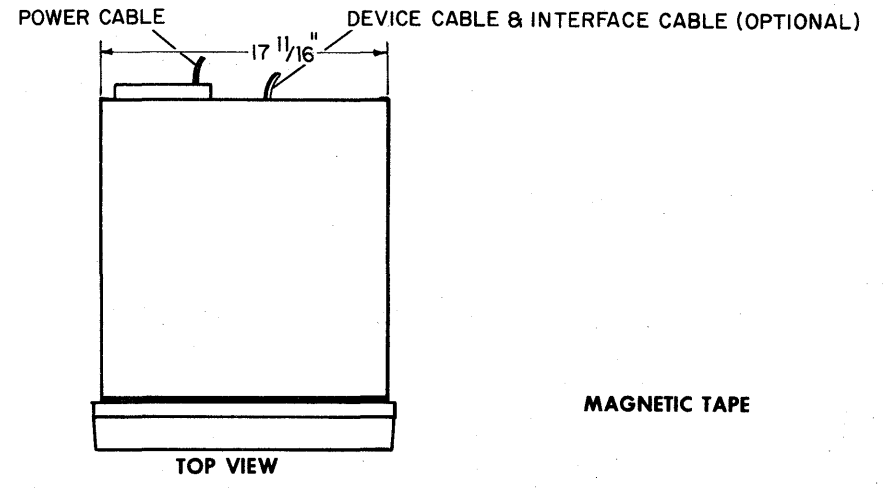
Item	Component	Number in Subsystem	Maximum Operating Temperature: Component °F / °C	Media °F / °C	Primary Power: Current (nom Draw (Amp)	Voltage ±ΔV %	Frequency	Cabinet Height Required: Area	in.	cm	Weight lbs / kg	Power Dissipation (Max Watts)	Preferred Location or Remarks	Operating Humidity (Relative) min% / %max
A	TAPE TRANSPORT		110 / 43.3	90 / 32.2	7.8	+ 10 120 - 15	50±2	14	24	62. 23	150 / 68	900	TOP OF CABINET	20 / 80
	"		" / "	" / "	6	+ 10 240 - 15	50±2	"	"	"	" / "	"	AREA 17-30 *	" / "
	"		" / "	" / "	8	+ 10 120 - 15	60±2	"	"	"	" / "	"		" / "

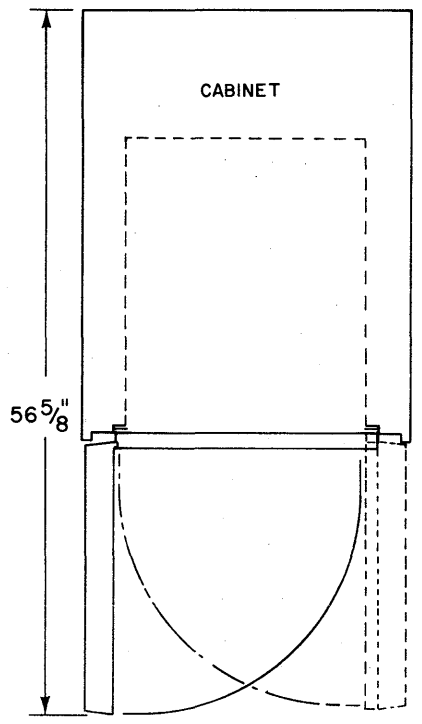
DG-01914

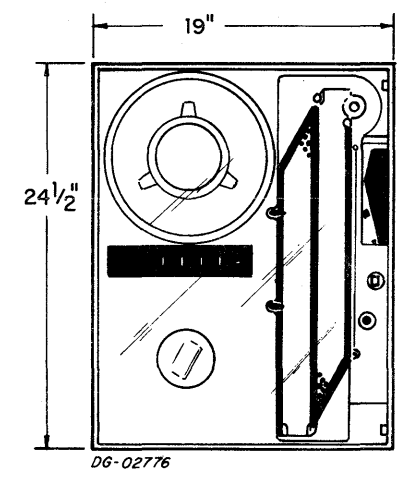
Voltage	Power Cable Length ft	m	Power Cable Plug	Mating Receptacle on Power Drop	Mating Receptacle in Wall
TAPE TRANSPORT 120	10	3	NEMA 5-15P	NEMA 5-15R	NEMA 5-15R
TAPE TRANSPORT 240	10	3	NEMA 6-15P	NEMA 6-15R	NEMA 6-15R

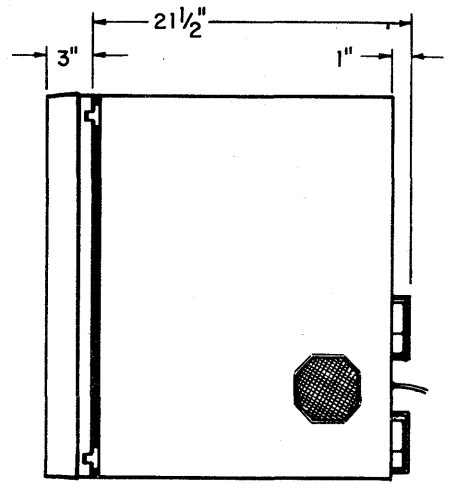
DG-02717

*WHEN EVER POSSIBLE LEAVE A 1.75 " FILLER PANEL DIRECTLY BELOW THE MTT TO PREVENT RUBBING OF DUCT COVER DOOR.



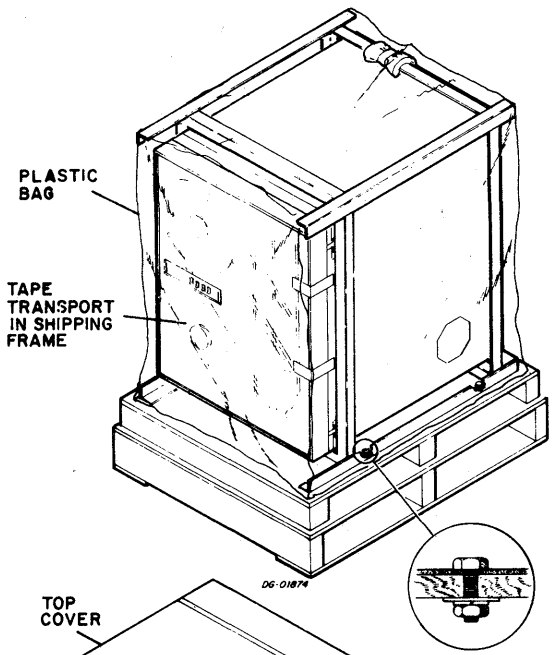




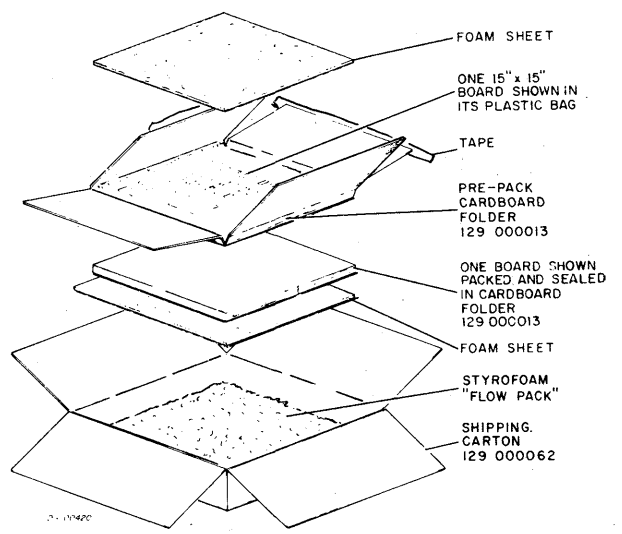


SHIPPING

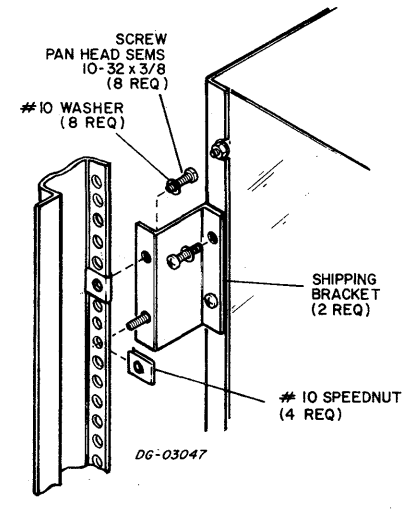
TAPE TRANSPORT



CONTROLLER



MOUNTING SHIPPING BRACKET TO CHASSIS AND RAILS



Storage Specifications		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-10 to +160 / -23 to +71	15 - 95%	90 DAYS

DG-02062

Shipping Specifications			
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude (Non-pressurized)	
-10 to +160 / -23 to +71	15 - 95%	50,000 ft	

DG-02063

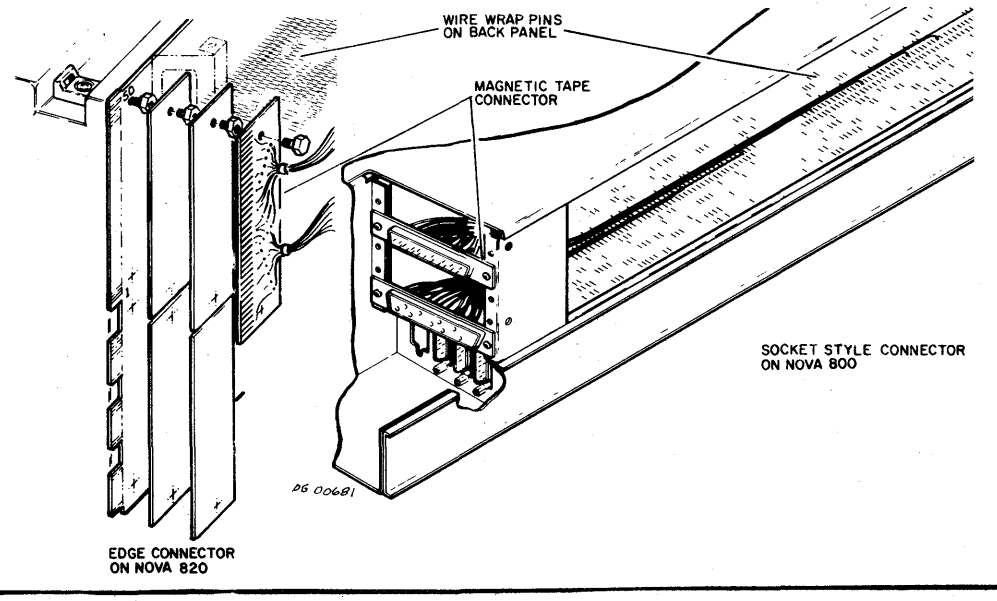
INTERNAL CABLES

INTERNAL CABLE CONNECTION FOR MAGNETIC TAPE SUBSYSTEMS

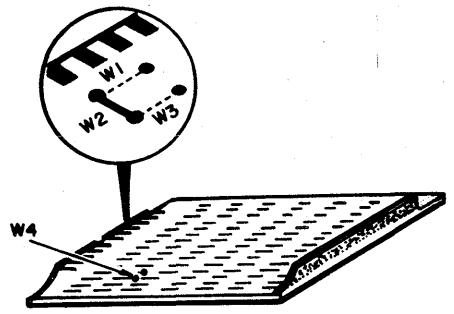
Signal Names	Paddleboard Edge Connector Pin Numbers	Destination Pins on Computer Back Panel: NOVA 2 & 3	ECLIPSE, NOVA 820 1210 & 1220	NOVA 800 & 1200	NOVA & SUPERNOVA computers,	Socket Connector Pin Numbers	Destination Pin Numbers for P11 & P14 NOVA 840, 1200 and 800 Jumbo
GND				B2	1, 2, 99, 100	50	P11-1
GND	1		A-1		1, 2, 99, 100	1	P14-1
9 CHANNEL	09		A-71			2	P14-16
REWIND T	49		B-69			3	P11-9
RUN	8		A-73			4	P14-17
WRITE RESET	16		A-57			5	P14-4
SEL 1	7		A-75			6	P14-18
WRITE STROBE	5		A-77			11	P14-20
RD EN	6		A-76			12	P14-19
WRITE T	14		A-61			13	P14-14
WBP	15		A-59			14	P14-3
WB6	38		B-34			15	P11-17
WB4	3		A-91			16	P14-7
WB3	21		A-84			17	P11-7
WB2	27		A-89			18	P14-8
RB1	41		B-40			19	P11-20
RB2	35		B-25			20	P11-14
REWINDING	30		B-11			21	P11-6
BOT	46		B-53			22	P11-11
IRG	17		A-47			26	P14-6
SEND CLOCK	13		A-63			27	P14-15
FOR/REV	48		B-67			28	P11-10
TUR	47		B-54			29	P11-22
SEL 2	4		A-78			30	P14-21
SEL 4	19		A-79			31	P14-22
WRITE LOCK	39		B-36			32	P11-18
READ STROBE	18		A-49			33	P14-5
RBP	40		B-38			34	P11-19
EOT	42		B-48			35	P11-21
HI DENSITY	43		B-49			36	P11-23
DLY 1	20		A-81			37	P14-23
RB5	32		B-15			38	P11-4
WB7	22		A-83			39	P14-11
WB5	23		A-86			40	P11-8
RB4	31		B-13			41	P11-5
RB6	33		B-19			42	P11-3
RB7	34		B-23			43	P11-2
RB0	37		B-31			44	P11-16
RB3	36		B-27			45	P11-15
WB1	24		A-85			46	P14-10
WB0	26		A-87			47	P14-9
(not used)	44		B-51			49	
"	2		A-92				
"	10		A-69				
"	11		A-67				
"	12		A-65				
"	25		A-88				
"	28		A-90				
"	29		B-6				
"	45		B-52				
"	50		A-3				

Computer	Internal Cable Part Number
NOVA 2, 3 and ECLIPSE computers	005-1802
NOVA 820, 1210 and 1220	005-1802
NOVA 840, 1200 and 800 Jumbo	005-411 (SLOT 16 ONLY)*
NOVA 800 and 1200	005-386
NOVA. SUPERNOVA computers	005-231

*IF NOT IN SLOT 16 USE 005-386

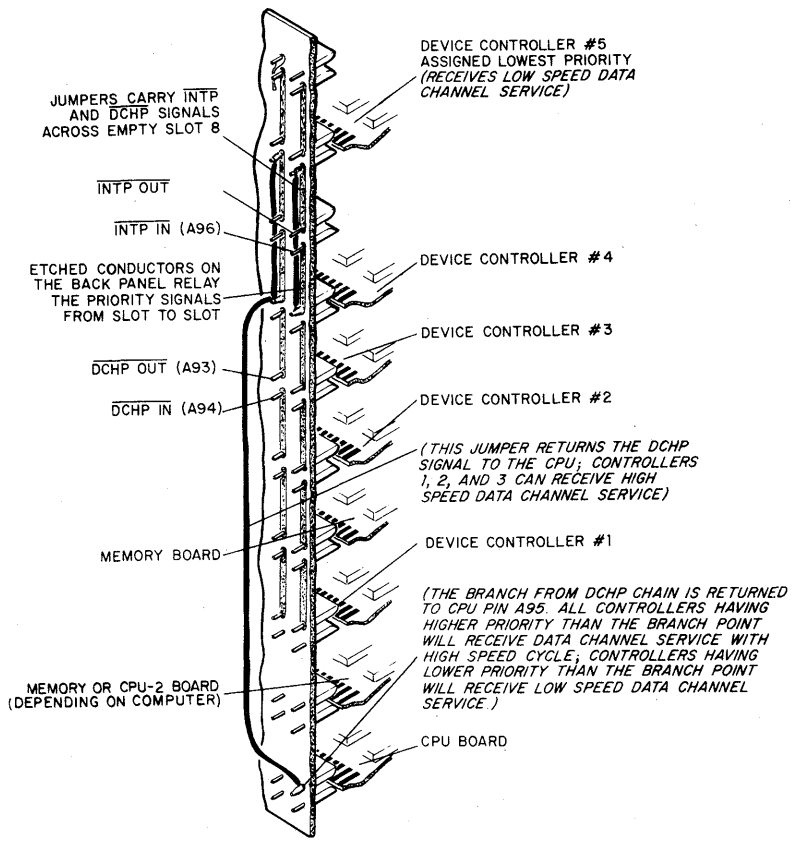


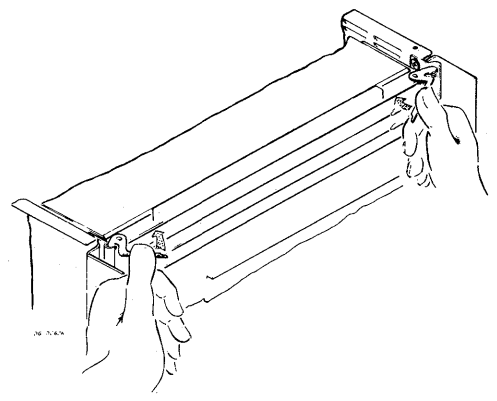
TAILORING



DEVICE CODE 22_8 W2 IN W1,3,4 OUT
DEVICE CODE 62_8 W2 OUT W1,W3,W4 IN

DG-00769

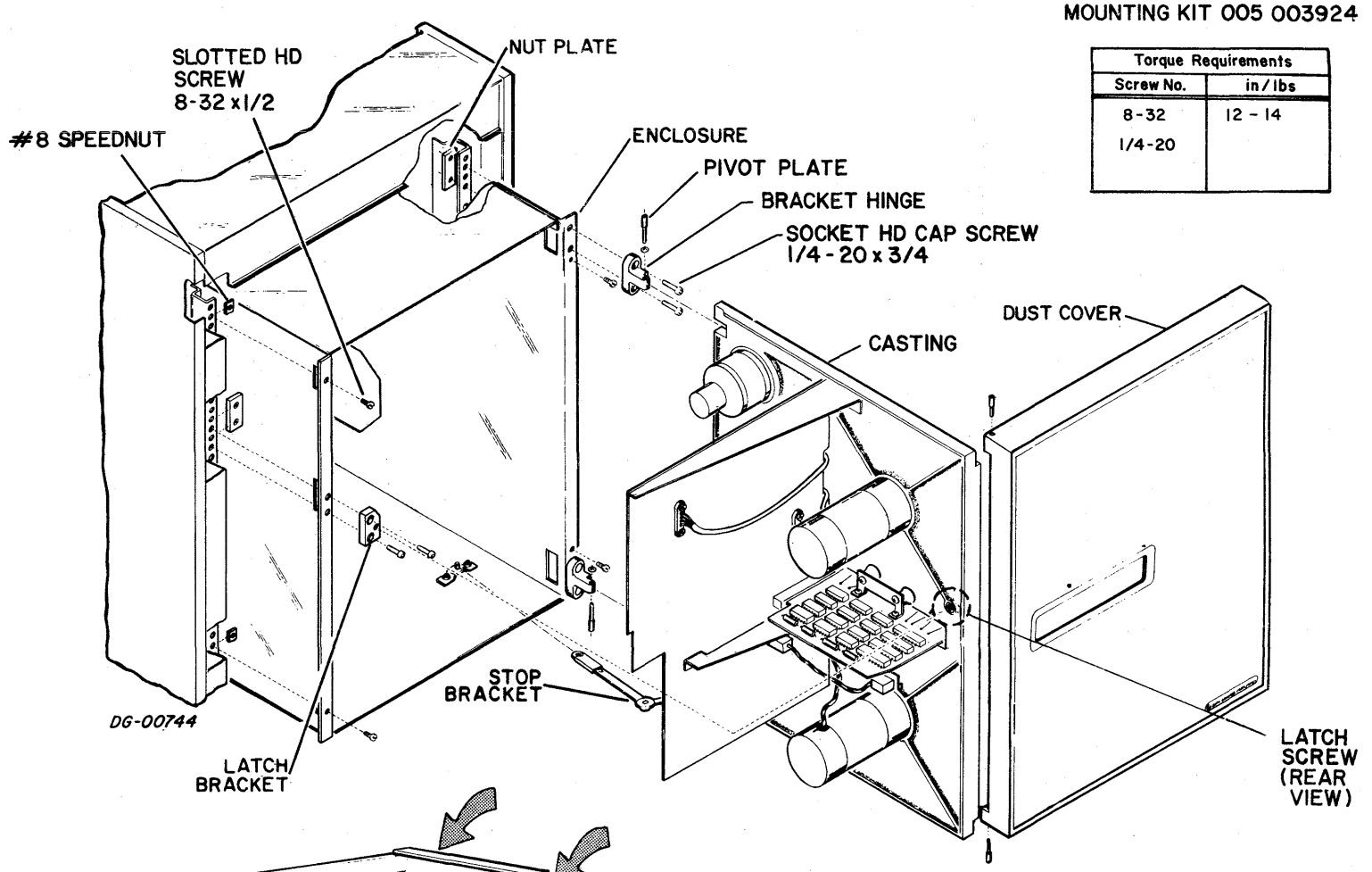




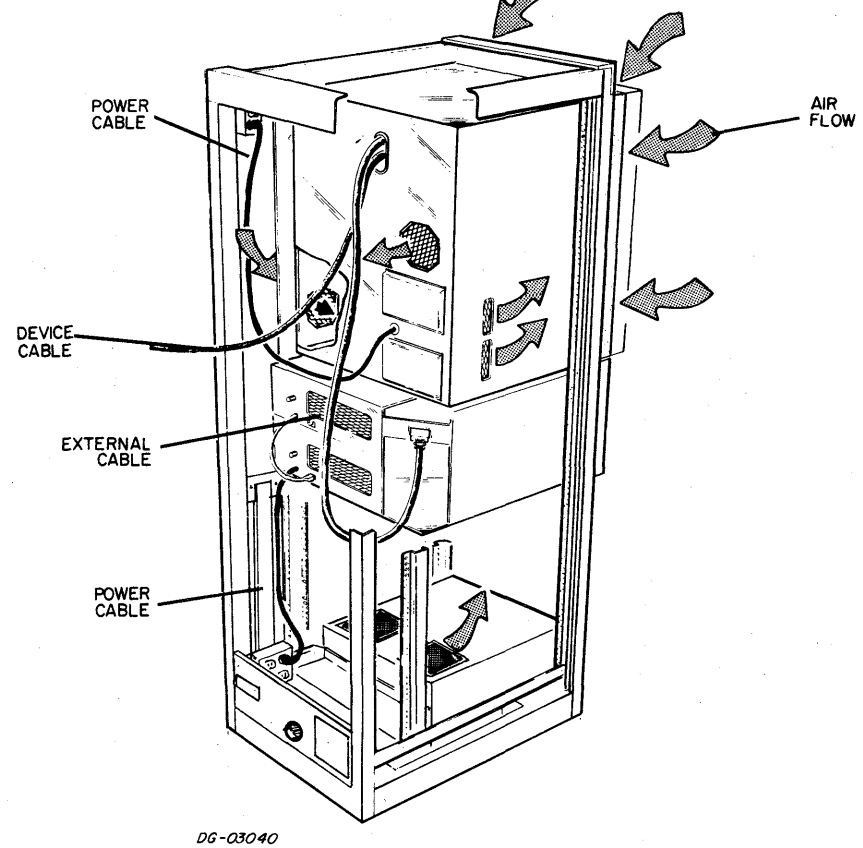
INSTALLATION IN A CABINET

MOUNTING KIT 005 003924

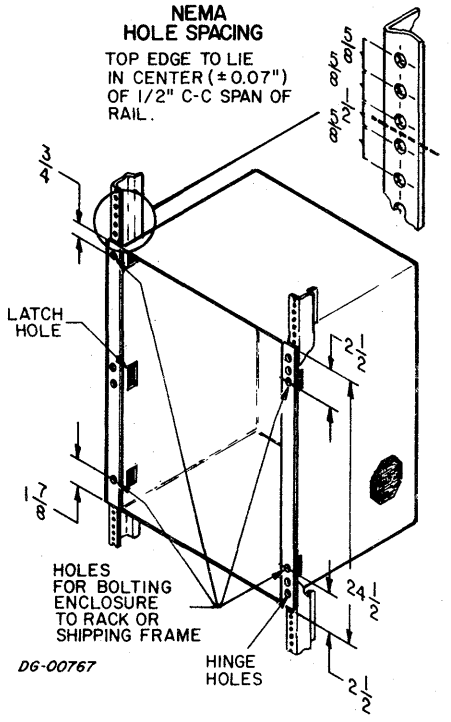
Torque Requirements	
Screw No.	in/lbs
8-32	12 - 14
1/4-20	



DG-00744

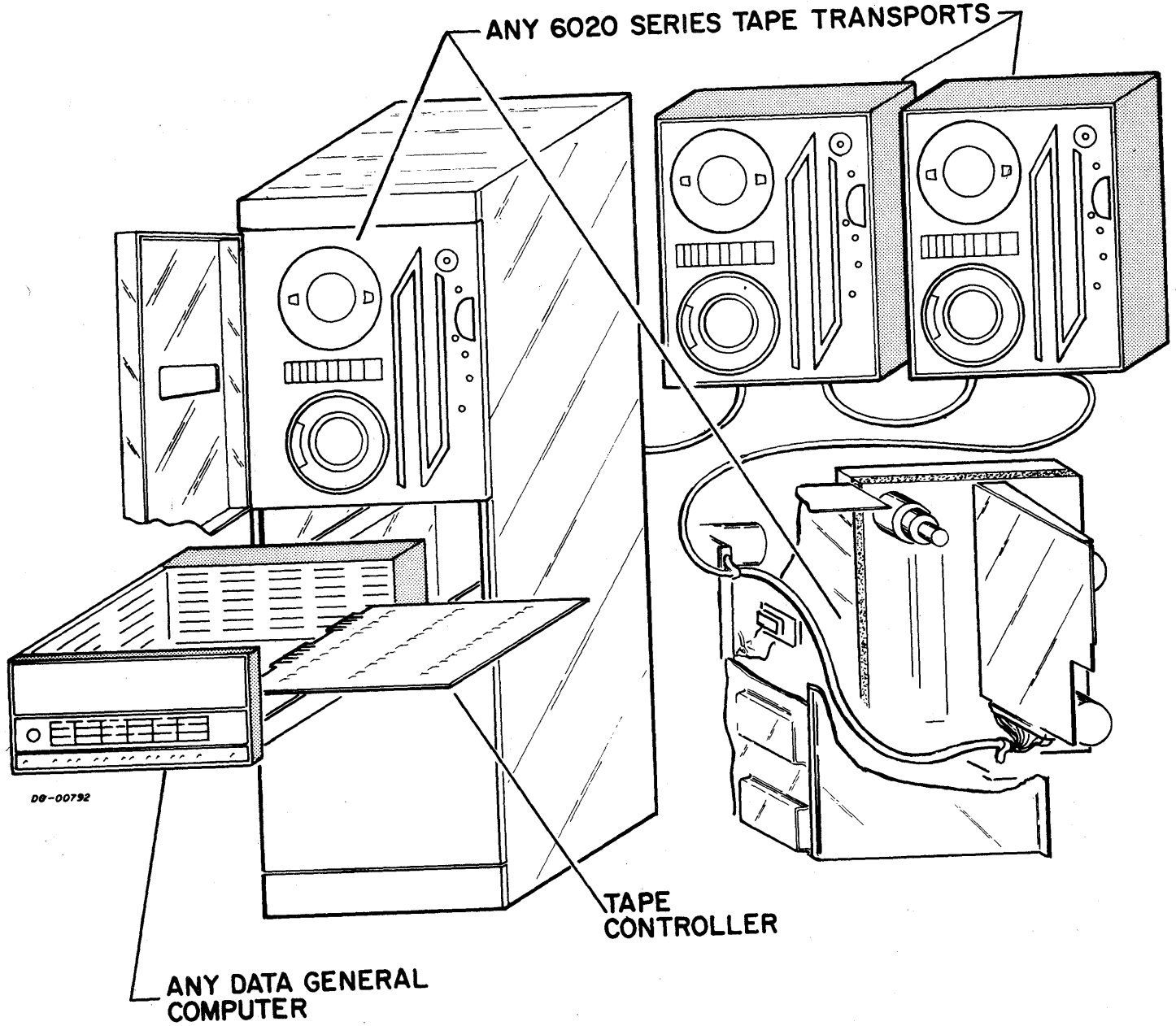


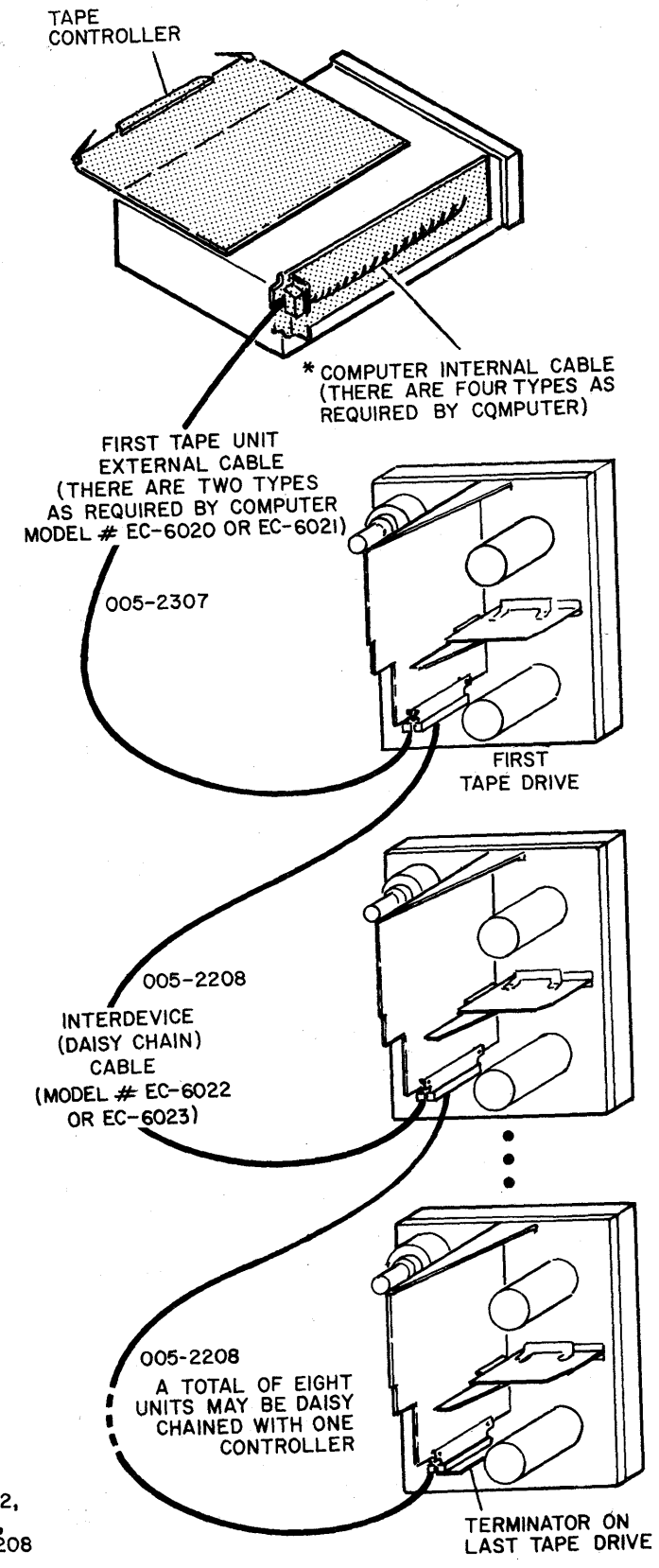
DG-03040



DG-00767

EXTERNAL CABLING

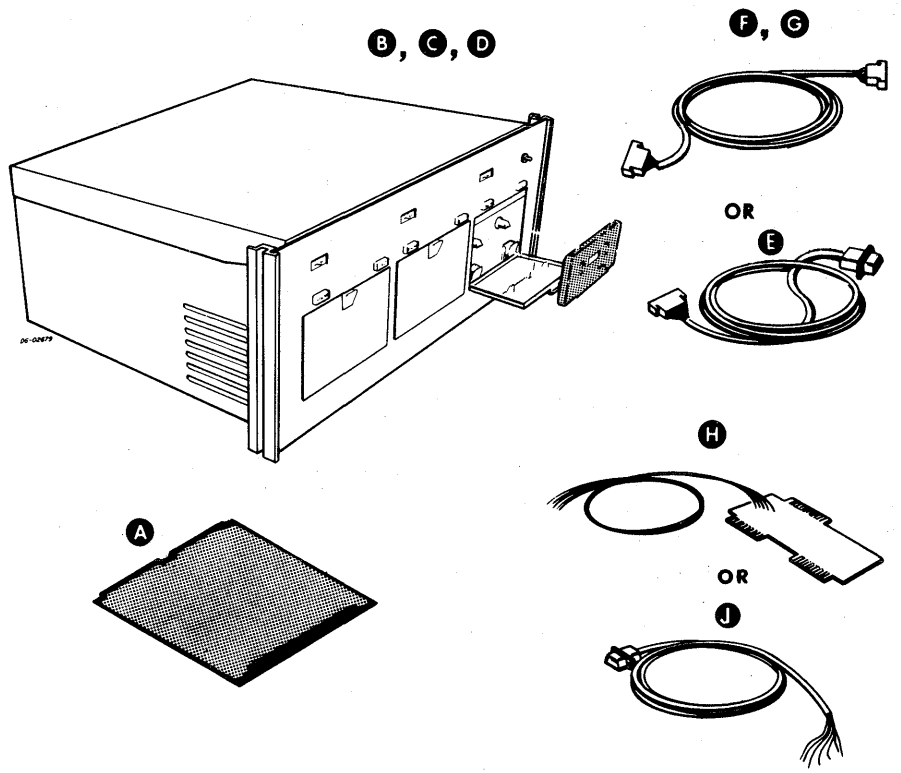




*CPU 2/4, 2/10, 3/4, 3/12, S/100, S200, S230, C330, USE 005-2208

DG-01130

SUBSYSTEM COMPONENT BREAKDOWN



MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	CONTROL	CPU	
B	1-TRANSPORT CHASSIS 4081	CABINET	
C	2-TRANSPORT CHASSIS 4084	CABINET	
D	3-TRANSPORT CHASSIS 4080	CABINET	

DG-02672

CABLE

Item	Cable	Connecting			Max Allowed Lg ft / m	Notes
E	DEVICE CABLE	CPU	and	CASSETTE CHASSIS	15 / 4.57	840 SUPERNOVA, 800,1200
F	DEVICE CABLE	CPU	"	CASSETTE CHASSIS	15 / 4.57	1210,1220,820,NOVA 2,NOVA 3,ECLIPSE
G	INTER DEVICE CABLE	CASSETTE CHASSIS	"	CASSETTE CHASSIS	15 / 4.57	
H	INTERNAL CABLE	BACK PANEL CPU	"	PADDLE BOARD		1210,1220,820,NOVA 2,NOVA 3,ECLIPSE
J	INTERNAL CABLE	BACK PANEL CPU	"	SOCKET CONN		840, SUPERNOVA,800,1200

DG-02673

SPECIFICATIONS OF THE CHASSIS-MOUNTED COMPONENTS

Item	Component	Chassis	Slots Required	Max Allowable Data Channel Latency (μ sec)	Type of Data Channel Service Desired: High Speed	Type of Data Channel Service Desired: Standard	Controller's +5 Volt Current Draw (Amps)
A	CONTROLLER	COMPUTER	1	28			2.5

DG-01912

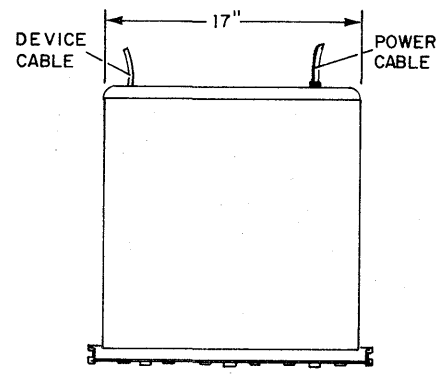
SPECIFICATIONS OF THE CABINET-MOUNTED COMPONENTS

Item	Component	Number in Subsystem Up to	Maximum Operating Temperature: Component °F / °C	Maximum Operating Temperature: Media °F / °C	Primary Power: Current (nom) Draw (Amp)	Primary Power: Voltage ± %	Primary Power: Frequency	Cabinet Height Required: Area	in.	cm	Weight lbs / kg	Power Dissipation (Max Watts)	Preferred Location or Remarks	Operating Humidity (Relative) min % / % max
B	Cassette chassis 1 Transport	8	130 / 55	100 / 38	2 Run 3.9 Start	115 ± 10	60 ± 5Hz	4	7	17.78	42 / 19.05	230	10-20 Preferred Loc.	20 / 80
	Cassette chassis 1 Transport	8			2 3	115 ± 10	50 ± 5Hz	4	7	17.78	42 / 19.05	230		
	Cassette chassis 1 Transport	8			1 1.5	230 ± 8.7	50 ± 5Hz	4	7	17.78	42 / 19.05	230		
C	Cassette chassis 2 Transports	4			3 4	115 ± 10	60 ± 5Hz	4	7	17.78	50 / 22.68	350		
	Cassette chassis 2 Transports	4			3 4	115 ± 10	50 ± 5Hz	4	7	17.78	50 / 22.68	350		
	Cassette chassis 2 Transports	4			1.5 2	230 ± 8.7	50 ± 5Hz	4	7	17.78	50 / 22.68	350		
D	Cassette chassis 3 Transports	2			4 5	115 ± 10	60 ± 5Hz	4	7	17.78	58 / 26.31	450		
	Cassette chassis 3 Transports	2			4 5	115 ± 10	50 ± 5Hz	4	7	17.78	58 / 26.31	450		
	Cassette chassis 3 Transports	2			2 2.5	230 ± 8.7	50 ± 5Hz	4	7	17.78	58 / 26.31	450		

DG-01914

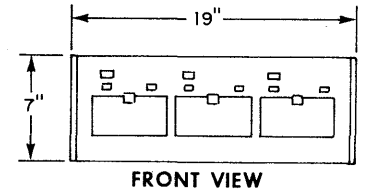
Voltage	Power Cable Length ft	Power Cable Length m	Power Cable Plug	Mating Receptacle on Power Drop	Mating Receptacle in Wall
110	5	1.524	5-15P	5-15R	5-15R
230	5	1.524	6-15P	6-15R	6-15R

DG-02717



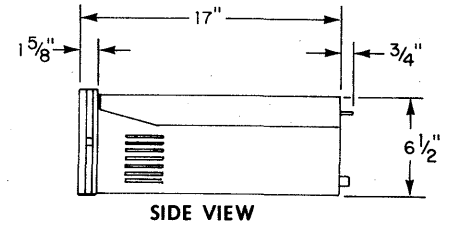
TOP VIEW

CASSETTE



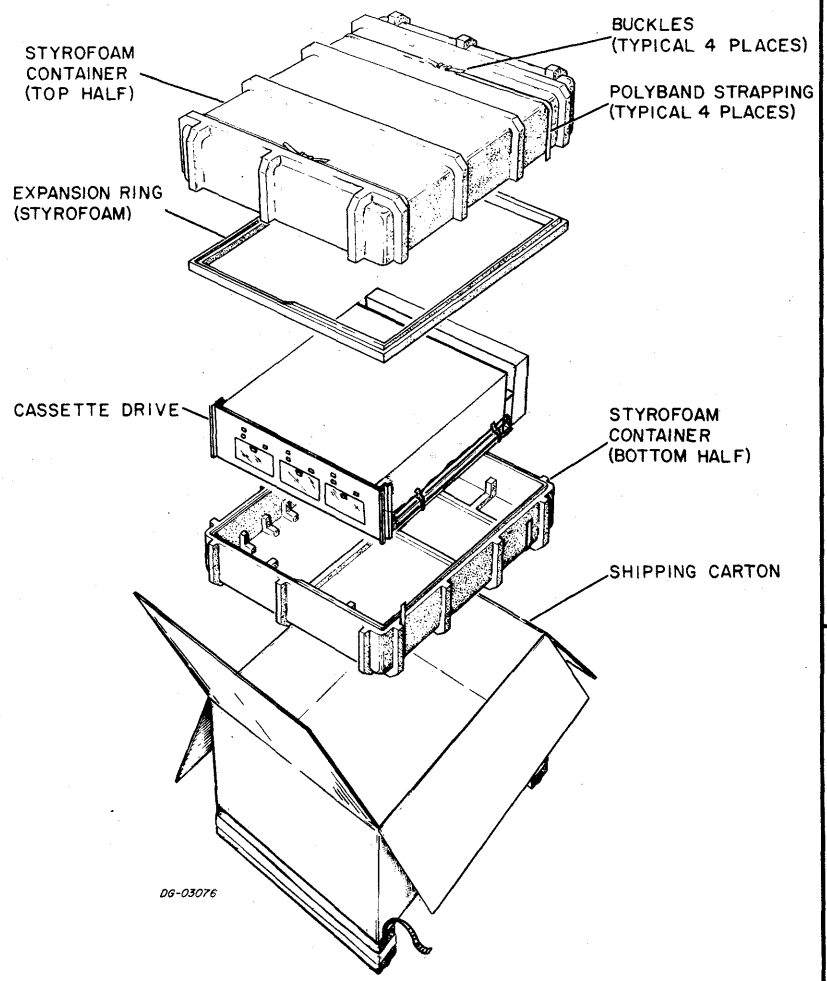
FRONT VIEW

DG-03030

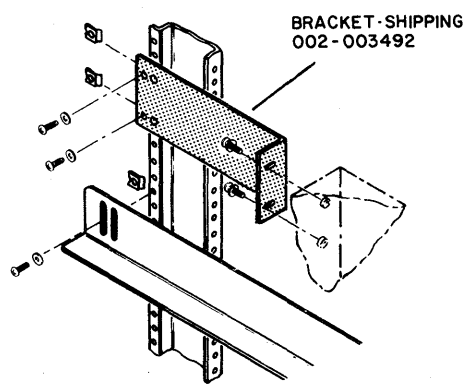


SIDE VIEW

SHIPPING



MOUNTING SHIPPING BRACKET TO CHASSIS AND RAILS



Shipping Specifications			
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	
-40 to 185 / -40 to 85	0-85%	15,000ft	

DG-02063

Storage Specifications		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-40 to 185 / -40 to 85	0-85%	90 days

DG-02062

INTERNAL CABLING

Internal Cable Connections

Signal Names	Paddleboard Edge Connector Pin Numbers	Destination Pins on Back Panel (NOVA and ECLIPSE Line Computers)	Socket Connector Pin Numbers
CUR	J	A69	1
Rewinding	7	A67	2
W.L.	H	A65	3
BOT	6	A63	4
EOT	5	A61	5
SEL 1	D	A59	6
SEL 2	4	A57	7
SEL 4	2	A49	8
Cas RD DATA	L	A77	9
Cas WT DATA	C	A47	10
Rev	9	A75	11
Rewind Cas	8	A71	12
Writing	K	A73	13
GND	10	A99	14
MOVE	B	A12	15
+5	I & A	A97	16
GND	E & F	A100	18

NOVA 2 ECLIPSE Series Computers 005 003453

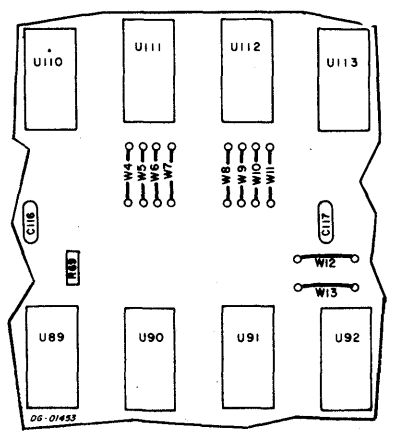
NOVA 1210,1220, Computers 005 003860

NOVA 800,1200 and SUPERNOVA Computers,840 005 001167

Teletype Baud Rate	
Function	Jumpers
Select 110 baud rate	Install W5, W6, W9, W11, W12 * Omit W4, W7, W8, W10, W13 *
Select 150 baud rate	Install W4, W5, W6, W7, W10, W11, W12 * Omit W8, W9, W13*
Select 300 baud rate	Install W4, W5, W6, W7, W11, W12 * Omit W8, W9, W10, W13*
Select 600 baud rate	Install W4, W5, W6, W7, W12* Omit W8, W9, W10, W11, W13*
Select 1200 baud rate	Install W5, W6, W7, W12* Omit W4, W8, W9, W10, W11, W13*
Select 2400 baud rate	Install W6, W7, W12* Omit W4, W5, W8, W9, W10, W11, W13*
Select 4800 baud rate	Install W7, W12 Omit W4, W5, W6, W8, W9, W10, W11, W13*
Select 9600 baud rate	Install W13* Omit W4, W5, W6, W7, W8, W9, W10, W11, W12*

DG-01340

*W12 and W13 are not present in revisions 00-09 of artwork 107-000151. Rev 107-000151 Revs 00-18



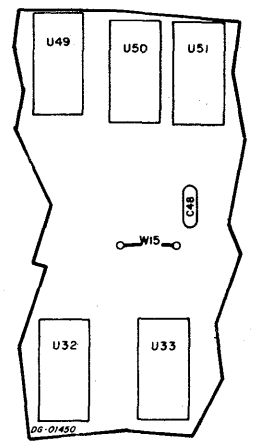
TAILORING

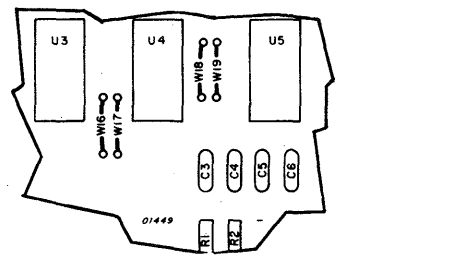
CONTROLLER 4075, 76, 77, 78, 79

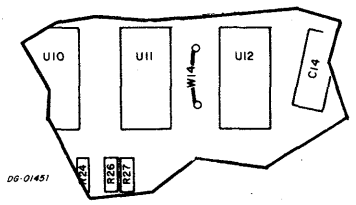
* Device Codes	
Function	Jumpers
Select the primary device codes - 34_8 for the cassette, 10_8 for TTI, 11_8 for TTO, and 13_8 for RTC	Install jumpers W16, W19 Omit jumpers W14, W15, W17, W18
Select the secondary device codes - 74_8 for the cassette, 50_8 for TTI, 51_8 for TTO, and 53_8 for RTC	Install jumpers W14, W15, W17, W18 Omit jumpers W16, W19
Select the primary device code - 34_8 for the cassette, and the secondary device codes - 50_8 for TTI, 51_8 for TTO, and 53_8 for RTC	Install jumpers W15, W17, W19 Omit jumpers W14, W16, W18
Select the secondary device code - 74_8 for the cassette, and the primary device codes - 10_8 for TTI, 11_8 for TTO, and 13_8 for RTC	Install jumpers W14, W16, W18 Omit jumpers W15, W17, W19

DG-01339

* Ref. DGC 107-000063 REV. 00-06.



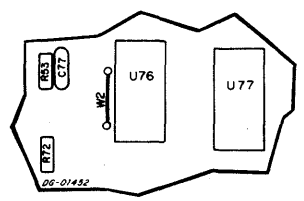


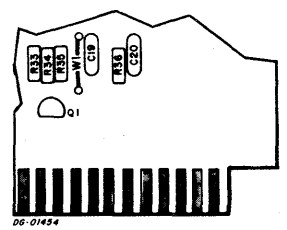


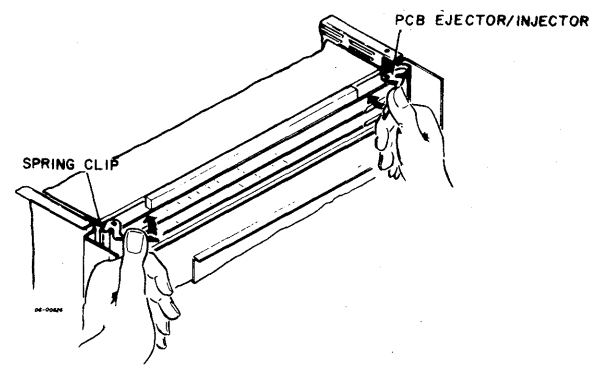
Current or Voltage Loop	
Function	Jumpers
Select the current loop	Install jumpers W1 and W2
Select the EIA voltage loop	Omit jumpers W1 and W2

DG-01341

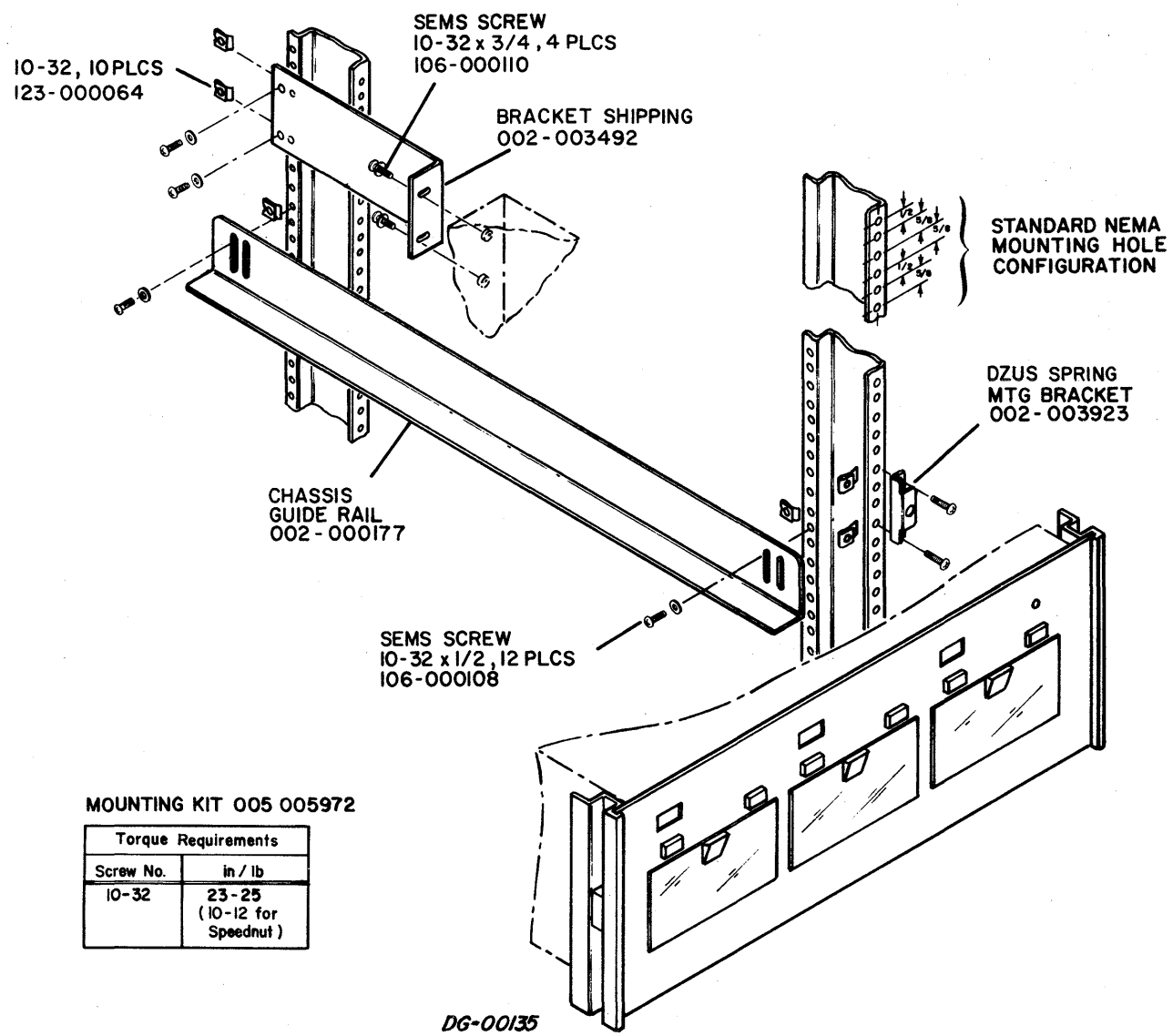
Ref DGC 107-000151 Revs 00-18







INSTALLATION IN A CABINET



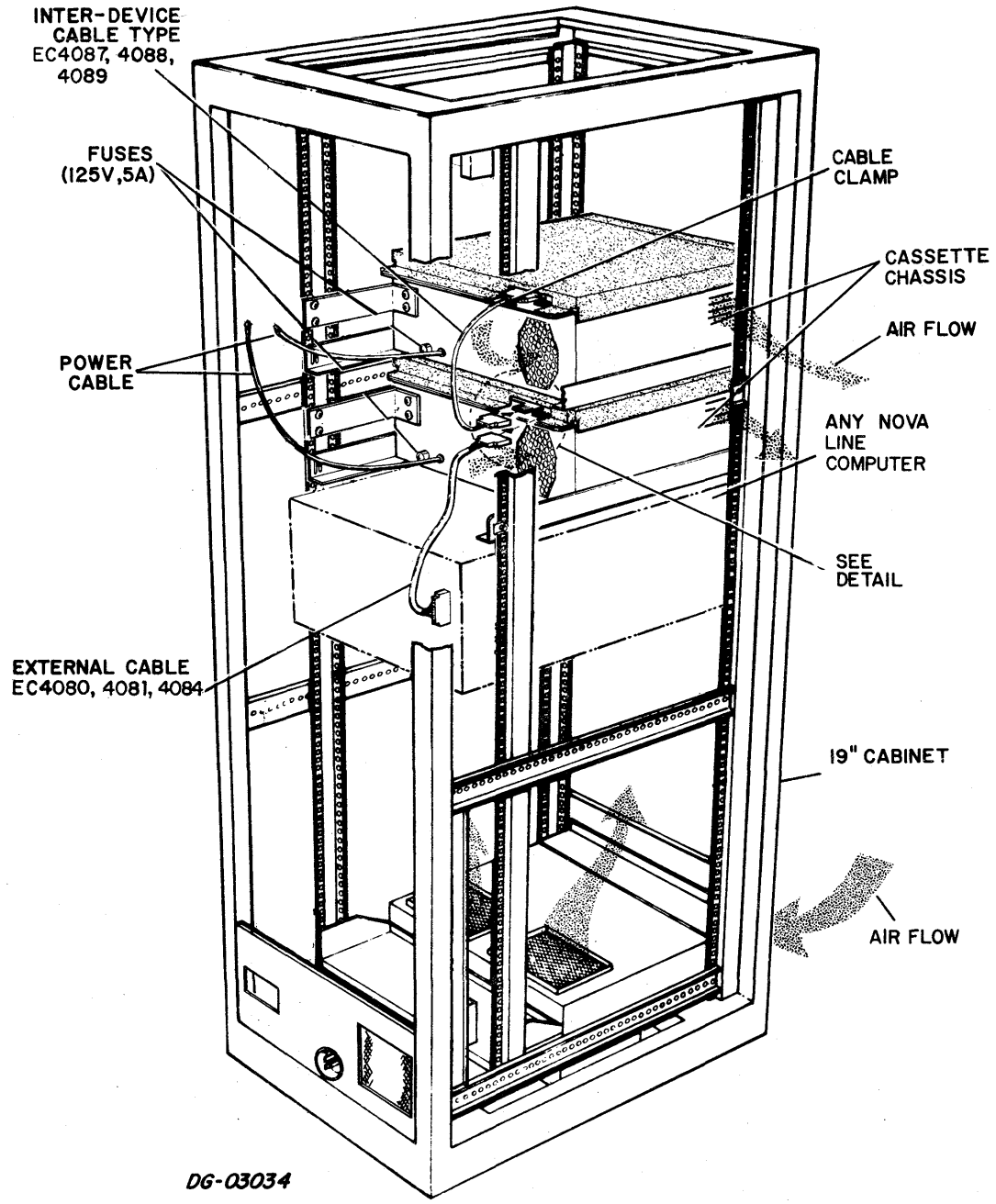
DG-00135

MOUNTING KIT 005 005972

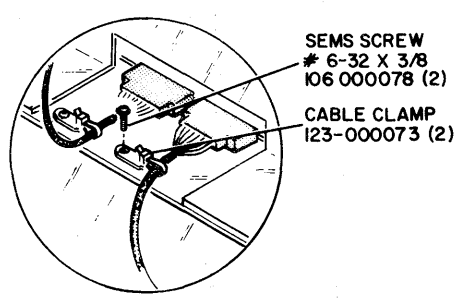
Torque Requirements	
Screw No.	in / lb
10-32	23-25 (10-12 for Speednut)

EXTERNAL CABLING

AIR FLOW



DG-03034



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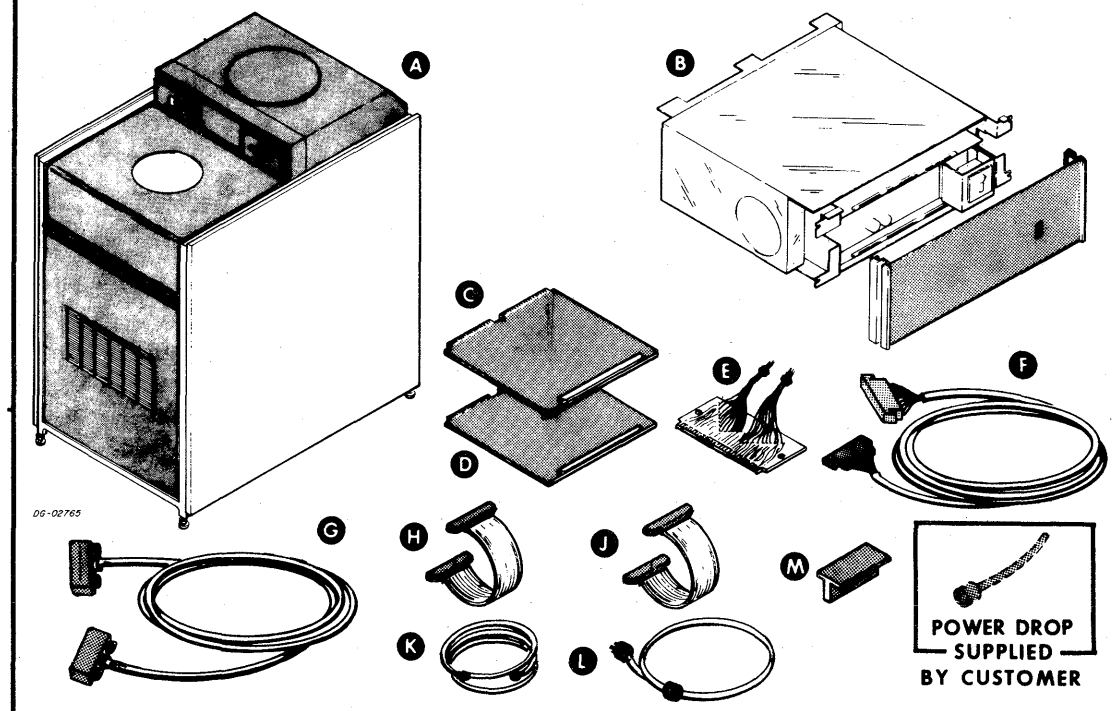
SUBSYSTEM COMPONENT BREAKDOWN



MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	100 M-BYTE DRIVE UNIT	FREE STANDING	SEE CABLE LENGTH RESTRICTIONS
B	ADAPTER	EQUIPMENT CABINET	SEE CABLE LENGTH RESTRICTIONS
C	CONTROLLER	COMPUTER CHASSIS (1-SLOT)	
D	DATA CHANNEL INTERFACE	COMPUTER CHASSIS (1-SLOT)	DIRECTLY BELOW CONTROLLER

CABLE

Item	Cable	Connecting			Max Allowed Lg ft / m	Notes
E	INTERFACE CA	B/P CTRLLR SLOT	and	DEVICE CA CONNECTOR		
F	DEVICE CA (ADAPTER)	DEVICE CA CONNECTOR	"	ADAPTER	10 / 3	1 PER SUBSYSTEM
G	DEVICE CA (DRIVE)	ADAPTER	"	DRIVE UNIT	50 / 15.3	1 PER DRIVE UNIT
H	CONTROLLER RIBBON CA	CONTROLLER	"	DATA CHAN INTERFACE		BTW RIBBON CONN @ HDL END OF BDS
J	ADAPTER RIBBON CA	ADAPTER BD #1	"	ADAPTER BD #2		BTW RIBBON CONN @HANDLE END, OF BDS
K	GROUND BRAID	ADAPTER CHASSIS	"	DRIVE CHASSIS	50 / 15.3	1 PER DRIVE UNIT
L	EXTERNAL POWER	DRIVE CHASSIS	"	WALL RECEPTACLE	10 / 3	1 PER DRIVE UNIT

TERMINATOR

Item	Terminator	Location	Notes
M	SIGNAL BUS TERMINATOR	"B" CONNECTOR, ADAPTER	NOT NEEDED IN DUAL CPU SYSTEM

SPECIFICATIONS OF THE CHASSIS-MOUNTED COMPONENTS

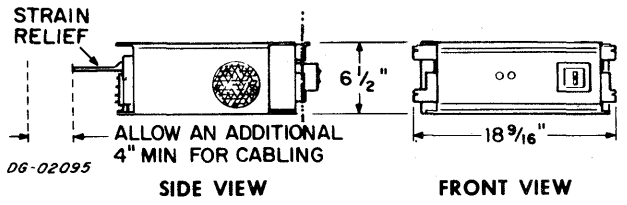
Item	Component	Chassis	Slots Required	Max Allowable Data Channel Latency (μ sec)	Max Allowable Programmed I/O Latency +	Controller's +5 Volt Current Draw (Amps)
C	CTRLLR	COMPUTER	1	N/A	N/A	9.4
D	DATA CHAN INT	COMPUTER	1*	19.8	N/A	2.9

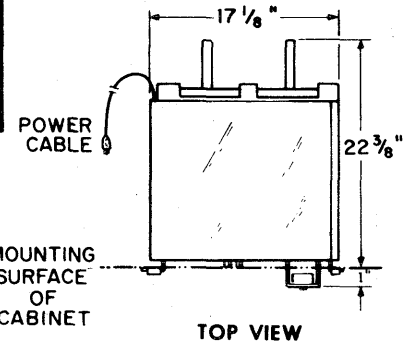
*(DIRECTLY BELOW CONTROLLER)

SPECIFICATIONS OF CABINET-MOUNTED COMPONENTS

Item	Component	Number in Subsystem	Maximum Operating Temperature Component °F / °C	Maximum Operating Temperature Media °F / °C	Primary Power Volts	Hz	Phase	Cond	Amps	Cabinet Height Required Area	in.	cm	Weight lbs / kg	Power Dissipation (Max Watts)	Preferred Location or Remarks	Operating Humidity (Relative) min % / % max
B	ADAPTER	1	131 / 55		100	50	1φ	3	1.8	4	7	17.8	30 / 13.6	180		20 / 80
		1	131 / 55		120	60	1φ	3	1.5	4	7	17.8	30 / 13.6	180		20 / 80
		1	131 / 55		220	50	1φ	3	.80	4	7	17.8	30 / 13.6	180		20 / 80
		1	131 / 55		240	50	1φ	3	.75	4	7	17.8	30 / 13.6	180		20 / 80

Voltage	Power Cable Length ft	Power Cable Length m	Power Cable Plug	Mating Receptacle on Power Drop	Mating Receptacle in Wall
100V, 50Hz.	5	1.52	5-15P	5-15R	5-15R
120V, 60Hz	5	1.52	5-15P	5-15R	5-15R
220V, 50Hz	5	1.52	6-15P	6-15R	6-15R
240V, 50Hz	5	1.52	6-15P	6-15R	6-15R





SPECIFICATIONS OF THE FREE-STANDING COMPONENTS

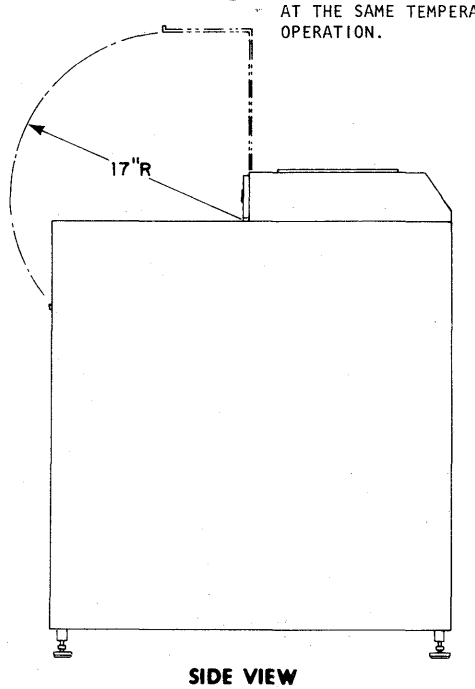
Item	Component	Number in Subsystem	Weight lbs / kg	Operating Humidity (Relative) min / max	Maximum Operating Temperature ① Component °F / °C	Maximum Operating Temperature ① Media °F / °C	② Power Dissipation (Watts)	BTUs/hr (3.41 x Watts)	③ Primary Power Volts	Hz ±1%	Phase	Cond	Amps	Power Cable Length ft / N/A m	Power Cable Connector	Power Drop Mating Power Receptacle *	Wall Mating Power Receptacle
A	DRIVE UNIT	1-4	575 / 262	20 / 80	90 / 32	90 / 32	1800	6140	208/120	60	3φ	5	8A/PH MAX		2515	2513	
			575 / 262	20 / 80	90 / 32	90 / 32	1800	6140	380/220	50	3φ	5	5A/PH MAX		2535	2533	
			575 / 262	20 / 80	90 / 32	90 / 32	1800	6140	415/240	50	3φ	5	4A/PH MAX		2535	2533	
			575 / 262	20 / 80	90 / 32	90 / 32	1800	6140	220	50	3φ	4	8A/PH MAX		2535	2533	
			575 / 262	20 / 80	90 / 32	90 / 32	1800	6140	200	50	3φ	4	8A/PH MAX		2535	2533	

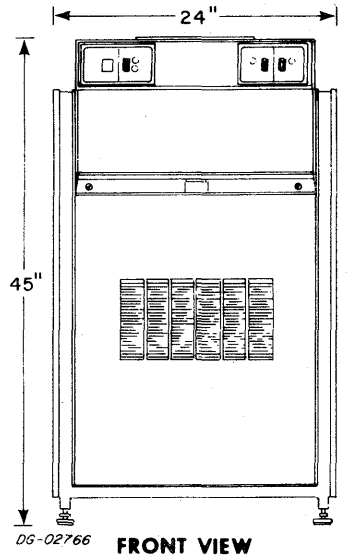
*SUPPLIED BY CUSTOMER

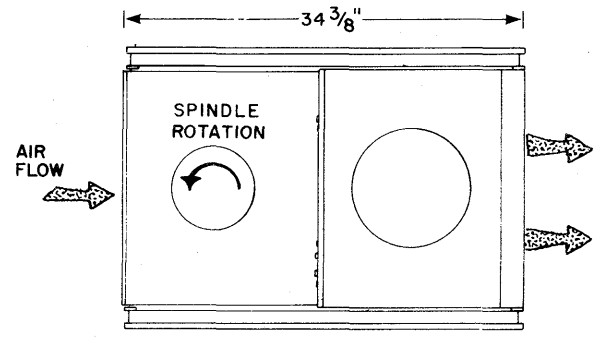
① THE DRIVE UNIT AND MEDIA MUST BE AT THE SAME TEMPERATURE FOR PROPER OPERATION.

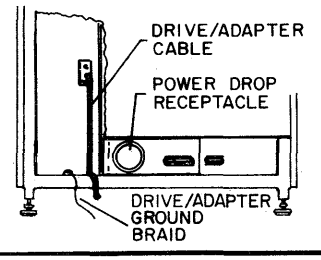
② BASED ON AVERAGE PER PHASE CURRENT OF 5.0 AMPS PER PHASE. 208/120, 60Hz.

③ CURRENT GIVEN IS FOR DRIVE UNIT WHEN ACCESSING. MAX SURGE CURRENT ON START-UP IS 30 AMPS PER PHASE FOR 12 SECONDS.





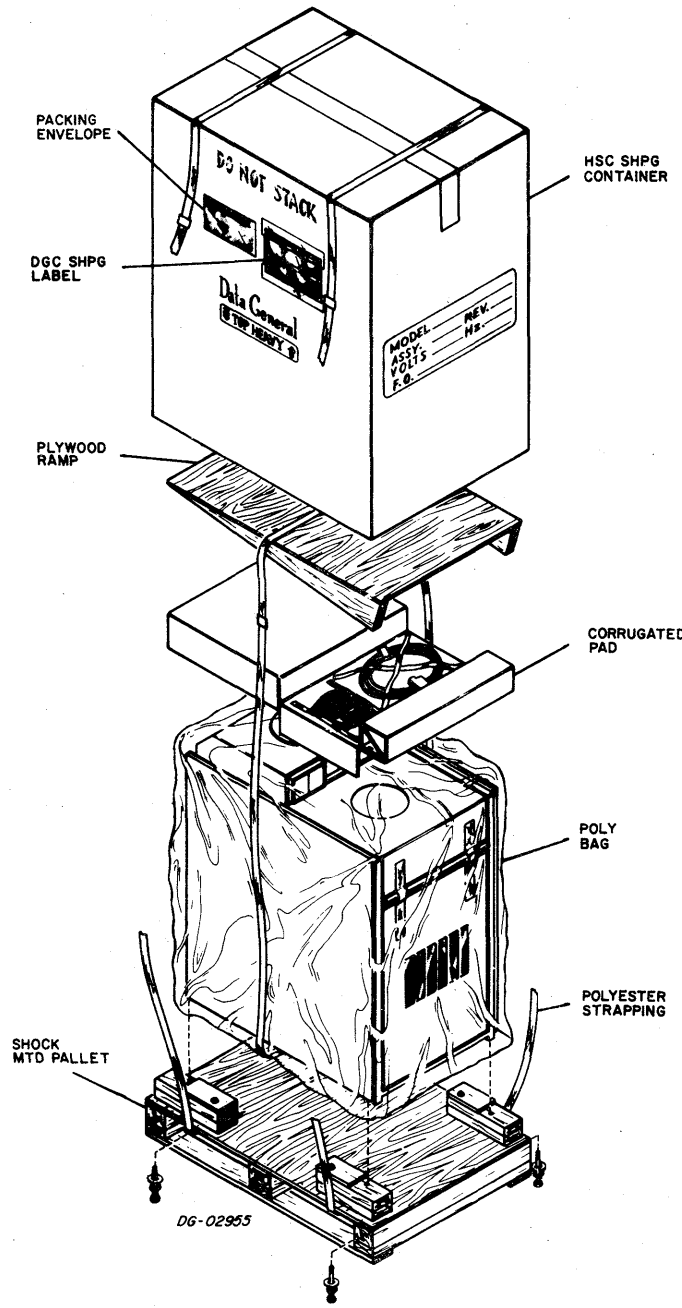




NOTE:
CHECK CORRECT ROTATION OF 3Ø SPINDLE DRIVE MOTOR. WHEN INSTALLING MORE THAN ONE DRIVE, ROTATE PHASES FROM UNIT TO UNIT IN POWER DROPS TO REDUCE UNBALANCE.

SHIPPING

THE DISC DRIVE PACKING KIT



SHIPPING AND PACKAGE DATA						
Outside Dimensions			Weight (Gross)	Volume	Density	
Length	Width	Depth				
in. / cm	in. / cm	in. / cm	lbs. / kg	cu ft. / cu m	lbs/cu ft / kg/cu m	
49 / 124	29 1/4 / 74	42 1/4 / 108	653 / 296	3.5 / 1	19 / 296	
SHIPPING SPECIFICATIONS			STORAGE SPECIFICATIONS			
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period	
-40to+160 / -40 to +71	0%/80%	50,000ft. 15,200m	-40to+160 / -40 to +71	0%/80%	90 days	

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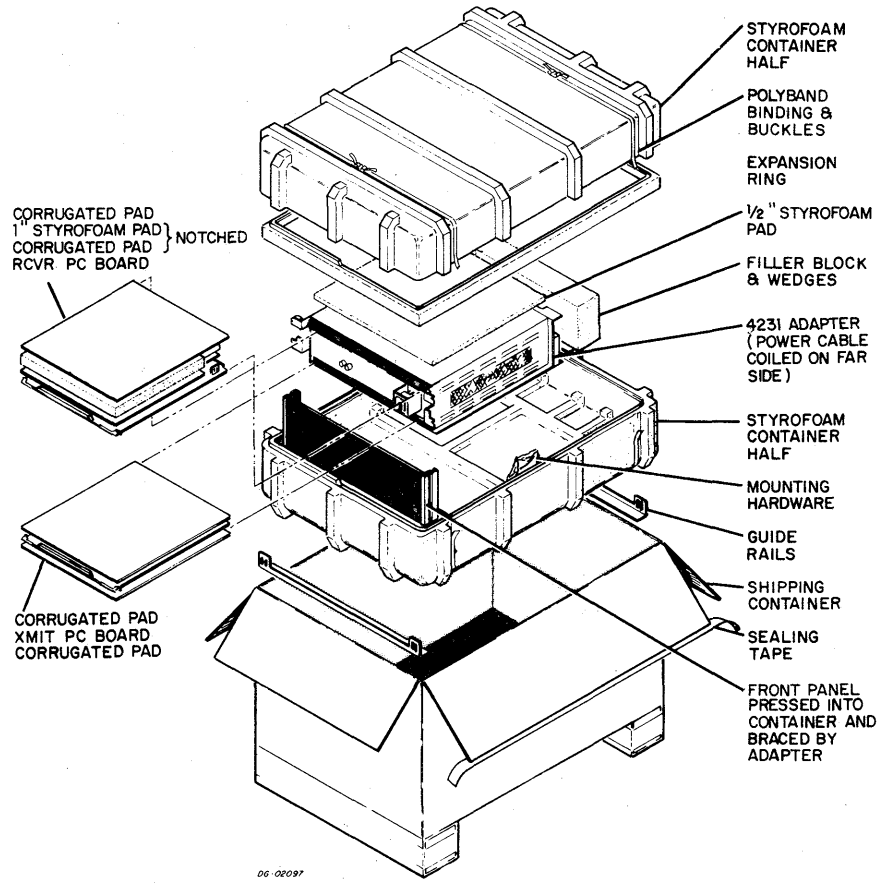
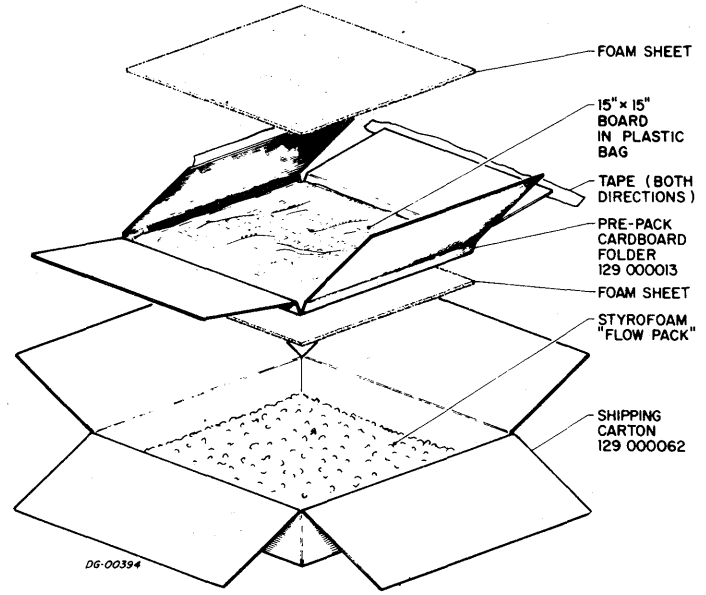
THE ADAPTER PACKING KIT



SHIPPING AND PACKAGE DATA						
Outside Dimensions			Weight (Gross)	Volume	Density	
Length	Width	Depth				
in. / cm	in. / cm	in. / cm	lbs. / kg	cu ft. / cu m	lbs/cu ft / kg/cu m	
30 / 76.2	24.3 / 61.7	18 / 45.7	62 / 28.1	7.6 / .21	8.2 / 133.8	
SHIPPING SPECIFICATIONS			STORAGE SPECIFICATIONS			
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period	
-40to+160 / -40 to +71	0%/80%	50,000ft. 15,200m	-40to+160 / -40 to +71	0%/80%	90 days	

DG-03224

THE CONTROLLER PACKING KIT

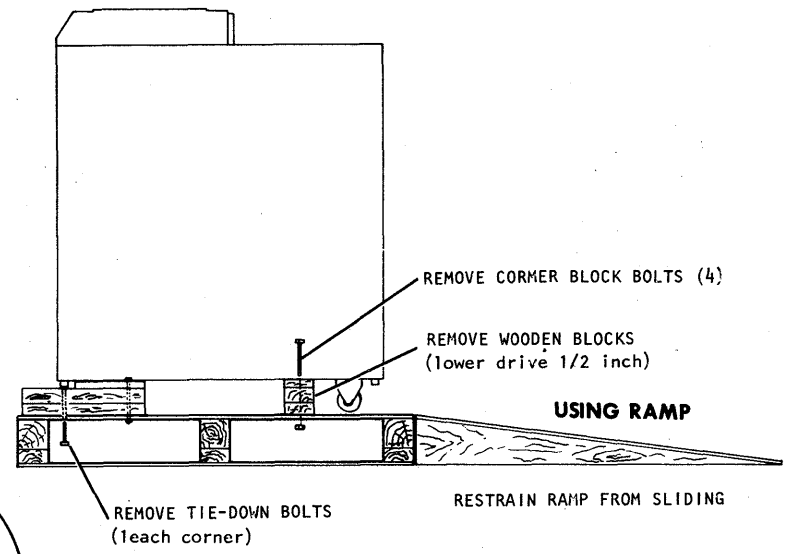


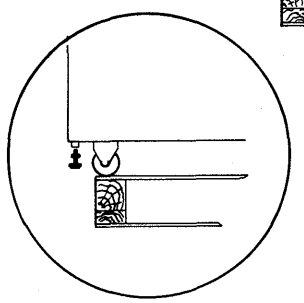
SHIPPING AND PACKAGE DATA						
Outside Dimensions			Weight (Gross)	Volume	Density	
Length	Width	Depth				
in. / cm	in. / cm	in. / cm	lbs. / kg	cu ft. / cu m	lbs/cu ft / kg/cu m	
18 / 45	18 / 45	4 / 10	8 / 3.6	.75 / .02	10.7 / 180	
SHIPPING SPECIFICATIONS			STORAGE SPECIFICATIONS			
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period	
-40to+160 / -40 to +71	0%/80%	50,000ft. 15,200m	-40to+160 / -40 to +71	0%/80%	90 days	

DG-03224

HANDLING PRECAUTIONS
UNPACKING CONSIDERATIONS
(Save Materials)

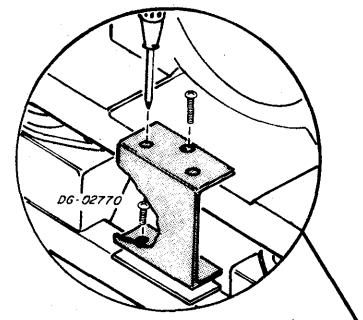
REMOVING DRIVE FROM PALLET



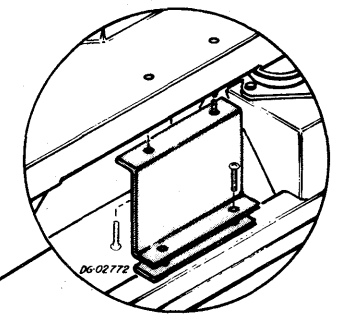


INSTALL LEVELLING LEGS
(move drive to overhang pallet edge screw levelling legs as far in as they will go to avoid bending them going on and off ramp)

MOVE DRIVE CARFULLY AFTER REMOVING CARRIAGE LOCK TO AVOID HEAD DAMAGE

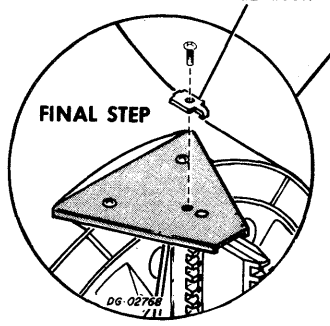


REMOVE BASEPLATE (casting)
REAR BRACKET AND SHIMS

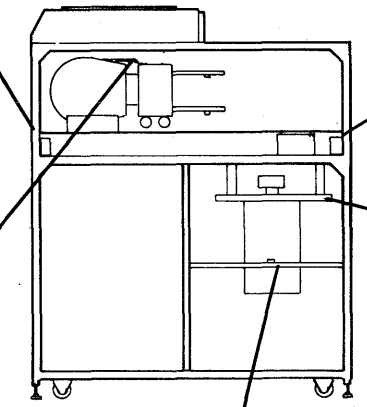


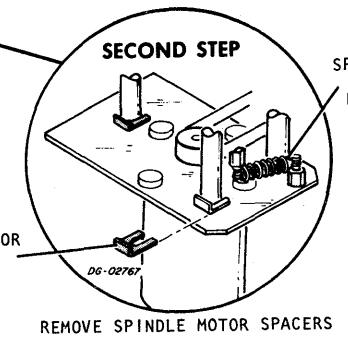
REMOVE BASEPLATE (casting)
FRONT BRACKET AND SHIMS

CARRIAGE LOCK

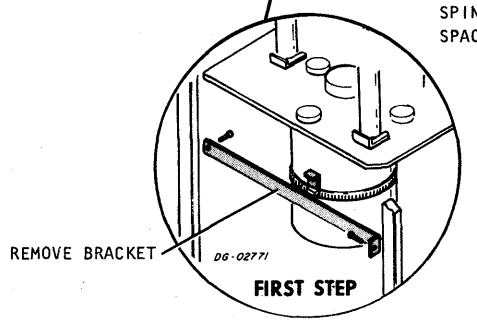


REMOVER CARRIAGE LOCK



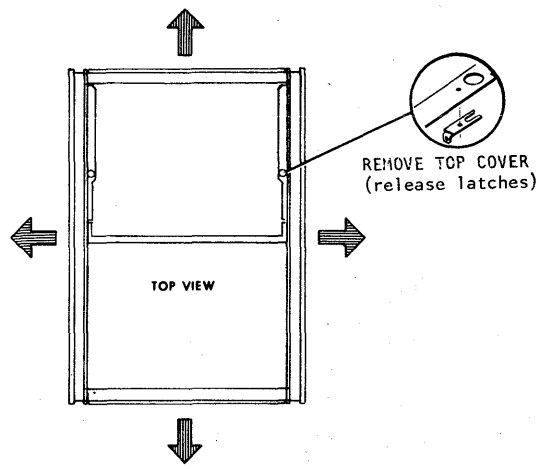


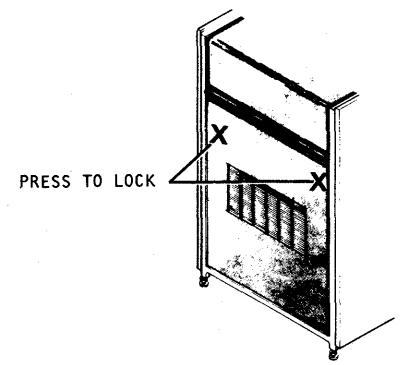
REMOVE SPINDLE MOTOR SPACERS (3) AND RETINGHTEN MOTOR MOUNTING BOLTS INSTALL SPRING AND BELT



REMOVE SPINDLE MOTOR CLAMP

REMOVING COVERS



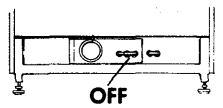


CONNECT 5 GROUND STRAPS
WHEN INSTALLING COVERS

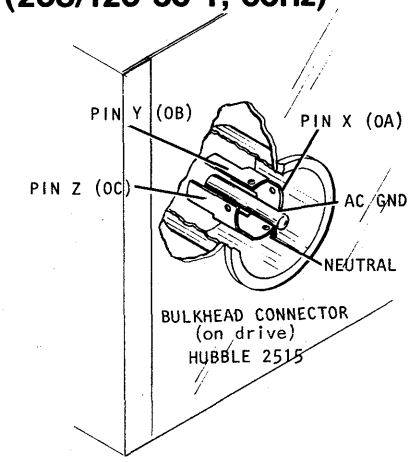
AC POWER WIRING
(208/120 30 Y, 60Hz)

CAUTION

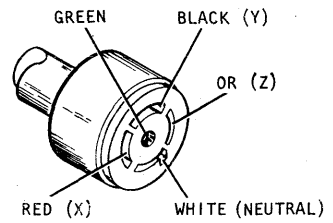
Check spindle drive rotation during BRIEF first power up. Spindle must turn CCW (viewed from above drive) Spindle drive belt may slide off its off its pulley if motor rotates in reverse direction. In multidrive systems, rotate phases in ac drops to equalize phase to phase loads.



BEFORE CONNECTING AC POWER



BULKHEAD CONNECTOR
(on drive)
HUBBLE 2515



PLUG ON AC POWER DROP
HUBBLE 2513

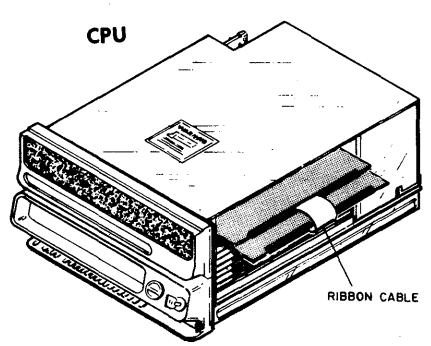
INTERNAL CABLING

INTERNAL CABLE WIRE LIST

SIGNAL NAME	Back Panel Pin Number	Paddle Connector Pin Number	Socket Connecter Pin Number
BUSY 0	B27	36	45
BUSY 1	B31	37	44
BUSY 2	B34	38	15
BUSY 3	B36	39	32
TRESS'D	B13	31	41
RESERVED	B15	32	38
COM STROBE	A91	3	16
ADAPT RESET	A87	26	47
REQ/RES	A89	27	18
COM CH BUSY	B11	30	21
COMD 2	A76	6	12
COMD 1	A77	5	11
COMD 0	A78	4	30
D 1	A85	24	46
D 0	A86	23	40
CYL1	A75	7	6
CYL2	A73	8	4
CYL4	A71	9	2
CYL8	A63	13	27
CYL16	A61	14	13
CYL32	A59	15	14
CYL64	A57	16	5
CYL128	A47	17	26
CYL256	A49	18	33
CYL512	A79	19	31
READY 0	A81	20	37
READY 1	A84	21	17
READY 2	A83	22	39
READY 3	B25	25	20
BUS 0	B69	49	3
BUS 1	B40	41	19
BUS 2	B48	42	35
BUS 3	B49	43	36
BUS 4	B51	44	49
BUS 5	B53	46	22
BUS 6	B54	47	29
BUS 7	B67	48	28
A RD/WR BYTE	B19	33	42
ADAPT PARITY	B38	40	34
RD/WR START'	B23	34	43

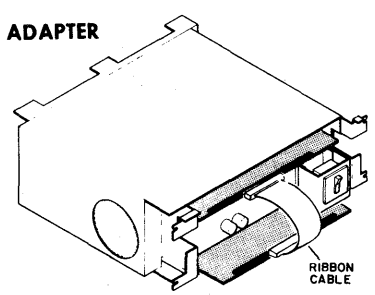
NOVA 3 Series Computers	005-1802
NOVA 2, ECLIPSE Series Computers	005-1802
NOVA 820, 1210 and 1220 Computers	005-901
NOVA 840, 1200 and 800 Jumbo Computers	005-386
NOVA 800, 830 and 1200 Computers	005-386
NOVA, SUPERNOVA Computers	005-386

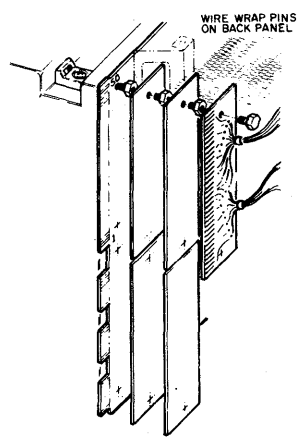
CPU



DG-02588

ADAPTER



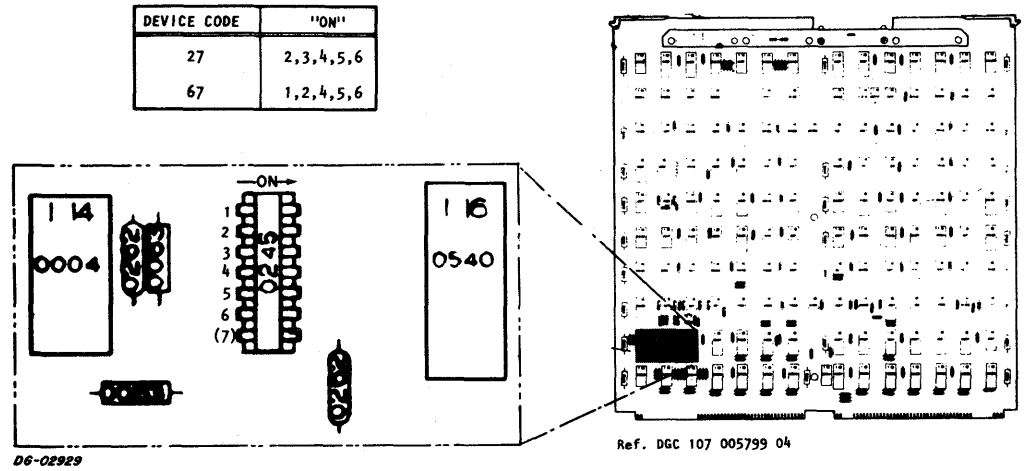


DG-01949 EDGE CONNECTOR

TAILORING

CONTROLLER BOARD SWITCH

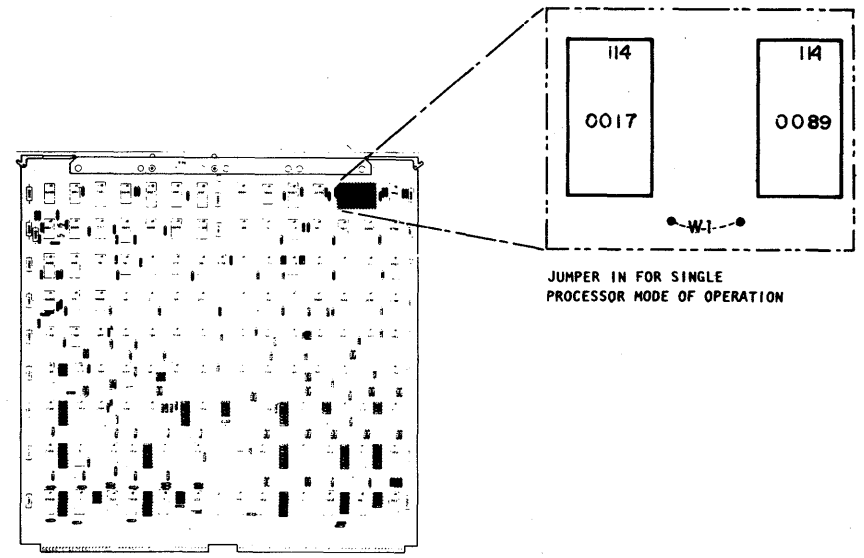
DEVICE CODE	"ON"
27	2,3,4,5,6
67	1,2,4,5,6



DG-02929

Ref. DGC 107 005799 04

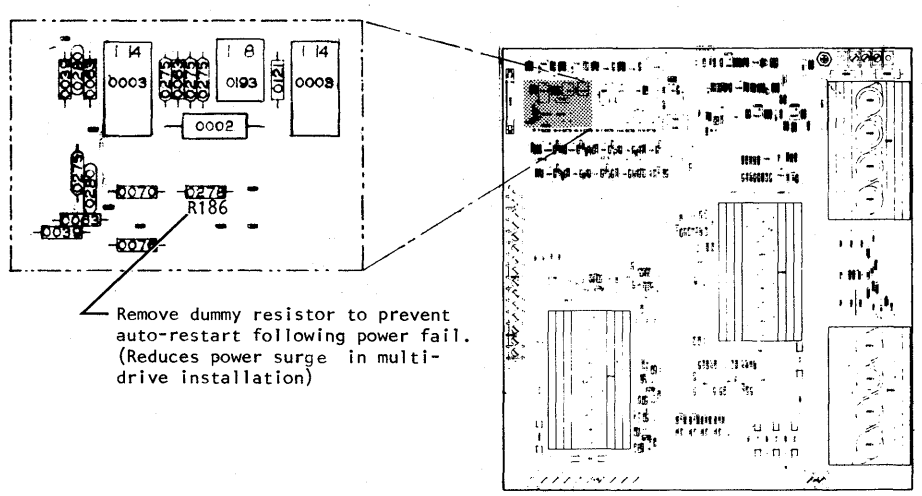
ADAPTOR BOARD #1 JUMPER



JUMPER IN FOR SINGLE PROCESSOR MODE OF OPERATION

Ref. DGC 005 006139 02

DC POWER CONTROL BOARD

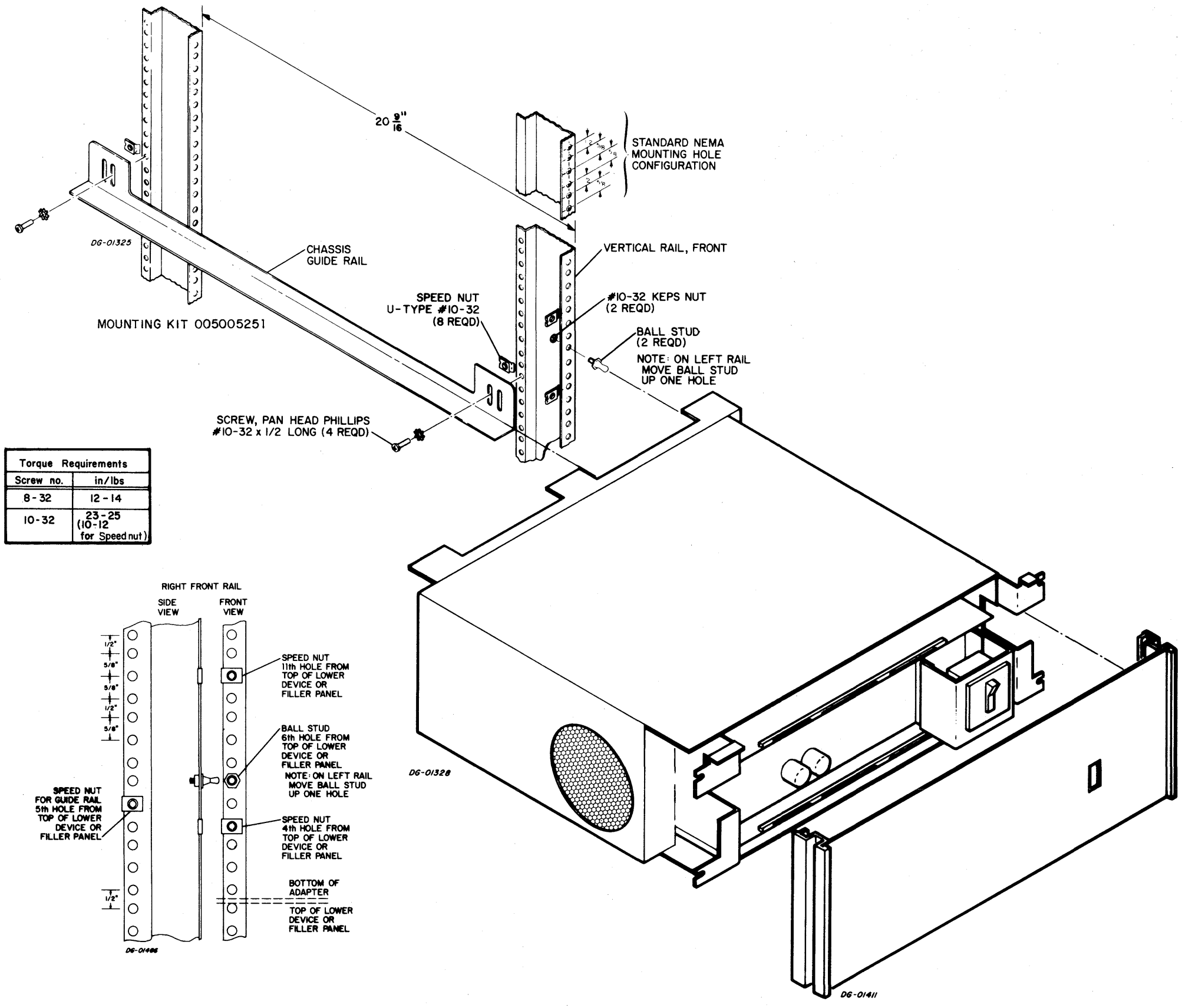


Remove dummy resistor to prevent auto-restart following power fail. (Reduces power surge in multi-drive installation)

Ref. DGC 007-5792 Rev. 03

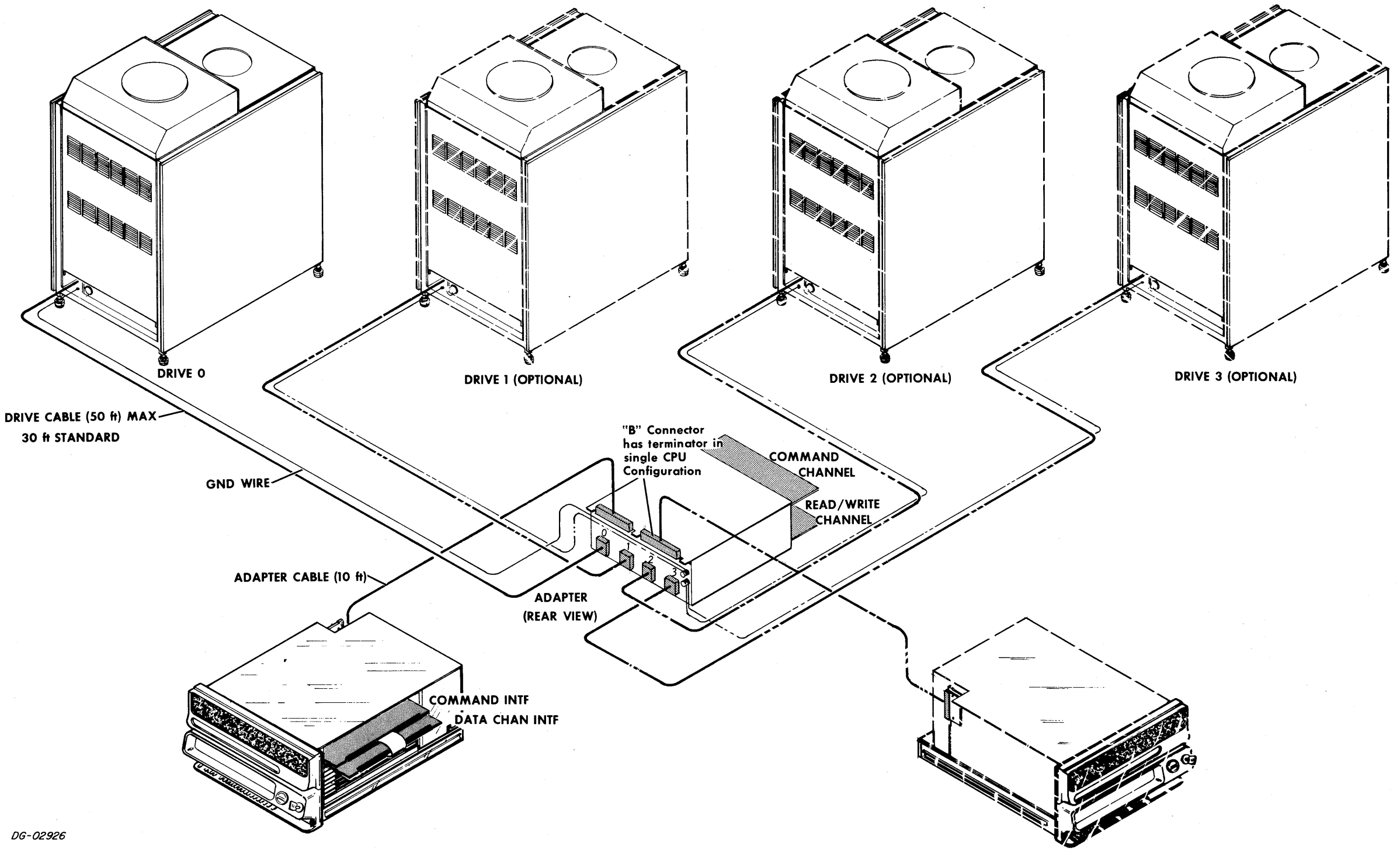
CABINET-MOUNTING

MOUNTING IN THE ECLIPSE-LINE CABINET



Torque Requirements	
Screw no.	in/lbs
8-32	12-14
10-32	23-25 (10-12 for Speed nut)

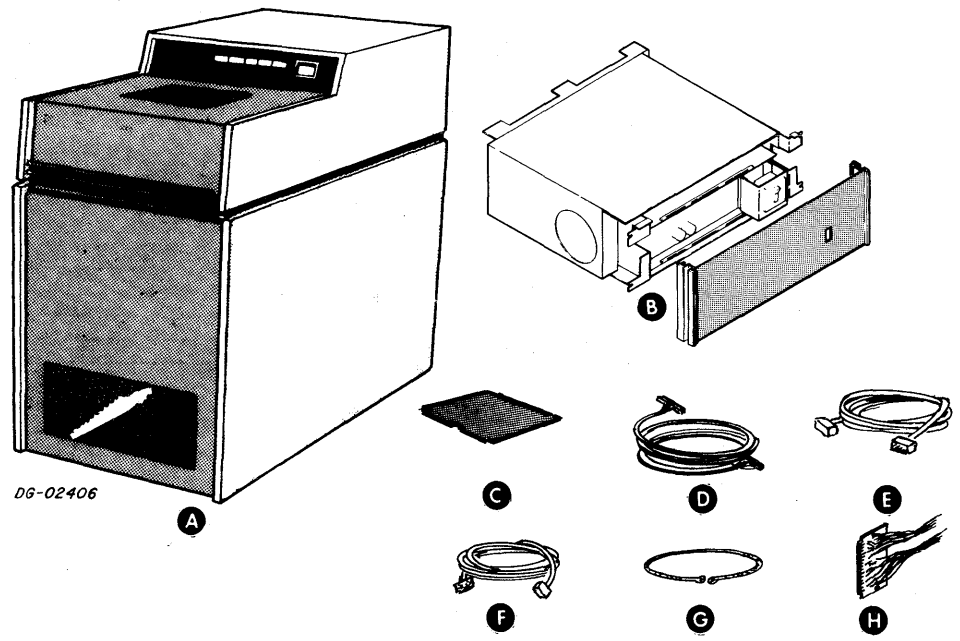
EXTERNAL CABLING



NOVA OR ECLIPSE LINE PROCESSOR

OPTIONAL MULTIPROCESSOR CONFIGURATION

SUBSYSTEM COMPONENT BREAKDOWN



MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	90 MEGABYTE DR UNIT	FREE-STANDING	
B	ADAPTER (WITH PANEL)	CABINET	
C	CONTROLLER	COMPUTER CHASSIS	

DG-02672

CABLE

Item	Cable	Connecting	Max Allowed Lg ft / m	Notes
D	DEVICE CABLE (ADAPTER)	COMPUTER and ADAPTER	10 / 3.5	
E	DEVICE CABLE A (DRIVE)	ADAPTER " DRIVE UNIT	30 / 9.1	
F	DEVICE CABLE B (DRIVE)	" " "	30 / 9.1	
G	GROUND STRAP (DRIVE)	" " "	30 / 9.1	
H	INTERNAL CABLE	CONTROLLER " DEVICE CA (ADAPTER)	- / -	

DG-02673

SPECIFICATIONS OF THE CHASSIS-MOUNTED COMPONENTS

Item	Component	Chassis	Slots Required	Max Allowable Data Channel Latency (μ sec)	Type of Data Channel Service Desired: High Speed	Standard	Max Allowable Programmed I/O Latency +	Controller's +5 Volt Current Draw (Amps)
C	Controller	Computer	1	19.8	√	√	N.A.	4.0

DG-01912

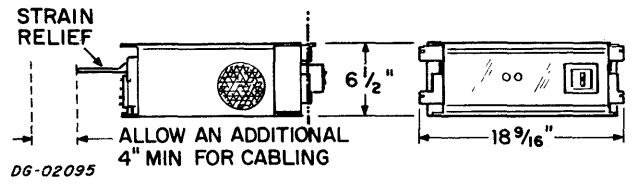
SPECIFICATIONS OF THE CABINET-MOUNTED COMPONENTS

Item	Component	Number in Subsystem	Maximum Operating Temperature: Component °F / °C	Maximum Operating Temperature: Media °F / °C	Primary Power: Current Draw (Amp)	Primary Power: Voltage ±ΔV	Primary Power: Frequency ±Δf	Cabinet Height Required: Area	Cabinet Height Required: in.	Cabinet Height Required: cm	Weight lbs / kg	Power Dissipation (Max Watts)	Preferred Location or Remarks	Operating Humidity (Relative) min / max
B	Adapter	1	131 / 55	— / —	2.0	120 +5 −15	50/60 ±3	4	7	17.8	30 / 13.6	240		20 / 90
						240 ±10	50/60 ±3							

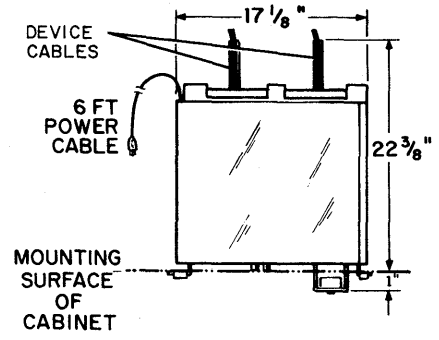
DG-01914

Voltage	Power Cable Length ft	Power Cable Length m	Power Cable Plug	Mating Receptacle on Power Drop	Mating Receptacle in Wall
120V	6	1.8	NEMA 5-15P	NEMA 5-15R	NEMA 5-15R
240V	6	1.8	NEMA 6-15P	NEMA 6-15R	NEMA 6-15R

DG-02717



SIDE VIEW FRONT VIEW

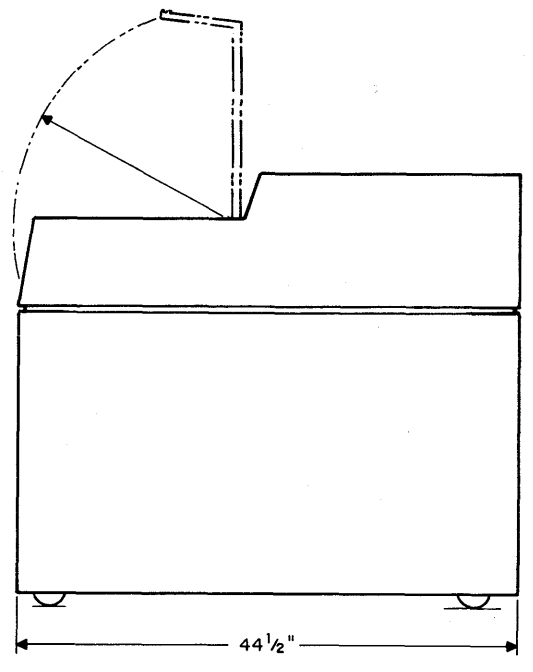


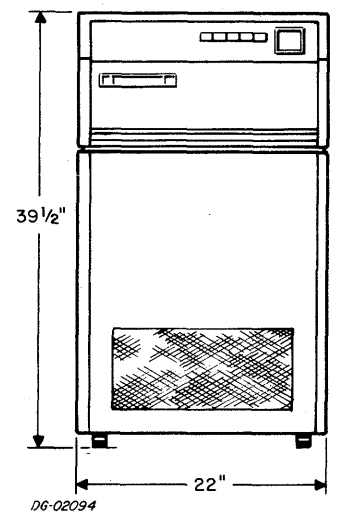
TOP VIEW

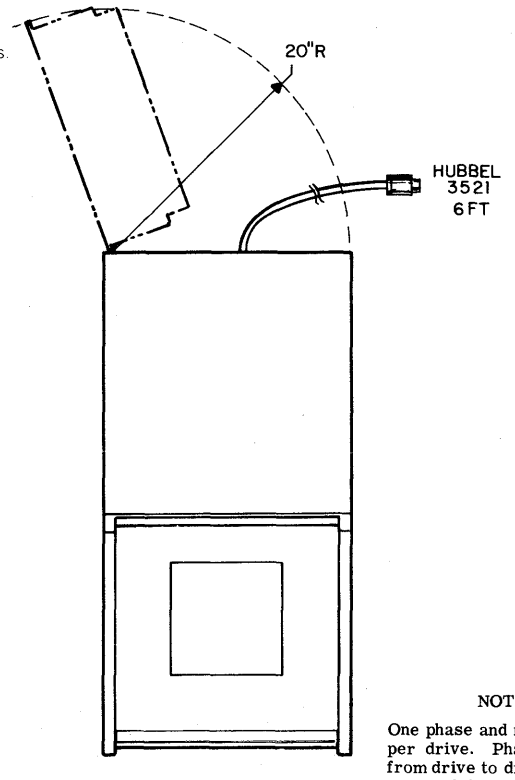
SPECIFICATIONS OF THE FREE-STANDING COMPONENTS

Item	Component	Number in Subsystem	Weight lbs / kg	Maximum Allowable Ext Cable Length ft / m	Operating Humidity (Relative) min / max	Maximum Operating Temperature ① Component °F / °C	Maximum Operating Temperature ① Media °F / °C	Power Dissipation (Watts)	BTUs/hr (3.41 x Watts)	Primary Power ② Current (Amps)	Primary Power ② Voltage ± ΔV	Primary Power ② Frequency ± Δf	Power Cord Length ft / m	Power Cord Connector (HUBBEL)	Mating Power Receptacle (HUBBEL)
A	Drive	1-4	700 / 317	30 / 9.15	20 / 80	90 / 32	120 / 55	1300	4550	8.5	208/220 ±20	60 ±.5	6 / 1.83	3521	3523
										8.5		50 ±.5			

① The drive unit and media must be at the same temperature for proper operation.
② Current given is for drive unit when accessing. Surge current on start-up is 4.Ø amps for 8 seconds, decreasing to 8.Ø amps after 24 seconds. Standby current is 2.Ø amps.



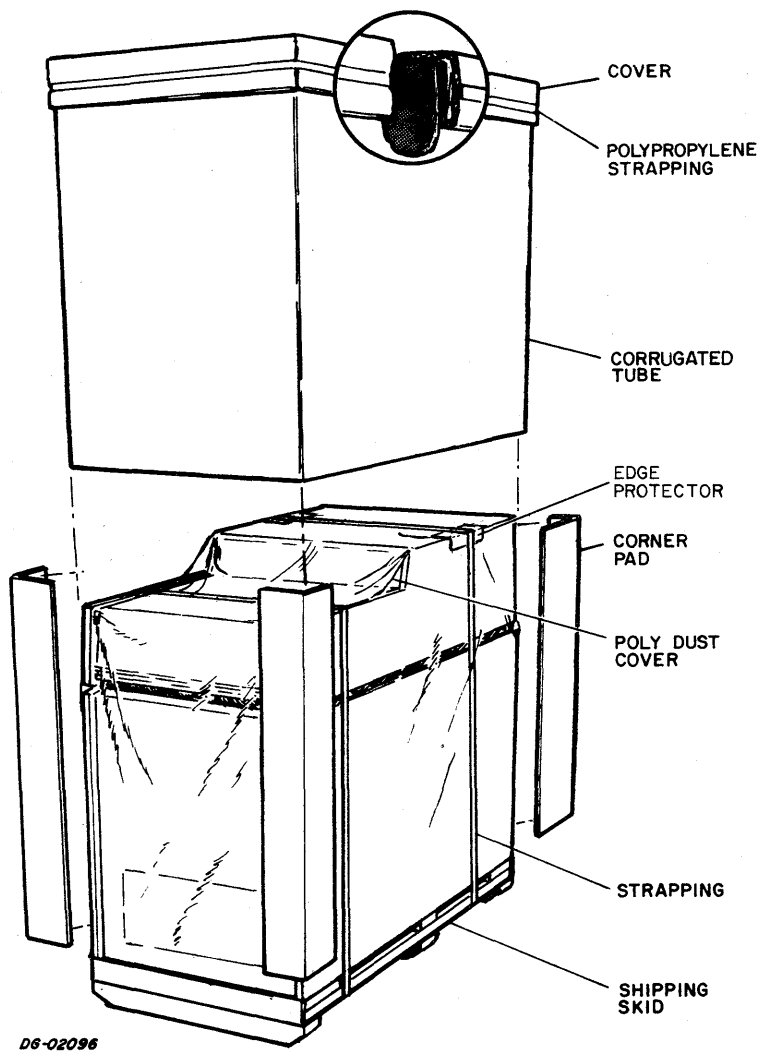




NOTE:
One phase and neutral are used per drive. Phases are rotated from drive to drive so that each group of three drives present a balanced three-phase load.

PACKING KIT

THE DRIVE UNIT PACKING KIT



DG-02096

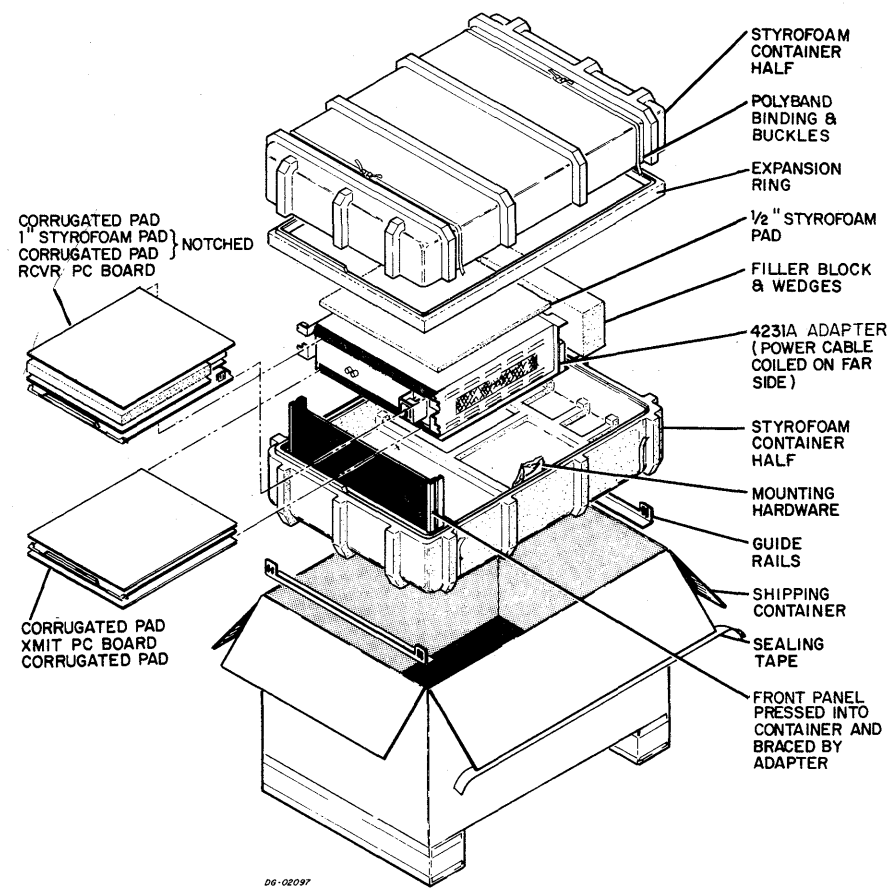
Storage Specifications		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-29.2 to 150.8 / -34 to +66	0–85%	90 DAYS

DG-02062

Shipping Specifications			
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	——
-29.2 to 150.8 / -34 to +66	0–85%	50,000 ft.	——

DG-02063

THE ADAPTER PACKING KIT



DG-02097

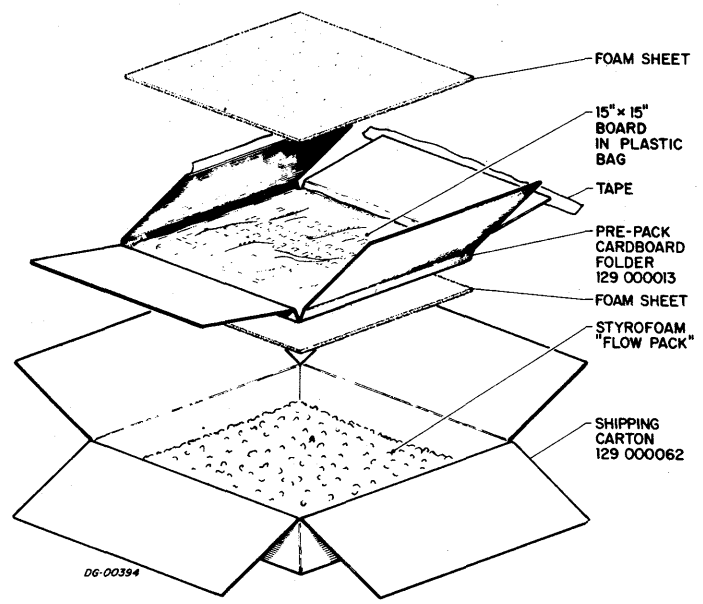
Storage Specifications		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude
-40 to +185 / -40 to +85	0–85%	90 DAYS

DG-02062

Shipping Specifications			
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period	——
-40 to +185 / -40 to +85	0–85%	50,000 ft.	——

DG-02063

THE CONTROLLER PACKING KIT



DG-00394

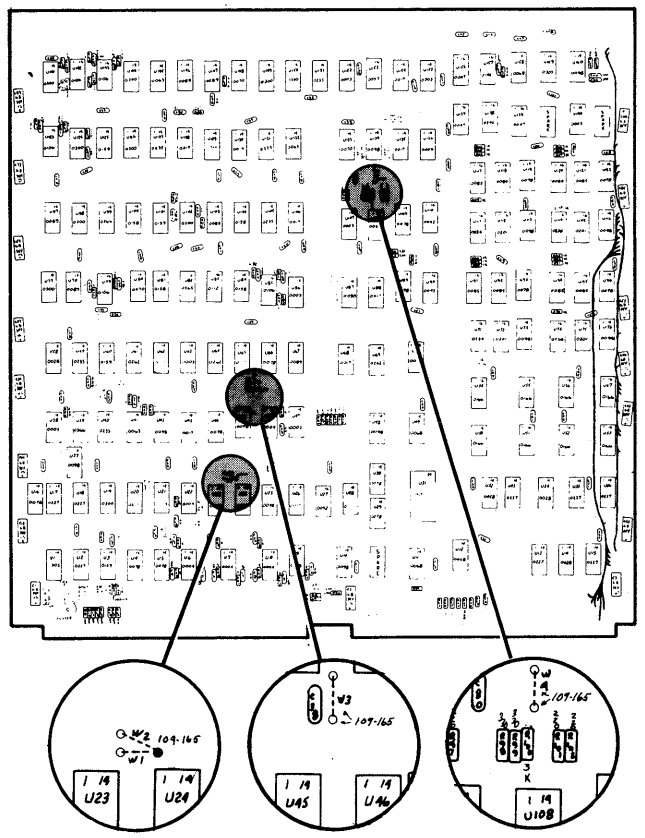
Storage Specifications		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-40 to +185 / -40 to +85	0–85%	90 DAYS

DG-02062

Shipping Specifications			
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	——
-40 to +185 / -40 to +85	0–85%	50,000 ft.	——

DG-02063

JUMPERING



Ref: DGC 003 000375 REV 00-09

JUMPER POSITION	DEVICE CODE 33	DEVICE CODE 73
W1	Jumper inserted	Jumper removed
W2	Jumper removed	Jumper inserted
W3	Jumper removed	Jumper inserted

For Dual Processor Configuration Jumper W4 is inserted.

DG-02105

INTERNAL CABLING

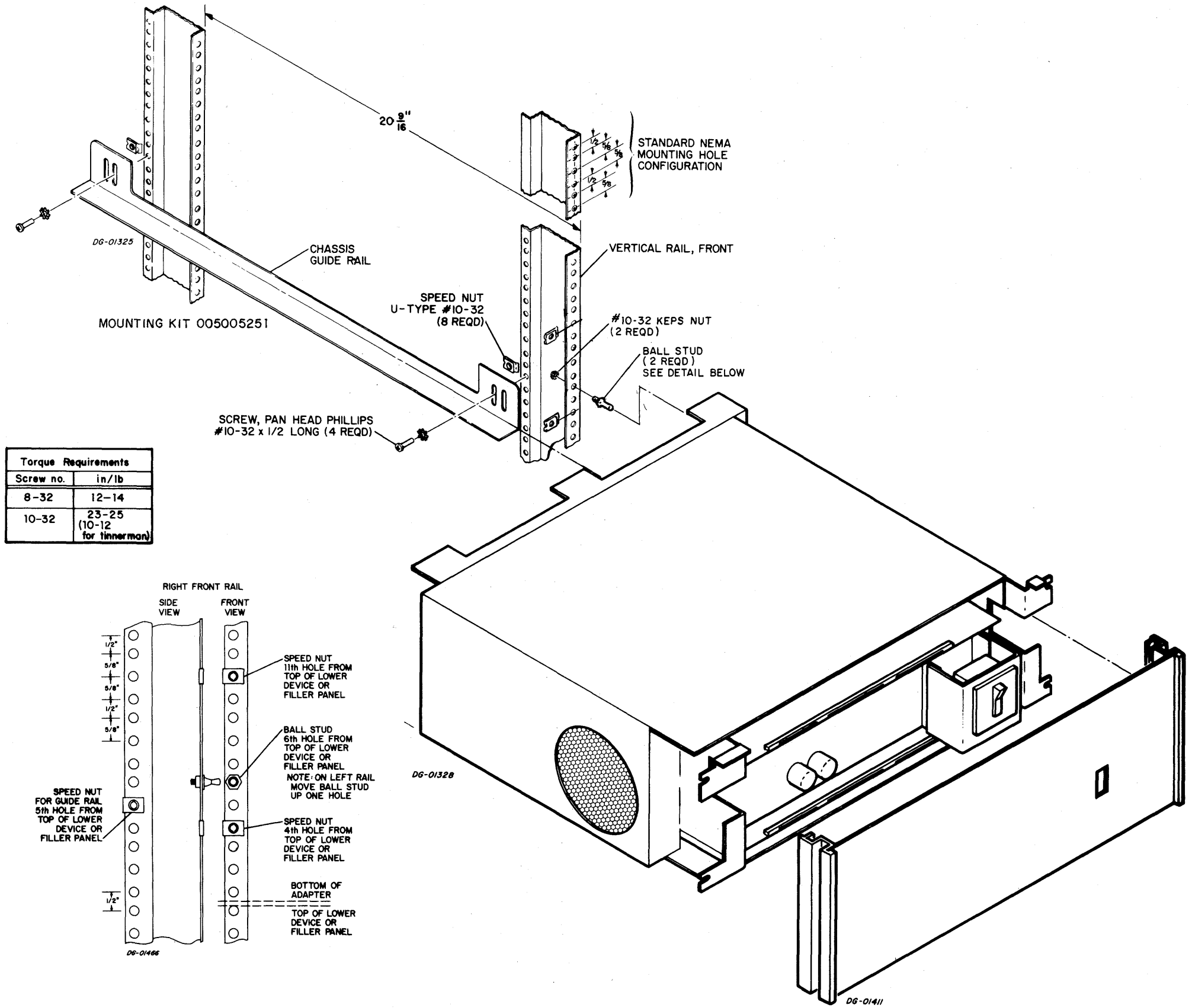
Internal Cable Connections			
Signal Names	Paddleboard Edge Connector Pin Numbers	Destination Pins on Back Panel (NOVA and ECLIPSE Line Computers)	Socket Connector Pin Numbers
GND	A-A8	A99	
GND	1	A100	
(not used)	2	A92	
LOAD HEAD	3	A91	16
SA0	4	A78	30
SA2	5	A77	11
UNSAFE	6	A76	12
SA4	7	A75	6
SA3	8	A73	4
SECTOR PULSE	9	A71	2
(not used)	10	A69	
(not used)	11	A67	
(not used)	12	A65	
DATA CLK	13	A63	27
DATA	14	A61	13
FINISH	15	A59	14
DISK SELECT	16	A57	5
DUR	17	A47	26
WRITE GATE	18	A49	33
SEEK ERROR	19	A79	31
RESTORE	20	A81	37
HD ADV	21	A84	17
TAS	22	A83	39
CPU REQUEST	23	A86	40
READ GATE	24	A85	46
(not used)	25	A88	
SA1	26	A87	47
TA256	27	A89	18
(not used)	28	A90	
(not used)	29	B6	
HD16	30	B11	21
HD8	31	B13	41
HD1 & TA1	32	B15	38
D0	33	B19	42
HD4	34	B23	43
D1	35	B25	20
HD2	36	B27	45
TA2	37	B31	44
TA128	38	B34	15
TA4	39	B36	32
TA32	40	B38	34
+5 REM	41	B40	19
TA64	42	B48	35
TA8	43	B49	36
TA16	44	B51	49
(not used)	45	B52	
ATTN3	46	B53	22
ATTN2	47	B54	29
ATTN0	48	B67	28
ATTN1	49	B69	3
(not used)	50	A3	

NOVA 3 Series Computers	005-1802
NOVA 2, ECLIPSE Series Computers	005-1802
NOVA 820, 1210 and 1220 Computers	005-901
NOVA 840, 1200 and 800 Jumbo Computers	005-386
NOVA 800, 830 and 1200 Computers	005-386
NOVA, SUPERNOVA Computers	005-386

DG-02236

CABINET-MOUNTING

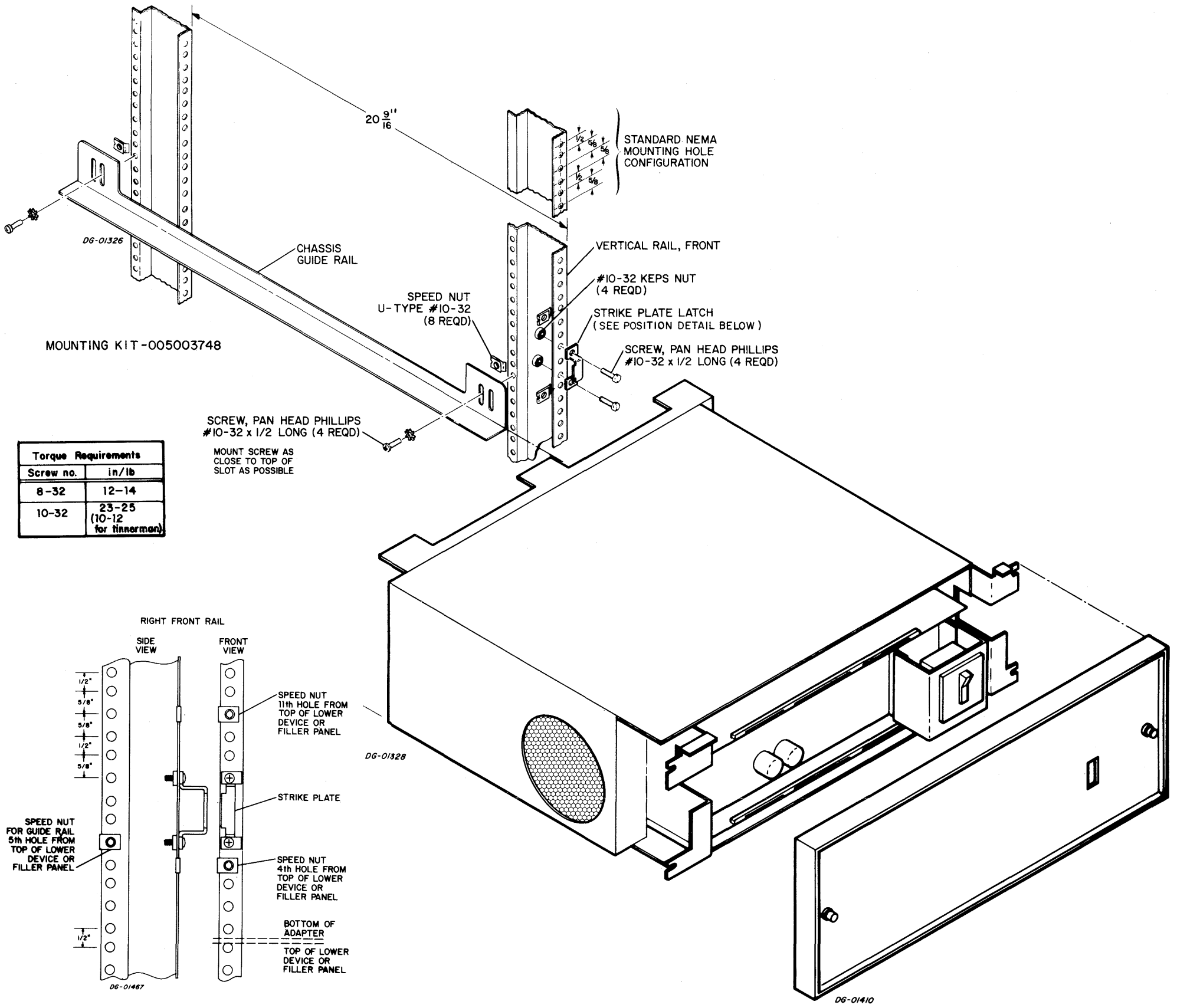
MOUNTING IN THE ECLIPSE-LINE CABINET



Torque Requirements	
Screw no.	in/lb
8-32	12-14
10-32	23-25 (10-12 for tinnerman)

CABINET-MOUNTING (Continued)

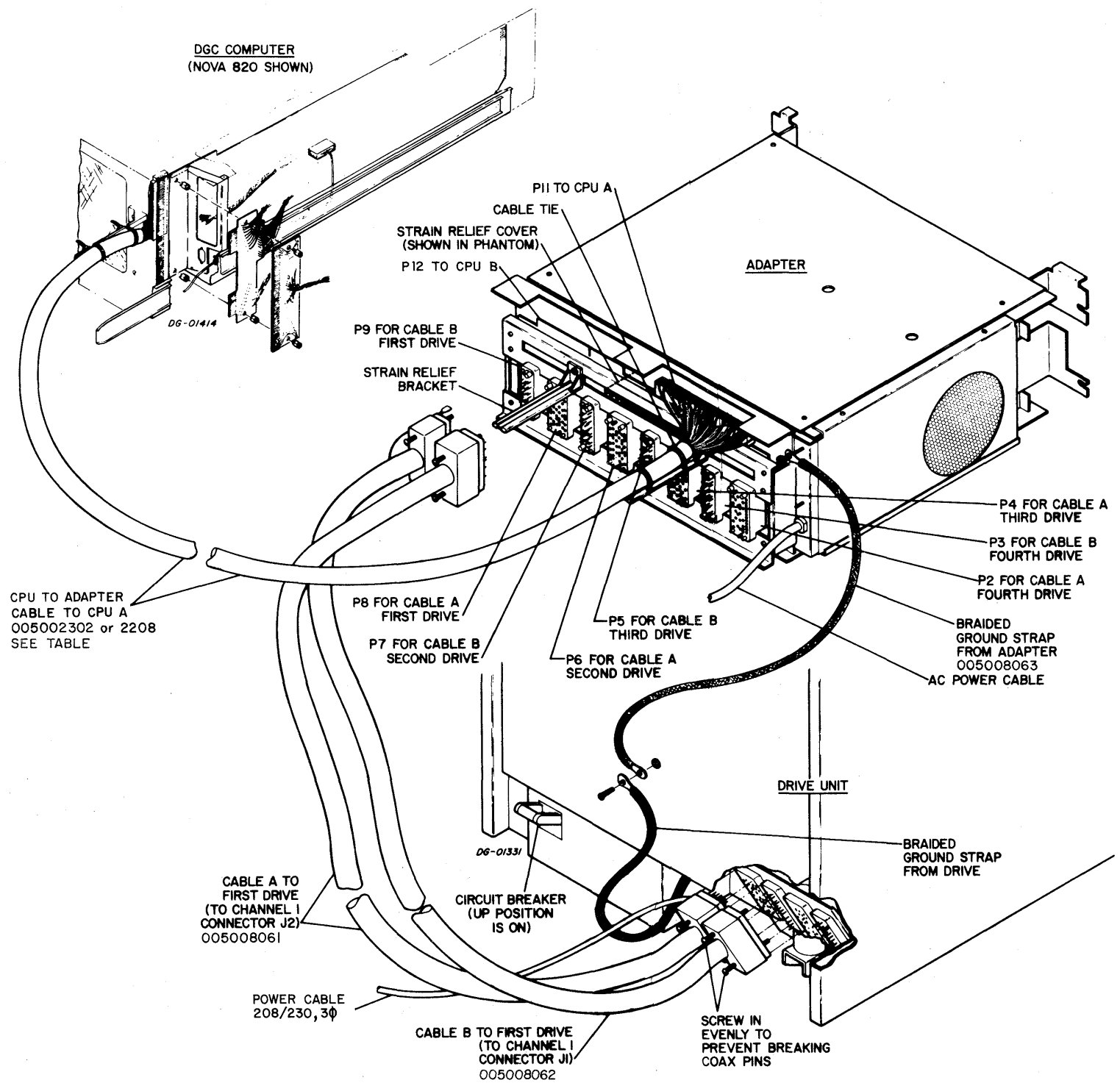
MOUNTING IN THE NOVA-LINE CABINET



Torque Requirements	
Screw no.	in/lb
8-32	12-14
10-32	23-25 (10-12 for tinnerman)

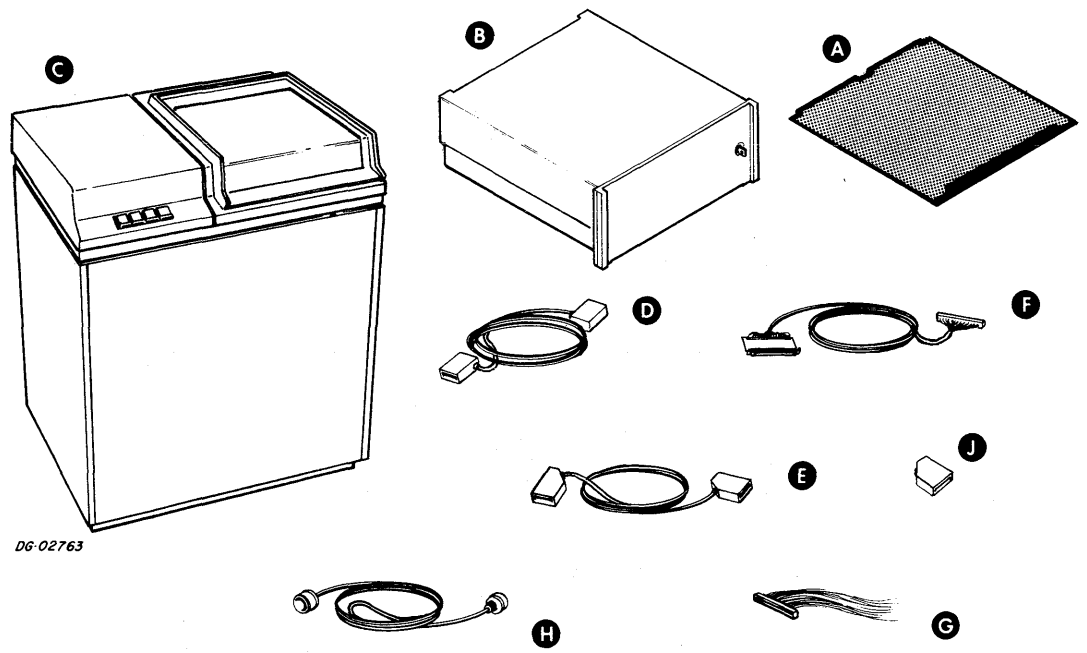
RIGHT FRONT RAIL

EXTERNAL CABLING



CABLE	CPU DESIGNATORS
005002302	NOVA SNOVA 12007 SLOT 800 7 SLOT 12001 7 SLOT 800 17 SLOT 830 840
005002208	1210 1220 820 N2/10 N2/4 ECLIPSE/7 ECLIPSE/16 C/300 NOVA 3/4 NOVA 3/12

SUBSYSTEM COMPONENT BREAKDOWN



DG-02763

MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	CONTROL	CPU	
B	ADAPTER	CABINET	
C	DRIVE UNIT	FREE STANDING	

DG-02672

CABLE

Item	Cable	Connecting			Max Allowed Lg ft / m	Notes
D	DEVICE CA A	ADAPTER	and	DRIVE	50 / 15.24	SIGNAL CA CAN ALSO BE DAISY-CHD
E	DEVICE CA B	ADAPTER	"	DRIVE	50 / 15.24	DC PWR TO DRIVE
F	DEVICE CA (ADAPTER)	CPU	"	ADAPTER	10 / 3.05	
G	INTERNAL	CONTROLLER	"	BK OF CPU		
H	DEVICE CA (ADAPTER AC)	ADAPTER	"	DRIVE UNIT	50 / 15.24	IF 120V AC IS USED THIS CA CANNOT BE DAISY-CHD
			"			

DG-02673

TERMINATOR

Item	Terminator	Location	Notes
J	TERMINATOR	SIGNAL OUT CONN OF LAST DRIVE IN CHAIN	

DG-02674

SPECIFICATIONS OF THE CHASSIS-MOUNTED COMPONENTS

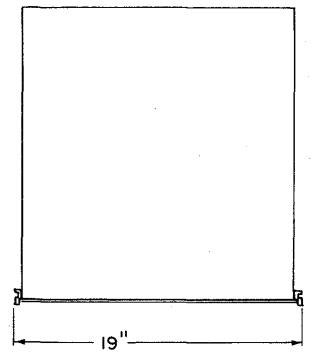
Item	Component	Chassis	Slots Required	Max Allowable Data Channel Latency (μ sec)	Type of Data Channel Service Desired: High Speed	Type of Data Channel Service Desired: Standard	Max Allowable Programmed I/O Latency +	Controller's +5 Volt Current Draw (Amps)
A	CONTROLLER	CPU	1	12.8			N/A	2.75

DG-01912

SPECIFICATIONS OF CABINET-MOUNTED COMPONENTS

Item	Component	Number in Subsystem	Maximum Operating Temperature: Component °F / °C	Maximum Operating Temperature: Media °F / °C	Primary Power: Current (nom) Draw (Amp)	Primary Power: Voltage ±ΔV	Primary Power: Frequency	Cabinet Height Required: Area	Cabinet Height Required: in.	Cabinet Height Required: cm	Weight lbs / kg	Power Dissipation (Max Watts)	Preferred Location or Remarks	Operating Humidity (Relative) min % / % max
B	ADAPTER	1			2	120	60	4	7	17.78		240	AN EXTRA OUTLET IS NEEDED SINCE AC POWER	
	ADAPTER	1			1	240	50	4	7	17.78		240	FOR THE DISC DRIVE IS SUPPLIED THROUGH THE	
													ADAPTER. THE VOLTAGE AT THE EXTRA OUTLET	
													MUST MATCH THAT REQUIRED BY THE DRIVE	

DG-01914



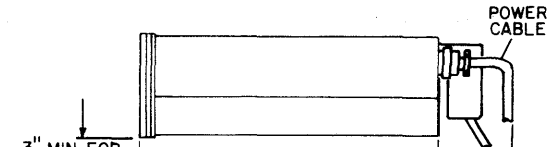
TOP VIEW

Voltage	Power Cable Length ft	Power Cable Length m	Power Cable Plug	Mating Receptacle on Power Drop	Mating Receptacle in Wall
120	5	1.524	5-15P	5-15R	5-15R
240	5	1.524	6-15P	6-15R	6-15R
208/230 3 PHASE	10	3.048	L14-30P	L14-30R	L14-30R

DG-02717

DG-02760

FRONT VIEW

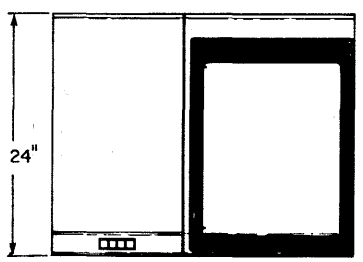


SIDE VIEW

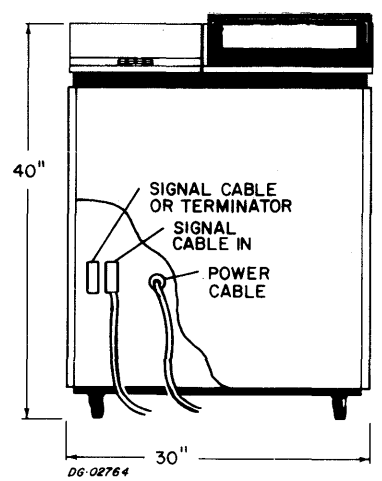
SPECIFICATIONS OF FREE-STANDING COMPONENTS

Item	Component	Number in Subsystem	Weight lbs / kg	Operating Humidity (Relative) min / max	Maximum Operating Temperature: Component °F / °C	Maximum Operating Temperature: Media °F / °C	Power Dissipation (Watts)	BTUs/hr (3.41 x Watts)	Primary Power: Current (Amps)	Primary Power: Voltage ±ΔV	Primary Power: Frequency ±Δf	Power Cable Length ft / m	Power Requirements
C	DRIVE	4	350 / 159	10 / 80			840	286.4	3.5 20 STRT	230±23	60±0.5	10 / 3.05	AC POWER IS PROVIDED FROM THE ADAPTER. THREE-PHASE POWER IS NEEDED FOR DAISY-CHAIN OPEFATION. A SINGLE DRIVE MAY BE RUN FROM SINGLE-PHASE POWER SOUPCE.
		4	350 / 159	10 / 80			840	286.4	3.5 20 STRT	200	50±0.5	10 / 3.05	
		4	350 / 159	10 / 80			840	286.4	3.5 20 STRT	230	50±0.5	10 / 3.05	
		4	350 / 159	10 / 80			840	286.4	2.2	380	50±0.5	10 / 3.05	

DG-01917

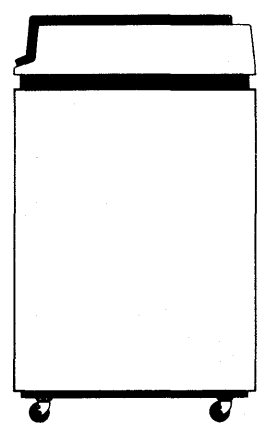


TOP VIEW



DG-02764

FRONT VIEW



SIDE VIEW

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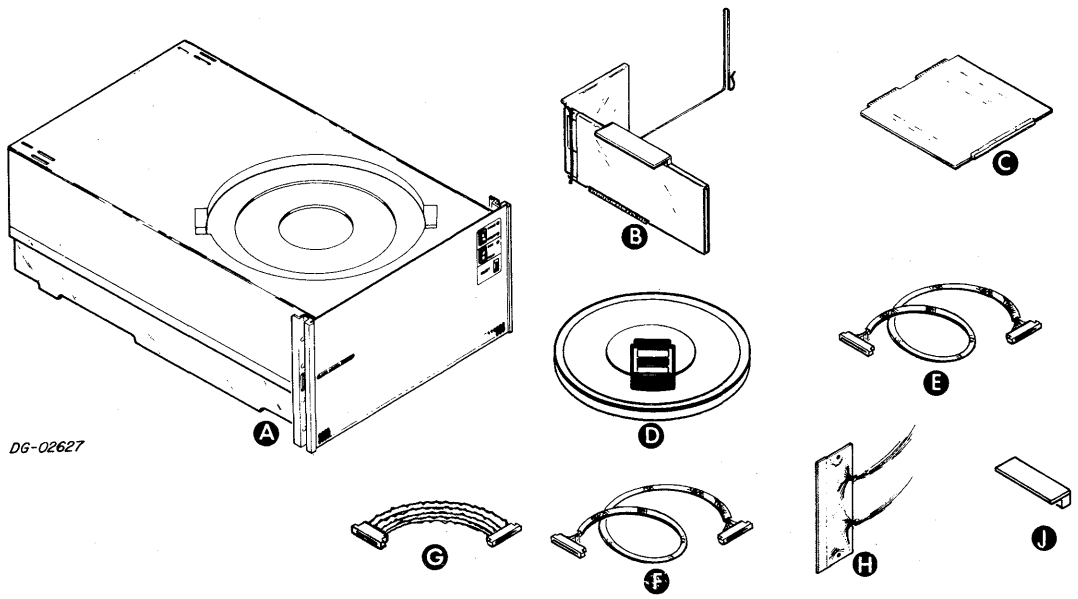
SUBSYSTEM COMPONENT BREAKDOWN



DG-02627

MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	10Mbyte cartridge disc drive	Cabinet	Two drives per cabinet maximum Four drives per subsystem, max.
B	Disc Cable Interface	Cabinet	One required per drive
C	Controller	Computer	One required per subsystem (Two req'd for dual processor subsystem.)
D	Disc Cartridge	10Mbyte cartridge disc drive	

DG-02672

CABLE

Item	Cable	Connecting			Max Allowed Lg ft / m	Notes
E	Device Cable	Computer Chassis Conn.	and	Disc Drive	40 / 12.2	Varies with computer. Length is maximum for the total system.
		"				
*F	Interdevice Cable (long)	Disc Drive	"	Disc Drive	30 / 9.1	May also connect diskette drives in SS
		"				Length is max for total subsystem
G	Interdevice Cable (short)	Disc Drive	"	Disc Drive	7.5" / 19.5cm	Used only to connect two drives mounted adjacent in cabinet.
		"				
H	Internal Cable	Computer back-panel pins	"	Computer chas conn	N/A / N/A	Varies with computer.

DG-02673

TERMINATOR

Item	Terminator	Location	Notes
J	Disc Subsystem Terminator	Last disc cable interface in daisy chain	Not required for dual processor applications.

DG-02674

*DGC DOES NOT RECOMMEND CONFIGURING 4234 TYPE DISC DRIVES IN SS.

SPECIFICATIONS OF THE CHASSIS-MOUNTED COMPONENTS

Item	Component	Chassis	Slots Required	Max Allowable Data Channel Latency (μ sec)	Type of Data Channel Service Desired: High Speed	Standard	Controller's +5 Volt Current Draw (Amps)
C	CONTROLLER	CPU	1	12.5	X	X	4.0

DG-01912

SPECIFICATIONS OF THE CABINET-MOUNTED COMPONENTS

Item	Component	Number in Subsystem	Maximum Operating Temperature: Component °F / °C	Media °F / °C	Primary Power *: Current (nom) Draw (Amp)	Voltage ±ΔV	Frequency	Cabinet Height Required: Area	in.	cm	Weight lbs / kg	Power Dissipation (Max Watts)	Preferred Location or Remarks	Operating Humidity (Relative): min % / % max
A	(120V)	1-4	110 / 43	90 / 32	4.9	120 +10% -15%	60Hz ±1Hz	6	10.5	26.7	150 / 67	500	1. AREAS 3-8 AND 9-14 FOR OPERATOR CONVENIENCE	20 / 80
	(100V)	1-4	110 / 43	90 / 32	5.7	100 +10% -15%	50Hz ±1Hz	6	10.5	26.7	150 / 67	500	2. MAX 2 DRIVES PER CABINET ADJACENT AREAS	20 / 80
	(220V)	1-4	110 / 43	90 / 32	2.6	220 +10% -15%	50Hz ±1Hz	6	10.5	26.7	150 / 67	500	3. POWERCORD 5ft./1.52m long 4. AT LEAST 3"BELOW COMPUTER	20 / 80
	(240V)	1-4	110 / 43	90 / 32	2.4	240 +10% -15%	50Hz ±1Hz	6	10.5	26.7	150 / 67	500	CABINET MUST BE EQUIPPED WITH ANT-TIP LEGS.	20 / 80

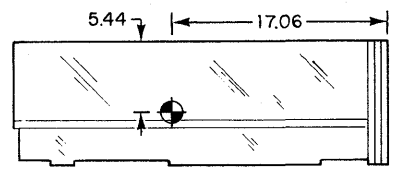
DG-01914

MAXIMUM OPERATING ALTITUDE 6000ft./1828m FOR ALL DISC DRIVES

Voltage	Power Cable Length: ft	m	Power Cable Plug	Mating Receptacle on Power Drop	Mating Receptacle in Wall
100V, 50Hz	5	1.52	5-15P	5-15R	5-15R
120V, 60Hz	5	1.52	5-15P	5-15R	5-15R
220V, 50Hz	5	1.52	6-15P	6-15R	6-15R
240V, 50Hz	5	1.52	6-15P	6-15R	6-15R

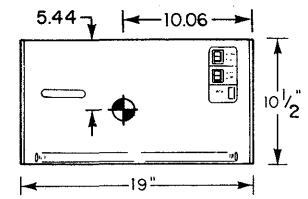
DG-02717

* FOR NOVA STYLE CABINETS, MOD KIT 005-005249 IS REQUIRED. SEE 010-000056.

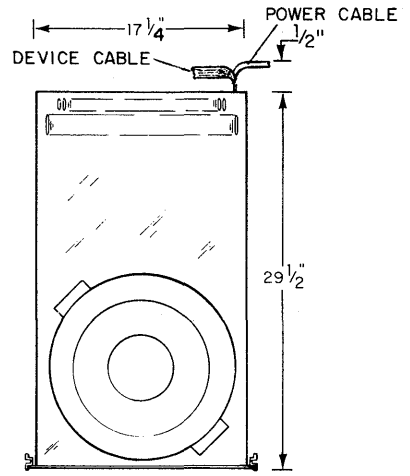


DG-02628

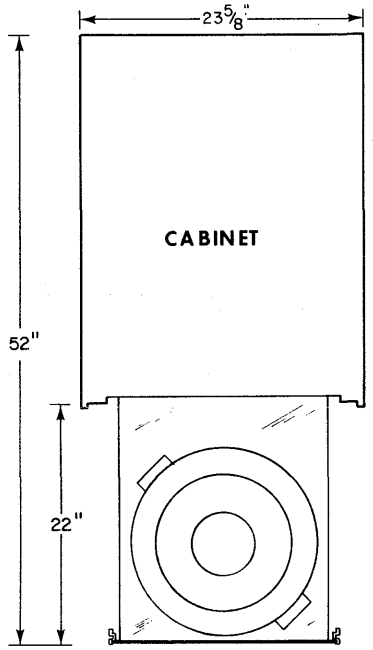
SIDE VIEW



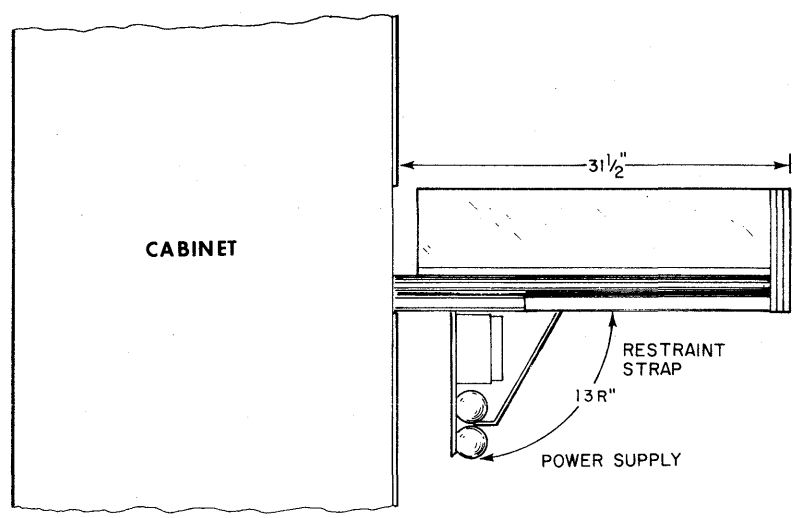
FRONT VIEW



TOP VIEW



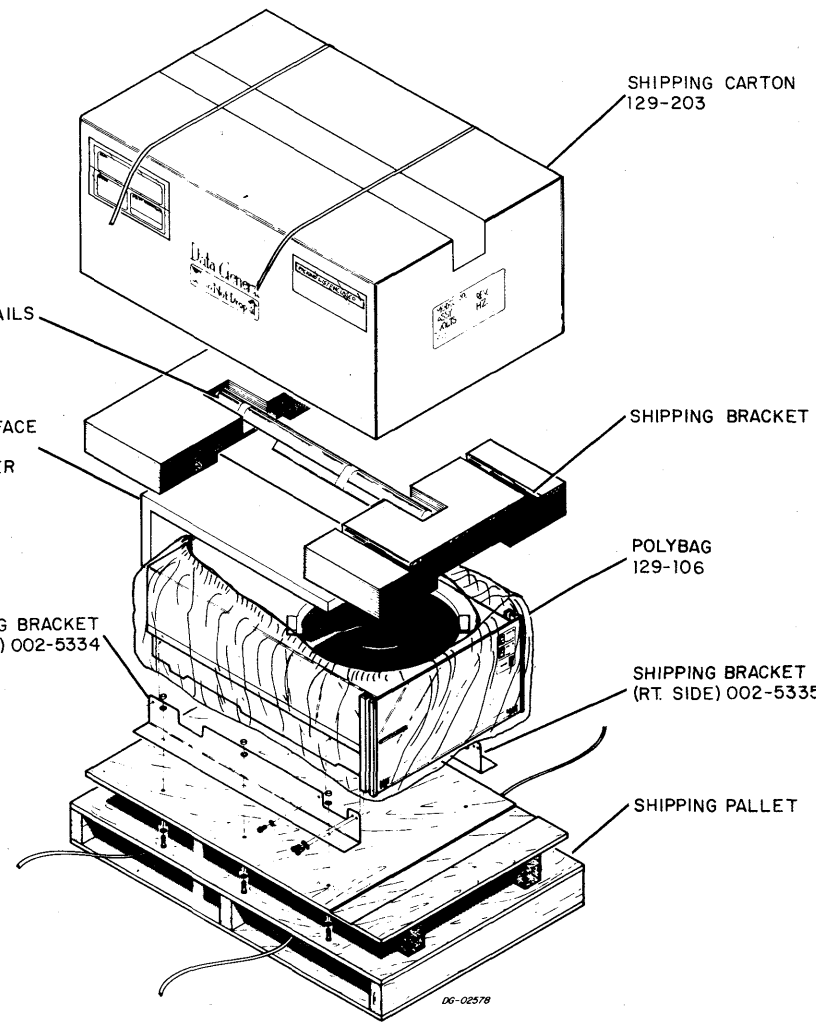
OPERATING DIMENSIONS

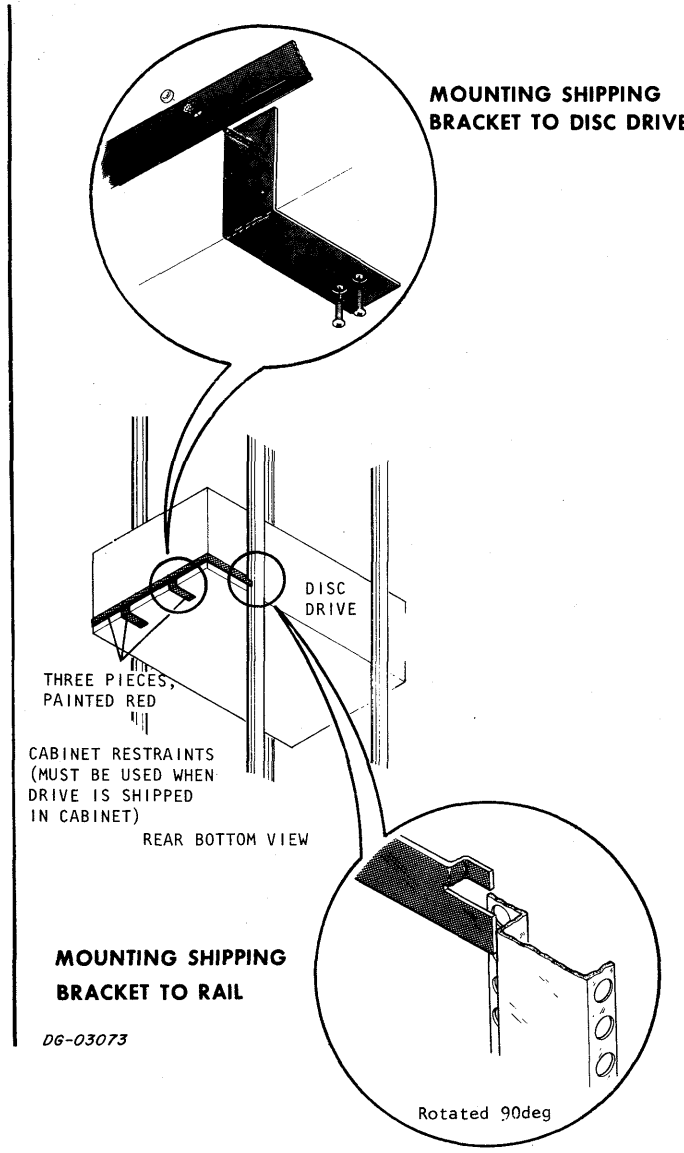


SERVICE DIMENSIONS

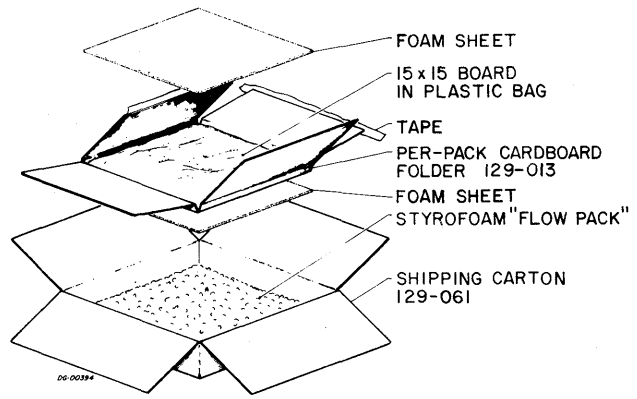
CAUTION: EXERCISE EXTREME CARE WHEN LOWERING THE POWER SUPPLY. IF ALLOWED TO FALL FREELY, IT WILL OVERCOME THE RESTRAINT STRAP AND SWING INTO AND DAMAGE COMPONENTS IN THE CABINET BELOW THE DISC DRIVE.

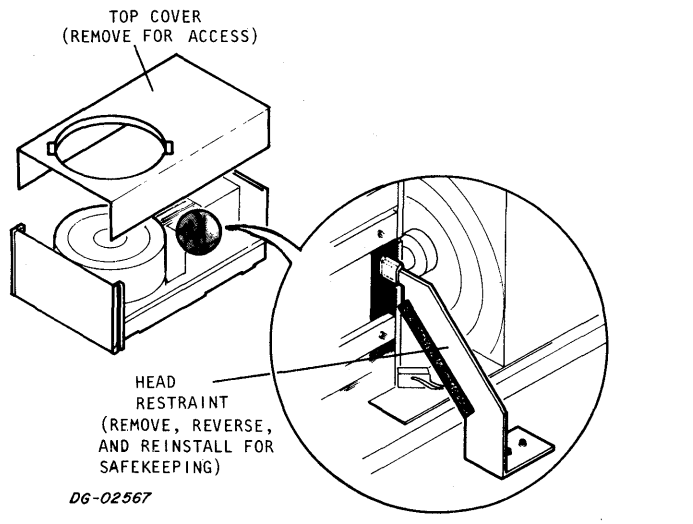
SHIPPING





CONTROLLER





Shipping Specifications		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude (Non-Pressurized)
-40 - 150 / -40 - 65.6	0%/80%	40,000ft. 12,160m

DG-02063

Storage Specifications		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-40 - 150 / -40 - 65.6	0%/80%	90 days

DG-02062

INTERNAL CABLING

Signal Names	Paddleboard Edge Connector Pin Numbers	Destination Pins On Computer Back Panel: NOVA 2	NOVA 820, 1210 & 1220	NOVA 800 & 1200	NOVA & SUPERNOVA Computers	9047 DDm50 Socket Connector Pin Numbers
GND	A-A8		A99			50
GND	1		A100			1
TA8	3		A91			16
ATTEN2	4		A78			30
RESTORE	5		A77			11
ATTEN3	6		A76			12
LFT SEL	7		A75			6
TA32	8		A73			4
TA128	9		A71			2
TA16	13		A63			27
RD CLK	14		A61			13
RD DATA	15		A59			14
DISKETTE	16		A57			5
SECT PULSE	18		A49			33
SK ERROR	19		A79			31
D0	20		A81			37
TA2	21		A84			17
HD1	22		A83			39
TAS	23		A86			40
RD/WR DISKETTE	24		A85			46
TA4	26		A87			47
TA1	27		A89			18
D1	31		B13			41
RD GATE	32		B15			38
TA256	33		B19			42
WR GATE	34		B23			43
FINISH	35		B25			20
WD CLK	36		B27			45
TA64	37		B31			44
DUR	38		B34			15
SA1	40		B38			34
CPU REQ	41		B40			19
ATTEN0	42		B48			35
ATTEN1	43		B49			36
SA2	44		B51			49
WR CHECK	46		B53			22
CPU SELECT	47		B54			29
SA8	48		B67			28
SA4	49		B69			3
HD2	30		B11			21
(not used)	2		A92			
"	10		A69			
"	11		A67			
"	12		A65			
" BIT COUNT	17		A47 - 26 (GPW|28) BIT COUNT			26
"	25		A88			
"	28		A90			
"	29		B6			
"	30		B11			
" +5V	39		B36 - 32 +5V			32
"	45		B52			
"	47		B54			
"	50		A3			

Computer	Internal Cable Part Number
NOVA 2 Series NOVA 3 Series ECLIPSE Line Computers	005-1802
NOVA 820, 1210 and 1220 Computers	005-901
NOVA 840, 1200 and 800 Jumbo Computers	005-469
NOVA 800 and 1200 Computers	005-469
NOVA, SUPERNOVA Computers	005-469
NOVA 830 Computer	005-469

DG-01922

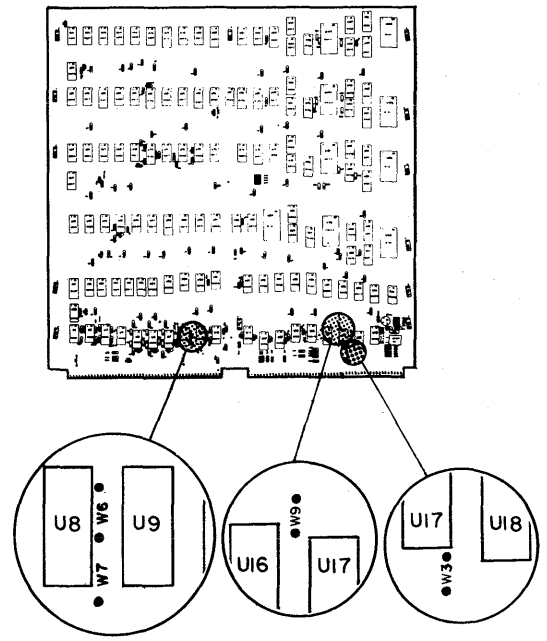
NOTE:

ON THE FOLLOWING PROCESSORS, A DISC DRIVE CABLE EDGE CONNECTOR IS PART OF THE COMPUTER BACKPANEL, AND IS PERMANENTLY CONNECTED, VIA BACKPANEL ETCH, TO THE SLOT INDICATED IN THE TABLE. NO INTERNAL CABLE IS REQUIRED.

PROCESSOR	SLOT
NOVA 2/10, NOVA 820	9
NOVA 1220 COMPUTERS	
NOVA 3/12 COMPUTER	10

TAILORING

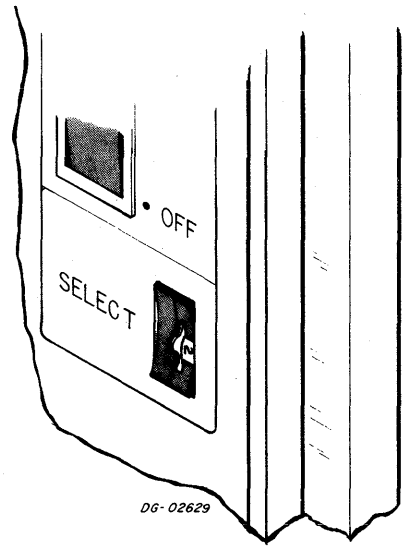
JUMPERS



DG-01927 REF BOARD DGC 107-000187-04

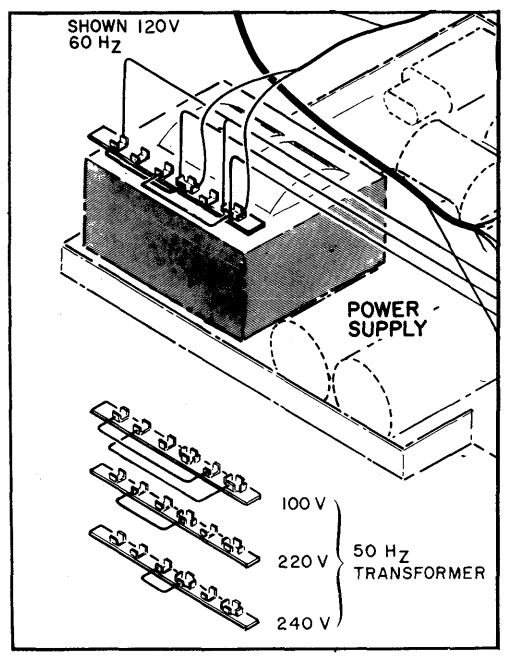
JUMPER POSITION	DEVICE CODE 33	DEVICE CODE 73
W6	JUMPER INSERTED	JUMPER REMOVED
W7	JUMPER REMOVED	JUMPER INSERTED
W9	JUMPER REMOVED	JUMPER INSERTED

UNIT SELECT SWITCH

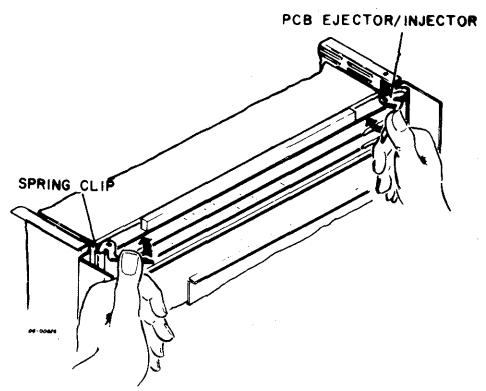


DG-02629

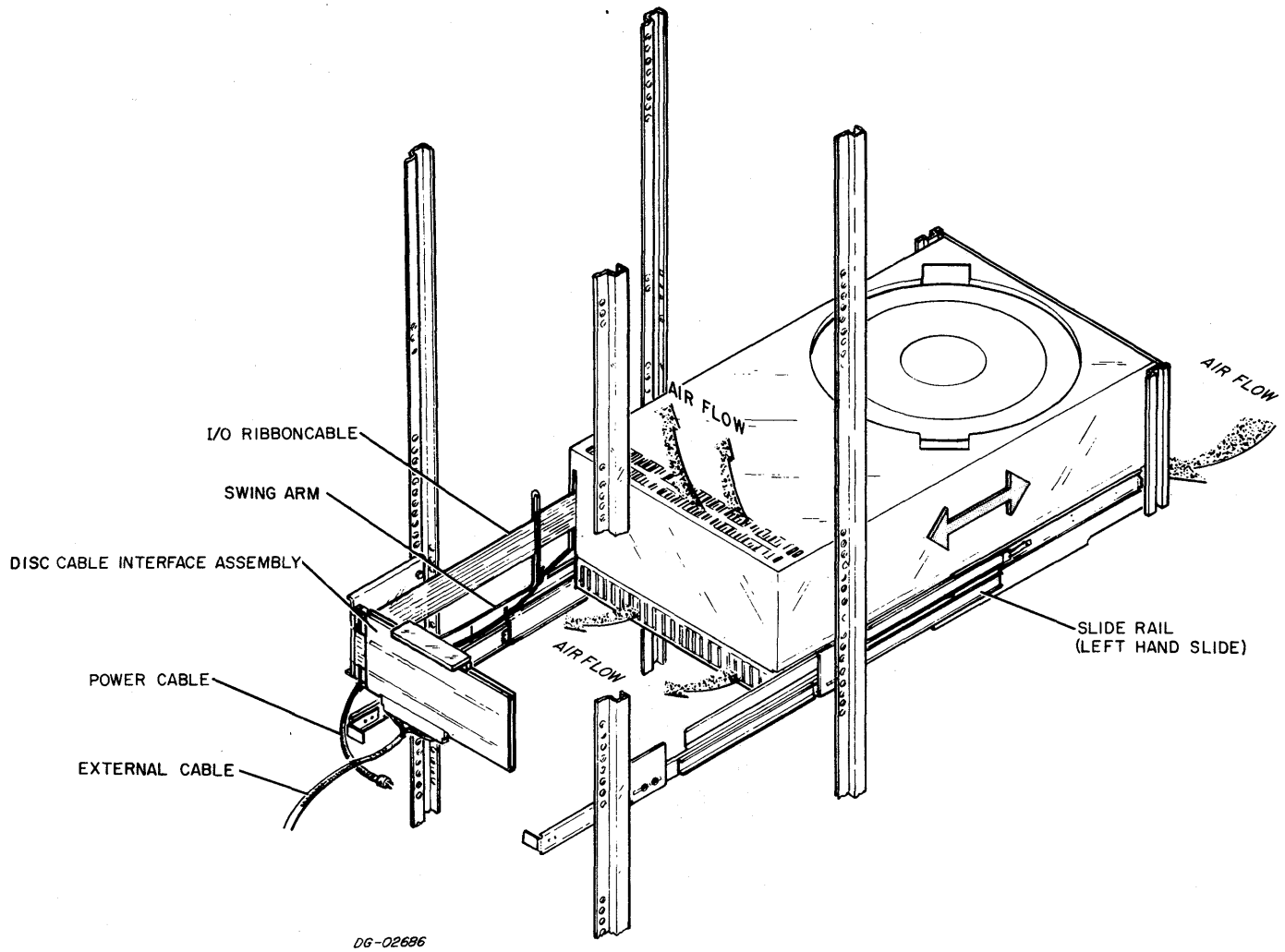
INPUT VOLTAGE SELECTION



INSTALLING PC BOARD



CABINET MOUNTED DISC DRIVE



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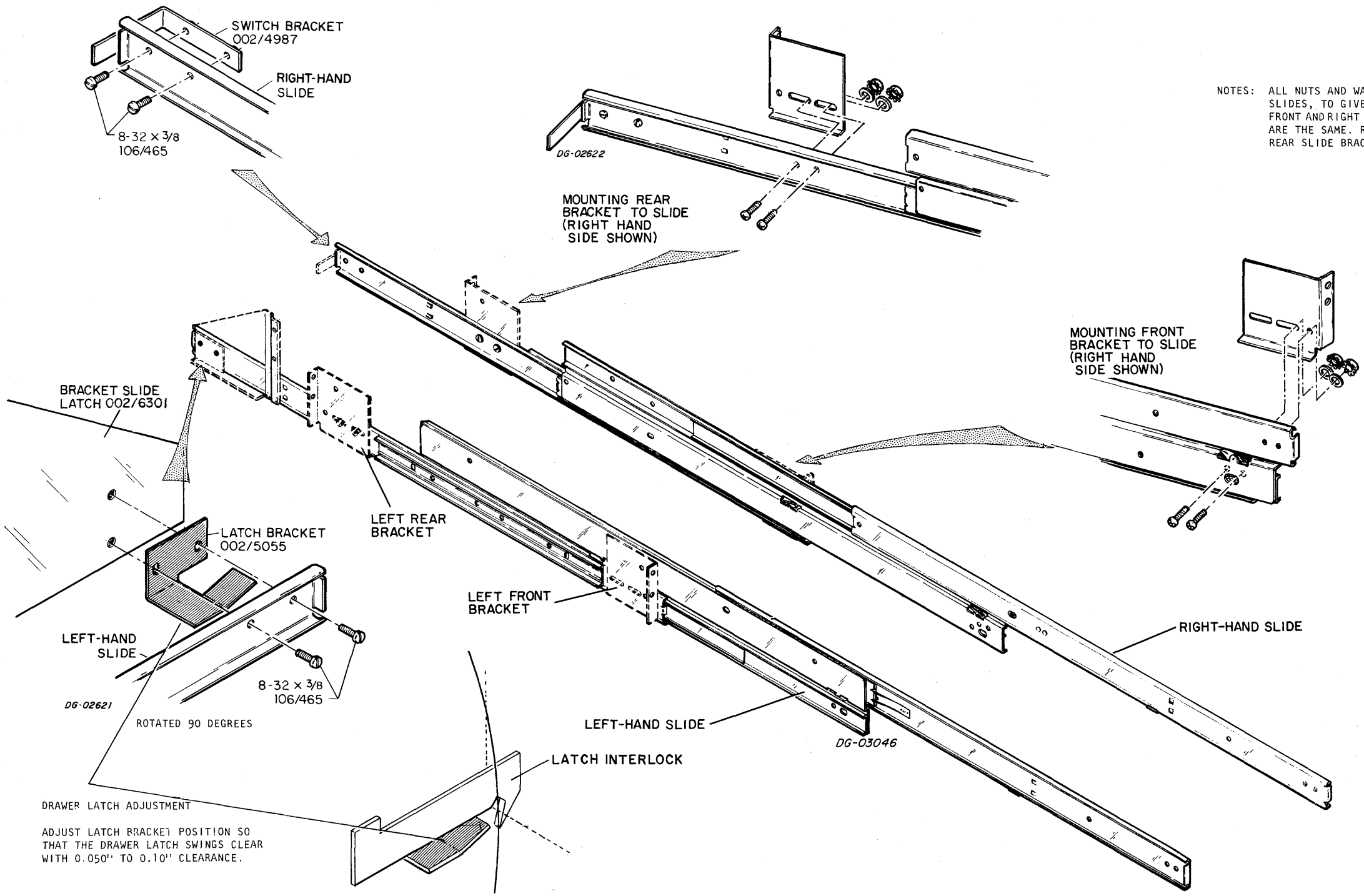
REAR VIEW OF A DISC DRIVE MOUNTED IN A STANDARD CABINET. DRIVE IS SHOWN PARTIALLY EXTENDED ON THE SLIDE RAILS. NOTE DISC CABLE INTERFACE ASSEMBLY FASTENED TO THE REAR CABINET RAIL; SLACK IN I/O AND POWER CABLES IS TAKEN UP BY A SPRING-LOADED SWING ARM.

INSTALLATION PROCEDURE

MOUNTING KIT 005 005927

1. ASSEMBLE THE SLIDES. BE SURE TO IDENTIFY RIGHT AND LEFT SLIDES AND BRACKETS.

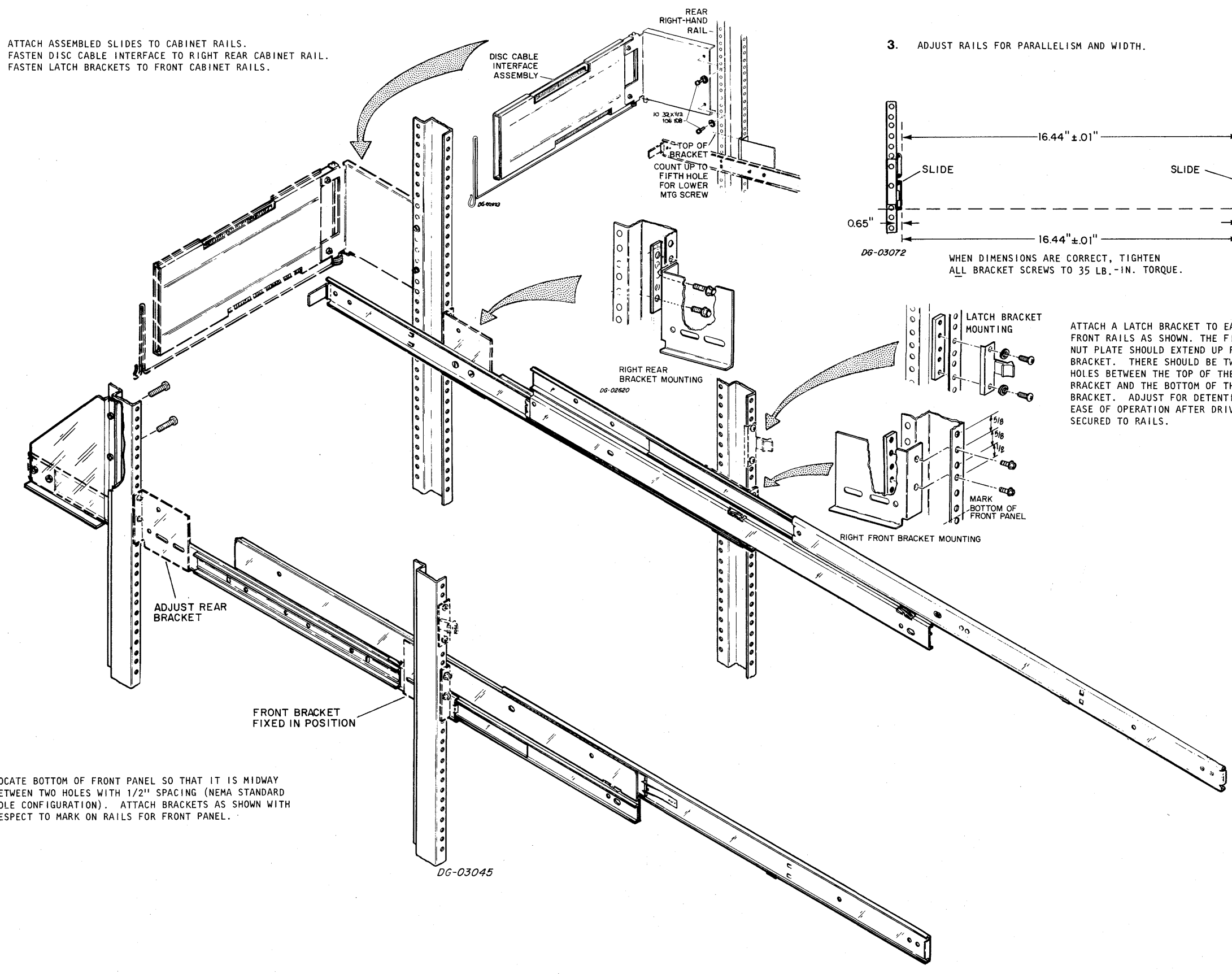


NOTES: ALL NUTS AND WASHERS ON OUTSIDE OF SLIDES, TO GIVE CLEARANCE. LEFT FRONT AND RIGHT REAR SLIDE BRACKETS ARE THE SAME. RIGHT FRONT AND LEFT REAR SLIDE BRACKETS ARE THE SAME.

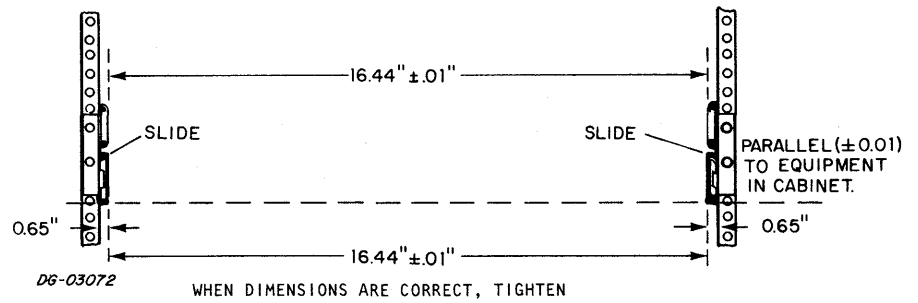
INSTALLATION PROCEDURE (CONT)

MOUNTING SLIDES TO RAILS

2. ATTACH ASSEMBLED SLIDES TO CABINET RAILS.
FASTEN DISC CABLE INTERFACE TO RIGHT REAR CABINET RAIL.
FASTEN LATCH BRACKETS TO FRONT CABINET RAILS.



3. ADJUST RAILS FOR PARALLELISM AND WIDTH.



WHEN DIMENSIONS ARE CORRECT, TIGHTEN ALL BRACKET SCREWS TO 35 LB.-IN. TORQUE.

ATTACH A LATCH BRACKET TO EACH OF THE FRONT RAILS AS SHOWN. THE FIVE HOLF NUT PLATE SHOULD EXTEND UP FROM THE BRACKET. THERE SHOULD BE TWO EMPTY HOLES BETWEEN THE TOP OF THE SLIDE BRACKET AND THE BOTTOM OF THE LATCH BRACKET. ADJUST FOR DETENTING AND EASE OF OPERATION AFTER DRIVE IS SECURED TO RAILS.

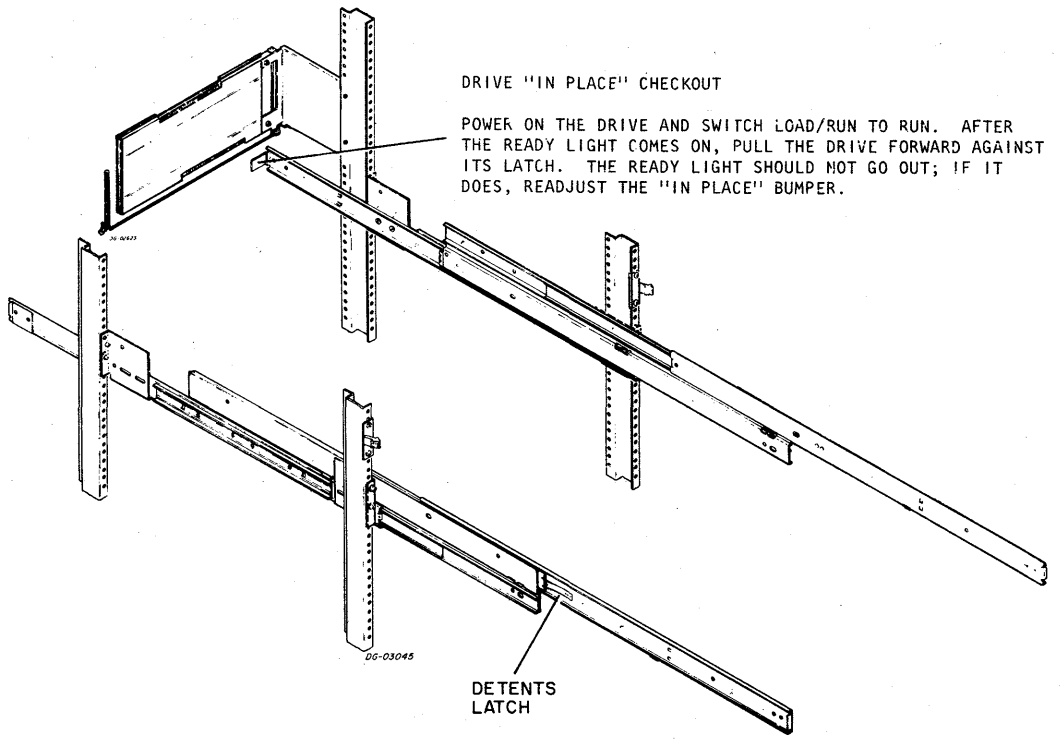
NOTE: LOCATE BOTTOM OF FRONT PANEL SO THAT IT IS MIDWAY BETWEEN TWO HOLES WITH 1/2" SPACING (NEMA STANDARD HOLE CONFIGURATION). ATTACH BRACKETS AS SHOWN WITH RESPECT TO MARK ON RAILS FOR FRONT PANEL.

INSTALLATION IN A CABINET

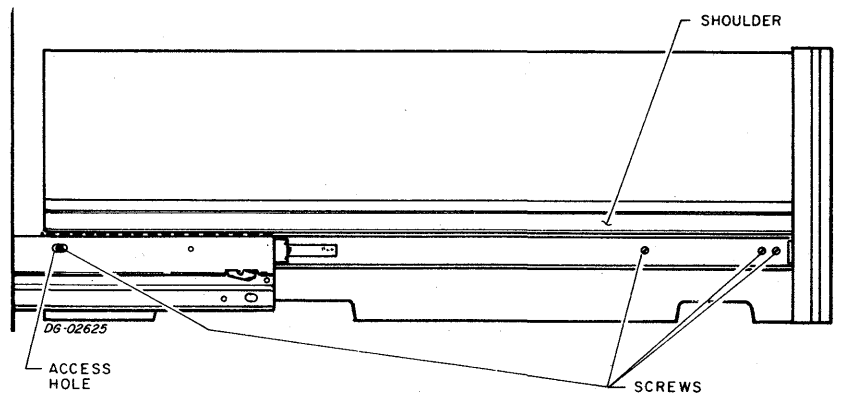
MOUNTING CHASSIS ON THE SLIDES

4. INSTALL DISC DRIVE ONTO SLIDES.

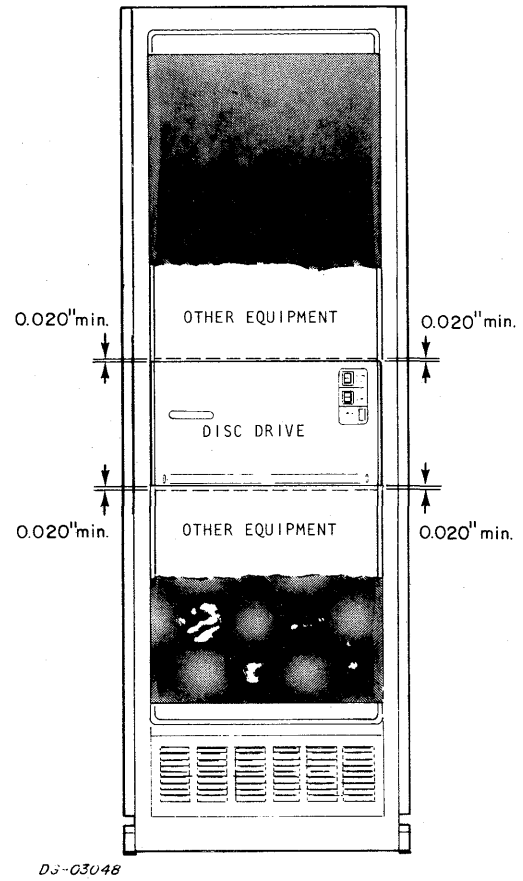
CAUTION: THIS STEP REQUIRES AT LEAST TWO, AND PREFERABLY THREE PERSONS; THE DRIVE WEIGHS APPROXIMATELY 150 POUNDS, AND SOME MANEUVERING IS REQUIRED DURING INSTALLATION.



EXTEND THE SLIDES TO THEIR FULLY EXTENDED (SERVICE) POSITION. ENSURE THAT THE DETENTS LATCH.

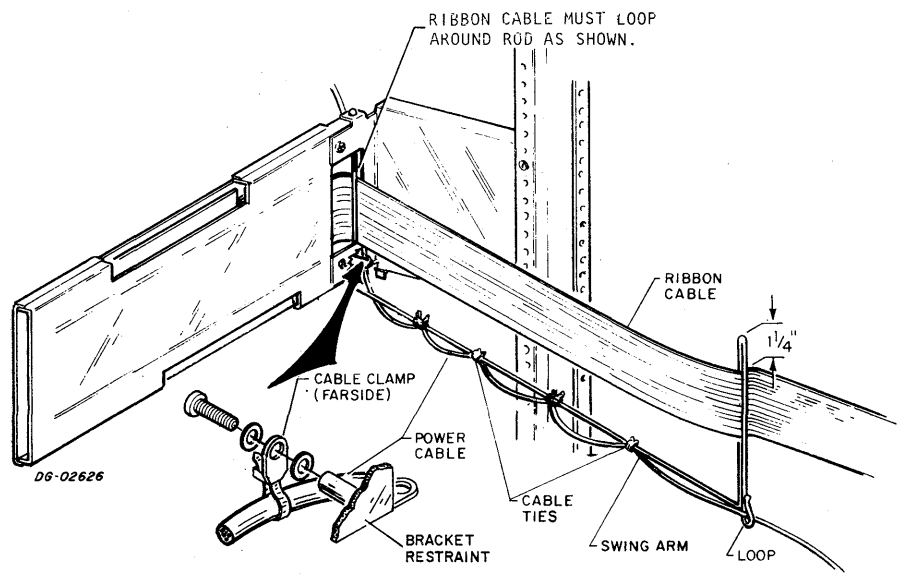


LIFT THE DRIVE INTO POSITION, SPREAD THE SLIDES, AND PLACE THE DRIVE ONTO THE EXTENDED SLIDES. PUSH THE SLIDES AGAINST THE CASTING SO THAT THE WEIGHT IS SUPPORTED BY THE MACHINED SHOULDER ON THE CASTING. THE SCREW HOLES IN THE SLIDE SHOULD ALIGN WITH THE TAPPED HOLES IN THE CASTING. SLIDE THE DRIVE FORWARD OR BACKWARD UNTIL THE HOLES ARE ALIGNED. BE SURE TO HOLD THE SLIDES FIRMLY AGAINST THE CASTING AND UNDER THE SHOULDER DURING THIS OPERATION. DO NOT RELEASE THE SLIDES UNTIL ALL SCREWS ARE INSTALLED.



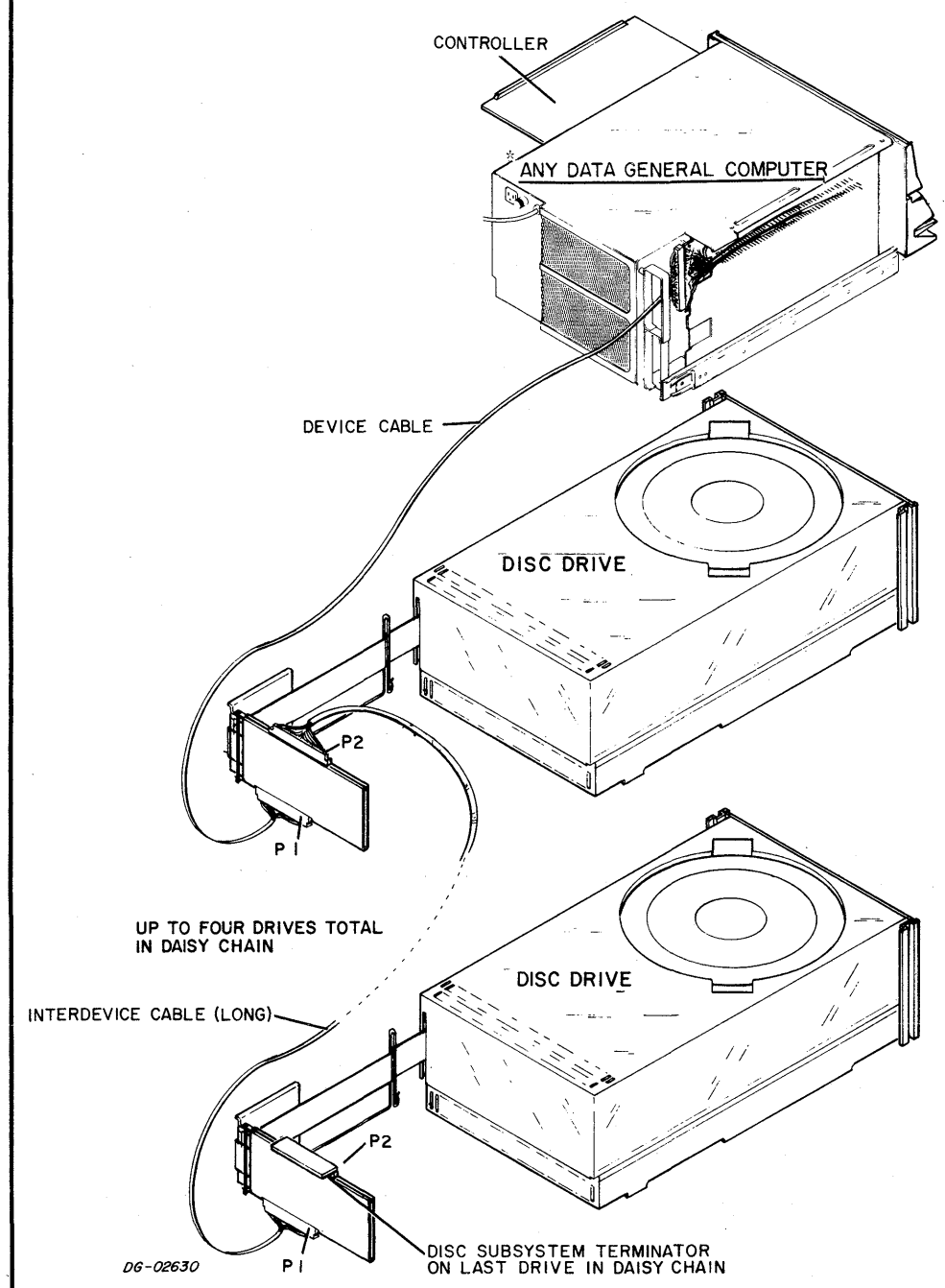
CHECK CLEARANCES BETWEEN DRIVE AND OTHER EQUIPMENT. MOUNT AT LEAST 3" BELOW COMPUTER.

5. ATTACH I/O AND POWER CABLES.



EXTERNAL CABLING

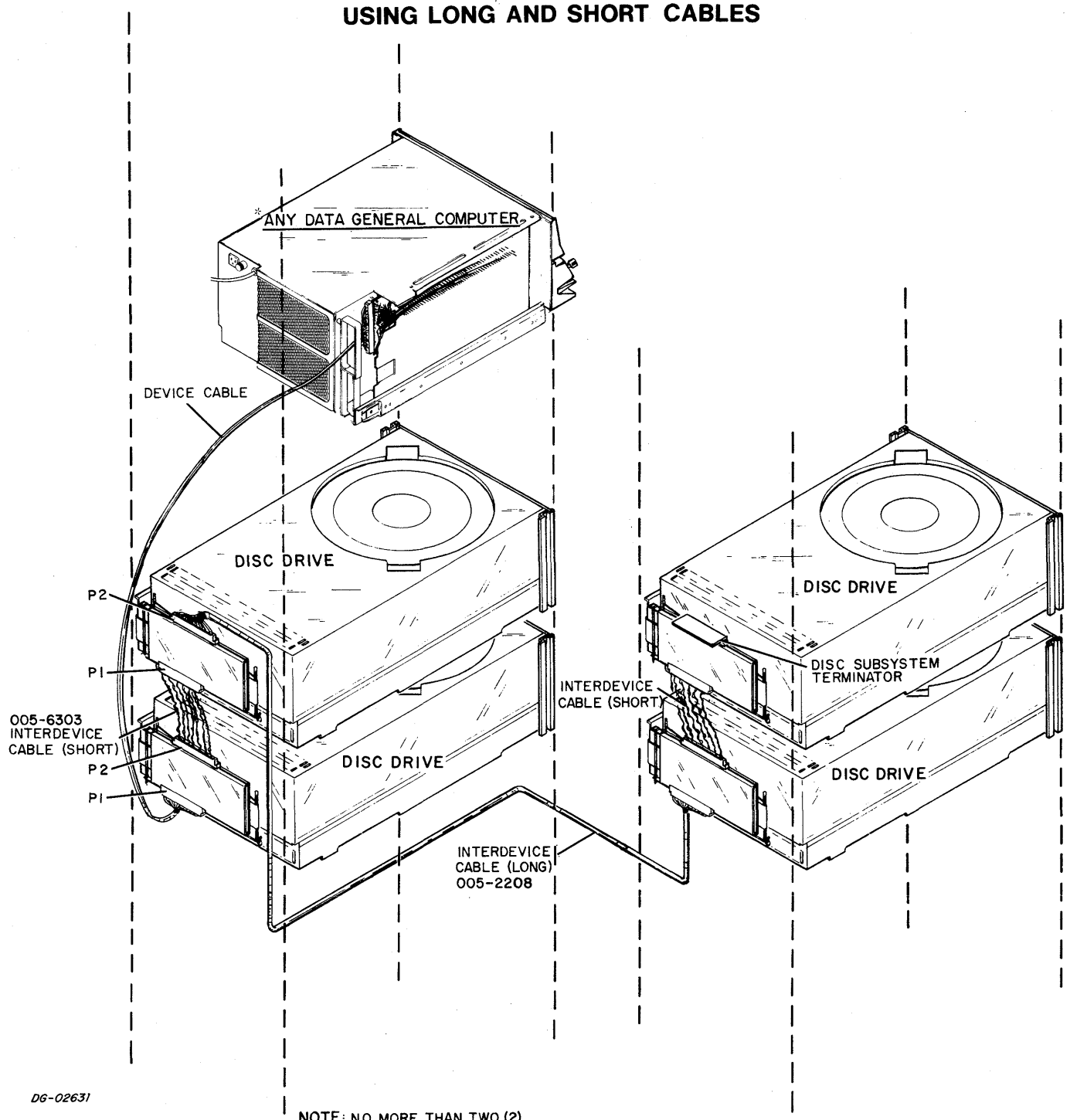
EXAMPLE OF SUBSYSTEM USING LONG CABLE



NOTE: DISKETTE DRIVE MAY BE INTERMIXED WITH 10Mbyte CARTRIDGE DISC DRIVE, UP TO FOUR DRIVE TOTAL.

DGC DOES NOT RECOMMEND INTERMIXING 4234 TYPE DISC DRIVES IN THIS SUBSYSTEM.

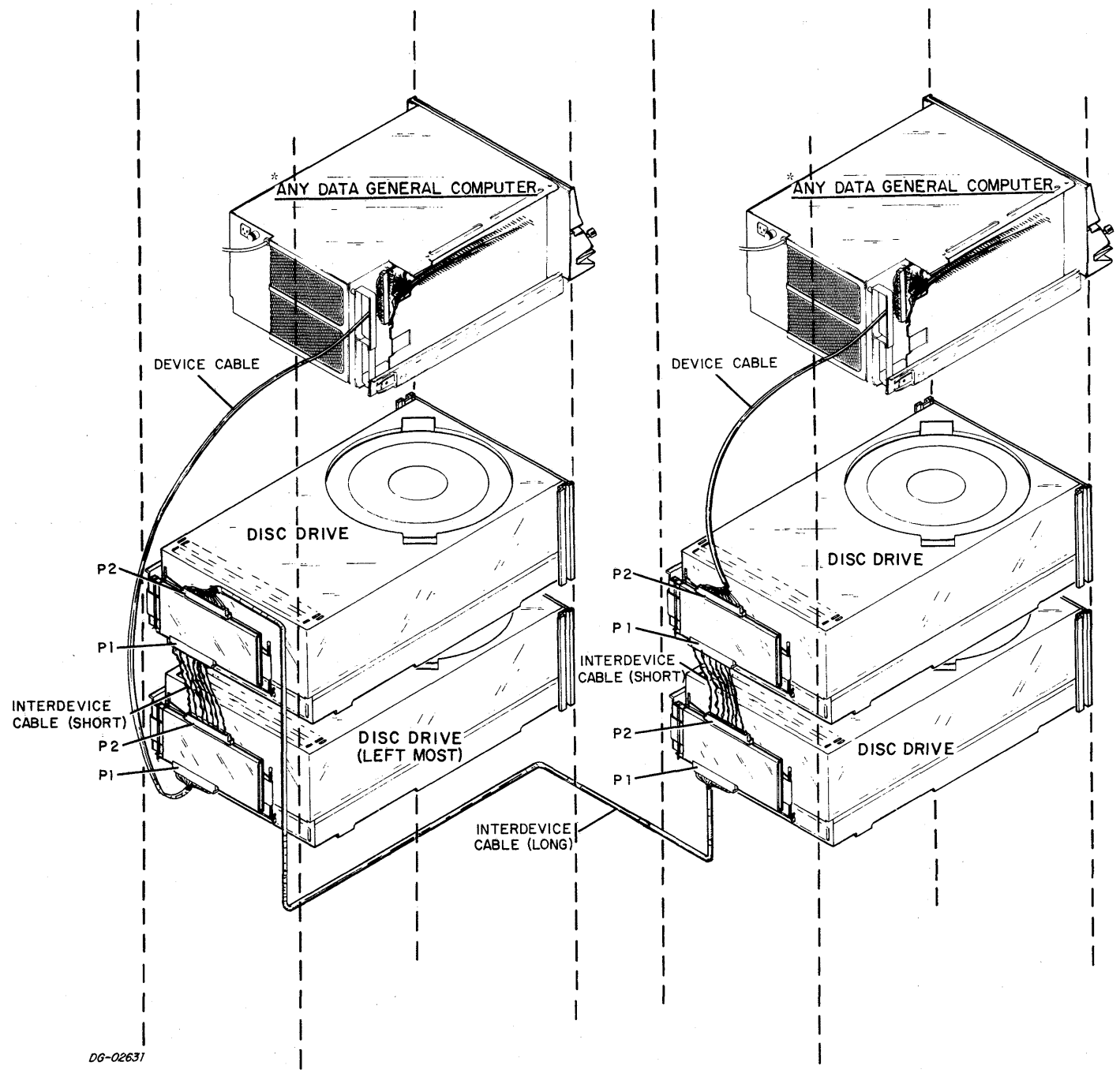
EXAMPLE OF CABINET MOUNTED SUBSYSTEM USING LONG AND SHORT CABLES



NOTE: NO MORE THAN TWO (2) DRIVES PER CABINET.

*EXCEPT MODEL 4001

EXTERNAL CABLING
(EXAMPLE OF A DUAL PROCESSOR CONFIGURATION)



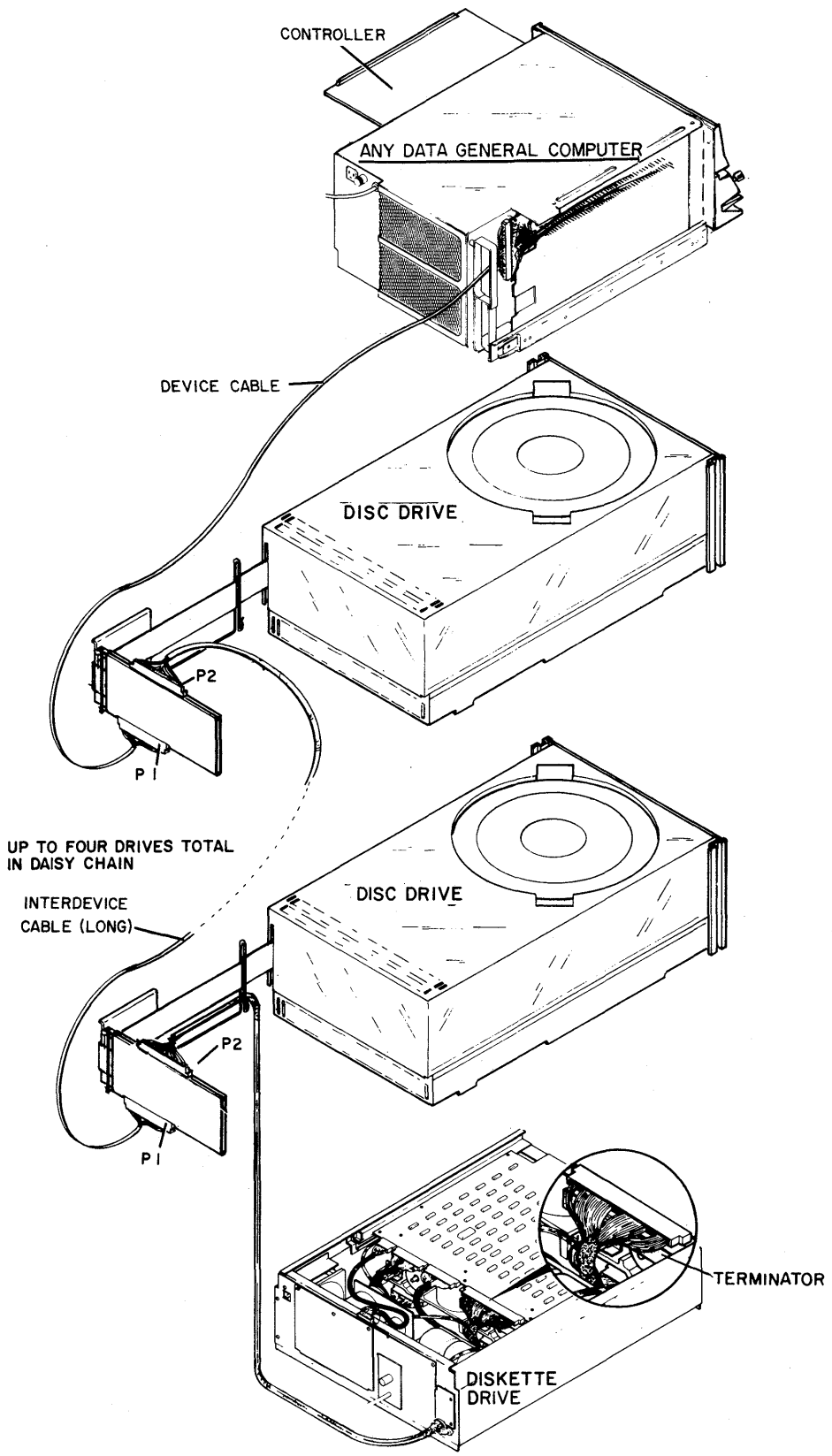
NOTE: BOTH PROCESSORS HAVE EQUAL PRIORITY, THE LEFT MOST DRIVE (WITH PLUG P1 CONNECTED TO PROCESSOR) CONTROLS THE PROCESSOR-SELECT SWITCHING.

DGC DOES NOT RECOMMEND INTERMIXING 4234 TYPE DISC DRIVES IN THIS SUBSYSTEM.

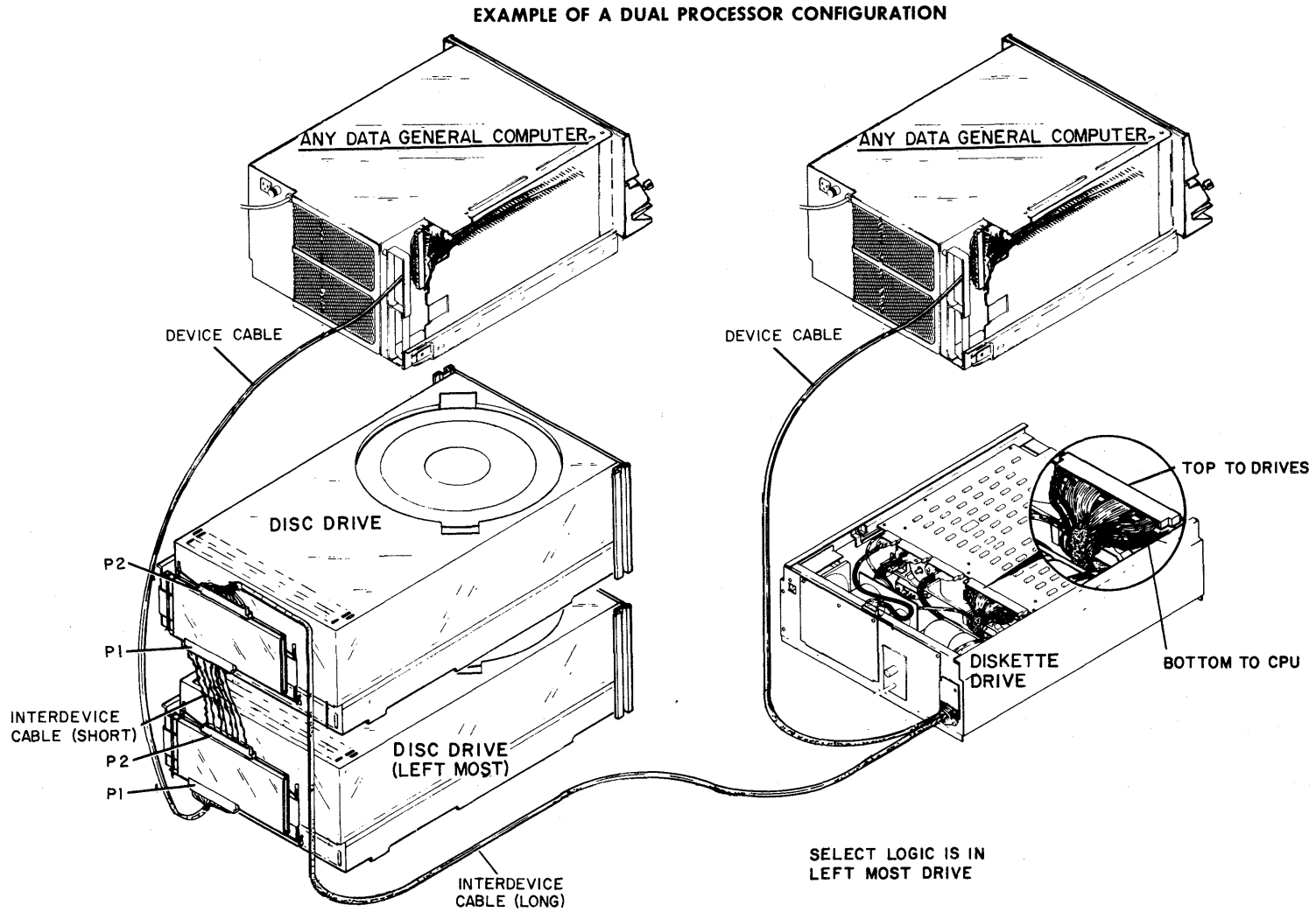
*EXCEPT MODEL 4001

EXTERNAL CABLING
(WITH DISKETTE UNITS)

EXAMPLE OF SUBSYSTEM USING LONG CABLE



EXAMPLE OF A DUAL PROCESSOR CONFIGURATION



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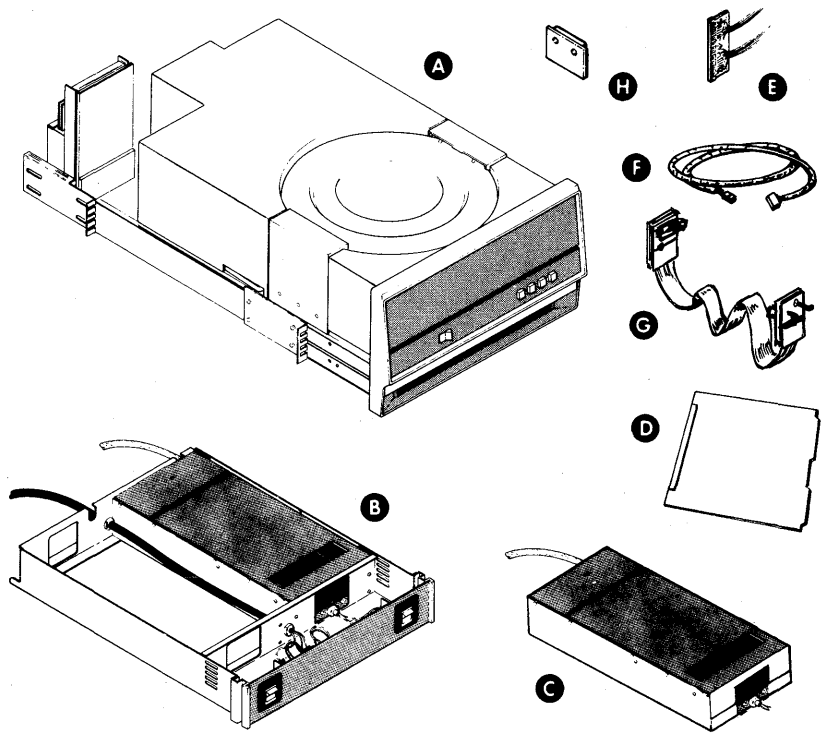
SUBSYSTEM COMPONENT BREAKDOWN



MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	10M BYTE DISC DRIVE	CABINET	UP TO 4 MAX IN SUBSYSTEM
B	PWR SUPPLY MODULE AND CHASSIS	CABINET	POWERS ONE 10M BYTE DISC DRIVE
			CHASSIS HAS SPACE AVAILABLE FOR ONE MORE MODULE
C	PWR SUPPLY MODULE	PWR SUPPLY CHASSIS	POWERS ONE 10M BYTE DISC DRIVE
D	CONTROLLER	COMPUTER	CONTROLS UP TO 4 DISC DRIVES

CABLE

Item	Cable	Connecting			Max Allowed Lg ft / m	Notes
E	INTERNAL	COMPUTER B/P	and	COMPUTER B/P CONN	N/A / N/A	VARIES W/COMPUTER WIRE-WRAPPED TO B/P PINS
		"				
F	DEVICE	COMPUTER B/P CONN	"	10M BYTE DISC DR	2.13	VARIES WITH COMPUTER
G	INTER-DEVICE	10 M BYTE DISC DRIVE	"	10 M BYTE DISC DRIVE		

TERMINATOR

Item	Terminator	Location	Notes
H	SIGNAL BUS TERMINATOR	10M BYTE DISC DRIVE	ONE REQUIRED PER SUBSYSTEM, ON LAST DISC DRIVE

SPECIFICATIONS OF THE CHASSIS-MOUNTED COMPONENTS

Component	Chassis	Slots Required	Max Allowable Data Channel Latency (μ sec)	Type of Data Channel Service Desired: High Speed	Standard	Max Allowable Programmed I/O Latency +	Controller's +5 Volt Current Draw (Amps)
CONTROLLER	COMPUTER	1	12.8	x	x	——	4.0
PS MODULE	PS CHAS.	1	—	-	—	——	—

SPECIFICATIONS OF THE CABINET-MOUNTED COMPONENTS

Item	Component	Number in Sub-system	Max Operating Temp: Component °F / °C	Max Operating Temp: Media °F / °C	Primary Power: Current (nom) Draw (Amp)	Primary Power: Voltage ±ΔV	Primary Power: Frequency ±ΔV	Cabinet Height Required: Area	in.	cm	Weight: lbs / kg	Power Dissipation (Max Watts)	Preferred Location or Remarks	Operating Humidity (Relative): min % / max %
A	4234 DRIVE	1-4	90 / 32	90 / 32	5.7	+24 ±1.2	DC	6	10.5	26.6	136 / 62	265	*9-14 CABINET MUST BE EQUIPPED WITH ANT-TIP LEGS.	20 / 80
					5	-24 ±1.2	DC							
					4	+5 ±0.1	DC							
B,C	MODULE W/ PS CHASSIS	1-2	90 / 32		5.7	115 ± 11	60Hz±1Hz	2	3.5	8.9	36 / 16		MOUNTS DIRECTLY BELOW * DRIVE; SPACE FOR 1 MORE MOD.	20 / 80
					5.6	115 ± 11	50Hz±1Hz							
					2.8	220 ± 22	50Hz±1Hz							
					2.6	220 ± 22	60Hz±1Hz							

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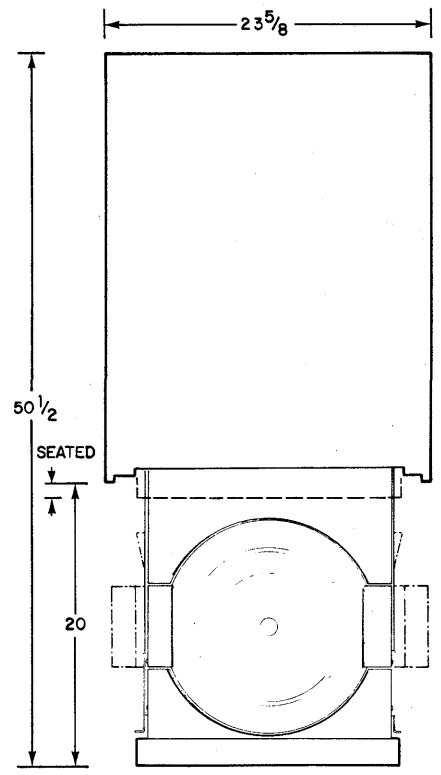
Item	Voltage	Power Cable Length ft	Power Cable Length m	Power Cable Plug	Mating Receptacle on Power Drop	Mating Receptacle in Wall
B,C	115 Vac	5	1.52	5-15P	5-15R	5-15R
	220 Vac	5	1.52	6-15P	6-15R	6-15R

DG-02717

NOTE:
CABINET MODIFICATION KIT REQUIRED FOR INSTALLATION IN "OLD STYLE" NOVA CABINETS. REFER TO DGC 010-000056.
*SECOND DRIVE MOUNT IN AREA 01-06



SERVICE DIMENSIONS

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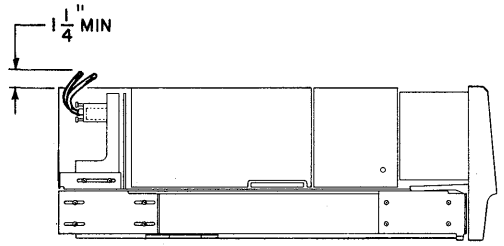
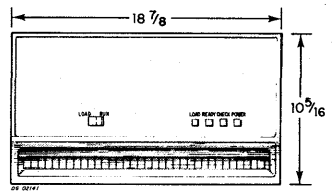
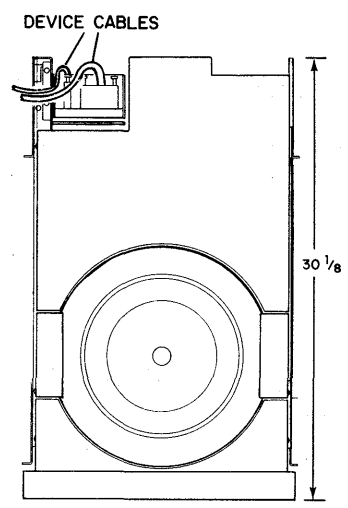


SIDE VIEW

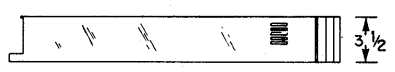


FRONT VIEW

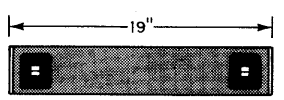


TOP VIEW

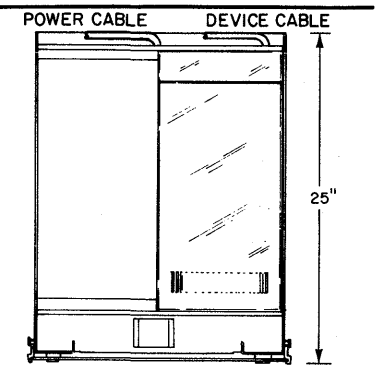
DISC DRIVE



SIDE VIEW



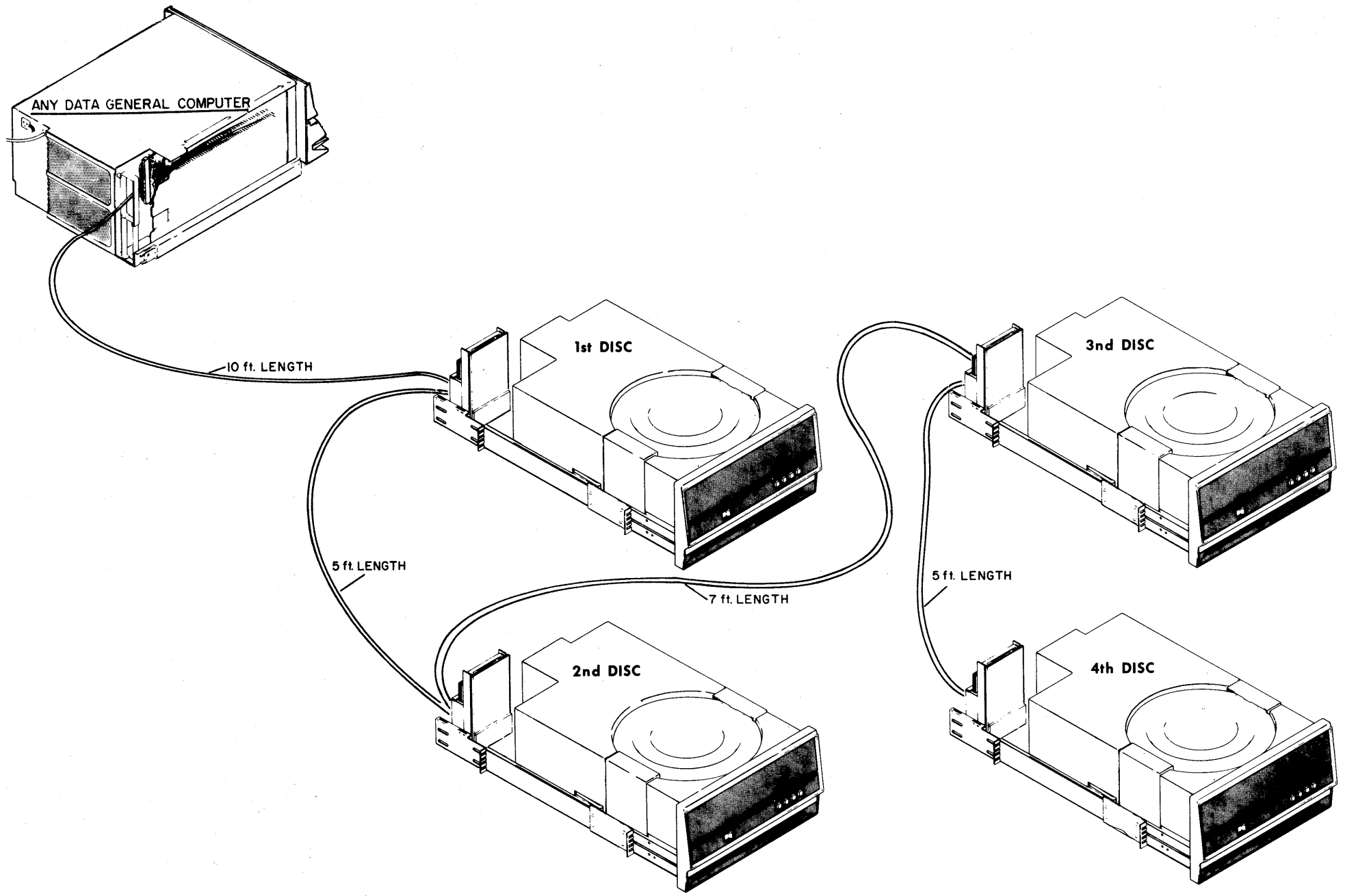
FRONT VIEW



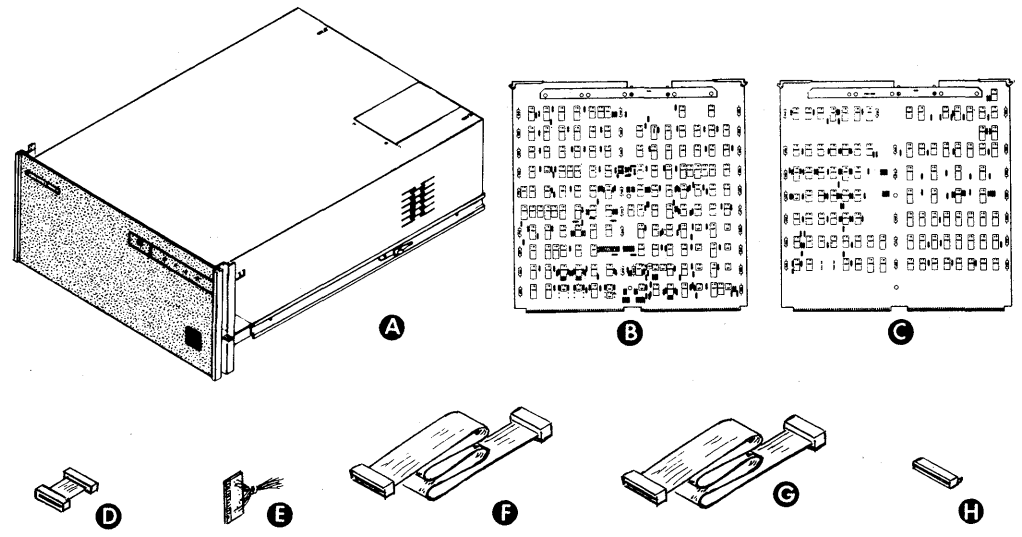
TOP VIEW

POWER SUPPLY CHASSIS

EXTERNAL CABLING



SUBSYSTEM COMPONENT BREAKDOWN



MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	2 M-BYTE DISC DRIVE	CABINET	FOUR DRIVES PER SUBSYSTEM, MAX.
B	CONTROLLER BOARD	COMPUTER	ONE OF EACH REQUIRED PER SUBSYSTEM. TWO OF EACH REQUIRED FOR DUAL PROCESSOR SUBSYSTEM.
C	DATA CHANNEL INTERFACE BOARD	COMPUTER	

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CABLE

Item	Cable	Connecting	Max Allowed Lg ft / m	Notes
D	INTER-BOARD	CONTROLLER and DATA CHANNEL INTERFACE	2 in. / 5 cm	FLAT CABLE
E	INTERNAL	COMPUTER BACKPANEL PINS " COMPUTER CHASSIS CONN	N/A / N/A	FOR CONTROLLER BOARD ONLY
F	DEVICE	COMPUTER CHASSIS CONN " DISC DRIVE CONNECTOR	10 / 3.05	TOTAL MAXIMUM LENGTH PER SYSTEM, SINGLE OR DUAL, 50FT (15.3 M)
G	INTERDEVICE	DISC DRIVE " DISC DRIVE	10 / 3.05	

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TERMINATOR

Item	Terminator	Location	Notes
H	DISC SUBSYSTEM TERMINATOR	LAST DISC IN DAISY CHAIN	NOT REQUIRED FOR DUAL PROCESSOR APPLICATIONS

DG-02674

SPECIFICATIONS OF THE CHASSIS-MOUNTED COMPONENTS

Item	Componen..	Chassis	Slots Required	Max Allowable Data Channel Latency (μ sec)	Type of Data Channel Service Desired: High Speed	Type of Data Channel Service Desired: Standard	Max Allowable Programmed I/O Latency +	Controller's +5 Volt Current Draw (Amps)
B	CONTROLLER	CPU	1	18μs (1)	✓	✓	N/A	4.4
C	DATA CHANNEL INTERFACE *	CPU	1	18μs (2)	✓	✓	N/A	3.8

DG-01912

NOTE: * DATA CHANNEL INTERFACE BOARD MUST HAVE A HIGHER DATA CHANNEL PRIORITY THAN THE CONTROLLER BOARD.

(1) THIS IS THE MAXIMUM LATENCY ALLOWED TO ASSURE READING OR WRITING CONSECUTIVE SECTORS EXCLUDING JUMP COMMANDS.

(2) THIS IS THE MAXIMUM LATENCY ALLOWED PROVIDED A DATA TRANSFER RATE OF 450,450 WORDS/SEC IS MAINTAINED OVER ANY 8-WORD BLOCK.

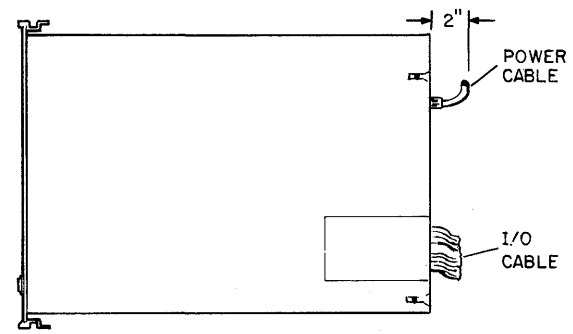
SPECIFICATIONS OF THE CABINET-MOUNTED COMPONENTS

Item	Component	Number in Subsystem	Maximum Operating Temperature: Component °F / °C	Maximum Operating Temperature: Media °F / °C	Primary Power: Volts	Hz	Phase	Cond	Amps	Cabinet Height Required: Area	in.	cm	Weight lbs / kg	Power Dissipation (Max Watts)	Preferred Location or Remarks	Operating Humidity (Relative) min % / max %
A	120V	1-4	100 / 38	100 / 38	120	60	1	3	3	5	8.75	22.2	76 / 34.5	300		10 / 90
	100V	1-4	100 / 38	100 / 38	100	50	1	3	3	5	8.75	22.2	76 / 34.5	300		10 / 90
	220V	1-4	100 / 38	100 / 38	220	50	1	3	2	5	8.75	22.2	76 / 34.5	300		10 / 90
	240V	1-4	100 / 38	100 / 38	240	50	1	3	2	5	8.75	22.2	76 / 34.5	300		10 / 90

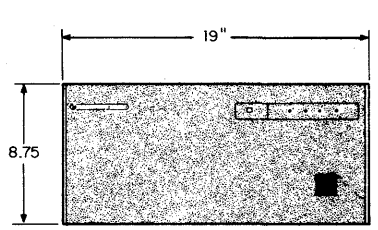
DG-01914

Voltage	Power Cable Length ft	Power Cable Length m	Power Cable Plug	Mating Receptacle on Power Drop	Mating Receptacle in Wall
100V	6	1.8	NEMA 5-15P	NEMA 5-15R	NEMA 5-15R
120V	6	1.8	NEMA 5-15P	NEMA 5-15R	NEMA 5-15R
220V	6	1.8	NEMA 6-15P	NEMA 6-15R	NEMA 6-15R
240V	6	1.8	NEMA 6-15P	NEMA 6-15R	NEMA 6-15R

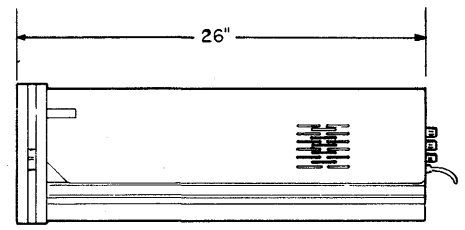
DG-02717



TOP VIEW

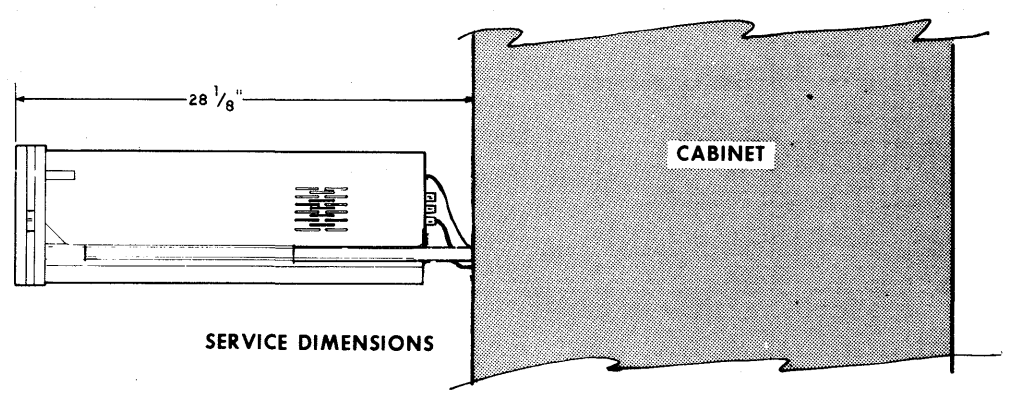


FRONT VIEW



SIDE VIEW

DG-03556



SERVICE DIMENSIONS

SHIPPING

PACKAGING KIT No. 005 007630

INFORMATION NOT AVAILABLE

INTERNAL CABLING

SIGNAL NAMES	PADDLEBOARD EDGE CONNECTOR PIN NUMBERS	DESTINATION PINS ON COMPUTER BACK PANEL	SOCKET CONNECTOR PIN NUMBERS
GND	A-A8	A-99	50
GND	1	A-100	1
T8	3	A-91	16
WRT OSC RTN(+)	4	A-78	30
WRT OSC RTN(-)	5	A-77	11
LEFT SEL	7	A-75	6
T32	8	A-73	4
T16	13	A-63	27
RD/WRT DATA (-)	14	A-61	13
RD/WRT DATA (+)	15	A-59	14
SECTOR PULSE	18	A-49	33
DISC RESET	19	A-79	31
D0	20	A-81	37
T2	21	A-84	17
RD/WRT CLK (+)	22	A-83	39
+5 AUX V	23	A-86	40
RD/WRT CLK (-)	24	A-85	46
T4	26	A-87	47
T1	27	A-89	18
D1	31	B-13	41
READ GATE	32	B-15	38
DS0	33	B-19	47
WRITE GATE	34	B-23	43
FINISH	35	B-25	20
SC16	36	B-27	45
T64	37	B-31	44
DUR	38	B-34	15
DS1	39	B-36	32
SC1	40	B-38	34
CPU REQ	41	B-40	19
WRT CLK RTN (-)	42	B-48	35
WRT CLK RTN (+)	43	B-49	36
SC2	44	B-51	49
UNSAFE	46	B-53	22
CPU ENABLE	47	B-54	29
SC8	48	B-67	28
SC4	49	B-69	3
NOT USED	2	A-92	
"	6	A-76	
"	9	A-71	
"	10	A-69	
"	11	A-67	
"	12	A-65	
"	16	A-57	
"	17	A-47	
"	25	A-88	
"	28	A-90	
"	29	B-6	
"	30	B-11	
"	45	B-52	
"	50	A-3	

COMPUTER	INTERNAL CABLE PART NUMBER
NOVA 2, NOVA 3, and ECLIPSE LINE	005 001802
NOVA 820, 1210, and 1220	005 001802
NOVA 840, 830, 1200, and 800 JUMBO	005 000411 (INSTALLED IN SLOT 16)
NOVA 800 and 1200	005 000386
NOVA and SUPERNOVA	005 000231

DG-03565

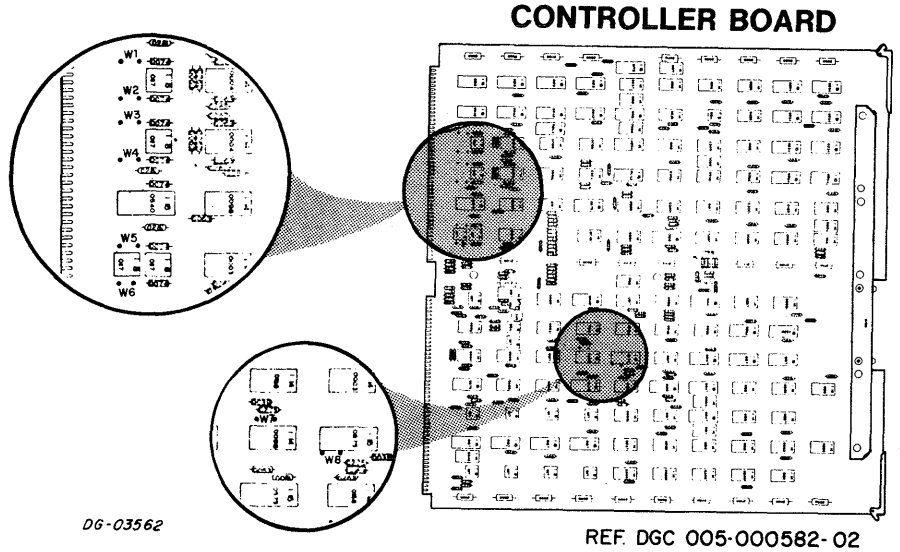
NOTE: INTERNAL CABLE IS FOR CONTROLLER BOARD ONLY; NOT NEEDED FOR DATA CHANNEL INTERFACE BOARD.
ON THE FOLLOWING PROCESSORS, A DISC DRIVE CABLE EDGE CONNECTOR IS PART OF THE COMPUTER BACK PANEL, AND IS PERMANENTLY CONNECTED, VIA BACK PANEL ETCH, TO THE SLOT INDICATED IN THE TABLE. NO INTERNAL CABLE IS REQUIRED.

PROCESSOR	SLOT	
NOVA 2/10, NOVA 820 NOVA 1220 COMPUTERS	9	P4 CONNECTOR
NOVA 3/12 COMPUTER	10	P4 CONNECTOR

TAILORING

JUMPERS

CONTROLLER BOARD



REF. DGC 005-000582-02

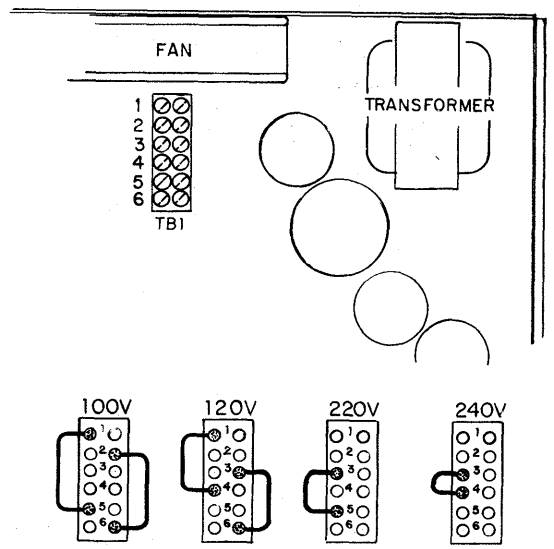
DEVICE CODE SELECT

JUMPER POSITION	DEVICE CODE 26_8	DEVICE CODE 66_8
W1	JUMPER REMOVED	JUMPER REMOVED
W2	JUMPER INSERTED	JUMPER INSERTED
W3	JUMPER REMOVED	JUMPER REMOVED
W4	JUMPER INSERTED	JUMPER INSERTED
W5	JUMPER REMOVED	JUMPER INSERTED
W6	JUMPER INSERTED	JUMPER INSERTED

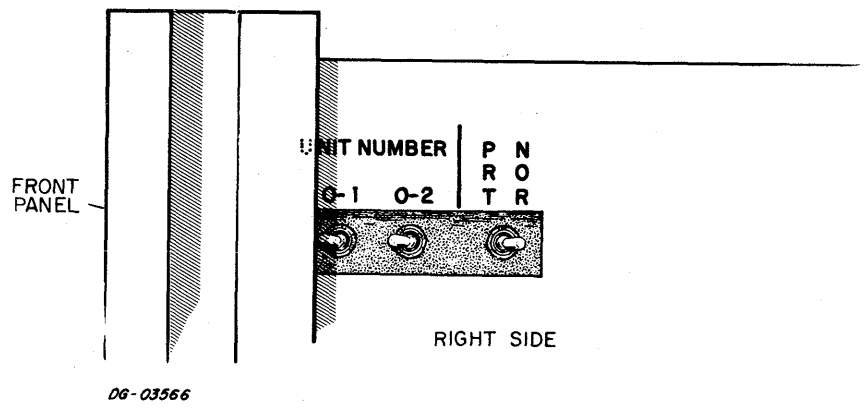
	SINGLE PROCESSOR	DUAL PROCESSOR
W7	JUMPER INSERTED	JUMPER REMOVED
W8	JUMPER REMOVED	JUMPER INSERTED (BOTH CONTROL BOARDS)

DATA 10	W5
" 11	W6
" 12	W1
" 13	W2
" 14	W4
" 15	W3

VOLTAGE SELECTION

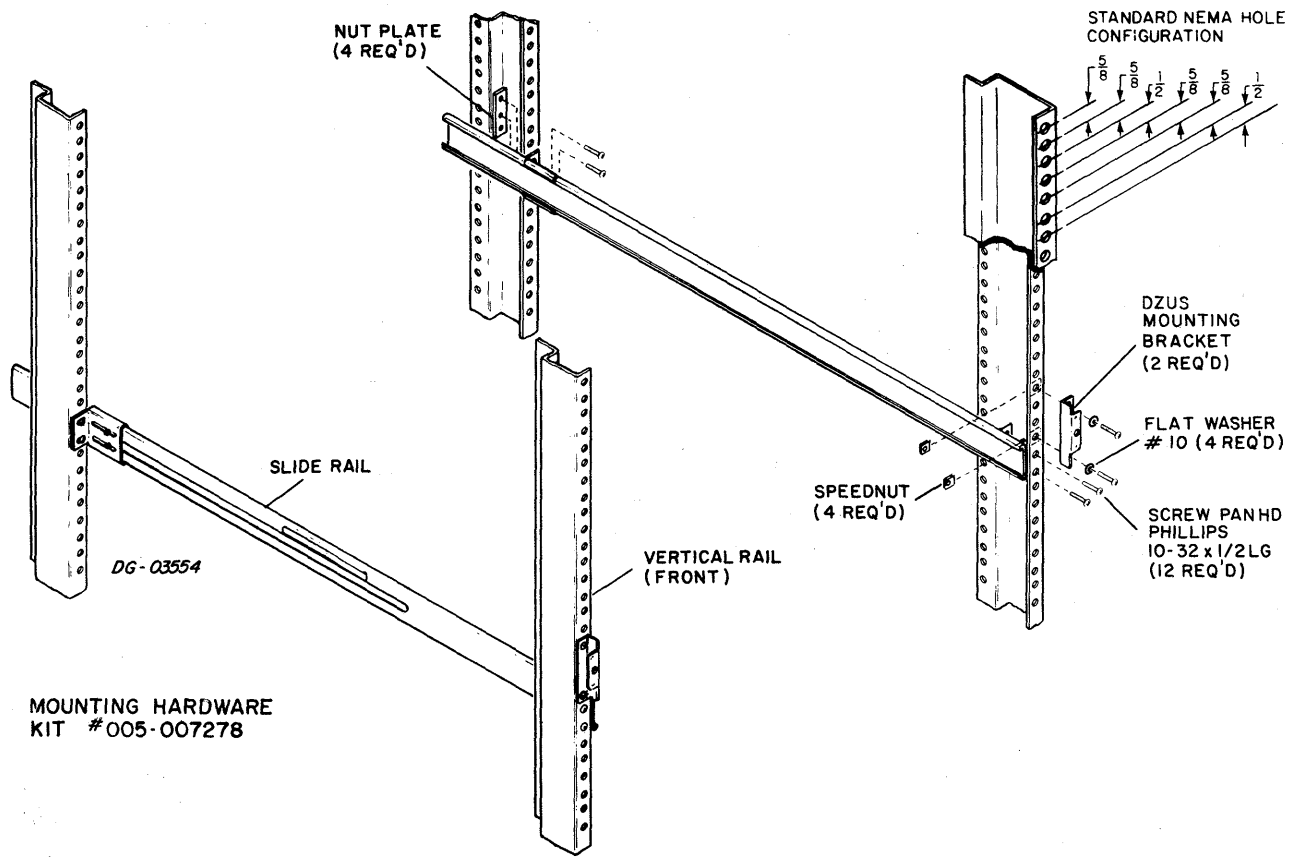


UNIT SELECT & PROTECT SWITCHES



CABINET MOUNTING

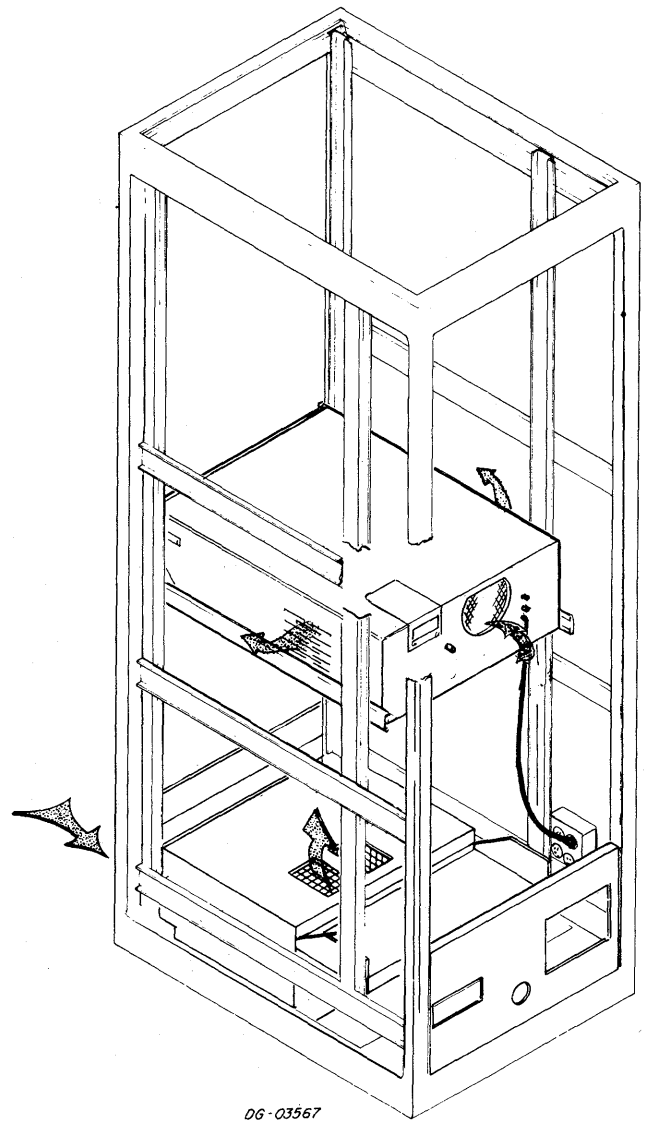
SLIDE RAIL INSTALLATION



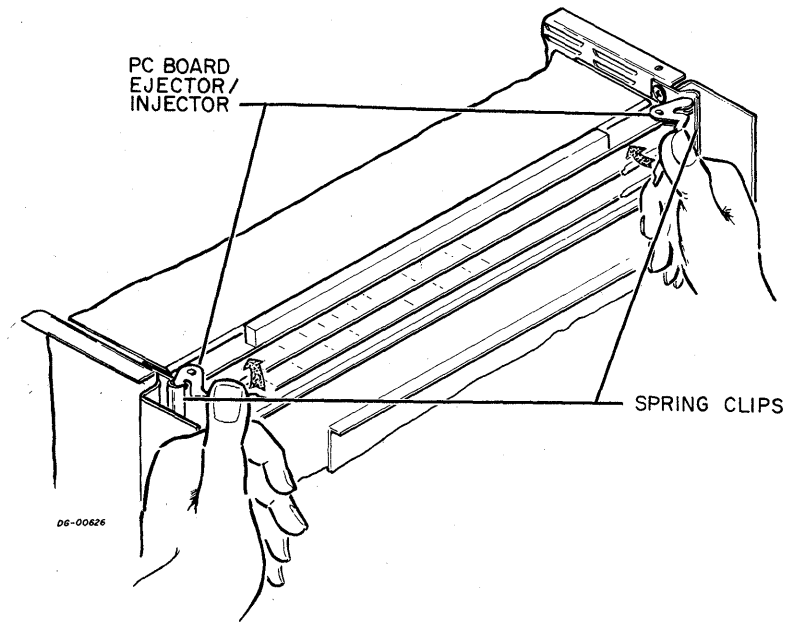
MOUNTING HARDWARE
KIT #005-007278

Torque Requirements	
Screw No.	In./Lb.
8-32	12-14
10-32	23-25 (10-12 for Speednut)

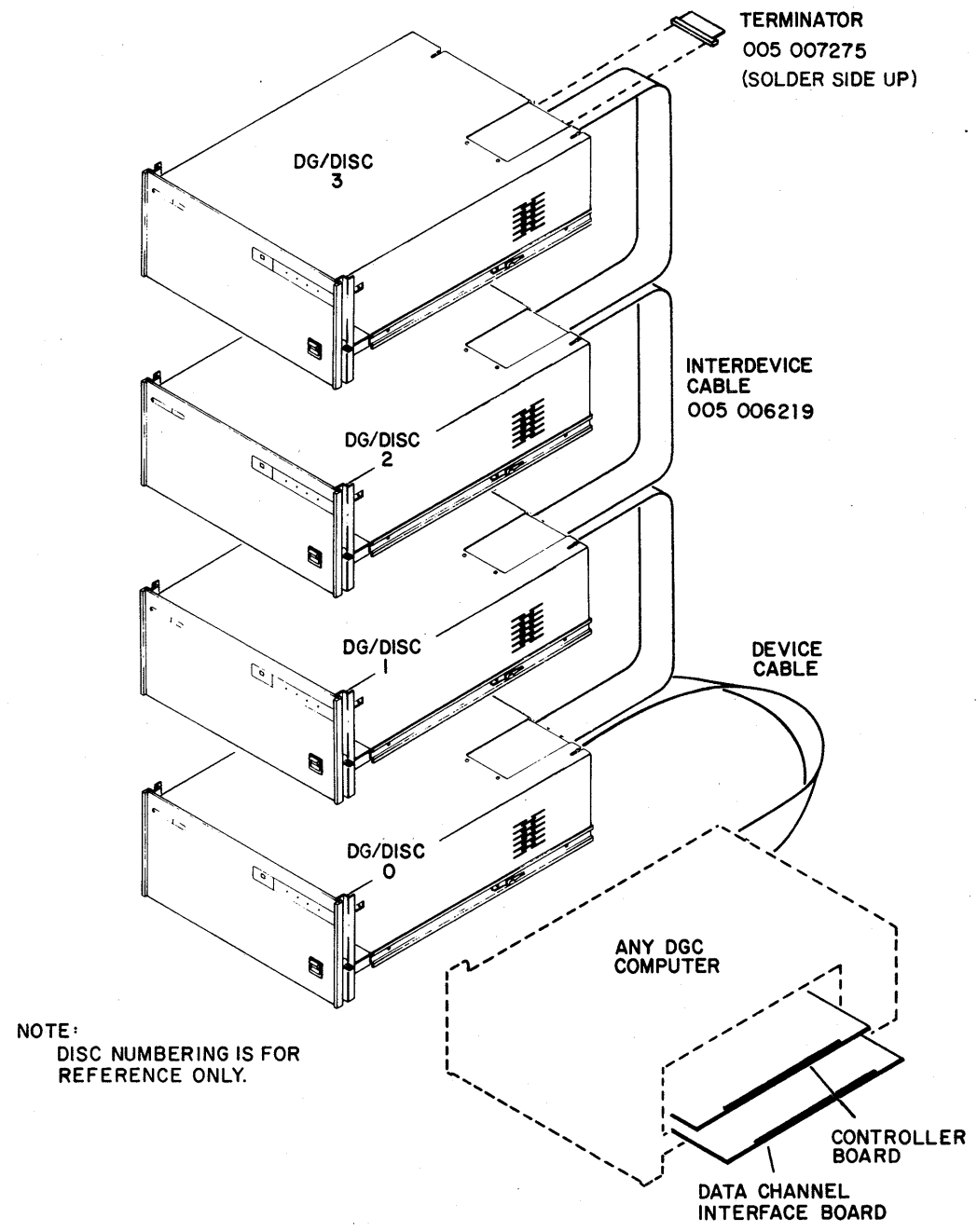
AIR FLOW



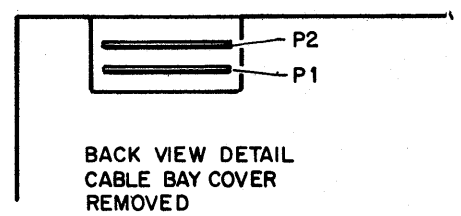
INSTALLING PC BOARD



EXTERNAL CABLING



NOTE:
DISC NUMBERING IS FOR
REFERENCE ONLY.



BACK VIEW DETAIL
CABLE BAY COVER
REMOVED

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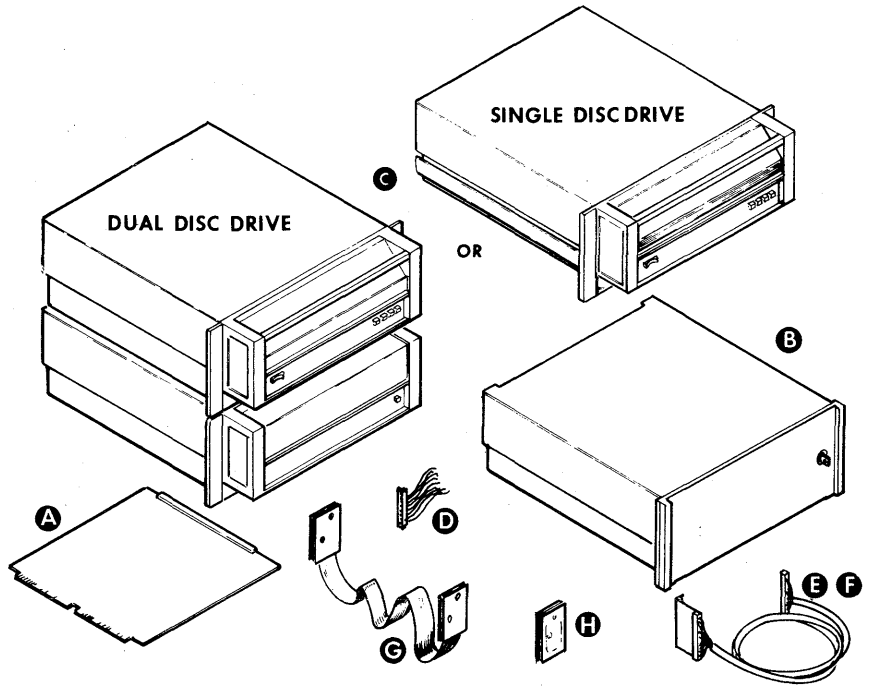
SUBSYSTEM COMPONENT BREAKDOWN



MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	Controller	CPU	
B	Adapter	Cabinet	
C	Disc Drive(s)	Cabinet	

DG-02672

CABLE

Item	Cable	Connecting		Notes
D	Internal Cable	Back panel	and Socket Conn	
	or	" " "	Paddleboard	
E	Device Cable (Adapter)	CPU (socket conn) "	Adapter	Max Allowed Lngth 25ft (7.61m)
	or	CPU (paddle bd) "	Adapter	
F	Device Cable (Drive)	Adapter "	Disc Drive	Max. Allowed Lngth, 5ft (1.52m)
G	Inter-Device Cable	Disc Drive "	Disc Drive	" " " " "

DG-02673

TERMINATOR

Item	Terminator	Location	Notes
H	Disc Unit I/O (pin type)	Last Unit Output Conn	

DG-02674

SPECIFICATIONS OF THE CHASSIS-MOUNTED COMPONENTS

Item	Component	Chassis	Slots Required	Max Allowable Data Channel Latency (μ sec)	Type of Data Channel Service Desired High Speed	Standard	Controller's +5 Volt Current Draw (Amps)
A	CONTROLLER	COMPUTER	1	28			2.5

DG-01912

SPECIFICATIONS OF THE CABINET-MOUNTED COMPONENTS

Item	Component	Number in Sub-system	Maximum Operating Temperature Component °F / °C	Media °F / °C	Primary Power Current (nom) Draw (Amp)	Voltage ±ΔV	Frequency Hz	Cabinet Height Required Area	in.	cm	Weight lbs / kg	Power Dissipation (Max Watts)	Max Ext Cable Length ft / m	Preferred Location or Remarks	Operating Humidity (Relative) min-%/%max
B	Adapter - 2 Driver Capacity	1	90 / 32		2 Max	115 ± 23	47 to 63	4	7	17.78	30 / 13.6	230	25 / 7.62	18-24 Preferred Location	
	Adapter - 2 Driver Capacity	1	90 / 32		1 Max	230 ± 46	47 to 63	4	7	17.78	30 / 13.6	230	25 / 7.62		
	Adapter - 4 Driver Capacity	1	90 / 32		4 Max	115 ± 23	47 to 63	4	7	17.78	55 / 24.9	460	25 / 7.62		
	Adapter - 4 Driver Capacity	1	90 / 32		2 Max	230 ± 46	47 to 63	4	7	17.78	55 / 24.9	460	25 / 7.62		
C	Single Disc Drive	4	90 / 32		N/A	N/A	N/A	4	7	17.78	43 / 19.3	200	5 / 1.52		
	Dual Disc Drive	2	90 / 32		N/A	N/A	N/A	4	7	17.78	86 / 38.6	400	5 / 1.52		

DG-01914

Voltage	Power Cable Length ft	m	Power Cable Plug	Mating Receptacle on Power Drop	Mating Receptacle in Wall
115 Vac	5	1.52	5-15P	5-15R	5-15R
220/240 Vac	5	1.52	6-15P	6-15R	6-15R

DG-02717

DRIVE UNIT

DG-02760

ADAPTER

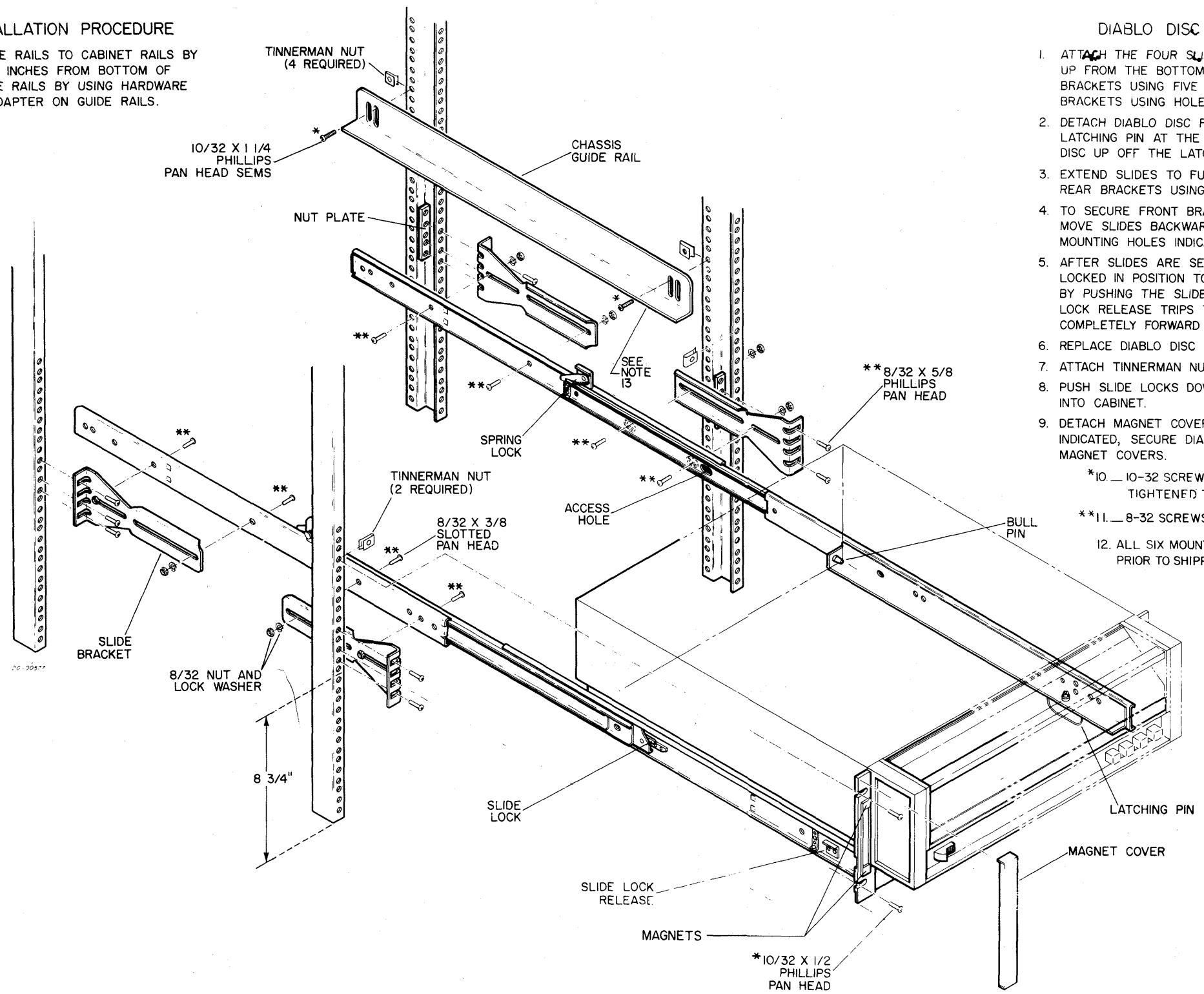
DEVICE	JUMPER
33	W2 IN
73	W1, W3, W4 IN

DG-02759

INSTALLATION PROCEDURE

ADAPTER INSTALLATION PROCEDURE

ATTACH CHASSIS GUIDE RAILS TO CABINET RAILS BY MEASURING UP 15 3/4 INCHES FROM BOTTOM OF RAILS. SECURE GUIDE RAILS BY USING HARDWARE INDICATED. PLACE ADAPTER ON GUIDE RAILS.



DIABLO DISC INSTALLATION PROCEDURE

1. ATTACH THE FOUR SLIDE BRACKETS TO THE RAILS BY MEASURING UP FROM THE BOTTOM OF RAILS 8 3/4 INCHES. SECURE ALL BRACKETS USING FIVE HOLE NUT PLATES. ATTACH THE BRACKETS USING HOLES INDICATED IN DRAWING.
2. DETACH DIABLO DISC FROM SLIDE BY FIRST RELEASING THE LATCHING PIN AT THE FRONT OF THE SLIDE. LIFT THE DIABLO DISC UP OFF THE LATCHING PIN AND SLIDE IT OFF THE BULL PIN.
3. EXTEND SLIDES TO FULL OPEN POSITION. ATTACH SLIDES TO REAR BRACKETS USING HOLES INDICATED IN DRAWING.
4. TO SECURE FRONT BRACKETS TO SLIDE, RELEASE SPRING LOCKS, MOVE SLIDES BACKWARD ALIGNING ACCESS HOLES TO BRACKET MOUNTING HOLES INDICATED IN DRAWING.
5. AFTER SLIDES ARE SECURED TO BRACKETS, SLIDES MUST BE LOCKED IN POSITION TO INSTALL DIABLO DISC. THIS IS DONE BY PUSHING THE SLIDES TO THE REAR SO THAT THE SLIDE LOCK RELEASE TRIPS THE SLIDE LOCK, THEN PULL SLIDES COMPLETELY FORWARD LOCKING THEM IN PLACE.
6. REPLACE DIABLO DISC ON SLIDES BY REVERSING PROCEDURE TWO.
7. ATTACH TINNERMAN NUTS TO HOLES INDICATED ON DRAWING.
8. PUSH SLIDE LOCKS DOWN AND PUSH DIABLO DISC BACK INTO CABINET.
9. DETACH MAGNET COVERS FROM DIABLO DISC. USING SCREWS INDICATED, SECURE DIABLO DISC TO RAILS. REPLACE MAGNET COVERS.

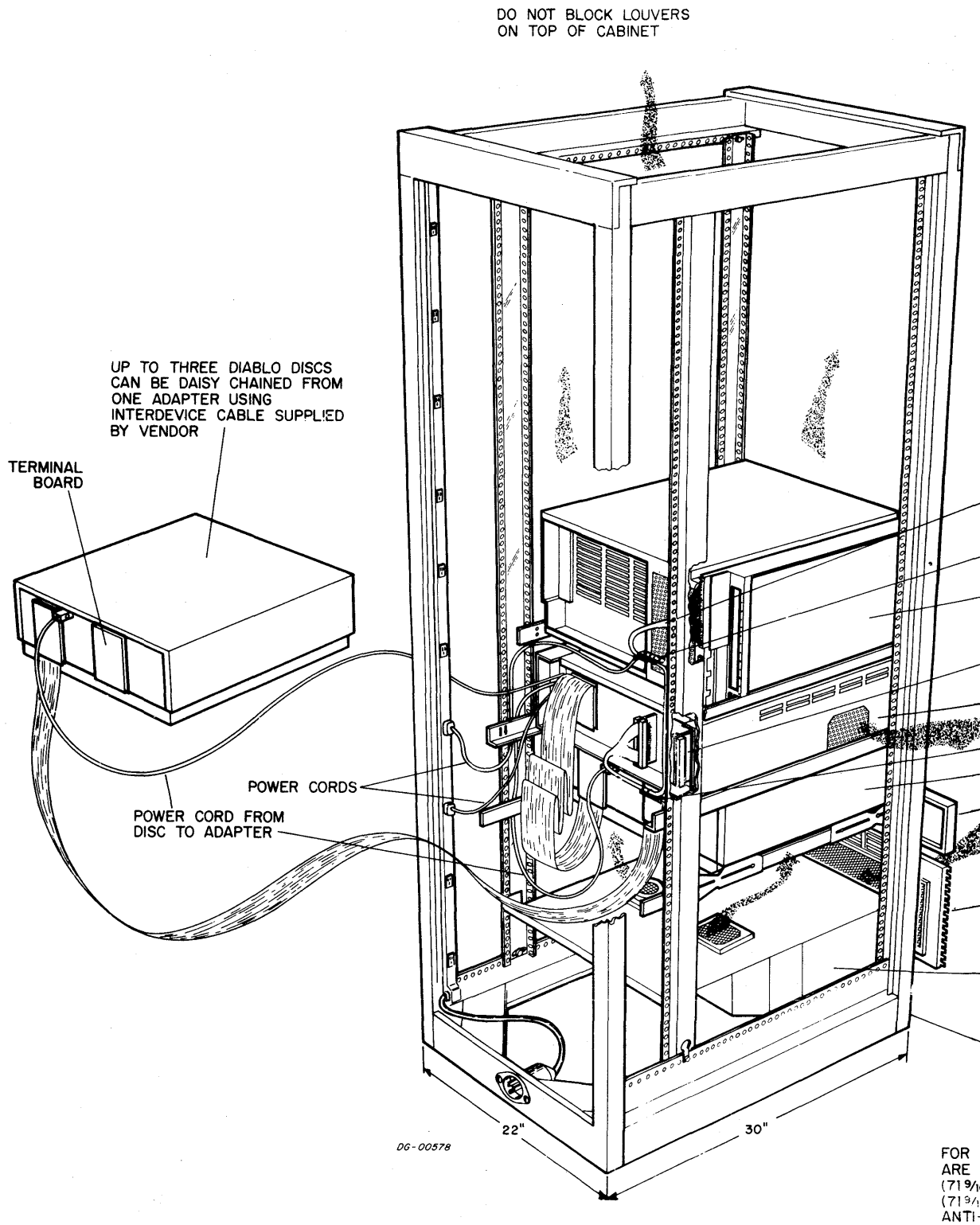
*10. — 10-32 SCREWS USED WITH TINNERMAN "U" NUTS TO BE TIGHTENED TO 10 IN. LB. TORQUE.

**11. — 8-32 SCREWS TIGHTEN TO A 14 IN. LB. TORQUE.

12. ALL SIX MOUNTING SLOTS ON THE ADAPTER TO BE USED PRIOR TO SHIPPING.

13. THE BOTTOM OF THE CHASSIS GUIDE RAILS TO BE HALF WAY BETWEEN THE 1/2" SPACED HOLES.

INSTALLATION IN A CABINET



FOR STABILITY, CABINETS 1012D (74" HT) AND 1012E (41 1/2" HT) ARE MOUNTED ON DGC BASE, NO. 112-000038; CABINETS 1012F (71 9/16", 1-BAY), 1012G (71 9/16", 2-BAY), 1012H (71 9/16", 3-BAY), 1012I (71 9/16", 4-BAY), AND 1012J (37 5/16", 1-BAY) AIR EQUIPPED WITH ANTI-TIP LEGS, DGC NO. 112-000045, AND LEVELOR LEGS, DGC NO 123-000138.

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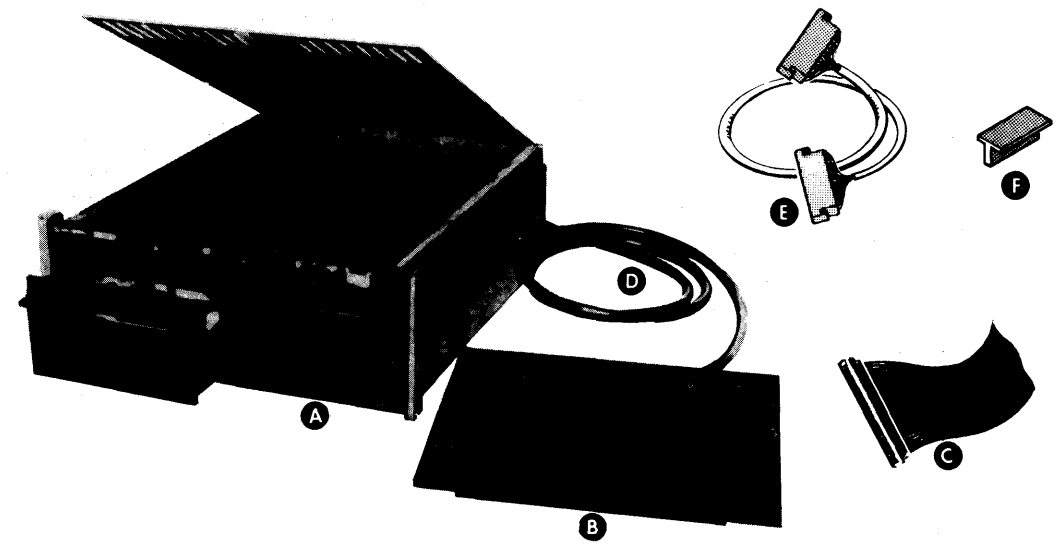
SUBSYSTEM COMPONENT BREAKDOWN



MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	DISKETTE CHASSIS	CABINET	MAY CONTAIN 2 DRIVE UNITS PER CHASSIS
B	CONTROLLER	COMPUTER CHASSIS	

DG-02672

CABLE

Item	Cable	Connecting		Max Allowed Lg ft / m	Notes
C	INTERNAL CABLE	CONTROLLER and	DEVICE CABLE	- / -	
D	DEVICE CABLE	COMPUTER "	FIRST DR UNIT	* /	MAY HAVE 2 DRIVE UNITS IN FIRST CHAS
E	INTERDEVICE CABLE	FIRST DR UNIT "	ADD'L DR UNITS	* /	ADD'L DRS MAY BE SINGLE OR DOUBLE
		*30FT (9.1M) MAXIMUM LENGTH OF TOTAL DAISY-CHAIN			UNITS (MAX OF 4 IN SUBSYSTEM)

DG-02673

TERMINATOR

Item	Terminator	Location	Notes
F	SIGNAL BUS TERM	LAST DR UNIT IN DAISY-CHAIN	

DG-02674

SPECIFICATIONS OF THE CHASSIS-MOUNTED COMPONENTS

Item	Component	Chassis	Slots Required	Max Allowable Data Channel Latency (μ sec)	Type of Data Channel Service Desired: High Speed	Standard	Controller's +5 Volt Current Draw (Amps)
B	CONTROLLER	COMP.	1	128		X	4.0

DG-01912

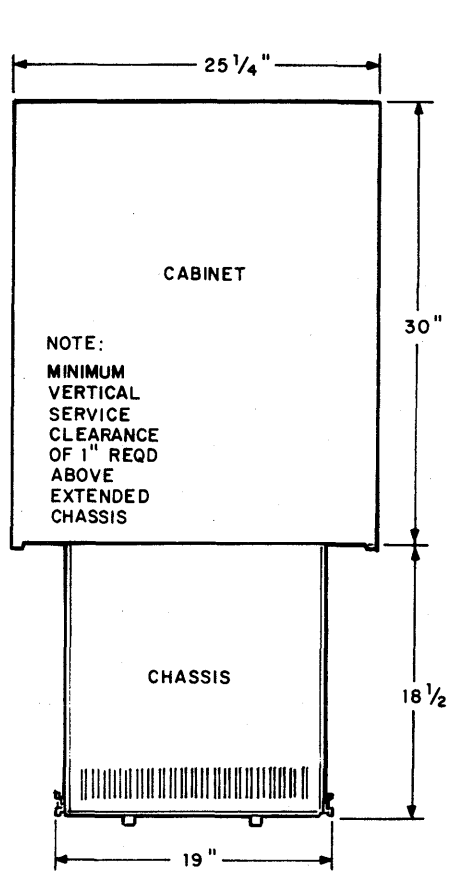
SPECIFICATIONS OF THE CABINET-MOUNTED COMPONENTS

Item	Component	Number in Subsystem	Max Operating Temp °F / °C: Component	Media	Primary Power: Current (nom) Draw (Amp)	Voltage ±ΔV %	Frequency %	Cabinet Height Required: Area	in.	cm	Weight lbs / kg	Power Dissipation (Max Watts)	Preferred Location or Remarks	Operating Humidity (Relative) min % / % max
A	SINGLE DR	1	100 / 38	100 / 38	30	100 +10 -15	50±1	4	7	17.8	54 / 24.5	300	6-9	20 / 80
	DUAL DR				4.9						67 / 30.4	475		
	SINGLE DR				2.6	120 +10 -15	60±1							
	DUAL DR				3.8									
	SINGLE DR				13	220 +10 -15	50±1							
	DUAL DR				2.1									
	SINGLE DR				125	240 +10 -15	50±1							
	DUAL DR				2.0									

DG-01914

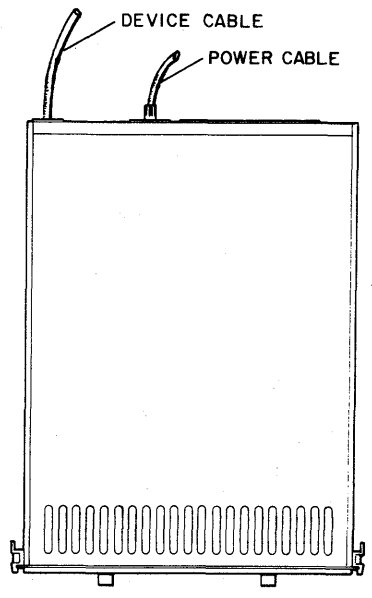
Voltage	Power Cable Length ft	m	Power Cable Plug	Mating Receptacle on Power Drop	Mating Receptacle in Wall
100V	6	1.8	NEMA 5-15P	NEMA 5-15R	NEMA 5-15R
120V	6	1.8	NEMA 5-15P	NEMA 5-15R	NEMA 5-15R
220V	6	1.8	NEMA 6-15P	NEMA 6-15R	NEMA 6-15R
240V	6	1.8	NEMA 6-15P	NEMA 6-15R	NEMA 6-15R

DG-02717

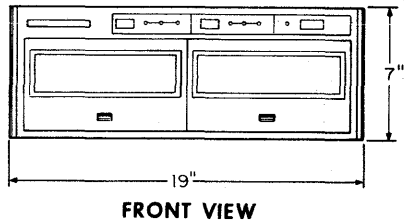


DG-02069

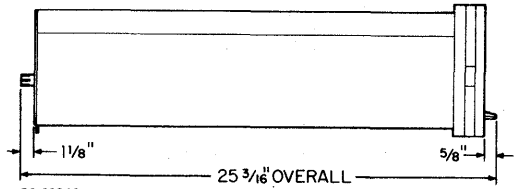
SERVICE DIMENSIONS



TOP VIEW



FRONT VIEW

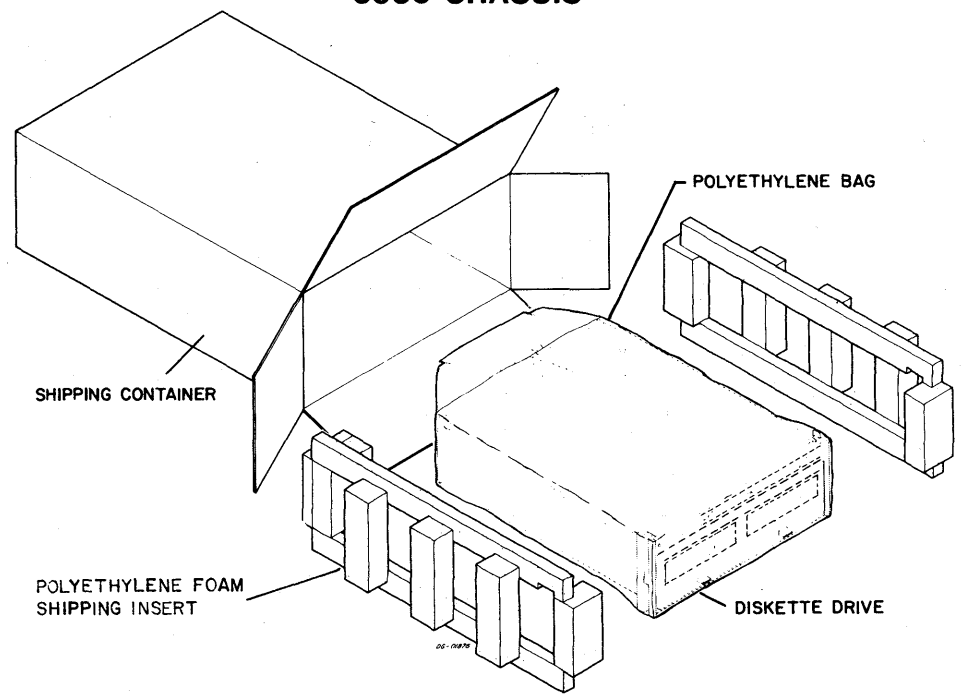


DG-02068

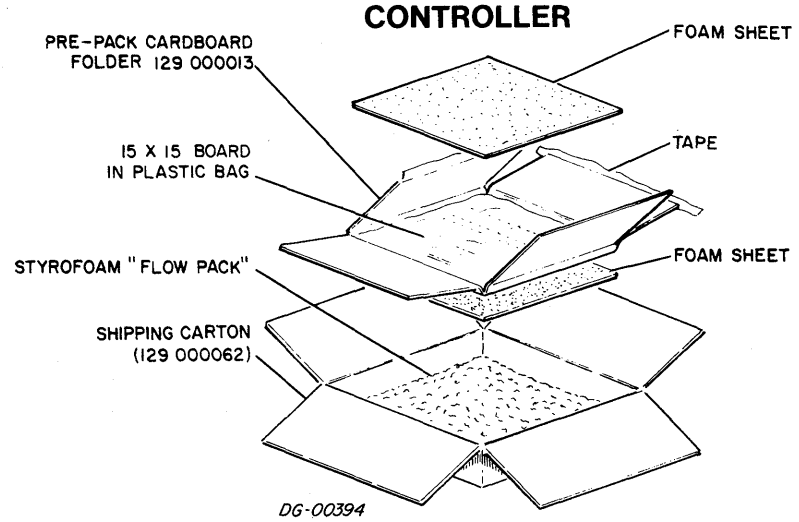
SIDE VIEW

PACKING KIT

6030 CHASSIS



CONTROLLER



DG-00394

Shipping Specifications			
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	———
-30 to +150 / -36 to +65	5-95%	15,000	———

DG-02063

Storage Specifications		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-30 to +150 / -36 to +65	5-95%	90 days

DG-02062

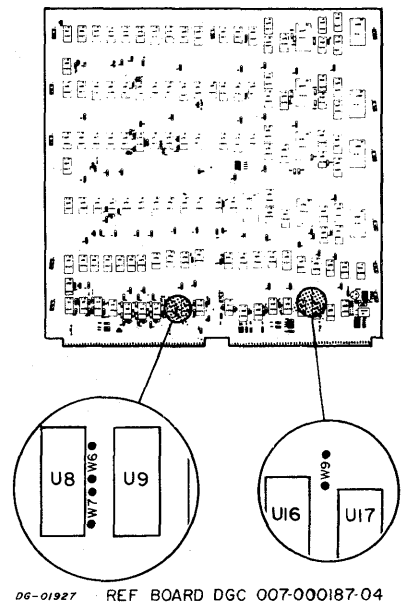
INTERNAL CABLING

Signal Names	Paddleboard Edge Connector Pin Numbers	Destination Pins On Computer Back Panel: NOVA 2	NOVA 820, 1210 & 1220	NOVA 800 & 1200	NOVA & SUPERNOVA Computers	Socket Connector Pin Numbers
GND	A-A8		A99			50
GND	1		A100			1
TA8	3		A91			16
ATTEN2	4		A78			30
RESTORE	5		A77			11
ATTEN3	6		A76			12
LFT SEL	7		A75			6
TA32	8		A73			4
TA128	9		A71			2
TA16	13		A63			27
RD CLK	14		A61			13
RD DATA	15		A59			14
DISKETTE	16		A57			5
SECT PULSE	18		A49			33
SK ERROR	19		A79			31
D0	20		A81			37
TA2	21		A84			17
HD1	22		A83			39
TAS	23		A86			40
RD/WR DISKETTE	24		A85			46
TA4	26		A87			47
TA1	27		A89			18
D1	31		B13			41
RD GATE	32		B15			38
TA256	33		B19			42
WR GATE	34		B23			43
FINISH	35		B25			20
WD CLK	36		B27			45
TA64	37		B31			44
DUR	38		B34			15
SA1	40		B38			34
CPU REQ	41		B40			19
ATTEN0	42		B48			35
ATTEN1	43		B49			36
SA2	44		B51			49
WR CHECK	46		B53			22
CPU SELECT	47		B54			29
SA8	48		B67			28
SA4	49		B69			3
HD2	30		B11			21
(not used)	2		A92			
"	10		A69			
"	11		A67			
"	12		A65			
"	17		A47			
"	25		A88			
"	28		A90			
"	29		B6			
"	30		B11			
"	39		B36			
"	45		B52			
"	47		B54			
"	50		A3			

Computer	Internal Cable Part Number
NOVA 2, 3 ECLIPSE Line Computers	005-1802
NOVA 820, 1210 and 1220 Computers	005-1802
NOVA 840, 1200 and 800 Jumbo Computers	005-469
NOVA 800 and 1200 Computers	005-469
NOVA, SUPERNOVA Computers	005-469
NOVA 830 Computer	005-469

DG-01922

JUMPERS

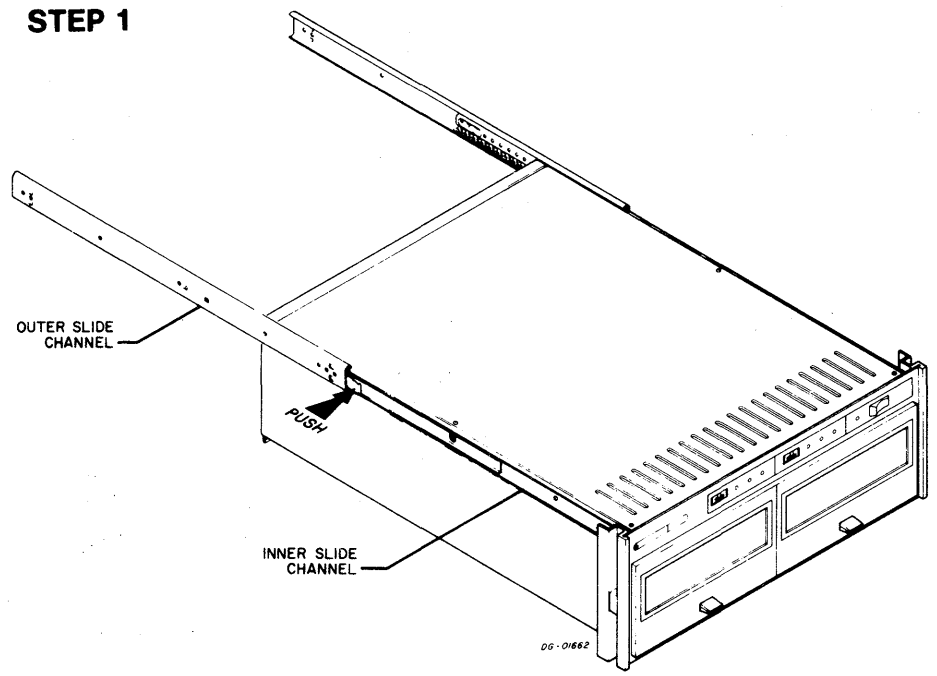


DG-01927 REF BOARD DGC 007-000187-04

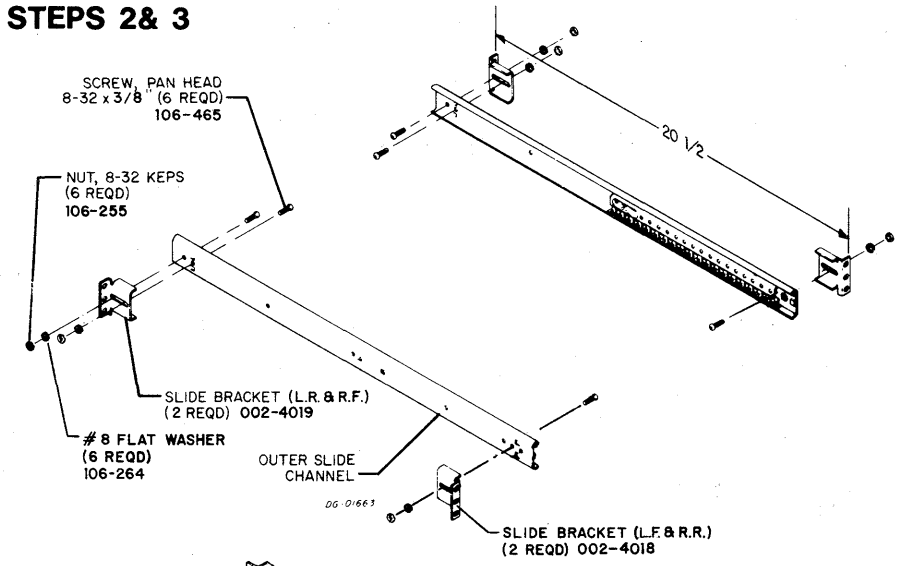
Jumper Position	Device Code 33	Device Code 73
W6	Jumper inserted	Jumper removed
W7	Jumper removed	Jumper inserted
W9	Jumper removed	Jumper inserted

SLIDE RAILS

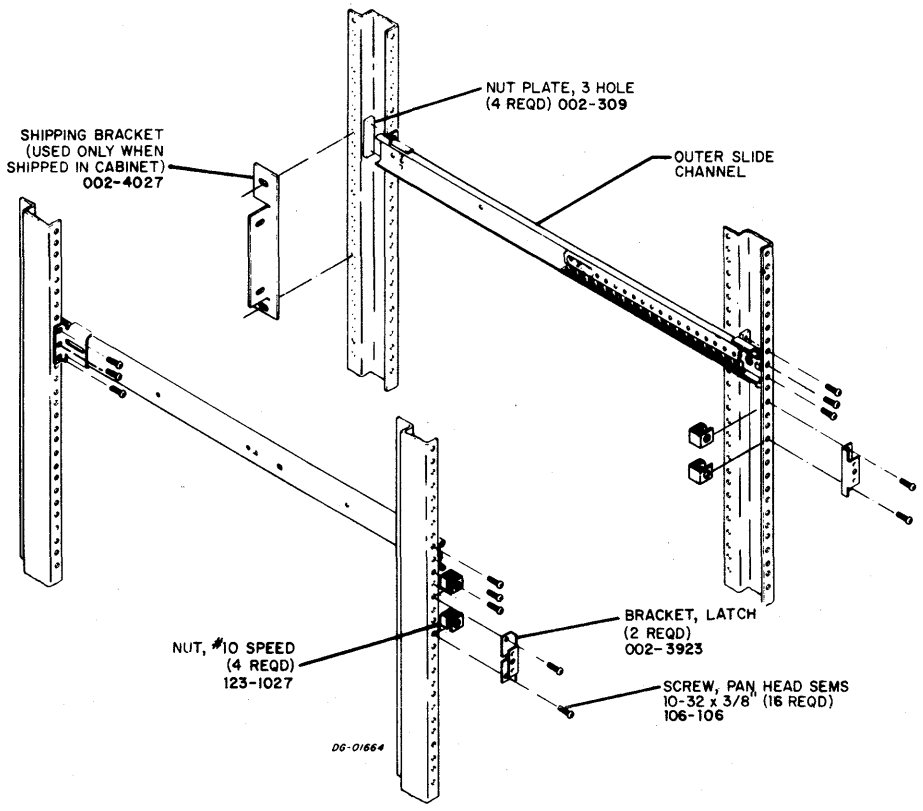
STEP 1



STEPS 2& 3



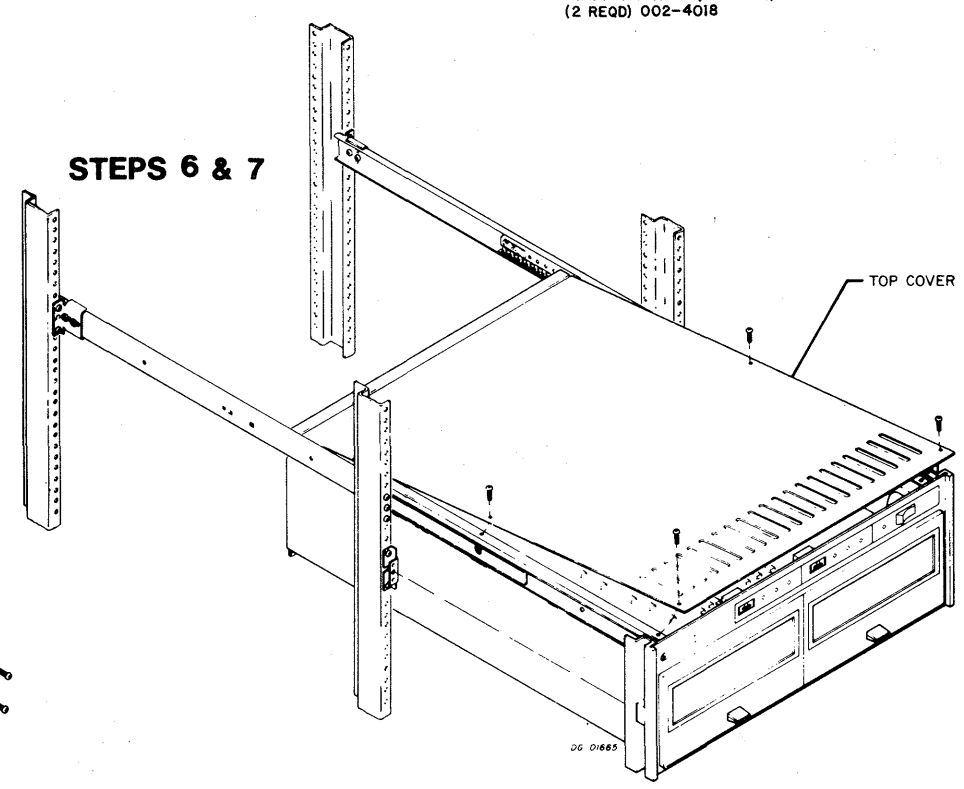
STEPS 4 & 5

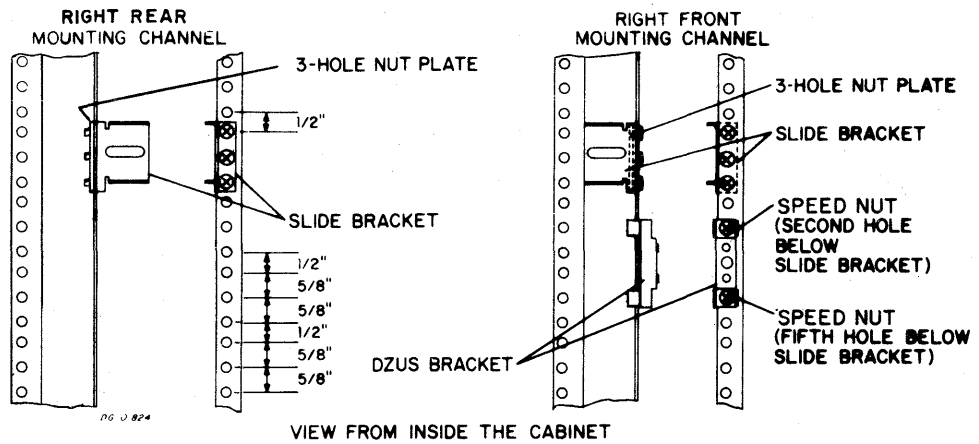


Torque Requirements	
Screw no.	in/lb
8-32	12-14
10-32	23-25

MOUNTING KIT 005 005762

STEPS 6 & 7





VIEW FROM INSIDE THE CABINET

1. REMOVE THE OUTER SLIDE CHANNELS FROM BOTH SIDES OF THE CHASSIS BY PULLING EACH SLIDE CHANNEL BACK UNTIL THE DETENT ENGAGES, PRESSING THE DETENT (INDICATED BY ARROW) TO RELEASE IT, AND PULLING THE SLIDE CHANNELS OFF THE CHASSIS. LEAVE THE INNER SLIDE CHANNELS FASTENED TO THE CHASSIS.

2. ATTACH A SLIDE BRACKET TO THE REAR OF EACH OUTER SLIDE CHANNEL. (THE FRONT OF THE SLIDE CHANNEL IS IDENTIFIED BY THE NYLON OR METAL INSERTS.) NOTE THAT THE BRACKETS ARE NOT SYMMETRICAL, AND MUST BE POSITIONED AS SHOWN WITH THE ELONGATED SIDE EXTENDED DOWNWARD FROM BOTH SLIDE CHANNELS. SECURE EACH BRACKET WITH TWO 8-32 x 3/8" PAN HEAD SCREWS, TWO #8 FLAT WASHERS AND TWO 8-32 KEPS NUTS, WITH THE NUTS AND WASHERS ON THE OUTSIDE OF THE SLIDE BRACKET. SLIDE EACH BRACKET FORWARD AS FAR AS THE REAR SCREW WILL ALLOW, AND TIGHTEN IT IN THIS POSITION.

3. ATTACH A SLIDE BRACKET TO THE FRONT OF EACH SLIDE CHANNEL. NOTE THAT THE BRACKETS ARE NOT SYMMETRICAL, AND MUST BE POSITIONED AS SHOWN WITH THE ELONGATED SIDE EXTENDED DOWNWARD ON BOTH SLIDE CHANNELS. SECURE EACH BRACKET WITH AN 8-32 x 3/8" PAN HEAD SCREW, A #8 FLAT WASHER AND AN 8-32 KEPS NUT WITH THE NUT AND WASHER ON THE OUTSIDE OF THE SLIDE. USE THE MIDDLE OF THE 3 HOLES IN THE FRONT OF THE SLIDE CHANNEL. BEFORE TIGHTENING THE SCREW, ADJUST THE BRACKET'S POSITION TO 20 1/2" FROM THE REAR SLIDE BRACKET, AS MEASURED FROM THE OUTSIDE FACES OF THE BRACKETS. TIGHTEN THE SCREWS SECURELY.

   NOTE: THE SLIDE BRACKET WILL BE SET BACK FROM THE FRONT EDGE OF THE SLIDE BY APPROXIMATELY 1/8".

4. FASTEN THE OUTER SLIDE CHANNELS TO THE MOUNTING CHANNELS AT THE LOCATION CHOSEN FOR THE DISKETTE DRIVE UNIT. THE UPPER SCREW HOLE OF THE SLIDE BRACKET SHOULD ALIGN WITH THE LOWER OF A PAIR OF MOUNTING CHANNEL HOLES SPACED ON 1/2" CENTERS. THE TOP OF THE FRONT PANEL WILL THEN LIE BETWEEN THE TWO 1/2" SPACED HOLES.

   NOTE: THE ORDER OF ASSEMBLY OF THE SLIDE BRACKET AND NUT PLATE ONTO THE MOUNTING CHANNEL IS DIFFERENT AT EACH END OF A SLIDE CHANNEL. THE PROPER ORDER OF ASSEMBLY OF THE SLIDE BRACKET AND NUT PLATE TO THE MOUNTING CHANNELS IS ESSENTIAL FOR FRONT PANEL CLEARANCE. REFER TO THE ILLUSTRATION FOR THE PROPER SEQUENCE.

   SECURE EACH BRACKET TO A MOUNTING CHANNEL WITH A 3-HOLE NUT PLATE AND THREE 10-32 x 3/8" SEMS SCREWS. TIGHTEN ALL SCREWS SECURELY.

5. SLIDE TWO #10 SPEED NUTS ONTO EACH FRONT MOUNTING CHANNEL. POSITION ONE AT THE SECOND HOLE AND ONE AT THE FIFTH HOLE BELOW THE BOTTOM SCREW OF THE SLIDE BRACKET. ATTACH A DZUS BRACKET TO EACH MOUNTING CHANNEL, USING TWO #10 SPEED NUTS AND TWO 10-32 x 3/8" PAN HEAD SEMS SCREWS FOR EACH BRACKET. THE OPEN SIDE OF THE BRACKET SHOULD FACE OUTWARD. TIGHTEN THE SCREW SECURELY.

6. SLIDE THE DISKETTE UNIT INTO THE CABINET BY ALIGNING THE CHASSIS SLIDES AND PUSHING THE UNIT INTO THE CABINET UNTIL THE DETENTS STOP IT. RELEASE THE DETENTS AND PUSH THE UNIT ALL THE WAY BACK INTO THE CABINET. IF IT BINDS OR DOESN'T FIT PROPERLY THE SLIDE CHANNELS ARE NOT ALIGNED CORRECTLY AND SHOULD BE RE-ADJUSTED BY TRIAL AND ERROR. (BE SURE TO REMOVE THE UNIT FROM THE CABINET BEFORE ADJUSTING THE SLIDE CHANNELS). THE DZUS BRACKETS MAY ALSO NEED TO BE ADJUSTED IN A SIMILAR FASHION.

7. ONCE THE UNIT MOVES BACK AND FORTH FREELY PULL IT OUT UNTIL THE DETENTS STOP IT. REMOVE THE TOP COVER BY REMOVING THE FOUR SCREWS, RAISING THE FRONT EDGE OF THE COVER AND SLIDING IT FORWARD AND UPWARD.

8. REMOVE THE DEVICE CABLE COVER PLATE ON THE REAR OF THE UNIT AND INSERT THE DEVICE CABLE(S) INTO THE CHASSIS THROUGH THE OPENING. PLUG THE EDGE CONNECTOR INTO THE 100 PIN ETCH (P1 OR P2) ON THE LARGE PCB. THE CONNECTOR MUST BE ORIENTED AS SHOWN IN THE DRAWING.

9. RELEASE THE DETENTS ON BOTH SIDES OF THE UNIT AND SLIDE IT BACK INTO ITS CABINET.

10. WORK FROM THE REAR OF THE CABINET, AND INSTALL A CABLE TIE MOUNT ON THE REAR OF THE CHASSIS IN THE POSITION SHOWN. ONE MOUNT IS REQUIRED FOR EACH DEVICE CABLE EXITING FROM THE CHASSIS. USE ONE 6-32 x 1/2 PAN HEAD SEMS SCREW FOR EACH MOUNT.

11. TIE EACH DEVICE CABLE TO ITS MOUNT, SO THAT THE CABLE DOES NOT STRAIN ITS CONNECTION INSIDE THE CHASSIS.

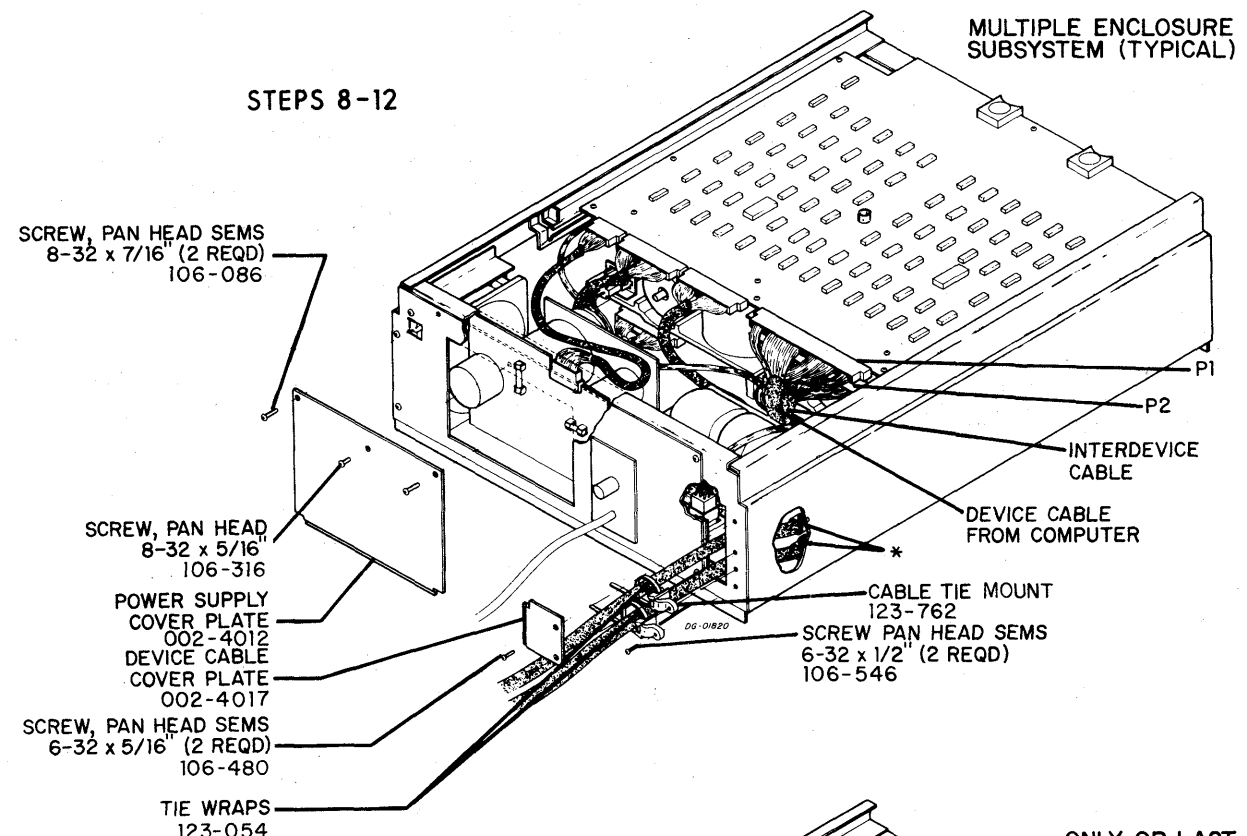
12. INSTALL THE OFFSET CABLE COVER PLATE, AND SECURE IT WITH THE TWO SEMS SCREWS (6-32 x 5/16").

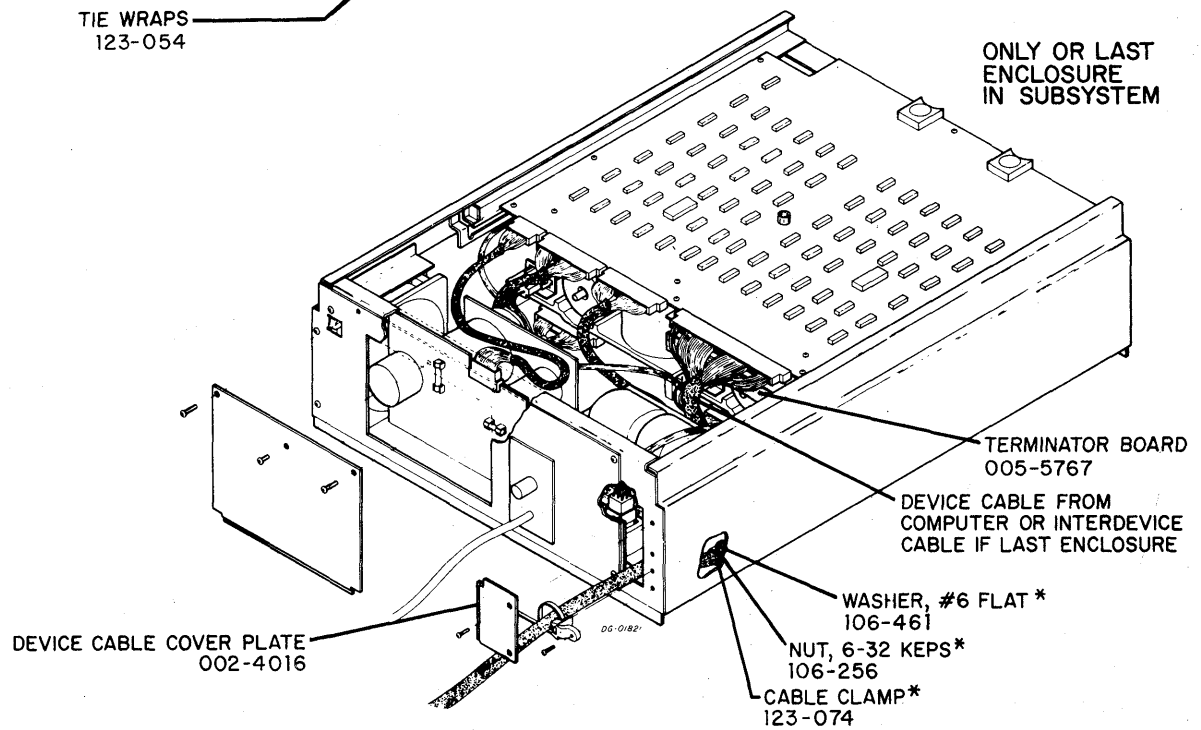
13. SLIDE THE DISKETTE UNIT FORWARD UNTIL THE DETENTS STOP IT, AND CHECK THAT THE DEVICE CABLES ARE FREE TO FLEX DURING THIS OPERATION.

14. WORK FROM THE FRONT OF THE CABINET, AND RECHECK THAT THE DEVICE CABLES (OR CABLE AND TERMINATOR BOARD) ARE SECURE.

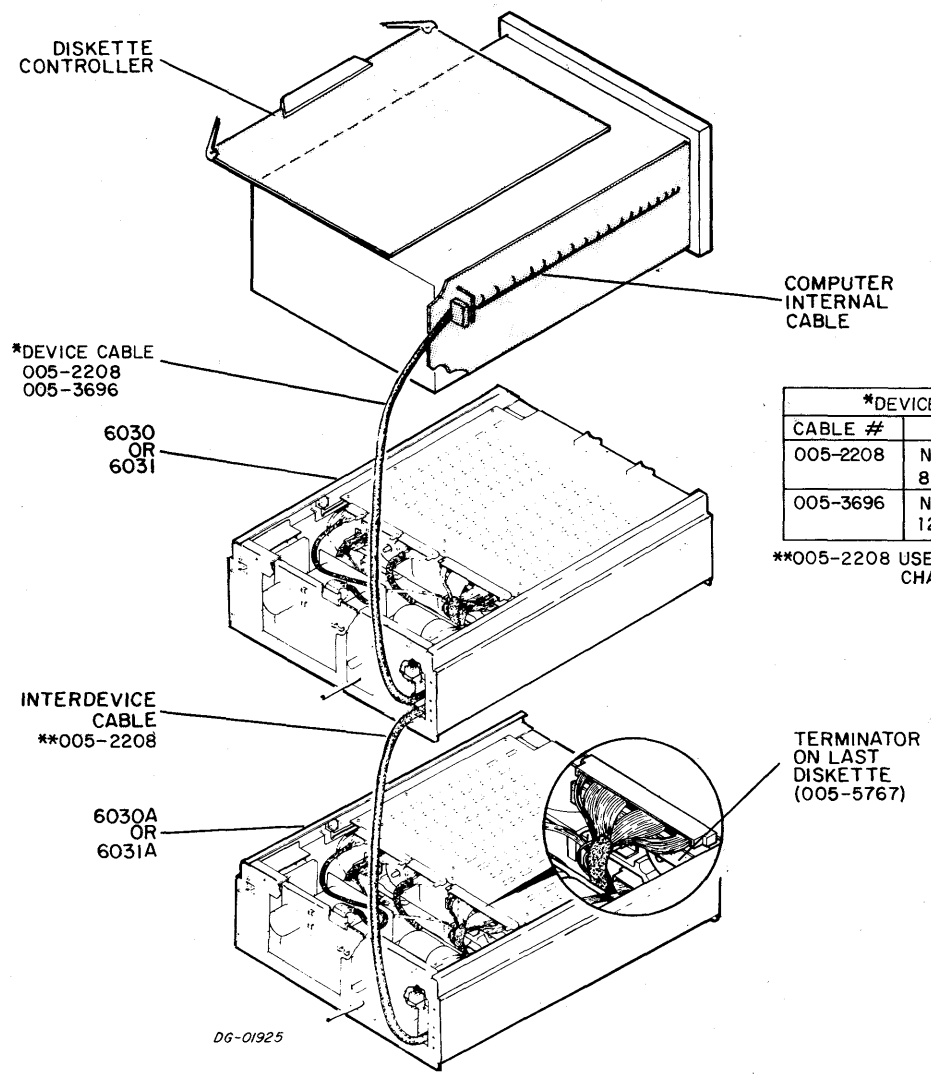
15. REPLACE THE TOP COVER. ENSURE THAT THE OFFSET REAR EDGE OF THE COVER ENGAGES THE FLANGE ON THE REAR OF THE CHASSIS. SECURE THE COVER WITH THE FOUR SEMS SCREWS (6-32 x 5/16").

EXTERNAL CABLING



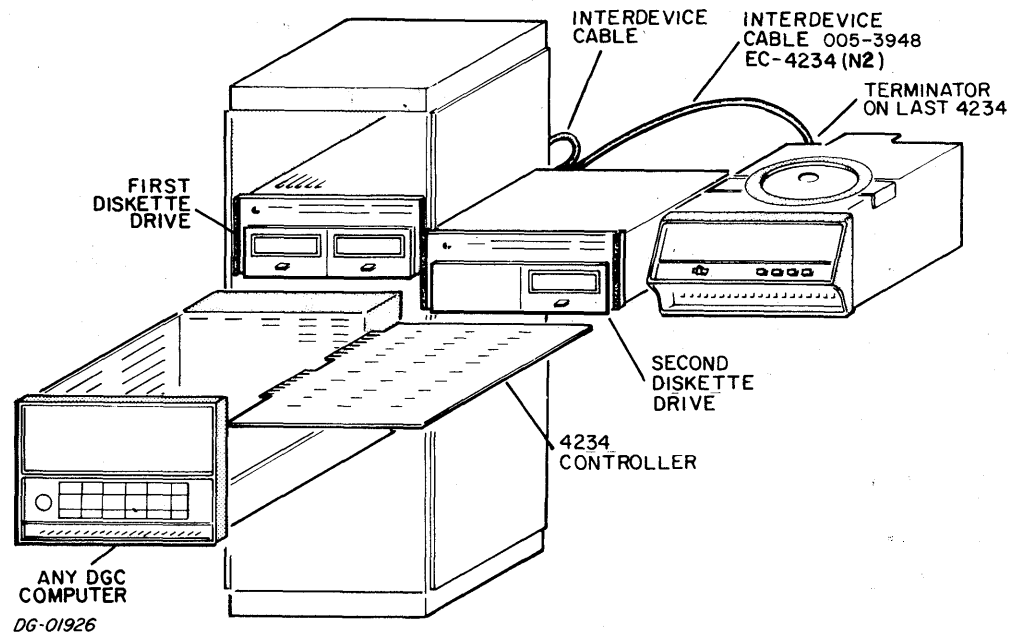


* 2 REQUIRED WITH MULTIPLE ENCLOSURE SUBSYSTEM



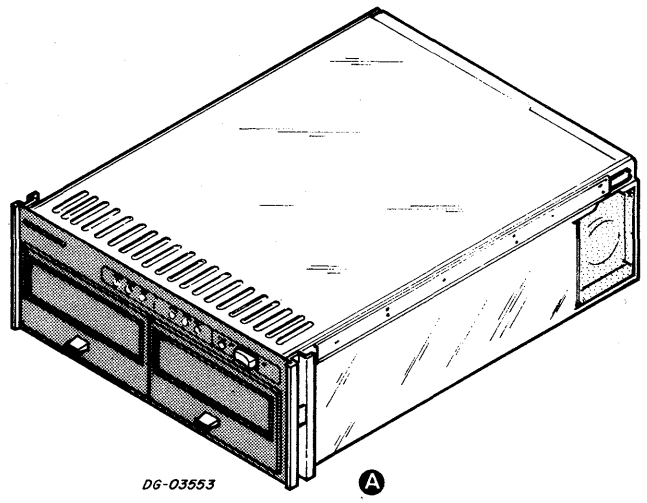
*DEVICE CABLE	
CABLE #	COMPUTER
005-2208	N2, N3, 1210, 1220, 820, and ECLIPSE
005-3696	N800, 830, 840, 1200, and SUP·NOVA

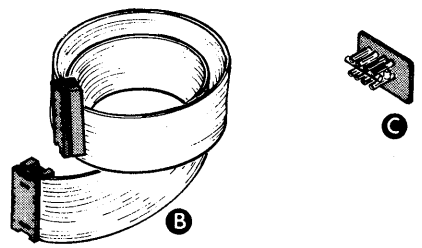
**005-2208 USED FOR DAISY CHAIN.



NOTE: THE MAXIMUM DEVICE CABLE LENGTH IS 30 FT.

SUBSYSTEM COMPONENT BREAKDOWN





MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	DISKETTE CHASSIS	CABINET	MAY CONTAIN TWO DRIVE UNITS PER CHASSIS

CABLE

Item	Cable	Connecting	Max Allowed Lg ft / m	Notes
B	I/O	COMPUTER and CHASSIS		

TERMINATOR

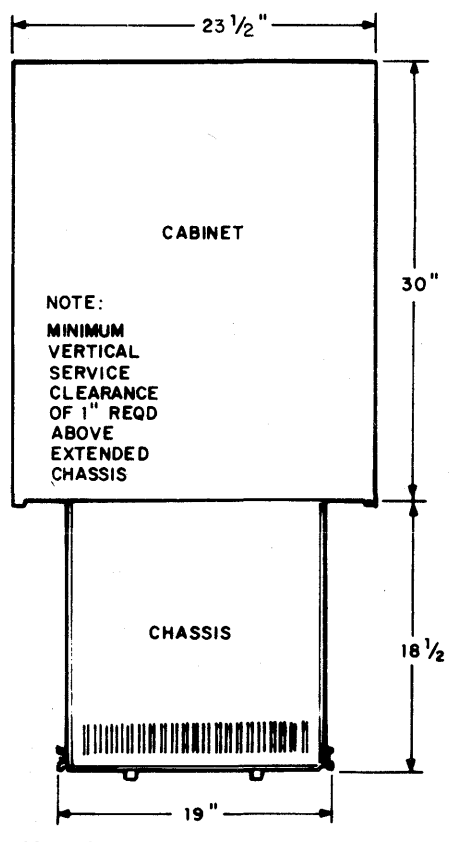
Item	Terminator	Location	Notes
C	I/O BUS TERM.	LAST DR UNIT IN DAISY CHAIN	SEE SHEET 4 OF 4

SPECIFICATIONS OF CABINET-MOUNTED COMPONENTS

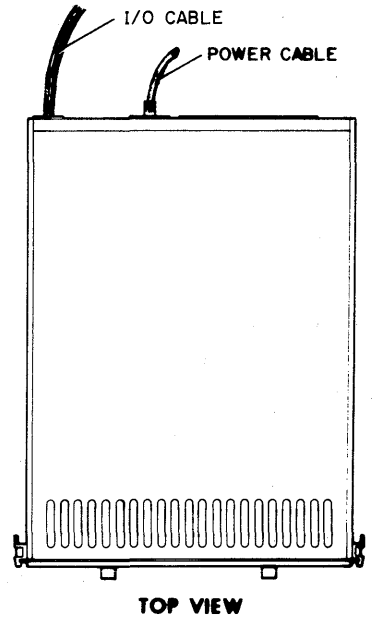
Item	Component	Number in Subsystem	Maximum Operating Temperature: Component °F / °C	Maximum Operating Temperature: Media °F / °C	Primary Power: Volts	Hz	Phase	Cond	Amps	Cabinet Height Required: Area	in.	cm	Weight: lbs / kg	Power Dissipation (Max Watts)	Preferred Location or Remarks: 1012N	1012P	Operating Humidity (Relative): min / max %
A	SINGLE DR	1	100 / 38	100 / 38	100	60	1	3	3.0	4	7	17.8	58 / 26.3	300	01-04	11-14	20 / 80
	DUAL DR		100 / 38	100 / 38	100	60	1	3	4.9	4	7	17.8	68 / 30.6	490	01-04	11-14	20 / 80
	SINGLE DR		100 / 38	100 / 38	120	60	1	3	2.6	4	7	17.8	58 / 26.3	312	01-04	11-14	20 / 80
	DUAL DR		100 / 38	100 / 38	120	60	1	3	3.5	4	7	17.8	68 / 30.6	420	01-04	11-14	20 / 80
	SINGLE DR		100 / 38	100 / 38	220	50	1	3	1.4	4	7	17.8	58 / 26.3	308	01-04	11-14	20 / 80
	DUAL DR		100 / 38	100 / 38	220	50	1	3	1.8	4	7	17.8	68 / 30.6	396	01-04	11-14	20 / 80
	SINGLE DR		100 / 38	100 / 38	240	50	1	3	1.2	4	7	17.8	58 / 26.3	288	01-04	11-14	20 / 80
	DUAL DR		100 / 38	100 / 38	240	50	1	3	2.0	4	7	17.8	68 / 30.6	480	01-04	11-14	20 / 80

Voltage	Power Cable Length ft	Power Cable Length m	Power Cable Plug	Mating Receptacle on Power Drop	Mating Receptacle in Wall
100V	6	1.8	NEMA 5-15P	NEMA 5-15R	NEMA 5-15R
120V	6	1.8	NEMA 5-15P	NEMA 5-15R	NEMA 5-15R
220V	6	1.8	NEMA 6-15P	NEMA 6-15R	NEMA 6-15R
240V	6	1.8	NEMA 6-15P	NEMA 6-15R	NEMA 6-15R

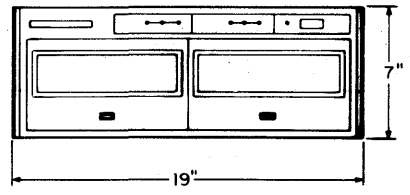
DG-02717



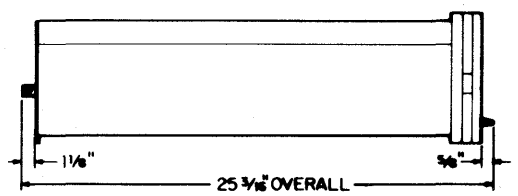
SERVICE DIMENSIONS



TOP VIEW

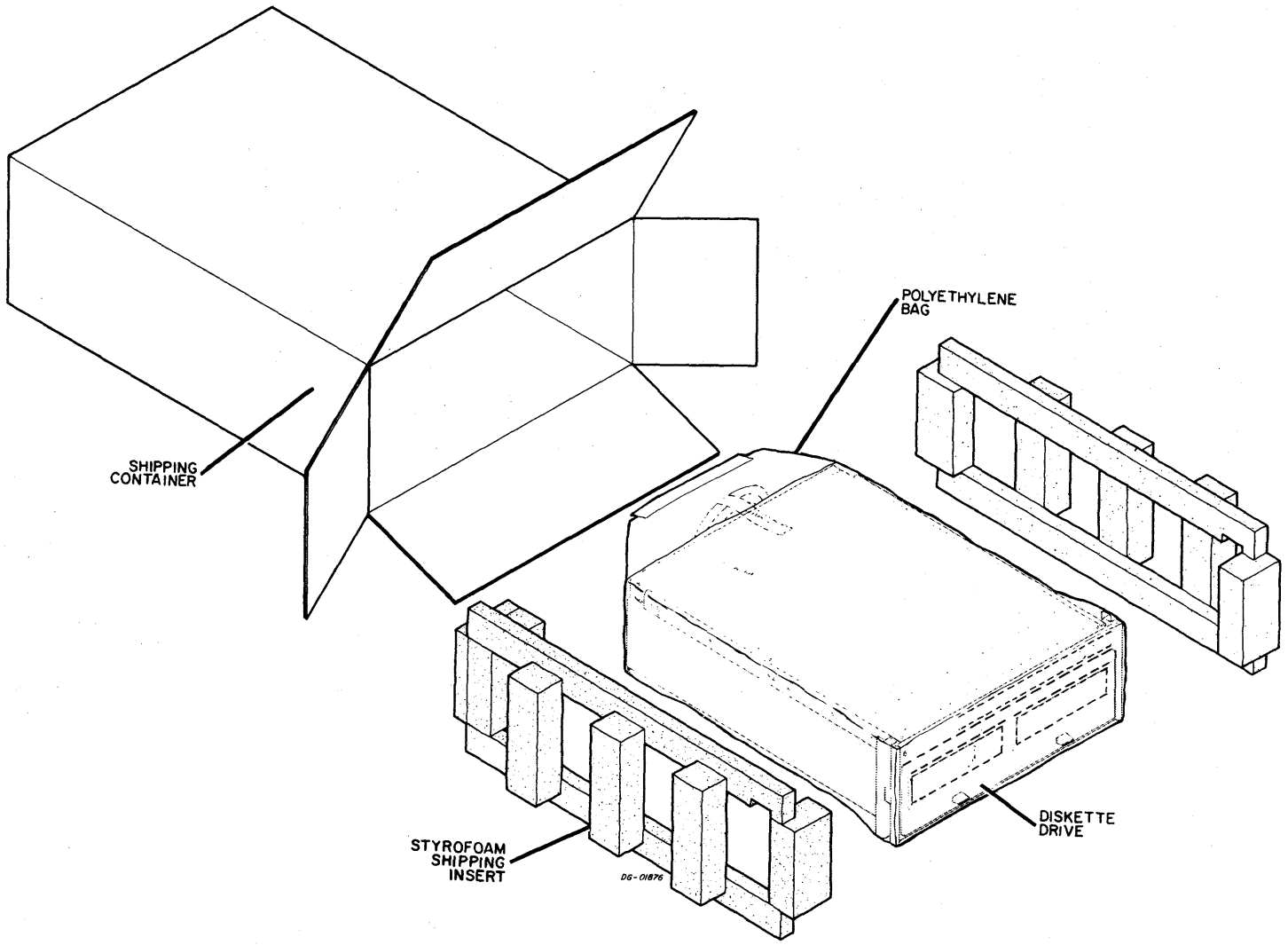


FRONT VIEW



SIDE VIEW

SHIPPING

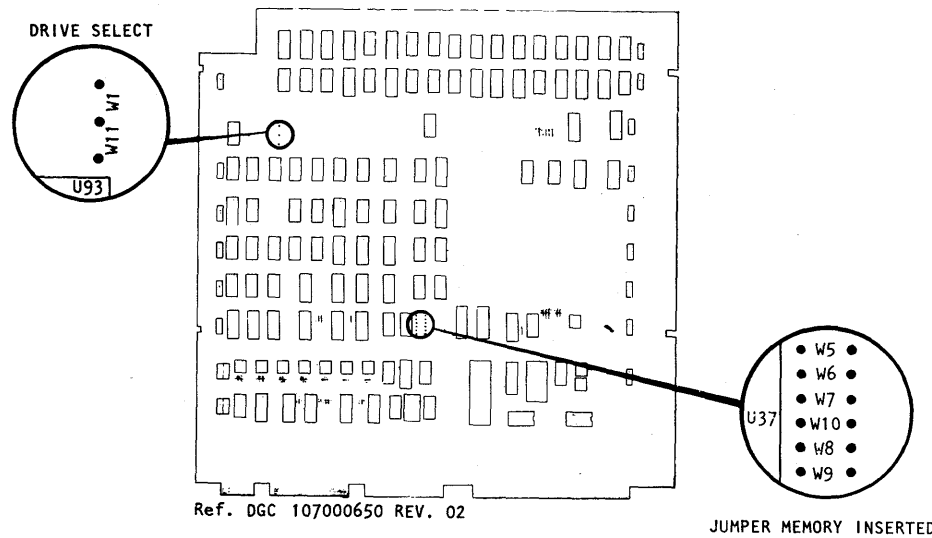


SHIPPING AND PACKAGE DATA					
Outside Dimensions			Weight (Gross)	Volume	Density
Length	Width	Depth			
in. / cm	in. / cm	in. / cm	lbs. / kg	cu ft. / cu m	lbs/cu ft. / kg/cu m
$21\frac{5}{8}$ / 54.9	$10\frac{3}{8}$ / 26.4	$29\frac{1}{8}$ / 74	70 / 31.8	3.8 / 0.11	18.4 / 289.1
SHIPPING SPECIFICATIONS			STORAGE SPECIFICATIONS		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-40 TO +160 / -40 TO +71	0%/80%	50,000 ft. 15,200 m	-40 TO +160 / -40 TO +71	0%/80%	90 days

DG-03224

TAILORING

JUMPERS



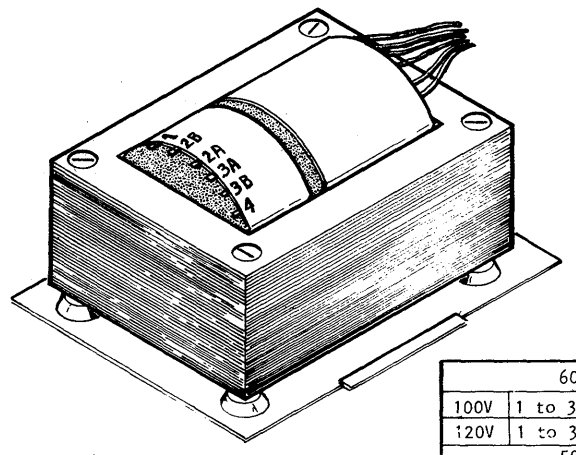
Ref. DGC 107000650 REV. 02

JUMPER MEMORY INSERTED FOR DEVICE CODE 33 BY

W10	W9	W8	W7	W6	W5
OUT	IN	IN	OUT	IN	IN

DRIVE 0 IS SELECTED BY INSTALLING JUMPER W1 OR W11. IF ONLY ONE DRIVE IN SYSTEM, JUMPER W11 SELECTS DRIVE 0.
W1 SELECTS LEFT DRIVE AS DRIVE 0.
W11 SELECTS RIGHT DRIVE AS DRIVE 0.

INPUT VOLTAGE SELECTION

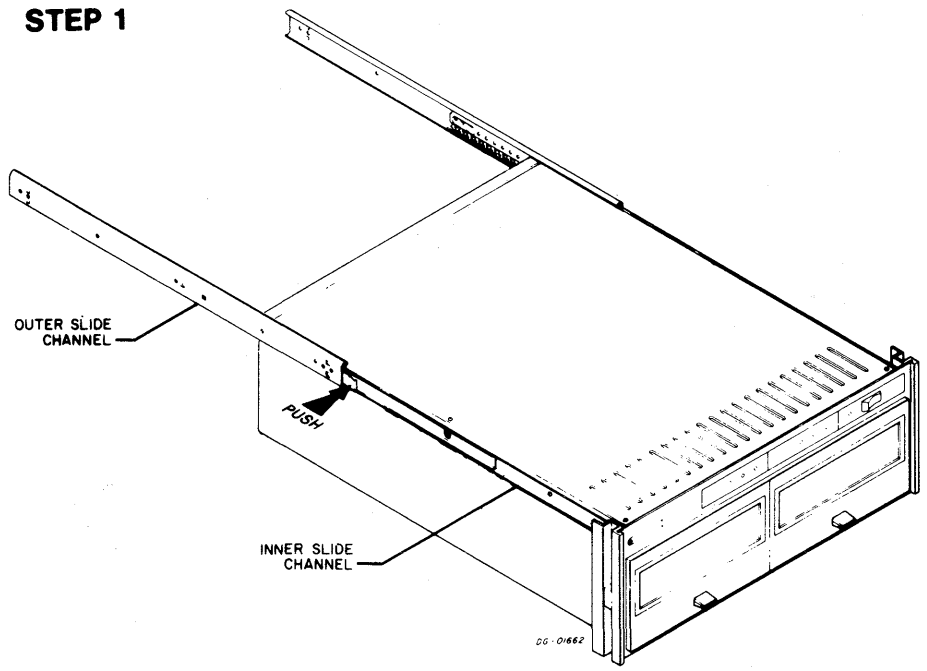


DG-03559

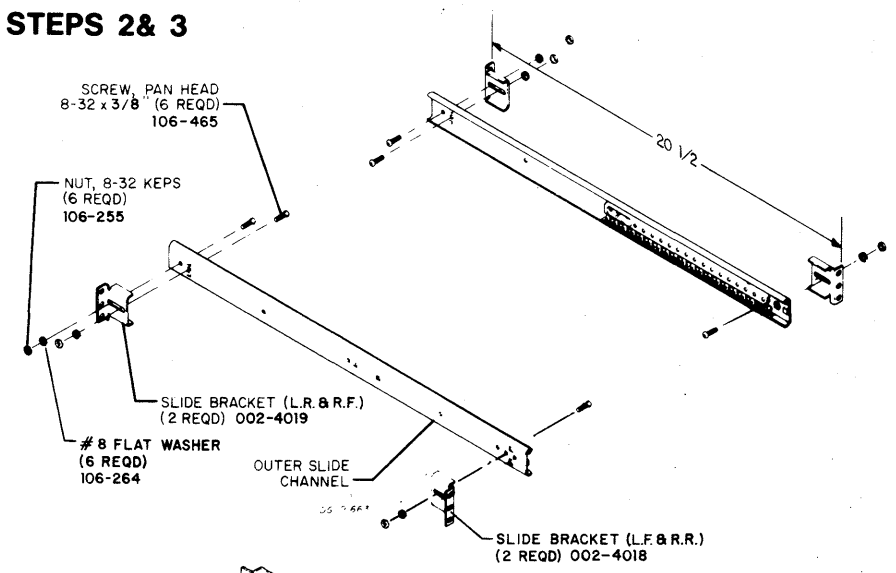
60Hz		
100V	1 to 3B and 2B to 4	TIE 1 and 4 to AC LINE
120V	1 to 3B and 2A to 4	
50Hz		
100V	1 to 3B and 2B to 4	
220V	2B to 3B	
240V	2A to 3A	

SLIDE RAILS

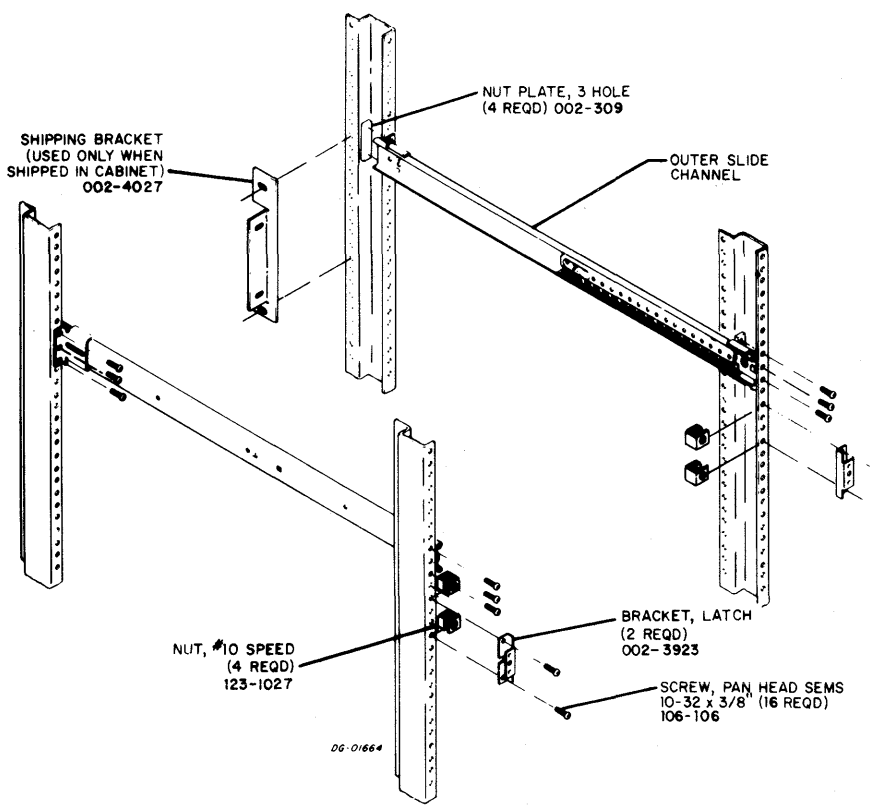
STEP 1



STEPS 2& 3



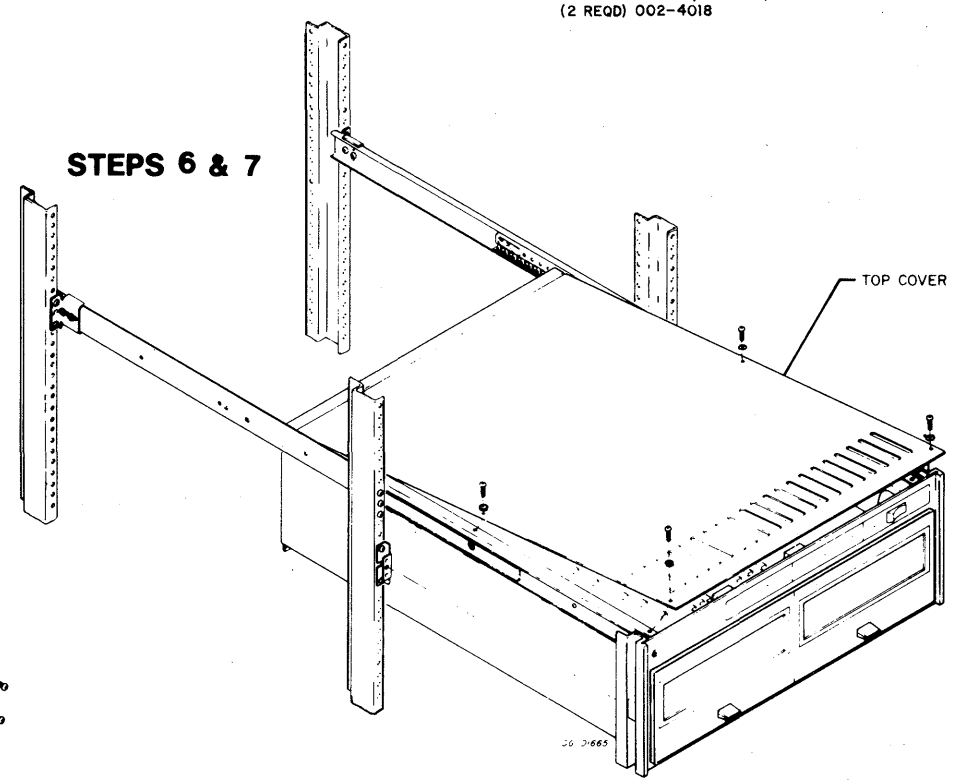
STEPS 4 & 5

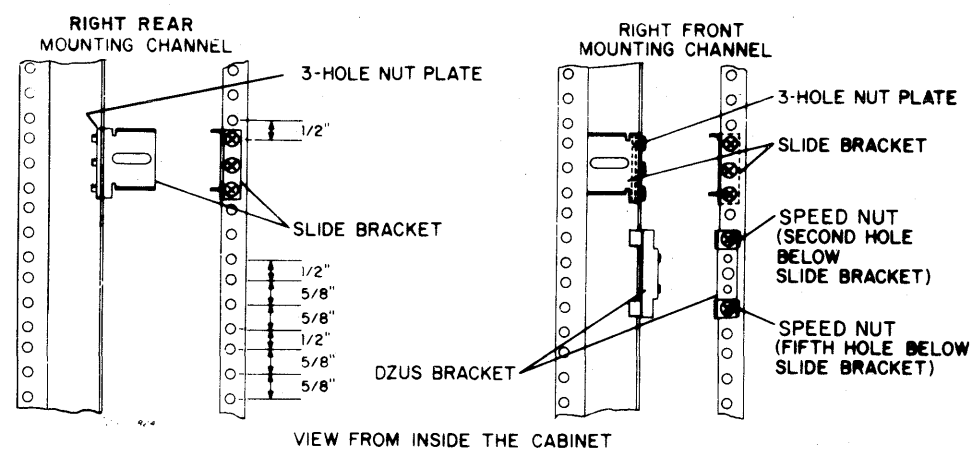


Torque Requirements	
Screw no.	in/lb
8-32	12-14
10-32	23-25

MOUNTING KIT 005 005762

STEPS 6 & 7





VIEW FROM INSIDE THE CABINET

1. REMOVE THE OUTER SLIDE CHANNELS FROM BOTH SIDES OF THE CHASSIS BY PULLING EACH SLIDE CHANNEL BACK UNTIL THE DETENT ENGAGES, PRESSING THE DETENT (INDICATED BY ARROW) TO RELEASE IT, AND PULLING THE SLIDE CHANNELS OFF THE CHASSIS. LEAVE THE INNER SLIDE CHANNELS FASTENED TO THE CHASSIS.

2. ATTACH A SLIDE BRACKET TO THE REAR OF EACH OUTER SLIDE CHANNEL. (THE FRONT OF THE SLIDE CHANNEL IS IDENTIFIED BY THE NYLON OR METAL INSERTS.) NOTE THAT THE BRACKETS ARE NOT SYMMETRICAL, AND MUST BE POSITIONED AS SHOWN WITH THE ELONGATED SIDE EXTENDED DOWNWARD FROM BOTH SLIDE CHANNELS. SECURE EACH BRACKET WITH TWO 8-32 x 3/8" PAN HEAD SCREWS, TWO #8 FLAT WASHERS AND TWO 8-32 KEPS NUTS, WITH THE NUTS AND WASHERS ON THE OUTSIDE OF THE SLIDE BRACKET. SLIDE EACH BRACKET FORWARD AS FAR AS THE REAR SCREW WILL ALLOW, AND TIGHTEN IT IN THIS POSITION.

3. ATTACH A SLIDE BRACKET TO THE FRONT OF EACH SLIDE CHANNEL. NOTE THAT THE BRACKETS ARE NOT SYMMETRICAL, AND MUST BE POSITIONED AS SHOWN WITH THE ELONGATED SIDE EXTENDED DOWNWARD ON BOTH SLIDE CHANNELS. SECURE EACH BRACKET WITH AN 8-32 x 3/8" PAN HEAD SCREW, A #8 FLAT WASHER AND AN 8-32 KEPS NUT WITH THE NUT AND WASHER ON THE OUTSIDE OF THE SLIDE. USE THE MIDDLE OF THE 3 HOLES IN THE FRONT OF THE SLIDE CHANNEL. BEFORE TIGHTENING THE SCREW, ADJUST THE BRACKET'S POSITION TO 20 1/2" FROM THE REAR SLIDE BRACKET, AS MEASURED FROM THE OUTSIDE FACES OF THE BRACKETS. TIGHTEN THE SCREWS SECURELY.

   NOTE: THE SLIDE BRACKET WILL BE SET BACK FROM THE FRONT EDGE OF THE SLIDE BY APPROXIMATELY 1/8".

4. FASTEN THE OUTER SLIDE CHANNELS TO THE MOUNTING CHANNELS AT THE LOCATION CHOSEN FOR THE DISKETTE DRIVE UNIT. THE UPPER SCREW HOLE OF THE SLIDE BRACKET SHOULD ALIGN WITH THE LOWER OF A PAIR OF MOUNTING CHANNEL HOLES SPACED ON 1/2" CENTERS. THE TOP OF THE FRONT PANEL WILL THEN LIE BETWEEN THE TWO 1/2" SPACED HOLES.

   NOTE: THE ORDER OF ASSEMBLY OF THE SLIDE BRACKET AND NUT PLATE ONTO THE MOUNTING CHANNEL IS DIFFERENT AT EACH END OF A SLIDE CHANNEL. THE PROPER ORDER OF ASSEMBLY OF THE SLIDE BRACKET AND NUT PLATE TO THE MOUNTING CHANNELS IS ESSENTIAL FOR FRONT PANEL CLEARANCE. REFER TO THE ILLUSTRATION FOR THE PROPER SEQUENCE.

   SECURE EACH BRACKET TO A MOUNTING CHANNEL WITH A 3-HOLE NUT PLATE AND THREE 10-32 x 3/8" SEMS SCREWS. TIGHTEN ALL SCREWS SECURELY.

5. SLIDE TWO #10 SPEED NUTS ONTO EACH FRONT MOUNTING CHANNEL. POSITION ONE AT THE SECOND HOLE AND ONE AT THE FIFTH HOLE BELOW THE BOTTOM SCREW OF THE SLIDE BRACKET. ATTACH A DZUS BRACKET TO EACH MOUNTING CHANNEL, USING TWO #10 SPEED NUTS AND TWO 10-32 x 3/8" PAN HEAD SEMS SCREWS FOR EACH BRACKET. THE OPEN SIDE OF THE BRACKET SHOULD FACE OUTWARD. TIGHTEN THE SCREW SECURELY.

6. SLIDE THE DISKETTE UNIT INTO THE CABINET BY ALIGNING THE CHASSIS SLIDES AND PUSHING THE UNIT INTO THE CABINET UNTIL THE DETENTS STOP IT. RELEASE THE DETENTS AND PUSH THE UNIT ALL THE WAY BACK INTO THE CABINET. IF IT BINDS OR DOESN'T FIT PROPERLY THE SLIDE CHANNELS ARE NOT ALIGNED CORRECTLY AND SHOULD BE RE-ADJUSTED BY TRIAL AND ERROR. (BE SURE TO REMOVE THE UNIT FROM THE CABINET BEFORE ADJUSTING THE SLIDE CHANNELS). THE DZUS BRACKETS MAY ALSO NEED TO BE ADJUSTED IN A SIMILAR FASHION.

7. ONCE THE UNIT MOVES BACK AND FORTH FREELY PULL IT OUT UNTIL THE DETENTS STOP IT. REMOVE THE TOP COVER BY REMOVING THE FOUR SCREWS, RAISING THE FRONT EDGE OF THE COVER AND SLIDING IT FORWARD AND UPWARD.

8. INSERT THE I/O CABLES INTO THE CHASSIS THROUGH THE REAR CABLE OPENING. PLUG THE I/O CONNECTOR INTO THE 16-PIN RECEPTACLE (P6 OR P7) ON THE LARGE PCB. THE CONNECTOR MUST BE ORIENTED AS SHOWN IN THE DRAWING.

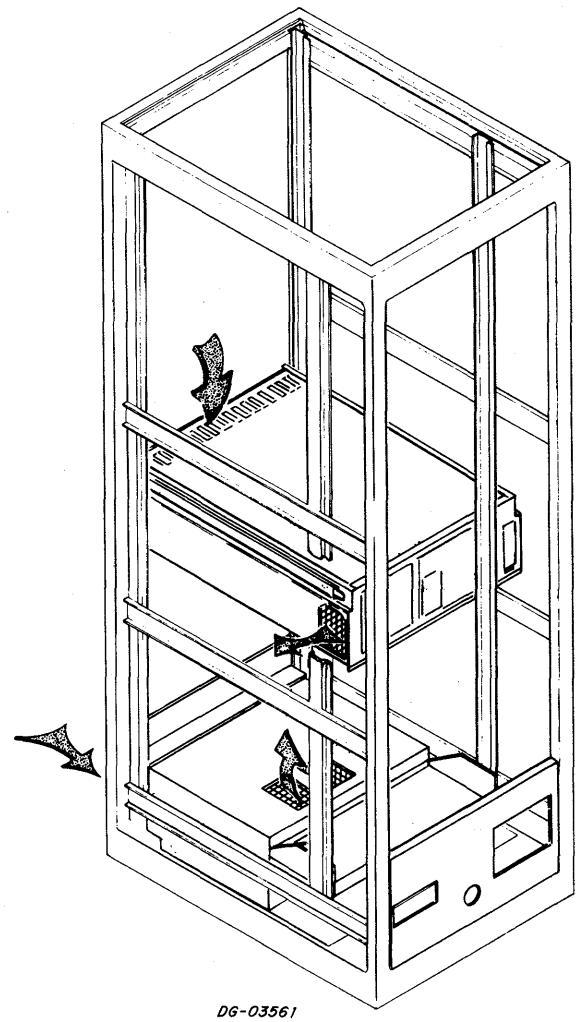
9. SLIDE THE DISKETTE UNIT FORWARD UNTIL THE D DETENTS STOP IT, AND CHECK THAT THE I/O CABLES ARE FREE TO FLEX DURING THIS OPERATION.

10. WORK FROM THE FRONT OF THE CABINET, AND RECHECK THAT THE I/O CABLES (OR CABLE AND TERMINATOR BOARD) ARE SECURE AND PROPERLY INSTALLED. THE I/O CABLES ARE INSERTED AS SHOWN AND THE TERMINATOR IS INSERTED INTO P7 WITH THE OPEN END FACING THE NEAR SIDE.

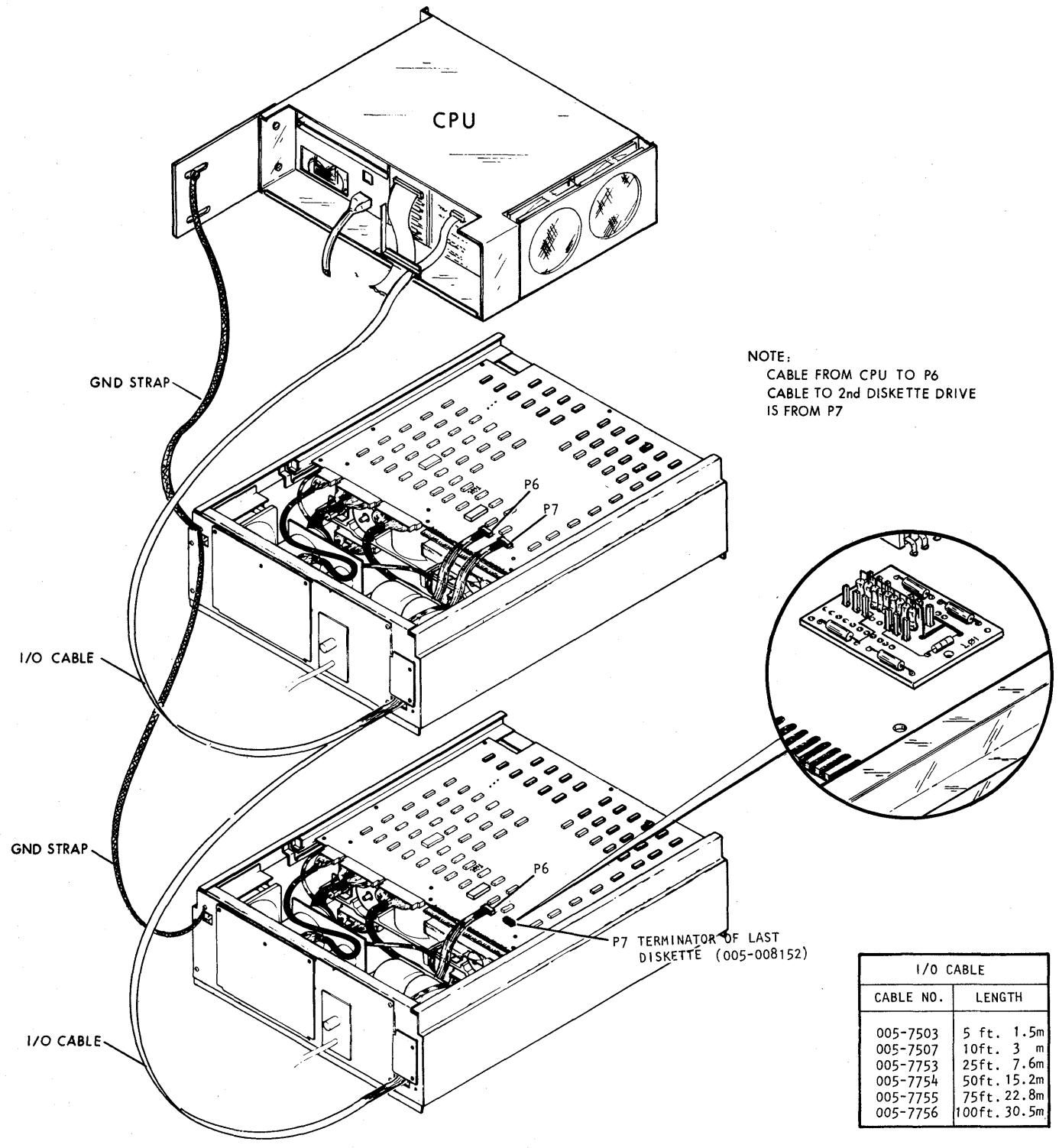
11. REPLACE THE TOP COVER. ENSURE THAT THE OFFSET REAR EDGE OF THE COVER ENGAGES THE FLANGE ON THE REAR OF THE CHASSIS. SECURE THE COVER WITH THE FOUR SEMS SCREWS (6-32 X 5/16"), AND FLAT WASHERS.

EXTERNAL CABLING

AIR FLOW



DG-03561

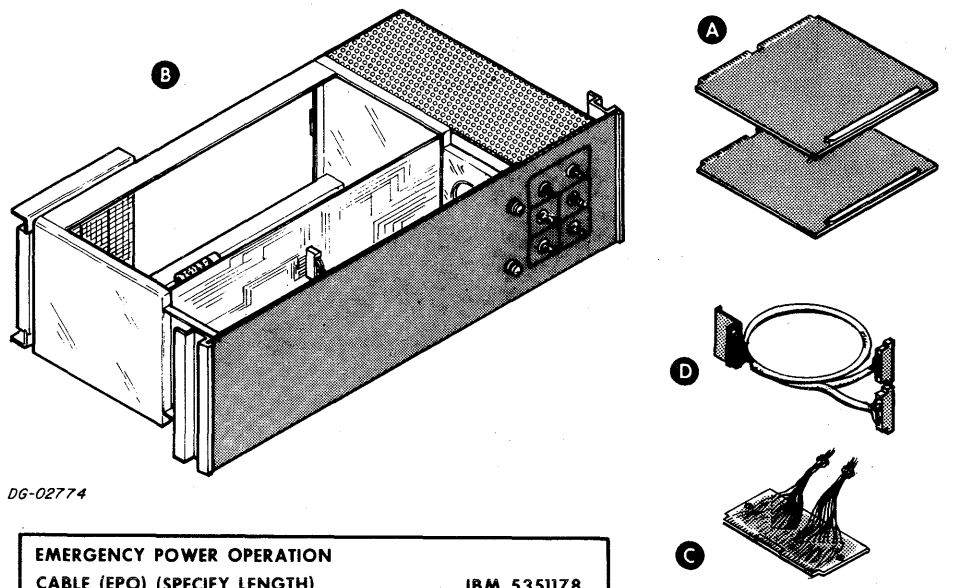


DG-03560

NOTE:
CABLE FROM CPU TO P6
CABLE TO 2nd DISKETTE DRIVE IS FROM P7

I/O CABLE	
CABLE NO.	LENGTH
005-7503	5 ft. 1.5m
005-7507	10ft. 3 m
005-7753	25ft. 7.6m
005-7754	50ft. 15.2m
005-7755	75ft. 22.8m
005-7756	100ft. 30.5m

SUBSYSTEM COMPONENT BREAKDOWN



DG-02774

EMERGENCY POWER OPERATION CABLE (EPO) (SPECIFY LENGTH)	IBM 5351178
BUS/TAG CABLE (SPECIFY LENGTH)	IBM 5353920
BUS LINE TERMINATOR	IBM 5440649
TAG LINE TERMINATOR	IBM 5440650

FOLLOWING PARTS SUPPLIED BY CUSTOMER

MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	CONTROLLER	COMPUTER CHASSIS	
B	ADAPTER	CABINET	

CABLE

Item	Cable	Connecting	Max Allowed Lg ft / m	Notes
C	INTERNAL CAB.	CON-TROLLER and ADAPTER CAB.		
D	ADAPTER CAB.	INTERNAL CAB." . ADAPTER	10 / 3.0	

SPECIFICATIONS OF THE CHASSIS-MOUNTED COMPONENTS

Component	Chassis	Slots Required	Max Allowable Data Channel Latency (μ sec)	Type of Data Channel Service Desired: High Speed	Type of Data Channel Service Desired: Standard	Max Allowable Programmed I/O Latency +	Controller's +5 Volt Current Draw (Amps)
CONTROLLER	COMPUTER	2	—	✓	✓	—	4.1

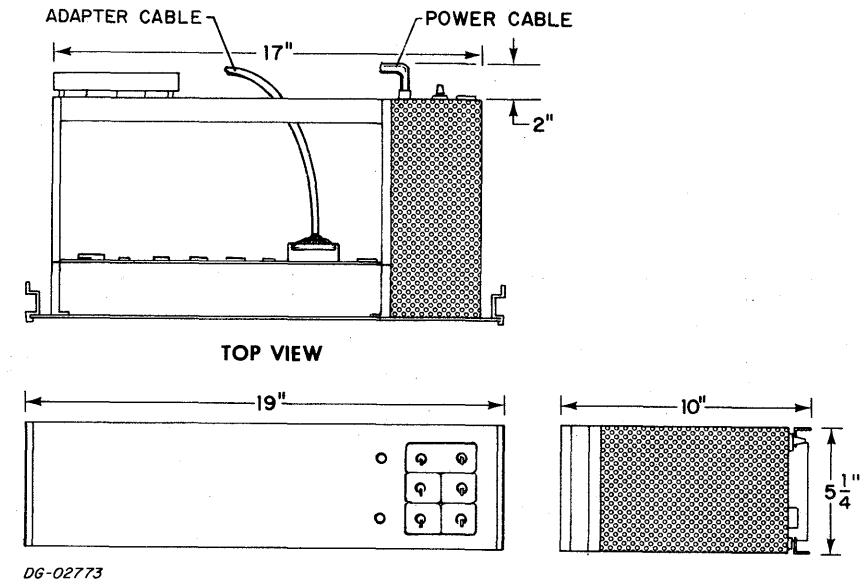
DG-01912

SPECIFICATIONS OF CABINET-MOUNTED COMPONENTS

Item	Component	Number in Sub-system	Maximum Operating Temperature: Component °F / °C	Maximum Operating Temperature: Media °F / °C	Primary Power: Current (nom Draw (Amp)	Primary Power: Voltage ±ΔV	Primary Power: Frequency	Cabinet Height Required: Area	Cabinet Height Required: in.	Cabinet Height Required: cm	Weight lbs / kg	Power Dissipation (Max Watts)	Preferred Location or Remarks	Operating Humidity (Relative) min % / % max
B	ADAPTER	1	131 / 55		1.8	120 ±12	50/60 ±3	3	5.25	13.3	15 / 6.8	13	—	20 / 90
	ADAPTER	1	131 / 55		1.8	240 ±24	50/60 ±3	3	5.25	13.3	15 / 6.8	13	—	20 / 90

Voltage	Power Cable Length ft	Power Cable Length m	Power Cable Plug	Mating Receptacle on Power Drop	Mating Receptacle in Wall
ADAPTER 120V	6	1.8	NEMA 5-15P	NEMA 5-15R	NEMA 5-15R
ADAPTER 240V	6	1.8	NEMA 6-15P	NEMA 6-15R	NEMA 6-15R

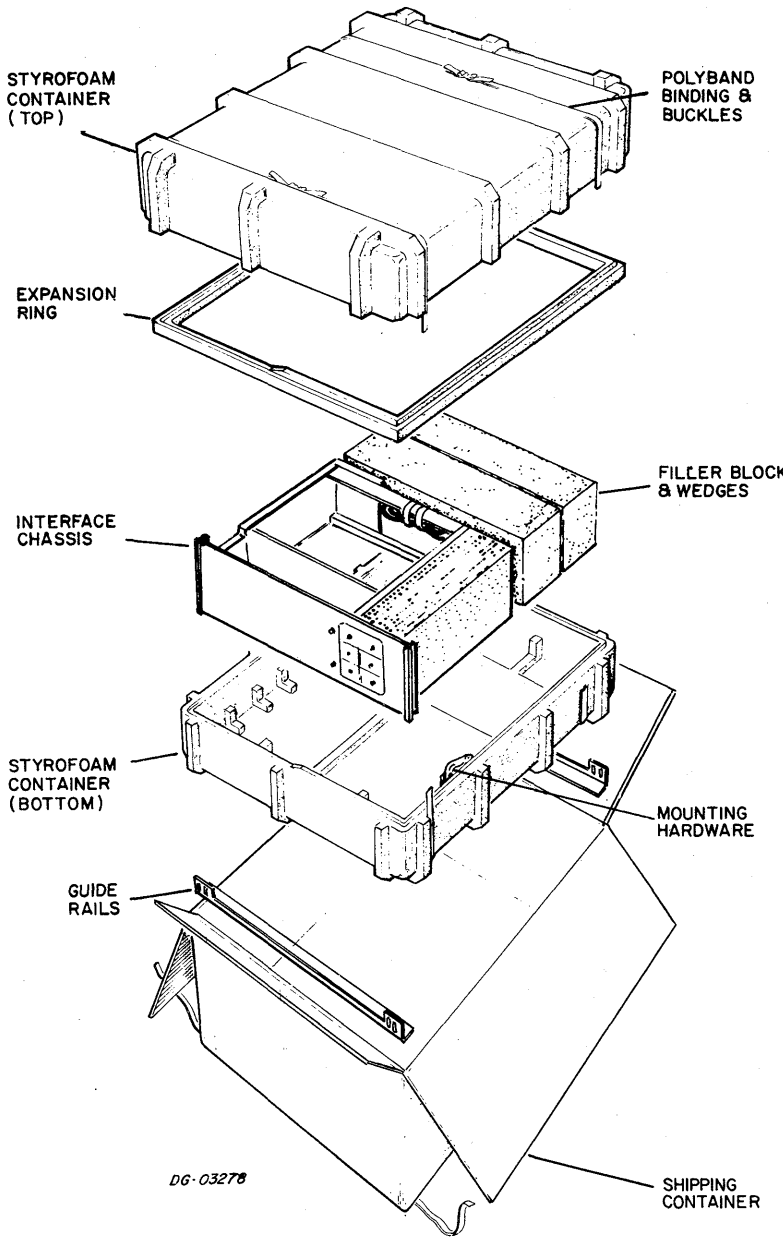
DG-02717



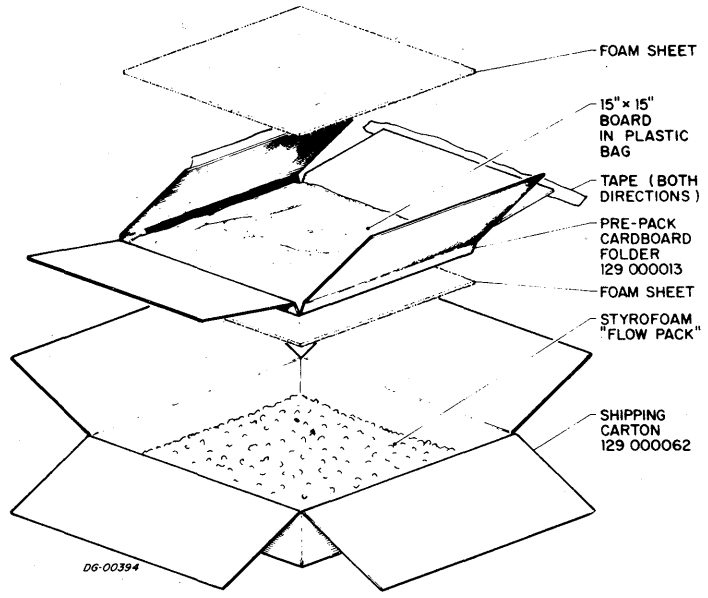
DG-02773

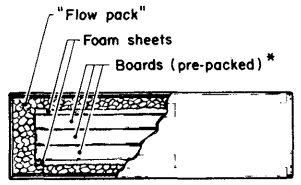
SHIPPING

PACKING KIT FOR ADAPTER



PACKING KIT FOR BOARDS





MULTIPLE PACKING

* Up to three (3) 15"x 15" boards, enclosed in plastic bags and sealed in pre-pack folders as shown, can be put in shipping carton No. 129 000062. For four (4) to seven (7) boards, use shipping carton No. 129 000012.

SHIPPING AND PACKAGE DATA						
Outside Dimensions			Weight (Gross)	Volume	Density	
Length	Width	Depth				
in. / cm	in. / cm	in. / cm	lbs. / kg	cu ft. / cu m	lbs/cu ft. / kg/cu m	
SHIPPING SPECIFICATIONS			STORAGE SPECIFICATIONS			
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period	
-40 - 160 / -40 70	0% - 80%	50,000 ft. 15,200 m	-40 - 160 / -40 70	0% -80%	90 Days	

DG-03224

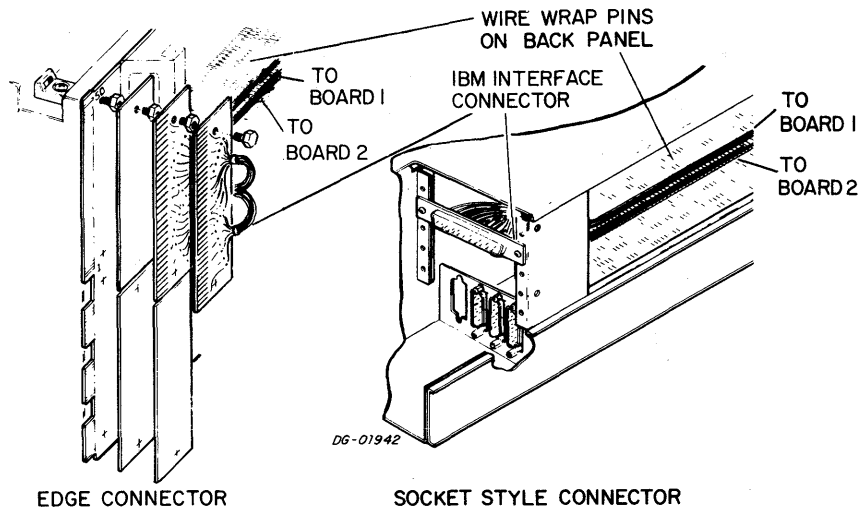
INTERNAL CABLING

INTERNAL CABLE CONNECTIONS FOR SOCKET CONNECTOR		
Signal Names	Backpanel Pin Numbers	Socket Connector Pin Numbers
GND	U-A1	1
CH SEL	U-A92	2
GND	U-A2	3
BUS IN 31	L-A92	4
BUS IN 3P	L-A73	5
BUS IN 34	L-A71	6
GND	U-A99	7
O.L.	U-A86	8
GND	U-B2	9
GND	U-B99	10
BUS OUT 32	L-A89	11
BUS OUT 34	L-A86	12
BUS OUT 36	L-A77	13
BUS OUT 30	L-A63	14
OPERATIONAL OUT (3)	U-A77	15
HOLD OUT (3)	U-A73	16
REQ IN (3)	U-A81	17
ADDRESS IN (3)	U-A85	18
STATUS IN (3)	U-A89	19
SERVICE IN (3)	U-A91	20
INB	U-A76	21
ON/OFF CONTROL (0)	U-A90	22
GND	L-A1	23
GND	L-A2	24
$\overline{\text{GND}}$	L-A100	25
$\overline{\text{OLR}}$	U-B69	26
GND	L-B1	27
BUS IN 30	L-B69	28
BUS IN 32	L-A83	29
BUS IN 33	L-A88	30
BUS IN 35	L-A61	31
BUS IN 36	L-A67	32
BUS IN 37	L-A65	33
BUS OUT 3P	L-A81	34
BUS OUT 31	L-A90	35
BUS OUT 33	L-A85	36
BUS OUT 35	L-A91	37
BUS OUT 37	L-A87	38
SELECT OUT (30)	U-A87	39
OPERATIONAL IN (3)	U-A83	40
SUPPRESS OUT (3)	U-A67	41
ADDRESS OUT (3)	U-A63	42
COMMAND OUT (3)	U-A65	43
SERVICE OUT (3)	U-A69	44
SELECT OUT (I)	U-A71	45
$\overline{\text{GND}}$	L-B2	46
$\overline{\text{MSTR}}$	U-A61	47
GND	U-B1	48
GND	U-B100	49
GND	L-A99	50
GND	L-B99	$\overline{51}$
GND	L-B100	52

TAILORING

INTERBOARD CONNECTIONS FOR SOCKET CONNECTORS		
Signal Names	Backpanel Pin Numbers Board 1	Backpanel Pin Numbers Board 2
$\overline{WE2}$	A47	A47
DEV SEL (31)	A49	A49
$\overline{DEV}$ SEL (32)	A57	A57
$\overline{WE1}$	A59	A59
ACOMP	A75	A75
$\overline{INB}$	A76	A76
$\overline{BUSY}$	A78	A78
DONE(1)	A79	A79
MD3(1)	A84	A84
TS1(1)	B6	B6
$\overline{RI}$	B11	B11
$\overline{NPO}$	B13	B13
$\overline{NPI}$	B15	B15
$\overline{BYTE\ ADD}$	B19	B19
$\overline{AOE}$	B23	B23
$\overline{AIE}$	B25	B25
$\overline{MD2}$	B27	B27
$\overline{COUNT}$	B31	B31
$\overline{CTAD}$	B34	B34
$\overline{LCP}$	B36	B36
$\overline{CMR1}$	B38	B38
$\overline{CMR2}$	B40	B40
S0	B48	B48
S1	B49	B49
$\overline{TC4}$	B51	B51
$\overline{LPE}$	B52	B52
N DATA	B53	B53
Σ ODD	B54	B54
$\overline{TI/O}$	B67	B67
$\overline{SP\ OP\ RST}$	B91	B91
E1(1)	A88	A69

NOTE: U = Upper slot (Board 1)
L = Lower slot (Board 2)



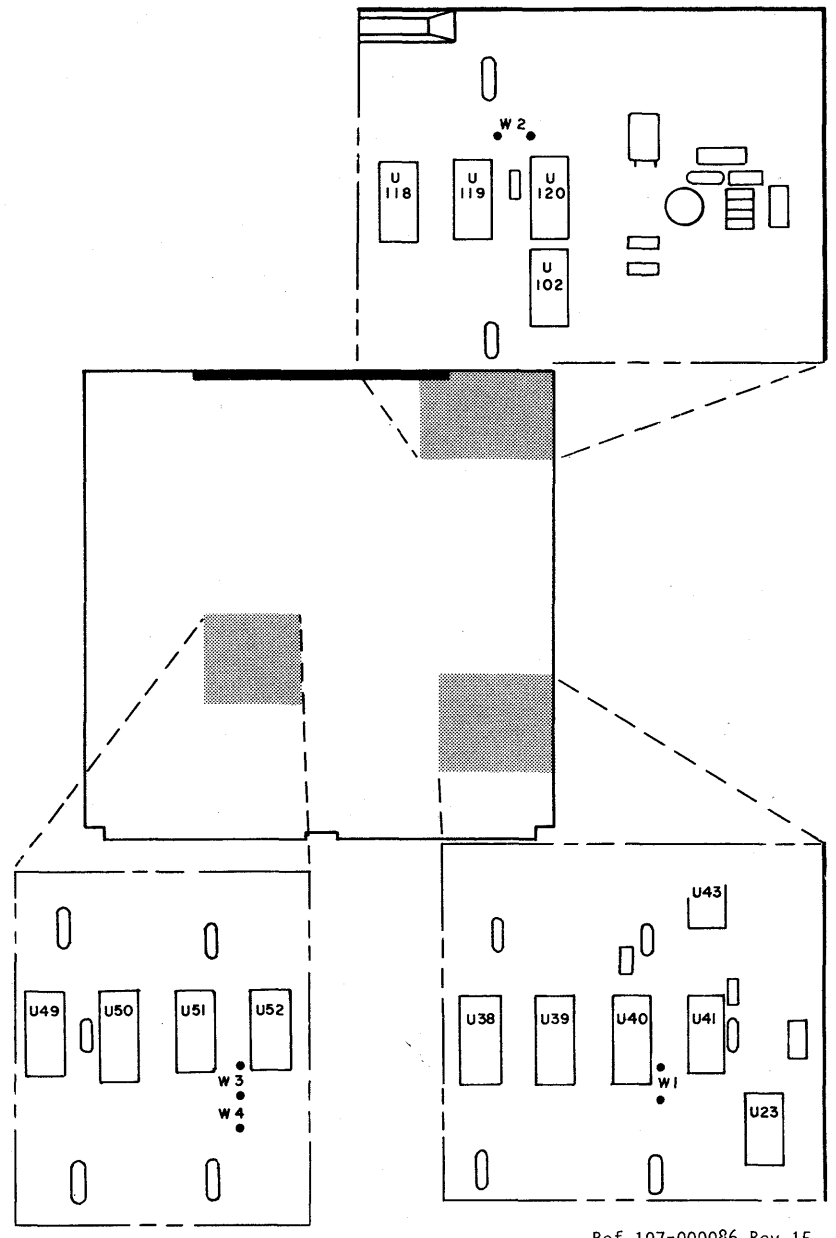
EDGE CONNECTOR SOCKET STYLE CONNECTOR

INTERNAL CABLE CONNECTIONS FOR EDGE CONNECTOR BOARD 1		
Signal Names	Backpanel Pin Numbers	Edge Connector Pin Numbers
GND	A1	1
CH SEL	A92	2
$\overline{SERVICE\ IN\ (3)}$	A91	3
$\overline{BUSY}$	A78	4
OPERATIONAL OUT (3)	A77	5
INB	A76	6
ACOMP	A75	7
HOLD OUT (3)	A73	8
SELECT OUT (I)	A71	9
SERVICE OUT (3)	A69	10
SUPPRESS OUT (3)	A67	11
COMMAND OUT (3)	A65	12
$\overline{ADDRESS\ OUT\ (3)}$	A63	13
$\overline{MSTR}$	A61	14
$\overline{WE1}$	A59	15
$\overline{DEV}$ SEL (32)	A57	16
$\overline{WE2}$	A47	17
GND	A99	1
DEV SEL (31)	A49	18
GND	A100	1
DONE(1)	A79	19
REQ IN (3)	A81	20
MD3(1)	A84	21
OPERATIONAL IN (3)	A83	22
O.L.	A86	23
ADDRESS IN (3)	A85	24
E1(1)	A88	25
SELECT OUT (30)	A87	26
STATUS IN (3)	A89	27
ON/OFF CONTROL (0)	A90	28
TS1(1)	B6	29
$\overline{RI}$	B11	30
$\overline{NPO}$	B13	31
$\overline{NPI}$	B15	32
$\overline{BYTE\ ADD}$	B19	33
$\overline{AOE}$	B23	34
$\overline{AIE}$	B25	35
$\overline{MD2}$	B27	36
$\overline{COUNT}$	B31	37
$\overline{CTAD}$	B34	38
GND	B99	1
$\overline{LCP}$	B36	39
$\overline{CMR1}$	B38	40
$\overline{CMR2}$	B40	41
S0	B48	42
S1	B49	43
$\overline{TC4}$	B51	44
$\overline{LPE}$	B52	45
N DATA	B53	46
Σ ODD	B54	47
TI/O	B67	48
$\overline{GND}$	B100	1
$\overline{OLR}$	B69	49
(not used)	A3	50

INTERNAL CABLE CONNECTIONS FOR EDGE CONNECTOR BOARD 2		
Signal Names	Backpanel Pin Numbers	Edge Connector Pin Numbers
GND	A1	1
BUS IN 31	A92	2
$\overline{BUS\ OUT\ 35}$	A91	3
$\overline{BUSY}$	A78	4
BUS OUT 36	A77	5
INB	A76	6
ACOMP	A75	7
BUS IN 3P	A73	8
BUS IN 34	A71	9
E1(1)	A69	10
BUS IN 36	A67	11
BUS IN 37	A65	12
BUS OUT 30	A63	13
$\overline{BUS\ IN\ 35}$	A61	14
$\overline{WE1}$	A59	15
$\overline{DEV}$ SEL (32)	A57	16
$\overline{WE2}$	A47	17
GND	A99	1
DEV SEL (31)	A49	18
GND	A100	1
DONE(1)	A79	19
BUS OUT 3P	A81	20
MD3(1)	A84	21
BUS IN 32	A83	22
BUS OUT 34	A86	23
BUS OUT 33	A85	24
BUS IN 33	A88	25
BUS OUT 37	A87	26
BUS OUT 32	A89	27
BUS OUT 31	A90	28
TS1(1)	B6	29
$\overline{RI}$	B11	30
$\overline{NPO}$	B13	31
$\overline{NPI}$	B15	32
$\overline{BYTE\ ADD}$	B19	33
$\overline{AOE}$	B23	34
$\overline{AIE}$	B25	35
$\overline{MD2}$	B27	36
$\overline{COUNT}$	B31	37
$\overline{CTAD}$	B34	38
GND	B99	1
$\overline{LCP}$	B36	39
$\overline{CMR1}$	B38	40
$\overline{CMR2}$	B40	41
S0	B48	42
S1	B49	43
$\overline{TC4}$	B51	44
$\overline{LPE}$	B52	45
N DATA	B53	46
Σ ODD	B54	47
TI/O	B67	48
GND	B100	1
BUS IN 30	B69	49
(not used)	A3	50

TAILORING (Continued)

BOARD 1

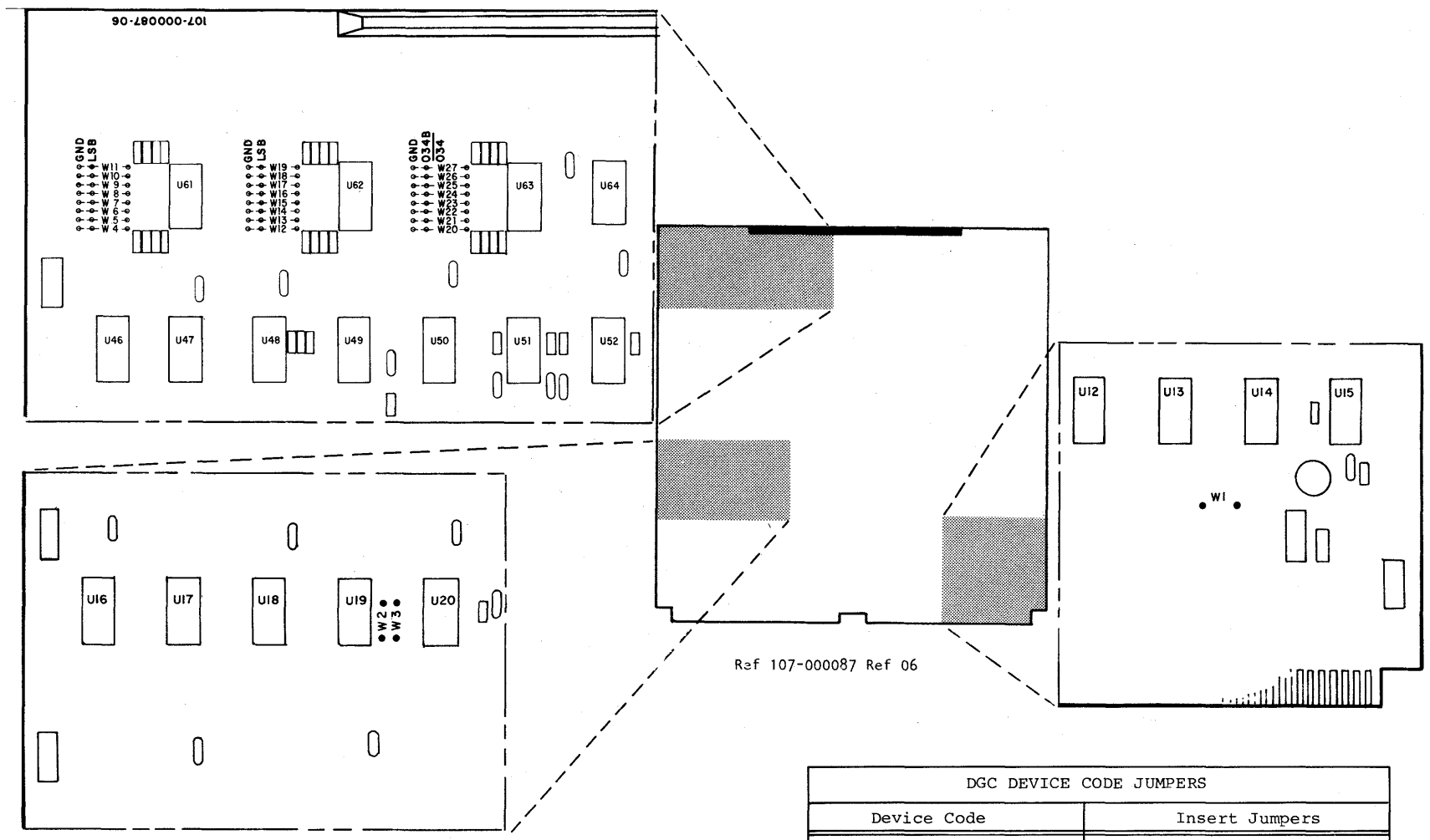


DG-03282

Ref 107-000086 Rev 15

COMPUTER INTERFACE JUMPERS	
Type of Computer	Insert Jumpers
IBM 360, IBM 370 AMDAHL 470	W2 and W3 on Board 1 W1 and W4 on Board 1

BOARD 2



Ref 107-000087 Ref 06

DG-03283

DGC DEVICE CODE JUMPERS	
Device Code	Insert Jumpers
31/32 (IBM1/IBM2) 71/72	W2 on Board 2 W1 and W3 on Board 2

IBM DEVICE CODE JUMPERS (MOST SIGNIFICANT DIGIT)			
Jumper	Connect jumper to LSB to enable device codes	Remove jumper to enable device codes	Connect jumper to GND to disable device codes
W11 on Board 2	0X	00-0F	00-0F
W10 on Board 2	1X	10-1F	10-1F
W9 on Board 2	2X	20-2F	20-2F
W8 on Board 2	3X	30-3F	30-3F
W7 on Board 2	4X	40-4F	40-4F
W6 on Board 2	5X	50-5F	50-5F
W5 on Board 2	6X	60-6F	60-6F
W4 on Board 2	7X	70-7F	70-7F
W19 on Board 2	8X	80-8F	80-8F
W18 on Board 2	9X	90-9F	90-9F
W17 on Board 2	AX	A0-AF	A0-AF
W16 on Board 2	BX	B0-BF	B0-BF
W15 on Board 2	CX	C0-CF	C0-CF
W14 on Board 2	DX	D0-DF	D0-DF
W13 on Board 2	EX	E0-EF	E0-EF
W12 on Board 2	FX	F0-FF	F0-FF

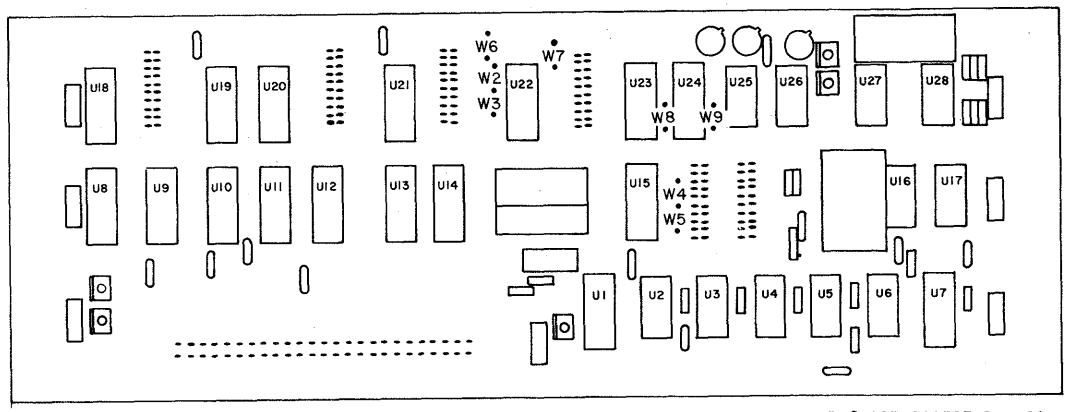
NOTE: X is any digit specified by the IBM device code jumpers for the least significant digit.

IBM DEVICE CODE JUMPERS (LEAST SIGNIFICANT DIGIT)		
To Enable Device Code	Connect Jumper	To Signal
X0	W27 on Board 2	$\overline{034}$
X1	W26 on Board 2	$\overline{034}$
X2	W25 on Board 2	$\overline{034}$
X3	W24 on Board 2	$\overline{034}$
X4	W23 on Board 2	$\overline{034}$
X5	W22 on Board 2	$\overline{034}$
X6	W21 on Board 2	$\overline{034}$
X7	W20 on Board 2	$\overline{034}$
X8	W27 on Board 2	034B
X9	W26 on Board 2	034B
XA	W25 on Board 2	034B
XB	W24 on Board 2	034B
XC	W23 on Board 2	034B
XD	W22 on Board 2	034B
XE	W21 on Board 2	034B
XF	W20 on Board 2	034B

NOTE: X is any digit specified by the IBM device code jumpers for the most significant digit. All other jumpers on Board 2 from W20 thru W27 should be connected to GND.

INTERNAL CABLING (Continued)

ADAPTER BOARD



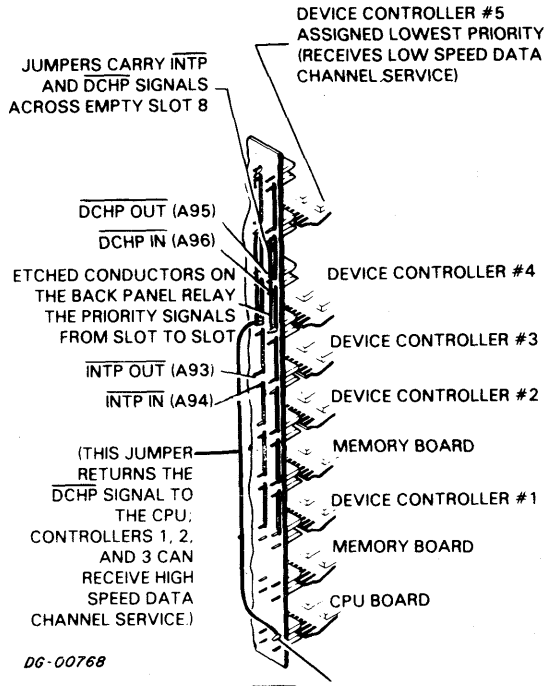
DG-03284 Ref 107-000527 Rev 01

IBM PRIORITY CHAIN JUMPERS	
Type of Priority	Insert Jumpers
High Priority Low Priority	W2, W4, and W6 on Adapter Board W3, W5, and W7 on Adapter Board

Jumpers W8 and W9 on the adapter board should always be inserted. Jumper W1 on the adapter board does not exist.

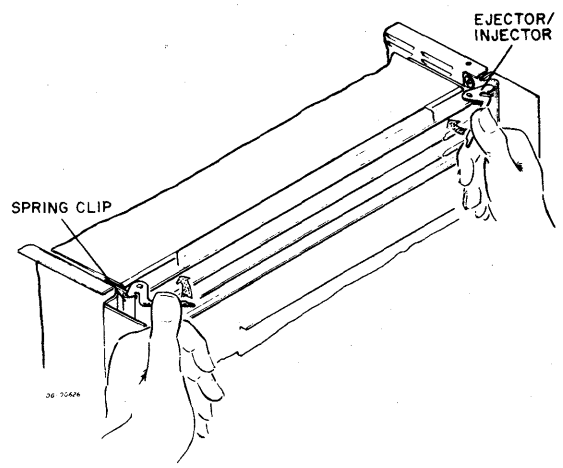
JUMPERING THE BACKPANEL

AN EXAMPLE OF JUMPERING THE BACKPANEL OF A 10-SLOT COMPUTER TO MAINTAIN THE INTEGRITY OF THE PRIORITY CHAINS.

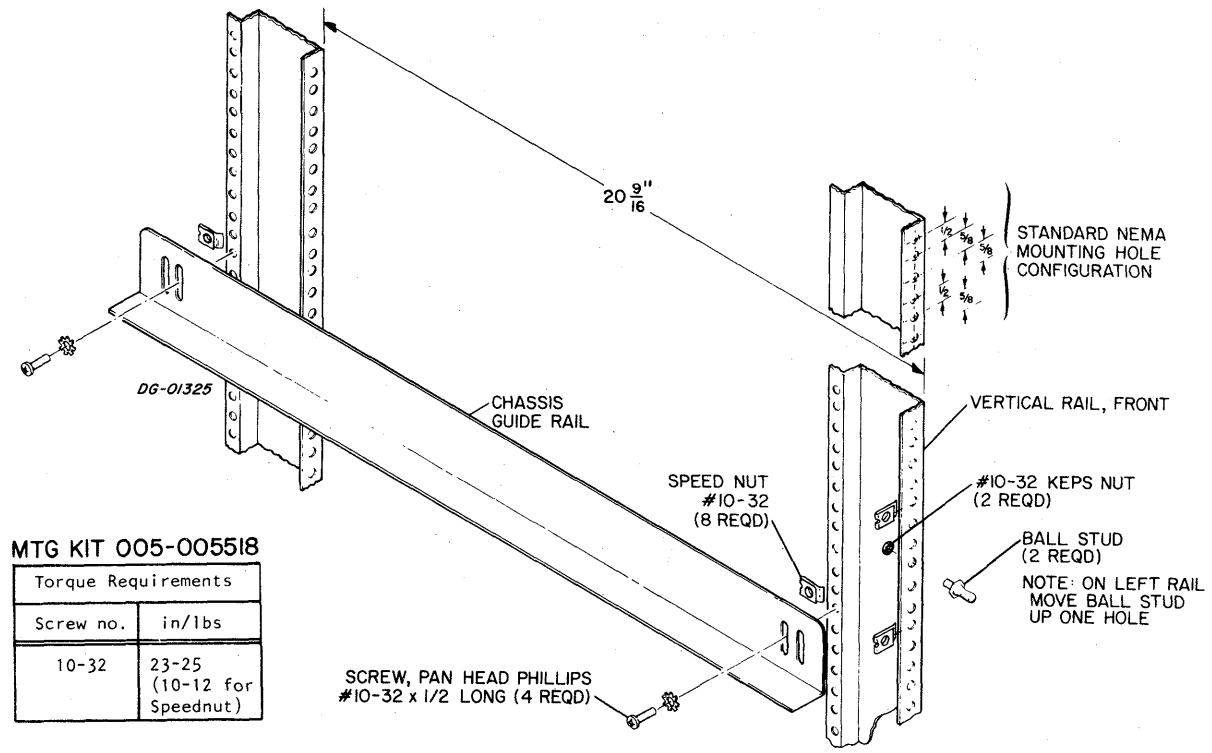


(THE BRANCH FROM DCHP CHAIN IS RETURNED TO CPU PIN A95. ALL CONTROLLERS HAVING HIGHER PRIORITY THAN THE BRANCH POINT WILL RECEIVE DATA CHANNEL SERVICE WITH HIGH SPEED CYCLE; CONTROLLERS HAVING LOWER PRIORITY THAN THE BRANCH POINT WILL RECEIVE LOW SPEED DATA CHANNEL SERVICE.)

INSTALLING PC BOARD



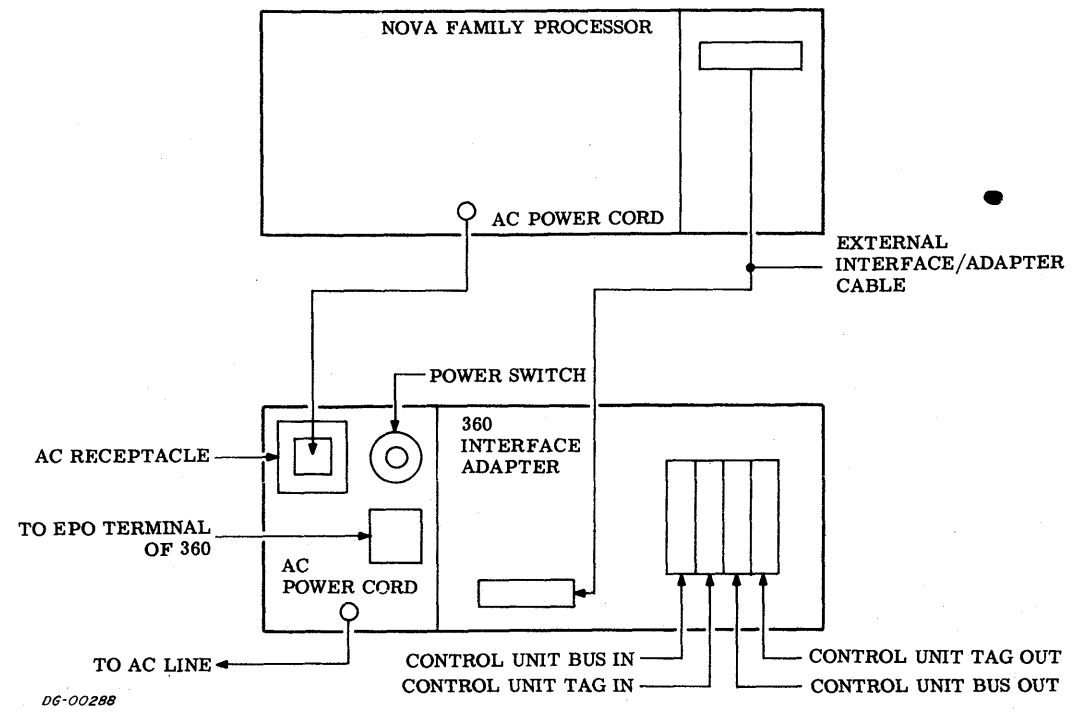
INSTALLATION IN A CABINET



MTG KIT 005-005518

Torque Requirements	
Screw no.	in/lbs
10-32	23-25 (10-12 for Speednut)

EXTERNAL CABLING



NOTE: IBM bus/tag cables should be mounted with the light gray cable connectors mated to the dark gray adapter connectors and the dark gray cable connectors mated to the light gray adapter connectors.

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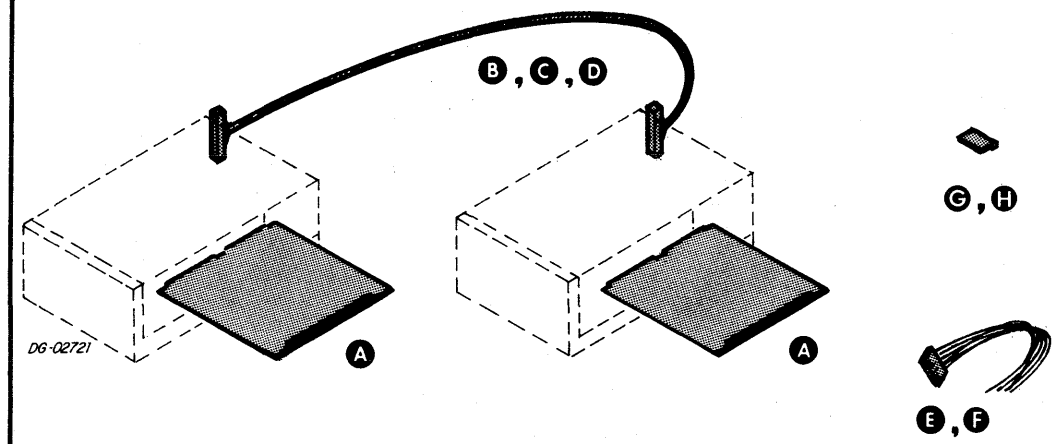
SUBSYSTEM COMPONENT BREAKDOWN



MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	PC BOARD	COMPUTER CHASSIS (ANY I/O SLOT)	TWO PC BOARDS ARE REQUIRED FOR OPERATION, ONE INSTALLED IN EACH PROCESSOR IN IPB SUBSYSTEM

DG-02672

CABLE

Item	Cable	Connecting			Max Allowed Lg ft / m	Notes	
B	1065A IPB EXTERNAL	INT CA IN 1ST CPU	and	INT CA IN 2ND CPU	15 / 4.5	CONNECTING GROUP A TO A PROCESSORS	(1)
C	1065B IPB EXTERNAL	INT CA IN 1ST CPU	"	INT CA IN 2ND CPU	15 / 4.5	CONNECTING GROUP A TO B PROCESSORS	(1)
D	1065C IPB EXTERNAL	INT CA IN 1ST CPU	"	INT CA IN 2ND CPU	15 / 4.5	CONNECTING GROUP B TO B PROCESSORS	(1)
E	INTERNAL	4240 PC BD	"	IPB EXTERNAL	- / -	CABLE FOR N820, N1210, N1220	
			"		- / -	CABLE FOR N2 AND ECLIPSE	
F	INTERNAL	4240 PC BD	"	IPB EXTERNAL	- / -	CABLE FOR N800, N830, N840, N1200	

DG-02673

TERMINATOR

Item	Terminator	Location	Notes	
G	TEST PLUG	INTERNAL CABLE CONNECTOR	REQUIRED TO RUN DIAGNOSTICS ON GROUP A PROCESSORS	(1)
H	TEST PLUG	INTERNAL CABLE CONNECTOR	REQUIRED TO RUN DIAGNOSTICS ON GROUP B PROCESSORS	(1)

DG-02674

NOTE: (1) GROUP A ARE SOCKET-CONNECTED PROCESSORS.
GROUP B ARE PADDLEBOARD-CONNECTED PROCESSORS.

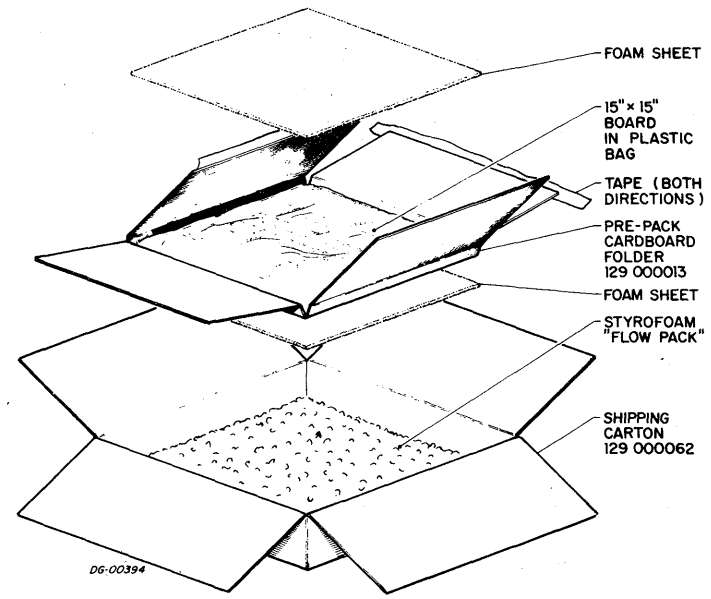
SPECIFICATIONS OF THE CHASSIS-MOUNTED COMPONENTS

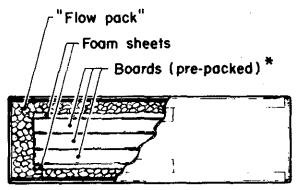
Item	Component	Chassis	Slots Required	Max Allowable Data Channel Latency (μ sec)	Type of Data Channel Service Desired: High Speed	Standard	Max Allowable Programmed I/O Latency +	Controller's +5 Volt Current Draw (Amps)
A	4240 PCB	CPU	1	N/A	N/A	N/A	36.2 μs	2.5 A

DG-01912

SHIPPING

PACKING KIT FOR BOARDS





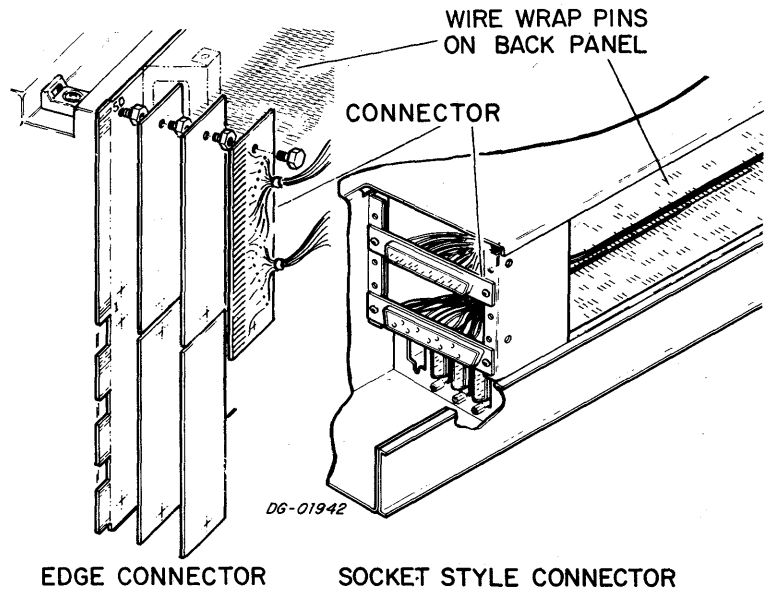
MULTIPLE PACKING

* Up to three (3) 15"× 15" boardr, enclosed in plastic bags and sealed in pre-pack folders as shown, can be put in shipping carton No. 129 000062. For four (4) to seven (7) boards, use shipping carton No. 129 000012.

SHIPPING AND PACKAGE DATA					
SHIPPING SPECIFICATIONS			STORAGE SPECIFICATIONS		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-40 - 160 / -40 70	0% - 80%	50,000ft 15,200m	-40 - 160 / -40 70	0% - 80%	90 days

DG-03224

INTERNAL CABLING



EDGE CONNECTOR

NOVA 2
NOVA 3
NOVA 820
NOVA 1210
NOVA 1220

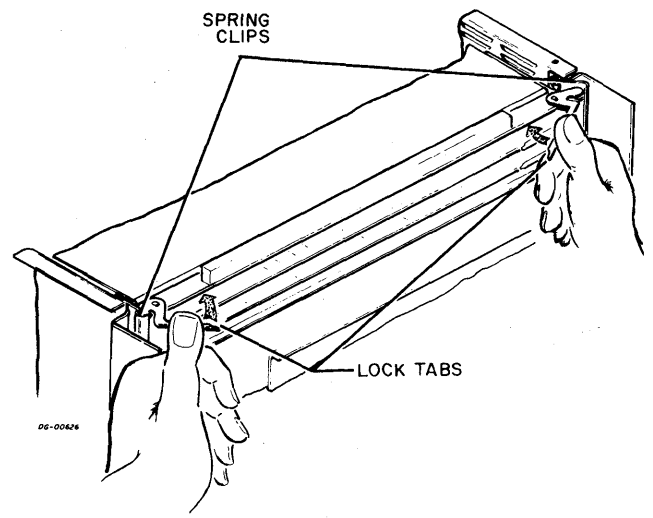
SOCKET STYLE CONNECTOR

NOVA
SUPERNOVA
NOVA 800
NOVA 830
NOVA 840
NOVA 1200
NOVA 1230

INTERNAL CABLING	
ASSEMBLY	DESCRIPTION
005-001802	FOR NOVA 820, NOVA 1210, NOVA 1220 NOVA 2, NOVA 3, ECLIPSE SERIES
005-001965	FOR NOVA 800, NOVA 830, NOVA 840, NOVA 1200

TAILORING

INSTALLING PC BOARDS



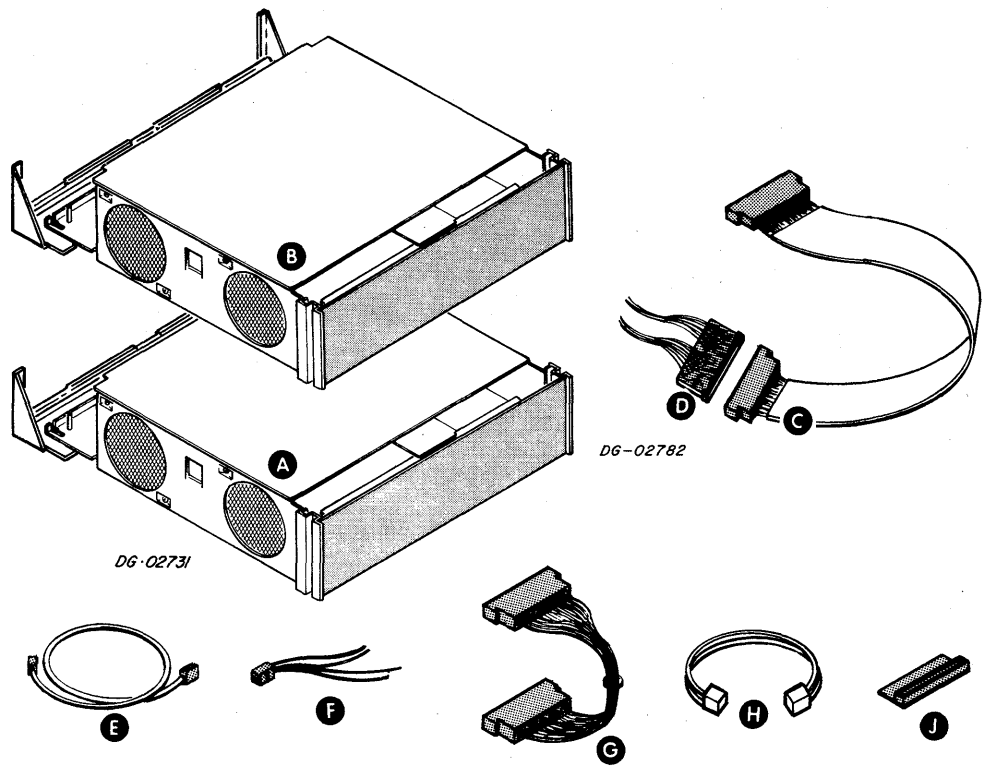
EXTERNAL CABLING

EXTERNAL CABLING

EXTERNAL CABLES	
ASSEMBLY	DESCRIPTION
005-001966	A to A
005-001967	A to B
005-001968	B to B

GROUP "A" ARE
SOCKET-CONNECTED PROCESSORS
GROUP "B" ARE
PADDLEBOARD CONNECTED PROCESSORS

SUBSYSTEM COMPONENT BREAKDOWN



MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	COMMUNICATIONS CHASSIS	CABINET	SHOULD BE MOUNTED ABOVE COMPUTER CHASSIS
B	EXPANSION COMMUNICATIONS	CABINET	MUST BE MOUNTED IMMEDIATELY ABOVE COMMUNICATIONS CHASSIS OR ANOTHER EXPANSION COMMUNICATIONS CHASSIS

DG-02672

CABLE

Item	Cable	Connecting			Max Allowed Lg ft / m	Notes
C	EXTERNAL I/O BUS	COMPUTER CHASSIS	and	COMM CHASSIS	15 / 4.5	
D	INTERNAL I/O BUS	COMPUTER CHAS & B/P	"	PADDLE-BOARD	2 / .6	SUPPLIED WITH FIRST COMM CHASSIS
E	EXTERNAL POWER FAIL	COMPUTER CHASSIS	"	COMM CHASSIS	15 / 4.5	
F	INTERNAL POWER FAIL	COMPUTER CHAS B/P	"	MOLEX CONNECTOR	1 / .3	
G	DAISY-CHAIN	COMM CHASSIS	"	COMM CHASSIS	.75 / .22	SUPPLIED WITH EXPANSION COMM CHASSIS
H	GND JUMPER WIRES	COMM CHASSIS	"	COMM CHASSIS	1 / .3	

DG-02673

TERMINATOR

Item	Terminator	Location	Notes
J	I/O BUS TERMINATOR BOARD	COMMUNICATIONS CHASSIS OR EXPANSION COMMUNICATIONS CHASSIS	

DG-02674

SPECIFICATIONS OF CABINET-MOUNTED COMPONENTS

Item	Component	Number in Subsystem	Maximum Operating Temperature: Component °F / °C	Maximum Operating Temperature: Media °F / °C	Primary Power: Current (nom) Draw (Amp)	Primary Power: Voltage ±ΔV	Primary Power: Frequency	Cabinet Height Required: Area	Cabinet Height Required: in.	Cabinet Height Required: cm	Weight: lbs / kg	Power Dissipation (Max Watts)	Preferred Location or Remarks	Operating Humidity (Relative): min % / max %
A	COMM CHASSIS	1	131 / 55		3.	120 +24	50/60 +3	3	5¼	13.3	40 / 18	350	* ABOVE COMPUTER CHASSIS	0 / 90
	"	1	131 / 55		3.	240 +48	50/60 +3	3	5¼	13.3	40 / 18	350		0 / 90
B	EXPANSIONS COMM CHASS	0-3	131 / 55		3	120+24	50/60 +3	3	5¼	13.3	40 / 18	350	ABOVE COMMUNICATIONS CHASSIS	0 / 90
	"	0-3	131 / 55		3	240+48	50/60 +3	3	5¼	13.3	40 / 18	350		0 / 90

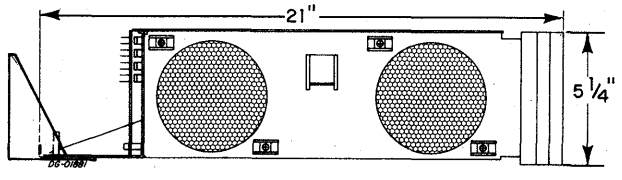
DG-01914

Item	Voltage	Power Cable Length ft	Power Cable Length m	Power Cable Plug	Mating Receptacle on Power Drop	Mating Receptacle in Wall
A	COMMUNICATIONS CHASSIS 120	6	1.8	NEMA 5-15P	NEMA 5-15R	NEMA 5-15R
	COMMUNICATIONS CHASSIS 240	6	1.8	NEMA 6-15P	NEMA 6-15R	NEMA 6-15R
B	EXPANSION COMM CHASSIS 120	6	1.8	NEMA 5-15P	NEMA 5-15R	NEMA 5-15R
	EXPANSION COMM CHASSIS 240	6	1.8	NEMA 6-15P	NEMA 6-15R	NEMA 6-15R

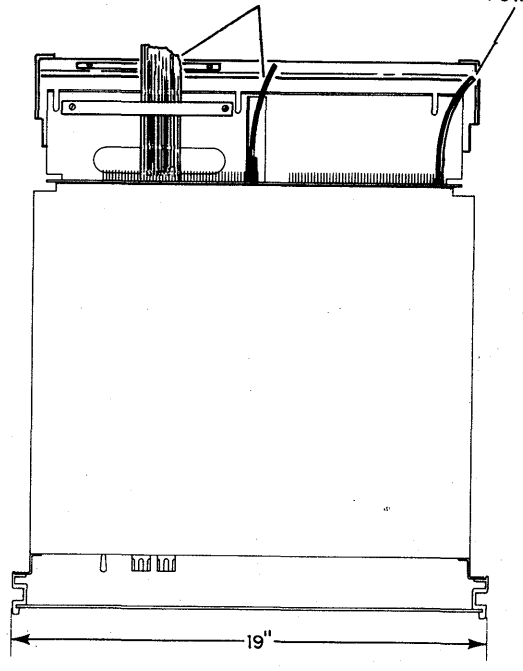
DG-02717

* A 1.75" FILLER PANEL SHOULD BE INSTALLED DIRECTLY BELOW THE FIRST CHASSIS BECAUSE WHEN THE TERMINATOR IS INSTALLED IT EXTENDS BELOW THE CHASSIS. IF TWO OR THREE CHASSIS SYSTEM, THIS 1.75" IS NOT REQUIRED BECAUSE THE TERMINATOR WILL MOUNT 2ND ON 3RD OBJECTIVES.

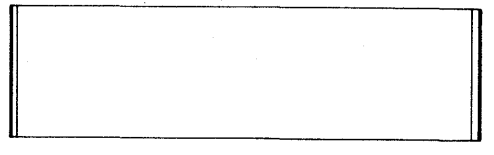
COMMUNICATIONS CHASSIS



SIDE VIEW

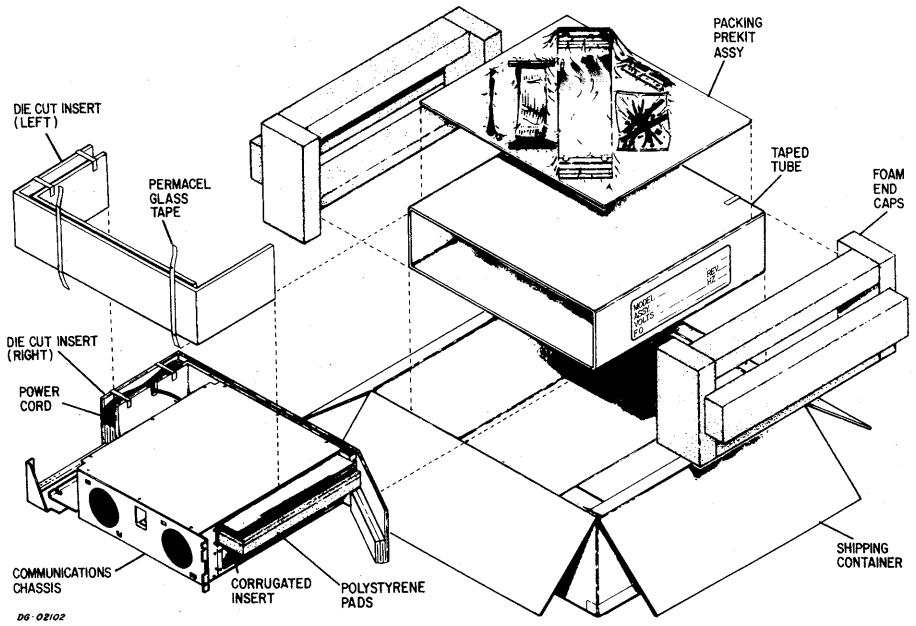


TOP VIEW



FRONT VIEW

SHIPPING



Storage Specifications		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-40 to 185 / -40 to 185	0 - 85%	90 days

DG-02062

Shipping Specifications			
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	———
-40 to 185 / -40 to 185	0 - 85%	50,000ft	———

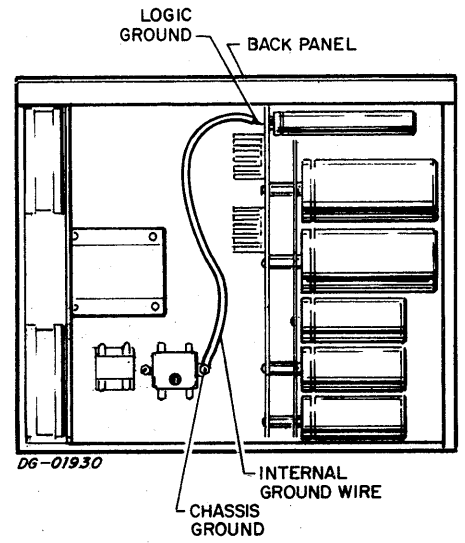
DG-02063

Caution

The communications chassis is designed for line multiplexor boards only. Ordinary I/O controller boards may be damaged if they are used in a communications chassis.

INTERNAL CABLING

GROUNDING REQUIREMENTS

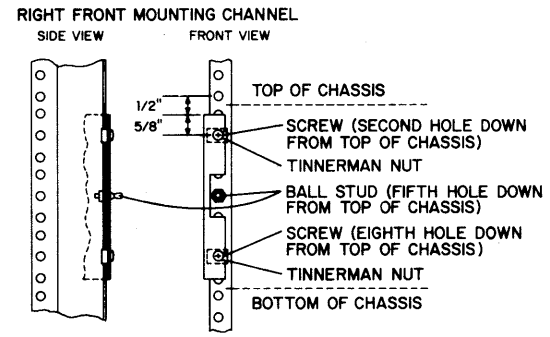


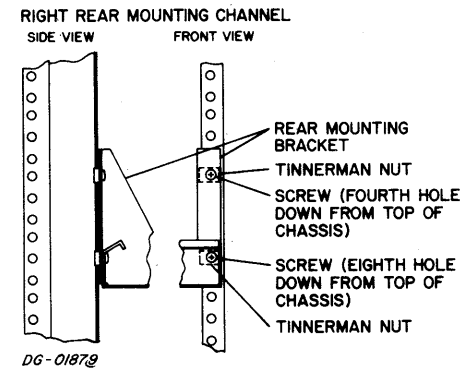
THE COMMUNICATIONS CHASSIS HAS AN INTERNAL GROUND WIRE WHICH CONNECTS CHASSIS GROUND TO LOGICAL GROUND. TO AVOID GROUND LOOPS, THIS WIRE SHOULD BE DISCONNECTED BEFORE THE COMMUNICATIONS CHASSIS IS CONNECTED TO THE COMPUTER CHASSIS WITH AN I/O CABLE.

INTERNAL CABLE FOR POWER-FAIL			
Signal Name	Power-Fail Cable Pin Numbers	Back Panel Pin Numbers for NOVA Computers	Back Panel Pin Numbers for ECLIPSE Computers
MEM OK	1	A9 of slot 1	A6 of slot 1
$\overline{\text{POWER FAIL}}$	2	A5 of slot 1	A6 of slot 2
GND	4	GND	GND
GND	5	GND	GND

DG-01736

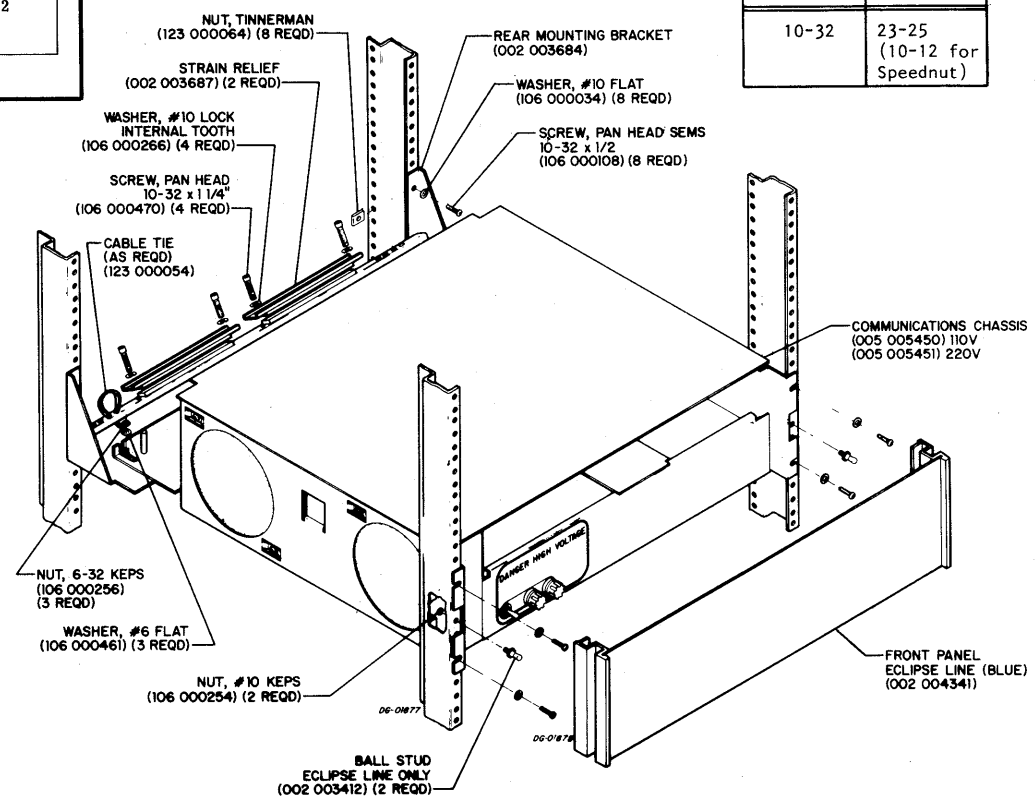
INSTALLATION IN A CABINET





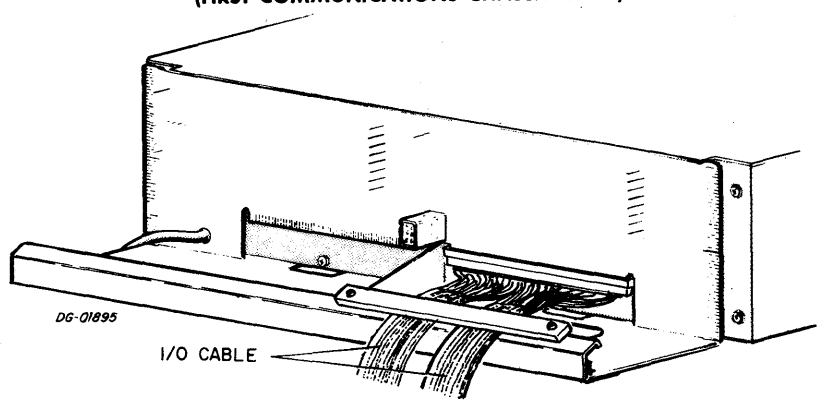
MTG KIT 005-005453

Torque Requirements	
Screw no.	in/lbs
10-32	23-25 (10-12 for Speednut)

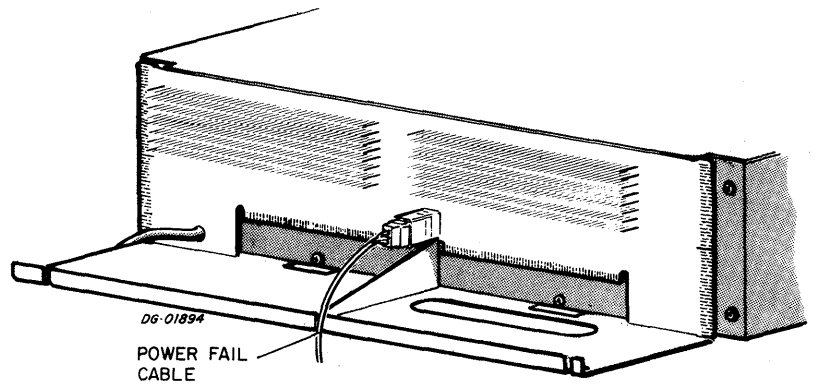


EXTERNAL CABLING

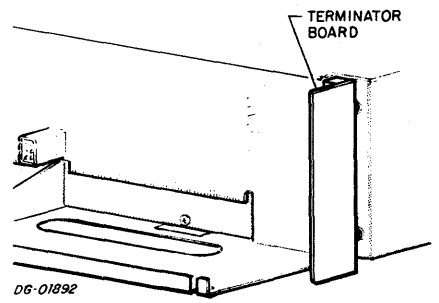
I/O CABLE CONNECTION
(FIRST COMMUNICATIONS CHASSIS ONLY)



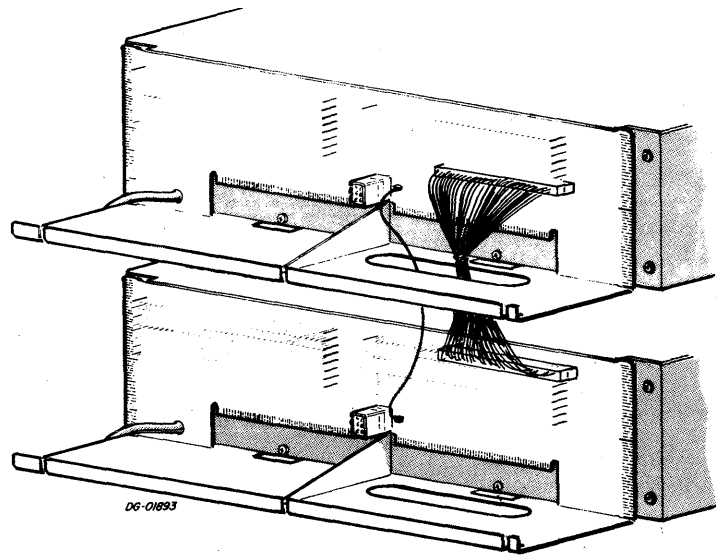
EXTERNAL POWER FAIL CABLE
(FIRST COMMUNICATIONS CHASSIS ONLY)



TERMINATOR BOARD
(LAST COMMUNICATIONS CHASSIS ONLY)

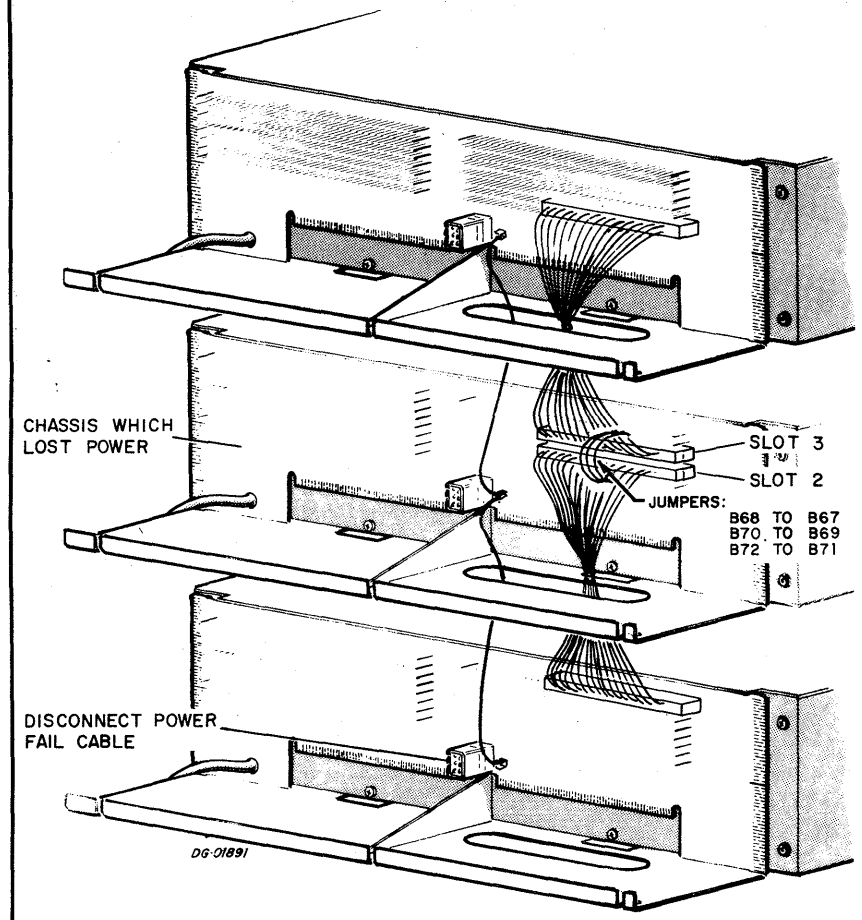


DAISY CHAIN CABLE AND GROUND JUMPERING FOR MULTIPLE COMMUNICATIONS CHASSIS



IF MORE THAN ONE COMMUNICATIONS CHASSIS IS INCLUDED IN A COMMUNICATIONS SYSTEM, THE CHASSIS SHOULD BE MOUNTED IN THE RACK ONE DIRECTLY ON TOP OF THE OTHER. THE I/O BUS OF THE COMPUTER CHASSIS SHOULD BE CABLED TO THE BOTTOM COMMUNICATIONS CHASSIS AND DAISY-CHAINED THROUGH ANY ADDITIONAL COMMUNICATIONS CHASSIS. THE LAST COMMUNICATIONS CHASSIS IN THE CHAIN MUST BE CONNECTED TO EITHER AN EXPANSION CHASSIS OR OTHER I/O BUS EXTENSION WITH ANOTHER I/O CABLE OR MUST BE TERMINATED WITH A TERMINATOR BOARD.

POWER FAILURE PROCEDURE



JUMPER CONNECTIONS FOR A COMMUNICATIONS CHASSIS WITHOUT POWER

Signal	on	Pin	to	Signal	on	Pin
$\overline{\text{UMCP IN}}$		B68 of slot 4		$\overline{\text{UMCP OUT}}$		B67 of slot 1
$\overline{\text{INTP IN}}$		B70 of slot 4		$\overline{\text{INTP OUT}}$		B69 of slot 1
$\overline{\text{DCHP IN}}$		B72 of slot 4		$\overline{\text{DCHP OUT}}$		B71 of slot 1

DG-01737

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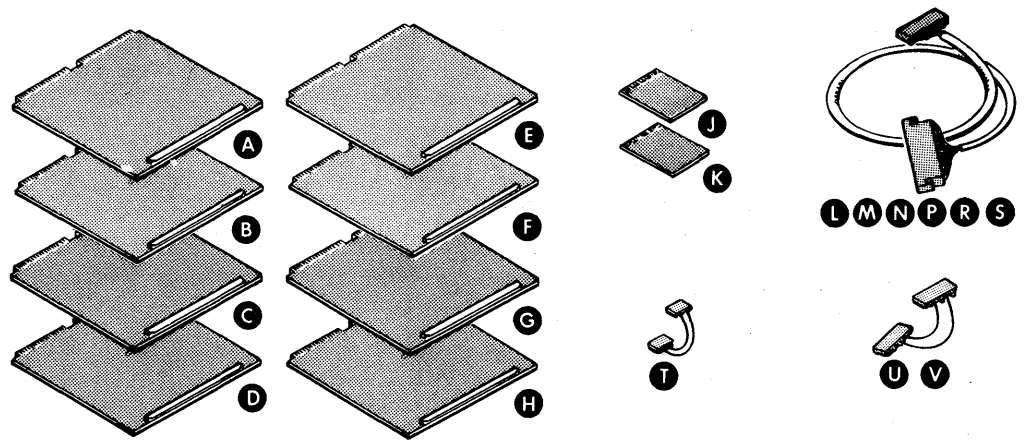
SUBSYSTEM COMPONENT BREAKDOWN



MAJOR COMPONENT

Item	Component		Mounting Location	Notes
A	SIXTEEN LINE ALM-16 (1)	4257	COMMUNICATIONS CHASSIS	
B	EIGHT LINE ALM-16	4258	COMMUNICATIONS CHASSIS	
C	EIGHT LINE ALM-8 (2)	4255	COMMUNICATIONS CHASSIS	BOARD WITH HIGHEST BAUD RATE LINES SHOULD BE
D	FOUR LINE ALM-8	4256	COMMUNICATIONS CHASSIS	ASSIGNED TO LOWEST SLOT
E	TWO LINE SLM-2 WITH CRC (3)	4263/4266	COMMUNICATIONS CHASSIS	
F	TWO LINE SLM-2	4263	COMMUNICATIONS CHASSIS	
G	ONE LINE SLM-2 WITH CRC	4264/4266	COMMUNICATIONS CHASSIS	
H	ONE LINE SLM-2	4264	COMMUNICATIONS CHASSIS	
J	4-LINE EIA INTERFACE MODULE	4261	ALM-16	DAUGHTER BOARDS REQUIRED
K	4-LINE 20mA INTERF MODULE	4260	ALM-16	WITH THE ALM-16 OPTIONAL
				DAUGHTER BOARD

DG-02672

(1) ASYNCHRONOUS LINE MULTIPLEXOR WITHOUT MODEM CONTROL
(2) ASYNCHRONOUS LINE MULTIPLEXOR WITH MODEM CONTROL
(3) SYNCHRONOUS LINE MULTIPLEXOR

CABLE

Item	Cable		Connecting			Max Allowed Lg ft / m	Notes
L	MODEM		ALM-8 OR SLM-2	"	MODEM	50 / 15	
M	BELL 303 MODEM		SLM-2 WITH 303 INTERF	"	BELL 303 MODEM	50 / 15	
N	DEDICATED MODEM		ALM-16 WITH EIA INTERF	"	DEDICATED MODEM	50 / 15	
P	TELETYPE		ALM-16 WITH 20mA INTERF	"	TELETYPE	500 / 150	
R	VIDEO DISPLAY WITH MODEM		ALM-8 OR SLM-2	"	VIDEO DISPLAY	50 / 15	
S	VIDEO DISPLAY	EIA	ALM-16	"	VIDEO DISPLAY	50 / 15	
		20ma	ALM-16		VIDEO DISPLAY	500 / 150	

DG-02673

TERMINATOR

Item	Terminator	Location	Notes
T	ALM-16 TEST PLUG	COMMUNICATIONS CHASSIS BACK PANEL	
U	ALM-8 TEST PLUG	COMMUNICATIONS CHASSIS BACK PANEL	
V	SLM-2 TEST PLUG	COMMUNICATIONS CHASSIS BACK PANEL	

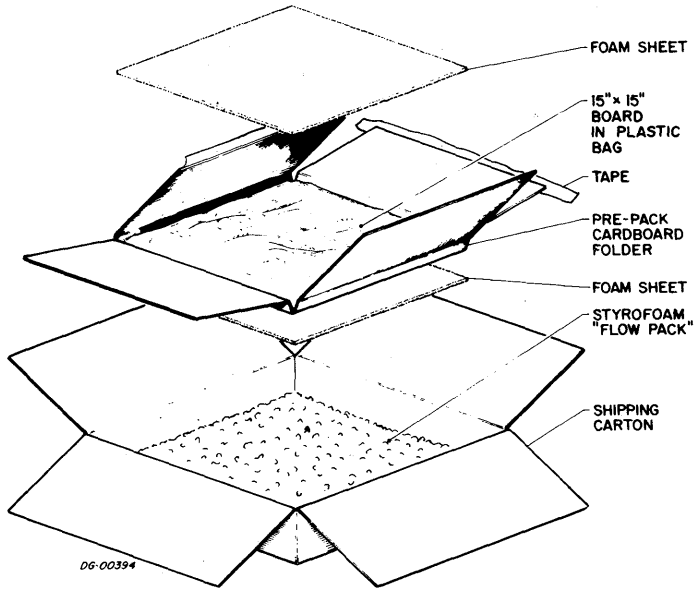
DG-02674

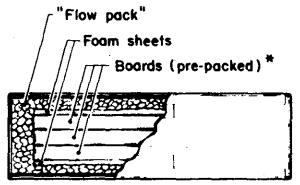
SPECIFICATIONS OF THE CHASSIS-MOUNTED COMPONENTS

Item	Component	Chassis	Slots Required	Max Allowable Data Channel Latency (μ sec)	Type of Data Channel Service Desired: High Speed	Type of Data Channel Service Desired: Standard	Max Allowable Programmed I/O Latency +	Controller's +5 Volt Current Draw (Amps)
A	16-LINE ALM-16	COMM	1	N/A				3.6
B	8-LINE ALM-16	COMM	1	N/A				3.2
C	8-LINE ALM-8	COMM	1	N/A				3.1
D	4-LINE ALM-8	COMM	1	N/A				2.8
E	2-LINE SLM-2,CRC	COMM	1	N/A				5.6
F	2-LINE SLM-2	COMM	1	N/A				4.6
G	1-LINE SLM-2,CRC	COMM	1	N/A				4.2
H	1-LINE SLM-2	COMM	1	N/A				3.2

DG-01912

SHIPPING





MULTIPLE PACKING

* Up to three (3) 15"x 15" boards, enclosed in plastic bags and sealed in pre-pack folders as shown, can be put in shipping carton No. 129 000062. For four (4) to seven (7) boards, use shipping carton No. 129 000012.

Shipping Specifications			
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	———
-40 to 185 / -40 to 185	0 - 85%	50,000ft	———

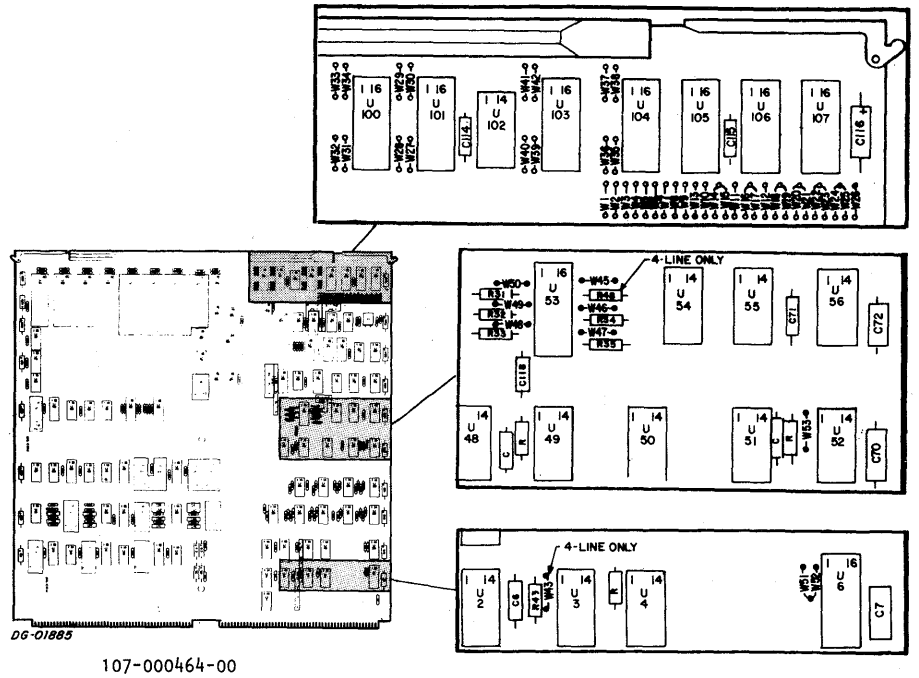
DG-02063

Storage Specifications		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-40 to 185 / -40 to 185	0 - 85%	90 days

DG-02062

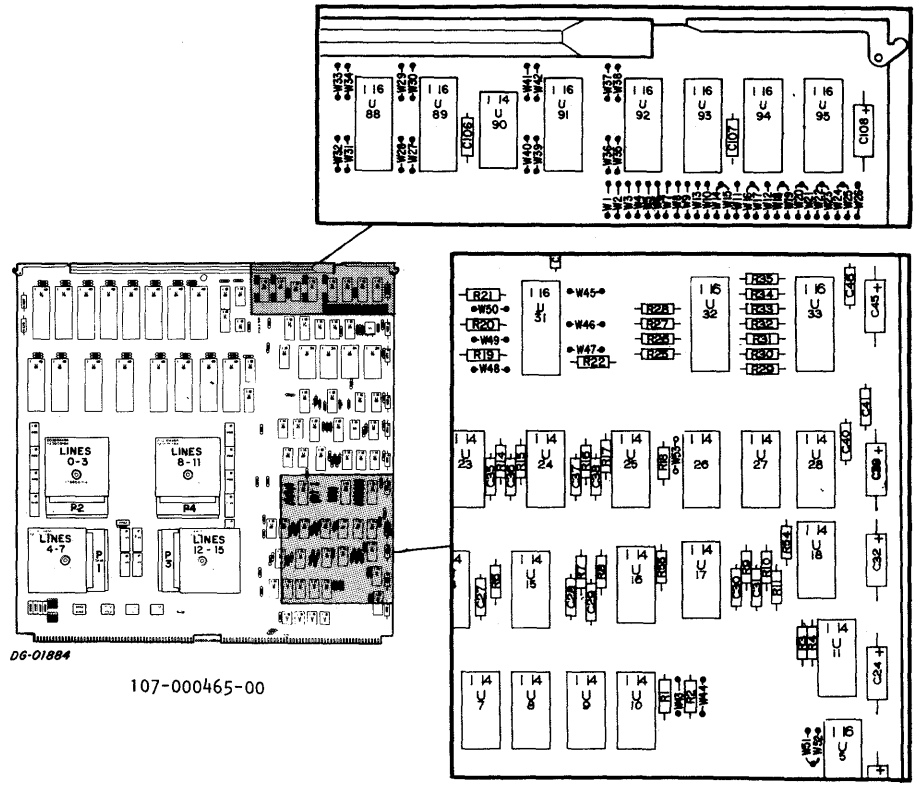
TAILORING

ALM-8 SERIES ASYNCHRONOUS LINE MULTIPLEXOR



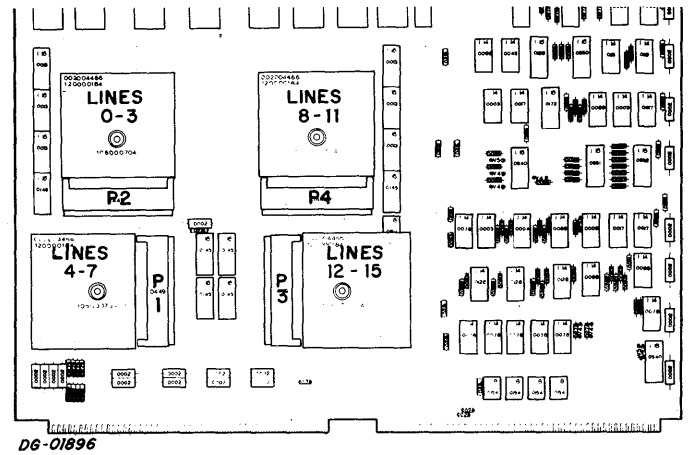
107-000464-00

ALM-16 SERIES ASYNCHRONOUS LINE MULTIPLEXOR



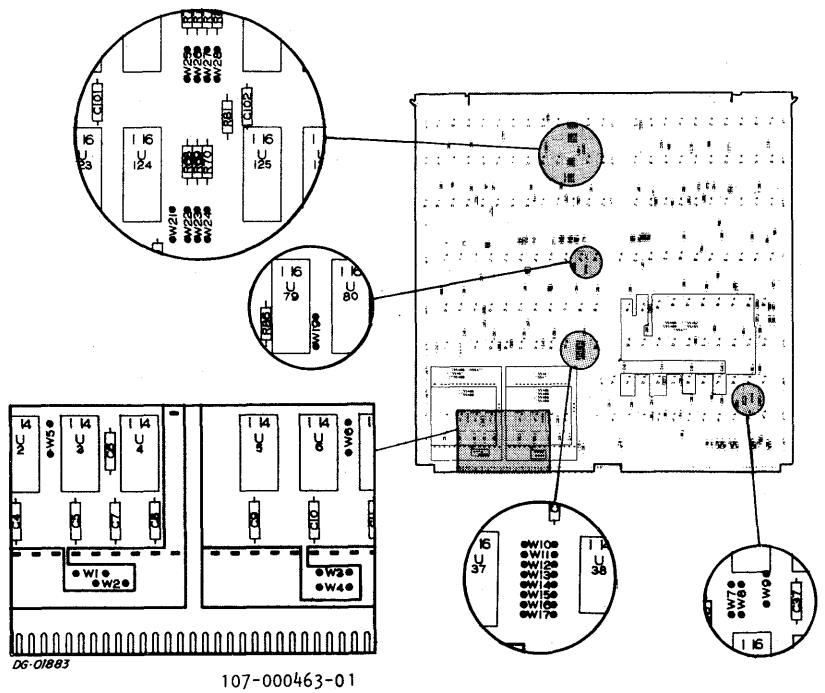
107-000465-00

EIA AND 20mA CURRENT LOOP MODULES



THE EIA MODULE AND THE 20mA CURRENT LOOP MODULE ARE DAUGHTER BOARDS WHICH ARE PLUGGED INTO THE LINE MULTIPLEXOR BOARD. THE FIGURE SHOWS THE LOCATIONS OF THE FEMALE EDGE CONNECTORS ON A LINE MULTIPLEXOR BOARD AND THE LINE NUMBERS TO WHICH THEY CORRESPOND. THE DAUGHTER BOARDS ARE INSTALLED BY PLUGGING THEM INTO THE APPROPRIATE EDGE CONNECTORS, TAKING CARE TO ENSURE THAT THE BOARDS ARE SEATED PROPERLY, AND THEN SECURING THEM IN PLACE WITH A SCREW THROUGH THE CENTER AND AN INSULATING WASHER ON TOP OF EACH BOARD.

SYNCHRONOUS LINE MULTIPLEXOR



107-000463-01

DEVICE CODE JUMPERS		
Device Address	Asynchronous Line Multiplexor	Synchronous Line Multiplexor
34/35 (MUX/CRC)	W51	W8
44/45 (MUX/CRC)	W52	W7

DG-01740

LINE ADDRESS GROUP JUMPERS								
Bit Positions of Line Address in DIA or DOA instructions (insert jumper to specify 0)	7	8	9	10	11	12	13	14
4-line asynchronous with modem control	W50	W49	W48	W47	W46	W45 W43		
8-line asynchronous with modem control	W50	W49	W48	W47	W46			
8-line asynchronous without modem control	W50	W49	W48	W47	W46 W44			
16-line asynchronous without modem control	W50	W49	W48	W47				
1-line synchronous	W27	W26	W25	W28	W23	W24	W22	
2-line synchronous	W27	W26	W25	W28	W23	W24	W22	W21 W19

DG-01741

TAILORING (Continued)

CLOCK FREQUENCY JUMPERS					
Synchronous Internal Clock		Asynchronous Clock 0		Asynchronous Clock 1	
Baud Rate	Jumper	Baud Rate	Jumper	Baud Rate	Jumper
38,400	W14	9600	W13	4800	W14
19,200	W15	4800	W15	2400	W16
9600	W16	2400	W17	1200	W18
4800	W17	1200	W19	600	W20
2400	W10	600	W21	300	W22
1200	W11	300	W23	150	W24
600	W12	150	W25	75	W26
300	W13				

Asynchronous Clock 2

If Desired Baud Rate in Range	Jumper	Yields Source Frequency
37.42690 to 74.85380	W8	9600
74.85380 to 149.7076	W6	19,200
149.7076 to 299.4152	W4	38,400
299.4152 to 598.8304	W2	76,800
598.8304 to 4800	W1	153,600

Source Frequency Divisor Minus One

Bit Position	0	1	2	3	4	5	6	7
Insert Jumper to Specify 1	W27	W28	W29	W30	W31	W32	W33	W34

Asynchronous Clock 3

If Desired Baud Rate in Range	Jumper	Yields Source Frequency
4.678363 to 9.356725	W12	1200
9.356725 to 18.71345	W11	2400
18.71345 to 37.42690	W10	4800
37.42690 to 74.85380	W9	9600
74.85380 to 149.7076	W7	19,200
149.7076 to 299.4152	W5	38,400
299.4152 to 2400	W3	76,800

Source Frequency Divisor Minus One

Bit Position	0	1	2	3	4	5	6	7
Insert Jumper to Specify 1	W35	W36	W37	W38	W39	W40	W41	W42

DG-01742

JUMPERS FOR COMMONLY USED CLOCK FREQUENCIES			
Baud Rate	Source Frequency Divisor Minus One (Octal)		Insert Jumpers
Asynchronous Clock 2			
4800	37	W1	W30-W34
3600	52	W1	W29, W31, W33
2400	77	W1	W29-W34
1800	124	W1	W28, W30, W32
1200	177	W1	W28-W34
600	377	W1	W27-W34
300	377	W2	W27-W34
150	377	W4	W27-W34
110	256	W6	W27, W29, W31, W32, W33
75	377	W6	W27-W34
Asynchronous Clock 3			
2400	37	W3	W38-W42
1800	52	W3	W37, W39, W41
1200	77	W3	W37-W42
600	177	W3	W36-W42
300	377	W3	W35-W42
150	377	W5	W35-W42
110	256	W7	W35, W37, W39, W40, W41
75	377	W7	W35-W42

DG-02091

ADDITIONAL SYNCHRONOUS LINE MULTIPLEXOR JUMPERS

CRC JUMPERS	
Function	Insert Jumper
Disable CRC	W30
Enable CRC	W29

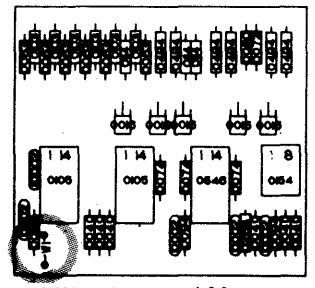
SPARE MODEM DRIVER JUMPERS	
Modem Driver	Jumper
Spare A to Line 0	W1
Spare B to Line 0	W2
Spare A to Line 1	W3
Spare B to Line 1	W4

DG-01744

SYNCHRONOUS INTERNAL CLOCK JUMPERS	
To Connect Internal Clock to Line	Insert Jumper
EIA Line 0	W5
EIA Line 1	W6
303 Line	W1 on daughter board

DG-01743

303 MODEM INTERFACE



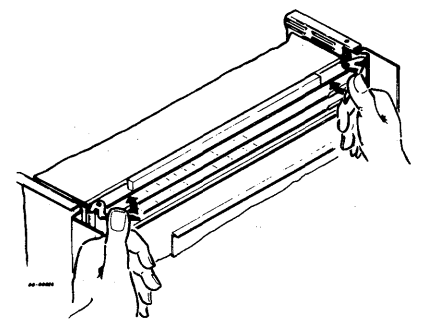
107-000488-00

COMMUNICATIONS CHASSIS BACKPANEL JUMPERING

JUMPER CONNECTIONS FOR AN EMPTY COMMUNICATIONS SLOT			
Signal	on Pin	to Signal	on Pin
UMCP IN	B68	UMCP OUT	B67
$\overline{\text{INTP IN}}$	B70	$\overline{\text{INTP OUT}}$	B69
$\overline{\text{DCHP IN}}$	B72	$\overline{\text{DCHP OUT}}$	B71

DG-01739

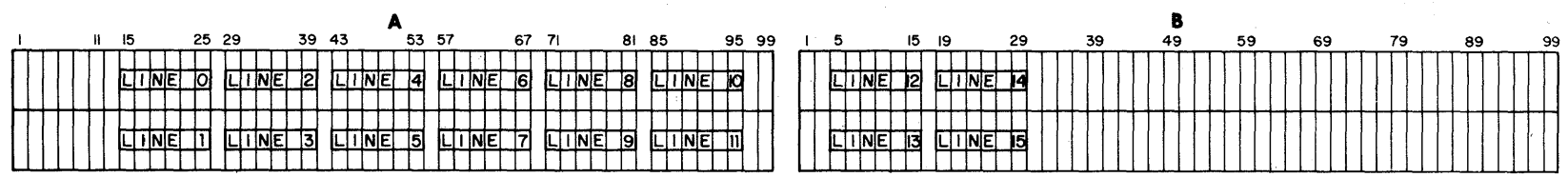
PC BOARD PLACEMENT IN SLOTS



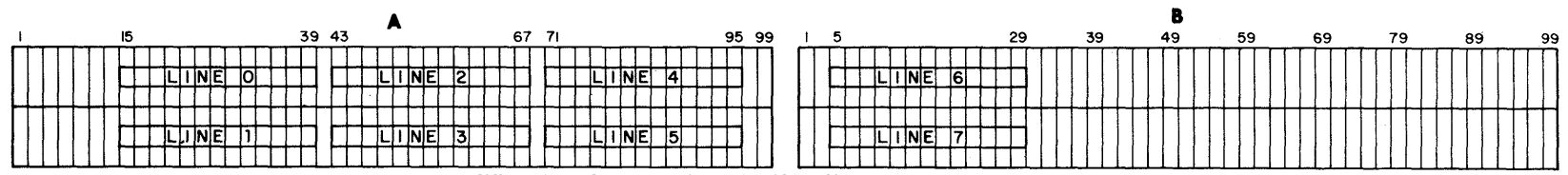
Caution

A line multiplexor board should only be placed in a communications chassis. Placing a line multiplexor in an ordinary I/O slot of the computer chassis may damage the board.

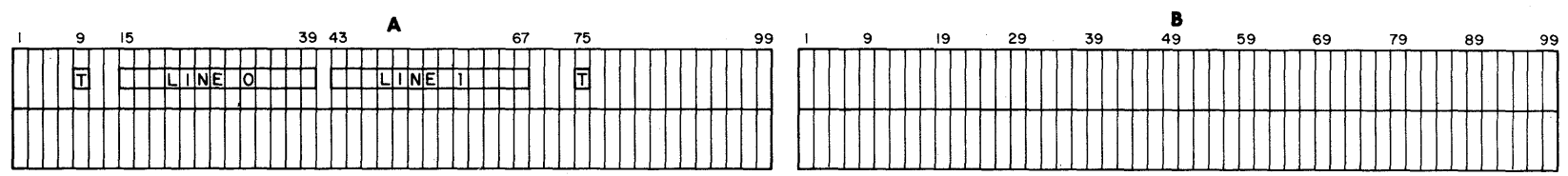
EXTERNAL CABLING



ASYNCHRONOUS LINE MULTIPLEXOR WITHOUT MODEM CONTROL



ASYNCHRONOUS LINE MULTIPLEXOR WITH MODEM CONTROL



DG-01723

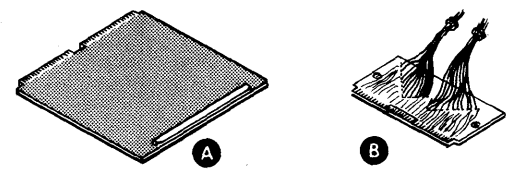
SYNCHRONOUS LINE MULTIPLEXOR

DEVICE CONNECTOR SIGNALS

Asynchronous Line Multiplexor Without Modem Control (EIA Interface)		Asynchronous Line Multiplexor Without Modem Control (20mA Current Loop Interface)		Asynchronous Line Multiplexor With Modem Control		Synchronous Line Multiplexor	
Pin Number	Signal Name	Pin Number	Signal Name	Pin Number	Signal Name	Pin Number	Signal Name
1	XMIT DATA	1	XMIT DATA (-XMIT)	1	not used	1	XMIT CLOCK
2	REC DATA	2	REC DATA (+REC)	2	XMIT DATA	2	XMIT DATA
3	+5V			3	RING	3	RING
4	RDR RUN(GND)			4	CARRIER DETECT	4	CARRIER DETECT
5	+V	5	+V (+XMIT)	5	DATA TERMINAL READY	5	DATA TERMINAL READY
6	-12V	6	-12V (-REC)	6	CLEAR TO SEND	6	CLEAR TO SEND
				7	DATASET READY	7	DATASET READY
				8	not used	8	SPARE A
				9	GND	9	GND
				10	not used	10	SPARE B
				11	REC DATA	11	REC DATA
				12	REQUEST TO SEND	12	REQUEST TO SEND
				13	not used	13	REC CLOCK

DG-01924

SUBSYSTEM COMPONENT BREAKDOWN



MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	DATA CONTROL UNIT (DCU)	COMPUTER CHASSIS	

DG-02672

CABLE

Item	Cable	Connecting	Max Allowed Lg ft / m	Notes
B	DCU INTERNAL I/O BUS	DCU and EXTERNAL I/O BUS	2 / .6	see note

DG-02673

SPECIFICATIONS OF THE CHASSIS-MOUNTED COMPONENTS

Item	Component	Chassis	Slots Required	Max Allowable Data Channel Latency (μ sec)	Type of Data Channel Service Desired: High Speed	Standard	Max Allowable Programmed I/O Latency +	Controller's +5 Volt Current Draw (Amps)
A	DCU	COMPUTER	1	—	X	X	—	8.0

DG-01912

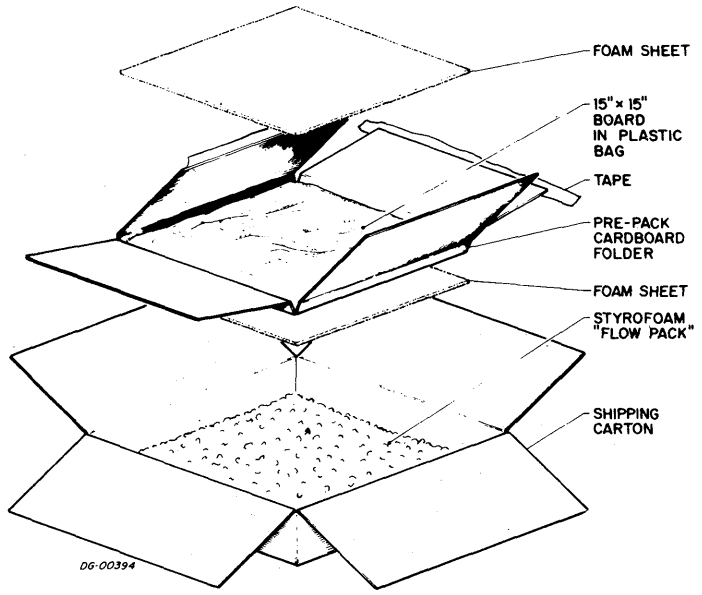
INTERPROCESSOR BUS CABLE

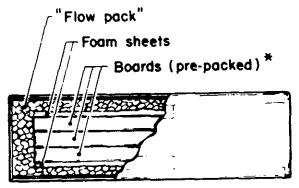
(1065 TYPE CABLE)	INTERPROCESSOR BUS CABLE, 15 FT. LONG, FOR INTERCONNECTING TWO 4240 INTERPROCESSOR BUS UNITS. MUST SPECIFY COMPUTER DESIGNATION AT EACH END. MAX CABLE LENGTH IS 25 FEET.
1065 A	IS USED TO INTERCONNECT COMPUTERS IN CATEGORY A.
1065 C	IS USED TO INTERCONNECT COMPUTERS IN CATEGORY B.
1065 B	IS USED TO INTERCONNECT A COMPUTER IN CATEGORY A TO A COMPUTER IN CATEGORY B.

NOTE: CABLES

CATEGORY A TYPE COMPUTERS 005-6136	NOVA	
	SNOVA	
	1200/17	
	800/7	
	1200/17	
	800/17	
	840/17	
	830/17	
CATEGORY B TYPE COMPUTERS 005-6135		1220/10
		820/10
		N2/10
		1210/4
		N2/4
		N3/12
		N3/4
		S100
		S200
		S230
		C300
		C330

SHIPPING





MULTIPLE PACKING

* Up to three (3) 15" x 15" boards, enclosed in plastic bags and sealed in pre-pack folders as shown, can be put in shipping carton No. 129 000062. For four (4) to seven (7) boards, use shipping carton No. 129 000012.

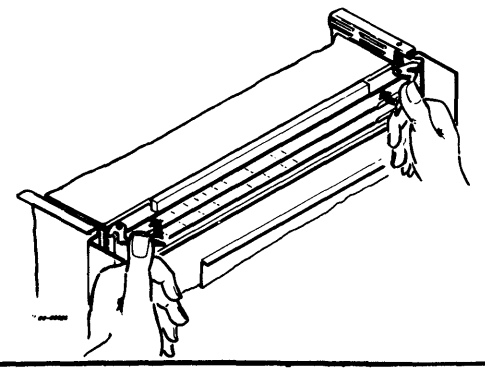
Storage Specifications		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-40 to 185 / -40 to 185	0 - 85%	90 days

DG-02062

Shipping Specifications			
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	———
-40 to 185 / -40 to 185	0 - 85%	50,000ft	———

DG-02063

PC BOARD PLACEMENT IN SLOTS

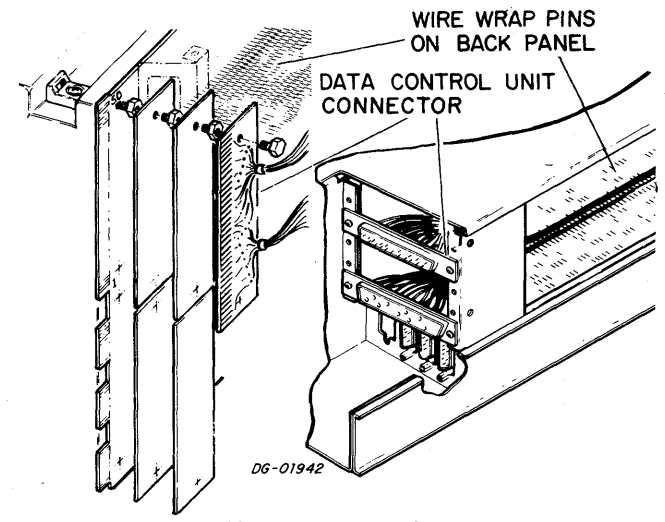


INTERNAL CABLING

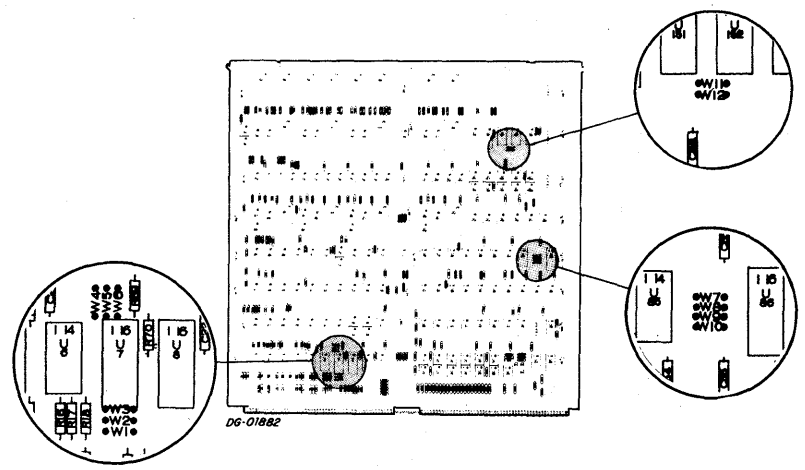
I/O BUS INTERNAL CABLE CONNECTION FOR DATA CONTROL UNIT

Signal Names	Back Panel Pin Numbers	Edge Connectors Pin Numbers	Socket Connector Pin Numbers
GND	GND	A	50
PWR ON	A3	B	49
$\overline{\text{MSKO}}$	B67	C	43
INTA	B54	D	38
DATIB	B53	E	20
DATIA	B52	F	19
$\overline{\text{DS3}}$	B51	H	35
DATOC	B49	J	24
CLR	B48	K	2
STRT	B40	L	48
DATIC	B38	M	21
DATOB	B36	N	23
DATOA	B34	P	22
ASYEN	B31	R	25
$\overline{\text{DS4}}$	B27	S	36
$\overline{\text{DS5}}$	B25	T	37
$\overline{\text{DS2}}$	B23	U	34
$\overline{\text{DS1}}$	B19	V	33
IORST	B15	W	42
$\overline{\text{DS0}}$	B13	X	32
IOPLS	B11	Y	41
$\overline{\text{SELD}}$	B6	Z	47
$\overline{\text{SELB}}$	A90	a	46
$\overline{\text{INTP OUT}}$	A87	c	39
$\overline{\text{BIR7}}$	A88	d	27
$\overline{\text{BLIO}}$	A85	e	28
$\overline{\text{INTR}}$	A86	f	40
$\overline{\text{RQENB}}$	A49	m	45
$\overline{\text{DATA7}}$	A47	n	10
$\overline{\text{DATA14}}$	A57	p	17
$\overline{\text{DATA5}}$	A59	r	8
$\overline{\text{DATA11}}$	A61	s	14
$\overline{\text{DATA12}}$	A63	t	15
$\overline{\text{DATA8}}$	A65	u	11
$\overline{\text{DATA4}}$	A67	v	7
$\overline{\text{DATA0}}$	A69	w	3
$\overline{\text{DATA9}}$	A71	x	12
$\overline{\text{DATA13}}$	A73	y	16
$\overline{\text{DATA1}}$	A75	z	4
$\overline{\text{DATA15}}$	A76	AA	18
$\overline{\text{DATA3}}$	A77	AB	6
$\overline{\text{DATA10}}$	A78	AC	13
$\overline{\text{DATA2}}$	A91	AD	5
$\overline{\text{DATA6}}$	A92	AE	9
GND	GND	AF	1

DG-01746



TAILORING



DEVICE CODE JUMPERS						
Bit Positions of Device Code	0	1	2	3	4	5
Insert Jumper to Specify 1	W6	W5	W4	W3	W2	W1

DG-01748

MEMORY PARTITION JUMPERS		
Location of addresses 0-1777	DCU memory	Host memory.
Jumper inserted	W11	W12

DG-01749

REAL-TIME CLOCK JUMPERS					
Jumper Configuration W10	W9	W8	W7	Clock Period (in milliseconds) 50Hz Line	60Hz Line
in	in	in	in	320.00	266.67
in	in	in	out	300.00	250.00
in	in	out	in	280.00	233.33
in	in	out	out	260.00	216.67
in	out	in	in	240.00	200.00
in	out	in	out	220.00	183.33
in	out	out	in	200.00	166.67
in	out	out	out	180.00	150.00
out	in	in	in	160.00	133.33
out	in	in	out	140.00	116.67
out	in	out	in	120.00	100.00
out	in	out	out	100.00	83.33
out	out	in	in	80.00	66.67
out	out	in	out	60.00	50.00
out	out	out	in	40.00	33.33
out	out	out	out	20.00	16.67

DG-01750

COMPUTER CHASSIS BACKPANEL JUMPERING

JUMPER CONNECTIONS FOR AN EMPTY I/O SLOT					
Signal	on Pin	to	Signal	on Pin
$\overline{\text{INTP IN}}$	A96		$\overline{\text{INTP OUT}}$	A95
$\overline{\text{DCHP IN}}$	A94		$\overline{\text{DCHP OUT}}$	A93

DG-01745

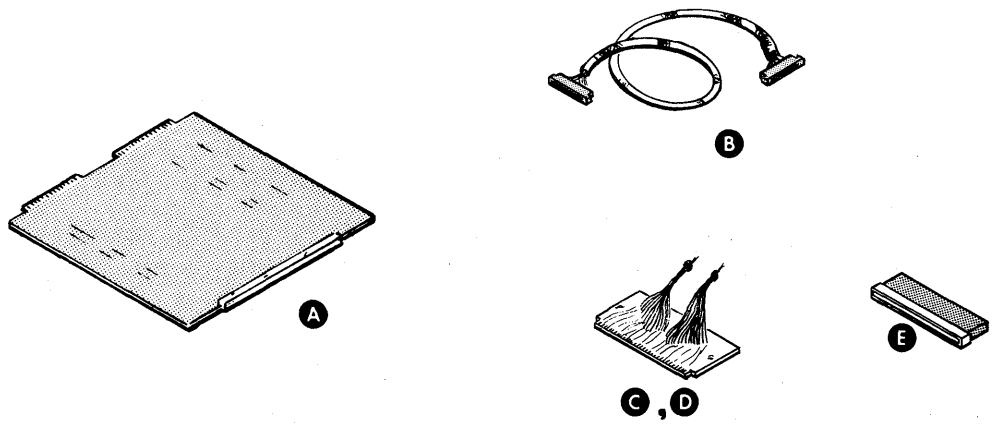
REAL-TIME CLOCK JUMPER WIRE		
Type of Computer	Pin Number for Line Frequency Source	Pin Number for Data Control Unit Slot
NOVA line computer	B6 of slot 3	A84
SUPERNOVA® computer	B6 of slot 4	A84
ECLIPSE S/100 computer	B6 of slot 5	A84
ECLIPSE S/200, S/230, C/300 and C/330 computers	B6 of slot 6	A84

DG-01747

DATA CHANNEL MAP SELECTION

If the host computer is a NOVA 3, ECLIPSE S/230, or ECLIPSE C/330 computer, a jumper wire should be installed to connect pin A89 to pin B62 on the back panel of the computer chassis for the slot being used for the data control unit.

SUBSYSTEM COMPONENT BREAKDOWN



MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	MCA 4206	COMPUTER CHASSIS	

DG-02672

CABLE

Item	Cable	Connecting			Max Allowed Lg ft / m	Notes
B	EXT COMM BUS 1106F	IN PORT CONNECTOR	"	OUT PORT CONNECTOR	140 / 42.7	
C	IN PORT INTERNAL	MCA	"	IN PORT CONNECTOR	2 / .6	SHOWN FOR PADDLE BOARD TYPE COMPUTER
D	OUT PORT INTERNAL	MCA	"	OUT PORT CONNECTOR	2 / .6	

DG-02673

TERMINATOR

Item	Terminator	Location	Notes
E	COMMUNICATIONS BUS TERMINATOR	IN PORT OR OUT PORT CONNECTOR	

DG-02674

SPECIFICATIONS OF THE CHASSIS-MOUNTED COMPONENTS

Item	Component	Chassis	Slots Required	Max Allowable Data Channel Latency (μ sec)	Type of Data Channel Service Desired High Speed	Standard	Max Allowable Programmed I/O Latency +	Controller's +5 Volt Current Draw (Amps)
A	MCA	COMPUTER	1	∞	✓	✓	∞	3.5

DG-01912

CONFIGURATION RULES

- In normal mode, up to 15 DGC NOVA and/or ECLIPSE computers may be interconnected with one 4206 adapter for each computer.
- In fast mode, up to four DGC NOVA and/or ECLIPSE computers may be interconnected with one 4206 adapter for each computer.
- The MCA board requires one slot per computer.
- The distance between MCAs is 10 feet maximu. Computer types at each end of the cable must be designated.
- The distance between a non-operating "left most" CPU and a functioning CPU is 20 feet, maximum.
- The maximum total MCA-bus length is 140 feet for normal mode operation.
- The maximum total MCA-bus length is 30 feet for fast mode operation.
- 4038 and 4206 MCAs cannot be intermixed on the same MCA bus.
- MCA 4206 is a data channel device.
- MCAs other than the "left most" and "right most" in a configurtion must have their pull-out terminators removed.

EXTERNAL CABLING

Model Number	Description
4206	Multiprocessor communications adapter board with appropriate internal cables (specify CPU). One per CPU. (Note that there is no 4206A; all 4206 MCAs have terminators.)

External cable for MCA. The MCA cable(s) ordered depend on the MCA configuration as indicated below:

A	1106AA
	1106AB
	1106BB
	NOVA
	SNOVA
	1200/17
	800/7
	1200/17
	800/17
	840/17
	830/17

B	1220/10
	820/10
	N2/10
	1210/4
	N2/4
	N3/12
	N3/4
	S100
	S200
	S230
	C300
	C330

A 1106AA is used to interconnect computers in Category A.

A 1106BB is used to interconnect computers in Category B.

A 1106AB is used to interconnect a computer in Category A to a computer in Category B.

The MCA bus is time-division multiplexed among MCAs. The priority on the bus proceeds from the leftmost CPU to the rightmost CPU along the MCA bus. If, for example, (Figure 2) MCA #1 has the bus, MCA #3 has next priority. However, assuming MCA #3 does not need the bus and MCA #4 does, MCA #4 will get the bus. MCA #3 will not have an opportunity to get the MCA bus again until MCA #2 and MCA #1 have had opportunity to get the bus.

A further description of the theory of operation of the MCA 4206 can be found in technical reference manual 014-000072.

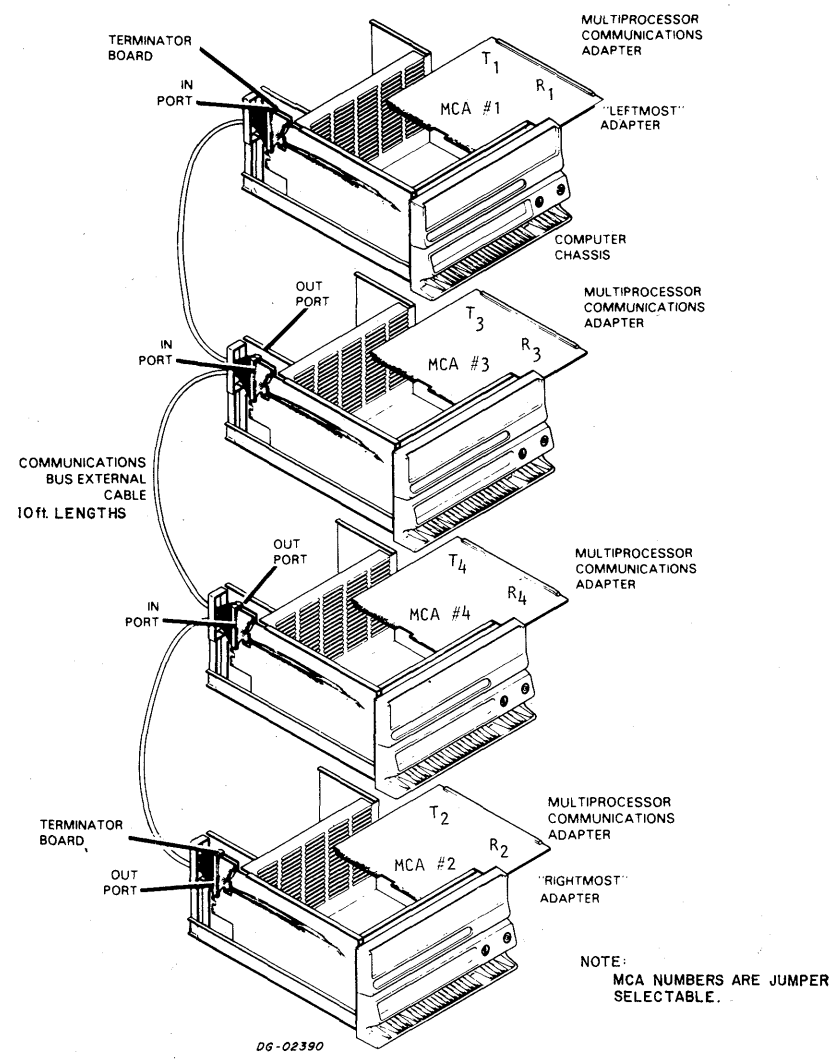
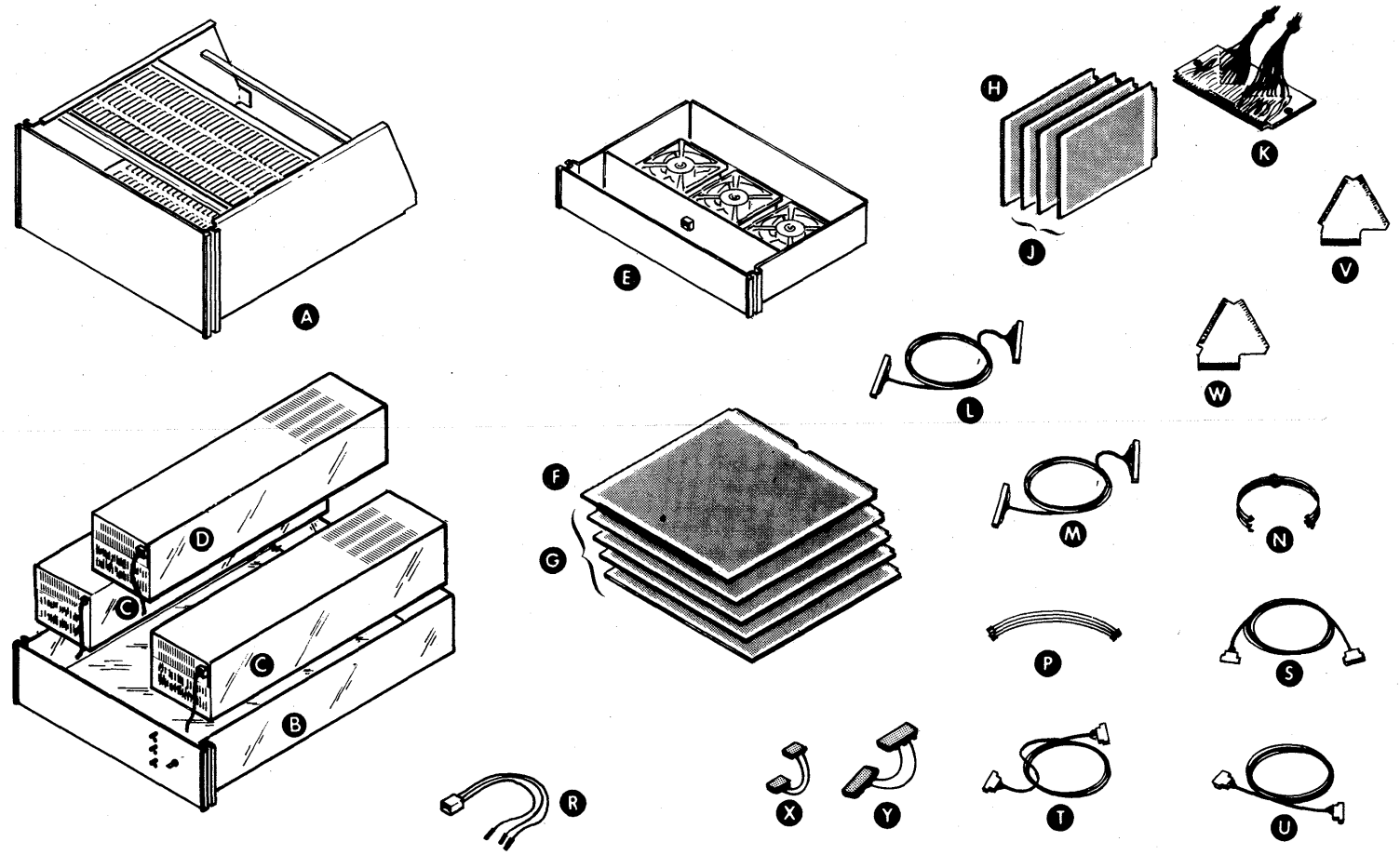


FIGURE-2

SUBSYSTEM COMPONENT BREAKDOWN



MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	LINE INTFC CHASSIS	CABINET	
B	P/S CHASSIS	CABINET	
C	P/S MODULE	P/S CHASSIS	
D	REDUNDANT P/S MODULE	P/S CHASSIS	
E	COOLING UNIT CHASSIS	CABINET	
F	DATA CONTROLLER	COMPUTER CHASSIS	REQUIRED WITH TWO LINE INTFC CHASSIS
G	SUBASSEMBLY BOARD	COMPUTER CHASSIS	
	SUBASSEMBLY BOARD WITH MODEM CONTROL	COMPUTER CHASSIS	
	SUBASSEMBLY BOARD WITH PARITY OPTION	COMPUTER CHASSIS	
	SUBASSY BD W/MODEM CONTROL & PARITY OP	COMPUTER CHASSIS	
H	BUS DROP/CLK MODULE	LINE INTFC CHASSIS	
J	LINE INTFC MODULE-2LINES W/MODEM CONT	LINE INTFC CHASSIS	
	LINE INTFC MODULE-4EIA LINES	LINE INTFC CHASSIS	
	LINE INTFC MODULE 4 20mA LINES	LINE INTFC CHASSIS	

DG-02672

CABLE

Item	Cable	Connecting			Max Allowed Lg ft / m	Notes
K	INTERNAL COMMUNICATIONS	DATA CONTROLLER	and	EXT COMM CABLE	2 / .6	
L	EXTERNAL COMMUNICATIONS	INT COMM CABLE	"	LINE INTFC CHASSIS	15 / 4.5	
M	INTER-CHASSIS	LINE INTFC CHASSIS	and	LINE INTFC CHASSIS	2 / .6	
N	POWER	P/S MODULE	"	LINE INTFC CHASSIS	3 / .9	
P	REDUNDANT DC POWER	REDUNDANT P/S MODULE	"	P/S MODULE	.75 / .23	
R	COOLING UNIT	P/S MODULE	"	COOLING UNIT CHAS	4 / 1.2	INCLUDED AS PART OF P/S CHASSIS
S	TELETYPE	LINE INTFC MODULE	"	TELETYPE	500 / 150	
T	MODEM	LINE INTFC MODULE	"	MODEM	50 / 15	
U	LOCAL TERMINAL	LINE INTFC MODULE	"	LOCAL TERMINAL	50 / 15	

DG-02673

TERMINATOR

Item	Terminator	Location	Notes
V	COMMUNICATIONS TERMINATOR BOARD	LINE INTFC CHASSIS	
W	COMMUNICATIONS CONNECTOR BOARD	LINE INTFC CHASSIS	
X	MODEM TEST PLUG	LINE INTFC CHASSIS	
Y	DATA TEST PLUG	LINE INTFC CHASSIS	

DG-02674

SPECIFICATIONS OF THE CHASSIS MOUNTED COMPONENTS AND SLOT ASSIGNMENTS

Item	Component	Chassis	Slots Required	Max Allowable Data Channel Latency (μ sec)	Type of Data Channel Service Desired High Speed	Standard	Max Allowable Programmed I/O Latency +	Controller's +5 Volt Current Draw (Amps)
F	DATA CONTROLLER	COMPUTER	1	NA			FCTN OF SYS SIZE, BAUD RT	3.75
G	SUBASSEMBLY BOARD	COMPUTER	1	NA			NA	0.43
	SUBASSY BD W/MODEM CONT	COMPUTER	1	NA			NA	1.72
	SUBASSY BD W/ PARITY OPTION	COMPUTER	1	NA			NA	0.74
	SUBASSY BD W/ MODEM CONT	COMPUTER	1	NA			NA	2.03
H	PARITY BUS DROP/ CLOCK MODULE	LINE INTERFACE	1	NA			NA	1.1
J	LINE INTFC MODULE 2 LINES W/MODEM CONT	LINE INTERFACE	1	NA			NA	1.1
	LINE INTFC MODULE 4 EIA LINES	LINE INTERFACE	1	NA			NA	1.1
	LINE INTFC MODULE 4 20mA LINES	LINE INTERFACE	1	NA			NA	1.1

DG-01912

Data Channel Speeds Available: Standard ☐ High Speed ☐

Slot	Allowed (Slot Chart)	Assigned	+5V Current Draw
1	BUS DROP/ CLOCK MODULES		
2			
3	LINE INTERFACE MODULES		
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			

Total +5V Current draw ____

Max +5V Current Available 20

+5V Current Surplus ____

DG-01915

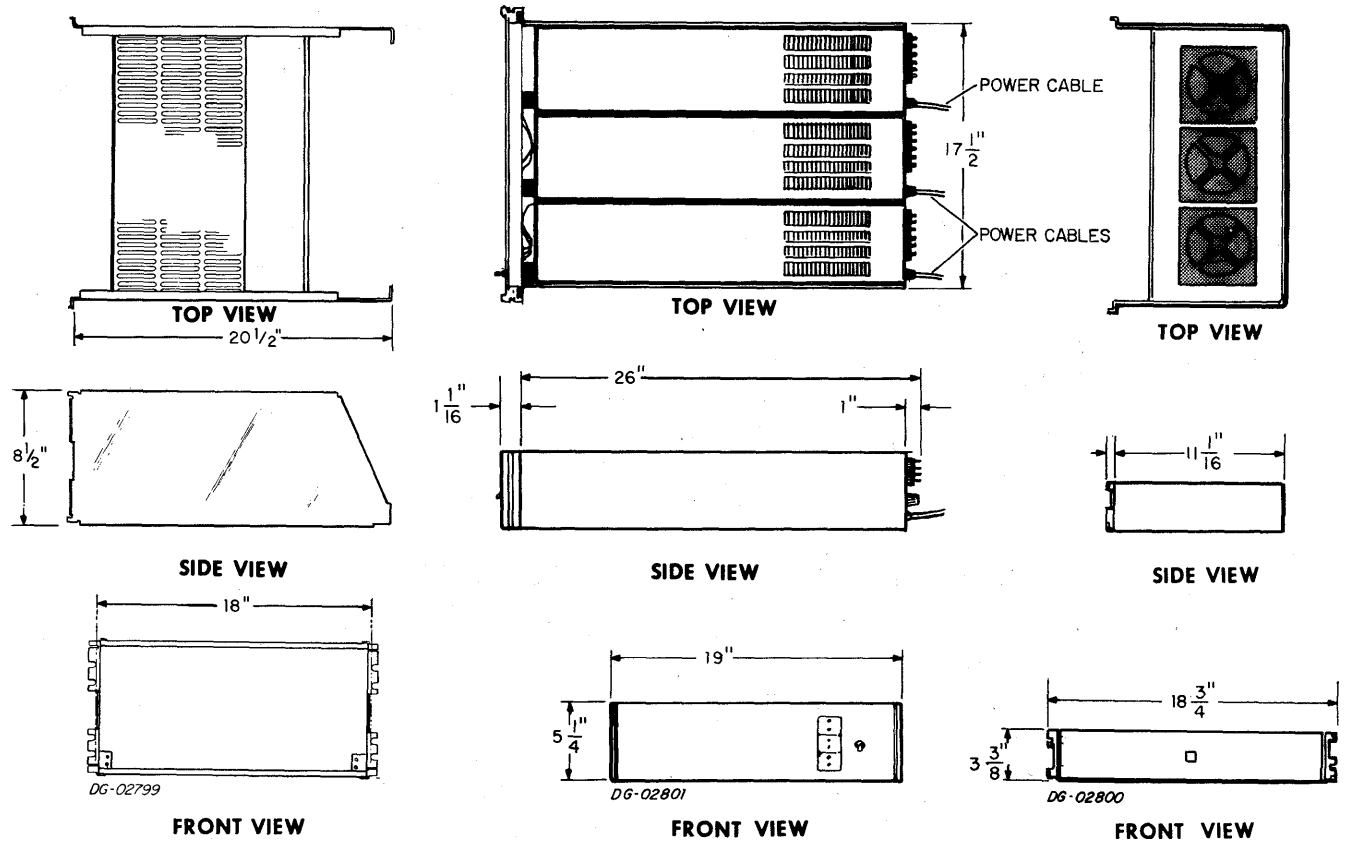
SPECIFICATIONS OF CABINET-MOUNTED COMPONENTS

Item	Component	Number in Sub-system	Maximum Operating Temperature Component °F / °C	Media °F / °C	Primary Power Current (nom) Draw (Amp)	Voltage ±ΔV	Frequency	Cabinet Height Required Area	in.	cm	Weight lbs / kg	Power Dissipation (Max Watts)	Preferred Location or Remarks	Operating Humidity (Relative) min % / % max
A	LINE INTFC CHASSIS	1	131 / 55					5	8¾	21	5 / 2.3	157	BELOW CPU	20 / 90
B	P/S CHASSIS	1						3	5¼	13.3	8 / 3.6		DIRECTLY ABOVE LINE INTFC CHASSIS	
C	P/S MODULE	1	131 / 55		3.6	120±24	60±1	3	5¼	13.3	40 / 18	415		20 / 90
	P/S MODULE	1	131 / 55		3.6	120±24	50±1	3	5¼	13.3	40 / 18	415	POWER SUPPLY CHASSIS	20 / 90
	P/S MODULE	1	131 / 55		1.8	240±48	50±1	3	5¼	13.3	40 / 18	415	POWER SUPPLY CHASSIS	20 / 90
D	REDUNDANT P/S		131 / 55		3.6	120±24	60±1	3	5¼	13.3	40 / 18	415	POWER SUPPLY CHASSIS	20 / 90
	REDUNDANT P/S		131 / 55		3.6	120±24	50±1	3	5¼	13.3	40 / 18	415	POWER SUPPLY CHASSIS	20 / 90
	REDUNDANT P/S		131 / 55		1.8	240±48	50±1	3	5¼	13.3	40 / 18	415	POWER SUPPLY CHASSIS	20 / 90
E	COOLING UNIT CHAS		131 / 55		0.26	120±24	50/ 60±3	2	3½	13.3	5 / 2.3	30	BETWEEN TWO LINE INTFC CHAS	20 / 90

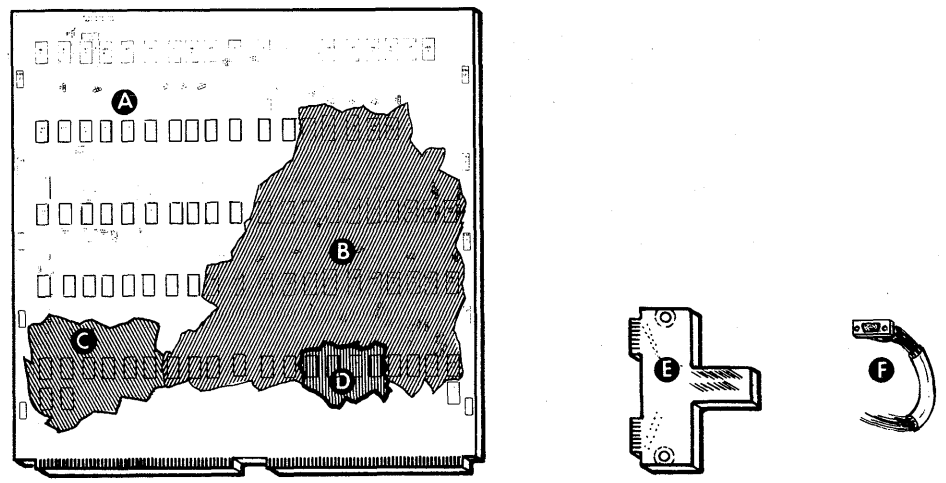
DG-01914

Voltage	Power Cable Length ft	m	Power Cable Plug	Mating Receptacle on Power Drop	Mating Receptacle in Wall
120V 60HZ	6	1.8	NEMA 5-15P	NEMA 5-15R	NEMA 5-15R
120V 50HZ	6	1.8	NEMA 5-15P	NEMA 5-15R	NEMA 5-15R
240V 50HZ	6	1.8	NEMA 6-15P	NEMA 6-15R	NEMA 6-15R

DG-02717



SUBSYSTEM COMPONENT BREAKDOWN



DG-03094

MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	BASIC I/O INTERFACE	COMPUTER CHASSIS	
B	ASYNC LINE CONTROLLER	BASIC I/O INTERFACE	FOR 20mA CURRENT LOOF APPLICATIONS AT 110 BAUD
C	EIA INTERFACE	ASYNC LINE CONTROLLER	FOR EIA APPLICATION AT 110 BAUD OR HIGHER
D	PRECISION CRYSTAL OSCILLATOR	ASYNC LINE CONTROLLER	FOR 75-9600 BAUD

CABLE

Item	Cable	Connecting	Max Allowed Lg ft / m	Notes
E	INTERNAL	ASYNC LINE CONTROLLER and DEVICE CABLE	N/A	NEEDED FOR SECOND CONTROLLER OR WHEN PREFERRED SLOT IS NOT USED. PADDLEBOARD STYLE SAME AS ABOVE SOCKET STYLE)
F	INTERNAL	ASYNC LINE CONTROLLER " DEVICE CABLE	N/A	

SPECIFICATIONS OF CHASSIS MOUNTED COMPONENTS

Item	Component	Chassis	Slots Required	Max Allowable Data Channel Latency (μ sec)	Type of Data Channel Service Desired: High Speed	Standard	Max Allowable Programmed I/O Latency +	Controller's +5 Volt Current Draw (Amps)
A	BASIC I/O INTERFACE AND ASYNC LINE CONTROLLER	COMPUTER	1	N/A	N/A	N/A	21.6ms @ 110 BAUD TO 0.24ms @ 9600 BAUD	0.25 FOR INTERFACE PLUS 0.7 FOR ASYNC LINE CONT

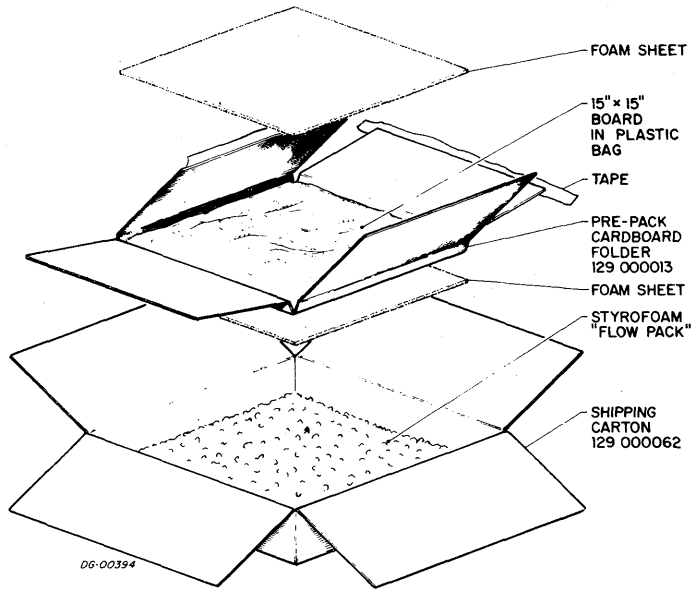
+DATA WILL BE LOST IN INPUT IF THESE LATENCIES ARE EXCEEDED

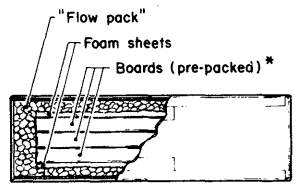
CONFIGURATION RULES

1. If a system has one or more TTYs, one (device code 10) must be assigned the primary slot (3, 4, or 5, depending on computer type).
2. If a system has one or more 6012s, Infotons, or other CRT displays, and no TTY, one (device code 10) must be assigned the primary slot.
3. If a system has one or more Low Cost Displays and none of the above, then one (device code 10) must be assigned the primary slot.
4. If a system has one or more Sprints (with keyboard) and none of the above, then one (device code 10) must be assigned the primary slot.
5. If a system has none of the above, then it is assumed to have no console device, and any other constraints and rules can be followed without diagnostic impact.

The above assumes that the interface boards required are standard DG types (ALM and Data Channel Line Printer interfaces excluded). In these cases, No. 5 applies.

SHIPPING





MULTIPLE PACKING

* Up to three (3) 15" x 15" boards, enclosed in plastic bags and sealed in pre-pack folders as shown, can be put in shipping carton No. 129 000062. For four (4) to seven (7) boards, use shipping carton No. 129 000012.

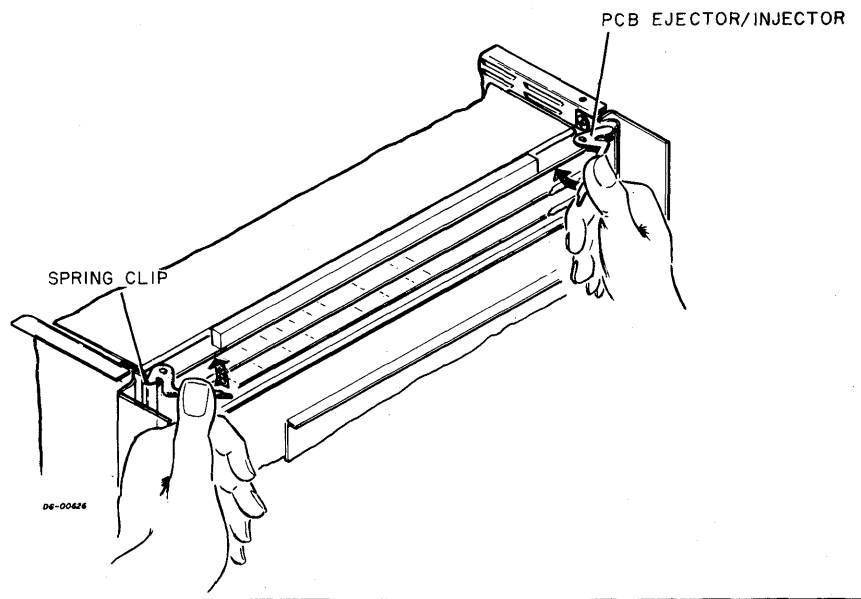
Shipping Specifications			
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Altitude	—
-40 to+185 / -40 to +85	0-85%	50,000 ft.	—

DG-02063

Storage Specifications		
Temperature Range °F / °C	Relative Humidity (Non-condensing)	Maximum Period
-40 to+185 / -40 to +85	0-85%	90 days

DG-02062

INSTALLING PC BOARD



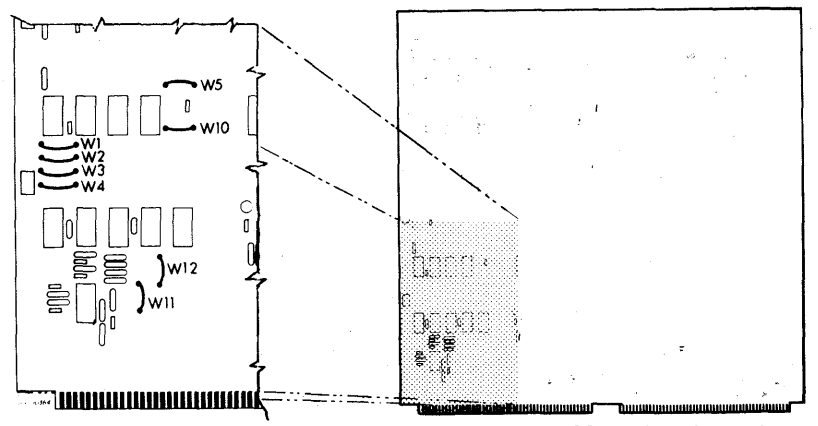
INTERNAL CABLING

Internal Cable Connections			
Signal Name	Paddleboard Connector Pin Numbers	Destination Pins on Back Panel (NOVA and ECLIPSE Line Display Terminal)	Socket Connector Pin Numbers
+ V	B1	A83	7
TTO	B2	A85	6
STOP WIDTH	B3	A87	8
RDR RUN	B4	A89	2
+5V	B8	A3	1
GND	B9	A1	9
TTI	B11	B69	3
-5V	B12	A6	4

Computer	Primary Device	Secondary Device
ECLIPSE NOVA 2/4, 2/10 1210, 820, 1220 NOVA 3/4, 3/12	none required	005-001023
NOVA 800, 830, 840, 1200	none required	005-000506

JUMPERING

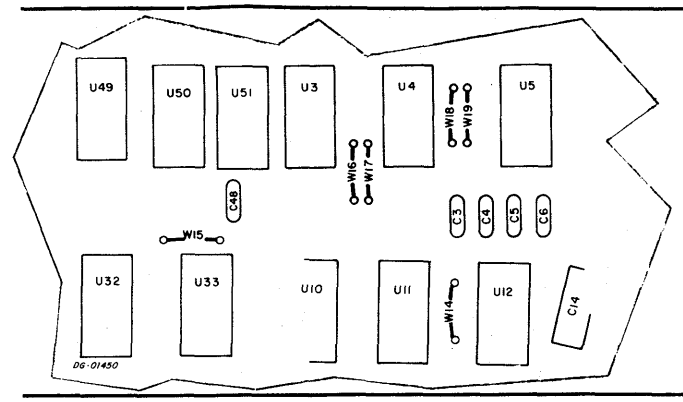
4010 CONTROLLER



Ref. DGC 107-000063 Rev. 00-06

Function	Jumpers
Select the primary device codes - 10_8 for TTI, 11_8 for TTO, 12_8 for the reader, and 14_8 for the punch.	Install jumpers W2, W3, W10, W11 Omit jumpers W1, W4, W5, W12
Select the secondary device codes - 50_8 for TTI, 51_8 for TTO, 52_8 for the reader , and 53_8 for punch.	Install jumpers W1, W3, W5, W10, W11 Omit jumpers W2, W4, W12

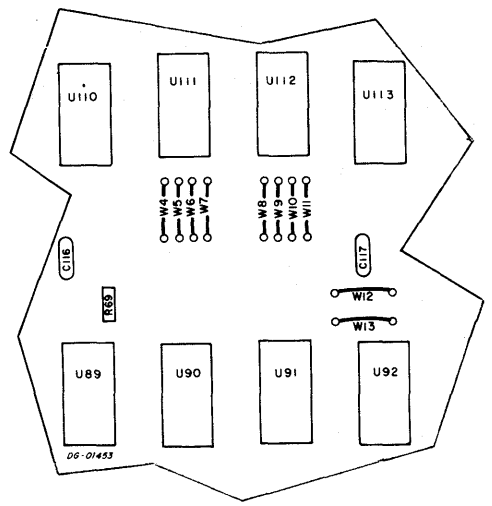
4077 CONTROLLER



* Device Codes	
Function	Jumpers
Select the primary device codes - 34_8 for the cassette, 10_8 for TTI, 11_8 for TTO, and 14_8 for RTC	Install jumpers W16, W19 Omit jumpers W14, W15, W17, W18
Select the secondary device codes - 74_8 for the cassette, 50_8 for TTI, 51_8 for TTO,	Install jumpers W14, W15, W17, W18 Omit jumpers W16, W19
Select the primary device code - 34_8 for the cassette, and the secondary device codes - 50_8 for TTI, 51_8 for TTO,	Install jumpers W15, W17, W19 Omit jumpers W14, W16, W18
Select the secondary device code - 74_8 for the cassette, and the primary device codes - 10_8 for TTI, 11_8 for TTO, and 14_8 for RTC	Install jumpers W14, W16, W18 Omit jumpers W15, W17, W19

DG-01339

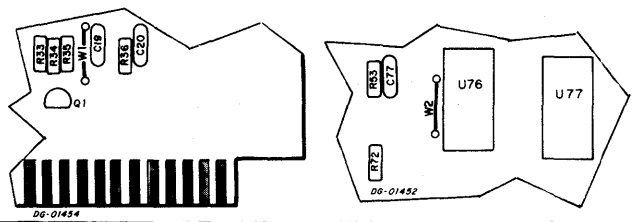
* Ref. DGC 107-000063 REV. 00-06.



Teletype Baud Rate	
Function	Jumpers
Select 110 baud rate	Install W5, W6, W9, W11, W12 * Omit W4, W7, W8, W10, W13 *
Select 150 baud rate	Install W4, W5, W6, W7, W10, W11, W12 * Omit W8, W9, W13*
Select 300 baud rate	Install W4, W5, W6, W7, W11, W12 * Omit W8, W9, W10, W13*
Select 600 baud rate	Install W4, W5, W6, W7, W12* Omit W8, W9, W10, W11, W13*
Select 1200 baud rate	Install W5, W6, W7, W12* Omit W4, W8, W9, W10, W11, W13*
Select 2400 baud rate	Install W6, W7, W12* Omit W4, W5, W8, W9, W10, W11, W13*
Select 4800 baud rate	Install W7, W12 Omit W4, W5, W6, W8, W9, W10, W11, W13*
Select 9600 baud rate	Install W13* Omit W4, W5, W6, W7, W8, W9, W10, W11, W12*

DG-01340

*W12 and W13 are not present in revisions 00-09 of artwork 107-000151. Rev 107-000151 Revs 00-18

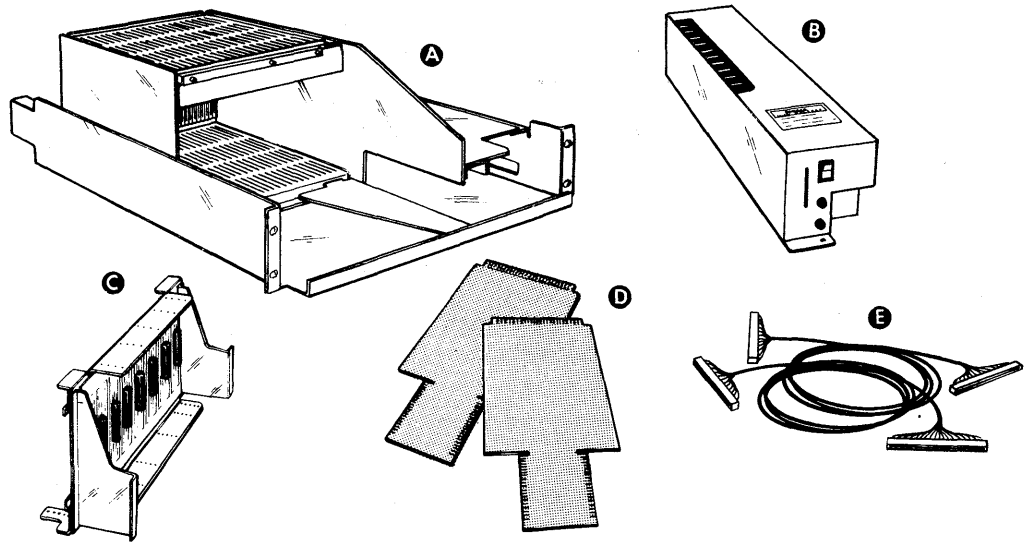


Current or Voltage Loop	
Function	Jumpers
Select the current loop	Install jumpers W1 and W2
Select the EIA voltage levels	Omit jumpers W1 and W2

DG-01341

Ref DGC 107-000151 Revs 00-18

SUBSYSTEM COMPONENT BREAKDOWN



MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	4300 CHASSIS	CABINET	
B	PLUG IN POWER SUPPLY	CHASSIS	MOUNT RIGHT SIDE OF CABINET.
C	TERMINAL PANEL	CABINET (REAR)	MAX 4 PER CABINET.
D	CONTROL CARD	CHASSIS	SLOT 16 or 17 ONLY

DG-02672

CABLE

Item	Cable	Connecting	Max Allowed Lg ft / m	Notes
E	DEVICE CABLE	CPU and 4300 CHASSIS	50 / 15	SUBTRACT 6ft. FROM MAX CABLE LENGTH FOR EACH CONTROL CARD.

DG-02673

CHASSIS SLOT ASSIGNMENTS

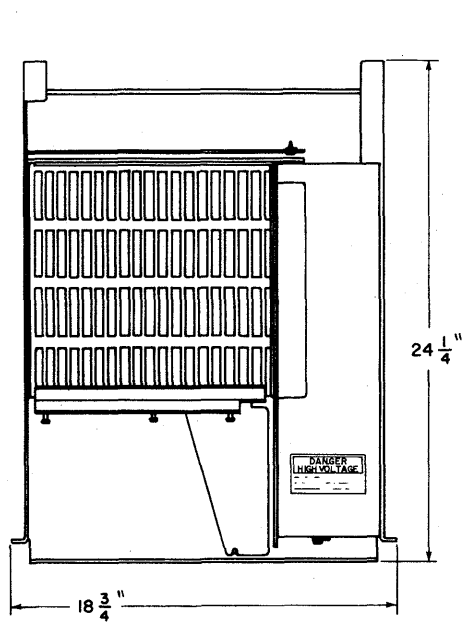
Slot	Allowed (Slot Chart)	Assigned	Current Draw +5V	Current Draw +24V	Current Draw ±21V
0	MODULES				
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16	CONTROL CARD		3A		
17	CONTROL CARD		3A		
		Total Current draw			
		Max Current Available	12A	3A	2A
		Current Surplus			

SPECIFICATIONS OF THE CABINET-MOUNTED COMPONENTS

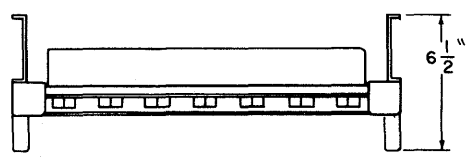
Item	Component	Number in Sub-system	Max Operating Temp Component °F / °C	Max Operating Temp Media °F / °C	Primary Power Current (nom) Draw (Amp)	Primary Power Voltage ±ΔV	Primary Power Frequency	Cabinet Height Required Area	Cabinet Height Required in.	Cabinet Height Required cm	Weight lbs / kg	Power Dissipation (Max Watts)	Preferred Location or Remarks	Operating Humidity (Relative) min % / % max
A C	CHASSIS & TERM PNL	UP TO 4	131 / 55		4 ST / 3.4 RUN	+10% / 100-15%	47-63	5 / 6	8.75 / 10.5	22.5 / 26.7	60 / 27.3	400	SEE SHEET 5 and 6	20 / 95
	CHASSIS & TERM PNL	UP TO 4	131 / 55		3.5 ST / 3 RUN	+10% / 120-15%	47-63	5 / 6	8.75 / 10.5	22.5 / 26.7	60 / 27.3	400		20 / 95
	CHASSIS & TERM PNL	UP TO 4	131 / 55		1.8 ST / 1.5 RUN	+10% / 220-15%	47-63	5 / 6	8.75 / 10.5	22.5 / 26.7	60 / 27.3	400		20 / 95
	CHASSIS & TERM PNL	UP TO 4	131 / 55		1.7 ST / 1.5 RUN	+10% / 240-15%	47-63	5 / 6	8.75 / 10.5	22.5 / 26.7	60 / 27.3	400		20 / 95

DG-01914

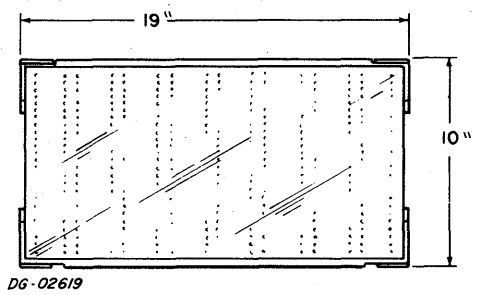
Voltage	Power Cable Length ft	Power Cable Length m	Power Cable Plug	Mating Receptacle on Power Drop	Mating Receptacle in Wall
100 Vac	6	1.8	5-15P	5-15R	5-15R
120 Vac	6	1.8	5-15P	5-15R	5-15R
220 Vac	6	1.8	6-15P	6-15R	6-15R
240 Vac	6	1.8	6-15P	6-15R	6-15R



TOP VIEW



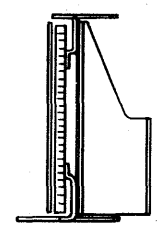
TOP VIEW



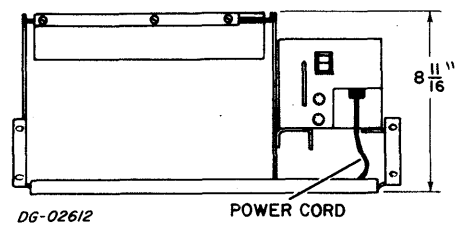
DG-02619

FRONT VIEW

TERMINAL PANEL

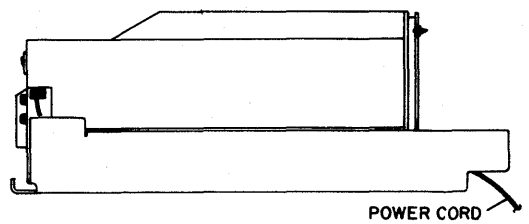


SIDE VIEW



DG-02612

FRONT VIEW



SIDE VIEW

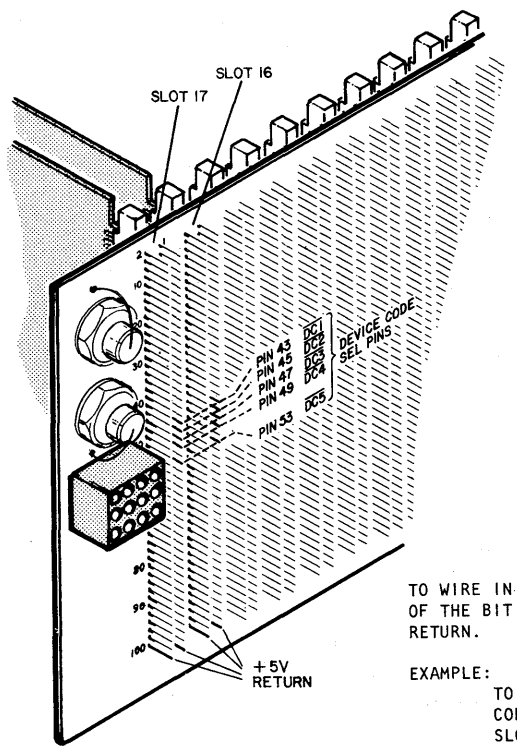
DG/DAC 4300 CHASSIS

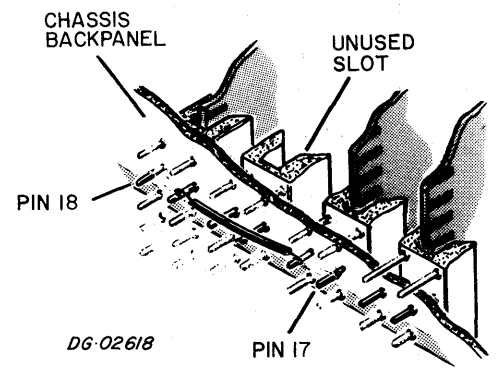
SHIPPING

INFORMATION NOT AVAILABLE

TAILORING

LOGIC BACKPANEL JUMPERING



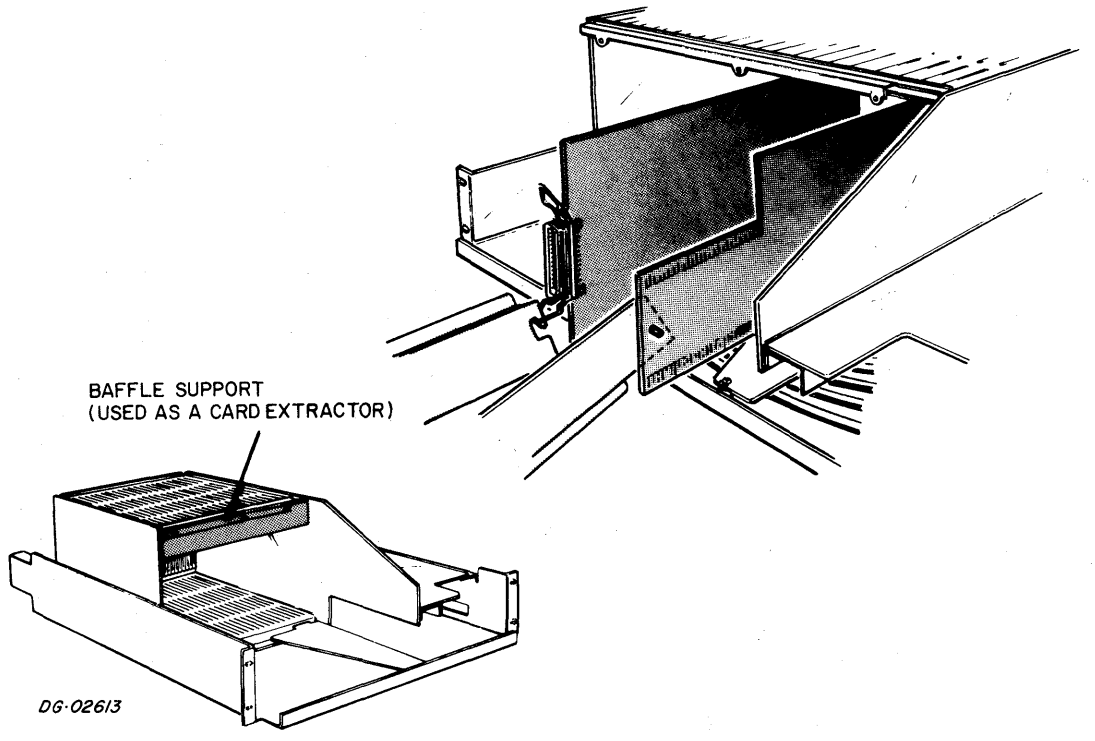


NOTE:
DCO IS PERMANENTLY ASSERTED ON EACH CONTROL BOARD. AS A RESULT THE DEVICE CODE IS ALWAYS 40 OR GREATER.

TO WIRE IN DEVICE CODE, JUMPER THE RESPECTIVE PIN OF THE BIT YOU WANT TO ASSERT "(1)" TO THE +5V RETURN.

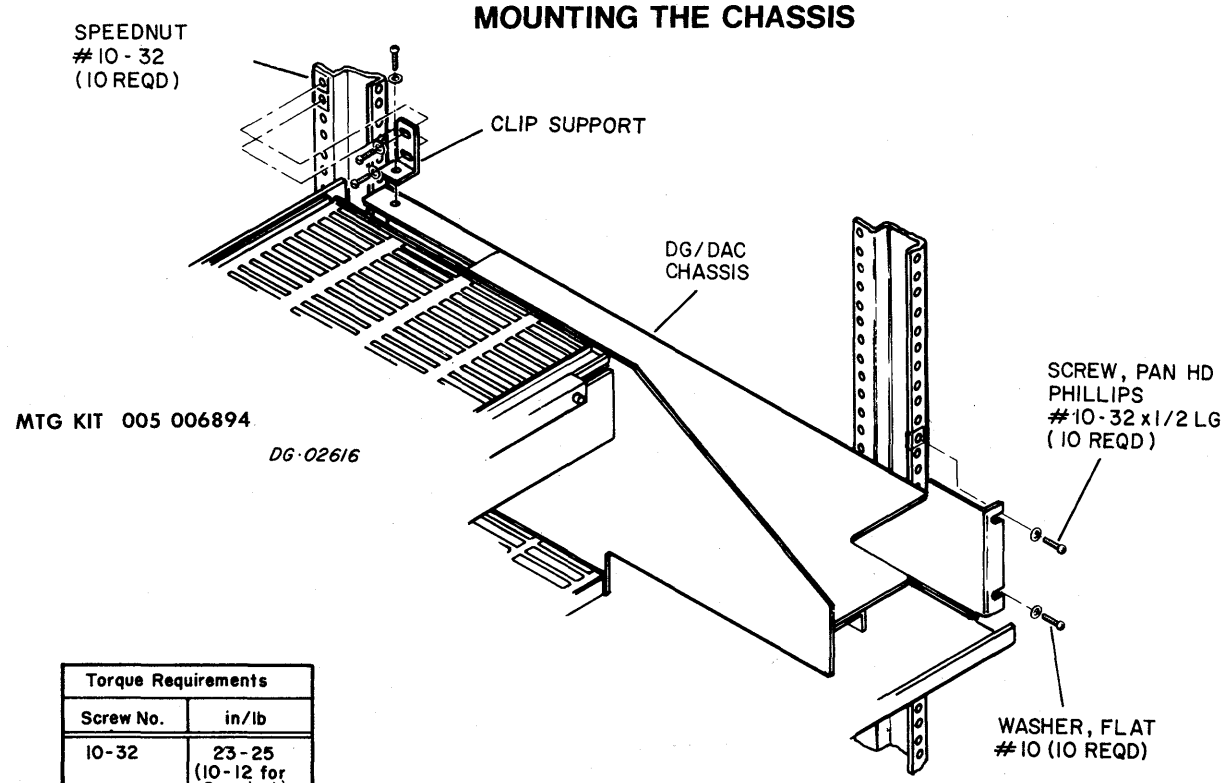
EXAMPLE:
TO SET UP CONTROLLER SLOT 17 FOR DEVICE CODE 42 JUMPER PIN 49 SLOT 17 TO PIN 99 SLOT 17.

CARD REMOVAL



CABINET MOUNTING

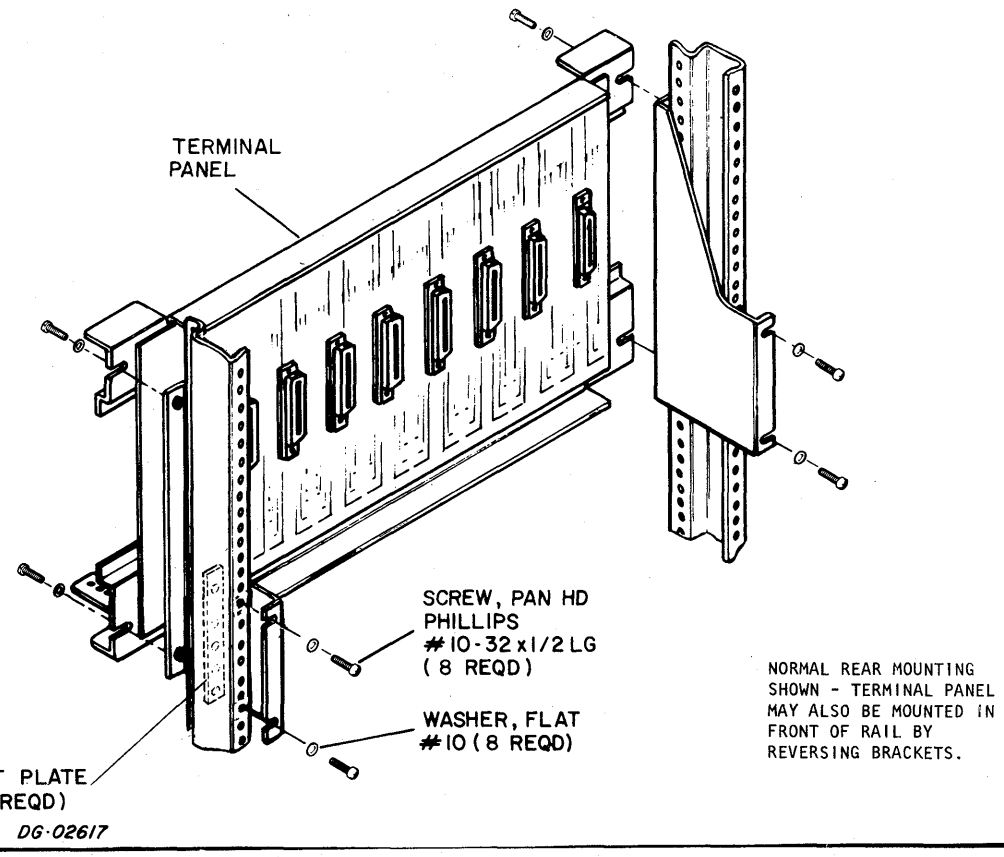
MOUNTING THE CHASSIS



MTG KIT 005 006894

Torque Requirements	
Screw No.	in/lb
10-32	23-25 (10-12 for Speednut)

MOUNTING THE TERMINAL PANEL

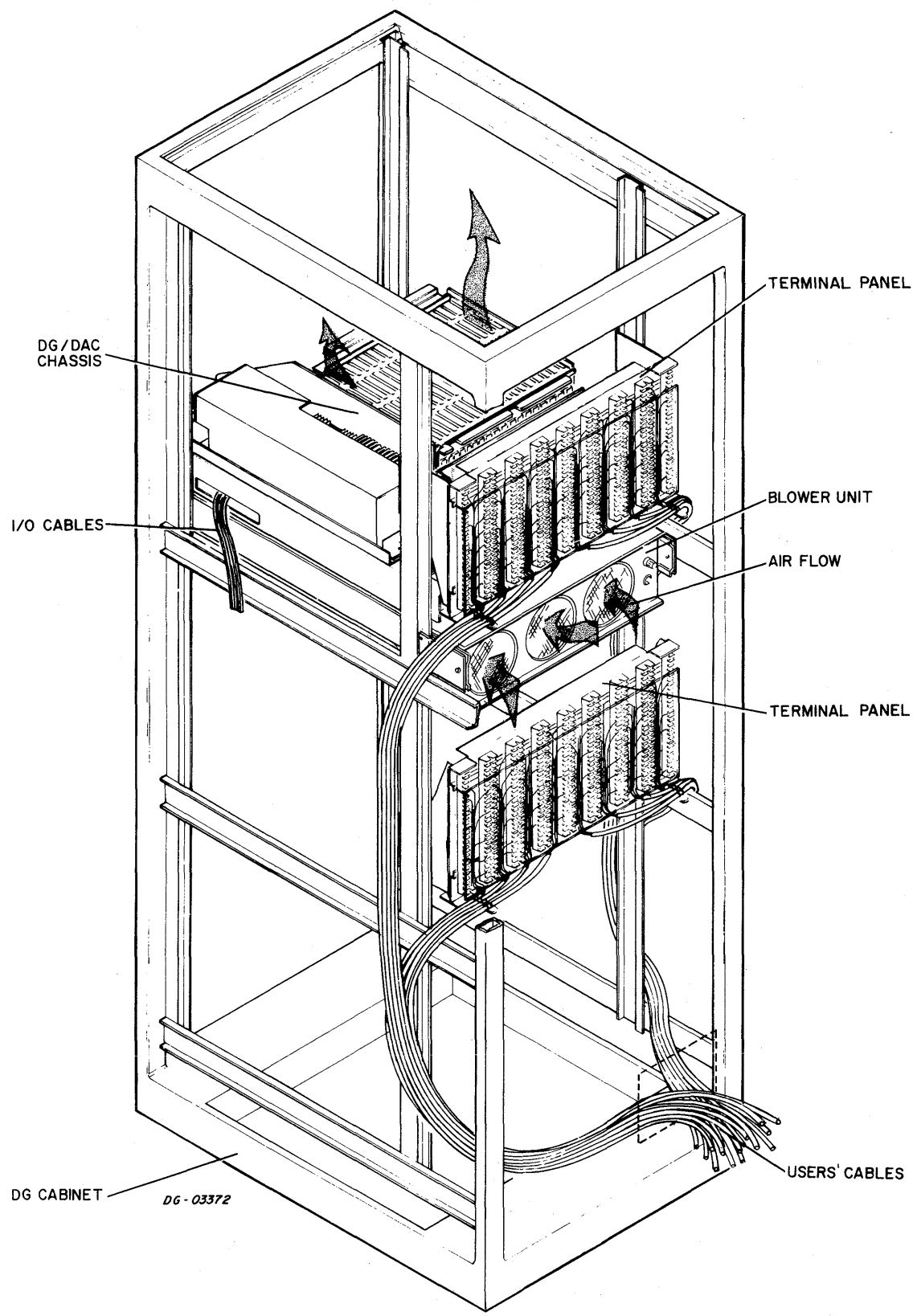


MTG KIT 005 007229

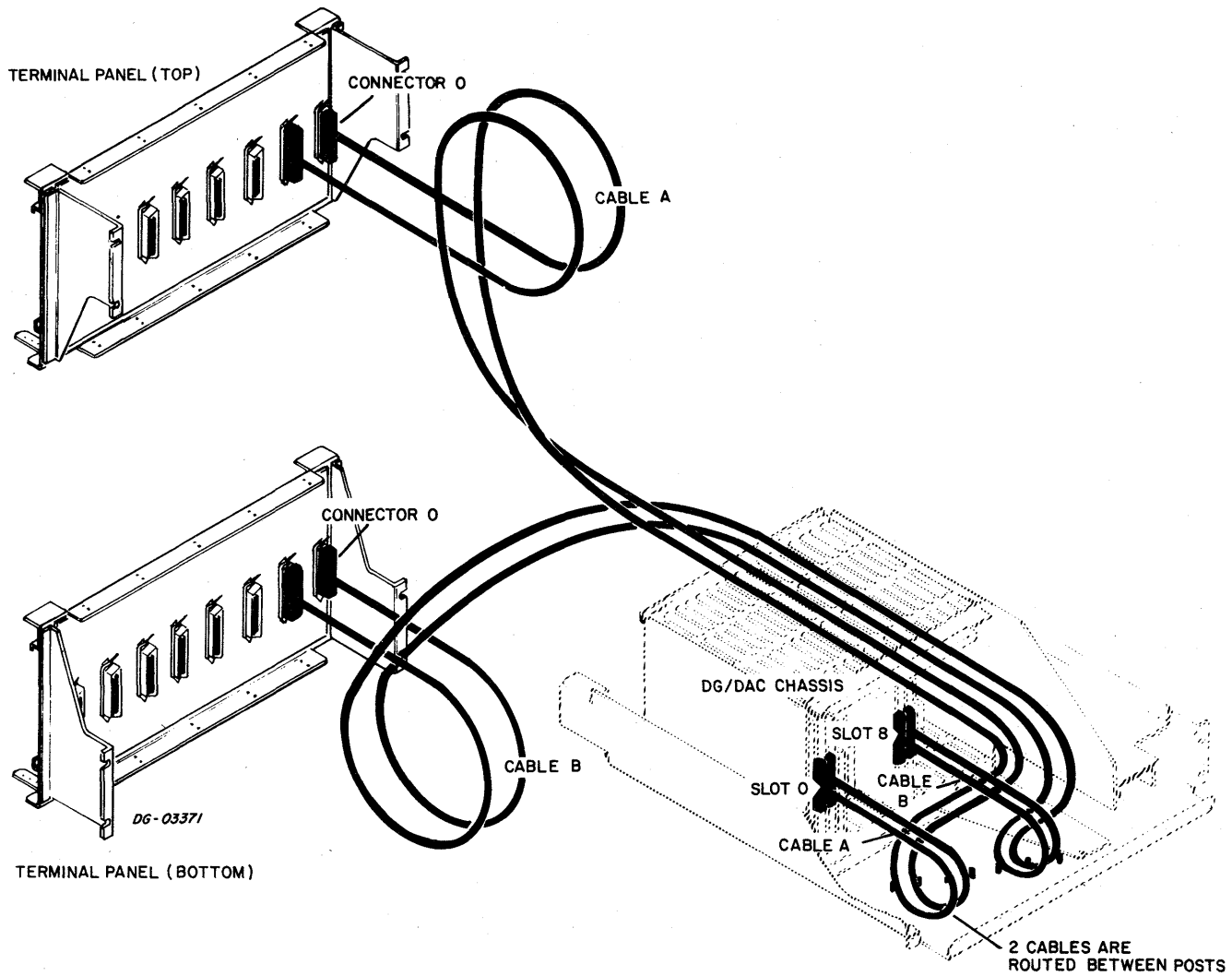
NORMAL REAR MOUNTING SHOWN - TERMINAL PANEL MAY ALSO BE MOUNTED IN FRONT OF RAIL BY REVERSING BRACKETS.

INSTALLATION AND EXTERNAL CABLING

REAR VIEW OF CABINET



FRONT VIEW OF DG/DAC CHASSIS AND TERMINALS.



MAXIMUM POWER DISSIPATION

CONFIGURATION	MAXIMUM POWER DISSIPATION PER CARD		MAXIMUM TOTAL CHASSIS POWER DISSIPATION
	SINGLE SLOT	DOUBLE* SLOT	
SINGLE CHASSIS, 5 1/4" FREE SPACE ABOVE AND BELOW CHASSIS	2.5W	5.0W	40W
SINGLE CHASSIS, AUX OR CABINET BLOWER DIRECTLY BELOW UNIT	40W	60W	400W
TWO CHASSIS, DIRECTLY ABOVE AUX OR CABINET BLOWER	10 TOP 25 BOTTOM	15 TOP 30 BOTTOM	100 TOP 300 BOTTOM

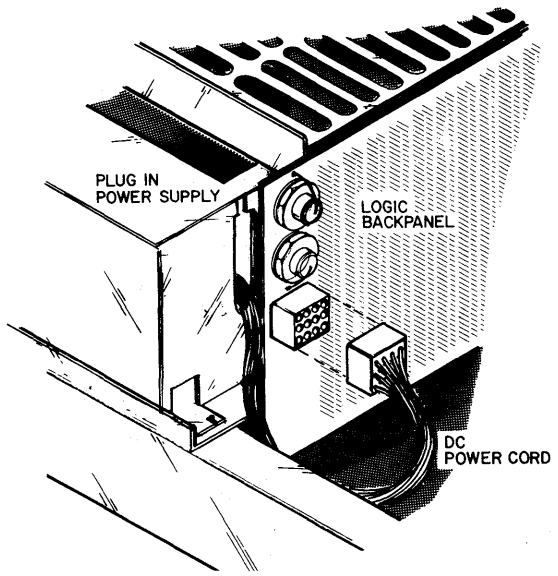
*THE 4294 TRIAC OUTPUT CARD REQUIRES TWO CHASSIS SLOTS.

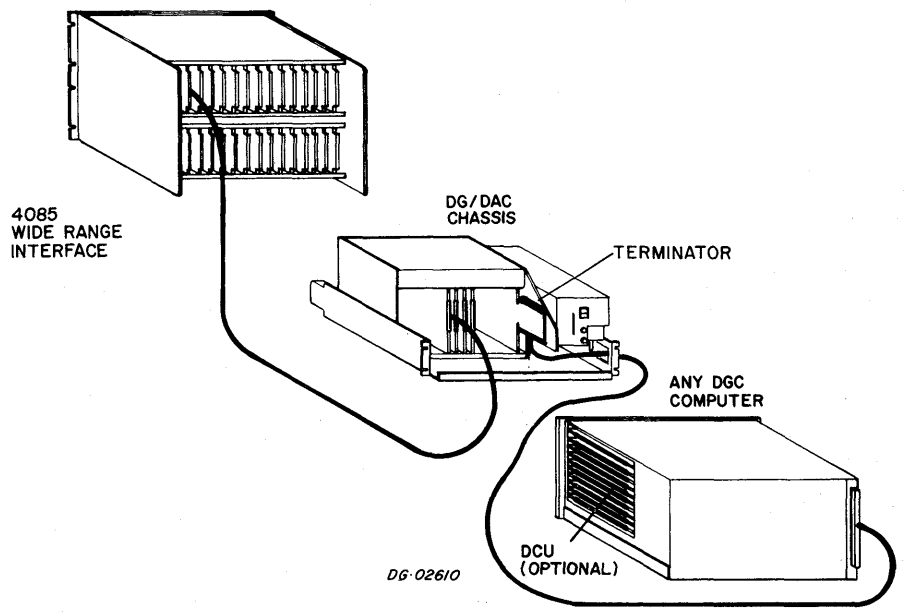
NOTES

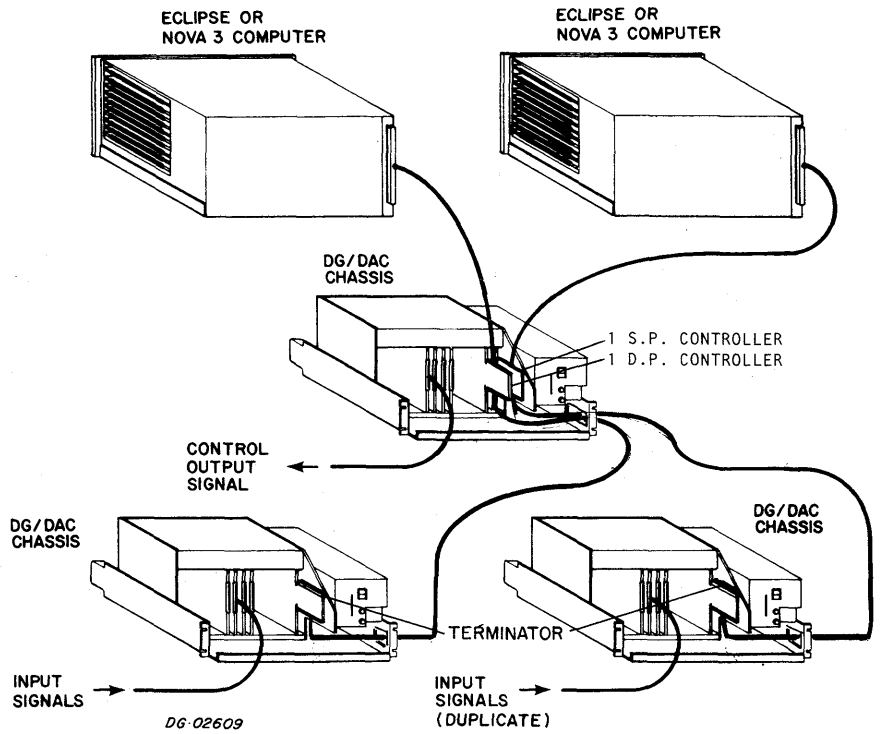
1. REDUCE THE MAXIMUM POWER BY 20% FOR 50Hz BLOWER OPERATION.
2. THE 1079 ENCLOSURE IN ALL CASES REQUIRES AN AUXILIARY BLOWER UNIT.
3. A MINIMUM CLEARANCE OF 5-1/2 in ON TOP OF THE CHASSIS MUST BE PROVIDED FOR AIR FLOW.

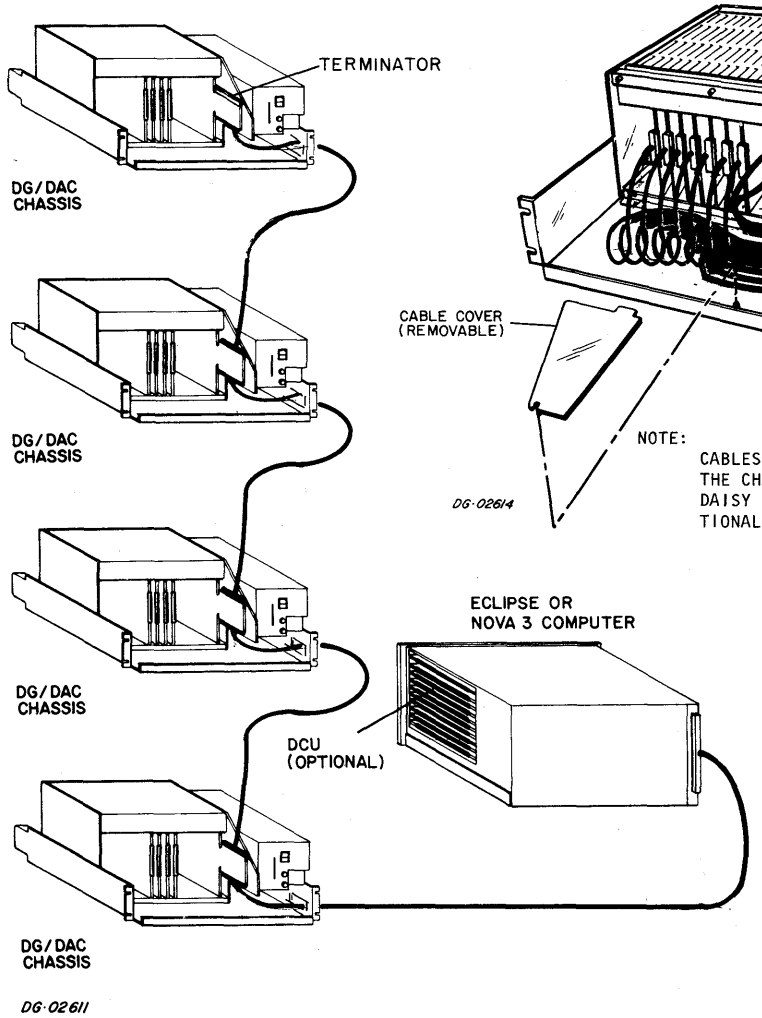
EXTERNAL CABLING

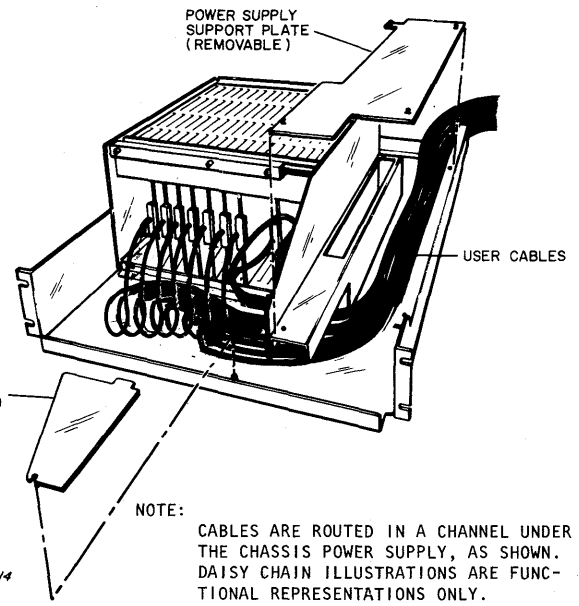
DC POWER SUPPLY TO BACKPANEL



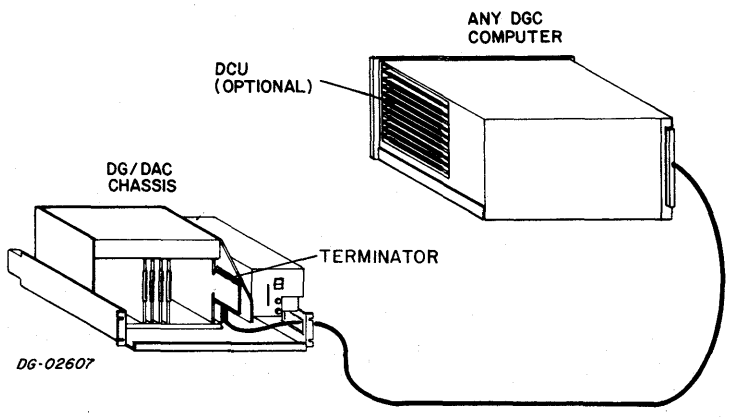


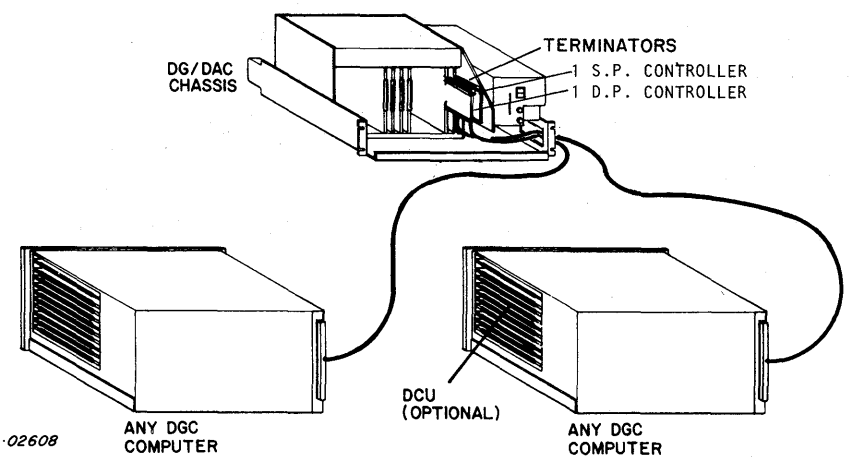




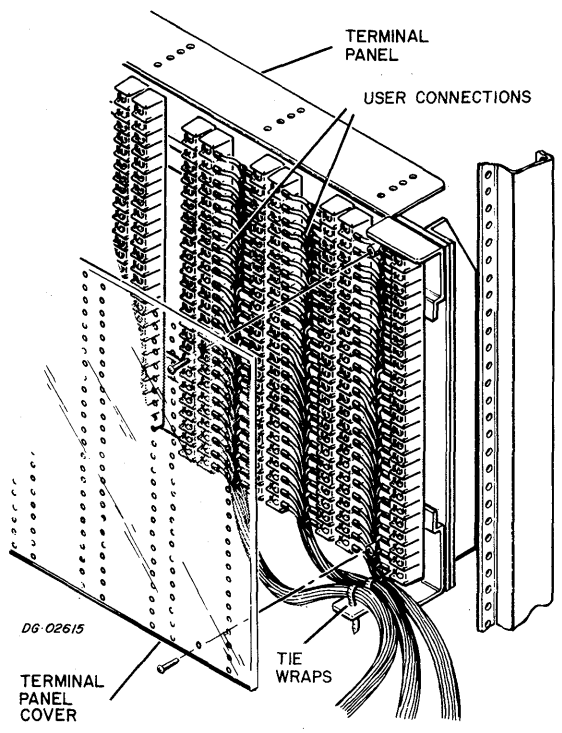


NOTE:
CABLES ARE ROUTED IN A CHANNEL UNDER THE CHASSIS POWER SUPPLY, AS SHOWN. DAISY CHAIN ILLUSTRATIONS ARE FUNCTIONAL REPRESENTATIONS ONLY.

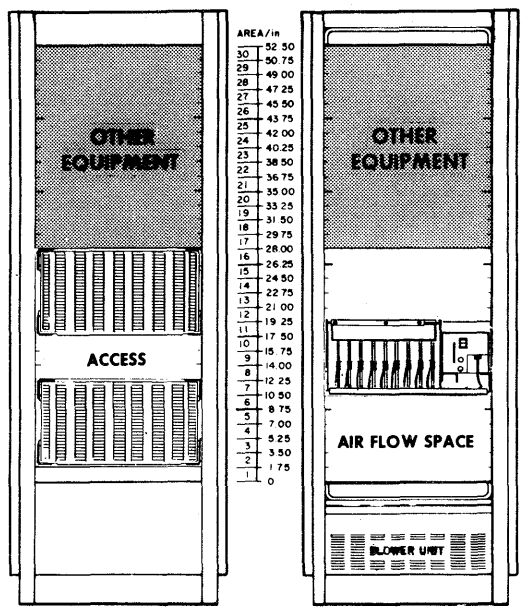




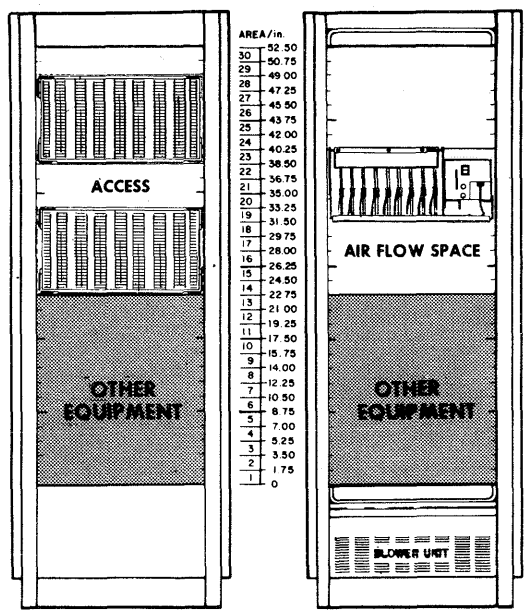
USER CONNECTIONS



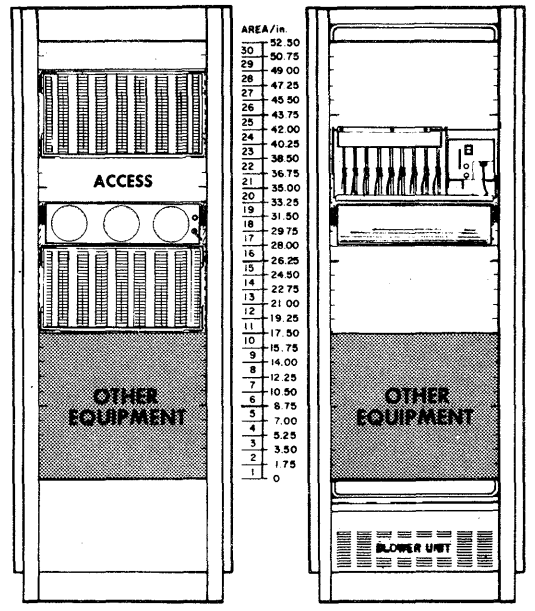
CABINET CONFIGURATIONS



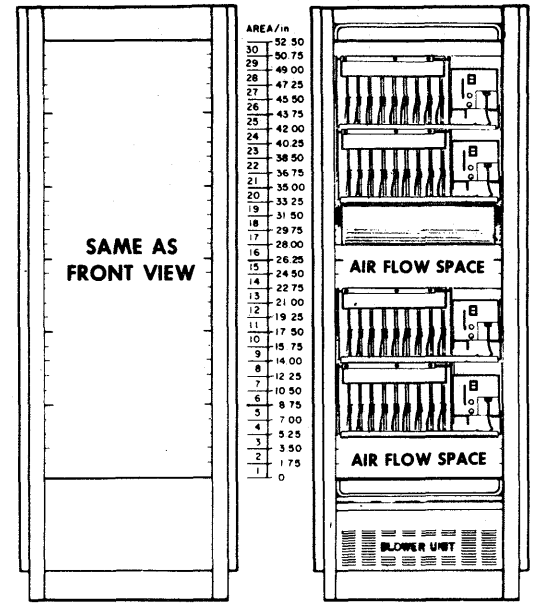
SINGLE CHASSIS, 5 1/4" FREE SPACE ABOVE AND CABINET BLOWER DIRECTLY BELOW CHASSIS
(USE 6ft. I/O CABLES)



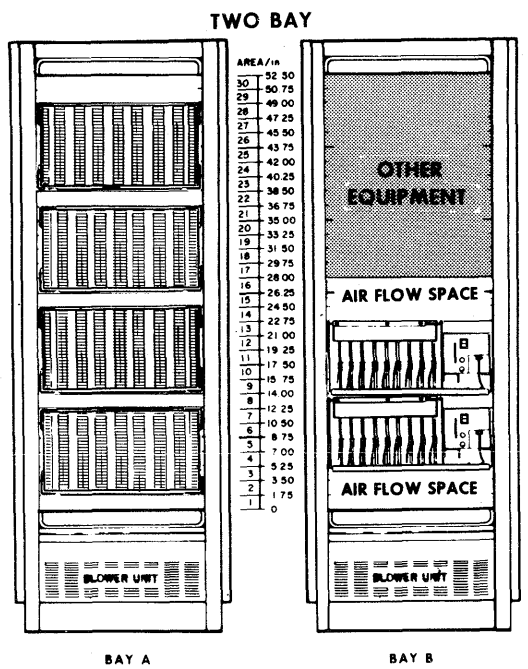
SINGLE CHASSIS, 5 1/4" FREE SPACE ABOVE AND BELOW CHASSIS
(USE 6ft. I/O CABLES)



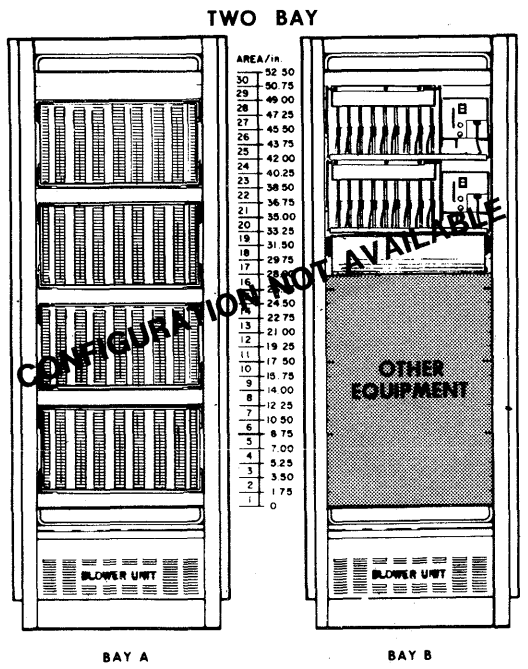
SINGLE CHASSIS, AUX BLOWER DIRECTLY BELOW UNIT
(USE 6ft. I/O CABLES)



4 CHASSIS, EXTERNAL TERMINAL PANELS.
(USE 18ft. I/O CABLES)

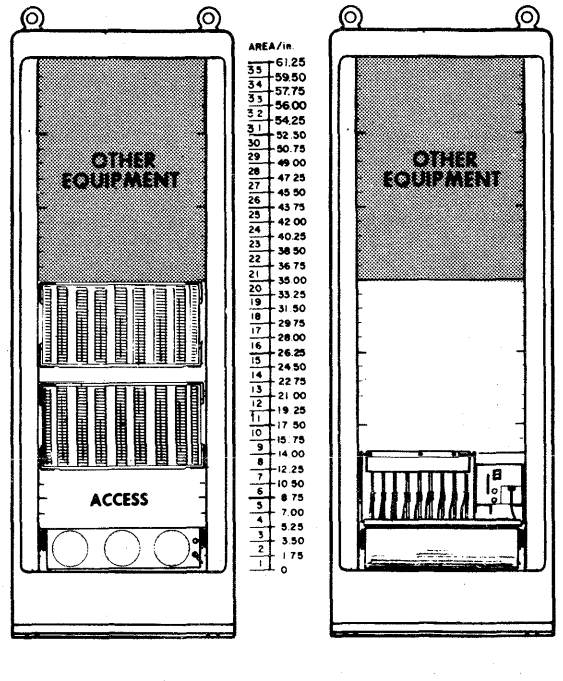


TWO CHASSIS, NO AUX BLOWER UNIT, BOTTOM CHASSIS DIRECTLY ABOVE CABINET BLOWER
(USE 10ft. I/O CABLES)

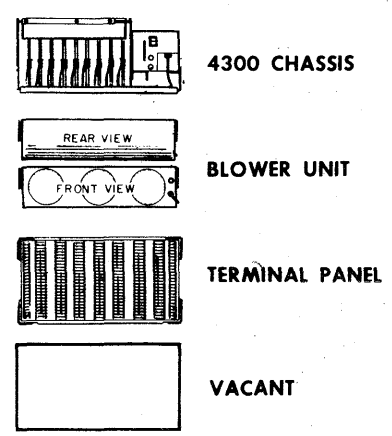


CONFIGURATION NOT AVAILABLE

TWO CHASSIS WITH AUX BLOWER UNIT
(USE 10ft. I/O CABLES)

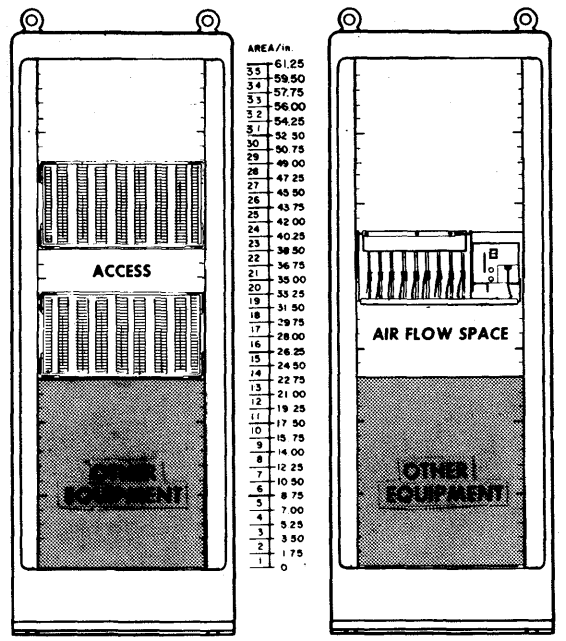


SINGLE CHASSIS, AUX BLOWER DIRECTLY BELOW UNIT IN 1079 SERIES ENCLOSURES.
(USE 6ft. I/O CABLES)



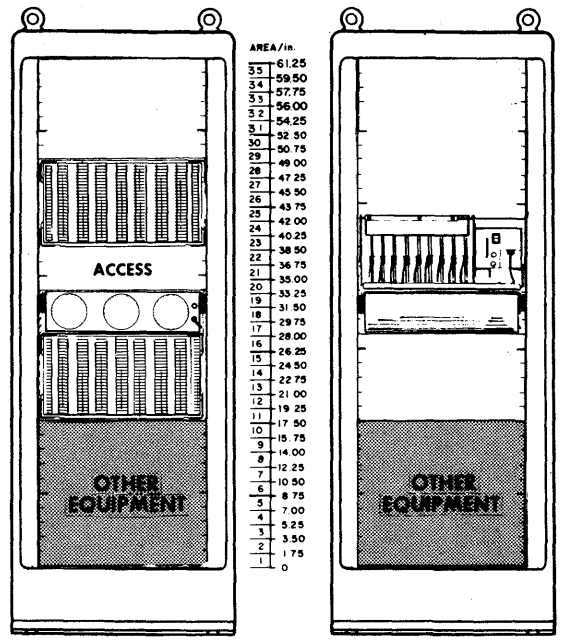
CABINET CONFIGURATION (CONT)

1079 SERIES ENCLOSURES



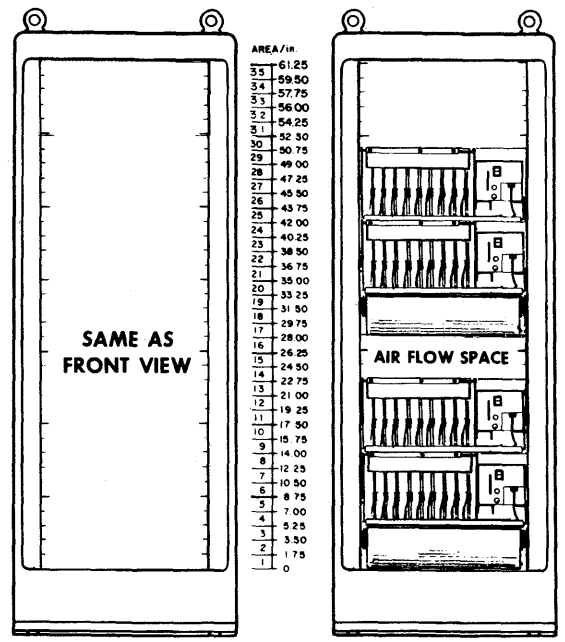
REAR VIEW **FRONT VIEW**

SINGLE CHASSIS, 5 1/4" FREE SPACE ABOVE AND BELOW CHASSIS
(USE 6ft. I/O CABLES)



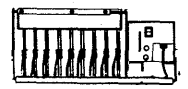
REAR VIEW **FRONT VIEW**

SINGLE CHASSIS, AUX BLOWER DIRECTLY BELOW UNIT
(USE 6ft. I/O CABLES)

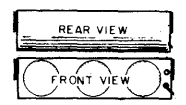


REAR VIEW **FRONT VIEW**

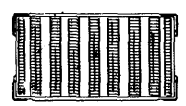
4 CHASSIS, EXTERNAL TERMINAL PANELS.
(USE 18ft. I/O CABLES)



4300 CHASSIS



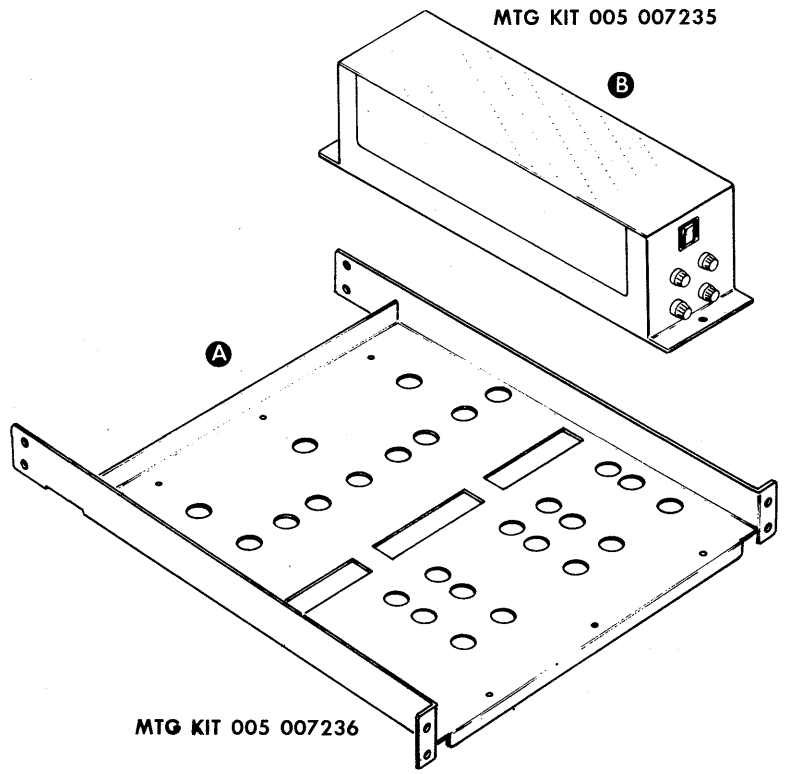
BLOWER UNIT

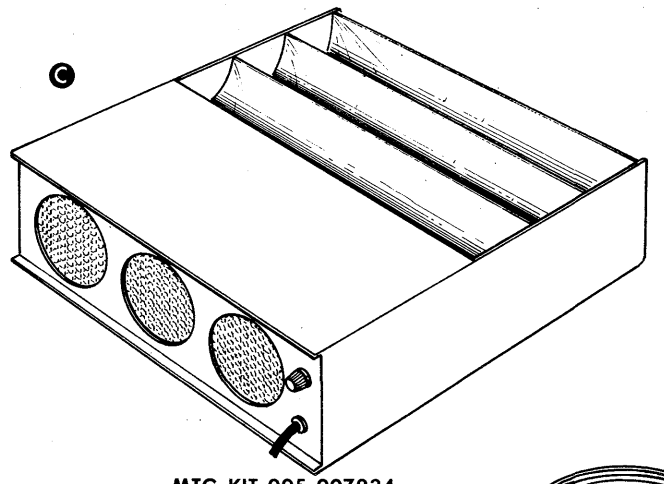


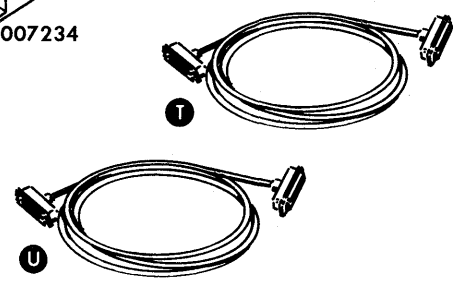
TERMINAL PANEL

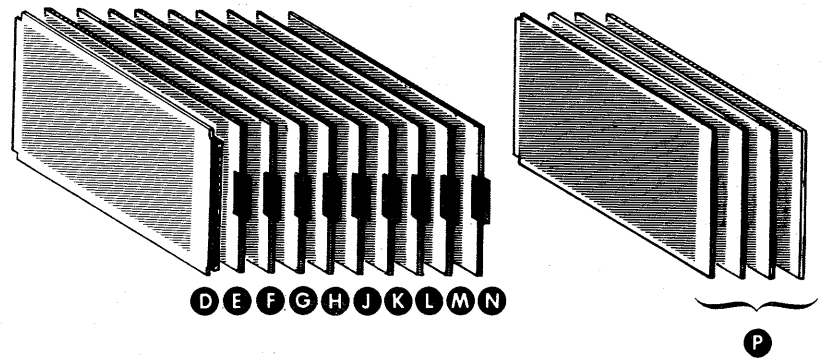
VACANT

SUBSYSTEM COMPONENT BREAKDOWN









MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	AUX POWER SUPPLY FRAME	CABINET	
B	AUXILIARY POWER SUPPLY	CHASSIS (PS)	1 TO 3 PER CHASSIS
C	BLOWER UNIT	CABINET	
D	EXTENDER CARD	DG/DAC CHASSIS SLOT 0-17	FOR MAINTENANCE PURPOSES
E	GENERAL PURPOSE WIRING CARD	DG/DAC CHASSIS SLOT 0-15	
F	GENERAL PURPOSE DIGITAL INPUT	DG/DAC CHASSIS SLOT 0-15	
G	TTL DIGITAL INPUT	DG/DAC CHASSIS SLOT 0-15	
H	ISOLATED DC DIGITAL OUTPUT	DG/DAC CHASSIS SLOT 0-15	
J	PULSE DC DIGITAL OUTPUT	DG/DAC CHASSIS SLOT 0-15	
K	ISOLATED AC DIGITAL OUTPUT	DG/DAC CHASSIS SLOT 0-15	
L	FORM "A" RELAY DIGITAL OUTPUT MODULE	DG/DAC CHASSIS SLOT 0-15	
M	FORM "C" RELAY DIGITAL OUTPUT MODULE	DG/DAC CHASSIS SLOT 0-15	
N	TTL DIGITAL OUTPUT MODULE	DG/DAC CHASSIS SLOT 0-15	
P	A/D CONVERTER	SEE NOTE 1	±10V INPUT RANGE
	A/D CONVERTER	SEE NOTE 1	±5V INPUT RANGE
	A/D CONVERTER	SEE NOTE 1	0 to +10V INPUT RANGE
	A/D CONVERTER	SEE NOTE 1	0 to +5V INPUT RANGE

DG-02672

MAJOR COMPONENT

Item	Component	Mounting Location	Notes
R	DIF MUX	SEE NOTE 1	DIF VOLTAGE INPUT JUMPER SELECTOR GAIN
	DIF MUX PROGRAMABLE GAIN	SEE NOTE 1	DIF VOLTAGE INPUT PROGRAMABLE GAIN
	CURRENT LOOP MUX	SEE NOTE 1	CURRENT INPUT JUMPER SELECTOR GAIN
	SINGLE ENDED MUX	SEE NOTE 1	SINGLE ENDED INPUT
S	ANALOG VOLTAGE OUTPUT	DG/DAC CHASSIS SLOT 0-15	0-10V, 0-5V, ±10V, ±5V, SWITCH SELECTABLE
	ANALOG CURRENT OUTPUT	DG/DAC CHASSIS SLOT 0-15	0-16mA or 4-20mA JUMPER SELECTABLE

DG-02672

NOTE 1
ONE A/D CARD AND AT LEAST ONE MUX CARD ARE NEEDED FOR AN A/D SUBSYSTEM. ALL MUX CARDS ASSOCIATED WITH AN A/D CARD MUST BE PLACED IN ADJACENT CONSECUTIVE HIGHER NUMBERED CHASSIS SLOTS.

CABLE

Item	Cable	Connecting	Max Allowed Lg ft / N/A / m	Notes
T	ANALOG CABLE	MODULE and TERMINAL PNL		
U	DIGITAL CABLE	MODULE " TERMINAL PNL		
		"		

DG-02673

SPECIFICATIONS OF THE CHASSIS MOUNTED COMPONENTS

Item	Component	No. of Slots Required	+5V Current Draw (Amps)	+24V Current Draw(Amps)	±21V Current Draw(Amps)	Internal Power Dis(Watts)	External Power Dis(Watts)
F 4280	GENERAL PURPOSE DIG INPUT	1	.85	-	-	4.25	32 (4)
G 4291	TTL DIG INPUT	1	.5	-	-	2.5	-
H 4292	ISOL DC DIG OUTPUT	1	.6	-	-	3.0	60 (5)
J 4293	PULSE DC DIG OUTPUT	1	1	-	-	5.0	60 (5)
K 4294	ISOL AC DIG OUTPUT	2	.6	-	-	3.0	38 (6)
L 4296	FORM "A" RELAY DIG OUTPUT MOD.	1	.3	.18	-	5.8	-
M 4297	FORM "C" RELAY DIG OUTPUT MOD.	1	.3	.18	-	5.8	-
N 4299	TTL DIG OUTPUT MOD.	1	.5	-	-	.2.5	-
4280	A/D CONVERTER	1	1.1	-	.1	10.5	-
4280 A P	A/D CONVERTER	1	1.1	-	.1	10.5	-
4280 B	A/D CONVERTER	1	1.1	-	.1	10.5	-
4280 C	A/D CONVERTER	1	1.1	-	.1	10.5	-
4281	DIF MUX	1	.3	-	.05	3.6	-
4281 G	DIF MUX PROGR GAIN	1	.3	-	.05	3.6	-
R 4281 C	CURRENT LOOP MUX	1	.3	-	.05	3.6	4 (2)
4282	SINGLE ENDED MUX	1	.3	-	.05	3.6	-
4288 S 4289	ANALOG VOLTAGE OUTPUT	1	.8	-	.16	11.7	3
	ANALOG CURRENT OUTPUT	1	.8	.08 (1)	.1	11.2	7(3)

NOTES:

1. WHEN USED AS CURRENT SOURCE.
2. IF EXTERNAL CURRENT IS KNOWN USE: $P = 200I^2$
3. IF EXTERNAL VOLTAGE AND CURRENT ARE KNOWN USE: $P = IV$
4. IF EXTERNAL VOLTAGE IS KNOWN USE: $P = \frac{V^{1.6}}{1000K}$ K = 1.1 for AC, K = 0.6 for DC
5. IF EXTERNAL CURRENT IS KNOWN USE: $P = I\ (\ 1.2 + I\ )$
6. IF EXTERNAL CURRENT IS KNOWN USE: $P = 1.2I$
7. IN ABOVE EQUATIONS I IS IN AMPS, V IS IN VOLTS.

MAXIMUM CURRENT OUTPUT FROM THE CHASSIS POWER SUPPLY CANNOT EXEED 12A FOR +5V, 3A FOR +24V, AND 2A FOR ± 21V.

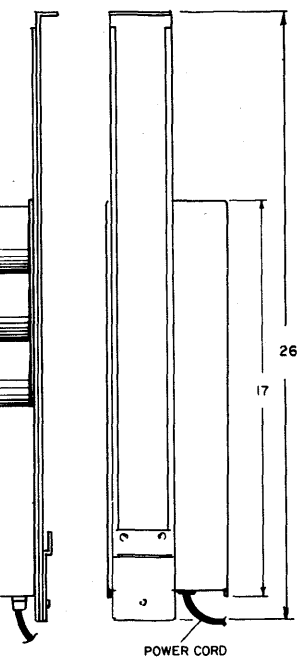
SPECIFICATIONS OF THECABINET MOUNTEDCOMPONENTS

Item	Component	Number in Sub-system	Maximum Operating Temperature Component °F / °C	Maximum Operating Temperature Media °F / °C	Primary Power Current (nom) Draw (Amp)	Primary Power Voltage ±ΔV +10 −15 %	Primary Power Frequency	Cabinet Height Required Area	Cabinet Height Required in.	Cabinet Height Required cm	Weight lbs / kg	Power Dissipation (Max Watts)	Preferred Location or Remarks	Operating Humidity (Relative) min % / % max
A	FRAME PWR SUPPLY		125 / 55					3	5¼	13.3				
B	AUX POWER SUPPLY		125 / 55		2.5A MAX	100	47-63	3	5¼	13.3		250	1 to 3 AUX POWER SUPPLIES	20 / 90
	AUX POWER SUPPLY		125 / 55		2.1A MAX	120	47-63	3	5¼	13.3		250	PER AUX P.S. FRAME	20 / 90
	AUX POWER SUPPLY		125 / 55		1.0A MAX	240	47-63	3	5¼	13.3		250	OUTPUT 12Vdc @8Vdc, 24Vdc @4A or 48Vdc @4A UNREGULATED	20 / 90
	AUX POWER SUPPLY		125 / 55		1.1A MAX	220	47-63	3	5¼	13.3		250		20 / 90
C	BLOWER UNIT		125 / 55		0.6A	120	47-63	3	5¼	13.3		60	DIRECTLY UNDERNEATH	20 / 90
	BLOWER UNIT		125 / 55		0.25A	240	47-63	3	5	13.3		60	DG/DAC CHASSIS	20 / 90

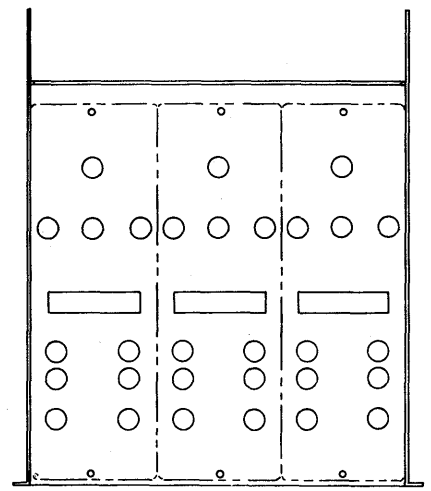
DG-01914

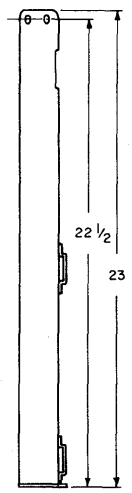
Voltage	Power Cable Length ft	Power Cable Length m	Power Cable Plug	Mating Receptacle on Power Drop	Mating Receptacle in Wall
100V	6	1.8	NEMA 5-15P	NEMA 5-15R	NEMA 5-15R
120V	6	1.8	NEMA 5-15P	NEMA 5-15R	NEMA 5-15R
240V	6	1.8	NEMA 6-15P	NEMA 6-15R	NEMA 6-15R
220V	6	1.8	NEMA 6-15P	NEMA 6-15R	NEMA 6-15R

DG-02717

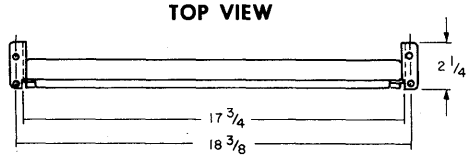


SIDE VIEW

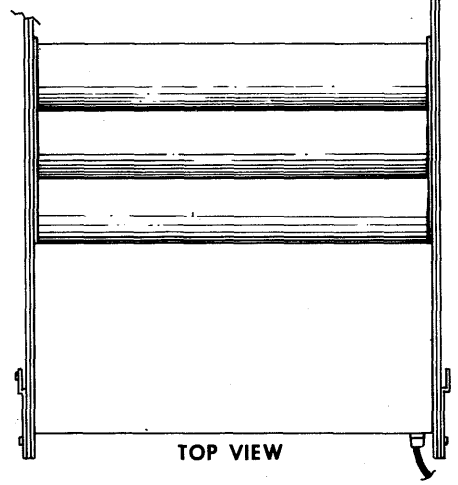

TOP VIEW

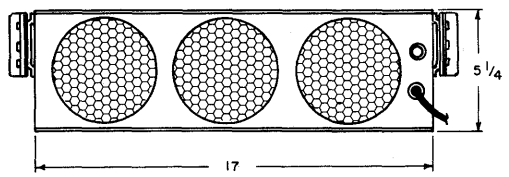


SIDE VIEW

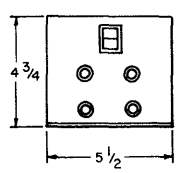


FRONT VIEW
AUXILIARY POWER SUPPLY FRAME

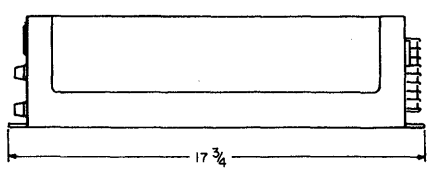

TOP VIEW



FRONT VIEW
BLOWER UNIT



FRONT VIEW



SIDE VIEW


TOPVIEW

AUXILIARY POWER SUPPLY

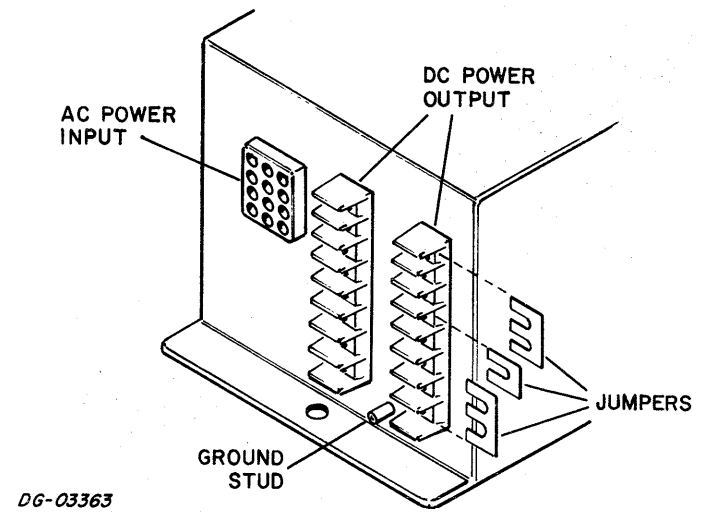
ALL DIMENSIONS IN INCHES

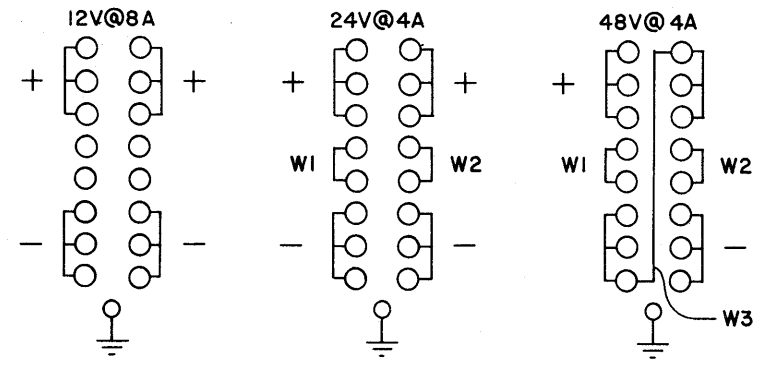
SHIPPING

INFORMATION NOT AVAILABLE

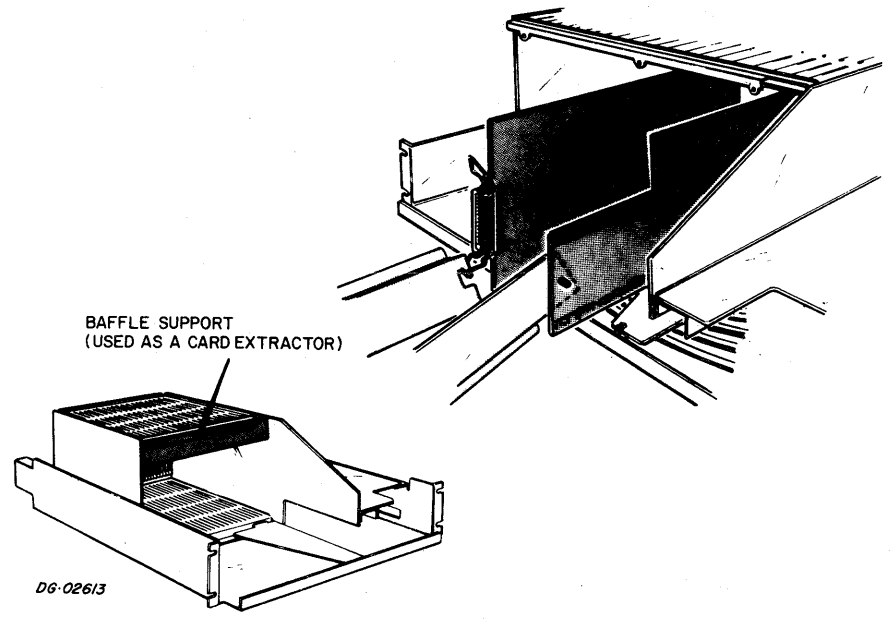
TAILORING

AUXILIARY POWER SUPPLY JUMPERING





CARD REMOVAL



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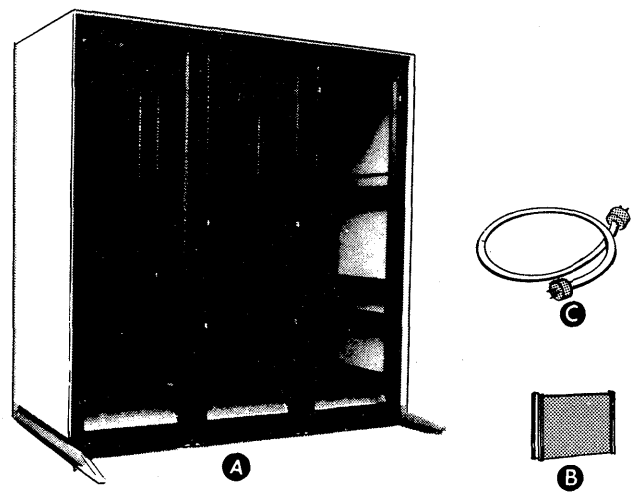
SUBSYSTEM COMPONENT BREAKDOWN



MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	CABINET	FREE-STANDING	
B	FILLER PANEL	CABINET	1.75" = 005-3994 3.50" = 005-3992 5.25" = 005-3995 7.00" = 005-3996 8.75" = 005-3998 10.50" = 005-3997

CABLE

Item	Cable	Connecting	Max Allowed Lg ft. / m	Notes
C	POWER CABLE	CABINET and AC POWER	8 / 2.7	

CABINET SPECIFICATIONS

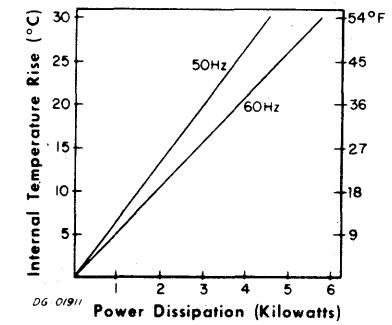
Item	Model	No. Bays	SIZE: Usable Vertical Space Per Bay: Area	In.	Cm.	POWER AVAILABLE AT INTERNAL RECEPTACLES: BAY A: Volts	Hz	Amps* (Max)	Receptacles** Nema	BAY B: Volts	Hz	Amps* (Max)	Receptacles** Nema	BAY C: Volts	Hz	Amps* (Max)	Receptacles** Nema	ALL BAYS COMBINED: Volts	Hz	Amps* (Max)	Receptacles** Nema
A	1012K	1	30	52.5	133	120Vac	50/60	16	5-15R									120Vac	50/60	16	5-15R
	1012K-2	1	30	52.5	133	240/220Vac	50	20	6-15R									220/240Vac	50	20	6-15R
	1012L	2	30	52.5	133	120Vac	60	50	5-15R	120Vac	60	20	5-15R					120Vac	60	70	5-15R
	1012L-2	2	30	52.5	133	240/220Vac	50	20	6-15R	240/220Vac	50	15	6-15R					240/220Vac	50	35	6-15R
	1012M	3	30	52.5	133	120Vac	60	50	5-15R	120Vac	60	20	5-15R	120Vac	60	20	5-15R	120Vac	60	80	5-15R
	1012M-2	3	30	52.5	133	240Vac	50	20	6-15R	240Vac	50	15	6-15R	240Vac	50	15	6-15R	240Vac	50	40	6-15R
	1012N	1	11	19.25	49.2	120Vac	50/60	16	5-15R									120Vac	50/60	16	5-15R
	1012N-2	1	11	19.25	49.2	220/240Vac	50	20	6-15R									220/240Vac	50	20	6-15R
	1012P	1	30	52.5	133	120Vac	60	44	5-15R									120Vac	60	44	5-15R

*VALUES FOR CURRENT ARE REDUCED 20% FROM CONNECTOR RATINGS TO CONFORM WITH UL STANDARDS.

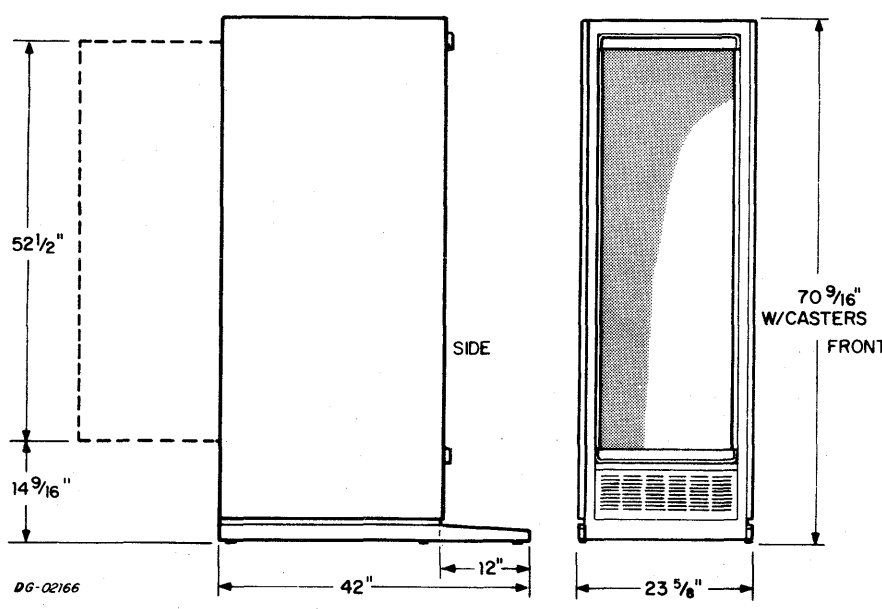
**FOR RECEPTACLE LAYOUT, SEE "INTERNAL CABLING" SECTION OF THESE DATA SHEETS.

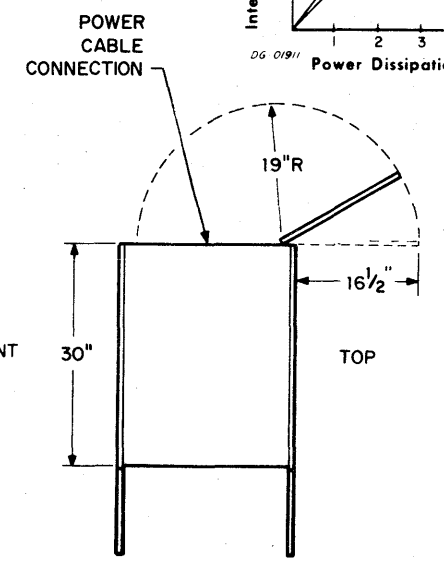
Item	Model	PRIMARY POWER REQUIRED FOR CABINET: POWER: Volts	Hz	Phase	Conductors	Amps	CORD SUPPLIED: Cable Length ft/m.	Cable Connector Nema	MATING RECEPTACLE REQ'D: Power Drop Nema/Hubbel	Wall Receptacle Nema/Hubbel	WEIGHT: EMPTY: Total lb/kg	Per Bay lb/kg	GROSS, FULLY LOADED: Total lb/kg	Per Bay lb/kg	COOLING UNIT: No. Units	POWER: Volt	Hz	Amp	Watts
A	1012K	120Vac	50/60	1	2 W/G	20	9/2.74	L5-20P	L5-20R/2313	L5-20R/2310	225/102	225/102	800/364	800/364	1	120	50/60	1.5	140
	1012K-2	240Vac	50	1	2 W/G	20	9/2.74	--	--	--	225/102	225/102	800/364	800/364	1	240	50	.75	140
	1012L	240Vac	60	1	3 W/G	40	9/2.74	14-50P	14-50R/	14-50R/9450	450/204	225/102	1600/728	800/364	2	120	60	1.5	140
	1012L-2	240Vac	50	1	2 W/G	35	9/2.74	--	--	--	450/240	225/102	1600/728	800/364	2	240	50	.75	140
	1012M	240Vac	60	1	3 W/G	40	9/2.74	14-50P	14-50R/	14-50R/9450	675/306	225/102	2400/1092	800/364	3	120	60	1.5	140
	1012M-2	240Vac	50	1	2 W/G	40	9/2.74	--	--	--	675/306	225/102	2400/1092	800/364	3	240	50	.75	140
	1012N	120Vac	50/60	1	2 W/G	16	9/2.74	L5-20P	L5-20R/2313	L5-20R/2310	152/69.1	152/69.1	800/364	800/364	1	120	60	1.5	140
	1012N-2	240Vac	50	1	2 W/G	20	9/2.74	--	--	--	152/69.1	152/69.1	800/364	800/364	1	240	50	.75	140
	1012P	240Vac	60	1	3 W/G	24	9/2.74	L14-30P	L14-30R/2715	L14-30R/2710	225/102	225/102	800/364	800/364	1	120	60	1.5	140

TEMPERATURE vs POWER DISSIPATION
1012K-1012P CABINETS
(DIRTY FILTER ASSUMED)



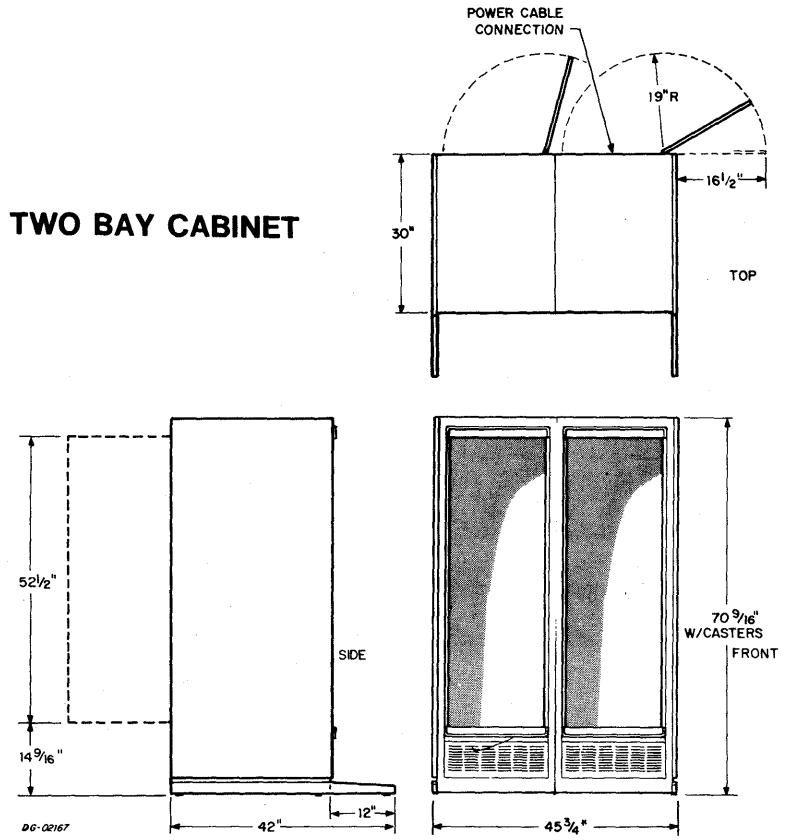
SINGLE BAY CABINET



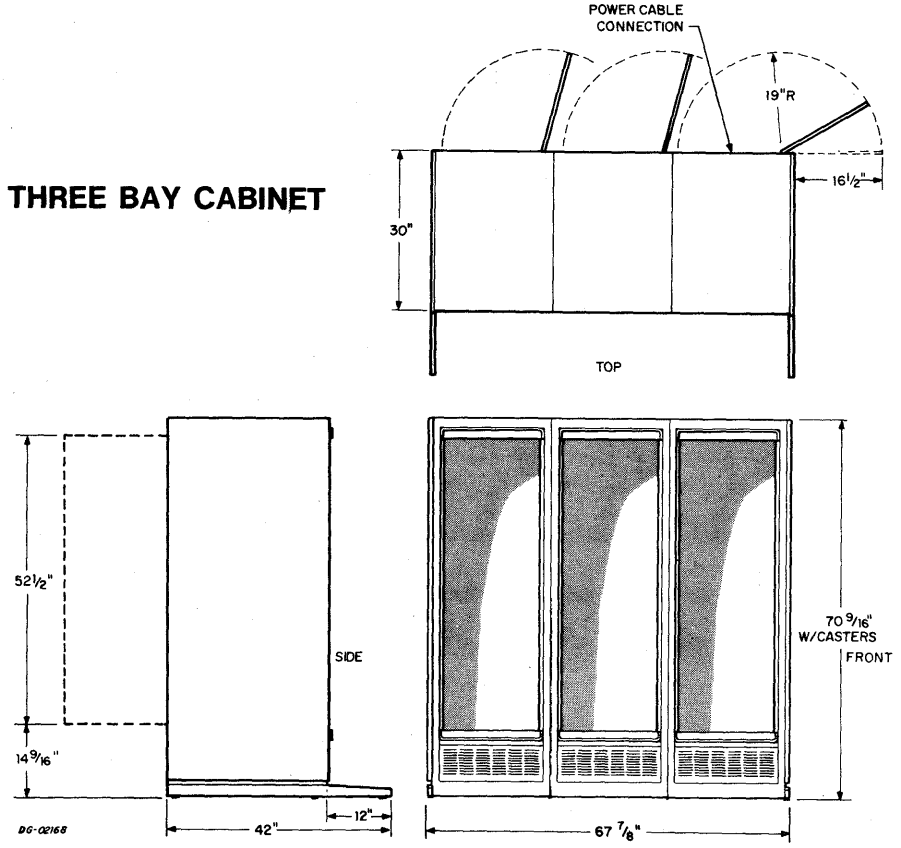


SPECIFICATIONS OF FREE-STANDING COMPONENT (Cont)

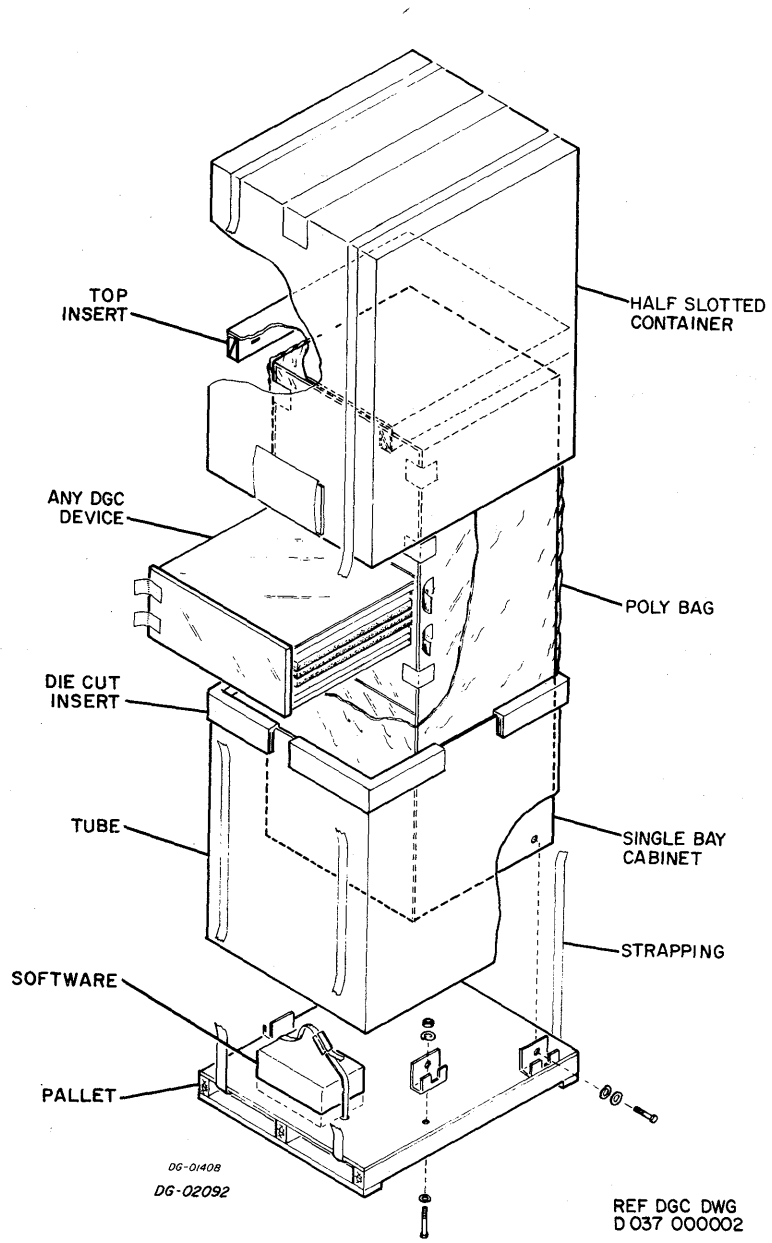
TWO BAY CABINET



THREE BAY CABINET

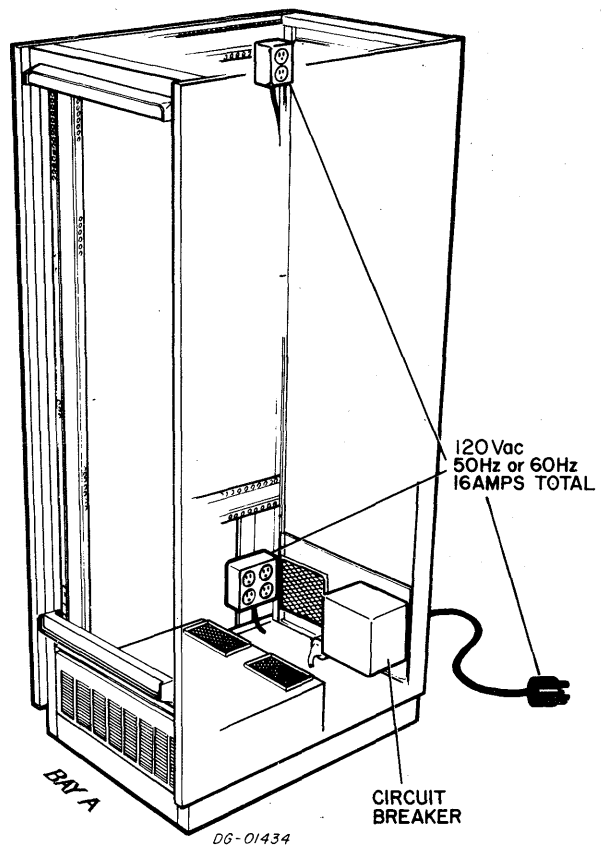


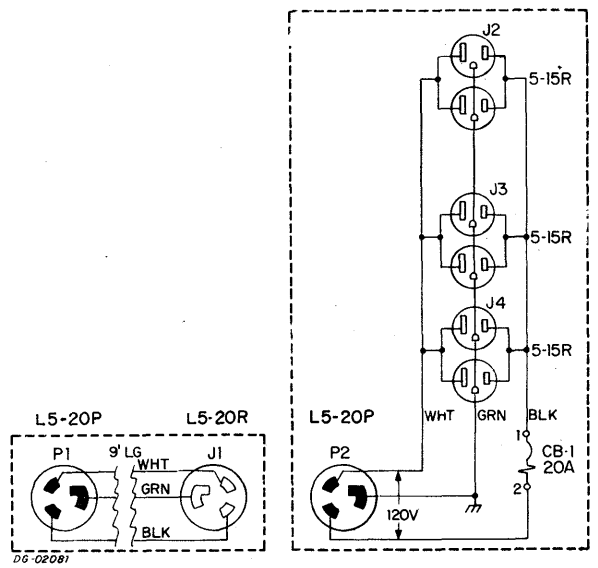
SHIPPING



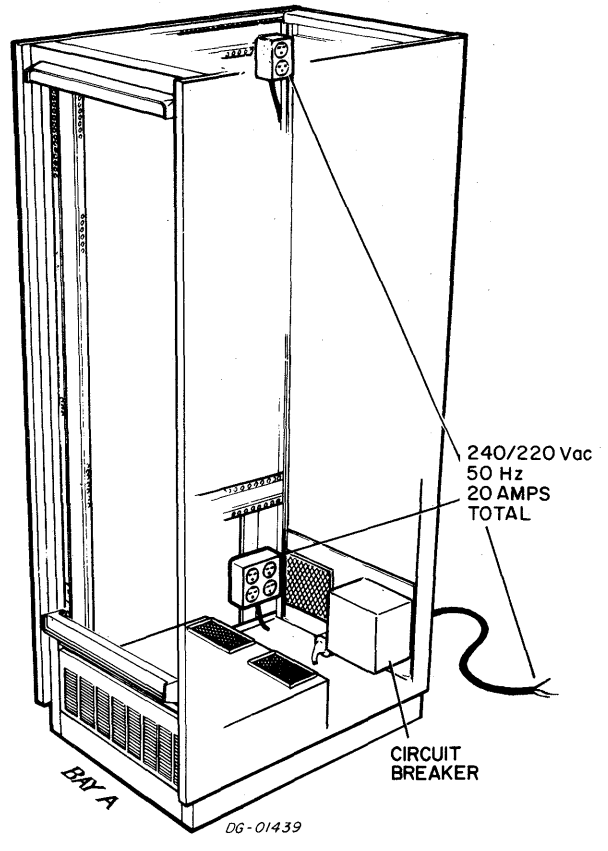
INTERNAL CABLING

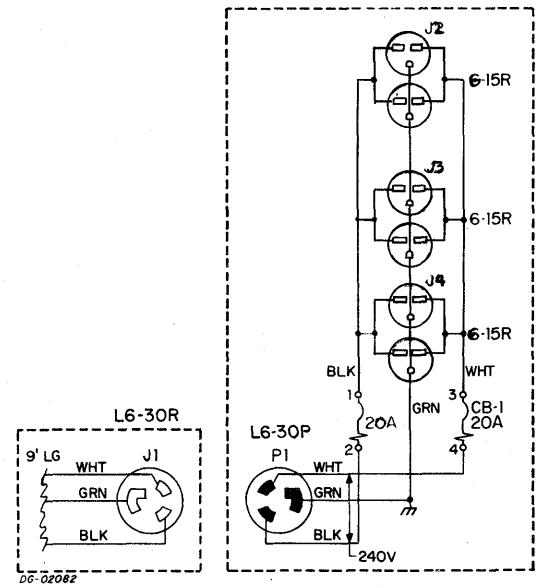
1012K





1012K-2





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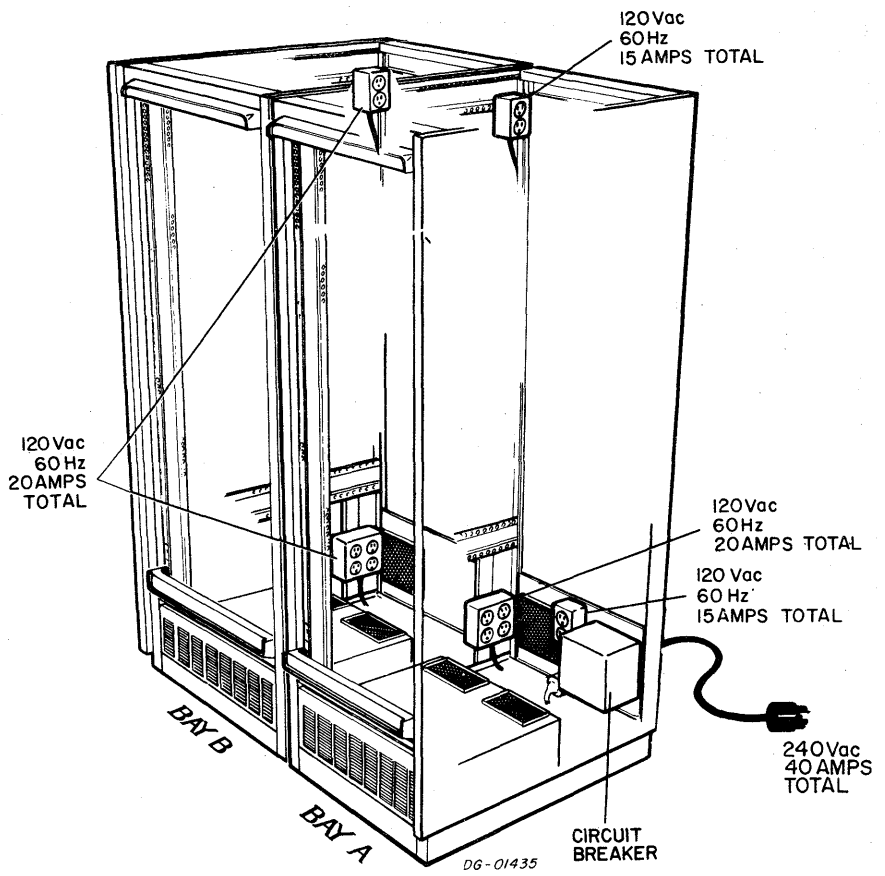
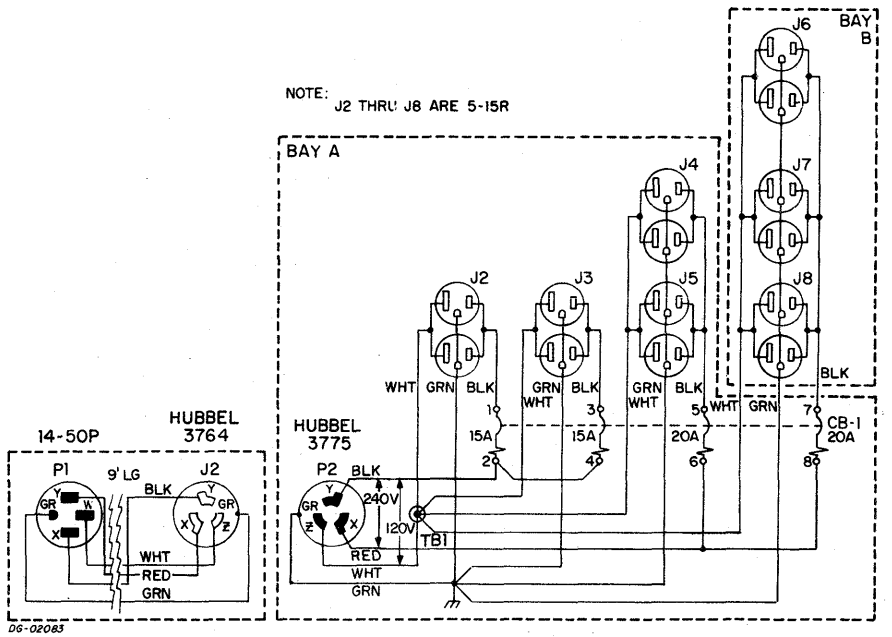
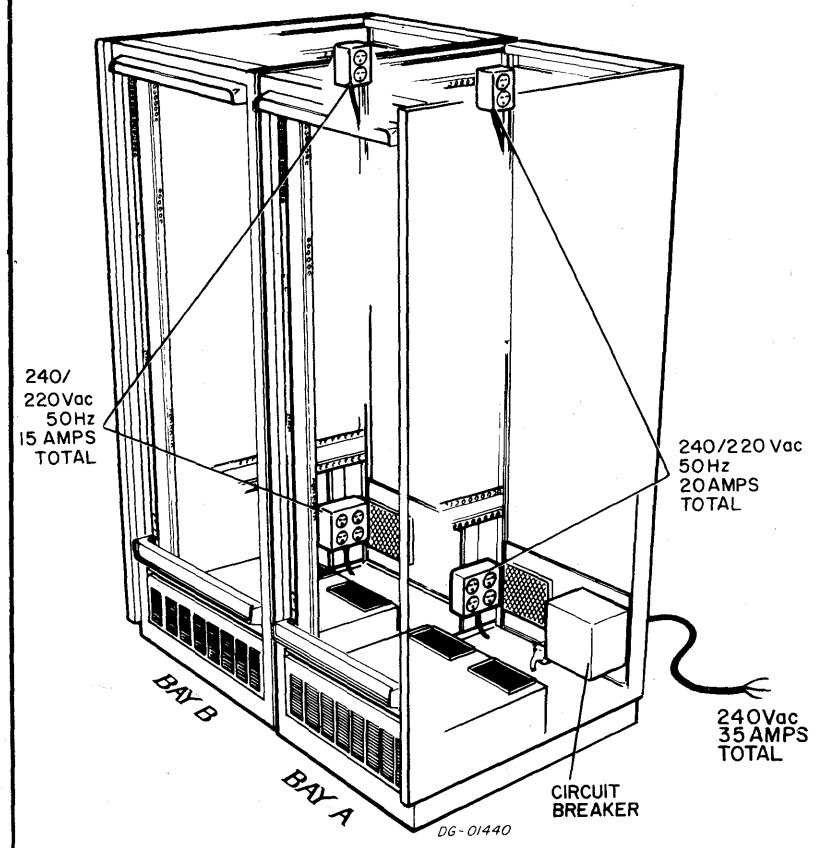
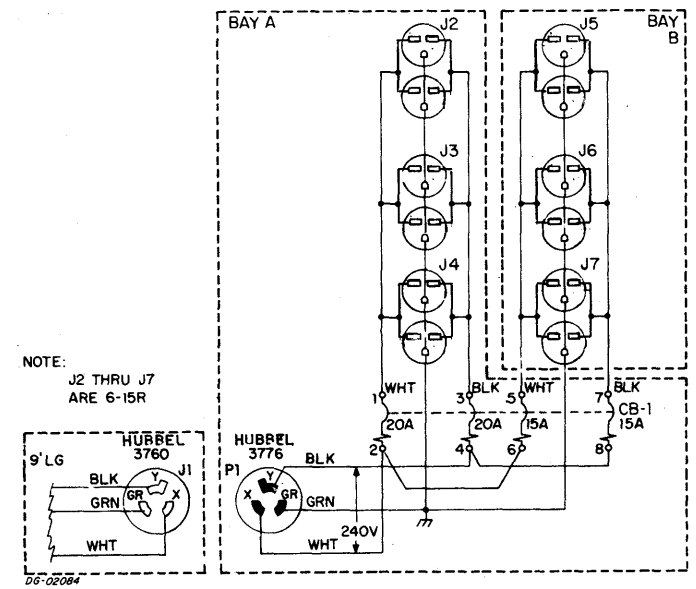




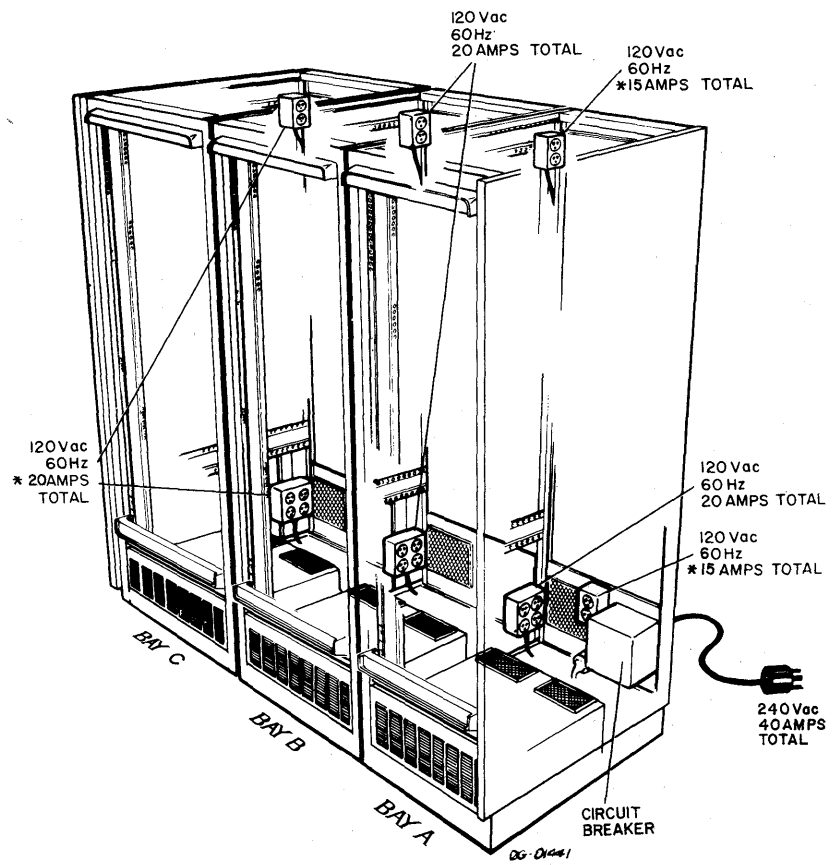
INTERNAL CABLING (Cont)

1012L-2

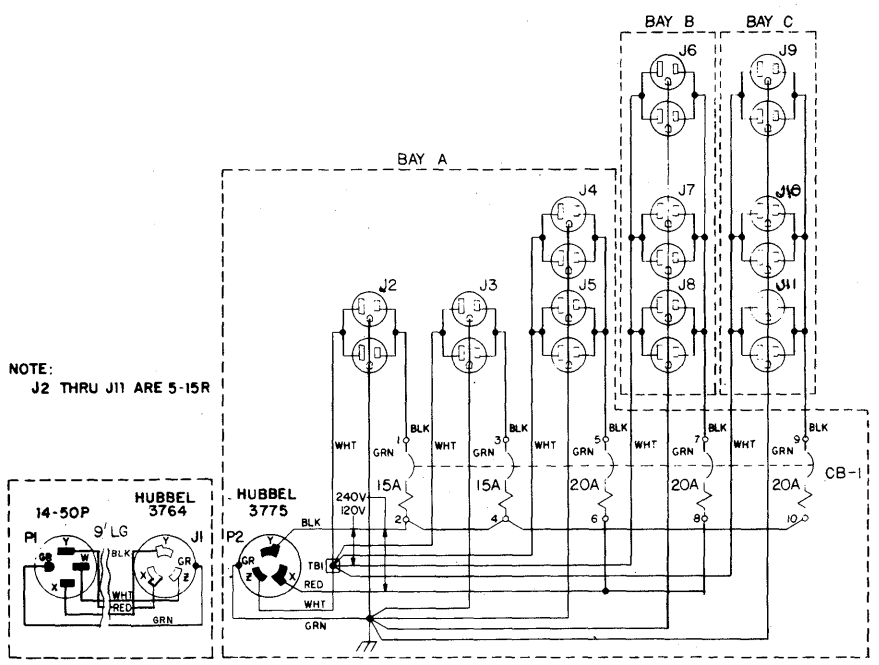




1012M



* NOTE: COMBINED TOTAL OF THESE OUTLETS NOT TO EXCEED 40 AMPS.



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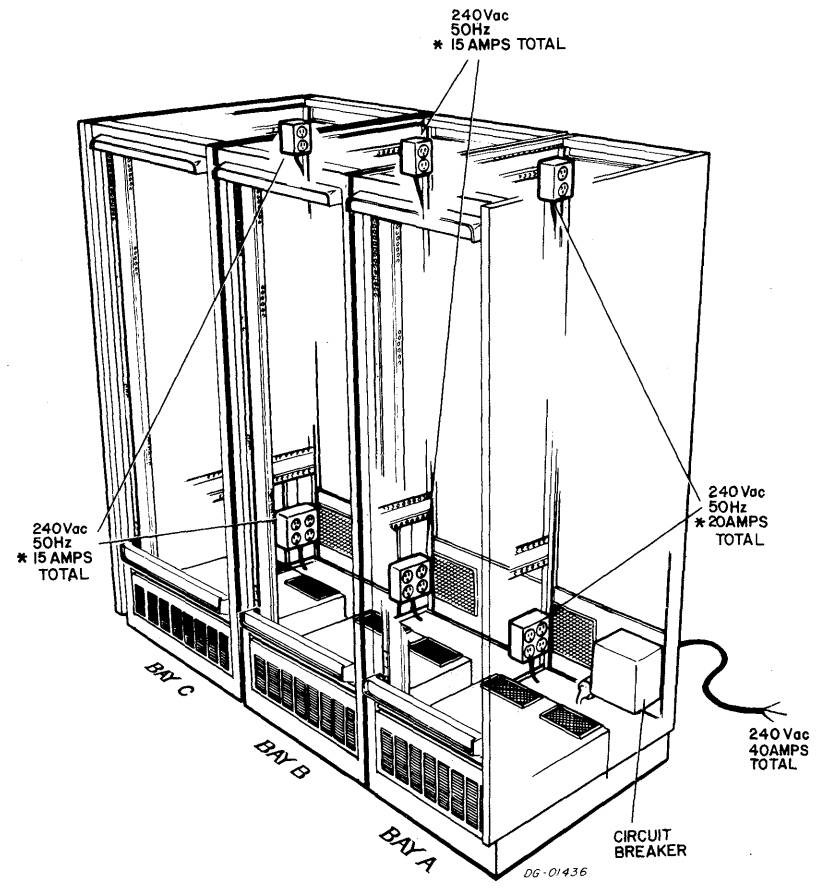
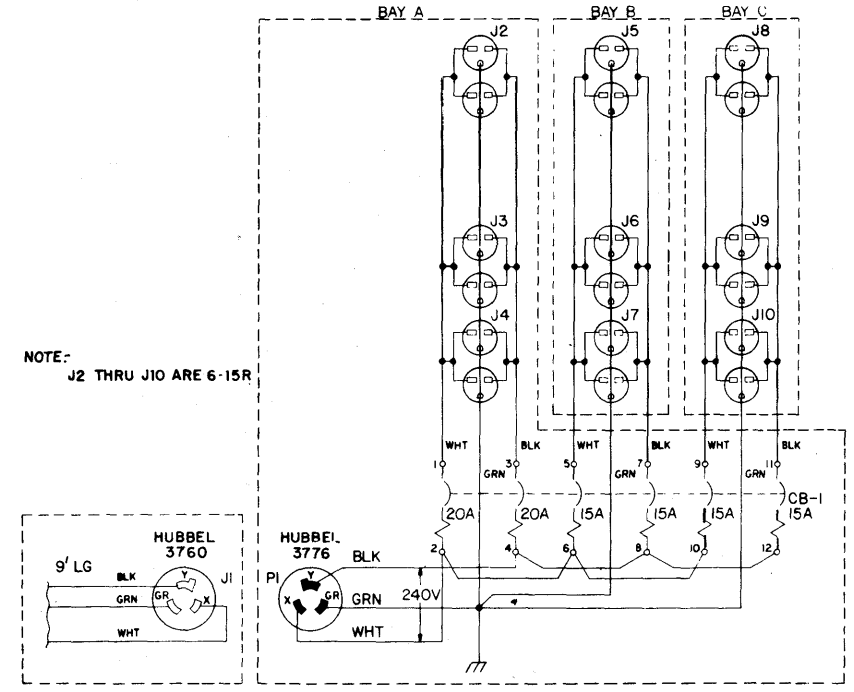
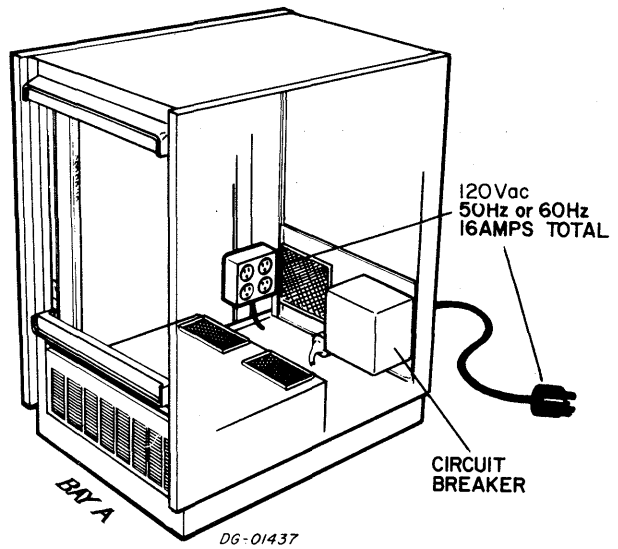


* NOTE: COMBINED TOTAL OF THESE OUTLET NOT TO EXCEED 40 AMPS.

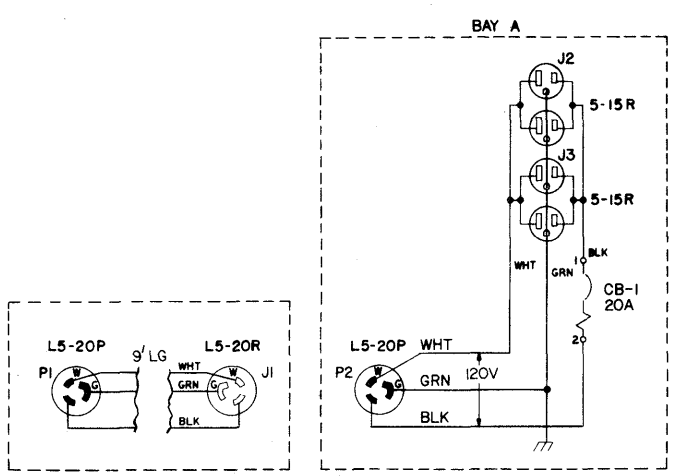


INTERNAL CABLING (Cont)

1012N



DG-01437



DG-02087

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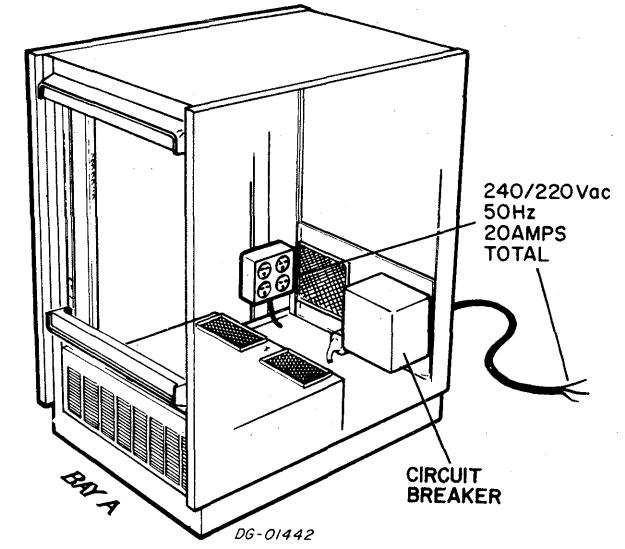

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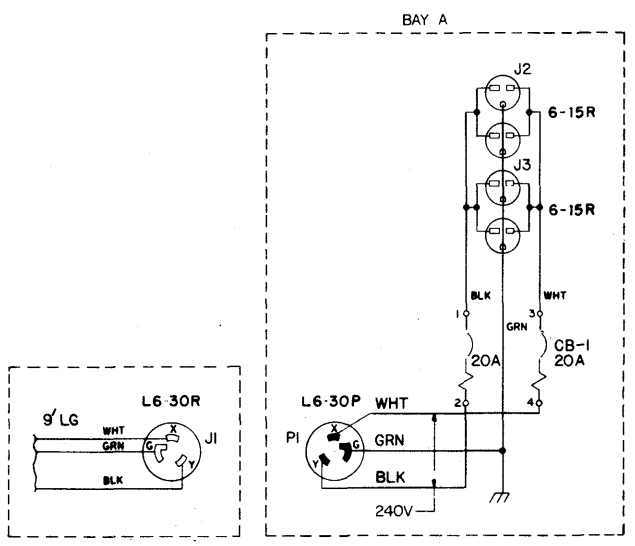
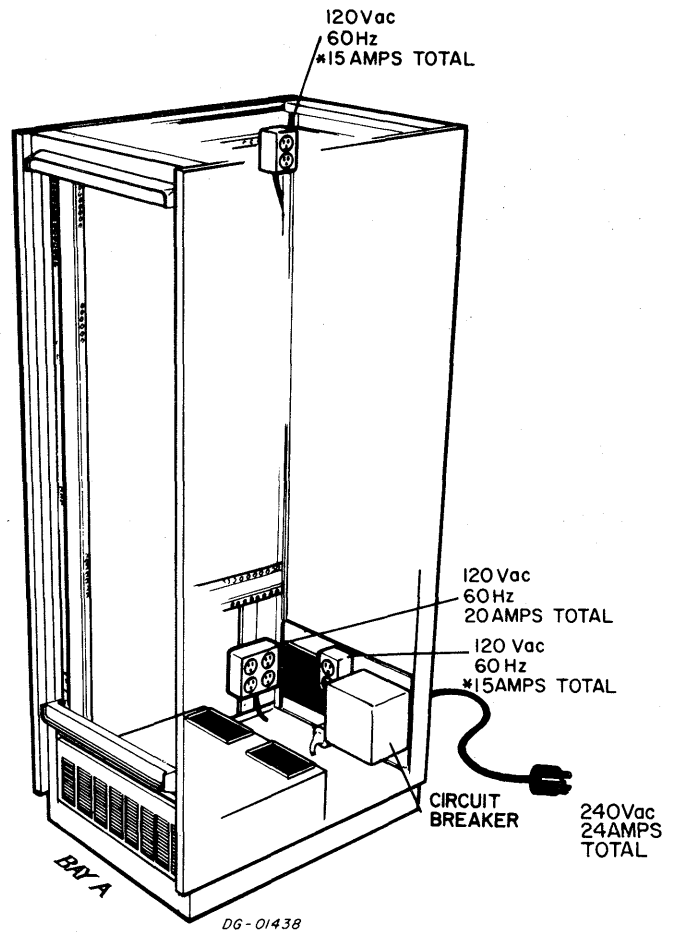


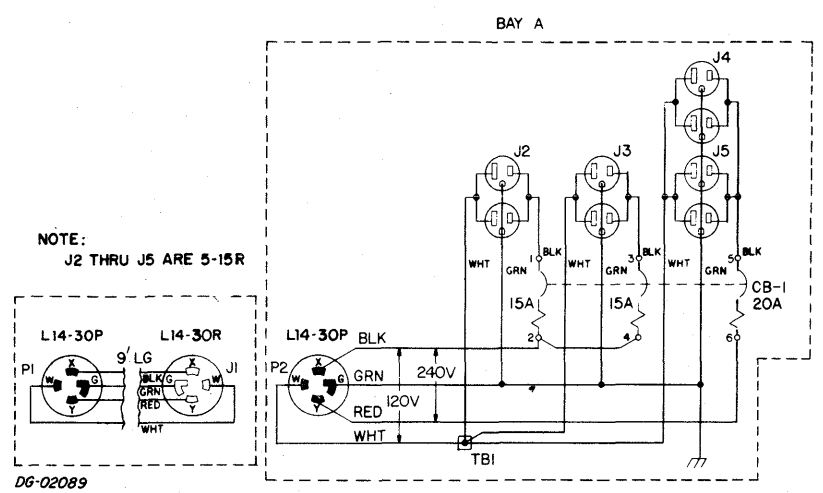
DG-02088

1012P



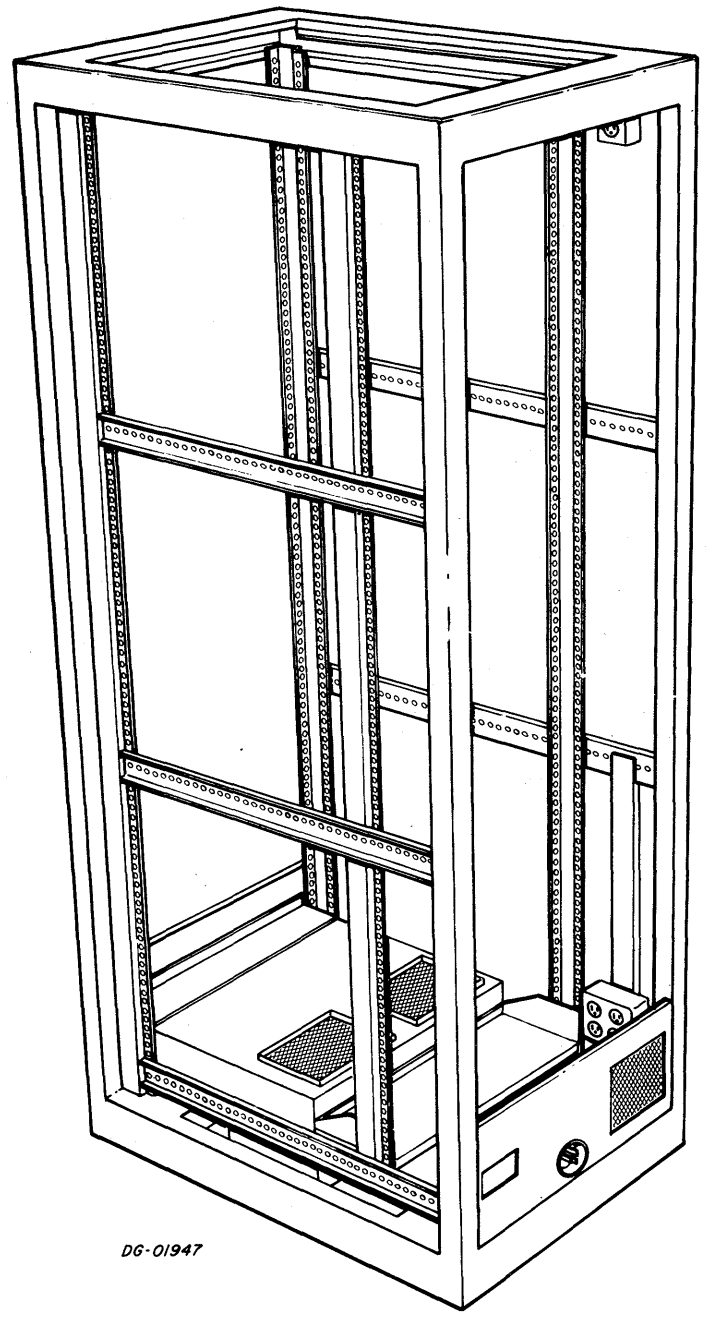
DG-01438

* NOTE: COMBINED TOTAL OF THESE OUTLETS NOT TO EXCEED 24AMPS.

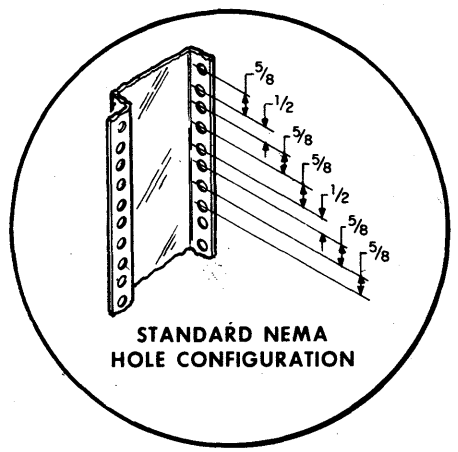


DG-02089

CABINET MOUNTING

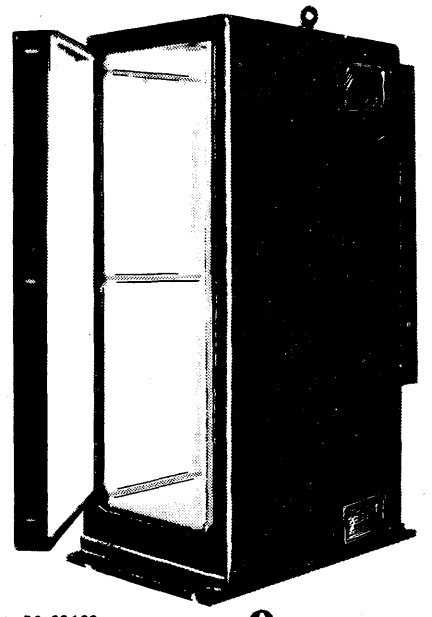


DG-01947



STANDARD NEMA
HOLE CONFIGURATION

SUBSYSTEM COMPONENT BREAKDOWN



DG-02402

Ⓐ

MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	CABINET	FREE-STANDING	

CABINET SPECIFICATIONS

Item	Cabinet	No. Bays	NEEDS: Current Draw (each Cooling Unit) Amps @Line Voltage	NEEDS: Total Weight of Empty Cabinet Lbs	NEEDS: Total Weight of Empty Cabinet Kg	NEEDS: Power Dissipation (each Cooling Unit) in Watts	CAPACITIES: Maximum User Power	CAPACITIES: Vertical Area Available per Cabinet Areas	CAPACITIES: Vertical Area Available per Cabinet Inches	CAPACITIES: Vertical Area Available per Cabinet Cm	CAPACITIES: Maximum Weight each Fully Loaded Cabinet/Bay Lbs	CAPACITIES: Maximum Weight each Fully Loaded Cabinet/Bay Kg
A	1079A		4.5 240V, 60Hz	540	245	1050W	1.75 kVA	35	61 1/4	155.5	1590	725
	1079A-2		4.5 220V, 50Hz	540	245	1050W	1.46kVA	35	61 1/4	155.5	1590	725
	1079B		2.5 240V, 60Hz	447	202	500W	1.55kVA	35	61 1/4	155.5	1497	680
	1079B-2		2.5 220V, 50Hz	447	202	500W	1.30kVA	35	61 1/4	155.5	1497	680

DG-02090

SPECIFICATION OF FREE-STANDING COMPONENTS

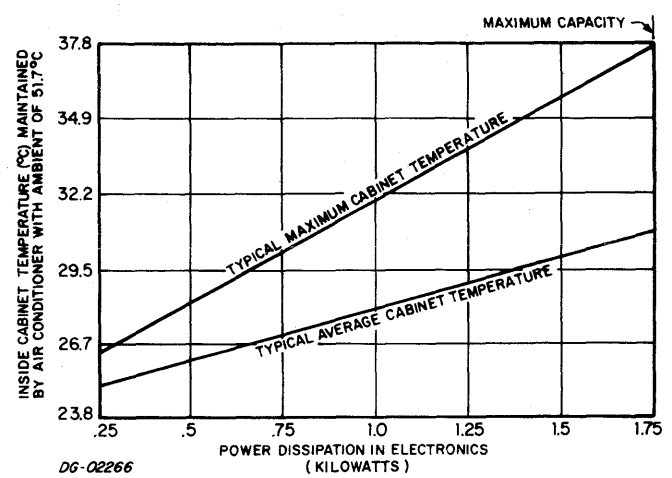
SPECIFICATION OF FREE-STANDING COMPONENTS					
Item	Cabinet	Input Power	Input Power Connection	Cooling Unit	Maximum Ambient Temp
A	1079A	240/120V, Single Phase, 4-wire, 60Hz	Terminal Connection at Circuit Breaker	Air Conditioner	125°F * (51.7°C)
	1079A-2	240V, Single Phase, 3-wire, 50Hz	Terminal Connection at Circuit Breaker	Air Conditioner	125°F * (51.7°C)
	1079B	240/120V, Single Phase, 4-wire, 60Hz	Terminal Connection at Circuit Breaker	Heat Exchanger	100°F (37.8°C)
	1079B-2	240V, Single Phase, 3-wire, 50Hz	Terminal Connection at Circuit Breaker	Heat Exchanger	100°F (37.8°C)

DG-02394

* Decrease maximum operating ambient temperature linearly with altitude at the rate of 2°F per 1000 ft (1.1°C per 304.8m)

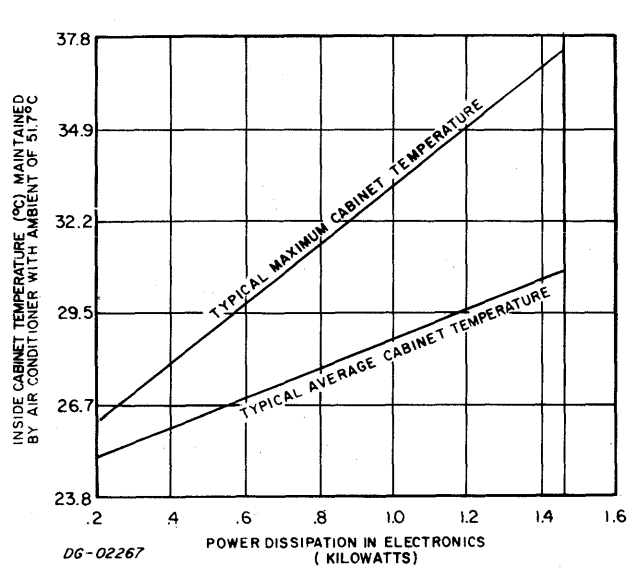
COOLING PERFORMANCE - INTERNAL TEMPERATURE RISE vs. INTERNAL EQUIPMENT POWER DISSIPATION

1079A (60 Hz)



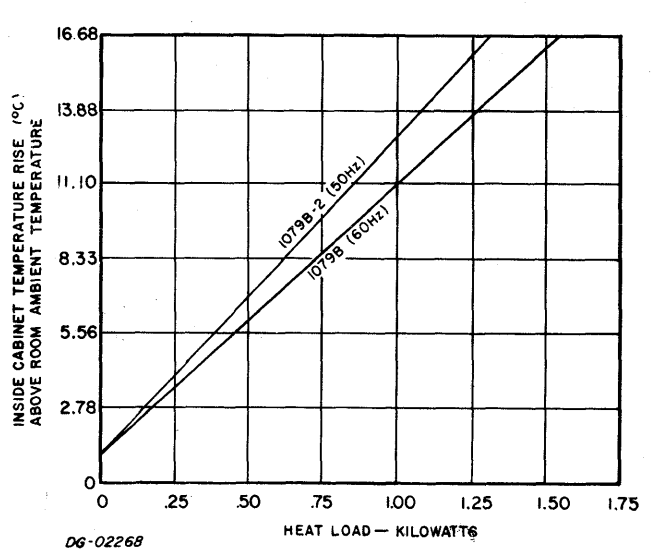
DG-02266

1079A-2 (50 Hz)



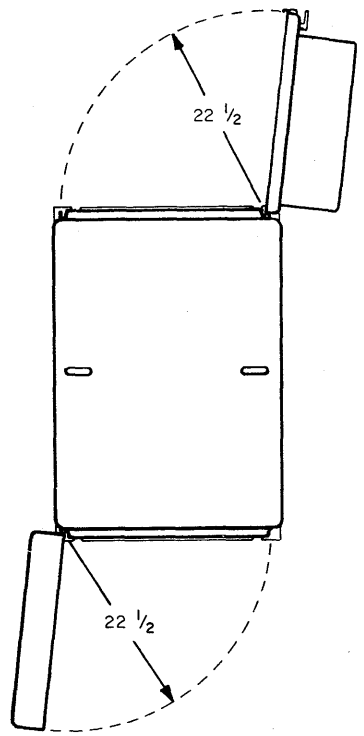
DG-02267

1079B SERIES



DG-02268

SPECIFICATION OF FREE-STANDING COMPONENTS (CONT'D)



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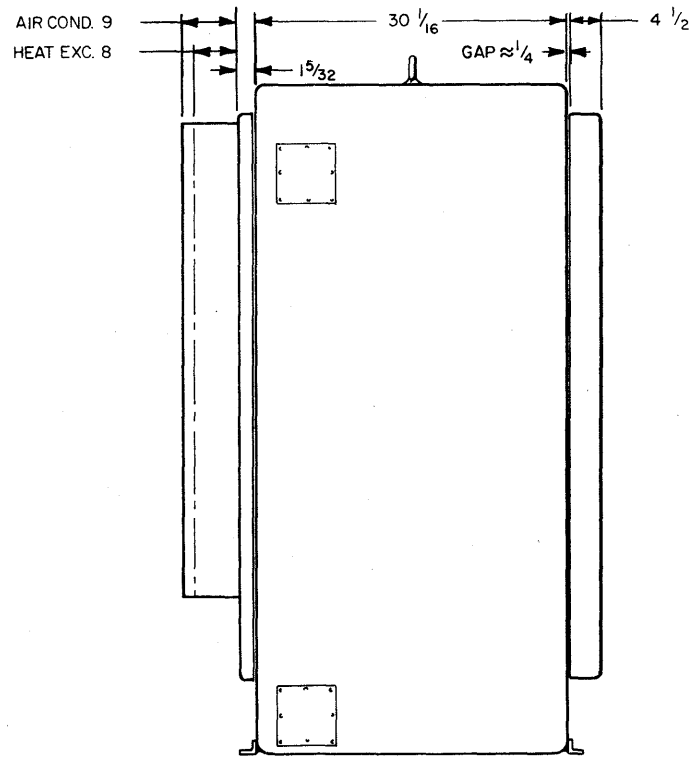

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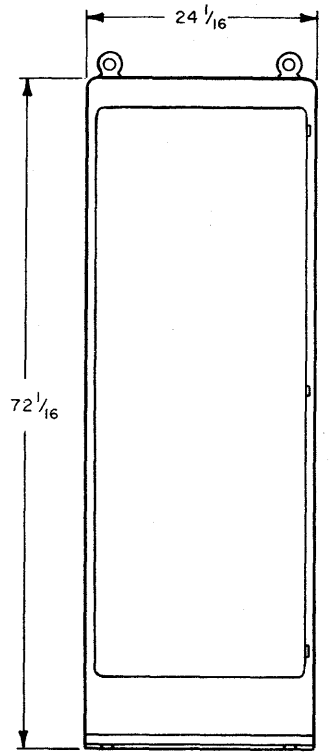

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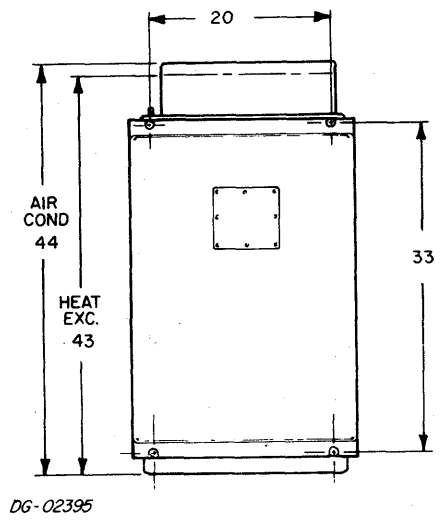
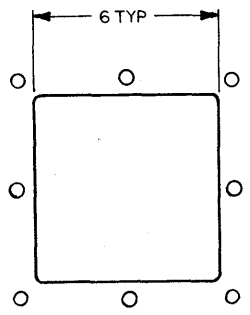


BASE

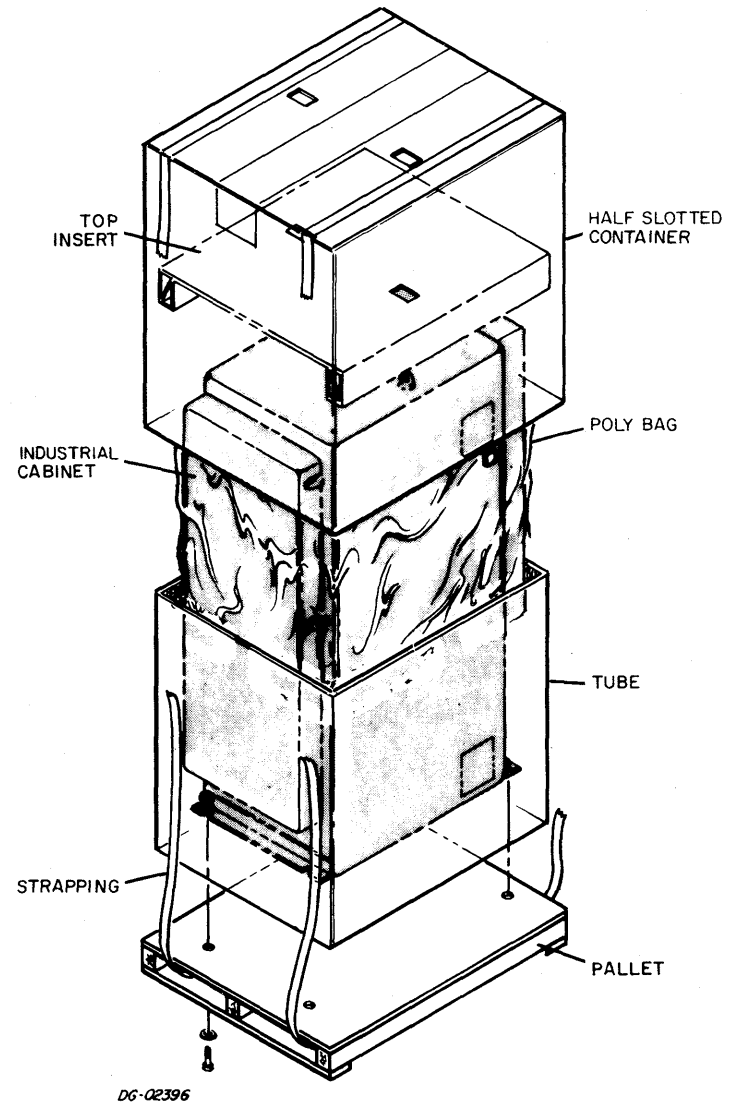


WIREWAY OPENING
(TYPICAL)

CAUTION: INPUT POWER CABLES MUST NOT PASS THROUGH ANY OPENING CONTAINING SIGNAL CABLES.

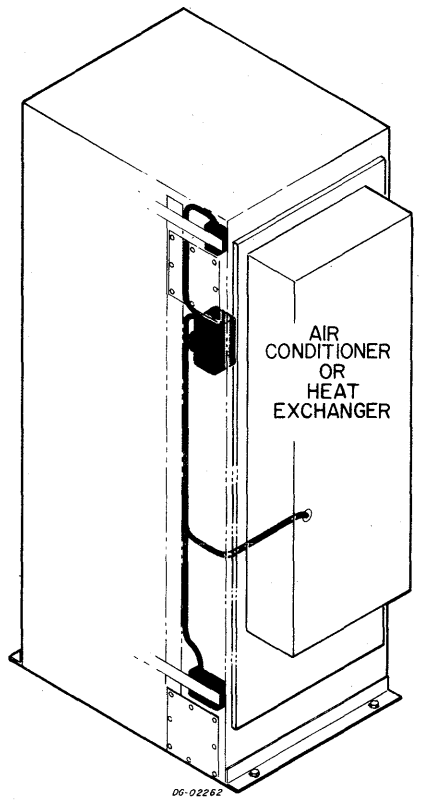
INSTALLATION NOTE: AFTER CABLES ARE RUN THROUGH WIREWAY OPENING, PACK REMAINING OPEN AREA WITH MATERIAL SUCH AS FOAM RUBBER, STYROFOAM, ETC.

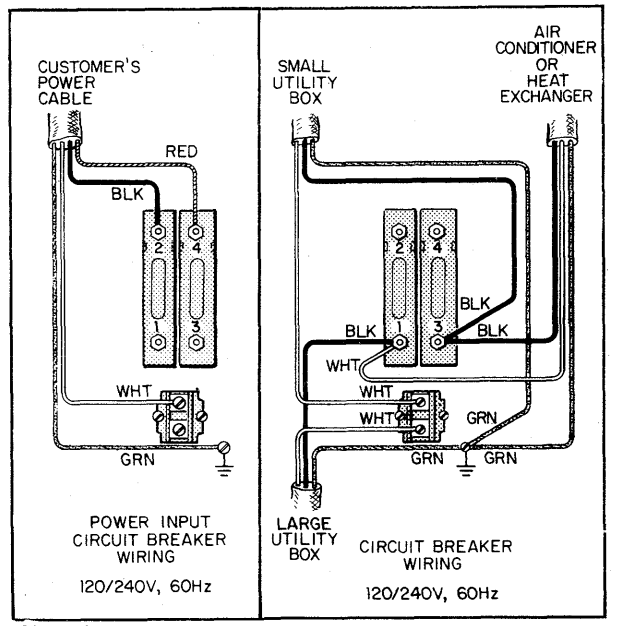
PACKING KIT



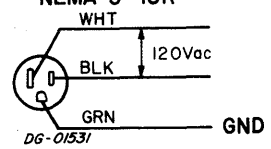
INTERNAL AND EXTERNAL CABLING

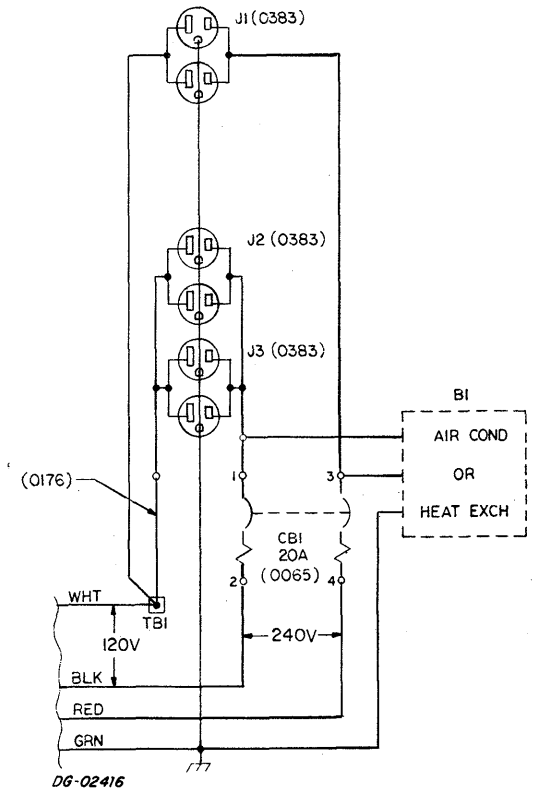
1079A, 1079B



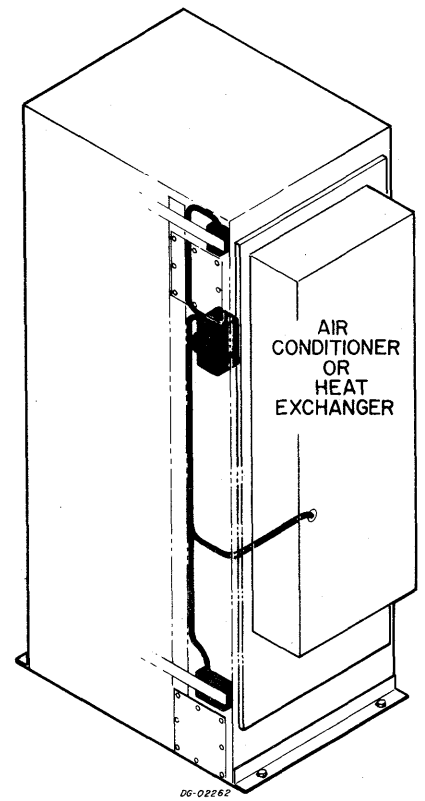


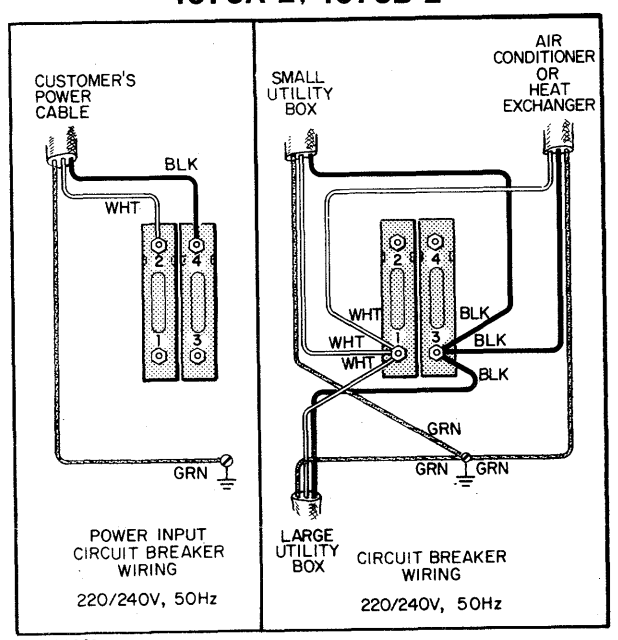
EACH INTERIOR RECEPTACLE
120Vac, 60Hz, 15A
NEMA 5-15R



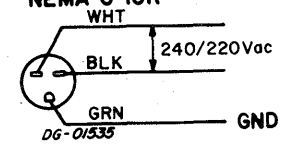


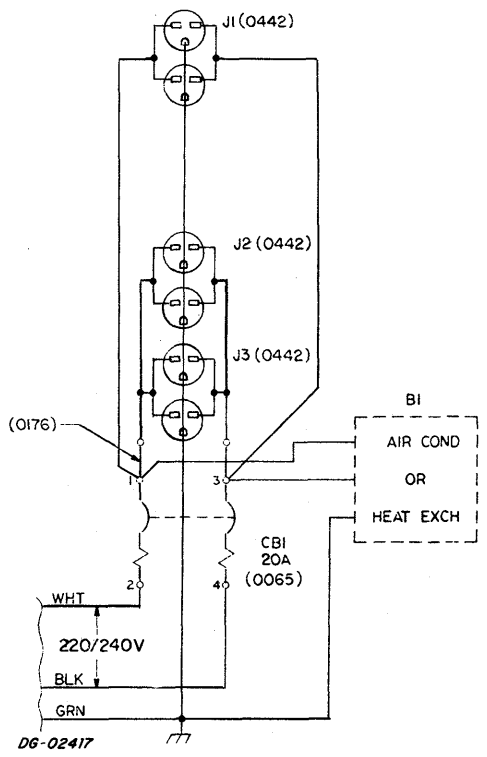
1079A-2, 1079B-2



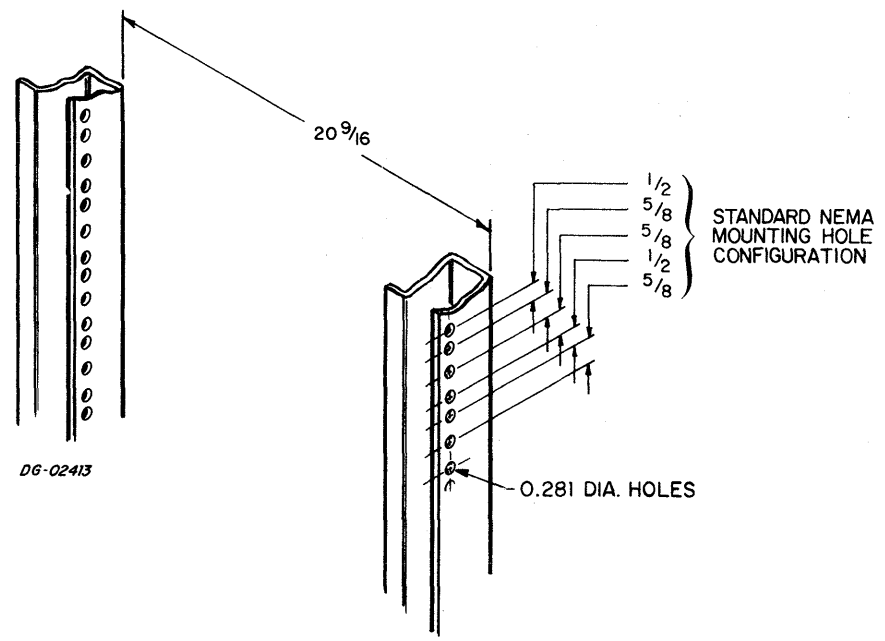


EACH INTERIOR RECEPTACLE
240/220Vac, 50Hz, 15A
NEMA 6-15R





RAILS



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