

**Installation and Packaging for
Data General Corporation
Processors and Packaged Systems**

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PREFACE

THIS MANUAL REPRESENTS A COMPILATION OF INSTALLATION DATA SHEETS FOR FCC-COMPLIANT DATA GENERAL CORPORATION PROCESSORS AND PACKAGED SYSTEMS. THE DATA SHEETS APPLICABLE TO YOUR EQUIPMENT WERE ALSO SUPPLIED TO YOU IN THE DOCUMENTATION PACKAGE ACCOMPANYING YOUR SHIPMENT. WE RECOMMEND THAT YOU REFER TO THE SHEETS SUPPLIED WITH YOUR EQUIPMENT IF POSSIBLE, AS THE INFORMATION THEY CONTAIN MAY BE MORE CURRENT THAN THE INFORMATION INCLUDED IN THIS MANUAL.

FOR FURTHER INFORMATION ON PERIPHERALS SEE "INSTALLATION AND PACKAGING FOR DATA GENERAL CORPORATION PERIPHERALS" (014-000730-00), ALSO FOR EARLIER MODEL EQUIPMENT SEE "INSTALLATION AND PACKAGING FOR EARLIER MODEL DATA GENERAL CORPORATION PROCESSORS AND PACKAGED SYSTEMS" (014-000731-00), AND "INSTALLATION AND PACKAGING FOR EARLIER MODEL DATA GENERAL CORPORATION PERIPHERALS" (014-000968).

FOR INFORMATION ON EXTERNAL CABLING, SEE "EXTERNAL CABLING FOR DATA GENERAL CORPORATION PRODUCTS" (014-000784).

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CONFIGURATION RULES

DCH CONFIGURATION RULES

1.0 SCOPE

THE PURPOSE OF THIS INSTALLATION DATA SHEET IS TO ESTABLISH A UNIFORM STANDARD FOR ASSIGNING PERIPHERAL CONTROLLER BOARDS TO POSITIONS IN A CPU CHASSIS. WITH REGARD TO DATA CHANNEL LATENCY, I/O BUS LOADING.

2.0 PROCEDURE

BEFORE ASSIGNING A PERIPHERAL CONTROLLER TO A SPECIFIC SLOT IN A CPU CHASSIS, YOU MUST CONSIDER SEVERAL FACTORS, SUCH AS DATA CHANNEL LATENCY, I/O BUS LOADING, D.C. POWER REQUIREMENTS, AND CABINET POWER REQUIREMENTS. THESE CONSIDERATIONS ARE COMMON TO ALL FAMILIES OF CPU'S AND THE MOST IMPORTANT OF THEM ARE DISCUSSED IN THIS PROCEDURE.

THERE ARE OTHER FACTORS WHICH MUST ALSO BE CONSIDERED IN CONFIGURING A COMPLETE SYSTEM. THESE INCLUDE PRIORITY WIRING, FUSE RATINGS, ALLOWABLE I/O CABLE LENGTHS, MECHANICAL RESTRICTIONS, CABINET POWER DISSIPATION, ETC. THIS PROCEDURE DOES NOT COVER ALL OF THE VARIABLES WHICH DETERMINE SYSTEMS CONFIGURATION; REFER TO THE APPROPRIATE CONFIGURATION GUIDE FOR EACH PROCESSOR FAMILY FOR THESE OTHER CONSIDERATIONS.

THE TABLES WHICH FOLLOW PRESENT INFORMATION NECESSARY FOR ASSIGNING A SLOT IN THE CPU. BOARDS WHICH HAVE THE HIGHEST DEGREE OF PRIORITY SHOULD BE ASSIGNED SLOTS CLOSEST TO THE CPU BOARDS (010, 020, 030, ETC.). IN PREPARING THESE TABLES, THE FACTORS WHICH WERE CONSIDERED WERE:

1. DATA CHANNEL LATENCY
2. BUS LOADING

THESE FACTORS ARE DEFINED BELOW:

1. DATA CHANNEL LATENCY - DEFINED AS THE TIME WHEN A PERIPHERAL DEVICE REQUESTS ACCESS TO MEMORY AND THE WORST CASE TIME THAT THE TRANSFER MUST BE ANSWERED

IN OTHER WORDS, THE TIME CONSISTS OF TWO ITEMS.

1) THE TIME THE PERIPHERAL REQUESTS MEMORY ACCESS VS. THE NEXT DATA CHANNEL BREAK;

AND:

2) THE TIME REQUIRED TO COMPLETE DATA CHANNEL TRANSFER TO/FROM ANY HIGHER PRIORITY PERIPHERALS THAT ARE ALSO REQUESTING MEMORY ACCESS

2. BUS LOADING - THE TOTAL NUMBER OF THE LOADS ON THE I/O BUS WHICH THE CPU MUST DRIVE.

THIS CAN BE DETERMINED BY ADDING UP THE INDIVIDUAL BUS LOADS OF THE PERIPHERAL CONTROLLERS USED IN THE SYSTEM. THE MAXIMUM NUMBER OF LOADS WHICH A PROCESSOR CAN DRIVE, WITHOUT USING AN I/O BUS REPEATER, IS TEN (10) LOADS, NOT INCLUDING THE MAP BOARD. NOTE THAT MEMORY BOARDS, WHICH DO NOT SHARE THE I/O BUS, DO NOT NEED TO BE CONSIDERED IN BUS LOADING.

3. CPU'S WITH BMC CAPABILITY HAVE MANDATORY BMC PRIORITY IF DEVICE IS CONFIGURED FOR BMC OPERATION. DISREGARD DCH CONFIGURATION AND SEE PAGE 3 OF THIS DOCUMENT FOR BMC CONFIGURATION

PRIORITY	MODEL NO.	DESCRIPTION	DATA CHANNEL CONTROLLER	PROG I/O	WORST CASE DATA CHANNEL LATENCY	BUS LOADING	EXPANSION CHASSIS
005	4330-33	A/D, D/A CONVERTER	X		10 μs	1	Y
010	4196	P.E. TAPE DRIVE (45 IPS)	X		10 μs	1	Y
020	4030 6020,6021	MAG TAPE DRIVE (75 IPS)	X		12.5μs	1	Y
030	4046	MOVING HEAD DISK (2.5 MBYTES)	X		12.8μs	1	Y
040	6045/6051 6046 6047 6048	DIABLO 44 OR 10MB DISC 20MB 30MB 40MB	X		12.8μs	1	Y
050	4055	ANALOG/DIGITAL (ANALOG CO)	X		13.3 μs	1	Y
060	*** 6063,-64,-65,-66 6063H,-64H,-65H,-66H	FIXED HEAD DISK	X, BMC SEE NOTE 4		18 μs	2	Y
070	4231 6060,-61/6067 *** 6060H,-61H	50, 100, 200 MB MHD CONTROLLER	X, BMC SEE NOTE 4		19.8μs	2	Y
080	6098 6100	12.5MB CONTROLLER (WITH QUAD DISKETTE) 25MB CONTROLLER WITH QUAD	X		50μs	1	Y
087	6231, 6225C, 6227C	1/4- INCH CARTRIDGE DRIVE	X		57μs	1	N
090	6026 6027	MAG TAPE 800/1600 BPI DMT 9 TRK NRZI DRIVE	X X		60 PE 250 NRZI	1	Y
095	***4307	GCR TAPE	X, BMC SEE NOTE 4		96μs	1	Y
100	6030,6031	FLOPPY DISK	X		128μs	1	Y
102	6125	MAG TAPE	X		160μs	1	Y
108	4250 4254	DCU 50 DCU 200	X		DEPENDS ON SPECIFIC DEVICE	1	Y
112	*** 6160,6161	SMD DISC CONTROLLER SEE NOTE 6	X, BMC SEE NOTE 4		949.2 μs	1	N

*** RUNS WITH BMC (also)

1. 8315 - I/O BUS REPEATER

- a.) USED TO DRIVE COMM CHASSIS OR DG/DAC: GETS DCU PRIORITY (110)
- b.) USED TO BOOST I/O LOADS:

8315-M - SLOT 28 OF M600
HIGHEST I/O SLOT OF C150/S130
SLOT 12 OF N3/12
SLOT 17 OF N800/N1200

2. WHEN 4079 OR 4008 IS ORDERED IT SHOULD BE INSTALLED IN PRIMARY I/O SLOT.

PRIORITY	MODEL NO.	DESCRIPTION	DATA CHANNEL CONTROLLER	PROG I/O	WORST CASE DATA CHANNEL LATENCY	BUS LOADING	EXPANSION CHASSIS
116	6070 (B, C, D, E)	20 MBYTE DISC	X		1.08ms	1	Y
120	6099/6103	DISK CONTROLLER (W/O DISKETTE)			1.2ms	1	Y
124	4380	ISC	X		125μs	1	Y
128	4357, 4358	IAC/8, IAC/16	X		10/R (R=HIGHEST) BAUD RATE (5) NOTE 6, 200μs	1	Y
132	4460	NBS	X		(7)	1	N
140	4038/4206	MCA	X		(7)	1	Y
145	8020/8539	DATA CHANNEL FPU - NOVA	X			1	Y
150	4100/4112	1000 LINE MUX CONTROLLER	X		n/a	1	Y
160	4015	HI-SPEED COMM CONTROLLER-SYNC	X		—	1	Y
180	4240	IPB		X	n/a	1	Y
190	4025	IBM INTERFACE	X		—	2	N
191	4349	BSI-4		X	n/a	1	Y
192	4348	BSI-1		X	n/a	1	Y
193	4345	CSI-2		X	n/a	1	Y
194	4346	CSI-1		X	n/a	1	Y
195	4342	ATI-16		X	n/a	1	Y
196	4340	AMI-8		X	n/a	1	Y
200	4242	1-LINE MUX (SYNC)		X	n/a	1	Y
210	4215/4216,4218,4219, 4244,4245,6088,6089	DATA CHANNEL LINE PRINTER	X		n/a	1	Y

3. BMC1 JUMPERS FOR 8 WORDS/ 16 WORDS.

4. FOR BMC CONFIGURATION, SEE PAGE 3 OF THIS DOCUMENT.

5. FOR LINES CONNECTED TO "PACING" DEVICES (SUCH AS STANDARD DG TERMINALS), USE R + c), REGARDLESS OF ACTUAL BAUD RATE.

6. MUST BE PLACED IN I/O ONLY SLOT, OTHERWISE DAMAGE TO OTHER BOARDS WILL RESULT.

7. FLOW CONTROLLED DEVICE.

DCH CONFIGURATION RULES (CONT)

PRIORITY	MODEL NO.	DESCRIPTION	DATA CHANNEL CONTROLLER	PROG I/O	WORST CASE DATA CHANNEL LATENCY	BUS LOADING	EXPANSION CHASSIS
215	4241/4241A 4243	4-LINE EIA/20MA MUX (ASYNC) 4-LINE ASYNC, 1-LINE SYNC MUX EIA & 20 MA		X		1	Y
220	4073	4-LINE MUX (SYNC)		X		1	Y
230	4074	1-LINE MUX (SYNC)		X		1	Y
240	4063	4-LINE EIA MUX		X		4	Y
250	4062	4-LINE EIA MUX (ASYNC)		X		4	Y
260	4060	4-LINE 20MA MUX (ASYNC)		X		4	Y
270	4061	4-LINE 20MA (ASYNC)		X		4	Y
280	4065,-66,-67,-68 4191	DIGITAL I/O		X		1	Y
290	4036 4016	CARD READER CONTROLLER		X		1	Y
300	4306	BUFFERED CARD READER CONTROLLER		X		1	Y
310	4014,4017,4034 4193 6086,-87	LINE PRINTER CONTROLLER		X		1	Y
320	4075,-77,-78,-79 6080,-81,-82,-84,-85	CASSETTE I/O SEE NOTE 2		X		1	Y
330	4007,-08 4010,-11,-12 4023,-29	BASIC I/O SEE NOTE 2		X		1	Y
340	4040 4190	G.P. BOARDS		X		1	Y
350	4181	D/A DIGITAL TP ANALOG CONVERTER		X		1	Y
360	4120-4180	A/D ANALOG DATA SUBSYSTEM		X		1	Y

NOTES:

1. 8315 - I/O BUS REPEATER
 - a.) USED TO DRIVE COMM CHASSIS OR DG/DAC: GETS DCU PRIORITY (110).
 - b.) USED TO BOOST I/O LOADS:
 - 8315-M - SLOT 28 OF M600
 - HIGHEST I/O SLOT OF C150/S130
 - SLOT 12 OF N3/12
 - SLOT 17 OF N800/N1200
2. WHEN 4079 OR 4008 IS ORDERED IT SHOULD BE INSTALLED IN PRIMARY I/O SLOT.
3. BMC1 JUMPERS FOR 8 WORDS/ 16 WORDS.
4. FOR BMC CONFIGURATION, SEE PAGE 3 OF THIS DOCUMENT.
5. FOR LINES CONNECTED TO "PACING" DEVICES (SUCH AS STANDARD DG TERMINALS), USE R + c), REGARDLESS OF ACTUAL BAUD RATE.
6. MUST BE PLACED IN I/O ONLY SLOT, OTHERWISE DAMAGE TO OTHER BOARDS WILL RESULT.

BMC CONFIGURATION RULES

1.0 SCOPE

THE PURPOSE OF THIS INSTALLATION DATA SHEET IS TO ESTABLISH A UNIFORM STANDARD FOR ASSIGNING PERIPHERAL CONTROLLER BOARDS USING BMC A PRIORITY BETWEEN BMCI DEVICES WITHIN A SYSTEM, WITH REGARD TO CHARACTERISTIC DIFFERENCES BETWEEN DEVICES.

2.0 PROCEDURE

BEFORE ASSIGNING A BMCI PERIPHERAL CONTROLLER A PRIORITY ON THE BMC BUS, AS WELL AS A SPECIFIC SLOT IN THE CPU CHASSIS, YOU MUST CONSIDER SEVERAL FACTORS. THESE CONSIDERATIONS, SUCH AS MAXIMUM ALLOWABLE LATENCY OF THE DEVICE, I/O BUS LOADING, D.C. POWER REQUIREMENTS, CABINET POWER REQUIREMENTS, AND INTERNAL AND EXTERNAL CABLE REQUIREMENTS, ARE COMMON TO ALL FAMILIES OF CPU'S. THE MOST IMPORTANT OF THESE ARE DISCUSSED IN THIS PROCEDURE.

THERE ARE OTHER FACTORS WHICH MUST ALSO BE CONSIDERED IN CONFIGURING A COMPLETE SYSTEM. THESE INCLUDE: PRIORITY JUMPERING OF THE BMCI DEVICE, FUSE RATINGS, BMC CABLE TYPES AND LENGTHS, MECHANICAL AND ELECTRICAL RESTRICTIONS, CABINET POWER DISSIPATION, ETC. THIS PROCEDURE DOES NOT COVER ALL OF THESE VARIABLES WHICH DETERMINE SYSTEM CONFIGURATIONS; REFER TO THE APPROPRIATE CONFIGURATION GUIDE FOR EACH PROCESSOR FAMILY FOR THESE OTHER CONSIDERATIONS.

2.1 ASSIGNING PRIORITIES

EACH INDIVIDUAL BMCI DEVICE IS RESPONSIBLE FOR CONFIGURATION OF ITS PRIORITY ON THE BMC BUS, AS WELL RECOGNITION OF ITS PRIORITY ON THE BMC BUS. EACH DEVICE ON THE BMC BUS HAS THE CAPABILITY OF REQUESTING SERVICE FROM THE BMC CHANNEL THROUGH ONE OF EIGHT REQUEST LINES HSCR 0 - HSCR 7. EACH DEVICE ON THE BMC BUS WILL HAVE AN ASSIGNED REQUEST NUMBER, EACH NUMBER HAVING

DIFFERENT PRIORITY. (HSCR 7 HAVING THE HIGHEST PRIORITY AND HSCR 0 HAVING THE LOWEST PRIORITY), AS WELL AS A REQUEST FOR BMC SERVICE. THE EIGHT REQUEST LINES RUN PARALLEL TO ALL CONTROLLERS SO THAT EACH CONTROLLER CAN SEE WHICH OTHER DEVICES ON THE BMC BUS ARE REQUESTING SERVICE DURING ANY BMC CYCLE. THE CONTROLLERS WILL THEN ARBITRATE WHICH DEVICE HAS PRIORITY BY LOOKING AT THESE REQUEST LINES.

FOR THE CONFIGURATION OF REQUEST NUMBERS ON EACH CONTROLLER THAT IS CONNECTED TO THE BMC BUS, REFER TO THE INDIVIDUAL CONTROLLERS INSTALLATION DATA SHEET, FOR JUMPER CONFIGURATIONS AND INDIVIDUAL REQUIREMENTS.

2.2 PRIORITY FACTOR

BECAUSE OF THE MANY TYPES AND CONFIGURATIONS OF BUFFERS AND FIFO'S IN THE CONTROLLERS ON THE BMC BUS, AS WELL AS THE DIFFERENT SPEEDS AT WHICH THE CONTROLLERS REQUIRE SERVICE FROM THE BMC, EACH CONTROLLER WILL BE ASSIGNED A PRIORITY FACTOR NUMBER FOR USE IN DETERMINING ITS PRIORITY ON THE BMC BUS. THE LOWER THE PRIORITY FACTOR NUMBER, THE HIGHER THE PRIORITY THE CONTROLLER REQUIRES. HSCR 7 HAS THE HIGHEST PRIORITY OF THE DEVICES ON THE BMC BUS.

TO DETERMINE THE PRIORITY FACTOR NUMBER A NUMBER OF FACTORS HAVE TO BE CONSIDERED. THERE ARE:

1. THE SIZE AND TYPE OF BUFFERS IN THE CONTROLLER, AND HOW THEY ARE USED.
2. THE MAXIMUM LENGTH OF TIME THE CONTROLLER CAN OPERATE WITHOUT SERVICE FROM THE BMC WITHOUT ENCOUNTERING A DATA LATE CONDITION.
3. THE AVERAGE SIZE OF A BURST THAT THE CONTROLLER REQUESTS FROM THE BMC, IN A BURST CYCLE.

TO FIND THE PRIORITY FACTOR OF A CONTROLLER MULTIPLY THE WORD RATE IN MICRO SECONDS, TIMES THE STANDBY BUFFER SIZE. (THE STANDBY BUFFER SIZE IN THE CASE OF A TWO RAM BUFFER CONTROLLER, WOULD BE ONE HALF OF THE TOTAL BUFFER, IN A FIFO BUFFER IT WOULD BE THE FULL SIZE OF THE FIFO.) TAKE THAT PRODUCT AND ADD TO THE TOTAL MAXIMUM ALLOWABLE LATENCY IN MICRO SECONDS, AND DIVIDE BY TWO. THIS IS THE PRIORITY FACTOR.

THE PRIORITY FACTOR DOES NOT TAKE IN ALL POSSIBLE CONDITIONS, BUT IS A BASIC WAY TO DETERMINE THE PRIORITY OF A CONTROLLER BY A SIMPLE MEANS.

3.0 BUS LOADING

BUS LOADING IS THE TOTAL NUMBER OF THE LOADS ON THE BUS WHICH THE CPU MSUT DRIVE AND IS DETERMINED BY ADDING UP THE INDIVIDUAL BUS LOADS OF THE PERIPHERAL CONTROLLERS USED IN THE SYSTEM. THE MAXIMUM NUMBER OF LOADS WHICH A PROCESSOR CAN DRIVE, WITHOUT USING A BUS REPEATER, IS TEN (10) LOADS, NOT INCLUDING THE MAP BOARD. NOTE THAT MEMORY BOARDS, WHICH DO NOT SHARE THE I/O BUS, DO NOT NEED TO BE CONSIDERED IN BUS LOADING.

THE BMC IS CAPABLE OF RUNNING EIGHT (8) CONTROLLERS, BUT SOME CPU AND SOFTWARE CONSTRAINTS MAY APPLY. REFER TO INDIVIDUAL CPU CONFIGURATION SHEETS FOR THESE RESTRICTIONS.

4.0 CABLING & TERMINATING

THE BMC BUS CABLES ARE RIBBON TYPE WITH 40 PIN CONNECTORS. THEY ARE DAISY-CHAINED FROM P1 AND P4 OF THE BMC TO P1 AND P4 OF EACH BMC DEVICE ON THE BUS. A TERMINATOR SHORTING STRIP (DGC NO. 005-013419) ON P2 OF THE LAST DEVICE ON THE BUS. FOR MORE DETAILED INFORMATION REFER TO INDIVIDUAL INSTALLATION DATA SHEETS FOR THE PARTICULAR CPU AND DEVICE TO BE INSTALLED.

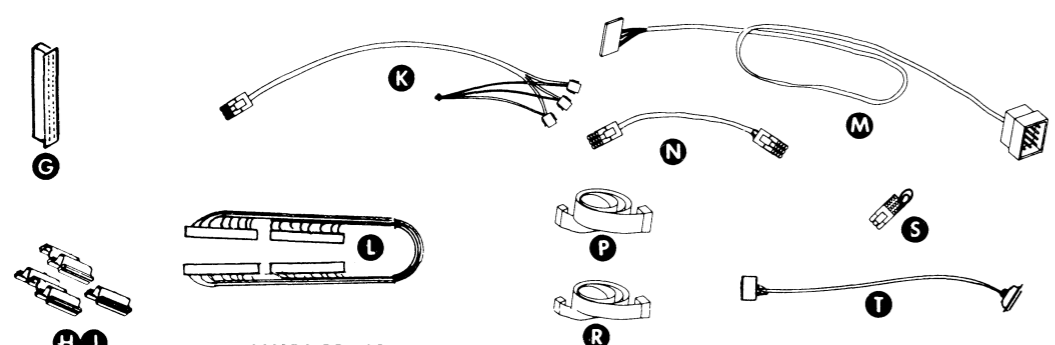
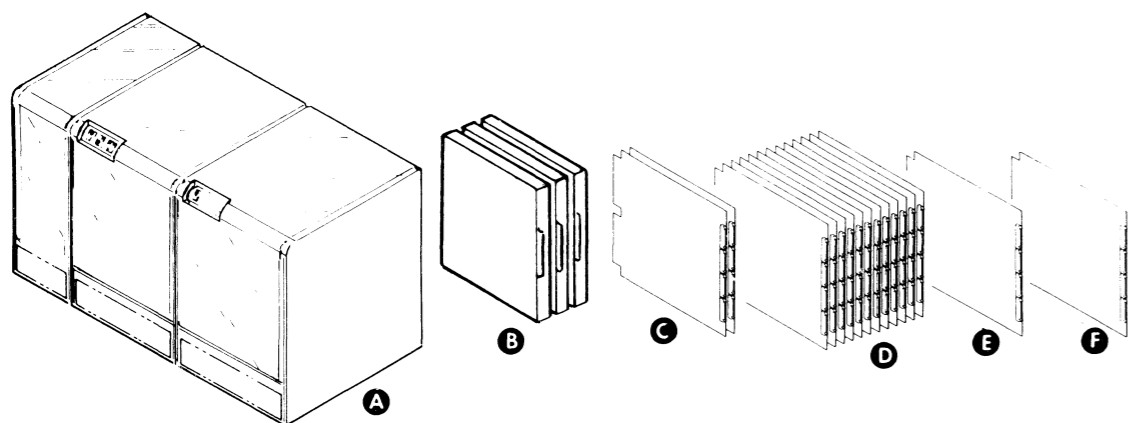
ORDER OF PRIORITY	PRIORITY FACTOR	MODEL NO.	DESCRIPTION	MAX ALLOWABLE LATENCY	WORD RATE / BUFFER SIZE	MEM I/O SLOT	I/O ONLY SLOT	BUS LOADING	NOTES
100	13.2	6122	MHD 277 MB	13.2 us	1.6us/ 16	YES	YES	2	1, 3, 5
200	18	6063H-64H	FHD 1, 2 MB	18 us	2.3us/ 16	YES	YES	2	2, 3
300	19.8	6060H-61H 67H	MHD 50, 96, 190 MB	19.8 us	2.48us/ 16	YES	YES	2	3
350	96	4307	GCR TAPE	96us	2us/48	YES	YES	1	3, 6
400	442.1	6160-61	MHD 73, 147MB	474.6 us	1.6us/512	NO	YES	1	3, 4
		6214 (NOTE 1)	MHD 602MB						
1200	1208.32	B6236 E6236	MHD 360 MB	1.2MS	1.18us/2K	YES	YES	1	1,7

NOTES:

1. RUNS ONLY WITH BMC
2. REQUIRES DCH PRIORITY
3. JUMPER SELECTABLE WORD BURSTS ON BMC - SEE INSTALLATION DATA SHEETS THIS PRODUCT.
4. WILL RUN ONLY IN I/O ONLY SLOT - SEE INSTALLATION DATA SHEETS THIS PRODUCT.
5. TWO RAM BUFFER
6. FIFO BUFFER
7. RAM/FIFO COMBINATION

ECLIPSE LINE

INSTALLATION SPECIFICATIONS

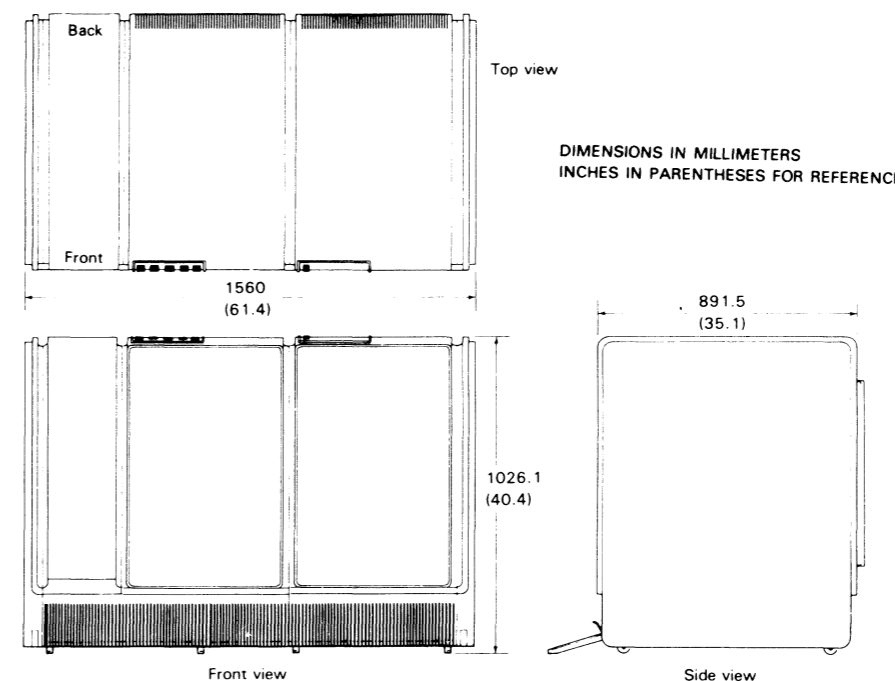


MAJOR COMPONENT

ITEM	Component	Mounting Location	Notes
A	2 BAY CABINET	FREE STANDING	
B	POWER SUPPLY BDS	CABINET	SEE CHART
C	MEMORY BDS	CABINET	1MB, 2MB; 8BDS MAX
D	PROCESSOR BDS	CABINET	SP, I02 (OPTIONAL), I01, FD, FS, AL, MS, AG, AT, IP, SC, BC
E	BOOSTER BD	CABINET	1 ONLY (005-019573)
F	MV BUS REPEATER BD	CABINET	OPTIONAL
G	INTERCONNECT BD	CABINET	

CABLE

ITEM	Cable	Connecting	Max Lgth		Notes
			ft	m	
H	INTERBOARD				10 FOR BETWEEN PROCESSOR BDS
J	BMC	BMC AND CONTROLLERS			2 PER IOC - SIZE DEPENDS ON NUMBER OF CONTROLLERS
K	VNR	VNR AND POWER SUPPLY			005-011051
L	MV/10000 BUS REPEATER	GROUP 1 I/O SLOTS AND GROUP 2 I/O SLOTS			005-021058 (OPTIONAL)
M	VNR CONTROLLER	VNR AND BACKPANEL			005-011052
N	BLOWER	VNR AND BLOWER			005-011050
P	FRONT PANEL, SIGNAL	BACKPANEL AND FRONT PANEL			005-011095
R	FRONT PANEL, POWER	FRONT PANEL AND POWER SUPPLY			005-011096
S	VNR JUMPER, PLUG				005-011081
T	CONSOLE CONNECTOR	BACKPANEL AND BULKHEAD			005-019213



DIMENSIONS:

	Width	Depth	Height
Millimeters	1560	891.5	1026
Inches	61.4	35.1	40.4

SERVICE CLEARANCES:

	Front	Rear	Right	Left
Millimeters	1067	1067	762	762
Inches	42	42	30	30

WEIGHT:

	Empty	Fully Loaded
Kilograms	314	540
Pounds	691	1189

HEAT OUTPUT:

	Watts	BTU/hr
	3400	11,594

OPERATING ENVIRONMENT:

Temperature (max)	38 C	100.4 F
Relative Humidity (max)	20 - 80%	
Altitude	2438m	(8,000 ft)

POWER SUPPLIES

JAPAN (Low Voltage)	005-020143 (master)
	005-020142 (slave)
OTHERS	005-020141 (master)
	005-020140 (slave)

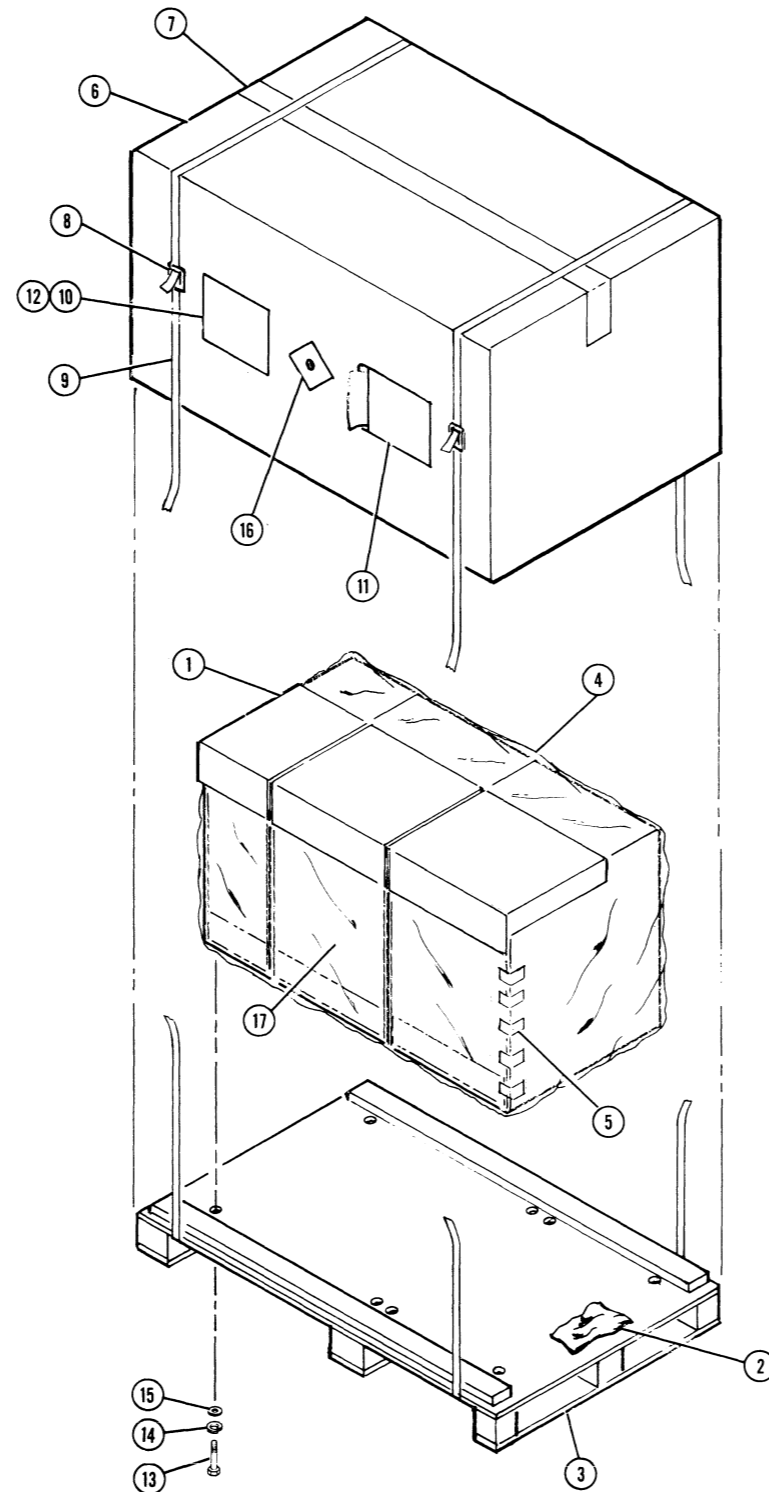
POWER REQUIREMENTS:

Power Suffix	System Type	Voltage	Hertz	Amps	Max Peak Surge
-1	Domestic	208 +10% -15%	60 + 1%	12	60 Msec @30A
-1	Japan	200 +10% -15%	50 & 60 ±1%	13	50 Msec @29A
-2	Low-Voltage Export	220 +10% -15%	50 & 60 ±1%	12	100 Msec @35A
-3, -4	High-Voltage Export	380 +10% -15%	50 & 60 ±1%	7	100 Msec @20A

CABLES:

Power Suffix	System Type	Power Cord	Mating Connector	Permissible Power Mains	Configuration
-1	Domestic	Supplied	NEMA L21-20R (not-supplied)	120/208	Y
-1	Japan	not-supplied	not required	200	Delta
-2	Low-Voltage Export	not-supplied	not required	220/240	Delta Delta
-3, -4	High-Voltage	not-supplied	not required	220/380/240/415	Y Y

PACKING



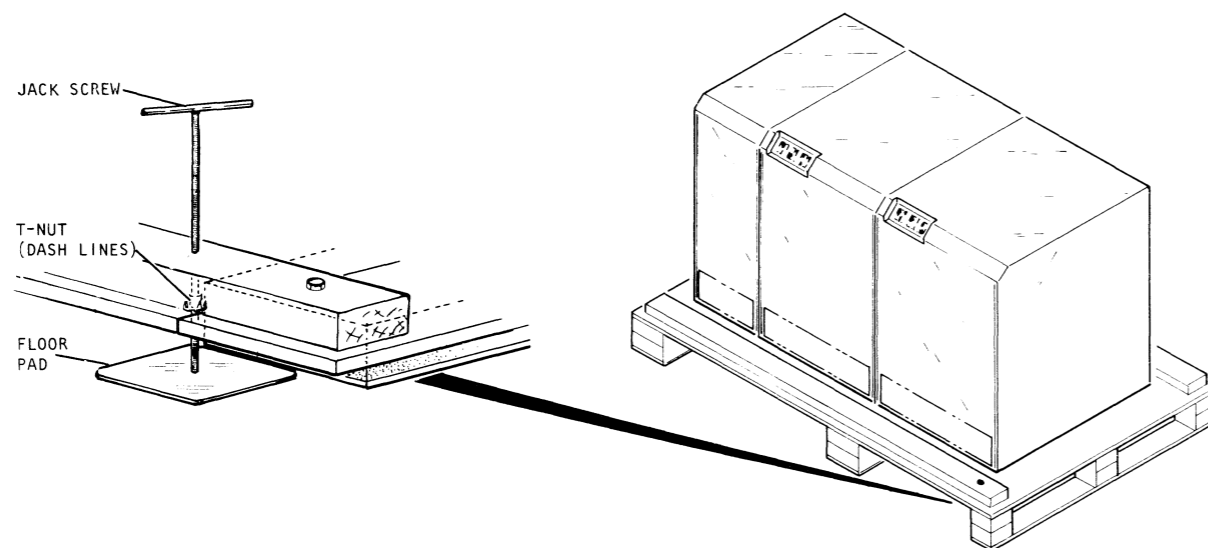
17	REF	CABINET, DOUBLE BAY	
16	2	SHOCKWATCH LABEL	
15	8	WASHER, FLAT 3/8	106000621
14	8	WASHER, LOCK 3/8	106000622
13	8	BOLT, HEX HD 3/8-16 X 1"	106000618
12	A/R	2" CLEAR SCOTCH TAPE	129000051
11	1	PACKING LIST ENVELOPE 6 3/4 X 5	129000042
10	1	DGC SHIPPING LABEL	129000030
9	A/R	POLYPROPYLENE STRAPPING	129000123
8	A/R	BUCKLE, AVB-4	129000025
7	A/R	REINFORCED SEALING TAPE 3"	129000027
6	1	HALF SLOTTED CONTAINER	
5	A/R	2" FILAMENT TAPE	129000370
4	1	POLYBAG	
3	1	SHOCK-MOUNTED PALLET	
2	1	PALLET UN-LOADING KIT	129000435
1	A/R	CORRUGATED FRONT PANEL COVER	129000780
ITEM	QTY	DESCRIPTION	PART NUMBER

UNLOADING MV/10000 CABINET

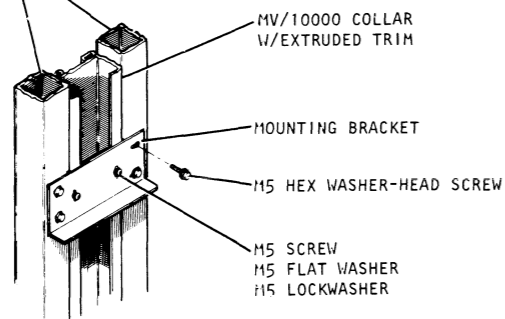
1. INSERT TWO JACK SCREWS THROUGH HOLES IN 2x3'S ON RIGHT END OF PALLET AND SCREW INTO T-NUTS.
2. SET ENDS OF JACK SCREWS INTO HOLES IN THE PADS ON THE FLOOR AND TURN T-NUTS UP UNTIL THE POINTS ENGAGE THE BOTTOM SURFACE OF THE PALLET.
3. REMOVE THE TWO SHIPPING BRACKETS FROM THE RIGHT SIDE OF THE CABINET AND PALLET.
4. SIMULTANEOUSLY TURN BOTH JACK SCREWS AND RAISE THE CUSHION MODULE FROM THE FLOOR.

REMOVE BOLTS AND SLIDE REMOVEABLE SECTION FROM PALLET. IF HARDIGG STYLE PALLET IS USED, REMOVE SKID-MATES FROM END OF PALLET BEING JACKED.
5. SIMULTANEOUSLY TURN BOTH JACK SCREWS TO LOWER END OF PALLET TO THE FLOOR.
7. HOLD MACHINE IN PLACE AND REMOVE THE TWO REMAINING SHIPPING BRACKETS.
8. EASE THE CABINET OFF THE PALLET.

UNLOADING AND SETUP



CORNER POSTS OF MV/10000 AND TWO-BAY CABINETS

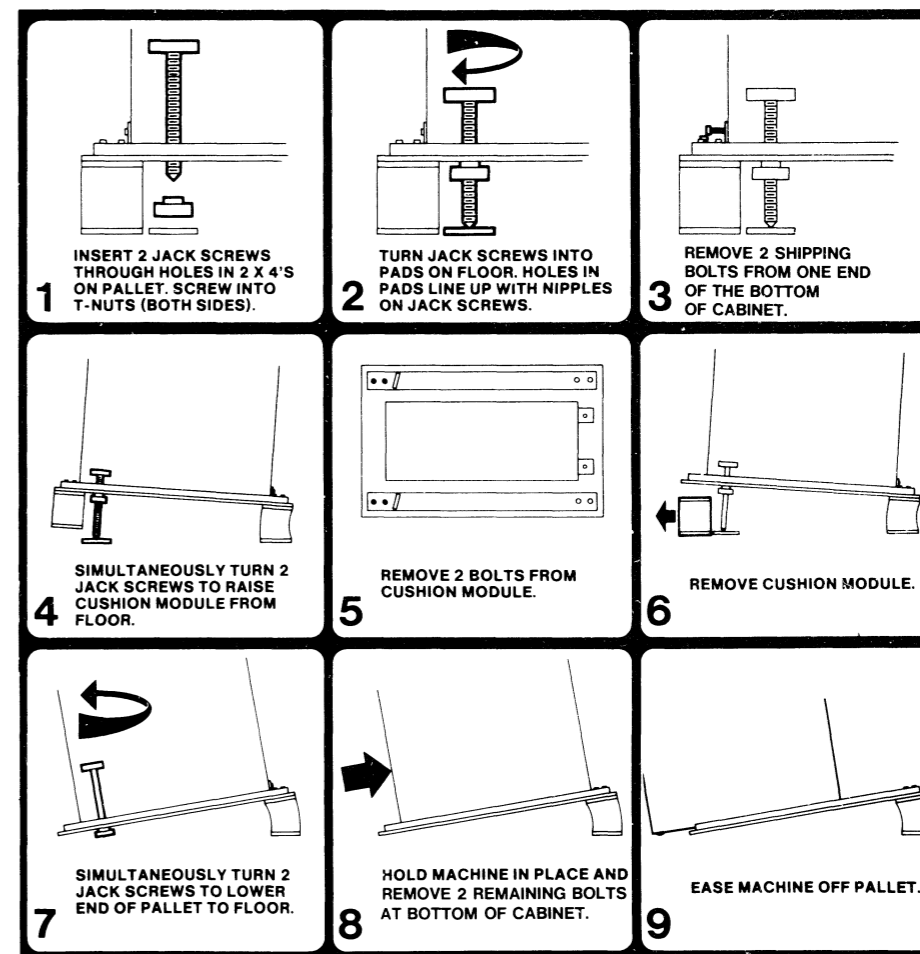


SHIPPED WITH COLLAR ATTACHED TO TWO-BAY CABINET

MV / 10000

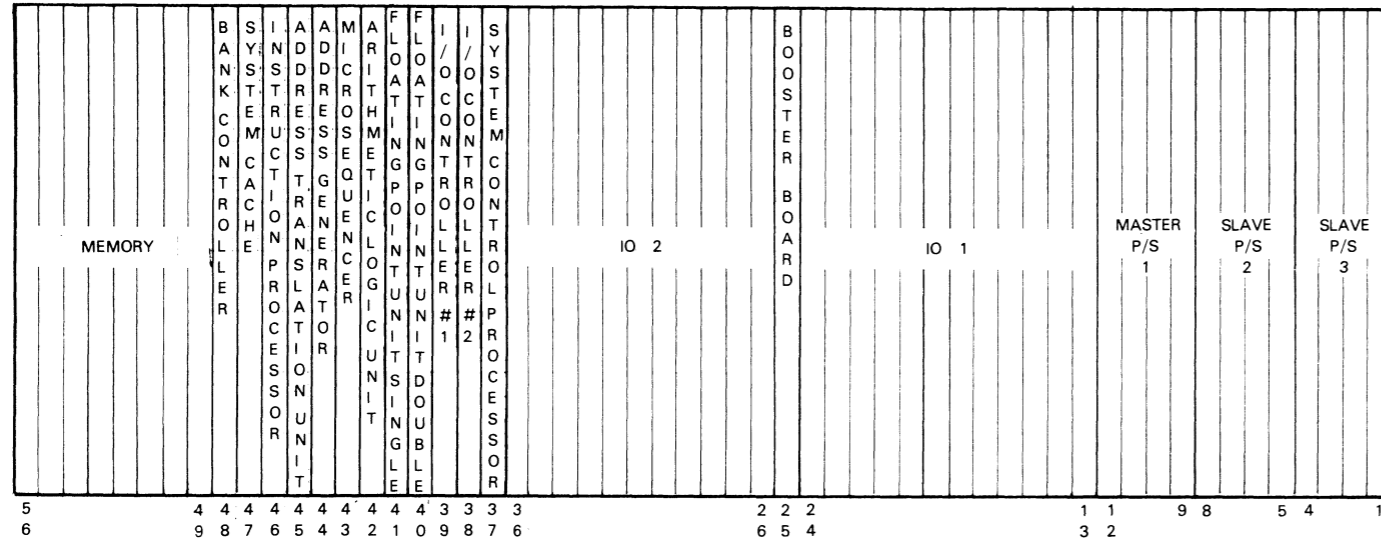
IMPORTANT

THIS IS A TWO-MAN OPERATION



SLOT ASSIGNMENTS and POWER DISTRIBUTION

FRONT VIEW

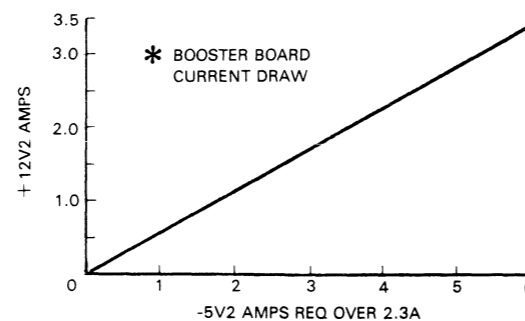


		+5V Current Draw	+12V3 Current Draw	-5V3 Current Draw	+5MEM1 Current Draw	Watts
BC	BANK CONTROLLER	14A				70
SC	SYSTEM CACHE	18.2A				91
IP	INSTRUCTION PROCESSOR	15.2A				76
AT	ADD TRANSLATION UNIT	13.8A				69
AG	ADDRESS GENERATOR	18.2A				91
MS	MICROSEQUENCER	15.3A				76.5
AL	ARITH LOGIC UNIT	18A				90
FS	FPU (SINGLE)	16.4A				82
FD	FPU (DOUBLE)	16.4A				82
I01	I/O CONTROLLER #1	14.3A				71.5
I02	I/O CONTROLLER #2	14.3A				71.5
SP	SYST CONTROL PROC	13.4A	0.27A	0.05A		70.5
PROCESSOR BOARDS TOTAL			0.27A	0.05A		
2MB (64K)	FIRST	5.1A			4.9A	50
	ADDITIONAL	4.1A			1.5A	28
1MB (64K)	FIRST	5.1A			4.6A	48.5
	ADDITIONAL	4.1A			1.0A	25.5
TOTAL OF MEM & PROCESSOR						

	+5V Current Draw	+12V1 Current Draw	+12V2 Current Draw	+12V3 Current Draw	-5V1 Current Draw	-5V2 Current Draw	-5V3 Current Draw	+5MEM1 Current Draw	+5MEM2 Current Draw	+5MEM3 Current Draw	Watts
I/O SLOTS 29-36											
I/O SLOTS 26-28											
I/O SLOTS 21-24											
I/O SLOTS 17-20											
I/O SLOTS 15, 16											
I/O SLOTS 13, 14											
BOOSTER BOARD	0		3.6 *								
FRONT PANEL/ TERMINATORS								3			
EXTERNAL BBU				4						11.2	60
I/O TOTALS											
MEM & PROCESSOR TOTAL											
TOTAL SYSTEM											

	JAPAN	OTHER
TOTAL +5V CURRENT DRIVE		
MAX +5V CURRENT AVAILABLE	320	350
+5V CURRENT SURPLUS		
MIN +5V CURRENT	18	18

Group of Slots	Maximum Current (Amps) For Group
13, 14	22
15, 16	22
17, 18, 19, 20	40
21, 22, 23, 24	40
25, 26, 27, 28	40
29, 30, 31, 32	40
33, 34, 35, 36	40
37, 38	40
39, 40	40
41, 42	40
43, 44	40
45, 46	40
47, 48	40
49, 50, 51, 52	40
53, 54, 55, 56	40

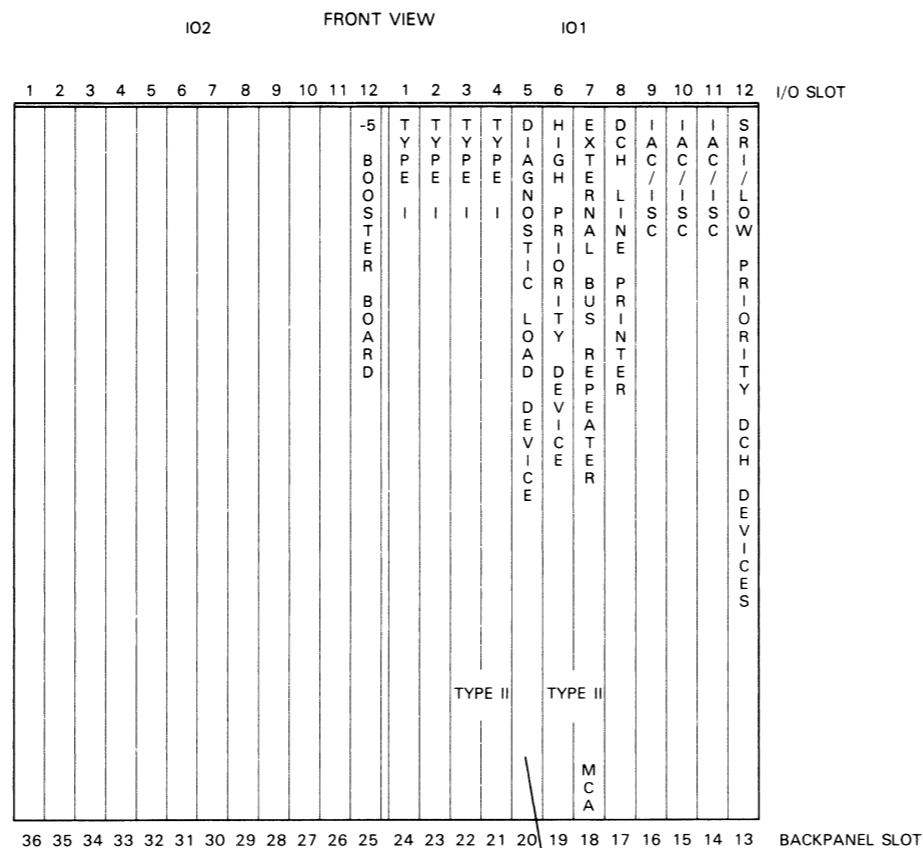


TOTAL +12V1 CURRENT DRIVE MAX +12V1 CURRENT AVAILABLE +12V1 CURRENT SURPLUS MIN +12V1 CURRENT	5.5 0	TOTAL -5V1 CURRENT DRIVE MAX -5V1 CURRENT AVAILABLE -5V1 CURRENT SURPLUS MIN -5V1 CURRENT	2.3 0	TOTAL +5MEM1 CURRENT DRIVE MAX +5MEM1 CURRENT AVAILABLE +5MEM1 CURRENT SURPLUS MIN +5MEM1 CURRENT	16 0	JAPAN	OTHER
TOTAL +12V2 CURRENT DRIVE MAX +12V2 CURRENT AVAILABLE +12V2 CURRENT SURPLUS MIN +12V2 CURRENT	5.5 0	TOTAL -5V2 CURRENT DRIVE MAX -5V2 CURRENT AVAILABLE -5V2 CURRENT SURPLUS MIN -5V2 CURRENT	8.3 0	TOTAL +5MEM2 CURRENT DRIVE MAX +5MEM2 CURRENT AVAILABLE +5MEM2 CURRENT SURPLUS MIN +5MEM2 CURRENT	16 0	16	22
TOTAL +12V3 CURRENT DRIVE MAX +12V3 CURRENT AVAILABLE +12V3 CURRENT SURPLUS MIN +12V3 CURRENT	5.5 0	TOTAL -5V3 CURRENT DRIVE MAX -5V3 CURRENT AVAILABLE -5V3 CURRENT SURPLUS MIN -5V3 CURRENT	2.3 0	TOTAL +5MEM3 CURRENT DRIVE MAX +5MEM3 CURRENT AVAILABLE +5MEM3 CURRENT SURPLUS MIN +5MEM3 CURRENT	16 0	16	22

TOTAL WATTS _____
NOTE: -5V2 AVAILABLE WITHOUT BOOSTER BOARD (005-019573) IS 2.3 AMPS.

I/O CONFIGURATION GUIDELINES

1 IOC NO INTERNAL BUS REPEATER



BMC PRIORITY

HIGH TYPE II DISKS
 (TWO BOARD BMC CONTROLLERS)
 TYPICAL MODELS: 6122
 6060

LOW TYPE I DISKS
 (SINGLE BOARD BMC CONTROLLERS)
 TYPICAL MODELS: 6214
 6160
 6161
 6236

DCH PRIORITY

HIGH 4330-33 A/D D/A
 4055 A/D
 6098 DISK W/QUAD
 6100 DISK W/QUAD

LOW IAC
 ISC
 DCH LINE PRINTER
 6026 NRZI

NOTE:
 ISC's SHOULD HAVE THE LOWEST PRIORITY.

NOTE:
 DIAGNOSTIC LOAD DEVICE IS TYPICALLY
 A DUAL MODE TAPE DRIVE.

ID-00474
 010-000351

GUIDELINES

1. IAC/ISC SHOULD START AT SLOT 9 OF IO1.
2. 6045 DISKS AND 6020 TAPE DRIVES WILL NOT BE SUPPORTED.
3. YOU CAN NOT CASCADE BUS REPEATERS.
4. BMC DEVICES MUST BE JUMPERED FOR 16 WORD TRANSFERS.

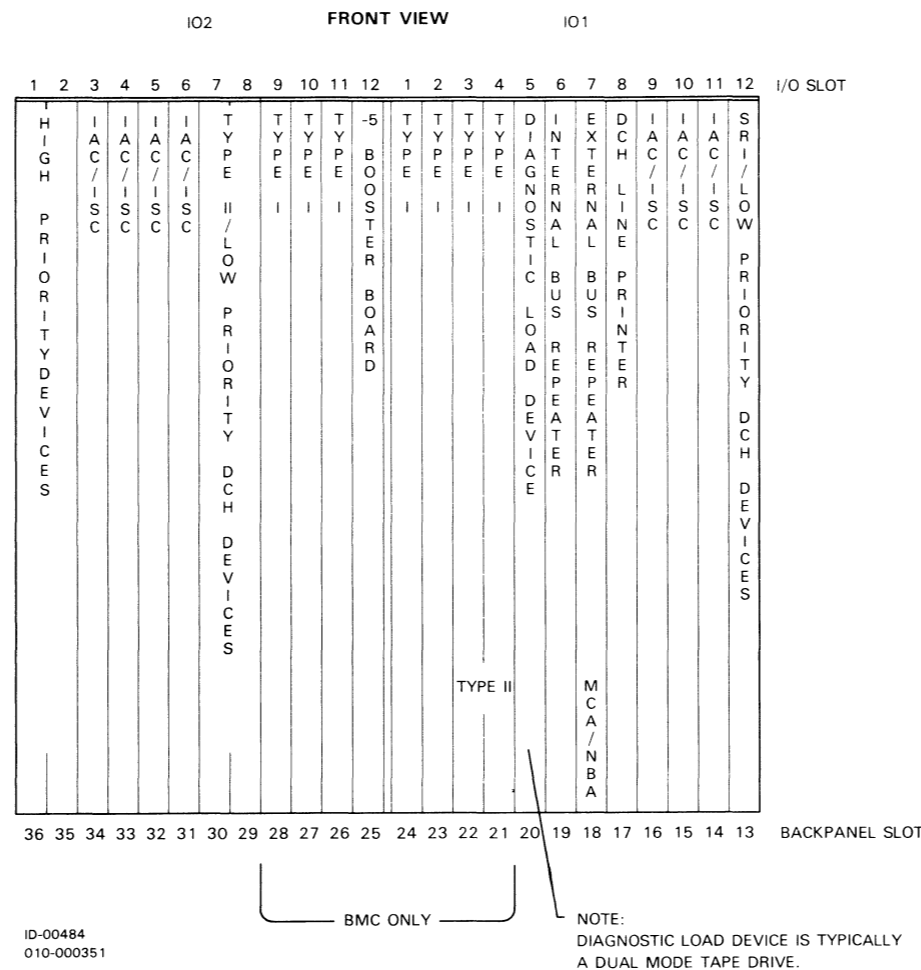
NOTE

THESE ARE CONFIGURATION GUIDELINES NOT RULES. THESE GUIDELINES WERE SET UP FOR THE FOLLOWING REASONS:

1. POWER MANAGEMENT IS DIFFICULT. CONFIGURATIONS SET UP BY THESE GUIDELINES HAVE A BETTER CHANCE OF NOT EXCEEDING CURRENT DRAW.
2. LATER EXPANSION COULD CAUSE COMPLETE RECONFIGURATION AND RECABLING IF THESE GUIDELINES ARE NOT FOLLOWED.
3. THESE CONFIGURATIONS ARE SET-UP TO ALLOW EASY ADDITION OF THE SECOND IOC.

I/O CONFIGURATION GUIDELINES (CONT)

1 IOC 1 INTERNAL BUS REPEATER



- BMC PRIORITY**
- H TYPE II DISKS
(TWO BOARD BMC CONTROLLERS)
 - H TYPICAL MODELS: 6122
6060
 - L TYPE I DISKS
(SINGLE BOARD BMC CONTROLLERS)
 - W TYPICAL MODELS: 6214
6160
6161
6236
- DCH PRIORITY**
- H 4330-33 A/D D/A
 - I 4055 A/D
 - G 6098 DISK W/QUAD
 - H 6100 DISK W/QUAD
 - L IAC
 - O ISC
 - W DCH LINE PRINTER
6026 NRZI

NOTE:
ISC's SHOULD HAVE THE LOWEST PRIORITY.
WATCH + 12 CURRENT ON + 12V3 DRAW IF BBU IS INSTALLED.
WATCH + 5 MEM3 CURRENT DRAW IF BBU IS INSTALLED.
PERIPHERALS SHOULD BE DIVIDED BETWEEN IO1 AND IO2 FOR
CASE OF CONVERTING TO SECOND IOC IN FUTURE EXPANSION.

- GUIDELINES**
1. IAC/ISC SHOULD START AT SLOT 9 OF IO1.
 2. THE INTERNAL BUS REPEATER SHOULD BE IN SLOT 6 OF IO1.
 - 3.
 4. 6045 DISKS AND 6020 TAPE DRIVES WILL NOT BE SUPPORTED.
 5. YOU CAN NOT CASCADE BUS REPEATERS.
 6. BMC DEVICES MUST BE JUMPED FOR 16 WORD TRANSFERS.
 7. THE SYSTEM SHOULD BE CONFIGURED TO DIVIDE CONTROLLERS BETWEEN THE IO1 AND IO2 SLOTS.

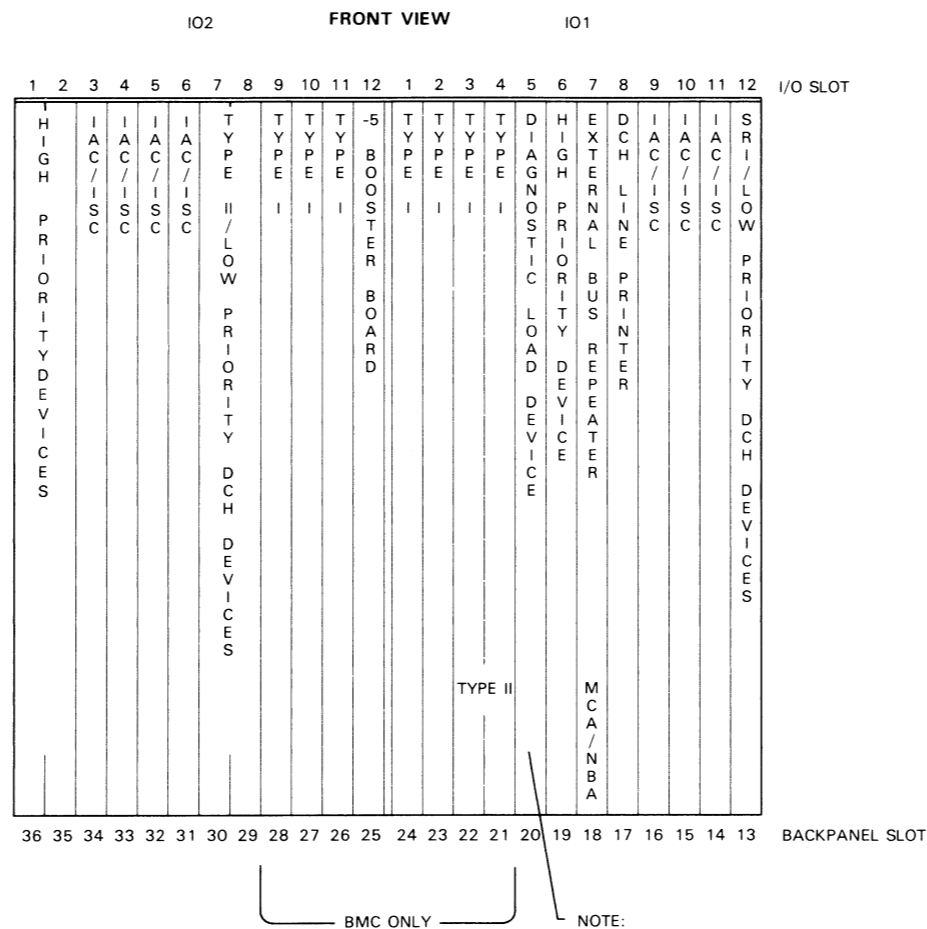
NOTE

THESE ARE CONFIGURATION GUIDELINES NOT RULES. THESE GUIDELINES WERE SET UP FOR THE FOLLOWING REASONS:

1. POWER MANAGEMENT IS DIFFICULT. CONFIGURATIONS SET UP BY THESE GUIDELINES HAVE A BETTER CHANCE OF NOT EXCEEDING CURRENT DRAW.
2. LATER EXPANSION COULD CAUSE COMPLETE RECONFIGURATION AND RECABLING, IF THESE GUIDELINES ARE NOT FOLLOWED.
3. THESE CONFIGURATIONS ARE SET-UP TO ALLOW EASY ADDITION OF THE SECOND IOC.

I/O CONFIGURATION GUIDELINES (CONT)

2 IOC 1 EXTERNAL BUS REPEATER



- BMC PRIORITY**
- HIGH** TYPE II DISKS
(TWO BOARD BMC CONTROLLERS)
TYPICAL MODELS: 6122
6060
- LOW** TYPE I DISKS
(SINGLE BOARD BMC CONTROLLERS)
TYPICAL MODELS: 6214
6160
6161
6236
- DCH PRIORITY**
- HIGH** 4330-33 A/D D/A
4055 A/D
6098 DISK W/QUAD
6100 DISK W/QUAD
- LOW** IAC
ISC
DCH LINE PRINTER
6026 NRZI

NOTE:

ISC's SHOULD HAVE THE LOWEST PRIORITY.

WATCH + 12 CURRENT DRAW ON + 12V3 IF BBU IS INSTALLED.

WATCH + 5 MEM3 CURRENT DRAW IF BBU IS INSTALLED.

ID-00473
010-000351

GUIDELINES

1. IAC/ISC SHOULD START AT SLOT 9 OF IO1.
2. 6045 DISKS AND 6020 TAPE DRIVES WILL NOT BE SUPPORTED.
3. YOU CAN NOT CASCADE BUS REPEATERS.
4. BMC DEVICES MUST BE JUMPERED OR 16 WORD TRANSFERS.
5. THE SYSTEM SHOULD BE CONFIGURED TO DIVIDE THE CONTROLLERS BETWEEN THE IO1 AND IO2 SLOTS.

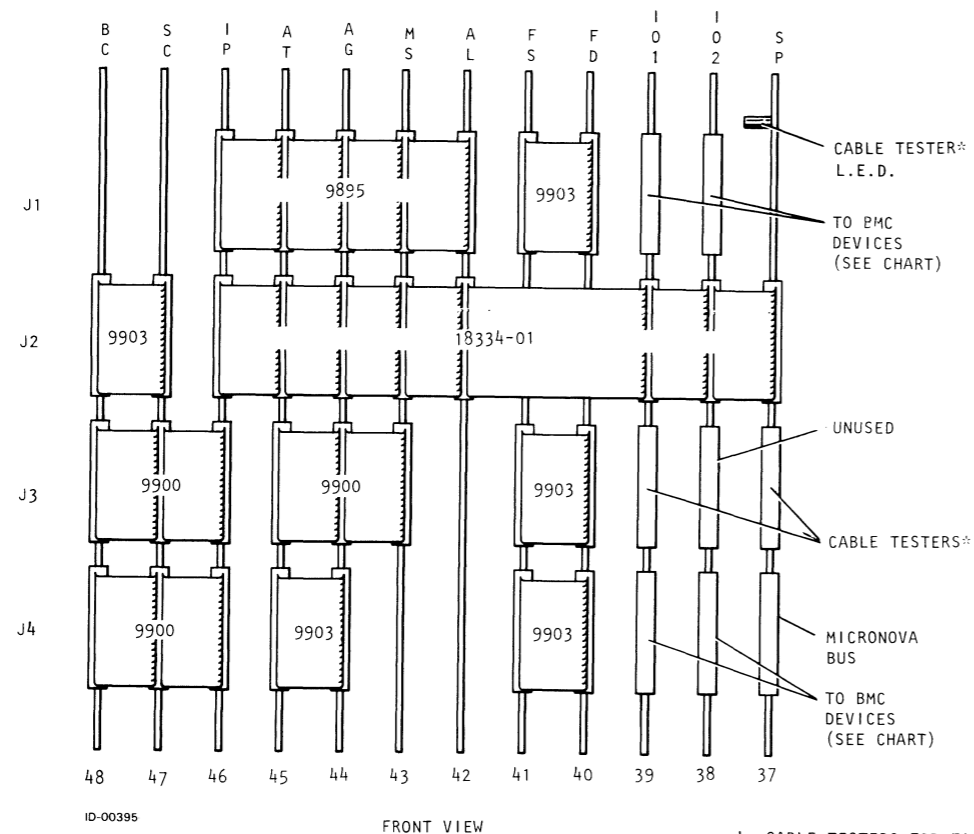
NOTE

THESE ARE CONFIGURATION GUIDELINES NOT RULES. THESE GUIDELINES WERE SET UP FOR THE FOLLOWING REASONS:

1. POWER MANAGEMENT IS DIFFICULT. CONFIGURATIONS SET UP BY THESE GUIDELINES HAVE A BETTER CHANCE OF NOT EXCEEDING CURRENT DRAW.
2. LATER EXPANSION COULD CAUSE COMPLETE RECONFIGURATION AND RE-CABLING IF THESE GUIDELINES ARE NOT FOLLOWED.

INTERNAL CABLING

NOTE: OPTIONAL BATTERY BACKUP IS INSTALLED IN EXPANSION BAY. SEE 010-000333.



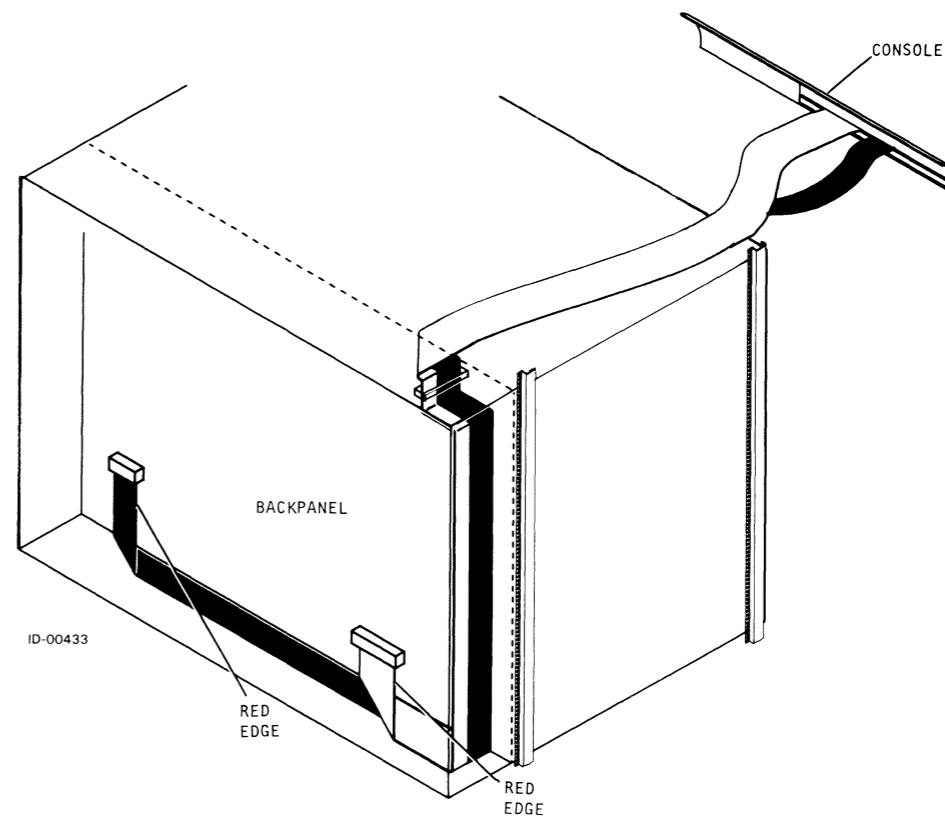
FRONT VIEW

* CABLE TESTERS FOR FIELD ENGINEERING ONLY.

NO OPENS EXIST BETWEEN THE TWO CONNECTORS UNDER TEST IF THE TESTER L.E.D. LIGHTS STEADILY. INTERWIRE SHORTS ARE NOT DETECTED.

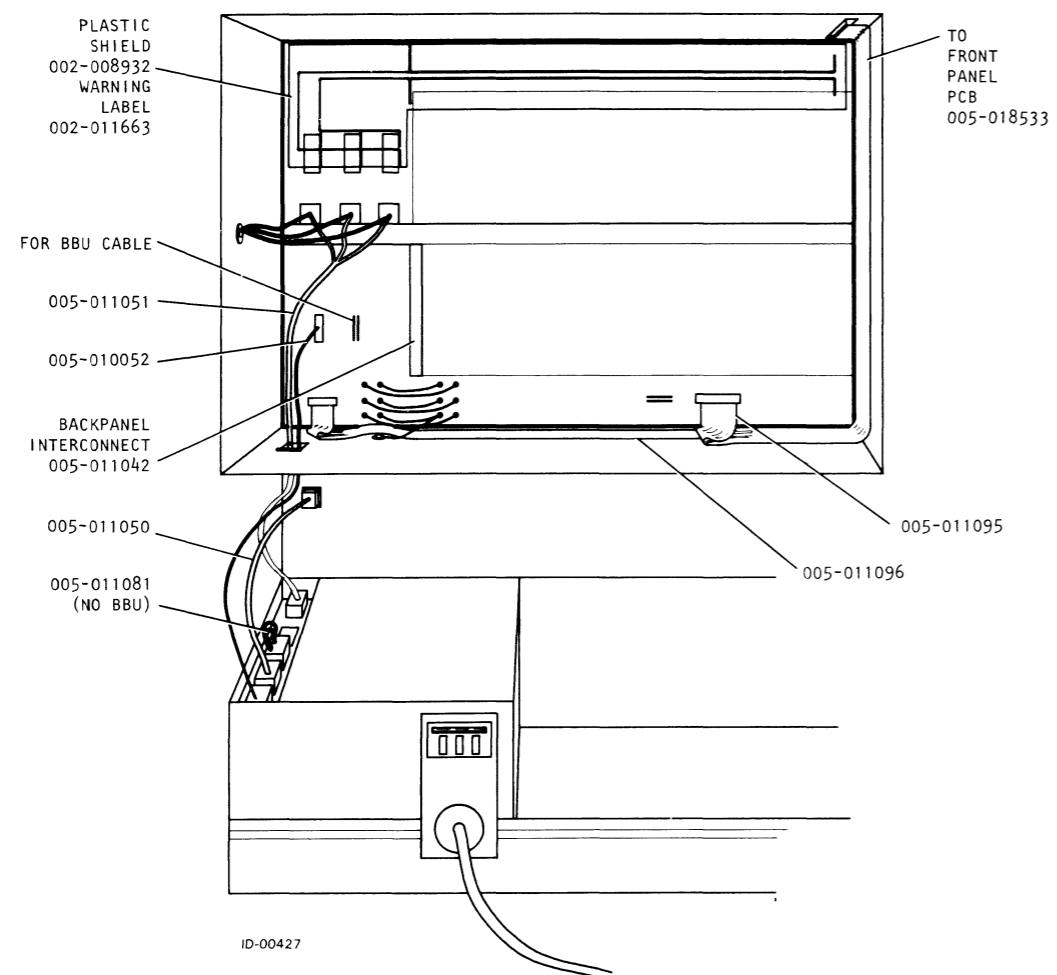
BMC INTERNAL CABLES - CONNECTING FROM IO1 OR IO2 TO BMC DEVICES	
1	BMC CONTROLLER 005-007408
2	BMC CONTROLLERS 005-012858
3	BMC CONTROLLERS 005-012859
4	BMC CONTROLLERS 005-012857
5	BMC CONTROLLERS 005-017669
6	BMC CONTROLLERS 005-019986
7	BMC CONTROLLERS 005-020251
8	BMC CONTROLLERS 005-020252

DRESSING CABLES FROM BACKPANEL TO CONSOLE



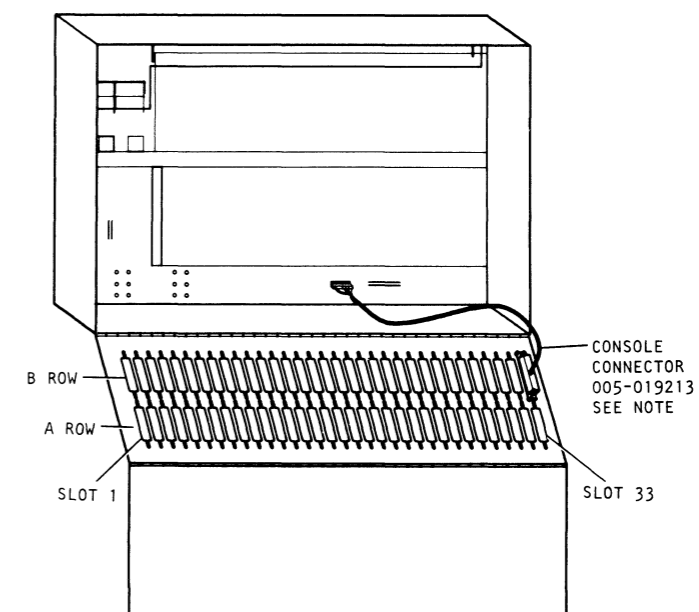
INTERNAL CABLING (CONT)

BACKPANEL / VNR INTERCONNECTIONS



CONSOLE CONNECTOR

BACK VIEW



ID-00438

NOTE:

WHEN CONNECTING TTY INTERFACE CABLE BE SURE TO USE ONLY THE BOTTOM ROW OF BACKPANEL PINS.

INTERNAL CABLE DIAGRAM

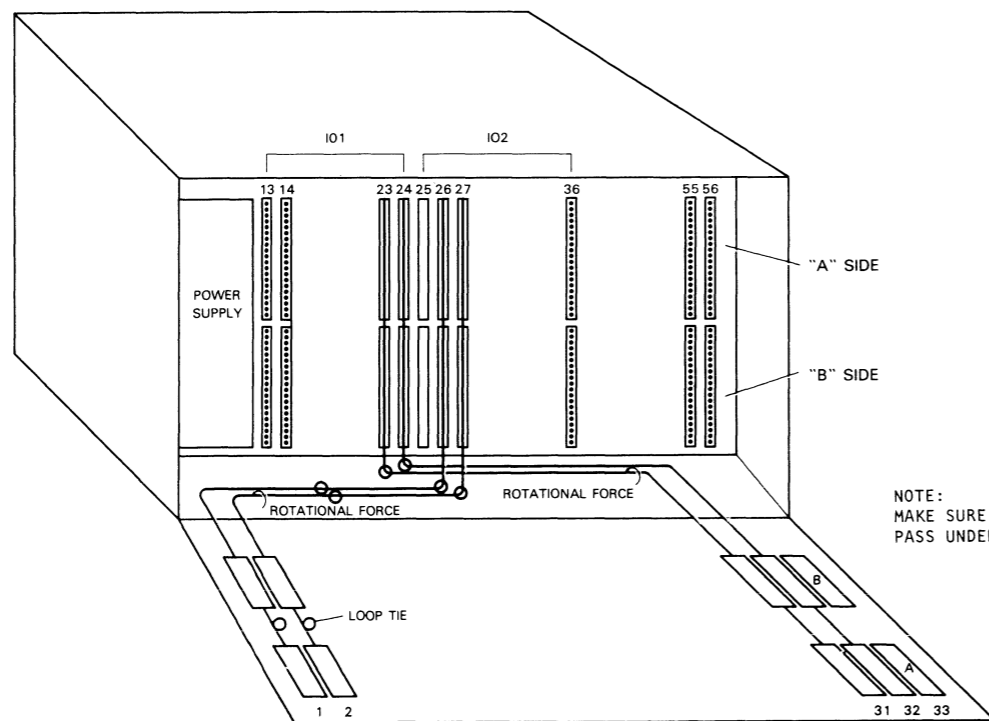
BACKPANEL SLOT TO BULKHEAD CONNECTOR MAP

BACKPANEL SLOT																CONNECTOR ON BULKHEAD													
1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6														
1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	3	4	5	6	7	8	9	1	1	J1		
3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	B	B	B	B	B	B	B	B	B	0	1		J2	
1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	3	4	5	6	7	8	9	1	1			J3
7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	A	A	A	A	A	A	A	A	A	0	1			
B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B												A		
1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1										B	
7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	2	3	4											B
A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	B	B	B											
																1	1	1									A		
																2	3	4										A	
																9	0	1											A
																A	A	A											
																2	3	4									A		
																9	0	1										A	
																A	A	A											A

BULKHEAD CONNECTOR TO BACKPANEL SLOT MAP

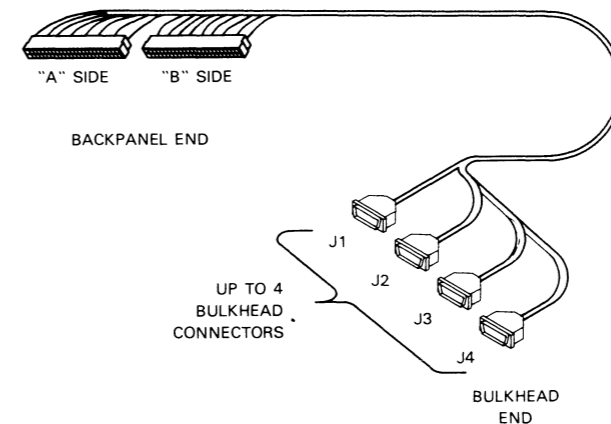
BACK VIEW OF CLOSED BULKHEAD DOOR

CONNECTOR COLUMN	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	3	3	3	3	
A CONNECTOR ROW																						S	P	P										S
B CONNECTOR ROW																						S	P	P										C
ASSOCIATED BACKPANEL SLOT	2	2	2	2	3	3	3	3	3	3	2	2	2								1	1	1	1	1	1	1	1	2	2	2	2	B	
	6	7	8	9	0	1	2	3	4	5	6	6	7	8							3	4	5	6	7	8	9	0	1	2	3	4	P	
	ASSOCIATED BACKPANEL SLOT																																	

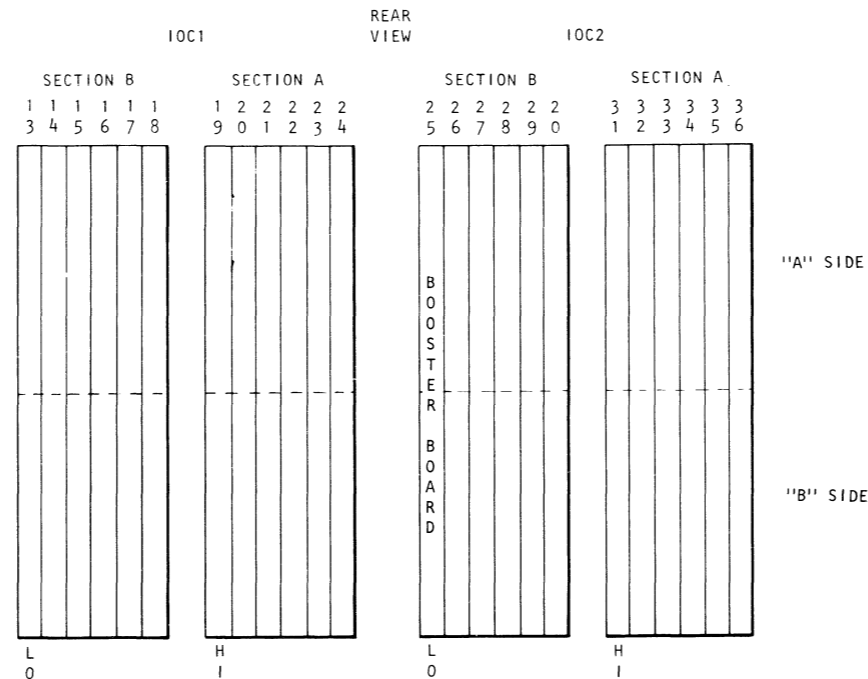


NOTE:
MAKE SURE IO1 CABLES
PASS UNDER IO2 CABLES.

TYPICAL INTERNAL CABLE



TAILORING JUMPERING



PRIORITY JUMPERING

NOTE: JUMPERING OF THE MV/10000 IS SIGNIFICANTLY DIFFERENT FROM PREVIOUS DATA GENERAL CPU'S. THE DATA CHANNEL AND INTERRUPT PRIORITIES OF EACH IOC ARE INDEPENDENT. EACH IOC DRIVES 12 I/O SLOTS. THESE SLOTS ARE DIVIDED INTO 2 SECTIONS. IOC1 DRIVES SLOTS 24 - 19 (SECTION A IOC1) AND 18 - 13 (SECTION B IOC1), IOC2 DRIVES SLOTS 36 - 31 (SECTION A IOC2) AND 30 - 25 (SECTION B IOC2). TAKE CARE WHEN JUMPERING PRIORITIES OF BOARDS AS EXPLAINED BELOW.

IN A DUAL IOC CONFIGURATION, IOC1 SLOT 24 HAS THE HIGHEST PRIORITY AND SLOT 13 THE LOWEST, FOR IOC2 SLOT 36 HAS THE HIGHEST PRIORITY AND SLOT 25 THE LOWEST.

DATA CHANNEL PRIORITY JUMPERING
(2 IOC'S USED OR 1 IOC USED TO
DRIVE IOC1 SLOTS ONLY)

1. IF THE FIRST BOARD IN SECTION B OF AN IOC IS EMPTY (SLOT 18 (IOC1) OR SLOT 30 (IOC2)) THEN JUMPER DCHPIN (PIN A94) OF THAT SLOT TO DCHPIN (PIN A94) OF THE NEXT SLOT USED IN THAT SECTION.
2. ALL OTHER DCHP JUMPERING OVER EMPTY SLOTS IS PER DATA GENERAL CORP. STANDARD (I.E. DCHPOUT A93 OF LAST OCCUPIED SLOT TO DCHPIN A94 OF NEXT OCCUPIED SLOT).
3. IF A BUS REPEATER IS ADDED IN A SINGLE IOC SYSTEM TO DRIVE IOC2 SLOTS, THEN A WIRE WRAP FROM SLOTS 31 - A93 MUST ALSO BE ADDED.

INTERRUPT PRIORITY JUMPERING

(2 IOC'S USED OR 1 IOC USED
TO DRIVE IOC1 SLOTS ONLY)

1. INTERRUPT PRIORITY IS JUMPERED IN STANDARD DATA GENERAL CORP. FASHION OVER EMPTY SLOTS (I.E. JUMPER INTPOUT A95 FROM LAST OCCUPIED SLOT TO INTPIN A96 OF NEXT OCCUPIED SLOT). EXCEPT WHEN THE LAST SLOT OF SECTION A (IOC1 SLOT 19 OR IOC2 SLOT 31) IS EMPTY. IN THIS CASE THE INTPOUT (A95) OF THE LAST OCCUPIED SLOT IS JUMPERED TO INTPOUT (A95) OF IOC1 SLOT 19 OR IOC2 SLOT 31 AND TO THE INTPIN (A96) OF THE NEXT OCCUPIED SLOT.

1 IOC
(WITH A BUS REPEATER USED TO
DRIVE CHANNEL 2 I/O SLOTS)

WHEN A BUS REPEATER IS USED TO CONNECT CHANNEL 2 I/O SLOTS (36 - 25) TO CHANNEL 1 I/O SLOTS (24 - 13), A BUS REPEATER MAY BE PLACED IN ANY CHANNEL 1 I/O SLOT. A CABLE (005-021058) MUST BE PLACED BETWEEN THAT SLOT AND SLOT 38. THIS WILL MAKE SLOTS 24 UP TO THE BUS REPEATER OF HIGHEST PRIORITY, AND THE CHANNEL 2 I/O SLOTS OF LOWER PRIORITY FOLLOWED BY ANY CHANNEL 1 I/O SLOTS AFTER THE BUS REPEATER.

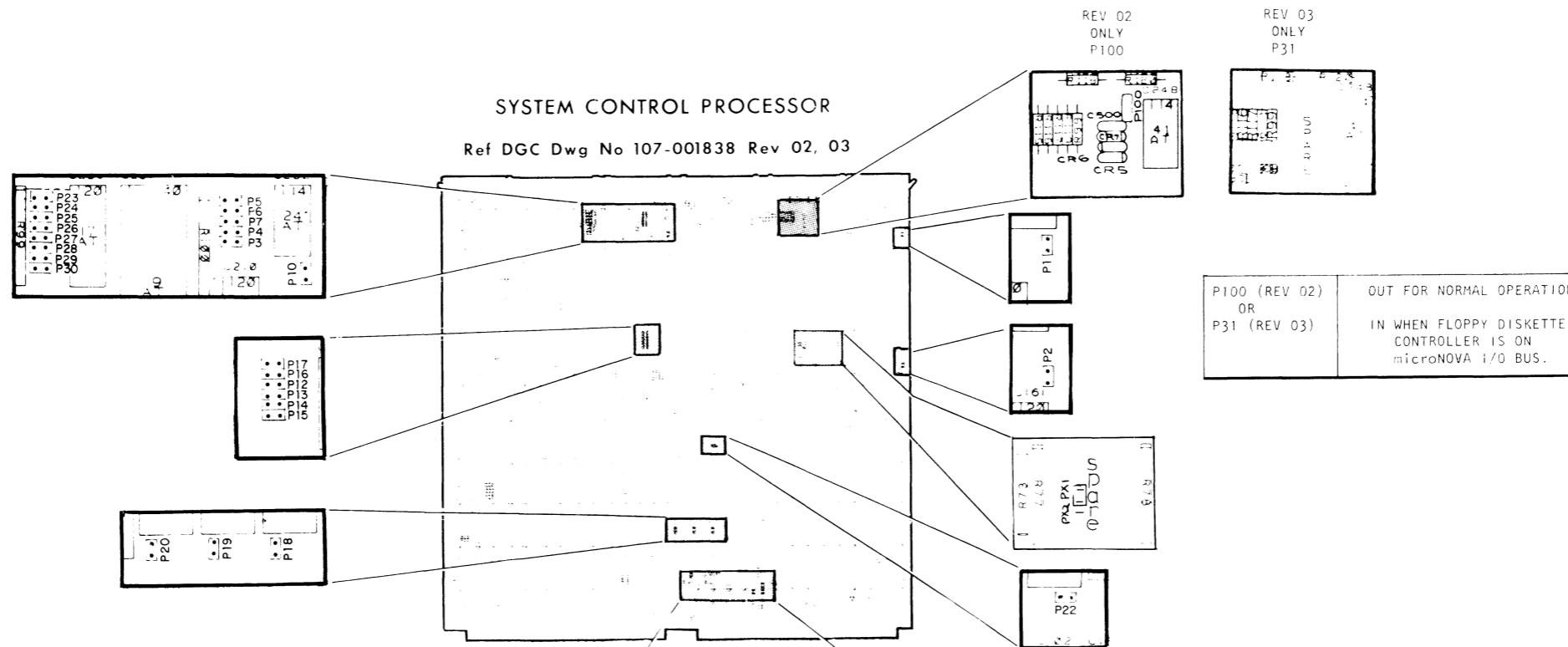
WHEN USING BUS REPEATER CABLE
(005-021058) CONNECT AS FOLLOWS:

P3 A SIDE TO SLOT 38 A SIDE
P4 B SIDE TO SLOT 38 B SIDE
P1 A SIDE TO I/O SLOT A SIDE
P2 B SIDE TO I/O SLOT B SIDE

TAILORING (CONT)

JUMPERING

SYSTEM CONTROL PROCESSOR
Ref DGC Dwg No 107-001838 Rev 02, 03



REV 02 ONLY
P100

REV 03 ONLY
P31

P100 (REV 02) OR P31 (REV 03)
OUT FOR NORMAL OPERATION
IN WHEN FLOPPY DISKETTE CONTROLLER IS ON microNOVA I/O BUS.

TTY INTERFACE SELECTION

SERIAL FORMAT			
JUMPER NUMBER	NORMAL STATE	NAME	EXPLANATION
P3	OUT	PARITY INHIBIT	INHIBITS PARITY GENERATION AND CHECKING. THE STOP BIT(S) WILL IMMEDIATELY FOLLOW THE LAST DATA BIT OF TRANSMISSION.
P4	IN	STOP BIT SELECT	OUT - SELECTS TWO STOP BITS IN - SELECTS ONE STOP BIT.
P5	OUT	PARITY ENABLE	OUT - PRODUCES EVEN PARITY GENERATION AND CHECKING. IN - PRODUCES ODD PARITY GENERATION AND CHECKING.
P6 P7	OUT OUT	WORD LENGTH SELECT	THE WORD LENGTH IS SELECTED ACCORDING TO THE FOLLOWING TABLE:

ELECTRICAL CHARACTERISTIC

P8 - IN (CURRENT LOOP)
OUT (RS232)

P9 - IN (CURRENT IF BELOW 600 BAUD)

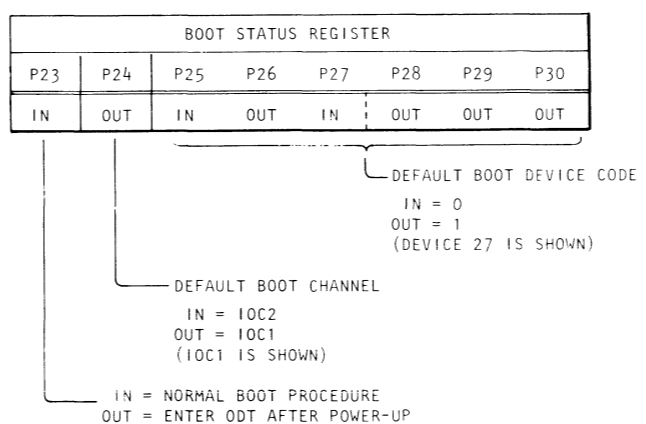
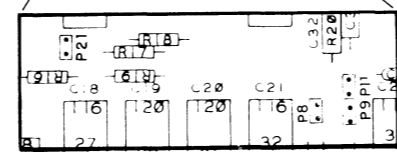
P10 - IN (CURRENT LOOP)
OUT (RS232)

P11 - IN (RS232)
OUT (CURRENT LOOP)

PX1 - IN (CLEAR TO SEND)

PX2 - IN (REGULAR OPERATION)

BAUD RATE SELECTION				
	P15	P14	P13	P12
50	IN	IN	IN	IN
75	IN	IN	IN	OUT
110	IN	IN	OUT	IN
135.5	IN	IN	OUT	OUT
150	IN	OUT	IN	IN
300	IN	OUT	IN	OUT
600	IN	OUT	OUT	IN
1200	IN	OUT	OUT	OUT
1800	OUT	IN	IN	IN
2000	OUT	IN	IN	OUT
2400	OUT	IN	OUT	IN
3600	OUT	IN	OUT	OUT
4800	OUT	OUT	IN	IN
7200	OUT	OUT	IN	OUT
9600	OUT	OUT	OUT	IN



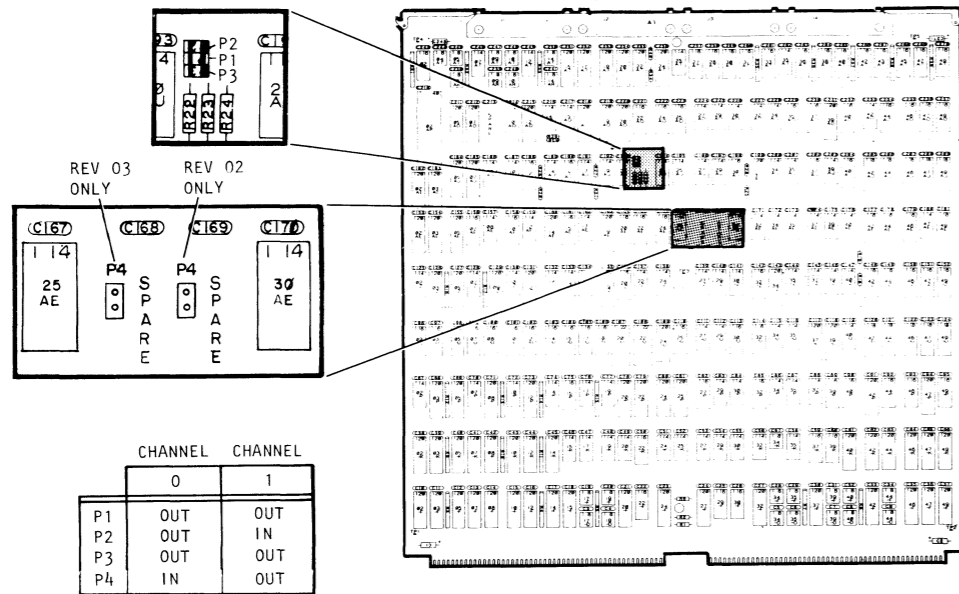
TESTABILITY JUMPERS MUST BE INSTALLED AS SHOWN

P1 - ALWAYS IN
P2 - ALWAYS IN
P10 - ALWAYS IN (TTYT)
P17 - ALWAYS IN (TTYR)
P18 - ALWAYS IN
P19 - ALWAYS IN
P20 - ALWAYS IN
P21 - ALWAYS IN
P22 - ALWAYS IN

TAILORING (CONT) JUMPERING

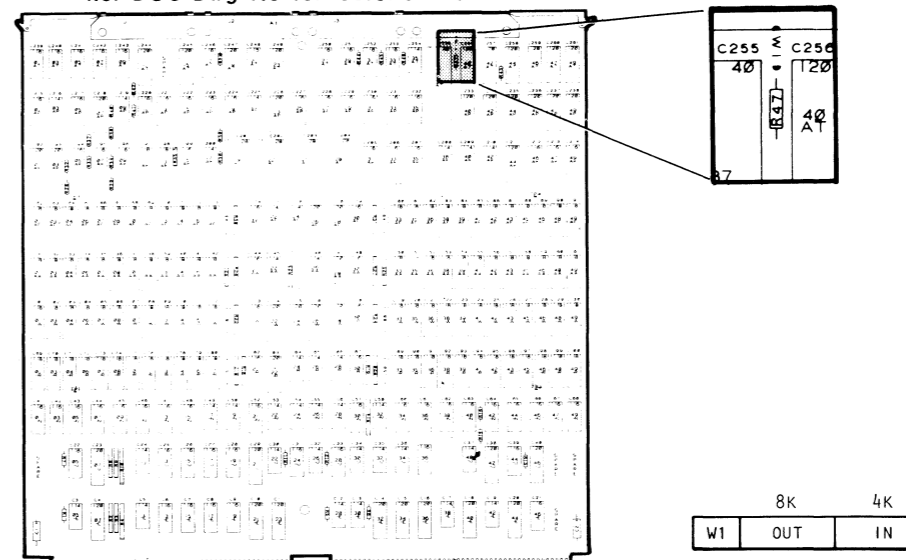
IOC

Ref DGC Dwg No 107-001837 Rev 02, 03



MICRO SEQUENCER

Ref DGC Dwg No 107-001678 Rev 01

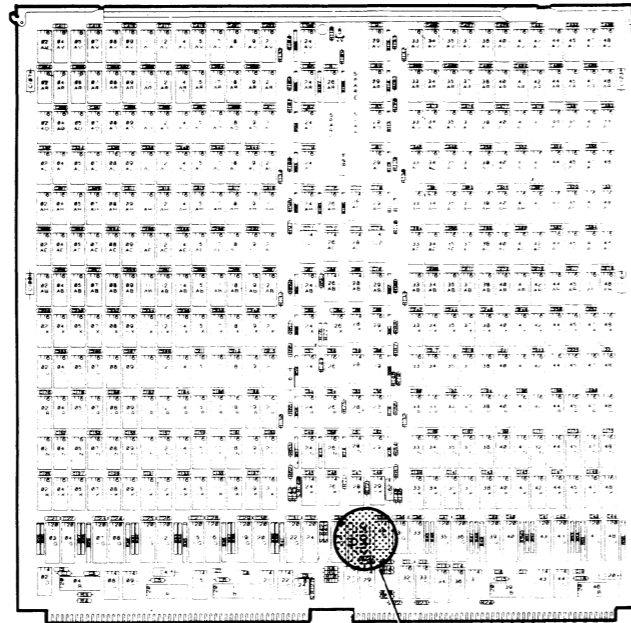


WRITE CONTROL STORAGE (4K) 005-019221
WRITE CONTROL STORAGE (8K) 005-018469

TAILORING (CONT) JUMPERING

MEMORY

NOTE: FOR ORDERING ADDITIONAL
BOARDS SEE CHART
REF DGC Dwg No 107-001804 Rev 01



MEMORY BOARDS

MEMORY SIZE	RAM TYPE	ASSEMBLY NUMBER
2MB	64 K	005-018664
1MB	64 K	005-018666

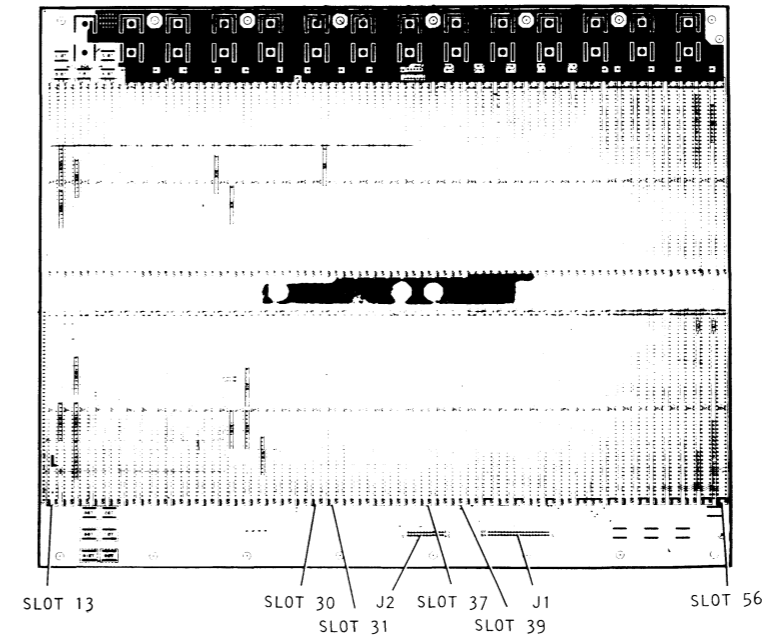
	2 MBYTE	1 MBYTE
0 MBYTE		NONE
1 MBYTE	NONE	W6
2 MBYTE		W5
3 MBYTE	W5	W5, W6
4 MBYTE		W4
5 MBYTE	W4	W4, W6
6 MBYTE		W4, W5
7 MBYTE	W4, W5	W4, W5, W6
8 MBYTE		W3
9 MBYTE	W3	W3, W6
10 MBYTE		W3, W5
11 MBYTE	W3, W5	W3, W5, W6
12 MBYTE		W3, W4
13 MBYTE	W3, W4	W3, W4, W6
14 MBYTE		W3, W4, W5
15 MBYTE	W3, W4, W5	W3, W4, W5, W6
16 MBYTE		

NOTES:

1. ALL JUMPERS LISTED INDICATE THE IN POSITION.
2. BOARD 0 MUST BE IN SLOT 56, AND ANY BOARDS AFTER THAT MUST BE IN ASCENDING ORDER (i.e. BOARD 1 IN SLOT 55, BOARD 2 IN SLOT 54, ETC).
3. DIFFERENT COMBINATIONS OF 1 AND 2 MB MEMORY BOARDS MAY BE INTERMIXED IN THE MV/10000 MEMORY SYSTEM.
4. SLOTS 56 THRU 49 ARE RESERVED FOR MEMORY.
5. LARGEST MEMORY BOARD SIZES ARE CONFIGURED INTO THE HIGHEST NUMBERED MEMORY SLOTS BEGINNING WITH SLOT 56.
6. JUMPERS W1 THRU W8 DEFINE THE ADDRESS BOUNDARIES OF EACH MEMORY BOARD.
7. THE FIRST MEMORY BOARD (SLOT 56) REQUIRES NO JUMPERING (W1 THRU W8 OUT).
8. THE FOLLOWING JUMPERS ARE ALWAYS OUT: W1, W2, W7, AND W8.

44-SLOT BACKPANEL

Ref DGC Dwg No 107-001237 Rev 01



WIRE WRAPS

	11: IOMPOUT	12: IOMPOUT	DCHRLO	DCHRH1
	SLOT 39-B30 TO SLOT 37-B28		SLOT 31-A93 TO SLOT 30-A94	
ONE IOC	IN		DON'T CARE	
ONE IOC WITH INTERNAL BUS REPEATER	IN		IN	
TWO IOC	OUT		OUT	

TAILORING (CONT)

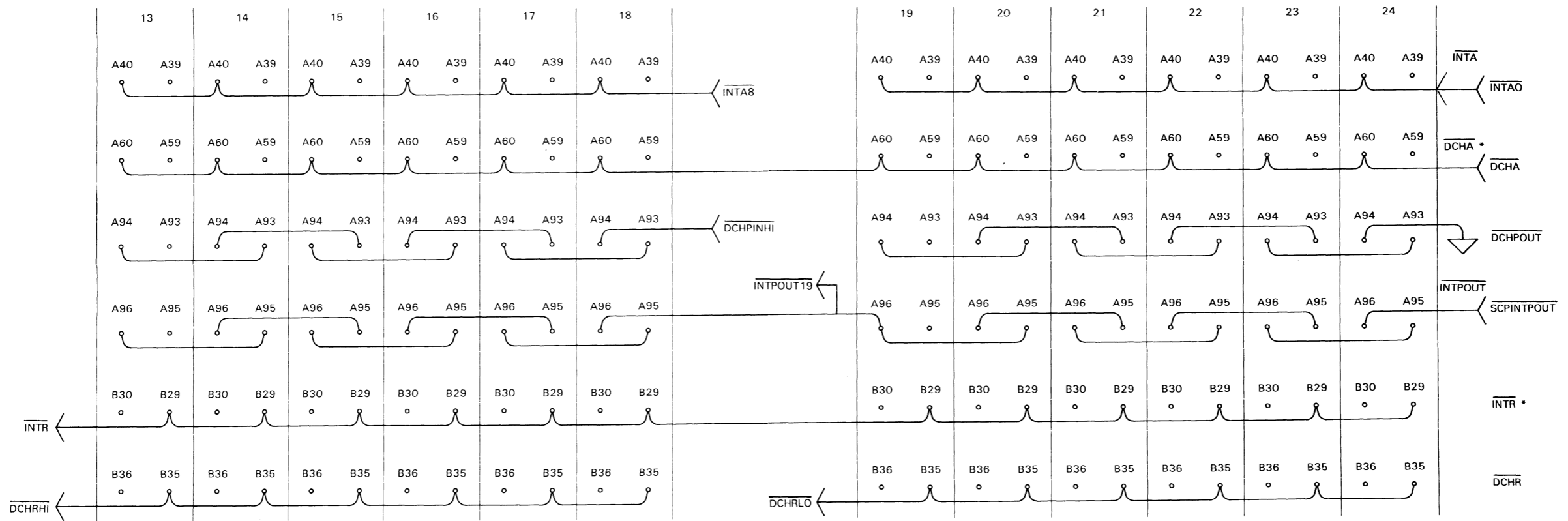
PRIORITY JUMPERING

THE BACKPANEL SUPPLIES THE PRIORITY CHAIN FOR BOTH THE INTERRUPT AND DATA CHANNEL REQUESTS. THE BACKPANEL HAS TWO SIGNALS, DCHPOUT AND INPOUT WHICH GO FROM ONE I/O CONTROLLER SLOT TO THE NEXT, ENTERING THE CONTROLLER ON ONE PIN OF THE SLOT AND LEAVING THE CONTROLLER ON ANOTHER PIN. IF A SLOT ON THE I/O SYSTEM IS EMPTY, AND THE CHAIN HAS BEEN BROKEN; ALL CONTROLLERS FARTHER DOWN THE CHAIN FROM THE EMPTY SLOT WILL NEVER BE ABLE TO ACKNOWLEDGE AN INTERRUPT. JUMPERS MUST BE USED TO KEEP THE CHAIN INTACT.

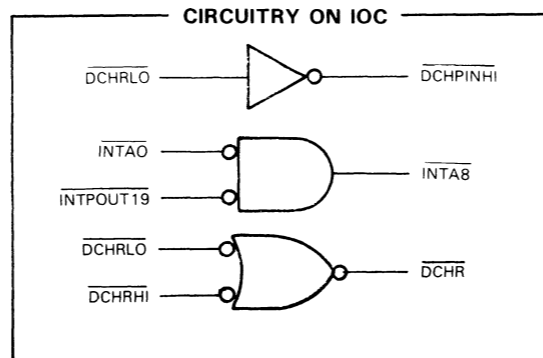
THE CENTRAL PROCESSOR'S I/O SLOTS IN THE ECLIPSE MV/1000 COMPUTER ARE NOT CONTIGUOUS. THE I/O IS DIVIDED INTO 2 SECTIONS, A AND B, FOR THE PURPOSE OF REDUCING THE NUMBER OF BOARDS THROUGH WHICH THE INTERRUPT AND DATA CHANNEL PRIORITY MUST PROPAGATE. THE SPEED UP LOGIC IS LOCATED ON THE IOC. WHEN SLOTS ARE JUMPED OVER CARE MUST BE TAKEN TO BE SURE THAT THE IOC STILL RECEIVES THE SIGNALS THAT WILL ALLOW THIS SPEED-UP, AND THAT ITS OUTPUT GO TO THE NEXT DEVICE IN THE CHAIN. THESE SIGNALS ARE:

INPUT TO IOC ^INTPOUT A-95 OF SLOT 19 (SLOT 31 FOR IOC2)

OUTPUT FROM IOC ^DCHPIN A-94 OF SLOT 18 (SLOT 30 FOR IOC2)

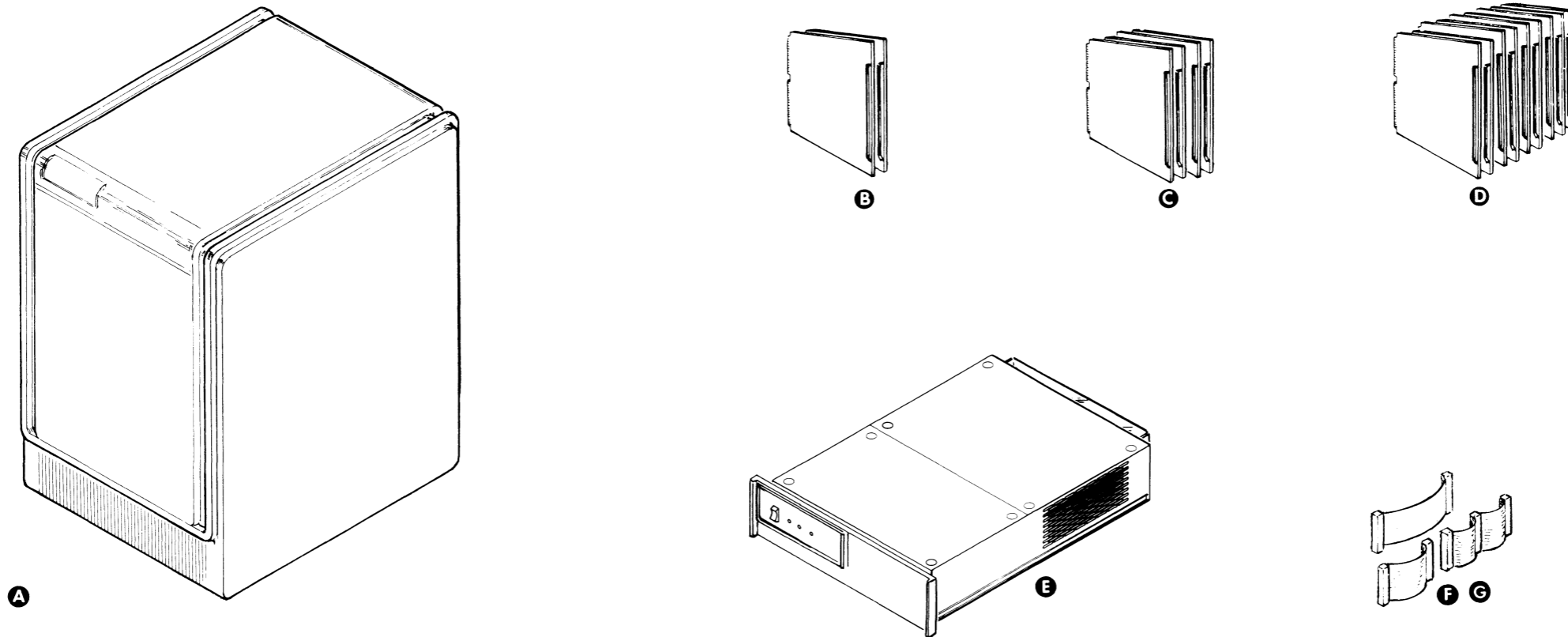


ID-00998
010-000351



* INTR AND DCHR ARE HANDLED IN THE STANDARD MANNER AND SHOWN FOR COMPLETENESS.

INSTALLATION SPECIFICATIONS

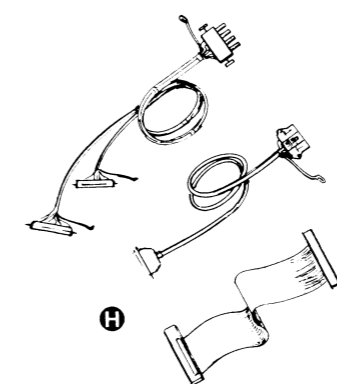


MAJOR COMPONENT

ITEM	COMPONENT	MOUNTING LOCATION	NOTES
A	CPU CABINET	FREE-STANDING	19" BAY
B	POWER SUPPLY BOARDS	IN CPU CABINET	2 BOARDS
C	MEMORY BOARDS	IN CPU CABINET	1 Mb MIN: 4 BOARDS MAX
D	PROCESSOR BOARDS	IN CPU CABINET	BC: MICRO; ALU1:FPU (OPTIONAL); IP; ATU; CACHE; SCP; IOC
E	BATTERY BACKUP 8745-D	METER HIGH "P" BAY	MODEL 1605, 1606, 010-333

CABLES

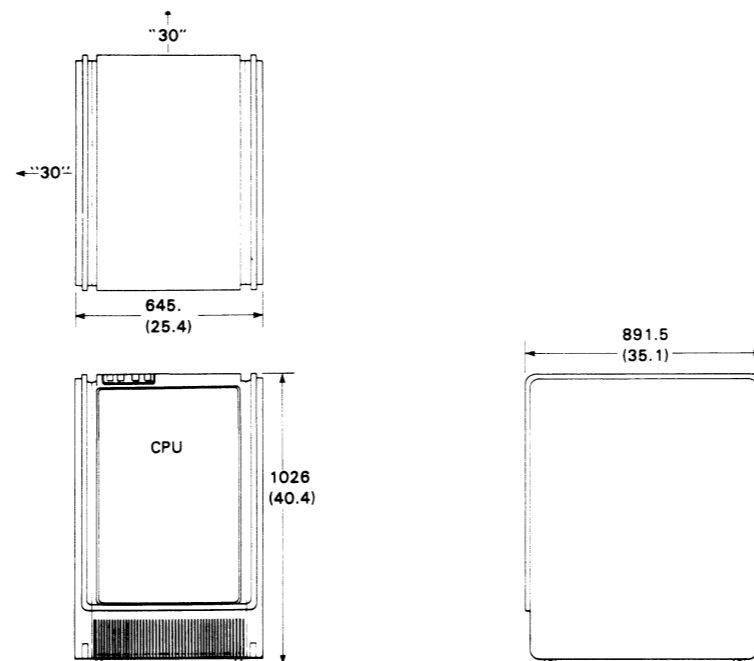
ITEM	CABLE	CONNECTING	MAX LG		NOTES
			FT	M	
F	INTERBD	PROCESSOR BOARDS			9 FOR BETWEEN PROCESSOR BOARDS
G	BMC	BMC AND CONTROLLERS			2 REQUIRED - SIZE DEPENDS ON # OF CONTROLLERS
H	BBU/VNR	BATTERY BACKUP CABLES	4	1.2	



NOTE: PERIPHERAL CABINET OPTIONAL 1605, 1606, 1344

Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. As temporarily permitted by regulation it has not been tested for compliance with the limits for Class A computing devices pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference. Operation of this equipment in a residential area is likely to cause interference, in which case the user, at his own expense, will be required to take whatever measures may be required to correct the interference.

INSTALLATION SPECIFICATIONS (CONT)



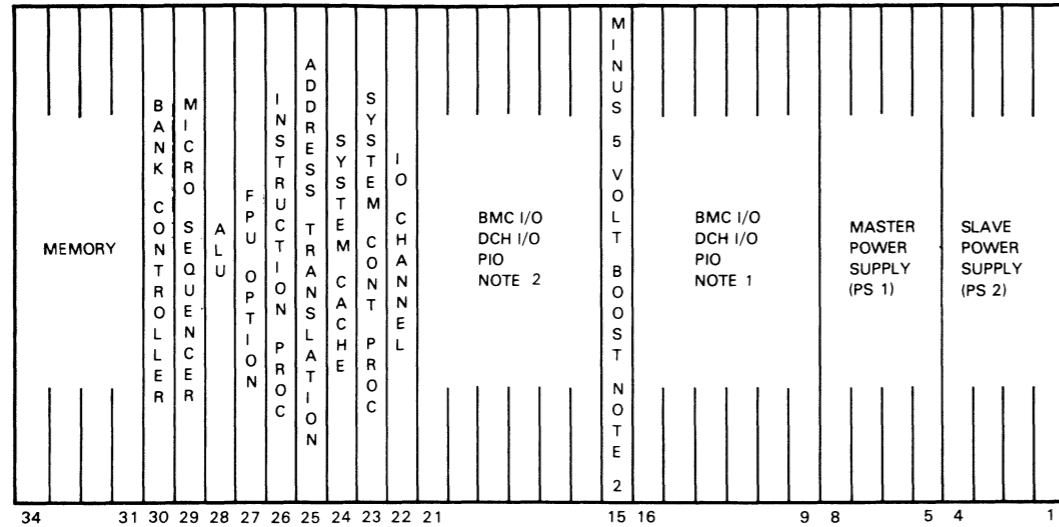
DIMENSIONS:	Width	Depth	Height
Millimeters	645	892	1026
Inches	25.4	35.1	40.4
SERVICE CLEARANCES:	Front	Rear	Left / Right
Millimeters	762	762	762
Inches	30	30	30
WEIGHT:	Empty	Fully Loaded	
Kilograms	165.1	192	
Pounds	360	425	
HEAT OUTPUT:	Watts	BTU/hr	
	2500	8500	
OPERATING ENVIRONMENT:			
Temperature Range	38 C	100.4 F	
Relative Humidity	20% - 80%		
Altitude	2438 m 8000 ft		
TRANSIT ENVIRONMENT:			
Temperature Range	-40 +65 C		
	-40 +149 F		
Relative Humidity	10% - 90%		
Altitude	-1000 ft +25000 ft		
	-304.8 m +7620 m		

POWER REQUIREMENT

TYPE	3 PHASE		VOLTAGE	HERTZ		MAX AMP PER PHASE	START UP SURGE FOR .2 SEC	INTERNAL POWER ASSEMBLIES				POWER WIRING			
		WYE						MASTER P.S.	SLAVE P.S.	VNR	TRANSFORMER	CABLES	CABINET CONNECTOR	SOURCE PLUG	CONFIGURATION
DOMESTIC	120/208	WYE	+10% -15%	60	+/-1%	9.4	11 AMPS	005-020141	005-020140	005-018706	NONE	SUPPLIED	L21-20R	L21-20P	5 WIRE
JAPANESE	200	DELTA	+10% -15%	50/60	+/-1%	9.6	11 AMPS	005-020143	005-020142	005-018707	NONE	NOT SUPPLIED	L21-20R	USER SPECIFIED	4 WIRE
LOW VOLTAGE EXPORT	220/240	DELTA	+10% -15%	50/60	+/-1%	8.3	12 AMPS	005-020141	005-020140	005-018709	NONE	NOT SUPPLIED	TERMINAL BLOCK	USER SPECIFIED	4 WIRE
HIGH VOLTAGE EXPORT	220/380 240/415	WYE WYE	+10% -15%	50/60	+/-1%	6.2	12 AMPS	005-020141	005-020140	005-018710	005-018647	NOT SUPPLIED	TERMINAL BLOCK	USER SPECIFIED	5 WIRE

INSTALLATION SPECIFICATIONS (CONT)

FRONT VIEW



NOTE 1: IF MORE CURRENT IS REQUIRED IN THESE SLOTS ADD -5 VOLT BOOSTER BOARD MODEL 8766 005-019573. THIS BOOSTER WILL DRAW +12V CURRENT. STANDARD CONFIGURATIONS DO NOT REQUIRE A BOOSTER ON THIS SUPPLY. INSTALL DATA SHEETS 010-352 INSTALL IN SLOT 9-16.

NOTE 2: STANDARD CONFIGURATION MAY DRAW MORE THEN 2.3 AMPS FROM THIS POWER SUPPLY. USE -5 VOLT BOOSTER MODEL 8766 005-019573 FOR THESE CONFIGURATIONS. THIS BOOSTER DRAWS +12 VOLTS CURRENT. INSTALL DATA SHEETS 010-352 INSTALLED IN SLOT 15.

-5 V CAPACITY OF THE SYSTEM (NOTE 3)

SLOTS	USE	NEEDED	MAX AVAIL	SLOTS	USE	NEEDED	MAX AVAIL
5-8	MASTER P.S		+ 2.3	1-4	SLAVE P.S		+ 2.3
9	I/O NOTE 1		NOTE 1	15	I/O NOTE 2		NOTE 2
10	I/O						
11	I/O						
12	I/O						
13	I/O						
14	I/O						
				20	I/O		
				21	I/O		
				22	IOC	0.2	
				23	SCP		
	TOTAL USED			TOTAL USED			
	RESERVE			RESERVE			

NOTE 3: THERE ARE TWO SEPARATE -5V SOURCES.

+12V CAPACITY OF THE SYSTEM (NOTE 4)

SLOTS	USE	NEEDED	MAX AVAIL	SLOTS	USE	NEEDED	MAX AVAIL
5-8	MASTER P.S		+ 11.0	1-4	SLAVE P.S		+ 9.0
9	I/O			16	I/O		
10	I/O						
11	I/O						
12	I/O						
13	I/O						
14	I/O						
15	I/O						
NA				NA	BAT. BACKUP	NOTE 5	
				23	SCP	1.0	
	TOTAL USED			TOTAL USED			
	RESERVE			RESERVE			

NOTE 4: THERE ARE TWO SEPARATE 12V POWER SOURCES. DERATE EACH +12V SOURCE, 0.9 AMPS FOR JAPANESE MODELS

NOTE 5: BBU MODEL IS SOURCED FROM A DEDICATED +12V SUPPLY

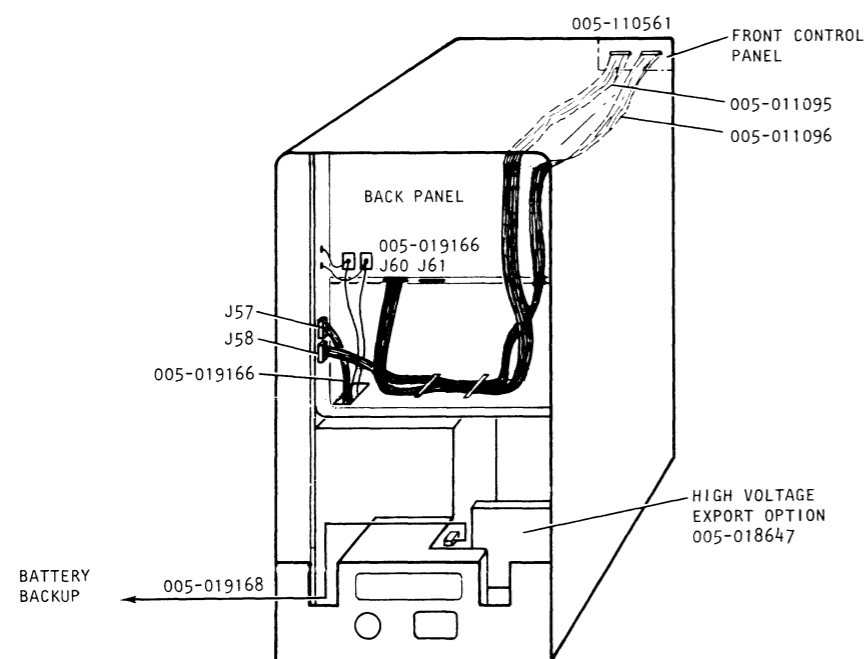
+5V CAPACITY OF THE SYSTEM (NOTE 6).

SLOTS	USE	MASTER		SLAVE	
		NEEDED	MAX AVAIL	NEEDED	MAX AVAIL
1-4	SLAVE P.S		+ 115.0		+ 21.0
5-8	MASTER P.S		+ 115.0	+ 22.0	
9	I/O				
10	I/O				
11	I/O				
12	I/O				
NOTE 7	NA				
	BAT BACKUP				
13	I/O				
14	I/O			55 AMP MAX	
15	I/O				
16	I/O				
17	I/O				
18	I/O				
19	I/O			55 AMP MAX	
20	I/O				
21	I/O				
22	IOC	14.2			
23	SCP	8.0			
24	CACHE	16.1		55 AMPS MAX	
25	ATU	10.8			
26	INST. PROC	15.3			
NOTE 7	27	FPU OPTION		55 AMP MAX	
NOTE 7	28	ALU	18.2		
NOTE 7	29	MICRO SEQ.	17.6		
NOTE 7	30	BANK CONT	7.6		
NOTE 7	31	MEMORY		55 AMP MAX	
	32	MEM			
	33	MEMORY			
	34	MEMORY			
	TOTAL USED				
	RESERVE				

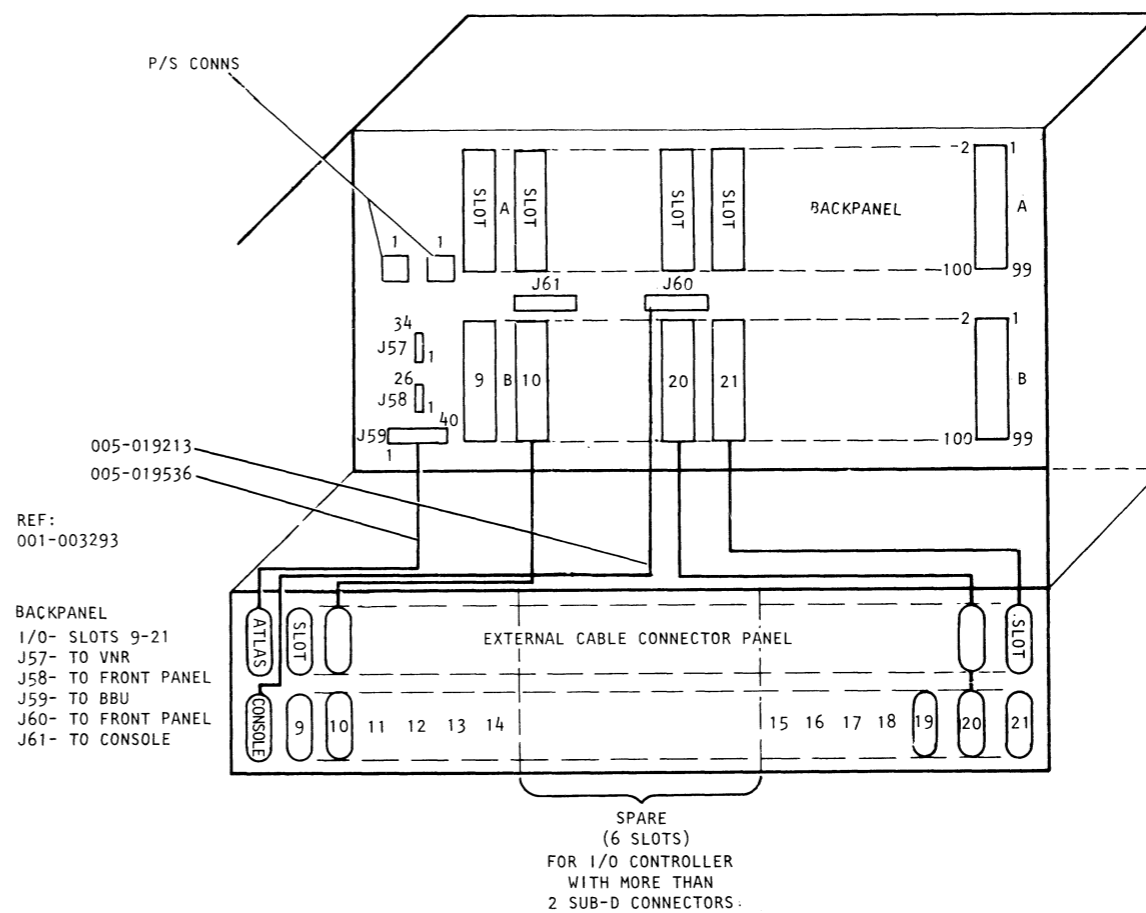
NOTE 6: THERE ARE 3 SEPARATE +5V POWER SOURCES. FOR JAPANESE MODELS: DERATE 230A SUPPLY TO 210A DERATE 22A SUPPLY TO 16A DERATE 21A SUPPLY TO 16A

NOTE 7: FIRST MEMORY 10.5A EACH ADDITIONAL MEMORY 6.2A FPU OPTION 17.6A BATTERY BACKUP 5.6A MODEL 8745-D

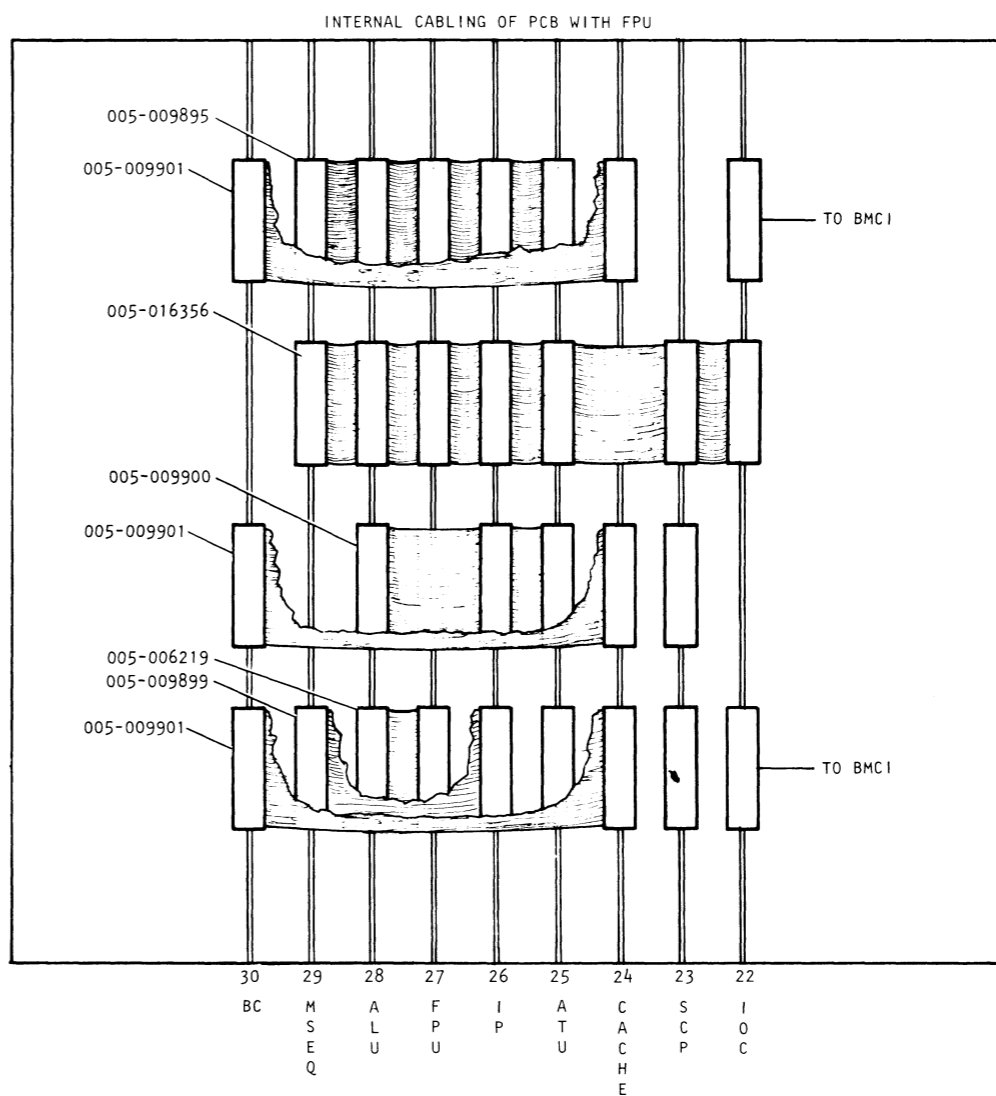
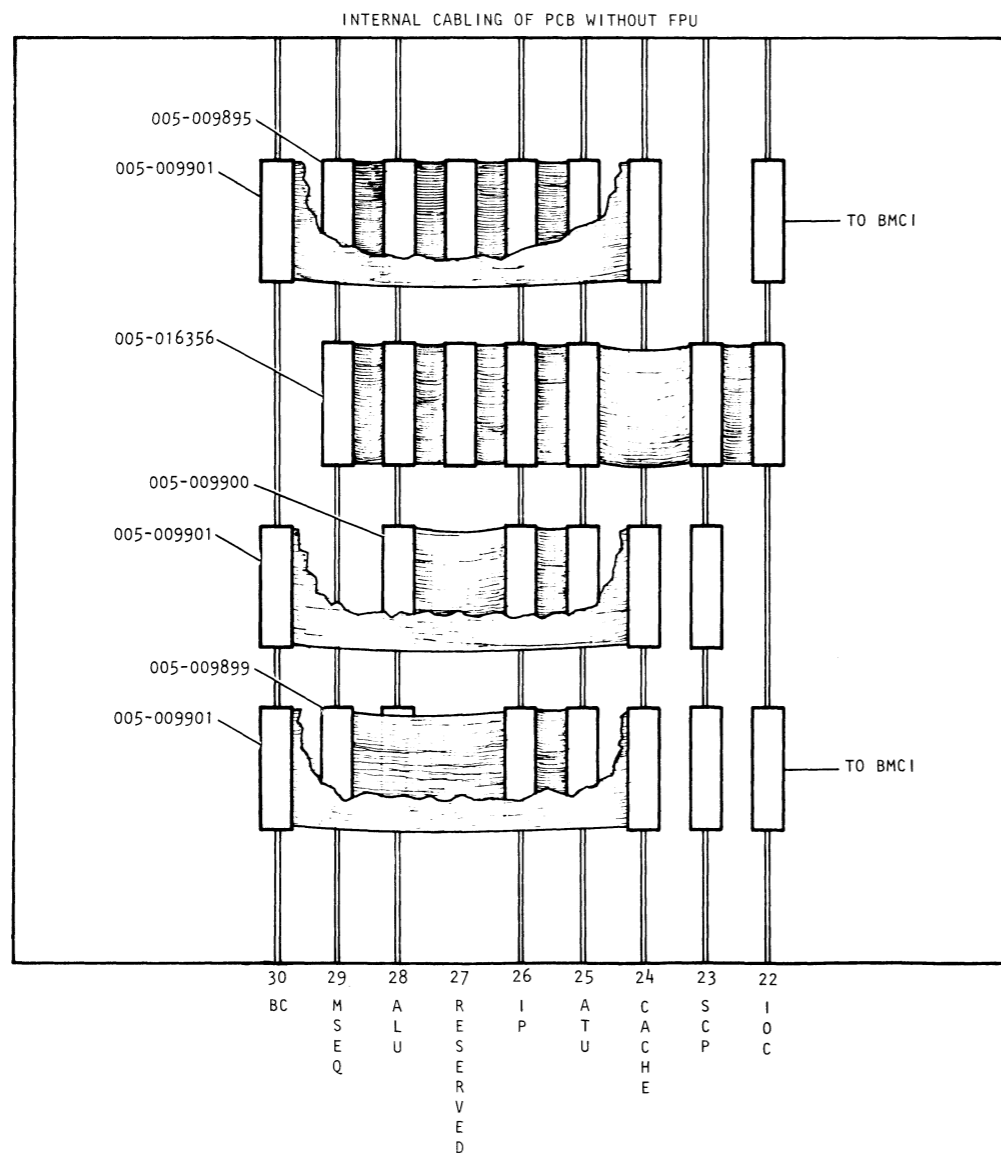
INTERNAL CABLING



CABINET WIRING AND CABLING
 NON - I/O



INTERNAL CABLING (CONT)

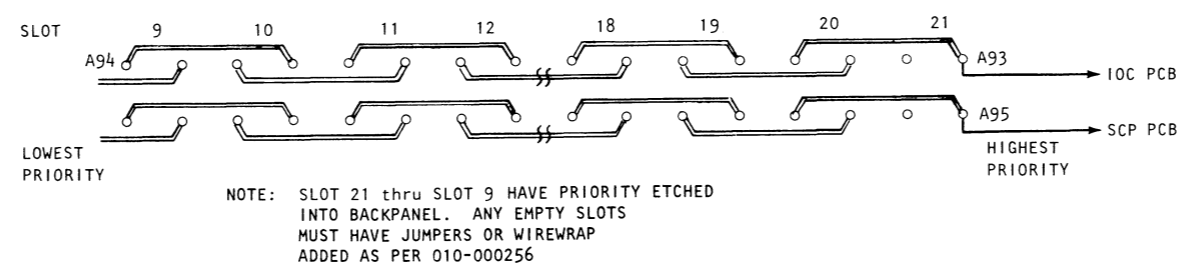


TAILORING JUMPERING

PRIORITY CHAIN MAINTENANCE

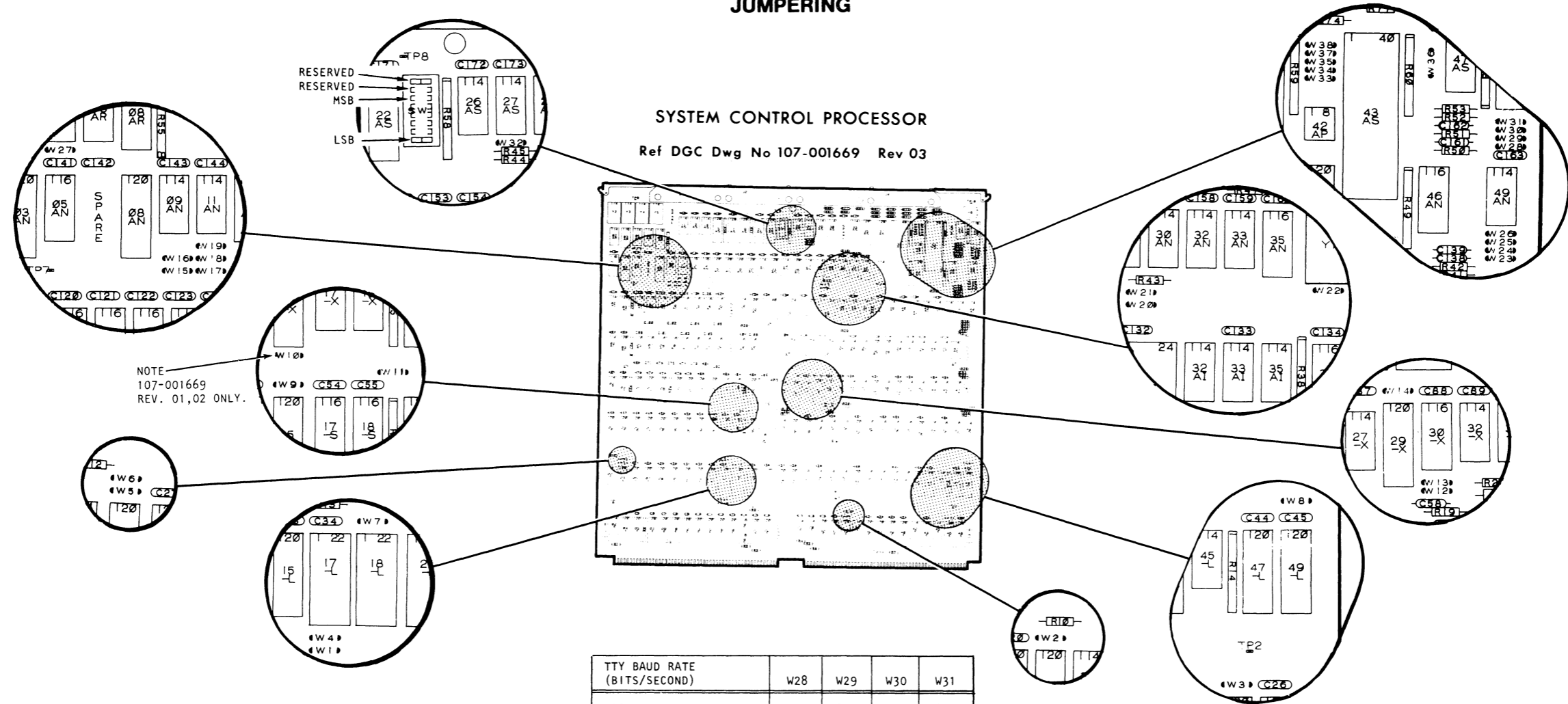
THE BACKPANEL SUPPLIES THE PRIORITY CHAIN FOR BOTH THE INTERRUPT AND DATA CHANNEL REQUESTS. THE BACKPANEL HAS TWO SIGNALS, DCHP AND INTP, WHICH GO FROM ONE I/O CONTROLLER SLOT TO THE NEXT, ENTERING THE CONTROLLER ON ONE PIN OF THE SLOT AND LEAVING THE CONTROLLER ON ANOTHER PIN. IF A SLOT ON THE I/O SYSTEM IS EMPTY, AND THE CHAIN HAS BEEN BROKEN; ALL CONTROLLERS FURTHER DOWN THE CHAIN FROM THE EMPTY SLOT WILL NEVER BE ABLE TO ACKNOWLEDGE AN INTERRUPT. JUMPERS MUST BE USED TO KEEP THE CHAIN INTACT.

THE I/O SLOTS START WITH SLOT 21 (HIGHEST PRIORITY) AND GO THROUGH SLOT 9. THE DRAWING BELOW SHOWS THESE SLOTS AND THE PRIORITY JUMPERS ALREADY ETCHED INTO THE BACK PANEL.



**TAILORING (CONT)
JUMPERING**

SYSTEM CONTROL PROCESSOR
Ref DGC Dwg No 107-001669 Rev 03



NOTE
107-001669
REV. 01,02 ONLY.

JUMPERS

W2, W3, W5, W6, W7, W8, W9, W11, W14, W16, W17, W18, W22, W27, W36 R29	IN
W1, W4, W10, W15, W19, W20, W21, W32 R30	OUT

NOTE-W10 APPLIES
TO REV 01,02 ONLY.

TTY INTERFACE	W12	W13	W23	W24	W25	W26
EIA RS-232-C	OUT	OUT	OUT	OUT	IN	IN
20 MA CURRENT LOOP 600 BAUD OR BELOW	IN	IN	IN	IN	OUT	OUT
20 MA CURRENT LOOP ABOVE 600 BAUD	OUT	IN	IN	IN	OUT	OUT

TTY BAUD RATE (BITS/SECOND)	W28	W29	W30	W31
300	IN	OUT	IN	OUT
600	IN	OUT	OUT	IN
1200	IN	OUT	OUT	OUT
2400	OUT	IN	OUT	IN
4800	OUT	OUT	IN	IN

TTY CHARACTER LENGTH	W35	W37
7 BITS	OUT	IN
8 BITS	OUT	OUT

TTY STOP BITS	W34
1 STOP BIT	IN
2 STOP BITS	OUT

TTY PARITY	W38	W33
EVEN	OUT	IN
ODD	IN	IN
NONE	OUT	OUT

DIP SWITCH

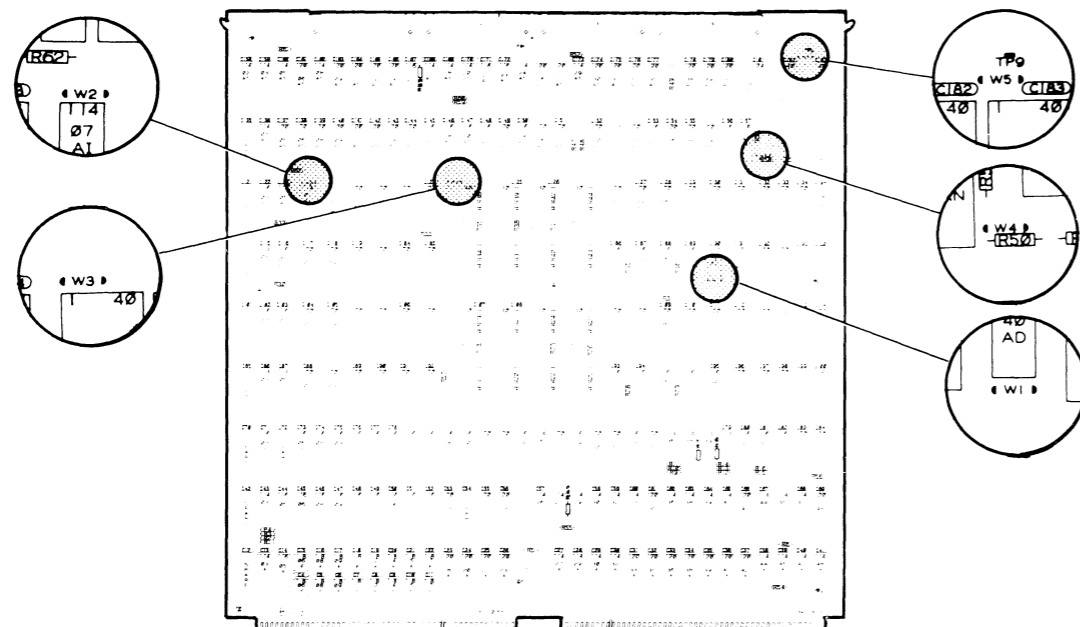
THE TWO UPPER SWITCHES MUST BE ON.
THE LOWER SIX SWITCHES SPECIFY IN BINARY
THE DEVICE THAT THE MV/8000 II BOOTS FROM.
THE OFF POSITION IS A 1; THE ON POSITION
IS A 0.

TAILORING (CONT)

JUMPERING

ARITHMETIC AND LOGIC UNIT (ALU1)

Ref DGC Dwg No 107-001627 Rev 00

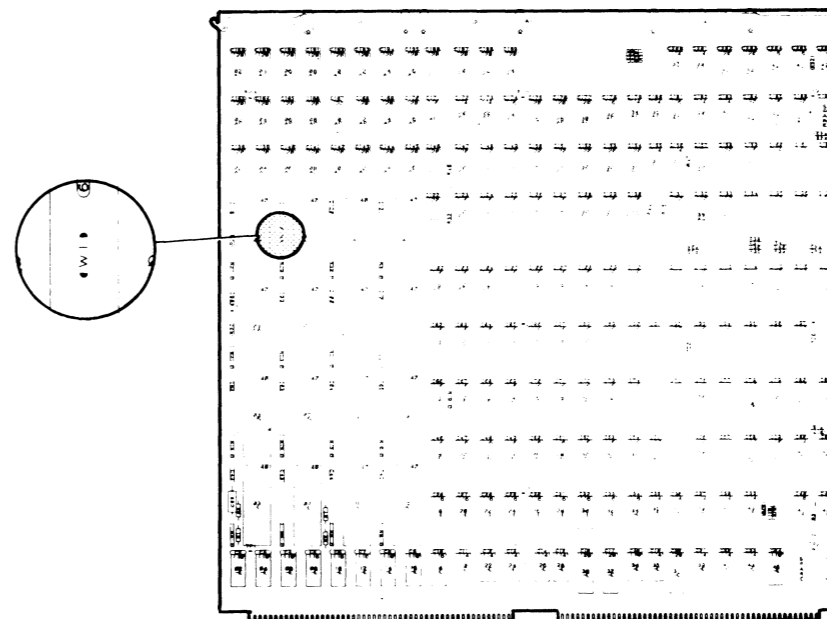


JUMPERS

W1-W5	IN
-------	----

FLOATING POINT UNIT

Ref DGC Dwg No 107-001649 Rev 01



JUMPER

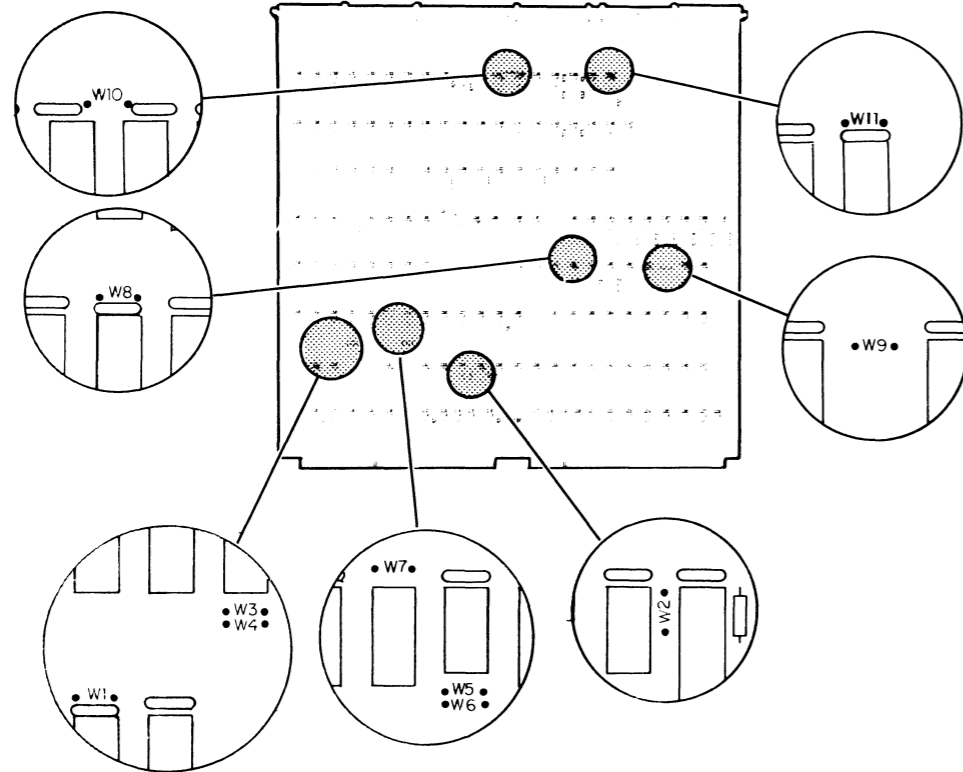
W1	IN
----	----

NOTE: 107-001649 REV. 04 HAS NO JUMPERS

TAILORING (CONT)
JUMPERING

BANK CONTROLLER

Ref DGC Dwg No 107-000982 Rev 01



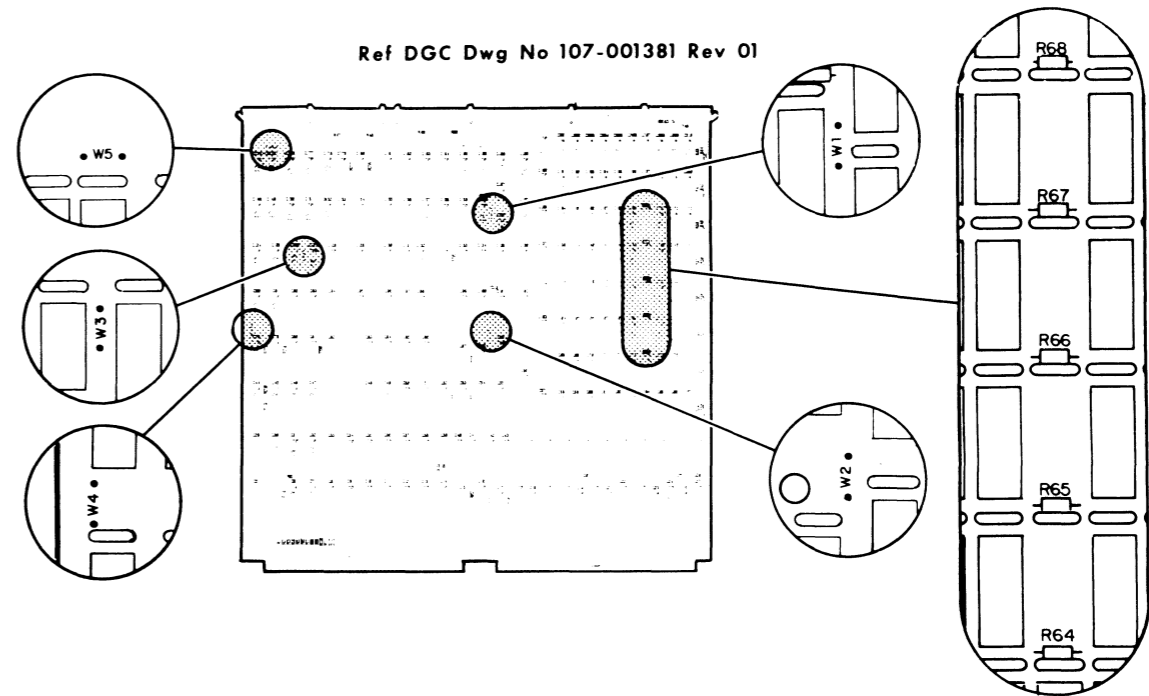
JUMPERS

W1 - W3	IN
W4	OUT
W5	IN
W6	OUT
W7 - W11	IN

* NOTE: USE THIS CHART
IF USING 162
MB MODULES

MICROSEQUENCER

Ref DGC Dwg No 107-001381 Rev 01



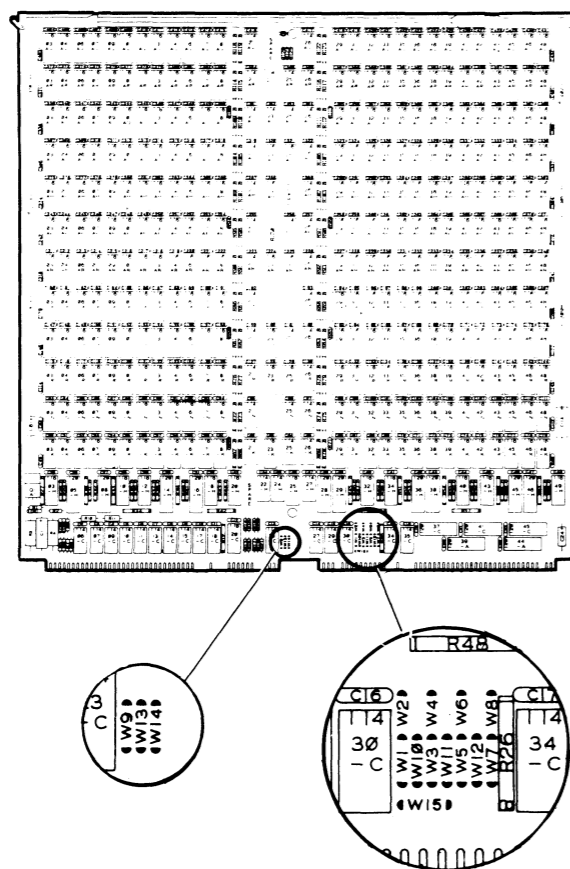
JUMPERS

W1-W5	IN
R64-R68	OUT

TAILORING (CONT) JUMPERING

DOUBLE DENSITY MEMORY ARRAY

Ref. DGC Dwg No 107-001603 Rev 01



MEMORY BOARDS ARE INSERTED CONSECUTIVELY FROM SLOT 31 TO SLOT 34 IN THE BACKPANEL. THE FOLLOWING CONFIGURATIONS OF MEMORY ARE ALLOWED:

MODULE	1MB MEMORY BOARD		2MB MEMORY BOARD	
	IN	OUT	IN	OUT
0	W1, W3, W5, W7, W9, W15	W2, W4, W6, W8, W10, W11, W12, W13, W14	W10 - W14	W1 - W9, W15
1	W1, W3, W5, W8, W9, W15	W2, W4, W6, W7, W10, W11, W12, W13, W14		
2	W1, W3, W6, W7, W9, W15	W2, W4, W5, W8, W10, W11, W12, W13, W14	W10 - W14	W1 - W9, W15
3	W1, W3, W6, W8, W9, W15	W2, W4, W5, W7, W10, W11, W12, W13, W14		
4	W1, W4, W5, W7, W9, W15	W2, W3, W6, W8, W10, W11, W12, W13, W14	W10 - W14	W1 - W9, W15
5	W1, W4, W5, W8, W9, W15	W2, W3, W6, W7, W10, W11, W12, W13, W14		
6	W1, W4, W6, W7, W9, W15	W2, W3, W5, W8, W10, W11, W12, W13, W14	W10 - W14	W1 - W9, W15
7	W1, W4, W6, W8, W9, W15	W2, W3, W5, W7, W10, W11, W12, W13, W14		

1 MEGB & 2 MEGB
MEMORY BOARDS

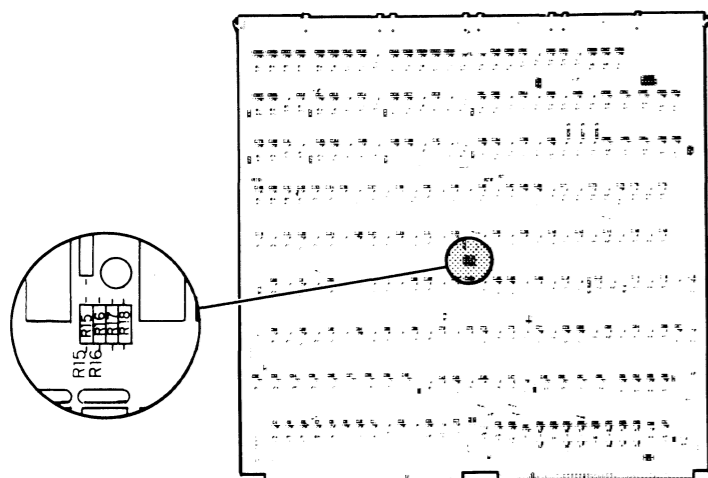
- 1 MB / 2 MB ARE INSTALLED CONSECUTIVELY FROM SLOT 31 THRU SLOT 34. (MAX OF 4 MEMORY BOARDS)
 - 2MB MEMORY ARE FIRST INSTALLED CONSECUTIVELY FROM SLOT 31 THRU SLOT 34.
 - IF ANY 1MB MEMORY BOARDS ARE IN THE SYSTEM THEY ARE CONSECUTIVELY INSTALLED AFTER THE LAST 2MB MEMORY BOARD.
 - THE 2MB MEMORY BOARD IS ALWAYS JUMPERED THE SAME.
 - THE 1MB MEMORY BOARD IS JUMPERED ACCORDING TO THE MEMORY MODULE ASSIGNED TO IT.
- 2 MB MEMORY BOARD HAS 2 MODULES
1 MB MEMORY BOARD HAS 1 MODULE
- THE MODULE ADDRESS OF THE FIRST CONSECUTIVE 1 MB MEMORY WILL BE EVEN, THE NEXT ODD AND SO FORTH.

FOR EXAMPLE, IN A SYSTEM OF (2) 2MB MEMORY BOARDS AND (2) 1MB MEMORY BOARDS, THE 2MB MEMORY BOARDS WILL BE MODULE 0-3. THE FIRST 1MB MEMORY BOARD WILL BE MODULE 4, THE NEXT MODULE 5.

TAILORING (CONT)
JUMPERING

INSTRUCTION PROCESSOR

Ref DGC Dwg No 107-001385 Rev 00

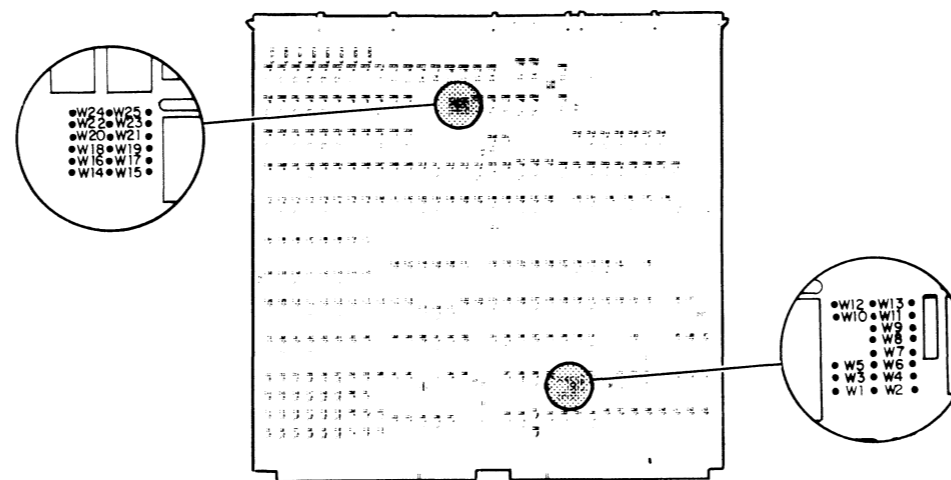


JUMPERS

R15	IN
R16	OUT

SYSTEM CACHE

Ref DGC Dwg No 107-001304 Rev 01

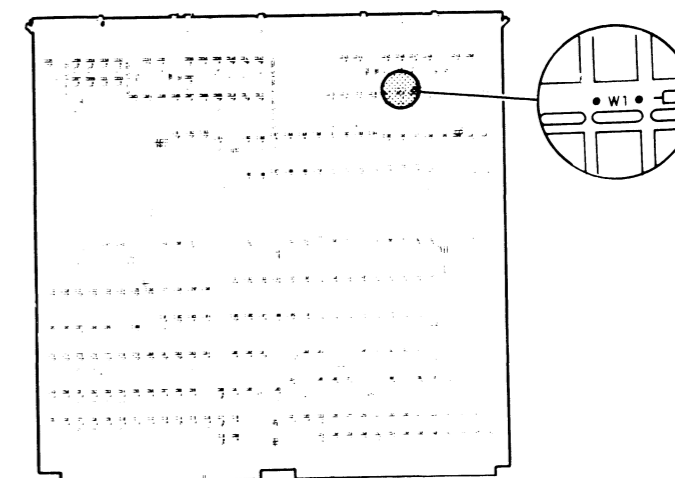


JUMPERS

W1, W3, W5, W7, W11, W13	OUT
W14, W16, W18, W20, W22, W24	IN
W2, W4, W6, W8, W9, W10, W12	IN
W15, W17, W19, W21, W23, W25	OUT

I/O CHANNEL

Ref DGC Dwg No 107-001330 Rev 01

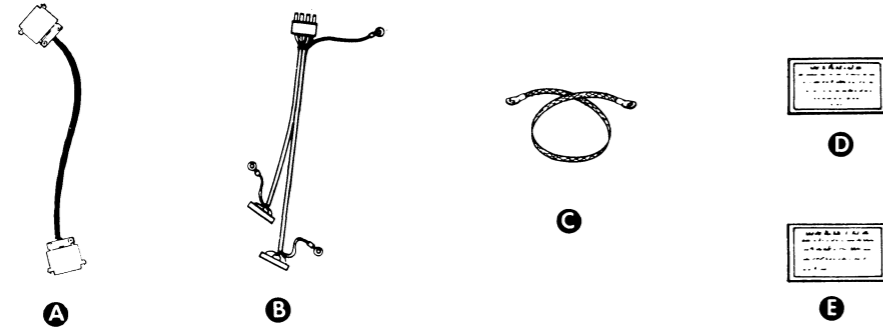


JUMPER

W1	OUT
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INSTALLATION SPECIFICATIONS MODEL 1329

Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.



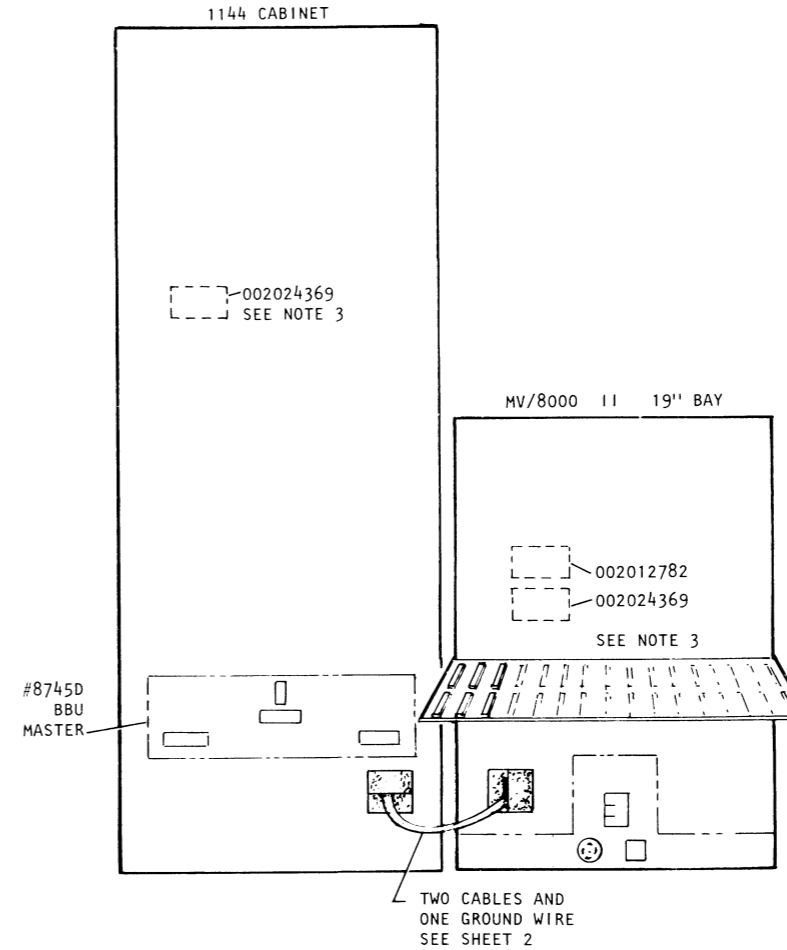
ITEM	DESCRIPTION	CONNECTING OR MOUNTING LOCATION	PART NUMBERS	QTY
A	SIGNAL CABLE 018001910	BLKD AND BBU	005021320 MV/8000II TO 1144 CAB	1
B	EXT POWER CABLE 018001909	VNR AND BBU	005021319 MV/8000II TO 1144 CAB	1
C	GROUND BRAID	BBU CAB AND CPU CAB	029013059 MV/8000II TO 1144 CAB	1
D	LABEL, BBU	CPU CAB NEXT TO HANDLE	002012782	1
E	LABEL, MULTI-POWER	CPU CAB AND BBU CAB NEXT TO HANDLE	002024369	2

THE FOLLOWING ITEMIZED BUT NOT SHOWN HERE

F	CLAMP (M6)	CABLE TO CABINET	123002058	2
H	WASHER, FLAT (M6)	CAB GNDS & CLAMP OPTION	106001029	2
J	WASHER, LOCK (M6)	"	106001028	2
K	WASHER, STAR (M6)	"	106001938	2
L	NUT (M6)	"	106001027	3
M	WASHER, FLAT (M5)	EMI SHIELD TO STUD (ITEM B)	106000985	1
N	WASHER, LOCK (M5)	"	106000989	1
P	WASHER, STAR (M5)	"	106001625	1
R	NUT (M5)	"	106000994	1
S	SCREW (M4)	REPLACES EXISTING SCREW WHEN USING ITEMS T & U	106001024	3
T	CLAMP 3/8 (M4)	ITEM B TO VNR BOX	123000432	4
U	CLAMP 7/16 (M4)	ITEM A TO VNR BOX	123000901	2
V	TYWRAP	CABLES OUTSIDE CAB	123000054	A/R
	LOCTITE	CLAMP OPTION	120000351	A/R

Notice - For continued protection and performance, replace battery with same type indicated in service manual.

Avertissement - Pour assurer une protection continue et une bonne performance, la batterie recharge doit être du type indiqué dans la notice technique.

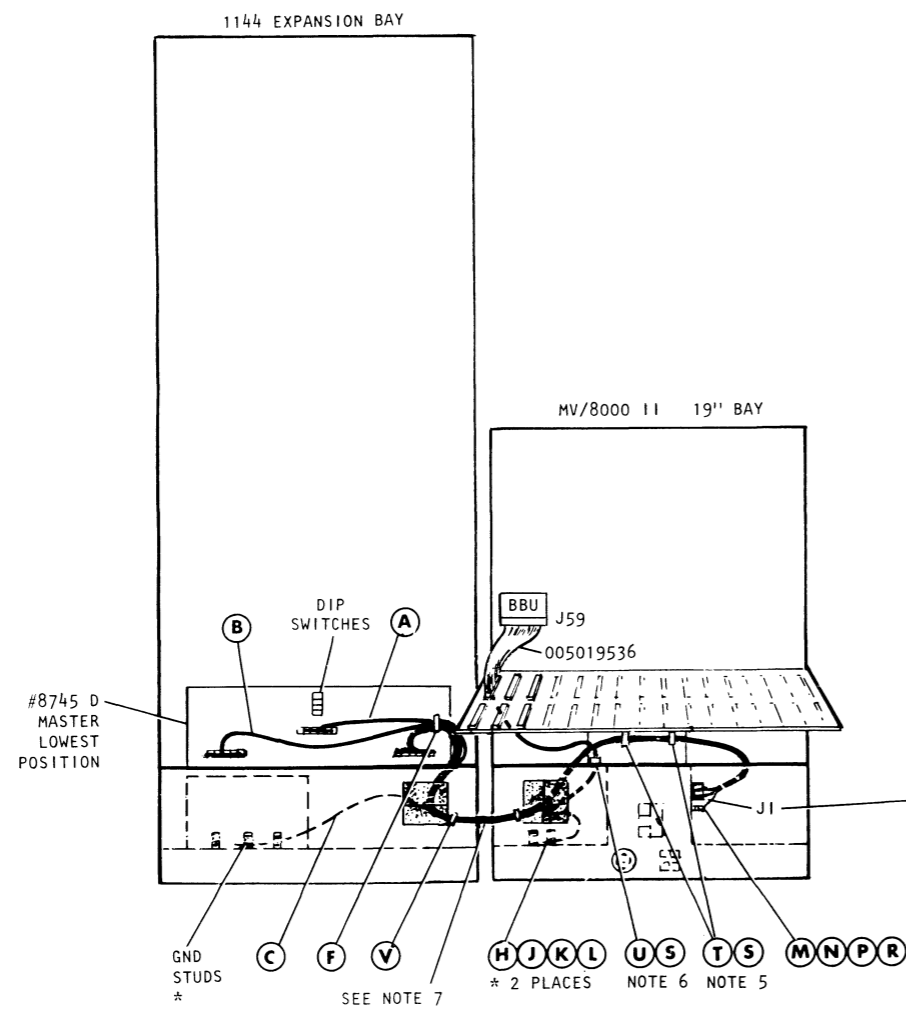


NOTES:

- SEE 010000333 FOR BBU MOUNTING INFORMATION.
- DISCONNECT ALL POWER AND WAIT 5 MINUTES BEFORE SERVICING OR CABLING UNIT.
- INSTALL LABELS ON CABINET DOORS.
- BBU MUST BE MOUNTED 5 1/4" ABOVE BLOWER TO ALLOW ACCESS TO REAR COVER.
- USE TWO CLAMPS AT EACH LOCATION, ONE FOR EACH LEG OF CABLE (ITEM B). REMOVE AND DISCARD SCREW (TOO SHORT FOR USE WITH CLAMPS), REPLACE WITH ITEM S.
- REMOVE AND DISCARD SCREW, REPLACE WITH ITEM S.
- CABINETS MUST BE CLOSE TOGETHER. ANY EXCESS CABLE MUST BE DRESSED INSIDE CABINET AND SECURELY TIED WITH CLAMPS AS SHOWN (35 LB PULL TEST). TIE CABLES TOGETHER NEATLY USING ITEM V.
- DUE TO OPTIONAL CABINET CONFIGURATIONS, SOME PARTS MAY NOT BE NEEDED.

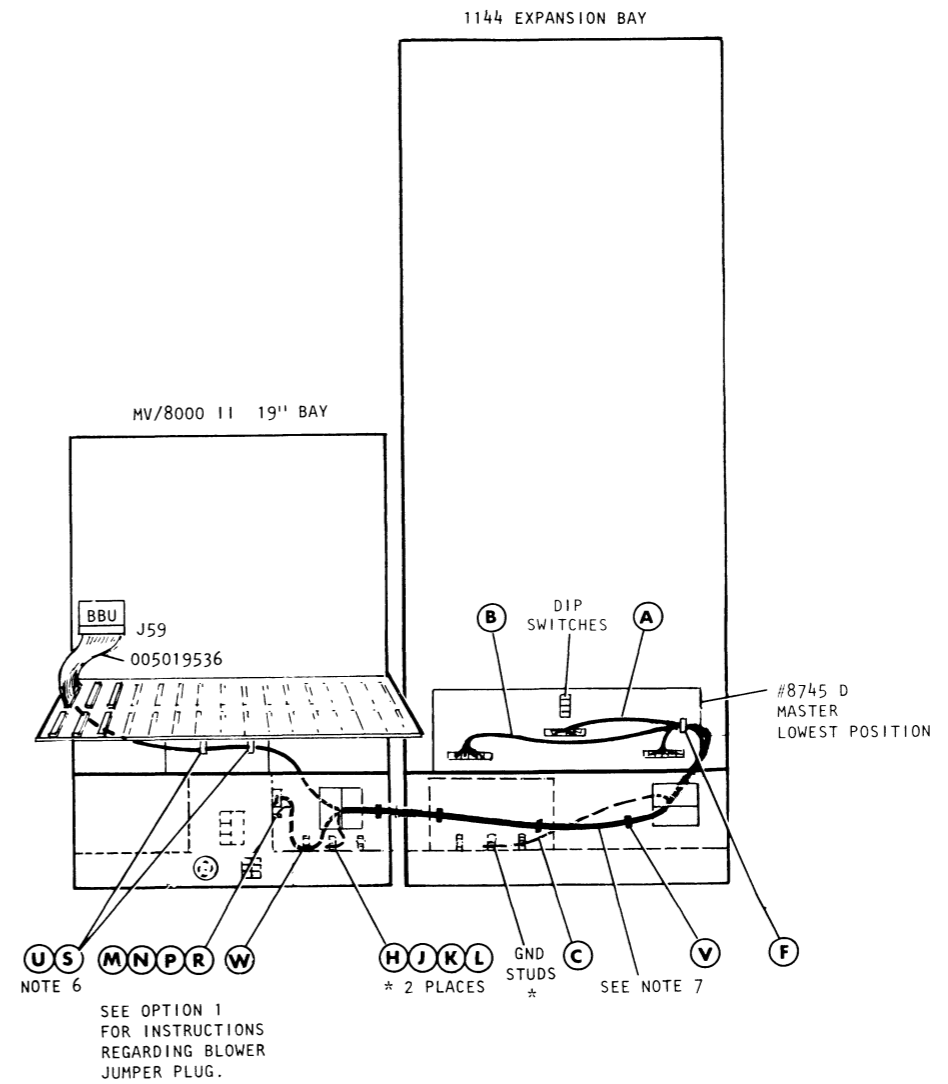
INTERNAL CABLING

OPTION 1
REAR VIEW



BLOWER JUMPER PLUG 005019170. REMOVE FROM VNR WHEN BBU IS INSTALLED. INSTALL TO TEST/RUN MV/8000 II WITHOUT BATTERY-BACKUP.

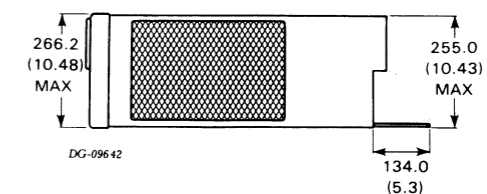
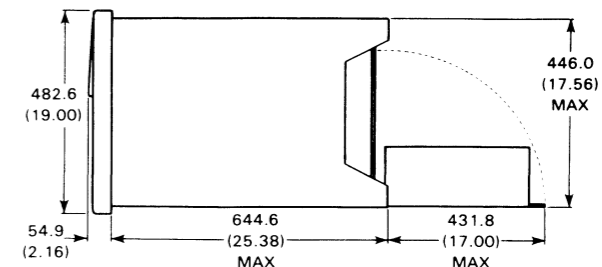
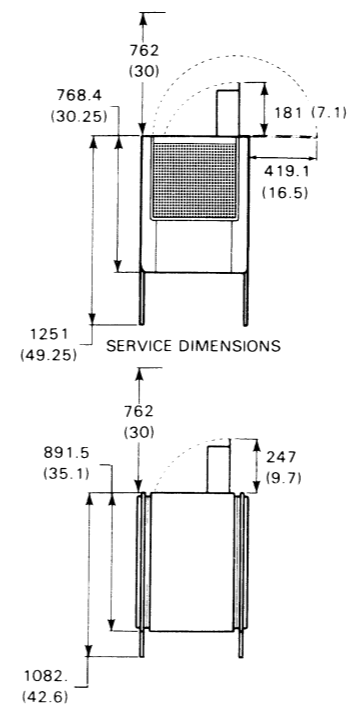
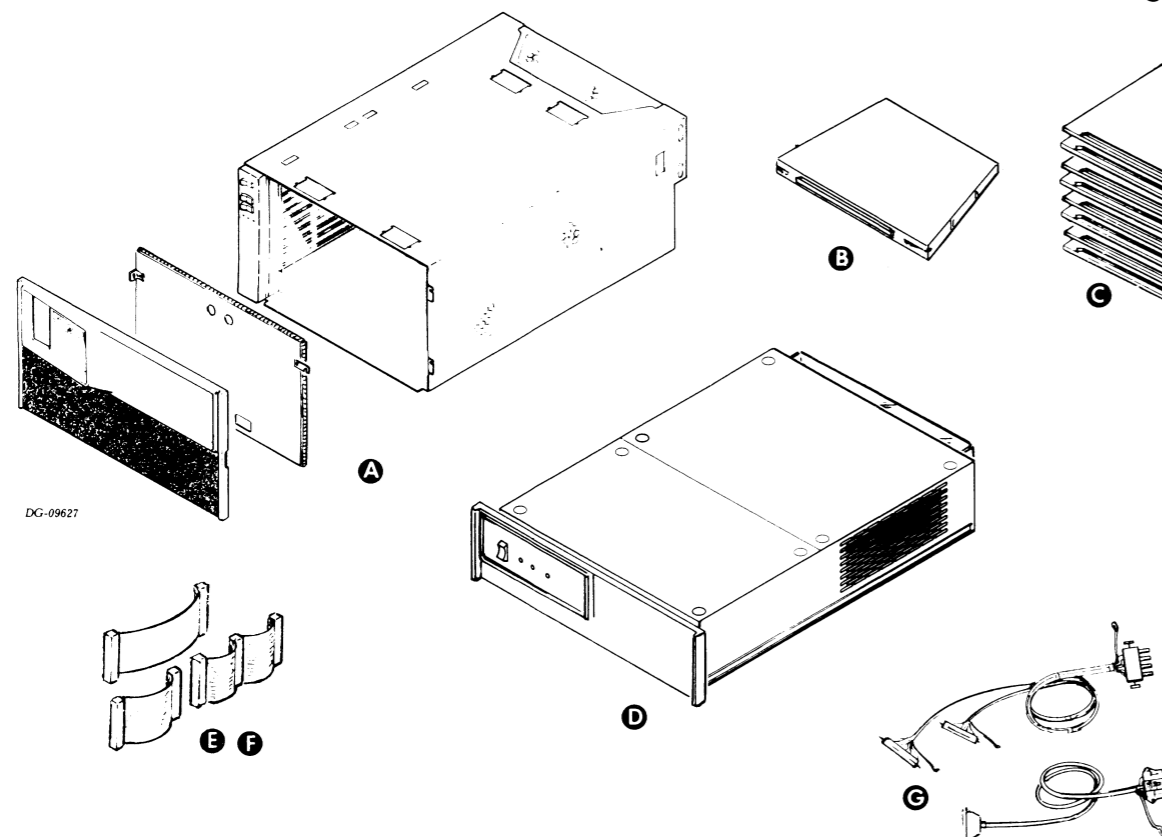
OPTION 2
REAR VIEW



INSTALLATION SPECIFICATIONS

MV/8000 C

CPU CHASSIS



DIMENSIONS IN MILLIMETERS
INCHES IN PARENTHESES FOR REFERENCE

MAJOR COMPONENT

ITEM	COMPONENT	MOUNTING LOCATION	NOTES
A	CPU CHASSIS	CABINET	19" BAY
B	POWER SUPPLY BOARD	IN CPU CHASSIS	
C	PROCESSOR BOARDS	IN CPU CHASSIS	MICRO; ALU1: FPU (OPTIONAL); IP; ATU; SCP; IOC; TMU
D	BATTERY BACKUP 8745 E	CPU CABINET	MODEL 1605, 1606, 010-333

CABLES

ITEM	CABLE	CONNECTING	MAX LG		NOTES
			FT	M	
E	INTERBD	PROCESSOR BOARDS			7 FOR BETWEEN PROCESSOR BOARDS
F	BMC	BMC AND CONTROLLERS			2 REQUIRED - SIZE DEPENDS ON # OF CONTROLLERS
G	BBU/VNR	BATTERY BACKUP CABLES	4	1.2	

DIMENSIONS:	Width	Depth	Height
Millimeters	482.6	699.5	266.3
Inches	19.00	27.54	10.48
SERVICE CLEARANCES:	Front	Rear	Left or Right
Millimeters	762	762	762
Inches	30	30	30
WEIGHT:	Empty	Fully Loaded	
Kilograms	30.6	46.5	
Pounds	67.5	102.5	
HEAT OUTPUT:	Watts	BTU/hr	
	1600	5460	

POWER REQUIREMENTS:		
(Domestic)		
Voltage	208	240
Hz	60	60
Max Amps/Phase	12	11
Startup Surge per Phase	29.4A for .133 sec	34A for .133 sec
(Export)		
Voltage	JAPAN	OTHER
	200	240
Hz	50/60	50
Max Amps/Phase	12	11
Startup Surge per Phase	28.3A for .133 sec	34A for .133 sec

OPERATING ENVIRONMENT:	
Temperature Range	0 - 55°C (32 - 131°F)
Relative Humidity Range	10 - 90%
Altitude Range	-305 - 2438m (-1000 - 8,000 ft)

LINE CORDS:			
			SUPPLIED
CABLES:			
Primary Power			
	Length	Conn	Mating Conn
Domestic/Japan	1.8m (6 ft)	L6-15P	L6-15R
EXPORT	1.8m (6 ft)	6-15P	6-15R

Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

INTERNAL CABLING

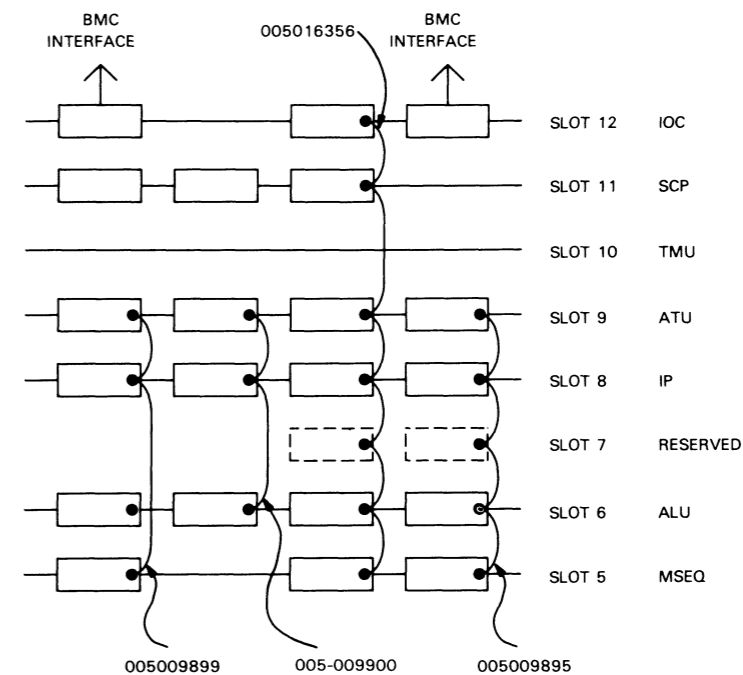
POWER AND PCB CONFIGURATION

(SEE 010-001220 FOR INDIVIDUAL PCB CURRENT REQUIREMENTS)

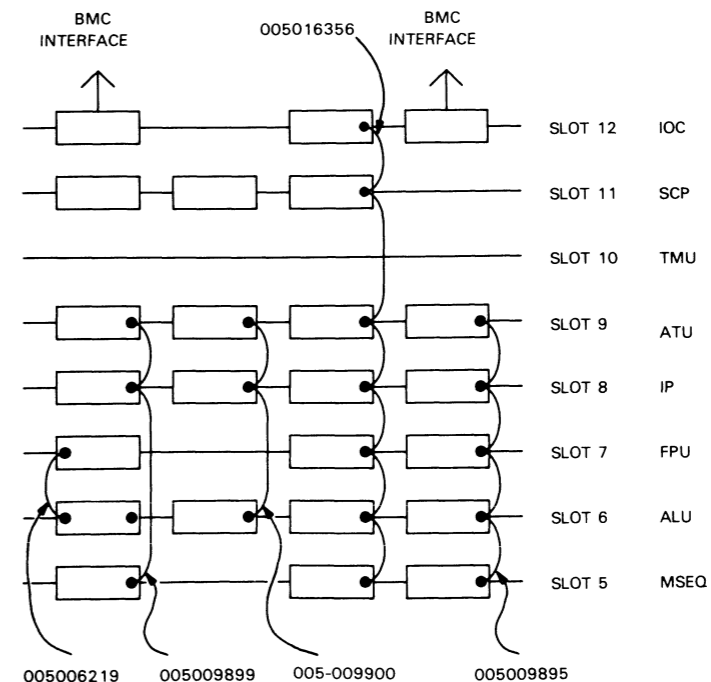
CURRENT CAPACITY OF THE SYSTEM

Slots	Use	+5 CURRENT		-5 CURRENT		+12 CURRENT	
		Needed	Avail	Needed	Avail	Needed	Avail
20	I/O		55 AMP MAX				
19	I/O						
18	I/O						
17	I/O		55 AMP MAX				
16	I/O						
15	I/O						
14	I/O		55 AMPS MAX				
13	I/O						
12	IOC						
11	SCP		55 AMPS MAX				
10	TMU						
9	ATU						
8	INST. PROC		55 AMPS MAX				
NOTE: 7	FPU OPTION	-					
6	ALU						
5	MICRO SEQ		55 AMPS MAX				
NOTE: EXT	BATTERY BACKUP						
1-4	POWER SUPPLY	+170.0				+4.5	
TOTAL CURRENT			-		-		-
TOTAL RESERVE CURRENTS			+		+		+

INTERNAL BOARD CABLING WITHOUT FPU OPTION



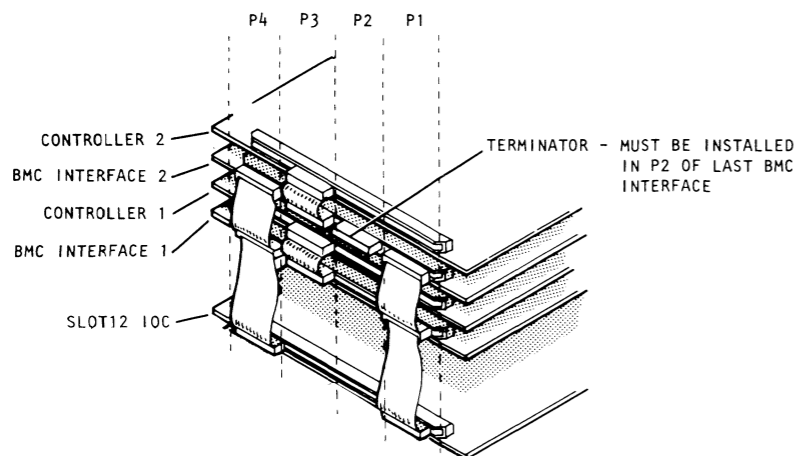
INTERNAL BOARD CABLING WITH FPU OPTION



ID-00973-01
010-001209

INTERNAL CABLING

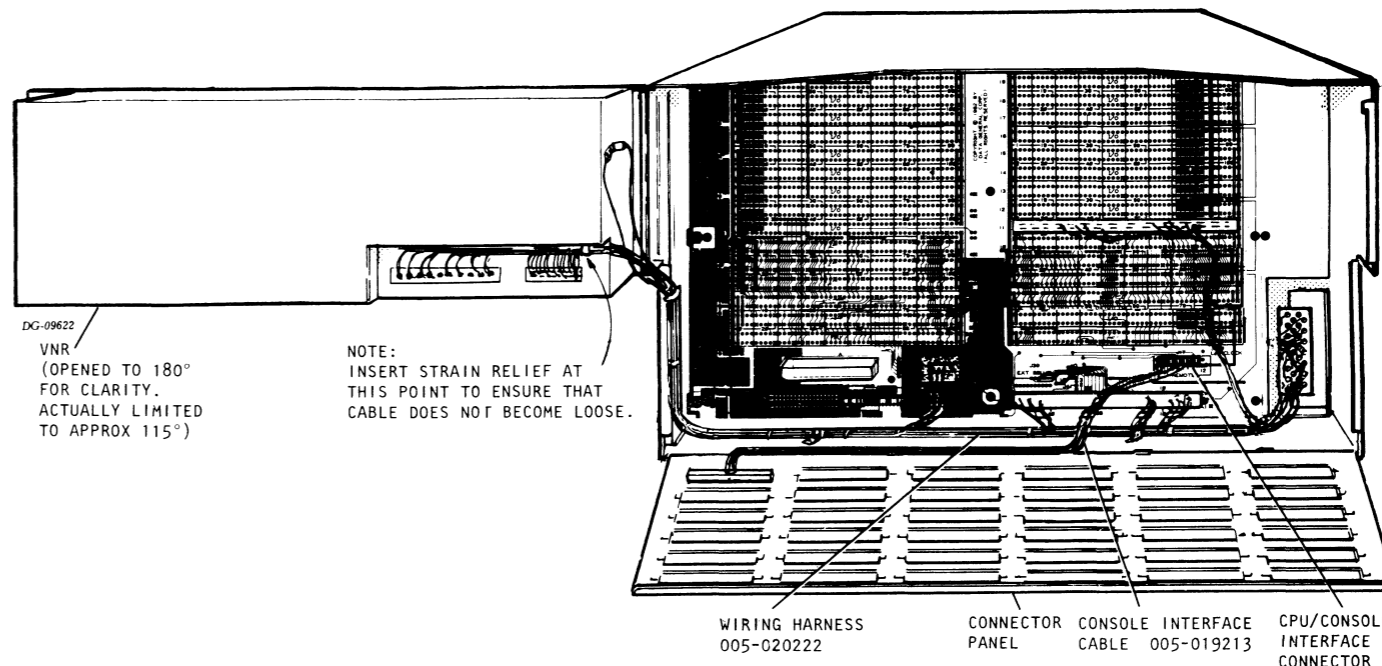
BMC CABLING



BMC INTERNAL CABLES - CONNECT THE IOC WITH BMC CONTROLLERS

1 BMC CONTROLLER	005-009903
2 BMC CONTROLLERS	005-009900
3 BMC CONTROLLERS	005-009897
4 BMC CONTROLLERS	005-009895

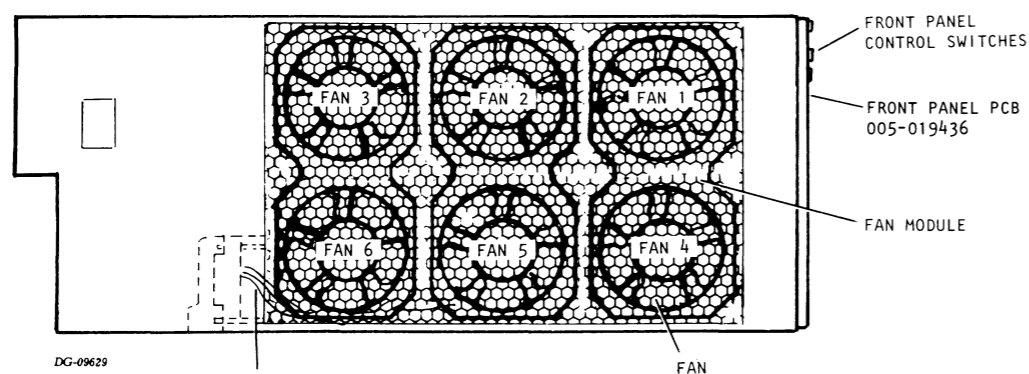
MV/8000 C CPU BACKPANEL



DG-09622
VNR
(OPENED TO 180° FOR CLARITY. ACTUALLY LIMITED TO APPROX 115°)

NOTE:
INSERT STRAIN RELIEF AT THIS POINT TO ENSURE THAT CABLE DOES NOT BECOME LOOSE.

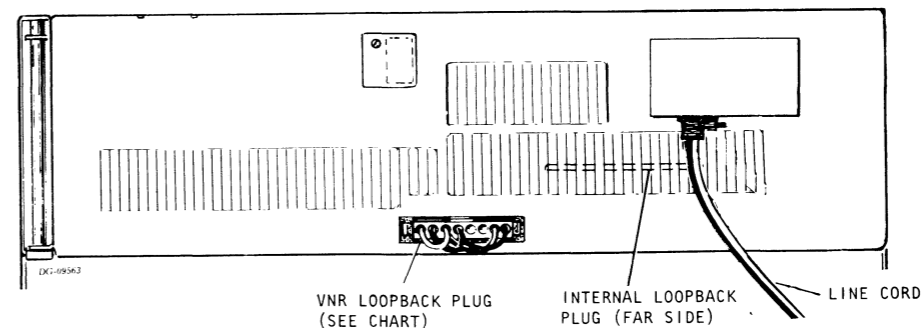
FAN CONFIGURATION



FAN MODULE CABLE
005-018446

VOLTAGE	FAN MODULE (6 FANS)	FAN (INDIVIDUAL)
DOM 208/JAPAN 200	005-019477	005-018996
DOM 240/EXPORT 240	005-019392	005-018997

VNR CHASSIS



AC VOLTS IN	WITH EXT BBU		WITHOUT EXT BBU		VNR ASSY NO
	EXTERNAL LOOPBACK PLUG	INTERNAL LOOPBACK PLUG	EXTERNAL LOOPBACK PLUG	INTERNAL LOOPBACK PLUG	
EXPORT 220/240	SEE 010-000333	005-018773	005-018986	005-018773	005-021311
DOMESTIC 208/JAPAN 200	SEE 010-000333	005-018773	005-018986	005-018773	005-020317
DOMESTIC 240	SEE 010-000333	005-018773	005-018986	005-018773	005-020330

INTERNAL CABLING (CONT)

**TAILORING
BACKPANEL JUMPERING**

MV/8000 C BACKPANEL

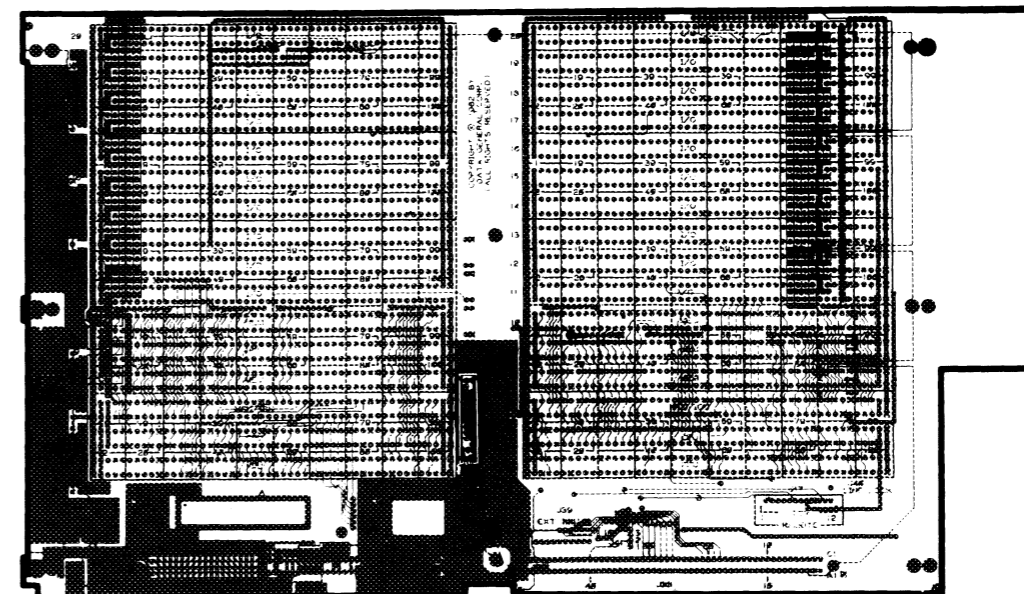
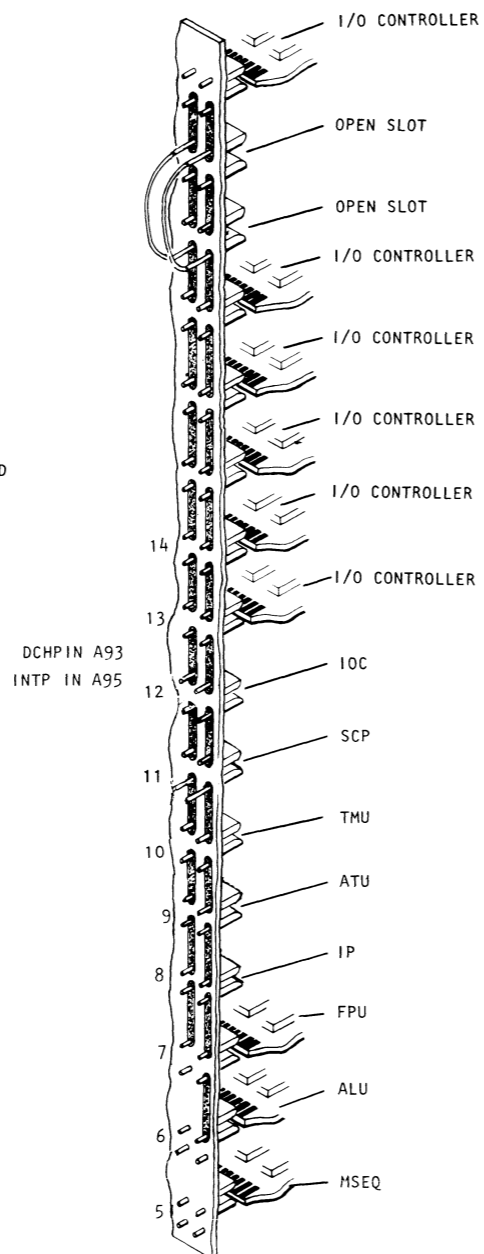
Ref DGC Dwg No 107-001959 Rev 00

(1) FOR JUMPERING OF INTERRUPT AND DATA CHANNEL PRIORITIES WHERE THERE IS NO I/O CONTROLLER IN SLOT 13, INSTALL A PAIR OF JUMPERS FROM SLOT 13 PINS A94 AND A96 TO PINS A93 AND A95 OF THE SLOT IMMEDIATELY BELOW THE LOWEST NUMBERED SLOT CONTAINING AN I/O BOARD. USE JUMPER 005-015153.

(2) OPEN I/O SLOT MUST BE JUMPERED OVER AS SHOWN AT RIGHT.

(3) FOR MORE INFORMATION CONCERNING INTERRUPT AND DATA CHANNEL PRIORITY SCHEMES, REFER TO THE INTERFACE DESIGNER'S REFERENCE, NOVA AND ECLIPSE COMPUTERS, DGC No 014-000629.

(4) MULTIPLE AMI'S, ATI'S, BSI'S, OR CSI'S CONFIGURED WITH THE SAME DEVICE CODE MUST HAVE THE FOLLOWING INTERBOARD PINS JUMPERED TOGETHER: B91, B94, B96.



**STANDARD ASSIGNMENT FOR BACKPANEL
TO BULKHEAD INTERNAL CABLES**

EXT BBU	SPARE	SLOT 15	SPARE	SPARE	SLOT 15
SPARE	SPARE	SLOT 16	SPARE	SPARE	SLOT 16
SPARE	SPARE	SLOT 17	SPARE	SPARE	SLOT 17
SPARE	SPARE	SLOT 18	SPARE	SPARE	SLOT 18
SPARE	SLOT 13	SLOT 19	SPARE	SLOT 13	SLOT 19
CONSOLE INTERFACE	SLOT 14	SLOT 20	SPARE	SLOT 14	SLOT 20

NOTE: REFER TO APPROPRIATE PERIPHERAL DATA SHEETS FOR NUMBER OF BULKHEAD CONNECTORS REQUIRED FOR A PERIPHERAL

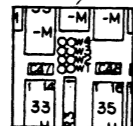
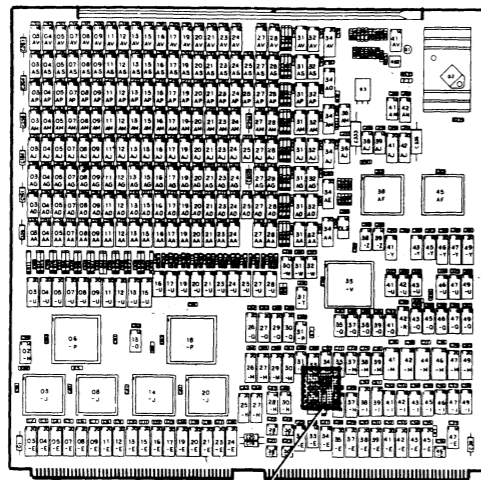
DG-05722

DG-09564

TAILORING (CONT)
JUMPERING

TMU

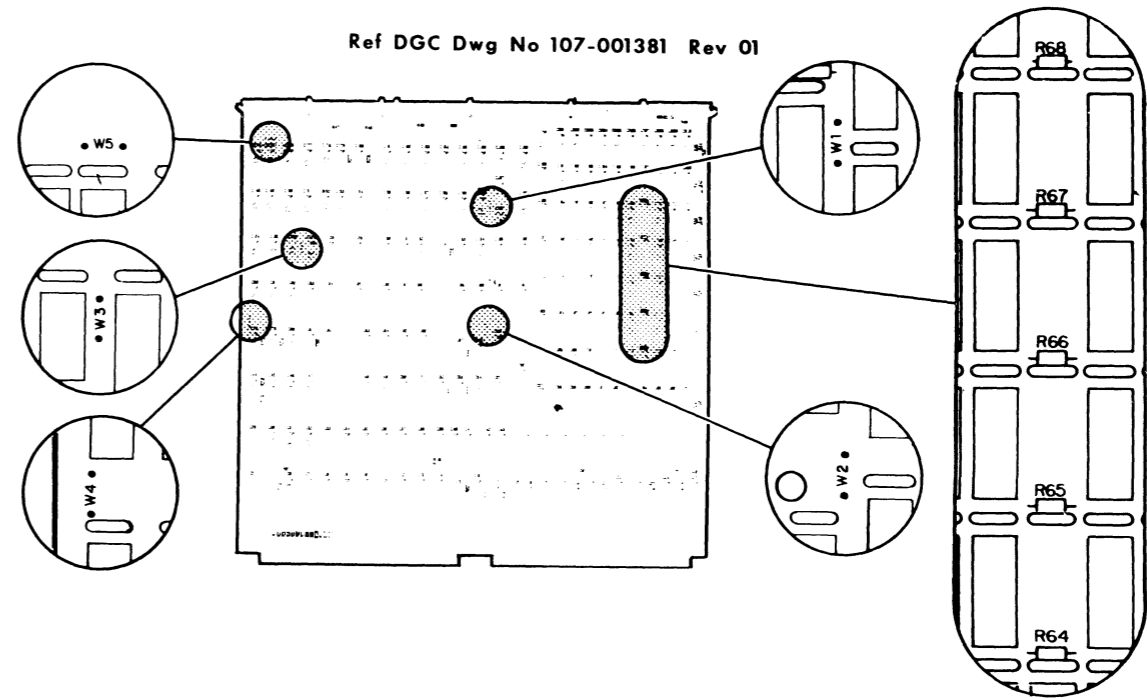
Ref DGC Dwg No 107-0010 1966 Rev 00



W1 - W4 OUT

MICROSEQUENCER

Ref DGC Dwg No 107-001381 Rev 01



JUMPERS

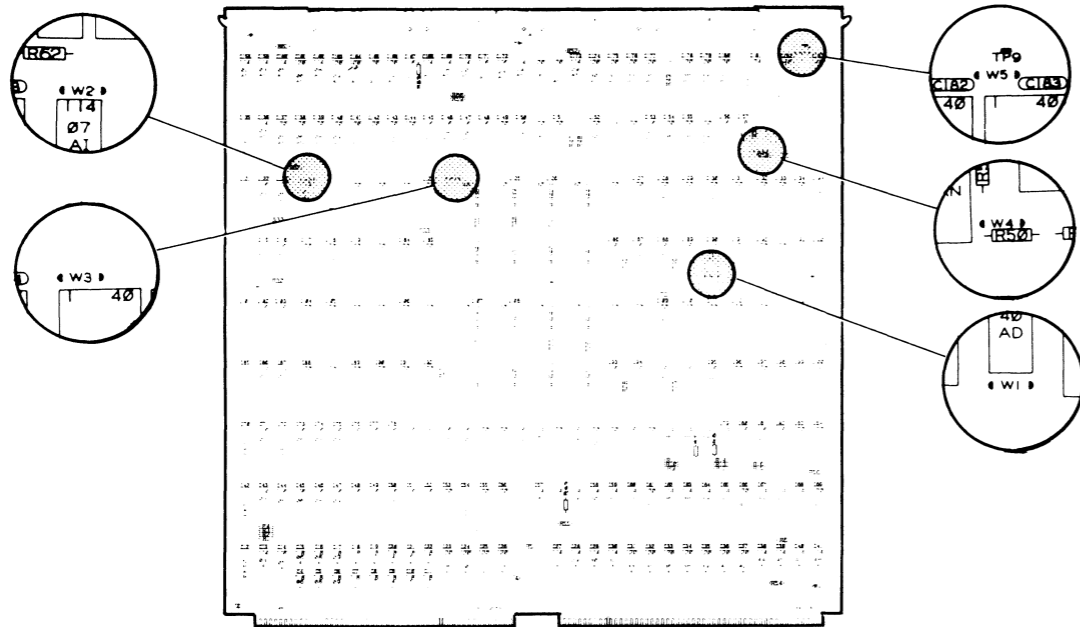
W1-W5	IN
R64-R68	OUT

TAILORING (CONT)

JUMPERING

ARITHMETIC AND LOGIC UNIT (ALU1)

Ref DGC Dwg No 107-001627 Rev 00

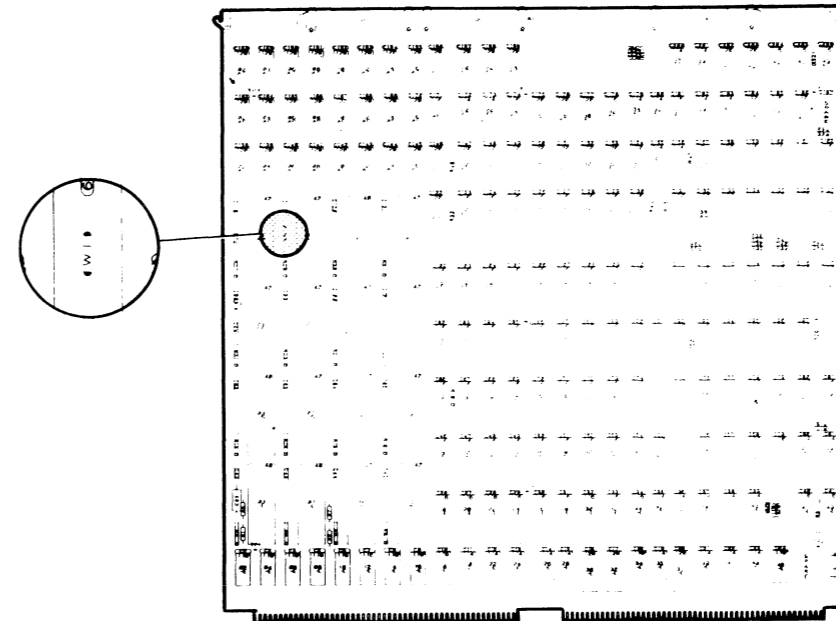


JUMPERS

W1-W5	IN
-------	----

FLOATING POINT UNIT

Ref DGC Dwg 107-01649 Rev 01



JUMPER

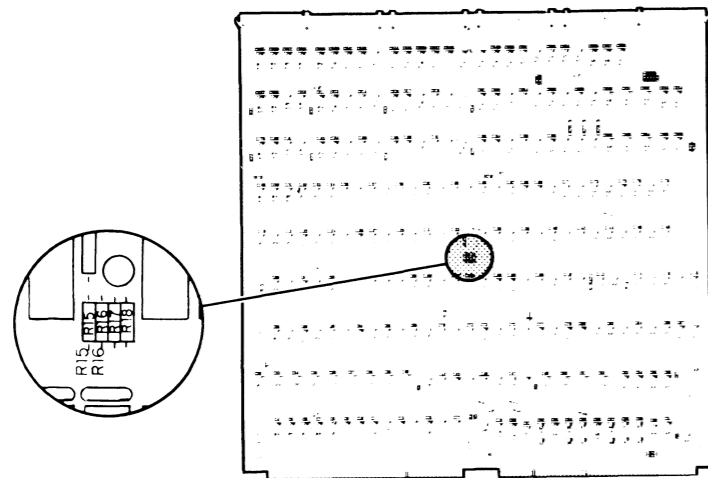
W1	IN
----	----

NOTE: 107-001649 REV 04 HAS NO JUMPERS

**TAILORING (CONT)
JUMPERING**

INSTRUCTION PROCESSOR

Ref DGC Dwg No 107-001385 Rev 00

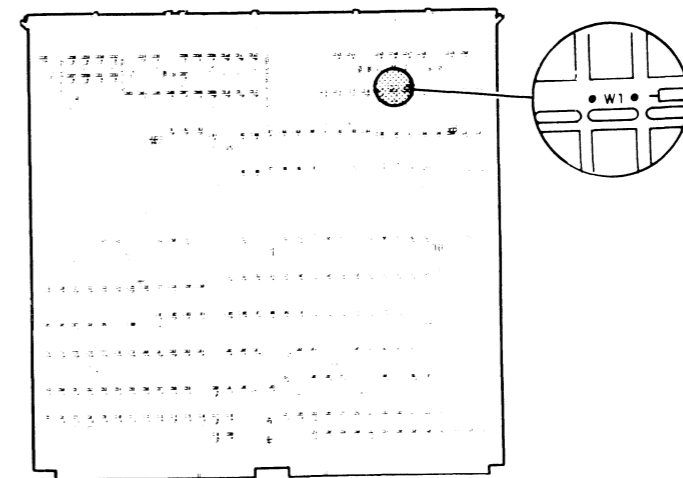


JUMPERS

R15	IN
R16	OUT

I/O CHANNEL

Ref DGC Dwg No 107-001330 Rev 01



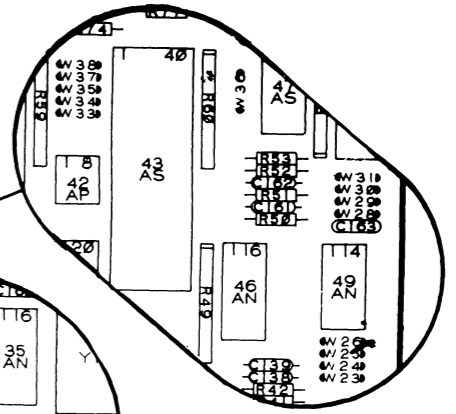
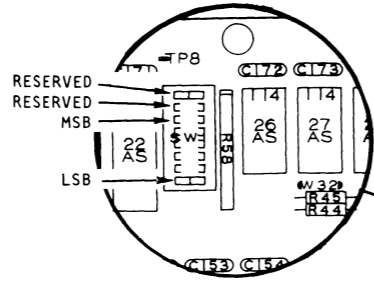
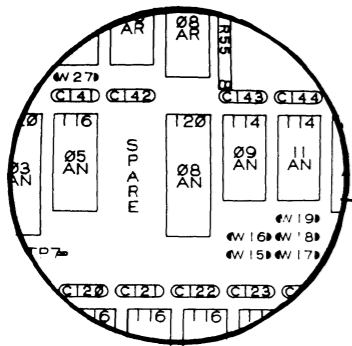
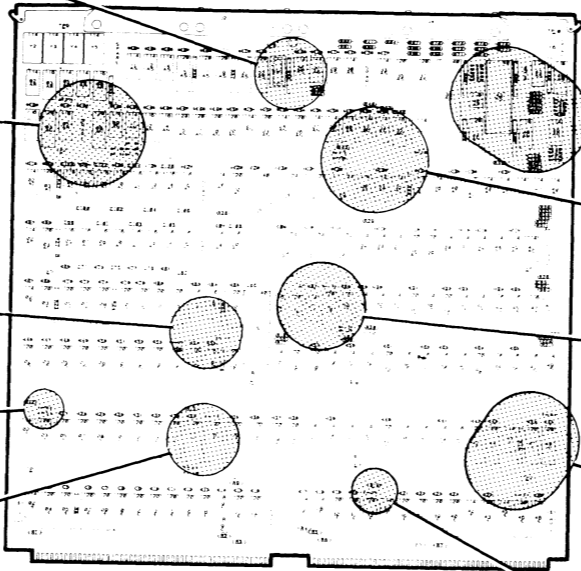
JUMPER

W1	OUT
----	-----

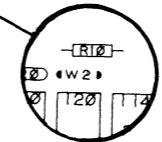
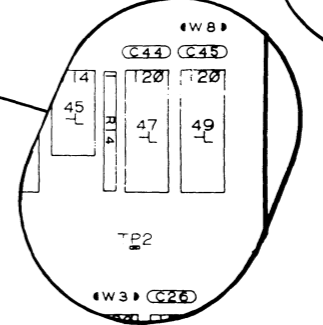
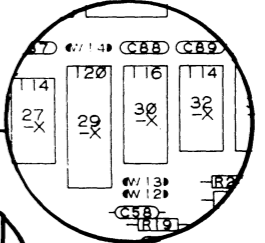
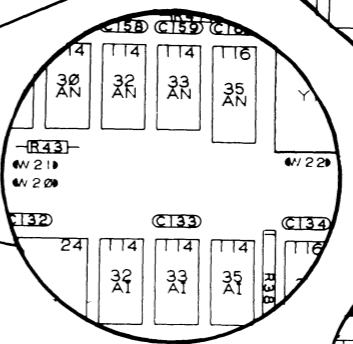
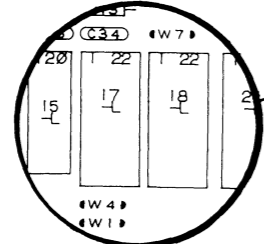
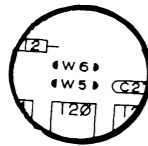
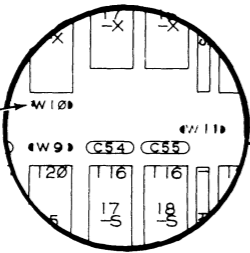
TAILORING (CONT)
JUMPERING

SYSTEM CONTROL PROCESSOR

Ref DGC Dwg No 107-001669 Rev 03



NOTE
107-001669
REV. 01,02 ONLY.



TTY BAUD RATE (BITS/SECOND)	W28	W29	W30	W31
300	IN	OUT	IN	OUT
600	IN	OUT	OUT	IN
1200	IN	OUT	OUT	OUT
2400	OUT	IN	OUT	IN
4800	OUT	OUT	IN	IN

TTY PARITY	W38	W33
EVEN	OUT	IN
ODD	IN	IN
NONE	OUT	OUT

JUMPERS

W2, W3, W5, W6, W7, W8, W9, W11, W14, W16, W17, W18, W22, W27, W36, R29	IN
W1, W4, W10, W15, W19, W20, W21, W32, R30	OUT

NOTE-W10 APPLIES TO REV 01,02 ONLY.

TTY CHARACTER LENGTH	W35	W37
7 BITS	OUT	IN
8 BITS	OUT	OUT

TTY INTERFACE	W12	W13	W23	W24	W25	W26
EIA RS-232-C	OUT	OUT	OUT	OUT	IN	IN
20 MA CURRENT LOOP 600 BAUD OR BELOW	IN	IN	IN	IN	OUT	OUT
20 MA CURRENT LOOP ABOVE 600 BAUD	OUT	IN	IN	IN	OUT	OUT

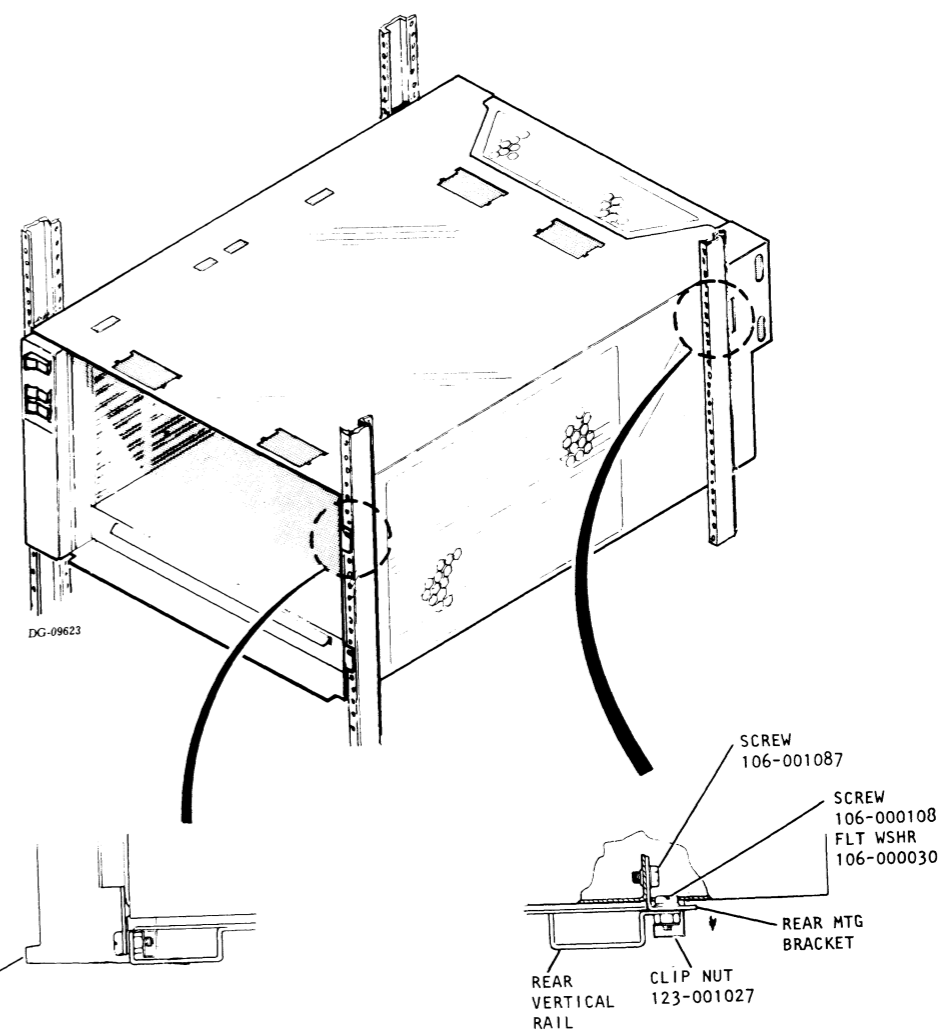
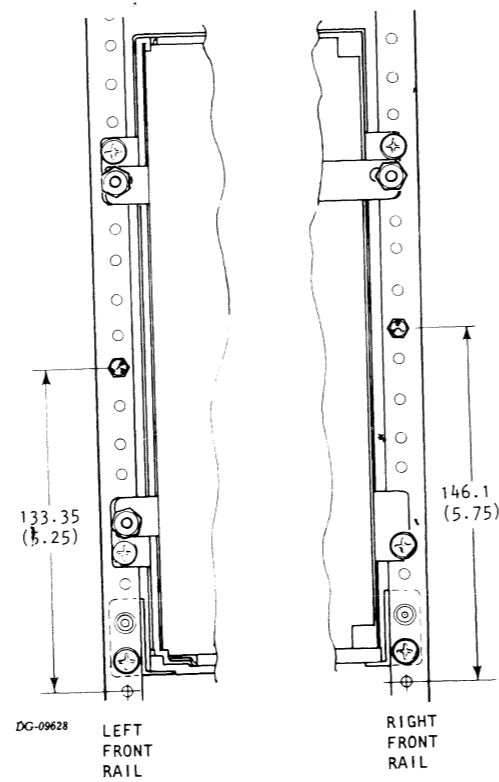
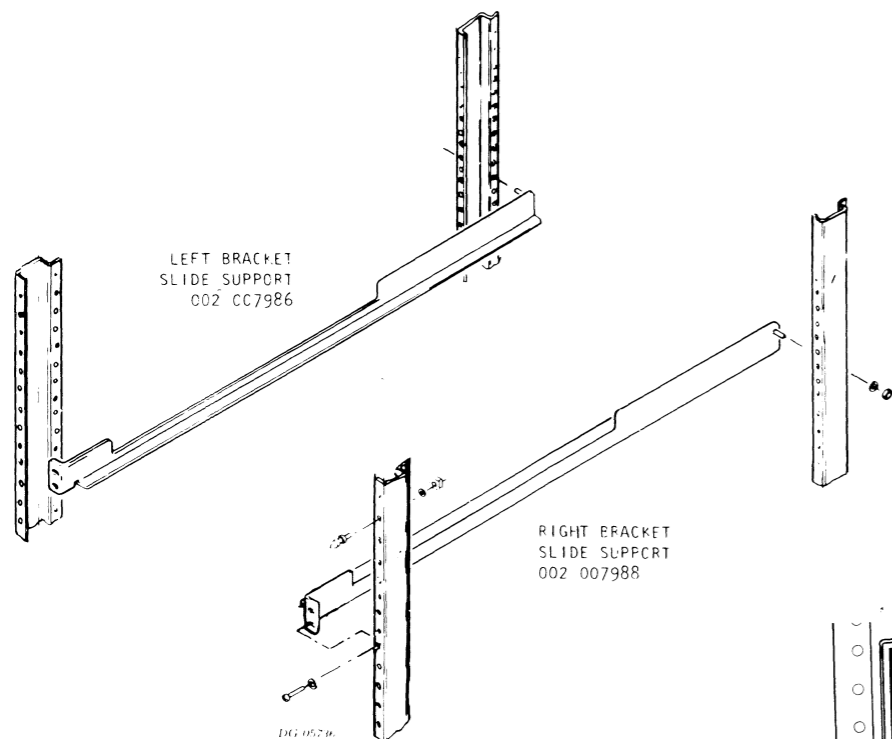
TTY STOP BITS	W34
1 STOP BIT	IN
2 STOP BITS	OUT

DIP SWITCH

THE TWO UPPER SWITCHES MUST BE ON.
THE LOWER SIX SWITCHES SPECIFY IN BINARY THE DEVICE THAT THE MV/8000 C BOOTS FROM. THE OFF POSITION IS A 1; THE ON POSITION IS A 0.

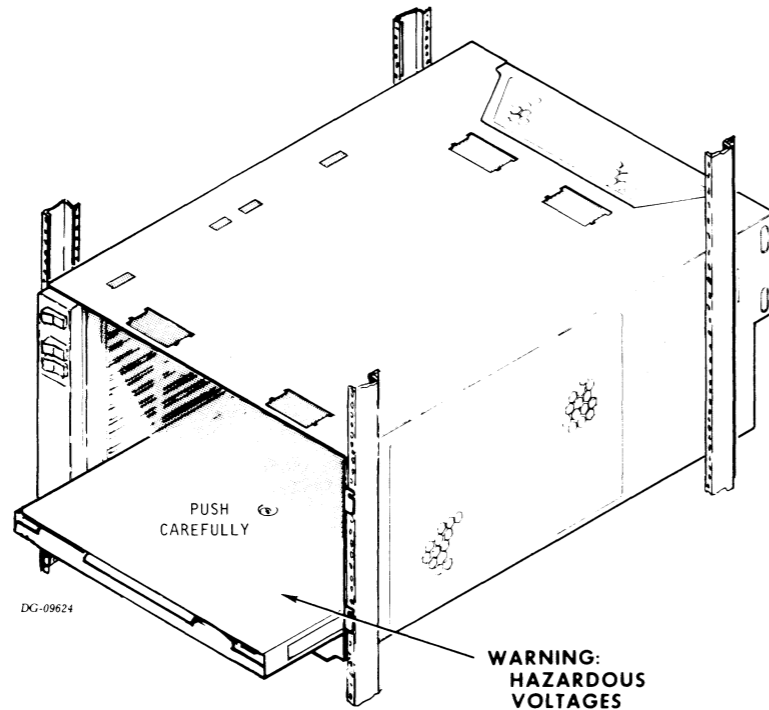
CABINET MOUNTING

HARDWARE MOUNTING KIT
005-019199



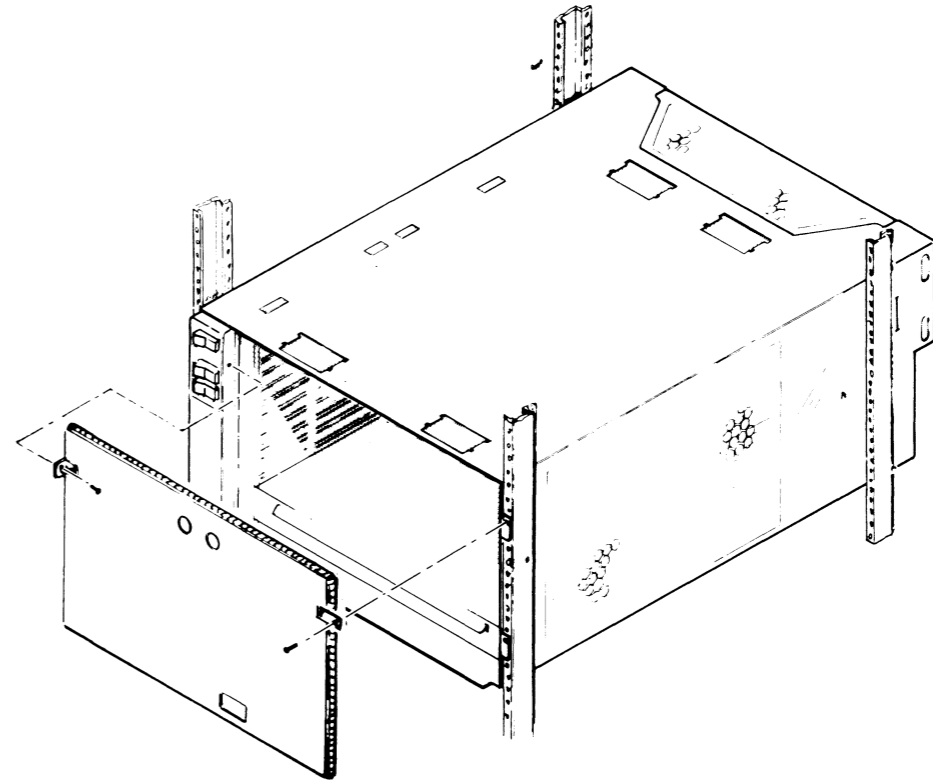
CABINET MOUNTING (CONT)

INSERTING POWER SUPPLY

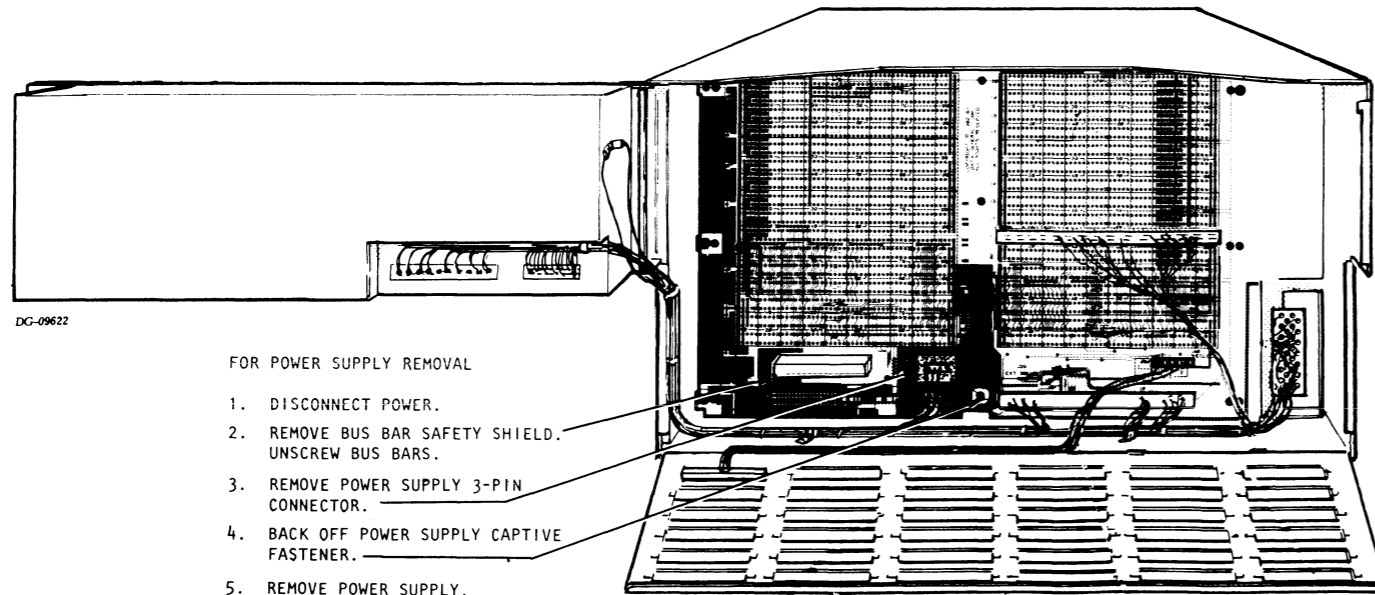


OBSERVE REAR VIEW OF CHASSIS BELOW.
TO INSTALL POWER SUPPLY, PERFORM
IN REVERSE THE REMOVAL PROCEDURE SHOWN.

INSTALLING RFI SHIELD



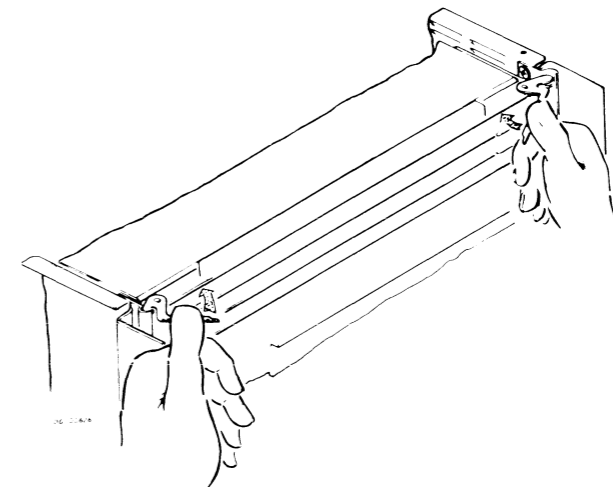
REMOVING POWER SUPPLY



FOR POWER SUPPLY REMOVAL

1. DISCONNECT POWER.
2. REMOVE BUS BAR SAFETY SHIELD. UNSCREW BUS BARS.
3. REMOVE POWER SUPPLY 3-PIN CONNECTOR.
4. BACK OFF POWER SUPPLY CAPTIVE FASTENER.
5. REMOVE POWER SUPPLY.

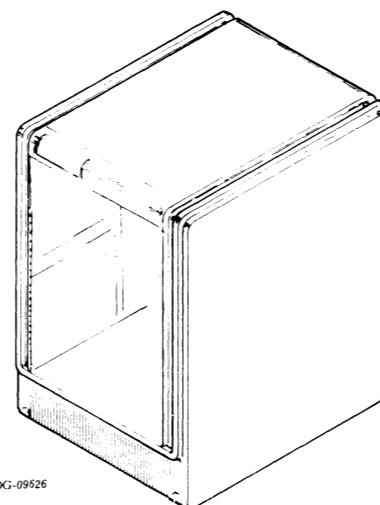
INSERTING PC BOARD



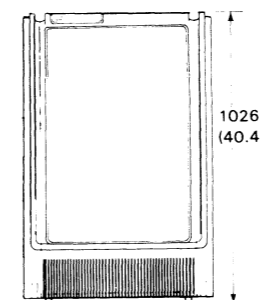
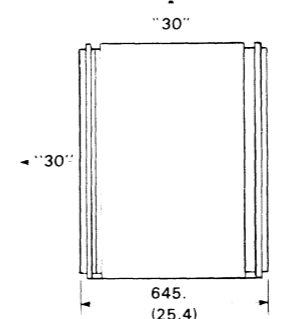
CABINETS, MV/8000 C

MODELS 1605/1606

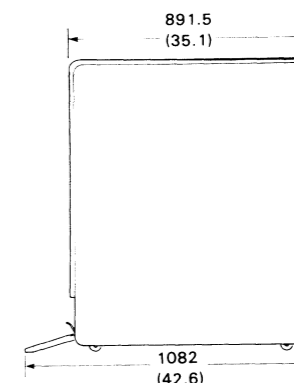
NOTE:
ONLY THE MV/8000 C CPU CHASSIS
AND 8745-C BATTERY BACK-UP UNIT
CAN BE INSTALLED IN THE MAIN
CABINET. ALL OTHER EQUIPMENT MUST
BE INSTALLED IN EXPANSION CABINETS.



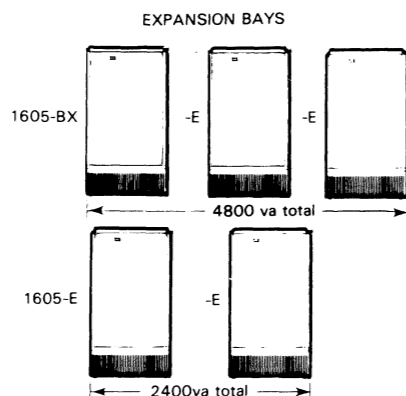
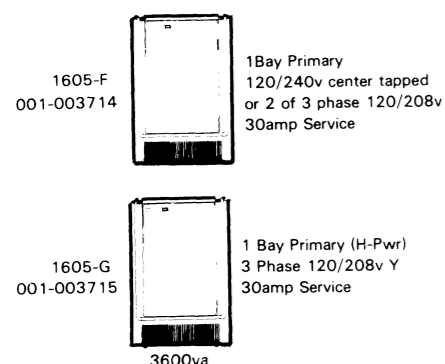
DG-09526



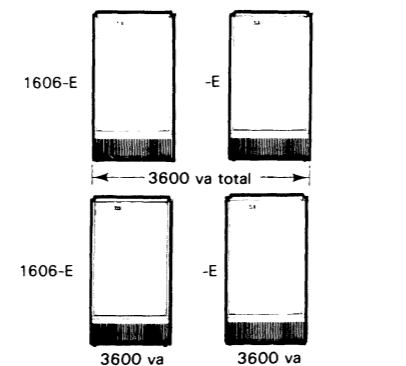
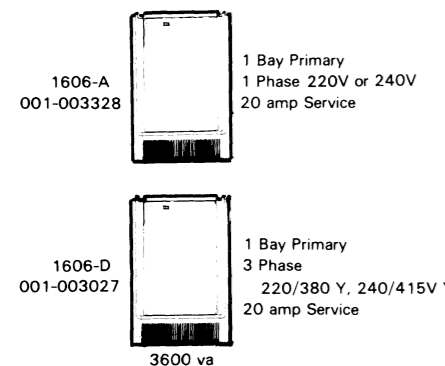
DG-09625



DOMESTIC



INTERNATIONAL



NOTES:

- VOLT AMPS CALCULATED ON BASIS OF 120V X AMPS OR 240V X AMPS. FOR 100V OR 220V SERVICE COUNTRIES, VOLT AMPS SHOULD BE REDUCED ACCORDINGLY; AMPS REMAIN THE SAME
- AMPS = va/VOLTAGE → (120 OR 240)

FOR PACKING 1-BAY CABINETS, SEE 010-000328
FOR PACKING 2-BAY CABINETS, SEE 010-000329
FOR PACKING 3-BAY CABINETS, SEE 010-000330

ALL PRIMARY UNITS WILL BE SHIPPED WITH SIDE PANEL KIT.
EXPANSION UNITS WILL BE SHIPPED WITHOUT SIDE PANEL KIT.
EXPANSION UNITS HAVE BUILT-IN 10 SECOND DELAY SEQUENCING.
SIDE PANEL KIT MAY BE DELETED BY ADDING (X) SUFFIX TO MODEL NUMBER.

POWER CABLES/CONNECTORS

PRIMARY POWER CABLES

Domestic: SUPPLIED. MATES CABINET TO WALL OUTLET.

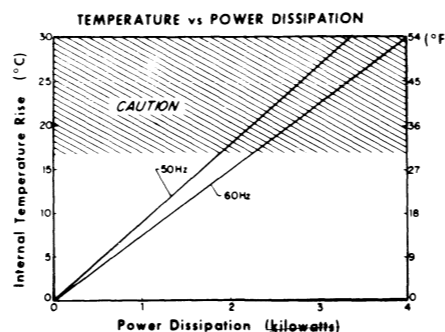
Export: NOT SUPPLIED

Cabinet Type	WALL:	DROP:	Nema #
1605-F	WALL:	DROP:	L-14-30 RECEPT L-14-30 BODY
1605-G	WALL:	DROP:	L-21-30 RECEPT L-21-30 BODY
1606-A	INTERNATIONAL AC POWER IS CONNECTED DIRECTLY TO A TERMINAL BLOCK LOCATED IN THE AC DISTRIBUTION BOX IN THE BOTTOM REAR OF THE CABINET.		
1606-D	INTERNATIONAL AC POWER IS CONNECTED DIRECTLY TO A TERMINAL BLOCK LOCATED IN THE AC DISTRIBUTION BOX IN THE BOTTOM REAR OF THE CABINET.		

NOTES:

- DOMESTIC PRIMARY UNITS ARE SHIPPED WITH A 6 FT. AC CABLE.
- EXPANSION CABINETS "E" RECEIVE AC POWER FROM THE PRIMARY BAY.
- EXPANSION CABINET "B" HAS SEPARATE AC LINE CORD
- CABLES ARE NOT SUPPLIED WITH INTERNATIONAL CABINETS.

STD CAPACITY BLOWER 0166



DIMENSIONS:	Width	Depth	Height
	Millimeters	645	892
Inches	25.4	35.1	40.4

SERVICE CLEARANCES:	Front	Rear	Left or Right
	Millimeters	762	762
Inches	30	30	30

WEIGHT:	Empty		Fully Loaded
	Kilograms	36.3	192.8
Pounds	80	425	

Side panel kit	Empty		Fully Loaded
	Kilograms	14.5	
Pounds	32		

OPERATING ENVIRONMENT:

Temperature Range	0 - 55°C (32 - 131°F)	See note (1)
Relative Humidity Range	10 - 90%	
Altitude Range	-305 - 2,440m (-1000 - 8000ft)	

NOTES:
(1) SPECS ARE FOR CABINET ONLY. SEE BLOWER CHART FOR TEMPERATURE RISE INSIDE CABINET AS YOU ADD EQUIPMENT. YOU MUST NOT EXCEED MAX ALLOWABLE TEMPERATURE INSIDE THE CABINET FOR ANY PIECE OF EQUIPMENT.

POWER REQUIREMENTS: See note (2)

Domestic	(1605-F or G only)
Voltage	120/240
Hz	50/60
Amp per Phase	30
Phase	
1605-F	Single or 2 phases off a 3-phase line
1605-G	3-phase line
Export	(1606 - D only)
Voltage	220/380Y, 240/415Y
Hz	50
Amp per Phase	20
Phase	3

CABLES:

COOLING UNITS

Domestic	
Volts	115
Hz	60
Watts	150
Amp	1.5
Export	
Volts	220/240
Hz	50
Watts	150
Amp	0.7

USABLE VERTICAL RACK SPACE	Areas	Inches	mm
	16	28	712

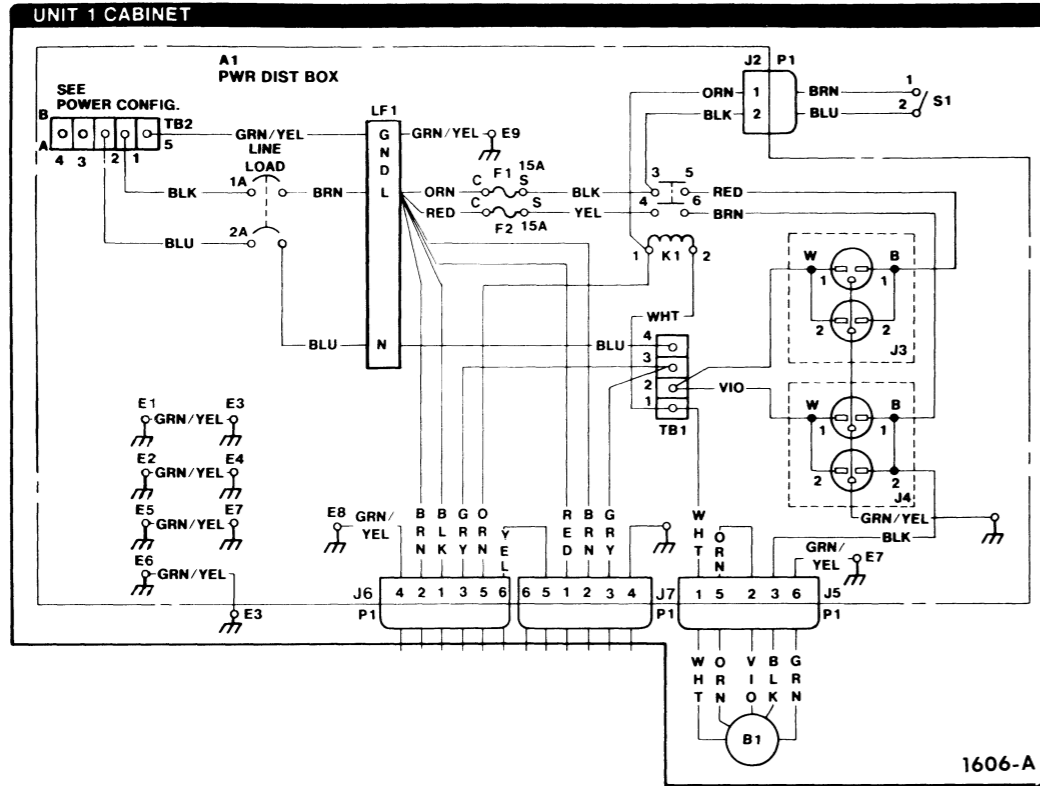
CABINETS, MV/8000 C

MODELS 1605/1606

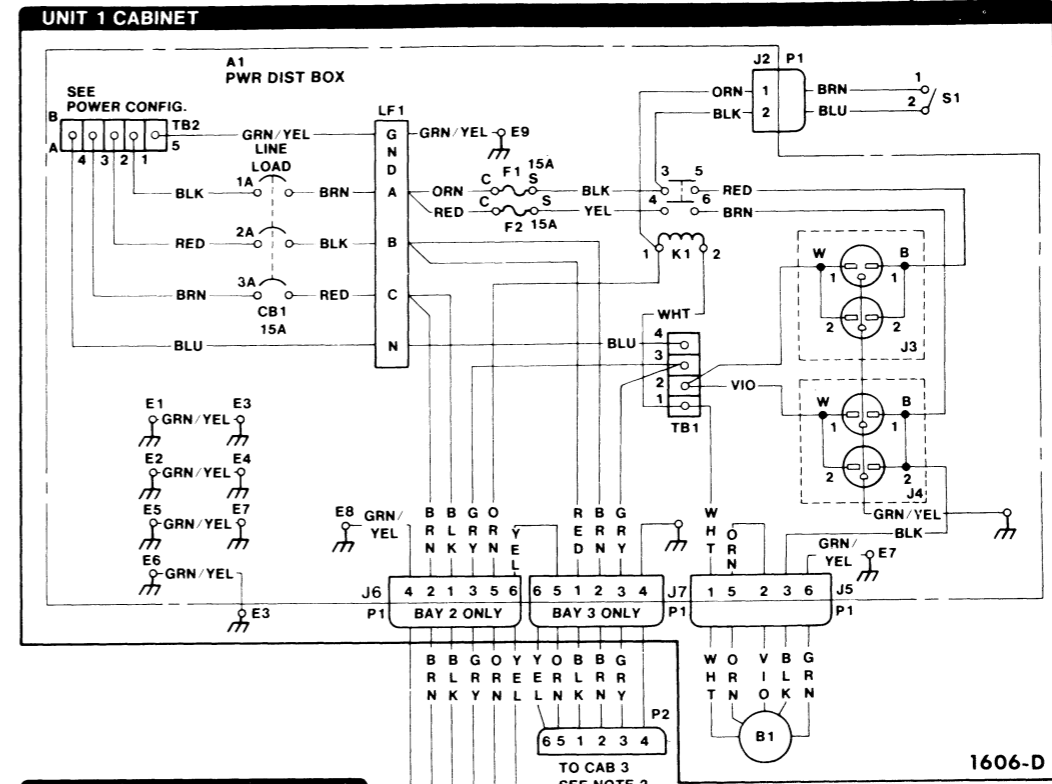
INTERNAL CABLING

1606-A (INTERNATIONAL)

1606-D (INTERNATIONAL)
WITH EXPANSION
1606-E

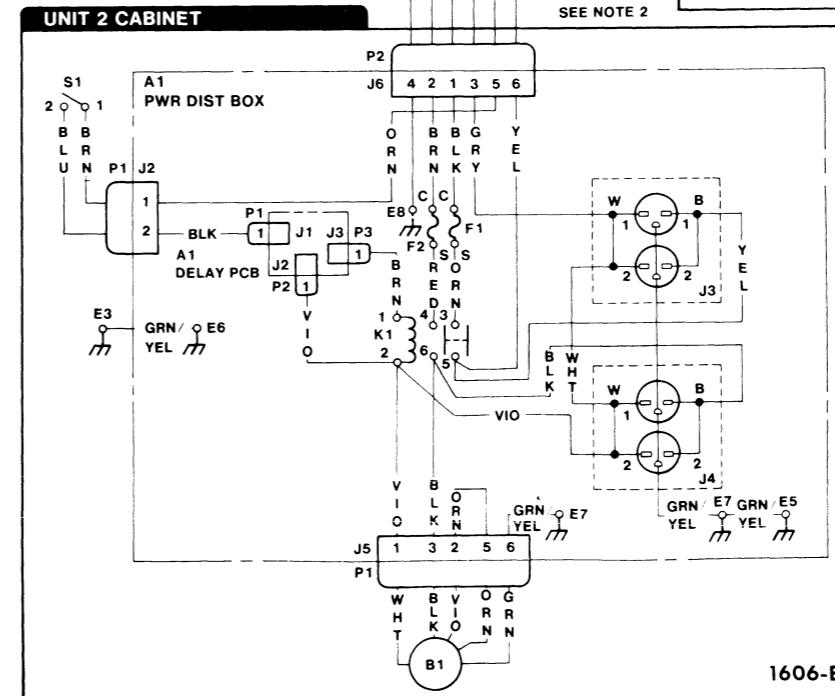


1606-A



1606-D

- POWER CONFIG.**
- FOR 3 PHASE OPERATION
240 / 415Y
- TB2 CONNECT TO**
- PHASE X
 - PHASE Z
 - PHASE Y
 - NEUTRAL-W
 - GND
- A 1606-E EXPANSION CABINET
CANNOT PLUG INTO A 1606-A
WITH AN MV/8000C. USE A
1606-AX.



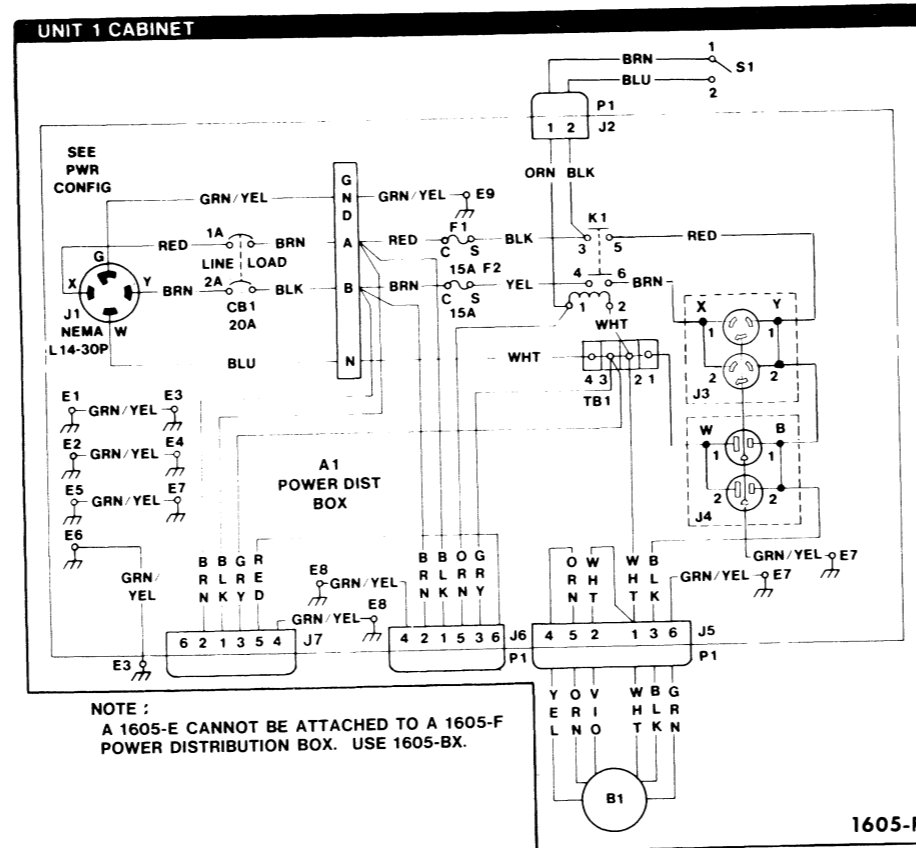
1606-E

- POWER CONFIG.**
- FOR 3 PHASE OPERATION
240 / 415Y
- TB2 CONNECT TO**
- PHASE X
 - PHASE Z
 - PHASE Y
 - NEUTRAL-W
 - GND
- FOR POINT TO POINT
WIRING
SEE UNIT 2 CABINET

CABINETS, MV/8000 C

MODELS 1605/1606
INTERNAL CABLING (CONT)

1605-F (DOMESTIC)



1. POWER CONFIGURATION

FOR 2 PHASES OF A 3 PHASE LINE CONFIGURATION

- J1 CONNECT
- W NEUTRAL
- X PHASE X
- Y PHASE Y
- G GND

FOR 120/240 CENTER
TAP CONFIG.

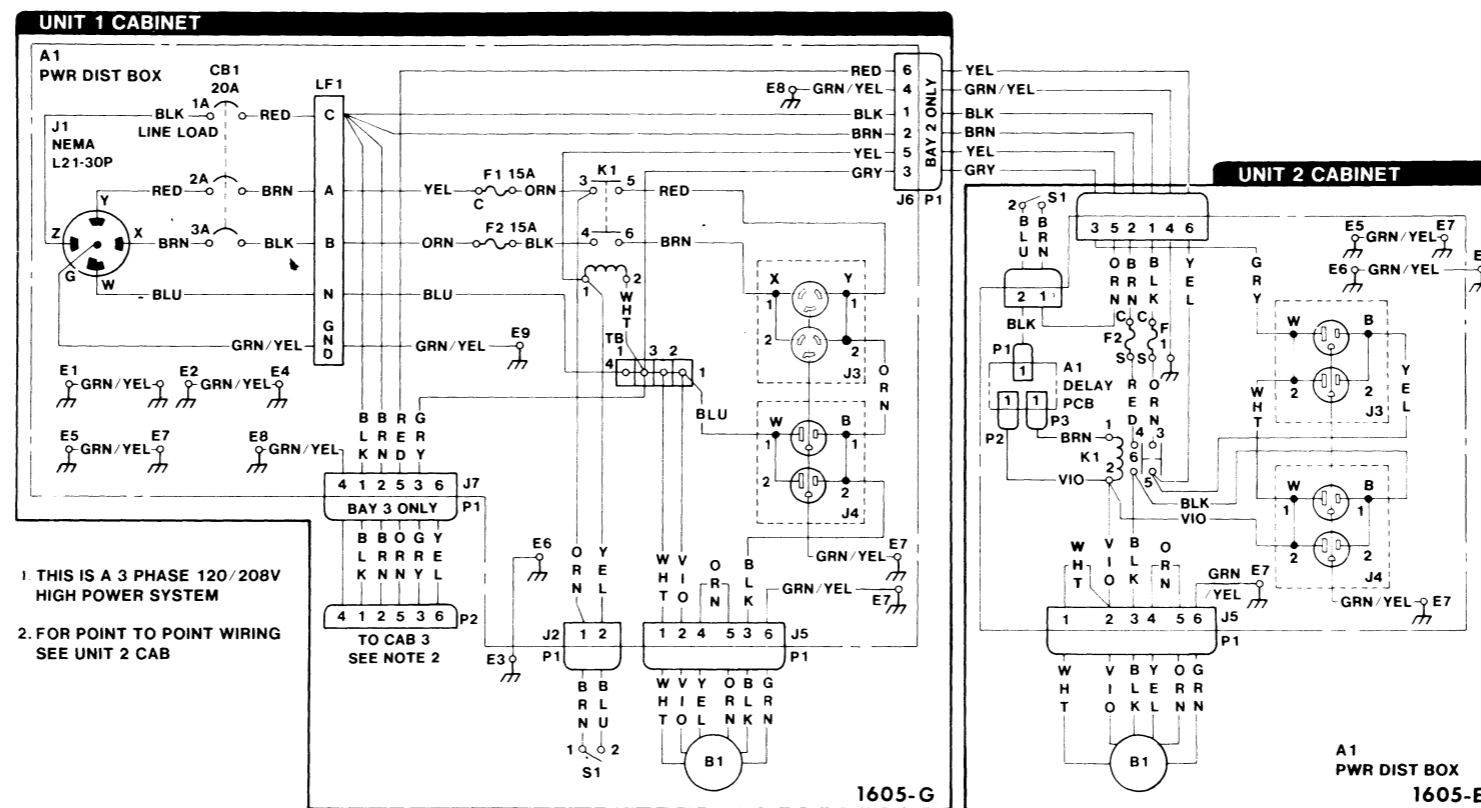
- J1 CONNECT
- W NEUTRAL
- X HOT 1
- Y HOT 2
- G GND

CABINETS, MV/8000 C

MODELS 1605/1606

INTERNAL CABLING (CONT)

1605-G (DOMESTIC)
WITH 1605-E EXPANSION

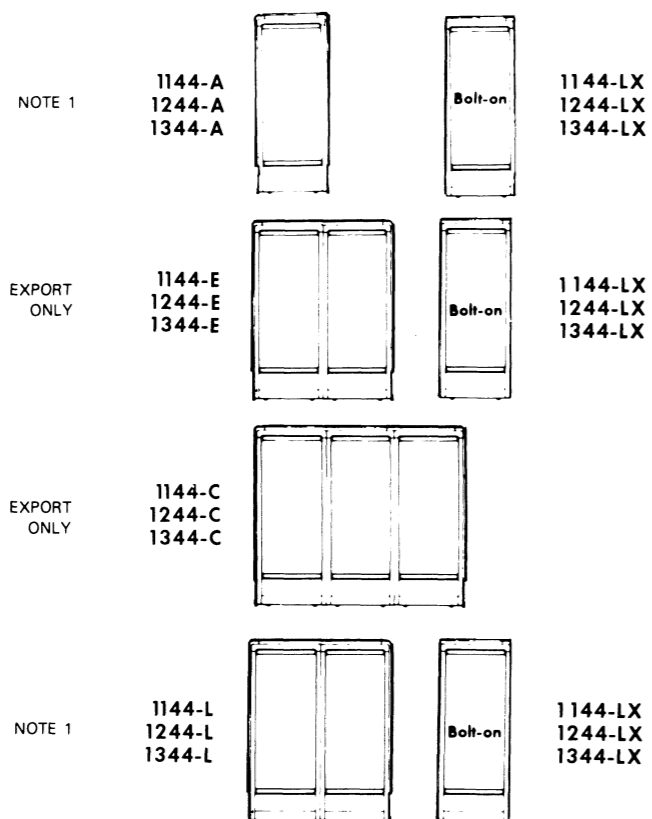


1. THIS IS A 3 PHASE 120/208V HIGH POWER SYSTEM
2. FOR POINT TO POINT WIRING SEE UNIT 2 CAB

CABINETS, MV/8000 C

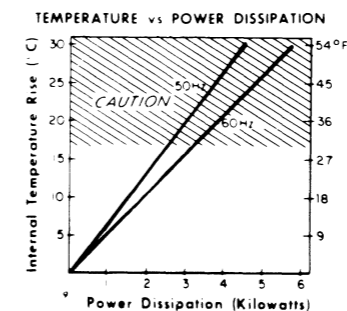
MODELS 1144/1244/1344

HIGH CAPACITY BLOWER



NOTE 1:
DOMESTIC CABINET ONLY. POWER
ADAPTER CABLE (MODEL 1317) IS
REQUIRED FOR MV/8000C.

HIGH CAPACITY BLOWER 0142/3



NOTE:
ONLY THE MV/8000C CPU CHASSIS AND 8745-E BATTERY
BACKUP UNIT CAN BE INSTALLED IN THE MAIN CABINET.
ALL OTHER EQUIPMENT MUST BE INSTALLED IN EXPANSION
CABINETS.

FOR PACKING 1-BAY CABINETS, SEE 010-000328
FOR PACKING 2-BAY CABINETS, SEE 010-000329
FOR PACKING 3-BAY CABINETS, SEE 010-000330

ECLIPSE MV/8000C

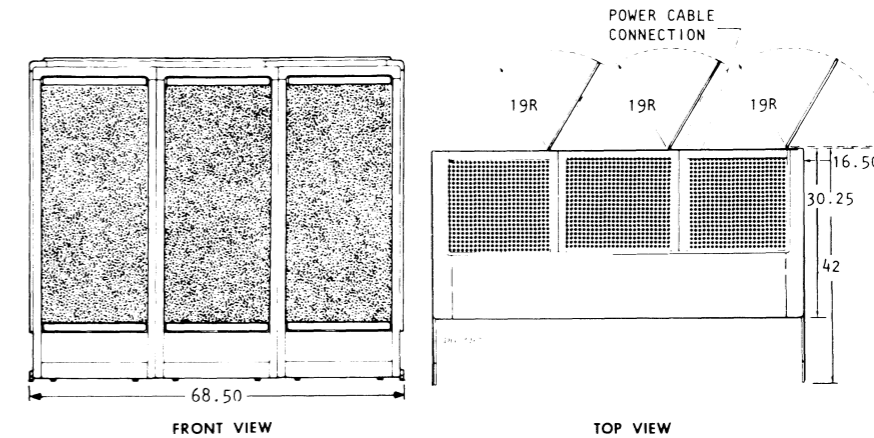
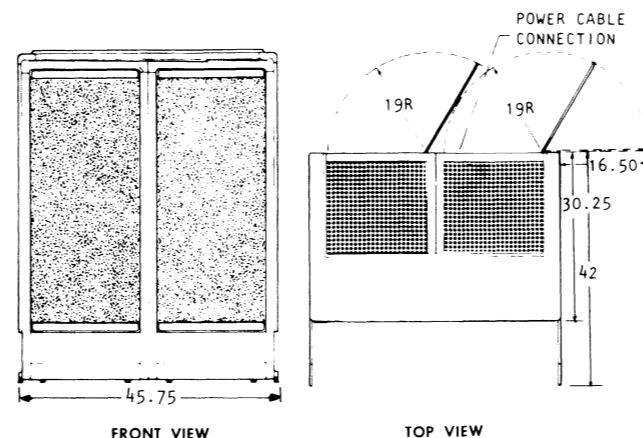
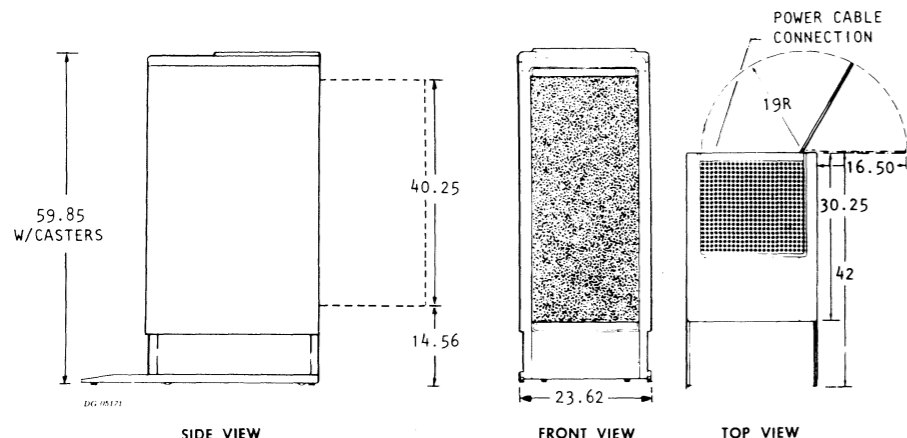
CABINETS, MV/8000C

MODELS 1144/1244/1344

SERIES 1144-A/1244-A/1344-A 1-BAY CABINET

SERIES 1144-E/1244-E/1344-E 2-BAY CABINET

SERIES 1144-C/1244-C/1344-C 3-BAY CABINET



SPECIFICATIONS 1144-A/1244-A/1344-A (DOMESTIC) HIGH CAPACITY BLOWER
1144-A1 - A4 / 1244-A1 - A4 / 1344-A1 - A4 (EXPORT)

DIMENSIONS:	Width	Depth	Height
Millimeters	600	1067	1520
Inches	23.62	42	59.85

WEIGHT:	Empty	Fully Loaded
Kilograms	100	364
Pounds	220	800

POWER REQUIREMENTS:

(Domestic)

Voltage	2 CKT 120V
Hz	60
Max Amp	20/CKT
Phase	1

(Export)

Voltage	200/220/240
Hz	50
Max Amp	15
Phase	1

POWER AVAILABLE:

Internal Receptacles	Each	Total (All bays, All recept)
Domestic	15	30.0
Export	15	13.8

SPECIFICATIONS 1144-E/1244-E/1344-E (DOMESTIC) HIGH CAPACITY BLOWER
1144-E1 - E4 / 1244-E1 - E4 / 1344-E1 - E4 (EXPORT)

DIMENSIONS:	Width	Depth	Height
Millimeters	1162	1067	1520
Inches	45.75	42	59.85

WEIGHT:	Empty	Fully Loaded
Kilograms	168	728
Pounds	370	1600

POWER REQUIREMENTS:

(Domestic)

Voltage	3 CKT 120V
Hz	60
Max Amp	20/CKT
Phase	1

(Export)

Voltage	200/220/240
Hz	50
Max Amp	15
Phase	1

POWER AVAILABLE:

Internal Receptacles	Each	Total (All bays, All recept)
Domestic	15	37.5
Export	15	27.6

SPECIFICATIONS 1144-C/1244-C/1344-C (Domestic) HIGH CAPACITY BLOWER
1144-C1 - C4 / 1244-C1 - C4 / 1344-C1 - C4 (Export)

DIMENSIONS:	Width	Depth	Height
Millimeters	1740	1067	1520
Inches	68.5	42	59.85

WEIGHT:	Empty	Fully Loaded
Kilograms	236	1092
Pounds	518	2400

POWER REQUIREMENTS:

(Domestic)

Voltage	3 CKT 120V
Hz	60
Max Amp	20/CKT
Phase	1

(Export)

Voltage	200/220/240
Hz	50
Max Amp	15
Phase	1

POWER AVAILABLE:

Internal Receptacles	Each	Total (All bays, All recept)
Domestic	15	52.5
Export	15	26.4

SERVICE CLEARANCES:	Front	Rear	Right
Millimeters	762	762	762
Inches	30	30	30

USABLE VERTICAL RACK SPACE PER BAY	Areas	Inches	cm
	25	43.75	111

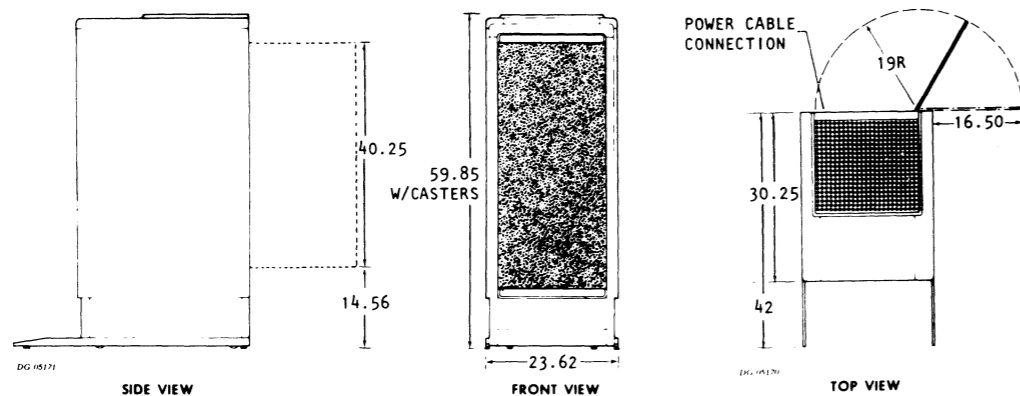
CABLES:	Domestic	Export
Primary Power (Supplied on Domestic only) Connector (Supplied on Export only)	L21-30P	L6-30P

COOLING UNIT (per bay):	
Domestic	HIGH CAPACITY 0143
Number	1
Volts	115
Hz	50/60
Watts	220
Amp	2.5
Export	HIGH CAPACITY 0142
Number	1
Volts	220/220/240
Hz	50/60
Watts	220
Amp	1.2

CABINETS, MV/8000 C

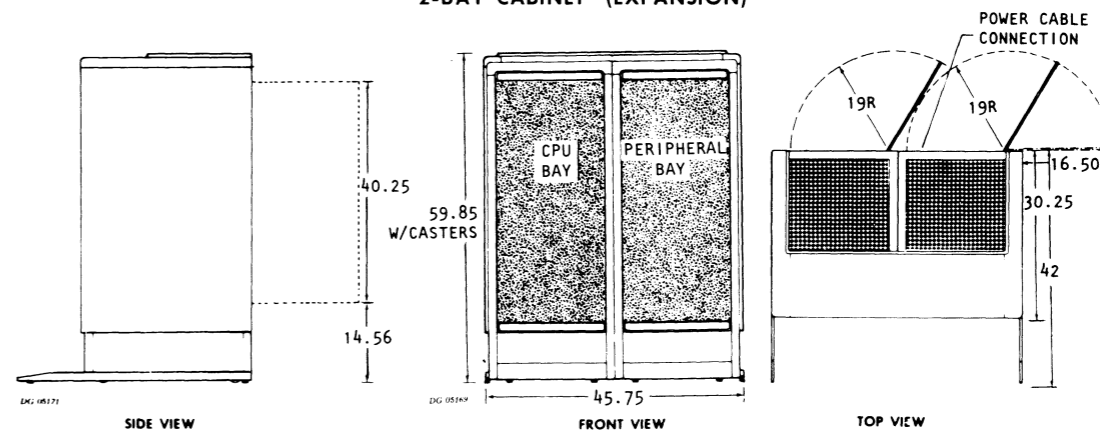
MODELS 1144/1244/1344

SERIES 1144-LX/1244-LX/1344-LX 1-BAY CABINET (EXPANSION)



DIMENSIONS:			
	Width	Depth	Height
Millimeters	600	1067	1520
Inches	23.62	42	59.85
WEIGHT:			
	Empty	Fully Loaded	
Kilograms	100	364	
Pounds	220	800	

SERIES 1144-L/1244-L/1344-L 2-BAY CABINET (EXPANSION)



DIMENSIONS:			
	Width	Depth	Height
Millimeters	1162	1067	1520
Inches	45.75	42	59.85
WEIGHT:			
	Empty	Fully Loaded	
Kilograms	168	728	
Pounds	370	1600	

USABLE VERTICAL RACK SPACE PER BAY			
Areas	Inches	cm	
25	43.75	111	

SERVICE CLEARANCES			
	Front	Rear	Right
Millimeters	762	762	762
Inches	30	30	30

CABLES:		
	Domestic	Export
Primary Power (Supplied on Domestic only) Connector (Supplied on Export only)	L14-30P	L6-15P

COOLING UNIT (per bay):	
(Domestic)	HIGH CAPACITY 0143
Volts	115
Hz	50/60
Watts	220
Amp	2.5
(Export)	HIGH CAPACITY 0142
Volts	220/240
Hz	50/60
Watts	220
Amp	1.2

POWER REQUIREMENTS:
1 power line for each bay. Each line is as follows:

(Domestic)	
Voltage	2 CKT 120V
Hz	60
Max Amp per Phase	15
Phase	1

(Export)	
Voltage	200/220/240V
Hz	50
Max Amp per Phase	15
Phase	1

POWER AVAILABLE:
Each Peripheral Bay; See power distribution chart below.

Internal Receptacle	Each	Total (All bays, All recept)
Domestic 120V	15	30.0
Export 200/220/240	15	14.25

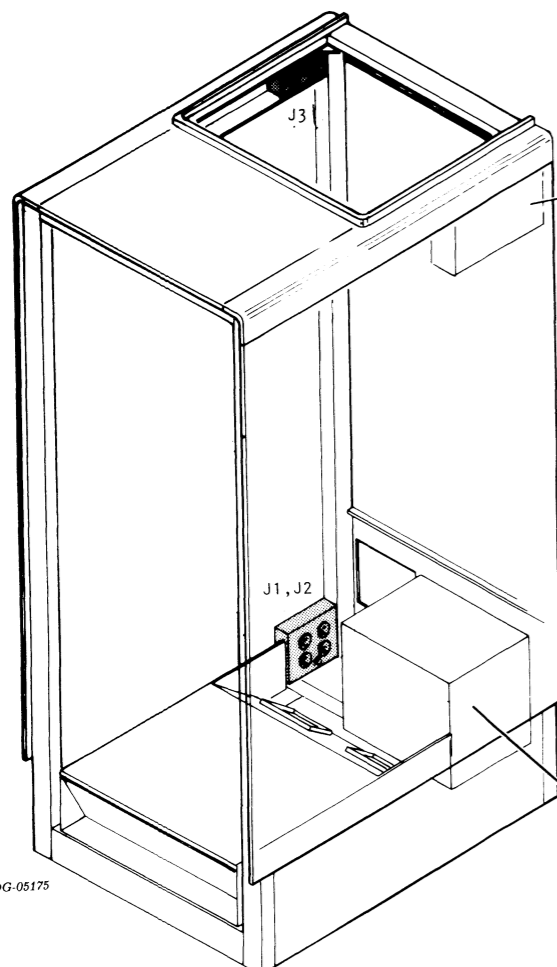
POWER DISTRIBUTION CHART

MAXIMUM CONDITIONS @ 120 Vac 60 Hz	J1	J2	EXP	BLOWER	J3	EXP-
PER RECEPTACLE	15A*	15A*	15A	2.5A	15A*	15A
COMBINED OUTLETS	15A*		15A	2.5A	15A*	15A
TOTAL COMBINED	20A*			20A*		

* DERATE CURRENT DRAW FOR CONTINUOUS USE TO 80% OF MAXIMUM.

CABINETS, MV/8000 C

**MODELS 1144/1244/1344
INTERNAL CABLING
1 BAY CABINET**



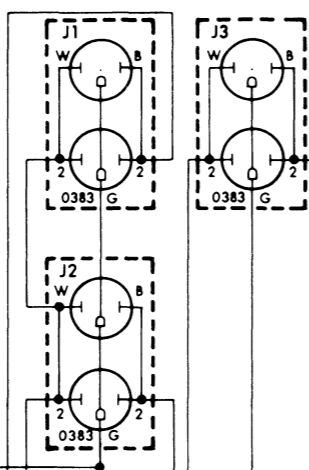
DOMESTIC 1144-A/1244-A/1344-A

MODEL 1317
POWER ADAPTER

POWER DISTRIBUTION CHART

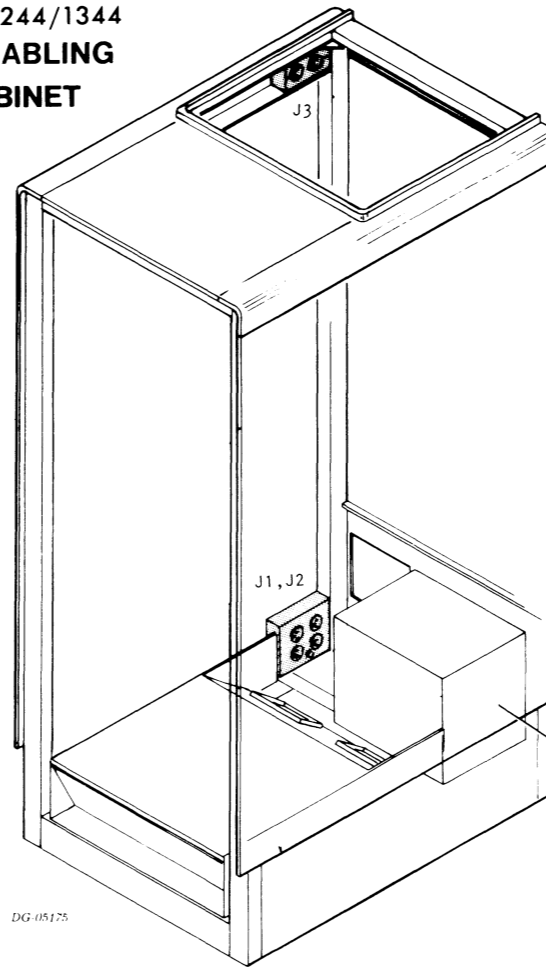
MAXIMUM CONDITIONS @ 120 Vac 60 Hz	J1	J2	EXP	BLOWER	1317 ADAPTER
PER RECEPTACLE	15A*	15A*	15A	2.5A	20A
COMBINED OUTLETS	15A*		15A	2.5A	
TOTAL COMBINED	20A*				20A*

* DERATE CURRENT DRAW FOR CONTINUOUS
USE TO 80% OF MAXIMUM



POWER
PANEL

DG-05175

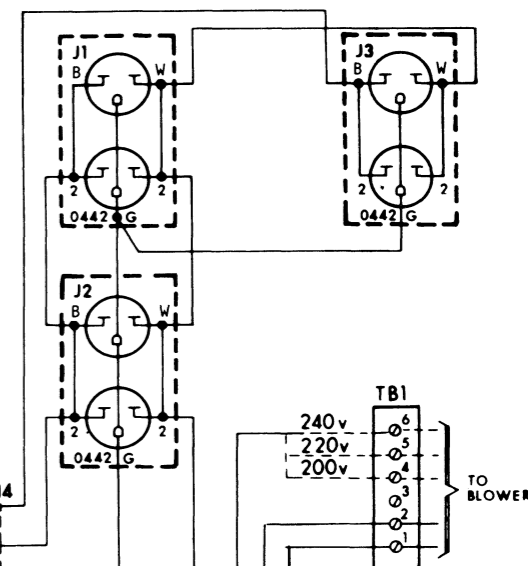


EXPORT 1344-A1/A2/A3/A4

POWER DISTRIBUTION CHART

MAXIMUM CONDITIONS 200/220/240 Vac 50 Hz	J1	J2	J3	EXP	BLOWER
PER RECEPTACLE	15A*	15A*	15A*	15A	2.5A
COMBINED OUTLETS	15 A*				2.5A
TOTAL COMBINED	15A*				

* DERATE CURRENT DRAW FOR CONTINUOUS
USE TO 80% OF MAXIMUM.



POWER
PANEL

DG-05175

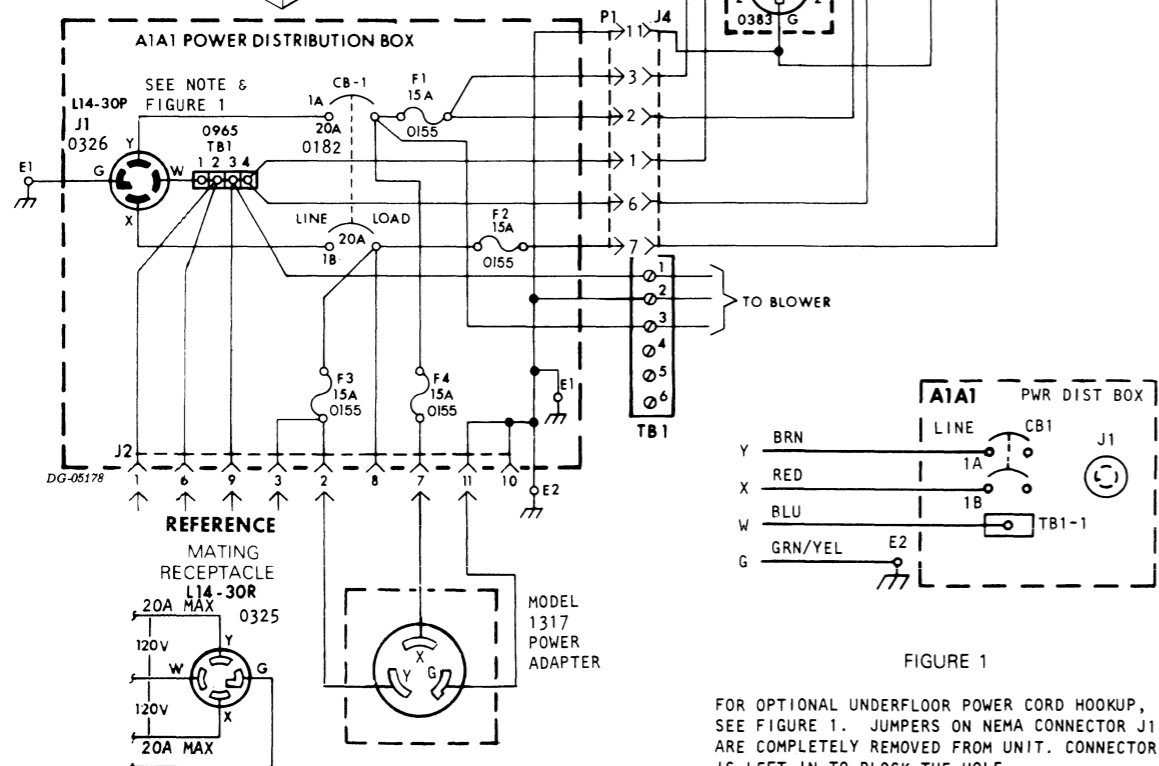


FIGURE 1

FOR OPTIONAL UNDERFLOOR POWER CORD HOOKUP,
SEE FIGURE 1. JUMPERS ON NEMA CONNECTOR J1
ARE COMPLETELY REMOVED FROM UNIT. CONNECTOR
IS LEFT IN TO BLOCK THE HOLE.

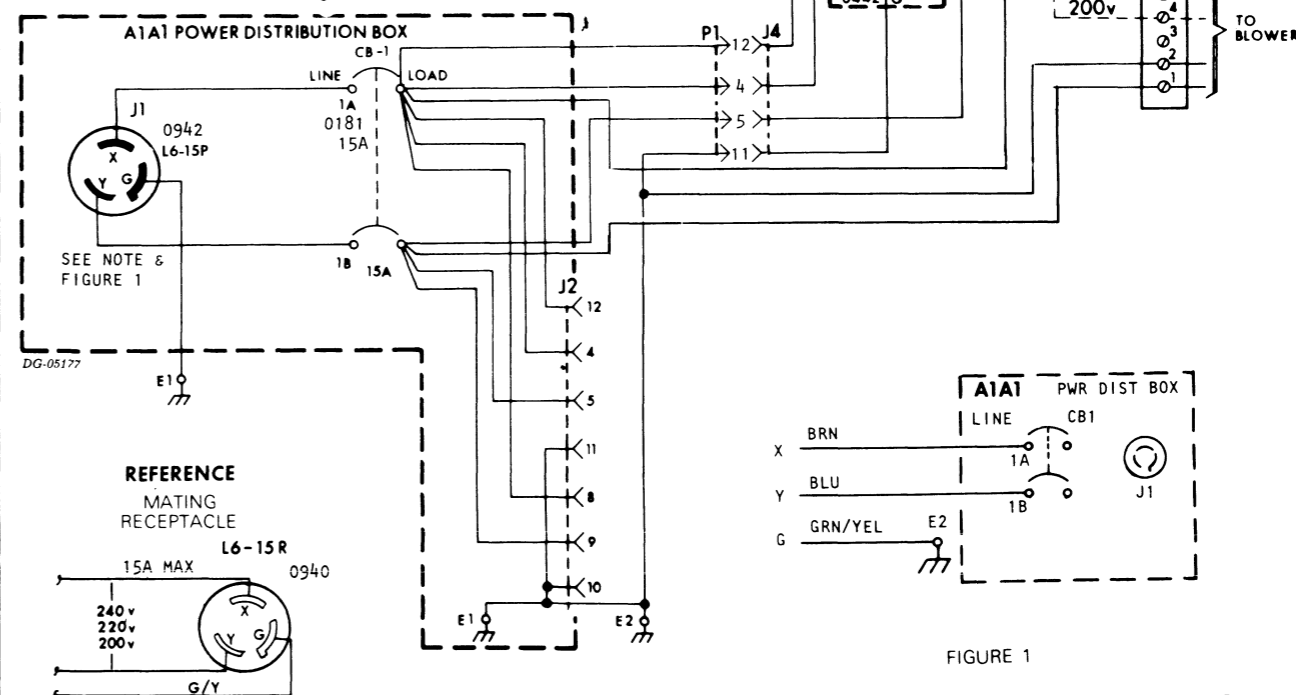


FIGURE 1

FOR OPTIONAL UNDERFLOOR POWER CORD HOOKUP,
SEE FIGURE 1. JUMPERS ON NEMA CONNECTOR J1
ARE COMPLETELY REMOVED FROM UNIT. CONNECTOR
IS LEFT IN TO BLOCK THE HOLE.

CABINETS, MV/8000 C

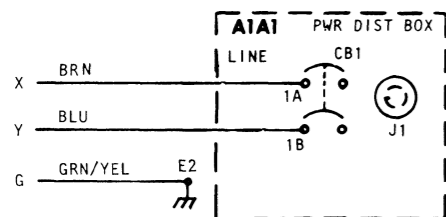
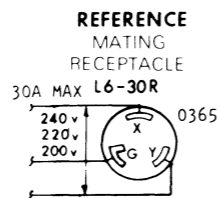
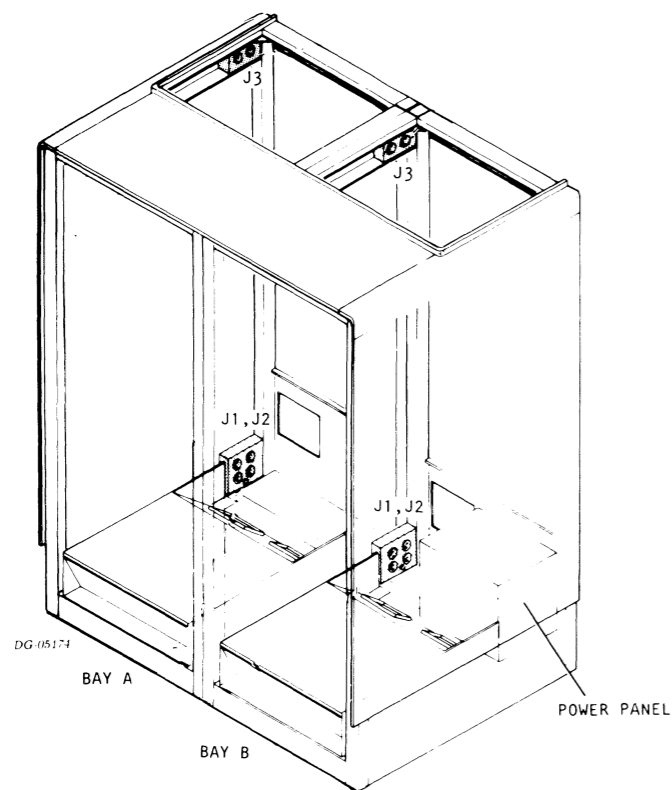
MODELS 1144/1244/1344

INTERNAL CABLING (CONT)

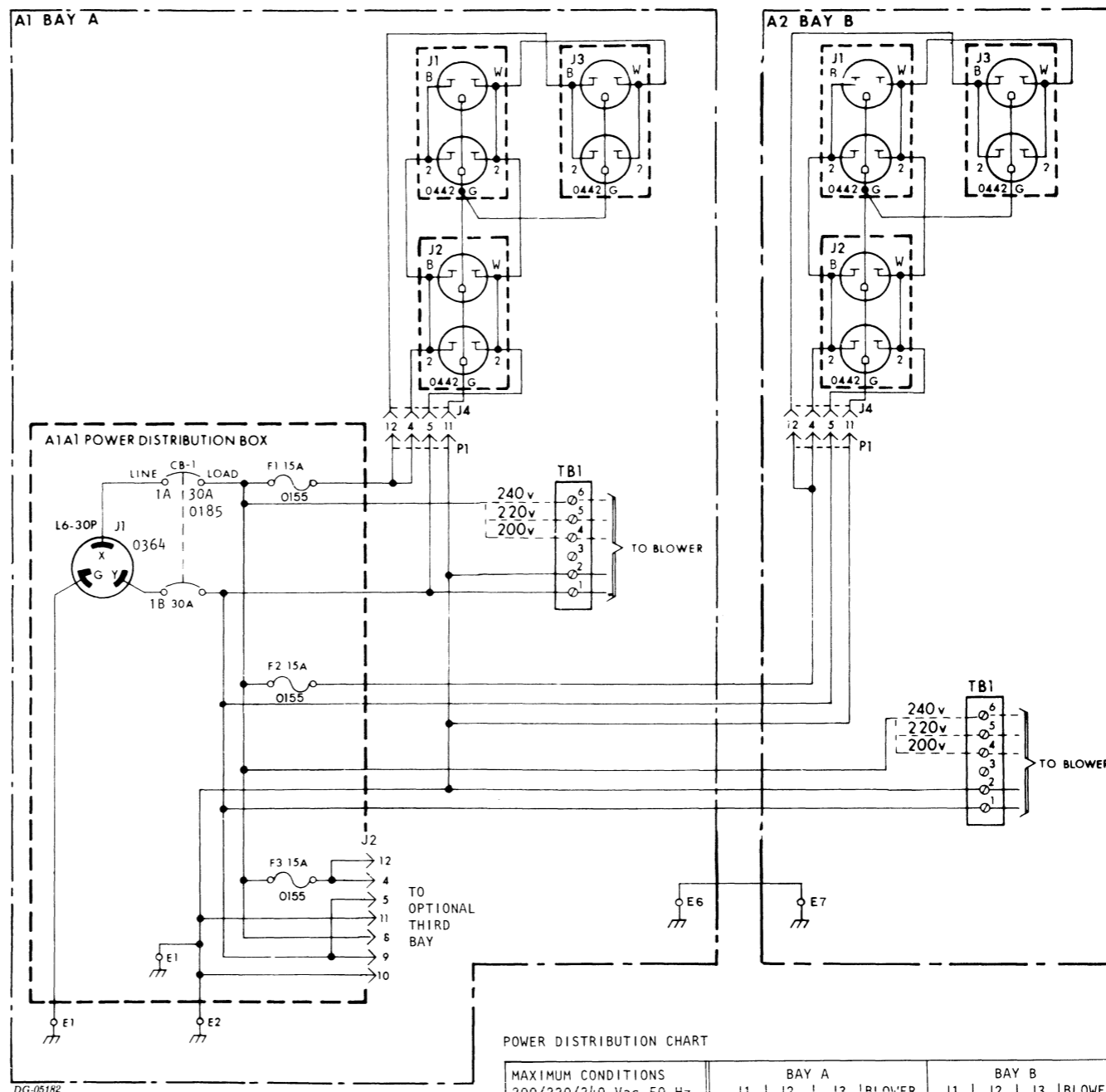
EXPORT 1144-E1/E2/E3/E4

EXPORT 1244-E1/E2/E3/E4

EXPORT 1344-E1/E2/E3/E4



FOR OPTIONAL UNDERFLOOR POWER CORD HOOKUP, SEE FIGURE 1. JUMPERS ON NEMA CONNECTOR J1 ARE COMPLETELY REMOVED FROM UNIT. CONNECTOR IS LEFT IN TO BLOCK HOLE.



POWER DISTRIBUTION CHART

MAXIMUM CONDITIONS 200/220/240 Vac 50 Hz	BAY A				BAY B				EXP (OPTIONAL)			
	J1	J2	J3	BLOWER	J1	J2	J3	BLOWER	J1	J2	J3	BLOWER
PER RECEPTACLE	15A*	15A*	15A*	2.5A	15A*	15A*	15A*	2.5A	15A*	15A*	15A*	2.5A
COMBINED OUTLETS	15A*			2.5A	15A*			2.5A	15A*			2.5A
TOTAL COMBINED	30A*											

* DERATE CURRENT DRAW FOR CONTINUOUS USE TO 80% OF MAXIMUM.

CABINETS, MV/8000 C

MODELS 1144/1244/1344

INTERNAL CABLING (CONT)

EXPORT

1144-C1/C2/C3/C4

1244-C1/C2/C3/C4

1344-C1/C2/C3/C4

POWER DISTRIBUTION CHART

MAXIMUM CONDITIONS 200/220/240 Vac 50 Hz	BAY A				BAY B				BAY C			
	J1	J2	J3	BLOWER	J1	J2	J3	BLOWER	J1	J2	J3	BLOWER
PER RECEPTACLE	15A*	15A*	15A*	2.5A	15A*	15A*	15A*	2.5A	15A*	15A*	15A*	2.5A
COMBINED OUTLETS	15A*			2.5A	15A*			2.5A	15A*			2.5A
TOTAL COMBINED	30A*											

* DERATE CURRENT DRAW FOR CONTINUOUS USE TO 80% OF MAXIMUM

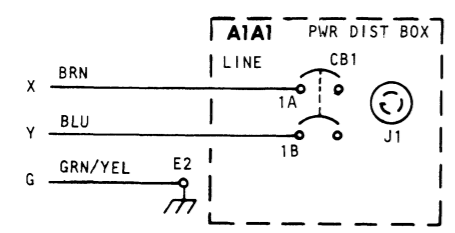
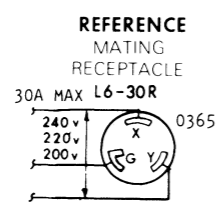
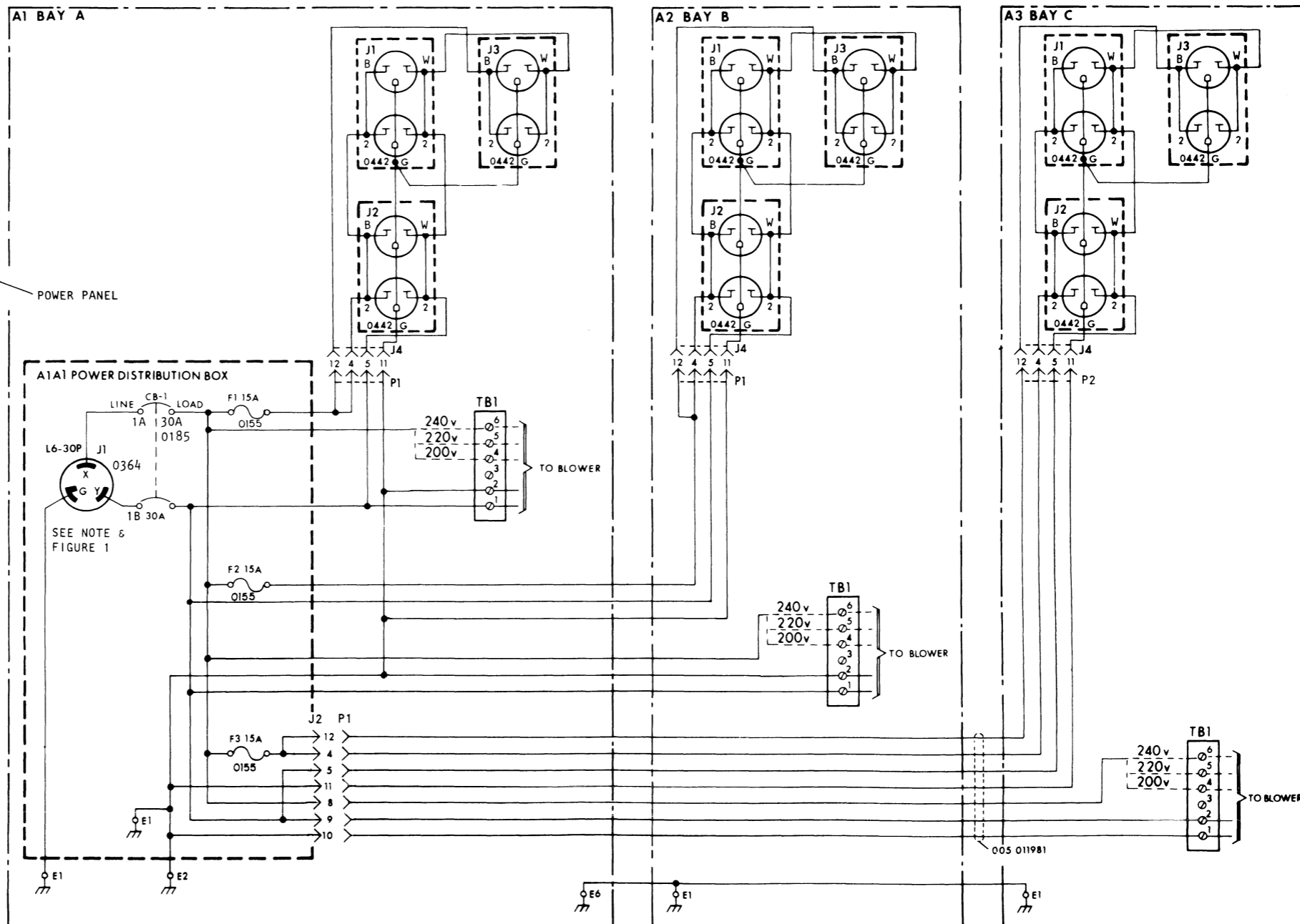
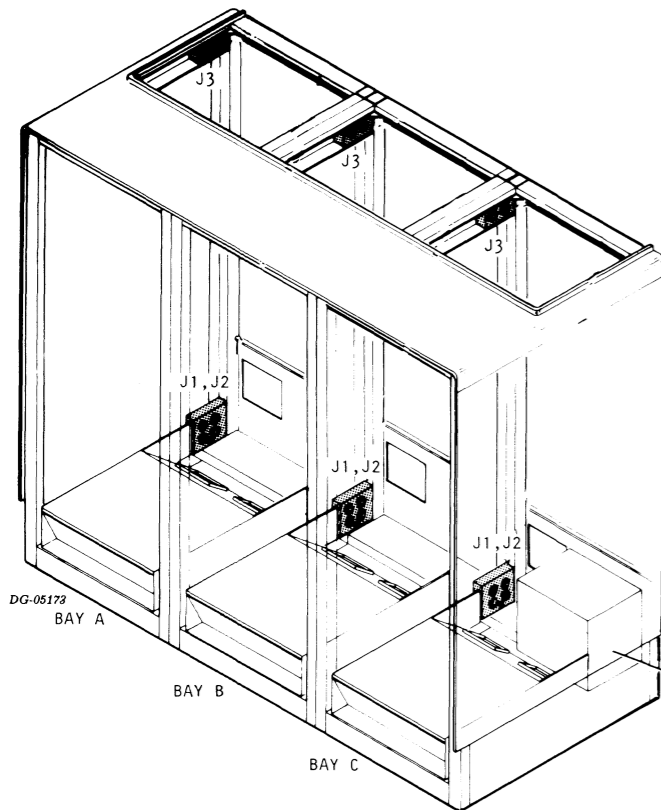


FIGURE 1

FOR OPTIONAL UNDERFLOOR POWER CORD HOOKUP, SEE FIGURE 1. JUMPERS ON NEMA CONNECTOR J1 ARE COMPLETELY REMOVED FROM UNIT. CONNECTOR IS LEFT IN TO BLOCK HOLE.

CABINETS, MV/8000 C

MODELS 1144/1244/1344
INTERNAL CABLING (CONT)

DOMESTIC 1144-L/1244-L/1344-L

NOTE:
POWER DISTRIBUTION CHART AND WIRING DIAGRAM INDICATE ONE BAY; WIRING AND POWER DISTRIBUTION ARE IDENTICAL FOR EACH EXISTING BAY. BOTH CABINETS ARE AVAILABLE IN DOMESTIC AND EXPORT MODELS.

POWER DISTRIBUTION CHART

MAXIMUM CONDITIONS @ 120 Vac 60 Hz	J1	J2	EXP	BLOWER	1317 ADAPTER
PER RECEPTACLE	15A*	15A*	15A	2.5A	20A
COMBINED OUTLETS	15A*	15A	2.5A		
TOTAL COMBINED	15A*				20A*

* DERATE CURRENT DRAW FOR CONTINUOUS USE TO 80% OF MAXIMUM.

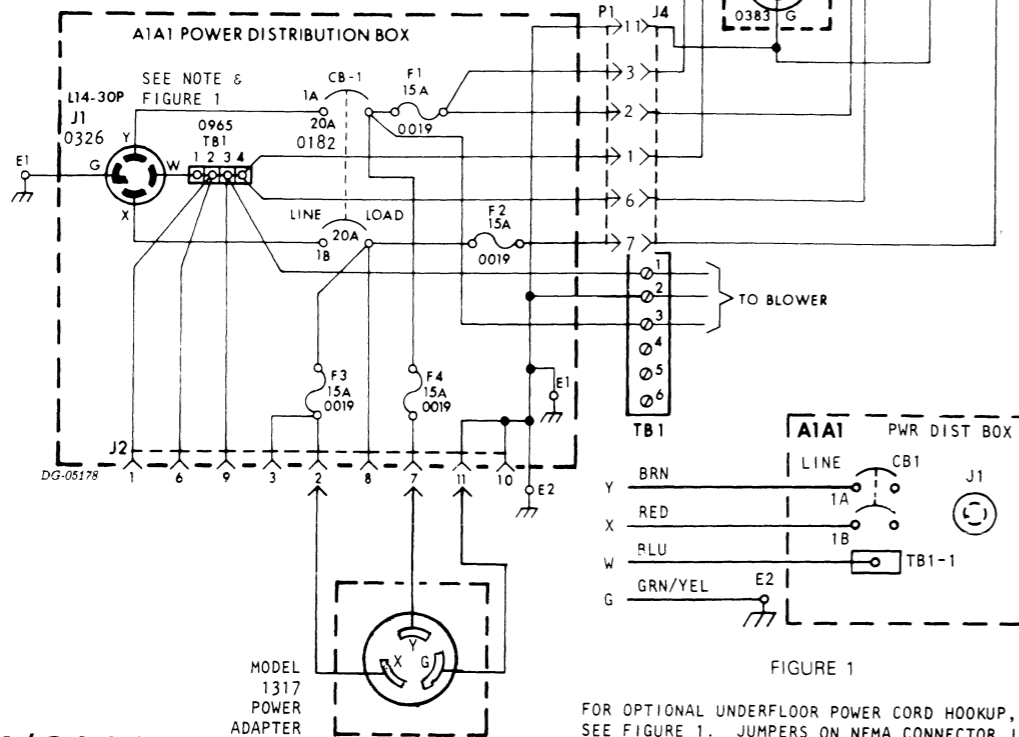
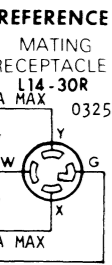
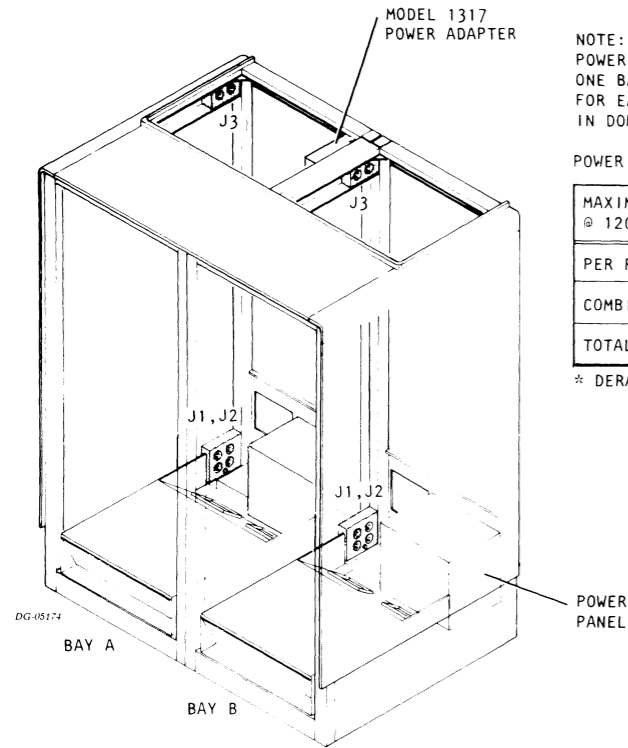


FIGURE 1

FOR OPTIONAL UNDERFLOOR POWER CORD HOOKUP, SEE FIGURE 1. JUMPERS ON NEMA CONNECTOR J1 ARE COMPLETELY REMOVED FROM UNIT. CONNECTOR IS LEFT IN TO BLOCK THE HOLE.

EXPORT 1144-LX/1244-LX/1344-LX

POWER DISTRIBUTION CHART

MAXIMUM CONDITIONS 200/220/240 Vac 50 Hz	J1	J2	J3	EXP	BLOWER
PER RECEPTACLE	15A*	15A*	15A*	15A	2.5A
COMBINED OUTLETS	15A*				2.5A
TOTAL COMBINED	15A*				

* DERATE CURRENT DRAW FOR CONTINUOUS USE TO 80% OF MAXIMUM

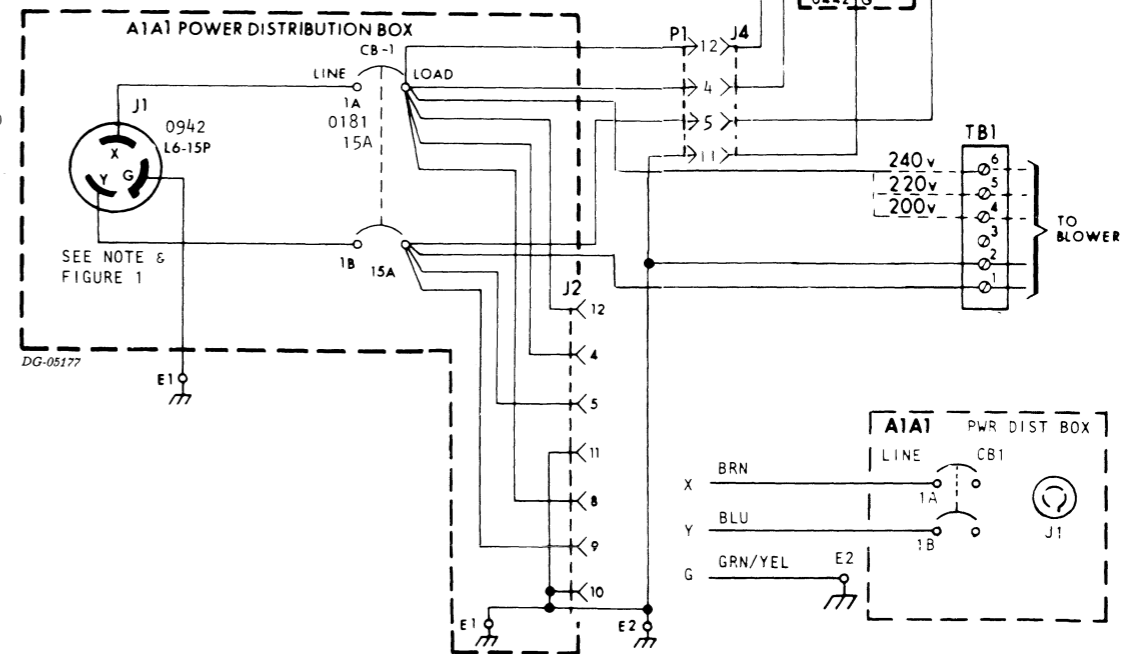
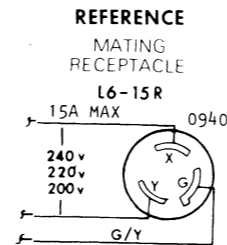
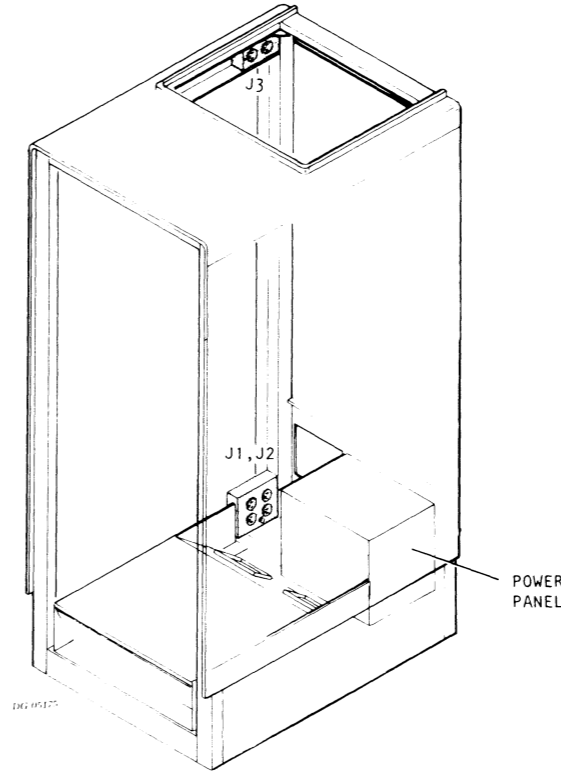


FIGURE 1

FOR OPTIONAL UNDERFLOOR POWER CORD HOOKUP, SEE FIGURE 1. JUMPERS ON NEMA CONNECTOR J1 ARE COMPLETELY REMOVED FROM UNIT. CONNECTOR IS LEFT IN TO BLOCK THE HOLE.

INSTALLATION SPECIFICATIONS

-5V BOOSTER BOARD
Ref DGC Dwg No.003-001917 Rev.01
005-019573

DIMENSIONS:

STANDARD 15" x 15" BOARD

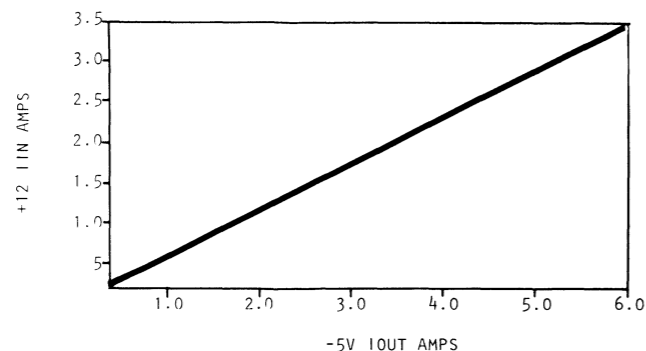
OPERATING ENVIRONMENT:

TEMPERATURE RANGE 0 DEG--55DEG (32 --131 DEG F)
RELATIVE HUMIDITY RANGE 10--90%
ALTITUDE RANGE -305--240m (-1000--8000 FT)

COOLING: 400F/m MINIMUM AS PRESENT IN MV4000 CHASSIS

POWER REQUIREMENTS:

VIN: 12 VOLTS DC +/-10%
IIN: 3.6 AMPS @ 30 WATTS OUT
WATTAGE OUT: 30 WATTS (-5V, 6 AMPS)



FEATURES:

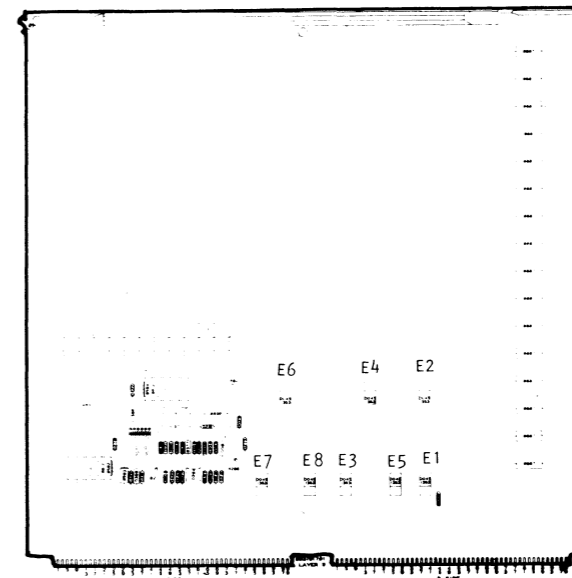
MARGINING UP AND DOWN IS PRESENT WITH APPROPRIATE SIGNALS PRESENT AS OBTAINED BY THE JUMPERING DESCRIBED IN THE FOLLOWING INFORMATION.

OUTPUT CURRENT LIMIT IS SET AT 7 AMPS TYPICAL.

-5 VOLT IOUT IS THE CURRENT PRODUCED BY THE BOOSTER BOARD. THE MAIN POWER SUPPLY WILL PUT OUT AN ADDITIONAL 2.3A.

Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

JUMPERING



JUMPERING:

MV/4000, S/280 APPLICATIONS:
VERIFY JUMPER CONNECTED FROM E3 TO E4 ON BOARD
VERIFY JUMPER CONNECTED FROM E6 TO E8 ON BOARD.
VERIFY JUMPER REMOVED FROM E1 TO E2 ON BOARD.

WIREWRAP ON BACKPANEL:

FROM J36, A22 TO PIN B36 ON THE I/O SLOT USED*
FROM J36, A21 TO PIN B38 ON THE I/O SLOT USED*

*NOTE: BOARD CAN GO IN ANY I/O SLOT; SLOT 20 PREFERRED.

MV/10000 APPLICATIONS:

VERIFY JUMPER CONNECTED FROM E4 TO E5 ON BOARD.
VERIFY JUMPER CONNECTED FROM E6 TO E8 ON BOARD.
VERIFY JUMPER REMOVED FROM E1 TO E2 ON BOARD.

WIREWRAP ON BACKPANEL:

FROM J3, A22 TO PIN B36 ON SLOT 25 ONLY.
FROM J3, A21 TO PIN B38 ON SLOT 25 ONLY.

INSERT -5 VOLT BOOSTER BOARD IN SLOT 25 ONLY.

MV/8000 □ APPLICATIONS:

VERIFY JUMPER CONNECTED FROM E4 TO E5 ON BOARD.
VERIFY JUMPER CONNECTED FROM E6 TO E8 ON BOARD.
VERIFY JUMPER REMOVED FROM E1 TO E2 ON BOARD.

NO MARGINING IS USED IN THIS APPLICATION.

INSERT -5 VOLT BOOSTER BOARD IN ANY I/O SLOT* CHOSEN.

*NOTE: BOARD CAN BE INSERTED IN I/O SLOTS 15-21, SLOT 15 PREFERRED.

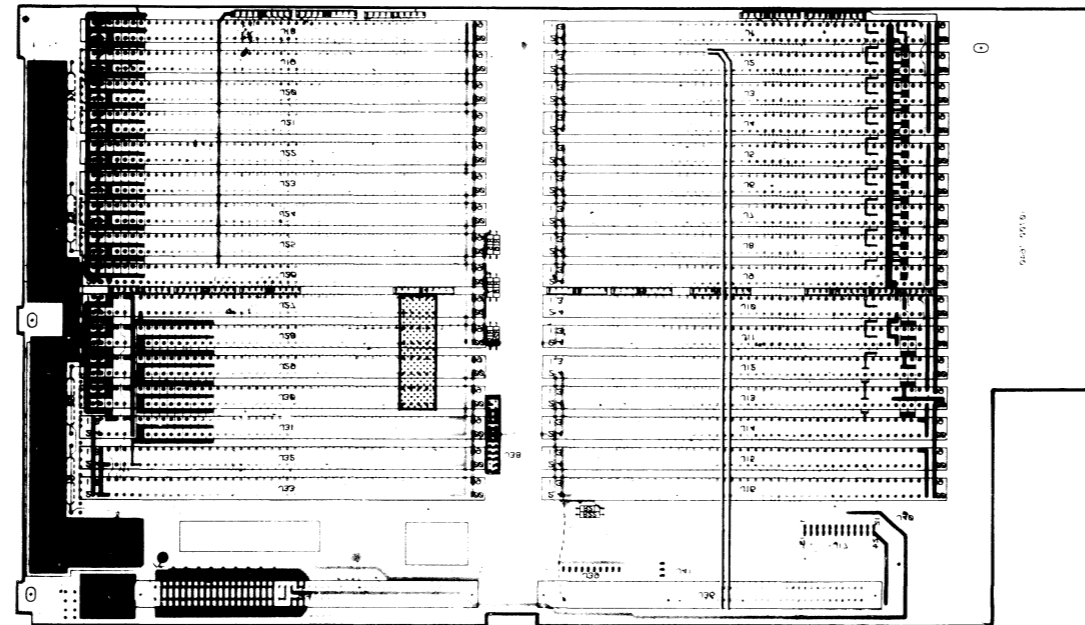
MV/8000 APPLICATIONS:

VERIFY JUMPER CONNECTED FROM E4 TO E5 ON BOARD.
VERIFY JUMPER CONNECTED FROM E6 TO E8 ON BOARD.
VERIFY JUMPER CONNECTED FROM E1 TO E2 ON BOARD.
INSERT -5VOLT BOOSTER BOARD IN ANY I/O SLOT ONLY.

INTERNAL CABLING

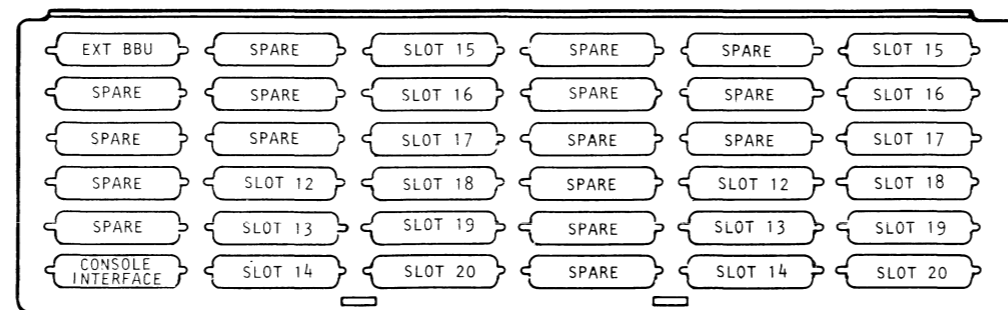
MV/4000 BACKPANEL

Ref DGC Dwg No 107-0001764 Rev 01



WIREWRAP J36, A22 TO B36
 J36, A21 TO B38
 FOR I/O SLOT USED

STANDARD ASSIGNMENT FOR BACKPANEL TO BULKHEAD INTERNAL CABLES



DG-09564

INSTALLATION SPECIFICATIONS

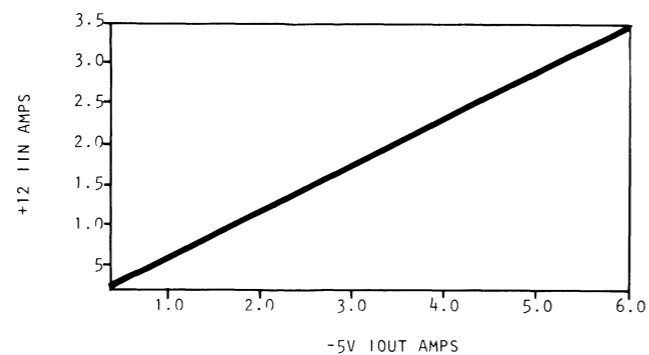
-5V BOOSTER BOARD
Ref DGC Dwg No.003-001917 Rev.01
005-020720

DIMENSIONS:
STANDARD 15" x 15" BOARD

OPERATING ENVIRONMENT:
TEMPERATURE RANGE 0 DEG--55DEG (32 --131 DEG F)
RELATIVE HUMIDITY RANGE 10--90%
ALTITUDE RANGE -305--240m (-1000--8000 FT)

COOLING: 400f/m MINIMUM AS PRESENT IN MV/4000 CHASSIS

POWER REQUIREMENTS:
VIN: 12 VOLTS DC +/-10%
IIN: 3.6 AMPS @ 30 WATTS OUT
WATTAGE OUT: 30 WATTS (-5V, 6 AMPS)

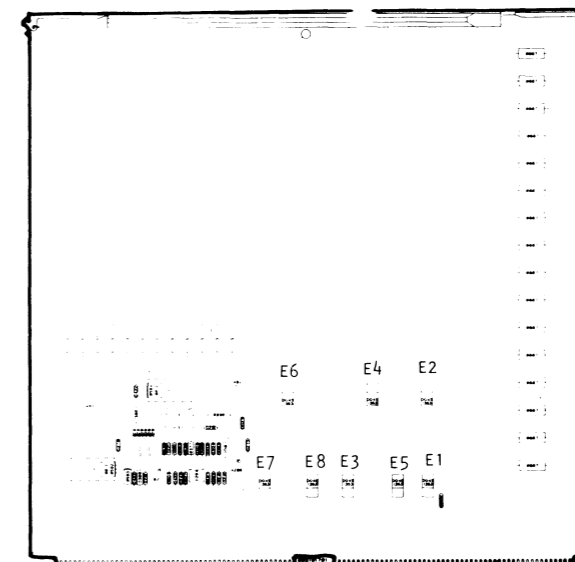


FEATURES:
MARGINING UP AND DOWN IS PRESENT WITH APPROPRIATE SIGNALS PRESENT AS OBTAINED BY THE JUMPERING DESCRIBED IN THE FOLLOWING INFORMATION.

OUTPUT CURRENT LIMIT IS SET AT 7 AMPS TYPICAL.

-5 VOLT IOUT IS THE CURRENT PRODUCED BY THE BOOSTER BOARD. THE MAIN POWER SUPPLY WILL PUT OUT AN ADDITIONAL 2.3A.

JUMPERING



MV/8000 APPLICATIONS:
VERIFY JUMPER CONNECTED FROM E3 TO E4 ON BOARD.
VERIFY JUMPER CONNECTED FROM E6 TO E7 ON BOARD.
VERIFY JUMPER REMOVED FROM E1 TO E2 ON BOARD.
NO MARGINING IS USED IN THIS APPLICATION.
INSERT BOOSTER BOARD IN MEM SLOTS ONLY.

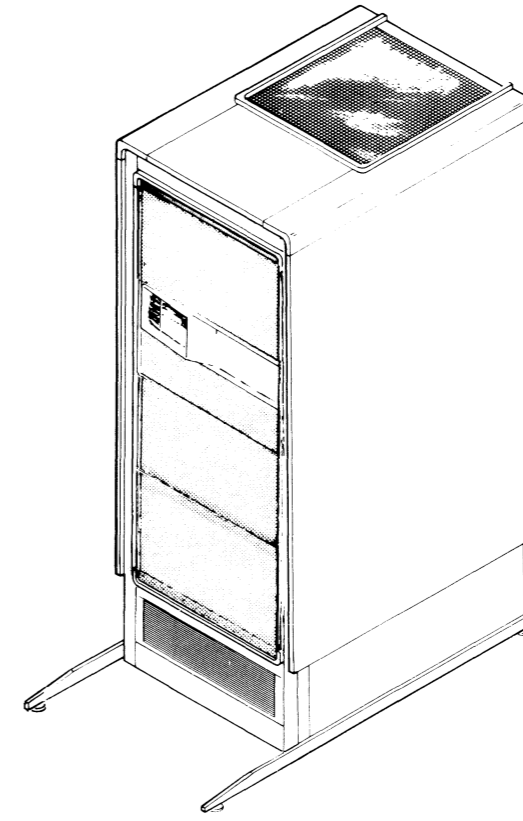
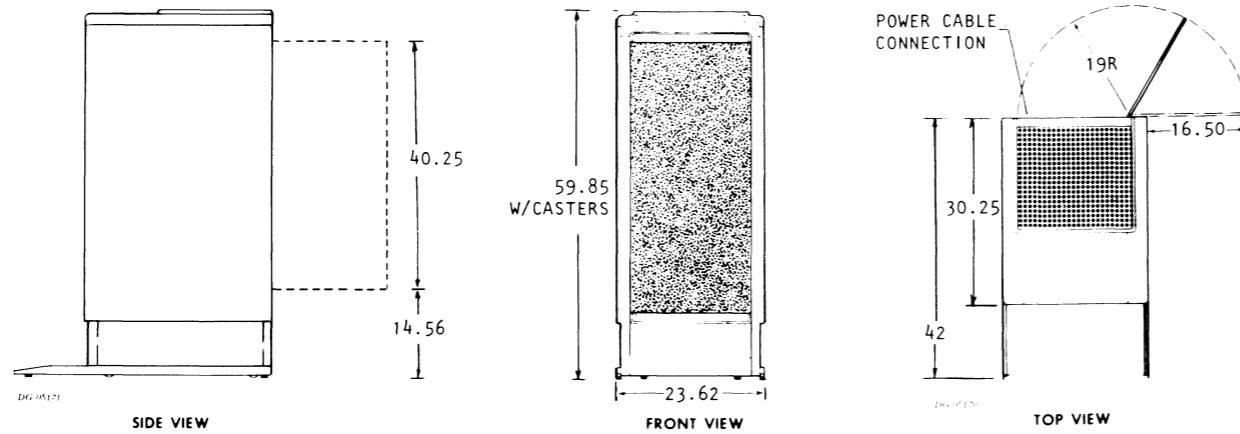
NOTE: BOARD CAN BE INSERTED IN MEM SLOTS 13-20, SLOT 13 PREFERRED.

Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

INSTALLATION SPECIFICATIONS MV/4000 1-BAY CABINET

1144-A/1244-A/1344-A

(Refer to DGC Dwg No 010-000204)



NOTE: CPU CHASSIS MUST BE INSTALLED ABOVE CENTER LINE OF THE CABINET.

DIMENSIONS:			
	Width	Depth	Height
Millimeters	600	1066	1520
Inches	23.62	42	59.85
SERVICE CLEARANCES:			
	Front	Rear	Left or Right
Millimeters	762	762	762
Inches	30	30	30
WEIGHT:			
	Empty	Fully Loaded	
Kilograms	100	364	
Pounds	220	800	
HEAT OUTPUT:			
	Watts	BTU/hr	
	2420	8252	
OPERATING ENVIRONMENT:			
Temperature Range	0° - 55°C (32° - 131°F)*		
Relative Humidity Range	10 - 90%		
Altitude Range	-305 - 2430m (-1000 - 8,000 ft)		

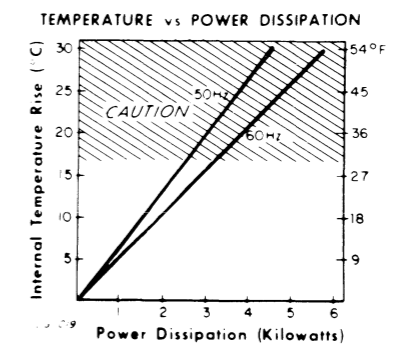
*NOTE
SPECS ARE FOR CABINET ONLY. SEE BLOWER CHART FOR TEMPERATURE RISE INSIDE CABINET AS YOU ADD EQUIPMENT. YOU MUST NOT EXCEED MAX ALLOWABLE TEMPERATURE INSIDE THE CABINET FOR ANY PIECE OF EQUIPMENT.

POWER REQUIREMENTS:			
(Domestic)			
Voltage	2 ckt	120V	
Hz	60		
Max Amp per Phase	20/CKT		
Phase	2		
(Export)			
Voltage	220/240		
Hz	50		
Max Amp per Phase	15		
Phase	1		
CABLES:			
	Domestic	Export	
Primary Power	(Supplied)	(Not supplied)	
Connector	L14-30R	L6-15R	

COOLING UNIT	
(Domestic)	
Volts	120
Hz	50/60
Watts	220
Amp	2.5
(Export)	
Volts	220/240
Hz	50/60
Watts	220
Amp	1.2

USABLE VERTICAL RACK SPACE:			
	Areas	Inches	mm
	25	43.75	1111

HIGH CAPACITY BLOWER 0142/3

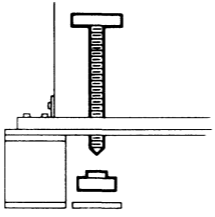
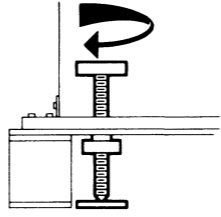
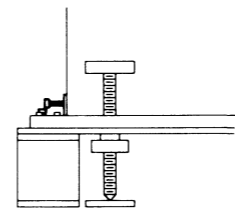
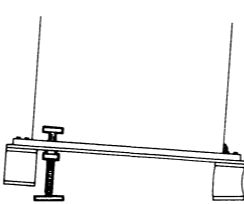
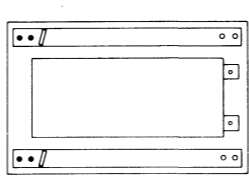
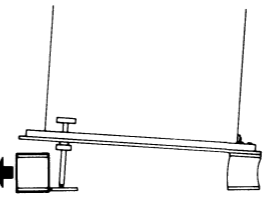
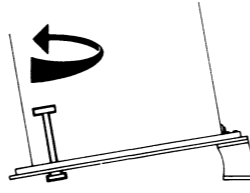
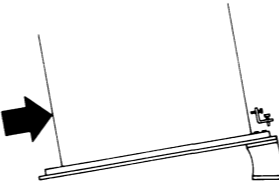
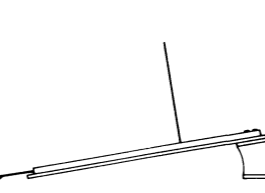


SHIPPING

UNLOADING INSTRUCTIONS

IMPORTANT

THIS IS A TWO-MAN OPERATION

 <p>1 INSERT 2 JACK SCREWS THROUGH HOLES IN 2 X 4'S ON PALLET. SCREW INTO T-NUTS (BOTH SIDES).</p>	 <p>2 TURN JACK SCREWS INTO PADS ON FLOOR. HOLES IN PADS LINE UP WITH NIPPLES ON JACK SCREWS.</p>	 <p>3 REMOVE 2 SHIPPING BRACKETS FROM END OF MACHINE BEING JACKED.</p>
 <p>4 SIMULTANEOUSLY TURN 2 JACK SCREWS TO RAISE CUSHION MODULE FROM FLOOR.</p>	 <p>5 REMOVE 4 BOLTS FROM CUSHION MODULE.</p>	 <p>6 REMOVE CUSHION MODULE.</p>
 <p>7 SIMULTANEOUSLY TURN 2 JACK SCREWS TO LOWER END OF PALLET TO FLOOR.</p>	 <p>8 HOLD MACHINE IN PLACE AND REMOVE THE 2 REMAINING SHIPPING BRACKETS.</p>	 <p>9 EASE MACHINE OFF PALLET.</p>

1144/1244/1344 CABINETS

FOR PACKING 1-BAY CABINETS, SEE 010-000266

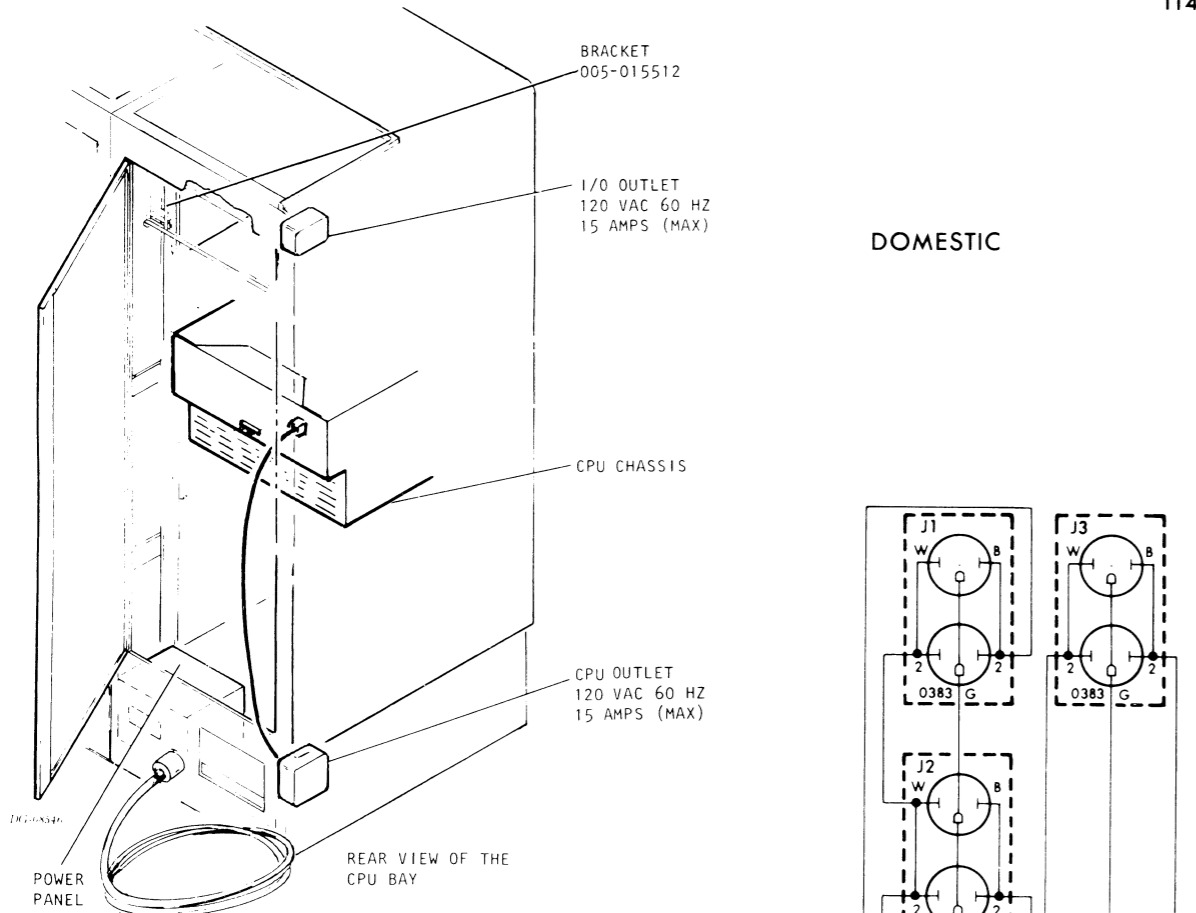
FOR PACKING 2-BAY CABINETS, SEE 010-000267

FOR PACKING 3-BAY CABINETS, SEE 010-000268

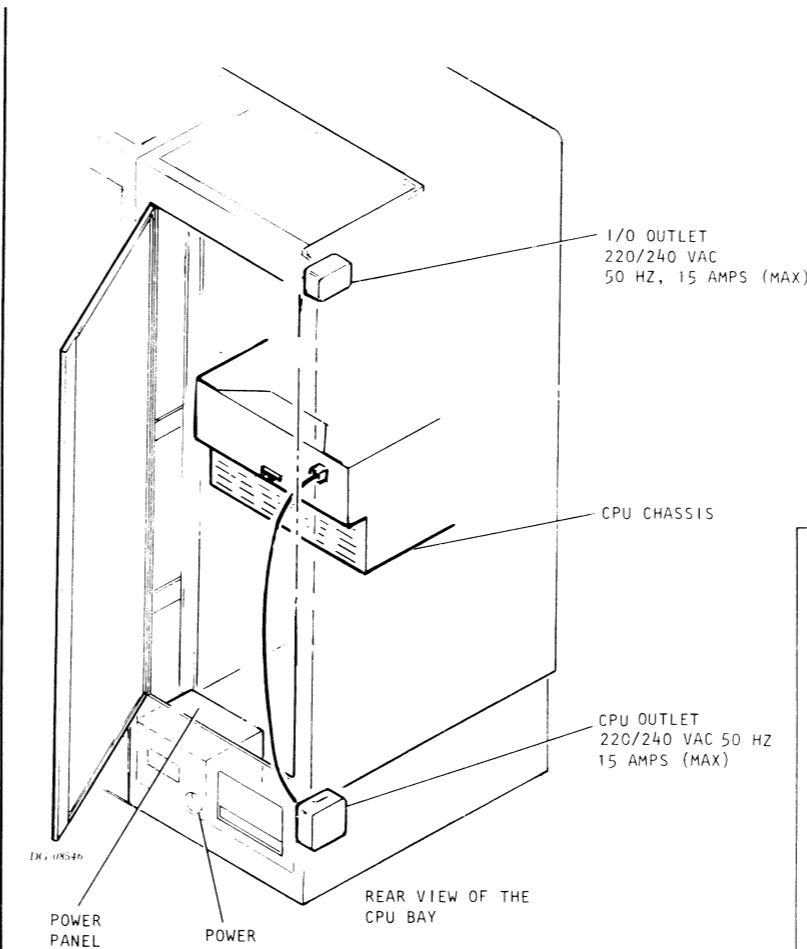
INTERNAL CABLING

1 BAY CABINET

1144/1244/1344



DOMESTIC



EXPORT

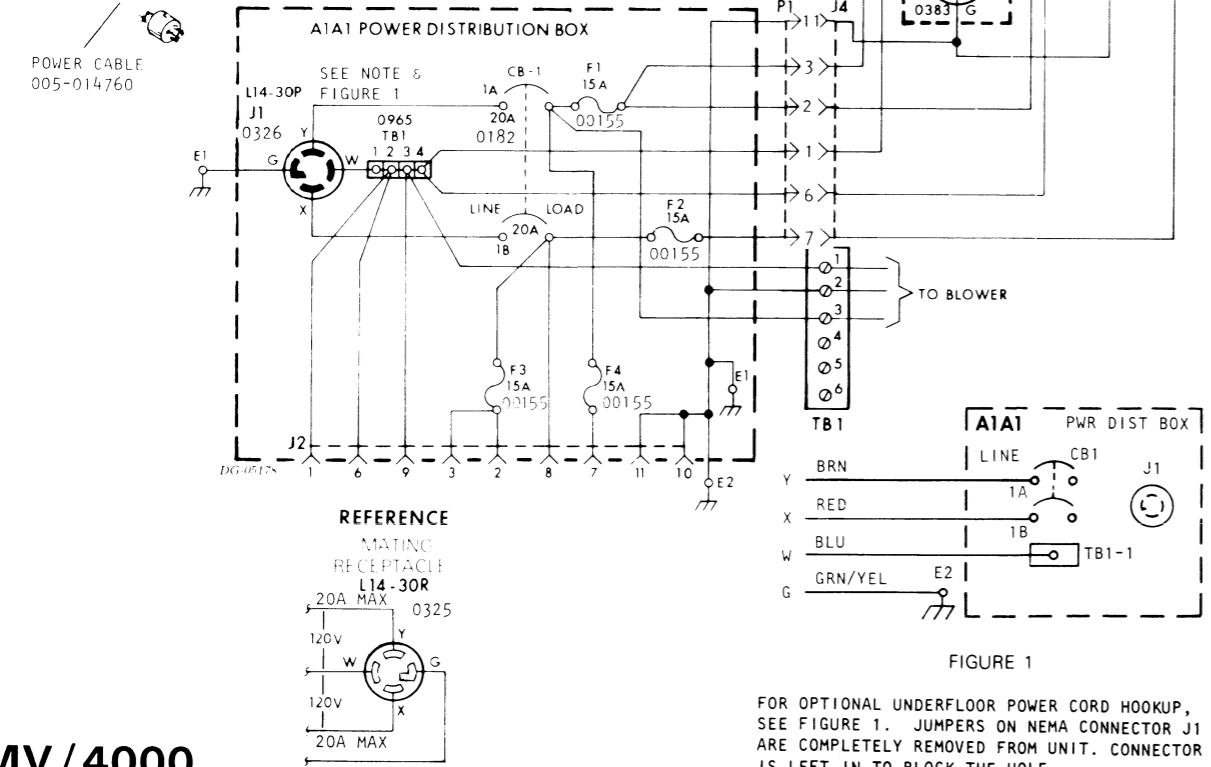


FIGURE 1

FOR OPTIONAL UNDERFLOOR POWER CORD HOOKUP, SEE FIGURE 1. JUMPERS ON NEMA CONNECTOR J1 ARE COMPLETELY REMOVED FROM UNIT. CONNECTOR IS LEFT IN TO BLOCK THE HOLE.

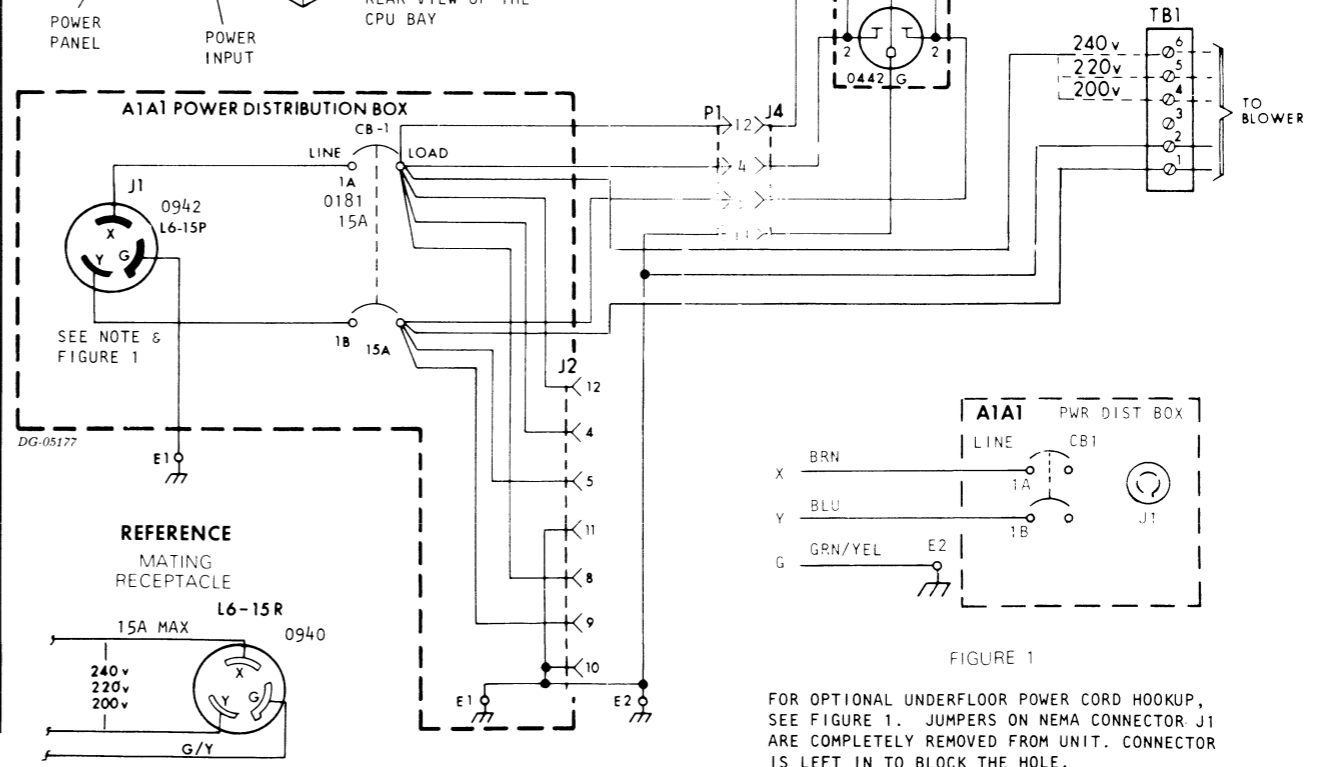


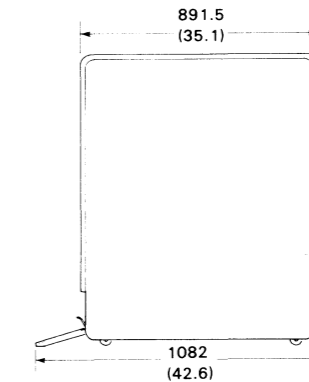
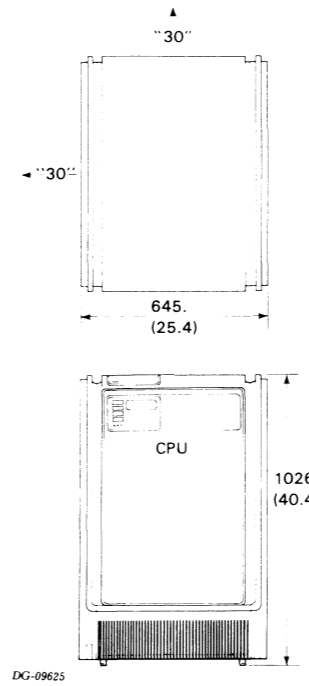
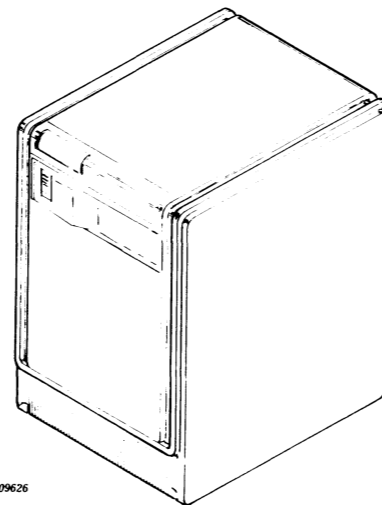
FIGURE 1

FOR OPTIONAL UNDERFLOOR POWER CORD HOOKUP, SEE FIGURE 1. JUMPERS ON NEMA CONNECTOR J1 ARE COMPLETELY REMOVED FROM UNIT. CONNECTOR IS LEFT IN TO BLOCK THE HOLE.

INSTALLATION SPECIFICATIONS

MV/4000 CABINET

(1605/1606)



DG-09626

NOTE: THE CPU CHASSIS MUST BE INSTALLED IN THE TOPMOST POSITION AVAILABLE IN THE PRIMARY BAY. THE MV/4000 CPU CHASSIS IS AVAILABLE IN ANY 1605/1606 SERIES CABINET EXCEPT 1605-A (EXCEPT IN SPECIAL ORDER).

POWER CABLES/CONNECTORS

PRIMARY POWER CABLES

Domestic: SUPPLIED. MATES CABINET TO WALL OUTLET.

Export: NOT SUPPLIED

Cabinet Type	WALL:	Drop:	Nema #
1605-A	WALL:	DROP:	L5-15 RECEPT L5-20 BODY
1605-B	WALL:	DROP:	L-14-30 RECEPT L-14-30 BODY
1605-C/D	WALL:	DROP:	L-21-30 RECEPT L-21-30 BODY

1606-A
1606-D INTERNATIONAL AC POWER IS CONNECTED DIRECTLY TO A TERMINAL BLOCK LOCATED IN THE AC DISTRIBUTION BOX IN THE BOTTOM REAR OF THE CABINET.

NOTES:

1. DOMESTIC PRIMARY UNITS ARE SHIPPED WITH A 6 FT. AC CABLE.
2. EXPANSION CABINETS RECEIVE AC POWER FROM THE PRIMARY BAY.
3. CABLES ARE NOT SUPPLIED WITH INTERNATIONAL CABINETS.

1605/1606 CABINETS

FOR PACKING 1-BAY CABINETS, SEE 010-000328
FOR PACKING 2-BAY CABINETS, SEE 010-000329
FOR PACKING 3-BAY CABINETS, SEE 010-000330

DOMESTIC

1605-A
001-002987
Single Bay Only
15amp 120v
15amp Service



1440va

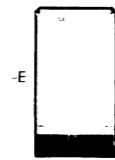
EXPANSION BAYS

1605-B
001-003130
1 Bay Primary
120/240v center tapped
or 2 of 3 phase 120/208v
30amp Service

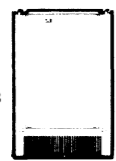


4800 va total

1605-E -E

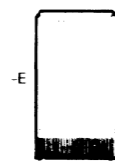
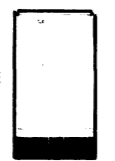


1605-C
001-003038
1 Bay Primary
3 Phase 120/208v Y
30amp Service



2400va

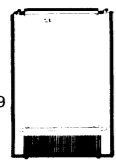
1605-E -E



2400va

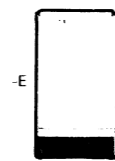
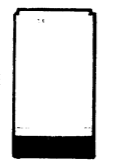
2400va

1605-D
001-003129
1 Bay Primary (H-Pwr)
3 Phase 120/208v Y
30amp Service



3600va

1605-E -E



2400va total

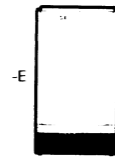
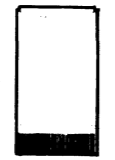
INTERNATIONAL

1606-A
001-003328
1 Bay Primary
1 Phase 220V or 240V
20 amp Service



3600 va total

1606-E -E

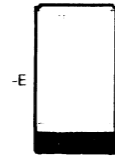


1606-D
001-003027
1 Bay Primary
3 Phase
220/380 Y, 240/415V Y
20 amp Service



3600 va

1606-E -E



3600 va

3600 va

ALL PRIMARY UNITS WILL BE SHIPPED WITH SIDE PANEL KIT. EXPANSION UNITS WILL BE SHIPPED WITHOUT SIDE PANEL KIT. EXPANSION UNITS HAVE BUILT-IN 10 SECOND DELAY SEQUENCING. SIDE PANEL KIT MAY BE DELETED BY ADDING (X) SUFFIX TO MODEL NUMBER.

NOTES:

1. VOLT AMPS CALCULATED ON BASIS OF 120V X AMPS OR 240V X AMPS. FOR 100V OR 220V SERVICE COUNTRIES, VOLT AMPS SHOULD BE REDUCED ACCORDINGLY; AMPS REMAIN THE SAME
2. AMPS = va/VOLTAGE → (120 OR 240)

DIMENSIONS:	Width	Depth	Height
Millimeters	645	892	1026
Inches	25.4	35.1	40.4

SERVICE CLEARANCES:	Front	Rear	Left or Right
Millimeters	762	762	762
Inches	30	30	30

WEIGHT:	Empty	Fully Loaded
Cabinet w/o side panels		
Kilograms	36.3	192.8
Pounds	80	425
Side panel kit		
Kilograms	14.5	
Pounds	32	

OPERATING ENVIRONMENT:

Temperature Range	0 - 55°C (32 - 131°F)	See note (1)
Relative Humidity Range	10 - 90%	
Altitude Range	-305 - 2,440m (-1000 - 8000ft)	

POWER REQUIREMENTS: See note (2)

Domestic (1605 - B only)
Voltage 120/240 or 120/208Y
Hz 47-63
Amp per Phase 30
Phase 1 phase center tapped, or 2 phases of a 3 phase line

Export (1606 - D only)
Voltage 220, 380Y, 240/415Y
Hz 50
Amp per Phase 20
Phase 3

COOLING UNITS See note (1)

Domestic
Volts 120
Hz 60
Watts 150
Amp 1.5

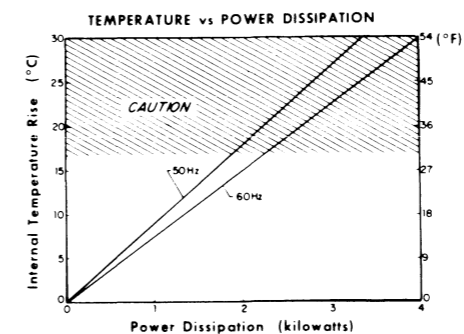
Export
Volts 220/240
Hz 50
Watts 150
Amp .7

USABLE VERTICAL RACK SPACE	Areas	Inches	mm
	16	28	712

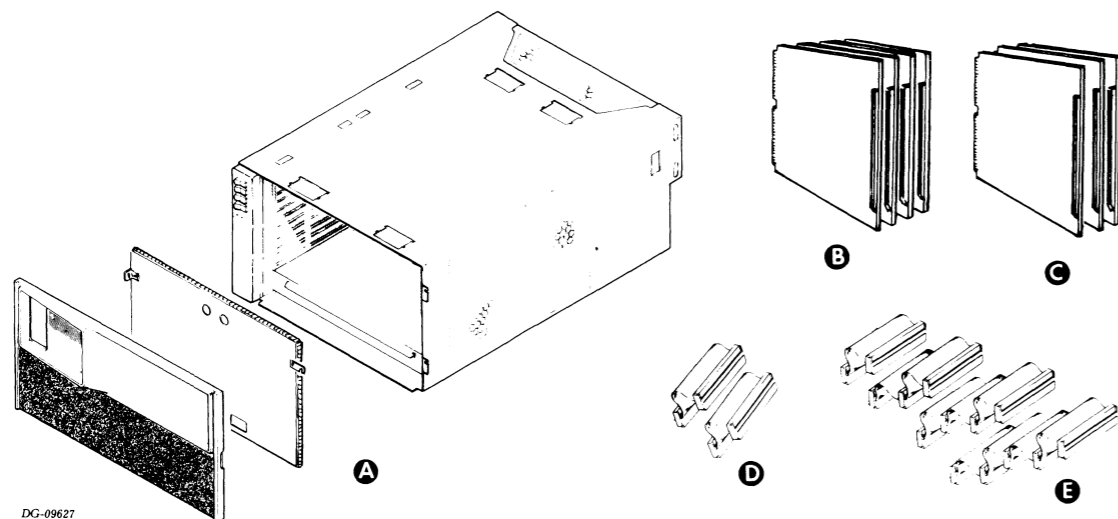
NOTES:

- (1) SPECS ARE FOR CABINET ONLY. SEE BLOWER CHART FOR TEMPERATURE RISE INSIDE CABINET AS YOU ADD EQUIPMENT. YOU MUST NOT EXCEED MAX ALLOWABLE TEMPERATURE INSIDE THE CABINET FOR ANY PIECE OF EQUIPMENT.
- (2) FOR COMPLETE POWER REQUIREMENTS DISTRIBUTION IN EACH CABINET SEE 010-322 SHEETS 3, 4, 5 AND 6.

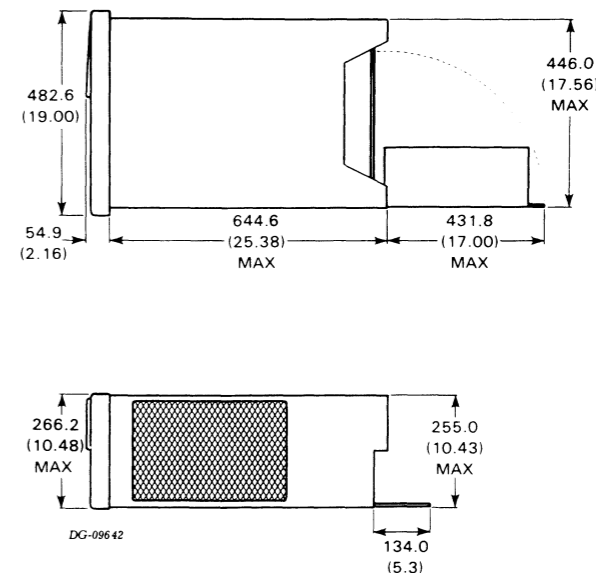
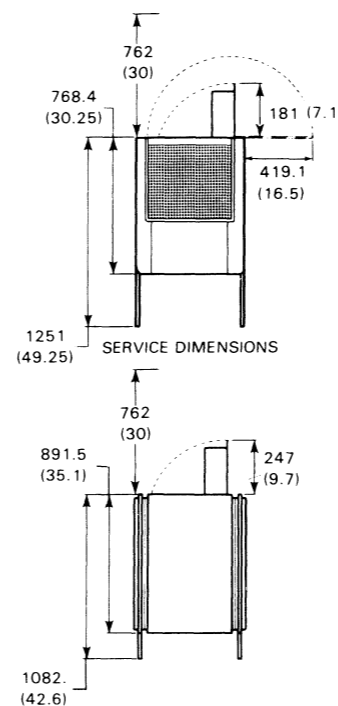
STD CAPACITY BLOWER 0166



INSTALLATION SPECIFICATIONS MV/4000 CPU CHASSIS



DG-09627



DIMENSIONS IN MILLIMETERS
INCHES IN PARENTHESES FOR REFERENCE

MAJOR COMPONENT

Item	Component	Mounting Location	Notes
A	CPU CHASSIS	CABINET	
B	MEMORY BOARDS	CPU CHASSIS	4 BOARDS MAX; 512 KB 1 OR 2 MB PER BOARD
C	PROCESSOR BOARDS	CPU CHASSIS	3 BOARDS = NCU, NPU, FPU

CABLE

Item	Cable	Connecting	Max Lgth		Notes
			ft	m	
D	INTERBOARD	CPU CHASSIS			2 FOR BETWEEN PROCESSOR BOARDS
E	BMC	BMC AND CONTROLLERS			2 REQUIRED; SIZE DEPENDS ON # OF CONTROLLERS

DIMENSIONS:

	Width	Depth	Height
Millimeters	482.6	699.5	266.3
Inches	19.00	27.54	10.48

SERVICE CLEARANCES:

	Front	Rear	Left or Right
Millimeters	762	762	762
Inches	30	30	30

WEIGHT:

	Empty	Fully Loaded
Kilograms	30.6	46.5
Pounds	67.5	102.5

HEAT OUTPUT:

	Watts	BTU/hr
	1150	3921.5

OPERATING ENVIRONMENT:
 Temperature Range 0 - 55°C (32 - 131°F)
 Relative Humidity Range 10 - 90%
 Altitude Range -305 - 2438m (-1000 - 8,000 ft)

STORAGE ENVIRONMENT:
 Temperature Range -40 -65°C (-40 -149°F)
 Relative Humidity Range 10 - 90%
 Altitude Range 0 - 7620m (0 - 25,000 ft)

POWER REQUIREMENTS:
 (Domestic)
 Voltage 120V^{±10%} -15%
 Hz 47 - 63
 Max Amp per Phase 12A
 Phase 1
 Startup Surge per Phase 17 A (typical) for .50 sec

(Export)
 Voltage 100 ± 10 220/240^{±10%} -15%
 Hz 47-63 47-63
 Max Amp per Phase 15A 8 A
 Phase 1 1
 Startup Surge per Phase 14 A (typ) 34 A (typ)
 for .50 sec for .15 sec

LINE CORDS

Supply	Part No.
100V	109 - 821
120V	109 - 719
220 240	109 - 708

CABLES:

Primary Power	Length	Conn	Mating Conn
Domestic	1.8M(6')	5-15P	5-15R
Export	1.8M(6')	6-15P	6-15R

NOTE:
THIS COMPONENT IS MEANT TO BE INSTALLED
IN A CABINET WITH REAR ACCESS.

POWER CONFIGURATION RULES

SLOT	ALLOWED SLOT CHART	ASSIGNED	CURRENT DRAW (AMPS)						WATTS
			+5V	+12V	-5V	+5V MEM	+12V MEM	-5V MEM	
20	I/O CONTROLLER								
19	I/O CONTROLLER								
18	I/O CONTROLLER								
17	I/O CONTROLLER								
16	I/O CONTROLLER								
15	I/O CONTROLLER								
14	I/O CONTROLLER								
13	I/O CONTROLLER								
12	I/O CONTROLLER								
11	MEM								
10	MEM								
9	MEM								
8	MEM								
7	FPU								
6	NCU		16	.06	-	.6	-	-	83.72
5	NPU		16.5	-	-	.1	-	-	83
1-4	POWER SUPPLY		-	-	-	-	-	-	-
N/A	TERMINATOR		1.65			.25			9.5
N/A	EXT BBU		5.0	1.5					42
	TOTALS (1) USED								

TOTAL +5V CURRENT DRAW _____ A
 MAX +5V CURRENT AVAILABLE 120 A*
 +5V CURRENT SURPLUS _____ A
 MINIMUM +5V CURRENT 6 A

TOTAL +12V CURRENT DRAW _____ A
 MAX +12V CURRENT AVAILABLE 5.5 A
 +12V CURRENT SURPLUS _____ A
 MINIMUM +12V CURRENT 0 A

TOTAL -5V CURRENT DRAW _____ A
 MAX -5V CURRENT AVAILABLE 2.0 A*
 -5V CURRENT SURPLUS _____ A
 MINIMUM -5V CURRENT 0 A

TOTAL +5MEM CURRENT DRAW _____ A
 MAX +5MEM CURRENT AVAILABLE 22 A*
 +5MEM CURRENT SURPLUS _____ A
 MINIMUM +5MEM CURRENT 0 A

TOTAL +12MEM CURRENT DRAW _____ A
 MAX +12MEM CURRENT AVAILABLE 5.5 A*
 +12MEM CURRENT SURPLUS _____ A
 MINIMUM +12MEM CURRENT 0 A

TOTAL -5MEM CURRENT DRAW _____ A
 MAX -5MEM CURRENT AVAILABLE .35 A
 -5MEM CURRENT SURPLUS .30A
 MINIMUM -5MEM CURRENT 0 A

TOTAL WATTS 720*

* SEE NOTES 3,4, 5

POWER CONSUMED

DEVICE		+5V CURRENT DRAW	+12V CURRENT DRAW	-5V CURRENT DRAW*	+5MEM CURRENT DRAW	+12MEM CURRENT DRAW	-5M CURRENT DRAW	WATTS
NPU		16.5	-	-	.1	-	-	83
NCU		16	.06	-	.6	-	-	83.72
TERMINATION (2)		1.65	-	-	.25	-	-	9.5
FPU		15	-	-	-	-	-	75
EXT BBU		5.0	1.5	-	-	-	-	42
512KB (16K)	FIRST	3.2	-	-	2.0	3.96	.04	73.7
	ADDITIONAL	3.2	-	-	1.02	.62	.032	28.7
1MB (64K)	FIRST	3.2	-	-	5.11	-	-	41.6
	ADDITIONAL	3.2	-	-	1.43	-	-	23.15
2MB (64K)	FIRST	3.2	-	-	6.4	-	-	48
	ADDITIONAL	3.2	-	-	2.3	-	-	27.5

* SEE NOTES 3, 4.

(1) THE SUM OF THE AMPS CONSUMED ON EACH OF THE SUPPLY VOLTAGES BY ALL OF THE PCB'S IN THE SYSTEM MUST NOT EXCEED THE MAX AMPS AVAILABLE LISTED BELOW THE CHART. THE SAME IS ALSO TRUE FOR MAX AVAILABLE WATTS.

(2) EXTRA POWER CONSUMED BY COMPONENTS LOCATED ON THE BACKPANEL.

(3) IF THERE ARE NO 512KB MEMORY BOARDS USED, THEN -5V AVAILABLE CURRENT IS 2.3 A.

(4) AN ADDITIONAL 6.0 A IS AVAILABLE AT -5V IF -5V BOOSTER BOARD (005-019573) IS CONFIGURED IN SLOT 20.

(5) (-1) (JAPAN) MODEL DERATED TO 110 AMPS, MAX +5V 16 AMPS, + 5 MEM; 4.6 AMPS, + 12 MEM, MAX TOTAL 645 WATTS

(6) SEE 010-000352 FOR WIRE- WRAP INFORMATION WHEN -5V BOOSTER IS INSTALLED.

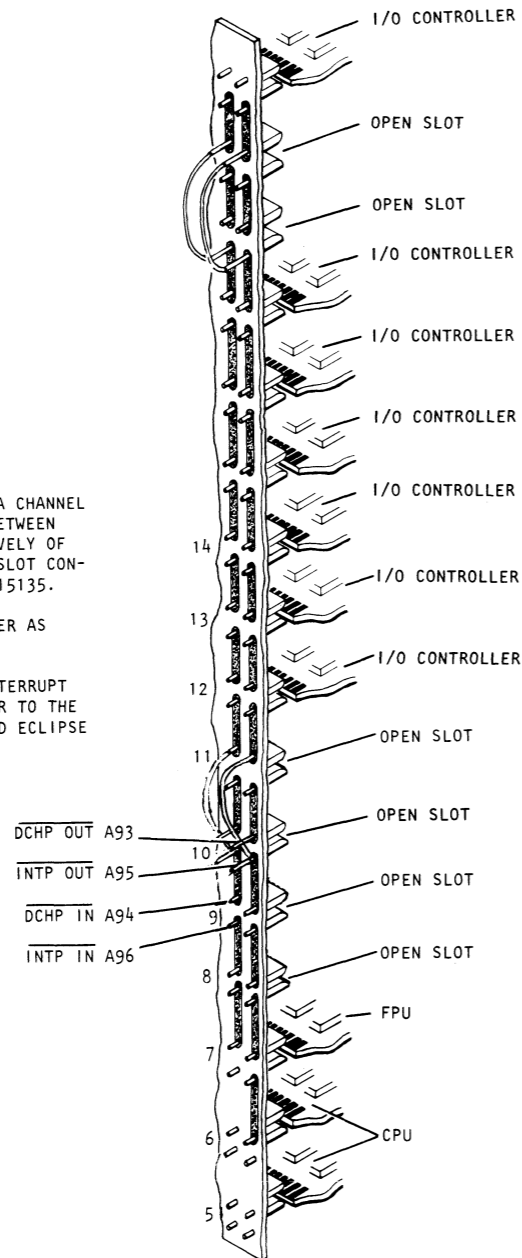
INTERNAL CABLING (CONT)

MV/4000 BACKPANEL

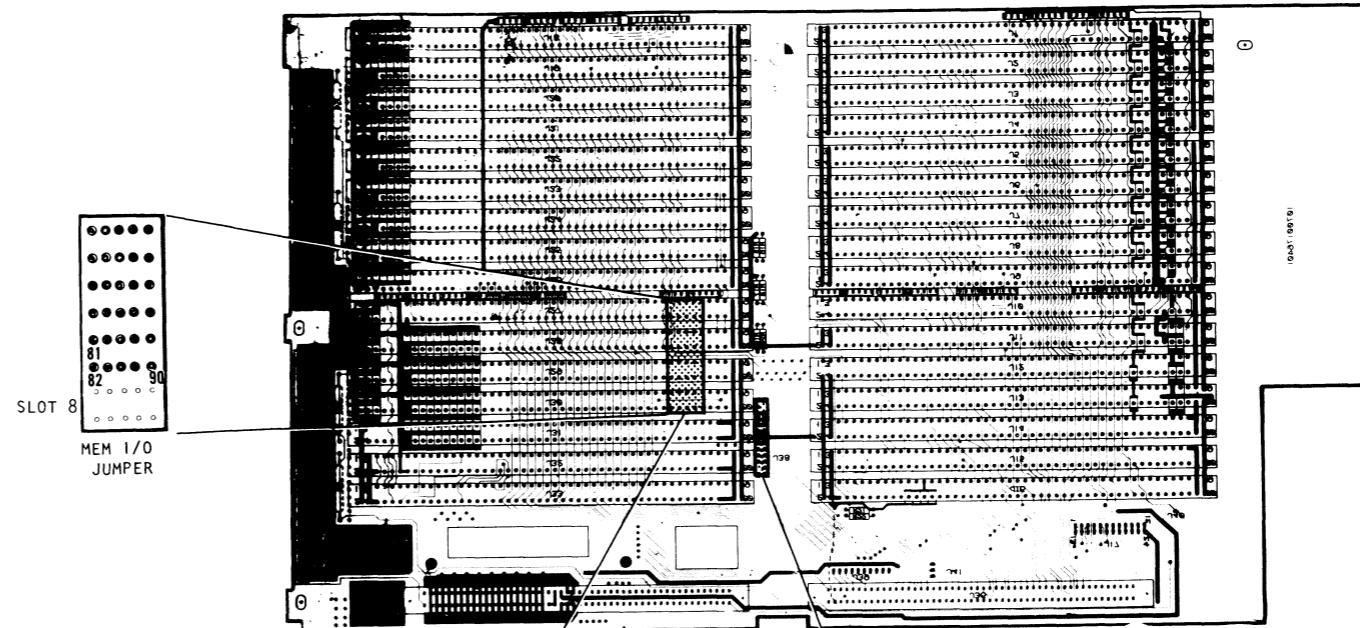
Ref DGC Dwg No 107-0001764 Rev 01

TAILORING BACKPANEL JUMPERING

- (1) FOR JUMPERING OF INTERRUPT AND DATA CHANNEL PRIORITIES, CONNECT A PAIR OF JUMPERS BETWEEN SLOT 10 A96, A94 AND A95, A93, RESPECTIVELY OF SLOT IMMEDIATELY BELOW LOWEST NUMBERED SLOT CONTAINING AN I/O BOARD. USE JUMPER 005-015135.
- (2) OPEN I/O SLOTS MUST BE JUMPERED OVER AS ILLUSTRATED AT RIGHT.
- (3) FOR MORE INFORMATION CONCERNING INTERRUPT AND DATA CHANNEL PRIORITY SCHEMES, REFER TO THE INTERFACE DESIGNER'S REFERENCE, NOVA AND ECLIPSE COMPUTERS, DGC No 014-000629.



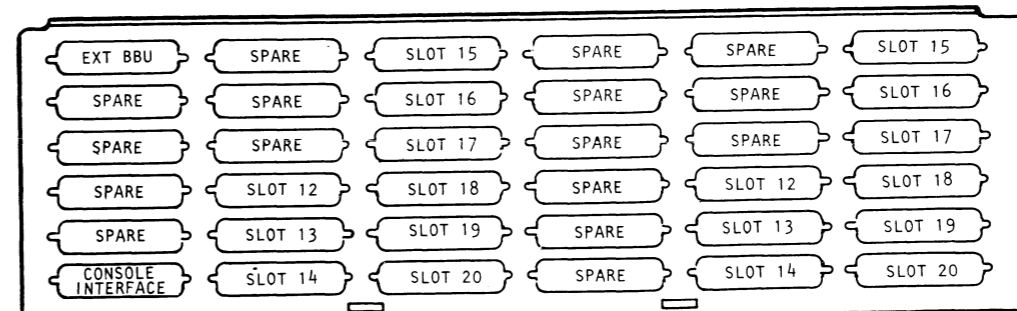
DG-05722



3- SLOT MEM I/O JUMPER (005-018683) TO INSTALL MEM I/O JUMPER, START WITH SLOT 8 AND GO UP THROUGH SLOT 11 PLACED ON PINS A82 - A90.

MARGIN PLUG (005-018987) FOR NORMAL OPERATION, PIN 1 OF MARGIN PLUG IS CONFIGURED TO TOPMOST POSITION. TO ENABLE MARGINING, INVERT MARGIN PLUG (PIN 1 TO LOWEST POSITION). IN NORMAL POSITION, +5BU LOGIC IS POWERED BY +5MEM; IN MARGIN POSITION, +5BU IS POWERED BY +5V.

STANDARD ASSIGNMENT FOR BACKPANEL TO BULKHEAD INTERNAL CABLES

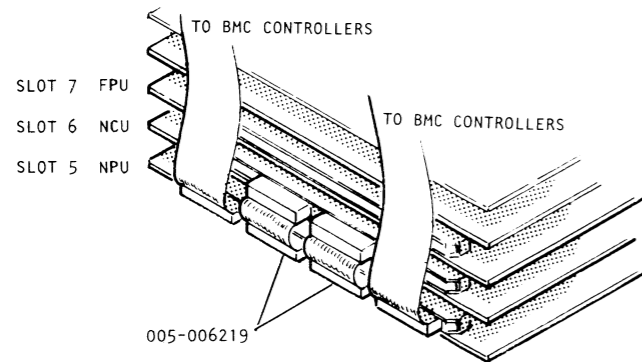


DG-05564

INTERNAL CABLING

MV/4000 CPU BACKPANEL

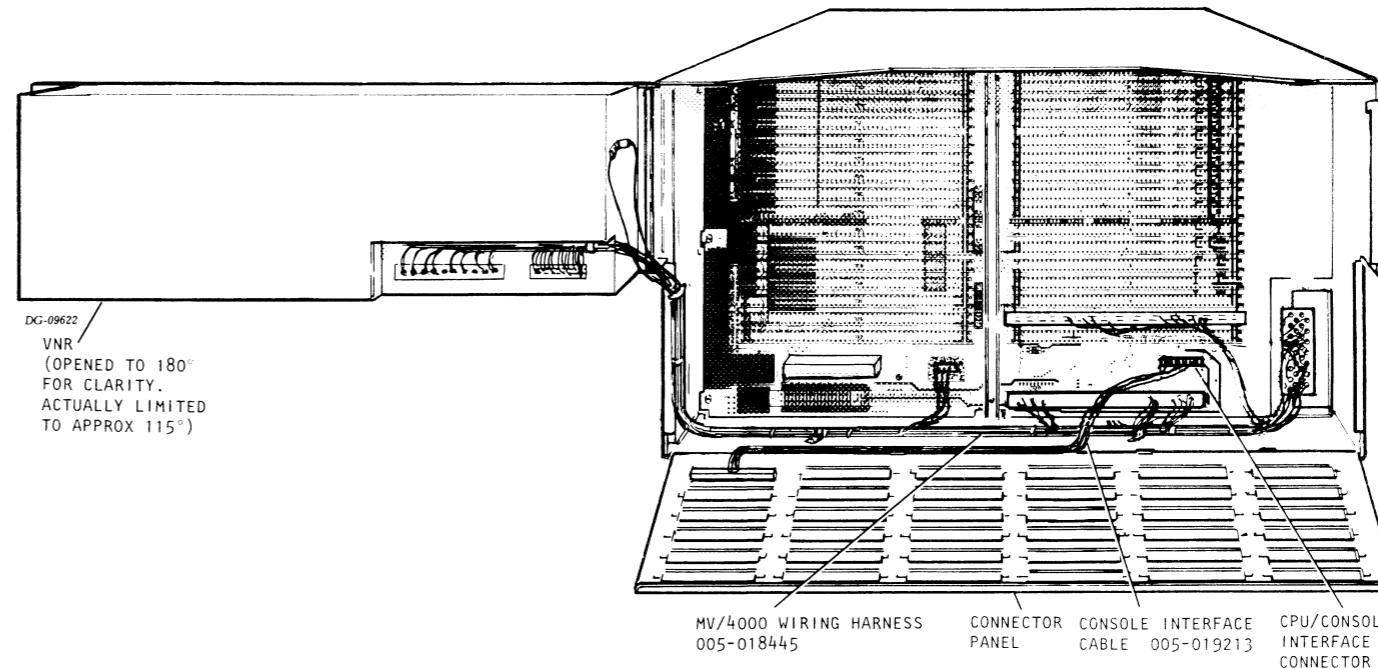
BMC JUMPERING



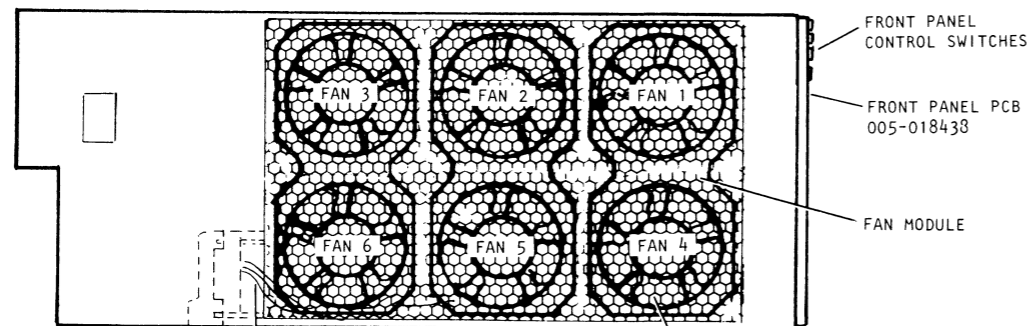
BMC INTERNAL CABLES - CONNECT THE NPU WITH BMC CONTROLLERS

1 BMC CONTROLLER	005-010968
2 BMC CONTROLLERS	005-009898
3 BMC CONTROLLERS	005-010969
4 BMC CONTROLLERS	005-010972

NOTE: VALID BMC BUS PRIORITY JUMPERING IS 0 - 3; 4 - 7 ARE NOT VALID CONFIGURATION.



FAN CONFIGURATION

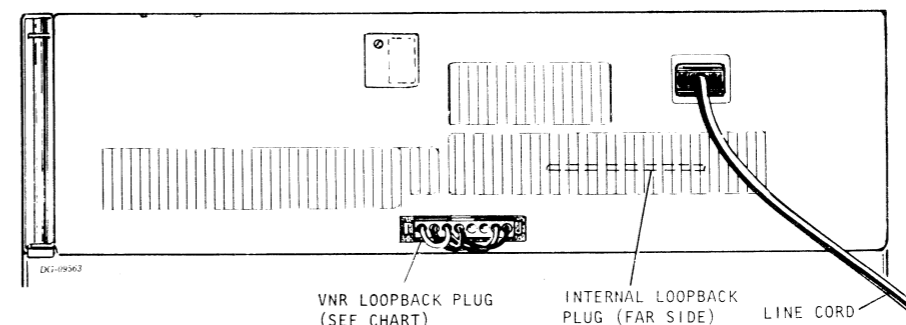


DG-09629

FAN MODULE CABLE 005-018446

VOLTAGE	FAN MODULE (6 FANS)	FAN (INDIVIDUAL)
100V (JAPAN)	005-018785	005-018996
120/220/240	005-018439	005-018997

VNR CHASSIS



AC VOLTS IN	WITH EXT BBU		WITHOUT BBU		VNR ASSY NO
	EXTERNAL LOOPBACK PLUG	INTERNAL LOOPBACK PLUG	EXTERNAL LOOPBACK PLUG	INTERNAL LOOPBACK PLUG	
100V	SEE 010-000333	005-018772	005-018774	005-018772	005-018913
120V	SEE 010-000333	005-018772	005-018774	005-018772	005-018436
220/240V	SEE 010-000333	005-018773	005-018986	005-018773	005-018915

NOTE: TO INSURE PROPER SYSTEM OPERATION, VERIFY THAT INTERNAL AND EXTERNAL LOOPBACK PLUG VOLTAGE LABELS MATCH THE SYSTEM OPERATING VOLTAGE.

TAILORING

JUMPERING

NCU

REF DGC Dwg No 107-001779 Rev 01

S2-1
MUST BE
OFF

S2-2
RESERVED

S2-3
ON DEVC0 = 0
OFF DEVC0 = 1

S2-4
ON DEVC1 = 1
OFF DEVC1 = 0

S2-5
ON DEVC2 = 0*
OFF DEVC2 = 1

S2-6
ON DEVC3 = 0
OFF DEVC3 = 1

S2-7
ON DEVC4 = 0
OFF DEVC4 = 1

S2-8
RESERVED

S1-1
ON DEVC5 = 0
OFF DEVC5 = 1

S1-2
MUST BE OFF

S1-3
MUST BE OFF

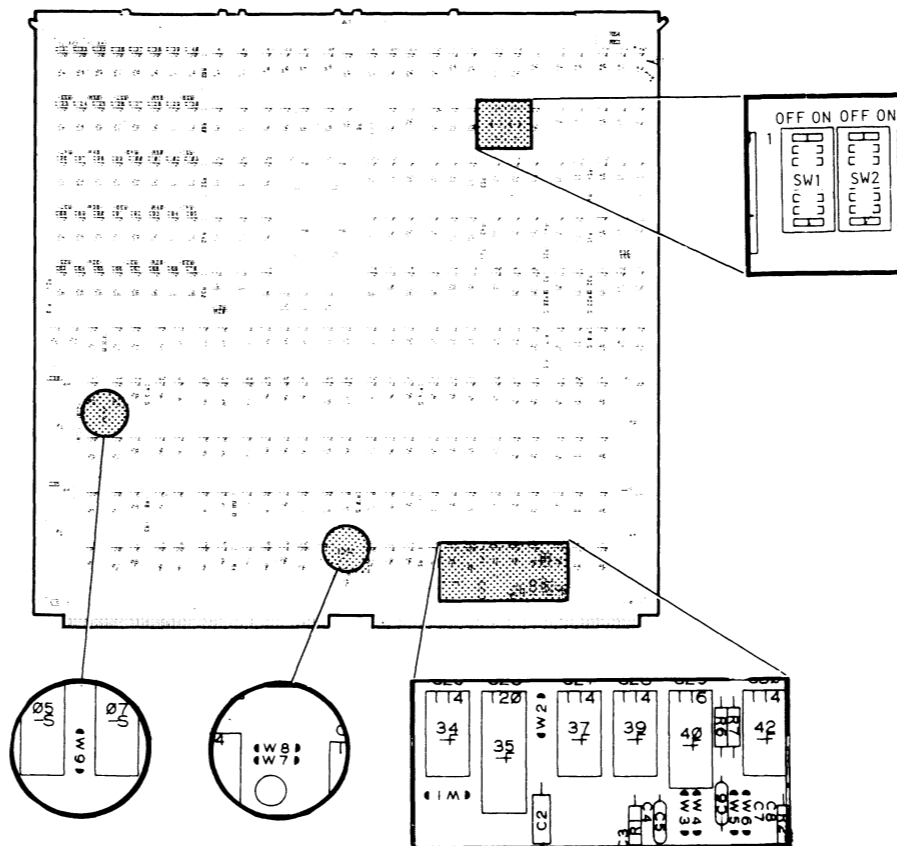
S1-4
MUST BE OFF

S1-5	S1-6	S1-7	S1-8	SYSTEM CONSOLE BAUD RATE
OFF	OFF	ON	ON	110
ON	ON	OFF	OFF	150
OFF	ON	OFF	OFF	300
ON	OFF	ON	ON	600
OFF	ON	OFF	ON	1200
ON	ON	OFF	ON	1800
ON	OFF	ON	OFF	2400
OFF	ON	ON	OFF	4800
ON	OFF	OFF	ON	9600
OFF	ON	ON	ON	19200

DEVC0-DEVC5 = DEVICE CODE USED ON AUTO-BOOT.
EXAMPLE: OCTAL 22

DEVC0 = 0 S2-3 ON
DEVC1 = 1 S2-4 ON
DEVC2 = 0 S2-5 ON
DEVC3 = 0 S2-6 ON
DEVC4 = 1 S2-7 OFF
DEVC5 = 0 S1-1 ON

* NOTE:
APPARENT INVERSION IS CORRECT.



NCU CONFIGURING:

W1 MUST BE IN
W2 MUST BE IN
W9 MUST BE IN

W3	W4	W5	W6	TTY
OUT	OUT	OUT	IN	EIA
IN	OUT	IN	OUT	20mA CURRENT LOOP = ≥ 600 BAUD
IN	IN	IN	OUT	20mA CURRENT LOOP = < 600 BAUD

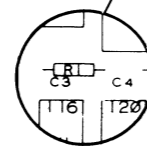
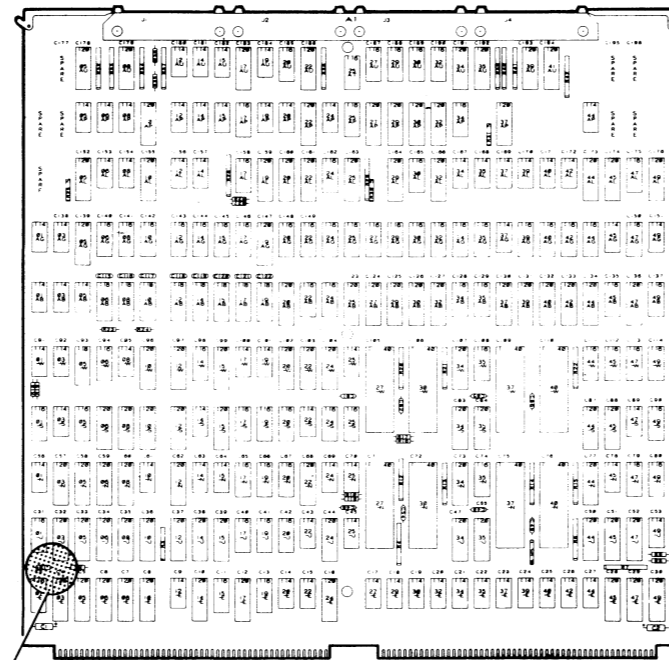
W7 W8 BASE CLOCK FREQUENCY
IN OUT 20MHz (NORMAL OPERATION)
OUT IN EXTERNAL (FROM BACKPANEL)

TAILORING (CONT)

JUMPERING

NPU

REF DGC Dwg No 107-001778 Rev 02

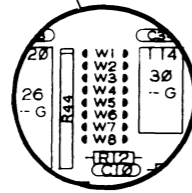
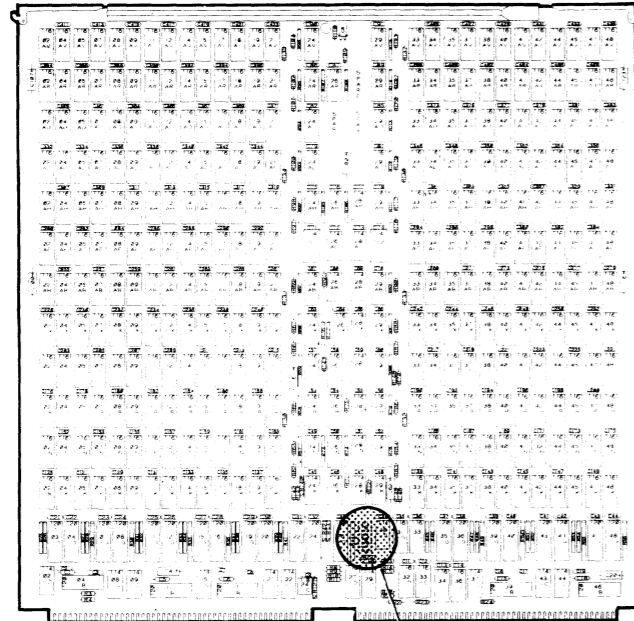


NOTE: R1, NORMALLY INSTALLED, WILL BE REMOVED IF SPECIAL PRODUCTS MODEL 557510C (005504731) IS CONFIGURED IN SYSTEM.

TAILORING (CONT) JUMPERING

MEMORY

NOTE: FOR ORDERING ADDITIONAL
BOARDS SEE CHART
REF DGC Dwg No 107-001804 Rev 01



- DIFFERENT COMBINATIONS OF MEMORY BOARDS MAY BE INTERMIXED IN THE MV/4000 MEMORY SYSTEM.
- SLOTS 8 THRU 11 ARE RESERVED FOR MEMORY.
- LARGEST MEMORY BOARD SIZES ARE CONFIGURED INTO THE LOWEST NUMBERED MEMORY SLOTS BEGINNING WITH SLOT 8.
- JUMPERS W1 THRU W8 DEFINE THE ADDRESS BOUNDARIES OF EACH MEMORY BOARD.
- THE FIRST MEMORY BOARD (SLOT 8) REQUIRES NO JUMPERING (W1 THRU W8 OUT).
- THE FOLLOWING JUMPERS ARE ALWAYS OUT (W1, W2, W3, AND W8).

MV/4000 MEMORY SYSTEM CONFIGURATION CHART

SLOT NUMBER	ALL			2MB AND 1MB			1MB AND .5MB			2MB AND .5MB			2MB AND 1MB AND .5B			BOARD NUMBER
	2MB	1MB	.5MB	BOARDS	BOARDS	BOARDS	BOARDS	BOARDS	BOARDS	BOARDS	BOARDS	BOARDS	BOARDS			
11	2 MB W4, 5	1 MB W5, 6	.5 MB W6, 7	1 MB W4, 5	1 MB W4, 6	1 MB W4	.5 MB W5, 6	.5 MB W5, 7	.5 MB W5	.5 MB W4, 5	.5 MB W4, 7	.5 MB W5, 6	.5 MB W4, 6	.5 MB W4	.5 MB W5, 6, 7	3
10	2 MB W4	1 MB W5	.5 MB W6	2 MB W4	1 MB W4	1 MB W5, 6	1 MB W5	.5 MB W5	.5 MB W6, 7	2 MB W4	.5 MB W4	.5 MB W5, 7	1 MB W4	1 MB W5, 6	.5 MB W5, 6	2
9	2 MB W5	1 MB W6	.5 MB W7	2 MB W5	2 MB W5	1 MB W5	1 MB W6	1 MB W6	.5 MB W6	2 MB W5	2 MB W5	.5 MB W5	2 MB W5	1 MB W5	1 MB W5	1
8	2 MB	1 MB	.5 MB	2 MB	2 MB	2 MB	1 MB	1 MB	1 MB	2 MB	2 MB	2 MB	2 MB	2 MB	2 MB	0

W JUMPERS LISTED INDICATE THE "IN" POSITION

EXAMPLE:

1. 4MB CONFIGURATION

SLOT	BOARD NUMBER	BOARD SIZE	JUMPERS IN
11	3	.5MB	W5 W6 W7
10	2	.5MB	W5 W6
9	1	1MB	W5
8	0	2MB	NONE

2. 1.5MB CONFIGURATION

SLOT	BOARD NUMBER	BOARD SIZE	JUMPERS IN
11	NO BOARD		
10	NO BOARD		
9	1	.5MB	W6
8	0	1MB	NONE

3. 4MB CONFIGURATION

SLOT	BOARD NUMBER	BOARD SIZE	JUMPERS IN
11	NO BOARD		
10	2	1MB	W5 W6
9	1	1MB	W5
8	0	2MB	NONE

4. 2MB CONFIGURATION

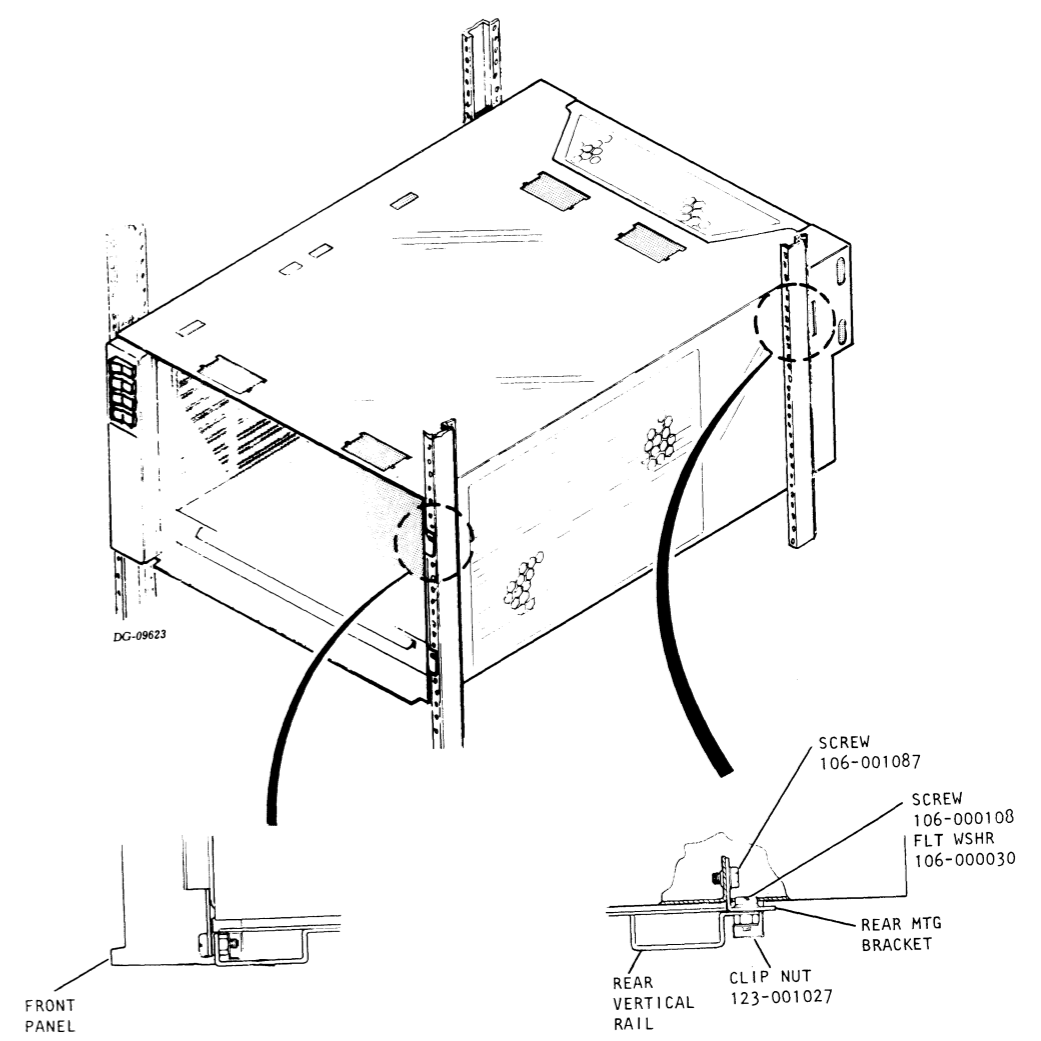
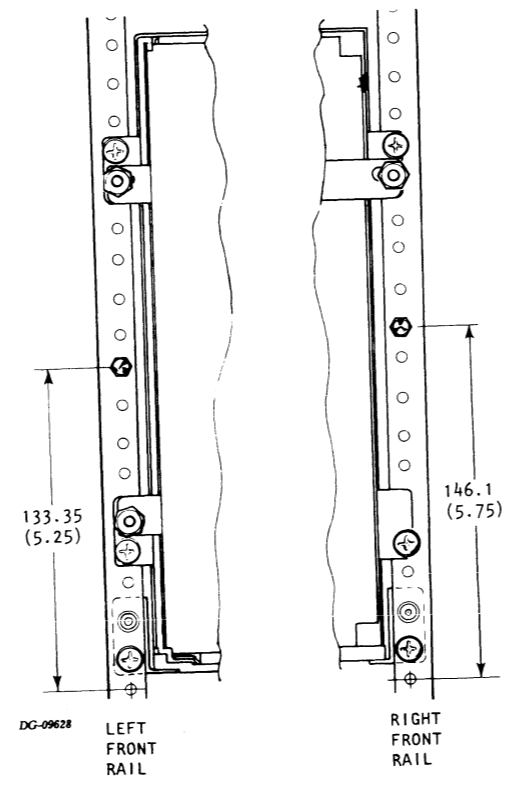
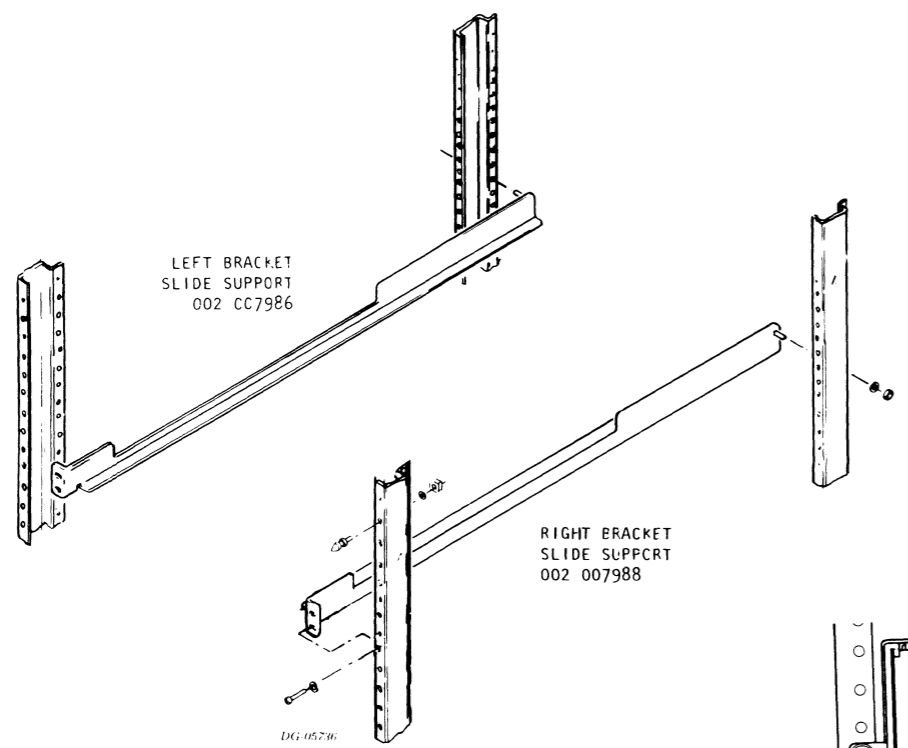
SLOT	BOARD NUMBER	BOARD SIZE	JUMPERS IN
11	NO BOARD		
10	NO BOARD		
9	NO BOARD		
8	0	2MB	NONE

MEMORY BOARDS

MEMORY SIZE	RAM TYPE	ASSEMBLY NUMBER
2 MB	64 K	005-18664
1 MB	64 K	005-18666
.5 MB	16 K	005-18660

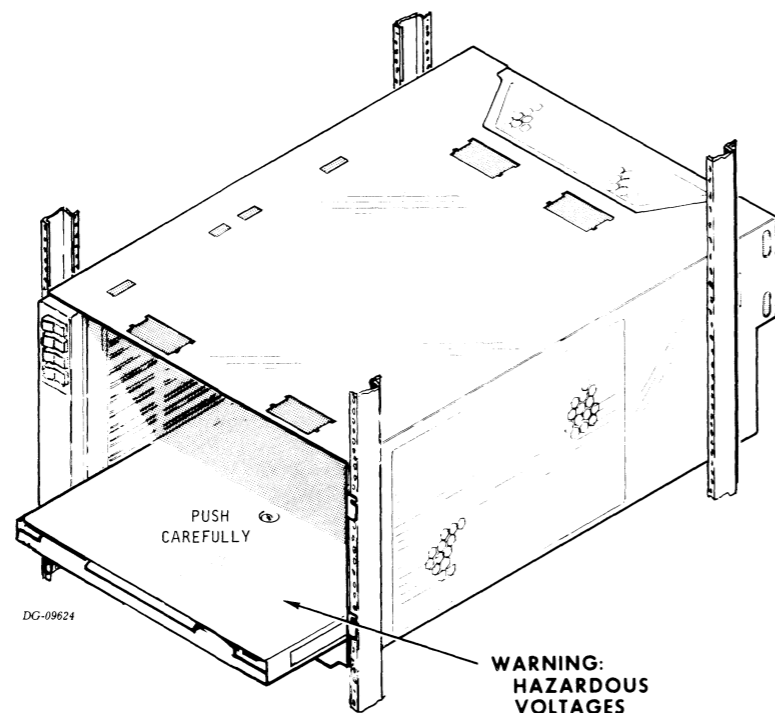
CABINET MOUNTING

HARDWARE MOUNTING KIT
005-019199



CABINET MOUNTING (CONT)

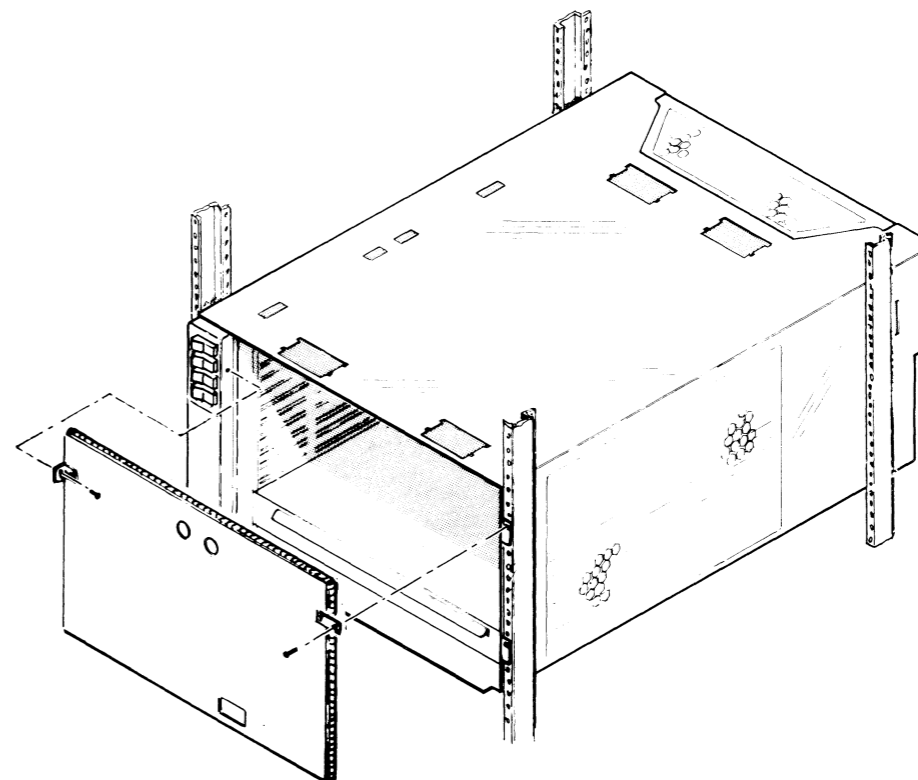
INSERTING POWER SUPPLY



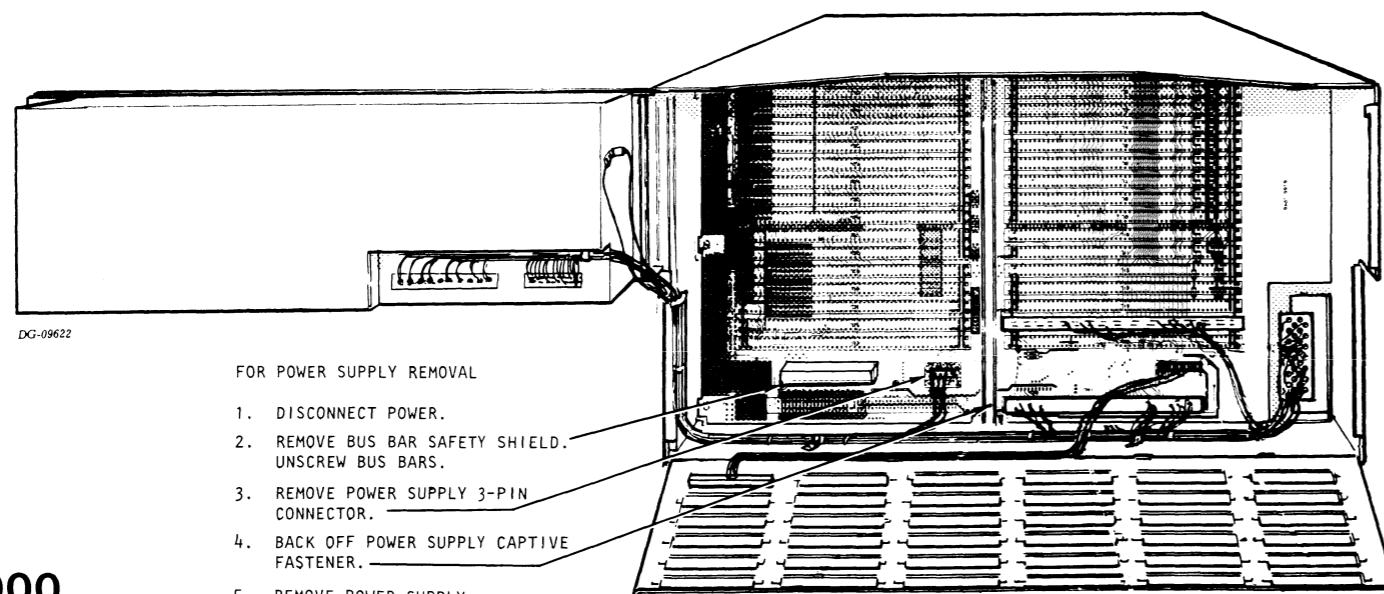
DG-09624

OBSERVE REAR VIEW OF CHASSIS BELOW.
TO INSTALL POWER SUPPLY, PERFORM
IN REVERSE THE REMOVAL PROCEDURE SHOWN.

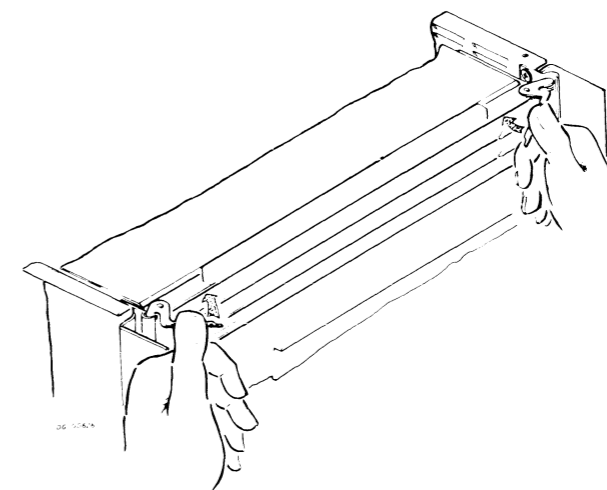
INSTALLING RFI SHIELD



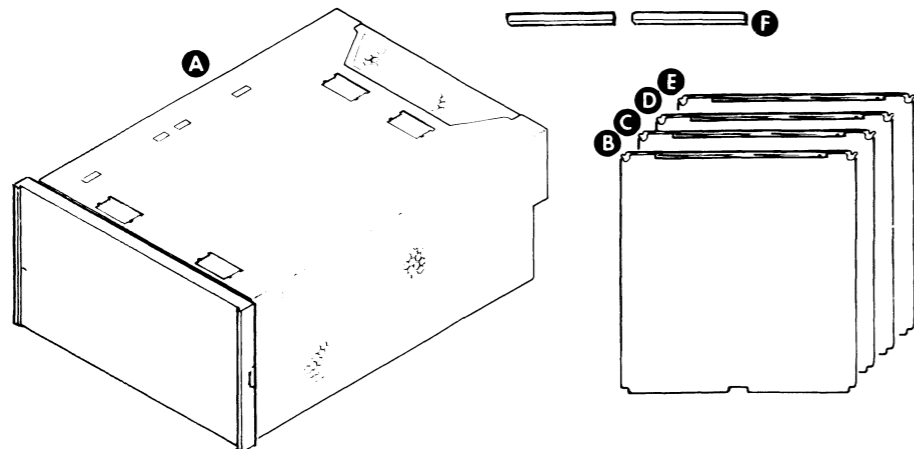
REMOVING POWER SUPPLY



INSERTING PC BOARD



INSTALLATION SPECIFICATIONS



Component	Mounting Location
A 16-SLOT CHASSIS	CABINET
B CPU	16-SLOT CHASSIS
C MEMORY	16-SLOT CHASSIS
D HARDWARE FLOATING POINT UNIT (FPU)	16-SLOT CHASSIS
E ERROR CHECK AND CORRECTING UNIT (ERCC) OR BURST MULTIPLEXOR CHANNEL AND ERCC UNIT (BMC-ERCC)	16-SLOT CHASSIS
F BUS TERMINATORS	16-SLOT CHASSIS

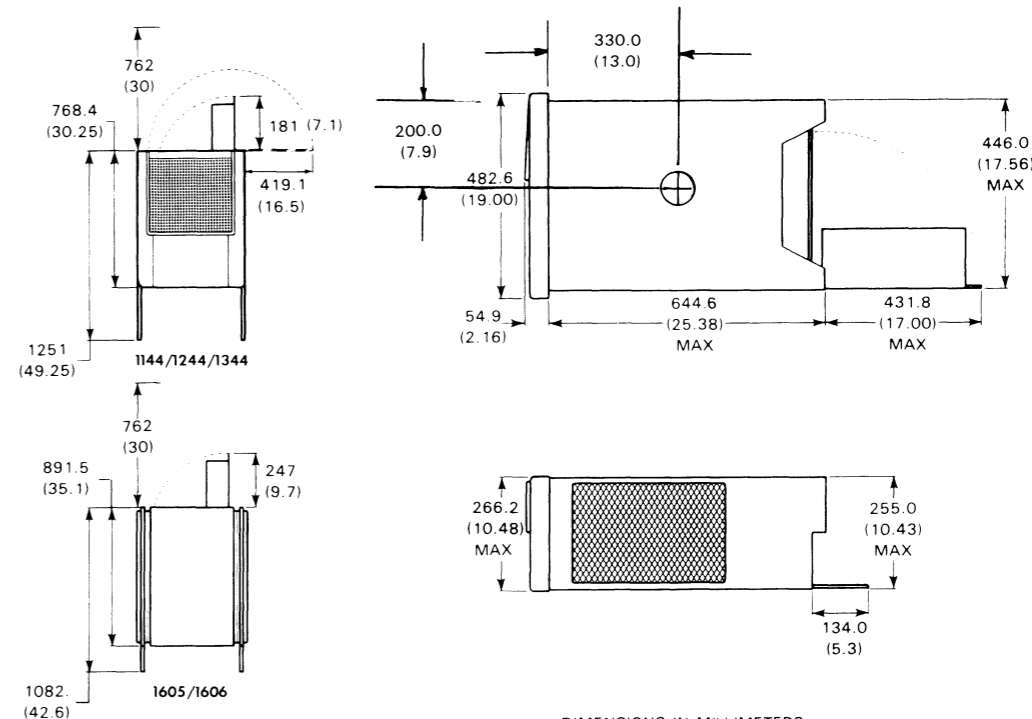
POWER SUPPLY vs MEMORY CAPACITY

Assy P/S PCB Tstd	BBU	Max. Number of Memory Boards per. P/S		Max Unit Memory Size
		128kB/256kB	512kB/1024kB	
005-17673	N	4	N/A	1.0MB
005-17674	Y	4	N/A	1.0MB
005-19490	N	8	5	2.0MB
005-19489	Y	8	5	2.0MB

NOTE: MAXIMUM SYSTEM MEMORY CAPACITY IS 2.0MB

* JAPAN MODELS

SERVICE DIMENSIONS



DIMENSIONS IN MILLIMETERS
INCHES IN PARENTHESES FOR REFERENCE

NOTES:

- ECLIPSE S/140
W/FIRMWARE FLOATING POINT UNIT 18A
—W/O FIRMWARE FLOATING POINT UNIT 17.5A
- HARDWARE FLOATING POINT UNIT 15A
- ERROR CHECKING AND CORRECTING UNIT 2.7A
- BURST MULTIPLEXOR CHANNEL AND ERROR CHECKING AND CORRECTING UNIT.
- MEMORY
W/BATTERY BACKUP
W/O BATTERY BACKUP 5.1A
MEMORY-2 6.3A
W/BATTERY BACKUP 4.8A
W/O BATTERY BACKUP 9.8A
SEE SHEET 3 FOR +5 MEM DRAW
- A MAXIMUM OF 10 TTL LOADS ON THE I/O BUS W/O A BUS REPEATER THE ERROR CHECKING AND CORRECTING UNIT IS 1 TTL LOAD.
- PUSH-ON TERMINATORS ON TOP MEMORY SLOT SEE PAGE 11 FOR +12V LOAD RESTRICTIONS
- JAPAN MODEL (-1) LIMITED TO 110 AMPS +5V CURRENT DRAW AND 550 WATTS TOTAL POWER DRAW.
- FOR SYSTEMS WITH MORE THAN 4 MEMORY MODULES, POWER SUPPLY NO. (SEE CHART) MUST BE USED.

SLOT ASSIGNMENTS

SLOT	ALLOWED (SLOT CHART)	ASSIGNED	+5 CURRENT DRAW	+12 CURRENT DRAW	-5 CURRENT DRAW	WATTS
16	I/O					
15						
14						
13						
12	I/O					
11	MEMORY OR I/O					
10						
9						
8						
7						
6						
5						
4	MEMORY OR I/O					
3	ERCC, BMC-ERCC, MEMORY OR I/O		NOTE 3, 4, 5			
2	FPU, ERCC OR BMC-ERCC		NOTE 2, 3, 4			
1	CPU		NOTE 1			
0	POWER SUPPLY		NOTE 10			

TOTAL +5 CURRENT DRAW _____ A
MAX +5 CURRENT AVAILABLE 120 A
+5 CURRENT SURPLUS _____ A
MINIMUM +5 CURRENT 6 A

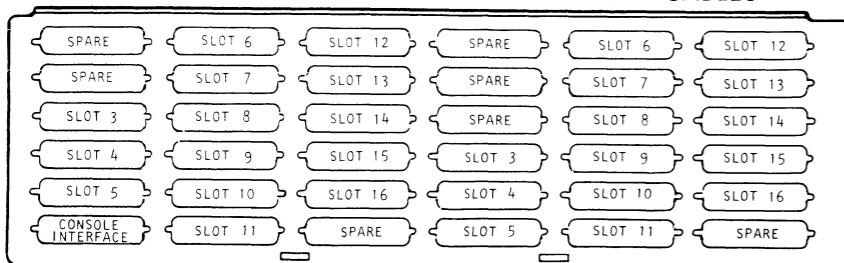
TOTAL +12 CURRENT DRAW _____ A
MAX +12 CURRENT AVAILABLE 12.5 A
+12 CURRENT SURPLUS _____ A
MINIMUM +12 CURRENT 0 A

TOTAL -5 CURRENT DRAW _____ A
MAX -5 CURRENT AVAILABLE 6 A
-5 CURRENT SURPLUS _____ A
MINIMUM -5 CURRENT 0 A

-1 (JAPAN) MODEL LIMITED TO 110 AMPS +5V AND 550 WATTS TOTAL POWER OUTPUT.

*SEE SHEET 10 THIS IDS FOR MORE DETAILS.

STANDARD ASSIGNMENT FOR BACKPANEL TO BULKHEAD INTERNAL CABLES



DIMENSIONS:

	Width	Depth	Height
Millimeters	482.6	699.5	266.3
Inches	19.00	27.54	10.48

SERVICE CLEARANCES:

	Front	Rear	Left or Right
Millimeters	762	762	762
Inches	30	30	30

WEIGHT:

	Empty	Fully Loaded
Kilograms	30.6	46.5
Pounds	67.5	102.5

HEAT OUTPUT:

	Watts	BTU/hr
	1150	3921.5

OPERATING ENVIRONMENT:
Temperature Range 0 - 55°C (32 - 131°F)
Relative Humidity Range 10 - 90%
Altitude Range -305 - 2438m (-1000 - 8,000 ft)

STORAGE ENVIRONMENT:
Temperature Range -40 - 65°C (-40 - 149°F)
Relative Humidity Range 10 - 90%
Altitude Range 0 - 7620m (0 - 25,000 ft)

POWER REQUIREMENTS:

(Domestic)	
Voltage	120V +10% -15%
Hz	47-63
Max Amp per Phase	12A
Phase	1
Startup Surge per Phase	17 A (typical) for .35 sec
(Export)	
Voltage	100 ± 10 220/240 +10% -15%
Hz	47-63 47-63
Max Amp per Phase	15A 8A
Phase	1 1
Startup Surge per Phase	14 A (typ) 34 A (typ) for .10 sec for .35 sec

CORDSET

Supply	Part No.
100V	109 - 719
120V	109 - 719
220/240	109 - 708

CABLES:

Primary Power	Length	WALL Conn	CORDSET Conn	CORDSET CONNECTOR (CPU)
Domestic	1.8M(6')	5-15R	5-15P	CEE-22
Export	1.8M(6')	6-15R	6-15P	CEE-22 (10 AMP)

FOR PACKING PROCEDURE, SEE 010-000263

Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

TAILORING CPU JUMPERING ECLIPSE S/140

BAUD RATE JUMPERS

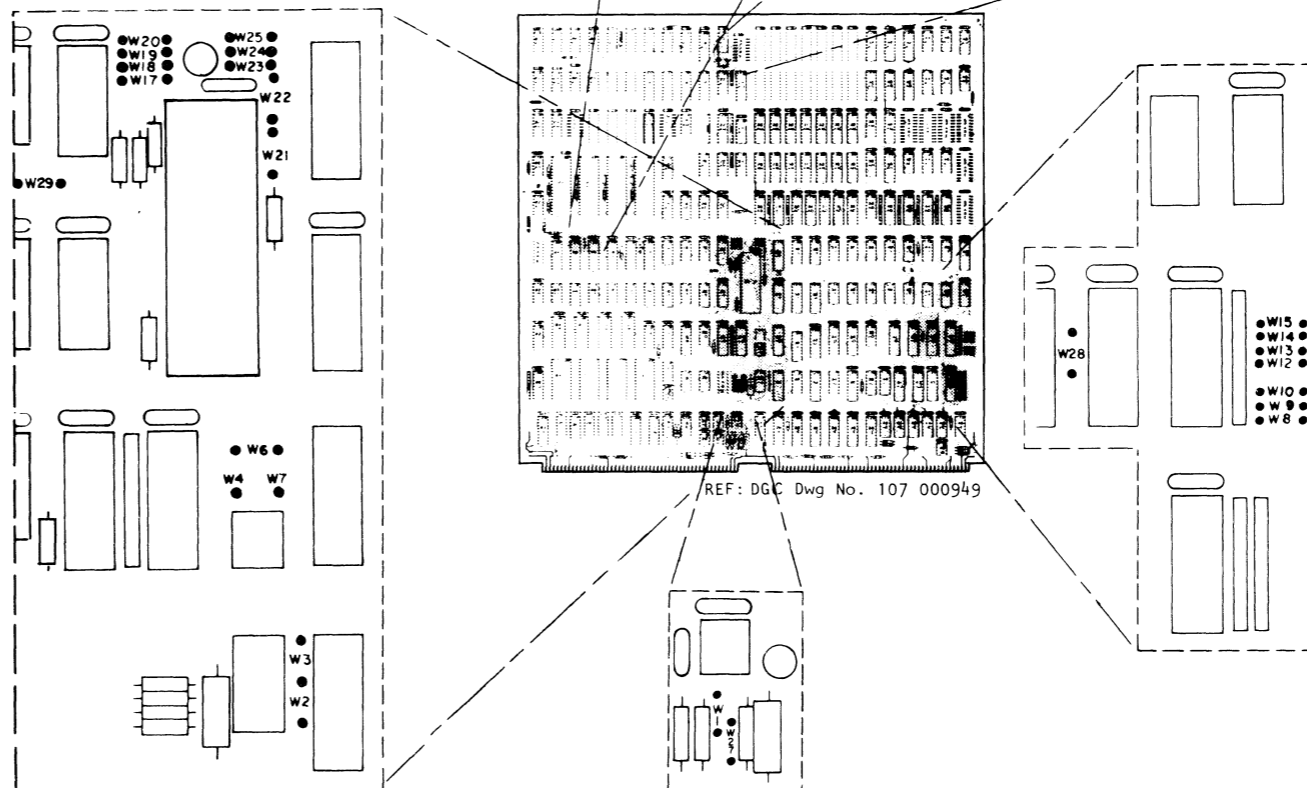
BAUD RATE	JUMPER POSITION				
	W17	W18	W19	W20	W27
50	IN	IN	OUT	IN	OUT
75	IN	IN	OUT	OUT	OUT
110	OUT	OUT	OUT	OUT	IN
134.5	IN	OUT	IN	IN	OUT
150	OUT	OUT	OUT	IN	OUT
200	IN	OUT	IN	OUT	OUT
300	OUT	OUT	IN	OUT	OUT
600	IN	OUT	OUT	IN	OUT
1200	OUT	IN	OUT	OUT	OUT
1600	OUT	IN	OUT	IN	OUT
2400	OUT	OUT	IN	IN	OUT
4800	OUT	IN	IN	OUT	OUT
9600	OUT	IN	IN	IN	OUT
19200	IN	IN	IN	OUT	OUT

PARITY JUMPERS

TYPE OF PARITY	JUMPER POSITION	
	W22	W21
EVEN	OUT	IN
ODD	IN	IN
NONE	OUT	OUT

CHARACTER LENGTH JUMPERS

CHARACTER LENGTH	JUMPER POSITION	
	W25	W24
5 BITS	IN	IN
6 BITS	OUT	IN
7 BITS	IN	OUT
8 BITS	OUT	OUT



TYPE OF TRANSMISSION JUMPERS

TYPE OF TRANSMISSION	JUMPERS INSERTED
20MA CURRENT LOOP	W4, W7, W2, W1
EIA RS232-C	W6, W3

STOP BIT JUMPERS

NUMBER OF STOP BITS	W23 JUMPER POSITION
1	IN
2	OUT

DEVICE CODE JUMPERS FOR FRONT PANEL AUTOMATIC PROGRAM LOAD

SELECT THE PROGRAM LOAD DEVICE CODE BY INSTALLING JUMPERS W13, W15, W14, W12, W10, W8 AS FOLLOWS:

JUMPER IN = 1 JUMPER OUT = 0

EXAMPLE JUMPERING FOR DEVICE CODE 27 :
8

W13	W15	W14	W12	W10	W8
OUT	IN	OUT	IN	IN	IN

W9 IS INSERTED IF THE PROGRAM LOAD DEVICE IS A HIGH SPEED DEVICE, OTHERWISE, IT IS REMOVED.

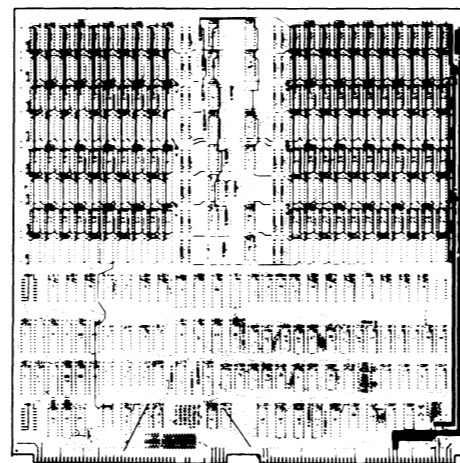
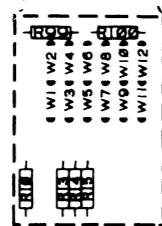
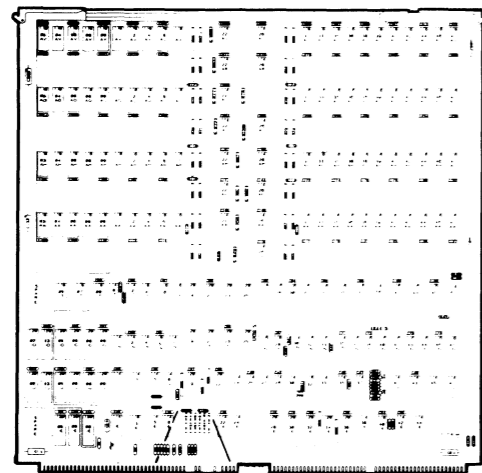
NOTE: JUMPERS W16, W26 AND W29 ARE ALWAYS INSERTED. JUMPERS W5 AND W11 DO NOT EXIST ON ANY BOARD AND JUMPER W29 DOES NOT EXIST ON BOARDS WITH ARTWORK NO. 107-000949, REV. 00.

REAL TIME CLOCK JUMPER

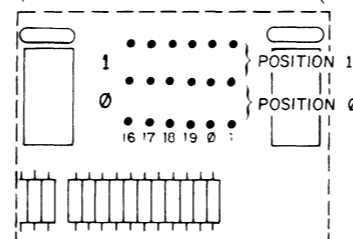
	W28
RTC ENABLED	IN
RTC DISABLED	OUT

TAILORING (CONT)

MEMORY JUMPERING
ECLIPSE S/140



REF: DGC Dwg No. 107 000813



THE S140-2 MEMORY BOARDS (512KB AND 1024KB) MAY BE MIXED WITH EXISTING S140 MEMORY BOARDS (128KB AND 256KB) IN ANY COMBINATION. MEMORY CONFIGURATIONS WILL BE LIMITED TO A MAXIMUM OF 5 BOARDS (DUE TO RESTRICTIONS ON +5MEM OF 9.5 AMPS.) AND THE LARGEST MEMORY BOARDS OCCUPYING THE LOWER ADDRESS RANGES.

MEMORY LOADS

VOLTAGE	DESCRIPTION	CURRENT DRAW
+5V	SYSTEM WITH BATTERY BACKUP	4.8A
+5V	SYSTEM WITHOUT BATTERY BACKUP	9.8A
+5MEM	FIRST MEMORY IN CHASSIS	5.0A
+5MEM	EACH ADDITIONAL MEMORY	1.5A

SYSTEMS SHOULD BE CONFIGURED WITH THE LARGER BOARDS OCCUPYING THE LOWER MEMORY ADDRESS RANGES.

MEMORY LOADS

VOLTAGE	DESCRIPTION	CURRENT DRAW
+5V	SYSTEM WITH BATTERY BACKUP	5.1A
+5V	SYSTEM WITHOUT BATTERY BACKUP	6.3A
+12V MEM	FIRST BOARD IN CHASSIS	3.0A
+12V MEM	EACH ADDITIONAL BOARD	0.39A

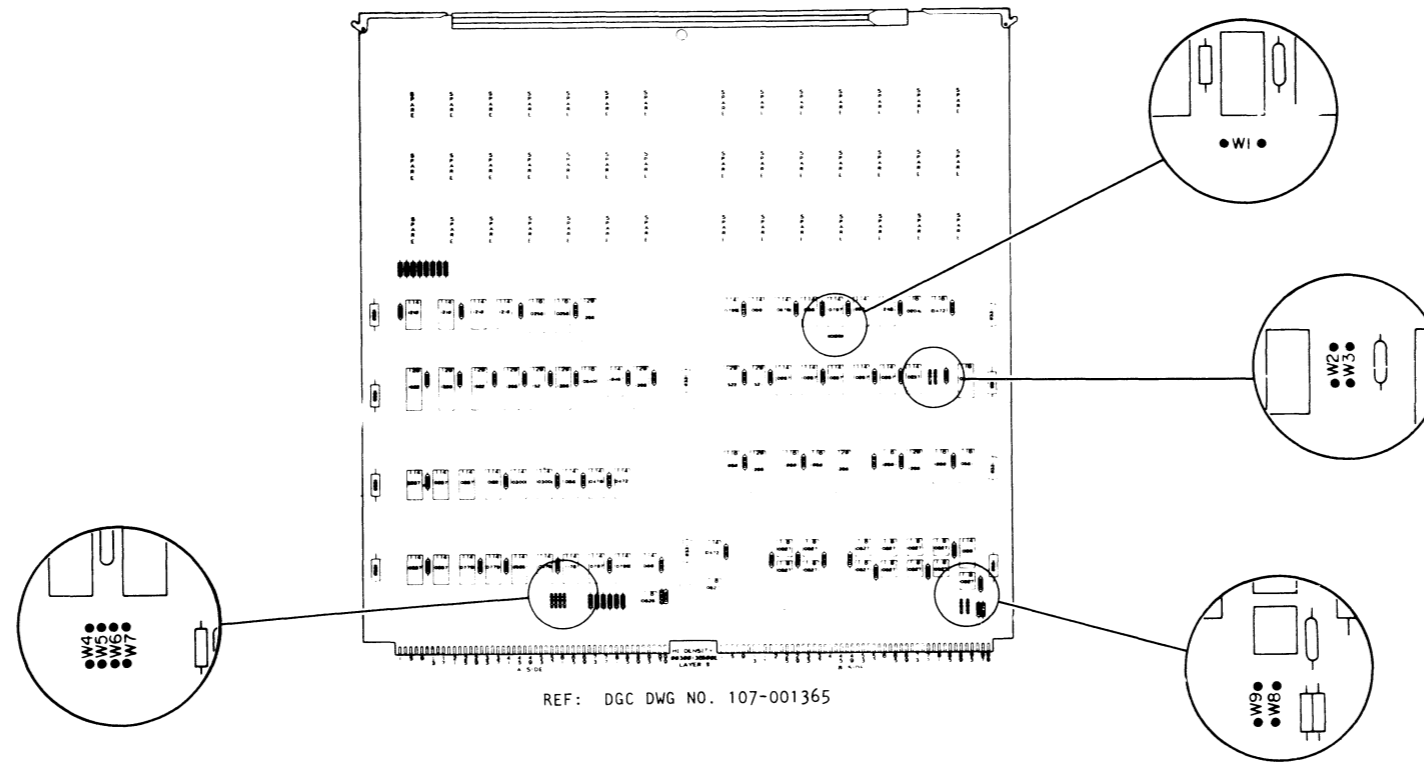
ECLIPSE S140 MEMORY BOARD SELECT JUMPERS

PHYSICAL ADDRESS RANGE	JUMPERS INSERTED NUMBER (POSITIONS) BOARD SIZE			
	1M BYTE	512 kBYTE	256 kBYTE	128 kBYTE
3777777-3600000	16(1)	16(1) 17(1)	16(1) 17(1) 18(1)	16(1) 17(1) 18(1) 19(1)
3577777-3400000			16(1) 17(1) 18(0)	16(1) 17(1) 18(1) 19(0)
3377777-3200000		16(1) 17(0) 18(0)	16(1) 17(1) 18(0) 19(1)	
3177777-3000000		16(1) 17(0) 18(1)	16(1) 17(0) 18(1) 19(0)	
2777777-2600000	16(0)	16(0) 17(1)	16(0) 17(0) 18(1)	16(0) 17(0) 18(1) 19(1)
2577777-2400000			16(0) 17(0) 18(0)	16(0) 17(0) 18(1) 19(0)
2377777-2200000		16(0) 17(1) 18(0)	16(0) 17(0) 18(0) 19(1)	
2177777-2000000		16(0) 17(0) 18(0)	16(0) 17(0) 18(0) 19(0)	
1777777-1600000	16(0)	16(0) 17(1)	16(0) 17(1) 18(1)	16(0) 17(1) 18(1) 19(1)
1577777-1400000			16(0) 17(1) 18(0)	16(0) 17(1) 18(1) 19(0)
1377777-1200000		16(0) 17(0) 18(0)	16(0) 17(1) 18(0) 19(1)	
1177777-1000000		16(0) 17(0) 18(0)	16(0) 17(1) 18(0) 19(0)	
0777777-0600000	16(0)	16(0) 17(0)	16(0) 17(0) 18(1)	16(0) 17(0) 18(1) 19(1)
0577777-0400000			16(0) 17(0) 18(0)	16(0) 17(0) 18(1) 19(0)
0377777-0200000		16(0) 17(0) 18(0)	16(0) 17(0) 18(0) 19(1)	
0177777-0000000		16(0) 17(0) 18(0)	16(0) 17(0) 18(0) 19(0)	

* THE JUMPERS LISTED SHOULD BE INSERTED IN THE POSITION (0 OR 1) GIVEN IN PARENTHESES. NONE OF THE UNLISTED JUMPERS IS INSERTED. NOTE THAT THE 001 DRAWINGS AND THE 016 DRAWINGS USE NUMBERS W1 THRU W12 TO REFER TO JUMPER POSITIONS. THE TABLE BELOW SHOWS WHICH "W" NUMBERS CORRESPOND WITH WHICH JUMPER POSITIONS.

ETCHED JUMPER NUMBER (POSITION)	010 AND 016 JUMPER NUMBER
16(0)	W1
16(1)	W2
17(0)	W3
17(1)	W4
18(0)	W5
18(1)	W6
19(0)	W7
19(1)	W8
1(0)	W9
1(1)	W10
0(0)	W11
0(1)	W12

TAILORING (CONT) ERROR CHECKING AND CORRECTING UNIT JUMPERING



DEVICE CODE JUMPERS

SELECT DEVICE CODE 2 FOR THE ECLIPSE AS FOLLOWS:

W4	W5	W6	W7	W8	W9
OUT	OUT	IN	IN	IN	OUT

PFP ENABLE JUMPER

TO ALLOW PFP REQUESTS TO START THE ERCC LOGIC, INSERT W1; OTHERWISE DO NOT INSERT IT. THIS JUMPER MUST BE INSERTED TO PROVIDE FULL CORRECTION CAPABILITIES.

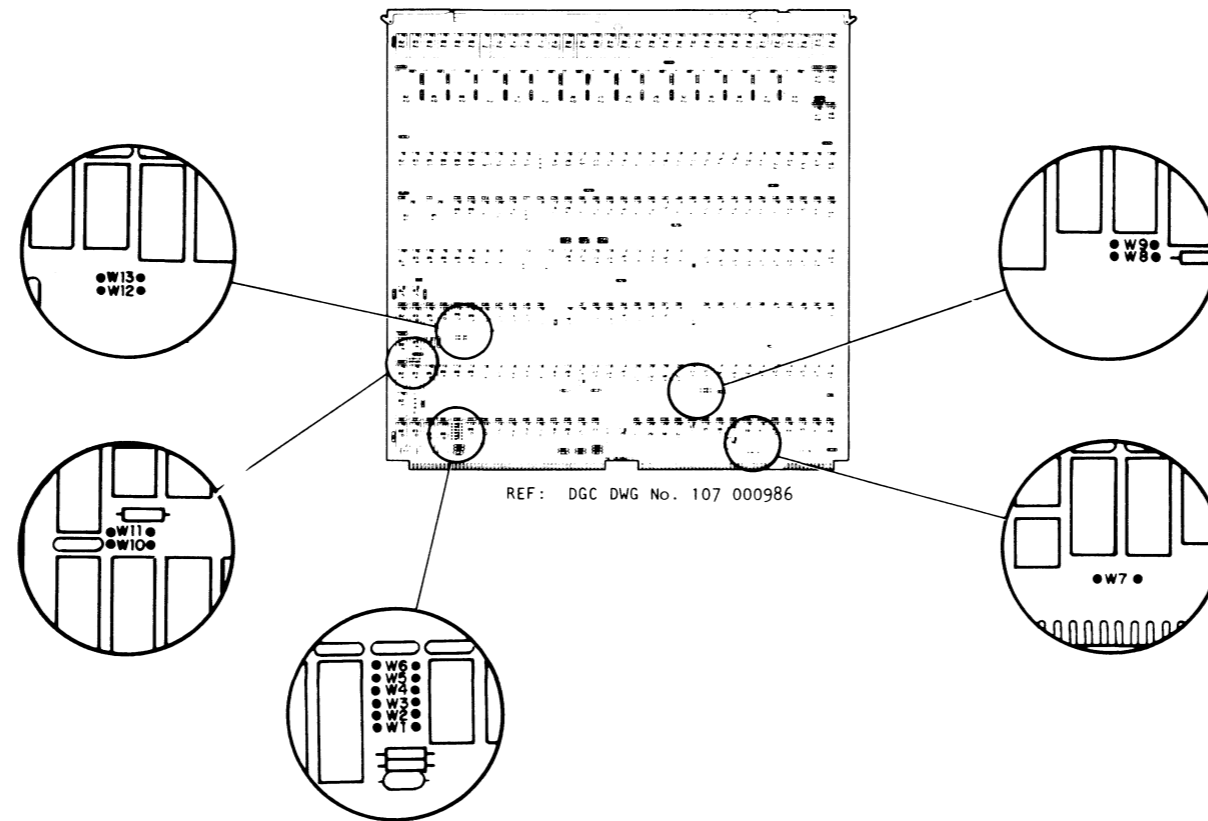
ERCC CORRECTION ENABLE JUMPERS

JUMPER	ENABLE CORRECTION	DISABLE* CORRECTION
W2 W3	IN OUT	OUT IN

*CHECKWORD BITS ARE STILL WRITTEN WITH DATA.

TAILORING (CONT)

HARDWARE FLOATING POINT UNIT JUMPERING



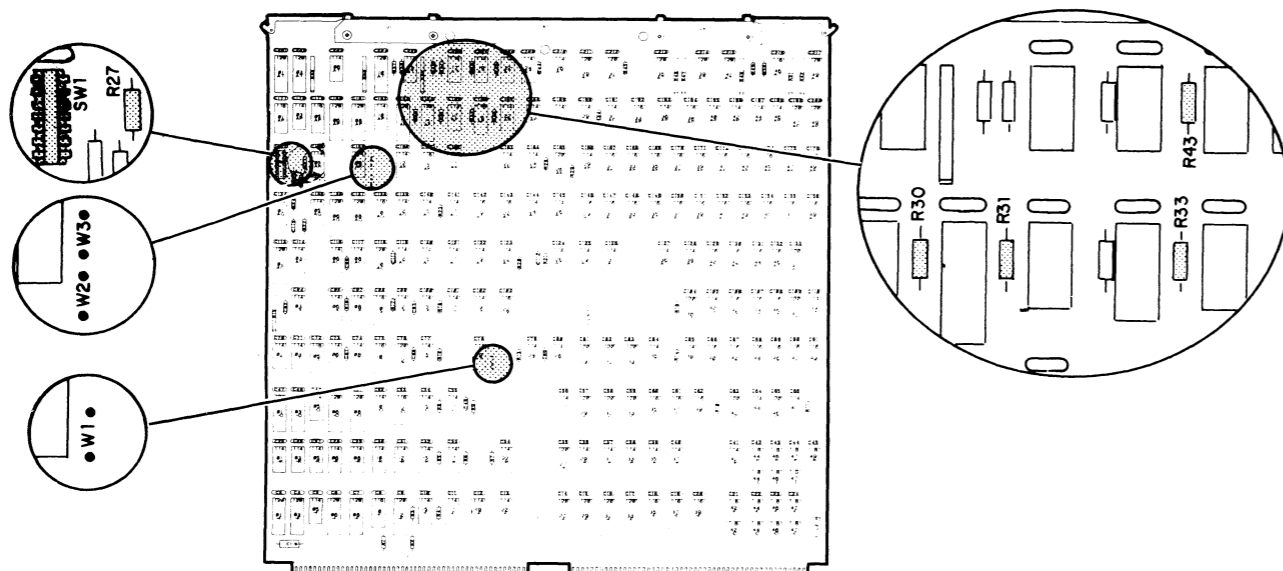
THE JUMPERS MUST BE POSITIONED ON THE HARDWARE FLOATING POINT UNIT PRINTED CIRCUIT BOARD AS INDICATED IN THE TABLE BELOW.

JUMPER	POSITION
W1	OUT
W2	IN
W3	IN
W4	OUT
W5	IN
W6	OUT
W7	IN
W8	IN
W9	OUT
W10	IN
W11	OUT
W12	IN
W13	OUT

TAILORING (CONT)

BURST MULTIPLEXOR CHANNEL / ERROR CHECKING AND CORRECTION UNIT

JUMPERING



REF DGC DWG No 003-001610 Rev 01

BMC

FUNCTIONS SELECTED BY DUMMY RESISTORS.
R27, R30 AND R43 ARE NORMALLY IN;
R31 AND R33 ARE NORMALLY OUT.

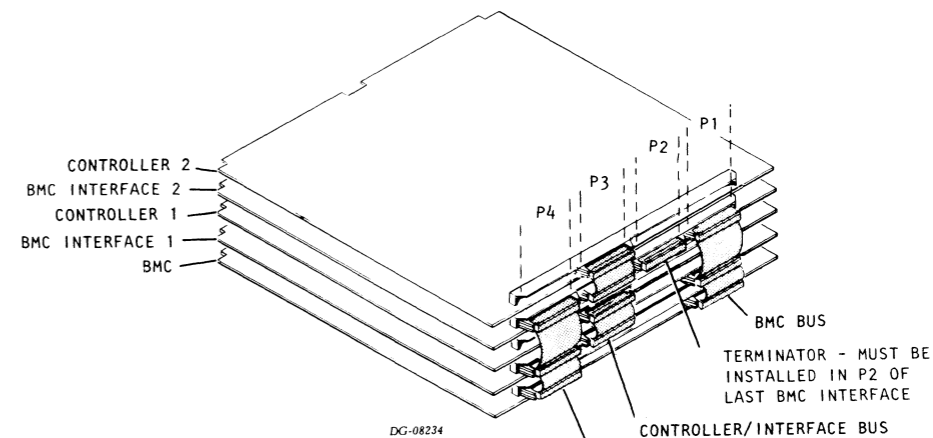
DUMMY RESISTORS	FUNCTIONS
R27	DRIVES ADDRERROR ON VALIDITY PROTECT
R30	GROUNDS J1 - 36 (VALERROR)
R43	PROVIDES DISCONTINUOUS SYNCLOCK
R31	DRIVES VALIDITY PROTECT ERROR ON VALERROR
R33	PROVIDES CONTINUOUS SYNCLOCK

SIMULTANEOUS REQUESTS
NEEDED TO GO INTO OVERDRIVE

NUMBER OF REQUESTS	SWITCHES ON *
2	4
3	3, 5
4	2, 6
(DISABLE OVERDRIVE)	(1, 5, 6)

* DEPRESS THE SIDE MARKED "ON" TO
TURN SWITCH ON.

BMC AND INTERFACE CONNECTION



INTERNAL CABLING

NO. OF BMC INTERFACES	CABLE NO.
1	005-012860
2	005-012858
3	005-012859
4	005-012857

ERCC

PPF ENABLE JUMPER

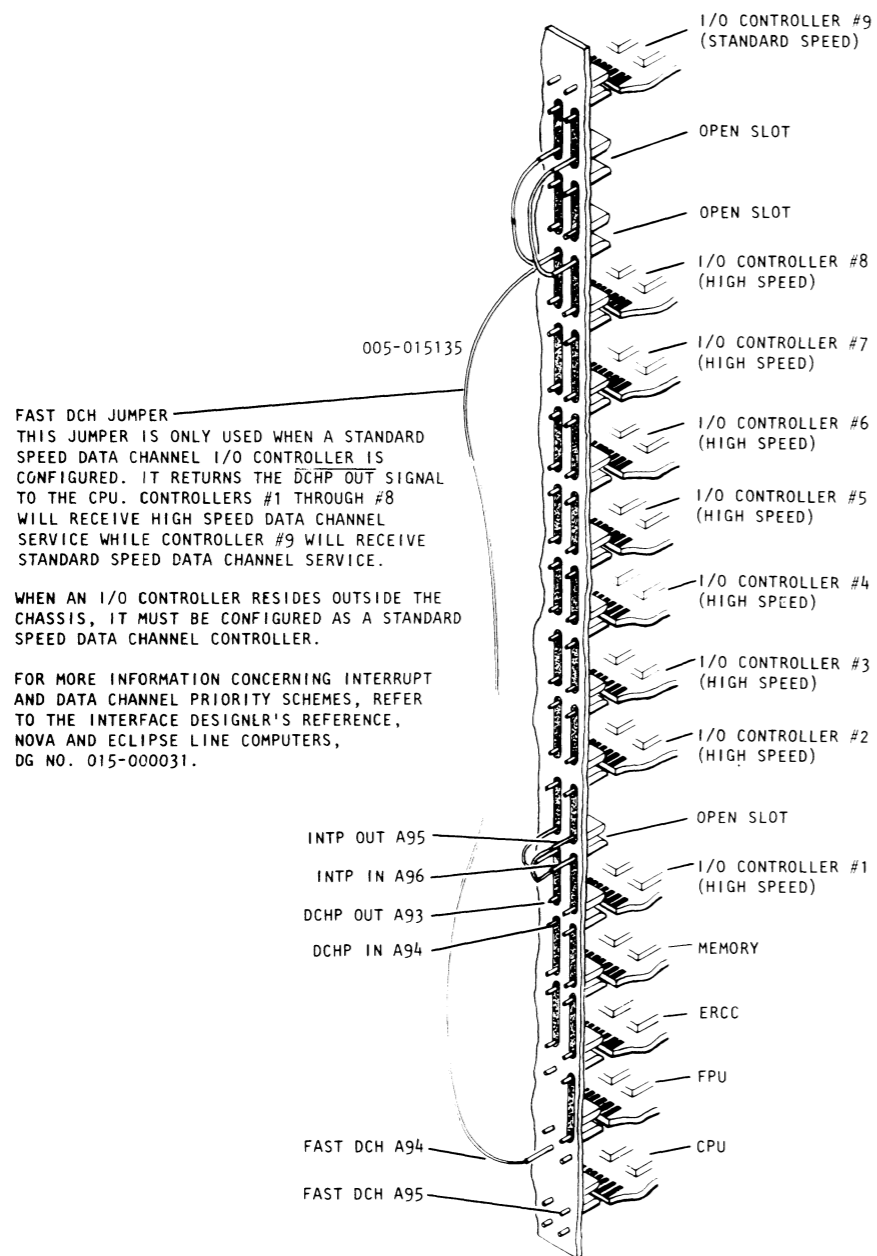
TO ALLOW THE PPF REQUESTS TO START THE ERCC LOGIC, INSERT W1;
OTHERWISE DO NOT INSERT IT. THIS JUMPER MUST BE INSERTED TO
PROVIDE FULL CORRECTION CAPABILITIES.

ERCC CORRECTION ENABLE JUMPERS

JUMPER	ENABLE CORRECTION	DISABLE * CORRECTION
W2	OUT	IN
W3	IN	OUT

* CHECKWORD BITS ARE STILL WRITTEN
WITH DATA.

**TAILORING (CONT)
BACKPANEL JUMPERING**



FAST DCH JUMPER
THIS JUMPER IS ONLY USED WHEN A STANDARD SPEED DATA CHANNEL I/O CONTROLLER IS CONFIGURED. IT RETURNS THE DCHP OUT SIGNAL TO THE CPU. CONTROLLERS #1 THROUGH #8 WILL RECEIVE HIGH SPEED DATA CHANNEL SERVICE WHILE CONTROLLER #9 WILL RECEIVE STANDARD SPEED DATA CHANNEL SERVICE.

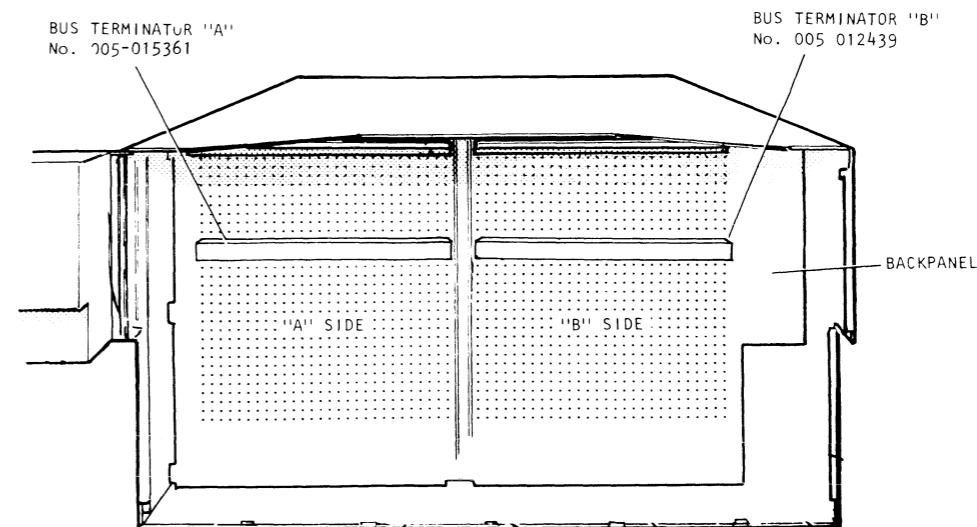
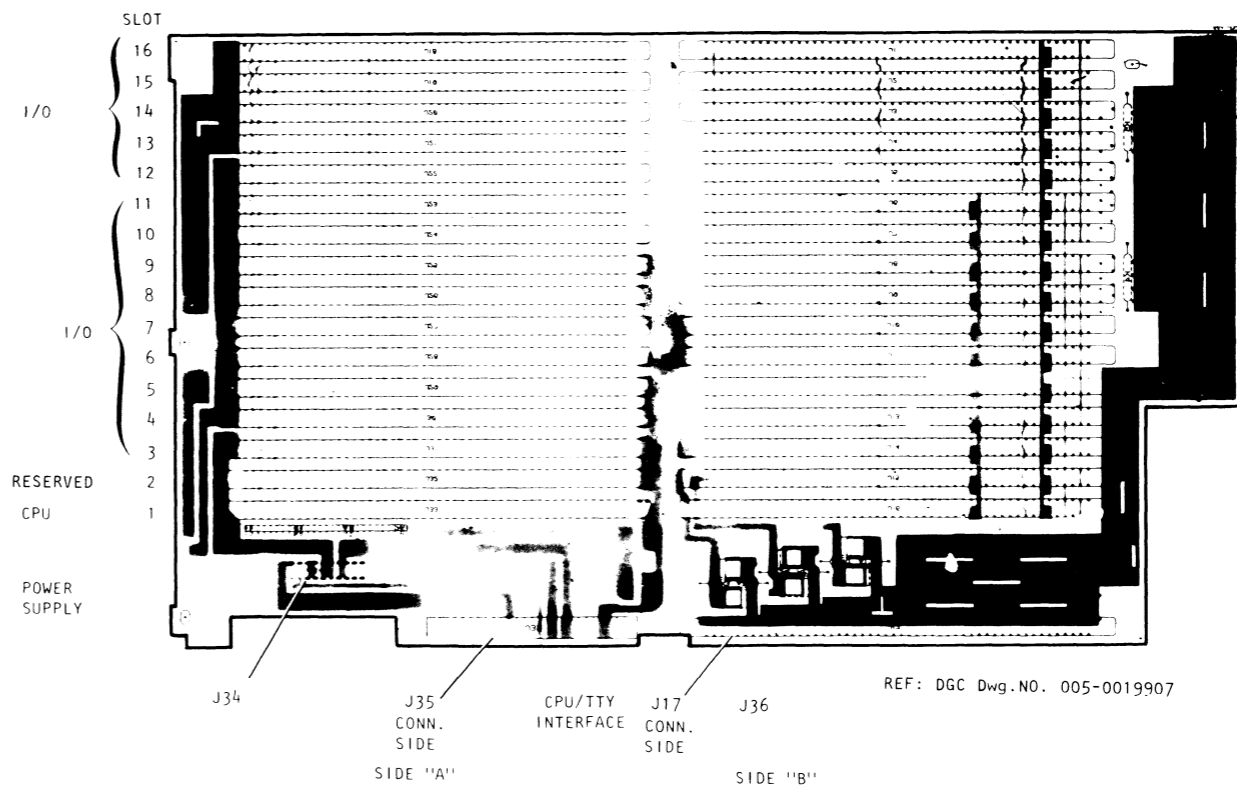
WHEN AN I/O CONTROLLER RESIDES OUTSIDE THE CHASSIS, IT MUST BE CONFIGURED AS A STANDARD SPEED DATA CHANNEL CONTROLLER.

FOR MORE INFORMATION CONCERNING INTERRUPT AND DATA CHANNEL PRIORITY SCHEMES, REFER TO THE INTERFACE DESIGNER'S REFERENCE, NOVA AND ECLIPSE LINE COMPUTERS, DG NO. 015-000031.

DG-05722

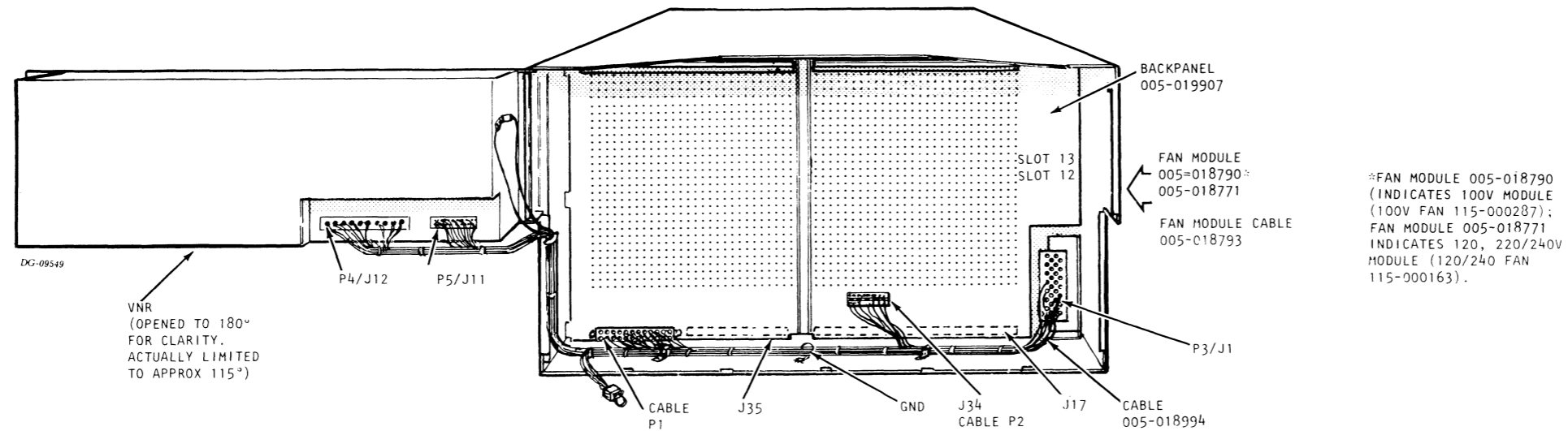
NO JUMPERS NEEDED EXCEPT FOR OPEN SLOTS AND STANDARD SPEED DATA CHANNEL I/O CONTROLLERS.

**INTERNAL CABLING
BACKPANEL CONNECTORS**



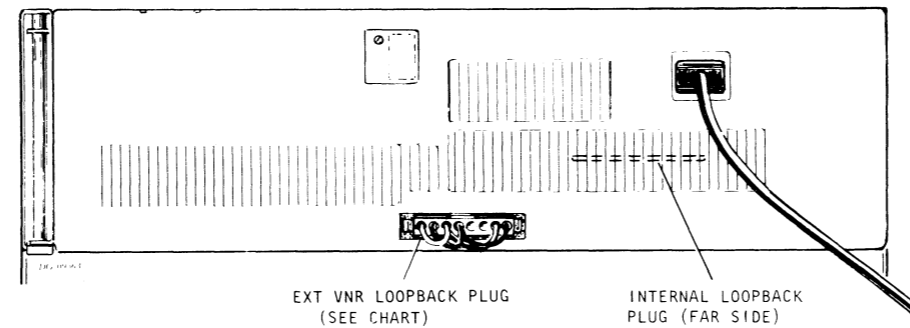
INTERNAL CABLING

BACKPANEL, EXPANSION CHASSIS



*FAN MODULE 005-018790
(INDICATES 100V MODULE
(100V FAN 115-000287);
FAN MODULE 005-018771
INDICATES 120, 220/240V
MODULE (120/240 FAN
115-000163).

VNR CHASSIS



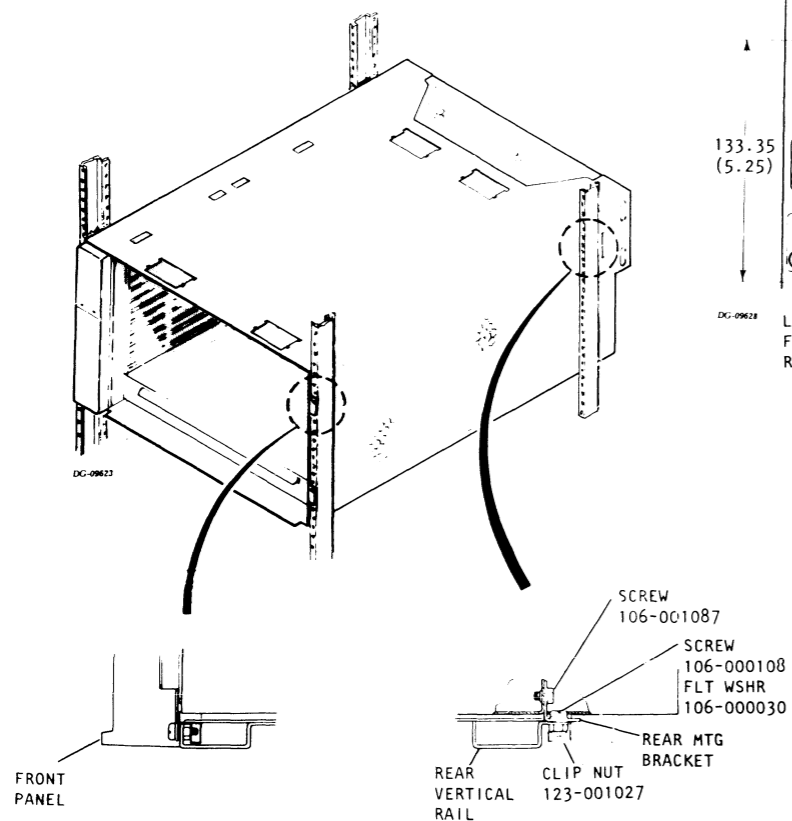
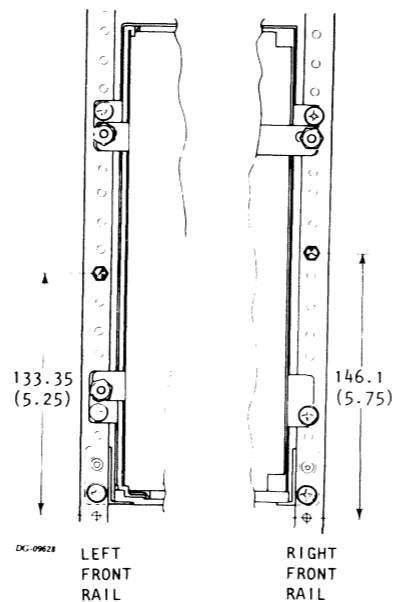
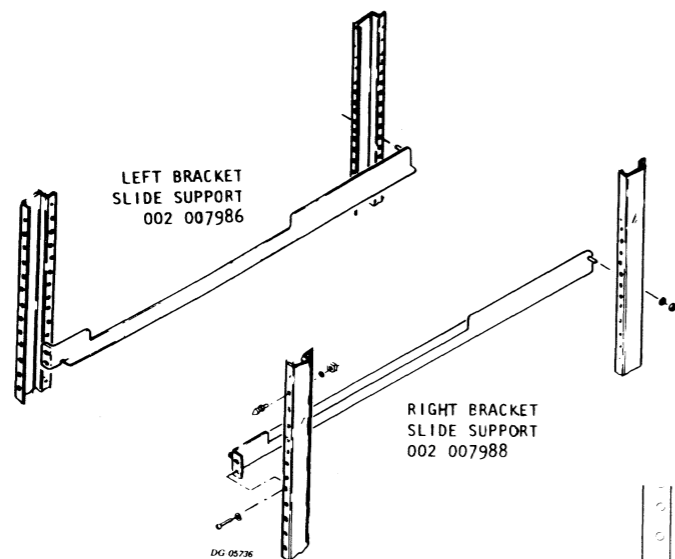
LINE CORD
109-000719 (100, 120V)
109-000703 (220/240V)

AC VOLTS IN	EXTERNAL LOOPBACK PLUG	INTERNAL LOOPBACK PLUG	VNR ASSY.NO.
100 V	005-018774	005-018772	005-019979
120 V	005-018774	005-018772	005-019978
220/240V	005-018986	005-018773	005-019990

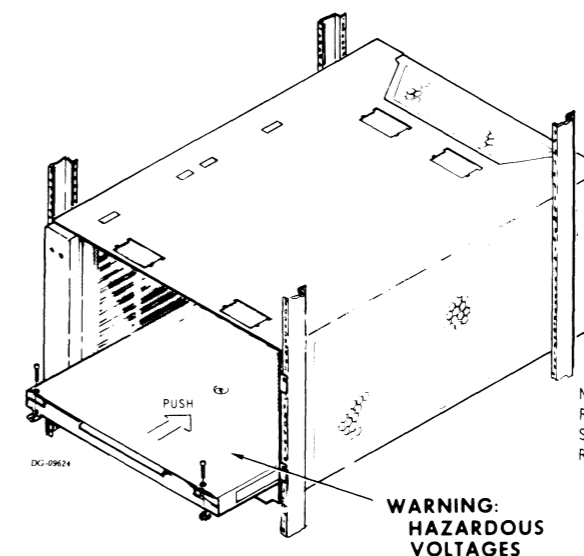
WARNING:
THE POWER SUPPLY ASSEMBLIES IN THIS PRODUCT
SHOULD BE SERVICED ONLY BY QUALIFIED PERSONNEL
WITH PROPER EQUIPMENT.

CABINET MOUNTING

HARDWARE MOUNT KIT 005-019199

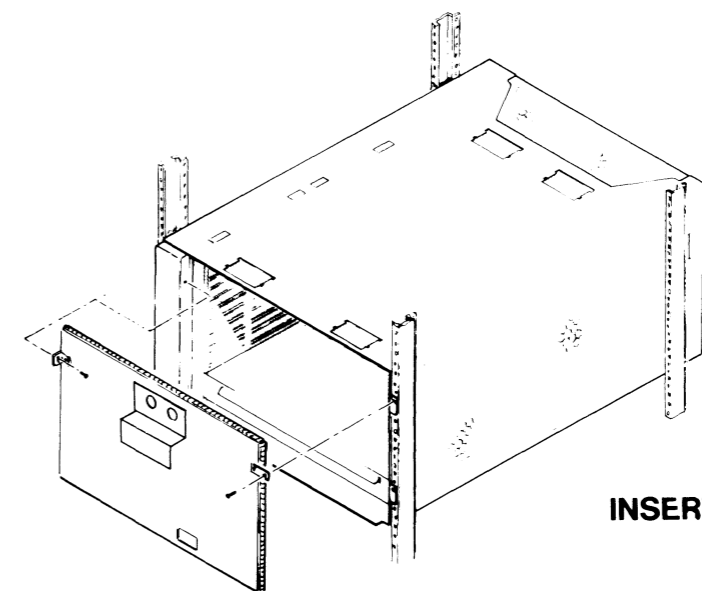


INSERTING POWER SUPPLY

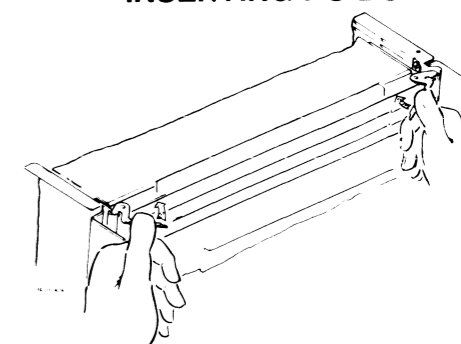


NOTE:
REMOVE GROUND STRAP AND MOUNTING
SCREWS ATTACHED TO CHASSIS BEFORE
REMOVING POWER SUPPLY.

INSTALLING RFI SHIELD



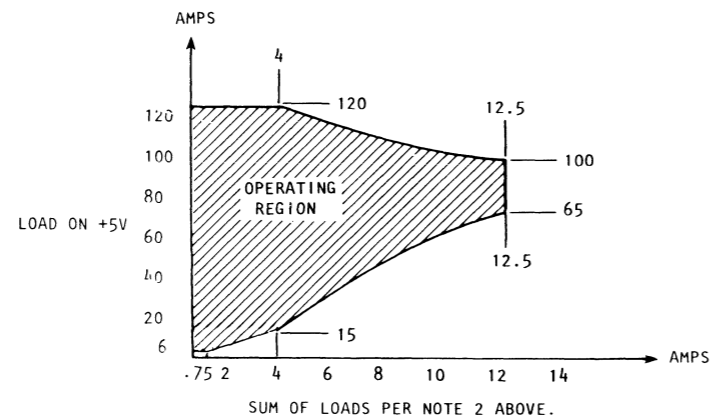
INSERTING PC BOARD



16-SLOT CHASSIS LOAD BALANCING RULES

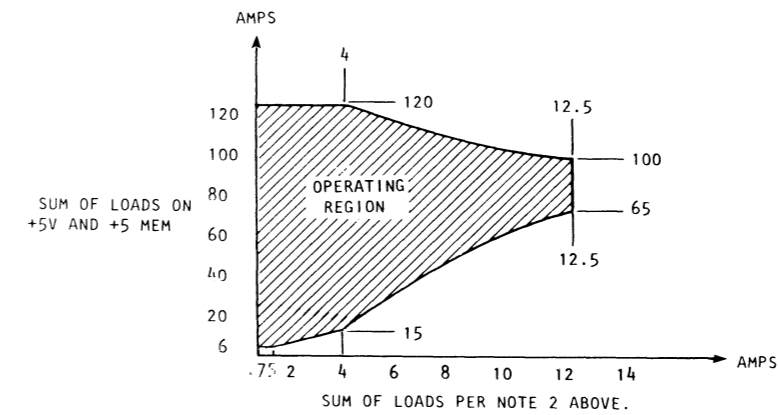
WITH BATTERY BACKUP:

1. THE LOAD OF -5V MUST NOT EXCEED 3.0 AMPS.
2. THE SUM OF THE LOADS ON +12V, +12 MEM, +15V AND 0.55 (SUM OF CURRENT FROM +5 MEM AND -5 MEM) MUST NOT EXCEED 12.5 AMPS.
3. THE LOAD ON -5 MEM MUST NOT EXCEED 0.3 AMPS.
4. THE LOAD ON +5 MEM MUST NOT EXCEED 4.5 AMPS AND MUST BE AT LEAST 0.25 AMPS
5. THE LOAD ON +5V MUST NOT EXCEED 120 AMPS AND MUST BE AT LEAST 6 AMPS.
6. THE LOADS MUST BE WITHIN THE OPERATING REGION SHOWN BELOW:
7. FOR JAPAN (-1) MODEL, TOTAL OUTPUT POWER NOT TO EXCEED 550 WATTS.

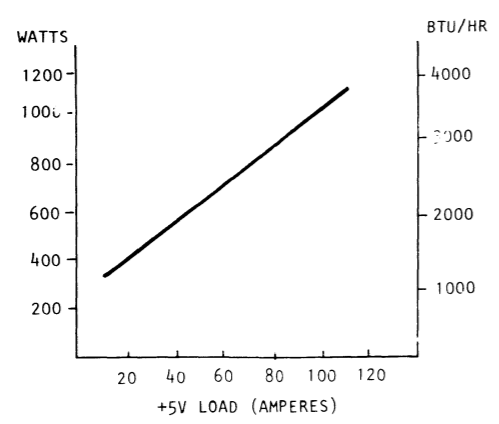


WITHOUT BATTERY BACKUP:

1. THE SUM OF THE LOADS ON -5V AND -5 MEM MUST NOT EXCEED 3.0 AMPS.
2. THE SUM OF THE LOADS ON +12V, +12 MEM, AND +15V MUST NOT EXCEED 12.5 AMPS.
3. THE SUM OF THE LOADS ON +5V AND +5 MEM MUST NOT EXCEED 120 AMPS AND MUST BE AT LEAST 6 AMPS.
4. THE LOADS MUST BE WITHIN THE OPERATING REGION SHOWN BELOW:
5. FOR JAPAN (-1) MODEL, TOTAL OUTPUT POWER NOT TO EXCEED 550 WATTS.

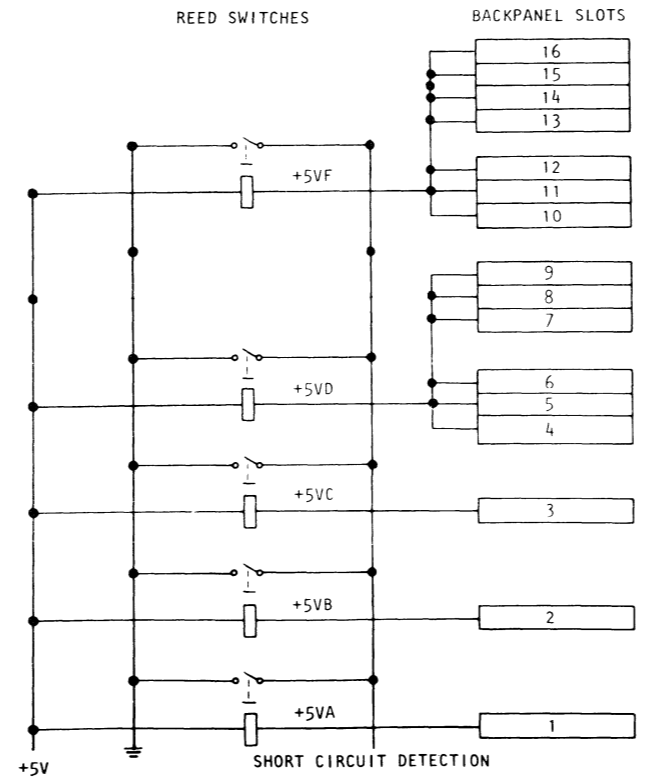


POWER CONSUMPTION vs LOADING



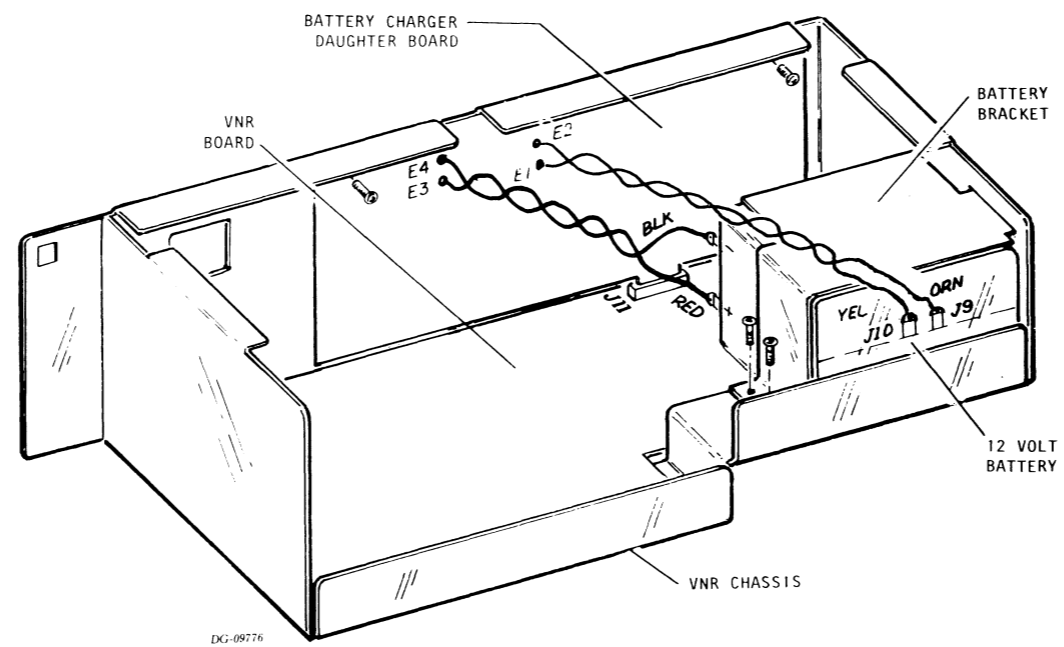
THIS CHART MAY BE USED AS A GUIDELINE OF ACTUAL HEAT OUTPUT OF A SPECIFIC SYSTEM.

SLOT LOADING RESTRICTIONS



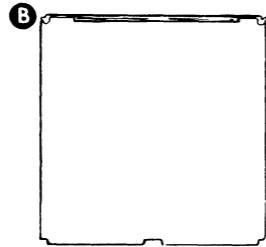
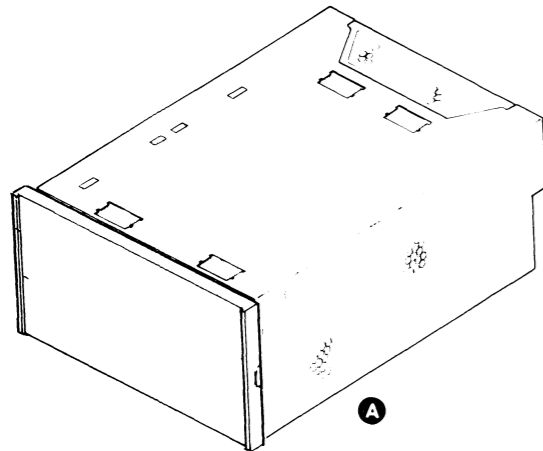
NOTE:
 REED SWITCHES A, B, AND C TRIP AT 22 AMPS,
 REED SWITCHES D AND F TRIP AT 40 AMPS.
 REFERENCE DGC DWG 001-003182.

BATTERY BACKUP



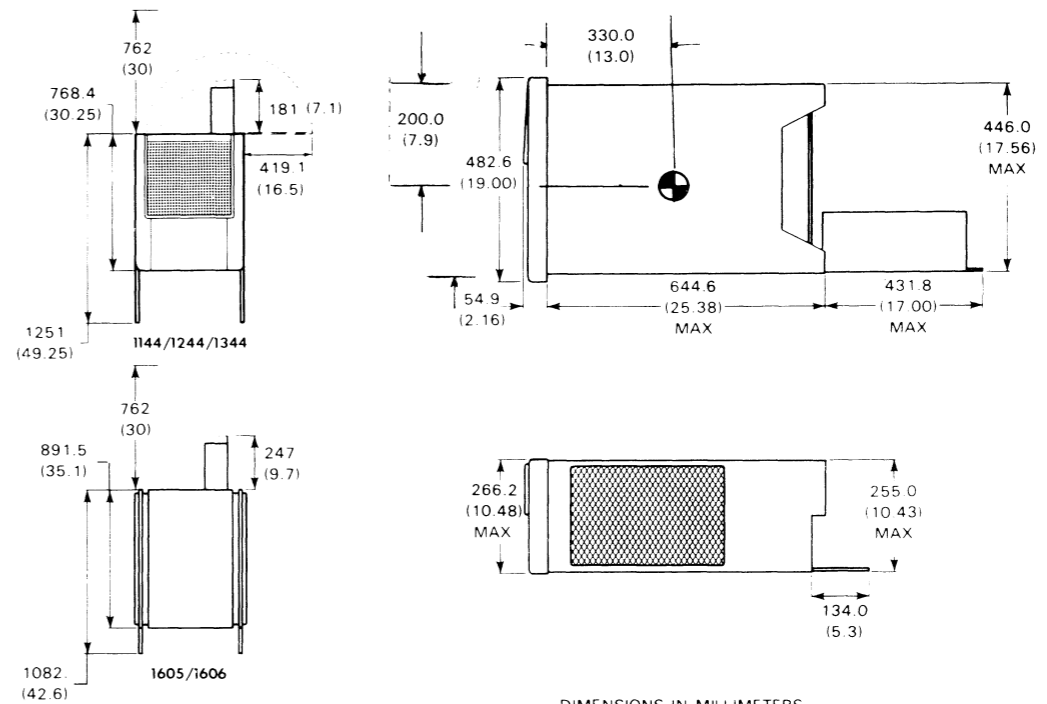
- ASSYS:
- 1) VNR 005-019978
 005-019979
 005-019980
 - 2) BATTERY CHARGER PCB 005-021061
 " KIT 005-020103
- STEPS:
- 1) INSTALL DAUGHTER BOARD IN J11 OR VNR BOARD
 - 2) INSTALL BATTERY AND BRACKET
 - 3) CONNECT 018-1605 WIRE JUMPER KIT AS SHOWN

INSTALLATION SPECIFICATIONS



Component	Mounting Location
A 16-SLOT CHASSIS	CABINET
B CPU	16-SLOT CHASSIS

SERVICE DIMENSIONS



DIMENSIONS IN MILLIMETERS
INCHES IN PARENTHESES FOR REFERENCE

SLOT	ALLOWED (SLOT CHART)	ASSIGNED	+ 5 CURRENT DRAW	+ 12 CURRENT DRAW	-5 CURRENT DRAW	WATTS
16	I/O					
15						
14						
13						
12						
11						
10						
9						
8						
7						
6						
5						
4						
3	I/O					
2	RESERVED					
1	SPU	S/120	5A			
0	POWERSUPPLY					

NOTES:

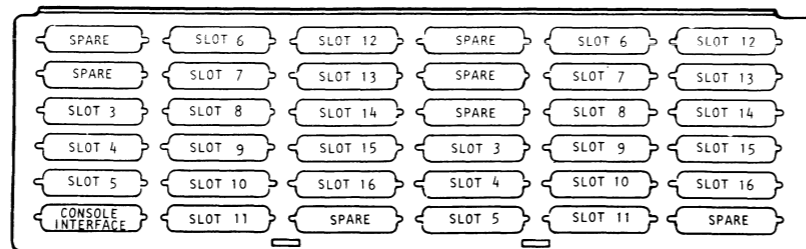
- MAXIMUM 10 I/O BOARDS CONNECTED TO I/O BUS W/O A BUS REPEATER.

TOTAL + 5 CURRENT DRAW _____ A	TOTAL + 12 CURRENT DRAW _____ A	TOTAL -5 CURRENT DRAW _____ A
MAX + 5 CURRENT AVAILABLE 120 A	MAX + 12 CURRENT AVAILABLE 12.5 A	MAX -5 CURRENT AVAILABLE 6 A
+ 5 CURRENT SURPLUS _____ A	+ 12 CURRENT SURPLUS _____ A	-5 CURRENT SURPLUS _____ A
MINIMUM + 5 CURRENT 6 A	MINIMUM + 12 CURRENT 0 A	MINIMUM -5 CURRENT 0 A

*SEE SHEET 6 THIS IDS FOR MORE DETAILS.

-1 (JAPAN) MODEL LIMITED TO 110 AMPS +5V AND 550 WATTS TOTAL POWER OUTPUT.

STANDARD ASSIGNMENT FOR BACKPANEL TO BULKHEAD INTERNAL CABLES



DIMENSIONS:	Width	Depth	Height
Millimeters	482.6	699.5	266.3
Inches	19.00	27.54	10.48

SERVICE CLEARANCES:	Front	Rear	Left or Right
Millimeters	762	762	762
Inches	30	30	30

WEIGHT:	Empty	Fully Loaded
Kilograms	30.6	46.5
Pounds	67.5	102.5

HEAT OUTPUT:	Watts	BTU/hr
	1150	3921.5

OPERATING ENVIRONMENT:

Temperature Range	0 - 55°C (32 - 131°F)
Relative Humidity Range	10 - 90%
Altitude Range	-305 - 2438m (-1000 - 8,000 ft)

STORAGE ENVIRONMENT:

Temperature Range	-40 - 65°C (-40 - 149°F)
Relative Humidity Range	10 - 90%
Altitude Range	0 - 7620m (0 - 25,000 ft)

POWER REQUIREMENTS:

(Domestic)	Voltage 120V $\pm 10\%$ / -15%	
	Hz 47-63	
	Max Amp per Phase	12A
	Phase	1
	Startup Surge per Phase	17 A (typical) for .35 sec
(Export)	Voltage 100 $\pm 10\%$ / 220/240 $\pm 10\%$ / -15%	
	Hz	47-63 / 47-63
	Max Amp per Phase	15A / 8A
	Phase	1 / 1
	Startup Surge per Phase	14 A (typ) for .35 sec / 34 A (typ) for .10 sec

CORDSET

Supply	Part No.
100V	109 - 719
120V	109 - 719
220/240	109 - 708

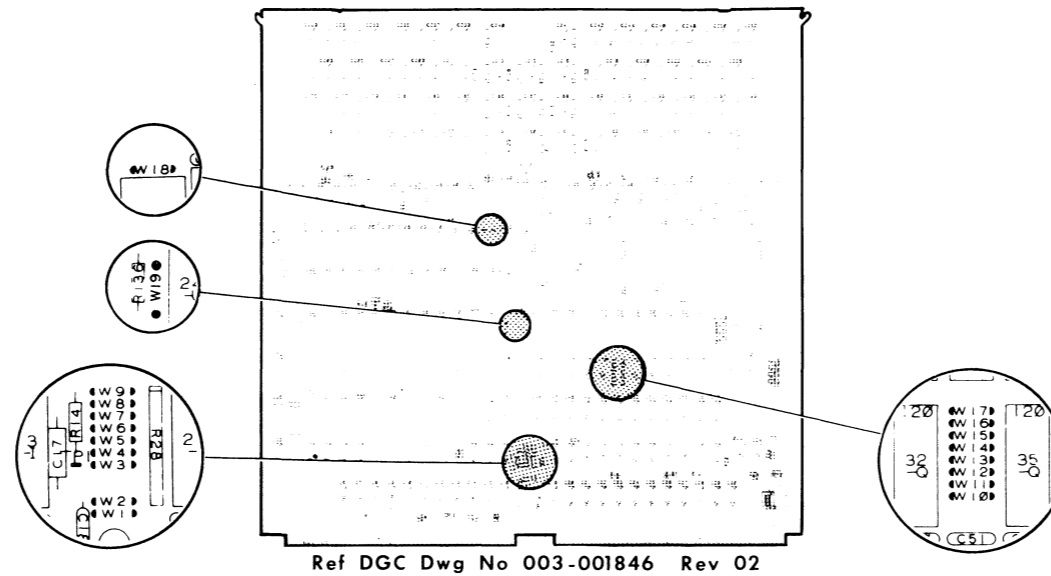
CABLES:

Primary Power	Length	Wall Conn	Cordset Conn	Cordset Connector (CPU)
Domestic	1.8M(6')	5-15R	5-15P	CEE-22
Export	1.8M(6')	6-15R	6-15P	CEE-22 (10 AMP)

FOR PACKING PROCEDURE, SEE 010-000263

Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

TAILORING
SPU JUMPERING
S/120



TYPE OF TRANSMISSION JUMPERS

TYPE OF TRANSMISSION	JUMPERS INSERTED
20MA CURRENT LOOP EIA RS232-C	W1, W2* (BOTH OUT)

* JUMPER 2 IS INSERTED ONLY IF 20mA CURRENT LOOP IS USED AT BAUD RATES OF 600 OR LESS, OTHERWISE IT IS NOT INSERTED.

**DEVICE CODE JUMPERS FOR
AUTOMATIC PROGRAM LOAD**

SELECT THE PROGRAM LOAD DEVICE CODE BY INSTALLING JUMPERS W8, W7, W6, W5, W4, W3 AS FOLLOWS:

JUMPER OUT = 1 JUMPER IN = 0

EXAMPLE JUMPERING FOR DEVICE CODE 278:

W8	W7	W6	W5	W4	W3
IN	OUT	IN	OUT	OUT	OUT

INSERT W9 IF PROGRAM LOADING IS TO BE DONE FROM A PROGRAMMED I/O (LOW SPEED) DEVICE.

DO NOT INSERT W9 IF PROGRAM LOADING IS TO BE DONE FROM A DATA CHANNEL (HIGH SPEED) DEVICE.

BAUD RATE JUMPERS

RATE	W10	W11	W12	W13
50	IN	IN	IN	IN
75	IN	OUT	OUT	OUT
110	IN	IN	OUT	OUT
134.5	OUT	OUT	OUT	OUT
150	OUT	OUT	IN	IN
200	OUT	IN	OUT	OUT
300	OUT	OUT	IN	OUT
600	IN	IN	OUT	IN
1200	IN	OUT	IN	OUT
1800	IN	OUT	IN	IN
2000	OUT	IN	IN	IN
2400	OUT	IN	OUT	IN
4800	OUT	IN	IN	OUT
9600	IN	OUT	OUT	IN
19200	IN	IN	IN	OUT
38400	OUT	OUT	OUT	IN

50, 75, 110, 134.5 BAUD RATES HAVE 2 STOP BITS, ALL OTHER BAUD RATES HAVE 1 STOP BIT. ALL BAUD RATES HAVE NO PARITY.

PIT RATE JUMPERS

RATE	W14	W15
1kHz	OUT	OUT
10kHz	IN	OUT
100kHz	OUT	IN
1MHz	IN	IN

BREAK KEY DISABLE

JUMPER W16 IS INSERTED TO DISABLE BREAK KEY DETECTION, OTHERWISE BREAK DETECTION IS ENABLED.

HALT DISPATCH DISABLE

JUMPER W17 IS INSERTED TO DISABLE DISPATCH TO VIRTUAL CONSOLE UPON EXECUTION OF HALT INSTRUCTION, OTHERWISE DISPATCH IS ENABLED.

SYSTEM CLOCK ENABLE

JUMPER W18 IS INSERTED TO ENABLE THE SYSTEM TIMING CLOCK. THIS JUMPER SHOULD ONLY BE REMOVED FOR ATE TESTING PURPOSES.

HYPERSPACE/MAP RAM ENABLE

JUMPER W19 IS INSERTED TO ENABLE HYPERSPACE/MAP RAM. THIS JUMPER SHOULD ONLY BE REMOVED FOR ATE TESTING PURPOSES.

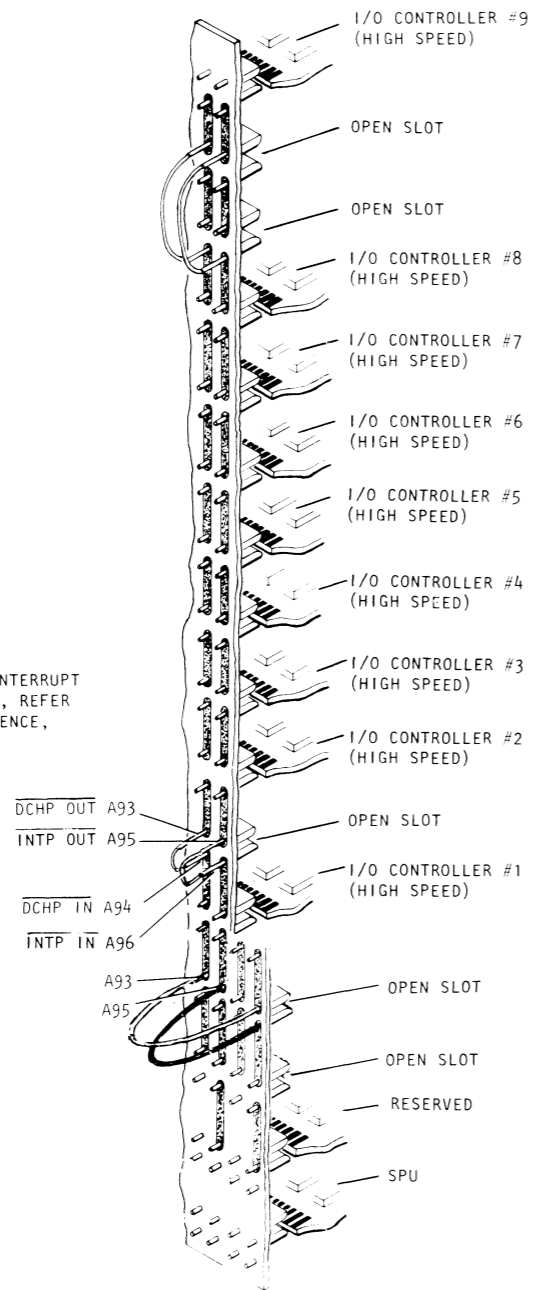
W18 AND W19 ARE ALWAYS INSERTED.

SPU/MEMORY LOADS

VOLTAGE	DESCRIPTION	CURRENT DRAW
+5V	SYSTEM WITHOUT BATTERY BACKUP	5.0A
+5V	SYSTEM WITH BATTERY BACKUP	5.0A
+5V MEM		3.0A
+12V		0.02A
-12V		0.02A

TAILORING (CONT) BACKPANEL JUMPERING

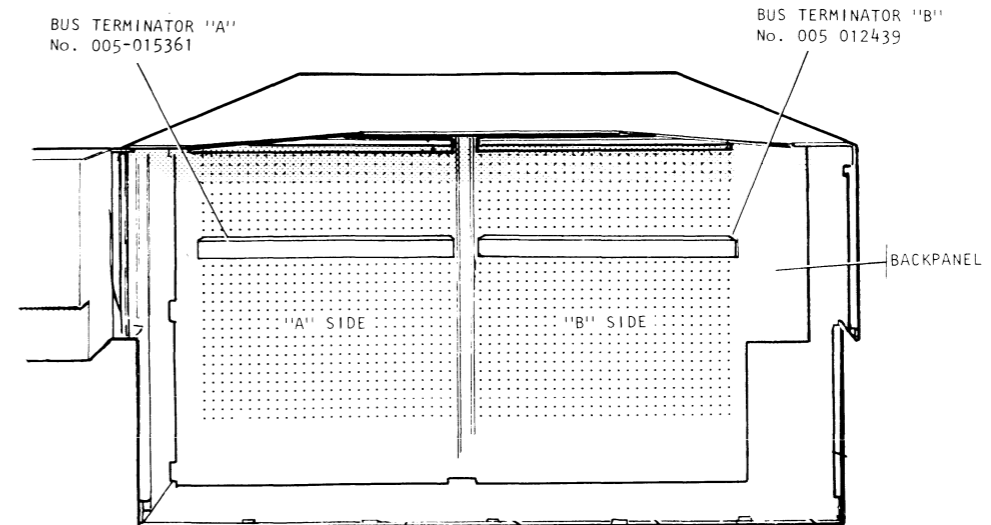
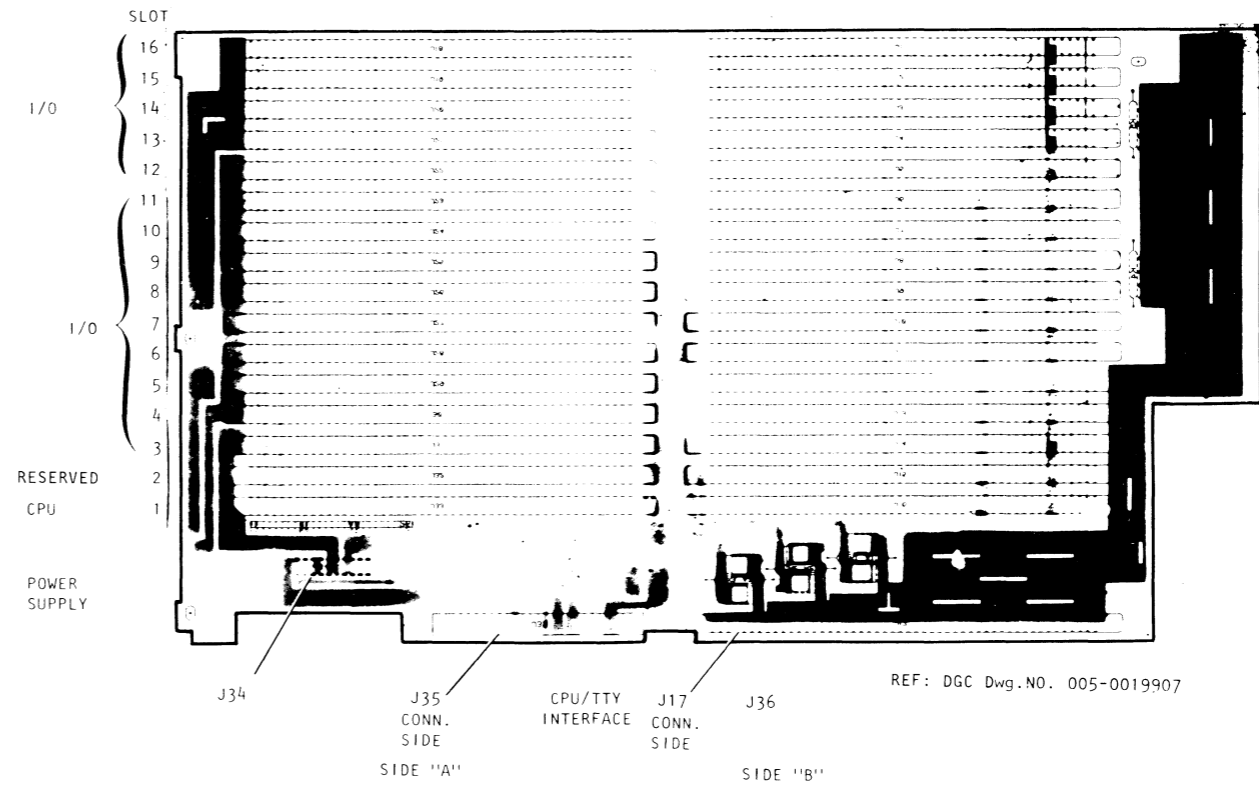
FOR MORE INFORMATION CONCERNING INTERRUPT AND DATA CHANNEL PRIORITY SCHEMES, REFER TO THE INTERFACE DESIGNER'S REFERENCE, NOVA AND ECLIPSE LINE COMPUTERS, DG NO. 014-000629



DG-05722

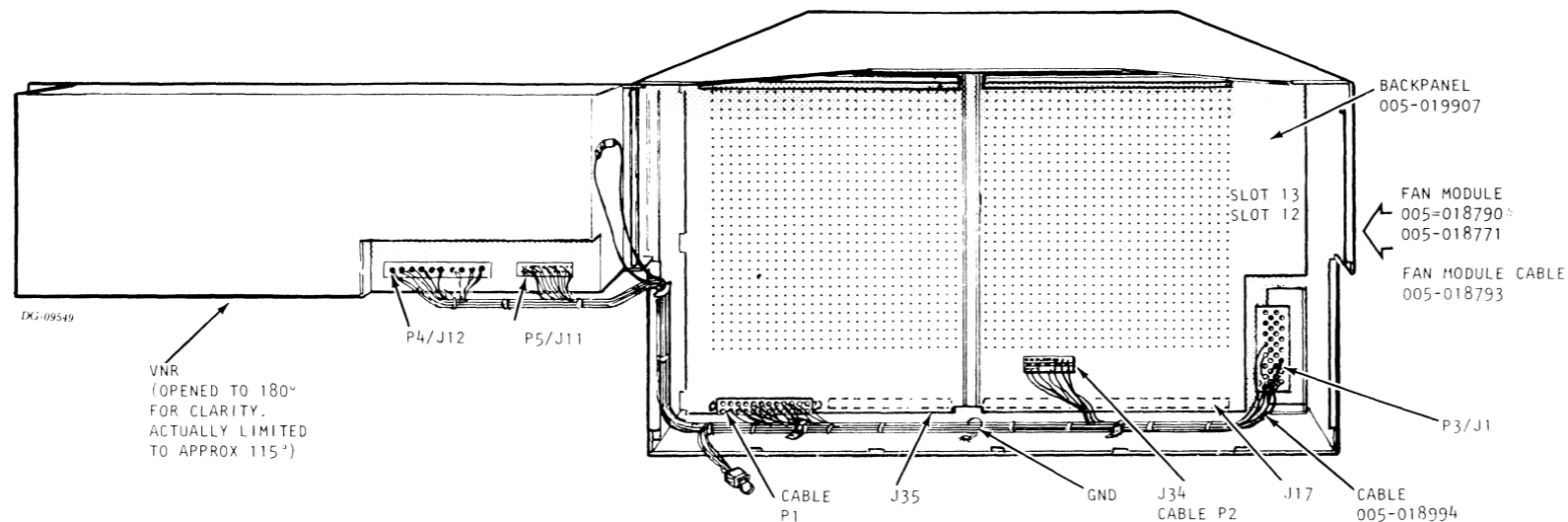
CONNECT A JUMPER BETWEEN PINS A93 (INPUT) AND A99 (GND) AND A JUMPER BETWEEN PINS A95 (DCHP OUT) AND A100 (GND) OF THE SLOT IMMEDIATELY BELOW THE LOWEST NUMBERED CHASSIS SLOT THAT CONTAINS AN I/O BOARD.

INTERNAL CABLING BACKPANEL CONNECTORS



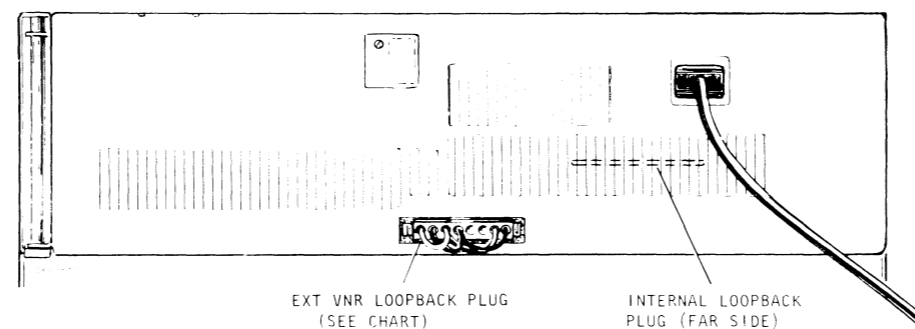
INTERNAL CABLING

BACKPANEL, EXPANSION CHASSIS



*FAN MODULE 005-018790
(INDICATES 100V MODULE
(100V FAN 115-000287);
FAN MODULE 005-018771
INDICATES 120, 220/240V
MODULE (120/240 FAN
115-000163).

VNR CHASSIS



LINE CORD
109-000719 (100, 120V)
109-000703 (220/240V)

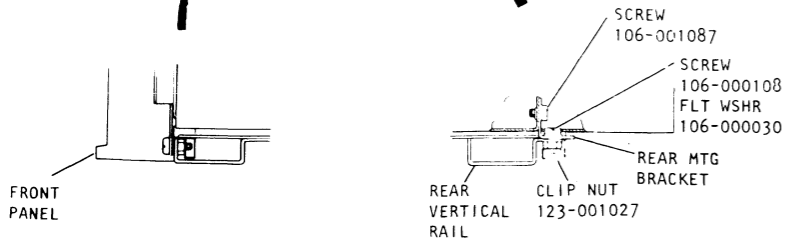
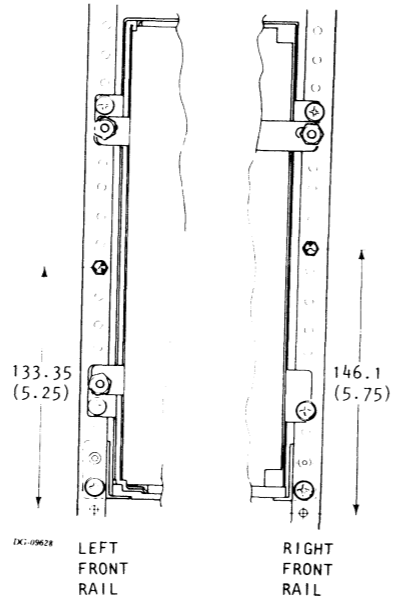
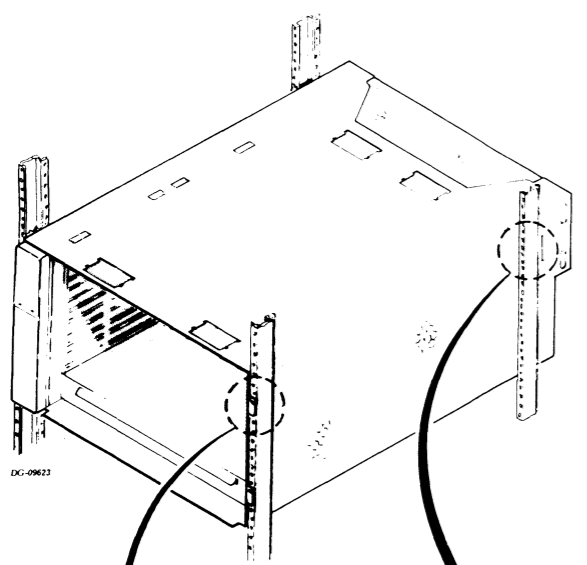
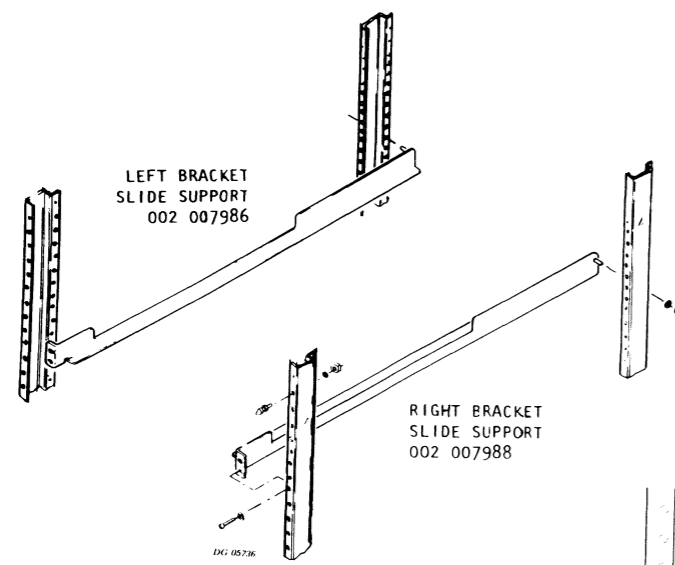
SUPPLY ASSEMBLIES IN THIS
OULD BE SERVICED ONLY
BY QUALIFIED PERSONNEL WITH PROPER
EQUIPMENT.

AC VOLTS IN	EXTERNAL LOOPBACK PLUG	INTERNAL LOOPBACK PLUG	VNR ASSY. NO.
100 V	005-018774	005-018772	005-019979
120 V	005-018774	005-018772	005-019978
220/240V	005-018986	005-018773	005-019990

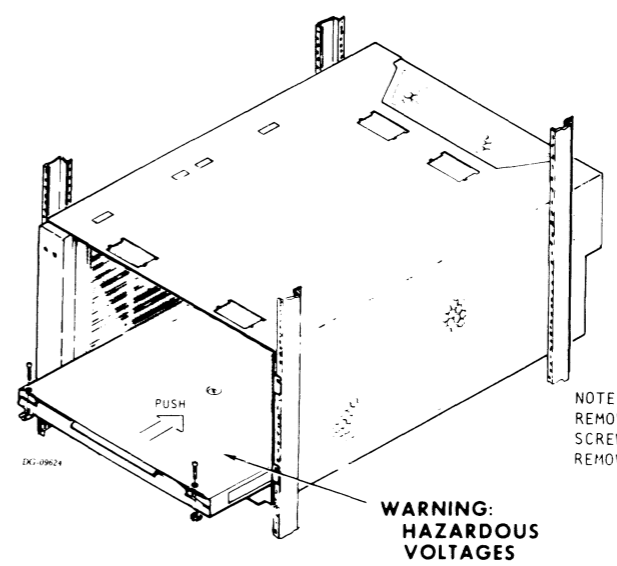
NOTE: TO INSURE PROPER SYSTEM, VERIFY THAT INTERNAL AND EXTERNAL LOOPBACK PLUG VOLTAGE LABELS MATCH THE SYSTEM OPERATING VOLTAGE.

CABINET MOUNTING

HARDWARE MOUNTING KIT 005-019199

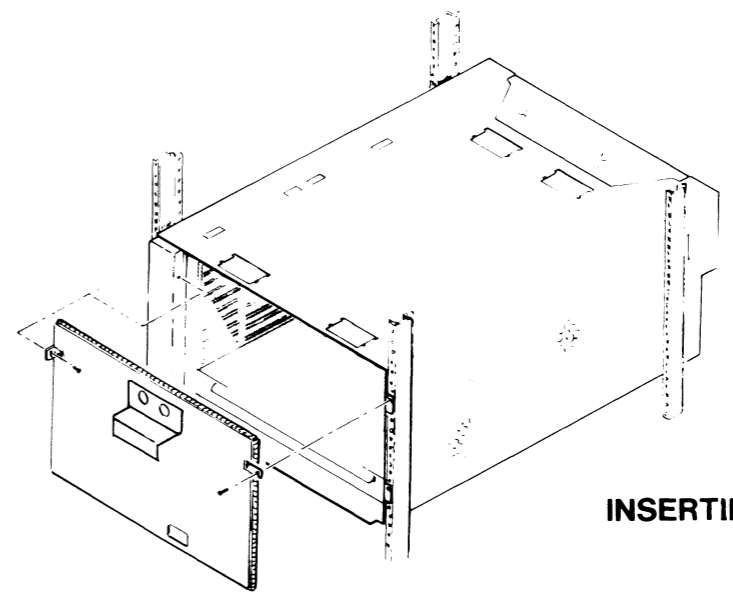


INSERTING POWER SUPPLY

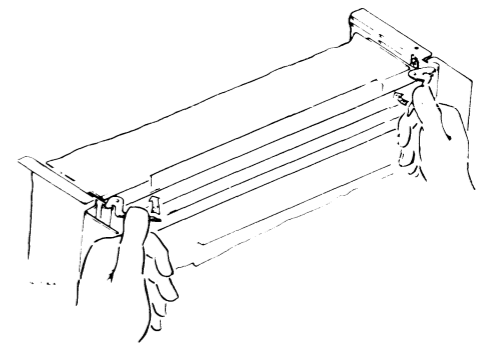


NOTE: REMOVE GROUND STRAP AND MOUNTING SCREWS ATTACHED TO CHASSIS BEFORE REMOVING POWER SUPPLY.

INSTALLING RFI SHIELD



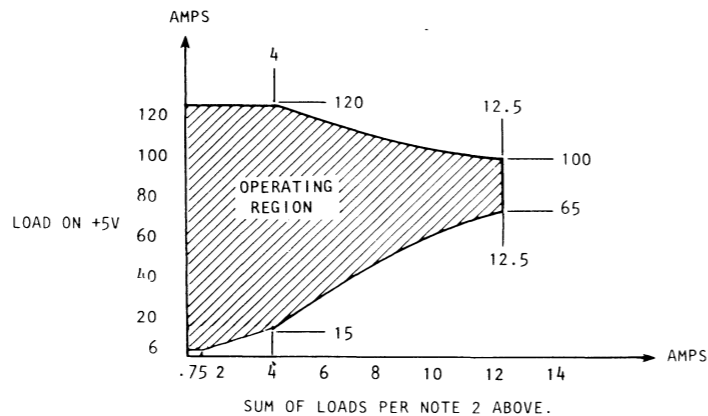
INSERTING PC BOARD



16-SLOT CHASSIS LOAD BALANCING RULES

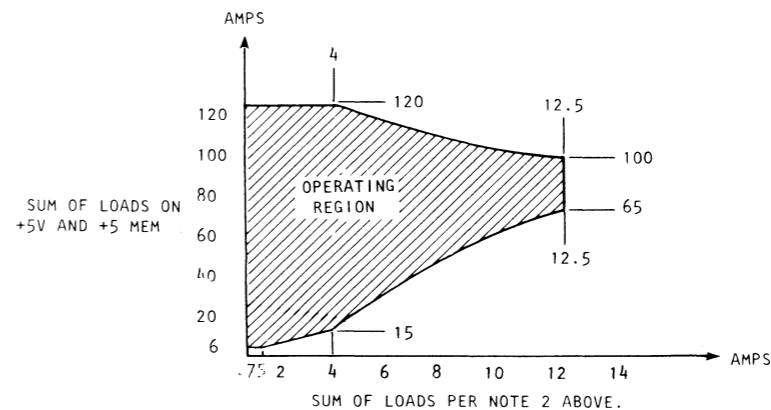
WITH BATTERY BACKUP:

1. THE LOAD OF -5V MUST NOT EXCEED 3.0 AMPS.
2. THE SUM OF THE LOADS ON +12V, +12 MEM, +15V AND 0.55 (SUM OF CURRENT FROM +5 MEM AND -5 MEM MUST NOT EXCEED 12.5 AMPS.)
3. THE LOAD ON -5 MEM MUST NOT EXCEED 0.3 AMPS.
4. THE LOAD ON +5 MEM MUST NOT EXCEED 4.5 AMPS AND MUST BE AT LEAST 0.25 AMPS
5. THE LOAD ON +5V MUST NOT EXCEED 120 AMPS AND MUST BE AT LEAST 6 AMPS.
6. THE LOADS MUST BE WITHIN THE OPERATING REGION SHOWN BELOW:
7. FOR JAPAN (-1) MODEL, TOTAL OUTPUT POWER NOT TO EXCEED 550 WATTS.

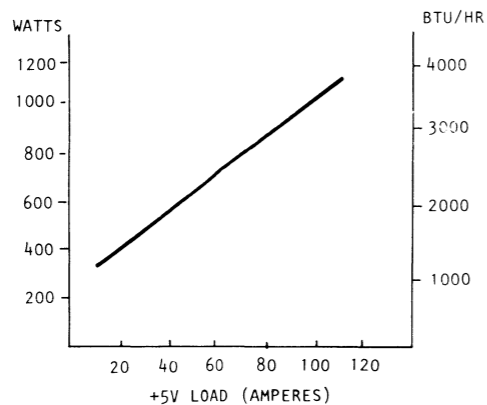


WITHOUT BATTERY BACKUP:

1. THE SUM OF THE LOADS ON -5V AND -5 MEM MUST NOT EXCEED 3.0 AMPS.
2. THE SUM OF THE LOADS ON +12V, +12 MEM, AND +15V MUST NOT EXCEED 12.5 AMPS.
3. THE SUM OF THE LOADS ON +5V AND +5 MEM MUST NOT EXCEED 120 AMPS AND MUST BE AT LEAST 6 AMPS.
4. THE LOADS MUST BE WITHIN THE OPERATING REGION SHOWN BELOW:
5. FOR JAPAN (-1) MODEL, TOTAL OUTPUT POWER NOT TO EXCEED 550 WATTS.

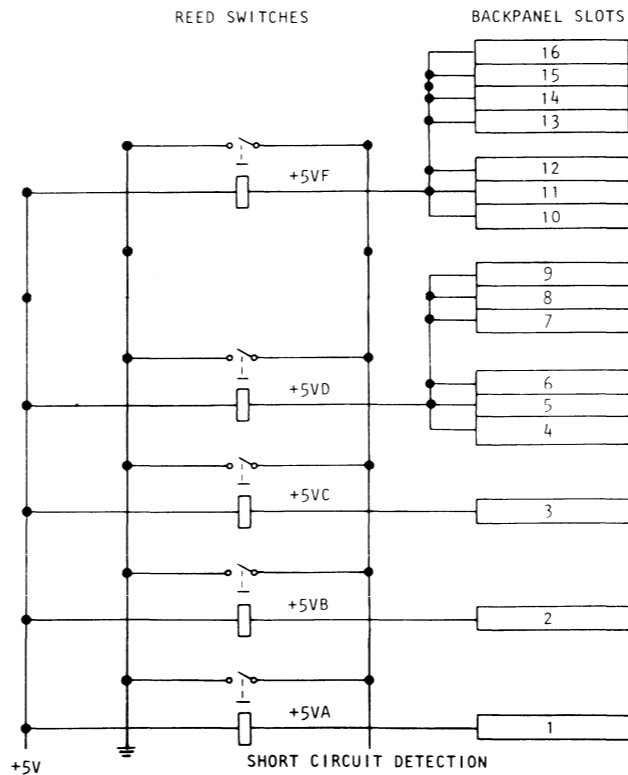


POWER CONSUMPTION vs LOADING



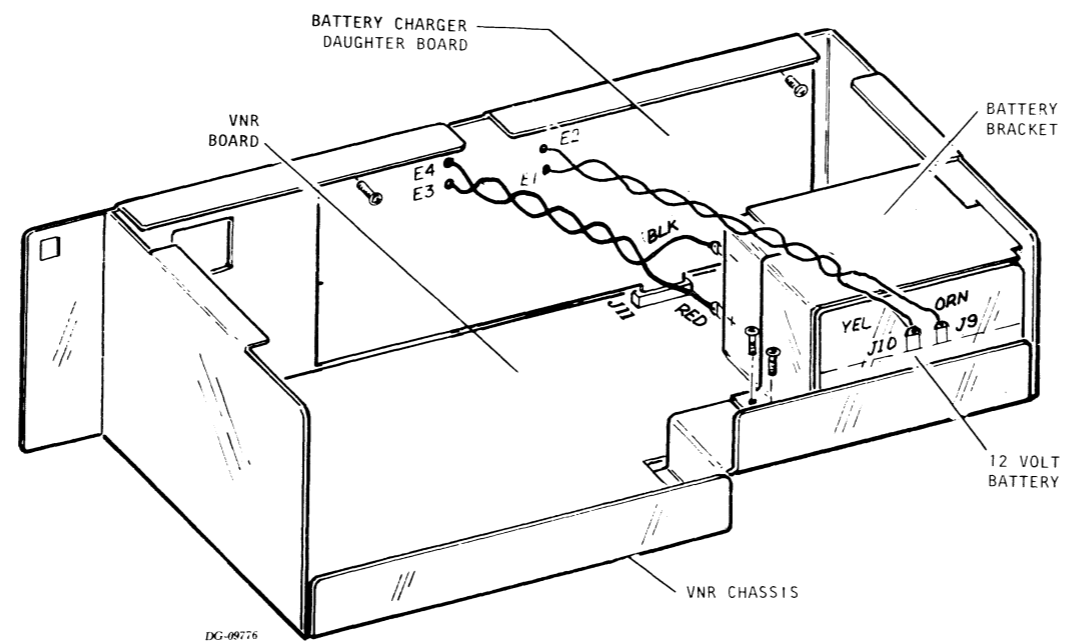
THIS CHART MAY BE USED AS A GUIDELINE OF ACTUAL HEAT OUTPUT OF A SPECIFIC SYSTEM.

SLOT LOADING RESTRICTIONS



NOTE:
 REED SWITCHES A, B, AND C TRIP AT 22 AMPS,
 REED SWITCHES D AND F TRIP AT 60 AMPS.
 REFERENCE DGC DWG 001-003182.

BATTERY BACKUP

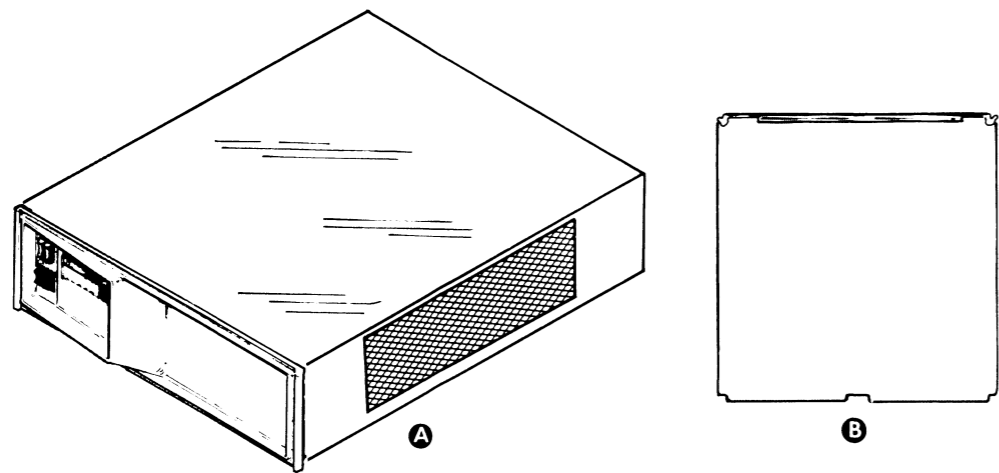


- 1) VNR 005-019978
 005-019979
 005-019980

- 2) BATTERY CHARGER PCB 005-021061
 " KIT 005-020103

- 1) INSTALL DAUGHTER BOARD IN J11 OR VNR BOARD
 2) INSTALL BATTERY AND BRACKET
 3) CONNECT 018-1605 WIRE JUMPER KIT AS SHOWN

INSTALLATION SPECIFICATIONS



Component	Mounting Location
A 5-SLOT CHASSIS	CABINET
B SPU	5-SLOT CHASSIS

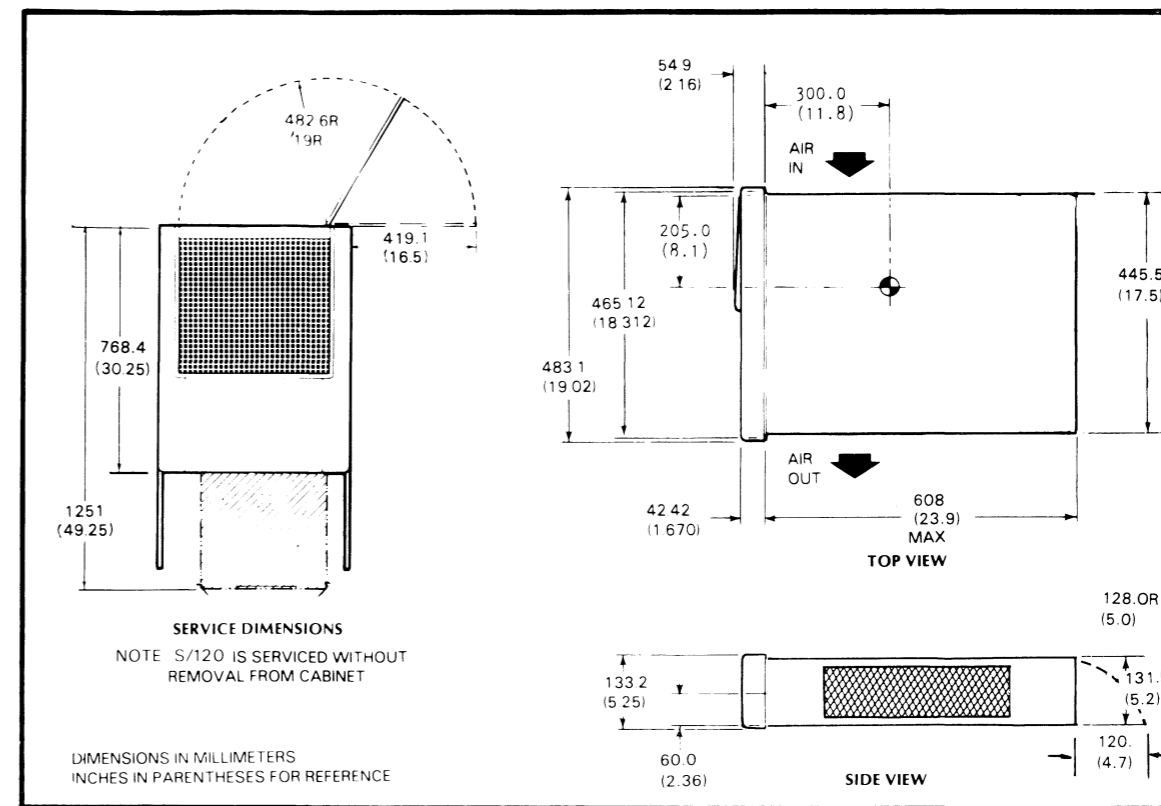
SLOT ASSIGNMENTS

Data Channel Speeds Available		Standard High Speed	<input type="checkbox"/> +5V Current Draw
Slot	Allowed (Slot Chart)	Assigned	
5	I/O		
4	I/O		
3	I/O		
2	I/O		NOTE 2
1	SPU	S/120	5A
0	POWER SUPPLY		
Total +5V Current draw			
Max +5 Current Available			40A
+5 Current Surplus			

POWER SUPPLY NOTES

- MAX. AVAILABLE +5V 40A SEE NOTE 8
- MAX. AVAILABLE +12V 5.0A SEE NOTE 9
- MAX. AVAILABLE -5V 2.0
- MAX. AVAILABLE +5 MEM 5.0A
- MAX. AVAILABLE +12 MEM 2.3A SEE NOTE 9
- MAX. AVAILABLE -5 MEM .05A
- MAX. AVAILABLE 12V .025A
- LOADING ON +5V MUST BE DIVIDED SO THAT SLOT 1 DRAWS LESS THAN 22 AMPERES, SLOTS 2 AND 3 DRAW LESS THAN 22 AMPERES, AND SLOTS 4 AND 5 DRAW LESS THAN 22 AMPERES.
- THE SUM OF +12V AND +12 MEM LOAD MUST BE LESS THAN 5A.
- THE MINIMUM +5V CURRENT REQUIRED FOR PROPER OPERATION IS 5A.

Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. As temporarily permitted by regulation it has not been tested for compliance with the limits for Class A computing devices pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference. Operation of this equipment in a residential area is likely to cause interference, in which case the user, at his own expense, will be required to take whatever measures may be required to correct the interference.



SPECIFICATIONS

	NOVA 4 5-slot		
DIMENSIONS:	Width	Depth	Height
Millimeters	483.1	662.9	133.2
Inches	19.02	(26.1)	5.25
SERVICE CLEARANCES:	Front	Rear	
Millimeters	914.4	914.4	
Inches	36	36	
WEIGHT:	Empty	Fully Loaded	
Kilograms	17.23	21.77	
Pounds	38	48	
OPERATING ENVIRONMENT:			
Temperature (max)	55 C (131 F) 60/50Hz		
Relative Humidity (max)	45 C (113 F) 50Hz		
Altitude (max)	90 3084m (10,000')		

HEAT OUTPUT:	Watts	BTU/hr
	600	2050
POWER REQUIREMENTS:		
	(Domestic)	(Japan)
Voltage	102-132	90-132
Hz	47-63	47-63
Max Amp per Phase	5.0A	5.5
Phase	1	1
Surge	30A, 50mS	25A, 50MS
	(Export)	
Voltage	187-264	
Hz	47-63	
Max Amp per Phase	2.5	
Phase	1	
Surge	30A, 50mS	

CABLES:

External I/O Bus Cable 15.3m (50') max

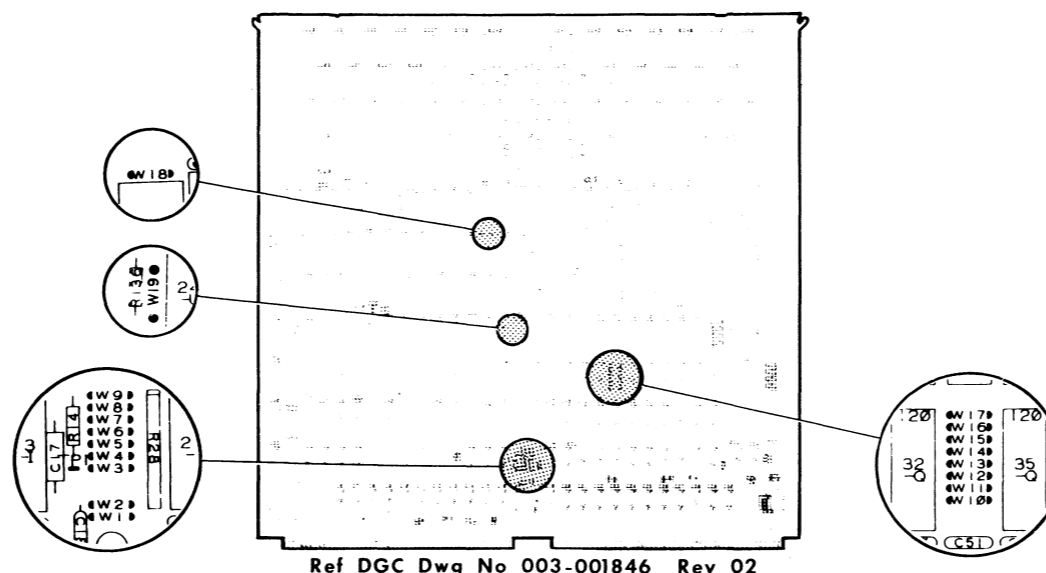
Supply	Part No
100V	109 000719
120V	109 000719
220V	109 000681
240V	109 000681

IN DG.C. RACK

FOR PACKING PROCEDURE, SEE 010-000262/263

TAILORING SPU JUMPERING

S/120



Ref DGC Dwg No 003-001846 Rev 02

TYPE OF TRANSMISSION JUMPERS

TYPE OF TRANSMISSION	JUMPERS INSERTED
20mA CURRENT LOOP EIA RS232-C	W1, W2* (BOTH OUT)

* JUMPER 2 IS INSERTED ONLY IF 20mA CURRENT LOOP IS USED AT BAUD RATES OF 600 OR LESS, OTHERWISE IT IS NOT INSERTED.

DEVICE CODE JUMPERS FOR AUTOMATIC PROGRAM LOAD

SELECT THE PROGRAM LOAD DEVICE CODE BY INSTALLING JUMPERS W8, W7, W6, W5, W4, W3 AS FOLLOWS:

JUMPER OUT = 1 JUMPER IN = 0

EXAMPLE JUMPERING FOR DEVICE CODE 278:

W8	W7	W6	W5	W4	W3
IN	OUT	IN	OUT	OUT	OUT

W9 IS NOT INSERTED IF THE PROGRAM LOAD DEVICE IS A HIGH SPEED DEVICE, OTHERWISE IT IS INSERTED.

BAUD RATE JUMPERS

RATE	W10	W11	W12	W13
50	IN	IN	IN	IN
75	IN	OUT	OUT	OUT
110	IN	IN	OUT	OUT
134.5	OUT	OUT	OUT	OUT
150	OUT	OUT	IN	IN
200	OUT	IN	OUT	OUT
300	OUT	OUT	IN	OUT
600	IN	IN	OUT	IN
1200	IN	OUT	IN	OUT
1800	IN	OUT	IN	IN
2000	OUT	IN	IN	IN
2400	OUT	IN	OUT	IN
4800	OUT	IN	IN	OUT
9600	IN	OUT	OUT	IN
19200	IN	IN	IN	OUT
38400	OUT	OUT	OUT	IN

50, 75, 110, 134.5 BAUD RATES HAVE 2 STOP BITS. ALL OTHER BAUD RATES HAVE 1 STOP BIT. ALL BAUD RATES HAVE NO PARITY.

PIT RATE JUMPERS

RATE	W14	W15
1kHz	OUT	OUT
10kHz	IN	OUT
100kHz	OUT	IN
1MHz	IN	IN

BREAK KEY DISABLE

JUMPER W16 IS INSERTED TO DISABLE BREAK KEY DETECTION, OTHERWISE BREAK DETECTION IS ENABLED.

HALT DISPATCH DISABLE

JUMPER W17 IS INSERTED TO DISABLE DISPATCH TO VIRTUAL CONSOLE UPON EXECUTION OF HALT INSTRUCTION, OTHERWISE DISPATCH IS ENABLED.

SYSTEM CLOCK ENABLE

JUMPER W18 IS INSERTED TO ENABLE THE SYSTEM TIMING CLOCK. THIS JUMPER SHOULD ONLY BE REMOVED FOR ATE TESTING PURPOSES.

HYPERSPACE/MAP RAM ENABLE

JUMPER W19 IS INSERTED TO ENABLE HYPERSPACE/MAP RAM. THIS JUMPER SHOULD ONLY BE REMOVED FOR ATE TESTING PURPOSES.

W18 AND W19 ARE ALWAYS INSERTED.

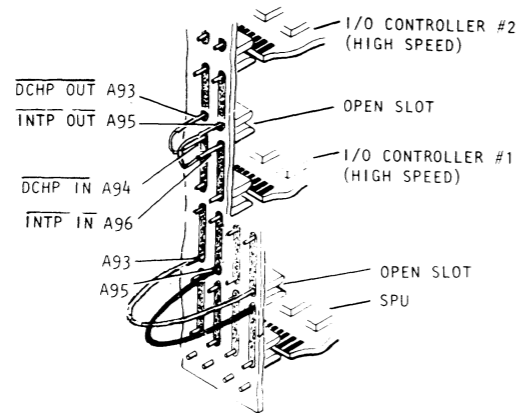
SPU/MEMORY LOADS

VOLTAGE	DESCRIPTION	CURRENT DRAW
+5V	SYSTEM WITH BATTERY BACKUP SYSTEM WITHOUT BATTERY BACKUP	5.0A
+5V		5.0A
+12V		0.2A
-12V		0.2A
+5V MEM		3.0A

TAILORING (CONT)
BACKPANEL JUMPERING

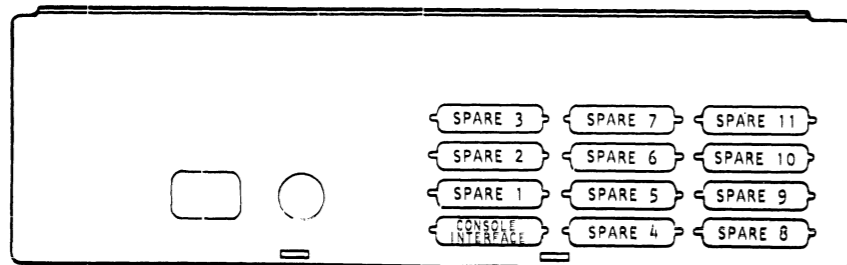
FOR MORE INFORMATION CONCERNING INTERRUPT AND DATA CHANNEL PRIORITY SCHEMES, REFER TO THE INTERFACE DESIGNER'S REFERENCE, NOVA AND ECLIPSE LINE COMPUTERS, DG No. 014-000629.

TYPICAL CONFIGURATION - A SIDE



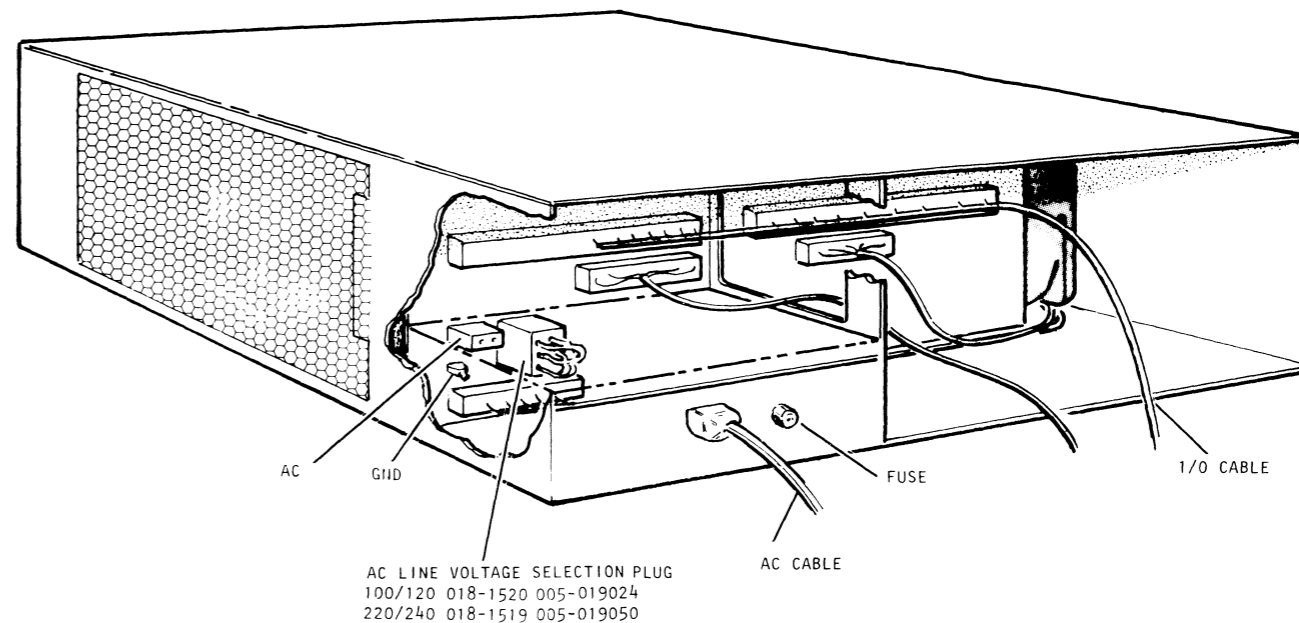
CONNECT A JUMPER BETWEEN PINS A93 (INPUT) AND A99 (GND) AND A JUMPER BETWEEN PINS A95 (DCHP OUT) AND A100 (GND) OF THE SLOT IMMEDIATELY BELOW THE LOWEST NUMBERED CHASSIS SLOT THAT CONTAINS AN I/O BOARD.

5 SLOT CHASSIS BULKHEAD



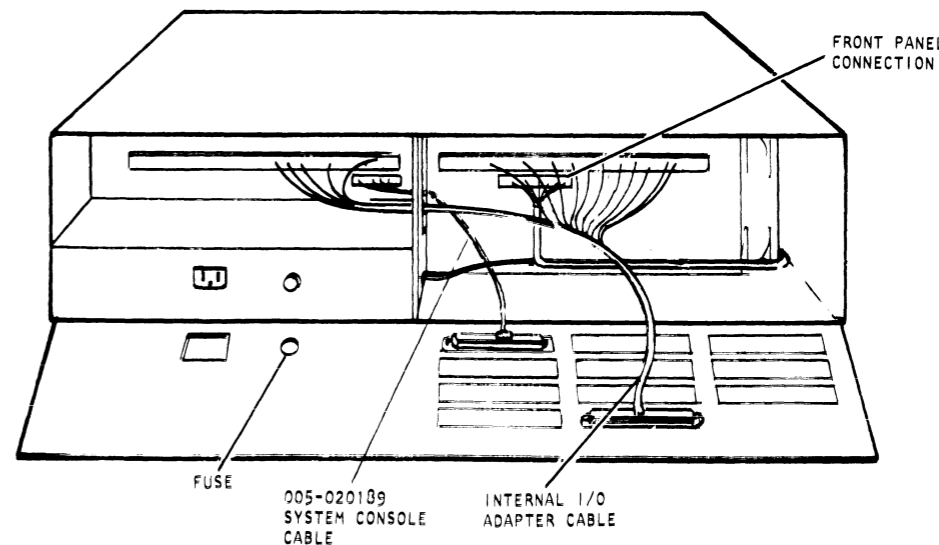
CABLING NOTE:
SYSTEM CONSOLE CABLE CONNECTS FROM BACKPANEL TO BULKHEAD POSITION MARKED "CONSOLE INTERFACE". I/O BOARD CABLES CONNECT FROM BACKPANEL TO BULKHEAD POSITIONS MARKED SPARE 1 THRU SPARE 11.

INTERNAL CABLING
BACKPANEL CONNECTORS



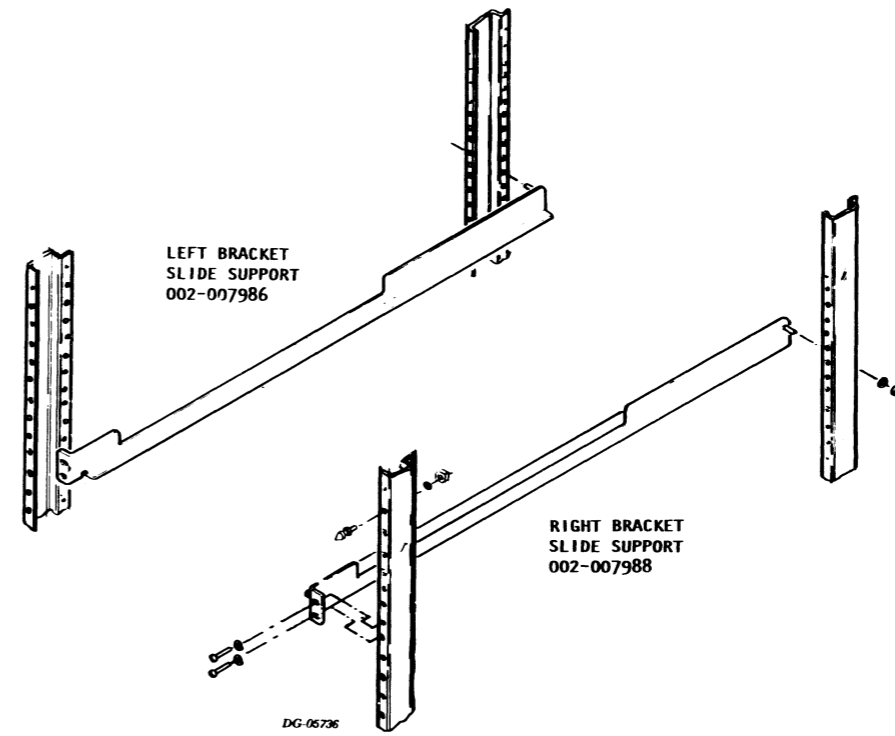
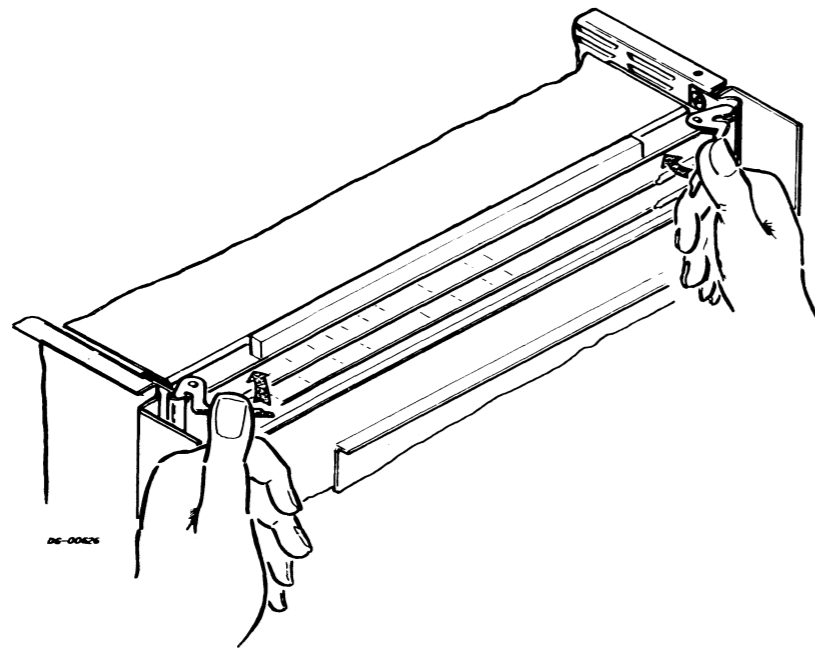
POWER LOADING RULE:

LOADING ON +5V MUST BE DIVIDED SO THAT SLOT 1 DRAWS LESS THAN 22 AMPERES, SLOTS 3, 4 AND 5 DRAW LESS THAN 33 22 AMPERES, AND SLOTS 4 AND 5 DRAW LESS THAN 22 AMPERES, THE TOTAL LOAD IS LESS THAN 40 AMPERES.

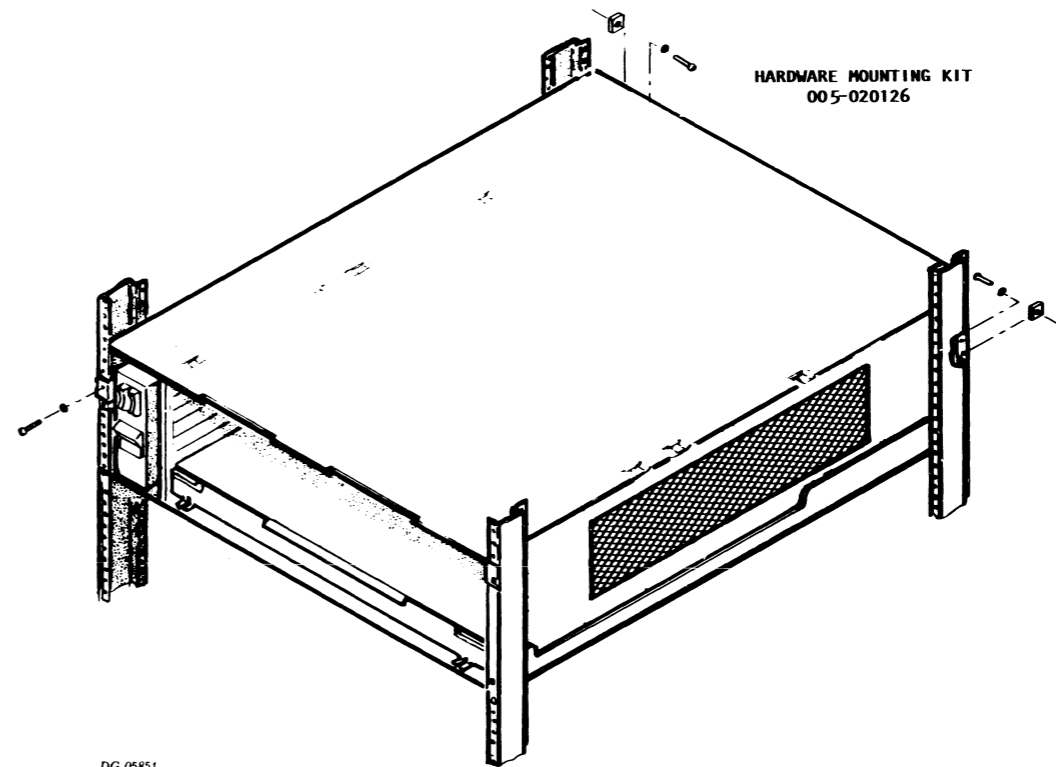
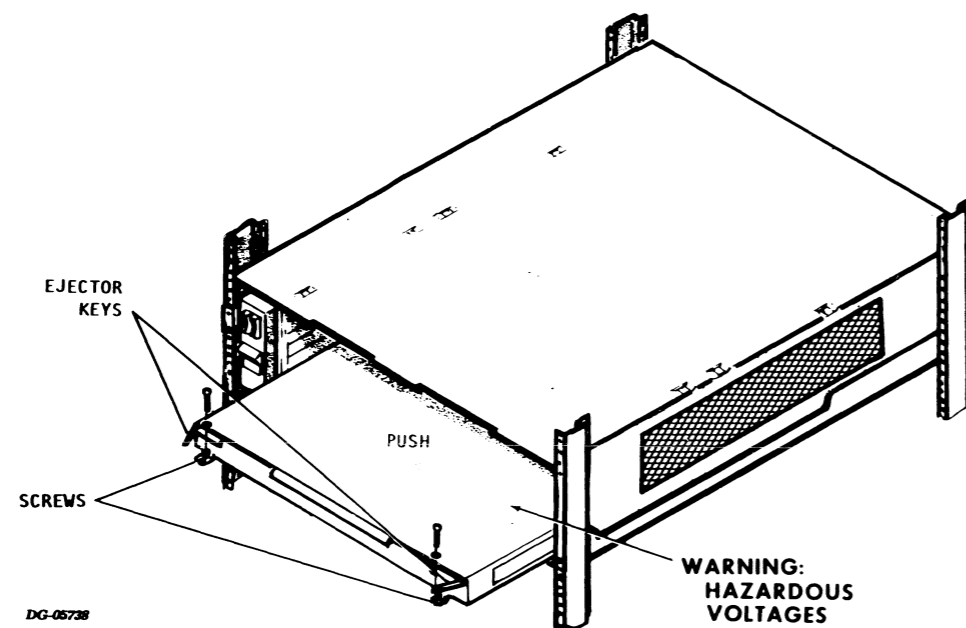


CABINET MOUNTING

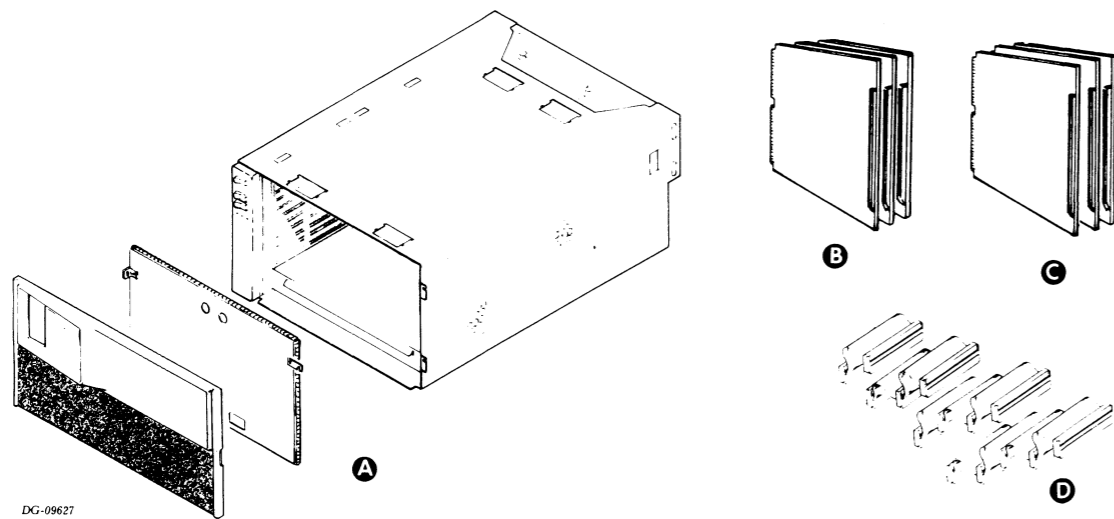
INSERTING PC BOARD



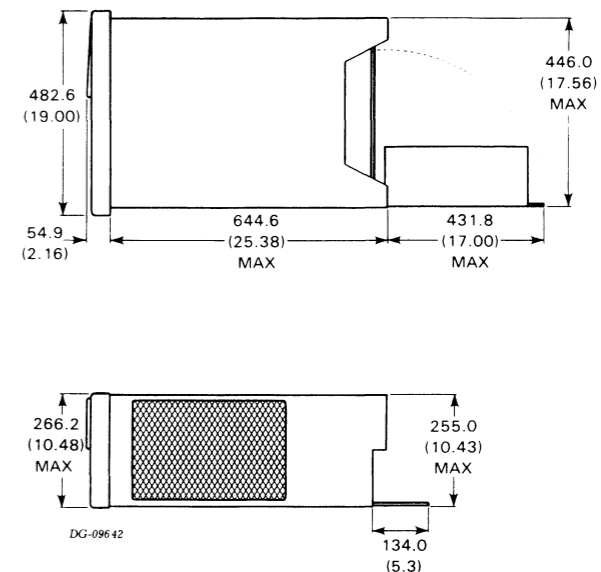
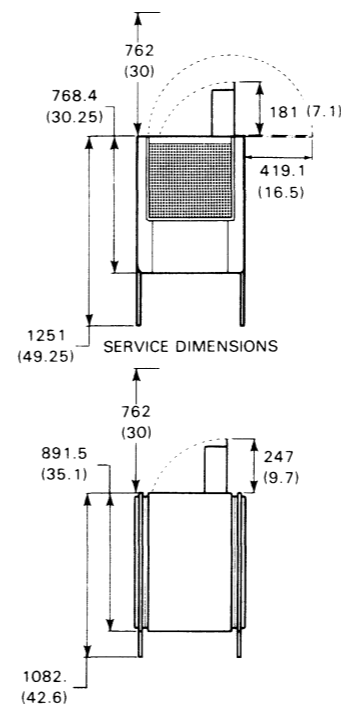
INSERTING POWER SUPPLY PCB



INSTALLATION SPECIFICATIONS S/280 CPU CHASSIS



DG-09627



DG-09642

DIMENSIONS IN MILLIMETERS
INCHES IN PARENTHESES FOR REFERENCE

MAJOR COMPONENT

ITEM	COMPONENT	MOUNTING LOCATION	005-	NOTES
A	CPU CHASSIS	CABINET		
B	MEMORY BOARDS	CPU CHASSIS SLOTS 8-10		3 BOARDS MAX UP TO 2MB
	512KB	SLOTS 8-10	18660	512KB, 1MB, 2MB PER BD.
	1MB	SLOTS 8-10	18666	
C	2MB	SLOTS 8-10	18664	
	PROCESSOR BOARDS	CPU CHASSIS		2 OR 3 BOARDS
	CPU	SLOT 6	18621	
	MCU/IOU OR	SLOT 7	18625	
	MCU/IOU WITH BMC	SLOT 7	18623	
	FPU (OPTIONAL)	SLOT 5	18761	

CABLE

ITEM	CABLE	CONNECTING	NOTES
D	BMC	BMC AND CONTROLLERS	NOT REQUIRED IF NO BMC CONTROLLERS ARE IN SYSTEM. OTHERWISE 2 CABLES REQUIRED. SIZE DEPENDS ON # OF CONTROLLERS (1-4) IN SYSTEM

DIMENSIONS:	Width	Depth	Height
Millimeters	482.6	699.5	266.3
Inches	19.00	27.54	10.48

SERVICE CLEARANCES:	Front	Rear	Left or Right
Millimeters	762	762	762
Inches	30	30	30

WEIGHT:	Empty	Fully Loaded
Kilograms	30.6	46.5
Pounds	67.5	102.5

HEAT OUTPUT:	Watts	BTU/hr
	1150	3921.5

OPERATING ENVIRONMENT:	Value
Temperature Range	0 - 55°C (32 - 131°F)
Relative Humidity Range	10 - 90%
Altitude Range	-305 - 2438m (-1000 - 8,000 ft)

STORAGE ENVIRONMENT:	Value
Temperature Range	-40 - 65°C (-40 - 149°F)
Relative Humidity Range	10 - 90%
Altitude Range	0 - 7620m (0 - 25,000 ft)

POWER REQUIREMENTS:

(Domestic)	Value
Voltage	120V (+10%, -15%)
Hz	47 - 63
Max Amp per Phase	12A
Phase	1
Startup Surge per Phase	17 A (typical) for .35 sec
(Export)	Value
Voltage	100 ± 10
Hz	47-63
Max Amp per Phase	15A
Phase	1
Startup Surge per Phase	14 A (typ) for .35 sec
	34 A (typ) for .10 sec

LINE CORDS	Supply	Part No.
	100V	109 - 719
	120V	109 - 719
	220/240	109 - 708

CABLES:	Length	Conn	Mating Conn
Primary Power			
Domestic	1.8M(6')	5-15P	5-15R
Export	1.8M(6')	6-15P	6-15R

Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

NOTE:
THIS COMPONENT IS MEANT TO BE INSTALLED
IN A CABINET WITH REAR ACCESS.

POWER CONFIGURATION RULES

SLOT	ALLOWED SLOT CHART	ASSIGNED	CURRENT DRAW (AMPS)						WATTS
			+5V	+12V	-5V	+5V MEM	+12V MEM	-5V MEM	
20	-5 BOOSTER OR I/O CONTROLLER								
19	I/O CONTROLLER								
18	I/O CONTROLLER								
17	I/O CONTROLLER								
16	I/O CONTROLLER								
15	I/O CONTROLLER								
14	I/O CONTROLLER								
13	I/O CONTROLLER								
12	I/O CONTROLLER								
11	I/O CONTROLLER								
10	MEM ONLY								
9	MEM ONLY								
8	MEM ONLY								
7	MCU/IOU (6)		11.2	.1		2.8			71.2
6	CPU		17	.06	-	.4	-	-	87
5	FPU		18	-	-	-	-	-	90
1-4	POWER SUPPLY		-	-	-	-	-	-	-
N/A	TERMINATOR		1.5			.25			8.75
N/A	EXT BBU		5.0	1.5					43
	TOTALS USED (1)								

TOTAL +5V CURRENT DRAW _____ A
 MAX +5V CURRENT AVAILABLE 120 A
 +5V CURRENT SURPLUS _____ A
 MINIMUM +5V CURRENT 6 A

TOTAL +12V CURRENT DRAW _____ A
 MAX +12V CURRENT AVAILABLE 5.5 A*
 +12V CURRENT SURPLUS _____ A
 MINIMUM +12V CURRENT 0 A

TOTAL -5V CURRENT DRAW _____ A
 MAX -5V CURRENT AVAILABLE 2.0 A*
 -5V CURRENT SURPLUS _____ A
 MINIMUM -5V CURRENT 0 A

TOTAL +5MEM CURRENT DRAW _____ A
 MAX +5MEM CURRENT AVAILABLE 22 A
 +5MEM CURRENT SURPLUS _____ A
 MINIMUM +5MEM CURRENT 0 A

TOTAL +12MEM CURRENT DRAW _____ A
 MAX +12MEM CURRENT AVAILABLE 5.5 A
 +12MEM CURRENT SURPLUS _____ A
 MINIMUM +12MEM CURRENT 0 A

TOTAL -5MEM CURRENT DRAW _____ A
 MAX -5MEM CURRENT AVAILABLE .35 A
 -5MEM CURRENT SURPLUS .30 A
 MINIMUM -5MEM CURRENT 0 A

TOTAL WATTS 720

* SEE NOTES 3, 4.

POWER CONSUMED

CURRENT DRAW (AMPS)

DEVICE		+5V CURRENT DRAW	+12V CURRENT DRAW	-5V CURRENT DRAW*	+5MEM CURRENT DRAW	+12MEM CURRENT DRAW	-5M CURRENT DRAW	WATTS
CPU		17	-	-	.4	-	-	87
MCU/IOU		11.2	.1	-	2.8	-	-	71.2
TERMINATION (2)		1.5	-	-	.25	-	-	8.75
FPU		18	-	-	-	-	-	90
EXT BBU		5.0	1.5	-	-	-	-	43
512KB (16K)	FIRST	3.2	-	-	2.0	3.96	.04	73.7
	ADDITIONAL	3.2	-	-	1.02	.62	.032	28.7
1MB (64K)	FIRST	3.2	-	-	5.11	-	-	41.6
	ADDITIONAL	3.2	-	-	1.43	-	-	23.15
2MB (64K)	FIRST	3.2	-	-	6.4	-	-	48

* SEE NOTES 3, 4.

(1) THE SUM OF THE AMPS CONSUMED ON EACH OF THE SUPPLY VOLTAGES BY ALL OF THE PCB'S IN THE SYSTEM MUST NOT EXCEED THE MAX AMPS AVAILABLE LISTED BELOW THE CHART. THE SAME IS ALSO TRUE FOR MAX AVAILABLE WATTS.

(2) EXTRA POWER CONSUMED BY COMPONENTS LOCATED ON THE BACKPANEL.

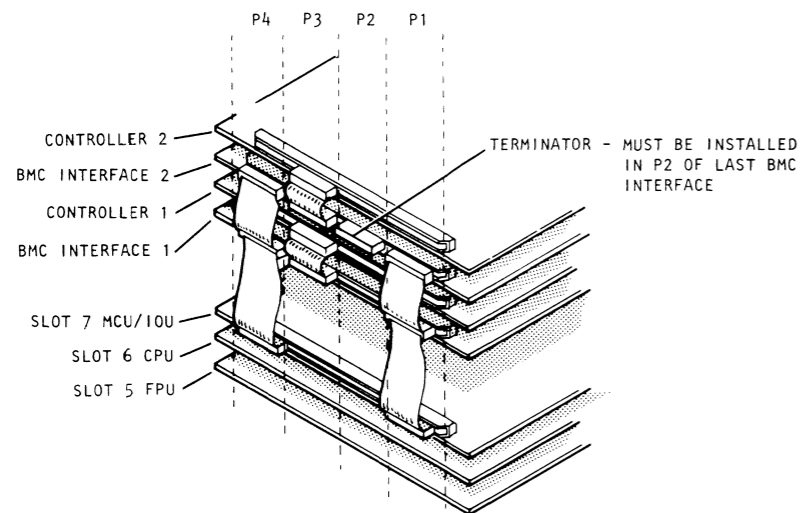
(3) IF THERE ARE NO 512KB MEMORY BOARDS USED, THEN -5V AVAILABLE CURRENT IS 2.3 A.

(4) AN ADDITIONAL 6.0 A IS AVAILABLE AT -5V AND CONSUMES 4 AMPS OF +12V IF BOOSTER BOARD (005-019573) IS CONFIGURED IN SLOT 20. THIS BOARD DOES NOT PASS INTERRUPT OR DATA CHANNEL PRIORITY.

(5) (-1) (JAPAN) MODEL DERATED TO 110 AMPS, MAX +5V AND 670 TOTAL WATTS.

(6) WITH BMC. FOR MCU/IOU WITHOUT BMC, SUBTRACT 1 AMP OF +5V.

BMC CABLING

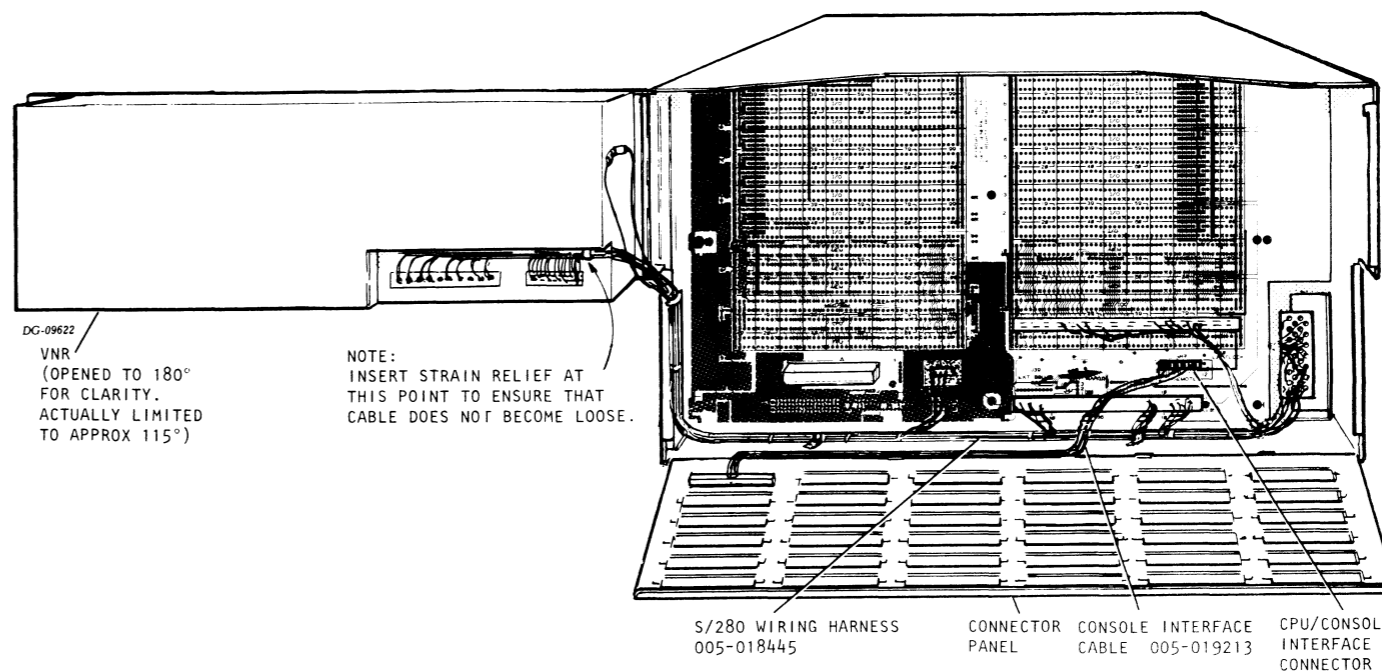


BMC INTERNAL CABLES - CONNECT THE MCU/IOU WITH BMC CONTROLLERS

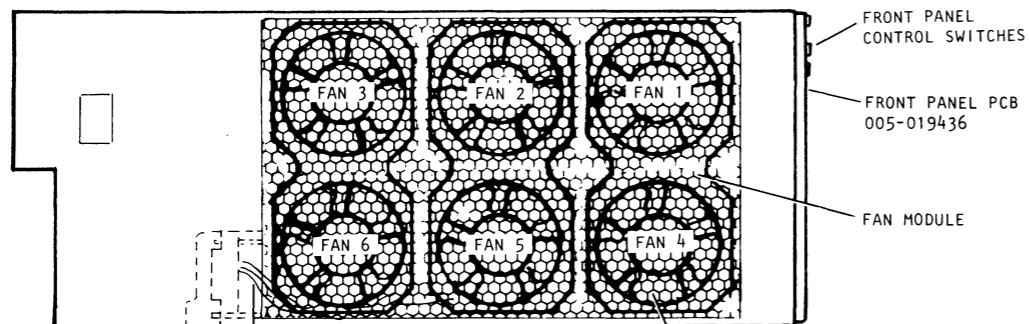
1 BMC CONTROLLER	005-012860
2 BMC CONTROLLERS	005-009898
3 BMC CONTROLLERS	005-010969
4 BMC CONTROLLERS	005-010972

NOTE: VALID BMC BUS PRIORITY JUMPERING IS 0 - 3; 4 - 7 ARE NOT VALID CONFIGURATION.

INTERNAL CABLING



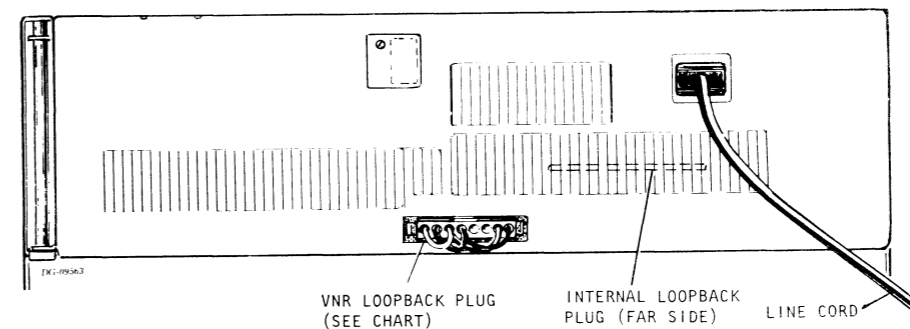
FAN CONFIGURATION



FAN MODULE CABLE 005-018446

VOLTAGE	FAN MODULE (6 FANS)	FAN (INDIVIDUAL)
100V (JAPAN)	005-019477	005-018996
120/220/240	005-019392	005-018997

VNR CHASSIS



AC VOLTS IN	WITH EXT BBU		WITHOUT EXT BBU		VNR ASSY NO
	EXTERNAL LOOPBACK PLUG	INTERNAL LOOPBACK PLUG	EXTERNAL LOOPBACK PLUG	INTERNAL LOOPBACK PLUG	
100V	SEE 010-000333	005-018772	005-018774	005-018772	005-018913
120V	SEE 010-000333	005-018772	005-018774	005-018772	005-018436
220/240V	SEE 010-000333	005-018773	005-018986	005-018773	005-018915

INTERNAL CABLING (CONT)

S/280 BACKPANEL

Ref DGC Dwg No 107-0001891 Rev 00

TAILORING BACKPANEL JUMPERING

(1) FOR JUMPERING OF INTERRUPT AND DATA CHANNEL PRIORITIES WHERE THERE IS NO I/O CONTROLLER IN SLOT 11, INSTALL A PAIR OF JUMPERS FROM SLOT 11 PINS A94 AND A96 TO PINS A93 AND A95 OF THE SLOT IMMEDIATELY BELOW THE LOWEST NUMBERED SLOT CONTAINING AN I/O BOARD. USE JUMPER 005-015153.

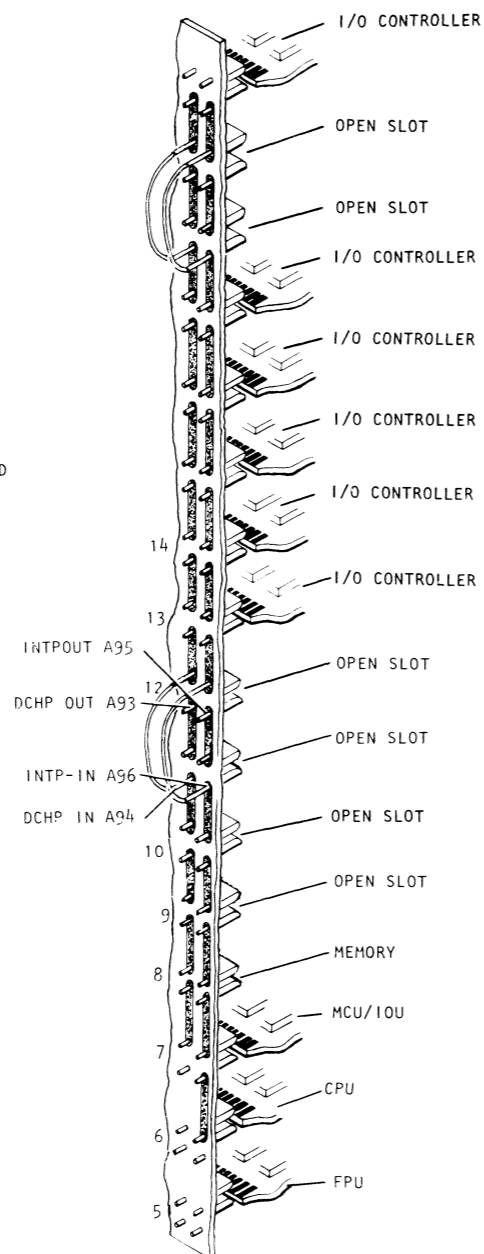
(2) OPEN I/O SLOT MUST BE JUMPERED OVER AS SHOWN AT RIGHT.

(3) FOR MORE INFORMATION CONCERNING INTERRUPT AND DATA CHANNEL PRIORITY SCHEMES, REFER TO THE INTERFACE DESIGNER'S REFERENCE, NOVA AND ECLIPSE COMPUTERS, DGC No 014-000629.

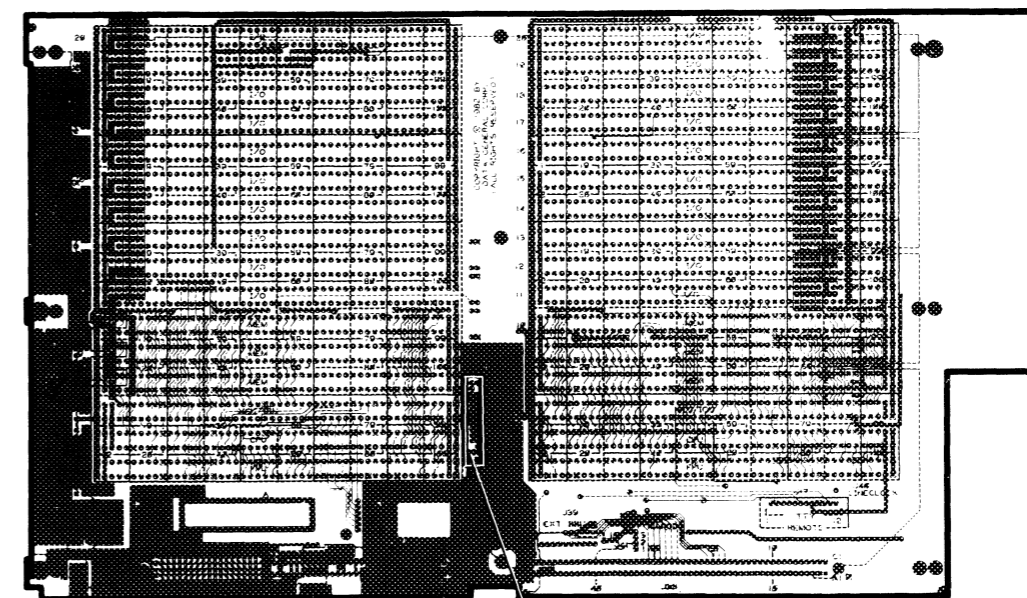
(4) MULTIPLE AMI'S, ATI'S, BSI'S, OR CSI'S CONFIGURED WITH THE SAME DEVICE CODE MUST HAVE THE FOLLOWING INTERBOARD PINS JUMPERED TOGETHER: B91, B94, B96.

(5) WHEN CONFIGURING A BUS REPEATER TO DRIVE AN EXPANSION CHASSIS OR DG/DAC, FASTDCH ON B11 SLOT 7 MUST BE JUMPERED TO A94 OF THE BUS REPEATER.

(6) A SEPARATE DATA CHANNEL PRIORITY CHAIN IS PROVIDED STARTING AT SLOT 17. FOR I/O CONTROLLER IN SLOT 17 WITH SLOT 16 EMPTY, NO DCH JUMPER IS NECESSARY. IN SITUATIONS WHERE JUMPERING WOULD NORMALLY START BELOW SLOT 17 AND END ABOVE SLOT 17, START THE DCH JUMPER AT PIN A94 OF SLOT 17 INSTEAD.

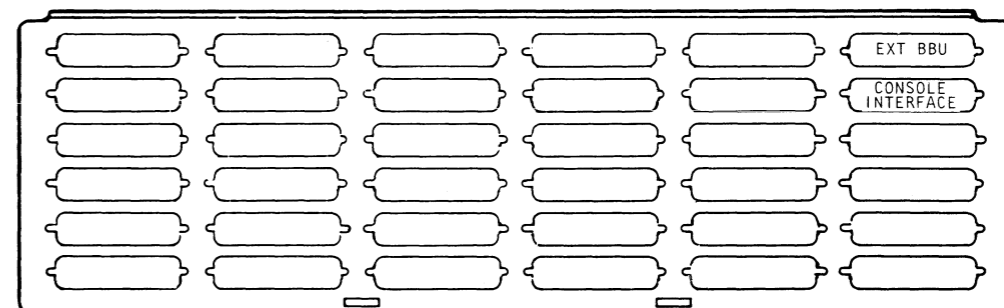


DG-05722



MARGIN PLUG (005-018987)
FOR NORMAL OPERATION, PIN 1 OF MARGIN PLUG IS CONFIGURED TO TOPMOST POSITION. TO ENABLE MARGINING, INVERT MARGIN PLUG (PIN 1 TO LOWEST POSITION). IN NORMAL POSITION, +5BU LOGIC IS POWERED BY +5MEM; IN MARGIN POSITION, +5BU IS POWERED BY +5V.

STANDARD ASSIGNMENT FOR BACKPANEL TO BULKHEAD INTERNAL CABLES



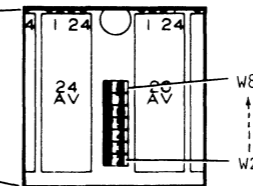
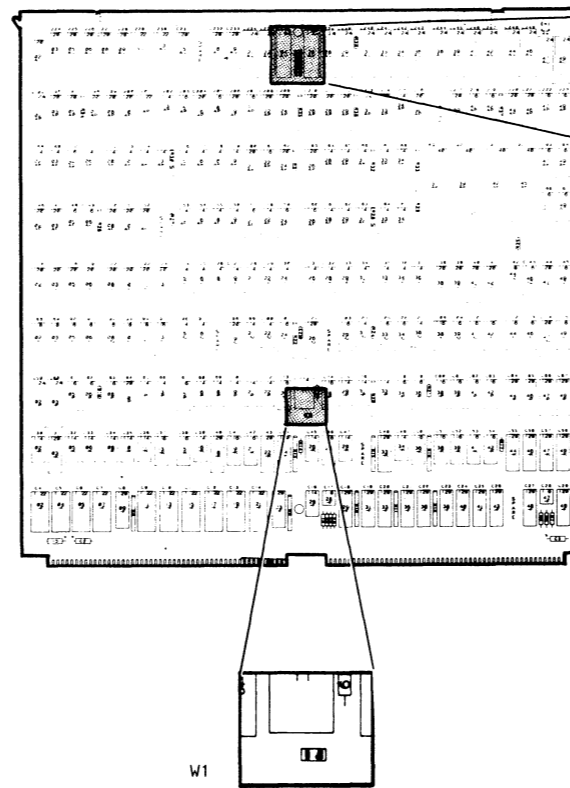
DG-09564

NOTE: REFER TO APPROPRIATE PERIPHERAL DATA SHEETS FOR NUMBER OF BULKHEAD CONNECTORS REQUIRED FOR A PERIPHERAL

TAILORING JUMPERING

CPU

Ref DGC Dwg No 107-001737 Rev 01



W8 - W2 USED FOR AUTO-BOOT
IF PLUG IS IN, THE BIT = 0
IF PLUG IS OUT, THEN BIT = 1

W8 = 1 FOR HIGH SPEED DRIVE
W8 = 0 FOR LOW SPEED DRIVE

W7 - W2 FOR DEVICE CODE

EXAMPLE: DEVICE CODE 27 (OCTAL)

PLUG	BIT	STATE
W8	1	OUT
W7	0	IN
W6	1	OUT
W5	0	IN
W4	1	OUT
W3	1	OUT
W2	1	OUT

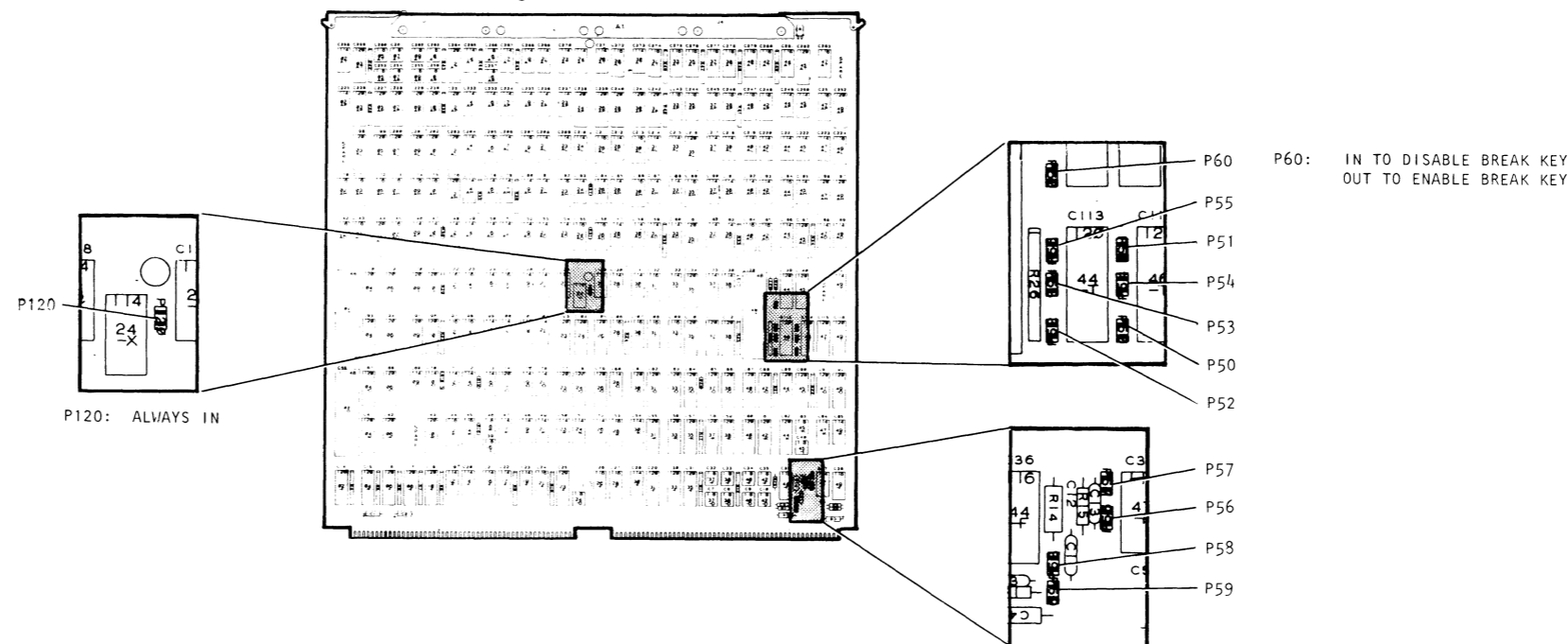
W1: ALWAYS IN

TAILORING (CONT)

JUMPERING

MCU/IOU

Ref DGC Dwg No 107-001892 Rev 00



PIT RATE JUMPERS

P50	P51	RATE
IN	IN	1MHz
IN	OUT	100kHz
OUT	IN	10kHz
OUT	OUT	1kHz

SYSTEM CONSOLE BAUD RATE

P52	P53	P54	P55	BAUD RATE
IN	IN	IN	IN	50
OUT	OUT	OUT	IN	75
OUT	OUT	IN	IN	110
OUT	OUT	OUT	OUT	134.5
IN	IN	OUT	OUT	150
OUT	OUT	IN	OUT	200
OUT	IN	OUT	OUT	300
IN	OUT	IN	IN	600
OUT	IN	OUT	IN	1200
IN	IN	OUT	IN	1800
IN	IN	IN	OUT	2000
IN	OUT	IN	OUT	2400
OUT	IN	IN	OUT	4800
IN	OUT	OUT	IN	9600
OUT	IN	IN	IN	19200
IN	OUT	OUT	OUT	38400

P56	P57	P58	P59	
IN	OUT	OUT	OUT	EIA
OUT	IN	IN	IN	CURRENT LOOP \leq 600 BAUD
OUT	IN	IN	OUT	CURRENT LOOP \geq 600 BAUD

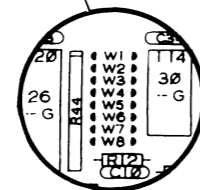
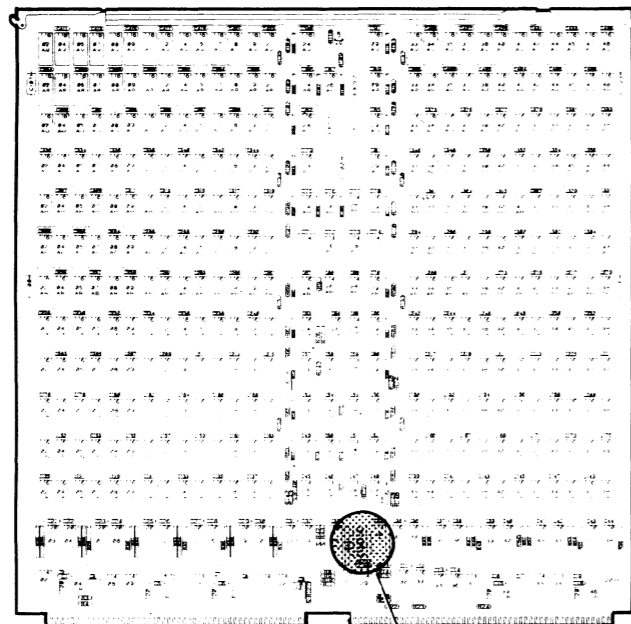
TAILORING (CONT)

JUMPERING

MEMORY

NOTE: FOR ORDERING ADDITIONAL
BOARDS SEE CHART

REF DGC Dwg No 107-001804 Rev 01



- DIFFERENT COMBINATIONS OF MEMORY BOARDS MAY BE INTERMIXED IN THE S/280 MEMORY SYSTEM.
- SLOTS 8 THRU 10 ARE RESERVED FOR MEMORY.
- LARGEST MEMORY BOARD SIZES ARE CONFIGURED INTO THE LOWEST NUMBERED MEMORY SLOTS BEGINNING WITH SLOT 8.
- JUMPERS W1 THRU W8 DEFINE THE ADDRESS BOUNDARIES OF EACH MEMORY BOARD.
- THE FIRST MEMORY BOARD (SLOT 8) REQUIRES NO JUMPERING (W1 THRU W8 OUT).
- THE FOLLOWING JUMPERS ARE ALWAYS OUT (W1, W2, W3, W4, W5, AND W8).
- MAXIMUM TOTAL MEMORY IN SYSTEM IS 2MB.

S/280 MEMORY SYSTEM CONFIGURATION CHART

BOARD NUMBER	SLOT NUMBER	TOTAL MEMORY SIZE							
		2MB	1MB	1.5MB	2MB	2MB	.5MB	1MB	1.5MB
2	10	---	---	---	.5MB W6, 7	---	---	---	.5MB W6
1	9	---	---	.5MB W6	.5MB W6	1MB W6	---	.5MB W7	.5MB W7
0	8	2MB	1MB	1MB	1MB	1MB	.5MB	.5MB	.5MB

W JUMPERS LISTED INDICATE THE "IN" POSITION

MEMORY BOARDS

MEMORY SIZE	RAM TYPE	ASSEMBLY NUMBER
2 MB	64 K	005-18664
1 MB	64 K	005-18666
.5 MB	16 K	005-18660

EXAMPLE:

1. 2MB CONFIGURATION

SLOT	BOARD NUMBER	BOARD SIZE	JUMPERS IN
10	2	.5MB	W6, W7
9	1	.5MB	W6
8	0	1MB	NONE

2. 1MB CONFIGURATION

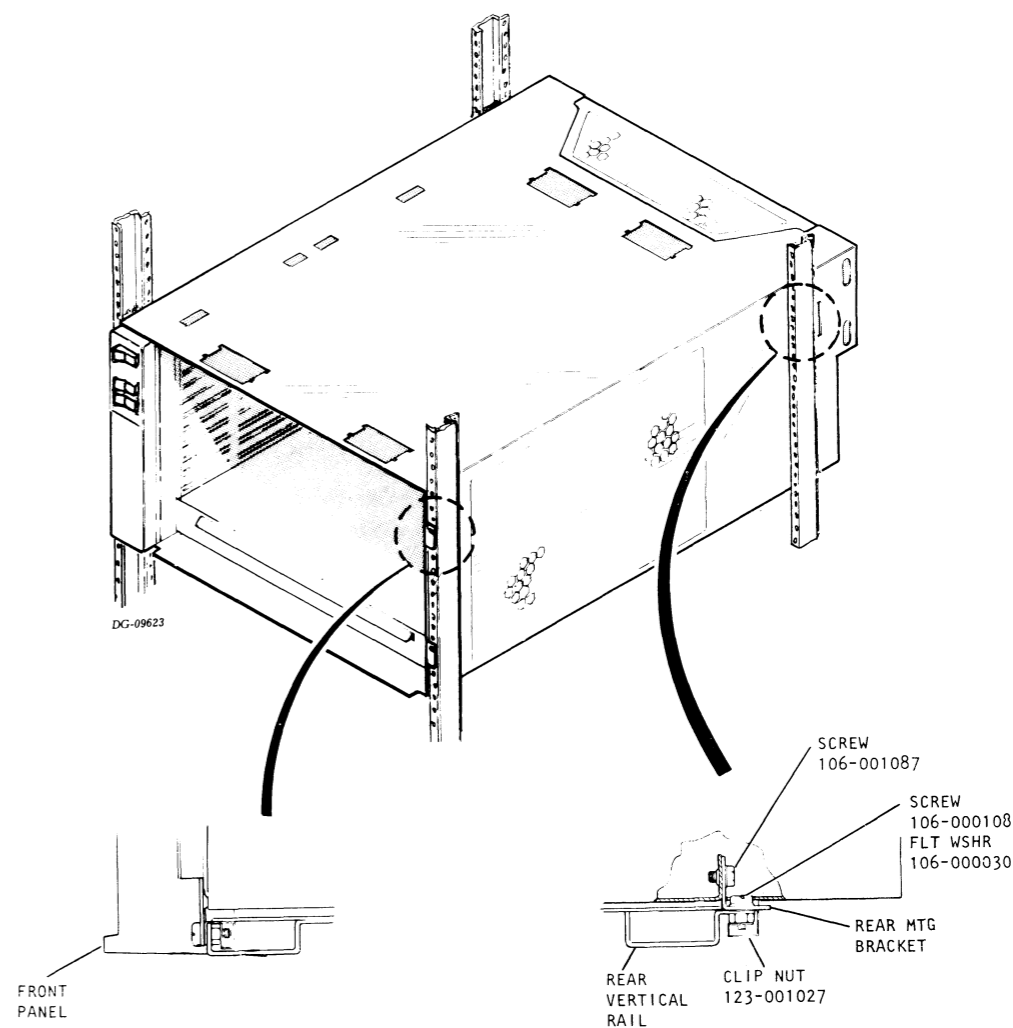
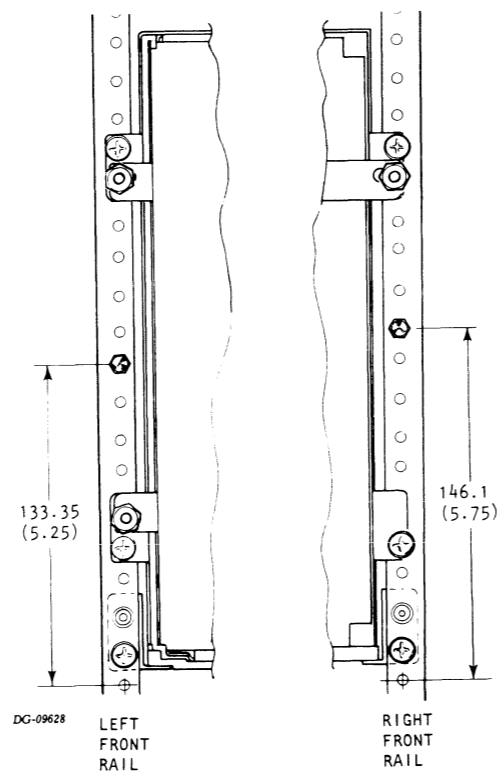
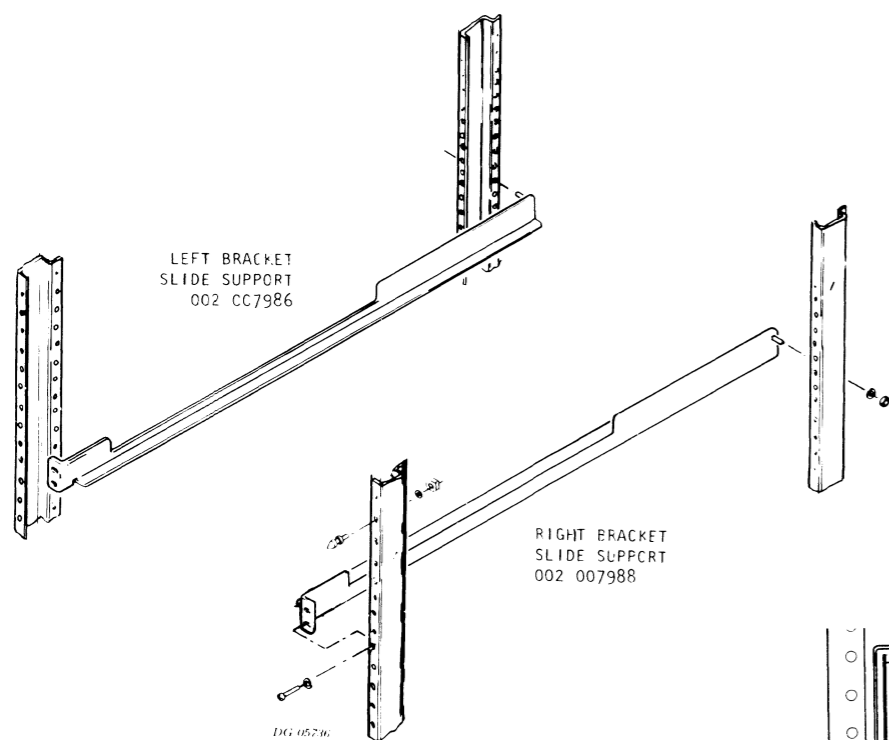
SLOT	BOARD NUMBER	BOARD SIZE	JUMPERS IN
10		NO BOARD	
9	1	.5MB	W7
8	0	.5MB	NONE

3. 2MB CONFIGURATION

SLOT	BOARD NUMBER	BOARD SIZE	JUMPERS IN
10		NO BOARD	
9		NO BOARD	
8	0	2MB	NONE

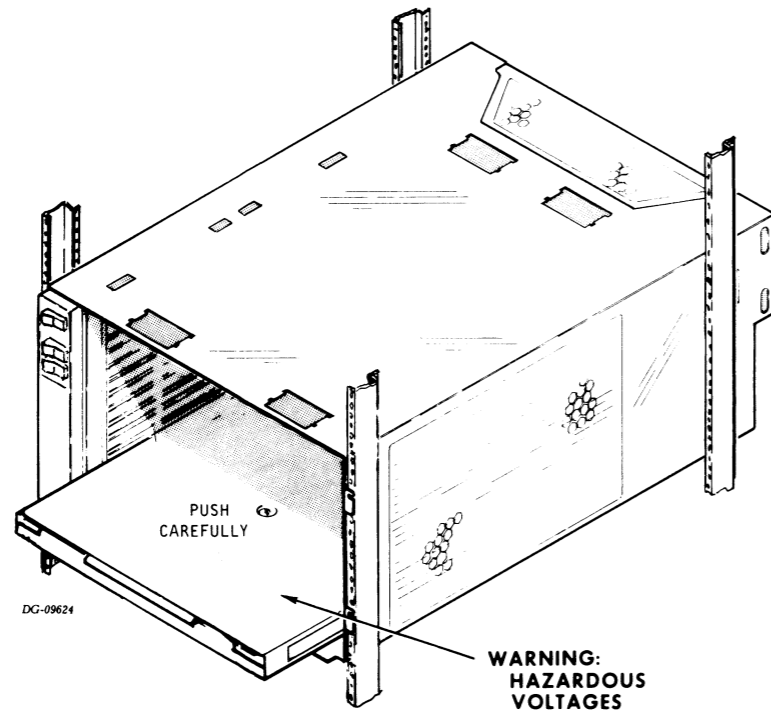
CABINET MOUNTING

HARDWARE MOUNTING KIT
005-019199



CABINET MOUNTING (CONT)

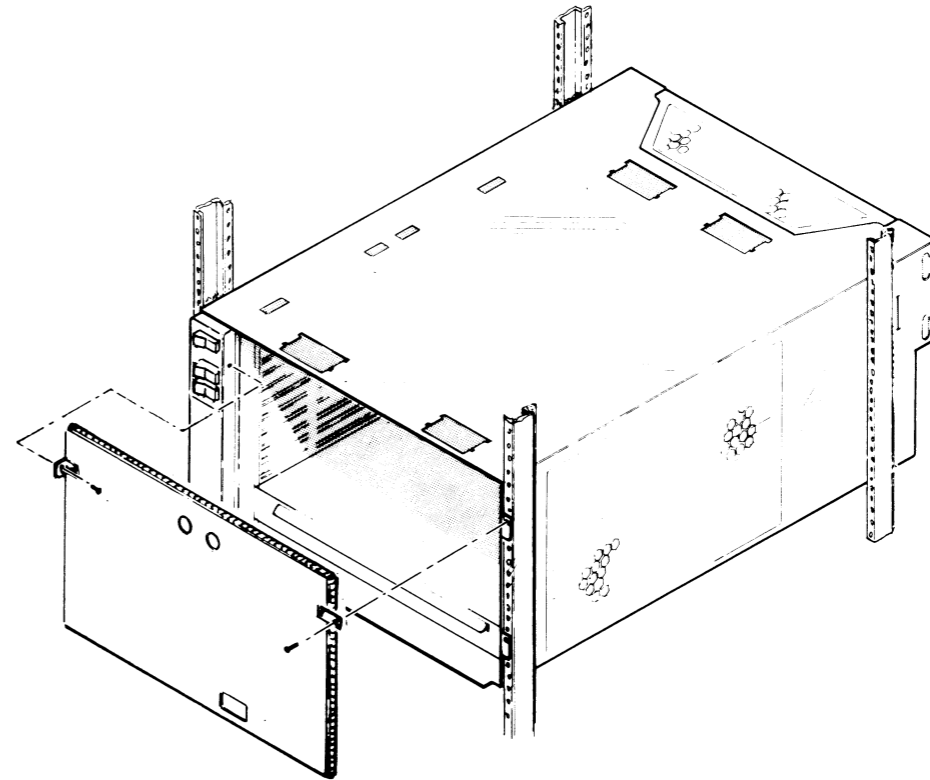
INSERTING POWER SUPPLY



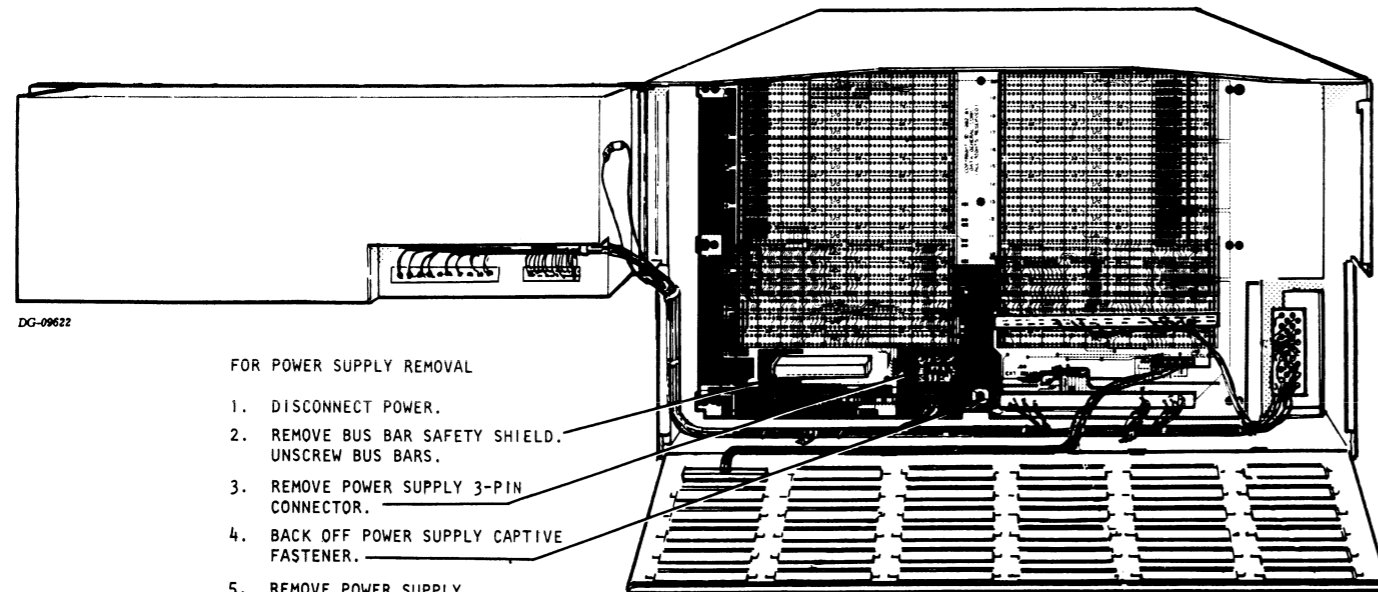
DG-09624

OBSERVE REAR VIEW OF CHASSIS BELOW.
TO INSTALL POWER SUPPLY, PERFORM
IN REVERSE THE REMOVAL PROCEDURE SHOWN.

INSTALLING RFI SHIELD

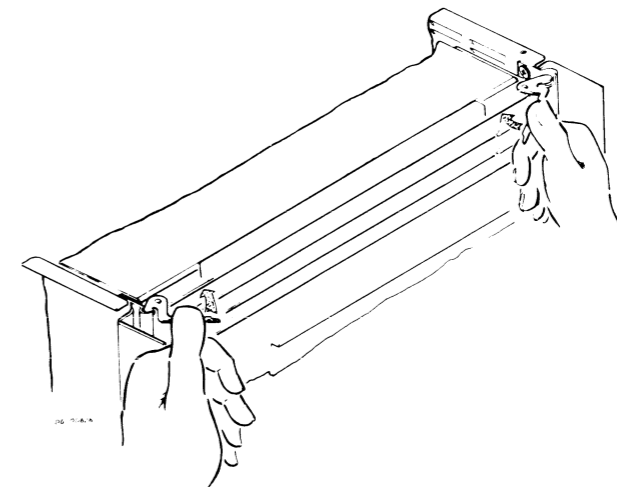


REMOVING POWER SUPPLY

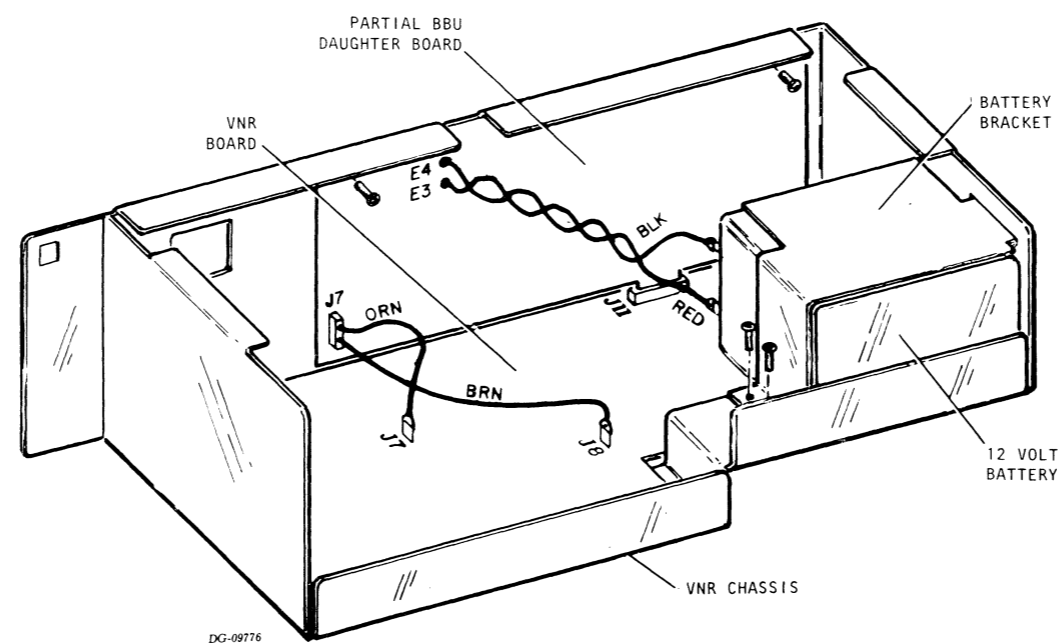


DG-09622

INSERTING PC BOARD



PARTIAL BATTERY BACKUP INSTALLATION



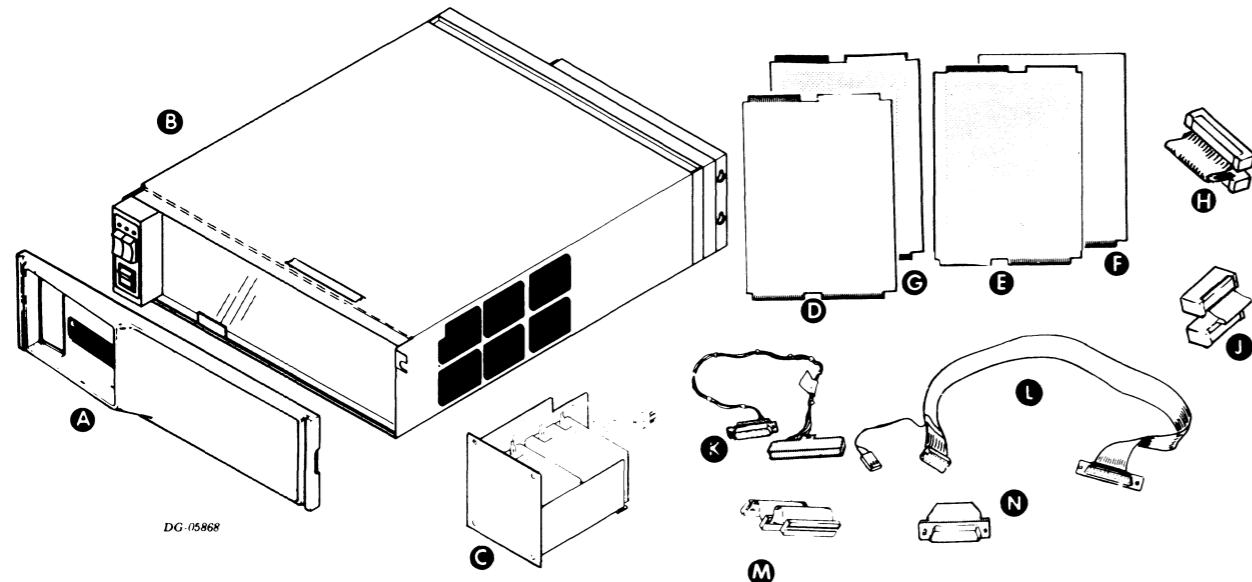
ASSEMBLIES:

- | | |
|--------------------|-------------------|
| 1. VNR CHASSIS | 005-018913 (100V) |
| | 005-018436 (120V) |
| | 005-018915 (220V) |
| 2. PARTIAL BBU PCB | 005-019498 |
| 3. PARTIAL BBU KIT | 005-020102 |

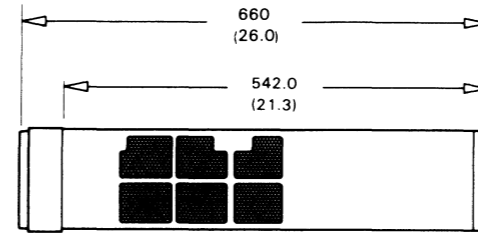
STEPS:

1. INSTALL DAUGHTER BOARD INTO J11 ON VNR BOARD.
2. INSTALL BATTERY AND BATTERY BRACKET.
3. INSTALL WIRE JUMPER KIT (018-001606) AS SHOWN.

INSTALLATION SPECIFICATIONS



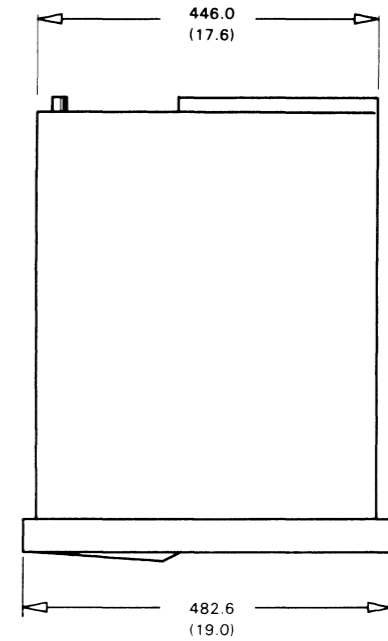
Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.



SIDE VIEW



FRONT VIEW



TOP VIEW

DG 05869

MAJOR COMPONENT

ITEM	COMPONENT	MOUNTING LOCATION	NOTES
A	FRONT PANEL	CABINET	
B	C/30 CHASSIS	CABINET	
C	BATTERY BACKUP	C/30 CHASSIS	OPTIONAL
D	C/30 SPU	C/30 CHASSIS	
E	C/30 FLOATING POINT UNIT	C/30 CHASSIS	NO TAILORING IS REQUIRED FOR THIS BOARD
F	C/30 RAM MEMORY	C/30 CHASSIS	
G	C/30 BMC	C/30 CHASSIS	

CABLES

ITEM	CABLE	CONNECTING	MAX LENGTH		NOTES
			FT	M	
H	005-009663	SPU TO FPU	1	0.3	USE C SIDE EDGE CONNECTOR OF SPU TO C SIDE OF FLOATING POINT
J	I/O BUS LINK 005-012784	SLOT 4 TO SLOT 5	0.25	0.08	
K	ASYN ADAPTER 005-019971	SPU TO COMM LINE	1	0.3	COMM LINE TO DEVICE FOR EIA. 1000 FT MAX FOR 20 mA CURRENT LOOP.
L	I/O BUS INTERNAL CPU 005-019403	BACKPANEL SLOTS 6, 7 & 8 TO BULKHEAD			
M	005-019681	SPU, FPU, AND BMC	1	0.3	REPLACES 005-009663 WHEN BMC IS USED.

TERMINATOR

ITEM	TERMINATOR	LOCATION	NOTES
N	I/O BUS 005-018508	BULKHEAD	MOUNT TERM ON LAST DEVICE ON I/O BUS IF I/O BUS IS EXTENDED. OTHERWISE ON BULKHEAD

DIMENSIONS:	Width	Depth	Height
Millimeters	482.6	660	133.3
Inches	19.0	26.0	5.25
SERVICE CLEARANCES:	Front	Rear	
Millimeters	914	610	
Inches	36.0	24.0	
WEIGHT:	Empty	Fully Loaded	Fully Loaded W/BBU
Kilograms	14.5	16.3	18.6
Pounds	32	36	41
HEAT OUTPUT:	Watts	BTU/hr	
	480	1640	
OPERATING ENVIRONMENT:	Temperature (max) 55°C @ 60Hz 45°C(113 F) @ 50Hz		
	Relative Humidity (max) 90% (non-condensing)		
	Altitude 8000 ft (2438m)		

POWER REQUIREMENTS:			
(Domestic)			
Voltage	120	+10	-15%
Hz	60	± 1%	
Amp per Phase	5		
Phase	1		
Startup Surge per Phase	40 amps for 8 milliseconds		
(Export)			
Voltage	100 ± 10%	220 +10	240 +10
		-15%	-15%
Hz	50/60 ± 1%	50 ± 1%	50 ± 1%
Max Amp per Phase	5	3	3
Phase	1	1	1
Startup Surge per Phase	40 amps for 8 milliseconds	30 amps for 8 milliseconds	

LINE CORDS	
100V	109-000719
120V	109-000719
220V	109-000681
240V	109-000681

} IN DGC RACK

SHIPPING

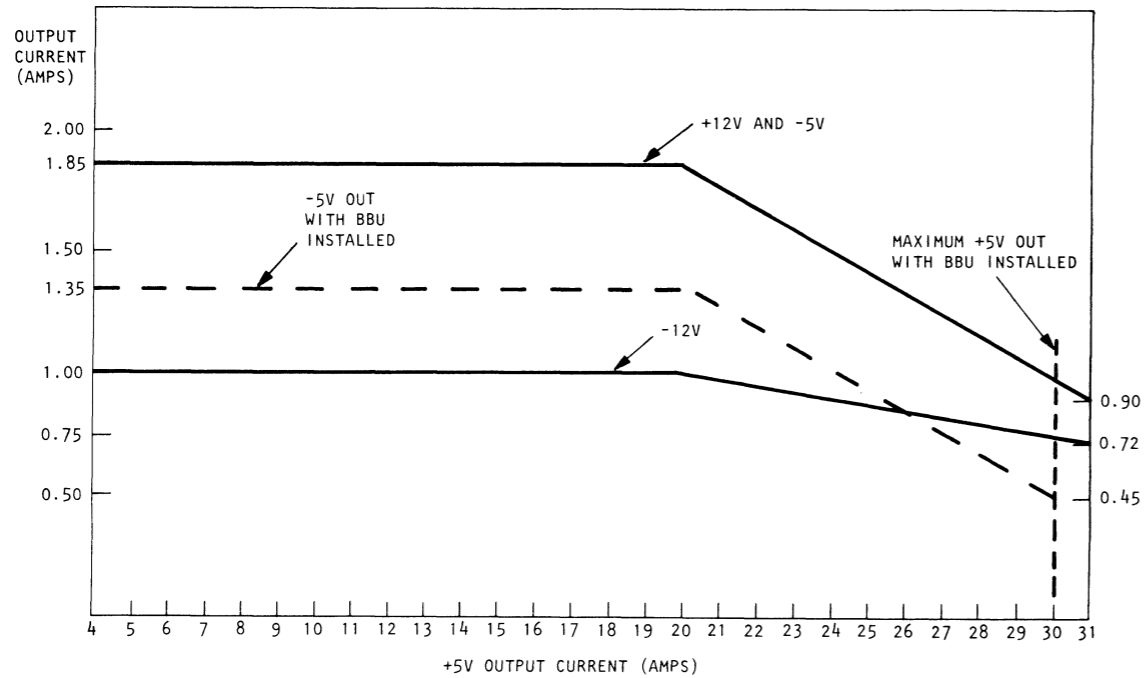
FOR PACKING PROCEDURE,
SEE 010-000262/263

SLOT	ALLOWED SLOT CHART	ASSIGNED	CURRENT DRAW (AMPS)			
			+5V	-5	+12	-12
8	I/O					
7	MEMORY OR I/O					
6	MEMORY OR I/O					
5	MEMORY OR I/O					
4	MEMORY OR I/O					
3	MEMORY OR BMC					
2	FPU					
1	C/30 SPU					

STANDARD
 HIGH SPEED

CURRENT DRAW
MAXIMUM AVAILABLE* 31 1.85 1.85 1.0
CURRENT SURPLUS _____

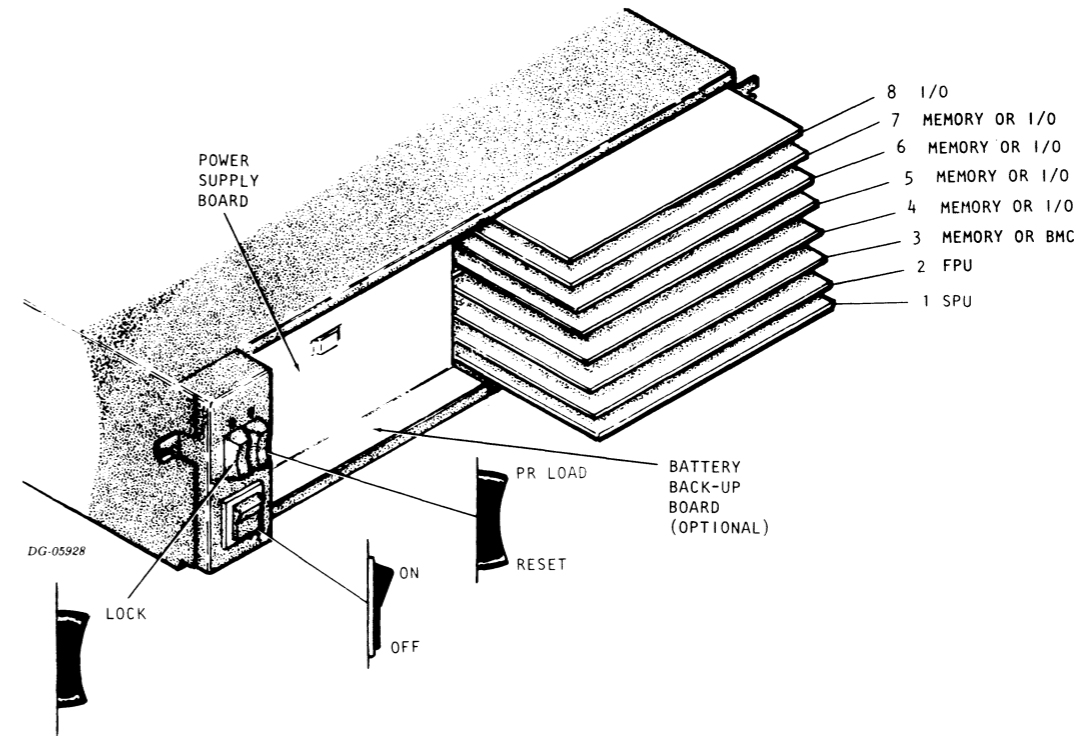
NOTES:
MINIMUM LOAD FOR MAIN CHASSIS IS 4A @ +5V, 0.2A @ -5V, 0.2A @ +12V, AND 0.2A @ -12V.
MINIMUM LOAD FOR EXPANSION CHASSIS IS 4A @ +5V. USE OPTION 1227 (LOAD PLUG) WHEN DRAWING LESS THAN 4A @ +5V. INSTALL ON J19 OF BACKPANEL.
THE MAXIMUM MEMORY CONFIGURATION IS FOUR MEMORY PC BOARDS.
THE MAXIMUM I/O BUS LENGTH IS 100 FEET.
THE MAXIMUM NUMBER OF I/O DEVICES ON THE I/O BUS IS 15.



PCB POWER REQUIREMENTS	+5V	-5V	+12V	-12V
SPU	5.5	.03	.10	.10
FPU	4.6	-	-	-
128KB MEM W/16K RAMS	OPERATING 1.7 STANDBY 1.7	.03 .03	.57 .14	- -
256KB MEM W64K RAMS	OPERATING 2.1 STANDBY 1.7	- -	- -	- -
512KB MEM W64K RAMS	OPERATING 2.4 STANDBY 2.0	- -	- -	- -
BMC	4.5	-	-	-

NOTE: WHEN DETERMINING MEMORY SYSTEM CURRENT DRAW, USE OPERATING CURRENT OF LARGEST MEMORY BOARD, AND STANDBY CURRENT OF REMAINING MEMORY.

BOARD ASSIGNMENTS



NOTE: THE POWER SUPPLY PC BOARD IS ALWAYS INSTALLED IN THE UPPER SLOT (SLOT 6). THE BATTERY BACK-UP PC BOARD IS INSTALLED IN THE LOWER SLOT (SLOT 2) IN SYSTEMS WHICH HAVE THE BATTERY BACK-UP OPTION

CHASSIS SLOT ASSIGNMENT STARTING WITH SLOT 1 IS:
SPU, FPU, BMC (IF USED), MEMORY, THEN I/O.

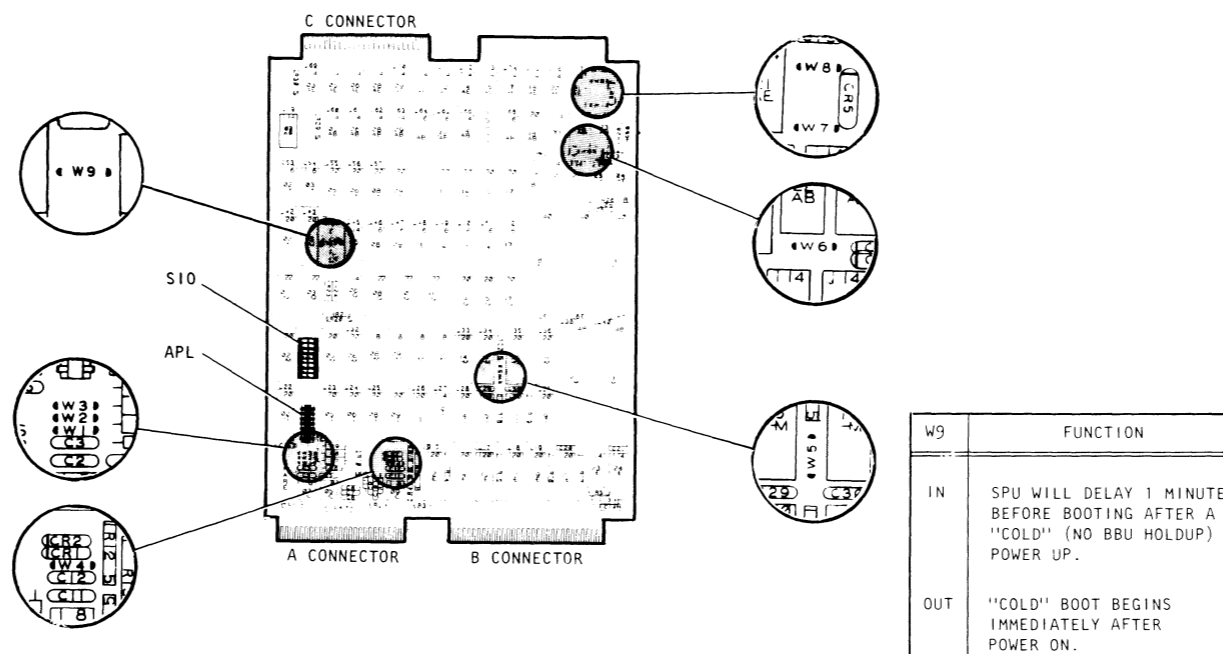
JUMPER 7 IS "IN" ONLY ON THE MEMORY THAT IS FARTHEST AWAY FROM SPU. ON ALL OTHER MEMORIES IT IS "OUT".

IF SOCKETED BOARD, DO NOT USE SLOTS 4 OR 8.

TAILORING

SPU

Ref DGD Dwg No 003-001774 Rev 04



W9	FUNCTION
IN	SPU WILL DELAY 1 MINUTE BEFORE BOOTING AFTER A "COLD" (NO BBU HOLDUP) POWER UP.
OUT	"COLD" BOOT BEGINS IMMEDIATELY AFTER POWER ON.

INTERFACE MODE SELECT

LINE TYPE	JUMPERS	
	W1	W2
EIA	OUT	OUT
20mA CURRENT LOOP (600 BAUD AND BELOW)	IN	IN
(ABOVE 600 BAUD)	IN	OUT

W3	FUNCTION
IN	CPU ENABLES CLEAR TO SEND
OUT	HALF-DUPLEX MODEM, 60 CPS DASHER, CONTROLS CLEAR TO SEND.

SIO SWITCHES

SWITCH	FUNCTION
1	HALT DISPATCH SWITCH: SET IT "ON" (TO 1) TO CAUSE THE C/30 PROCESSOR TO ENTER THE VIRTUAL CONSOLE WHEN IT ENCOUNTERS A HALT INSTRUCTION. SET SWITCH 1 TO "OFF" (TO 0) TO CAUSE THE PROCESSOR TO DO A HARD HALT WHEN IT ENCOUNTERS A HALT INSTRUCTION.
2	BREAK ENABLE SWITCH: SET IT "ON" (TO 1) TO ENABLE INTERRUPTS INITIATED BY THE VIRTUAL CONSOLE BREAK KEY. IF YOU DO NOT WANT TO CAUSE CPU INTERRUPTS BY DEPRESSING THE VIRTUAL CONSOLE BREAK KEY, SWITCH SWITCH 2 "OFF" (TO 0).
3-4	SET THE COUNTER RATE FOR THE PROGRAMMABLE INTERVAL TIMER, AS SHOWN IN THE PIT RATE SELECT TABLE.
5-8	SET THE TRANSMISSION RATE OF THE ASYNCHRONOUS INTERFACE, AS SHOWN BY THE BAUD RATE TABLE.

BAUD RATE

kHz	SWITCH SETTINGS			
	SW5	SW6	SW7	SW8
50	OFF	OFF	OFF	OFF
75	ON	ON	ON	OFF
110	ON	ON	OFF	OFF
134.5	ON	ON	ON	ON
150	OFF	OFF	ON	ON
200	ON	ON	OFF	ON
300	ON	OFF	ON	ON
600	OFF	ON	OFF	OFF
1200	ON	OFF	ON	OFF
1800	OFF	OFF	ON	OFF
2000	OFF	OFF	OFF	ON
2400	OFF	ON	OFF	ON
4800	ON	OFF	OFF	ON
9600	OFF	ON	ON	OFF
19200	ON	OFF	OFF	OFF
38400	OFF	ON	ON	ON

JUMPER	FUNCTION
W4	INSERT ONLY IF AN EXTERNAL I/O CABLE IS CONNECTED TO THE BACKPANEL OR IF ANY I/O BOARDS ARE INSTALLED IN THE CHASSIS.
W5	IN ENABLES POWER FAIL INTERRUPTS OUT DISABLES POWER FAIL INTERRUPTS
W6 } W7 } W8 }	MUST BE IN

APL SWITCH

BIT POSITION	10	11	12	13	14	15
"ON" TO SPECIFY 1	S2 MSB	S3	S4	S5	S6	S7 LSB

NOTE:
SET APL SWITCH 1 "ON" TO LOAD FROM A HIGH-SPEED (DATA CHANNEL) DEVICE. SET APL SWITCH 1 "OFF" TO LOAD FROM A LOW-SPEED (PROGRAMMED I/O) DEVICE.

SET SWITCHES S2-S7 TO THE DEVICE CODE OF THE LOAD DEVICE. EXAMPLE: FOR DEVICE CODE 23 OCTAL, SET S2 OFF, S3 ON, S4 OFF, S5 OFF, S6 ON, AND S7 ON.

PIT RATE

kHz	SWITCH SETTINGS	
	SW3	SW4
1	ON	ON
10	ON	OFF
100	OFF	ON
1000	OFF	OFF

TAILORING

C/30 MEMORY SYSTEM CONFIGURATION CHART

BOARD NUMBER	ALL 512 KB BOARDS	ALL 256KB BOARDS	ALL 128KB BOARDS	512KB AND 256KB BOARDS			256KB AND 128KB BOARDS			512KB AND 128KB BOARDS			512 KB AND 256KB AND 128KB BOARDS		
3	512KB NONE	256KB W1	128KB W1, 2	256KB W3	256KB W2	256KB W2, 3	128KB W1, 4	128KB W1, 3	128KB W1, 3, 4	128KB W3, 4	128KB W2, 3	128KB W1, 4	128KB W2, 4	128KB W2, 3, 4	128KB W1
2	512KB W2	256KB W1, 3	128KB W1, 2, 4	512KB W2	256KB W2, 3	256KB W1	256KB W1, 3	128KB W1, 3, 4	128KB W1, 2	512KB W2	128KB W2, 3, 4	128KB W1, 3	256KB W2, 3	256KB W1	128KB W1, 4
1	512KB W1	256KB W1, 2	128KB W1, 2, 3	512KB W1	512KB W1	256KB W1, 3	256KB W1, 2	256KB W1, 2	128KB W1, 2, 4	512KB W1	512KB W1	128KB W1, 3, 4	512KB W1	256KB W1, 3	256KB W1, 3
0	512KB W1, 2	256KB W1, 2, 3	128KB W1, 2, 3, 4	512KB W1, 2	512KB W1, 2	512KB W1, 2	256KB W1, 2, 3	256KB W1, 2, 3	256KB W1, 2, 3	512KB W1, 2	512KB W1, 2	512KB W1, 2	512KB W1, 2	512KB W1, 2	512KB W1, 2

W JUMPERS LISTED INDICATE THE "IN" POSITION

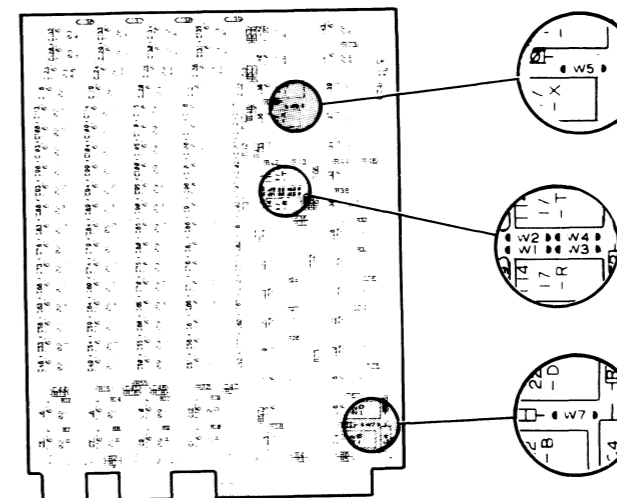
EXAMPLES:

1.	SLOT	BOARD NUMBER	BOARD SIZE	JUMPERS IN
1024KB	5	3	128KB	W1
	4	2	128KB	W1, 4
	3	1	256KB	W1, 3
	2	0	512KB	W1, 2
2.	SLOT	BOARD NUMBER	BOARD SIZE	JUMPER IN
384KB	5	---	NO BOARD	---
	4	---	NO BOARD	---
	3	1	128KB	W1, 2, 4
	2	0	256KB	W1, 2, 3
3.	SLOT	BOARD NUMBER	BOARD SIZE	JUMPERS IN
1024KB	6	---	NO BOARD	---
	5	2	256KB	W1
	4	1	256KB	W1, 3
	*3	0	512KB	W1, 2
4.	SLOT	BOARD NUMBER	BOARD SIZE	JUMPERS IN
512KB	6	---	NO BOARD	---
	5	---	NO BOARD	---
	4	---	NO BOARD	---
	*3	0	512KB	W1, 2

* THESE SYSTEMS START MEMORY BOARDS IN SLOT 3 BECAUSE SLOT 2 HAS AN FPU.

RAM BOARD

Ref DGC Dwg No 003-001809 Rev 01



NOTE: RAM BOARD SHOWN IS 005-18375 (128KB MEMORY MODULE) THE JUMPERS ARE LOCATED IN THE SAME PLACE FOR ALL C/30 MEMORY BOARDS

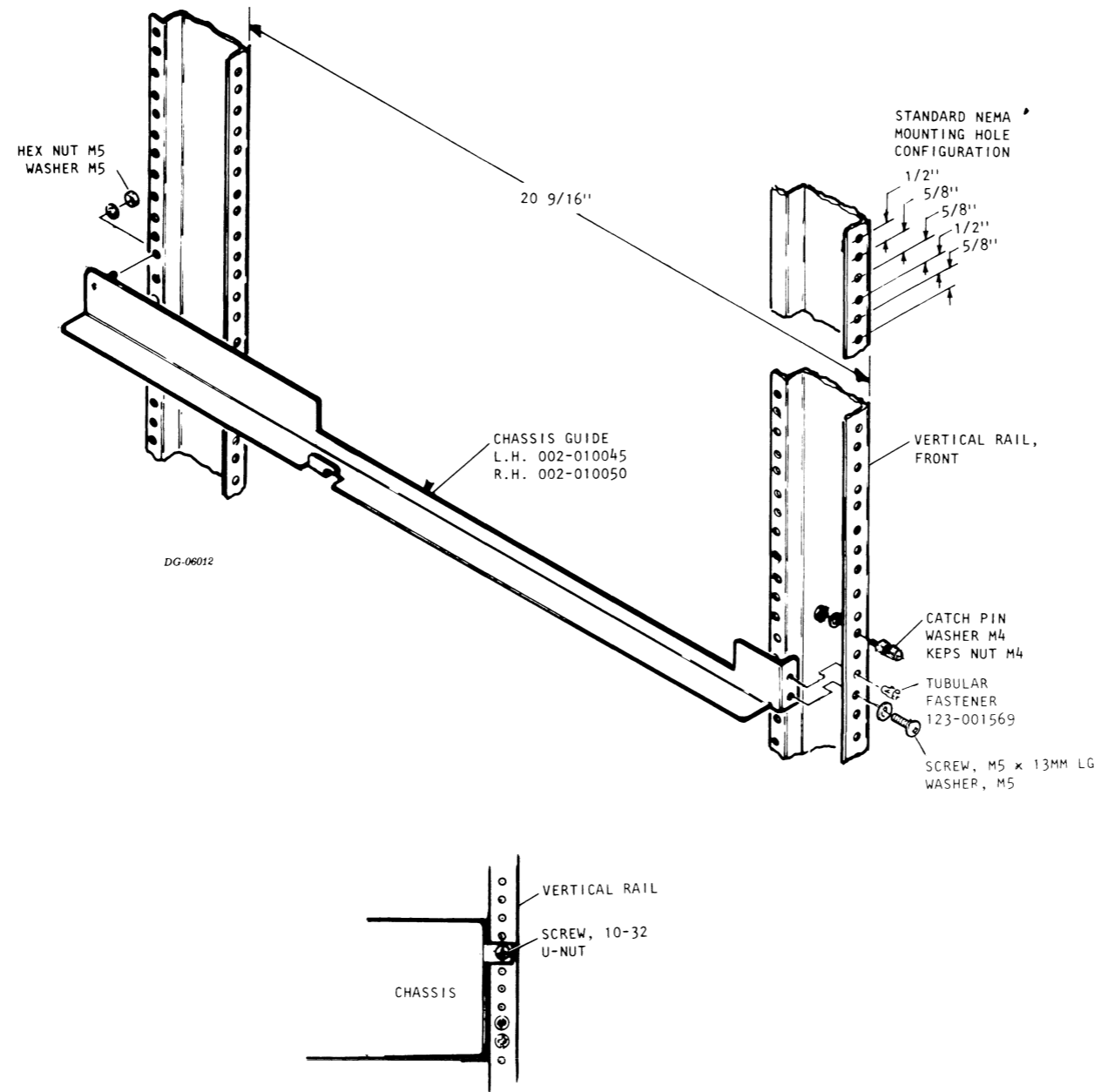
NOTES:

1. DIFFERENT COMBINATIONS OF MEMORY BOARDS MAY BE INTERMIXED IN THE C/30 MEMORY SYSTEM (SEE CONFIGURATION CHART).
2. LARGEST MEMORY BOARD SIZES ARE CONFIGURED INTO THE LOWEST NUMBERED MEMORY SLOTS.
3. JUMPERS W1 THRU W4 DEFINE THE ADDRESS BOUNDARIES OF EACH MEMORY BOARD.
4. JUMPER W5 IS ALWAYS "OUT."
5. THERE IS NO W6.
6. JUMPER W7 IS "IN" ONLY ON THE MEMORY THAT IS FARTHEST AWAY FROM SPU. ON ALL OTHER MEMORIES IT IS "OUT."

MEMORY BOARDS

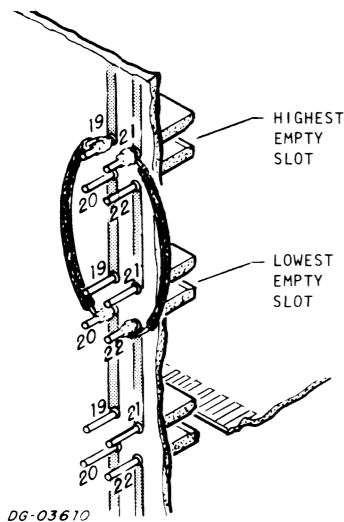
MEMORY SIZE	RAM TYPE	ASSEMBLY NUMBER
512KB	64K	005-19537
256KB	64K	005-19538
128KB	16K	005-18375

CABINET MOUNTING



EXTERNAL/INTERNAL CABLING

JUMPERING BACKPANEL



AN 8-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 THE LOWEST EMPTY SLOT MAY BE THE SAME. NO JUMPERS ARE REQUIRED IF THE GROUP OF EMPTY SLOTS INCLUDES SLOT 8, UNLESS THE EXTERNAL I/O BUS IS USED. THE HIGHEST LEVEL PRIORITY BOARD IS THE ONE NEAREST THE CPU SLOT.

06-03610

PIN ASSIGNMENTS, A CONNECTOR

EVEN	SIGNAL NAMES	ODD
2	CTS	TTIN 1
4		-5V 3
6		GND 5
8		7
10	DTR	+5V 9
12		11
14		13
16		15
18		17
20		19
22		TTOUT 21
24		23
26		+V 25
28		27
30		29
32		31
34		33
36		35
38		37
40		39
42		41
44		43
46		45
48		47
50		49

NOTE: BLANK PINS NOT USED.

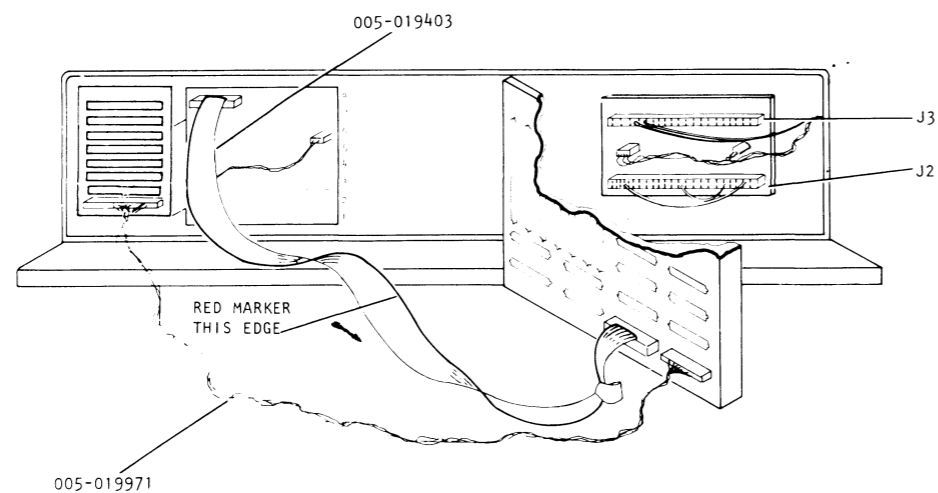
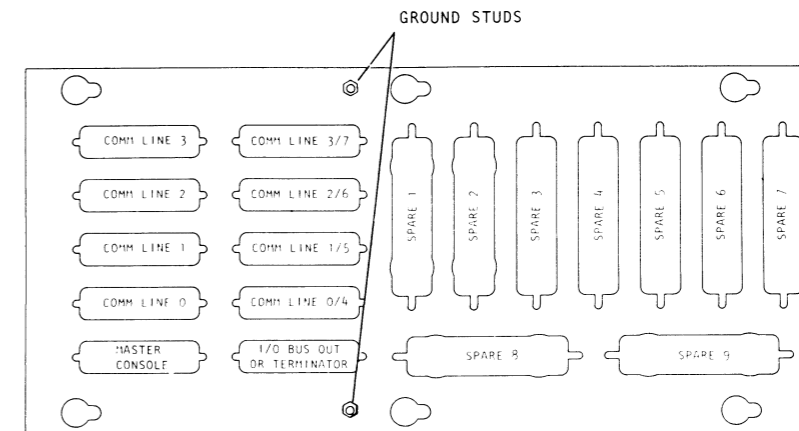
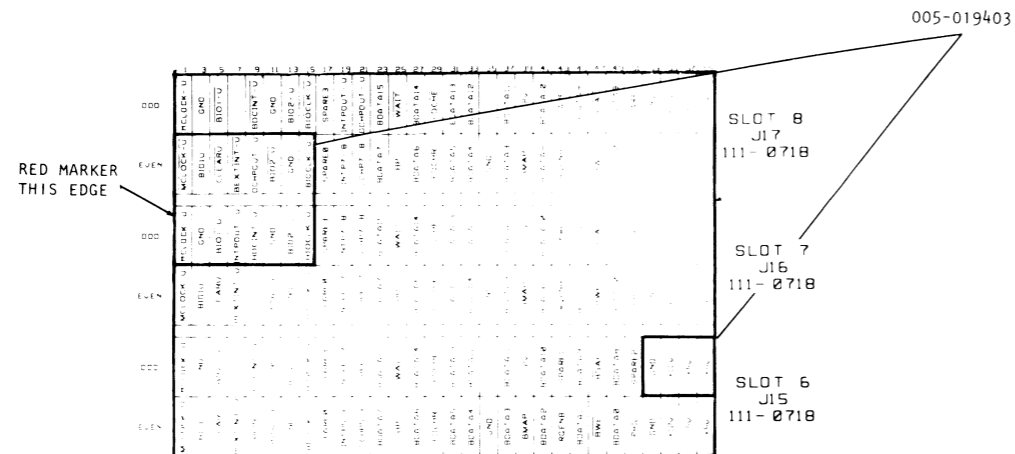
PIN ASSIGNMENTS, B CONNECTOR

PIN	SIGNAL	PIN	SIGNAL
1	BMCLOCK	2	BMCLOCK
3	GROUND	4	BI/O DATA1
5	BI/ODATA1	6	CLEAR
7	PWRFATL	8	EXTINT
9	EXT DCHR	10	CONSOLE LOCK
11	GROUND	12	BI/ODATA2
13	BI/ODATA2	14	GROUND
15	BI/OCLOCK	16	BI/OCLOCK
17	HALT	18	BUS READY
19	INTPOUT	20	PF
21	DCHPOUT	22	POWEROK
23	DATA15	24	DATA7
25	XMA4	26	BUS MEMCYC
27	DATA4	28	DATA6
29	WL/PARL	30	WH/PARH
31	DATA13	32	DATA5
33	DATA12	34	DATA4
35	RTC	36	GROUND
37	DATA11	38	DATA3
39	-12V	40	XMA3
41	DATA10	42	DATA2
43	BOOT	44	XMA2
45	DATA9	46	DATA1
47	XMA0	48	BUS ADDREN
49	DATA8	50	DATA0
51	XMA1	52	SYSCLK
53	GROUND	54	GROUND
55	+12V	56	+12V
57	+5V	58	-5V
59	+5V	60	+5V

PIN ASSIGNMENTS, C CONNECTOR

PIN	SIGNAL	PIN	SIGNAL
1	GROUND	2	GROUND
3		4	TEST
5	GROUND	6	GROUND
7		8	
9		10	
11		12	
13		14	
15		16	
17		18	
19	QPIPE	20	GROUND
21	+5V	22	+5V
23	GROUND	24	
25	QUACK	26	
27	QSKTP	28	
29		30	
31	QREQ	32	
33	QFETCH	34	
35		36	
37		38	
39		40	
41		42	
43	BMC	44	
45	BLOCK	46	
47	BMC GRANT	48	
49	GROUND	50	

EXTERNAL/INTERNAL CABLING (Cont)



THIS DRAWING SHOWS CABLING WHEN NO BATTERY BACK-UP OPTION IS INSTALLED. IF BATTERY BACK-UP OPTION IS INSTALLED, THE CONNECTOR SHOWN AT J3 WILL BE MOVED TO J2 AND THE CONNECTOR SHOWN AT J2 WILL BE MOVED TO J3.

NOTES:

IF I/O BUS IS EXTENDED, TERMINATOR MUST BE INSTALLED ON LAST I/O DEVICE. IF I/O BUS IS NOT EXTENDED, TERMINATOR MUST BE INSTALLED ON BULKHEAD ON I/O BUS OUT CONNECTOR.

I/O BUS OUT ADAPTER CABLE (005-019403)

FROM: BACKPANEL SLOTS 7 & 8 (16 POSITION DIP) AND SLOT 6 (4 POSITION DIP) SEE DIAGRAM UPPER LEFT ON PAGE.

TO: BULKHEAD I/O BUS OUT POSITION

MASTER CONSOLE ADAPTER CABLE (005-019971)

FROM CPU BOARD (SLOT 1) EDGE CONNECTOR A TO MASTER CONSOLE POSITION ON BULKHEAD.

OPTION CABLING

ASLM PRIMARY DEVICE CODE 4336 } USE BULKHEAD POSITIONS COMM LINE 0-3
 ASYNC MUX BOARD #1 4227 }

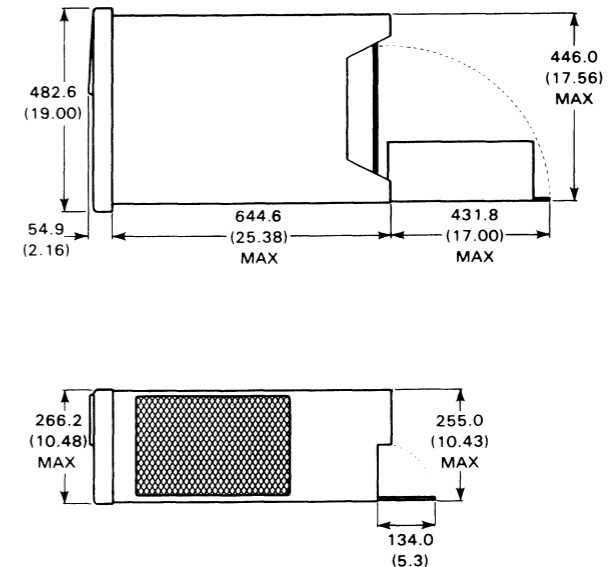
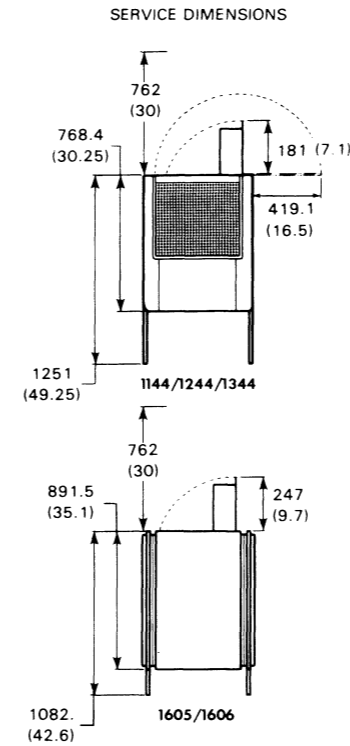
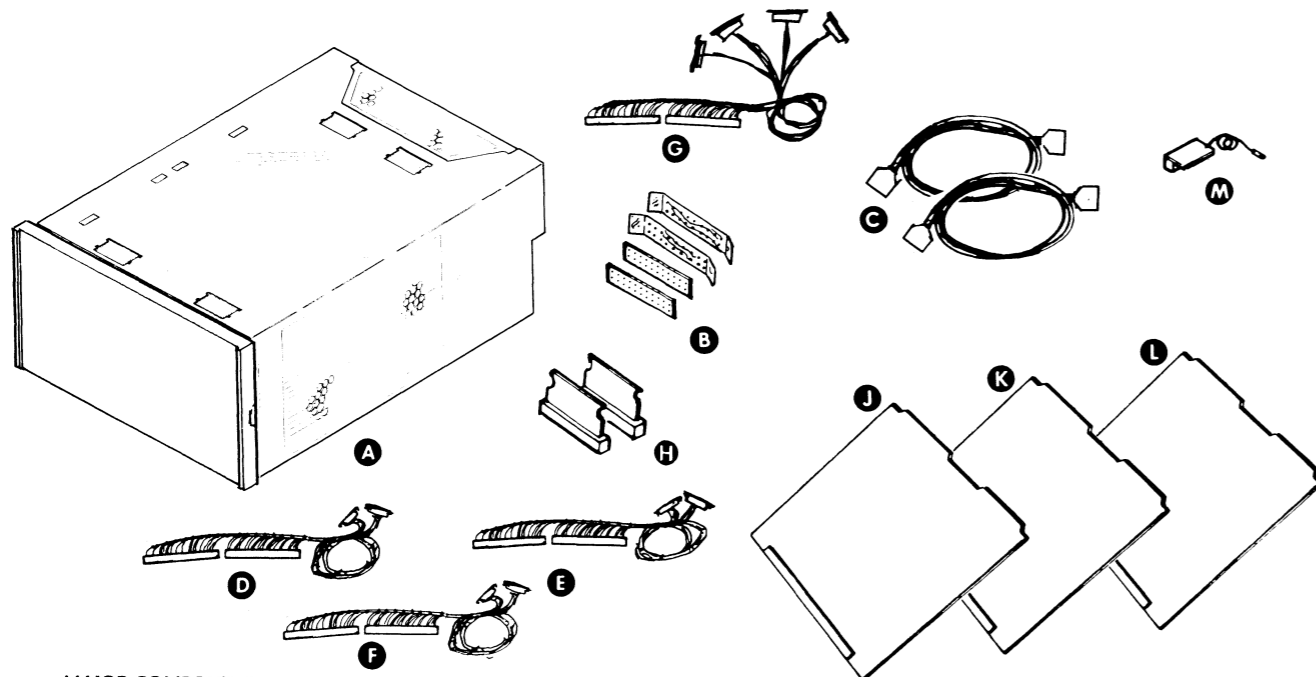
ASLM SECONDARY DEVICE CODE 4336 } USE BULKHEAD POSITIONS COMM 0/4-3/7
 ASYNC MUX BOARD #2 4227 }

ADDITIONAL COMMUNICATION LINES USING EITHER 4336 OR 4227 USE SPARES 1-4 AND SPARE 5-8.

ALL OTHER OPTION BOARDS USE SPARES 1-9.

INSTALLATION SPECIFICATIONS

Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.



DIMENSIONS IN MILLIMETERS
INCHES IN PARENTHESES FOR REFERENCE

MAJOR COMPONENT

ITEM	COMPONENT	MOUNTING LOCATION	NOTES
A	EXPANSION CHASSIS	CABINET	MOUNT IN ADJACENT CABINET IF POSSIBLE

CABLES

ITEM	CABLE	CONNECTING	NOTES
B	B/P INTERCONNECT ASSY A SIDE (005-014955) B SIDE (005-014829)	EXP CHASSIS SLOT 12 AND EXP CHASSIS SLOT 13	SINGLE BUS CONFIGURATIONS
	INSULATOR 002-012704		PIN SIDE OF BACKPANEL INTERCONNECTS
C	50-PIN EXTERNAL 005-018617	HOST CHASSIS AND EXPANSION CHASSIS	10 ft
	25-PIN EXTERNAL 005-019441		
D	I/O BUS 005-019056	EXPANSION CHASSIS AND EXTERNAL CABLE	ALL CONFIGURATIONS
E	BUS REPEATER 005-019439	HOST CHASSIS AND EXTERNAL CABLE	CONFIGURATIONS USING BUS REPEATER
F	DCU 005-020295	HOST CHASSIS AND EXTERNAL CABLE	CONFIGURATIONS USING DCU/50 OR DCU/200
G	I/O BUS SPLIT BACKPANEL 005-019535	EXPANSION CHASSIS AND EXTERNAL CABLE	DUAL BUS CONFIGURATIONS

TERMINATOR

ITEM	TERMINATOR	LOCATION	NOTES
H	I/O BUS TERMINATORS A SIDE (005-019992) B SIDE (005-019993)	B/P EXP CHASSIS	DUAL CONFIGS. TWO TERMINATORS FOR A-SIDE TWO TERMINATORS FOR B-SIDE
J	LOAD BOARD 005-015455	EXP CHASSIS SLOT 5	REQUIRED FOR ALL CONFIGS.
K	BUS REPEATER BOARD 005-017374	ANY HOST I/O SLOT	REQUIRED FOR S/280 AND MV CLASS CPU'S
	BUS REPEATER BOARD 005-010043	ANY HOST I/O SLOT	REQUIRED FOR S/120, S/140 AND NOVA 4 CPU'S
L	DCU/50 OR DCU/200 005-005473 005-011976	ANY HOST I/O SLOT	REQUIRED FOR DCU I/O BUS MODELS
M	MEMOK MODULE 005-014846	MAINFRAME SLOT 1	REQUIRED FOR N4, S/120, S/140 CPU'S

DIMENSIONS:

	Width	Depth	Height
Millimeters	482.6	699.5	266.3
Inches	19.00	27.54	10.48

SERVICE CLEARANCES:

	Front	Rear	Left or Right
Millimeters	762	762	762
Inches	30	30	30

WEIGHT:

	Empty	Fully Loaded
Kilograms	30.6	46.5
Pounds	67.5	102.5

HEAT OUTPUT:

	Watts	BTU/hr
	1150	3921.5

OPERATING ENVIRONMENT:

Temperature Range	0 - 55°C (32 - 131°F)
Relative Humidity Range	10 - 90%
Altitude Range	-305 - 2438m (-1000 - 8,000 ft)

STORAGE ENVIRONMENT:

Temperature Range	-40 - 65°C (-40 - 149°F)
Relative Humidity Range	10 - 90%
Altitude Range	0 - 7620m (0 - 25,000 ft)

POWER REQUIREMENTS:

(Domestic)		
Voltage	120V (+10%, -15%)	
Hz	60±1%	
Max Amp per Phase	12A	
Phase	1	
Startup Surge per Phase	17 A (typical) for .35 sec	
(Export)		
Voltage	100 ± 10	220/240 (+10%, -15%)
Hz	50±1%	50±1%
Max Amp per Phase	15A	8A
Phase	1	1
Startup Surge per Phase	14 A (typ) for .35 sec	34 A (typ) for .10 sec

LINE CORDS

Supply	Part No.
100V	109 - 719
120V	109 - 719
220/240	109 - 708

CABLES:

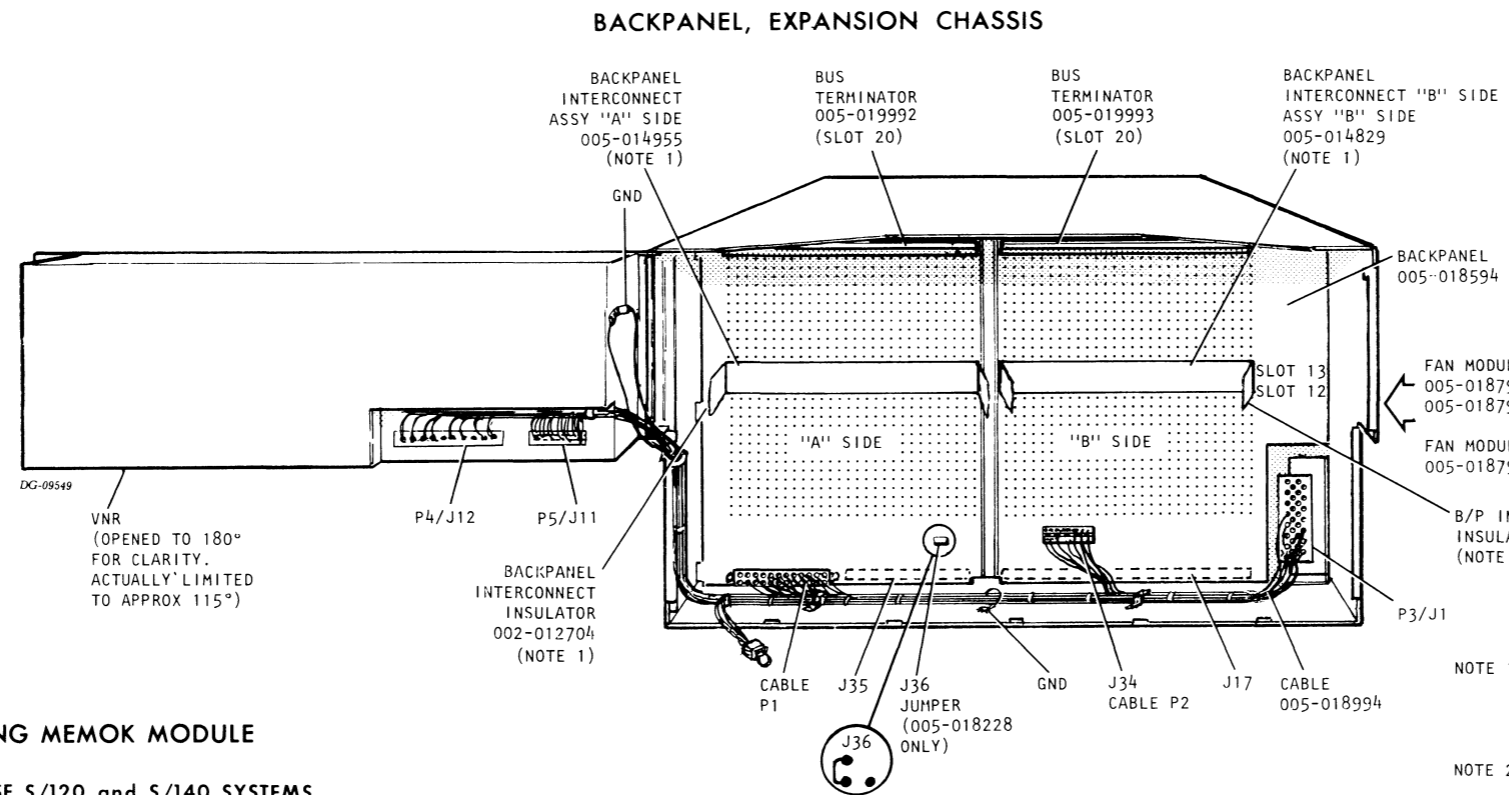
Primary Power	Length	Conn	Mating Conn
Domestic	1.8M(6')	5-15P	5-15R
Export	1.8M(6')	6-15P	6-15R

FOR PACKING PROCEDURE,
SEE 010-000263

INTERNAL CABLING

WARNING:

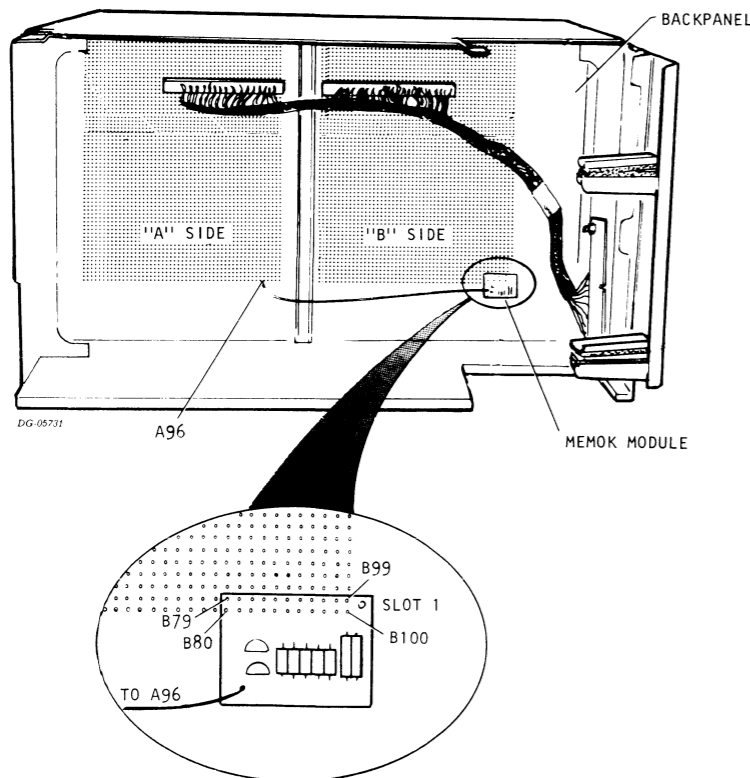
THE POWER SUPPLY ASSEMBLIES IN THIS PRODUCT SHOULD BE SERVICED ONLY BY QUALIFIED PERSONNEL WITH PROPER EQUIPMENT.



FAN MODULE 005-018791 INDICATES 100V MODULE (100V FAN 115-000287); FAN MODULE 005-018792 INDICATES 120, 220/240V MODULE (120/240V FAN 115-000163).

MOUNTING MEMOK MODULE

NOVA 4 and ECLIPSE S/120 and S/140 SYSTEMS
MAIN 16-SLOT CHASSIS



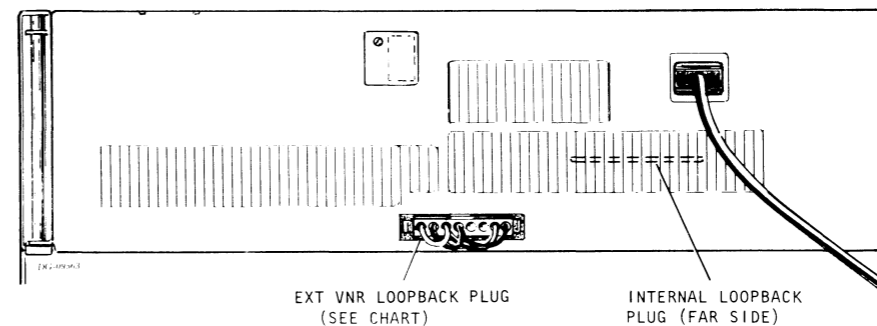
DUAL BUS CONFIGURATION

NOTE 1: THE BACKPANEL INTERCONNECT ASSEMBLIES (005-014955, 005-014829) AND BACKPANEL INTERCONNECT INSULATORS (002-012704) ARE NOT INSTALLED FOR DUAL BUS CONFIGURATIONS.

NOTE 2: INSTALL A-SIDE BUS TERMINATORS (005-019992) AND B-SIDE BUS TERMINATORS (005-019993) ON SLOTS 12 AND 20 FOR DUAL BUS CONFIGURATIONS.

THE B/P INTERCONNECT ASSEMBLIES MOUNT OVER PINS OF SLOTS 12 AND 13. THE A-SIDE ASSEMBLY (005-014955) MOUNTS SO THAT PINS A1 AND A99 OF SLOT 13 ARE IN THE HOLES NUMBERED 1 AND 99 RESPECTIVELY; THE B-SIDE ASSEMBLY (005-014829) MOUNTS SO THAT PINS B1 AND B99 OF SLOT 13 ARE IN HOLES 1 AND 99 RESPECTIVELY.

VNR CHASSIS



AC VOLTS IN	WITH EXT BBU		WITHOUT EXT BBU		VNR ASSY NO
	EXTERNAL LOOPBACK PLUG	INTERNAL LOOPBACK PLUG	EXTERNAL LOOPBACK PLUG	INTERNAL LOOPBACK PLUG	
100V	SEE 010-000333	005-018772	005-018774	005-018772	005-019979
120V	SEE 010-000333	005-018772	005-018774	005-018772	005-019978
220/240V	SEE 010-000333	005-018773	005-018986	005-018773	005-019990

LINE CORD
109-000719 (100, 120V)
109-000708 (220/240V)

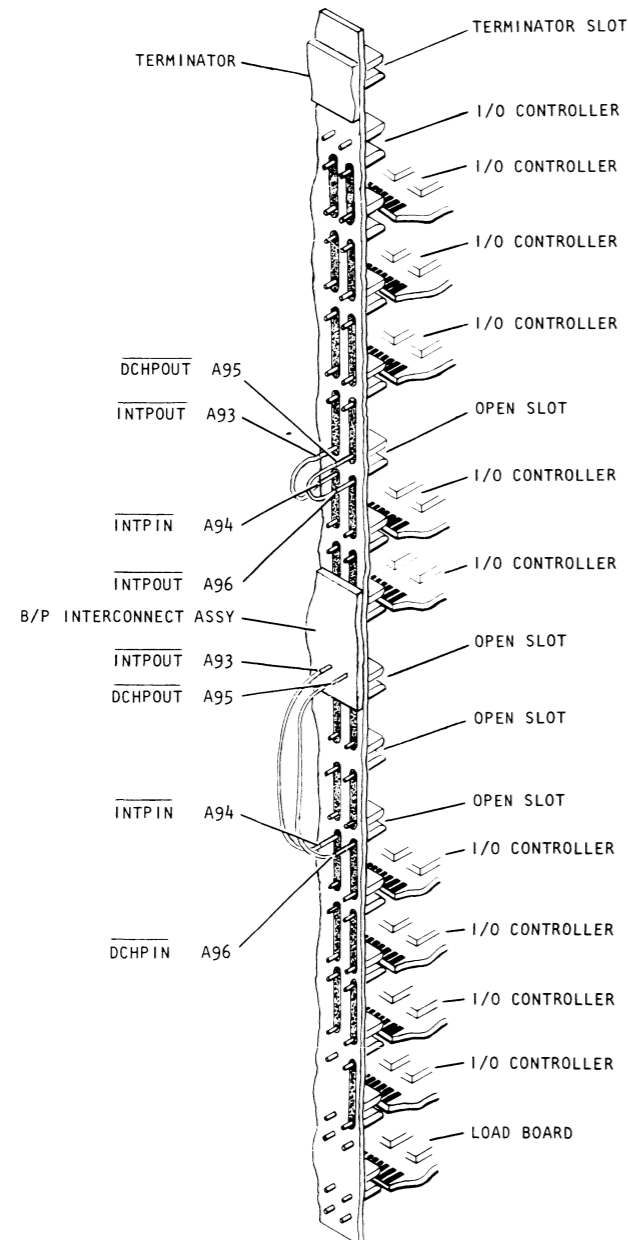
NOTE: TO INSURE PROPER SYSTEM OPERATION, VERIFY THAT INTERNAL AND EXTERNAL LOOPBACK PLUG VOLTAGE LABELS MATCH THE SYSTEM OPERATING VOLTAGE.

INTERNAL CABLING (CONT)

BACKPANEL JUMPERING

EACH GROUP OF OPEN (EMPTY, NON-TERMINATOR) SLOTS IN BETWEEN SLOTS CONTAINING BOARDS, MUST HAVE INTERRUPT AND DATA CHANNEL PRIORITY JUMPERS INSTALLED ACROSS THEM. IN ADDITION, IF A COMMUNICATIONS BOARD RESIDES IN A SLOT ABOVE A GROUP OF OPEN SLOTS, COMMUNICATIONS INTERRUPT PRIORITY JUMPERS MUST ALSO BE INSTALLED. IN DUAL BUS CONFIGURATIONS, ONLY GROUPS OF OPEN SLOTS BETWEEN FULL SLOTS ON THE SAME BUS MUST BE JUMPED.

INTERRUPT AND DATA CHANNEL PRIORITY JUMPERING
(SINGLE REPEATED I/O BUS SHOWN)



SLOT	ALLOWED (SLOT CHART)	ASSIGNED	+5 CURRENT DRAW	+12 CURRENT DRAW	-5 CURRENT DRAW	WATTS
20	TERMINATOR		1			
19	I/O					
18						
17						
16						
15						
14						
13						
12	NOTE 1					
11						
10						
9						
8						
7						
6	I/O					
5	LOAD BOARD		6			
1-4	POWER SUPPLY					
N/A	EXTERNAL BBU		6	1.5		

NOTE 1: For Dual Bus configurations, A-side terminators (005-19992) and B-side terminators (005-19993) are also required on slot 12.

TOTAL +5 CURRENT DRAW _____ A
 MAX +5 CURRENT AVAILABLE 120 A
 +5 CURRENT SURPLUS _____ A
 MINIMUM +5 CURRENT 6 A

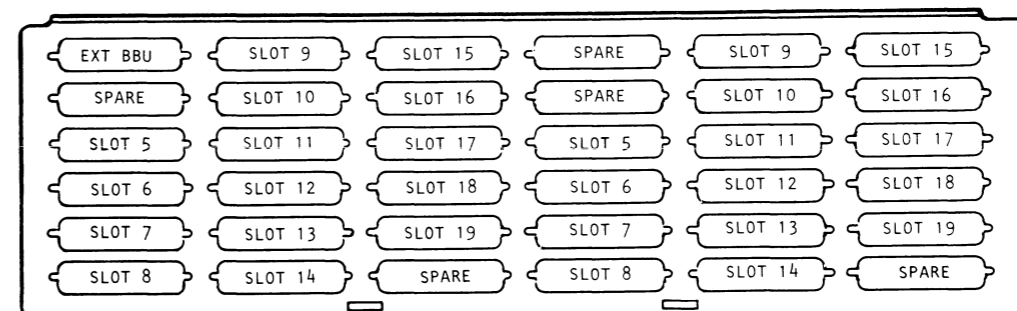
TOTAL +12 CURRENT DRAW _____ A
 MAX +12 CURRENT AVAILABLE 12.5 A
 +12 CURRENT SURPLUS _____ A
 MINIMUM +12 CURRENT 0 A

TOTAL -5 CURRENT DRAW _____ A *
 MAX -5 CURRENT AVAILABLE 6 A
 -5 CURRENT SURPLUS _____ A
 MINIMUM -5 CURRENT 0 A

* SEE SHEET 7 THIS IDS FOR MORE DETAILS.

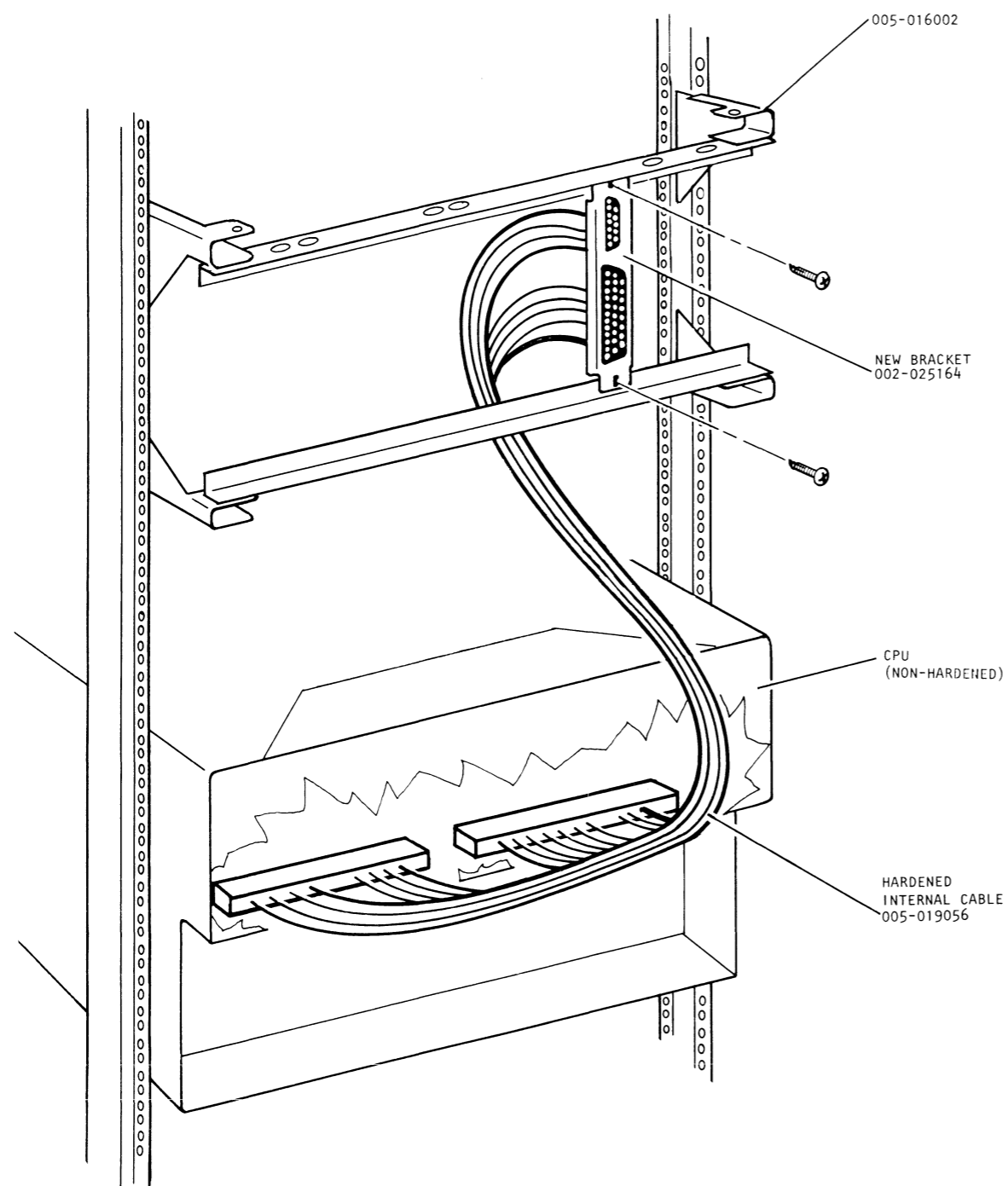
-1 (JAPAN) MODEL LIMITED TO 110 AMPS +5V AND 550 WATTS TOTAL POWER OUTPUT.

STANDARD ASSIGNMENT FOR BACKPANEL TO BULKHEAD INTERNAL CABLES



DG-09564

INTERNAL CABLING (CONT)



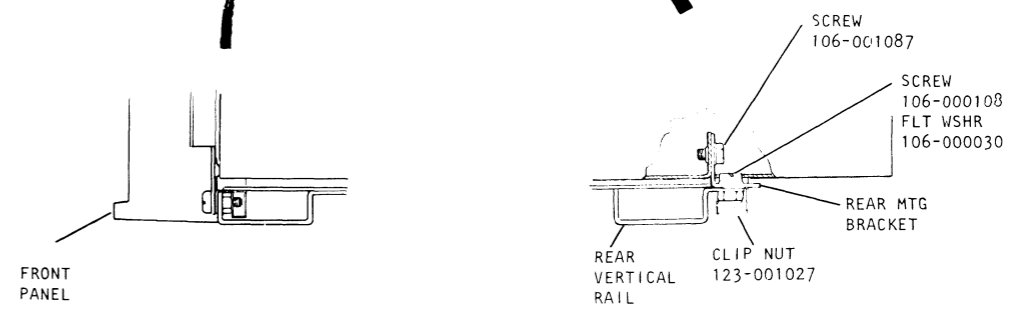
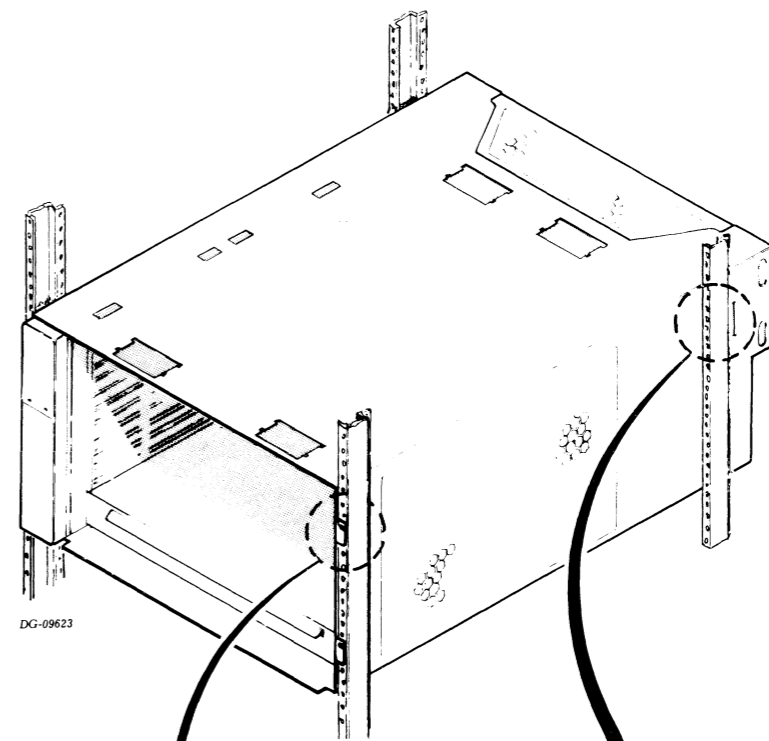
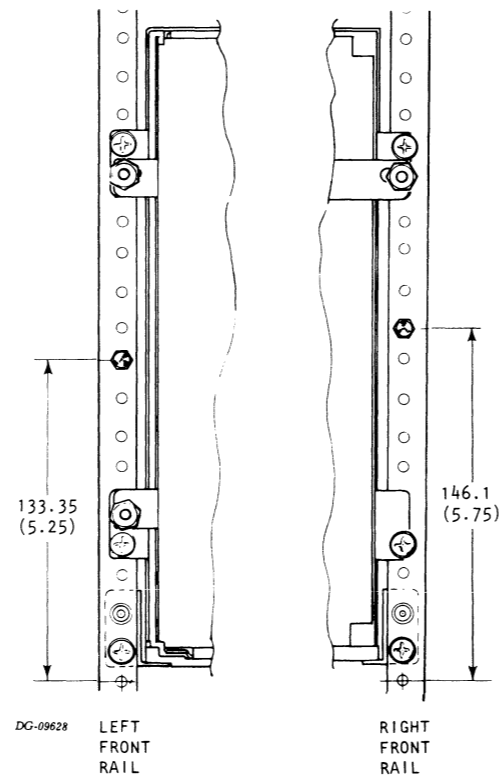
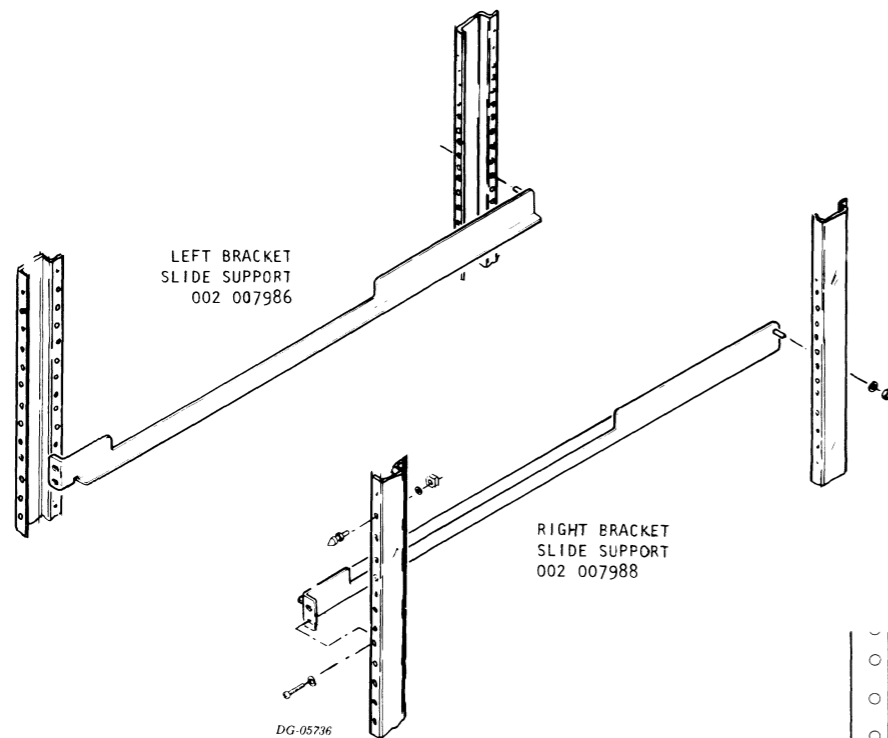
RULES FOR CONNECTING NON-HARDENED CPUs TO A HARDENED EXPANSION CHASSIS
OR HARDENED CPUs TO A NON-HARDENED EXPANSION CHASSIS

NOTE - THE NON-HARDENED EXPANSION OR NON-HARDENED CPU MUST BE RACK MOUNTED EXCEPT IN THE CASE OF STAND-ALONE CPUs. THIS CONCEPT ONLY APPLIES TO BOXES WHERE THE PCBs ARE INSTALLED FROM THE FRONT. IT DOES NOT APPLY TO THOSE BOXES WHERE THE BOX MUST BE PULLED OUT OF ITS CABINET TO ACCESS ITS PCBs.

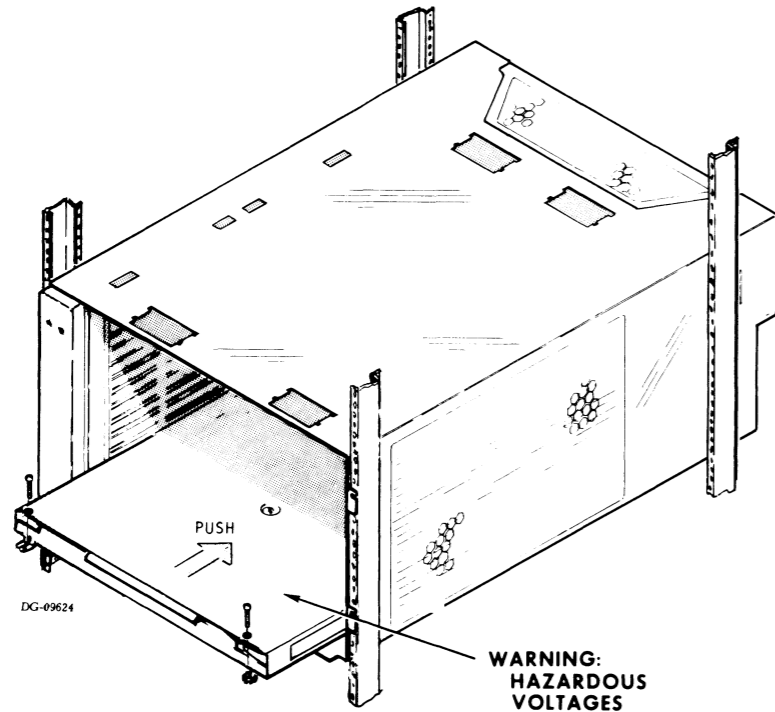
- I. CONNECTING NON-HARDENED CPU TO HARDENED EXPANSION.
 - A. HARDENED EXPANSION INTERNAL CABLE. (005-019056)
 - B. HARDENED EXTERNAL CABLE. (005-018617)
 - C. IF DCU DRIVEN:
 1. USE 005-020295 WITH NEW BRACKET INSTALLED ON IT. *
 2. ADD NEW SUPPORT IF ONE IS NOT ALREADY INSTALLED. **
 3. MOUNT BRACKET TO SUPPORT AND CONNECT EXTERNAL CABLE.
 - D. IF BUS REPEATER DRIVEN:
 1. USE 005-019439 WITH NEW BRACKET INSTALLED ON IT. *
 2. ADD NEW SUPPORT IF ONE IS NOT ALREADY INSTALLED. **
 3. MOUNT BRACKET TO SUPPORT AND CONNECT EXTERNAL CABLE.
 - II. CONNECTING HARDENED CPU TO NON-HARDENED EXPANSION.
 - A. HARDENED CPU INTERNAL CABLE. (005-019439 BUS REPEATER OR 005-020295 DCU)
 - B. HARDENED EXTERNAL CABLE. (005-018617)
 - C. IN EXPANSION USE 005-019056.
 1. MOUNT NEW BRACKET AT END OF CABLE. ***
 2. ADD NEW SUPPORT IF ONE IS NOT ALREADY INSTALLED. SUPPORT (005-016002) MUST BE MOUNTED ON CABINET DIRECTLY ABOVE OR BELOW THE EXPANSION BACKPANEL.
 3. ATTACHED BRACKET TO SUPPORT AND CONNECT EXTERNAL CABLE.
- * NOTE - BRACKET IS 002-025164.
- ** NOTE - SUPPORT IS ALREADY INSTALLED ON ALL NON-HARDENED STAND ALONE CPUs. (S/250, C/350, M/600, AND MV/8000.) SUPPORT IS ALREADY INSTALLED IF PRESENT CPU HAS COMMUNICATIONS GEAR ATTACHED AND CABLED TO IT. IF REQUIRED, SUPPORT (005-016002) MUST BE MOUNTED DIRECTLY ABOVE CPU'S BACKFRAME.
- *** NOTE - BRACKET IS 002-025164.

CABINET MOUNTING

HARDWARE MOUNTING KIT 005-019199

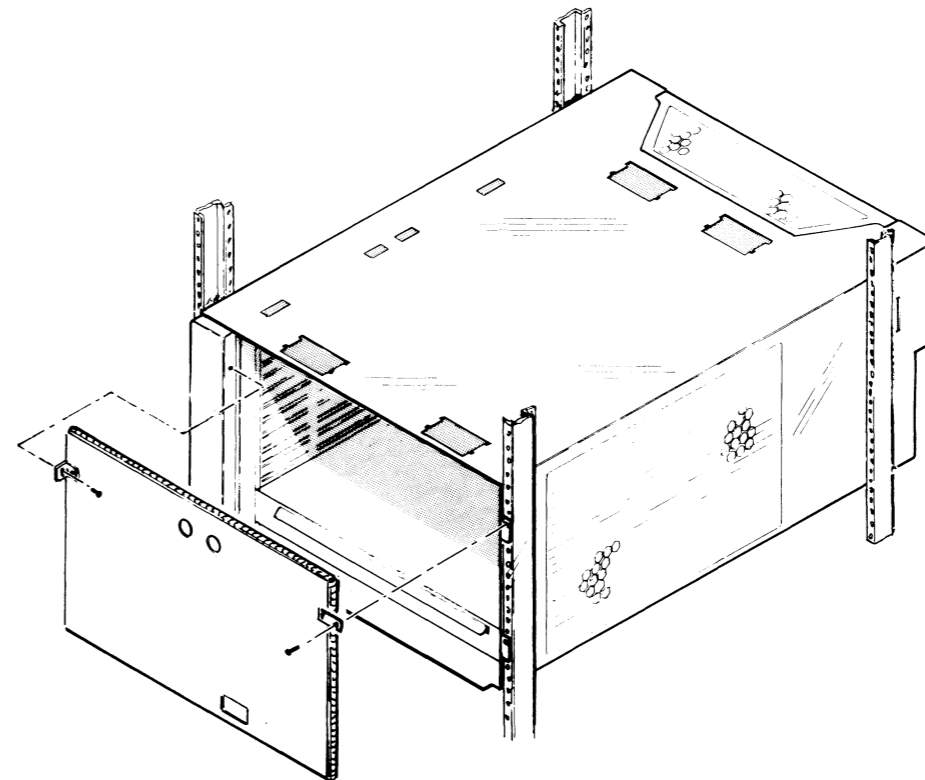


INSERTING POWER SUPPLY

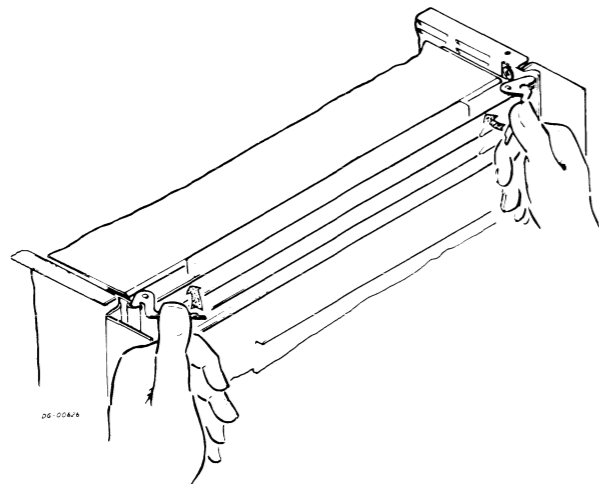


NOTE:
REMOVE GROUND STRAP AND MOUNTING
SCREWS ATTACHED TO CHASSIS BEFORE
REMOVING POWER SUPPLY.

INSTALLING RFI SHIELD



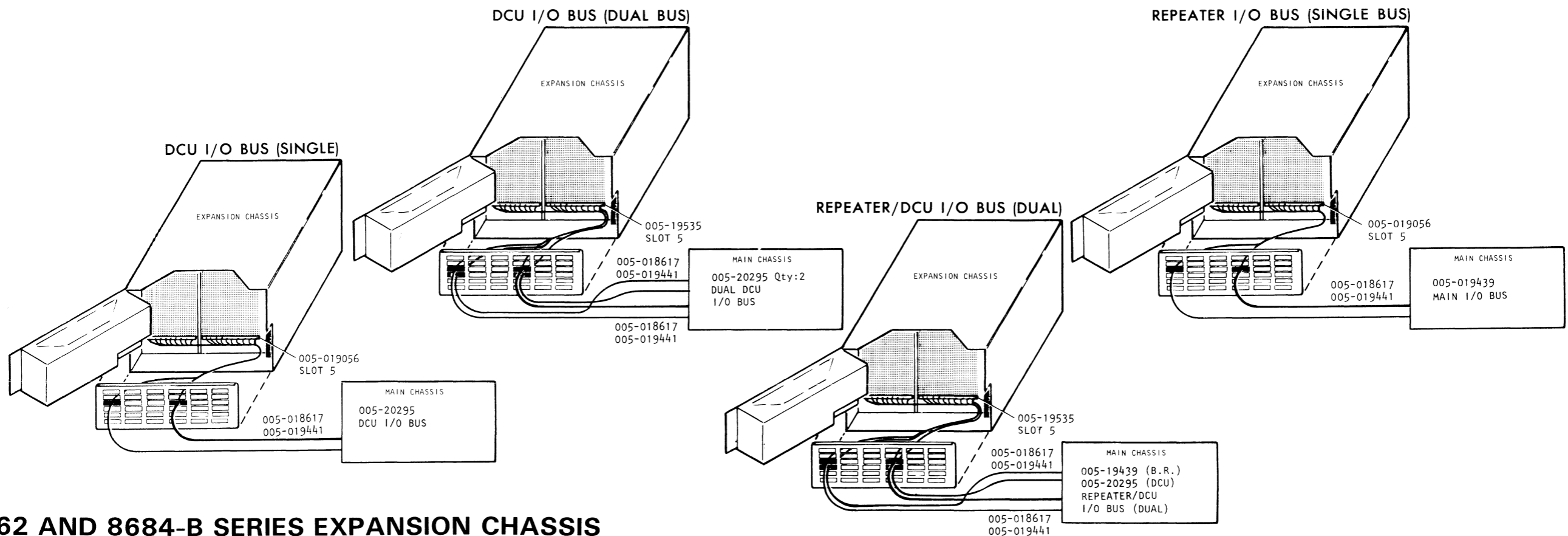
INSERTING PC BOARD



DG-00474

CONFIGURATION

<p>8762-BC 8684-BC</p>		<p>SINGLE DCU I/O BUS. THE 14 I/O SLOTS ARE DRIVEN BY A DCU ON THE HOST I/O BUS.</p>	<p>005-20295 005-19056 005-18617 005-19441 005-14955 005-14829 005-19992 005-19993</p>	<p>1 1 1 1 1 1 1 1</p>	<p>DCU CABLE INTERNAL CABLE (EXPANSION) DAISY CHAIN CABLES EXP. B/P INTERCONNECT (A-SIDE) EXP. B/P INTERCONNECT (B-SIDE) TERMINATOR (A-SIDE) TERMINATOR (B-SIDE)</p>
<p>8762-BE 8684-BE</p>		<p>DUAL DCU I/O BUS. THE DUAL BUS IS DRIVEN BY THE TWO DCU'S ON THE HOST BUS.</p>	<p>005-20295 005-19535 005-18617 005-19441 005-19992 005-19993</p>	<p>2 1 2 2 2 2</p>	<p>DCU CABLE DUAL BUS INTERNAL CABLE (EXP.) DAISY CHAIN CABLES TERMINATOR (A-SIDE) TERMINATOR (B-SIDE)</p>
<p>8762-BD 8684-BD</p>		<p>DUAL DCU/BUS REPEATER I/O BUS. THE 6 AND 7 SLOT DUAL BUS CONFIGURATION CAN BE DRIVEN BY DCU/BUS REPEATER OR BUS REPEATER/DCU COMBINATIONS ON THE HOST I/O BUS.</p>	<p>005-19429 005-20295 005-19535 005-18617 005-19441 005-19992 005-19993</p>	<p>1 1 1 2 2 2 2</p>	<p>BUS REPEATER CABLE DCU CABLE INTERNAL CABLE (EXP.) DAISY CHAIN CABLES TERMINATOR (A-SIDE) TERMINATOR (B-SIDE)</p>
<p>8762 8684-BB</p>		<p>SINGLE REPEATER I/O BUS. THE 14 I/O SLOTS ARE DRIVEN BY A BUS REPEATER ON THE HOST I/O BUS.</p>	<p>005-019439 005-019056 005-018617 005-019441 005-014955 005-014829 005-019992 005-019993</p>	<p>1 1 1 1 1 1 1 1</p>	<p>BUS REPEATER CABLE INTERNAL CABLE (EXPANSION) DAISY CHAIN CABLE EXP B/P INTERCONNECT (A SIDE) EXP B/P INTERCONNECT (B SIDE) TERMINATOR "A" TERMINATOR "B"</p>

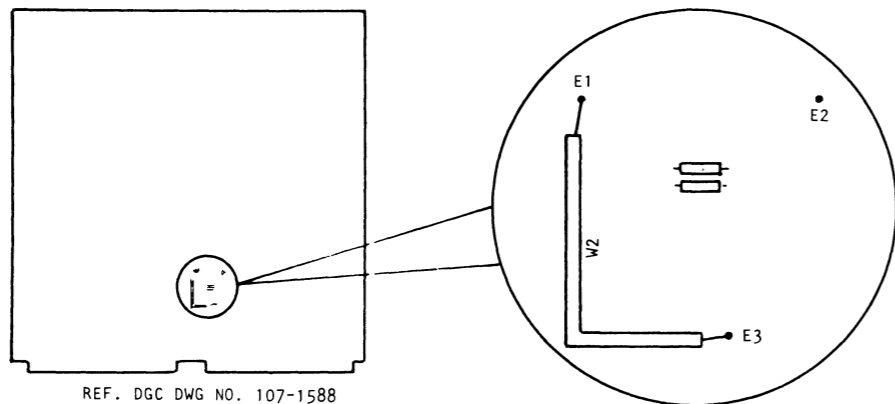


8762 AND 8684-B SERIES EXPANSION CHASSIS

DC LOADING RULES

LOAD BOARD JUMPERING

W2 MUST CONNECT E2 TO E3 UNLESS THE EXPANSION CHASSIS CONTAINS MORE THAN SEVEN 16-LINE COMMUNICATIONS BOARDS; IN THIS CASE, W2 MUST CONNECT E1 TO E3.



REF. DGC DWG NO. 107-1588

CAUTION:

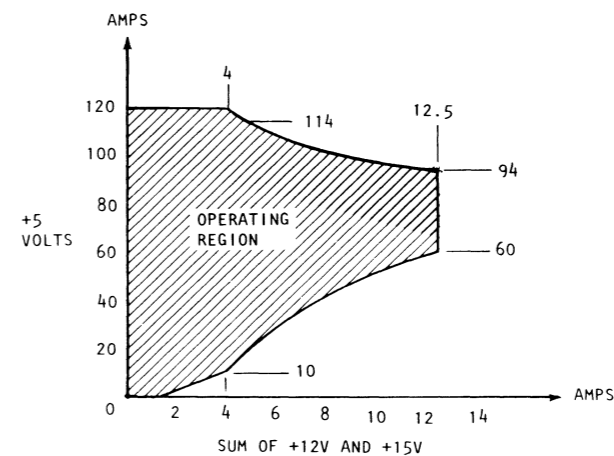
DO NOT POWER UP THE SYSTEM WITHOUT A LOAD BOARD IN THE EXPANSION CHASSIS, SINCE POWERING UP THE EXPANSION CHASSIS WITHOUT A LOAD ON THE POWER SUPPLY MAY BLOW FUSE F1 IN THE VNR UNIT.

+5V LOAD DISTRIBUTION WITH LOAD BOARD IN SLOT 5

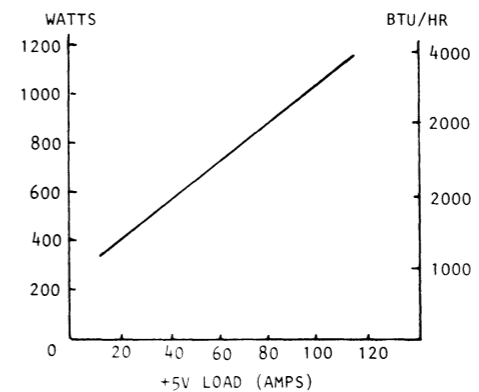
GROUP OF SLOTS	MAXIMUM CURRENT (AMPS) FOR GROUP
5, 6	50
7, 8	50
9, 10, 11, 12	50
13, 14, 15, 16	50
17, 18, 19, 20	50

DC LOADING RULES FOR THE EXPANSION CHASSIS WITH THE LOAD BOARD

1. THE LOAD ON +15V MUST NOT EXCEED 1.5 AMPS.
2. THE SUM OF THE LOADS ON +12V AND +15V MUST NOT EXCEED 12.5 AMPS.
3. THE LOAD ON -5V MUST NOT EXCEED 3 AMPS WHEN THE LOAD BOARD JUMPER (W2) CONNECTS E2 TO E3 OR 6 AMPS WHEN W2 CONNECTS E1 TO E3.
4. THE LOADS MUST BE WITHIN THE OPERATING REGION SHOWN BELOW:



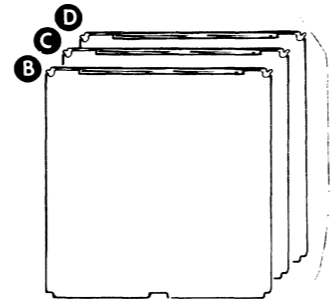
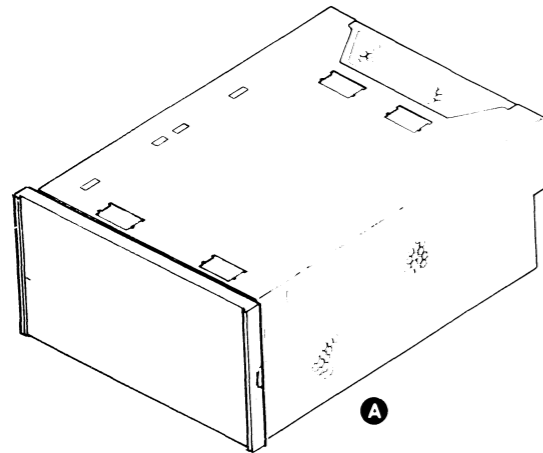
POWER CONSUMPTION VS LOADING*



*THIS CHART IS A GUIDELINE TO THE ACTUAL HEAT OUTPUT OF A SPECIFIC SYSTEM.

NOVA LINE

INSTALLATION SPECIFICATIONS



Component	Mounting Location
A	16-SLOT CHASSIS
B	CPU
C	MEMORY
D	FLOATING POINT UNIT (FPU)

SLOT	ALLOWED (SLOT CHART)	ASSIGNED	+ 5 CURRENT DRAW	+ 12 CURRENT DRAW	-5 CURRENT DRAW	WATTS
16	I/O					
15	I/O					
14	I/O					
13	I/O					
12	I/O					
11	MEM. OR I/O					
10						
9						
8						
7						
6						
5						
4						
3	MEM. OR I/O					
2	MEM OR FPU	NOTE 2,3				
1	CPU	NOTE 1				
0	POW SUPPLY					

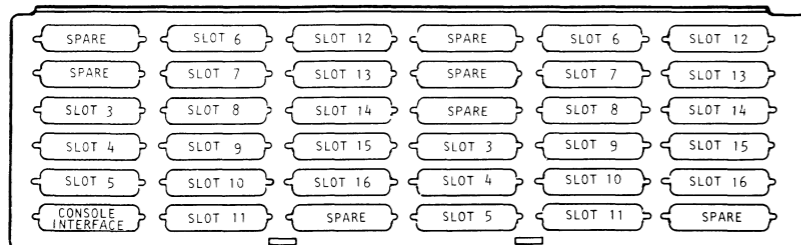
- NOTES:
- NOVA 4/S and NOVA 4/X NOVA 4/C 13.5A 8A
 - MEMORY (NOVA 4/S & 4/X only) w/BATTERY BACKUP OPTION PRESENT 4.4A w/o BATTERY BACKUP OPTION PRESENT 5.6A
 - FLOATING POINT UNIT 15A
 - MAXIMUM 4 MEMORY BOARDS PER SYSTEM
 - MAXIMUM 10 I/O BOARDS CONNECTED TO I/O BUS W/O A BUS REPEATER
 - PUSH-ON TERMINATORS ON TOP MEMORY SLOT FOR NOVA 4/S & 4/X.
 - PUSH ON TERMINATORS ON SLOT 2 FOR NOVA 4/C

TOTAL + 5 CURRENT DRAW _____ A	TOTAL + 12 CURRENT DRAW _____ A	TOTAL -5 CURRENT DRAW _____ A
MAX + 5 CURRENT AVAILABLE 120 A	MAX + 12 CURRENT AVAILABLE 12.5 A	MAX -5 CURRENT AVAILABLE 6 A
+ 5 CURRENT SURPLUS _____ A	+ 12 CURRENT SURPLUS _____ A	-5 CURRENT SURPLUS _____ A
MINIMUM + 5 CURRENT 6 A	MINIMUM + 12 CURRENT 0 A	MINIMUM -5 CURRENT 0 A

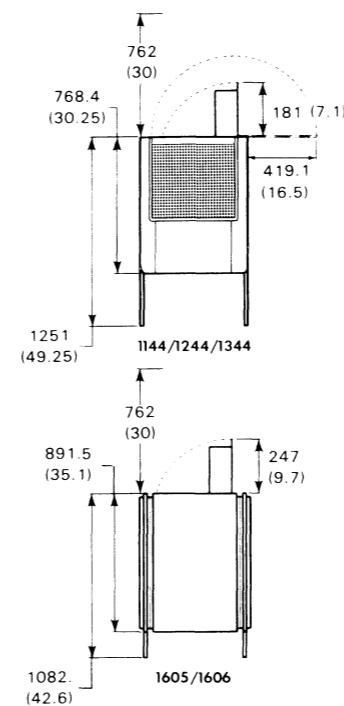
*SEE SHEET 9 THIS IDS FOR MORE DETAILS.

-1 (JAPAN) MODEL LIMITED TO 110 AMPS +5V AND 550 WATTS TOTAL POWER OUTPUT.

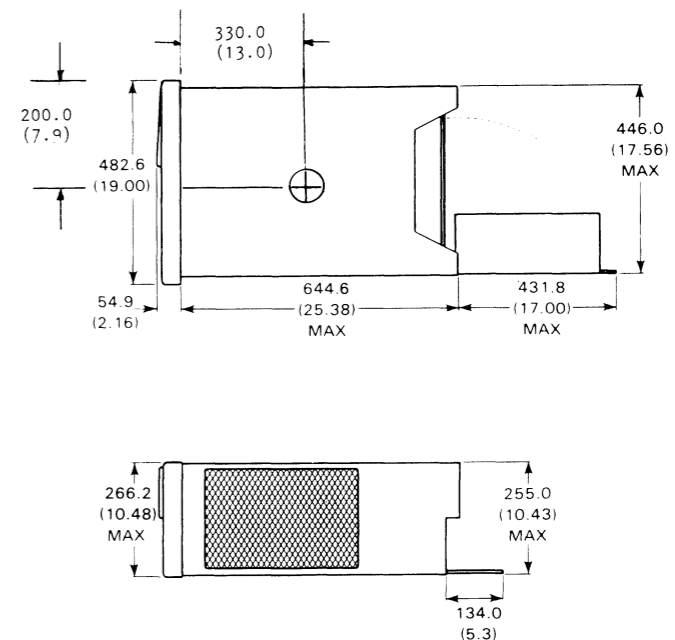
STANDARD ASSIGNMENT! FOR BACKPANEL TO BULKHEAD INTERNAL CABLES!



SERVICE DIMENSIONS



DG-09642



DIMENSIONS IN MILLIMETERS INCHES IN PARENTHESES FOR REFERENCE

DIMENSIONS:

Millimeters	Width 482.6	Depth 699.5	Height 266.3
Inches	19.00	27.54	10.48

SERVICE CLEARANCES:

	Front	Rear	Left or Right
Millimeters	762	762	762
Inches	30	30	30

WEIGHT:

	Empty	Fully Loaded
Kilograms	30.6	46.5
Pounds	67.5	102.5

HEAT OUTPUT:

	Watts	BTU/hr
	1150	3921.5

OPERATING ENVIRONMENT:

Temperature Range	0 - 55°C (32 - 131°F)
Relative Humidity Range	10 - 90%
Altitude Range	-305 - 2438m (-1000 - 8,000 ft)

STORAGE ENVIRONMENT:

Temperature Range	-40 - 65°C (-40 - 149°F)
Relative Humidity Range	10 - 90%
Altitude Range	0 - 7620m (0 - 25,000 ft)

POWER REQUIREMENTS:

(Domestic)		
Voltage	120V ± 10%	115V ± 10%
Hz	50-60	57-63
Max Amp per Phase	12A	
Phase	1	
Startup Surge per Phase	17 A (typical) for .35 sec	

(Export)

Voltage	100 ± 10%	220/240 ± 10%
Hz	47-63	47-63
Max Amp per Phase	15A	8A
Phase	1	1
Startup Surge per Phase	14 A (typ) for .35 sec	34 A (typ) for .10 sec

CORSET

Supply	Part No.
100V	109 - 719
120V	109 - 719
220/240	109 - 708

CABLES:

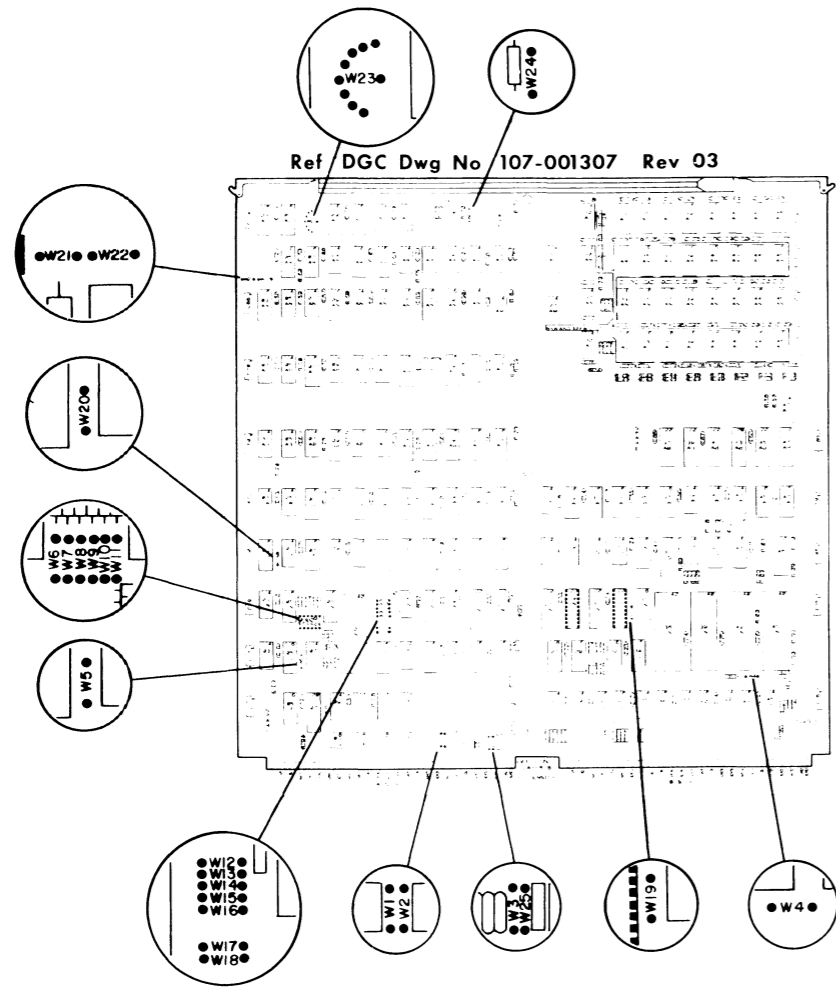
Primary Power	Length	Wall Conn	Cordset Conn	Cordset Connector (CPU)
Domestic	1.8M(6')	5-15R	5-15P	CEE-22
Export	1.8M(6')	6-15R	6-15P	CEE-22

(10 AMPS)

FOR PACKING PROCEDURE, SEE 010-000263

Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

TAILORING CPU JUMPERING NOVA 4/C



DEVICE CODE JUMPERS FOR FRONT PANEL AUTOMATIC PROGRAM LOAD
SELECT THE PROGRAM LOAD DEVICE CODE BY INSTALLING JUMPERS
W11, W8, W6, W7, W9, W10, AS FOLLOWS:

JUMPER OUT = 1 JUMPER IN = 0

EXAMPLE JUMPERING FOR DEVICE CODE 27g:

W11	W8	W6	W7	W9	W10
IN	OUT	IN	OUT	OUT	OUT

W4 IS NOT INSERTED IF THE PROGRAM LOAD DEVICE IS A HIGH SPEED DEVICE, OTHERWISE IT IS INSERTED.

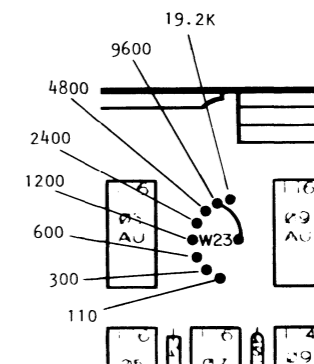
TYPE OF TRANSMISSION JUMPERS

TYPE OF TRANSMISSION	JUMPERS INSERTED*
20MA CURRENT LOOP EIA RS232-C	W1, W3 W2

* JUMPER 25 IS INSERTED IF THE SYSTEM TERMINAL IS A TELETYPE, OTHERWISE IT IS NOT INSERTED.

* JUMPERS W17 AND W18 MUST ALSO BE INSERTED AS SHOWN BELOW.

W23 IS INSERTED TO DETERMINE THE BAUD RATE AS SHOWN BELOW: (9600 SHOWN)



W22 IS NEVER INSERTED.

THE FOLLOWING JUMPERS ARE ALWAYS INSERTED:

- W5
- W19
- W20
- W21
- W24

STOP BIT JUMPERS

NUMBER OF STOP BITS	W15 JUMPER POSITION
1	IN
2	OUT

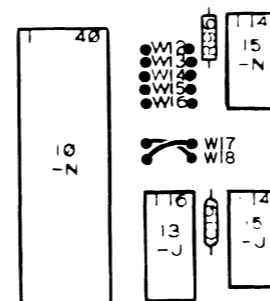
PARITY JUMPERS

TYPE OF PARITY	JUMPER POSITION	
	W12	W16
EVEN	OUT	IN
ODD	IN	IN
NONE	OUT	OUT

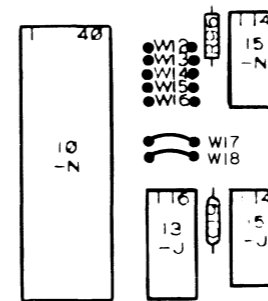
CHARACTER LENGTH JUMPERS

CHARACTER LENGTH	JUMPER POSITION	
	W13	W14
5 BITS	IN	IN
6 BITS	OUT	IN
7 BITS	IN	OUT
8 BITS	OUT	OUT

20MA CURRENT LOOP



EIA RS232-C



JUMPERS W17 AND W18 MUST NOT TOUCH!

CPU/MEMORY LOADS

VOLTAGE	DESCRIPTION	CURRENT DRAW
+5V	SYSTEM WITHOUT BATTERY BACKUP	8.0A
+5V	SYSTEM WITH BATTERY BACKUP	7.5A
+5V MEM		0.5A
+12V MEM		0.7A
+15V		0.04A

TAILORING (CONT) CPU JUMPERING NOVA 4/S OR 4/X

BAUD RATE JUMPERS

BAUD RATE	JUMPER POSITION:				
	W17	W18	W19	W20	W27
50	IN	IN	OUT	IN	OUT
75	IN	IN	OUT	OUT	OUT
110	OUT	OUT	OUT	OUT	IN
134.5	IN	OUT	IN	IN	OUT
150	OUT	OUT	OUT	IN	OUT
200	IN	OUT	IN	OUT	OUT
300	OUT	OUT	IN	OUT	OUT
600	IN	OUT	OUT	IN	OUT
1200	OUT	IN	OUT	OUT	OUT
1600	OUT	IN	OUT	IN	OUT
2400	OUT	OUT	IN	IN	OUT
4800	OUT	IN	IN	OUT	OUT
9600	OUT	IN	IN	IN	OUT
19200	IN	IN	IN	OUT	OUT

PARITY JUMPERS

TYPE OF PARITY	JUMPER POSITION	
	W22	W21
EVEN	OUT	IN
ODD	IN	IN
NONE	OUT	OUT

CHARACTER LENGTH JUMPERS

CHARACTER LENGTH	JUMPER POSITION	
	W25	W24
5 BITS	IN	IN
6 BITS	OUT	IN
7 BITS	IN	OUT
8 BITS	OUT	OUT

TYPE OF TRANSMISSION JUMPERS

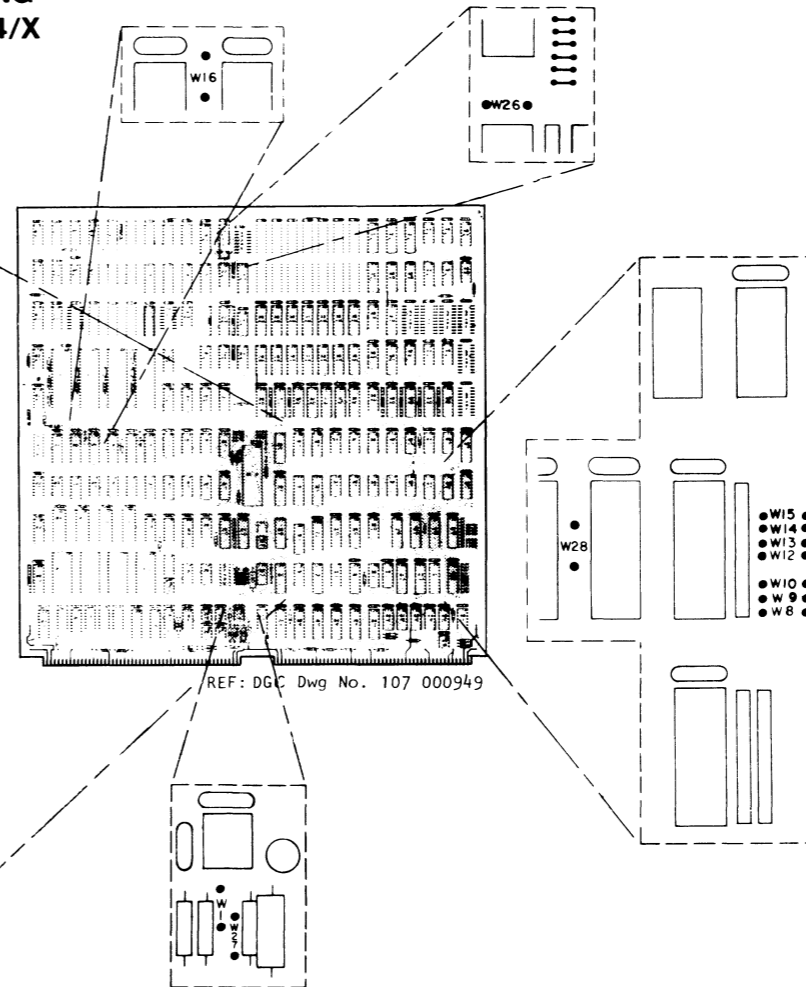
TYPE OF TRANSMISSION	JUMPERS INSERTED
20MA CURRENT LOOP	W4, W7, W2, W1
EIA RS232-C	W6, W3

STOP BIT JUMPERS

NUMBER OF STOP BITS	W23 JUMPER POSITION
1	IN
2	OUT

REAL TIME CLOCK JUMPER

	W28
RTC ENABLED	IN
RTC DISABLED	OUT



DEVICE CODE JUMPERS FOR FRONT PANEL AUTOMATIC PROGRAM LOAD

SELECT THE PROGRAM LOAD DEVICE CODE BY INSTALLING JUMPERS W13, W15, W14, W12, W10, W8 AS FOLLOWS:

JUMPER IN = 1 JUMPER OUT = 0

EXAMPLE JUMPERING FOR DEVICE CODE 27 :
8

W13	W15	W14	W12	W10	W8
OUT	IN	OUT	IN	IN	IN

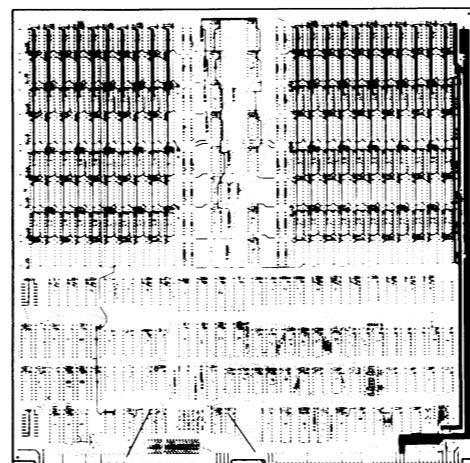
W9 IS INSERTED IF THE PROGRAM LOAD DEVICE IS A HIGH SPEED DEVICE, OTHERWISE, IT IS REMOVED.

NOTE: JUMPERS W16 AND W26 ARE ALWAYS INSERTED. JUMPERS W5 AND W11 DO NOT EXIST.

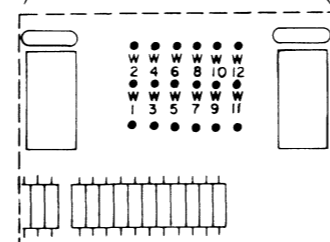
+5V CURRENT DRAW = 13.5A

TAILORING (CONT)

MEMORY JUMPERING NOVA 4/S AND 4/X



REF: DGC Dwg No. 107 000813



NOVA 4/X MEMORY BOARD SELECT JUMPERS

ADDRESS RANGE	JUMPERS INSERTED*		
	BOARD SIZE		
	256KBYTES	128KBYTES	64KBYTES
0377777-	NONE	W8	W8 W10
0300000-			W8 W9
0277777-		W7	W7
0200000-	W7 W9		
0177777-			
0100000-			
0077777-			
0000000-			

*NOTE: JUMPERS W1, W3, AND W5 ARE ALWAYS INSERTED.
JUMPERS W2, W4, AND W6 ARE NEVER INSERTED.

NOVA 4/S MEMORY BOARD SELECT JUMPERS

ADDRESS RANGE	JUMPERS INSERTED*	
	BOARD SIZE	
	64 KBYTES	32KBYTES
0077777-	W7 W9	W7 W9 W12
0040000-		W7 W9 W11
0037777-		
0000000-		

NOTE: JUMPERS W1, W3, AND W5 ARE ALWAYS INSERTED;
JUMPERS W2, W4, AND W6 ARE NEVER INSERTED.

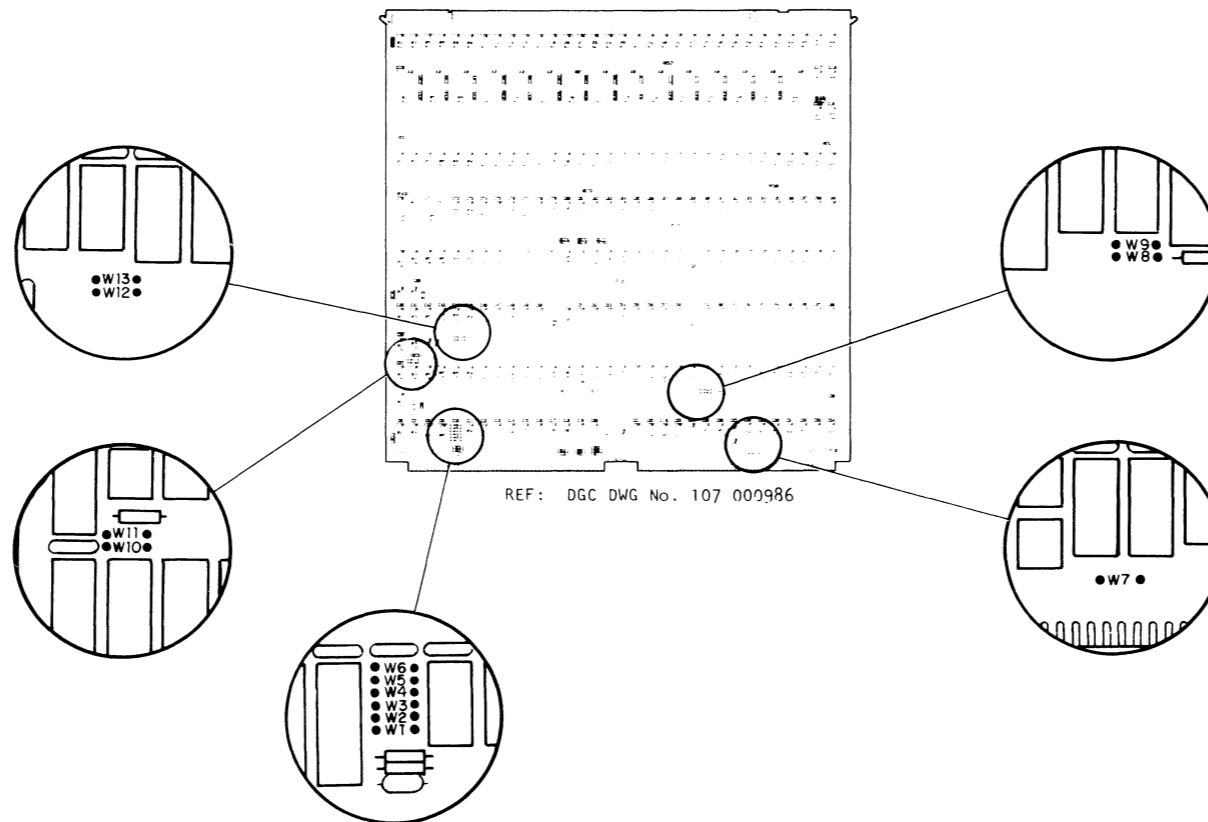
SYSTEMS SHOULD BE CONFIGURED WITH THE LARGER BOARDS OCCUPYING THE LOWER MEMORY ADDRESS RANGES.

MEMORY LOADS

VOLTAGE	DESCRIPTION	CURRENT DRAW
+5V	SYSTEM WITH BATTERY BACKUP	4.4 A
+5V	SYSTEM WITHOUT BATTERY BACKUP	5.6 A
+5V MEM		1.2 A
+12V MEM	FIRST BOARD IN CHASSIS	2.3 A
+12V MEM	EACH ADDITIONAL BOARD	0.3 A

TAILORING (CONT)

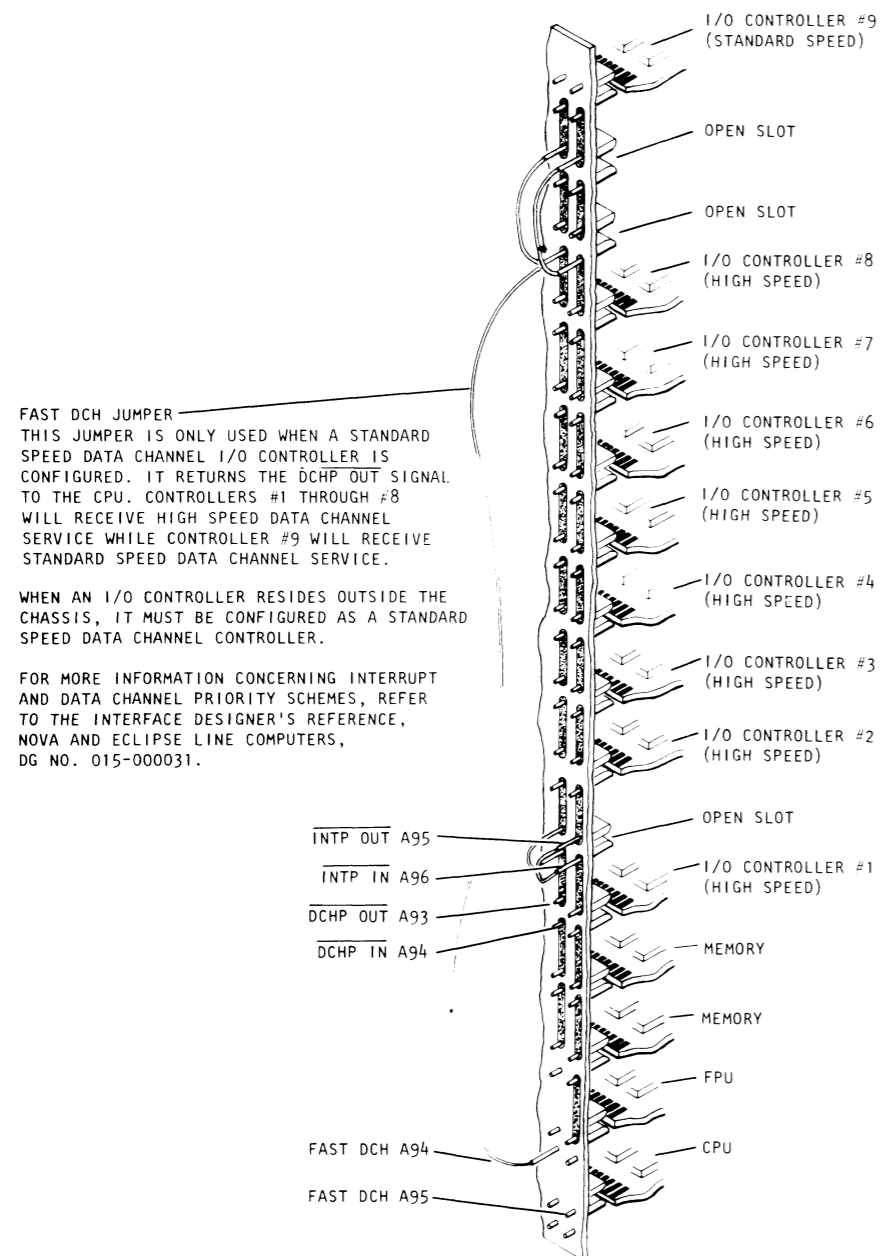
FLOATING POINT UNIT JUMPERING



THE JUMPERS MUST BE POSITIONED ON THE FLOATING POINT UNIT PRINTED CIRCUIT BOARD AS INDICATED IN THE TABLE BELOW.

JUMPER	POSITION
W1	IN
W2	OUT
W3	OUT
W4	IN
W5	OUT
W6	IN
W7	IN
W8	OUT
W9	IN
W10	OUT
W11	IN
W12	OUT
W13	IN

TAILORING (CONT)
BACKPANEL JUMPERING



FAST DCH JUMPER
THIS JUMPER IS ONLY USED WHEN A STANDARD SPEED DATA CHANNEL I/O CONTROLLER IS CONFIGURED. IT RETURNS THE DCHP OUT SIGNAL TO THE CPU. CONTROLLERS #1 THROUGH #8 WILL RECEIVE HIGH SPEED DATA CHANNEL SERVICE WHILE CONTROLLER #9 WILL RECEIVE STANDARD SPEED DATA CHANNEL SERVICE.

WHEN AN I/O CONTROLLER RESIDES OUTSIDE THE CHASSIS, IT MUST BE CONFIGURED AS A STANDARD SPEED DATA CHANNEL CONTROLLER.

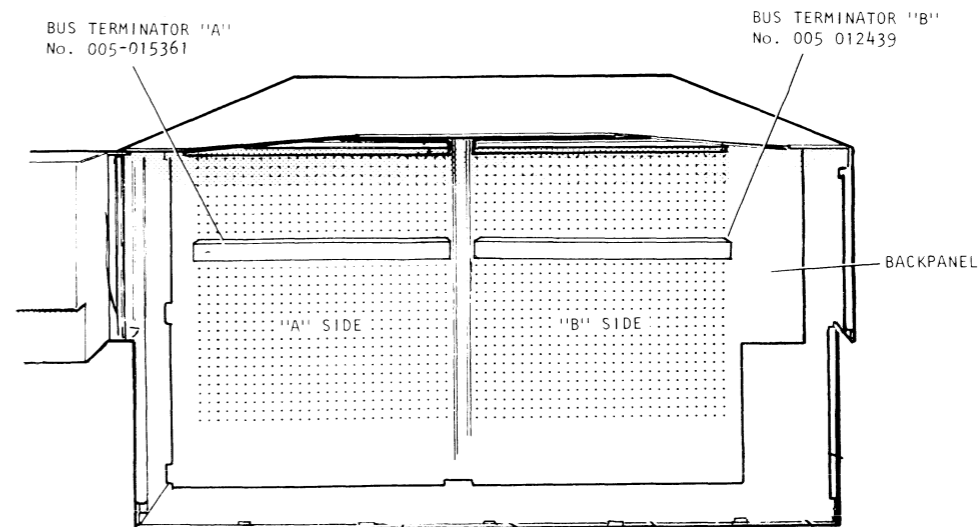
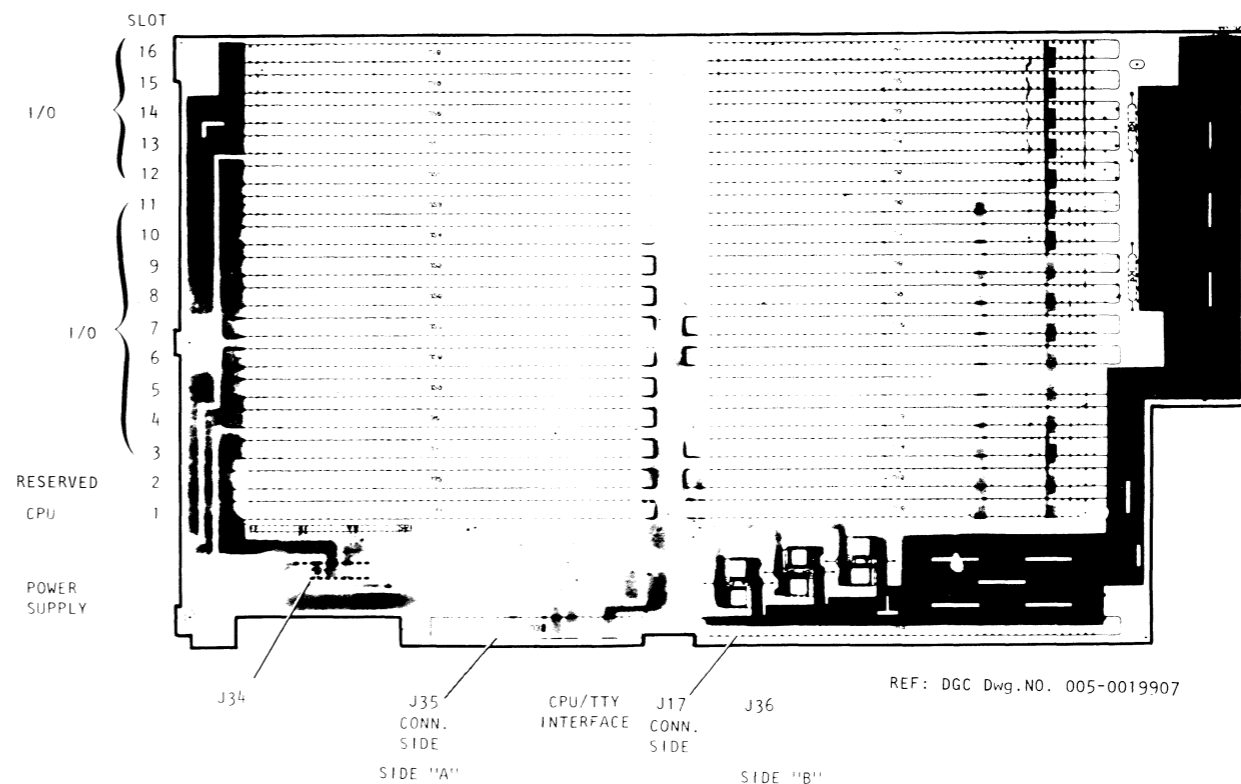
FOR MORE INFORMATION CONCERNING INTERRUPT AND DATA CHANNEL PRIORITY SCHEMES, REFER TO THE INTERFACE DESIGNER'S REFERENCE, NOVA AND ECLIPSE LINE COMPUTERS, DG NO. 015-000031.

DG-05722

NO JUMPERS NEEDED EXCEPT FOR OPEN SLOTS AND STANDARD SPEED DATA CHANNEL I/O CONTROLLERS.

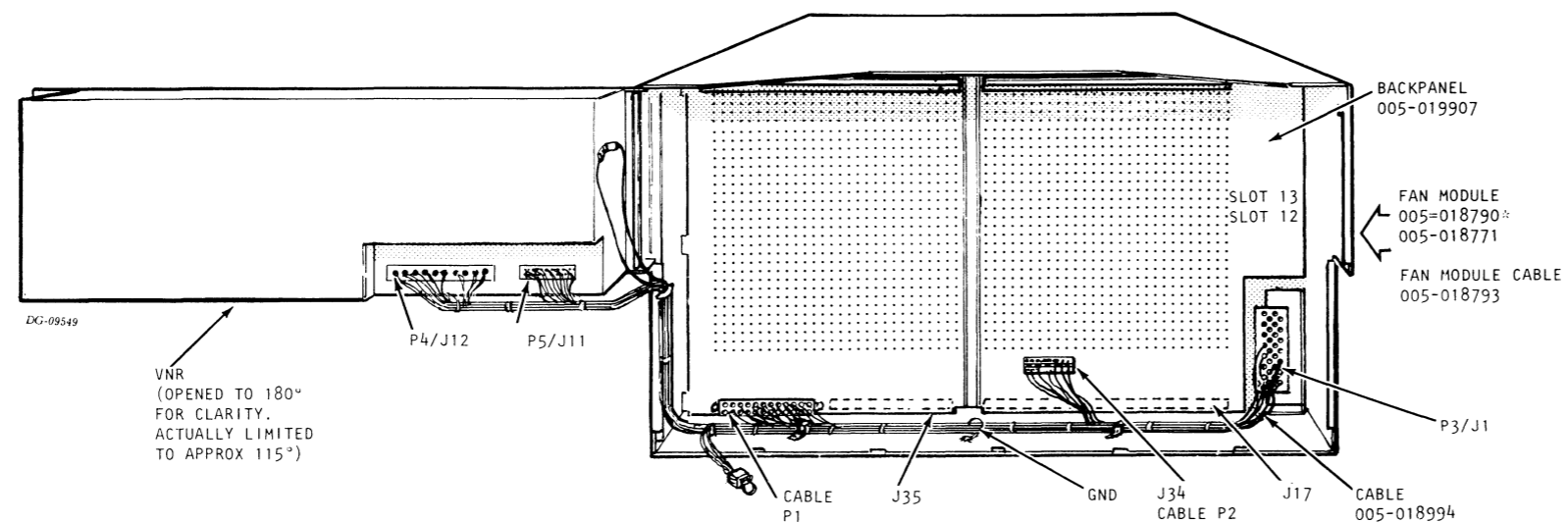
WHEN A 4C PROCESSOR IS USED IN THIS CHASSIS, THE END OF THE INTP PRIORITY NETWORK CLOSEST TO THE PROCESSOR (HIGHEST PRIORITY) MUST BE CONNECTED TO THE NEAREST GROUND (PIN A99 OR A100).

INTERNAL CABLING
BACKPANEL CONNECTORS



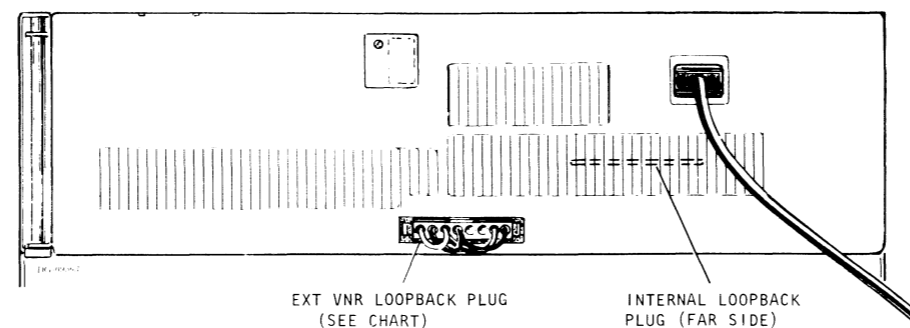
INTERNAL CABLING

BACKPANEL, EXPANSION CHASSIS



*FAN MODULE 005-018790
(INDICATES 100V MODULE
(100V FAN 115-000287);
FAN MODULE 005-018771
INDICATES 120, 220/240V
MODULE (120/240 FAN
115-000163).

VNR CHASSIS



WARNING:
THE POWER SUPPLY ASSEMBLIES IN THIS
PRODUCT SHOULD BE SERVICED ONLY
BY QUALIFIED PERSONNEL WITH PROPER
EQUIPMENT.

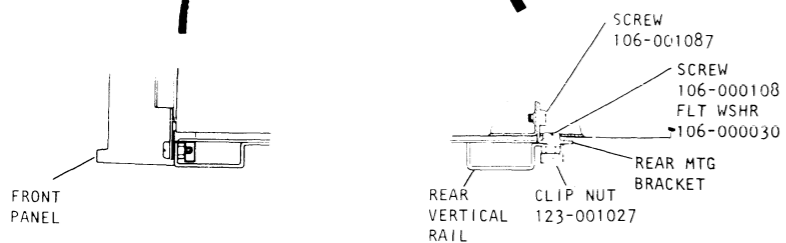
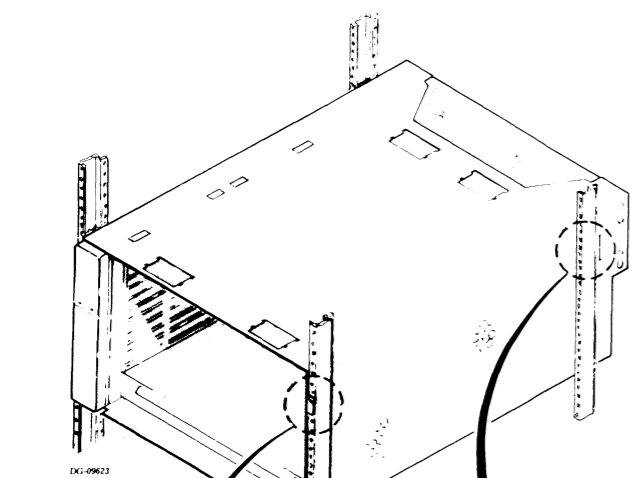
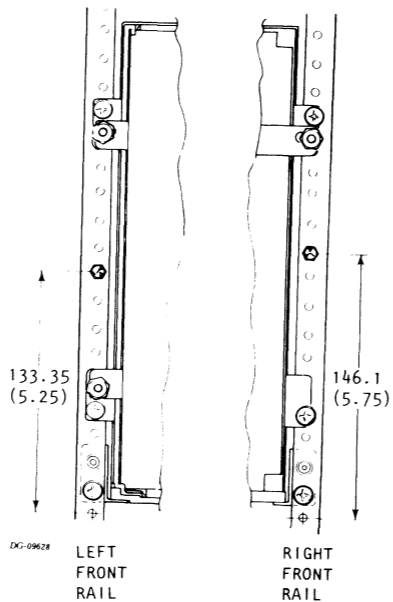
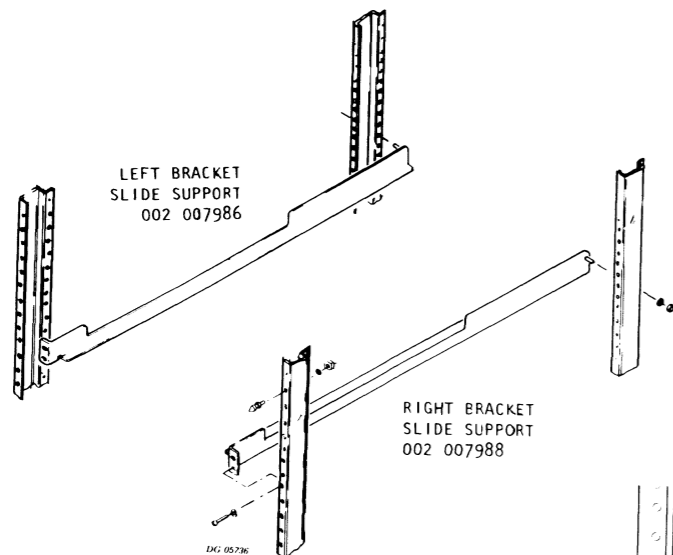
LINE CORD
109-000719 (100, 120V)
109-000703 (220/240V)

AC VOLTS IN	EXTERNAL LOOPBACK PLUG	INTERNAL LOOPBACK PLUG	VNR ASSY.NO.
100 V	005-018774	005-018772	005-019979
120 V	005-018774	005-018772	005-019978
220/240V	005-018986	005-018773	005-019990

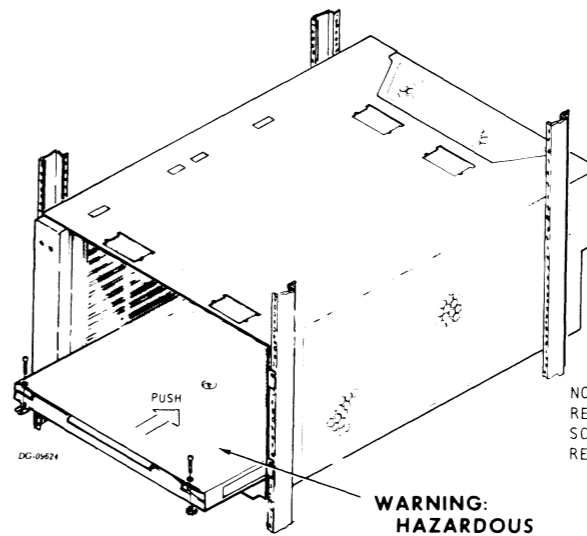
NOTE: TO INSURE PROPER SYSTEM, VERIFY THAT INTERNAL AND EXTERNAL LOOPBACK PLUG VOLTAGE LABELS MATCH THE SYSTEM OPERATING VOLTAGE.

CABINET MOUNTING

HARDWARE MOUNTING KIT 005-019199

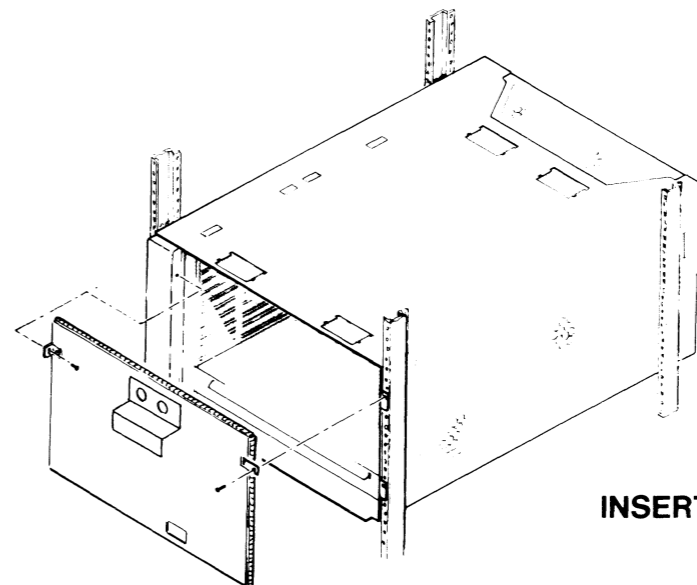


INSERTING POWER SUPPLY

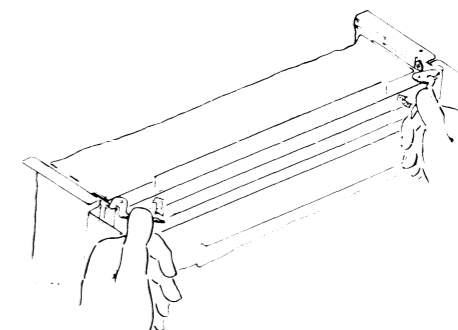


NOTE: REMOVE GROUND STRAP AND MOUNTING SCREWS ATTACHED TO CHASSIS BEFORE REMOVING POWER SUPPLY.

INSTALLING RFI SHIELD



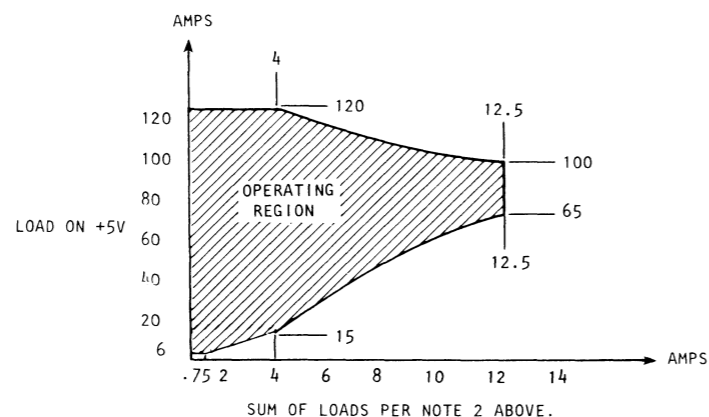
INSERTING PC BOARD



16-SLOT CHASSIS LOAD BALANCING RULES

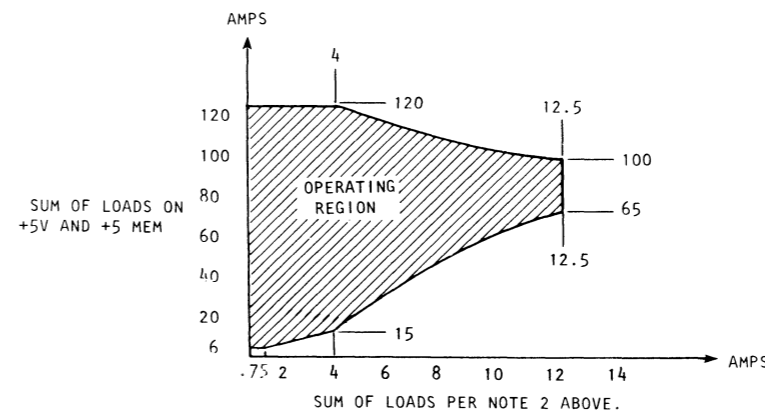
WITH BATTERY BACKUP:

1. THE LOAD OF -5V MUST NOT EXCEED 3.0 AMPS.
2. THE SUM OF THE LOADS ON +12V, +12 MEM, +15V AND 0.55 (SUM OF CURRENT FROM +5 MEM AND -5 MEM) MUST NOT EXCEED 12.5 AMPS.
3. THE LOAD ON -5 MEM MUST NOT EXCEED 0.3 AMPS.
4. THE LOAD ON +5 MEM MUST NOT EXCEED 4.5 AMPS AND MUST BE AT LEAST 0.25 AMPS.
5. THE LOAD ON +5V MUST NOT EXCEED 120 AMPS AND MUST BE AT LEAST 6 AMPS.
6. THE LOADS MUST BE WITHIN THE OPERATING REGION SHOWN BELOW:
7. FOR JAPAN (-1) MODEL, TOTAL OUTPUT POWER NOT TO EXCEED 550 WATTS.

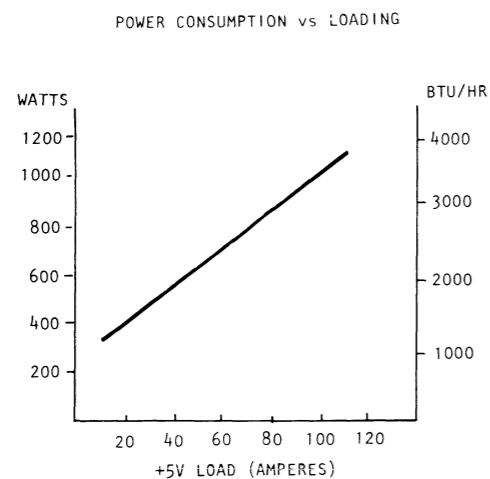


WITHOUT BATTERY BACKUP:

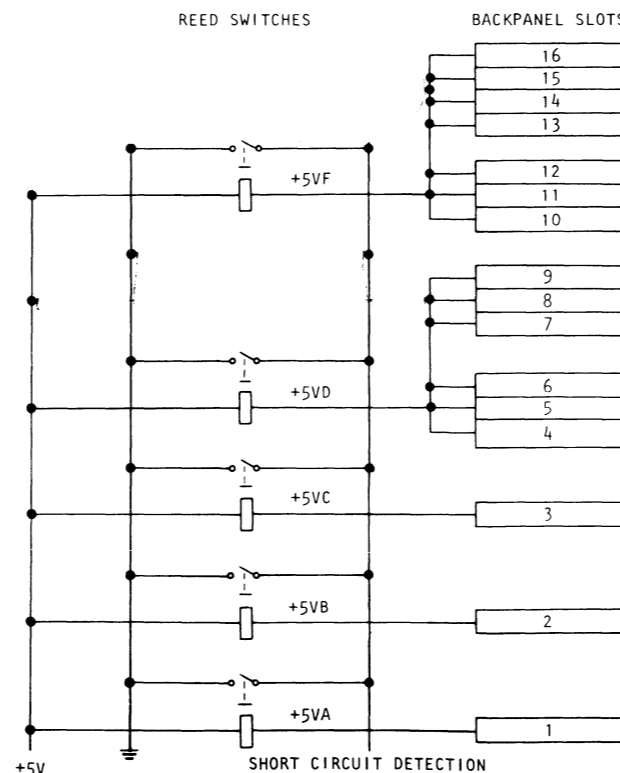
1. THE SUM OF THE LOADS ON -5V AND -5 MEM MUST NOT EXCEED 3.0 AMPS.
2. THE SUM OF THE LOADS ON +12V, +12 MEM, AND +15V MUST NOT EXCEED 12.5 AMPS.
3. THE SUM OF THE LOADS ON +5V AND +5 MEM MUST NOT EXCEED 120 AMPS AND MUST BE AT LEAST 6 AMPS.
4. THE LOADS MUST BE WITHIN THE OPERATING REGION SHOWN BELOW:
5. FOR JAPAN (-1) MODEL, TOTAL OUTPUT POWER NOT TO EXCEED 550 WATTS.



SLOT LOADING RESTRICTIONS



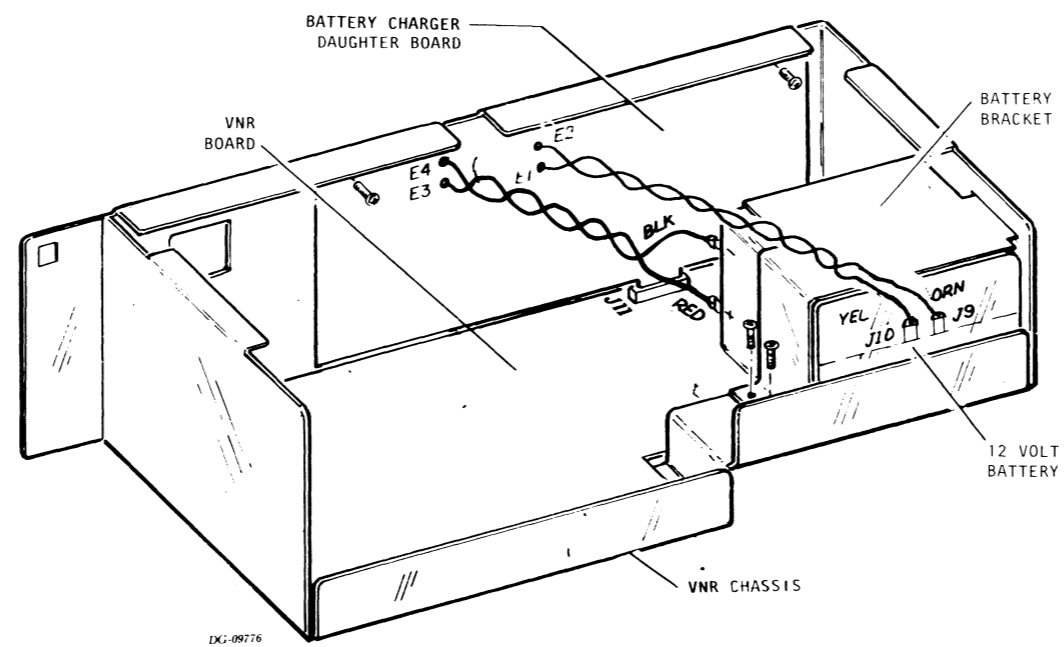
THIS CHART MAY BE USED AS A GUIDELINE OF ACTUAL HEAT OUTPUT OF A SPECIFIC SYSTEM.



NOTE:

REED SWITCHES A, B AND C TRIP AT 22 AMPS,
REED SWITCHES D AND F TRIP AT 60 AMPS.
REFERENCE DGC DWG 001-003182.

BATTERY BACKUP

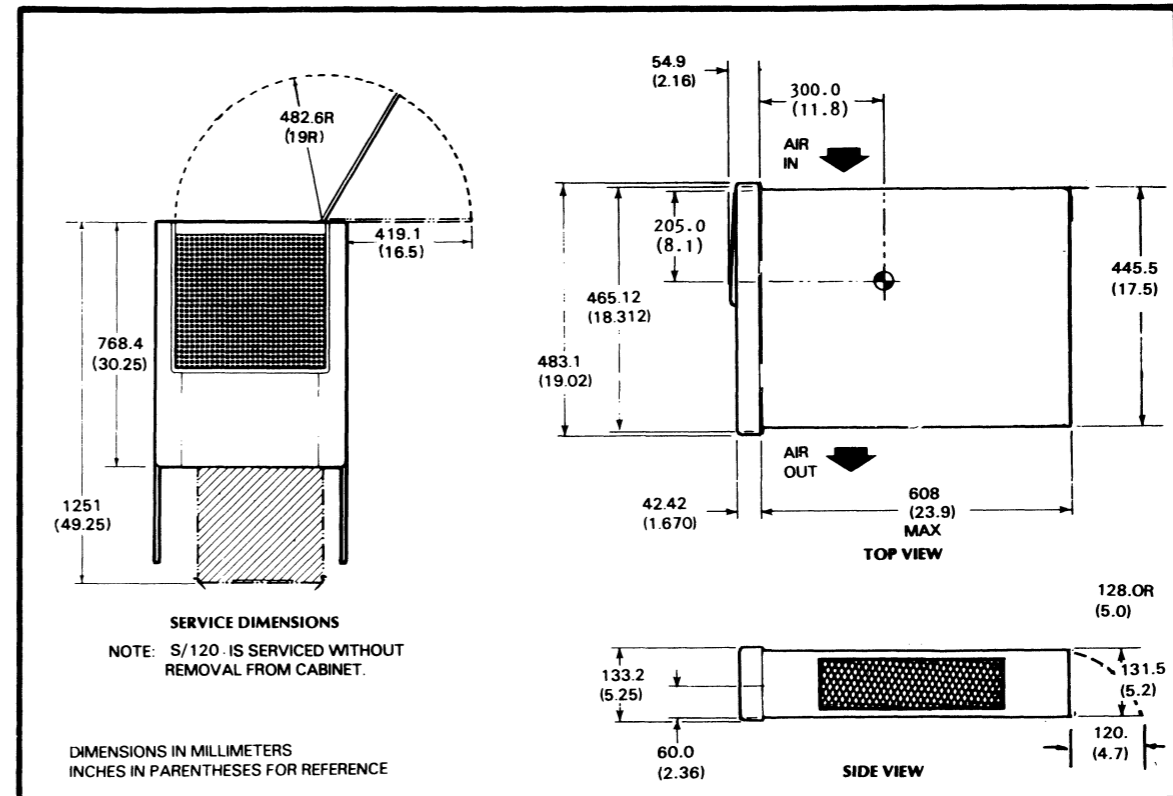
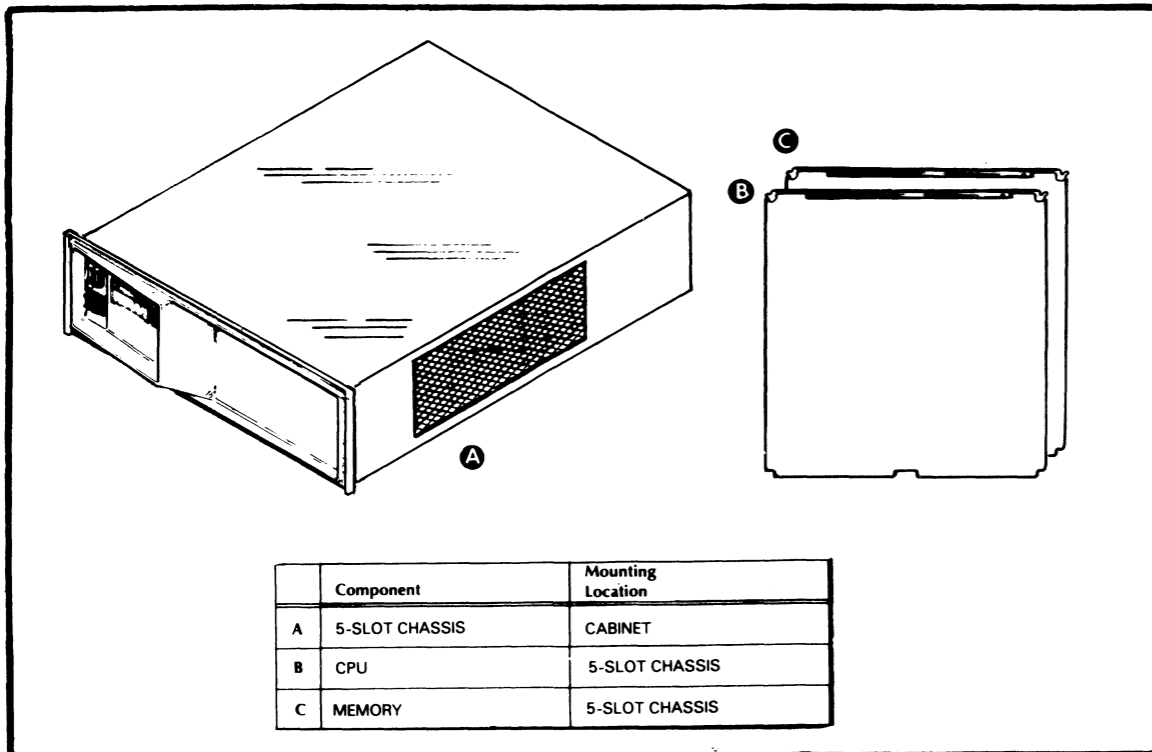


ASSYS: 1) VNR 005-019978
 005-019979
 005-019980

2) BATTERY CHARGER PCB 005-021061
 " KIT 005-020103

STEPS: 1) INSTALL DAUGHTER BOARD IN J11 OR VNR BOARD
 2) INSTALL BATTERY AND BRACKET
 3) CONNECT 018-1605 WIRE JUMPER KIT AS SHOWN

INSTALLATION SPECIFICATIONS



SLOT ASSIGNMENTS

Slot	Allowed (Slot Chart)	Assigned	Standard High Speed	+5V Current Draw
5	I/O			
4	I/O			
3	I/O			
2	MEMORY or I/O			NOTES 2, 3
1	CPU			NOTE 1
0	POWER SUPPLY			
Total +5V Current draw				
Max +5 Current Available				40A
+5 Current Surplus				

NOTE: MINIMUM +5V CURRENT 5A

NOTES:

- NOVA 4/S AND NOVA 4/X 13.5A
NOVA 4/C 8A
- MEMORY (NOVA 4/S & 4/X ONLY) 5.6A
- PUSH ON TERMINATORS ON MEMORY SLOT (NOVA 4/S & 4/X ONLY)
- MAXIMUM AVAILABLE +12 5.0A SEE NOTE 12
- MAXIMUM AVAILABLE -5V 2.0A
- MAXIMUM AVAILABLE +5 MEM 5.0A
- MAXIMUM AVAILABLE +12 MEM 2.3 SEE NOTE 12
- MAXIMUM AVAILABLE -5 MEM 0.05A
- MAXIMUM AVAILABLE -12V .025A
- MAXIMUM AVAILABLE +5V 40.0A SEE NOTE 11
- LOADING ON +5V MUST BE DIVIDED SO THAT SLOT 1 DRAWS LESS THAN 22 AMPERES, SLOTS 2 AND 3 DRAW LESS THAN 22 AMPERES, AND SLOTS 4 AND 5 DRAW LESS THAN 22 AMPERES.
- THE SUM OF THE +12V AND +12 MEM LOAD MUST BE LESS THAN 5A.
- THE MINIMUM +5V CURRENT REQUIRED FOR PROPER OPERATION IS 5A.

SPECIFICATIONS

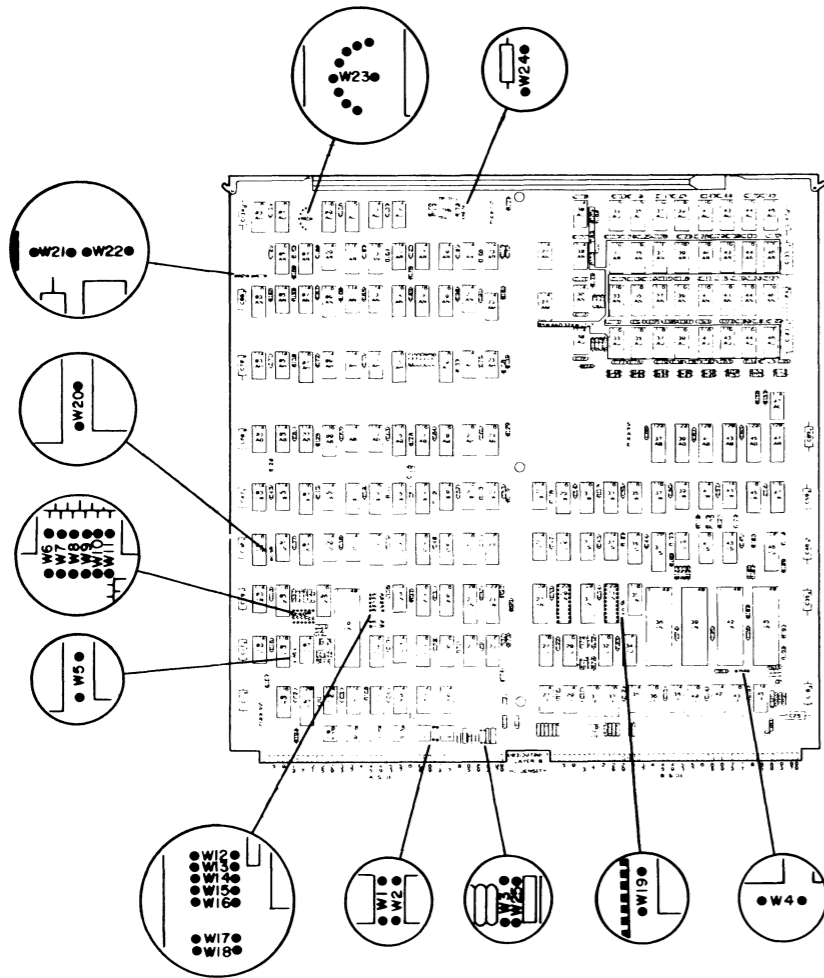
NOVA 4 5-slot

DIMENSIONS:	NOVA 4 5-slot			HEAT OUTPUT:	
	Width	Depth	Height	Watts 600	BTU/hr 2050
Millimeters	483.1	662.9	133.2		
Inches	19.02	(26.1)	5.25		
SERVICE CLEARANCES:	Front	Rear		(Domestic)	(Japan)
	Millimeters	914.4	914.4	Voltage 102-132	90-132
Inches	36	36	Hz 47-63	47-63	
WEIGHT:	Empty	Fully Loaded	Max Amp per Phase 5.0A	5.5	
	Kilograms	17.23	21.77	Phase 1	1
Pounds	38	48	Surge 30A, 50mS	25A, 50MS	
OPERATING ENVIRONMENT:	Voltage	187-264	(Export)		
	Temperature (max)	55°C(131°F) 60/50Hz	Hz 47-63		
	Relative Humidity (max)	90%	Max Amp per Phase 2.5		
	Altitude (max)	3084m (10,000')	Phase 1		
CABLES:	Supply	Part No.	LINE CORDS:		
	External I/O Bus Cable	15.3m (50') max	Surge 30A, 50mS		
	100V	109 000719			
	120V	109 000719			
	220V	109 000681			
	240V	109 000681	} IN D.G.C. RACK		

Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

**FOR PACKING PROCEDURE,
SEE 010-000262/263**

TAILORING CPU JUMPERING NOVA 4/C



DEVICE CODE JUMPERS FOR FRONT PANEL AUTOMATIC PROGRAM LOAD

SELECT THE PROGRAM LOAD DEVICE CODE BY INSTALLING JUMPERS W11, W8, W6, W7, W9, W10, AS FOLLOWS:

JUMPER OUT = 1 JUMPER IN = 0

EXAMPLE JUMPERING FOR DEVICE CODE 278:

W11	W8	W6	W7	W9	W10
IN	OUT	IN	OUT	OUT	OUT

W4 IS NOT INSERTED IF THE PROGRAM LOAD DEVICE IS A HIGH SPEED DEVICE, OTHERWISE IT IS INSERTED.

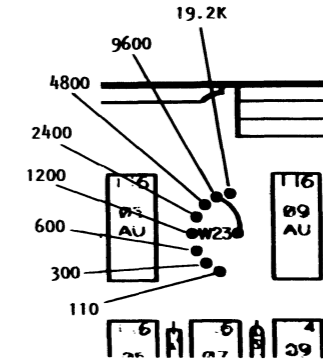
TYPE OF TRANSMISSION JUMPERS

TYPE OF TRANSMISSION	JUMPERS INSERTED*
20MA CURRENT LOOP EIA RS232-C	W1, W3 W2

* JUMPER 25 IS INSERTED IF THE SYSTEM TERMINAL IS A TELETYPE, OTHERWISE IT IS NOT INSERTED.

* JUMPERS W17 AND W18 MUST ALSO BE INSERTED AS SHOWN BELOW.

W23 IS INSERTED TO DETERMINE THE BAUD RATE AS SHOWN BELOW: (9600 SHOWN)



W22 IS NEVER INSERTED.

THE FOLLOWING JUMPERS ARE ALWAYS INSERTED:

- W5
- W19
- W20
- W21
- W24

STOP BIT JUMPERS

NUMBER OF STOP BITS	W15 JUMPER POSITION
1	IN
2	OUT

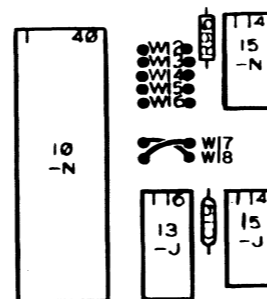
PARITY JUMPERS

TYPE OF PARITY	JUMPER POSITION	
	W12	W16
EVEN	OUT	IN
ODD	IN	IN
NONE	OUT	OUT

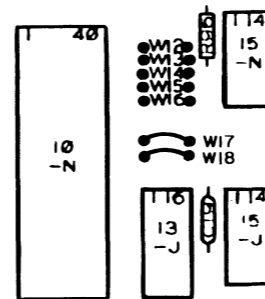
CHARACTER LENGTH JUMPERS

CHARACTER LENGTH	JUMPER POSITION	
	W13	W14
5 BITS	IN	IN
6 BITS	OUT	IN
7 BITS	IN	OUT
8 BITS	OUT	OUT

20MA CURRENT LOOP



EIA RS232-C



JUMPERS W17 AND W18 MUST NOT TOUCH!

CPU/MEMORY LOADS

VOLTAGE	DESCRIPTION	CURRENT DRAW
+5V	SYSTEM WITHOUT BATTERY BACKUP	8.0A
+5V	SYSTEM WITH BATTERY BACKUP	7.5A
+5V MEM		0.5A
+12V MEM		0.7A
+15V		0.04A

TAILORING (CONT)

CPU JUMPERING NOVA 4/S OR 4/X

BAUD RATE JUMPERS

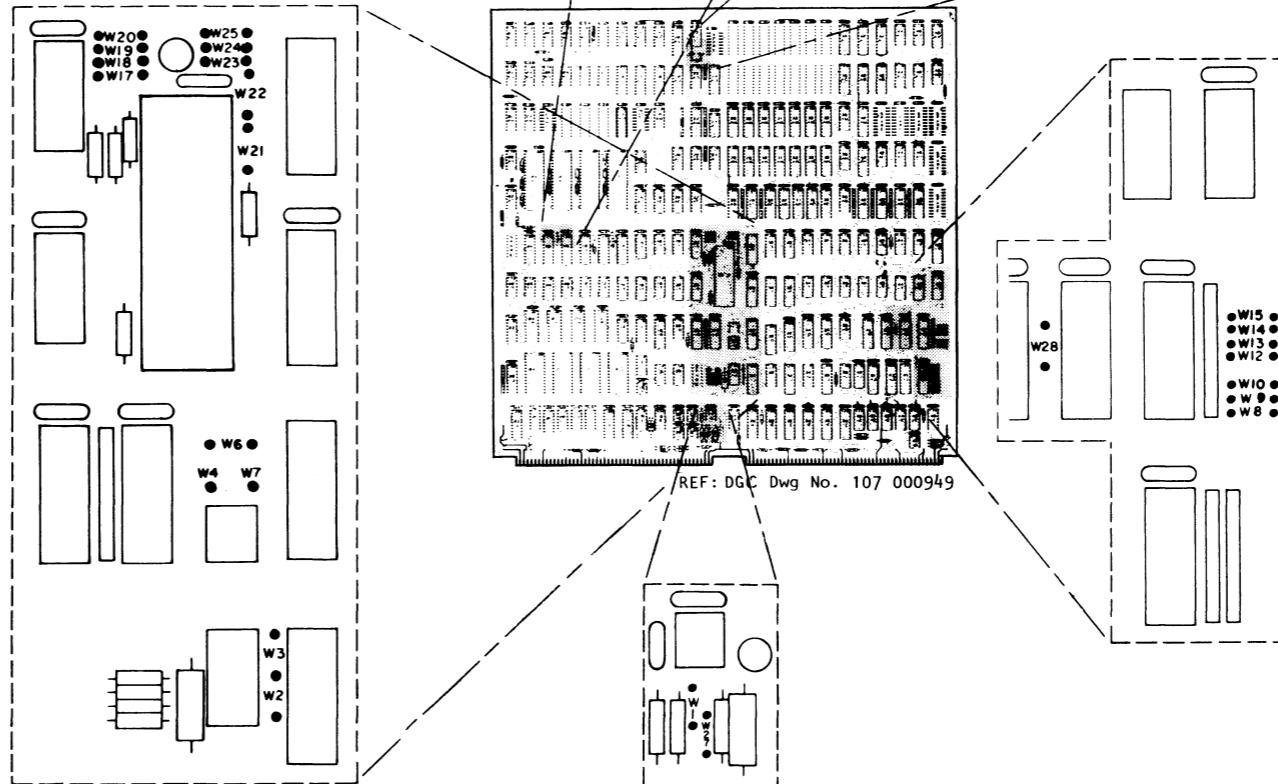
BAUD RATE	JUMPER POSITION				
	W17	W18	W19	W20	W27
50	IN	IN	OUT	IN	OUT
75	IN	IN	OUT	OUT	OUT
110	OUT	OUT	OUT	OUT	IN
134.5	IN	OUT	IN	IN	OUT
150	OUT	OUT	OUT	IN	OUT
200	IN	OUT	IN	OUT	OUT
300	OUT	OUT	IN	OUT	OUT
600	IN	OUT	OUT	IN	OUT
1200	OUT	IN	OUT	OUT	OUT
1600	OUT	IN	OUT	IN	OUT
2400	OUT	OUT	IN	IN	OUT
4800	OUT	IN	IN	OUT	OUT
9600	OUT	IN	IN	IN	OUT
19200	IN	IN	IN	OUT	OUT

PARITY JUMPERS

TYPE OF PARITY	JUMPER POSITION	
	W22	W21
EVEN	OUT	IN
ODD	IN	IN
NONE	OUT	OUT

CHARACTER LENGTH JUMPERS

CHARACTER LENGTH	JUMPER POSITION	
	W25	W24
5 BITS	IN	IN
6 BITS	OUT	IN
7 BITS	IN	OUT
8 BITS	OUT	OUT



TYPE OF TRANSMISSION JUMPERS

TYPE OF TRANSMISSION	JUMPERS INSERTED
20MA CURRENT LOOP	W4, W7, W2, W1
EIA RS232-C	W6, W3

STOP BIT JUMPERS

NUMBER OF STOP BITS	W23 JUMPER POSITION
1	IN
2	OUT

REAL TIME CLOCK JUMPER

	W28
RTC ENABLED	IN
RTC DISABLED	OUT

DEVICE CODE JUMPERS FOR FRONT PANEL AUTOMATIC PROGRAM LOAD

SELECT THE PROGRAM LOAD DEVICE CODE BY INSTALLING JUMPERS W13, W15, W14, W12, W10, W8 AS FOLLOWS:

JUMPER IN = 1 JUMPER OUT = 0

EXAMPLE JUMPERING FOR DEVICE CODE 27 :
8

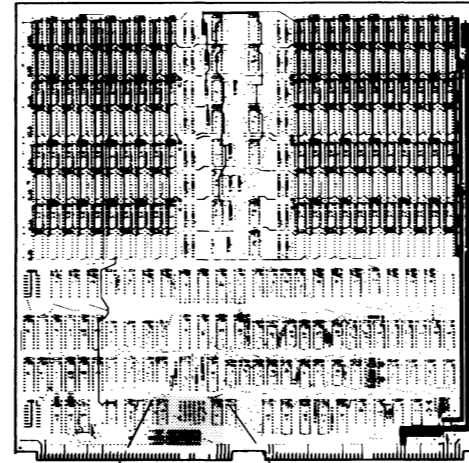
W13	W15	W14	W12	W10	W8
OUT	IN	OUT	IN	IN	IN

W9 IS INSERTED IF THE PROGRAM LOAD DEVICE IS A HIGH SPEED DEVICE, OTHERWISE, IT IS REMOVED.

NOTE: JUMPERS W16 AND W26 ARE ALWAYS INSERTED. JUMPERS W5 AND W11 DO NOT EXIST.

+5V CURRENT DRAW = 13.5A

TAILORING (CONT)
MEMORY JUMPERING
NOVA 4/S AND 4/X



REF: DGC Dwg No. 107 000813

NOVA 4/X MEMORY BOARD SELECT JUMPERS

ADDRESS RANGE	JUMPERS INSERTED*	
	BOARD SIZE	
	256KBYTES	128KBYTES
0377777-	NONE	W8
0300000-		
0277777-		
0200000-		
0177777-	W7	W7
0100000-		
0077777-		
0000000-		

*NOTE: JUMPERS W1, W3, AND W5 ARE ALWAYS INSERTED.
 JUMPERS W2, W4, AND W6 ARE NEVER INSERTED.

NOVA 4/S MEMORY BOARD SELECT JUMPERS

ADDRESS RANGE	JUMPERS INSERTED*	
	BOARD SIZE	
	64 KBYTES	32KBYTES
0077777-	W7 W9	W7 W9 W12
0040000-		
0037777-		W7 W9 W11
0000000-		

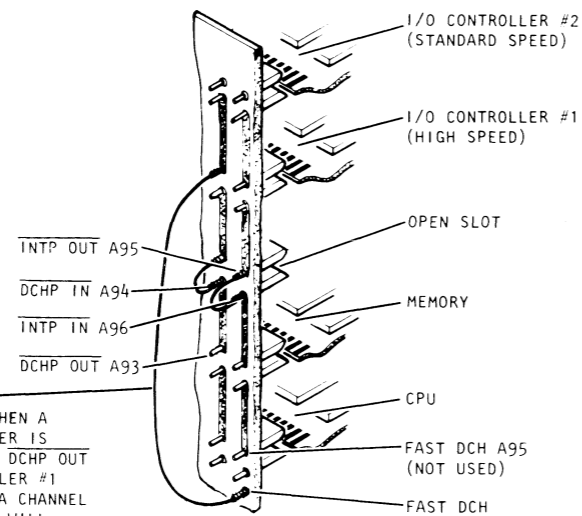
NOTE: JUMPERS W1, W3, AND W5 ARE ALWAYS INSERTED;
 JUMPERS W2, W4, AND W6 ARE NEVER INSERTED.

MEMORY LOADS

VOLTAGE	DESCRIPTION	CURRENT DRAW
+5V	SYSTEM WITH BATTERY BACKUP	4.4A
+5V	SYSTEM WITHOUT BATTERY BACKUP	5.6A
+5V MEM		1.2A
+12V MEM	FIRST BOARD IN CHASSIS	2.3A

TAILORING (CONT) BACKPANEL JUMPERING

TYPICAL CONFIGURATION



FAST DCH JUMPER
(THIS JUMPER IS ONLY USED WHEN A STANDARD SPEED I/O CONTROLLER IS CONFIGURED. IT RETURNS THE DCHP OUT SIGNAL TO THE CPU. CONTROLLER #1 WILL RECEIVE HIGH SPEED DATA CHANNEL SERVICE WHILE CONTROLLER #2 WILL RECEIVE STANDARD SPEED DATA CHANNEL SERVICE.)

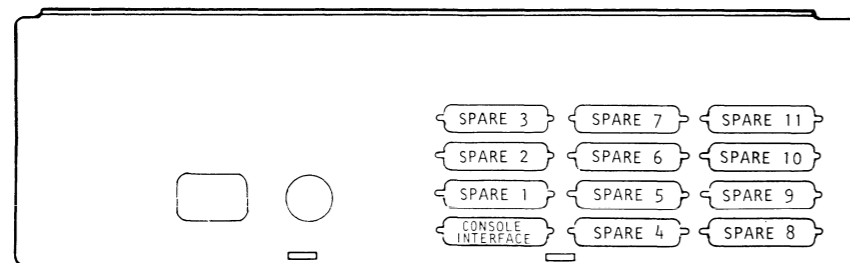
NO JUMPERS NEEDED EXCEPT FOR OPEN SLOTS

NOTE: WHEN AN I/O CONTROLLER RESIDES OUTSIDE THE CHASSIS, IT MUST BE CONFIGURED AS A STANDARD DATA CHANNEL CONTROLLER.

FOR MORE INFORMATION CONCERNING INTERRUPT AND DATA CHANNEL PRIORITY SCHEMES, REFER TO THE INTERFACE DESIGNER'S REFERENCE, NOVA AND ECLIPSE LINE COMPUTERS, DG NO. 015-000031.

DG-05828

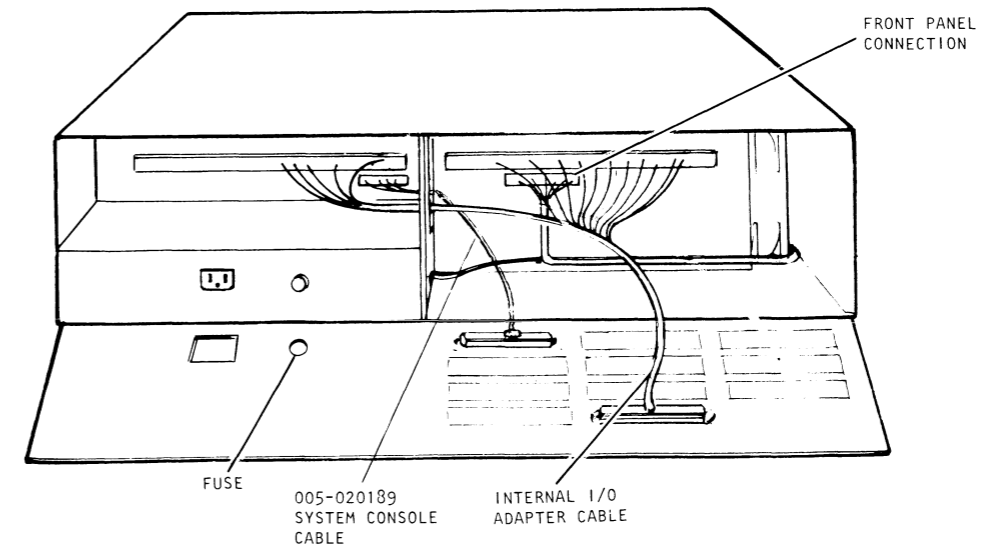
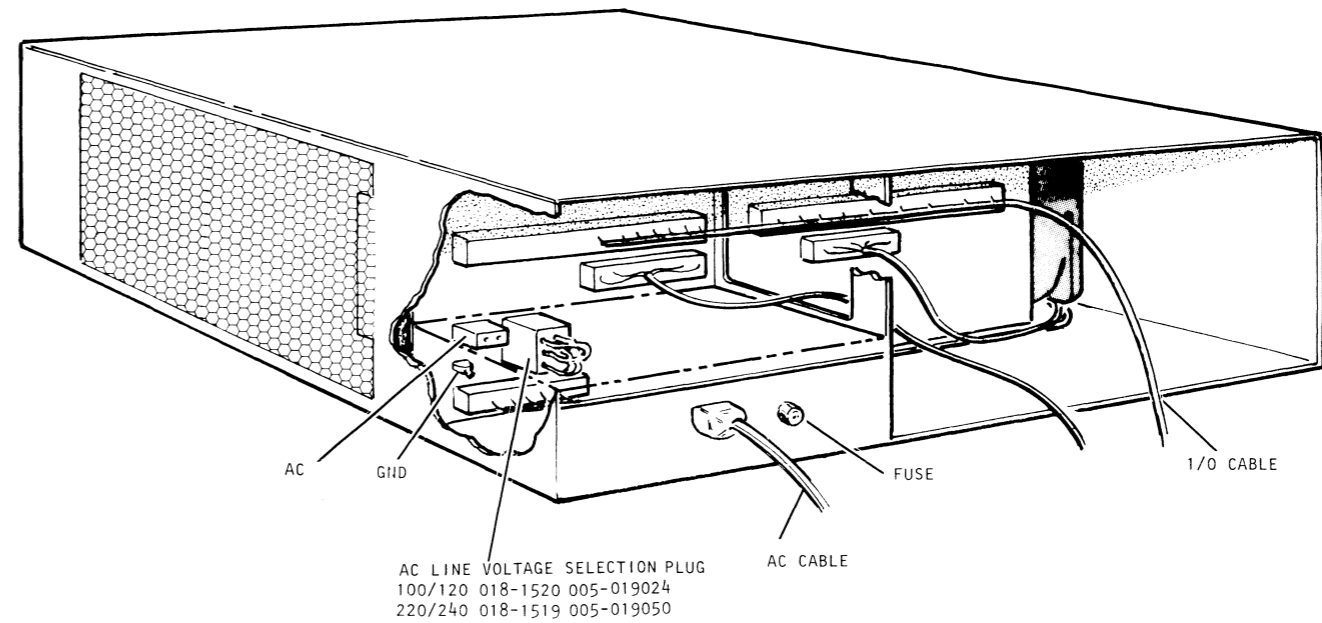
5 SLOT CHASSIS BULKHEAD



DG-09364

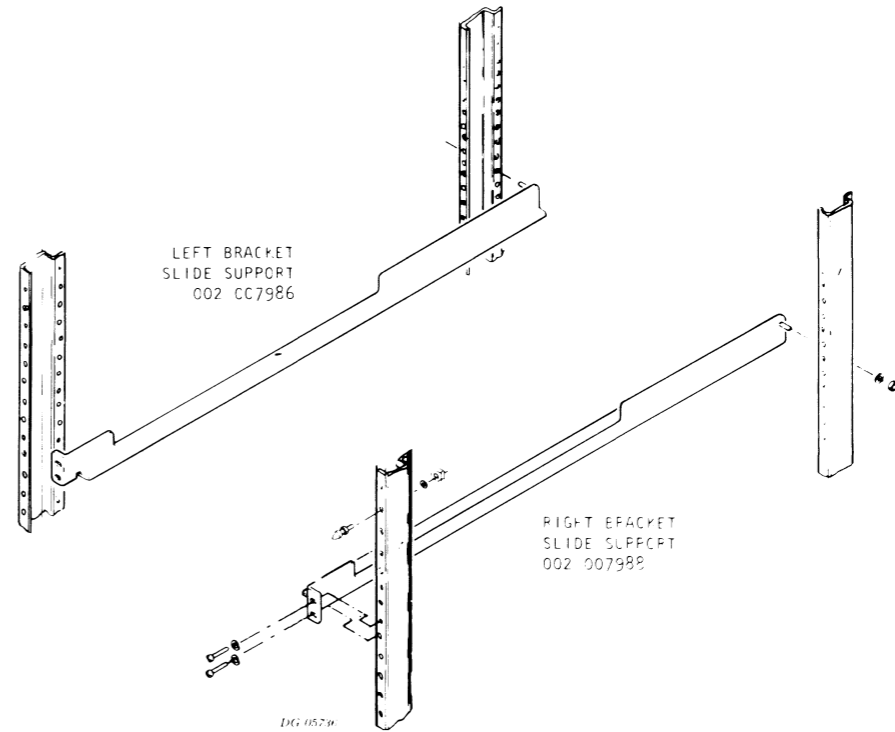
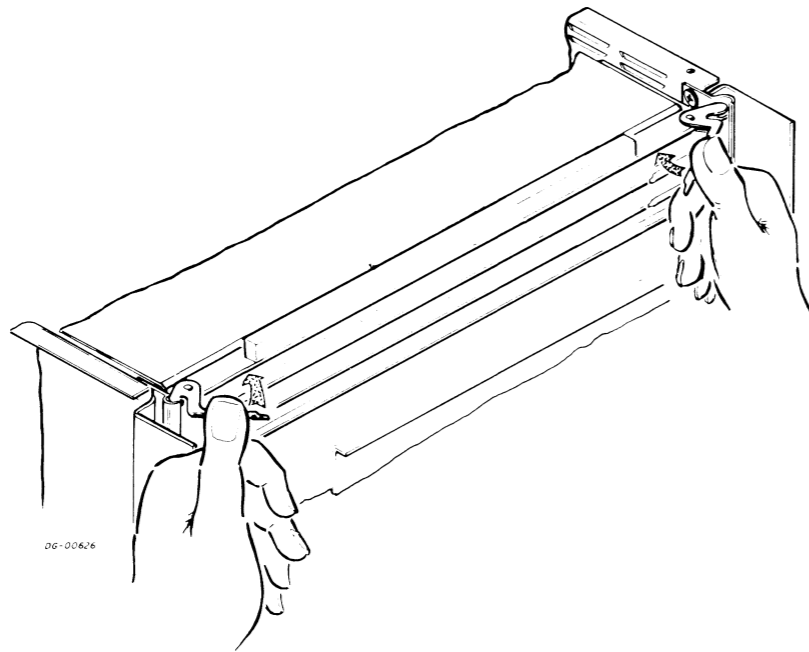
CABLING NOTE:
SYSTEM CONSOLE CABLE CONNECTS FROM BACKPANEL TO BULKHEAD POSITION MARKED "CONSOLE INTERFACE". I/O BOARD CABLES CONNECT FROM BACKPANEL TO BULKHEAD POSITIONS MARKED SPARE 1 THRU SPARE 11.

INTERNAL CABLING BACKPANEL CONNECTORS

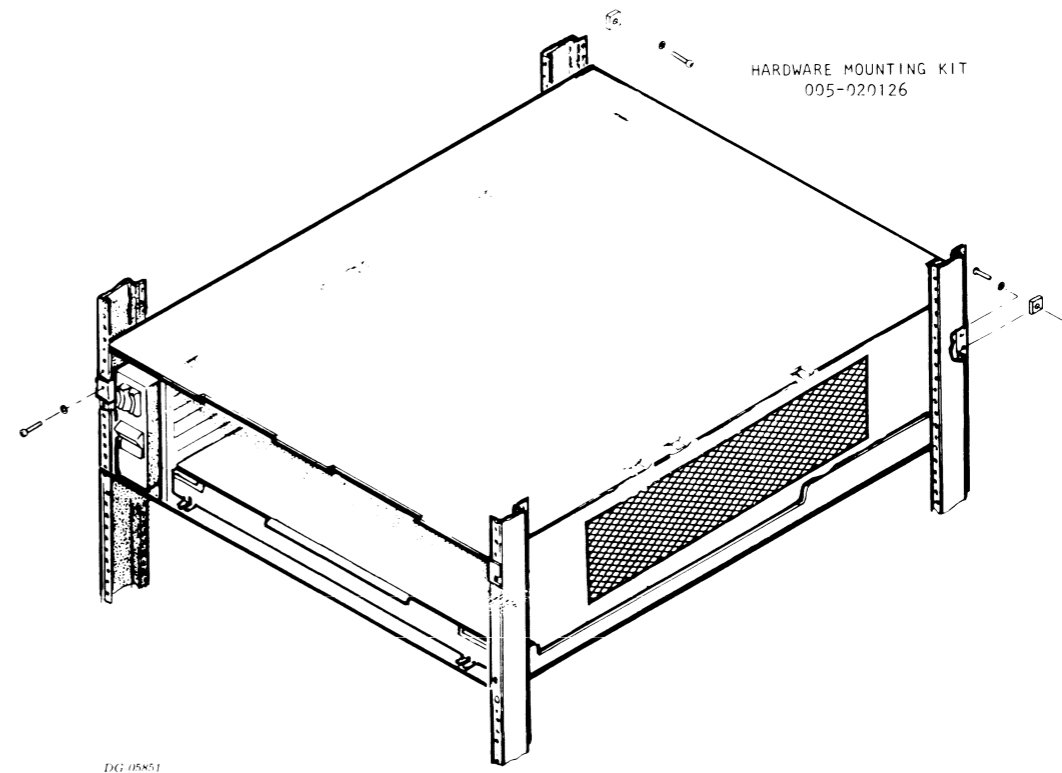
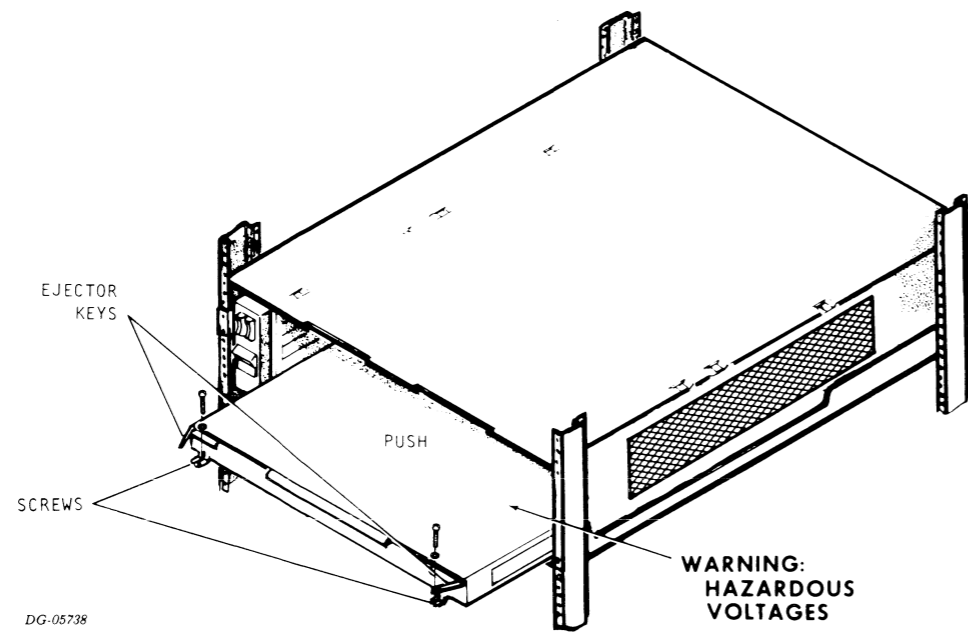


CABINET MOUNTING

INSERTING PC BOARD

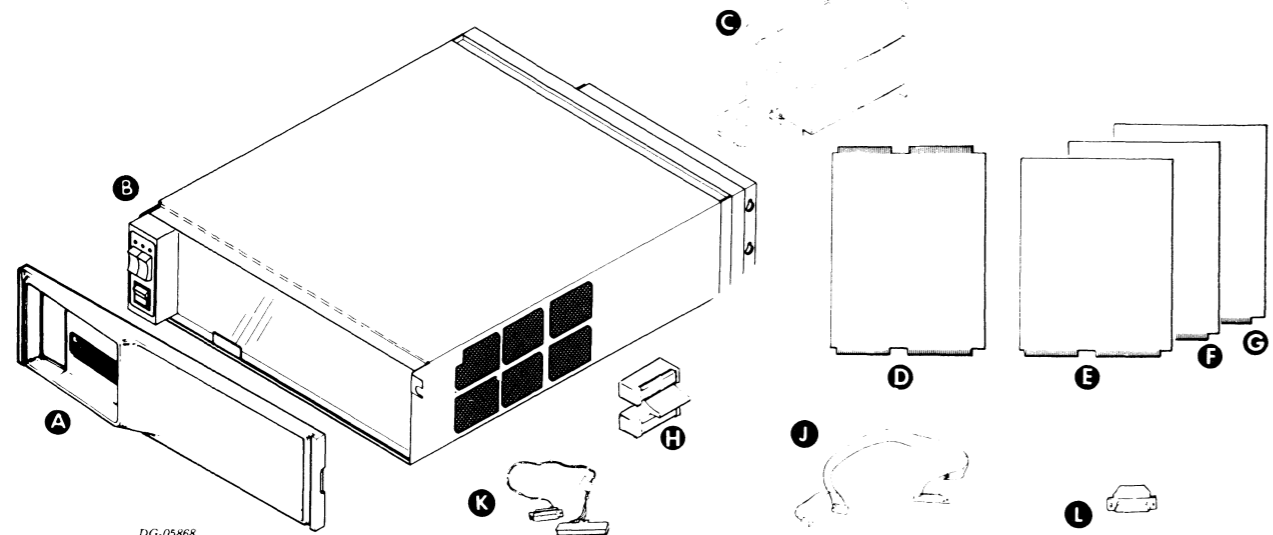


INSERTING POWER SUPPLY PCB



microPRODUCTS LINE

INSTALLATION SPECIFICATIONS



DG-05868

MAJOR COMPONENT

ITEM	COMPONENT	MOUNTING LOCATION	NOTES
A	FRONT PANEL	CABINET	
B	MP/100 CHASSIS	CABINET	
C	BATTERY BACKUP	MP/100 CHASSIS	OPTIONAL
D	SPU 602	MP/100 CHASSIS	
E	4/8/16/32 K RAM MEMORY	MP/100 CHASSIS	
F	8K PROM MEMORY	MP/100 CHASSIS	WITHOUT PROMS
G	4/16 K RAM MEMORY / 2/4/8/16K EPROM MEMORY	MP/100 CHASSIS	WITHOUT EPROMS

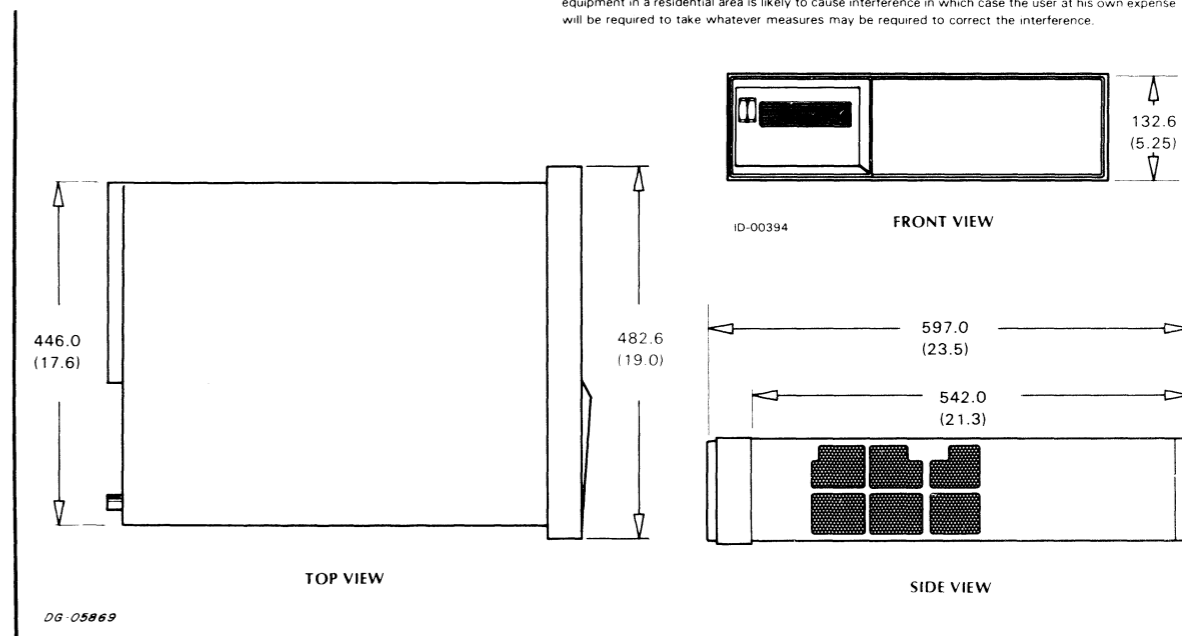
CABLES

ITEM	CABLE	CONNECTING	MAX LENGTH		NOTES
			FT	M	
H	I/O BUS LINK 005-012784	SLOT 4 TO SLOT 5	0.25	0.08	
J	I/O BUS INT CPU 005-019403	B/P SLOTS 6, 7, 8 TO BULKHEAD			
K	ASYNC 005-019971	CPU TO COMM LINE	1	0.3	COMM LINE TO DEVICE. 50 FT MAX FOR EIA. 1000 FT MAX FOR 20 AMP CURRENT LOOP.

TERMINATOR

ITEM	TERMINATOR	LOCATION	NOTES
L	I/O BUS 005-018508	BULKHEAD	MOUNT TERM ON LAST DEVICE ON I/O BUS IF I/O BUS IS EXTENDED. OTHERWISE ON BULKHEAD

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DG-05869

DIMENSIONS:	Width	Depth	Height	POWER REQUIREMENTS:
Millimeters	482.6	597	132.6	(Domestic)
Inches	19	23.5	5.25	Voltage
				120 +10% -15%
SERVICE CLEARANCES:	Front			Hz
Millimeters	558.8			47-63
Inches	22			Max Amp per Phase
				5
WEIGHT:	Empty	Fully Loaded	Fully Loaded W/BBU	Phase
Kilograms	14.5	16.3	18.6	1
Pounds	32	36	41	Startup Surge per Phase
				33 amps for 8 milliseconds
HEAT OUTPUT (MAX)	Watts	BTU/hr		(Export)
	200	680		Voltage
				100 +10% -15%
OPERATING ENVIRONMENT:				220 +10% -15%
Temperature (max)	55°C			240 +10% -15%
Relative Humidity (max)	80 (non-condensing)			Hz
Altitude	10,000ft	3084m		47-63
				Max Amp per Phase
				5
				Phase
				1
				Startup Surge per Phase
				33 amps for 8 milliseconds
				17 amps for 8 milliseconds
				8 milliseconds
				LINE CORDS
				100V 109-000719
				120V 109-000719
				220V 109-000681 IN DGC
				240V 109-000681 RACK

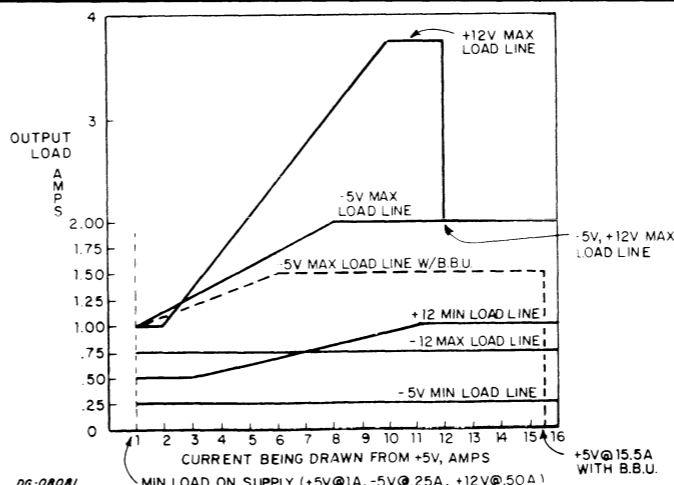
DATA CHANNEL SPEEDS AVAILABLE				STANDARD	<input checked="" type="checkbox"/>	
				HIGH SPEED	<input checked="" type="checkbox"/>	
SLOT	ALLOWED SLOT CHART	ASSIGNED	CURRENT DRAW (AMPS)			
			+5V	-5V	+12V	-12V
8	MEMORY OR I/O					
7	MEMORY OR I/O					
6	MEMORY OR I/O					
5	MEMORY OR I/O					
4	MEMORY OR I/O					
3	MEMORY OR I/O					
2	MEMORY OR I/O					
1	MP/100 SPU		2.0	0.1	0.3	0.1

NOTE: MINIMUM LOAD FOR EXPANSION CHASSIS IS 5A @ +5V. USE OPTION 1227 (LOAD PLUG) WHEN DRAWING LESS THAN 5A @ 5V. INSTALL ON J19 OF BACKPANEL.

* WHEN LESS THAN 8 AMPS OF +5V CURRENT IS BEING USED, THE +12V AND -5V CURRENT SOURCES ARE DERATED AS SHOWN.

FOR MODELS MP/100-1, THE MAXIMUM AVAILABLE +5V CURRENT IS 15 AMPS.

CURRENT DRAW
 MAXIMUM CURRENT AVAILABLE*
 CURRENT SURPLUS



THE MP/100 SPU REQUIRES 2.0A @ +5V; 0.1A @ -5V; 0.3A @ +12V; AND 0.1A @ -12V.

THE MP/100 RAM REQUIRES 0.5A @ +5V; 0.02A @ -5V; AND 0.3A @ +12V.

THE MP/100 8K PROM REQUIRES 0.9A @ +5V; 0.25A @ +12V.

THE MP/100 4/16K RAM and the 2/4/8/16K EPROM REQUIRES 0.46A @ +5V; 0.003A @ -5V; AND 0.56A @ +12V.

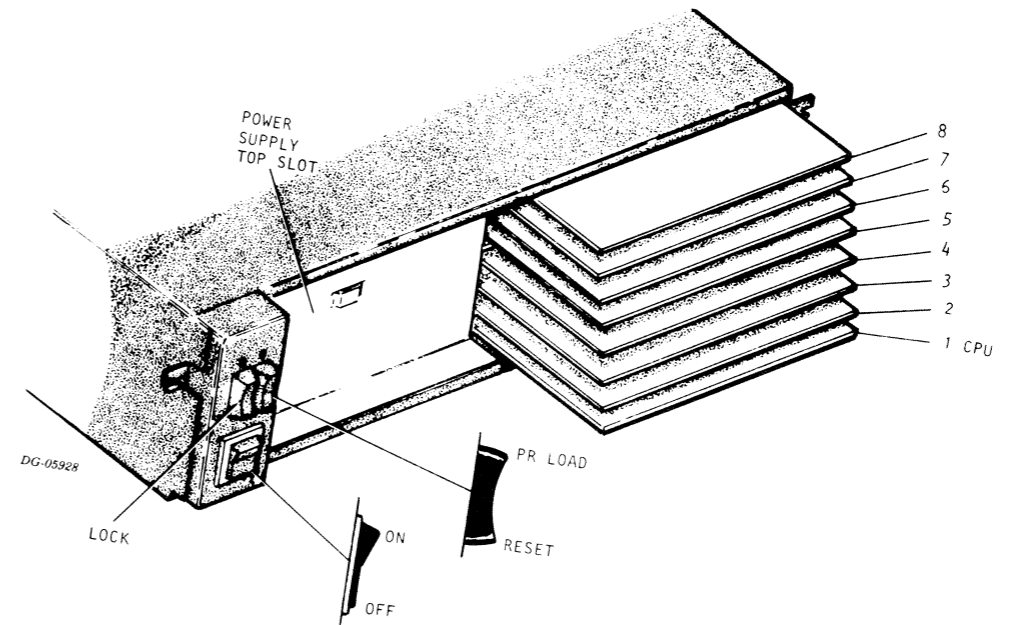
NOTE: EPROM AND PROM BOARDS' POWER REQUIREMENTS DO NOT INCLUDE REQUIREMENTS OF USER-SUPPLIED PROMS.

SHIPPING

FOR PACKING PROCEDURE,
SEE 010-000262/263

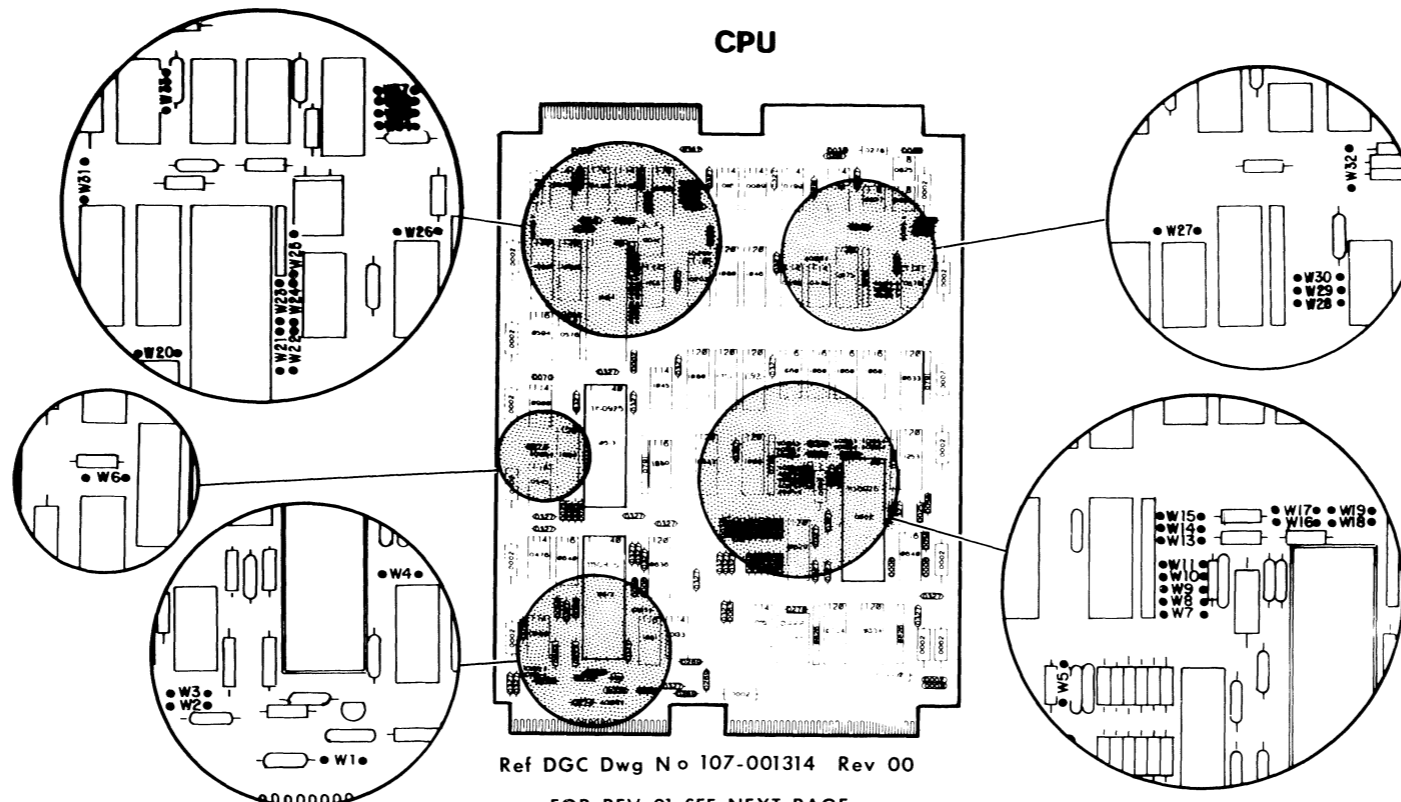
010-000347-00

BOARD ASSIGNMENTS



TAILORING

CPU



Ref DGC Dwg No 107-001314 Rev 00

FOR REV 01 SEE NEXT PAGE

INTERFACE MODE SELECT

LINE TYPE	JUMPERS			
	W1	W2	W3	W4
EIA	OUT	OUT	OUT	IN
20AMP CURRENT LOOP (600 BAUD AND BELOW)	IN	IN	IN	OUT
(ABOVE 600 BAUD)	IN	OUT	IN	OUT

JUMPER	FUNCTION
W5	IN
W27	INSERT TO ENABLE POWER FAIL INTERRUPTS. REMOVE TO IGNORE POWER FAIL INTERRUPTS.

DEVICE CODE SELECT

DEVICE CODE	JUMPER W6	DEVICE	
		TT1	TTO
	IN	10	11
	OUT	50	51

JUMPER WORD IS ENABLED WHEN ADDRESS 77777 IS ISSUED AND MAPON IS ASSERTED; JUMPER WORD IS (HIGH BYTE*) OF A STARTING ADDRESS.

JUMPER WORD IS ENABLED WHEN ADDRESS 77776 IS ISSUED AND MAPON IS ASSERTED; JUMPER WORD IS THE DEVICE CODE TO PROGRAM LOAD FROM. IF DEVICE CODE 77, ENTER SOFT CONSOLE.

W28 OUT IN

W9	A0	**
W10	A1	***
W13	A2	DS0
W11	A3	DS1
W8	A4	DS2
W7	A5	DS3
W15	A6	DS4
W14	A7	DS5

NOTE: JUMPER IN = 1

* STARTING ADDRESS LOW BYTE = 00,000,001
 ** IN FOR DCH LOAD; OUT FOR PIO LOAD
 *** IN FOR 1 MINUTE WAIT PRIOR TO PROGRAM LOAD EXECUTION; OUT FOR NO WAIT

JUMPER	FUNCTION
W16	INSERT JUMPER TO SYSTEM BOOT, OR RESTART WHEN LOCKED.
W17	INSERT JUMPER FOR UNCONDITIONAL RESTART AFTER POWER FAIL WHEN UNLOCKED.
W18	NORMALLY OUT. INSERT TO ACCESS THE SECONDARY ADDRESS SPACE ON TRAP.
W19	NORMALLY IN. INSERT WHEN THE SECONDARY 32-WORD ADDRESS SPACE ENABLED.
W20	INSERT TO ENABLE MODEM CHARGE INTERRUPT.
W26	NORMALLY IN. ENABLES NON-MASHABLE INTERRUPT REQUESTS ON "BREAK", IF FRONT CONSOLE IS UNLOCKED.
W29	NORMALLY OUT. ENABLES THE JUMPER WORD STROBE. INSERT TO DISABLE STROBE.
W31	INSERT TO ENABLE EXTENDED STATUS.
W32	INSERT TO ENABLE SOFT CONTROL PANEL MEMORY.

FREQUENCY SELECT

W30	REAL TIME CLOCK FREQUENCY SELECT
IN	POWER LINE FREQUENCY
OUT	INTERNAL FREQUENCY

W33	FUNCTION
IN	CPU ENABLES CLEAR TO SEND
OUT	HALF-DUPLEX MODEM, 60 CPS DASHER, CONTROLS CLEAR TO SEND.

BAUD RATE SELECT

RATE	W34	W35	W36	W37
50	IN	IN	OUT	IN
75	IN	IN	OUT	OUT
110	OUT	OUT	OUT	OUT
134.5	IN	OUT	IN	IN
150	OUT	OUT	OUT	IN
200	IN	OUT	IN	OUT
300	OUT	OUT	IN	OUT
600	IN	OUT	OUT	IN
1200	OUT	IN	OUT	OUT
1800	OUT	IN	OUT	IN
2400	OUT	OUT	IN	IN
4800	OUT	IN	IN	OUT
9600	OUT	IN	IN	IN
19200	IN	IN	IN	OUT

PARITY SELECT

PARITY	W21	W23
ODD	IN	IN
EVEN	OUT	IN
NONE	OUT	OUT

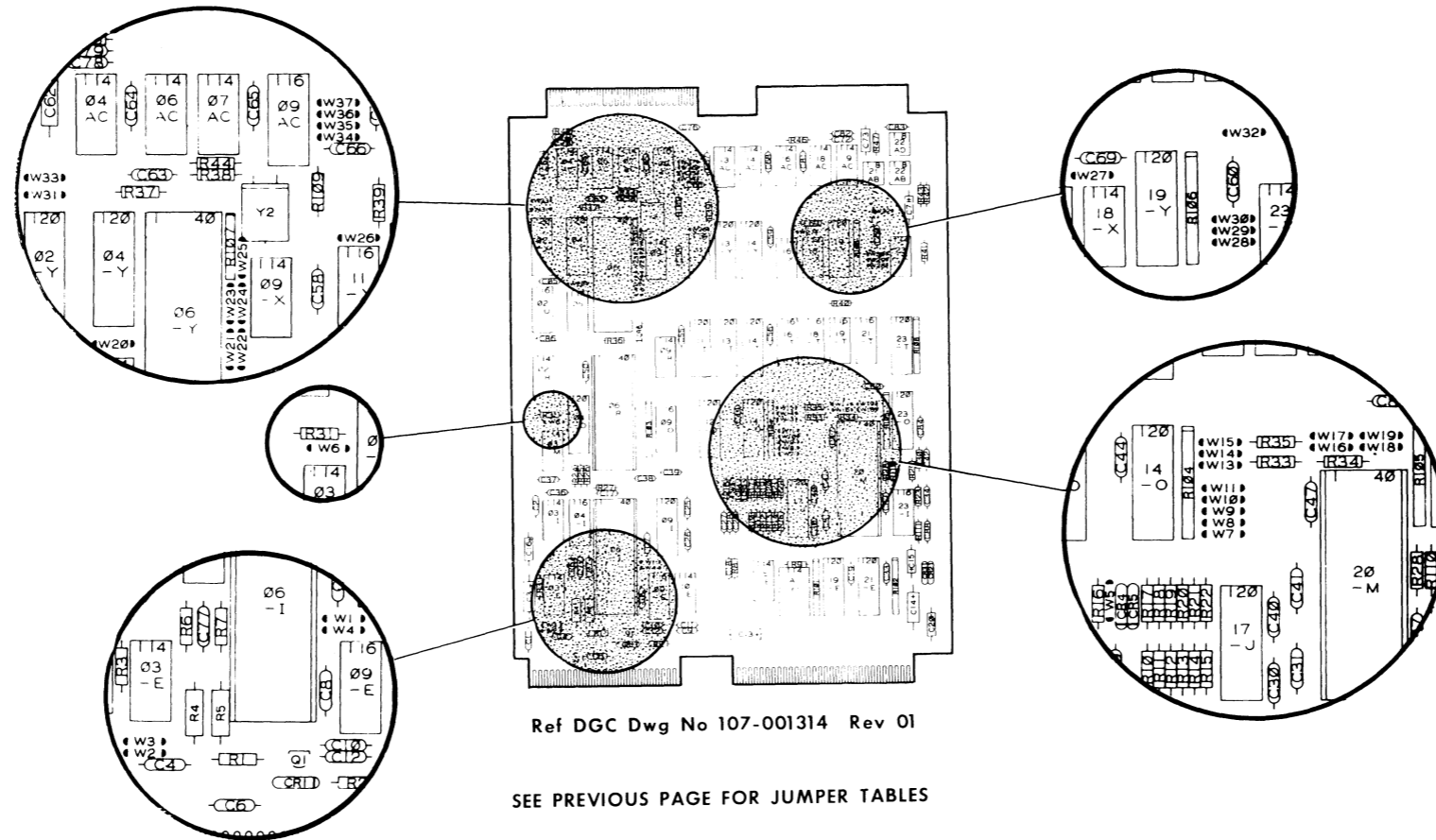
STOP BIT SELECT

W22	STOP BIT SELECT
IN	ONE STOP BIT
OUT	TWO STOP BITS

CHARACTER SELECT

LENGTH	W24	W25
5 BITS	IN	IN
6 BITS	IN	OUT
7 BITS	OUT	IN
8 BITS	OUT	OUT

TAILORING CPU

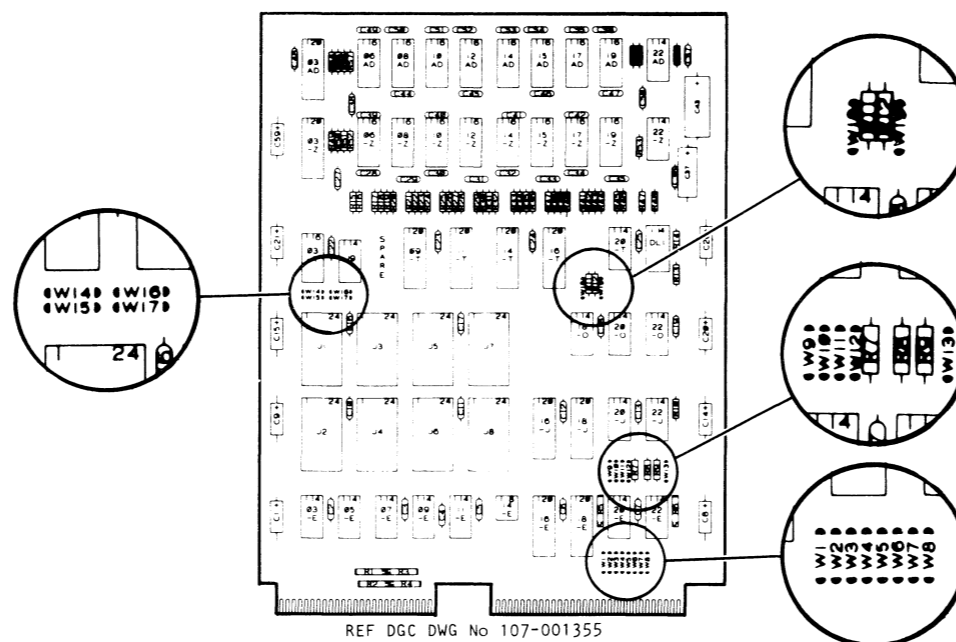


Ref DGC Dwg No 107-001314 Rev 01

SEE PREVIOUS PAGE FOR JUMPER TABLES

TAILORING (CONT)

MP/100 RAM/EPROM BOARD



REF DGC DWG No 107-001355

RAM 4/16K WORDS

4K WORDS

ADDRESS	JUMPERS		
	W6	W8	W7
0K-4K	OUT	OUT	OUT
4K-8K	OUT	OUT	IN
8K-12K	OUT	IN	OUT
12K-16K	OUT	IN	IN
16K-20K	IN	OUT	OUT
20K-24K	IN	OUT	IN
24K-28K	IN	IN	OUT
28K-32K	IN	IN	IN

NOTE: RESISTORS R8, R52, AND R62 ARE NORMALLY IN.
RESISTORS R51, AND R61 ARE NORMALLY OUT.

16K WORDS

ADDRESS	JUMPER W6
0K-16K	OUT
16K-32K	IN

NOTE: RESISTORS R8, R52, AND R62 ARE NORMALLY OUT.
RESISTORS R51, AND R61 ARE NORMALLY IN.
REMOVE JUMPERS W7 AND W8.

MAPPED MEMORY

PHYSICAL ADDRESS	JUMPERS	
	W5	W13
0K-32K	OUT	IN
32K-64K	IN	IN

EPROM 2/4/8/16K WORDS

2K WORDS

ADDRESS	JUMPERS				SOCKET PAIR	
	W4	W3	W2	W1	HIGH	LOW
0K-2K	OUT	OUT	OUT	OUT	J1	J2
2K-4K	OUT	OUT	OUT	IN	J5	J6
4K-6K	OUT	OUT	IN	OUT	J3	J4
6K-8K	OUT	OUT	IN	IN	J7	J8
8K-10K	OUT	IN	OUT	OUT	J1	J2
10K-12K	OUT	IN	OUT	IN	J5	J6
12K-14K	OUT	IN	IN	OUT	J3	J4
14K-16K	OUT	IN	IN	IN	J7	J8
16K-18K	IN	OUT	OUT	OUT	J1	J2
18K-20K	IN	OUT	OUT	IN	J5	J6
20K-22K	IN	OUT	IN	OUT	J3	J4
22K-24K	IN	OUT	IN	IN	J7	J8
24K-26K	IN	IN	OUT	OUT	J1	J2
26K-28K	IN	IN	OUT	IN	J5	J6
28K-30K	IN	IN	IN	OUT	J3	J4
30K-32K	IN	IN	IN	IN	J7	J8

NOTE: JUMPERS W9, W10, AND W11 ARE INSERTED FOR 2K EPROM MEMORY BLOCKS.

4K WORDS

ADDRESS	JUMPERS			SOCKET PAIR	
	W4	W3	W2	HIGH	LOW
0K-4K	OUT	OUT	OUT	J1	J2
4K-8K	OUT	OUT	IN	J3	J4
8K-12K	OUT	IN	OUT	J5	J6
12K-16K	OUT	IN	IN	J7	J8
16K-20K	IN	OUT	OUT	J1	J2
20K-24K	IN	OUT	IN	J3	J4
24K-28K	IN	IN	OUT	J5	J6
28K-32K	IN	IN	IN	J7	J8

NOTE: JUMPERS W1, AND W9 ARE NORMALLY OUT FOR 4K EPROM MEMORY BLOCKS.
JUMPERS W10, AND W11 ARE NORMALLY IN FOR 4K EPROM MEMORY BLOCKS.

NOTE: FOR A SINGLE PAIR OF EPROMS, THE ABOVE TABLES GIVE THE CORRESPONDING BLOCK OF MEMORY TO THE PAIR INSERTED.

8K WORDS

ADDRESS	JUMPERS	
	W4	W3
0K-8K	OUT	OUT
8K-16K	OUT	IN
16K-24K	IN	OUT
24K-32K	IN	IN

NOTE: JUMPERS W1, W2, W9, AND W10 ARE NORMALLY OUT FOR 8K EPROM MEMORY BLOCKS. JUMPER W11 IS NORMALLY IN.

16K WORDS

ADDRESS	JUMPERS	
	W4	W3
0K-16K	OUT	OUT
16K-32K	IN	OUT

NOTE: JUMPERS W1, W2, W9, W10, AND W11 ARE NORMALLY OUT.

MAPPED MEMORY

PHYSICAL ADDRESS	JUMPERS	
	W19	W12
0K-32K	OUT	IN
32K-64K	IN	IN

PINOUT JUMPERS

EPROM CHIP SIZE	TYPE	JUMPERS				
		W14	W15	W16	W17	W18
2K X 8	A	OUT	IN	IN	OUT	OUT
2K X 8	B	OUT	IN	IN	OUT	OUT
4K X 8	A	IN	OUT	IN	OUT	IN
4K X 8	B	IN	OUT	OUT	IN	OUT

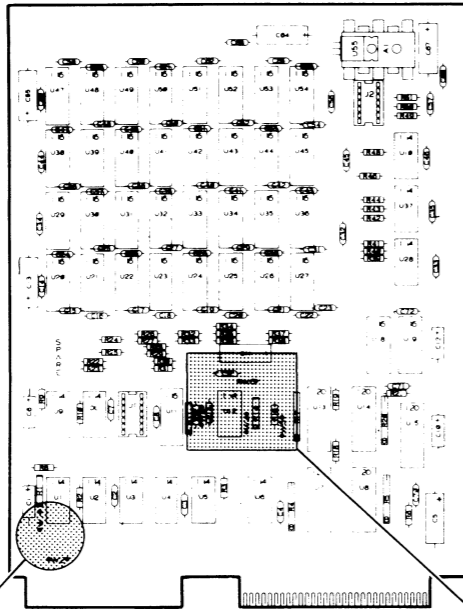
NOTE: A TYPE EPROMS HAVE PINOUTS COMPATIBLE WITH TEXAS INSTRUMENT'S EPROMS.
B TYPE EPROMS HAVE PINOUTS COMPATIBLE WITH INTEL EPROMS.

NOTE: ALL EPROMS ARE USER SUPPLIED.

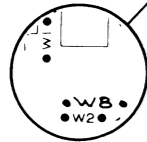
NOTE: JUMPER W20 NORMALLY OUT TO ENABLE EPROM MEMORY.

TAILORING (CONT)

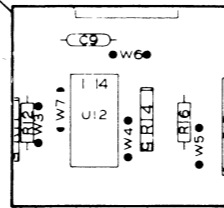
RAM BOARD
4/8/16/32K WORDS



REF DGC DWG No. 107-000799

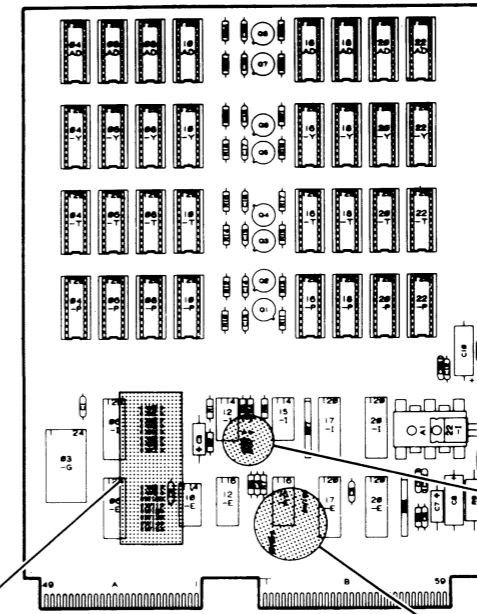


JUMPER	FUNCTION
W1	USED WHEN MAPPED MEMORY SELECTED OUT = 0 - 32K IN = 32 - 64K
W2	INSERTED TO ENABLE MAPPED MEMORY
W7	ALWAYS INSERTED
W8	NOT INSTALLED IF MEMORY IS TO BE USED ON +15V SYSTEMS. DO NOT INSTALL IF MEMORY IS INSTALLED IN MP/100 SYSTEM, SLOT 1 OR 2.

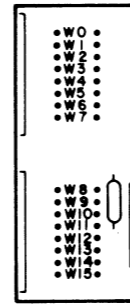


MEMORY ALLOCATION	ADDRESS JUMPERS			
	W3	W4	W5	W6
4K MEMORY BOARDS				
0K - 4K	OUT	IN	OUT	OUT
4K - 8K	OUT	IN	OUT	IN
8K - 12K	OUT	IN	IN	OUT
12K - 16K	OUT	IN	IN	IN
16K - 20K	IN	IN	OUT	OUT
20K - 24K	IN	IN	OUT	IN
24K - 28K	IN	IN	IN	OUT
28K - 32K	IN	IN	IN	IN
8K MEMORY BOARDS				
0K - 8K	OUT	IN	OUT	IN
8K - 16K	OUT	IN	IN	OUT
16K - 24K	IN	IN	OUT	OUT
24K - 32K	IN	IN	IN	OUT
16K MEMORY BOARDS				
0K - 16K	OUT	OUT	OUT	OUT
16K - 32K	OUT	OUT	OUT	IN
32K MEMORY BOARDS				
0K - 32K	OUT	OUT	OUT	OUT

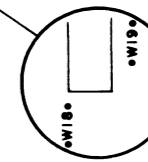
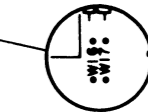
8K WORD PROM BOARD



REF DGC DWG No. 107-000977



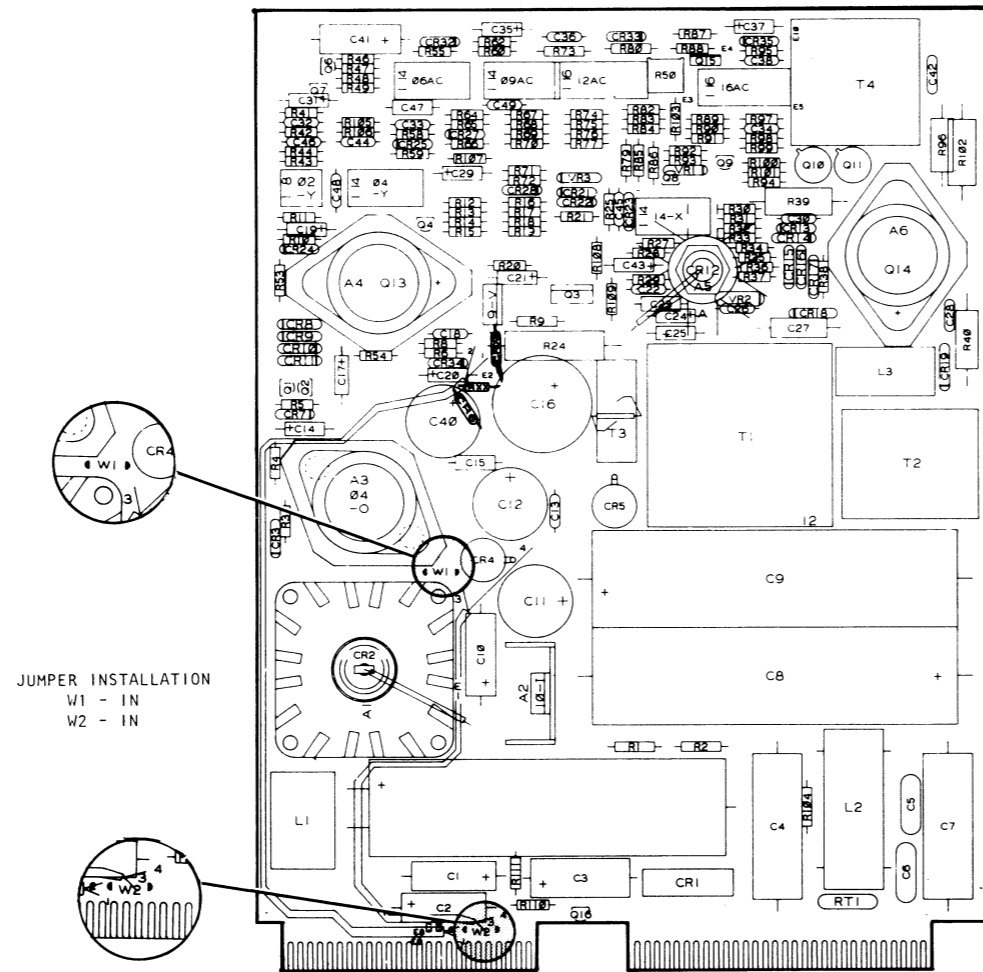
PROM BANK SELECT	INSERT JUMPER
BANK 0	(W0)
BANK 1	(W1)
BANK 2	(W2)
BANK 3	(W3)
BANK 4	(W4)
BANK 5	(W5)
BANK 6	(W6)
BANK 7	(W7)
BANK 8	(W8)
BANK 9	(W9)
BANK 10	(W10)
BANK 11	(W11)
BANK 12	(W12)
BANK 13	(W13)
BANK 14	(W14)
BANK 15	(W15)



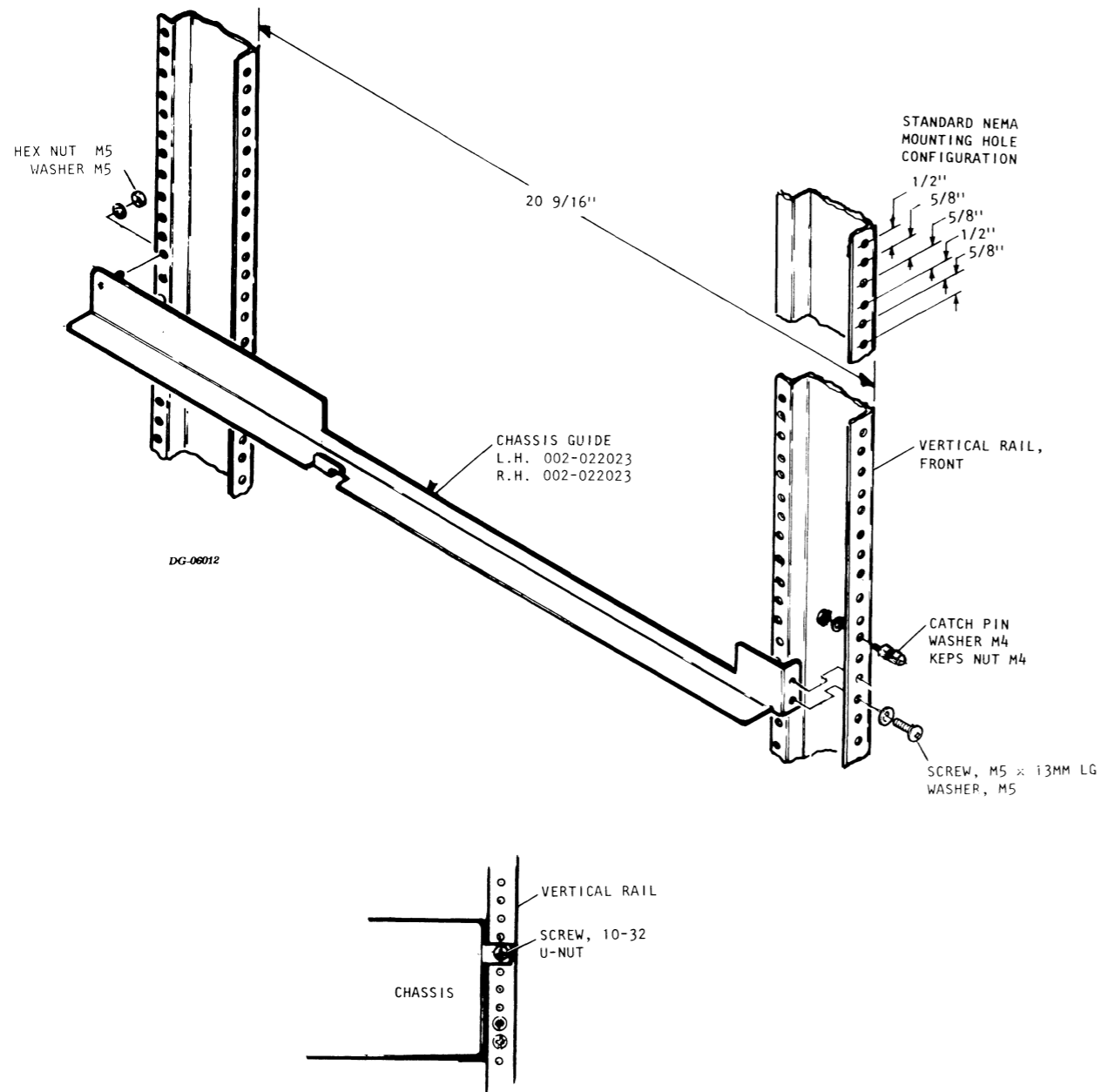
MEMORY ADDRESSES SELECTED	JUMPER	
	W16	W17
0 TO 17777	OUT	OUT
20000 TO 37777	IN	OUT
40000 TO 57777	OUT	IN
60000 TO 77777	IN	IN

JUMPER	FUNCTION
W18	USED WHEN MAPPED MEMORY SELECTED OUT = 0 - 32K IN = 32 - 64K
W19	INSERTED TO ENABLE MAPPED MEMORY

**TAILORING
JUMPERING
POWER SUPPLY**

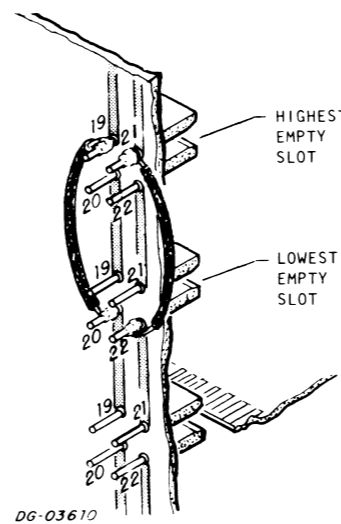


CABINET MOUNTING



EXTERNAL/INTERNAL CABLING

JUMPERING BACKPANEL



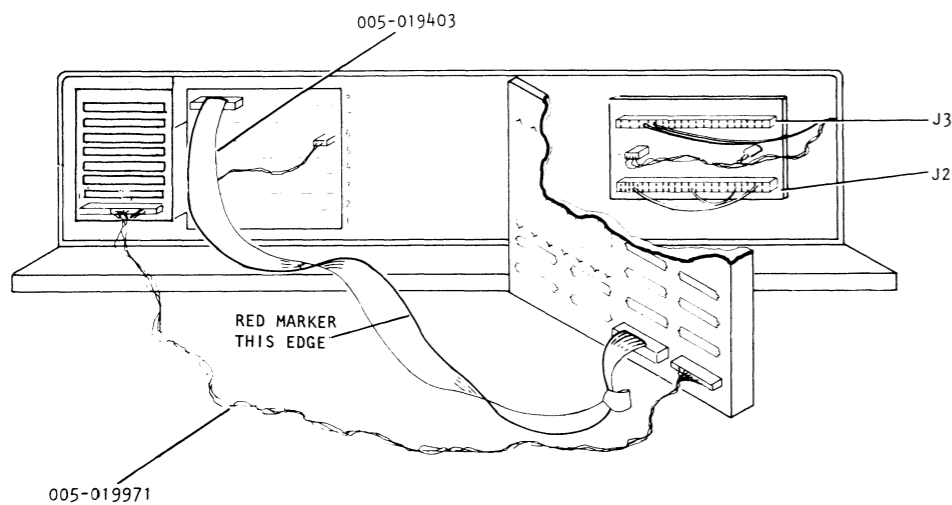
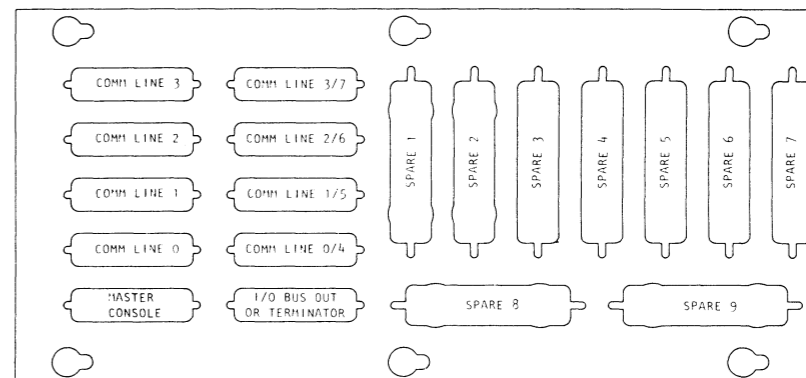
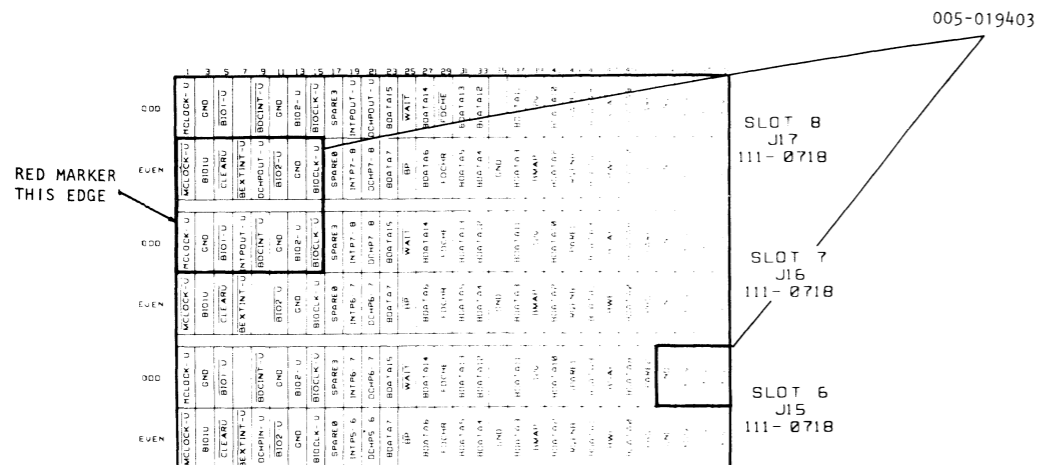
AN 8-SLOT CARDFRAME, HAVING EMPTY SLOTS BETWEEN SYSTEM MODULES, MUST HAVE PRIORITY JUMPERS INSTALLED ACROSS THOSE SLOTS AS FOLLOWS: PINS 20 AND 22 OF THE LOWEST EMPTY SLOT SHOULD BE CONNECTED TO PINS 19 AND 21, RESPECTIVELY, OF THE HIGHEST EMPTY SLOT. THE HIGHEST AND THE LOWEST EMPTY SLOT MAY BE THE SAME. NO JUMPERS ARE REQUIRED IF THE GROUP OF EMPTY SLOTS INCLUDES SLOT 8, UNLESS THE EXTERNAL I/O BUS IS USED. THE HIGHEST LEVEL PRIORITY BOARD IS THE ONE NEAREST THE CPU SLOT.

PIN ASSIGNMENTS

SLOT 1

	EVEN	ODD	
2	MCLOCK-L	MCLOCK-L	1
4	B101-L	GND	3
6	CLEAR-L	B101-L	5
8	BEXTINT-L	PWR-FAIL	7
10	LOCK	BDCINT-L	9
12	B102-L	GND	11
14	GND	B102-L	13
16	BIOCLOCK-L	BIOCLOCK-L	15
18	SPARE 0	HALT	17
20	PWR-FAIL	INTP→2	19
22	PWR OK	DCHP→2	21
24	BDATA7	BDATA15	23
26	BP	WAIT	25
28	BDATA6	BDATA14	27
30	FDCHR	FDCH	29
32	BDATA5	BDATA13	31
34	BDATA4	BDATA12	33
36	GND	RTC	35
38	BDATA3	BDATA11	37
40	BMAP	-12V	39
42	BDATA2	BDATA10	41
44	RQENB	BOOT	43
46	BDATA1	BDATA9	45
48	BWE	BSAE	47
50	BDATA0	BDATA8	49
52	PHIL	SPARE2	51
54	GND	GND	53
56	+12V	+12V	55
58	-5V	+5V	57
60	+5V	+5V	59

EXTERNAL/INTERNAL CABLING (Cont)



THIS DRAWING SHOWS CABLING WHEN NO BATTERY BACK-UP OPTION IS INSTALLED. IF BATTERY BACK-UP OPTION IS INSTALLED, THE CONNECTOR SHOWN AT J3 WILL BE MOVED TO J2 AND THE CONNECTOR SHOWN AT J2 WILL BE MOVED TO J3.

NOTES:

IF I/O BUS IS EXTENDED, TERMINATOR MUST BE INSTALLED ON LAST I/O DEVICE. IF I/O BUS IS NOT EXTENDED, TERMINATOR MUST BE INSTALLED ON BULKHEAD ON I/O BUS OUT CONNECTOR.

I/O BUS OUT ADAPTER CABLE (005-019403)

FROM: BACKPANEL SLOTS 7 & 8 (16 POSITION DIP) AND SLOT 6 (4 POSITION DIP) SEE DIAGRAM UPPER LEFT ON PAGE.

TO: BULKHEAD I/O BUS OUT POSITION

MASTER CONSOLE ADAPTER CABLE (005-019971)

FROM CPU BOARD (SLOT 1) EDGE CONNECTOR A TO MASTER CONSOLE POSITION ON BULKHEAD.

OPTION CABLING

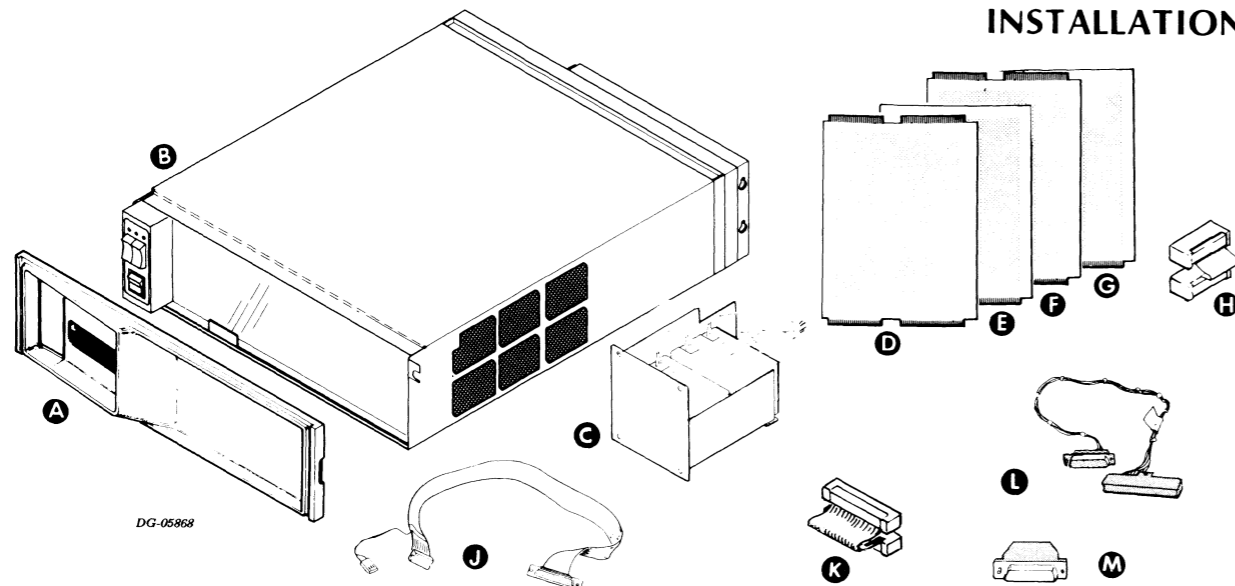
ASLM PRIMARY DEVICE CODE 4336 } USE BULKHEAD POSITIONS COMM LINE 0-3
 ASYNC MUX BOARD #1 4227 }

ASLM SECONDARY DEVICE CODE 4336 } USE BULKHEAD POSITIONS COMM 0/4-3/7
 ASYNC MUX BOARD #2 4227 }

ADDITIONAL COMMUNICATION LINES USING EITHER 4336 OR 4227 USE SPARES 1-4 AND SPARE 5-8.

ALL OTHER OPTION BOARDS USE SPARES 1-9.

INSTALLATION SPECIFICATIONS



MAJOR COMPONENT

ITEM	COMPONENT	MOUNTING LOCATION	NOTES
A	FRONT PANEL	CABINET	
B	MP/200 CHASSIS	CABINET	
C	BATTERY BACKUP	MP/200 CHASSIS	OPTIONAL
D	MP/200 CPU	MP/200 CHASSIS	A, C, D EDGE CONNECTOR 50 PINS B EDGE CONNECTOR 60 PINS
E	8/16/32 K RAM MEMORY	MP/200 CHASSIS	
F	MP/200 CONTROLLER	MP/200 CHASSIS	
G	MP/200 RAM/EPROM MEMORY	MP/200 CHASSIS	

CABLES

ITEM	CABLE	CONNECTING	MAX LENGTH		NOTES
			FT	M	
H	I/O BUS LINK 005-12784	SLOT 4 TO SLOT 5	0.25	0.08	
J	I/O BUS INT CPU 005-019403	B/P SLOTS 6,7,8 TO BULKHEAD			
K	MP/200 CONTROLLER 005-009663	CONTROLLER TO MP/200 CPU	1	0.3	USE C SIDE EDGE CONNECTOR OF CONTROLLER TO C SIDE OF CPU
L	ASYNCR 005-19971	CONTROLLER TO COMM. LINE	1	0.3	COMM LINE TO DEVICE 50 FT MAX FOR EIA. 1000 FT MAX FOR 20 AMP CURRENT LOOP

TERMINATOR

ITEM	TERMINATOR	LOCATION	NOTES
M	I/O BUS 005-018508	BULKHEAD	MOUNT TERM ON LAST DEVICE ON I/O BUS IF I/O BUS IS EXTENDED, OTHERWISE ON BULKHEAD

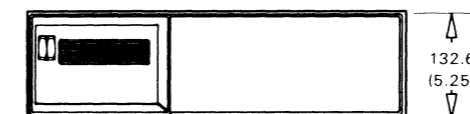
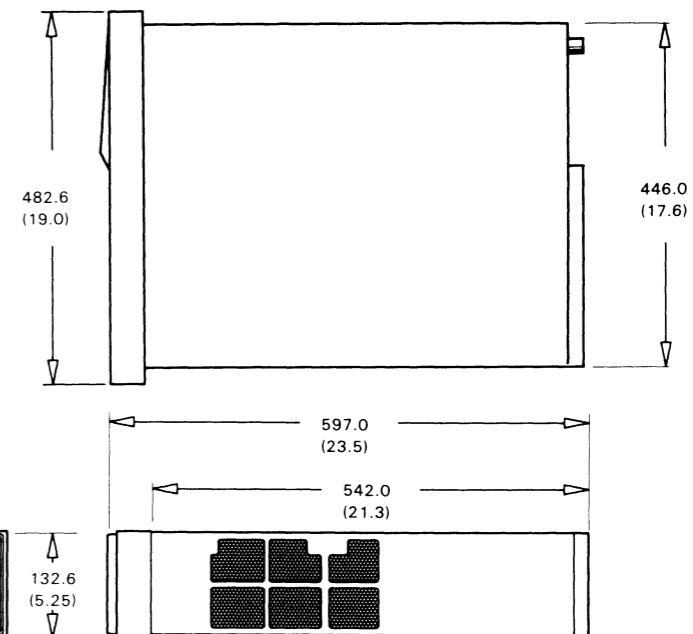
DATA CHANNEL SPEEDS AVAILABLE				STANDARD <input checked="" type="checkbox"/>		HIGH SPEED <input checked="" type="checkbox"/>	
SLOT	ALLOWED SLOT CHART	ASSIGNED	CURRENT DRAW (AMPS)				
			+5V	-5V	+12V	-12V	
8	MEMORY OR I/O						
7	MEMORY OR I/O						
6	MEMORY OR I/O						
5	MEMORY OR I/O						
4	MEMORY OR I/O						
3	MEMORY OR I/O						
2	MP/200 BASIC CONTROLLER		2.5	0.11	0.3		
1	MP/200 CPU		5.0	0.03			

CURRENT DRAW
 MAXIMUM CURRENT AVAILABLE* 16 2 1.75 0.75
 CURRENT SURPLUS

NOTE: MINIMUM LOAD FOR EXPANSION CHASSIS IS 5A @ +5V. USE OPTION 1227 (LOAD PLUG) WHEN DRAWING LESS THAN 5A @ +5V. INSTALL ON J19 OF BACKPANEL.

* WHEN LESS THAN 8 AMPS OF +5V CURRENT IS BEING USED, THE +12V AND -5V CURRENT SOURCES ARE DERATED AS SHOWN.

MP/200-1 MAXIMUM +5V CURRENT IS 15 AMPS.



ID-00394

DIMENSIONS:

	Width	Depth	Height
Millimeters	482.6	597	132.6
Inches	19	23.5	5.25

SERVICE CLEARANCES:

	Front
Millimeters	558.8
Inches	22

WEIGHT:

	Empty	Fully Loaded	Fully Loaded W/BBU
Kilograms	14.5	16.3	18.6
Pounds	32	36	41

HEAT OUTPUT (MAX)

	Watts	BTU/hr
	200	680

OPERATING ENVIRONMENT:

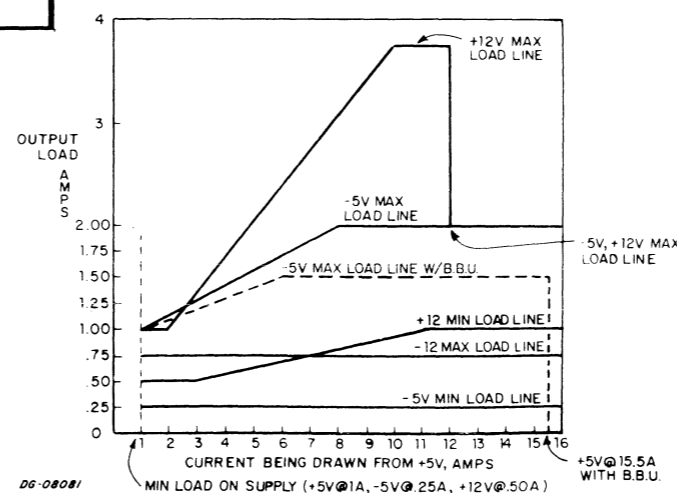
Temperature (max)	55°C
Relative Humidity (max)	80 (non-condensing)
Altitude	10,000ft 3084m

POWER REQUIREMENTS:

(Domestic)		(Export)	
Voltage	120 +10 -15	100 +10 -15	220 +10 -15
Hz	47-63	47-63	47-63
Max Amp per Phase	5	3	3
Phase	1	1	1
Startup Surge per Phase	33 amps for 8 milliseconds	17 amps for 8 milliseconds	

LINE CORDS

100V	109-000719	IN DGL RACK
120V	109-000719	
220V	109-000681	
240V	109-000681	



THE MP/200 CPU REQUIRES 5.0A @ +5V; 0.033A @ -5V.
 THE MP/200 CONTROLLER REQUIRES 2.5A @ +5V; 0.11A @ +12V.
 THE RAM MEMORY REQUIRES 0.5A @ +5V; 0.02A @ -5V;
 0.3A @ +12V.

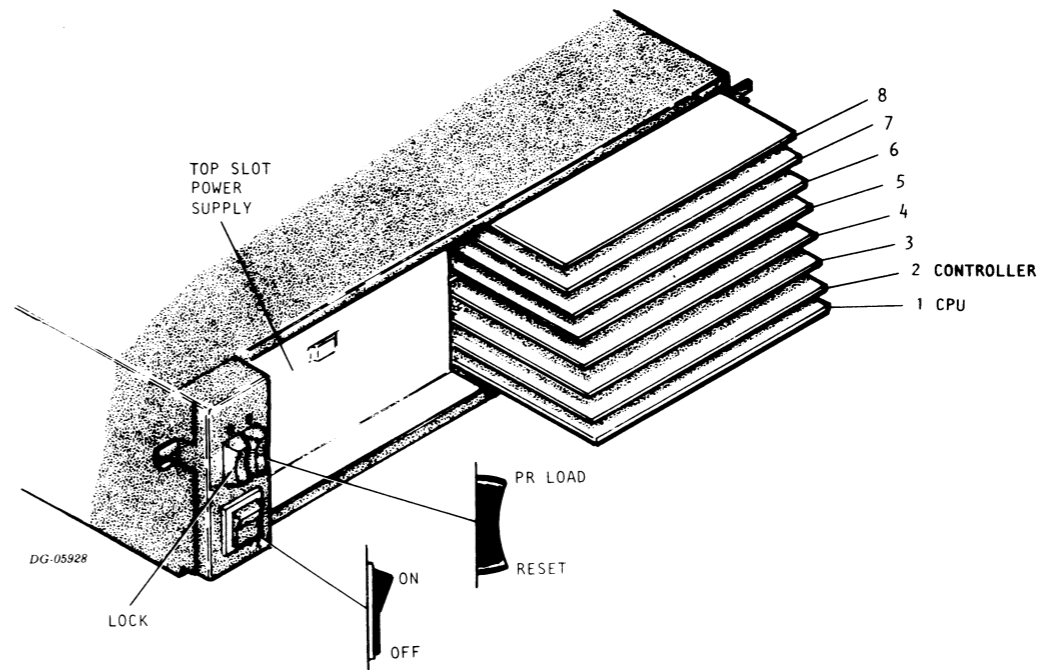
Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

DG-08081

SHIPPING

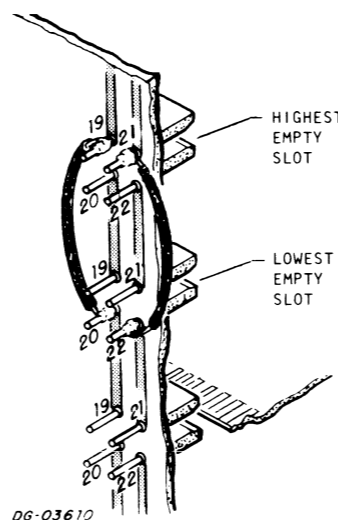
FOR PACKING PROCEDURE,
SEE 010-000262/263

BOARD ASSIGNMENTS



BACKPANEL

JUMPERING BACKPANEL



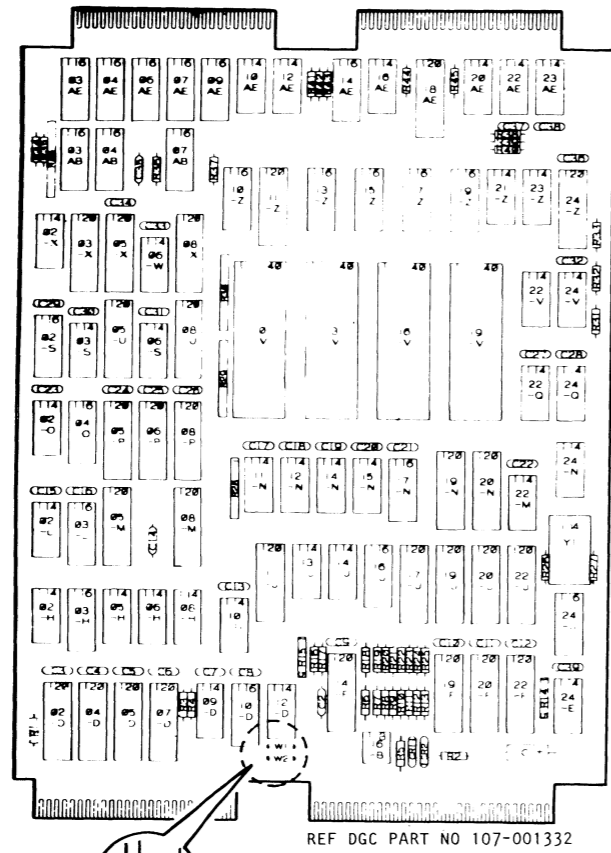
AN 8-SLOT CARDFRAME, HAVING EMPTY SLOTS BETWEEN SYSTEM MODULES, MUST HAVE PRIORITY JUMPERS INSTALLED ACROSS THOSE SLOTS AS FOLLOWS: PINS 20 AND 22 OF THE LOWEST EMPTY SLOT SHOULD BE CONNECTED TO PINS 19 AND 21, RESPECTIVELY, OF THE HIGHEST EMPTY SLOT. THE HIGHEST AND THE LOWEST EMPTY SLOT MAY BE THE SAME. NO JUMPERS ARE REQUIRED IF THE GROUP OF EMPTY SLOTS INCLUDES SLOT 8, UNLESS THE EXTERNAL I/O BUS IS USED. THE HIGHEST LEVEL PRIORITY BOARD IS THE ONE NEAREST THE CPU SLOT.

PIN ASSIGNMENTS

SLOT 1		
EVEN	ODD	
2	MCLOCK-L	1
4	B101-L	3
6	CLEAR-L	5
8	BEXTINT-L	7
10	LOCK	9
12	B102-L	11
14	GND	13
16	B10CLOCK-L	15
18	MEMINH	17
20	PWR-FAIL	19
22	PWR OK	21
24	BUS7	23
26	MEMIO	25
28	BBUS6	27
30	WEH1	29
32	BUS5	31
34	BUS4	33
36	GND	35
38	BUS3	37
40	BPHASE	39
42	BUS2	41
44	XMA1	43
46	BUS1	45
48	ADREN	47
50	BBUS0	49
52	SYSCLK	51
54	GND	53
56	+12V	55
58	-5V	57
60	+5V	59

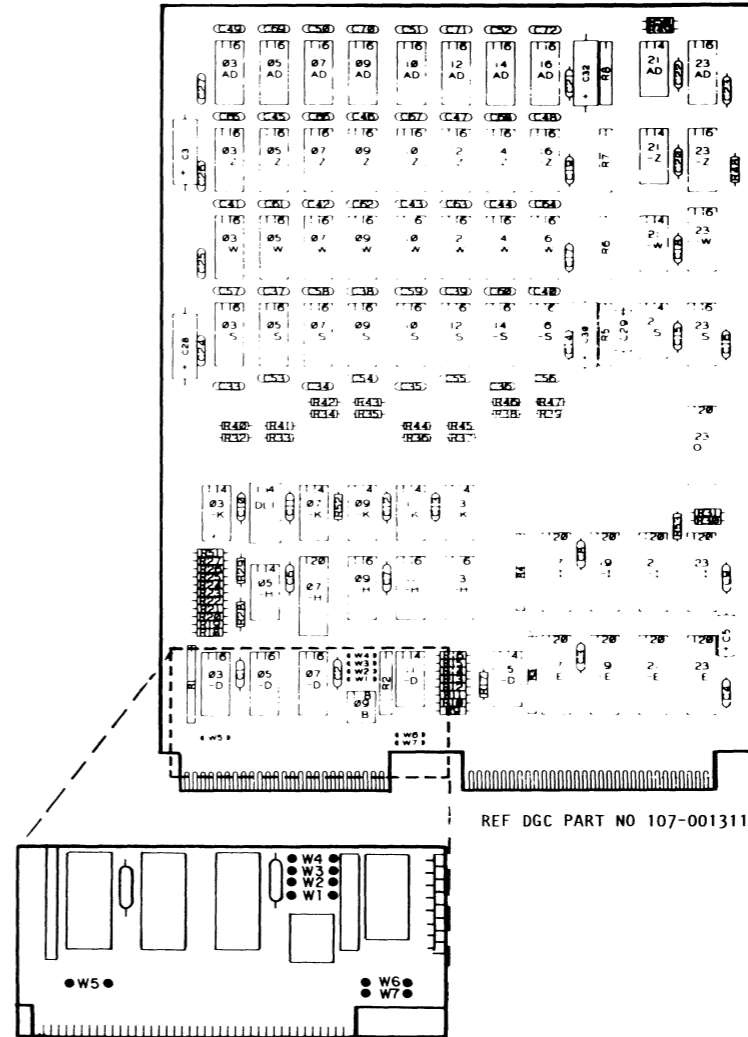
TAILORING

CPU



W1 ALWAYS IN
W2 ALWAYS OUT

MP/200 8/16/32K RAM BOARD



8K-WORD

ADDRESS SELECT	JUMPERS	
	W3	W4
0K-8K	OUT	OUT
8K-16K	OUT	IN
16K-24K	IN	OUT
24K-32K	IN	IN

NOTE: JUMPERS W1, W2, W5, W6 AND W7 ARE NORMALLY OUT.

16K-WORDS

ADDRESS SELECT	JUMPERS
	W3
0K-16K	OUT
16K-32K	IN

NOTE: JUMPERS W1, W2, W4, W5, W6 AND W7 ARE NORMALLY OUT.

32K-WORDS

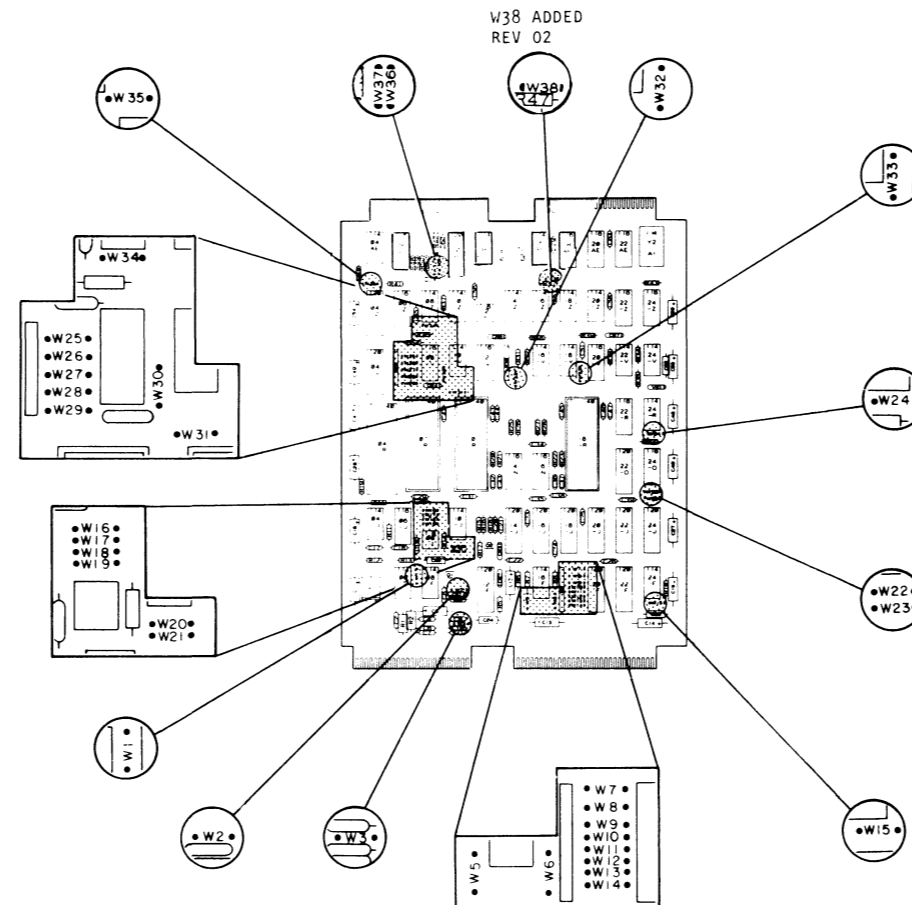
NOTE: ALL JUMPERS ARE NORMALLY OUT FOR 32K BOARD.

TAILORING (CONT)

MP/200 CONTROLLER BOARD

Ref DGC Dwg No 107-001313 Rev 02

JUMPER	FUNCTION
W5	NORMALLY INSERTED. ALONG WITH W24 ENABLES JUMPER REGISTER.
W6	NORMALLY INSERTED. ALONG WITH W24 ENABLES SOFT CONTROL PANEL.
W15	NORMALLY OUT. INSERTED IF W5 AND W24 ARE INSERTED AND W6 IS OUT.
W24	NORMALLY INSERTED. NEEDED TO ENABLE SOFT CONTROL PANEL ROMS AND JUMPER WORD REGISTER.
W26	SELECT NUMBER OF STOP BITS ON ASYNCHRONOUS INTERFACE. INSERT FOR 1 STOP BIT. OUT FOR 2 STOP BITS.
W34	INSERT TO ENABLE MODEM CHANGE INTERRUPT.
W35	INSERT TO ENABLE EXTENDED STATUS.
W36	IN = DISABLE POWERFAIL INTERRUPT. OUT = ENABLE POWERFAIL INTERRUPT.
W37	INSERT TO ENABLE AUTO RESTART AFTER HALT. OUT FOR HARD HALT.



RATE	JUMPERS			
	W16	W17	W18	W19
50	IN	OUT	IN	IN
75	OUT	OUT	IN	IN
110	OUT	OUT	OUT	OUT
134.5	IN	IN	OUT	IN
150	IN	OUT	OUT	OUT
200	OUT	IN	OUT	IN
300	OUT	IN	OUT	OUT
600	IN	OUT	OUT	IN
1200	OUT	OUT	IN	OUT
1800	IN	OUT	IN	OUT
2700	IN	IN	OUT	OUT
4800	OUT	IN	IN	OUT
9600	IN	IN	IN	OUT
19200	OUT	IN	IN	IN

LINE TYPE	W1	W2	W3	W32
EIA	IN	OUT	OUT	OUT
20AMP CURRENT LOOP (600 BAUD AND BELOW)	OUT	IN	IN	IN
(ABOVE 600 BAUD)	OUT	IN	OUT	IN

JUMPER	FUNCTION
W30	NORMALLY OUT SELECTS THE PRIMARY TTO. INSERTED SELECTS SECONDARY TTO.
W31	NORMALLY OUT SELECTS THE PRIMARY TTI. INSERTED SELECTS SECONDARY TTI.
W33	NORMALLY OUT SELECTS THE PRIMARY RTC. DEVICE CODE 14. INSERT TO SELECT DEVICE CODE 54.

JUMPER		FUNCTION
W20	W21	
OUT	IN	FORCE CLEAR TO SEND HALF-DUPLEXED MODEM, 60-CPS DASHER
IN	OUT	

PARITY	JUMPERS	
	W25	W29
ODD	IN	IN
EVEN	IN	OUT
NONE	OUT	OUT

LENGTH	JUMPERS	
	W27	W28
5 BITS	IN	IN
6 BITS	IN	OUT
7 BITS	OUT	IN
8 BITS	OUT	OUT

JUMPER REGISTER IS ENABLED WHEN ADDRESS 077777 IS ISSUED; JUMPER REGISTER IS (HIGH BYTE*) OF STARTING ADDRESS.

JUMPER REGISTER IS ENABLED WHEN ADDRESS 077776 IS ISSUED; JUMPER REGISTER IS DEVICE CODE TO PROGRAM LOAD FROM. IF DEVICE CODE IS 77 ENTER SOFT CONSOLE.

W22	OUT	IN	
W23	IN	OUT	

W7	A0	**	
W8	A1	***	
W9	A2	DS0	
W10	A3	DS1	
W11	A4	DS2	
W12	A5	DS3	
W13	A6	DS4	
W14	A7	DS5	

NOTE: JUMPER IN = 0
OUT = 1

* STARTING ADDRESS LOW BYTE = 00,000,001
 ** OUT FOR DCH LOAD; IN FOR PIO LOAD
 *** OUT FOR 1 MINUTE WAIT PRIOR TO PROGRAM LOAD EXECUTION;
 IN FOR NO WAIT PRIOR TO PROGRAM LOAD EXECUTION

W38	IN = DISABLE NON-MASKABLE INTERRUPT ON "BREAK" OUT = ENABLE NON-MASKABLE INTERRUPT ON "BREAK" WHEN FRONT CONSOLE IS UNLOCKED
-----	---

W38 ADDED REV 02

TAILORING (CONT)

MP/200 RAM/EPROM BOARD

EPROM 1/2/4/8/16K WORDS

NOTE: THE JUMPING INFORMATION GIVEN ON THIS DOCUMENT SUPERCEDES THAT GIVEN IN THE MP/200 HARDWARE REFERENCE MANUAL DGC 014-000667.

1K x 8 EPROMS

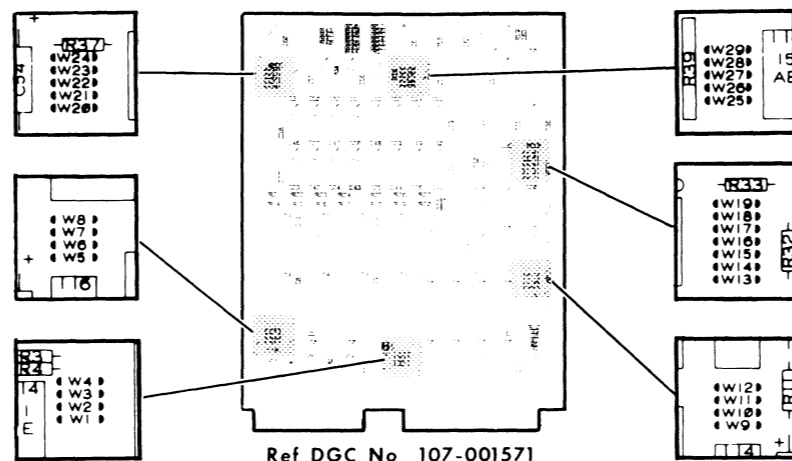
ADDRESS	JUMPERS					SOCKET PAIR	
	W14	W15	W16	W13	W12	MSB	LSB
0K-1K	OUT	OUT	OUT	OUT	OUT	J1	J5
1K-2K	OUT	OUT	OUT	OUT	IN	J2	J6
2K-3K	OUT	OUT	OUT	IN	OUT	J3	J7
3K-4K	OUT	OUT	OUT	IN	IN	J4	J8
4K-5K	OUT	OUT	IN	OUT	OUT	J1	J5
5K-6K	OUT	OUT	IN	OUT	IN	J2	J6
6K-7K	OUT	OUT	IN	IN	OUT	J3	J7
7K-8K	OUT	OUT	IN	IN	IN	J4	J8
8K-9K	OUT	IN	OUT	OUT	OUT	J1	J5
9K-10K	OUT	IN	OUT	OUT	IN	J2	J6
10K-11K	OUT	IN	OUT	IN	OUT	J3	J7
11K-12K	OUT	IN	OUT	IN	IN	J4	J8
12K-13K	OUT	IN	IN	OUT	OUT	J1	J5
13K-14K	OUT	IN	IN	OUT	IN	J2	J6
14K-15K	OUT	IN	IN	IN	OUT	J3	J7
15K-16K	OUT	IN	IN	IN	IN	J4	J8
16K-17K	IN	OUT	OUT	OUT	OUT	J1	J5
17K-18K	IN	OUT	OUT	OUT	IN	J2	J6
18K-19K	IN	OUT	OUT	IN	OUT	J3	J7
19K-20K	IN	OUT	OUT	IN	IN	J4	J8
20K-21K	IN	OUT	IN	OUT	OUT	J1	J5
21K-22K	IN	OUT	IN	OUT	IN	J2	J6
22K-23K	IN	OUT	IN	IN	OUT	J3	J7
23K-24K	IN	OUT	IN	IN	IN	J4	J8
24K-25K	IN	IN	OUT	OUT	OUT	J1	J5
25K-26K	IN	IN	OUT	OUT	IN	J2	J6
26K-27K	IN	IN	OUT	IN	OUT	J3	J7
27K-28K	IN	IN	OUT	IN	IN	J4	J8
28K-29K	IN	IN	IN	OUT	OUT	J1	J5
29K-30K	IN	IN	IN	OUT	IN	J2	J6
30K-31K	IN	IN	IN	IN	OUT	J3	J7
31K-32K	IN	IN	IN	IN	IN	J4	J8

NOTE: JUMPERS W10, W17, W18, AND W19 ARE NORMALLY IN FOR 1K EPROM MEMORY BLOCKS.

2K-WORD ADDRESS SELECT

ADDRESS	JUMPERS					SOCKET PAIR	
	W14	W15	W16	W13	W12	MSB	LSB
0K-2K	OUT	OUT	OUT	OUT	OUT	J1	J5
2K-4K	OUT	OUT	OUT	IN	OUT	J3	J7
4K-6K	OUT	OUT	IN	OUT	OUT	J2	J6
6K-8K	OUT	OUT	IN	IN	OUT	J4	J8
8K-10K	OUT	IN	OUT	OUT	OUT	J1	J5
10K-12K	OUT	IN	OUT	IN	OUT	J3	J7
12K-14K	OUT	IN	IN	OUT	OUT	J2	J6
14K-16K	OUT	IN	IN	IN	OUT	J4	J8
16K-18K	IN	OUT	OUT	OUT	OUT	J1	J5
18K-20K	IN	OUT	OUT	IN	OUT	J3	J7
20K-22K	IN	OUT	IN	OUT	OUT	J2	J6
22K-24K	IN	OUT	IN	IN	OUT	J4	J8
24K-26K	IN	IN	OUT	OUT	OUT	J1	J5
26K-28K	IN	IN	OUT	IN	OUT	J3	J7
28K-30K	IN	IN	IN	OUT	OUT	J2	J6
30K-32K	IN	IN	IN	IN	OUT	J4	J8

NOTE: JUMPERS W17, W18, AND W19 ARE NORMALLY IN AND W10 AND W12 ARE NORMALLY OUT FOR 2K EPROM MEMORY BLOCKS. 2K-WORDS CAN NOT BE IMPLEMENTED WITH 2 PAIRS OF 1K EPROMS.



4K-WORD ADDRESS SELECT (FOR 1 PAIR OF 4K EPROMS)

ADDRESS	JUMPERS			SOCKET PAIR	
	W14	W15	W16	MSB	LSB
0K-4K	OUT	OUT	OUT	J1	J5
4K-8K	OUT	OUT	IN	J2	J6
8K-12K	OUT	IN	OUT	J3	J7
12K-16K	OUT	IN	IN	J4	J8
16K-20K	IN	OUT	OUT	J1	J5
20K-24K	IN	OUT	IN	J2	J6
24K-28K	IN	IN	OUT	J3	J7
28K-32K	IN	IN	IN	J4	J8

NOTE: JUMPERS W10, W12, W13, AND W19 ARE NORMALLY OUT FOR 4K EPROM MEMORY BLOCKS. JUMPERS W17 AND W18 ARE NORMALLY IN FOR 4K EPROM MEMORY BLOCKS. 4K-WORDS CAN ALSO BE IMPLEMENTED WITH 4 PAIRS OF 1K EPROMS. REFER TO THE 1K x 8 EPROM TABLE FOR CONFIGURATION OF JUMPERS W12 - W16. LEAVE JUMPER W10 AND W12 OUT WHEN 4 K-WORDS ARE USED. 4K-WORDS CAN NOT BE IMPLEMENTED WITH 2 PAIRS OF 2K EPROMS.

NOTE: FOR A SINGLE PAIR OF EPROMS, ADDRESS DEPENDS ON THE SOCKET LOCATION AS MUCH AS THE JUMPERS INSERTED.

EPROM TYPES

EPROM TYPE	T.I.	Words	JUMPERS									
			W4	W5	W6	W7	W8	W20	W21	W22	W23	W24
1K x 8-BIT	2508	2508	OUT	IN	OUT	IN	OUT	OUT	OUT	IN	OUT	OUT
	ANY	2708	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	OUT
2K x 8-BIT	2516	2516	IN	OUT	IN	IN	OUT	OUT	OUT	IN	OUT	OUT
	ANY	2716	IN	OUT	IN	IN	OUT	OUT	OUT	IN	OUT	OUT
4K x 8-BIT	2532	2532	IN	OUT	IN	OUT	IN	OUT	OUT	IN	OUT	IN
	ANY	2732	IN	OUT	IN	OUT	IN	OUT	OUT	OUT	IN	OUT

8K-WORD ADDRESS SELECT (FOR 4 PAIRS OF 2K EPROMS)

ADDRESS	JUMPERS		SOCKET PAIR	
	W14	W15	MSB	LSB
0K-2K	OUT	OUT	J1	J5
2K-4K	OUT	OUT	J3	J7
4K-8K	OUT	OUT	J2	J6
6K-8K	OUT	OUT	J4	J8
8K-10K	OUT	IN	J1	J5
10K-12K	OUT	IN	J3	J7
12K-14K	OUT	IN	J2	J6
14K-16K	OUT	IN	J4	J8
16K-18K	IN	OUT	J1	J5
18K-20K	IN	OUT	J3	J7
20K-22K	IN	OUT	J2	J6
22K-24K	IN	OUT	J4	J8
24K-26K	IN	IN	J1	J5
26K-28K	IN	IN	J3	J7
28K-30K	IN	IN	J2	J6
30K-32K	IN	IN	J4	J8

NOTE: JUMPERS W10, W12, W13, W16, W18, AND W19 ARE NORMALLY OUT FOR 8K EPROM MEMORY BLOCKS. 8K-WORDS CAN NOT BE IMPLEMENTED WITH 2 PAIRS OF 4K EPROMS.

16K-WORD ADDRESS SELECT (FOR 4 PAIRS OF 4K EPROMS)

ADDRESS	JUMPERS	
	W14	W15
0K-16K	OUT	OUT
16K-32K	IN	OUT

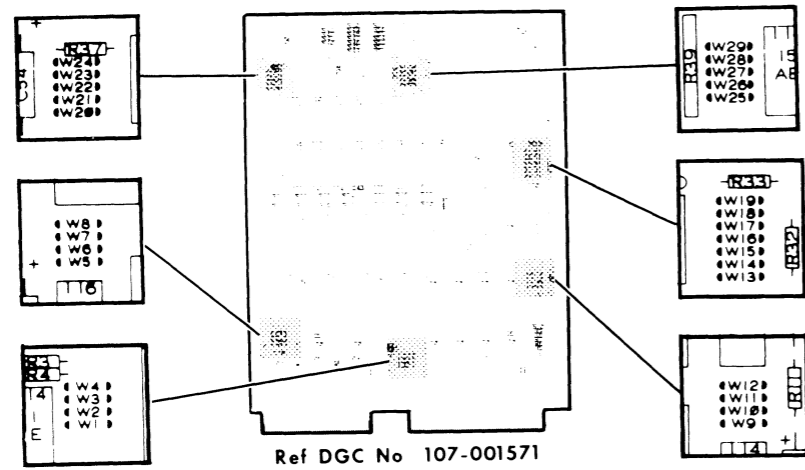
NOTE: JUMPERS W10, W12, W13, W16, W17, W18, AND W19 ARE NORMALLY OUT. INSERT THE EPROM PAIRS IN SOCKETS J1 - J8 AS SHOWN IN THE TABLE FOR 4K-WORD ADDRESS SPACE.

JUMPER W1 IS INSERTED TO DISABLE EPROM MEMORY. JUMPER W1 IS NORMALLY OUT. JUMPERS W2 AND W25 ARE NORMALLY INSERTED AND W3 IS NORMALLY REMOVED; IN THIS CASE, THE CPU MEMINH SIGNAL CONTROLS THE BOARD. IF THE EPROM SECTION IS REQUIRED TO GENERATE ITS OWN MEMINH SIGNAL, WHILE IGNORING THAT OF THE CPU, THEN REMOVE JUMPERS W2 AND W25, AND INSERT W3.

JUMPERS W9, W11, AND W27 ARE NORMALLY OUT.

TAILORING (CONT)

MP/200 RAM/EPROM BOARD (CONT)



RAM 4/16K WORDS

4K-WORD ADDRESS SELECT

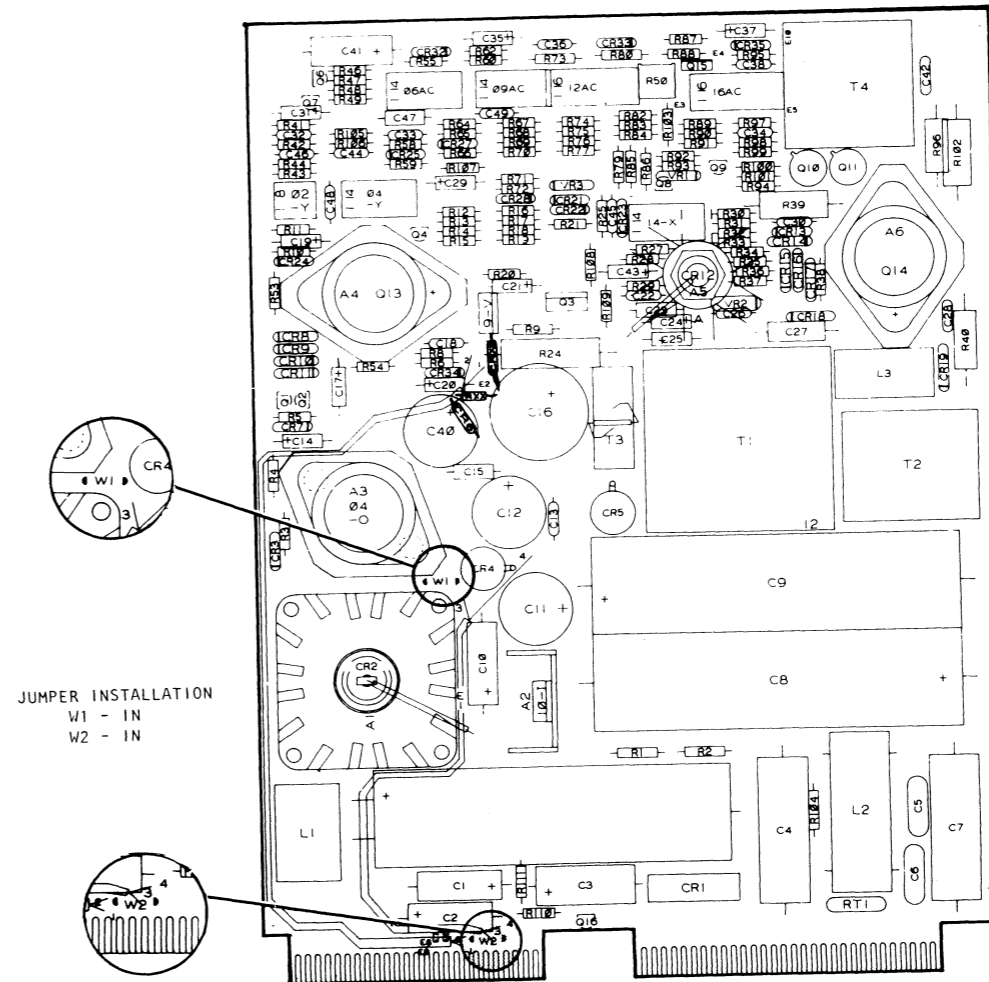
ADDRESS	JUMPERS		
	W26	W28	W29
0K-4K	OUT	OUT	OUT
4K-8K	OUT	OUT	IN
8K-12K	OUT	IN	OUT
12K-16K	OUT	IN	IN
16K-20K	IN	OUT	OUT
20K-24K	IN	OUT	IN
24K-28K	IN	IN	OUT
28K-32K	IN	IN	IN

16K-WORD ADDRESS SELECT

ADDRESS	JUMPER W26
0K-16K	OUT
16K-32K	IN

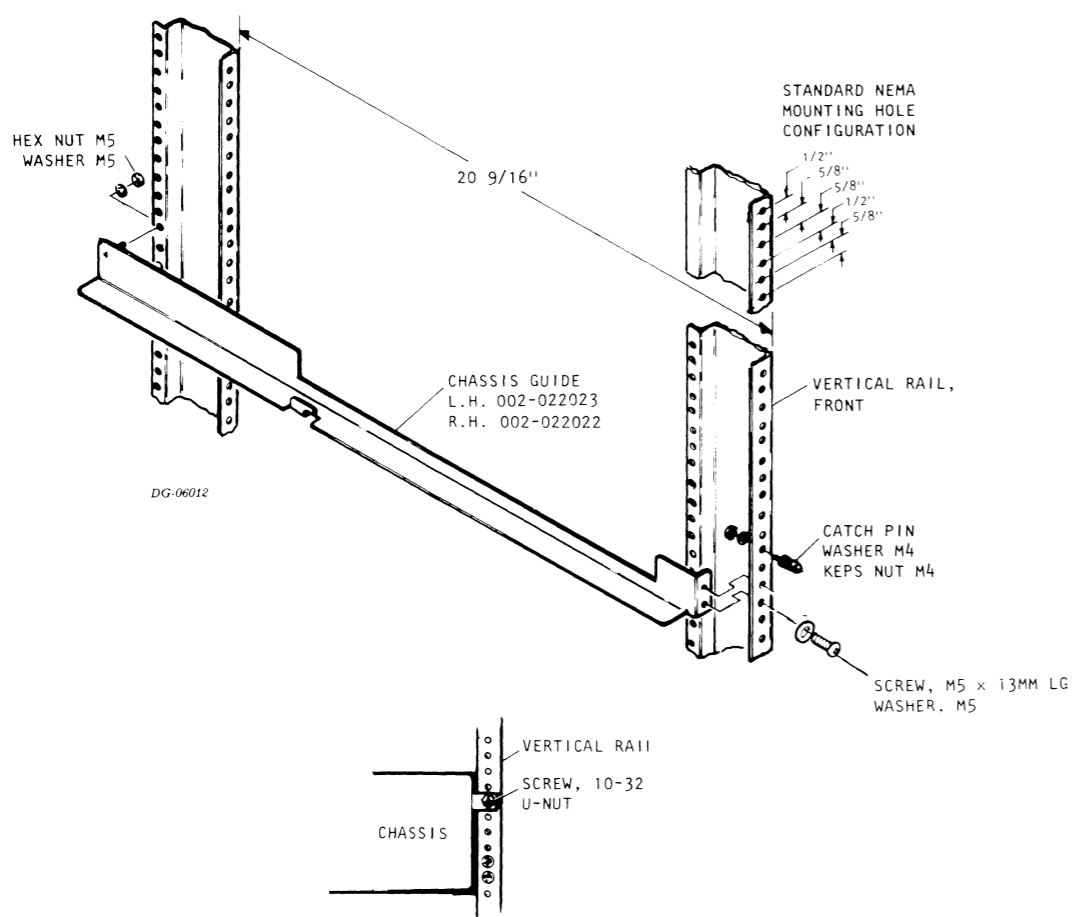
NOTE: THE USER SELECTS THE 32K-WORD ADDRESS SPACE FOR RAM MEMORY INDEPENDENTLY OF EPROM MEMORY.

JUMPERING POWER SUPPLY

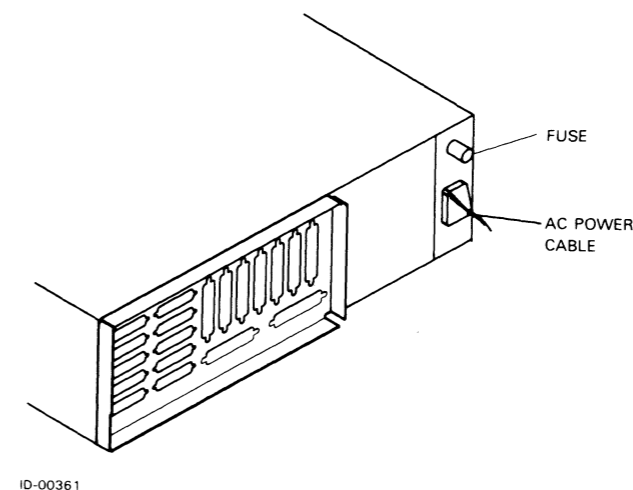


JUMPER INSTALLATION
W1 - IN
W2 - IN

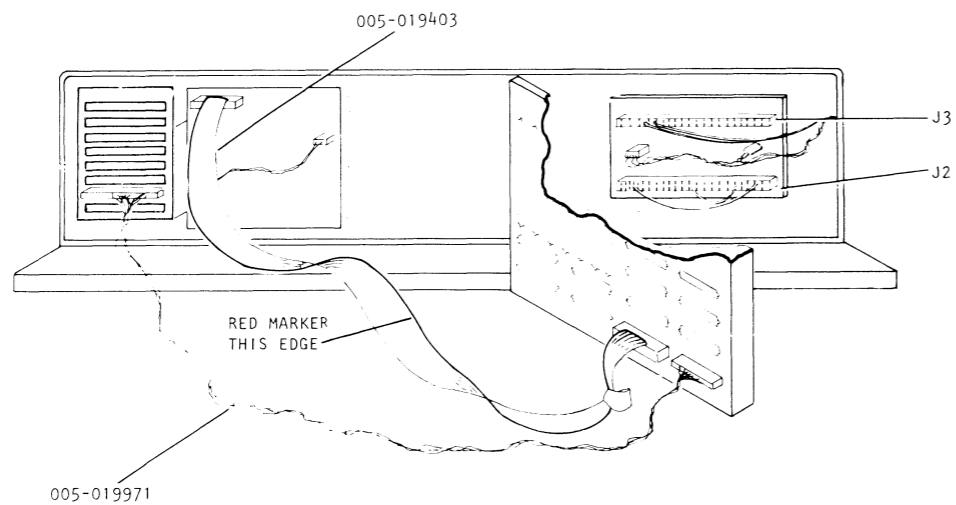
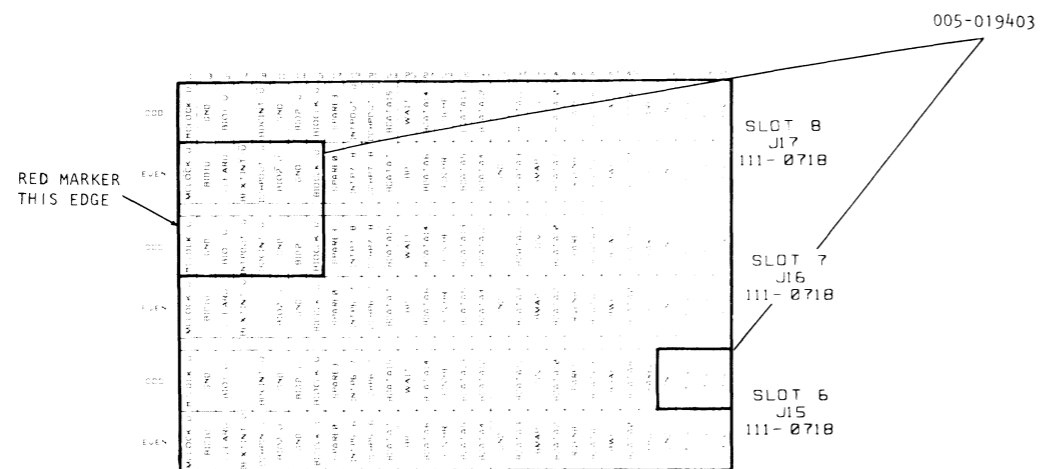
CABINET MOUNTING



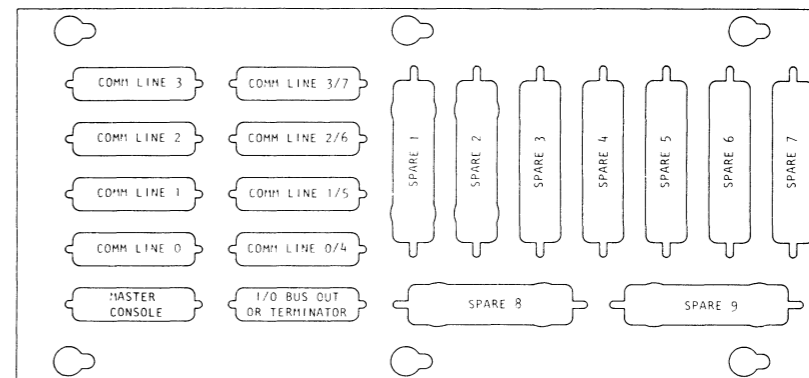
EXTERNAL/INTERNAL CABLING



EXTERNAL/INTERNAL CABLING (Cont)



THIS DRAWING SHOWS CABLING WHEN NO BATTERY BACK-UP OPTION IS INSTALLED. IF BATTERY BACK-UP OPTION IS INSTALLED, THE CONNECTOR SHOWN AT J3 WILL BE MOVED TO J2 AND THE CONNECTOR SHOWN AT J2 WILL BE MOVED TO J3.



NOTES:

IF I/O BUS IS EXTENDED, TERMINATOR MUST BE INSTALLED ON LAST I/O DEVICE. IF I/O BUS IS NOT EXTENDED, TERMINATOR MUST BE INSTALLED ON BULKHEAD ON I/O BUS OUT CONNECTOR.

I/O BUS OUT ADAPTER CABLE (005-019403)

FROM: BACKPANEL SLOTS 7 & 8 (16 POSITION DIP) AND SLOT 6 (4 POSITION DIP) SEE DIAGRAM UPPER LEFT ON PAGE.

TO: BULKHEAD I/O BUS OUT POSITION

MASTER CONSOLE ADAPTER CABLE (005-019971)

FROM: BASIC CONTROLLER BOARD (SLOT 2) EDGE CONNECTOR A TO MASTER CONSOLE POSITION ON BULKHEAD.

OPTION CABLING

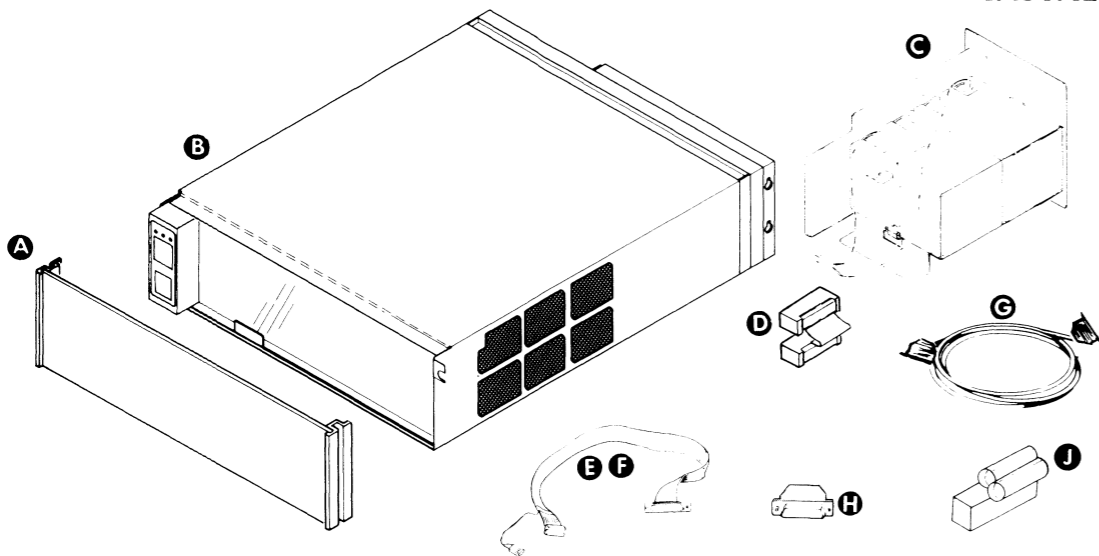
ASLM PRIMARY DEVICE CODE 4336	}	USE BULKHEAD POSITIONS COMM LINE 0-3
ASYN MUX BOARD #1 4227		
ASLM SECONDARY DEVICE CODE 4336	}	USE BULKHEAD POSITIONS COMM 0/4-3/7
ASYN MUX BOARD #2 4227		

ADDITIONAL COMMUNICATION LINES USING EITHER 4336 OR 4227 USE SPARES 1-4 AND SPARE 5-8.

ALL OTHER OPTION BOARDS USE SPARES 1-9.

INSTALLATION SPECIFICATIONS

Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.



MAJOR COMPONENT

ITEM	COMPONENT	MOUNTING LOCATION	NOTES
A	FRONT PANEL	CABINET	
B	EXPANSION CHASSIS	CABINET	
C	BATTERY BACKUP	CHASSIS	OPTIONAL

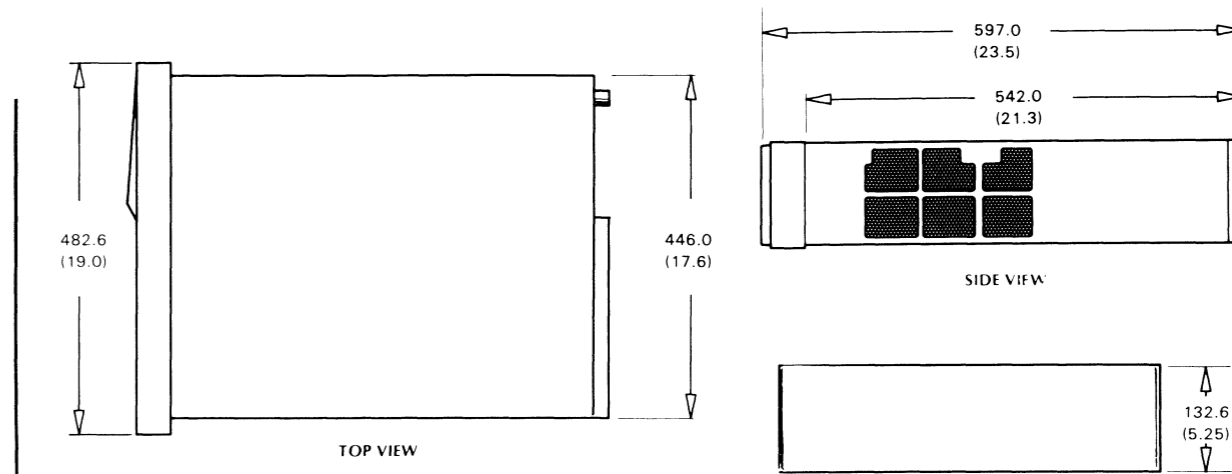
CABLES

ITEM	CABLE	CONNECTING	MAX LENGTH		NOTES
			FT	M	
D	I/O BUS LINK 005-012784	SLOT 4 TO SLOT 5	0.25	0.08	
E	I/O BUS INTERNAL CPU 005-019403	BACKPANEL SLOTS 6, 7, & 8 TO BULKHEAD			
F	I/O BUS EXPAN- SION 005-019402	BACKPANEL SLOTS 1 & 2 WIRE HARNESS TO BULKHEAD	10	3.0	
G	I/O BUS CABLE 005-20223	MAIN FRAME TO EXPANSION			

TERMINATOR

ITEM	TERMINATOR	LOCATION	NOTES
H	I/O BUS CABLE 005-018508	BULKHEAD	MOUNT TERMINATOR ON LAST DEVICE ON I/O BUS IF I/O BUS IS EXTENDED OTHERWISE ON BULKHEAD
J	LOAD PLUG 005-015296	BACKPANEL CONNECTOR J19	REQUIRED IF MINIMUM LOAD ON POWER SUPPLY IS NOT MET

* WHEN LESS THAN 8 AMPS OF +5V CURRENT IS USED, THE +12V AND -5V SUPPLIES ARE DERATED AS SHOWN. THE MAXIMUM CURRENT AVAILABLE FROM THE +5V SUPPLY FOR MODELS MP/100 - 1 AND MP/200 - 1 IS 15 AMPS.



DIMENSIONS:

	Width	Depth	Height
Millimeters	482.6	597	132.6
Inches	19	23.5	5.25

SERVICE CLEARANCES:

	Front
Millimeters	558.8
Inches	22

WEIGHT:

	Empty	Fully Loaded	Fully Loaded W/BBU
Kilograms	14.5	16.3	18.6
Pounds	32	36	41

HEAT OUTPUT (MAX)

	Watts	BTU/hr
	200	680

OPERATING ENVIRONMENT:

Temperature (max)	55 C
Relative Humidity (max)	80 (non-condensing)
Altitude	10,000 ft 3084m

POWER REQUIREMENTS:

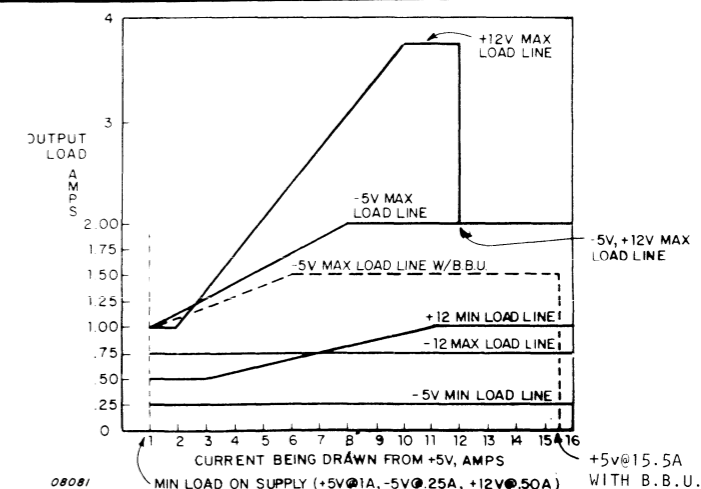
(Domestic)			
Voltage	120	+10	-15
Hz	47-63		
Max Amp per Phase	5		
Phase	1		
Startup Surge per Phase	33 amps	for 8 milliseconds	
(Export)			
Voltage	100	+10	220 +10
		-15	240 -15
Hz	47-63	47-63	47-63
Max Amp per Phase	5	3	3
Phase	1	1	1
Startup Surge per Phase	33 amps	for 8 milliseconds	17 amps for 8 milliseconds

LINE CORDS

100V	109-000719
120V	109-000719
220V	109-000681 IN DGC
240V	109-000681 RACK

DATA CHANNEL SPEEDS AVAILABLE					STANDARD	<input checked="" type="checkbox"/>
					HIGH SPEED	<input type="checkbox"/>
SLOT	ALLOWED SLOT CHART	ASSIGNED	CURRENT DRAW (AMPS)			
			+5V	-5	+12	-12
8	I/O					
7	I/O					
6	I/O					
5	I/O					
4	I/O					
3	I/O					
2	I/O					
1	I/O					

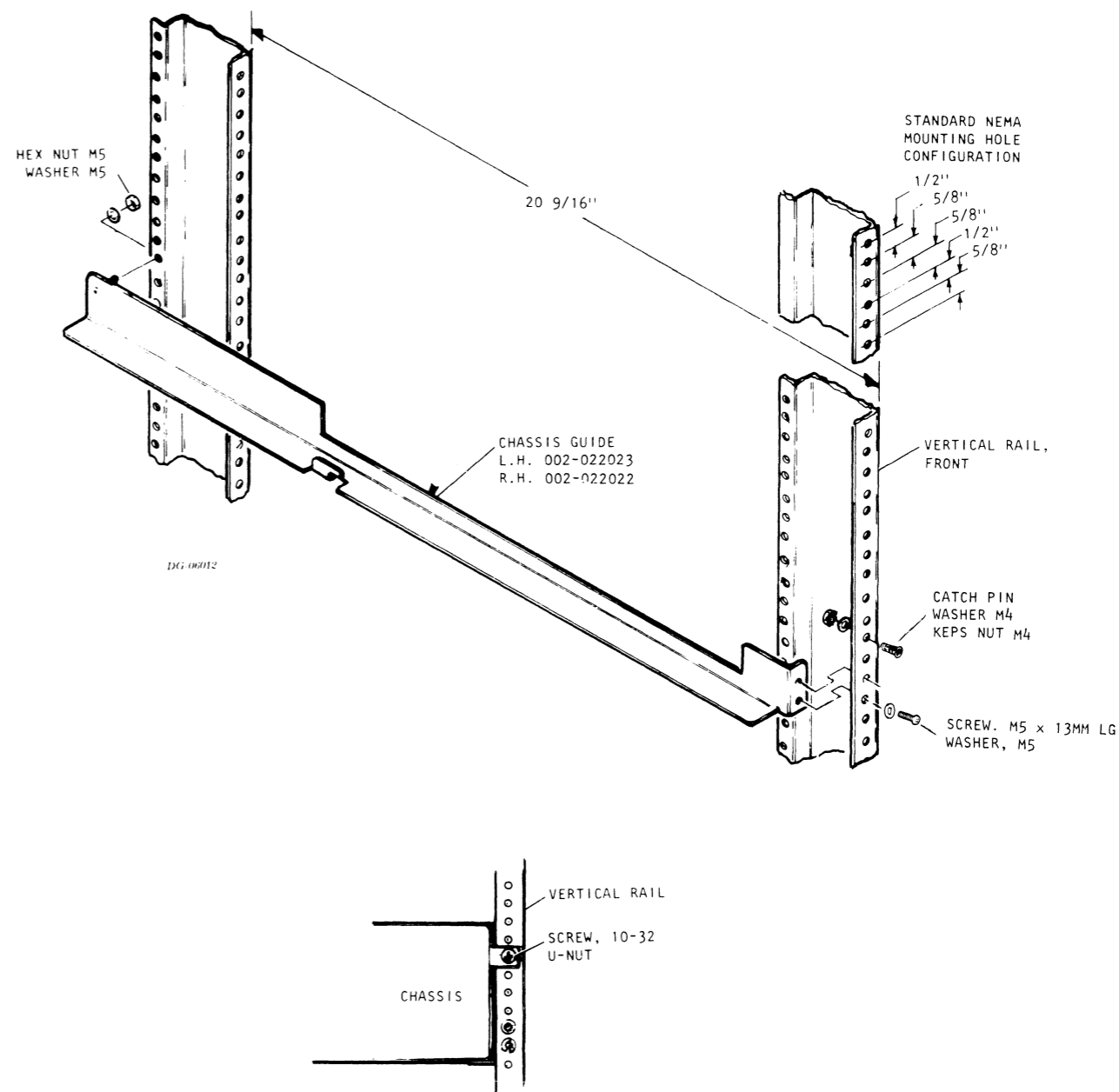
CURRENT DRAW				
MAXIMUM CURRENT AVAILABLE*	16	2	1.75	0.75
CURRENT SURPLUS				



SHIPPING

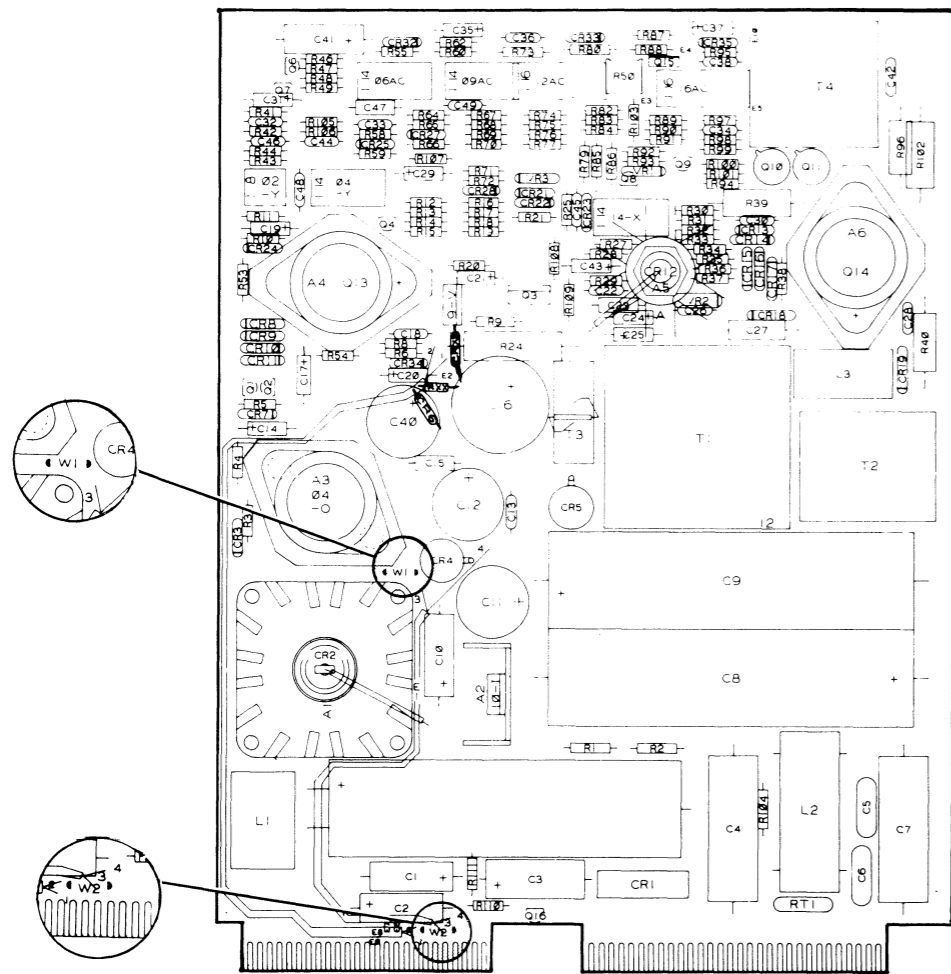
FOR PACKING PROCEDURE,
SEE 010-000263

CABINET MOUNTING



TAILORING

JUMPERING
POWER SUPPLY

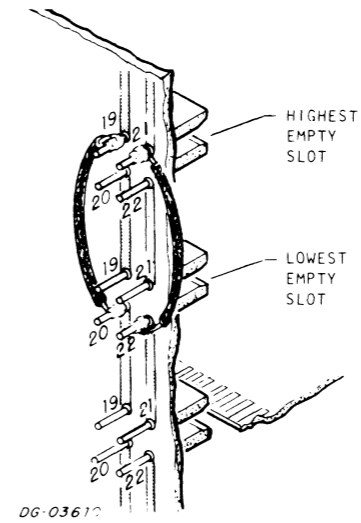


JUMPER INSTALLATION

W1 - OUT

W2 - OUT

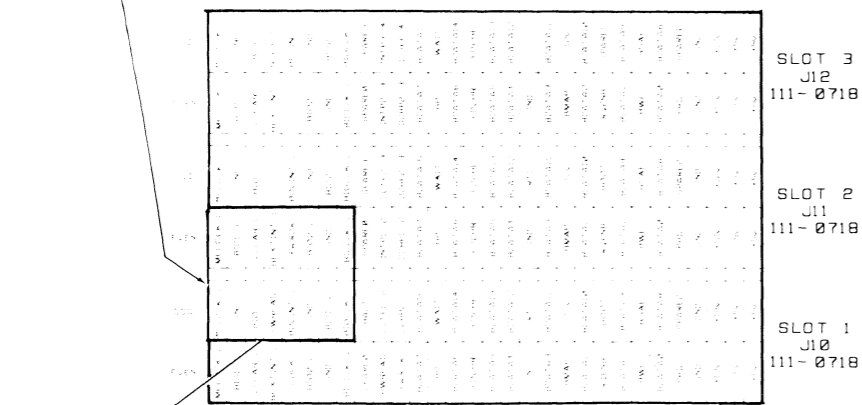
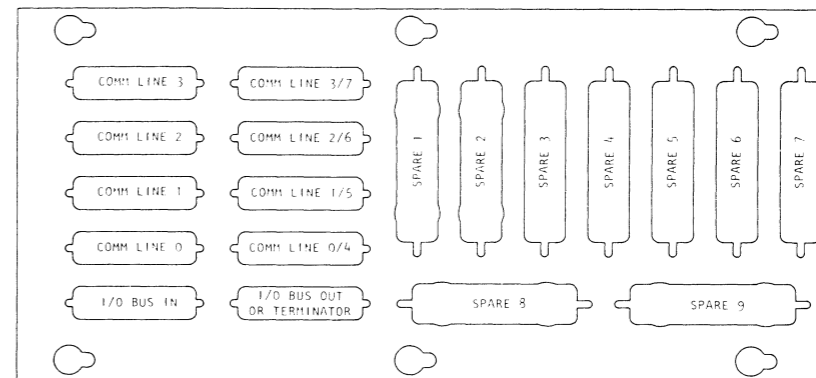
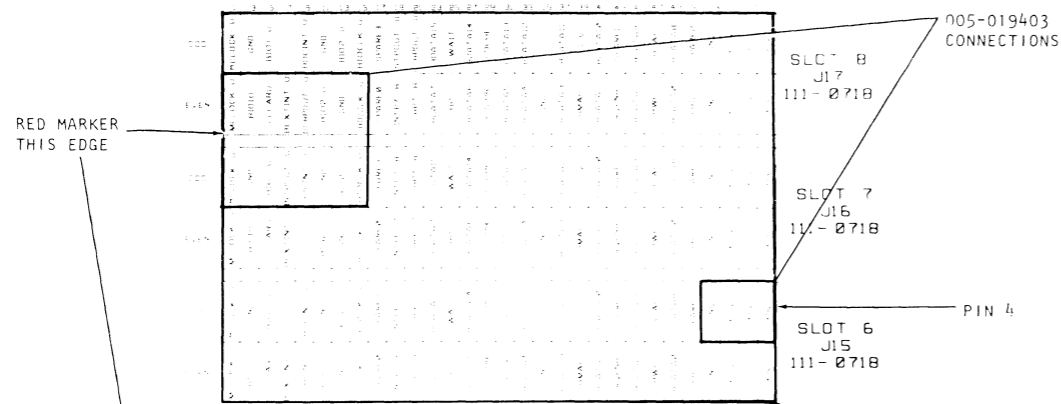
JUMPERING BACKPANEL



06-03610

AN 8-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 THE LOWEST EMPTY SLOT MAY BE THE SAME. NO JUMPERS ARE REQUIRED IF THE GROUP OF EMPTY SLOTS INCLUDES SLOT 8, UNLESS THE EXTERNAL I/O BUS IS USED. THE HIGHEST LEVEL PRIORITY BOARD IS THE ONE NEAREST THE CPU SLOT.

EXTERNAL/INTERNAL CABLING



B CONNECTOR PIN ASSIGNMENTS SLOTS 1-8

	EVEN	ODD	
2	MCLOCK-L	MCLOCK-L	1
4	B101-L	GND	3
6	CLEAR-L	B101-L	5
8	BEXTINT-L		7
10		BDCINT-L	9
12	B102-L	GND	11
14	GND	B102-L	13
16	B10CLOCK-L	B10CLOCK-L	15
18			17
20		INTP→2	19
22		DCHF→2	21
24			23
26			25
28			27
30			29
32			31
34			33
36	GND		35
38			37
40		-12V	39
42			41
44			43
46			45
48			47
50			49
52			51
54	GND	GND	53
56	+12V	+12V	55
58	-5V	+5V	57
60	+5V	+5V	59

NOTES:

IF I/O BUS IS EXTENDED, TERMINATOR MUST BE INSTALLED ON LAST I/O DEVICE. IF I/O BUS IS NOT EXTENDED, TERMINATOR MUST BE INSTALLED ON BULKHEAD ON I/O BUS OUT CONNECTOR.

I/O BUS IN ADAPTER CABLE (005-019402)

FROM: BACKPANEL SLOTS 1 & 2 (16 POSITION DIP) AND POWER HARNESS (4 POSITION DIP) SEE DIAGRAM UPPER LEFT ON PAGE.

TO: BULKHEAD I/O BUS IN POSITION.

I/O BUS OUT ADAPTER CABLE (005-019403)

FROM: BACKPANEL SLOTS 7 & 8 (16 POSITION DIP) AND SLOT 6 (4 POSITION DIP). SEE DIAGRAM UPPER LEFT ON PAGE.

TO: BULKHEAD I/O BUS OUT POSITION.

OPTION CABLING

ASLM PRIMARY DEVICE CODE 4336 } USE BULKHEAD POSITIONS COMM LINE 0-3

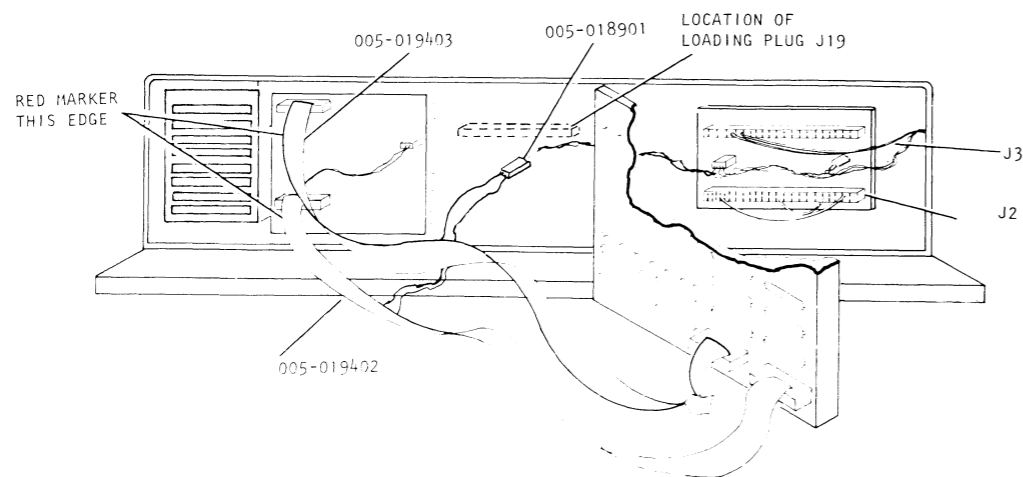
ASYN MUX BOARD #1 4227

ASLM SECONDARY DEVICE CODE 4336 } USE BULKHEAD POSITIONS COMM 0/4-3/7
ASYN MUX BOARD #2 4227

ADDITIONAL COMMUNICATION LINES USING EITHER 4336 OR 4227 USE SPARES 1-4 AND SPARE 5-8.

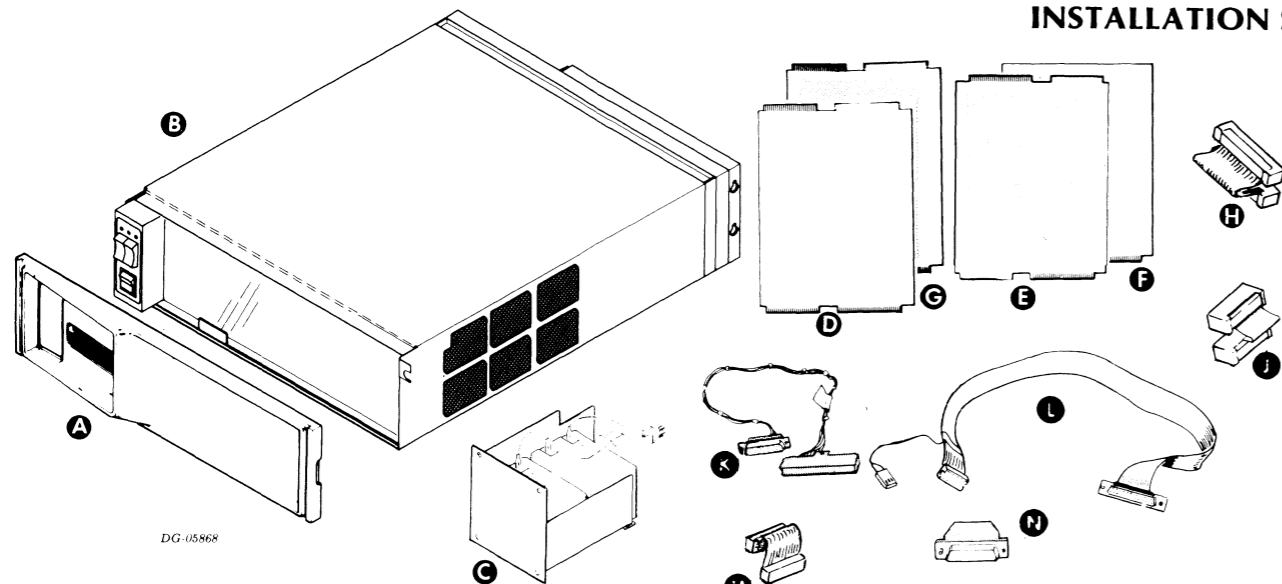
ALL OTHER OPTION BOARDS USE SPARES 1-9.

005-019402 CONNECTIONS → 4 PIN DIP TO POWER HARNESS CABLE (005-018901)



THIS DRAWING SHOWS CABLING WHEN NO BATTERY BACK-UP OPTION IS INSTALLED. IF BATTERY BACK-UP OPTION IS INSTALLED, THE CONNECTOR SHOWN AT J3 WILL BE MOVED TO J2, AND THE CONNECTOR SHOWN AT J2 WILL BE MOVED TO J3.

INSTALLATION SPECIFICATIONS



DG-05868

MAJOR COMPONENT

ITEM	COMPONENT	MOUNTING LOCATION	NOTES
A	FRONT PANEL	CABINET	
B	S/20 CHASSIS	CABINET	
C	BATTERY BACKUP	S/20 CHASSIS	OPTIONAL
D	S/20 SPU	S/20 CHASSIS	
E	S/20 FLOATING POINT	S/20 CHASSIS	NO TAILORING IS REQUIRED FOR THIS BOARD
F	S/20 RAM MEMORY	S/20 CHASSIS	
G	S/20 BMC	S/20 CHASSIS	

CABLES

ITEM	CABLE	CONNECTING	MAX LENGTH		NOTES
			FT	M	
H	005-009663	SPU TO FLOATING POINT	1	0.3	USE C SIDE EDGE CONNECTOR OF SPU TO C SIDE OF FLOATING POINT
J	I/O BUS LINK 005-012784	SLOT 4 TO SLOT 5	0.25	0.08	
K	ASYNC ADAPTER 005-19971	SPU TO COMM LINE	1	0.3	COMM LINE TO DEVICE FOR EIA 1000 FT MAX FOR 20 mA CURRENT LOOP
L	I/O BUS INTERNAL CPU 005-19403	BACKPANEL SLOTS 6, 7 & 8 TO BULKHEAD.			
M	SPU TO BMC 005-20135				USE C SIDE EDGE CONNECTOR OF SPU TO C SIDE CONNECTOR OF BMC

TERMINATOR

ITEM	TERMINATOR	LOCATION	NOTES
N	I/O BUS 005-018508	BULKHEAD	MOUNT TERM ON LAST DEVICE ON I/O BUS IF I/O BUS IS EXTENDED, OTHERWISE ON BULKHEAD

DATA CHANNEL SPEEDS AVAILABLE				CURRENT DRAW (AMPS)			
SLOT	ALLOWED SLOT CHART	ASSIGNED	CURRENT DRAW (AMPS)				
			-5V	-5	-12	-12	
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 FLOATING POINT OR BMC						
1	S/20 SPU						

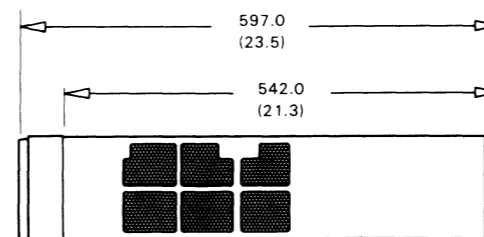
STANDARD HIGH SPEED

CURRENT SURPLUS: 31, 1.85, 1.85, 1.0

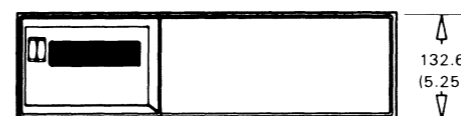
NOTES:

- MINIMUM LOAD FOR MAIN CHASSIS IS 4A @ +5V, 0.2A @ -5V, 0.2A @ +12V, AND 0.2A @ -12V.
- MINIMUM LOAD FOR EXPANSION CHASSIS IS 5A @ +5V. USE OPTION 1227 (LOAD PLUG) WHEN DRAWING LESS THAN 5A @ +5V. INSTALL ON J19 OF BACKPANEL.
- THE MAXIMUM MEMORY CONFIGURATION IS FOUR MEMORY P6 BOARDS.
- THE MAXIMUM NUMBER OF I/O DEVICES ON THE I/O BUS IS 15.

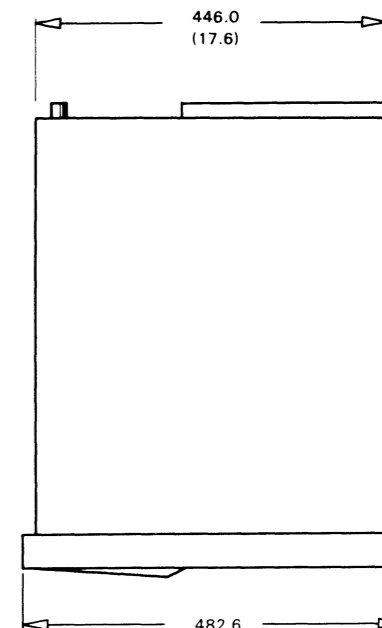
Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.



SIDE VIEW



FRONT VIEW



TOP VIEW

DG-05869

DIMENSIONS:

	Width	Depth	Height
Millimeters	482.6	597	133.3
Inches	19.0	23.5	5.25

SERVICE CLEARANCES:

	Front
Millimeters	558.8
Inches	22

WEIGHT:

	Empty	Fully Loaded	Fully Loaded W/BBU
Kilograms	14.5	16.3	18.6
Pounds	32	36	41

HEAT OUTPUT (MAX)

	Watts	BTU/hr
	480	1640

OPERATING ENVIRONMENT:

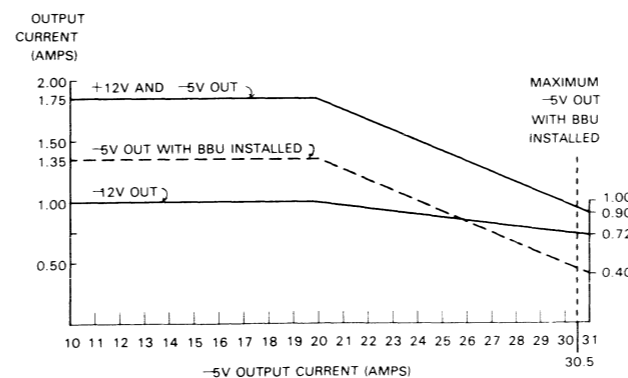
Temperature (max)	55°C @ 60Hz 45 C (113 F) @ 50Hz
Relative Humidity (max)	90% (non-condensing)
Altitude	8000 ft (2438m)

POWER REQUIREMENTS:

		+10%		+10%		+10%	
(Domestic)	Voltage	120	-15%	220	-15%	240	-15%
	Hz	60	-1%				
	Max Amp per Phase	5					
	Phase	1					
	Startup Surge per Phase	40 amps	for 8 milliseconds				
(Export)	Voltage	100	-10%	220	-15%	240	-15%
	Hz	50	60 ± 1%	50	± 1%	50	± 1%
	Max Amp per Phase	5		3		3	
	Phase	1		1		1	
	Startup Surge per Phase	40 amps	for 8 milliseconds	30 amps	for 8 milliseconds		

LINE CORDS

100V	109-000719	} IN DGC RACK
120V	109-000719	
220V	109-000681	
240V	109-000681	



NOTE: THIS POWER CURVE REFLECTS THE 005019561 POWER SUPPLY. WHEN USING THE 005016895 POWER SUPPLY, REFER TO THE 010-000350, REV 00, POWER CURVE.

ID-01004
010-000350

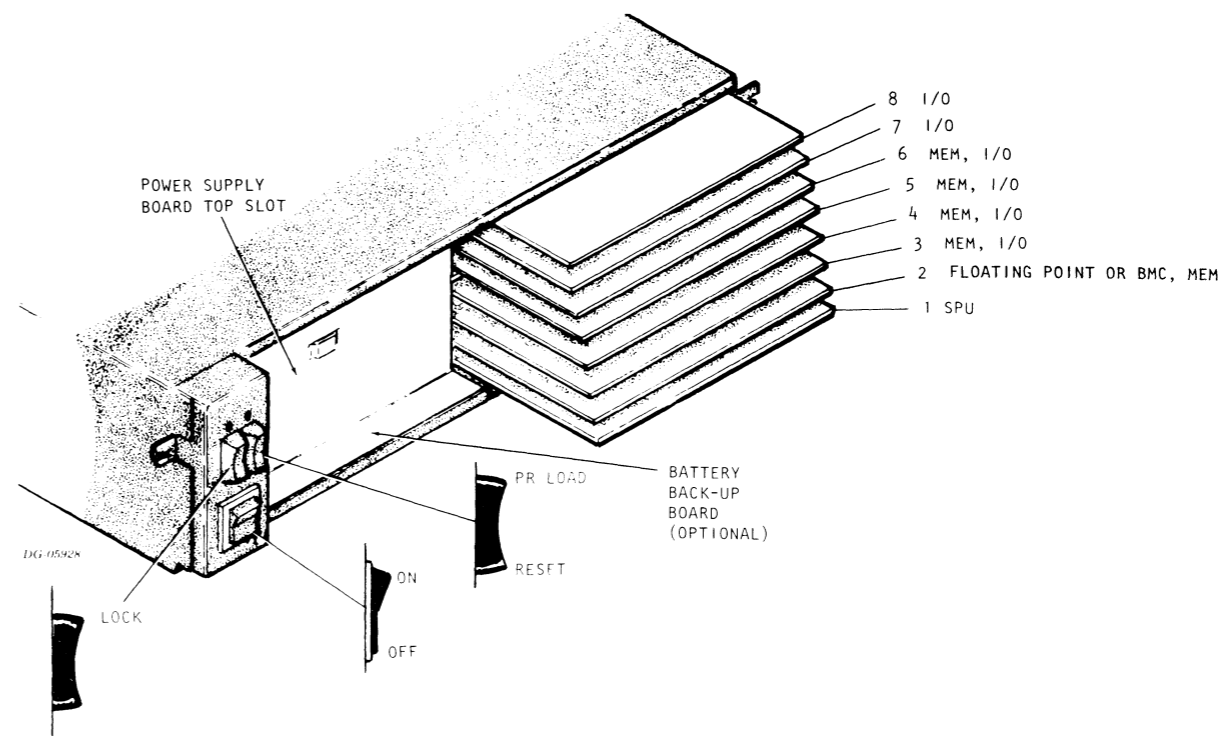
PCB POWER REQUIREMENTS		+5V	-5V	+12V	-12V
SPU		5.5	.03	.10	.10
FPU		4.0	—	—	—
128KB MEM W/16K RAMS	OPERATING	1.7	.03	.57	—
	STANDBY	1.7	.03	.14	—
256KB MEM W/64K RAMS	OPERATING	2.1	—	—	—
	STANDBY	1.7	—	—	—
512KB MEM W/64K RAMS	OPERATING	2.4	—	—	—
	STANDBY	2.0	—	—	—
BMC		4.5	—	—	—

NOTE: WHEN DETERMINING MEMORY SYSTEM CURRENT DRAW, USE OPERATING CURRENT OF LARGEST MEMORY BOARD AND STANDBY CURRENT OF REMAINING MEMORY.

SHIPPING

FOR PACKING PROCEDURE,
SEE 010-000262/263

BOARD ASSIGNMENTS



NOTE: THE POWER SUPPLY PC BOARD IS ALWAYS INSTALLED IN THE UPPER SLOT (SLOT 6). THE BATTERY BACK-UP PC BOARD IS INSTALLED IN THE LOWER SLOT (SLOT 2) IN SYSTEMS WHICH HAVE THE BATTERY BACK-UP OPTION

CHASSIS SLOT ASSIGNMENT STARTING WITH SLOT 1 IS:
SPU, FP OR BMC (IF USED), MEMORY, THEN I/O.

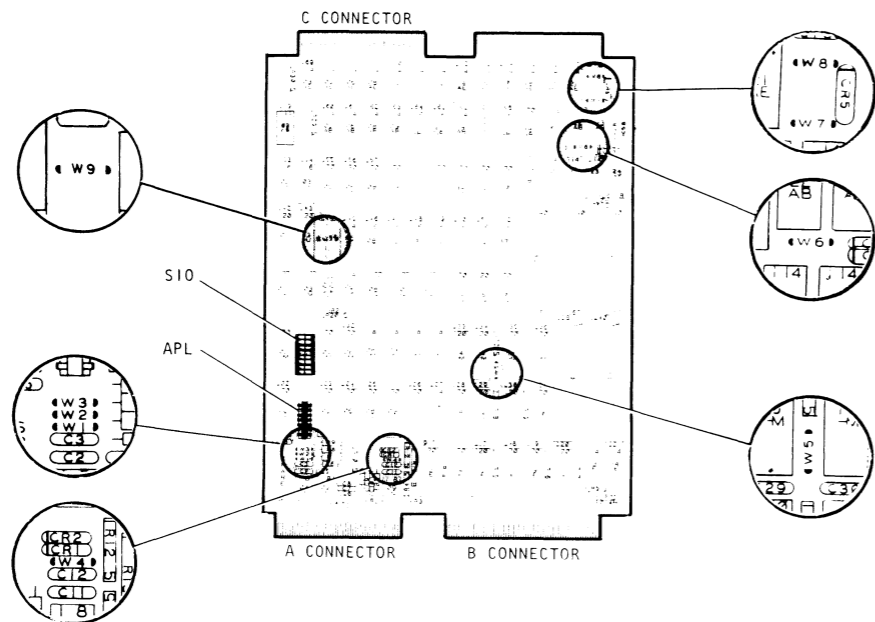
JUMPER 7 IS "IN" ONLY ON THE MEMORY THAT IS FARTHEST AWAY FROM SPU. ON ALL OTHER MEMORIES IT IS "OUT".

IF SOCKETED BOARD, DO NOT USE SLOTS 4 OR 8.

TAILORING

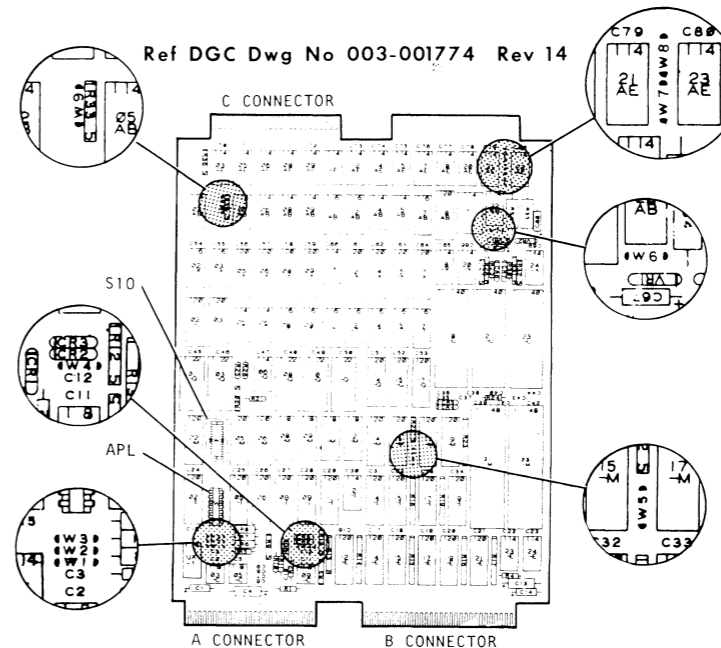
SPU

Ref DGC Dwg No 003-001774 Rev 04



W9	FUNCTION
IN	SPU WILL DELAY 1 MINUTE BEFORE BOOTING AFTER A "COLD" (NO BBU HOLDUP) POWER UP.
OUT	"COLD" BOOT BEGINS IMMEDIATELY AFTER POWER ON.

Ref DGC Dwg No 003-001774 Rev 14



INTERFACE MODE SELECT

LINE TYPE	JUMPERS	
	W1	W2
EIA	OUT	OUT
20mA CURRENT LOOP (600 BAUD AND BELOW)	IN	IN
(ABOVE 600 BAUD)	IN	OUT

W3	FUNCTION
IN	CPU ENABLES CLEAR TO SEND
OUT	HALF-DUPLEX MODEM, 60 CPS DASHER, CONTROLS CLEAR TO SEND.

SIO SWITCHES

SWITCH	FUNCTION
1	HALT DISPATCH SWITCH: SET IT "ON" (TO 1) TO CAUSE THE S/20 PROCESSOR TO ENTER THE VIRTUAL CONSOLE WHEN IT ENCOUNTERS A HALT INSTRUCTION. SET SWITCH 1 TO "OFF" (TO 0) TO CAUSE THE PROCESSOR TO DO A HARD HALT WHEN IT ENCOUNTERS A HALT INSTRUCTION.
2	BREAK ENABLE SWITCH: SET IT "ON" (TO 1) TO ENABLE INTERRUPTS INITIATED BY THE VIRTUAL CONSOLE BREAK KEY. IF YOU DO NOT WANT TO CAUSE CPU INTERRUPTS BY DEPRESSING THE VIRTUAL CONSOLE BREAK KEY, SWITCH SWITCH 2 "OFF" (TO 0).
3-4	SET THE COUNTER RATE FOR THE PROGRAMMABLE INTERVAL TIMER, AS SHOWN IN THE PIT RATE SELECT TABLE.
5-8	SET THE TRANSMISSION RATE OF THE ASYNCHRONOUS INTERFACE, AS SHOWN BY THE BAUD RATE TABLE.

BAUD RATE

kHz	SWITCH SETTINGS			
	SW5	SW6	SW7	SW8
50	OFF	OFF	OFF	OFF
75	ON	ON	ON	OFF
110	ON	ON	OFF	OFF
134.5	ON	ON	ON	ON
150	OFF	OFF	ON	ON
200	ON	ON	OFF	ON
300	ON	OFF	ON	ON
600	OFF	ON	OFF	OFF
1200	ON	OFF	ON	OFF
1800	OFF	OFF	ON	OFF
2000	OFF	OFF	OFF	ON
2400	OFF	ON	OFF	ON
4800	ON	OFF	OFF	ON
9600	OFF	ON	ON	OFF
19200	ON	OFF	OFF	OFF
38400	OFF	ON	ON	ON

JUMPER	FUNCTION
W4	IN
W5	IN ENABLES POWER FAIL INTERRUPTS OUT DISABLES POWER FAIL INTERRUPTS
W6	MUST BE IN
W7	
W8	

APL SWITCH

BIT POSITION	10	11	12	13	14	15
"ON" TO SPECIFY 1	S2 MSB	S3	S4	S5	S6	S7 LSB

NOTE:

SET APL SWITCH 1 "ON" TO LOAD FROM A HIGH-SPEED (DATA CHANNEL) DEVICE. SET APL SWITCH 1 "OFF" TO LOAD FROM A LOW-SPEED (PROGRAMMED I/O) DEVICE.

SET SWITCHES S2-S7 TO THE DEVICE CODE OF THE LOAD DEVICE. EXAMPLE: FOR DEVICE CODE 23 OCTAL, SET S2 OFF, S3 ON, S4 OFF, S5 OFF, S6 ON, AND S7 ON.

PIT RATE

kHz	SWITCH SETTINGS	
	SW3	SW4
1	ON	ON
10	ON	OFF
100	OFF	ON
1000	OFF	OFF

TAILORING

S/20 MEMORY SYSTEM CONFIGURATION CHART

BOARD NUMBER	ALL 512 KB BOARDS	ALL 256KB BOARDS	ALL 128KB BOARDS	512KB AND 256KB BOARDS			256KB AND 128KB BOARDS			512KB AND 128KB BOARDS			512 KB AND 256KB AND 128KB BOARDS		
3	512KB NONE	256KB W1	128KB W1, 2	256KB W3	256KB W2	256KB W2, 3	128KB W1, 4	128KB W1, 3	128KB W1, 3, 4	128KB W3, 4	128KB W2, 3	128KB W1, 4	128KB W2, 4	128KB W2, 3, 4	128KB W1
2	512KB W2	256KB W1, 3	128KB W1, 2, 4	512KB W2	256KB W2, 3	256KB W1	256KB W1, 3	128KB W1, 3, 4	128KB W1, 2	512KB W2	128KB W2, 3, 4	128KB W1, 3	256KB W2, 3	256KB W1	128KB W1, 4
1	512KB W1	256KB W1, 2	128KB W1, 2, 3	512KB W1	512KB W1	256KB W1, 3	256KB W1, 2	256KB W1, 2	128KB W1, 2, 4	512KB W1	512KB W1	128KB W1, 3, 4	512KB W1	256KB W1, 3	256KB W1, 3
0	512KB W1, 2	256KB W1, 2, 3	128KB W1, 2, 3, 4	512KB W1, 2	512KB W1, 2	512KB W1, 2	256KB W1, 2, 3	256KB W1, 2, 3	256KB W1, 2, 3	512KB W1, 2	512KB W1, 2	512KB W1, 2	512KB W1, 2	512KB W1, 2	512KB W1, 2

V JUMPERS LISTED INDICATE THE "IN" POSITION

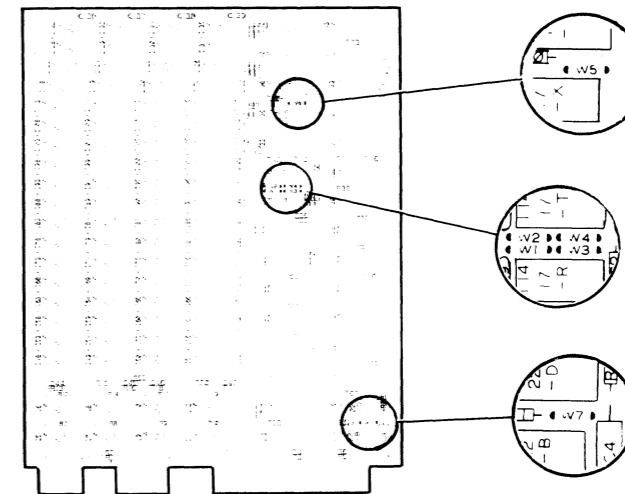
EXAMPLES:

1.	SLOT	BOARD NUMBER	BOARD SIZE	JUMPERS IN
1024KB	5	3	128KB	W1
	4	2	128KB	W1, 4
	3	1	256KB	W1, 3
	2	0	512KB	W1, 2
2.	SLOT	BOARD NUMBER	BOARD SIZE	JUMPER IN
384KB	5	---	NO BOARD	---
	4	---	NO BOARD	---
	3	1	128KB	W1, 2, 4
	2	0	256KB	W1, 2, 3
3.	SLOT	BOARD NUMBER	BOARD SIZE	JUMPERS IN
1024KB	6	---	NO BOARD	---
	5	2	256KB	W1
	4	1	256KB	W1, 3
	*3	0	512KB	W1, 2
4.	SLOT	BOARD NUMBER	BOARD SIZE	JUMPERS IN
512KB	6	---	NO BOARD	---
	5	---	NO BOARD	---
	4	---	NO BOARD	---
	*3	0	512KB	W1, 2

* THESE SYSTEMS START MEMORY BOARDS IN SLOT 3 BECAUSE SLOT 2 HAS AN FPU.

RAM BOARD

Ref DGC Dwg No 003-001809 Rev 01



NOTE: RAM BOARD SHOWN IS 005-18375 (128KB MEMORY MODULE) THE JUMPERS ARE LOCATED IN THE SAME PLACE FOR ALL S/20 MEMORY BOARDS

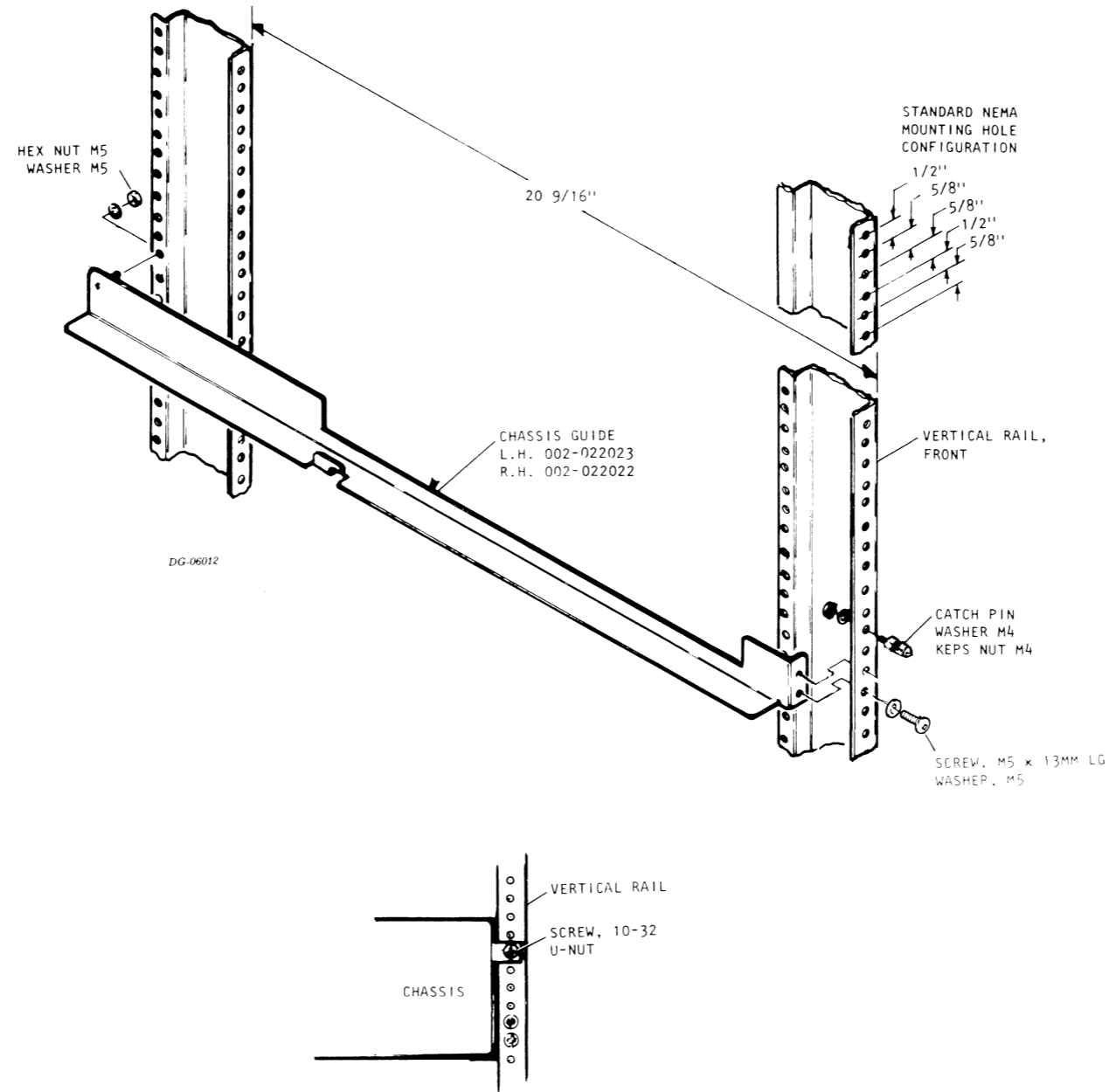
NOTES:

- DIFFERENT COMBINATIONS OF MEMORY BOARDS MAY BE INTERMIXED IN THE S/20 MEMORY SYSTEM (SEE CONFIGURATION CHART).
- LARGEST MEMORY BOARD SIZES ARE CONFIGURED INTO THE LOWEST NUMBERED MEMORY SLOTS.
- JUMPERS W1 THRU W4 DEFINE THE ADDRESS BOUNDARIES OF EACH MEMORY BOARD.
- JUMPER W5 IS ALWAYS "OUT."
- THERE IS NO W6.
- JUMPER W7 IS "IN" ONLY ON THE MEMORY THAT IS FARTHEST AWAY FROM SPU. ON ALL OTHER MEMORIES IT IS "OUT."

MEMORY BOARDS

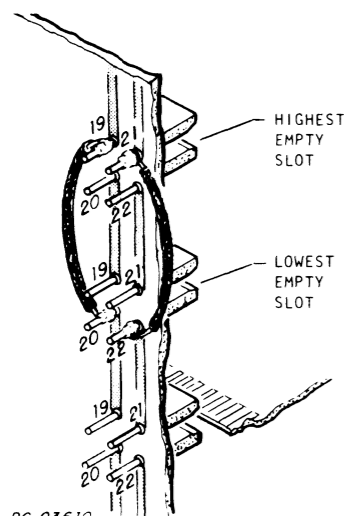
MEMORY SIZE	RAM TYPE	ASSEMBLY NUMBER
512KB	64K	005-19537
256KB	64K	005-19538
128KB	16K	005-18375

CABINET MOUNTING



EXTERNAL/INTERNAL CABLING

JUMPERING BACKPANEL



06-03610

AN 8-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 THE LOWEST EMPTY SLOT MAY BE THE SAME. NO JUMPERS ARE REQUIRED IF THE GROUP OF EMPTY SLOTS INCLUDES SLOT 8, UNLESS THE EXTERNAL I/O BUS IS USED. THE HIGHEST LEVEL PRIORITY BOARD IS THE ONE NEAREST THE CPU SLOT.

PIN ASSIGNMENTS, A CONNECTOR

EVEN	SIGNAL NAMES		ODD
2	CTS	TTIN	1
4		-5V	3
6			5
8		GND	7
10	DTR	+5V	9
12			11
14			13
16			15
18			17
20			19
22		TTOUT	21
24		+V	23
26			25
28			27
30			29
32			31
34			33
36			35
38			37
40			39
42			41
44			43
46			45
48			47
50			49

NOTE: BLANK PINS NOT USED.

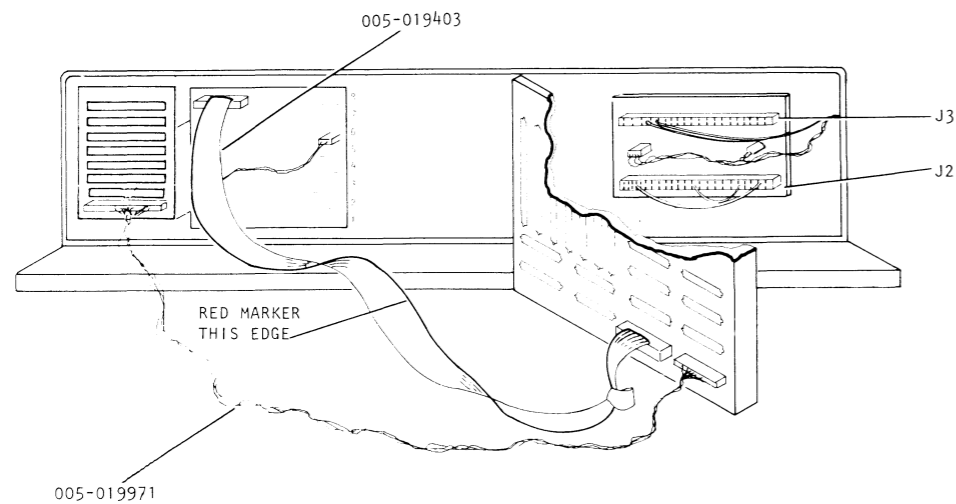
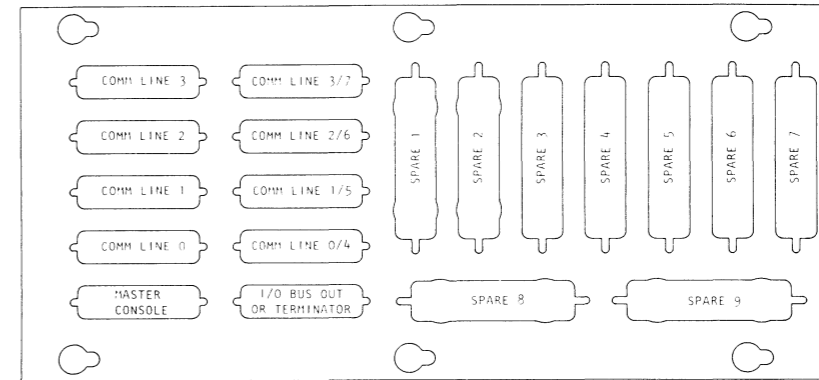
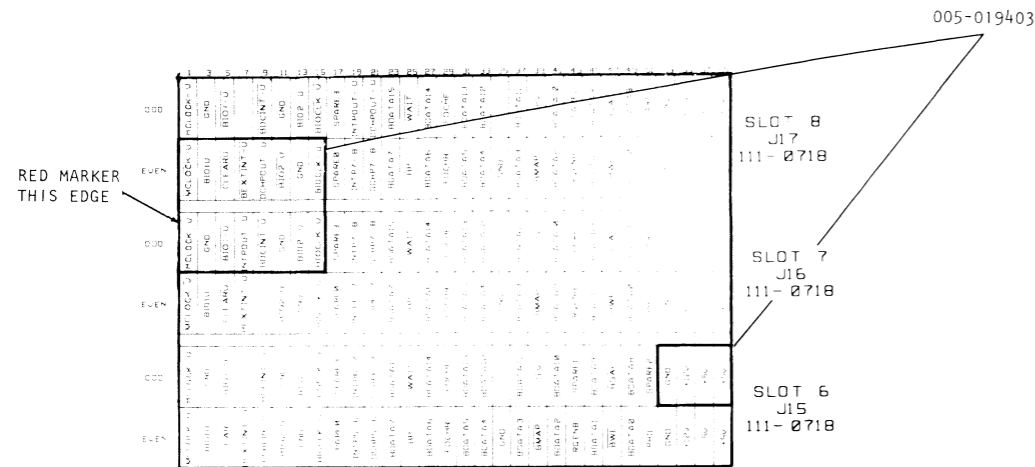
PIN ASSIGNMENTS, B CONNECTOR

PIN		PIN	
1	BMCLOCK	2	BMCLOCK
3	GROUND	4	BI/O DATA1
5	BI/ODATA1	6	CLEAR
7	PWRFAIL	8	EXTINT
9	EXT DCHR	10	CONSOLE LOCK
11	GROUND	12	BI/ODATA2
13	BI/ODATA2	14	GROUND
15	BI/OCLOCK	16	BI/OCLOCK
17	HALT	18	BUS READY
19	INTPOUT	20	PF
21	DCHPOUT	22	POWEROK
23	DATA15	24	DATA7
25	XMA4	26	BUS MEMCYC
27	DATA14	28	DATA6
29	WL/PARL	30	WH/PARH
31	DATA13	32	DATA5
33	DATA12	34	DATA4
35	RTC	36	GROUND
37	DATA11	38	DATA3
39	-12V	40	XMA3
41	DATA10	42	DATA2
43	BOOT	44	XMA2
45	DATA9	46	DATA1
47	XMA0	48	BUS ADDRÉN
49	DATA8	50	DATA0
51	XMA1	52	SYSCLK
53	GROUND	54	GROUND
55	+12V	56	+12V
57	+5V	58	-5V
59	+5V	60	+5V

PIN ASSIGNMENTS, C CONNECTOR

PIN	SIGNAL	PIN	SIGNAL
1	GROUND	2	GROUND
3		4	TEST
5	GROUND	6	GROUND
7		8	
9		10	
11		12	
13		14	
15		16	
17		18	
19	QPIPE	20	GROUND
21	+5V	22	+5V
23	GROUND	24	
25	QUACK	26	
27	QSKTP	28	
29		30	
31	QREQ	32	
33	QFETCH	34	
35		36	
37		38	
39		40	
41		42	
43	BMC	44	
45	BLOCK	46	
47	BMCGRANT	48	
49	GROUND	50	

EXTERNAL/INTERNAL CABLING (Cont)



THIS DRAWING SHOWS CABLING WHEN NO BATTERY BACK-UP OPTION IS INSTALLED. IF BATTERY BACK-UP OPTION IS INSTALLED, THE CONNECTOR SHOWN AT J3 WILL BE MOVED TO J2 AND THE CONNECTOR SHOWN AT J2 WILL BE MOVED TO J3.

NOTES:

IF I/O BUS IS EXTENDED, TERMINATOR MUST BE INSTALLED ON LAST I/O DEVICE. IF I/O BUS IS NOT EXTENDED, TERMINATOR MUST BE INSTALLED ON BULKHEAD ON I/O BUS OUT CONNECTOR.

I/O BUS OUT ADAPTER CABLE (005-019403)

FROM: BACKPANEL SLOTS 7 & 8 (16 POSITION DIP) AND SLOT 6 (4 POSITION DIP) SEE DIAGRAM UPPER LEFT ON PAGE.

TO: BULKHEAD I/O BUS OUT POSITION

MASTER CONSOLE ADAPTER CABLE (005-019971)

FROM CPU BOARD (SLOT 1) EDGE CONNECTOR A TO MASTER CONSOLE POSITION ON BULKHEAD.

OPTION CABLING

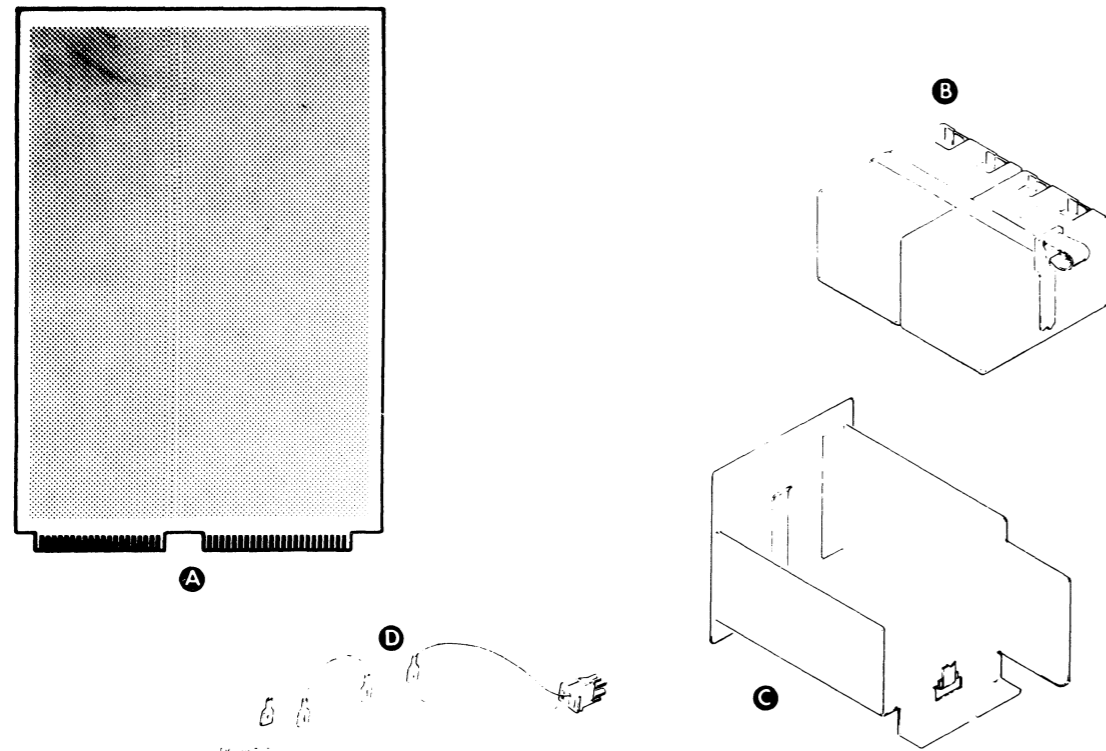
ASLM PRIMARY DEVICE CODE 4336 } USE BULKHEAD POSITIONS COMM LINE 0-3
 ASYNC MUX BOARD #1 4227 }

ASLM SECONDARY DEVICE CODE 4336 } USE BULKHEAD POSITIONS COMM 0/4-3/7
 ASYNC MUX BOARD #2 4227 }

ADDITIONAL COMMUNICATION LINES USING EITHER 4336 OR 4227 USE SPARES 1-4 AND SPARE 5-8.

ALL OTHER OPTION BOARDS USE SPARES 1-9.

INSTALLATION SPECIFICATIONS



MAJOR COMPONENTS

ITEM	COMPONENT	MOUNTING LOCATION	NOTES
A	BATTERY BACK-UP UNIT	LEFT SIDE OF CHASSIS SLOT 1	
B	BATTERIES	BATTERY TRAY	005-007093
C	BATTERY TRAY	RIGHT VERTICAL RAIL OF CABINET	002-022021

CABLE

ITEM	COMPONENT	CONNECTING	MAX LENGTH		NOTES
			FT	M	
D	BATTERY CABLES	BATTERIES TO BACKPANEL	2.0	0.57	005-018904

POWER REQUIREMENTS

SLOT	ALLOWED SLOT CHART	ASSIGNED	CURRENT DRAW (AMPS)			
			5V	-5	12	-12
8	MEMORY OR I/O					
7	MEMORY OR 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 I/O					
1	CPU					

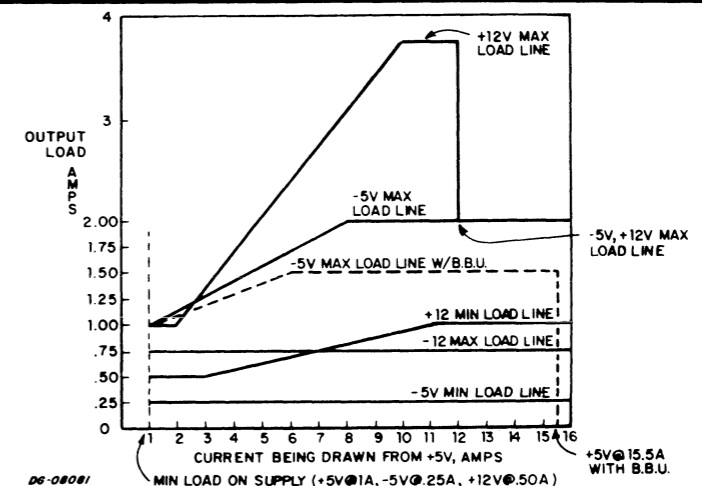
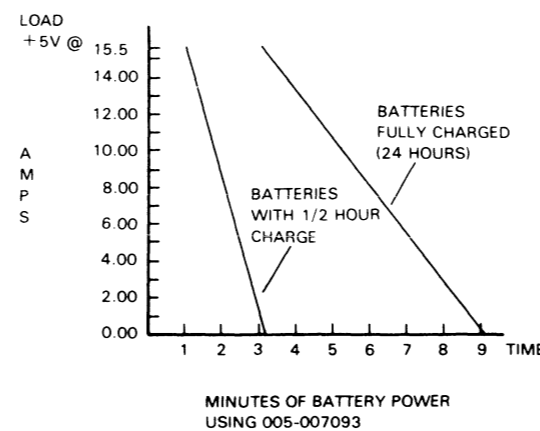
CURRENT DRAW

MAXIMUM CURRENT AVAILABLE: 15.5 1.5 1.75 .75

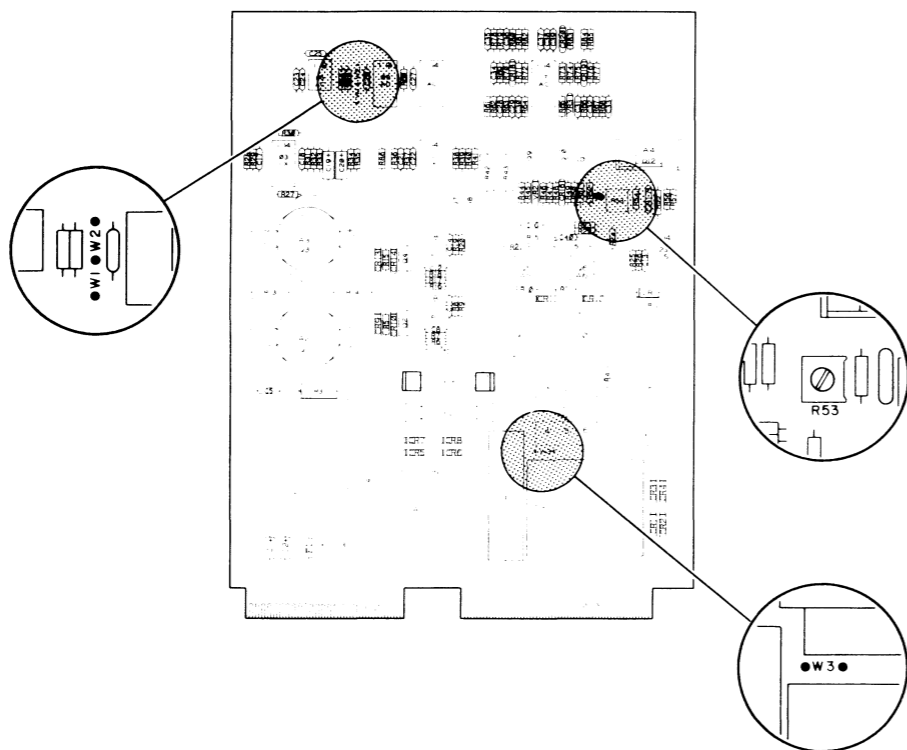
CURRENT SURPLUS: _____

SHIPPING

INFORMATION NOT AVAILABLE



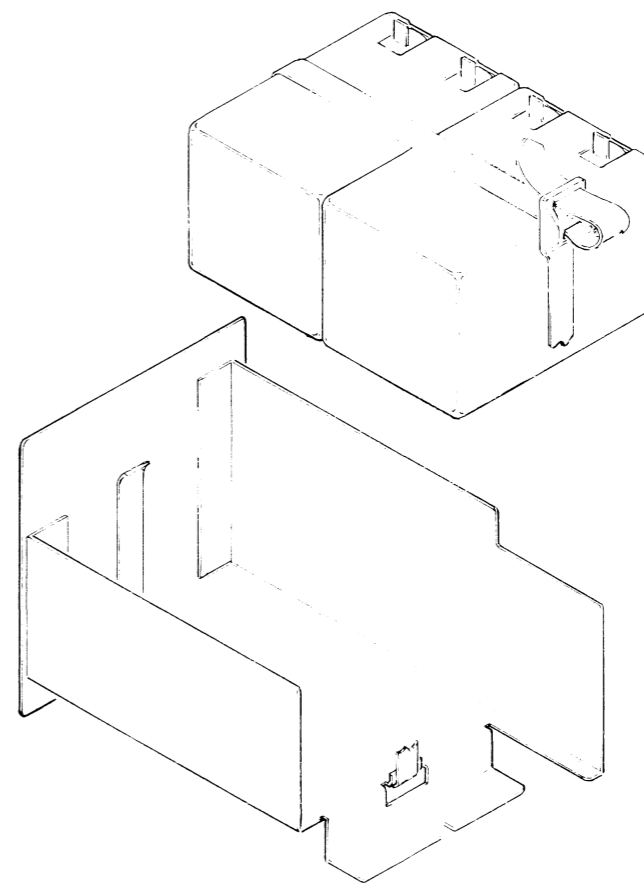
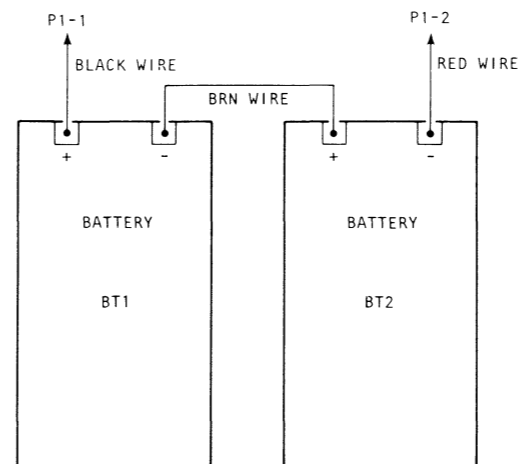
TAILORING

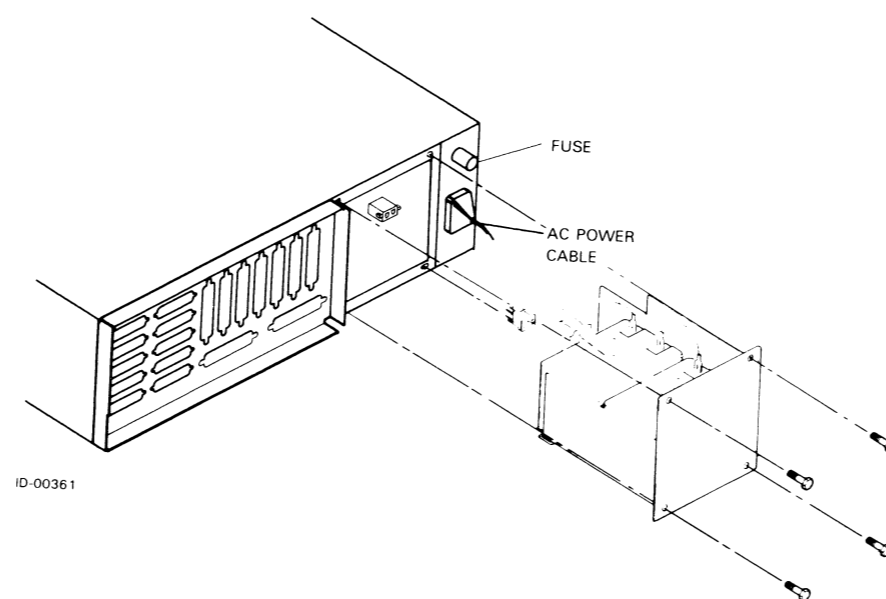


JUMPER	FUNCTION
W1	NORMALLY OUT.
W2	NORMALLY IN.
W3	NORMALLY IN. REMOVE WHEN USING OTHER THAN DG No 005-007093 BATTERIES.

- NOTE:
1. FOR MP/100 SYSTEMS REMOVE JUMPER W27 AND INSERT JUMPER W16 ON CPU BOARD TO IGNORE POWER-FAIL INTERRUPTS.
 2. FOR MP/200 SYSTEMS INSERT JUMPERS W36 AND W37, ON MULTIFUNCTION CONTROLLER BOARD.
 3. USE TRIM POT (R53) TO ADJUST LEVEL OF CHARGE.

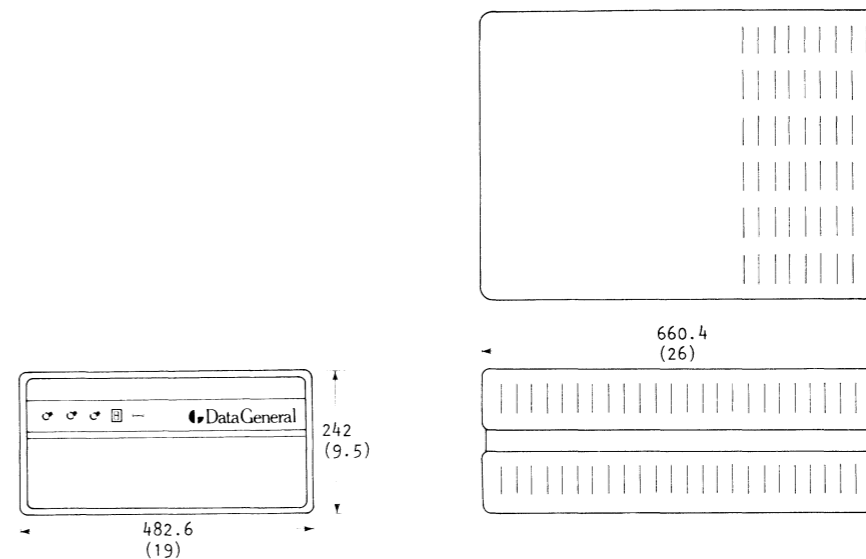
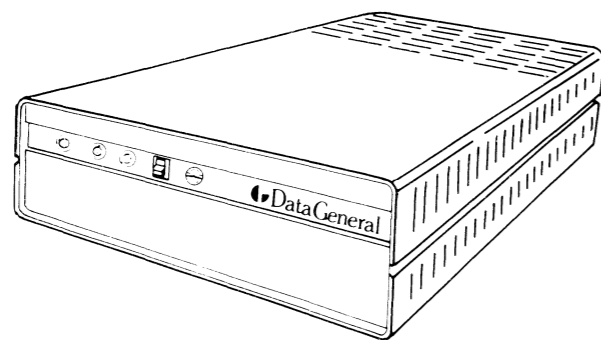
INTERNAL/EXTERNAL CABLING





SYSTEMS

INSTALLATION SPECIFICATIONS



DIMENSIONS IN MILLIMETERS
INCHES IN PARENTHESES
FOR REFERENCE:

	MODEL 1318 Domestic Unit	MODEL 1290 Export Unit	
Input Voltage	120VAC	220/240VAC	+ 10 - 15%
Input Frequency	60Hz	50Hz	+ or - 10% Single phase
Input Line Noise Attenuation	120dB	120dB	Common mode
Output Current at Voltage	60dB	60dB	Transverse mode
Output Surge	750 Volt-amps	750 Volt-amps	.75 lagging to .90 leading power factor.
Max Peak Repetitive Load Current	1320 Volt-amps	1320 Volt-amps	Over 280VA pre-load for 10 seconds.
Output Frequency	20 Amps	10 Amps	At 30% duty cycle during peaks of AC output voltage.
Output Wave Shape	60Hz	50Hz	+ or -.5% single phase
	Sine wave	Sine wave	Single Phase, max 5% total harmonic distortion.

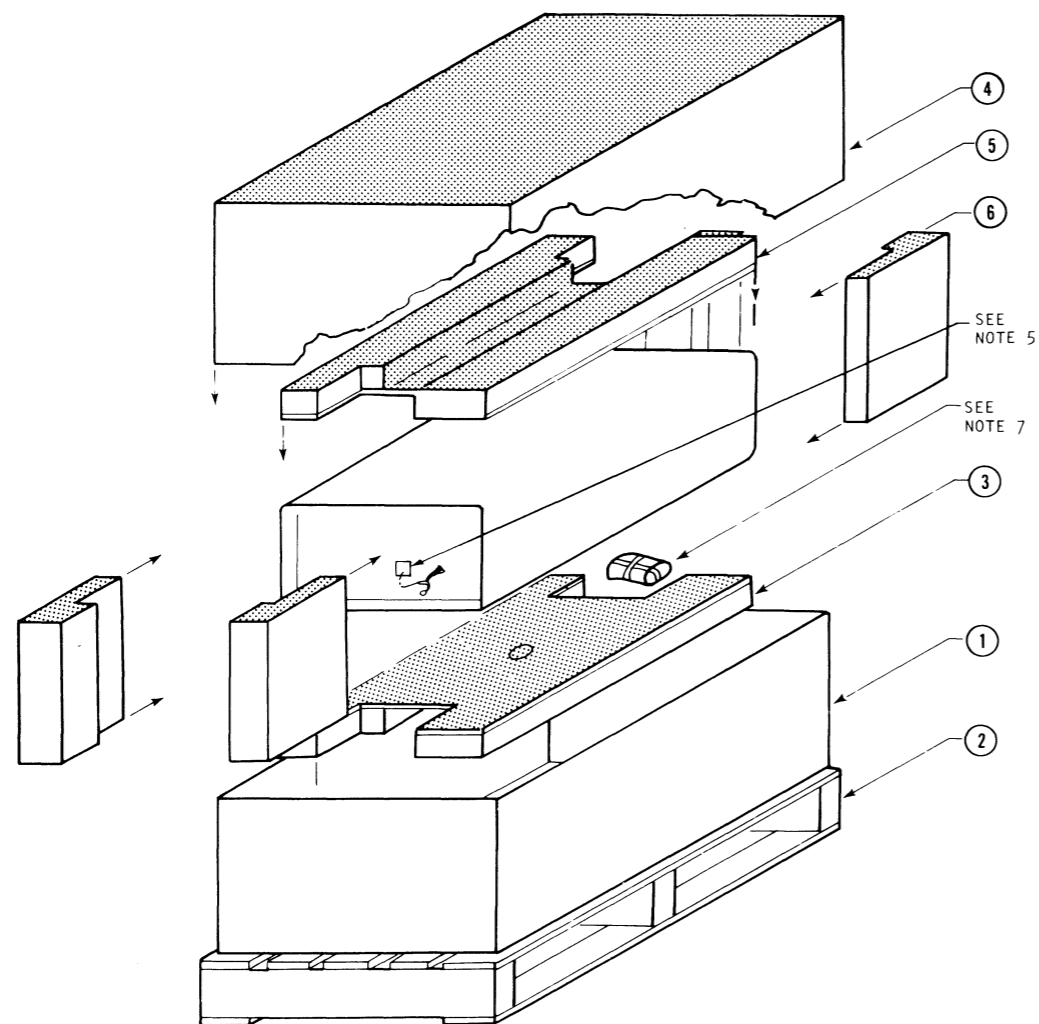
DIMENSIONS:	Width	Depth	Height	
Millimeters	482.6	660.4	241.3	
Inches	19	26	9.5	
SERVICE CLEARANCES:	Front	Rear	Right	Left
Millimeters	457.2	635	152.4	152.4
Inches	18	25	6	6
WEIGHT:				
Kilograms	60			
Pounds	132			
OPERATING ENVIRONMENT:				
Temperature	0-38 °C	(32-100 °F)		
Relative Humidity	0-95%	non-condensing		
Altitude (max)	2438m	(8000 ft)		

STORAGE ENVIRONMENT (INTERNAL BAT. FUSE IN):

Temperature:	20-27deg C (68-81deg F)	Battery recharge required every 3 months.
	40deg C (100 deg F)	Battery recharge required every 75 days.
	60deg C (140deg F)	Battery recharge required every 14 days.
Relative Humidity:	0-95%	Non-condensing
Power Dissipation:	369 Watts	1260 BTU'S At full rated load
Recharge Time:	12 Hours at nominal line	
Holdup Time:	8 Minutes at configurations on page 6	

Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

**SHIPPING
PACKING INSTRUCTIONS**



NOTES:

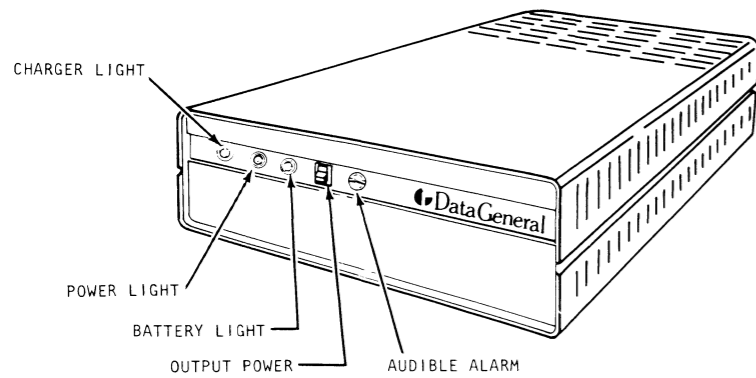
1. SET UP CARTON #1 SQUARELY ON PALLET.2.
2. PLACE PAD 3 ON BOTTOM OF CARTON WITH ETHAFOAM STRIPS FACING DOWN.
3. PLACE A SHEET OF 4 ml. THICK PLASTIC FILM, 36" x 60" CENTERED OVER THE CARTON.
4. LOWER THE UNIT INTO CARTON WITH THE REAR OF THE UNIT FACING THE CARTON PANEL WITH THE CUTOUT.
5. OVERLAP EXCESS PLASTIC ON TOP OF THE UNIT AND SECURE IT WITH TAPE. PULL END OF CHARGING JUMPER OUT OF THE PLASTIC COVER.
6. PLACE FOAM CORNER PADS 6 IN CORNERS (4 PIECES).
7. WRAP ACCESSORIES
7. WRAP UP AC RECEPTACLE, INTERNAL BATTERY FUSE, AND EXTERNAL BATTERY CONNECTION COVER IN MICROFOAM AND SECURE WITH TAPE. PLACE IT ON THE BOTTOM OF THE CARTON NEXT TO THE FRONT END OF THE UNIT (CRISS-CROSS TAPE BUNDLE).
8. PLACE PAD 5 ON TOP OF UNIT WITH FOAM STRIPS FACING UP.
9. LOWER TOP CARTON 4 OVER ASSEMBLY. CUTOUTS IN BOTH CARTONS SHOULD BE NEXT TO THE REAR END OF THE UNIT.
10. STRAP CARTON TO PALLET ABOUT ITS GIRTH IN TWO PLACES - 8" FROM EACH END OF THE CARTON.

MATERIAL INDEX

- ① CARTON BOTTOM
- ② PALLET
- ③ ⑤ FOAM PAD
- ④ CARTON TOP
- ⑥ FOAM CORNER PADS

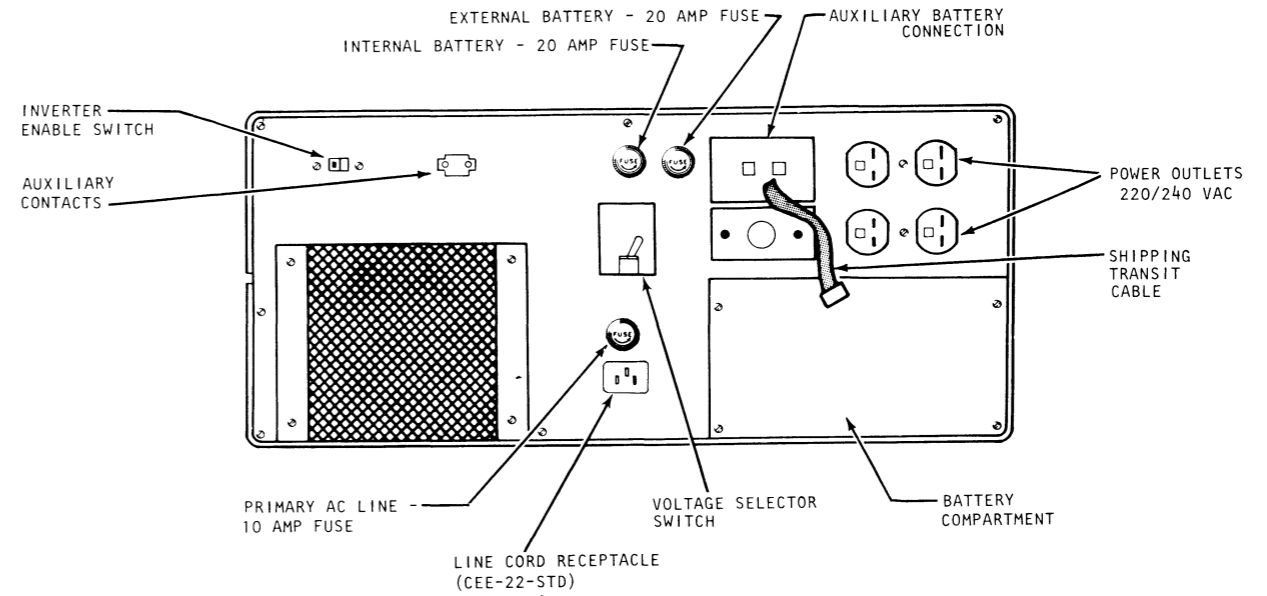
THE UNINTERRUPTIBLE POWER SUPPLY MODEL 1290/1318

FRONT PANEL

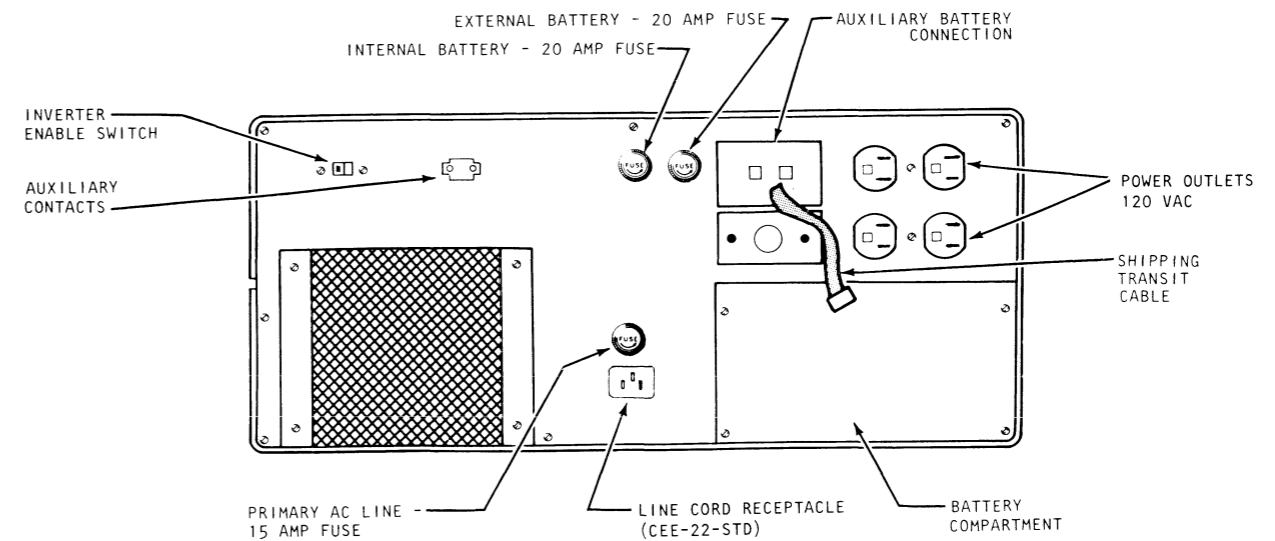


MODEL NUMBER	1318	1290-2,4
DESCRIPTION	60 HZ UNIT	50 HZ UNIT
HARDWARE KIT	005-020277	005-019690
DOCUMENT PACKAGE	005-019908	005-019908

REAR PANEL - 50 Hz Unit



REAR PANEL - 60 Hz Unit



EXTERNAL CABLING
(JUNCTION BOX – NEXT PAGE)

CAUTION:

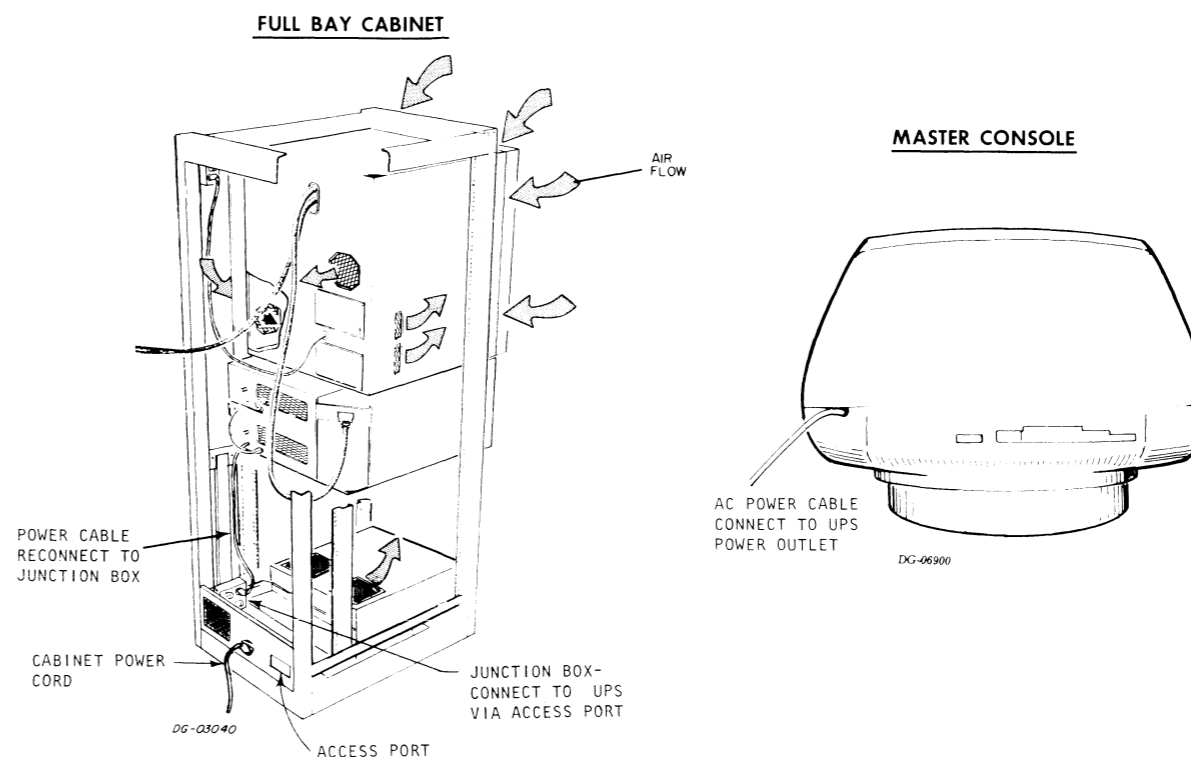
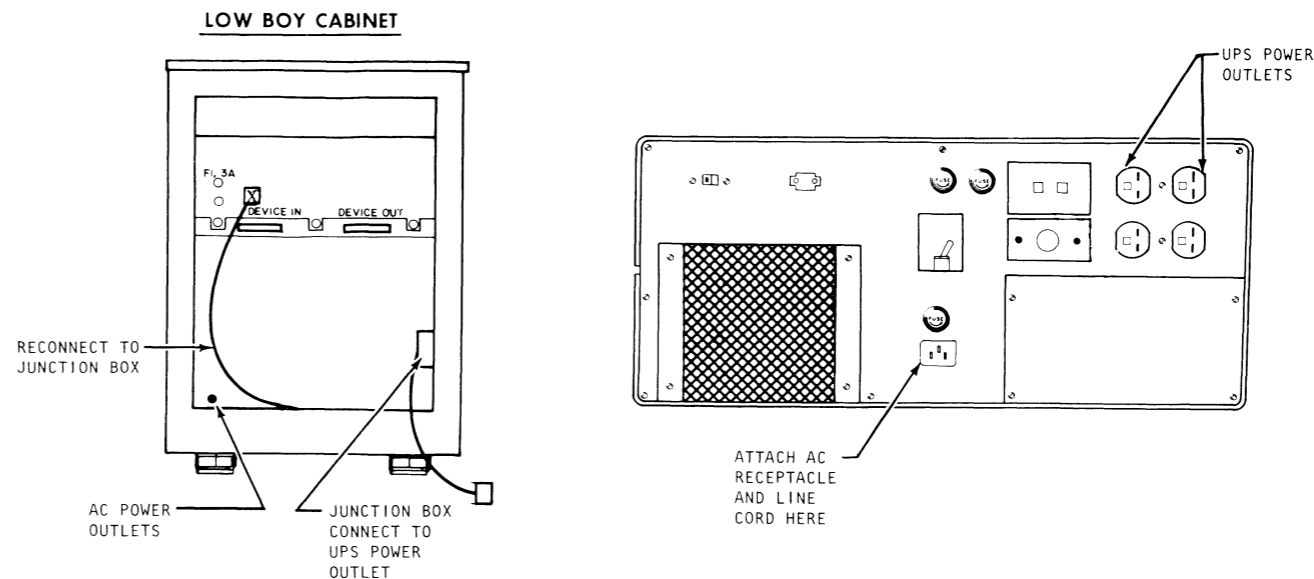
REMOVE EXTERNAL BATTERY FUSE BEFORE REMOVING THE SHIPPING TRANSIT CABLE. FAILURE TO DO SO COULD RESULT IN ELECTRIC SHOCK.

NOTES:

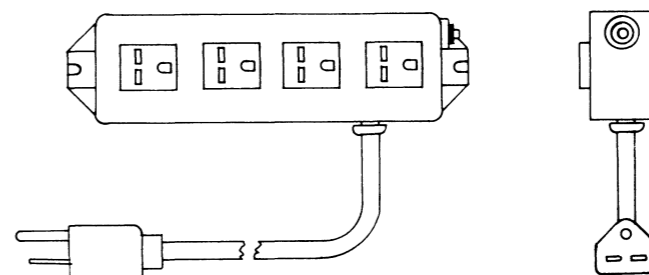
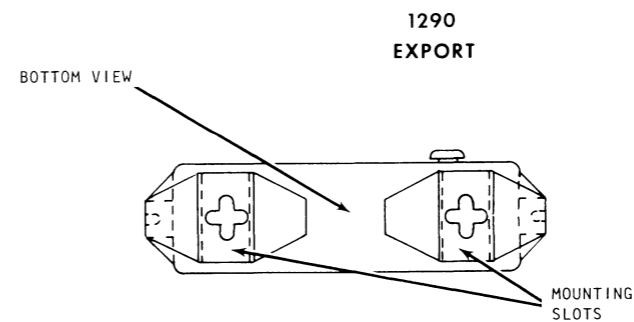
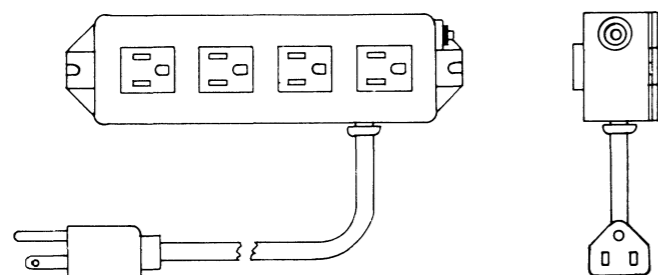
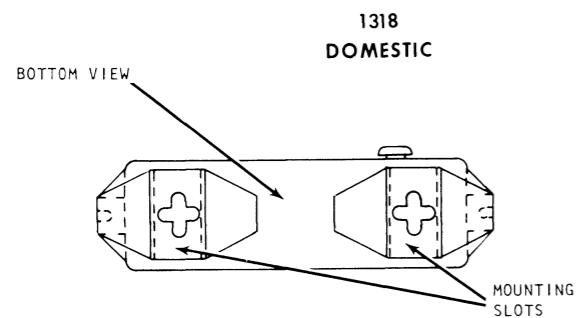
1. REMOVE THE SHIPPING TRANSIT CABLE AND THEN SCREW THE METAL PLATE LABELED "EXTERNAL BATTERY CONNECTION" ON TO THE BACK OF THE UNIT SO THE PLATE COVERS THE AUXILLIARY BATTERY CONNECTION. INSTALL THE INTERNAL BATTERY FUSE IN THE BACK OF THE UNIT.
2. BEFORE ADDING THE UNINTERRUPTIBLE POWER SUPPLY (UPS) TO THE SYSTEM, BRING THE SYSTEM DOWN AND PLACE ALL POWER SWITCHES IN THE OFF POSITION.
3. MOUNT THE JUNCTION BOX PLATE IN THE SYSTEM CABINET. MOUNT THE JUNCTION BOX ON THE PLATE (SEE NEXT PAGE)
4. USING THE TABLES ON SHEETS 6 AND 7 OF THIS IDS, DETERMINE WHICH COMPONENTS OF THE SYSTEM CAN BE PLUGGED INTO THE UPS (SEE NOTES 1 - 3).
5. UNPLUG THE POWER CABLES FROM THESE COMPONENTS.
6. REPLACE THE SYSTEM CONSOLE LINE PLUG WITH THE CONNECTOR SUPPLIED. FOR CS/5 SYSTEMS, THE LINE PLUG FOR THE MPT CONSOLE AND ANY TABLE TOP DISK M MUST ALSO BE REPLACED WITH CONNECTORS SUPPLIED WITH THE UNIT.
7. PLUG THE CPU/CONSOLE OR THE MASTER CONSOLE CABLE INTO THE POWER OUTLET ON THE REAR OF THE UPS UNIT. PLUG THE SYSTEM DISKS OR DISKETTES INTO THE JUNCTION BOX,KEEPING TO CONFIGURATIONS PER UPS AS DEFINED ON PAGE 6 AND 7.
8. SELECT THE PROPER VOLTAGE WITH THE VOLTAGE SELECT SWITCH ON EXPORT UNITS.
9. ATTACH A POWER CORD AND PLUG WHICH MEET LOCAL STANDARDS (SEE NOTE 3) TO THE UPS.
10. PUT THE INVERTER ENABLE SWITCH IN THE ON POSITION.
11. PLUG THE UPS INTO THE WALL OUTLET.
12. SET THE FRONT PANEL ON/OFF SWITCH TO ON.
13. POWER-UP THE SYSTEM, AND BRING THE SYSTEM BACK UP.

NOTES:

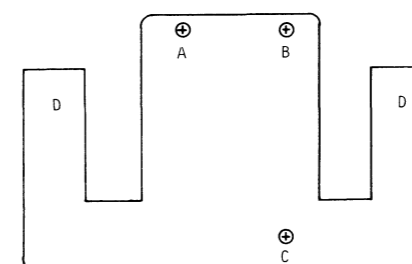
1. FOR THE CS SERIES 100, THE POWER FAIL ENABLE JUMPER (W5) ON THE CPU PCB MUST BE REMOVED IN ORDER FOR THE SYSTEM TO BE PROPERLY BACKED UP (SEE SHEET 8 OF THIS IDS.
2. THE UPS GENERATES HEAT AND THEREFORE REQUIRES NATURAL AIR FLOW AROUND IT. THE UPS ALSO MUST BE PLACED IN SUCH A LOCATION SO THAT THE CABLES FROM THE CABINET AND THE LINE CORD FROM THE MASTER CONSOLE WILL BE ABLE TO PLUG INTO THE UPS.
3. DUE TO VARIANCE IN POWER PLUG CONFIGURATION ON EXPORT UNITS, NO POWER PLUG OR POWER CORD IS SUPPLIED WITH THE UPS UNIT. FOR SAFE OPERATION THESE COMPONENTS SHOULD BE RATED FOR 10 AMPS AND 264 VAC.



JUNCTION BOX



MOUNTING BRACKET



1. SLIDE PLATES D - D INTO MOUNTING SLOTS OF JUNCTION BOX AS FAR AS POSSIBLE.
2. MOUNT WITH STANDARD HARDWARE SCREW 106-108
WASHER 106-30
NUT CLIP 123-1027
TO ANY OPEN PLACE ALONG CABINET SLIDE BRACKETS CAN BE MOUNTED HORIZONTALLY USING HOLES B-C OR VERTICALLY USING HOLES A-B. SCREWS IN A OR B HOLES KEEP JUNCTION BOX FROM COMING OUT OF BRACKET.

CONFIGURATIONS

NOTE: EVERY PROCESSOR, EXPANSION CHASSIS, MAIN CONSOLE AND DISK IN ANY SYSTEM MUST BE BACKED UP BY A UPS OR BBU FOR PROPER SYSTEM SOFTWARE OPERATION

CONFIGURATIONS PER UPS

EACH LISTED CONFIGURATION CAN BE SUPPORTED BY ONE UPS. NO MORE THAN THAT LISTED IN EACH CONFIGURATION CAN BE RUN ON ONE UPS. BUT ANY SUBSET CAN ALSO BE SUPPORTED.

CS/5 #1
 MPT CPU/CONSOLE
 5/15MB 8 INCH UNOVA I/O OR NIO OR BMC
 5/15MB 8 INCH UNOVA I/O OR NIO OR BMC

CS/5 #2
 MPT CPU/CONSOLE
 12.5/25MB 14"

CS/10 #1
 CS/10 CPU/CONSOLE AND MUX
 DISKETTE 1 OR 2 DRIVES

CS/10 #2
 CS/10 CPU/CONSOLE AND MUX
 12.5/25MB 14" & 1 FPY

CS/10 #3
 CS/10 CPU/CONSOLE AND MUX
 12.5/25MB 14"

CS/SERIES 100 #1
 CONSOLE
 S/20 OR EXP CH
 5/15MB 8 INCH μNOVA I/O OR BMC/NIO & FLOPPY OR CARTRIDGE

CS/SERIES 100 #2
 CONSOLE
 5/15MB 8 INCH μNOVA I/O OR NIO OR BMC
 5/15MB 8 INCH μNOVA I/O OR NIO OR BMC
 5/15MB 8 INCH μNOVA I/O OR BMC/NIO & FLOPPY OR CARTRIDGE

CS/SERIES 100 #3
 CONSOLE
 5/15MB 8 INCH μNOVA I/O OR BMC/NIO & FLOPPY OR CARTRIDGE
 5/15MB 8 INCH μNOVA I/O OR BMC/NIO & FLOPPY OR CARTRIDGE

CS/SERIES 100 #4
 CONSOLE
 12.5/25MB 14" OR 12.5/25MB 14" & 1 FPY OR 50MB 14" WITH BMC/NOVA I/O

CS/SERIES 200 #1
 CONSOLE
 S/120/5

CS/SERIES 200 #2
 5/15MB 8 INCH μNOVA I/O OR NIO OR BMC
 5/15MB 8 INCH μNOVA I/O OR NIO OR BMC
 5/15MB 8 INCH μNOVA I/O OR BMC/NIO & FLOPPY OR CARTRIDGE

CS/SERIES 200 #3
 5/15MB 8 INCH μNOVA I/O OR BMC/NIO & FLOPPY OR CARTRIDGE
 5/15MB 8 INCH μNOVA I/O OR BMC/NIO & FLOPPY OR CARTRIDGE

CS/SERIES 200 #4
 12.5/25MB 14" OR 12.5/25MB 14" & 1 FPY OR 50MB 14" WITH NOVA I/O

CONFIGURATIONS

THE FOLLOWING IS THE LIST OF SBS PACKAGED SYSTEMS THAT CAN BE SUPPORTED BY UPS UNITS. THE AMOUNT OF NUMBERS LISTED UNDER CONFIGURATION # IS THE NUMBER OF UPS UNITS REQUIRED. ONLY THE FOLLOWING LIST OF PACKAGED OR BASE SYSTEMS IS ALLOWED TO BE RUN ON THE 1290 UPS. WITH BBU ONLY 2 MINUTES OF BACKUP IS GUARANTEED.

NOTE: EVERY PROCESSOR, EXPANSION CHASSIS, MAIN CONSOLE AND DISK IN ANY SYSTEM MUST BE BACKED UP BY A UPS OR BBU FOR PROPER SYSTEM SOFTWARE OPERATION

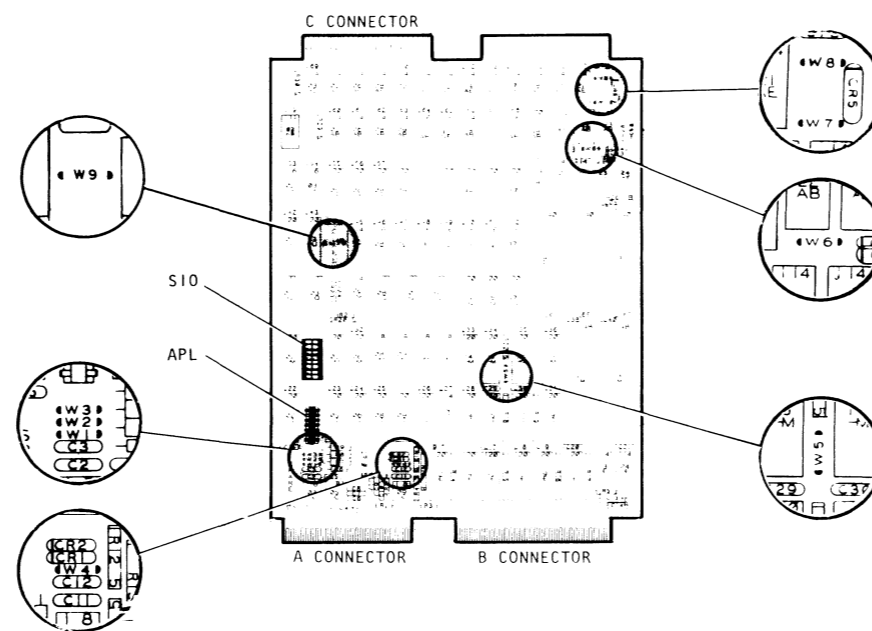
THE FOLLOWING IS A LIST OF THE ONLY OPTIONS THAT CAN BE SUPPORTED BY UPS UNITS. IF ATTACHED TO THE LIST OF MODELS SUPPORTED, EACH OPTION MUST FIT INTO THE CONFIGURATIONS DEFINED ON PAGE 6.

MODELS SUPPORTED							
		CONFIGURATION #	EXCLUDING UNITS				
CS/5		CS/5 #		CS/5	CS/10	CS/SER 100	CS/SER 200
9480	MPT	1	NONE	EXP CHASS	NA	NA	4314 NA
9486	MPT & 1 5MB	1	NONE	DISKETTE 1 DRIVE 1.26MB	NA	6096-A	NA 6097-A
9487	MPT & 1 15MB	1	NONE	DISKETTE 2 DRIVE 1.26MB	NA	6096-B	NA 6097-B
CS10		CS/10 #		WINCHESTER DISKS			
MOD C1							
9320	2 DISKETTE	1	NONE	12.5 MB 14"	6102-T	6102-S	6102 6099
9321	DISKETTE & 12.5MB	2	NONE	12.5 MB 14" & 1 DISKETTE	NA	6101-S	6101 6098
9322	DISKETTE & 25MB	2	NONE	25 MB 14"	6105-T	6105-S	6105 6103
9321-W	2 DISKETTE & 12.5MB	3	DISKETTES	25 MB 14" & 1 DISKETTE	NA	6104-S	6104 6100
9322-W	2 DISKETTE & 25MB	3	DISKETTES	5MB 8 INCH μNOVA I/O	6220-TT	NA	6220 NA
MOD C3				5MB 8 INCH μNOVA I/O & DISKETTE	NA	NA	6220-D NA
9323	DISKETTE & 12.5MB	2	NONE	5MB 8 INCH μNOVA I/O & CARTRIDGE	NA	NA	6220-C NA
9324	DISKETTE & 25MB	2	NONE	5MB 8 INCH NOVA I/O	NA	NA	NA 6225
9323-W	2 DISKETTE & 12.5MB	3	DISKETTES	5MB 8 INCH WITH DISKETTE	NA	NA	NA 6225-D
9324-W	2 DISKETTE & 25MB	3	DISKETTES	5MB 8 INCH WITH CARTRIDGE	NA	NA	NA 6225-C
CS/SERIES 100		CS/SER 100 #		15MB 8 INCH μNOVA I/O	6222-TT	NA	6222 NA
9810	CONSOLE, CPU, 5MB&FPY	1	NONE	15MB 8 INCH μNOVA I/O & DISKETTE	NA	NA	6222-D NA
9811	CONSOLE, CPU, 15MB&FPY +	1	NONE	15MB 8 INCH NOVA I/O & CARTRIDGE	NA	NA	6222-C NA
9812	CONSOLE, CPU, 15MB +	1	6123 TAPE	15MB 8 INCH WITH DISKETTE	NA	NA	6222-C NA
9813	CONSOLE, CPU, 25MB +	1 & 4	6123 TAPE	15MB 8 INCH WITH BMC OR N IO	NA	NA	6224 6227
		OR BBU, & 4		15MB 8 INCH WITH BMC & DISKE	NA	NA	6224-D 6227-D
9814	CONSOLE, CPU, 15MB&CART +	1	NONE	15MB 8 INCH WITH BMC & CART	NA	NA	6224-C 6227-C
9815	CONSOLE, CPU, 15MB&CART +	1	NONE	50MB 14" WITH BMC OR NOVA	NA	NA	6280 6234
9816	CONSOLE, CPU, 25MB +	1 & 4	B6230 CART				
		OR BBU, & 4					
9820-27	CPU	1	NONE				
B90170	CONSOLE, CPU+EXP, 50MB +	1 & 1 & 3	B6230 CART				
		OR BBU, BBU & 3					
B90171	CONSOLE, CPU+EXP, 50MB +	1 & 1 & 3	6123 TAPE				
		OR BBU, BBU & 3					
CS/SERIES 200		CS/SER 200 #					
9920-23	CPU	1	NONE				
9926	CPU	1	NONE				
9928	CONSOLE, CPU, 15MB&FPY +	1 & 2	NONE				
9950	CONSOLE, CPU, 15MB&CART +	1 & 2	NONE				

TAILORING

JUMPERING

Ref DGD Dwg No 003-001774 Rev 04

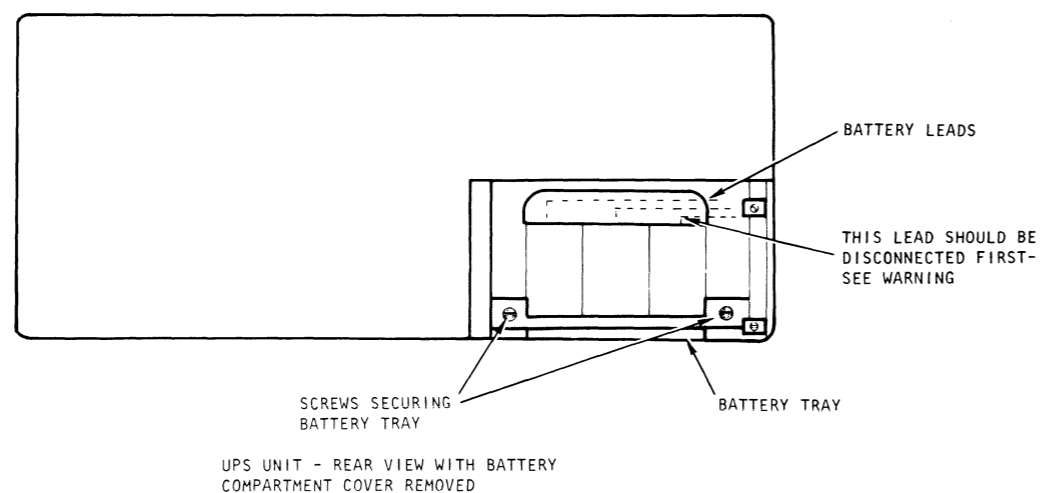
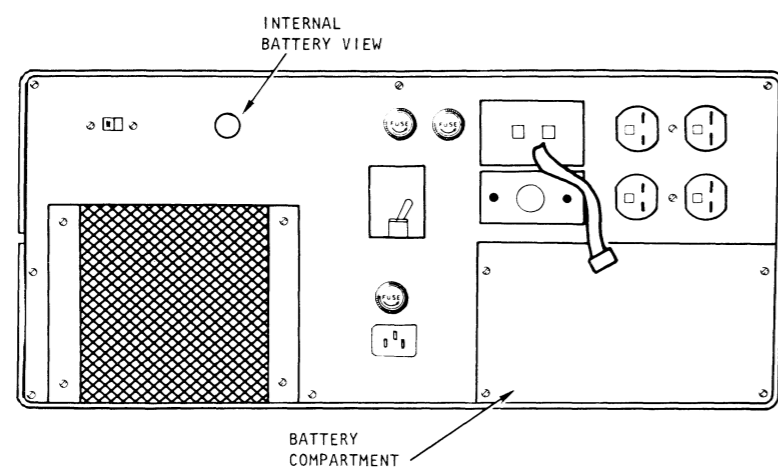


WS	FUNCTION
IN	ENABLES POWER FAIL INTERRUPTS
OUT	DISABLES POWER FAIL INTERRUPTS

BATTERY REPLACEMENT INSTRUCTION

INVERTER
ENABLE SWITCH

UPS UNIT - REAR VIEW



NOTES:

1. SET THE REAR PANEL INVERTER ENABLE SWITCH TO OFF.
2. UNPLUG THE INPUT LINE CORD AND THE CRITICAL LOAD. MAKE SURE THE INVERTER IS OFF.
3. REMOVE THE INTERNAL BATTERY FUSE. REMOVE THE FOUR SCREWS SECURING THE BATTERY COMPARTMENT COVER AND SET IT ASIDE.
4. DISCONNECT THE CONNECTION PLUG.

WARNING: DANGEROUS VOLTAGES PRESENT! BATTERY LEADS MUST BE DISCONNECTED AS INSTRUCTED TO AVOID THE POSSIBILITY OF ACCIDENTAL SHOCK.
5. REMOVE THE TWO SCREWS SECURING THE BATTERY TRAY AND SLIDE IT FROM THE UPS.
6. INSTALL THE NEW BATTERY TRAY AND SECURE IT WITH THE TWO SCREWS REMOVED IN STEP 5. NOTE THAT THE BATTERY IS REPLACED AS AN ASSEMBLY. THE INDIVIDUAL CELLS MUST NOT BE REPLACED.
7. REPLACE THE SCREWS WHICH SECURE THE BATTERY TRAY.
8. CONNECT THE BATTERY LEAD CONNECTION PLUG.
9. RECONNECT THE UPS TO THE LOCAL POWER SOURCE.
10. WAIT AT LEAST 60 SECONDS, AND THEN REINSTALL THE INTERNAL BATTERY FUSE.
11. REINSTALL THE BATTERY COMPARTMENT COVER.
12. CHARGE THE NEW BATTERY AS EXPLAINED IN THE UPS OPERATOR'S MANUAL.
13. AFTER CHANGING THE NEW BATTERY SET THE INVERTER ENABLE SWITCH TO ON AND RETURN THE UPS TO USE.

WARNING: CAUTION MUST BE OBSERVED WHEN DISPOSING OF USED BATTERIES SINCE THEY MAY BE HIGHLY EXPLOSIVE UNDER CERTAIN CONDITIONS. CONSULT LOCAL AUTHORITIES FOR PROPER DISPOSAL PROCEDURES.

WARNING: ONLY BATTERY PACKS OBTAINED FROM DATA GENERAL SHOULD BE USED FOR PROTECTION FROM HAZARDS AND FOR OPTIMUM PERFORMANCE.

Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

SERIES 100 SUBSYSTEM COMPONENT BREAKDOWN

MODELS 9810 THRU 9816, 9820, 9821, 9826, 9827, 90149 THRU 90153
9490 THRU 9498, 90170 & 90171, 90175 THRU 90184

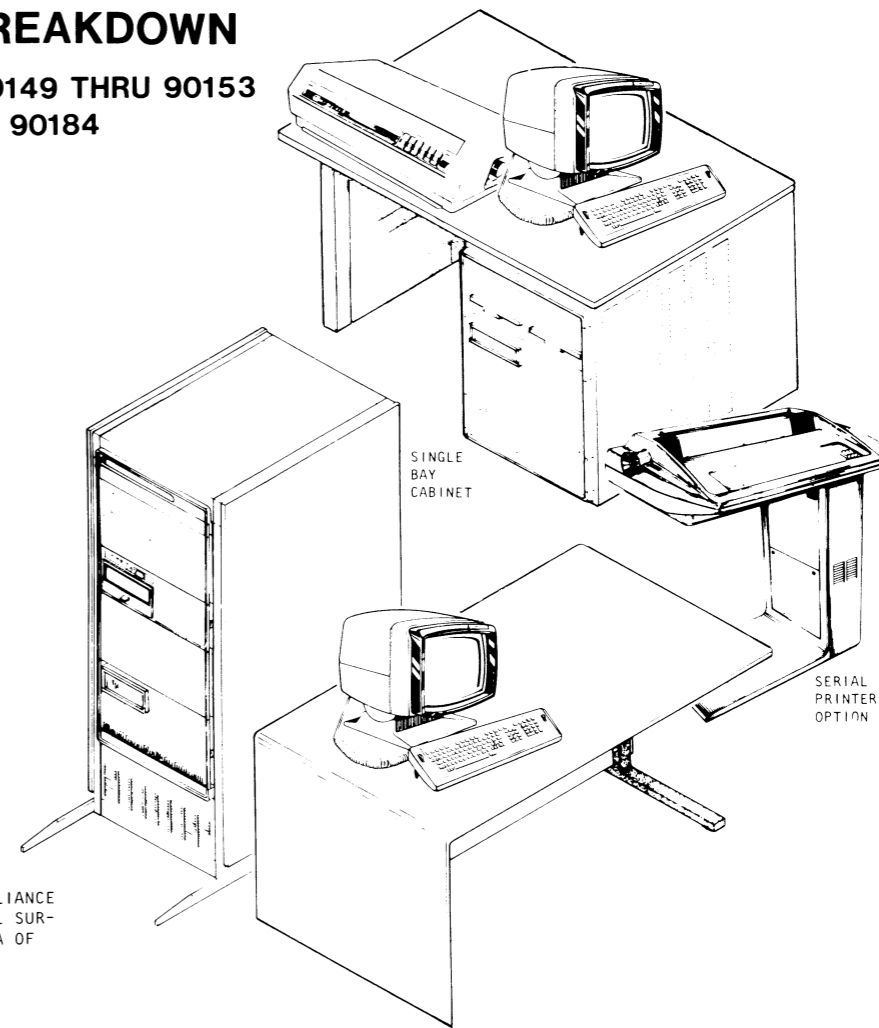
MAJOR COMPONENT

COMPONENT	MOUNTING LOCATION	NOTES	REFERENCE
S/20 CPU - 128 KB 8733-K	CABINET	USED ON 9820, 9821, 9810, 9811, 9812, 9814	010-000350
S/20 CPU - 256 KB 8733-NA	CABINET	USED ON 90149, 90150, 90151, 9815, 9816	010-000350
S/20 CPU - 512 KB 8733-RA	CABINET	90170, 90171 USED ON 90152, 90153	010-000350
S/20 CPU - 128KB 8833-K	CABINET	USED ON 9490, 9491, 90175, 90176	010-000350
S/20 CPU - 256KB 8833-N	CABINET	USED ON 9492, 9493, 90177 THRU 90182	010-000350
S/20 CPU - 512KB 8833-R	CABINET	USED ON 9494, 9495, 9497, 9498, 90183, 90184	010-000350
S/20 CPU - 1024KB 8833-V	CABINET	USED ON 9496,	010-000350
S/20 CPU - 1024 KB 8733-V	CABINET	USED ON 9826, 9827	010-000350
FULL BAY CABINET 1344-F	FREE STANDING	USED ON 9491, 9493, 9495, 9496, 9498, 90176, 90179 THRU 90184	010-000204
FULL BAY CABINET 1344-FX	1344-F CABINET	1344-FX ADD-ON EXPANDS A 1344-F TO A 1344-G CABINET	010-000204
LOW BOY CABINET 1348-AS	FREE STANDING	USED ON 9490, 9492, 9494, 9497, 90175, 90177, 90178	010-000219
LOW BOY CABINET 1348-BS	FREE STANDING	OPTION IN PLACE OF 1348-AS	010-000219
S/20 EXPANSION CHASSIS 4314-S	CABINET	REQUIRED WITH 10-17 TERMINAL SYSTEMS STANDARD	010-000349
S/20 BATTERY BACKUP 4315, 4316	S/20 CHASSIS	USED ON 9821, 9827, 90151, 90153	010-000353
FULL BAY CABINET 1144-F	FREE STANDING	1144-FX ADD-ON EXPANDS A 1144-F TO A 1144-G CABINET	010-000204
FULL BAY CABINET 1144-FX	1144-F CABINET		010-000204
LOW-BOY CABINET 1148-A	FREE STANDING	USED ON 9820, 9826, 90150, 90152	010-000219
LOW-BOY CABINET/DESK TOP 1148-B	FREE STANDING	OPTION IN PLACE OF 1148-A	010-000219
TABLE-TOP ADD-ON 1249	FREE STANDING	ADD-ON OPTION TO 1148-A	010-000219
DISPLAY TERMINALS	FREE STANDING	MAXIMUM OF 17 (18 WITH CONCURRENCY) SEE DISPLAY TERMINAL OPTIONS	
PARALLEL INTERFACE PRINTERS	FREE STANDING	SEE PARALLEL PRINTER OPTIONS	
SERIAL INTERFACE PRINTERS	FREE STANDING	MAXIMUM OF 17 (18 WITH CONCURRENCY) SEE SERIAL PRINTER OPTIONS	
DISK/DISKETTE DRIVES *	CABINET	UP TO 4 DEVICES (CODES 25/65, 26/66) EACH WITH AN ADD-ON DEVICE SEE DISK/DISKETTE/CARTRIDGE TAPE OPTIONS	
DISK/CARTRIDGE TAPE DRIVES *	CABINET	CARTRIDGE TAPE DEVICE CODE 22	
CARTRIDGE TAPE UNIT 6230 *	CABINET	DISK DEVICE CODE 26, 66	010-000332
MAGNETIC TAPE UNIT 6123 *	CABINET	6400 BPI DEVICE CODE 22	010-000313
	CABINET	1600 BPI DEVICE CODE 22	

*SEE 010-000344 FOR CABLE INFORMATION

OPTIONAL COMPONENTS

COMPONENT	MOUNTING LOCATION	NOTES	REFERENCE
ADD-ON MEMORY MODULES	S/20 CHASSIS	8736-K 128 KB 8736-N 256 KB 8736-R 512 KB	010-000297
LINE PRINTER CONTROLLER	S/20 CHASSIS	4221-S - PROGRAMED I/O	010-000227
COMMUNICATIONS SUBSYSTEM	S/20 CHASSIS	4225-S, 4227-S, 4227-P 4226-S, 4228-S, 4226-P	010-000190
SINGLE LINE ASYNC CONTROLLER	S/20 CHASSIS	4207-S - DEVICE CODE 50, 51	010-000225
S/20 BMC	S/20 CHASSIS	8734-A	010-000297
UNINTERRUPTED POWER SUPPLY	FREE STANDING	1290/1318	010-000337
REPLACEMENT MEMORY MODULES	S/20 CHASSIS	8659-A REPLACES 128KB MEMORY WITH 256KB MEMORY 8659-B REPLACES 128KB MEMORY WITH 512KB MEMORY 8659-C REPLACES 256KB MEMORY WITH 512KB MEMORY	010-000350
UNIVERSAL SYNC/ASYNC MUX	S/20 CHASSIS	4463-Z FOUR LINE 4463-W ONE LINE	010-000380



NOTE:
APPLY FCC EMC CLASS A COMPLIANCE LABEL 002015245 ON EXTERNAL SURFACE OF CABINET IN THE AREA OF THE A/C POWER SOURCE.

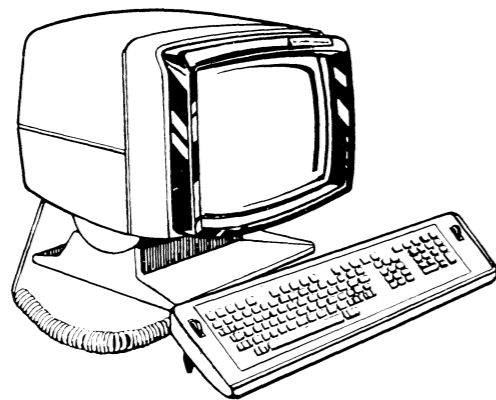
CABLES

CABLE	CONNECTING	LENGTH FT / M	NOTES
005-13258	TERMINAL AND BULKHEAD	25/7.6	EIA FOR D210, D211, D460, D410, G300
005-13260	TERMINAL AND BULKHEAD	25/7.6	20mA FOR D210, D211, D460, D410, G300
005-13258	PRINTER AND BULKHEAD	25/7.6	EIA FOR 6193 ALSO 005-013280 ADAPTER
005-015275	PRINTER AND BULKHEAD	25/7.6	EIA FOR 4320, 4322
005-015268	PRINTER AND BULKHEAD	25/7.6	20mA FOR 4320, 4322
005-13258	PRINTER AND BULKHEAD	25/7.6	EIA FOR 4354
005-13260	PRINTER AND BULKHEAD	25/7.6	ALSO 005-13264 ADAPTER
005-13258	PRINTER AND BULKHEAD	25/7.6	20mA FOR 4354
005-13265	PRINTER AND BULKHEAD	25/7.6	ALSO 005-13263 ADAPTER
005-13265	PRINTER AND BULKHEAD	25/7.6	EIA FOR 6190 ALSO 005-13281 ADAPTER
005-13265	PRINTER AND BULKHEAD	25/7.6	P10 FOR 4353
005-13265	PRINTER AND BULKHEAD	25/7.6	P10 FOR 4323, 4324 ALSO 005-13267 ADAPTER
005-013258	PRINTER AND BULKHEAD	25/7.6	EIA FOR 4518, 4433
005-013260	PRINTER AND BULKHEAD	25/7.6	20mA FOR 4433
005-19971	INTERFACE PCB AND BULKHEAD	2.0/.61	INTERNAL CABLE FOR SYSTEM CONSOLE
005-19984	INTERFACE PCB AND BULKHEAD	2.5/.76	4 LINE EIA / 20mA INTERNAL CABLE FOR 4227
005-19972	INTERFACE PCB AND BULKHEAD	2.0/.61	INTERNAL CABLE FOR 4226
005-19687	MODEM AND 4226 ADAPTER	20/6.1	1084-M
005-14999	MODEM AND 4226 ADAPTER	20/6.1	1085-M
005-014758	CABINET AND AC OUTLET	12/3.66	120 VAC ADAPTER CABLE
005-20811	INTERFACE PCB AND BULKHEAD	2.5/.76	4463-Z
005-20810	INTERFACE PCB AND BULKHEAD	2.5/.76	4463-W

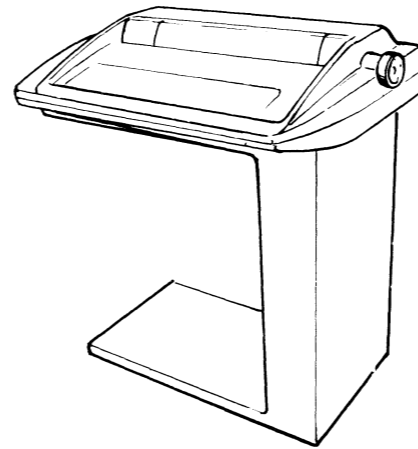
SERIES 100 SUBSYSTEM COMPONENT BREAKDOWN (CONT)

**MODELS 9810 THRU 9816, 9820,9821, 9826, 9827, 90149 THRU 90153
9490 THRU 9498, 90170 & 90171, 90175 THRU 90184**

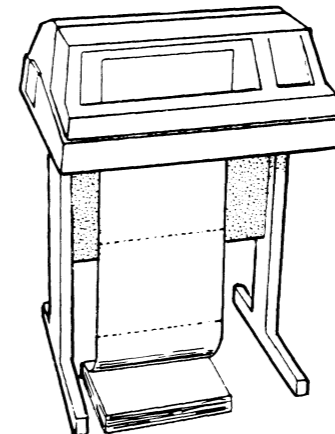
DISPLAY TERMINAL
D210/211, D410/460



SERIAL INTERFACE
PRINTER (DOT-
MATRIX TYPE)



PARALLEL INTERFACE
PRINTER (BAND TYPE)



DG-09484

DISPLAY TERMINAL OPTIONS

DASHER TYPE	MODEL	DESCRIPTION	REFERENCES
D210	6242	U.S. ONLY	010-000660
D211	6243	MULTI-LINGUAL	010-000660
D210/D211 KEYBOARD	6245	KEYBOARD FOR D210/D211 TERMINALS	
D410	6255	STANDARD	010-000674
D460	6256		010-000674
D410/D460 KEYBOARD	6246	KEYBOARD FOR D410/D460 TERMINALS	

NOTE: ONE CABLE REQUIRED FOR EACH TERMINAL

SERIAL INTERFACE PRINTER OPTIONS

TYPE	MODEL	COMMENTS	REFERENCE
TP1	6041	REQUIRES 1129 TOF OPTION	010-000094
TP2	6193		010-001016
35 CPS LETTER QUALITY	4518	OPTIONAL 4526, 4523, 4522	010-000655
55 CPS LETTER QUALITY	4220		010-000248
55 CPS LETTER QUALITY/ SHEET FEED	4322		010-000248
150 CPS DOT MATRIX	4422		010-000301
150 CPS DOT MATRIX	4433		010-001045
340 CPS DOT MATRIX	4354		010-001005

DISK/DISKETTE/CARTRIDGE TAPE OPTIONS

STORAGE DEVICE	MODEL	DESCRIPTION	ADD-ON DISKETTE(S)	REFERENCE	DEVICE CODE
SINGLE 1.2 MB	6096-A	DISKETTE DRIVE	6096-C	010-000345	26/66
DUAL 1.2 MB	6096-B	DUAL DISKETTE DRIVES	6096-C	010-000345	26/66
5 MB	6220	FIXED DISK	6096-EZ	010-000303	26/66
5 MB / 1.2 MB	6220-D	FIXED DISK/DISKETTE DRIVE	NONE	010-000303	26/66
5 MB / 15 MB	6220-C	FIXED DISK/CARTRIDGE TAPE	NONE	010-000332	26/66
15 MB	6222	FIXED DISK	6096-EZ	010-000303	26/66
15 MB / 1.2 MB	6222-D	FIXED DISK/DISKETTE DRIVE	NONE	010-000303	26/66
15 MB / 15 MB	6222-C	FIXED DISK/CARTRIDGE TAPE	NONE	010-000332	26/66
12.5 MB	6102	FIXED DISK	6096-CZ OR 6096-CZ & 6096-C	010-000318	26/66
5.25" RACK MOUNT FLOPPY	4513	DUAL DISKETTE	NONE	010-000377	20/60
25 MB	6105	FIXED DISK	6096-CZ OR 6096-CZ & 6096-C	010-000318	26/66
15 MB**	6224	FIXED DISK	NONE	010-000303	25/65
15 MB**	6224-C	FIXED DISK/CART. TAPE	NONE	010-000303	25/65
15 MB**	6224-D	FIXED DISK/DISKETTE DRIVE	NONE	010-000303	25/65
50 MB**	6280	FIXED DISK	NONE	010-000303	25/65

** BMC 8734-A REQUIRED

PARALLEL INTERFACE PRINTER OPTIONS

TYPE	MODEL	COMMENTS	REFERENCE
LP2, 180 CPS	6190	ALL PARALLEL PRINTERS	010-001023
340 CPS DOT MATRIX	4353	REQUIRE THE 4221-S LINE	010-001004
230 LPM BAND	4324	PRINTER CONTROLLER	010-000233
300 LPM BAND	4323		010-000233

SERIES 100

CHASSIS SLOT ASSIGNMENTS

SLOT ASSIGNMENTS

1 - 5 TERMINAL

(NOTE 1.)

SLOT	NON-CONCURRENT (NOTE 2.)	CONCURRENT (NOTE 3.)
8	6096/ 4221-S/4513 *	4207-S/4513 4221-S/6096 *
7	4207-S 4221-S *	4207-S/ 4221-S/4228-S*
6	4228-S/ 4207-S *	4226-S
5	4228-S/ 4227-S NOTE 4.	4225-S
4	4226-S/ 4227-S/ NOTE 5.	4227-S
3	4225-S	4225-S/4463
2	128/256 KB MEM	128/256 KB MEM
1	S/20 CPU	S/20 CPU
E X P A N S I O N	8	OPEN
	7	OPEN
	6	4228-S *
	5	4228-S 4227-S NOTE 4.
	4	4226-S 4227-S NOTE 5.
C H A S S I S	3	4225-S
	2	OPEN
	1	OPEN
	1	OPEN

*-OPTIONAL
/-OR

- FOR SINGLE USER SYSTEM, 4225-S/4227-S/4463 IS OPTIONAL FOR AUX RO PRINTERS.
- EXPANSION CHASSIS REQUIRED FOR COMMUNICATION BOARDS IF MORE THAN FIVE OF THE FOLLOWING OPTIONS ARE IN THE SYSTEM: 4207-S, 4221-S, 4226-S, 4227-S, 6096, AND 4513.
- EXPANSION CHASSIS REQUIRED FOR COMMUNICATION BOARDS IF MORE THAN FIVE OF THE FOLLOWING OPTIONS ARE IN THE SYSTEM: 4207-S, 4221-S, 4226-S, 4228-S, 6096, AND 4513.
- LOCATION OF 4227-S IF 4226-S IS IN THE SYSTEM.
- ALTERNATE LOCATION OF 4227-S IF NO 4226-S IN SYSTEM.

SLOT ASSIGNMENTS

6 - 9 TERMINAL

SLOT	NON-CONCURRENT (NOTE 1.)	CONCURRENT (NOTE 2.)
8	4221-S/4207-S/ 6096/4513 *	4207/ 6096/4513 *
7	4228-S/ 4221-S *	4226-S/ 4221-S *
6	4207-S/ 4227-S	4225-S/ 4207-S
5	4227-S NOTE 3.	4227-S
4	4227-S/ NOTE 4. 4226-S *	4227-S/4463
3	4225-S	4225-S/4463
2	512 KB MEM	512 KB MEM
1	S/20 CPU	S/20 CPU
E X P A N S I O N	8	OPEN
	7	4228-S *
	6	4227-S
	5	4227-S NOTE 3.
	4	4227-S NOTE 4. 4226-S *
C H A S S I S	3	4225-S
	2	OPEN
	1	OPEN
	3	OPEN

*-OPTIONAL
/-OR

- EXPANSION CHASSIS REQUIRED FOR COMMUNICATION BOARDS IF MORE THAN THREE OF THE FOLLOWING OPTIONS ARE IN THE SYSTEM: 4226-S, 4228-S, 4207-S, 4221-S & 6096.
- EXPANSION CHASSIS REQUIRED FOR SYSTEMS WITH 4227 COMMUNICATIONS SUBSYSTEMS IF ANY OF THE FOLLOWING OPTIONS ARE IN THE SYSTEM: 4228-S, 4221-S, 6096, OR 5413
- LOCATION OF FIRST 4227-S IF 4226-S IS IN SYSTEM.
- ALTERNATE LOCATION OF FIRST 4227-S IF NO 4226-S IS IN THE SYSTEM.

SLOT ASSIGNMENTS

10 - 17 TERMINAL

NOTE 1.

SLOT	NON-CONCURRENT NOTE 2.	CONCURRENT
8	6096/4513 *	6096/4513 *
7	4221-S *	4221-S *
6	4207-S *	4207-S
5	512KB MEM	512KB MEM
4	512KB MEM	512KB MEM
3	512 KB MEM	512KB MEM
2	512KB MEM	512KB MEM
1	S/20 CPU	S/20 CPU
E X P A N S I O N C H A S S I S		
3	OPEN	4228-S *
7	OPEN	4226-S
6	4228-S *	4225-S
5	4227-S	4227-S *
4	4227-S	4227-S/4463
3	4227-S	4227-S/4463
2	4227-S/ 4226-S *	4227-S/4463
1	4225-S	4225-S/4463

* - OPTIONAL
/- OR

- FOR ALL 10 - 17 TERMINAL SYSTEMS AN EXPANSION CHASSIS IS REQUIRED.
- IF 4226-S IS REQUIRED, 13 TERMINALS OR THREE 4227-S BOARDS IS THE SYSTEM MAXIMUM.

SLOT ASSIGNMENTS

ONE BMC DISK SYSTEMS (8733 CHASSIS)

NOTE 1.

SLOT	NON-CONCURRENT	CONCURRENT	NO SYNC COM
8	6237 BMC I	6237 BMC I	6237 BMC I
7	OPEN	OPEN	OPEN
6	OPEN	OPEN	OPEN
5	OPEN	OPEN	OPEN
4	512KB MEM*	512KB MEM*	512KB MEM*
3	256/512KB MEM	256/512KB MEM	256/512 KB MEM
2	8734BMC	8734BMC	8734BMC
1	S/20 CPU	S/20 CPU	S/20 CPU
E X P A N S I O N C H A S S I S (4 3 1 4 - S)			
8	4221-S*	4221-S*	4221-S*
7	4207-S*	4207-S	4207-S*
6	6096/4228-S* 4513	6096/4228-S* 4513	6096* 4513
5	4226-S	4226-S	4227-S
4	4227-S/4463	4227-S/4463	4227-S/4463
3	4227-S/4463	4227-S/4463	4227-S/4463
2	4227-S/4463	4227-S/4463	4227-S/4463
1	4225-S/4463	4225-S/4463	4225-S/4463

*- OPTIONAL
/- OR

- EXPANSION CHASSIS REQUIRED FOR 8733 CHASSIS BMC SYSTEMS.
- 4227-P IS A TWO PCB SET. BOARD #1 IS 4227-S; BOARD #2 IS 4225-S.
- 4226-P IS A TWO PCB SET. BOARD #1A IS 4226-S; BOARD #2A IS 4228-S.

SERIES 100

CHASSIS SLOT ASSIGNMENTS (CONT)

SLOT ASSIGNMENTS
ONE BMC DISK SYSTEMS (8833 CHASSIS)
 (NOTE 1.)

SLOT	NON-CONCURRENT	CONCURRENT	NO SYNC COM
8	6237 BMC1	6237 BMC1	6237 BMC1
7	4207-S/4221-S/ 4463	4207-S/4221-S/ 4463	4207-S/4221-S/ 4463
6	512KB MEM/ 4463	512KB MEM/ 4463	512KB MEM/ 4463
5	512KB MEM/ 4463	512KB MEM/ 4463	512KB MEM/ 4463
4	512KB MEM*	512KB MEM*	512KB MEM*
3	256/512KB MEM	256/512KB MEM	256/512KB MEM
2	8734BMC	8734BMC	8734BMC
1	S/20 CPU	S/20 CPU	S/20 CPU
EXPANSION CHASSIS (4314-S)			
8	4221-S*	4221-S*	4221-S*
7	4207-S*	4207-S	4207-S*
6	6096/4228-S * 4513	6096/4228-S * 4513	6096/4513 *
5	4226-S	4226-S	4227-S
4	4227-S/4463	4227-S/4463	4227-S/4463
3	4227-S/4463	4227-S/4463	4227-S/4463
2	4227-S/4463	4227-S/4463	4227-S/4463
1	4225-S/4463	4225-S/4463	4225-S/4463

* OPTIONAL
/ OR

1. EXPANSION CHASSIS REQUIRED IF MORE THAN THREE I/O OPTIONS ARE REQUIRED.
2. 4227-P IS A TWO PCB SET. BOARD #1 IS 4227-S; BOARD #2 IS 4225-S.
3. 4226-D IS A TWO PCB SET. BOARD #1A IS 4226-S; BOARD #2A IS 4228-S.

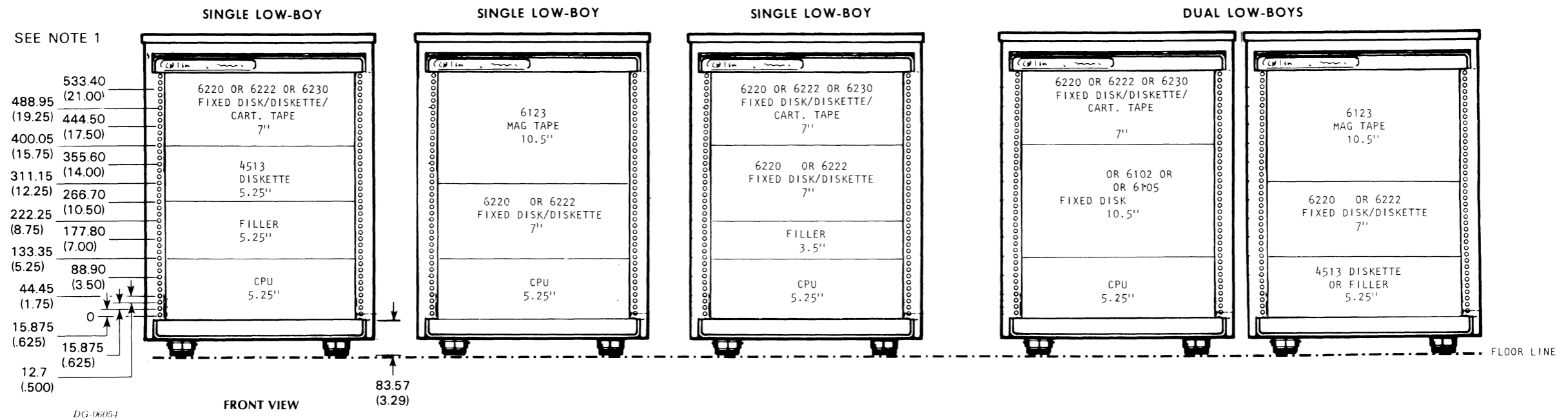
SLOT ASSIGNMENTS
TWO BMC DISK SYSTEMS (8833 CHASSIS)
 NOTE 1.

SLOT	NON-CONCURRENT	CONCURRENT	NO SYNC COMM
8	6237 BMC1	6237 BMC1	6237 BMC1
7	6237 BMC1	6237 BMC1	6237 BMC1
6	512KB MEM/4463	512KB MEM/4463	512KB MEM/4463
5	512KB MEM/4463	512KB MEM/4463	512KB MEM/4463
4	512KB MEM*	512KB MEM*	512KB MEM*
3	256/512KB MEM	256/512KB MEM	256/512KB MEM
2	8734 BMC	8734 BMC	8734 BMC
1	S/20 CPU	S/20 CPU	S/20 CPU
EXPANSION CHASSIS (4314-S)			
8	4221-S	4221-S	4221-S
7	4207-S*	4207-S*	4207-S*
6	6096/4228-S * 4513	6096/4228-S * 4513	6096/4228-S * 4513
5	4226-S*	4226-S	4227-S*
4	4227-S/4463	4225-S/4463	4227-S/4463
3	4227-S/4463	4227-S/4463	4227-S/4463
2	4227-S/4463	4227-S/4463	4227-S/4463
1	4225-S/4463	4225-S/4463	4225-S/4463

* OPTIONAL
/ OR

- NOTES:
1. EXPANSION CHASSIS REQUIRED IF MORE THAN EIGHT TERMINALS OR MORE THAN TWO I/O OPTIONS ARE REQUIRED.
 2. 4227-P IS A TWO PCB SET. BOARD #1 IS 4227-S; BOARD #2 IS 4225-S.
 3. 4226-P IS A TWO PCB SET. BOARD #1A IS 4226-S; BOARD #2A IS 4228-S.

SERIES 100
TYPICAL CABINET CONFIGURATIONS
LOW-BOY CABINETS



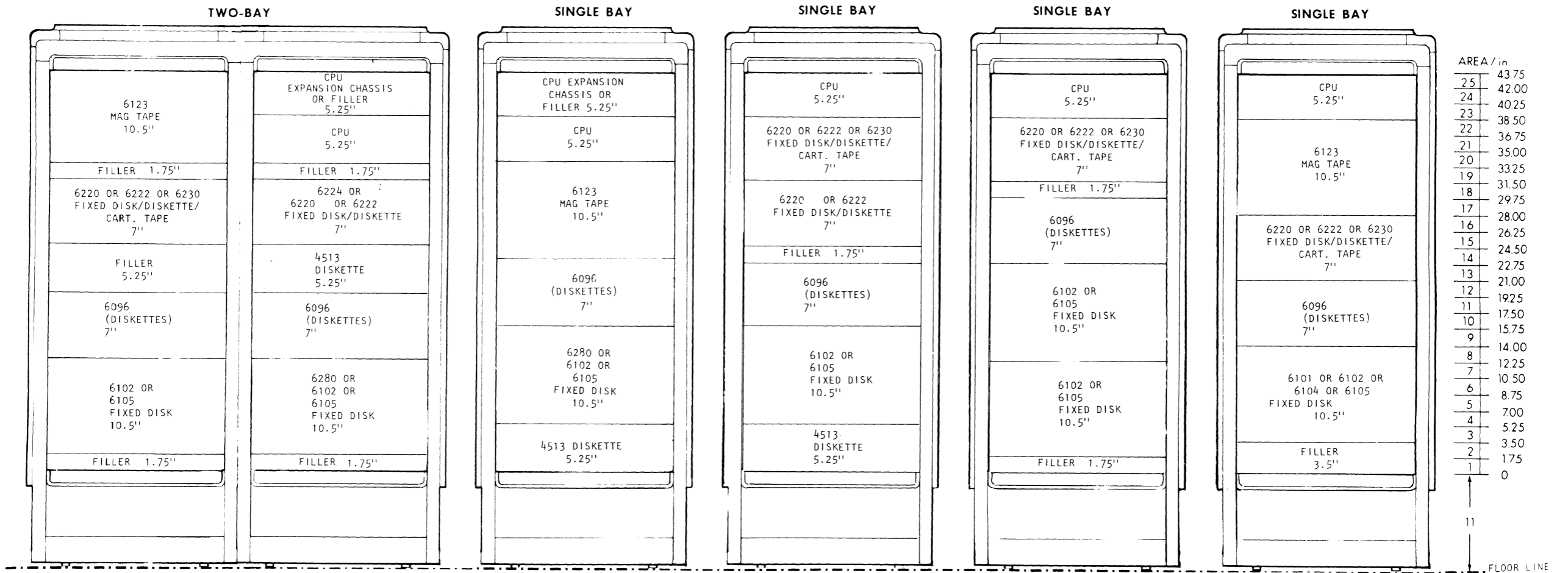
- NOTES:
1. DIMENSIONS ARE IN MILLIMETERS, INCHES SHOWN IN PARENTHESES FOR REFERENCE.
 2. FIXED DISKS SHOULD NOT BE INSTALLED LOWER THAN 133.35mm (5.25") FROM BOTTOM OF USABLE WORK SPACE.

ALL 1348-A/1348-BS LOWBOY CABINET CONFIGURATIONS REQUIRE ANTI-TIP LEGS.

SERIES 100

TYPICAL CABINET CONFIGURATIONS

FULL BAY CABINETS



NOTES:

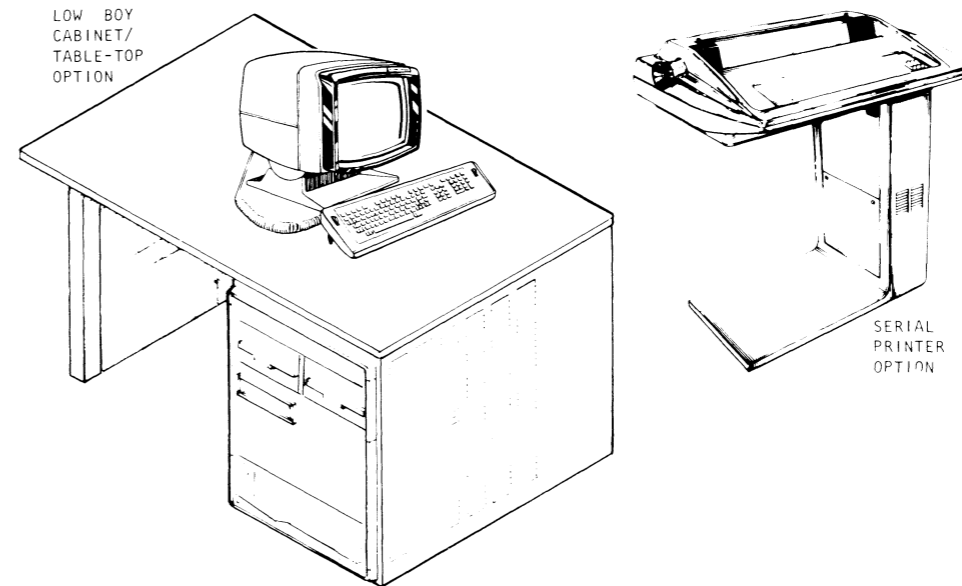
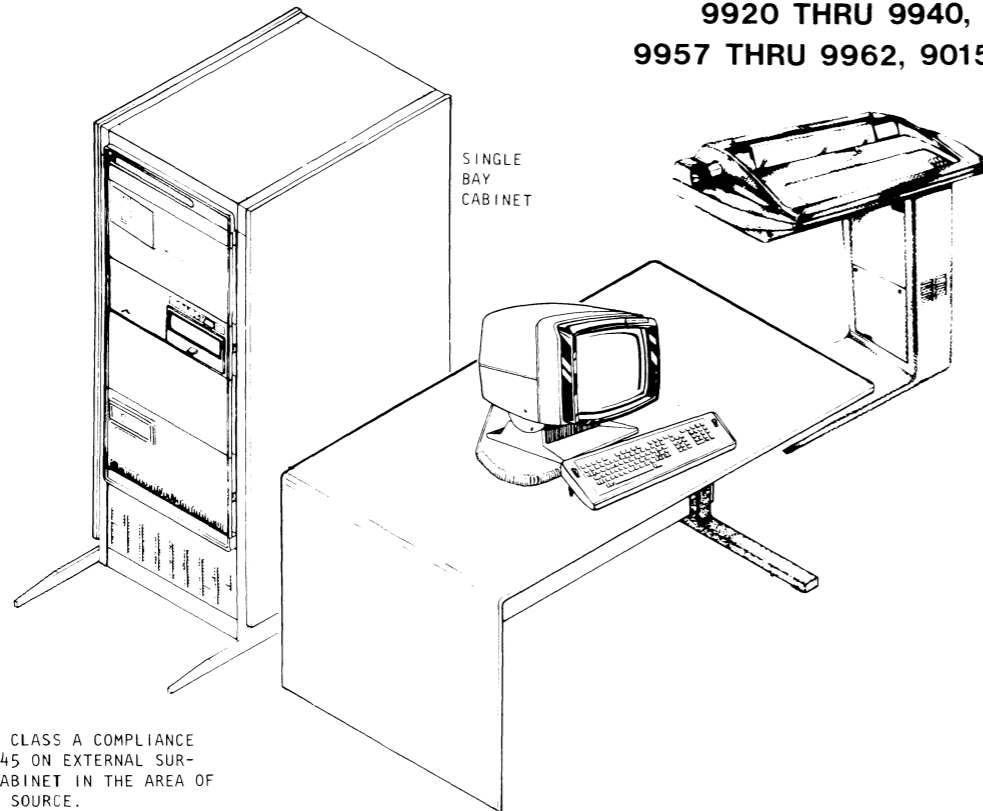
- ONLY ONE OF THE FOLLOWING OPTIONS CAN BE CONFIGURED PER SYSTEM: 6230, 6220-C, 6222-C, OR 6123.
- MAXIMUM OF TWO DISK STORAGE DEVICES ALLOWED PER SYSTEM (PLUS ADD-ON DISKETTE). LOCATIONS SHOWN ARE THE PREFERRED POSITIONS DEPENDING ON THE COMBINATION OF STORAGE DEVICES USED.

SERIES 200 SUBSYSTEM COMPONENT BREAKDOWN

MODELS

**9920 THRU 9940, 9950 THRU 9954, 9947, 9948
9957 THRU 9962, 90154 THRU 90163, 90185 THRU 90205**

Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.



NOTE:
APPLY FCC EMC CLASS A COMPLIANCE LABEL 002015245 ON EXTERNAL SURFACE OF THE CABINET IN THE AREA OF THE A/C POWER SOURCE.

MAJOR COMPONENT

COMPONENT	MOUNTING LOCATION	NOTES	REFERENCE
S/120 CPU - 256 KB 8731-N	CABINET	USED ON 9920, 9921, 90185	010-000360
S/120 CPU - 512 KB 8731-R	CABINET	USED ON 9922, 9923, 9926	010-000360
S/120 CPU - 256 KB 8732-N	CABINET	USED ON 9924, 90186 THRU 90191	010-000358
S/120 CPU - 512 KB 8732-R	CABINET	USED ON 9925, 9927	010-000358
S/140 CPU - 256 KB 8678-N	CABINET	USED ON 9940, 90192 THRU 90197	010-000357
S/140 CPU - 512 KB 8678-RA	CABINET	USED ON 90158, 90161, 90198 THRU 90204	010-000357
S/140 CPU - 768 KB 8678-TA	CABINET	USED ON 90159, 90162	010-000357
S/140 CPU - 1024 KB 8678-VA	CABINET	USED ON 90160, 90163, 90205	010-000357
S/140 CPU - 1536 KB 8678-XA	CABINET	USED ON 9947	010-000357
S/140 CPU - 2048 KB 8678-ZA	CABINET	USED ON 9948	010-000357
FULL BAY CABINET 1144-F/1344-F	FREE STANDING	ALL MODELS EXCEPT 9920, 9922, 90185	010-000204
FULL BAY CABINET 1144-FX/1344-FX	1144-F/1344-F CABINET	1144-FX/1344-FX ADD-ON EXPANDS A 1144-F/1344-F TO A 1144-G/1344/G CABINET	010-000204
LOW-BOY CABINET 1148-A/1348-AS	FREE STANDING	USED ON 9920, 9922, 90185	010-000219
LOW-BOY CABINET/DESK TOP 1148-B/1348-BS	FREE STANDING	OPTION IN PLACE OF 1148-A	010-000219
TABLE-TOP ADD-ON 1249 DISPLAY TERMINALS	LOW-BOY CABINET	ADD-ON OPTION TO 1148-A/1348-AS	010-000219
PARALLEL INTERFACE PRINTERS	FREE STANDING	MAXIMUM OF 25, DEPENDING ON OPERATING SYSTEM, CPU, AND MEMORY	
SERIAL INTERFACE PRINTERS	FREE STANDING	SEE DISPLAY TERMINAL OPTIONS	
DISK/DISKETTE DRIVES *	FREE STANDING	SEE PARALLEL PRINTER OPTIONS	
	FREE STANDING	SAME AS TERMINALS	
	FREE STANDING	SEE SERIAL PRINTER OPTIONS	
DISK/DISKETTE DRIVES *	CABINET	UP TO 4 SUBSYSTEMS (CODES 33, 73, 27, 67) EACH WITH ADD-ON DEVICES	
	CABINET	SEE DISK/DISKETTE/CARTRIDGE TAPE OPTIONS	
DISK/CARTRIDGE TAPE DRIVES *	CABINET	CARTRIDGE TAPE DEVICE CODES 22, 62	
	CABINET	DISK DEVICE CODE 33, 73	
	CABINET	SEE DISK/DISKETTE/CARTRIDGE TAPE OPTIONS	
CARTRIDGE TAPE UNIT 6231 *	CABINET	6400 BPI STREAMING DEVICE CODE 22	010-000367
MAGNETIC TAPE UNIT 6125 *	CABINET	1600 BPI STREAMING DEVICE CODE 22	010-000314
MAGNETIC TAPE UNIT 6026 *	CABINET	800/1600 BPI VACUUM COLUMN	010-000315

*SEE 010-000331 FOR DISK CABLE OR 010-000319 FOR TAPE CABLE INFORMATION

DISK/DISKETTE/CARTRIDGE TAPE OPTIONS

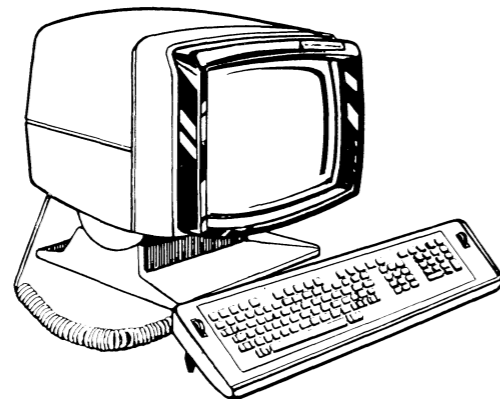
STORAGE DEVICE	MODEL	DESCRIPTION	ADD-ON DEVICE(S)	DEVICE CODES	REFERENCE
SINGLE 1.2 MB	6097-A	DISKETTE DRIVE	6099-A, 6103-A	33/73	010-000346
DUAL 1.2 MB	6097-B	DUAL DISKETTE DRIVES	6099-A, 6103-A	33/73	010-000346
5 MB	6225	FIXED DISK	6096-EX	33/73	010-000303
5 MB / 1.2 MB	6225-D	FIXED DISK/DISKETTE DRIVE	NONE	33/73	010-000303
5 MB / 15 MB	6225-C	FIXED DISK/CARTRIDGE TAPE	NONE	33/73	010-000367
15 MB	6227	FIXED DISK	6096-EX	33/73	010-000303
15 MB / 1.2 MB	6227-D	FIXED DISK/DISKETTE DRIVE	NONE	33/73	010-000303
15 MB / 15 MB	6227-C	FIXED DISK/CARTRIDGE TAPE	NONE	33/73	010-000367
12.5 MB	6099	FIXED DISK	6096-CX	33/73	010-000317
25 MB	6103	FIXED DISK	6096-CX	33/73	010-000317
50 MB	6234	FIXED DISK	6096-CV, 6096-DV	33/73	010-000300
73 MB	6160	FIXED DISK	6160-A, 6161-A	27/67	010-000289
147 MB	6161	FIXED DISK	6160-A, 6161-A	27/67	010-000289
277 MB	6122	DISK PACK (REQUIRES 8699 BMC OPTION)	6122-A, 6067-A	27/67	010-000342
368KB	4514	DUAL 5.25" DISKETTES	6060-A, 6061-A	20/60	010-000377

OPTIONAL COMPONENTS

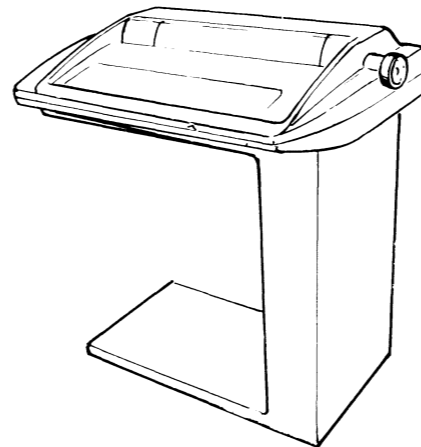
COMPONENT	MOUNTING LOCATION	NOTES	REFERENCE
SINGLE LINE ASYNC CONTROLLER	CPU CHASSIS	4078-P DEVICE CODE 50/51	010-000115
INTEGRATED COMMUNICATIONS MULTIPLEXORS	CPU CHASSIS	4340, 4342, 4344, 4345, 4346, 4261, 4387, 4388, 4389, 4390	010-000257
BIT SYNCHRONOUS INTERFACE	CPU CHASSIS	4348	010-000286
UNIVERSAL LINE MULTIPLEXOR	CPU CHASSIS	4241, 4242, 4243	010-000194
DATA CONTROL UNIT (DCU-200)	CPU CHASSIS	4254	010-000209
SYNCHRONOUS LINE MULTIPLEXOR	COMM CHASSIS	4264, 4266	010-000104
TERMINAL CONNECTION BOX	CABINET	4371, 4372	010-000335
BIT LINE MULTIPLEXOR	COMM CHASSIS	4248	010-000285
COMM CHASSIS	CABINET	4251	010-000105
P10 PARALLEL PRINTER CONTROL	CPU CHASSIS	USED WITH 6191, 4325, 4326, 14355	010-000199
DCH PARALLEL PRINTER CONTROL	CPU CHASSIS	USED WITH 6192, 4356, 4327, 4328, 4363, 4364	010-000199
NETWORK BUS SYSTEM	CPU CHASSIS	4460	010-000302
PROGRAMMABLE INTERVAL TIMER	CPU CHASSIS	4065/4068	SHEET 7
UNINTERRUPTED POWER SUPPLY	FREE STANDING	1290/1318	010-000337
16 SLOT EXPANSION CHASSIS	CABINET	8762	010-000321

SERIES 200 SUBSYSTEM COMPONENT BREAKDOWN (CONT)

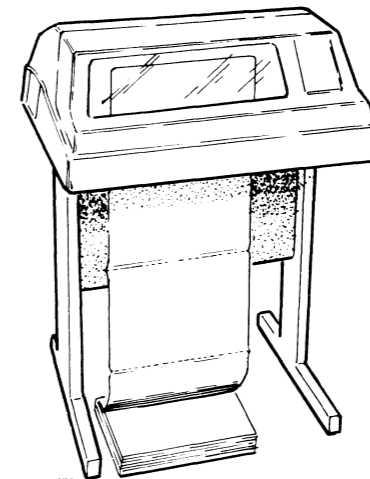
DISPLAY TERMINAL
D210/211, D410/460



SERIAL
INTERFACE
PRINTER



PARALLEL
INTERFACE
PRINTER



DWG-09484

PARALLEL INTERFACE PRINTER OPTIONS

TYPE	MODEL	COMMENTS	REFERENCE
LP2, 180 CPS	6191	P10	010-001023
LP2, 180 CPS	6192	DCH	010-001023
340 CPS DOT MATRIX	4355	P10	010-001004
340 CPS DOT MATRIX	4356	DCH	010-001004
230 LPM BAND	4326	P10	010-000233
230 LPM BAND	4328	DCH	010-000233
300 LPM BAND	4325	P10	010-000233
300 LPM BAND	4327	DCH	010-000233
436 LPM BAND	4363	DCH	010-001035
600 LPM BAND	4364	DCH	010-001035

SERIAL PRINTER OPTIONS

TYPE	MODEL	COMMENTS	REFERENCE
TP2	6193		010-001016
35 CPS LETTER QUALITY	4518	OPTIONAL 4526, 4523, 4522	010-000655
55 CPS LETTER QUALITY	4320		010-000248
55 CPS LETTER QUALITY/ SHEET FEED	4322		010-000248
150 CPS DOT MATRIX	4422		010-000301
150 CPS DOT MATRIX	4433		010-001045
340 CPS DOT MATRIX	4354		010-001005

DISPLAY TERMINAL OPTIONS

DASHER TYPE	MODEL	DESCRIPTION	REFERENCES
D210	6242	U.S. ONLY	010-660
D211	6243	MULTI-LINGUAL	010-660
D210/D211 KEYBOARD	6245	KEYBOARD FOR D210/D211 TERMINALS	
D410	6255	STANDARD	010-674
D460	6256	STANDARD	010-674
D410/D460 KEYBOARD	6246	KEYBOARD FOR D410/D460 TERMINALS	

CABLES

CABLE	CONNECTING	LENGTH FT / M	NOTES
005-13384	TERMINAL AND BULKHEAD	25/7.6	RS422 FOR D211, D410, D460
005-13258	TERMINAL AND BULKHEAD	25/7.6	EIA FOR D210, D211, D410, D460, G300
005-13260	TERMINAL AND BULKHEAD	25/7.6	20ma FOR D210, D211, D410, D460, G300
005-13258	PRINTER AND BULKHEAD	25/7.6	EIA FOR 6193, ALSO 005-13280 ADAPTER
005-015275	PRINTER AND BULKHEAD	25/7.6	EIA FOR 4320, 4322
005-015268	PRINTER AND INTERFACE PCB	1000/305	20ma FOR 4320, 4322
005-13258	PRINTER AND BULKHEAD	25/7.6	EIA FOR 4354 ALSO 005-13264 ADAPTER
005-13260	PRINTER AND BULKHEAD	25/7.6	20ma FOR 4354 ALSO 005-13263 ADAPTER
005-13258	PRINTER AND BULKHEAD	25/7.6	EIA FOR 4422 ALSO 005-13259 ADAPTER
005-13265	PRINTER AND BULKHEAD/TCB	25/7.6	DCH FOR 4356
005-13265	PRINTER AND BULKHEAD/TCB	25/7.6	DCH FOR 6192 ALSO 005-13281 ADAPTER
005-13265	PRINTER AND BULKHEAD/TCB	25/7.6	DCH FOR 4327, 4328, 4363, 4364 ALSO 005-13267 ADAPTER
005-13265	PRINTER AND BULKHEAD/TCB	25/7.6	P10 FOR 6191. ALSO 005-13281 ADAPTER
005-13265	PRINTER AND BULKHEAD/TCB	25/7.6	P10 FOR 4355
005-13265	PRINTER AND BULKHEAD/TCB	25/7.6	P10 FOR 4325, 4326 ALSO 005-13267 ADAPTER
005-013258	PRINTER AND BULKHEAD	25/7.6	EIA FOR 4518, 4433
005-013260	PRINTER AND BULKHEAD	25/7.6	20ma FOR 4433
005-015136	INTERFACE PCB AND BULKHEAD	4/1.22	MASTER CONSOLE 200A
005-21056	INTERFACE PCB AND BULKHEAD	4/1.22	FOR 4078-P EIA ONLY
005-13261	INTERFACE PCB AND BULKHEAD	2.5/.76	FOR 4327, 4328, 4363, 4364
005-19397	INTERFACE PCB AND BULKHEAD	4/1.22	FOR 4340, 4389
005-19398	INTERFACE PCB AND BULKHEAD	4/1.22	FOR 4342, 4387
005-21104	INTERFACE PCB AND BULKHEAD	4/1.22	FOR 4345, 4346
005-21055	INTERFACE PCB AND BULKHEAD	4/1.22	FOR 4348
005-19565	INTERFACE PCB AND BULKHEAD	4/1.22	FOR 4241
005-13262	INTERFACE PCB AND BULKHEAD	2.5/.76	FOR 4325, 4326
005-19564	INTERFACE PCB AND BULKHEAD	4/1.22	FOR 4242
005-19565	INTERFACE PCB AND BULKHEAD	4/1.22	FOR 4243
005-19687	MODEM AND BULKHEAD	25/7.6	1084-M
005-014999	MODEM AND BULKHEAD	20/6.1	1085-M
005-19481	WALL BOX AND BULKHEAD	25/7.6	FOR 4460 ALSO 005-19479 INT CABLE

CHASSIS SLOT ASSIGNMENTS SERIES 200 A/B

5 SLOT SERIES 200A

I/O
ONLY
|

SLOT	DESCRIPTION	+5V CURRENT DRAW
5	DCH/PIO PRINTER	3.0
4	DISK (PRI)	6.0 (6160, 6161)
3	OPTION - PRI (NOTE 1)	3.4 (ATI 16)
2	OPTION (NOTE 2)	7.0 (MAG TAPE)
1	S/120 SPU	8.0 ESTIMATE
		27.4A

MAX +5V AVAILABLE = 35A

NOTE 1 4340 AMI-8
4342 ATI-16
4342-PCA ATI-16
4078 ALC-1

NOTE 2 DISK (SEC) (EXCEPT 6160, 6161)
6125 STREAMING TAPE CONTROLLER
CONTROLLER
6026 DUAL MODE TAPE CONTROLLER
CONTROLLER
6231 CARTRIDGE TAPE CONTROLLER
4241 ULM-5 (ALM)
4242 ULM-5 (SLM)
4243 ULM-5 (SLM/ALM)
4514 DISKETTE

NOTE 3 4340 AMI-8
4241 ULM-5 (ALM)
4342 ATI-16
4342-PCA ATI-16
4078-P ALC-1
4243 ULM-5 (SLM/ALM)
4345 CSI-2
4346 CSI-1
4348 BSI-1
6099 DISK
6103 DISK

NOTE 4 4345 CSI-2
4346 CSI-1
4348 BSI-1
6103 DISK
6160 DISK
6161 DISK
6099 DISK
6225 DISK
6227 DISK
4078-P ALC-1
6234 DISK

NOTE 5 6097 DISKETTE
6098 DISK/DISKETTE
6100 DISK/DISKETTE
6225-D DISK/DISKETTE
6227-D DISK/DISKETTE
6225-C CARTRIDGE TAPE CONTROLLER
6227-C CARTRIDGE TAPE CONTROLLER
6231 CARTRIDGE TAPE CONTROLLER
4514 DISKETTE

NOTE 6 6097 DISKETTE
6098 DISK/DISKETTE
6100 DISK/DISKETTE
6225-D DISK/DISKETTE
6227-D DISK/DISKETTE
6225-C DISK CONTROLLER
6227-C DISK CONTROLLER
4514 DISKETTE

16 SLOT SERIES 200A

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I/O
ONLY
SLOTS
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SLOT	DESCRIPTION	+5V CURRENT DRAW
16	DCH/PIO PRINTER (PRI)	3.0
15	DCH/PIO PRINTER (SEC) (NOTE 3)	3.4/4.0
14	NOTE 3 (PRI)	3.4/4.0
13	NOTE 4 (SEC)	6.0/4.0
12	NOTE 4 (PRI)	6.0/4.0
11	4242 ULM-5 (SLM)/4254 DCU-200 4460	5.2/8.0
10	6026, 6125 MAG TAPE	7.0
9	NOTE 5 (SEC)	4.0/4.5
8	NOTE 6 (PRI)	4.0/4.5
7	OPEN	1.0
6	OPEN	4.0
5	OPEN	
4	OPEN	
3	OPEN	
2	N/A (BUS TERMINATOR)	
1	S/120 SPU	8.0
		55.0

MAX +5 AVAILABLE = 100A

PRIMARY AND SECONDARY DISKS COULD BE 6097, 6089/99, 6100/03, 6225/27, 6234.

OPEN SLOTS COULD BE USED FOR ANY OPTIONS EXCEPT 6160/6161, 4078-P 4340/42/45/46/48 WHICH REQUIRE I/O ONLY SLOTS.

LOCATION OF PRIMARY AND SECONDARY DISK CONTROLLERS DEPENDS ON SYSTEM CONFIGURATION AND WORST CASE DATA CHANNEL LATENCY. SEE 010-256 FOR PRIORITY CONFIGURATION RULES.

16 SLOT SERIES 200B

I
|
I/O
ONLY
SLOTS
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|

SLOT	DESCRIPTION	+5V CURRENT DRAW
16	DCH/PIO PRINTER (PRI)	3.0
15	DCH/PIO PRINTER (SEC)/4065 PIT (NOTE 3)	3.4/4.0
14	NOTE 3 (PRI)	3.4/4.0
13	NOTE 4 (SEC)	6.0/4.0
12	NOTE 4 (PRI)	6.0/4.0
11	4242 ULM-5 (SLM)/4254 DCU-200 4460	5.2/8.0
10	6026, 6125 MAG TAPE	7.0
9	NOTE 5 (SEC)/6122 DISK (SEC)	4.0(4.5)
8	NOTE 6 (PRI)/6122 DISK (PRI)	4.0/5.3
7	4065 PIT	1.0
6	MEMORY 8687 8754	4.4
5	MEMORY 8687 8754	4.4
4	MEMORY 8687 8754 8755	4.4
3	MEMORY 8687 8754 8755	4.4
2	ERCC/BMC-8699	2.7(10.0)
1	S/140 CPU	18.0
		94.4

PRIMARY AND SECONDARY DISKS COULD BE 6097, 6098/99, 6100/03, 6225/27, 6234.

LOCATION OF PRIMARY AND SECONDARY DISK CONTROLLERS DEPENDS ON SYSTEM CONFIGURATION AND WORST CASE DATA CHANNEL LATENCY. SEE 010-256.

* MODEL 8699 (ERCC PLUS BMC) MUST BE ORDERED IF 6122 DISK IS USED, OPTIONAL FOR 6160/6161 DISK.

S/140 ADD-ON MEMORY:

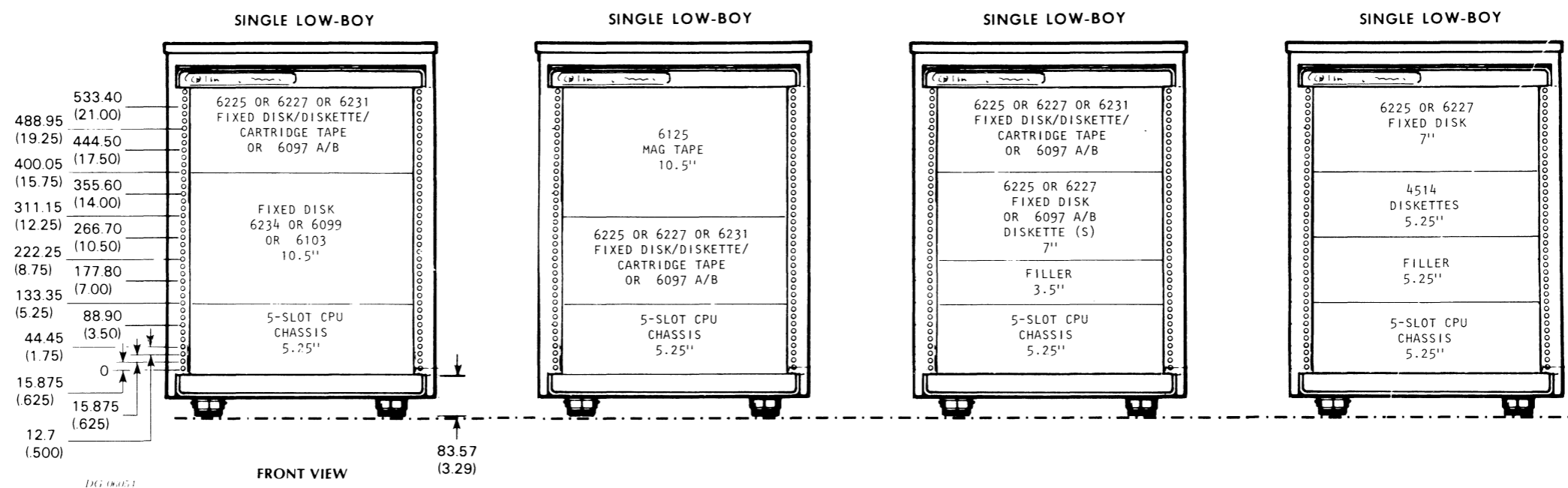
8687 256KB ERCC MEMORY
8754 512KB ERCC MEMORY
8755 1024KB ERCC MEMORY

S/140 CPU OPTIONS:

8662 FLOATING POINT INSTRUCTION SET
8664 CHARACTER INSTRUCTION SET

TYPICAL CABINET CONFIGURATIONS

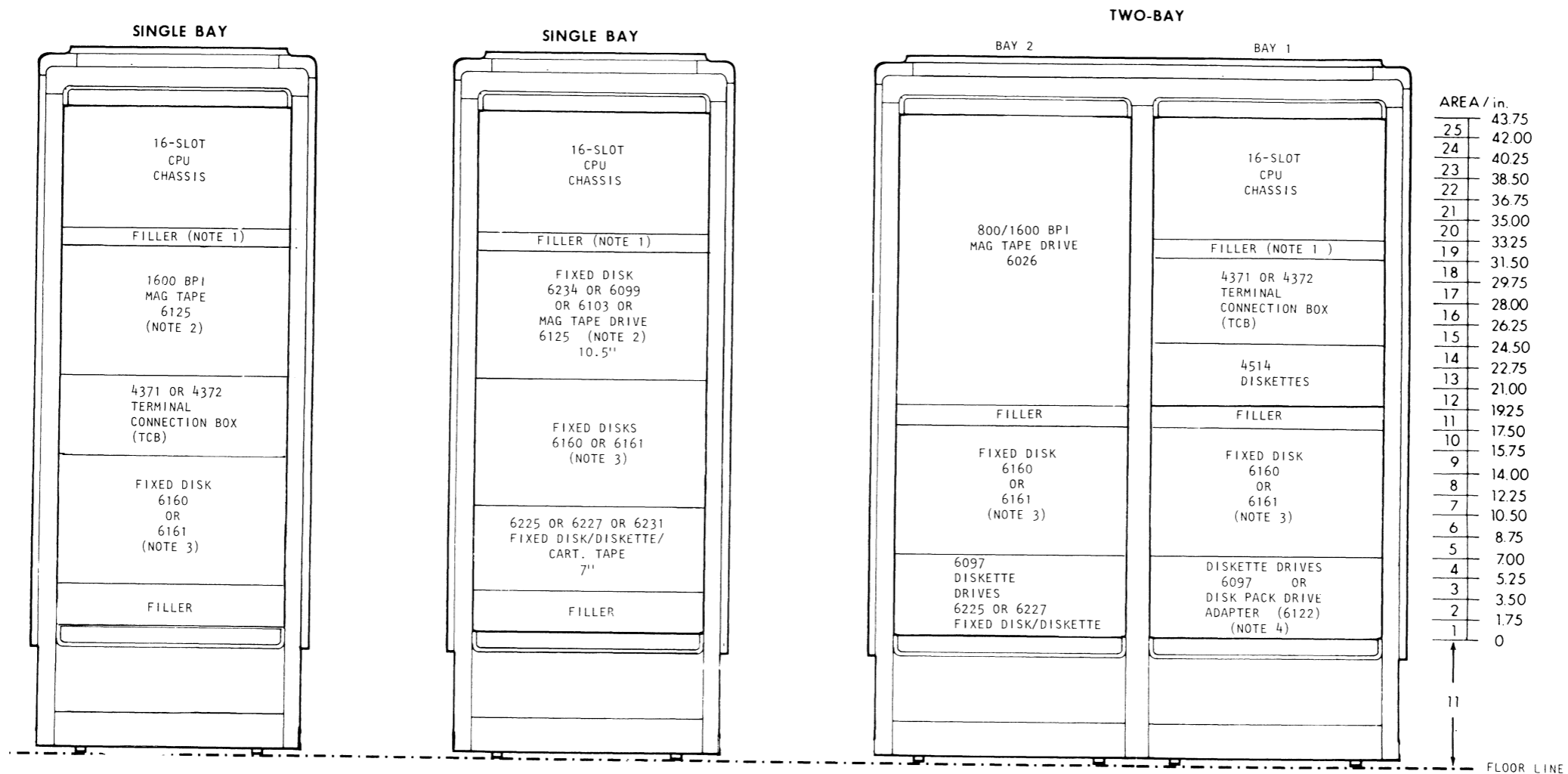
MODEL 1148/1348



DG 00053

TYPICAL CABINET CONFIGURATIONS (CONT)

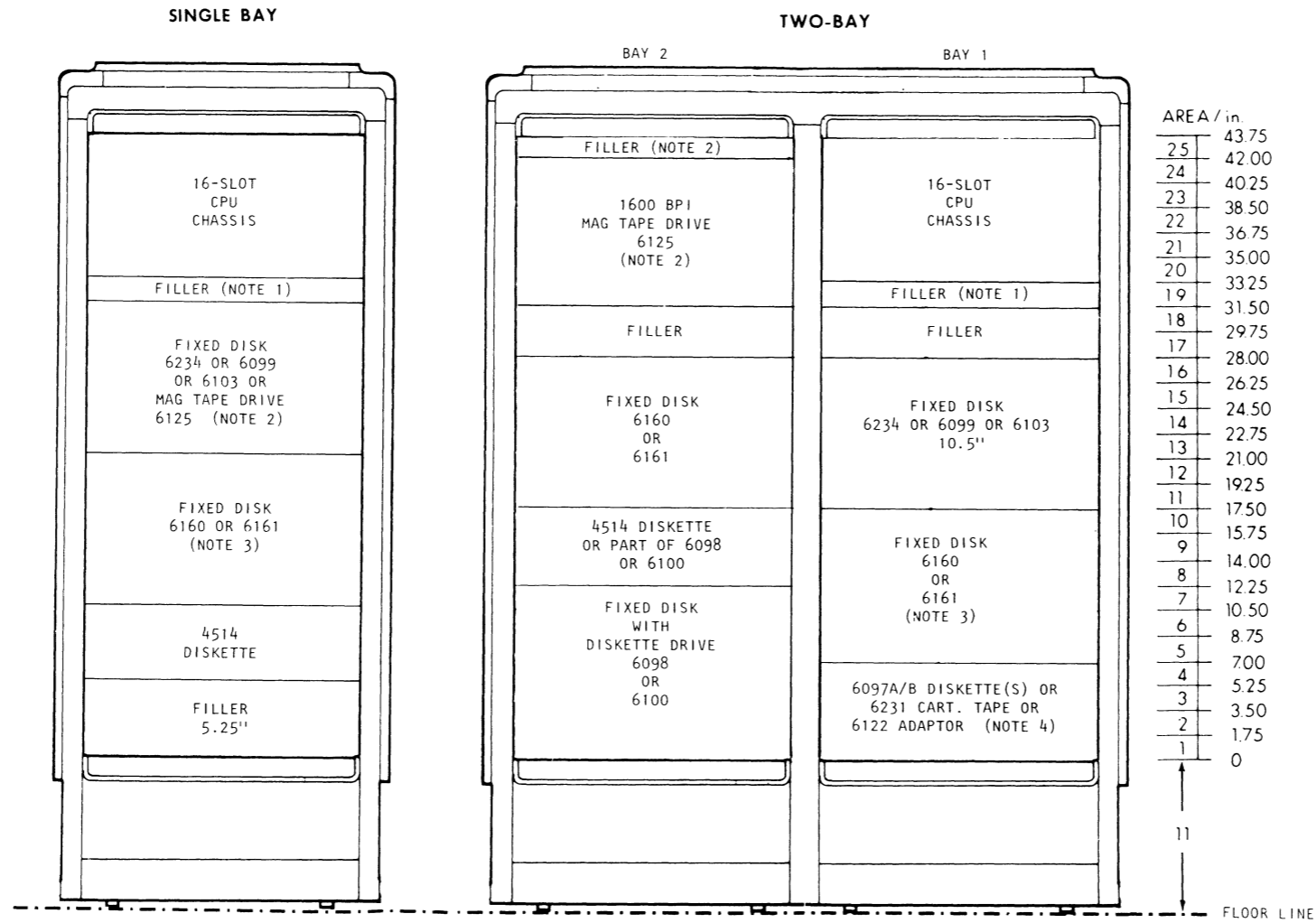
MODEL 1144/1344



1. FILLER SPACE REQUIRED FOR PROPER COOLING OF LOGIC CHASSIS. (ALSO SEE NOTE 2.)
2. MAG TAPE DRIVE 6125 REQUIRES AT LEAST A 1" CLEARANCE AT THE TOP OF THE DRIVE FOR INSTALLATION AND REMOVAL.
3. CABINET COOLING REQUIREMENTS LIMIT THE NUMBER OF DRIVES THAT CAN BE MOUNTED PER CABINET BAY. ONLY ONE 6160 OR 6161 CAN BE CONFIGURED IN THE SAME BAY WITH AN S/140 CPU. TWO DRIVES ARE ALLOWED IN BAYS WITHOUT ANY CPU CHASSIS OR WITH AN S/120 CPU.
4. THE ADAPTER ASSEMBLY FOR THE 6122 DISK PACK DRIVE MUST BE MOUNTED AT THE LOWEST LOCATION IN THE CABINET.

TYPICAL CABINET CONFIGURATIONS (CONT)

MODEL 1144/1344

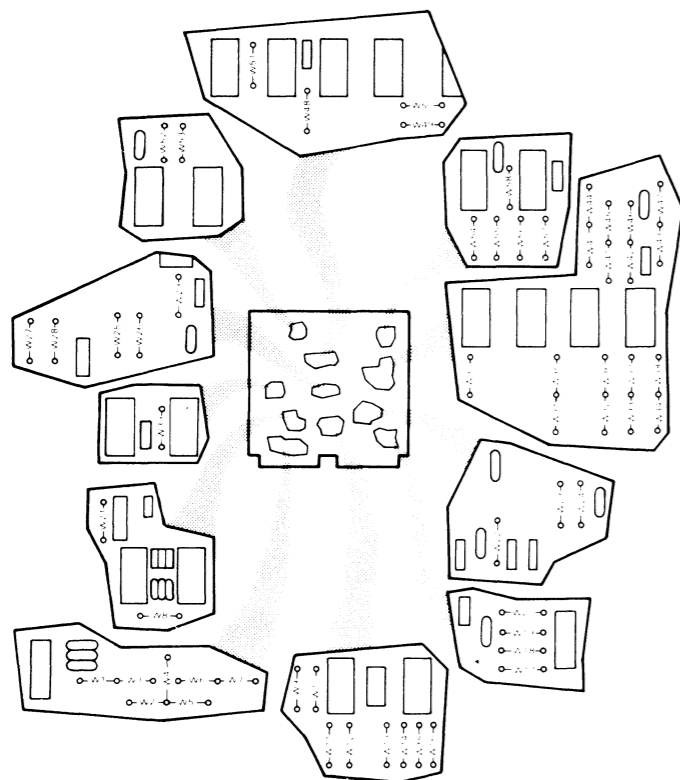


1. FILLER SPACE REQUIRED FOR PROPER COOLING OF LOGIC CHASSIS. (ALSO SEE NOTE 2.)
2. MAG TAPE DRIVE 6125 REQUIRES AT LEAST A 1" CLEARANCE AT THE TOP OF THE DRIVE FOR INSTALLATION AND REMOVAL.
3. CABINET COOLING REQUIREMENTS LIMIT THE NUMBER OF DRIVES THAT CAN BE MOUNTED PER CABINET BAY. ONLY ONE 6160 OR 6161 CAN BE CONFIGURED IN THE SAME BAY WITH AN S/140 CPU. TWO DRIVES ARE ALLOWED IN BAYS WITHOUT ANY CPU CHASSIS OR AN S/120 CPU.
4. THE ADAPTER ASSEMBLY FOR THE 6122 DISK PACK DRIVE MUST BE MOUNTED AT THE LOWEST LOCATION IN THE CABINET.

PROGRAMMABLE INTERVAL TIMER

DIGITAL I/O 4065 WITH
PROGRAMMABLE INTERVAL TIMER (PIT) 4068

4065 JUMPER LOCATIONS

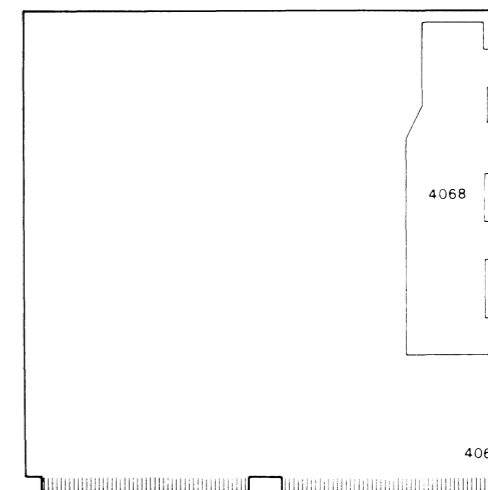


ES 01343

4065 DIGITAL I/O JUMPERS

JUMPER	FUNCTION	JUMPER	FUNCTION
W16	DS0 IN=0, OUT=1	W43	4067, 4068 INTRPT MASK BIT
W12	DS1 IN=0, OUT=1		IN=DATA 6, OUT=NO CONNECTION
W11	DS2 IN=0, OUT=0	W46	4067, 4068 INTRPT MASK BIT
W10	DS3 IN=0, OUT=1		IN=DATA 7, OUT=NO CONNECTION
W9	DS4 IN=0, OUT=1	W51	16 OUTPUT POLARITY
W14	DIO INTERRUPT TRANSITION SELECT		IN=0=LOW, OUT=0=HIGH
	IN=NEGATIVE, OUT=POSITIVE	W52	CLEAR OUTPUTS 8-16 IN
W15	OUT (NOT USED)	W53	OUT (NOT USED)
W23	OUT (NOT USED)	W2	IN FOR OUTPUT PULL UP TO +5V
W24	IN FOR 4068 OPTIO, OTHERWISE OUT	W4	IN FOR OUTPUT PULL UP TIED TO V1
W20	DIO INTRPT INPUT PULL-UP VOLTAGE	W5	IN FOR OUTPUT PULL UP TIED TO PIN A47
	IN=+5V, OUT=NO CONNECTION	W27	DATA OUT STROBE IN=START
W19	DIO INPUT PULL-UP VOLTAGE	W28	DATA OUT STROBE IN=START
	IN=EXT VOLTAGE VT, OUT=NO CONNECTION	W8	DATA OUT STROBE IN=START DELAY
W18	X10 INPUT PULL-UP VOLTAGE	W21	DATA OUT STROBE IN=START DELAY
	IN=+5V, OUT=NO CONNECTION	W24	DATA OUT STROBE IN=BUSY (1)
W17	X10 INPUT PULL-UP VOLTAGE	W25	DATA OUT STROBE IN=BUSY (0)
	IN=EXT VOLTAGE VT, OUT=NO CONNECTION	W22	CLR OR
W37	DIO INTRPT MASK BIT		OUT=CLR OUTPUT REG END OF INTRPT DELAY
	IN=DATA 2, OUT=NO CONNECTION	W39	16 INPUT POLARITY IN=0=HIGH
W31	DIO INTRPT MASK BIT	W50	LOAD INPUT REG STROBE SELECT
	IN=DATA 1, OUT=NO CONNECTION		IN=DIA
W36	DIO INTRPT MASK BIT	W49	LOAD INPUT REG STROBE SELECT
	IN=DATA 2, OUT=NO CONNECTION		IN=DOA DONE STROBE
W35	DIO INTRPT MASK BIT	W1	V1H SELECT IN=+5V
	IN=DATA 3, OUT=NO CONNECTION	W3	V1H SELECT IN=5V
W34	DIO INTRPT MASK BIT	W6	V1H SELECT IN=+5V, OUT=NO CONNECTION
	IN=DATA 4, OUT=NO CONNECTION	W7	SELECT V1H IN=PIN A49 EXT VOLTAGE
W32	DIO INTRPT MASK BIT		OUT=NO CONNECTION
	IN=DATA 5, OUT=NO CONNECTION	W30	X10-3 INTRPT TRANSITION SELECT
W38	DIO INTRPT MASK BIT		IN=NEGATIVE, OUT=POSITIVE
	IN=DATA 6, OUT=NO CONNECTION	W29	X14-7 INTRPT TRANSITION SELECT
W33	DIO INTRPT MASK BIT		IN=NEGATIVE, OUT=POSITIVE
	IN=DATA 7, OUT=NO CONNECTION	W54	4068 IN=SELECT EXTERNAL CLOCK
W42	4067, 4068 INTRPT MASK BIT	W55	4068 IN=SELECT 160kHz
	IN=DATA 0, OUT=NO CONNECTION	W58	4068 IN=SELECT 80kHz
W44	4067, 4068 INTRPT MASK BIT	W56	4068 IN=SELECT 40kHz
	IN=DATA 1, OUT=NO CONNECTION	W57	4068 IN=SELECT 10kHz (STANDARD)
W41	4067, 4068 INTRPT MASK BIT	W13	4068 EXT CLK PHASE SELECT
	IN=DATA 2, OUT=NO CONNECTION		IN=NEGATIVE, OUT=POSITIVE (TRANSITION)
W40	4067, 4068 INTRPT MASK BIT		
	IN=DATA 3, OUT=NO CONNECTION		
W47	4067, 4068 INTRPT MASK BIT		
	IN=DATA 4, OUT=NO CONNECTION		
W45	4067, 4068 INTRPT MASK BIT		
	IN=DATA 5, OUT=NO CONNECTION		

LOCATION OF 4068 PIT ON 4065 BOARD



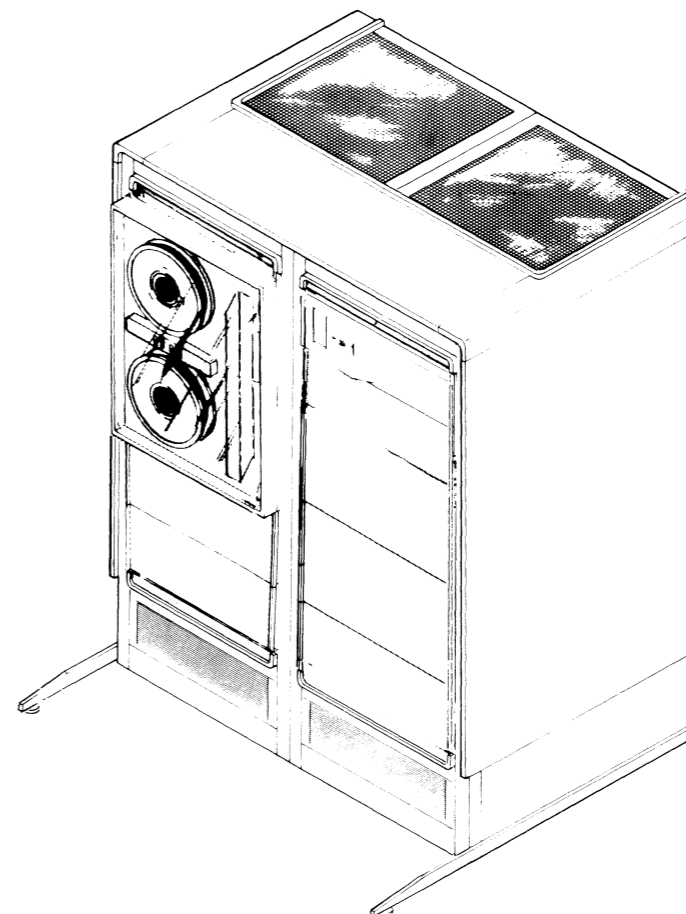
ES 01342

SERIES 200C SUBSYSTEM COMPONENT BREAKDOWN

BASE SYSTEM MODELS 90114, 90115, 90117, 90118, AND 90119
PACKAGE SYSTEM MODELS 90120, 90121, 90122, 90124, AND 90125
90206 THRU 90210

Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

NOTE:
 APPLY FCC EMC CLASS A COMPLIANCE LABEL 002015245 ON EXTERNAL SURFACE OF CABINET IN THE AREA OF THE A/C POWER SOURCE.



MAJOR COMPONENT			
COMPONENT	MOUNTING LOCATION	NOTES	REFERENCE
S/280 CPU - 512 KB 8770-RS	CABINET	USED ON 90114, 90117, 90120, 90121, 90124, 90206, 90207, 90209	010-000338
S/280 CPU - 1024 KB 8770-VS	CABINET	USED ON 90122, 90125, 90115, 90118, 90208, 90210	010-000338
S/280 CPU - 1536 KB 8770-XS	CABINET	USED ON 90119	010-000338
S/280 PARTIAL BATTERY BACK-UP	CPU CHASSIS	8773	010-000338
DUAL BAY CABINET 1144-JS	FREE STANDING	ALL MODELS BLUE	010-000204
FULL BAY CABINET 1144-JX	1144-J CABINET	1144-JX ADD-ON EXPANDS A 1144-JS TO A 1144-H CABINET	010-000204
DUAL BAY CABINET, 1344-JS	FREE STANDING	ALL MODELS (EARTH TONE)	010-000204
FULL BAY CABINET, 1344-JX	1344-JS CABINET	1344-JX ADD-ON EXPANDS A 1344-JS TO A 3-BAY CABINET	010-000204
DISPLAY TERMINALS	FREE STANDING	MAXIMUM OF 32, DEPENDING ON OPERATING SYSTEM, CPU, AND MEMORY	
PARALLEL INTERFACE PRINTERS	FREE STANDING	SEE DISPLAY TERMINAL OPTIONS	
SERIAL INTERFACE PRINTERS	FREE STANDING	SEE PARALLEL PRINTER OPTIONS SAME AS TERMINALS	
DISK/DISKETTE DRIVES	CABINET	SEE SERIAL PRINTER OPTIONS UP TO 5 SUBSYSTEMS (CODES 33, 24, 73, 27, 67) EACH WITH ADD-ON DEVICES.	
DISK/CARTRIDGE TAPE DRIVES	CABINET	SEE DISK/DISKETTE/CARTRIDGE TAPE OPTIONS CARTRIDGE TAPE DEVICE CODES 22, 62 DISK DEVICE CODES 33, 73 SEE DISK/DISKETTE/CARTRIDGE TAPE OPTIONS	
CARTRIDGE TAPE UNIT 6231*	CABINET	6400 BPI STREAMING	010-000332
MAGNETIC TAPE UNIT 6125*	CABINET	1600 BPI STREAMING	010-000314
MAGNETIC TAPE UNIT 6026*	CABINET	800/1600 BPI VACUUM COLUMN	010-000315

*SEE NOTE 1

OPTIONAL COMPONENTS			
COMPONENT	MOUNTING LOCATION	NOTES	REFERENCE
SINGLE LINE ASYNC CONTROLLER	CPU CHASSIS	4078-P	010-000115
INTEGRATED COMMUNICATIONS MULTIPLEXORS	CPU CHASSIS	4340, 4342, 4344, 4345, 4388, 4346, 4261, 4387, 4389, 4390	010-000257
BIT SYNCHRONOUS INTERFACE	CPU CHASSIS	4348	010-000286
UNIVERSAL LINE MULTIPLEXOR	CPU CHASSIS	4241, 4242, 4243	010-000194
TERMINAL CONNECTION BOX (TCB)	CABINET	4371-A, 4371-B, 4371-C, 4372-A, 4372-B, 4372-C	010-000335
DCH PARALLEL PRINTER CONTROL	CPU CHASSIS	USED WITH 4327, 4328, 4363, 4364	010-000199
P10 PARALLEL PRINTER CONTROL	CPU CHASSIS	USED WITH 4325, 4326	010-000199
BATTERY BACK-UP	CABINET	8746	010-000333
DATA CONTROL UNIT (DCU-200)	CPU CHASSIS	4254	010-000209
NETWORK BUS SYSTEM	CPU CHASSIS	4460	010-000302
16 SLOT EXPANSION CHASSIS	CABINET	8762	010-000321

DISK/DISKETTE/CARTRIDGE TAPE OPTIONS

STORAGE DEVICE	MODEL	DESCRIPTION	ADD-ON DEVICE(S)	DEVICE CODES	REFERENCE
SINGLE 1.2 MB	6097-A	DISKETTE DRIVE	6099-A, 6103-A	33/73	010-000346
DUAL 1.2 MB	6097-B	DUAL DISKETTE DRIVES	6099-A, 6103-A	33/73	010-000346
5 MB	6225	FIXED DISK	6096-EX	33/73	010-000303
5 MB / 1.2 MB	6225-D	FIXED DISK/DISKETTE DRIVE	NONE	33/73	010-000303
5 MB / 15 MB	6225-C	FIXED DISK/CARTRIDGE TAPE	NONE	33/73	010-000308
15 MB	6227	FIXED DISK	6096-EX	33/73	010-000303
15 MB / 1.2 MB	6227-D	FIXED DISK/DISKETTE DRIVE	NONE	33/73	010-000303
15 MB / 15 MB	6227-C	FIXED DISK/CARTRIDGE TAPE	NONE	33/73	010-000303
12.5 MB	6099	FIXED DISK	6096-CX	33/73	010-000317
12.5 MB / 1.2 MB	6098	FIXED DISK/DISKETTE DRIVE	6096-CW	33/73	010-000221
25 MB	6103	FIXED DISK	6096-CX	33/73	010-000317
25 MB / 1.2 MB	6100	FIXED DISK/DISKETTE DRIVE	6096-CW	33/73	010-000221
50 MB	6234	FIXED DISK	6096-CV, 6096-DV	33/73	010-000300
73 MB	6160	FIXED DISK	6160-A, 6161-A	27/67	010-000289
147 MB	6161	FIXED DISK	6160-A, 6161-A	27/67	010-000289
277 MB	6122	DISK PACK (REQUIRES 8772 BMC OPTION)	6122-A, 6061-A, 6060-A, 6061-A	27/67	010-000342
350 MB	6236	FIXED DISK	6236-A	24	010-000355
3					
368 KB	4515	5.25" RACK MOUNT	DISKETTE	20/60	010-000377

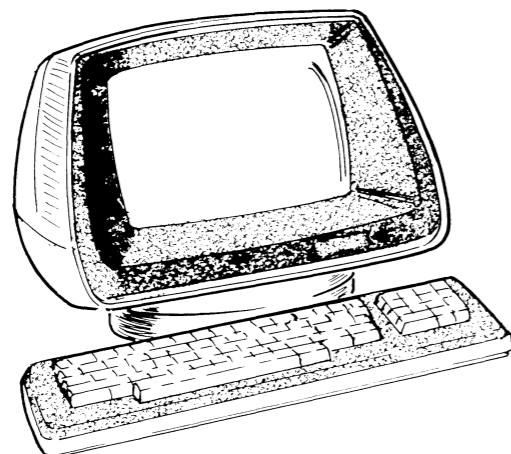
NOTES:

1. REFER TO 010-000331 FOR DISK CABLING OR 010-000319 FOR TAPE CABLING INFORMATION.

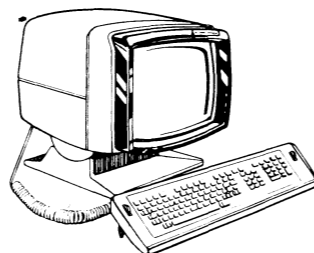
**SERIES 200C SUBSYSTEM COMPONENT BREAKDOWN
(CONT)**

**BASE SYSTEM MODELS 90114, 90115, 90117, 90118, AND 90119
PACKAGE SYSTEM MODELS 90120, 90121, 90122, 90124, AND 90125
90206 THRU 90210**

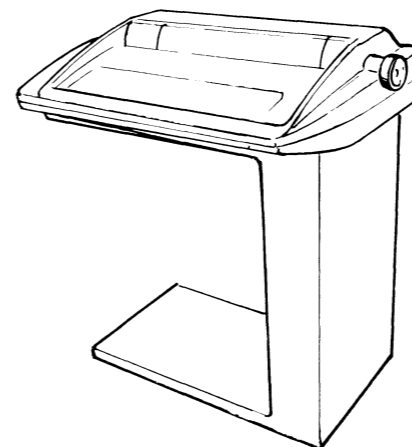
CONFIGURATION FOR
OTHER DASHER TERMINALS



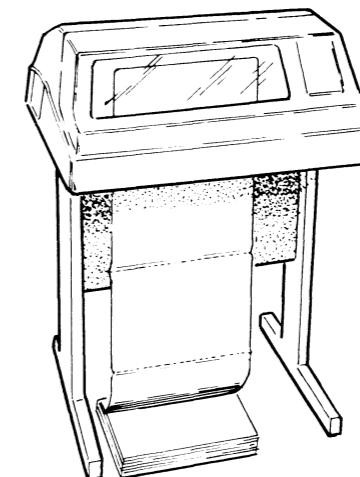
D210, D211, D410, D460



SERIAL INTERFACE
PRINTER (DOT-
MATRIX TYPE)



PARALLEL INTERFACE
PRINTER (BAND TYPE)



DG-09484

CABLES

CABLE	CONNECTING	MAX LENGTH FT/M	NOTES
005-013258	TERMINAL & BULKHEAD/TCB	25 / 7.6	EIA FOR D100, D200 D400, D450, G300, 4518, 4433, D210, D211, D460, D410
005-013260	TERMINAL & BULKHEAD/TCB	1000 / 305	20ma FOR D100, D200 D400, D450, G300, 4433, D210, D211, D410, D460
005-13258	PRINTER & BULKHEAD/TCB	25 / 7.6	EIA FOR 6041, 6193, ALSO 005-13280 ADAPTER
005-015275	PRINTER & BULKHEAD/TCB	25 / 7.6	EIA FOR 4320, 4322
005-015268	PRINTER & BULKHEAD/TCB	1000 / 305	20ma FOR 4320, 4322
005-13258	PRINTER & BULKHEAD/TCB	20 / 6.0	EIA FOR 4422
005-013265	PRINTER & BULKHEAD	30 / 9.1	ALSO 005-013259 ADAPTER FOR 4325, 4326, 4327, 4328, 4363, 4364 ALSO 005-013267 ADAPTER
005-013261	BACKPANEL & BULKHEAD	2.5 / .76	INT CABLE FOR 4327, 4328, 4363, 4364
005-013262	BACKPANEL & BULKHEAD	2.5 / .76	INT CABLE FOR 4325, 4326
005-019397	BACKPANEL & BULKHEAD	2.5 / .76	FOR 4340 WITHOUT 4371
005-019396	BULKHEAD & TCB	25 / 7.6	FOR 4340 WITH 4371
005-019052	BACKPANEL & BULKHEAD	2.5 / .76	INT CABLE FOR 4371
005-019398	BACKPANEL & BULKHEAD	2.5 / .76	FOR 4342 WITHOUT 4372
005-019396	BULKHEAD & TCB	25 / 7.6	FOR 4342 WITH 4372
005-019059	BACKPANEL & BULKHEAD	2.5 / .76	INT CABLE FOR 4372
005-021104	BACKPANEL & BULKHEAD	2.5 / .76	INT CABLE FOR 4345
005-021104	BACKPANEL & BULKHEAD	2.5 / .76	INT CABLE FOR 4346
005-021055	BACKPANEL & BULKHEAD	2.5 / .76	INT CABLE FOR 4348
005-019565	BACKPANEL & BULKHEAD	2.5 / .76	INT CABLE FOR 4241, 4243
005-019564	BACKPANEL & BULKHEAD	2.5 / .76	INT CABLE FOR 4242
005-021056	BACKPANEL & BULKHEAD	2.5 / .76	INT CABLE FOR 4078-P
005-19687	MODEM & BULKHEAD	20 / 6.1	1084-M
005-014999	MODEM & BULKHEAD	20 / 6.1	1085-M
005-13384	TERMINAL & BULKHEAD/TCB	25 / 7.6	RS422 FOR D210, D211 D410, D460
005-19481	WALL BOX & BULKHEAD	25 / 7.6	FOR4460 ALSO 005-19479 INT CABLE

PARALLEL INTERFACE PRINTER OPTIONS

TYPE	MODEL	COMMENTS	REFERENCE
LP2 180 CPS	6191	P10	010-001023
LP2 180 CPS	6192	DCH	010-001023
230 LPM BAND	4326	P10	010-000233
230 LPM BAND	4328	DCH	010-000233
300 LPM BAND	4325	P10	010-000233
300 LPM BAND	4327	DCH	010-000233
436 LPM BAND	4363	DCH	010-001035
600 LPM BAND	4364	DCH	010-001035
GRAPHICS PRINTER	6156	CONNECTS TO G300 TERMINAL	010-001036

SERIAL PRINTER OPTIONS

TYPE	MODEL	COMMENTS	REFERENCE
TP1	6041	REQUIRES 1129 TOP OPTION	010-000094
TP2	6193		010-001016
55 CPS LETTER QUALITY	4320		010-000248
55 CPS LETTER QUALITY/ SHEET FEED	4322		010-000248
35 CPS LETTER QUALITY	4518	OPTIONAL 4526, 4523, 4522	010-000655
150 CPS DOT MATRIX	4433		010-001045
150 CPS DOT MATRIX	4422		010-000301

DISPLAY TERMINAL OPTIONS

TYPE	MODEL	COMMENTS	REFERENCE
D100	6106	STANDARD TERMINAL	010-000241
D100 / PRINT OPTION	6107	STANDARD TERMINAL/PRINT OPTION	010-000241
D200	6108	STANDARD TERMINAL	010-000241
D200 / PRINT OPTION	6109	STANDARD TERMINAL/PRINT OPTION	010-000241
D400	6130	"SMART" TERMINAL	010-001015
D450	6134	"SMART" TERMINAL/CHARACTER GRAPHICS	010-001015
D400/D450 KEYBOARD	6131	KEYBOARD FOR D400/D450	
G300	6150	GRAPHICS DISPLAY TERMINAL	010-001013
G300 KEYBOARD	6151	KEYBOARD FOR G300	010-001013
D210	6242	U.S. ONLY	010-000660
D211	6243	MULTI-LINGUAL	010-000660
D410	6255	STANDARD	010-000674
D460	6256	STANDARD	010-000674
D210/D211 KEYBOARD	6245	KEYBOARD FOR D210/D211	
D410/D460 KEYBOARD	6246	KEYBOARD FOR D410/D460	

SERIES 200C CHASSIS SLOT ASSIGNMENTS

SLOT CONFIGURATIONS SERIES 200C CHASSIS

SLOT	DESCRIPTION	REFERENCE	+5 VOLT CURRENT
20	DCH/PIO PRINTER	NOTE 1	3.0/1.5
19	DCH PRINTER / COMMUNICATIONS MUX	NOTE 2	3.0 3.0/4.6
18	COMMUNICATIONS MUX 6098/6100, 6099/6103, 6234, 4514	NOTE 3	3.0/4.6 4.0
17	COMMUNICATIONS MUX 6098/6100, 6099/6103, 6236, 4514	NOTE 3	3.0/4.6 4.0
16	6097,6098/6100, 6099/6103, 6225/6227 6160/6161,6234,8766 OR COMM MUX	NOTE 4	4.0 8.2/4.6
15	6097,6098/6100,6099/6103,6225/6227 6160/6161,6234 OR 8766	NOTE 5	4.0 8.2/2.5
14	MAG TAPE CONTROLLER	NOTE 6	7.0
13	6122 BD # 2,8766,6231 6225-C, 6227-C	NOTE 7	4.0
12	6122 BD # 1, 6236		5.3
11	4078-P SEC TTY INTFC.		1.2
10	ERCC MEMORY	TABLE A	3.25
9	ERCC MEMORY	TABLE A	3.25
8	ERCC MEMORY	TABLE A	3.25
7	MCU/IOU (OPTIONAL BMC 8772)		11.2 (1)
6	S/280 CPU/FFP/CHIS		17.5
5	OPEN RSV'D FOR FLTG POINT		
4	POWER SUPPLY		
3	POWER SUPPLY		
2	POWER SUPPLY		
1	POWER SUPPLY		
MAX +5 VOLT CURRENT IS 120 AMPS			88.65
MAX DC POWER IS 720 WATTS			

I/O
ONLY
SLOTS

MEMORY
ONLY
SLOTS

SLOT CONFIGURATIONS NOTES

- NOTE 1. PIO PRINTER CONTROLLER
DCH PRINTER CONTROLLER
2. DCH PRINTER CONTROLLER
4340/4389/4390 AMI-8
4342/4387/4388 AT1-16
4241 ULM-5
4242 ULM-5
4243 ULM-5
4345 CSI-2
4346 CSI-1
4348 BSI-1
3. 4340/4389/4390 AMI-8
4342/4387/4388 AT1-16
4241 ULM-5
4242 ULM-5
4243 ULM-5
4345 CSI-2
4346 CSI-1
4348 BSI-1
6098/6100 12.5/25MB DISK CONTROLLER
6099/6103 12.5/25MB DISK CONTROLLER
6234 50MB DISK CONTROLLER
4514 DISKETTE CONTROLLER
4. 4340/4389/4390 AMI-8
4342/4387/4388 AT1-16
4241 ULM-5
4242 ULM-5
4243 ULM-5
4345 CSI-2
4346 CSI-1
4348 BSI-1
8766 -5 VOLT BOOSTER
SECONDARY DEVICE CODE - DISK CONTROLLERS
6097 DISKETTE CONTROLLER
6225/6227 DISK/DISKETTE CONTROLLER
6098/6100 12.5/25MB DISK/DISKETTE CONTROLLER
6099/6103 12.5/25MB DISK CONTROLLER
6160/6161 73/147MB DISK CONTROLLER
6234 50MB DISK CONTROLLER
5. 8766 -5 VOLT BOOSTER
PRIMARY DEVICE CODE -DISK CONTROLLERS
6097 DISKETTE CONTROLLER
6225/6227 DISK/DISKETTE CONTROLLER
6098/6100 12.5/25MB DISK/DISKETTE CONTROLLER
6099/6103 12.5/25MB DISK CONTROLLER
6160/6161 73/147MB DISK CONTROLLER
6234 50MB DISK CONTROLLER
6. 6026 DUAL MODE CONTROLLER
6125 STREAMING TAPE CONTROLLER
7. 6122 BD #2
8766 -5V BOOSTER
6231 TAPE CONTROLLER
6225-C TAPE CONTROLLER
6227-C TAPE CONTROLLER
8. 6122, BD:#1 350 MBDISK CONTROLLER
6236

TABLE A

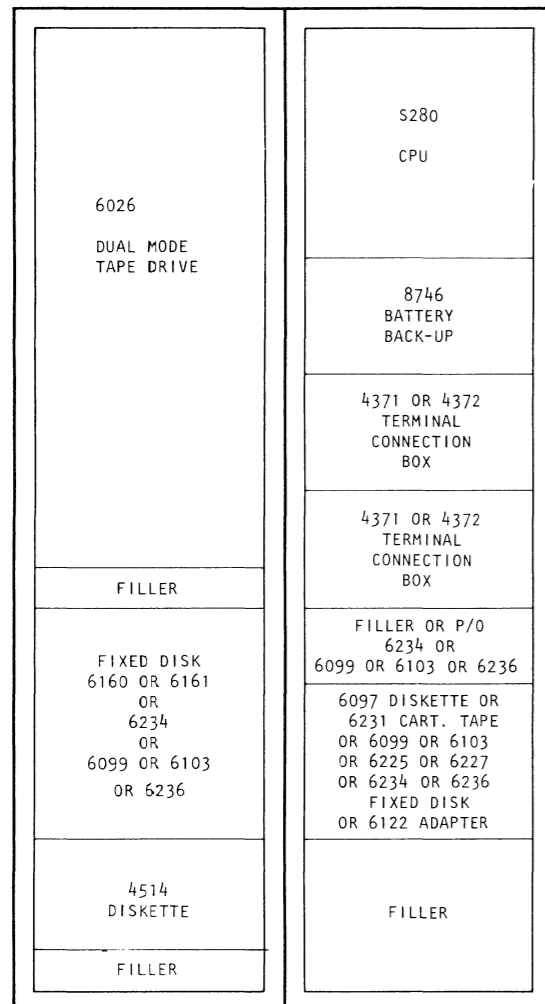
SYSTEM MEMORY SIZE	MODULE SIZE AND SLOT		
	SLOT 8	SLOT 9	SLOT 10
512 KB	512 KB		
1024 KB	1024 KB		
1024 KB	512 KB	512 KB	
1536 KB	1024 KB	512 KB	
1536 KB	512 KB	512 KB	512 KB
2048 KB	2048 KB		
2048 KB	1024 KB	1024 KB	
2048 KB	1024 KB	512 KB	512 KB

LOCATION OF PRIMARY AND SECONDARY I/O CONTROLLERS DEPENDS ON SYSTEM CONFIGURATION AND WORST CASE DATA CHANNEL LATENCY. SEE 010-000256 FOR PRIORITY CONFIGURATION RULES.

8766 - 5 VOLT BOOSTER BOARD CAN GO IN SLOTS 13, 15 OR 16 DEPENDING ON SERIES 200C SYSTEM CONFIGURATION

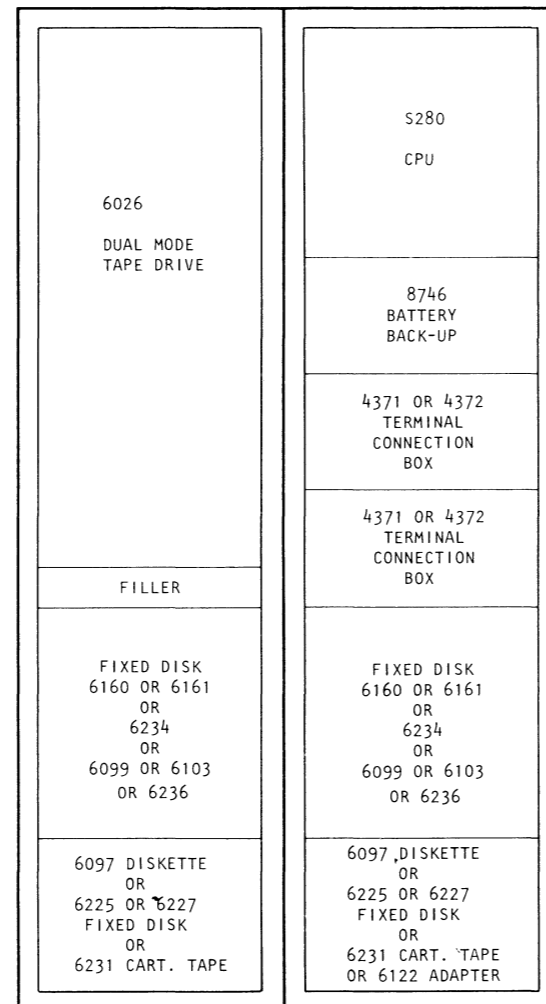
**SERIES 200C
TYPICAL CABINET CONFIGURATIONS**

TWO BAY WITH DUAL MODE TAPE DRIVE
MAXIMUM TEMPERATURE 90 F



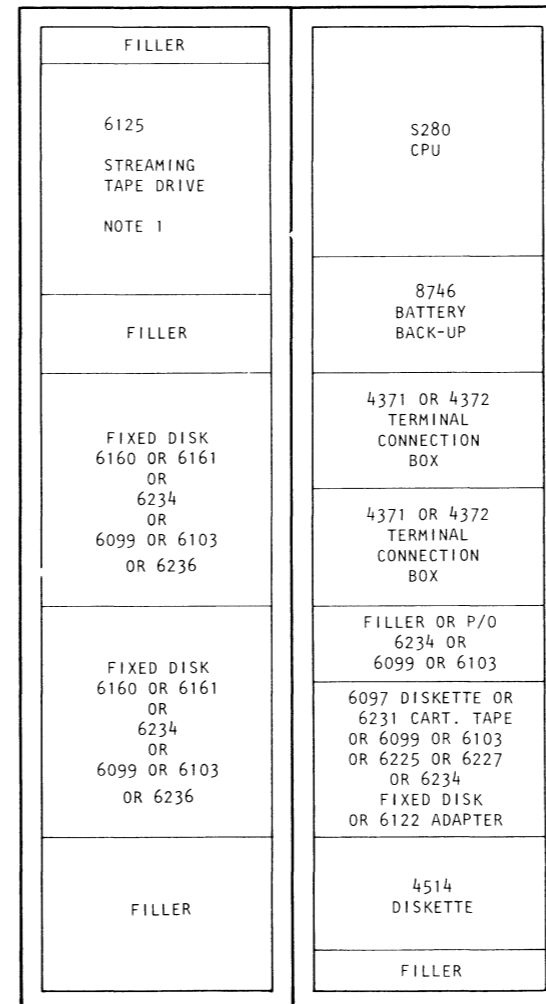
CONFIGURATION
FRONT VIEW

TWO BAY WITH DUAL MODE TAPE DRIVE
MAXIMUM TEMPERATURE 80 F



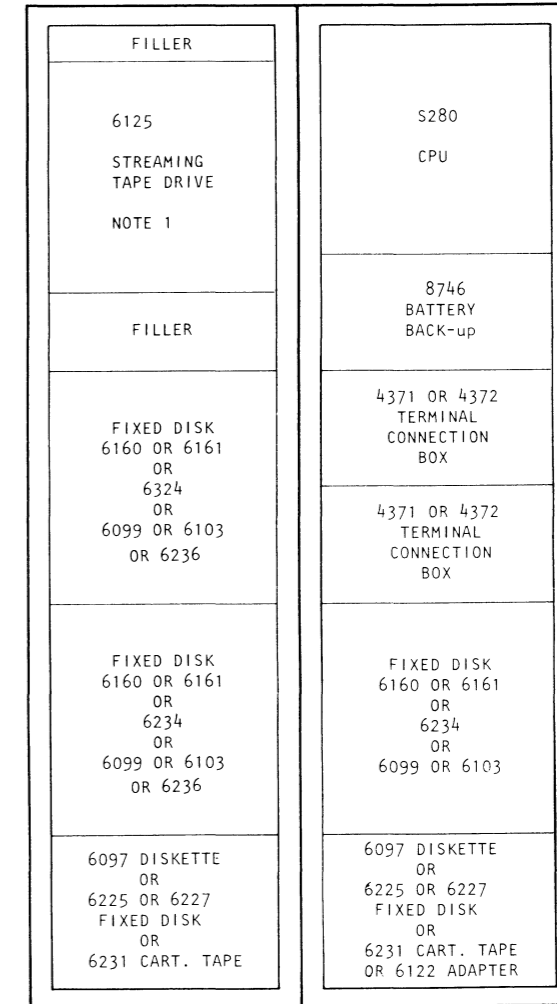
CONFIGURATION
FRONT VIEW

TWO BAY WITH STREAMING TAPE DRIVE
MAXIMUM TEMPERATURE 90 F



CONFIGURATION
FRONT VIEW

TWO BAY WITH STREAMING TAPE DRIVE
MAXIMUM TEMPERATURE 80 F

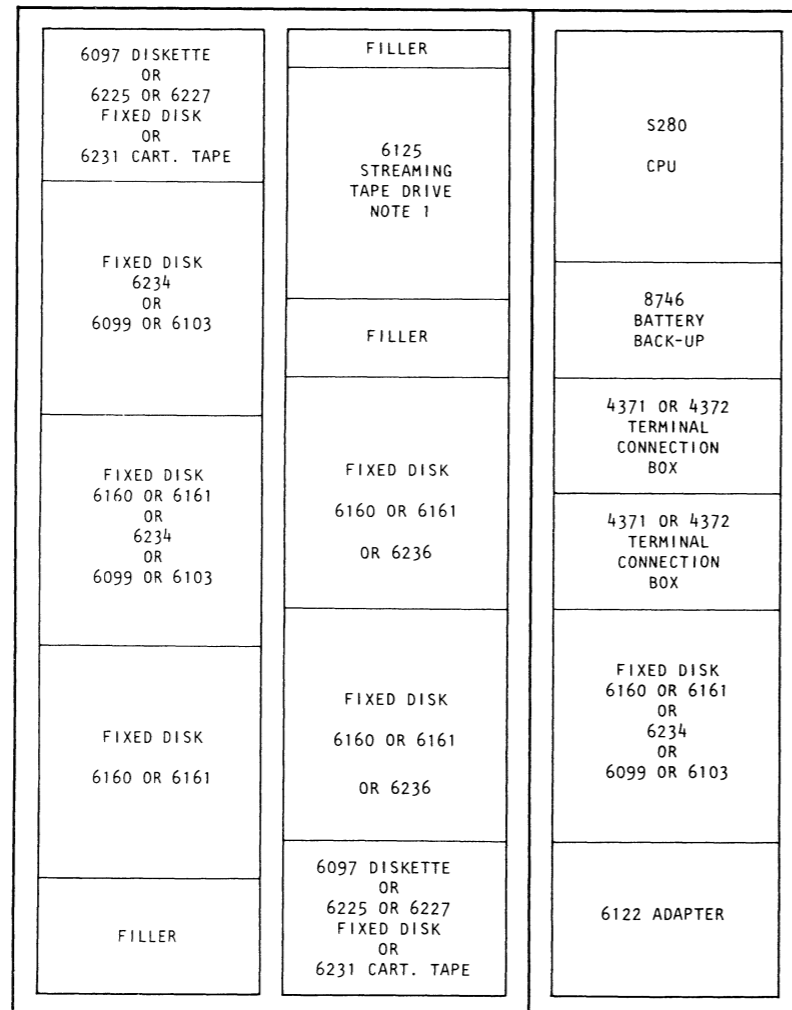


CONFIGURATION
FRONT VIEW

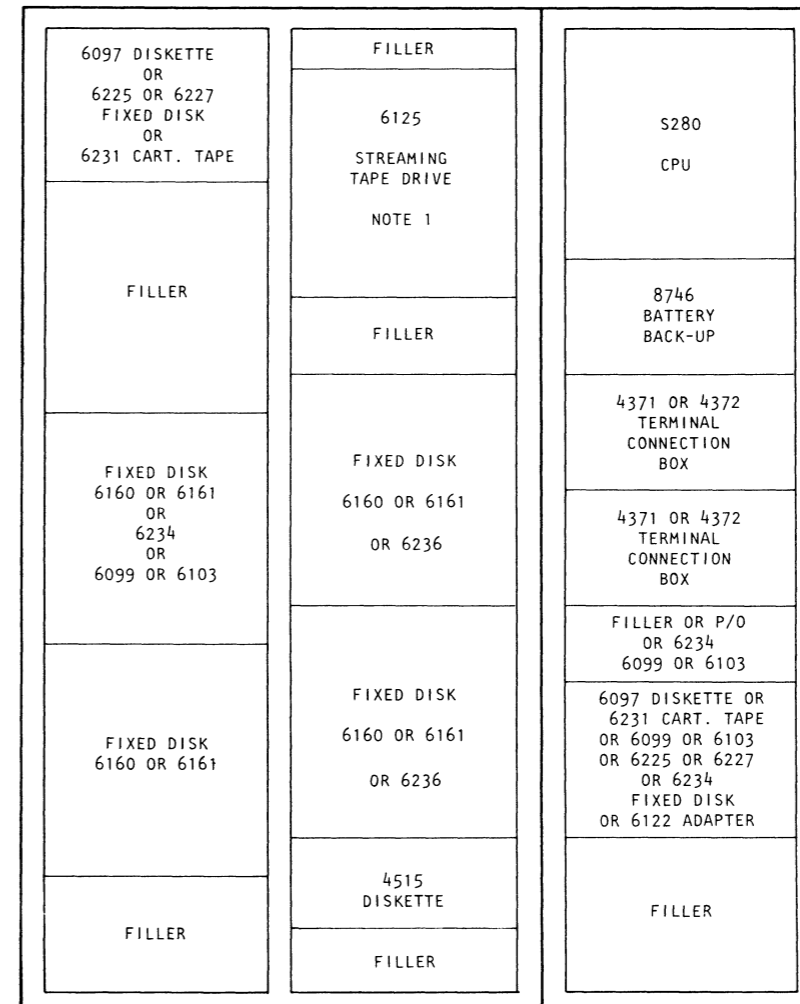
NOTE:
1: MAG TAPE DRIVE 6125 REQUIRES AT LEAST
A 1" CLEARANCE AT THE TOP OF THE DRIVE
FOR INSTALLATION AND REMOVAL.

SERIES 200C TYPICAL CABINET CONFIGURATIONS

3 BAY WITH STREAMING TAPE DRIVE
MAXIMUM TEMPERATURE IS 80 F



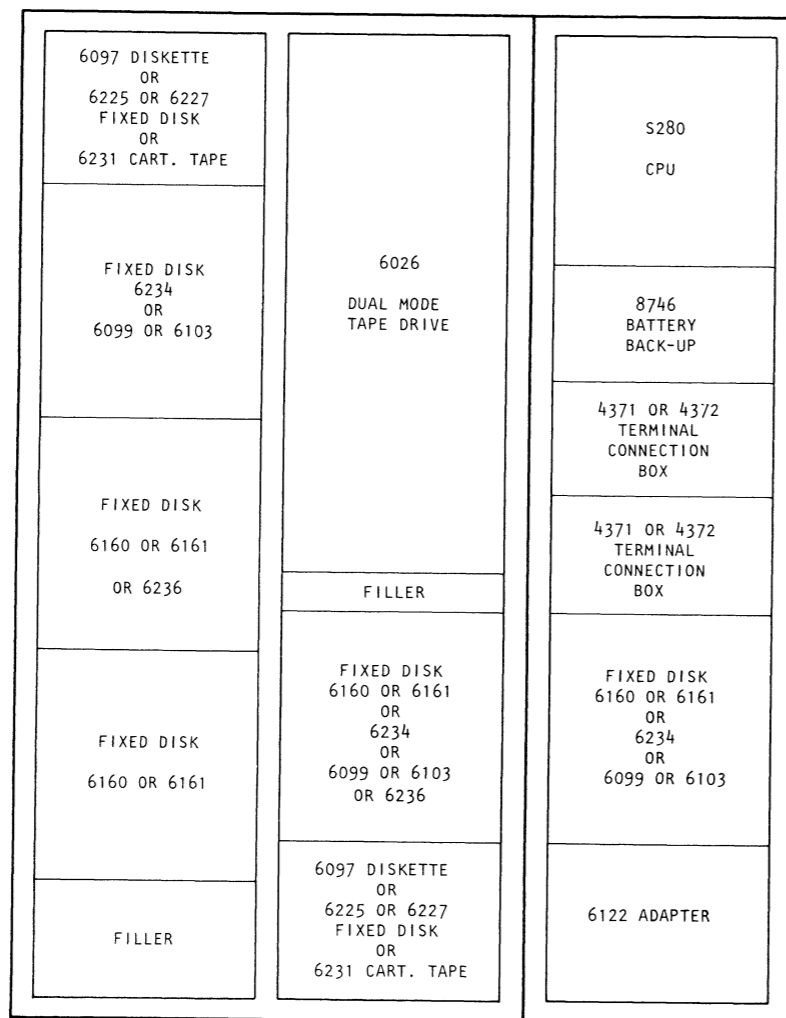
3 BAY WITH STREAMING TAPE DRIVE
MAXIMUM TEMPERATURE IS 90 F



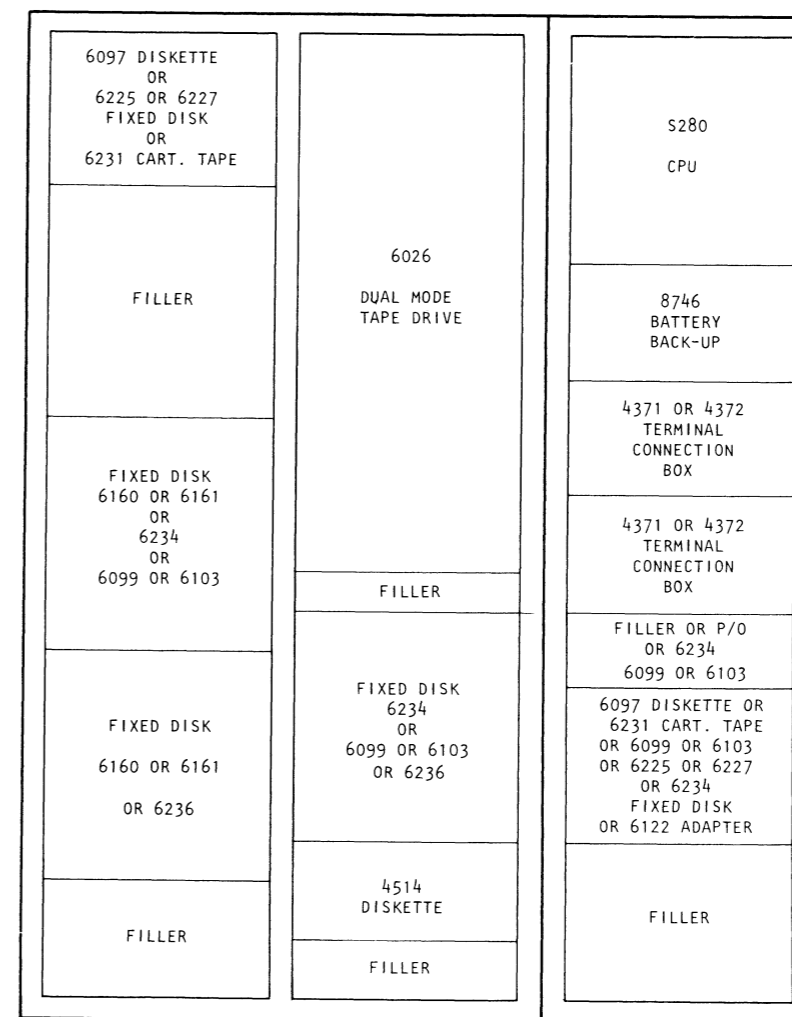
NOTE:
1: MAG TAPE DRIVE 6125 REQUIRES AT LEAST
A 1" CLEARANCE AT THE TOP OF THE DRIVE
FOR INSTALLATION AND REMOVAL.

SERIES 200C
TYPICAL CABINET CONFIGURATIONS

3 BAY WITH DUAL MODE TAPE DRIVE
MAXIMUM TEMPERATURE IS 80 F



3 BAY WITH DUAL MODE TAPE DRIVE
MAXIMUM TEMPERATURE IS 90 F



CS/60 SYSTEM UPGRADES TO CS SERIES 200C

IMPORTANT

PRIOR TO ORDER PLACEMENT, IT IS RECOMMENDED THAT A SITE SURVEY BE PERFORMED BY DATA GENERAL SERVICE PERSONNEL. THIS SURVEY IS TO DETERMINE WHAT CABLES AND OTHER COMPONENTS SHOULD BE ORDERED IN ADDITION TO THE BASIC UPGRADE KIT. FOR INSTALLATIONS WHERE REMOTE DEVICES ON THE SYSTEM HAVE THEIR CABLING ENCLOSED WITHIN THE CONSTRUCTION (E.G. CONDUIT OR OTHER RELATIVELY INACCESSIBLE ROUTING), CONSIDERATION SHOULD BE GIVEN FOR MODIFICATION OF THE CABLE INTERFACE, EITHER BY CHANGING THE CABLE CONNECTOR OR BY ADDITION OF AN ADAPTER CABLE.

Warning: This computer was designed for use with shielded cables in order to meet FCC specifications. Although use with cables which are not shielded is permitted, such use may cause interference with radio or television transmissions, and as before, the user is responsible to correct such interference.

UPGRADE COMPONENTS

MODEL 9472*

COMPONENT	MODEL/PART #	DESCRIPTION
S/280 CPU, 512 KB PARTIAL BATT. BACK-UP	8770-RS 8773	DATA GENERAL CS SERIES 200 FOR SERIES 200 SYSTEMS
CABINET LABEL	002-021762	
DOCUMENTATION PACAKGE	005-020625	
LISCENCE TO USE RDOS	3359-10N	

SEPARATE COMPONENTS

COMPONENT	MODEL/PART #	NOTES
LINE PRINTER CONTROLLER ULM-5 PCB'S	005-003564	OPTION - FOR PIO PRINTER
	4241	OPTION - FOR ASYNC
	4242	OPTION - FOR SYNC
	4243	OPTION - FOR SYNC/ASYNC
CSI-2/1 PCB	4345/4346	OPTION - FOR 2-LINE/1-LINE CHARACTER SYNC INTERFACE
BSI-1 PCB	4348	OPTION - FOR BIT-SYNC INTERFACE
AMI-8	4340, 4389	ASYNC MODEM INTERFACE WITH MODEM CONTROL
ATI-16	4342, 4387	ASYNC TERMINAL INTERFACE WITHOUT MODEM CONTROL
ASYNC LINE CONTROLLER PCB	4078-P	OPTION - FOR CONCURRENCY
AMI-8 FOR USE WITH TERM. CONNECTION BOX, 8 LINES	4390	ASYNC MODEM INTERFACE WITH MODEM CONTROL
ATI-16 FOR USE WITH TERM. CONNECTION BOX, 16 LINES	4388	ASYNC TERMINAL INTERFACE WITHOUT MODEM CONTROL

* SYSTEM POWER SUFFIXES (Y)

Y =	DESCRIPTION
BLANK	120 VAC
2	220 VAC
4	240 VAC

CABLE CHANGES

SERIAL PRINTERS	DELETE OLD CABLE(S)	ADD NEW CABLE (S)
6041, 6193	005-009692	005-018250 (20 ma)
6041, 6193	005-008181	005-018250 (EIA)
4320, 4322	005-015267	005-015268 (20 ma)
4320, 4322	005-015277	005-015275 (EIA)
4422	005-018313	005-013258 + 005-013259 (EIA)
PIO PRINTERS		
9125, 9123	005-009061	005-013262 + 005-013265 + 005-012367
9260, 9261	005-009061	005-013262 + 005-013265 + 005-012367
9129, 9613	005-009060	005-013262 + 005-013265 + 013281
DISPLAY TERMINALS		
6053, 6093	005-007636	005-013260 + 005-013280 (20 ma)
6053, 6093	005-008181	005-013258 + 005-013280 (EIA)
6108	005-014695	005-013260 (20 ma)
6108	005-014690	005-013258 (EIA)

DISK STORAGE

FOR THE FOLLOWING DISK STORAGE UNITS DELETE THE INTERNAL CABLE, 005-001802 AND THE EXTERNAL CABLE, 005-002208 AND ADD THE NEW CABLES AS SHOWN (REFER TO 010-000331).

6098, 6100	005-018631 + 005-019268 + 005-019437
6099, 6103	005-019499 + 005-019268
6097-A	005-019500 + 005-019437
6045, 6070	005-018382 + 005-018765
6060, 6061, 6067	005-018382 + 005-018765
6030/6031	005-018382 + 005-018765

NOTE: NEW CABLES INDICATED FOR THE MODELS 6060, 6061 AND 6067 ARE FOR ATTACHING THE CPU TO THE DISK ADAPTER. USE THE EXISTING CABLES FOR ATTACHING THE ADAPTER TO THE DISK DRIVES.

MAG TAPE

DELETE THE SAME INTERNAL AND EXTERNAL CABLES AS INDICATED FOR THE DISK STORAGE UNITS. ADD THE NEW CABLES INDICATED. (REFER TO 010-000319)

6125, 6026	005-018382 + 005-018765
------------	-------------------------

- FOR THE SERIES 200, AN EXTERNAL CABLE IS REQUIRED FOR SYNCHRONOUS COMMUNICATIONS. TWO CABLES WHICH CAN BE USED ARE AS FOLLOWS: 1084M, A 25 FOOT MODEM CABLE FOR CONNECTING CS/200 TO BELL 201,203,208,209 SYNCHRONOUS DATA SETS OR 103, 202, 133 ASYNCHRONOUS DATA SET OR EQUIVALENT; 1085M, A MODEM CABLE USED WITH BELL 303 SERIES DATA SETS.

UPGRADE PROCEDURE

MODEL 9472

FOR THESE SYSTEMS, THE UPGRADE IS TO A MODEL 90158 CS SERIES 200 WITH 512 KB OF MEMORY. IN THE FOLLOWING PROCEDURE, REFERENCE IS MADE TO THE CS SERIES 200 INSTALLATION DATA SHEETS 010-00310 WHICH ARE INCLUDED IN THE NEW DOCUMENTATION PACKAGE 005-020625.

CAUTION

BACK-UP ALL DISK FILES BEFORE BEGINNING THE UPGRADE PROCEDURES.

NOTES FOR THE DISASSEMBLY OF CS/60 SYSTEM:

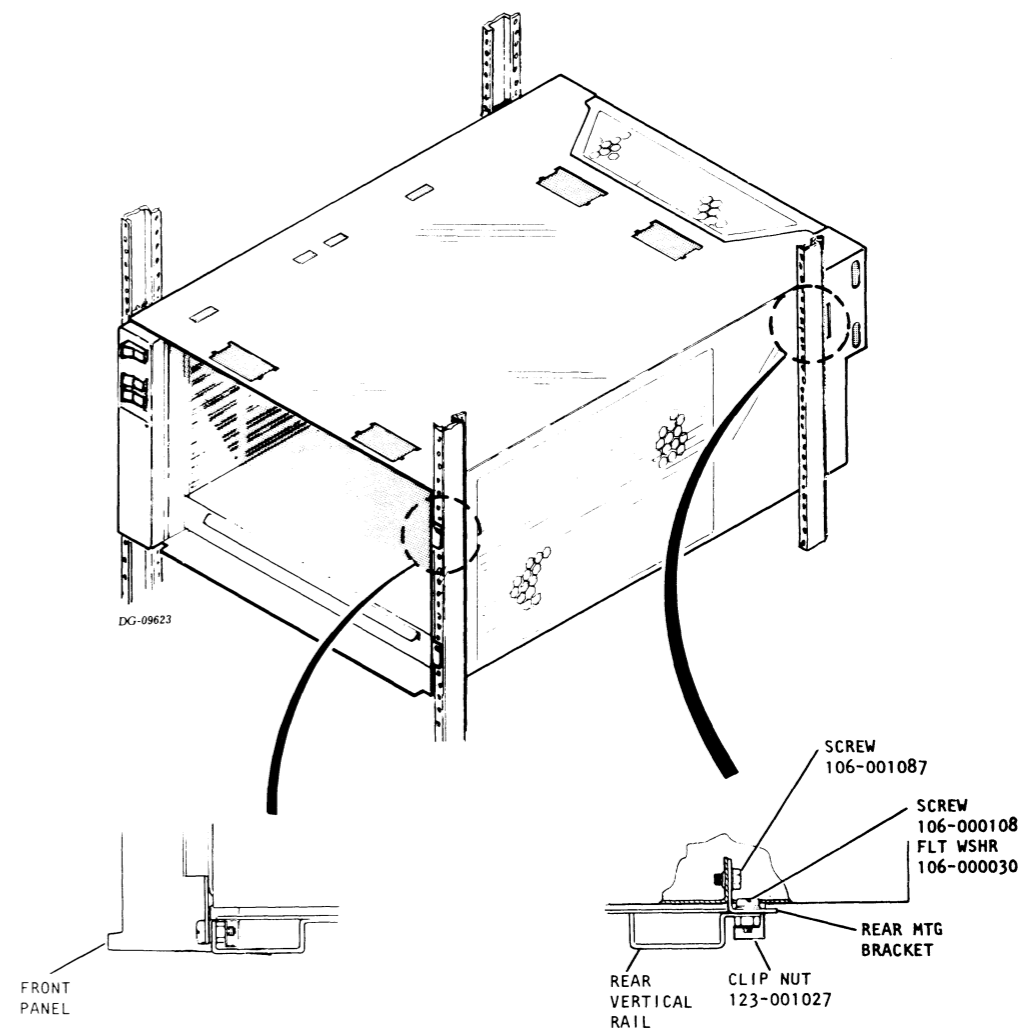
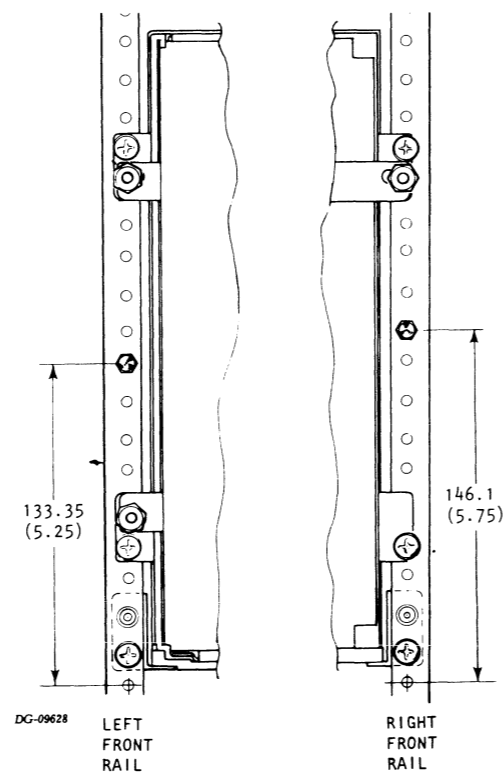
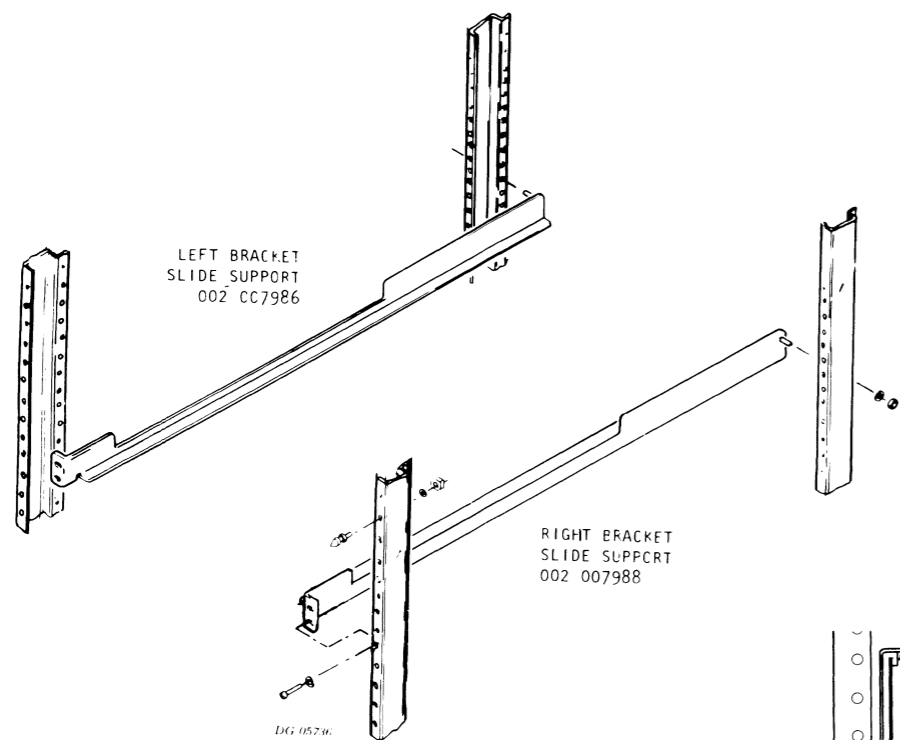
- NOTE 1. DISCONNECT ALL CABLES TO THE CONVENIENCE PANEL PCB. REMOVE THE CONVENIENCE PANEL PCB AND ITS MOUNTING HARDWARE. THESE CABLES, THE MOUNTING HARDWARE AND THE CONVENIENCE PANEL WILL NOT BE USED IN THE NEW CONFIGURATION.
2. REMOVE THE CPU CHASSIS (MODEL: 8611-HS, 8611-KAS, 8611-NAS, 8611-PAS, OR 8611-RAS) AND MOUNTING HARDWARE. DELETE THE COMBO MUX PCB AND CABLE, THE SYNC LINE MUX PCB (005-009349) AND CABLES 005-005629 AND 005-009028. THESE BOARDS AND CABLES WILL NOT BE USED IN THE NEW SYSTEM.

NOTES FOR THE ASSEMBLY OF THE CS SERIES 200C FCC EMC COMPLIANT CPU:

- NOTE 1. INSTALL THE CPU CHASSIS (MODEL 8770-RS, S/280, 512KB MEMORY) AND ITS MOUNTING HARDWARE. INSTALL THE PIO PRINTER PCB (IF PRESENT), AND EITHER THE AMI, ATI OR ULM PCB. NOTE THAT THE PCBs CARRIED OVER FROM THE CS/60 SHOULD BE RECONFIGURED PER THE SLOT ASSIGNMENTS FOR THE CS SERIES 200C (SEE CS SERIES 200C INSTALLATION DATA SHEET 010-000339 TO DETERMINE THE PROPER SLOT ASSIGNMENTS AND TAILORING FOR EACH PCB).
2. CONNECT THE INTERNAL CABLE (PROVIDED IN AMI, ATI OR ULM KIT) TO THE CPU CHASSIS (SEE SHEETS 1 THROUGH 3 OF THE CS SERIES 200 INSTALLATION DATA SHEETS FOR REFERENCE)
3. RECONFIGURE CABLES THAT ATTACH SERIAL PRINTERS AND TERMINALS TO THE CPU CHASSIS (SEE SHEET 2 OF THE CS SERIES 200C INSTALLATION DATA SHEETS).
4. IF A PIO PRINTER IS PRESENT IN THE NEW CONFIGURATION, INSTALL THE PROPER NEW CABLES, PER SHEET 1 OF THIS DOCUMENT, BETWEEN THE PRINTER AND THE CPU CHASSIS.
5. FOR THE DISK STORAGE AND THE MAG TAPE UNITS, REMOVE THE OLD EXTERNAL CABLE, 005-008802. ADD THE NEW CABLES, PER SHEET 1 OF THIS DOCUMENT. CONNECTING THE PERIPHERAL TO THE CPU CHASSIS.
6. IF SYNCHRONOUS COMMUNICATIONS ARE TO BE USED, ADD THE APPROPRIATE SYNC BOARD FOR YOUR CONFIGURATION (SEE SHEETS 1 THROUGH 3 OF CS SERIES 200 INSTALLATION DATA SHEETS).
7. INSTALL LABEL 002-021792 OVER THE EXISTING LABEL AT THE TOP OF THE CABINET.
8. VERIFY CORRECT SYSTEM OPERATION USING SYSTEM DIAGNOSTICS.
9. LOAD THE OPERATING SOFTWARE AS DESCRIBED IN THE DOCUMENTATION ACCOMPANYING THE SOFTWARE PACKAGE. RELOAD THE BACKED-UP DISK FILES.

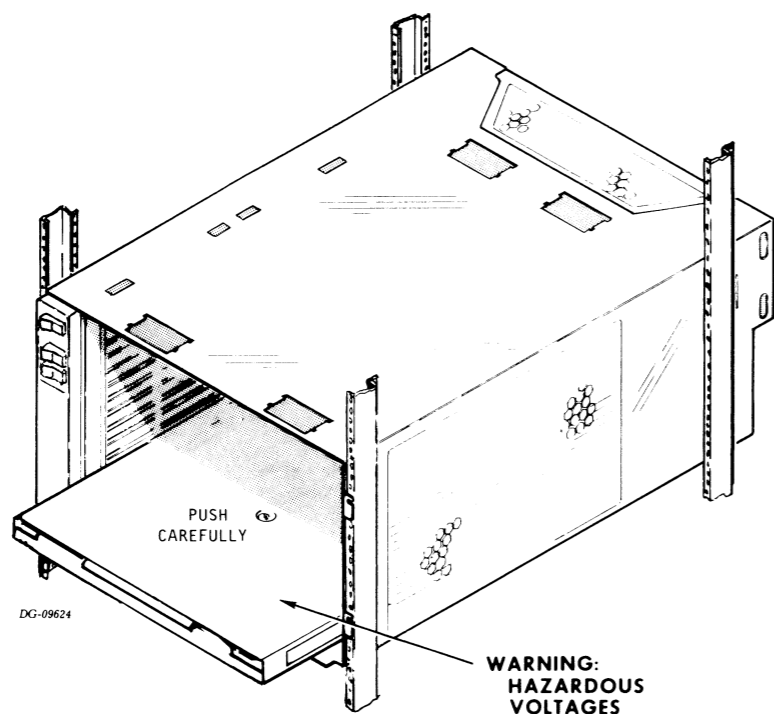
CABINET MOUNTING

HARDWARE MOUNTING KIT
005-019199



CABINET MOUNTING (CONT)

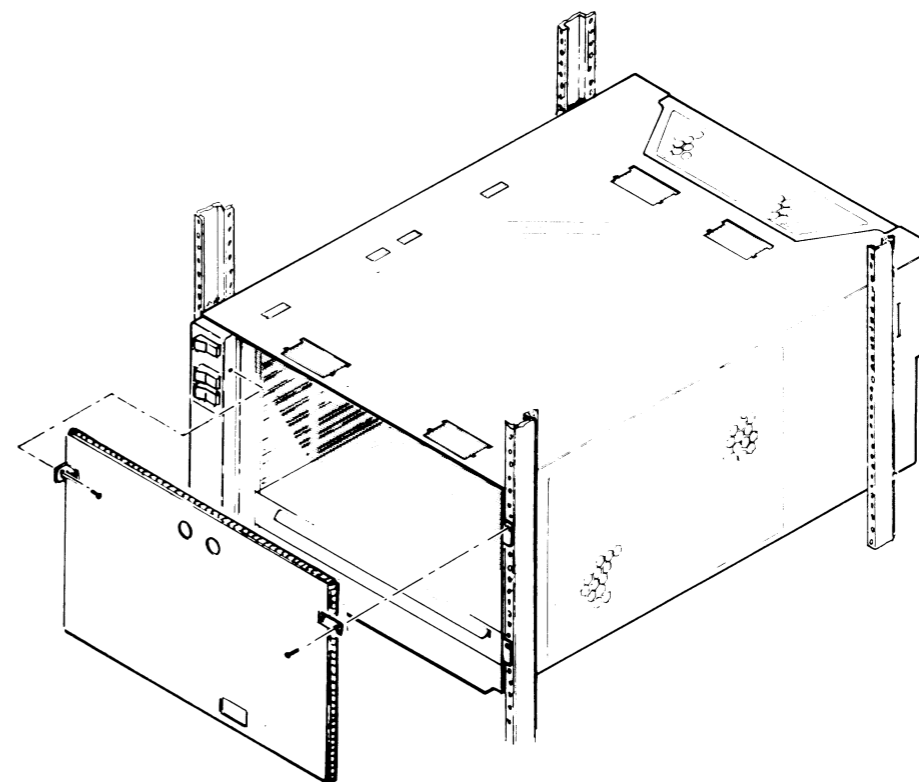
INSERTING POWER SUPPLY



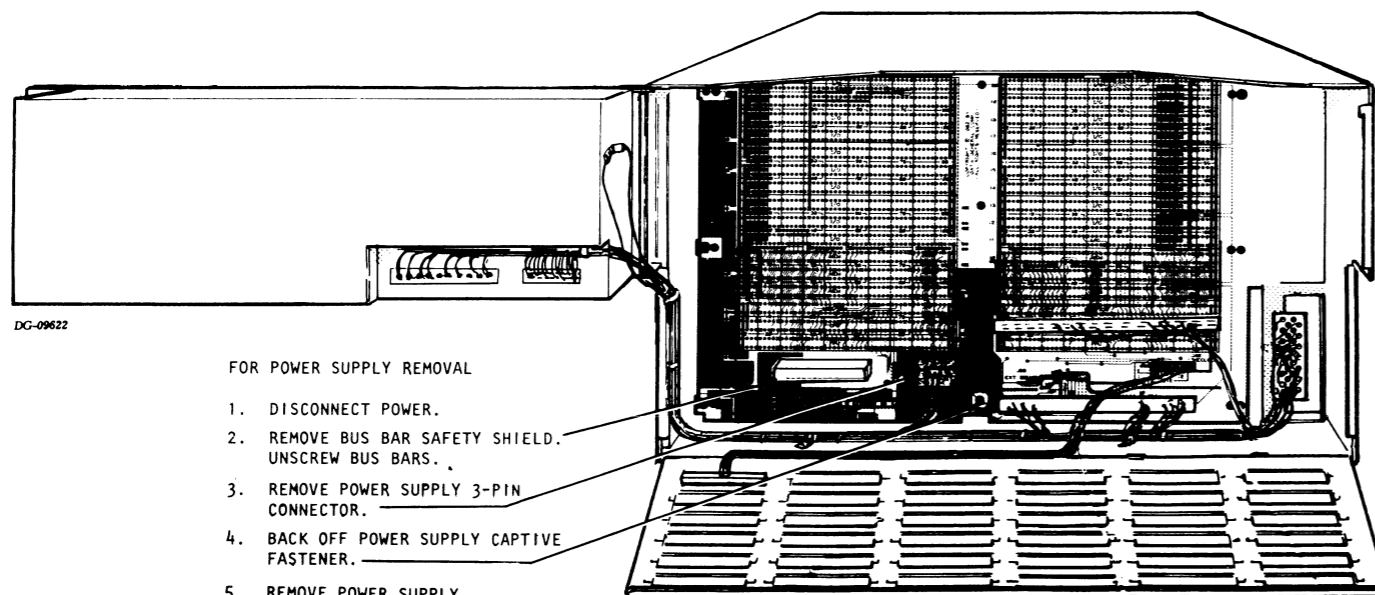
DG-09624

OBSERVE REAR VIEW OF CHASSIS BELOW.
TO INSTALL POWER SUPPLY, PERFORM
IN REVERSE THE REMOVAL PROCEDURE SHOWN.

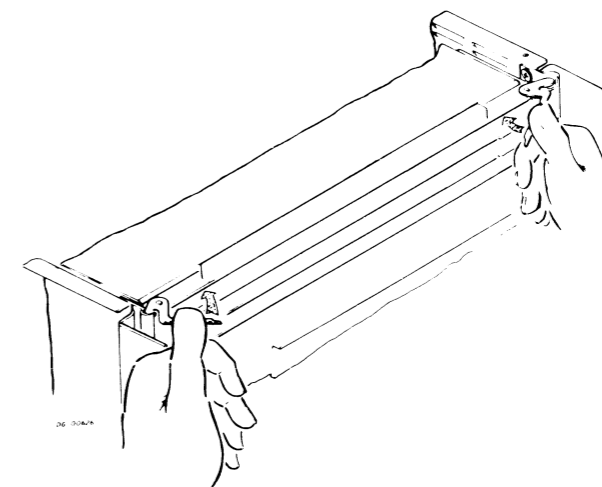
INSTALLING RFI SHIELD



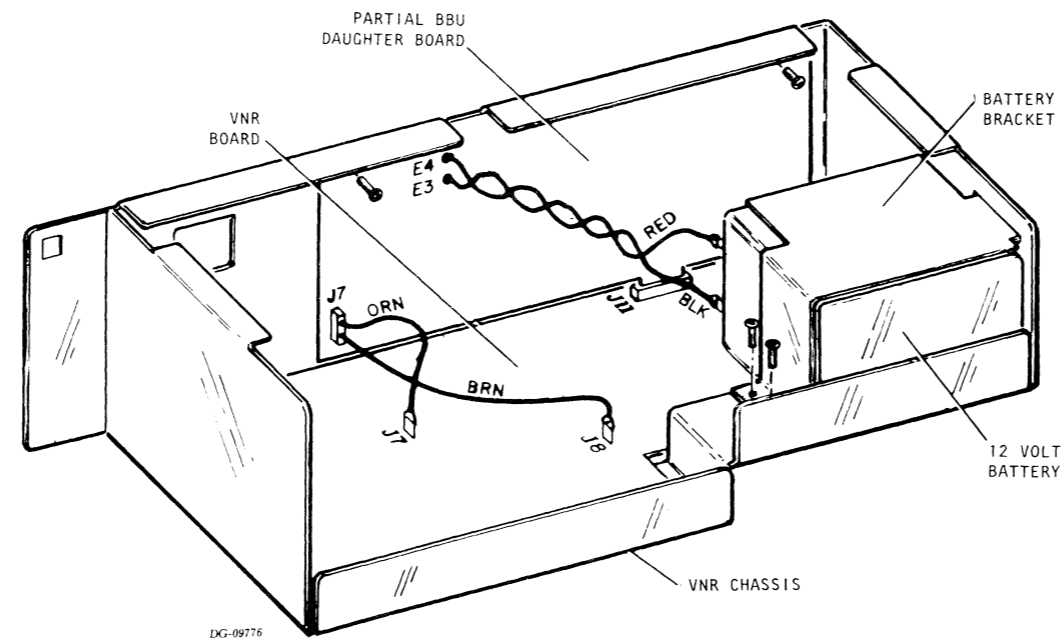
REMOVING POWER SUPPLY



INSERTING PC BOARD



PARTIAL BATTERY BACKUP INSTALLATION



ASSEMBLIES:

- | | |
|--------------------|-------------------|
| 1. VNR CHASSIS | 005-018913 (100V) |
| | 005-018436 (120V) |
| | 005-018915 (220V) |
| 2. PARTIAL BBU PCB | 005-019498 |
| 3. PARTIAL BBU KIT | 005-020102 |

STEPS:

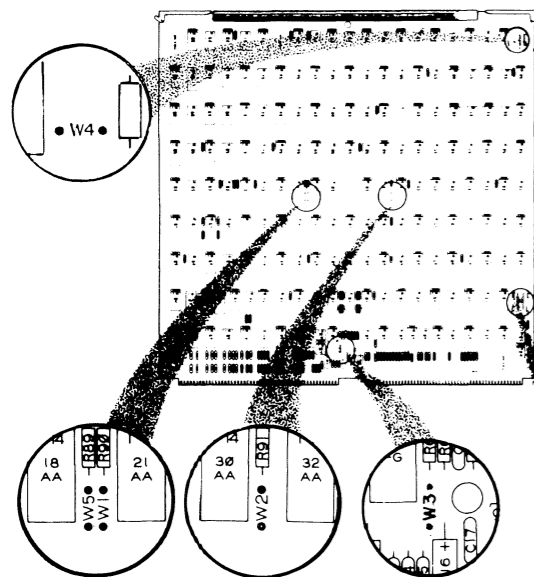
1. INSTALL DAUGHTER BOARD INTO J11 ON VNR BOARD.
2. INSTALL BATTERY AND BATTERY BRACKET.
3. INSTALL WIRE JUMPER KIT (018-001606) AS SHOWN.

**TAILORING
JUMPERING**

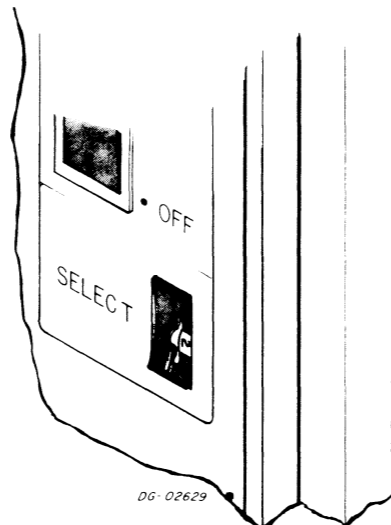
(For CS Series 200 PCB's, see 010-000339)

6070 CARTRIDGE DISK

Ref DGC Dwg No 107-000839 Rev 05



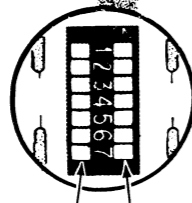
UNIT SELECT SWITCH



DG-02629

CONTROLLER DEVICE SELECT		
SWITCH NUMBER	DEVICE CODE 33 ₃	DEVICE CODE 73 ₈
1	OFF	ON
2	ON	ON
3	ON	ON
4	OFF	OFF
5	ON	ON
6	ON	ON
7	OFF	OFF

HEAD SELECTION JUMPERS		
W1	OUT	FOR
W2	IN	20MBYTE
W5	IN	DISC
W3	OUT	FOR SINGLE PROCESSOR
	IN	FOR DUAL PROCESSOR
W4	IN	FOR NOVA 4/C ONLY
	OUT	FOR OTHER PROCESSORS



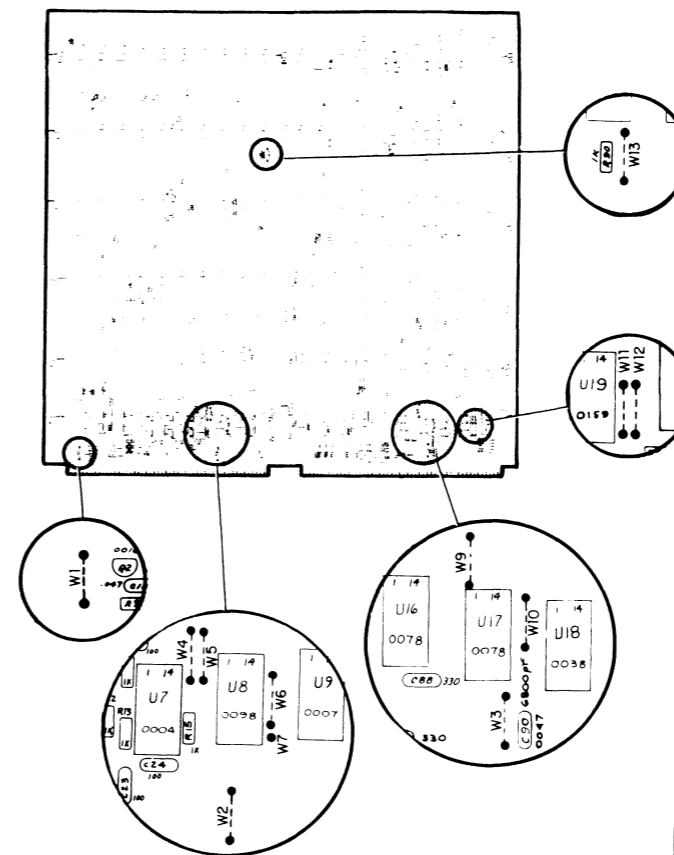
PUSH SWITCH
BUTTON (OFF)
THIS SIDE

PUSH SWITCH
BUTTON (ON)
THIS SIDE

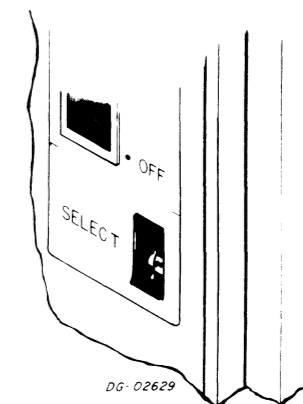
DG-04549

6045 CARTRIDGE DISK

Ref DGC Dwg No 003-000187 Rev 38



UNIT SELECT SWITCH



DG-02629

CONFIGURATION JUMPERS

W1	IN	- FACTORY TEST
	OUT	- NORMAL OPERATION
W2	IN	- FUTURE USE
	OUT	- NORMAL OPERATION
W3	IN	- SINGLE PROCESSOR
	OUT	- DUAL PROCESSOR
W11	IN	- NORMAL OPERATION
	OUT	- FACTORY TEST ONLY
W12	IN	- FACTORY TEST ONLY
	OUT	- NORMAL OPERATION
W13	IN	- NORMAL OPERATION
	OUT	- FUTURE USE

DEVICE CODE SELECTION

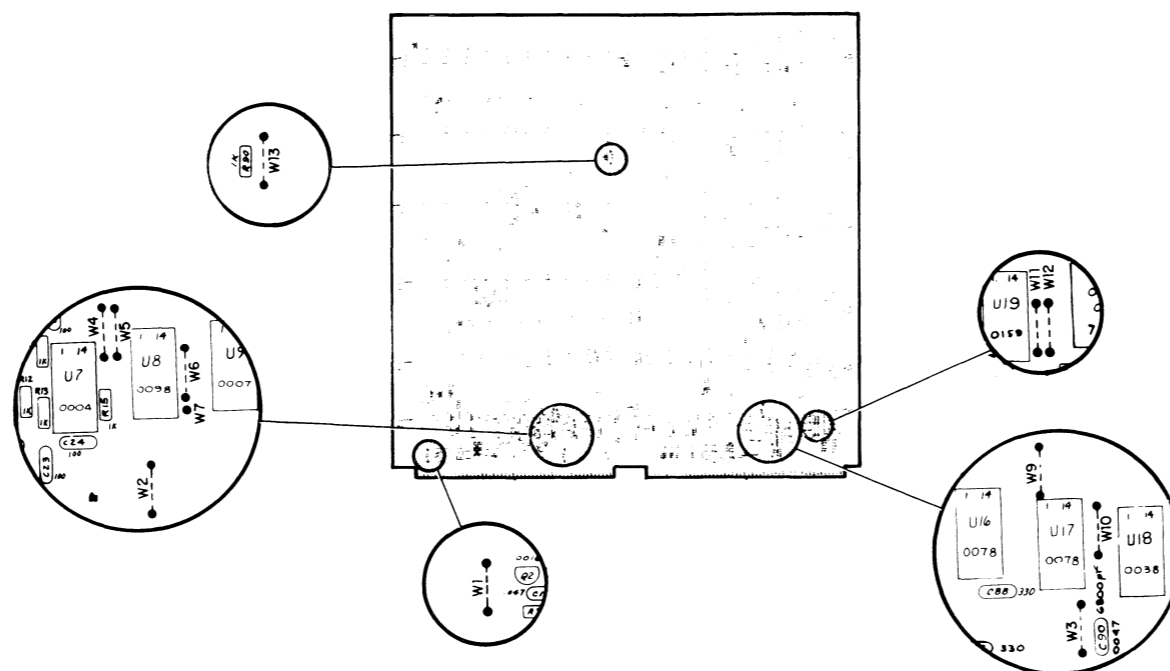
JUMPER POSITION	DEVICE CODE 33	DEVICE CODE 73	DEVICE CODE 32	DEVICE CODE 72
W4	IN	IN	OUT	OUT
W5	OUT	OUT	IN	IN
W6	IN	OUT	IN	OUT
W7	OUT	IN	OUT	IN
W9	OUT	IN	OUT	IN
W10	IN	IN	OUT	OUT

TAILORING JUMPERING

(For CS Series 200 PCB's, see 010-000339)

6031 DISKETTE DRIVE

Ref DGC Dwg 003-000187 Rev 38



DEVICE CODE SELECTION

JUMPER POSITION	DEVICE CODE 33	DEVICE CODE 73	DEVICE CODE 32	DEVICE CODE 72
W4	IN	IN	OUT	OUT
W5	OUT	OUT	IN	IN
W6	IN	OUT	IN	OUT
W7	OUT	IN	OUT	IN
W9	OUT	IN	OUT	IN
W10	IN	IN	OUT	OUT

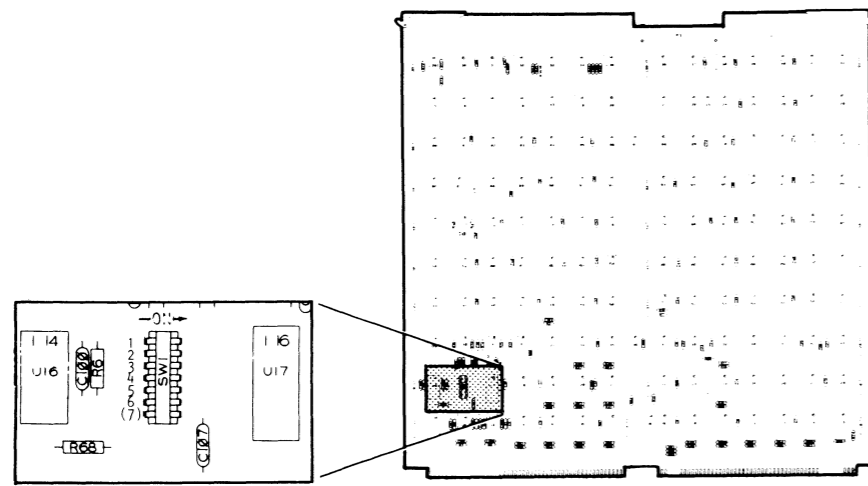
CONFIGURATION JUMPERS

W1	IN - FACTORY TEST OUT - NORMAL OPERATION
W2	IN - FUTURE USE OUT - NORMAL OPERATION
W3	IN - SINGLE PROCESSOR OUT - DUAL PROCESSOR
W11	IN - NORMAL OPERATION OUT - FACTORY TEST ONLY
W12	IN - FACTORY TEST ONLY OUT - NORMAL OPERATION
W13	IN - NORMAL OPERATION OUT - FUTURE USE

**TAILORING
JUMPERING**

6060, 6061, 6067 DISK PACK DISKS

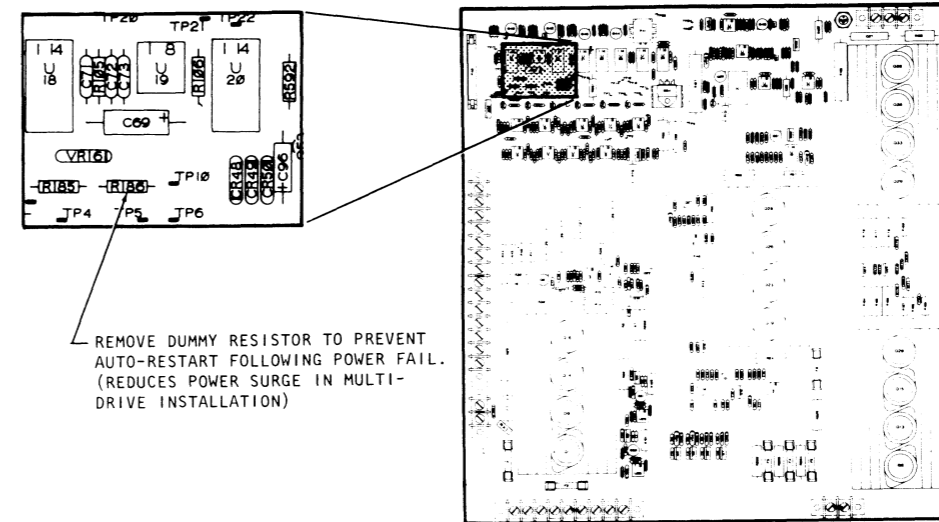
CONTROLLER BOARD SWITCH



Ref DGC Dwg No 107-000605 Rev 07

DEVICE CODE	"ON"
27	2, 4, 5, 6
67	1, 2, 4, 5, 6
SINGLE PROCESSOR	7

DC POWER CONTROL BOARD



REMOVE DUMMY RESISTOR TO PREVENT
AUTO-RESTART FOLLOWING POWER FAIL.
(REDUCES POWER SURGE IN MULTI-
DRIVE INSTALLATION)

Ref DGC Dwg No 107-000519 Rev 05

CS/70 SYSTEM UPGRADES TO CS SERIES 200C

IMPORTANT

PRIOR TO ORDER PLACEMENT, IT IS RECOMMENDED THAT A SITE SURVEY BE PERFORMED BY DATA GENERAL SERVICE PERSONNEL. THIS SURVEY IS TO DETERMINE WHAT CABLES AND OTHER COMPONENTS SHOULD BE ORDERED IN ADDITION TO THE BASIC UPGRADE KIT. FOR INSTALLATIONS WHERE REMOTE DEVICES ON THE SYSTEM HAVE THEIR CABLING ENCLOSED WITHIN THE CONSTRUCTION (E.G. CONDUIT OR OTHER RELATIVELY INACCESSIBLE ROUTING), CONSIDERATION SHOULD BE GIVEN FOR MODIFICATION OF THE CABLE INTERFACE, EITHER BY CHANGING THE CABLE CONNECTOR OR BY ADDITION OF AN ADAPTER CABLE.

Warning: This computer was designed for use with shielded cables in order to meet FCC specifications. Although use with cables which are not shielded is permitted, such use may cause interference with radio or television transmissions, and as before, the user is responsible to correct such interference.

UPGRADE COMPONENTS

MODEL 9273 *

COMPONENT	MODEL/PART #	DESCRIPTION
S/280 CPU, 512 KB PARTIAL BATT. BACK-UP	8770-RS 8773	
CABINET LABEL	002-021762	DATA GENERAL CS SERIES 200 FOR SERIES 200C UPGRADE
DOCUMENTATION PACAKGE	005-020830	
LICENSE TO USE RDOS	3359-10N	

SEPARATE COMPONENTS

COMPONENT	MODEL/PART #	NOTES
LINE PRINTER CONTROLLER ULM-5 PCB'S	005-003564 4241 4242 4243	OPTION - FOR PIO PRINTER OPTION - FOR ASYNC OPTION - FOR SYNC OPTION - FOR SYNC/ASYNC
CSI-2/1 PCB	4345/4346	OPTION - FOR 2-LINE/1-LINE CHARACTER SYNC INTERFACE
BSI-1 PCB	4348	OPTION - FOR BIT-SYNC INTERFACE
AMI-8	4340, 4389	ASYNC MODEM INTERFACE WITH MODEM CONTROL
ATI-16	4342, 4387	ASYNC TERMINAL INTERFACE WITHOUT MODEM CONTROL
ASYNC LINE CONTROLLER PCB	4078-P	OPTION - FOR CONCURRENCY
AMI-8 FOR USE WITH TERM CONNECTION BOX, 8 LINES	4390	ASYNC MODEM INTERFACE WITH MODEM CONTROL
ATI-16 FOR USE WITH TERM CONNECTION BOX, 16 LINES	4388	ASYNC TERMINAL INTERFACE WITHOUT MODEM CONTROL

* SYSTEM POWER SUFFIXES (Y)

Y =	DESCRIPTION
BLANK	120 VAC
2	220 VAC
4	240 VAC

CABLE CHANGES

SERIAL PRINTERS	DELETE OLD CABLE(S)	ADD NEW CABLE(S)
6041, 6193	005-009692	005-018250 (20 ma)
6041, 6193	005-008181	005-018250 (EIA)
4320, 4322	005-015267	005-015268 (20 ma)
4320, 4322	005-015277	005-015275 (EIA)
4422	005-018313	005-013258 + 005-013259 (EIA)

PIO PRINTERS	DELETE OLD CABLE(S)	ADD NEW CABLE(S)
9125, 9123	005-009061	005-013262 + 005-013265 + 005-012367
9260, 9261	005-009061	005-013262 + 005-013265 + 005-012367
9129, 9613	005-009060	005-013262 + 005-013265 + 013281

DCH PRINTERS	DELETE OLD CABLE(S)	ADD NEW CABLE(S)
9199	005-012928	005-013261 + 005-013265
4215, 4216, 4218, 4219	005-007874	005-013261 + 005-013265 + 005-013267
4244, 4245, 9262, 9263		
9755, 9756		

DISPLAY TERMINALS	DELETE OLD CABLE(S)	ADD NEW CABLE(S)
6053, 6093	005-007636	005-013260 + 005-013280 (20 ma)
6053, 6093	005-008181	005-013258 + 005-013280 (EIA)
6108	005-014695	005-013260 (20 ma)
6108	005-014690	005-013258 (EIA)

DISK STORAGE	DELETE OLD CABLE(S)	ADD NEW CABLE(S)
FOR THE FOLLOWING DISK STORAGE UNITS DELETE THE INTERNAL CABLE, 005-012472 AND THE EXTERNAL CABLE, 005-002208 AND ADD THE NEW CABLES AS SHOWN (REFER TO 010-000331).		
6098, 6100		005-018631 + 005-019268 + 005-019437
6099, 6103		005-019499 + 005-019268
6097-A		005-019500 + 005-019437
6045, 6070		005-018382 + 005-018765
6060, 6061, 6067		005-018382 + 005-018765
6030/6031		005-018382 + 005-018765

NOTE: NEW CABLES INDICATED FOR THE MODELS 6060, 6061 AND 6067 ARE FOR ATTACHING THE CPU TO THE DISK ADAPTER. USE THE EXISTING CABLES FOR ATTACHING THE ADAPTER TO THE DISK DRIVES.

MAG TAPE	DELETE OLD CABLE(S)	ADD NEW CABLE(S)
DELETE THE SAME INTERNAL AND EXTERNAL CABLES AS INDICATED FOR THE DISK STORAGE UNITS. ADD THE NEW CABLES INDICATED. (REFER TO 010-000319)		
6125, 6026		005-018382 + 005-018765

- FOR THE SERIES 200, AN EXTERNAL CABLE IS REQUIRED FOR SYNCHRONOUS COMMUNICATIONS. TWO CABLES WHICH CAN BE USED ARE AS FOLLOWS: 1084M, A 25 FOOT MODEM CABLE FOR CONNECTING CS/200 TO BELL 201, 203, 208, 209 SYNCHRONOUS DATA SETS OR 103, 202, 133 ASYNCHRONOUS DATA SET OR EQUIVALENT; 1085M, A MODEM CABLE USED WITH BELL 303 SERIES DATA SETS.

UPGRADE PROCEDURE

MODEL 9473

FOR THESE SYSTEMS, THE UPGRADE IS TO A MODEL 90158 CS SERIES 200 WITH 512 KB OF MEMORY. IN THE FOLLOWING PROCEDURE, REFERENCE IS MADE TO THE CS SERIES 200 INSTALLATION DATA SHEETS 010-00310 WHICH ARE INCLUDED IN THE NEW DOCUMENTATION PACKAGE 005-020830.

CAUTION

BACK-UP ALL DISK FILES BEFORE BEGINNING THE UPGRADE PROCEDURES.

NOTES FOR THE DISASSEMBLY OF CS/70 SYSTEM:

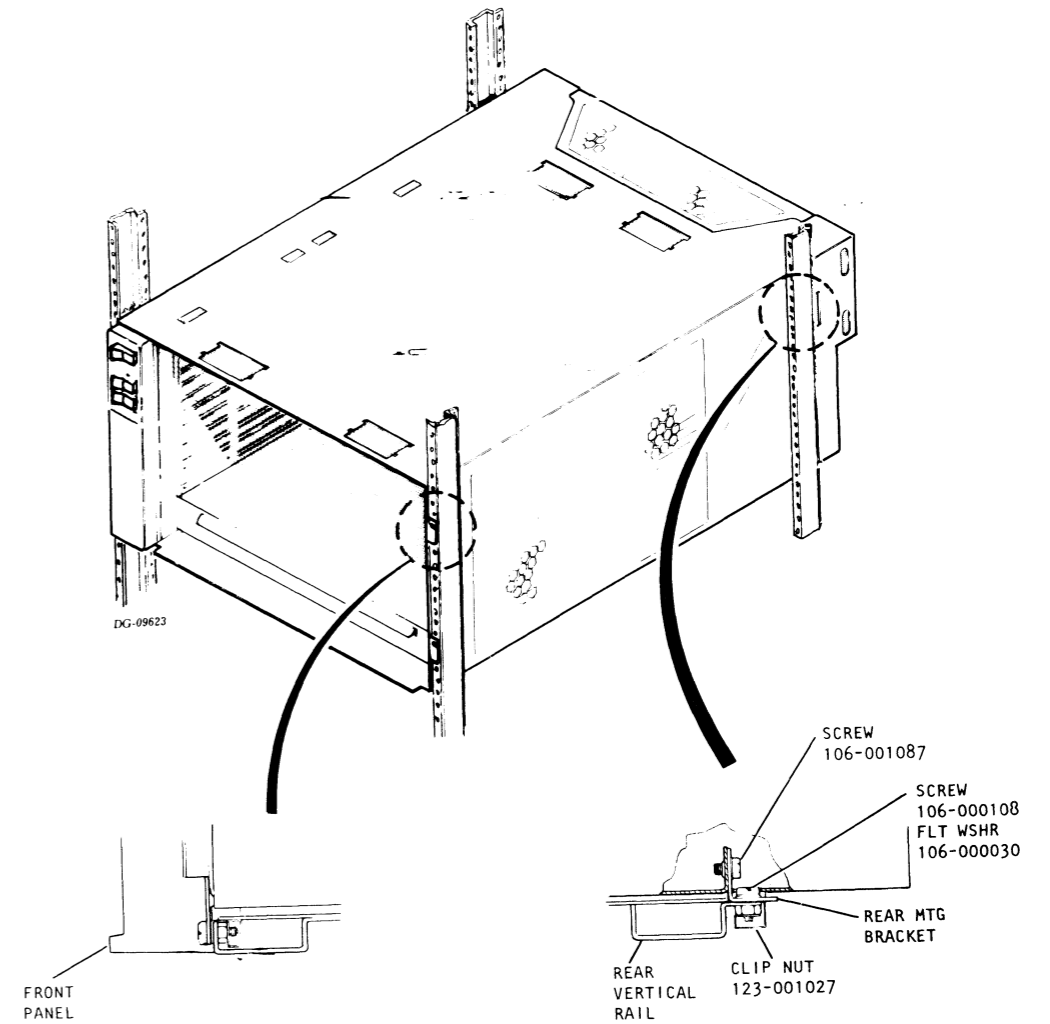
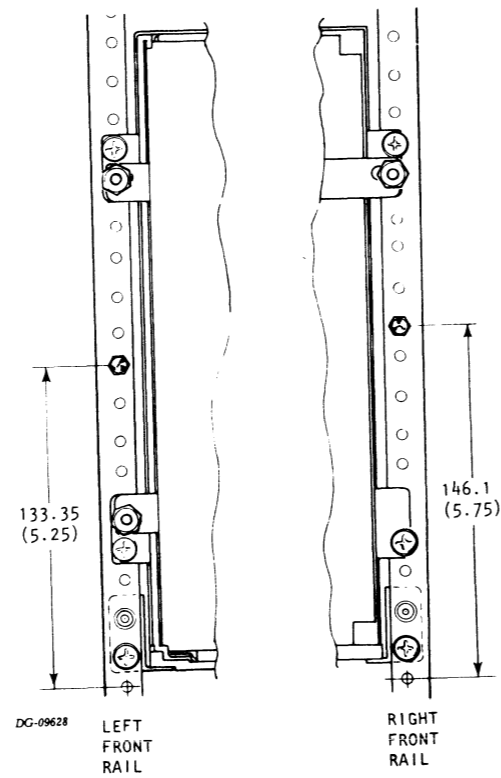
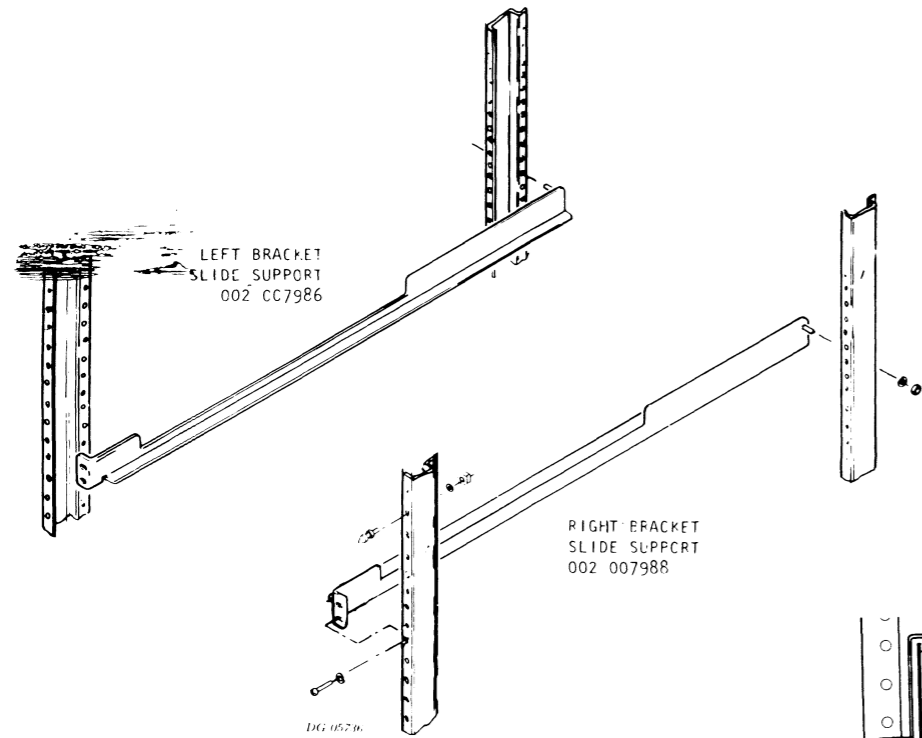
- NOTE 1. DISCONNECT ALL CABLES TO THE CONVENIENCE PANEL PCB. REMOVE THE CONVENIENCE PANEL PCB AND ITS MOUNTING HARDWARE. THESE CABLES, THE MOUNTING HARDWARE AND THE CONVENIENCE PANEL WILL NOT BE USED IN THE NEW CONFIGURATION.
2. REMOVE THE CPU CHASSIS (MODEL 8678-KS, 8678-NS, 8678-PS OR 8678-RS) AND MOUNTING HARDWARE. DELETE THE COMBO MUX PCB AND CABLE. THE SYNC LINE MUX PCB (005-009349) AND CABLES 005-005629 AND 005-009028. THESE BOARDS AND CABLES, WILL NOT BE USED IN THE NEW SYSTEM.

NOTES FOR THE ASSEMBLY OF THE CS SERIES 200C FCC EMC COMPLIANT CPU:

- NOTE 1. INSTALL THE CPU CHASSIS (MODEL 8770-RS, S/280, 512KB MEMORY) AND ITS MOUNTING HARDWARE. INSTALL THE PIO PRINTER PCB (IF PRESENT), AND EITHER THE AMI, ATI OR ULM PCB. NOTE THAT THE PCBs CARRIED OVER FROM THE CS/60 SHOULD BE RECONFIGURED PER THE SLOT ASSIGNMENTS FOR THE CS SERIES 200C (SEE CS SERIES 200C INSTALLATION DATA SHEET 010-000339 TO DETERMINE THE PROPER SLOT ASSIGNMENTS AND TAILORING FOR EACH PCB).
2. CONNECT THE INTERNAL CABLE (PROVIDED IN AMI, ATI OR ULM KIT) TO THE CPU CHASSIS (SEE SHEETS 1 THROUGH 3 OF THE CS SERIES 200 INSTALLATION DATA SHEETS FOR REFERENCE)
3. RECONFIGURE CABLES THAT ATTACH SERIAL PRINTERS AND TERMINALS TO THE CPU CHASSIS (SEE SHEET 2 OF THE CS SERIES 200C INSTALLATION DATA SHEETS).
4. IF A PIO/DCH PRINTER IS PRESENT IN THE NEW CONFIGURATION, INSTALL THE PROPER NEW CABLES, PER SHEET 1 OF THIS DOCUMENT, BETWEEN THE PRINTER AND THE CPU CHASSIS.
5. FOR THE DISK STORAGE AND THE MAG TAPE UNITS, REMOVE THE OLD INTERNAL CABLE 005-012472 AND THE OLD EXTERNAL CABLE, 005-008802. ADD NEW CABLES, PER SHEET 1 OF THIS DOCUMENT, CONNECTING THE PERIPHERAL TO THE CPU CHASSIS.
6. IF SYNCHRONOUS COMMUNICATIONS ARE TO BE USED, ADD THE APPROPRIATE SYNC BOARD FOR YOUR CONFIGURATION (SEE SHEETS 1 THROUGH 3 OF CS SERIES 200 INSTALLATION DATA SHEETS).
7. INSTALL LABEL 002-021792 OVER THE EXISTING LABEL AT THE TOP OF THE CABINET.
8. VERIFY CORRECT SYSTEM OPERATION USING SYSTEM DIAGNOSTICS.
9. LOAD THE OPERATING SOFTWARE AS DESCRIBED IN THE DOCUMENTATION ACCOMPANYING THE SOFTWARE PACKAGE. RELOAD THE BACKED-UP DISK FILES.

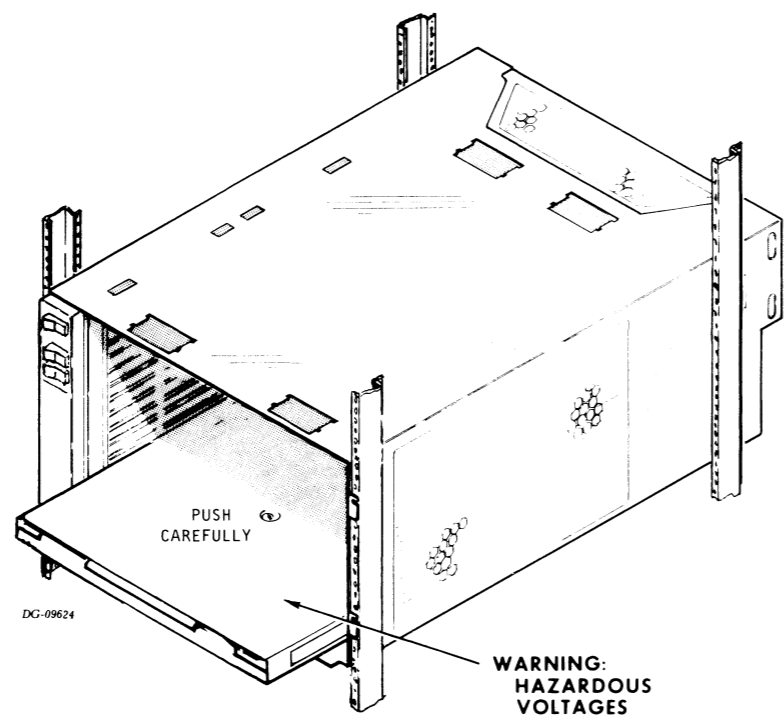
CABINET MOUNTING

HARDWARE MOUNTING KIT
005-019199



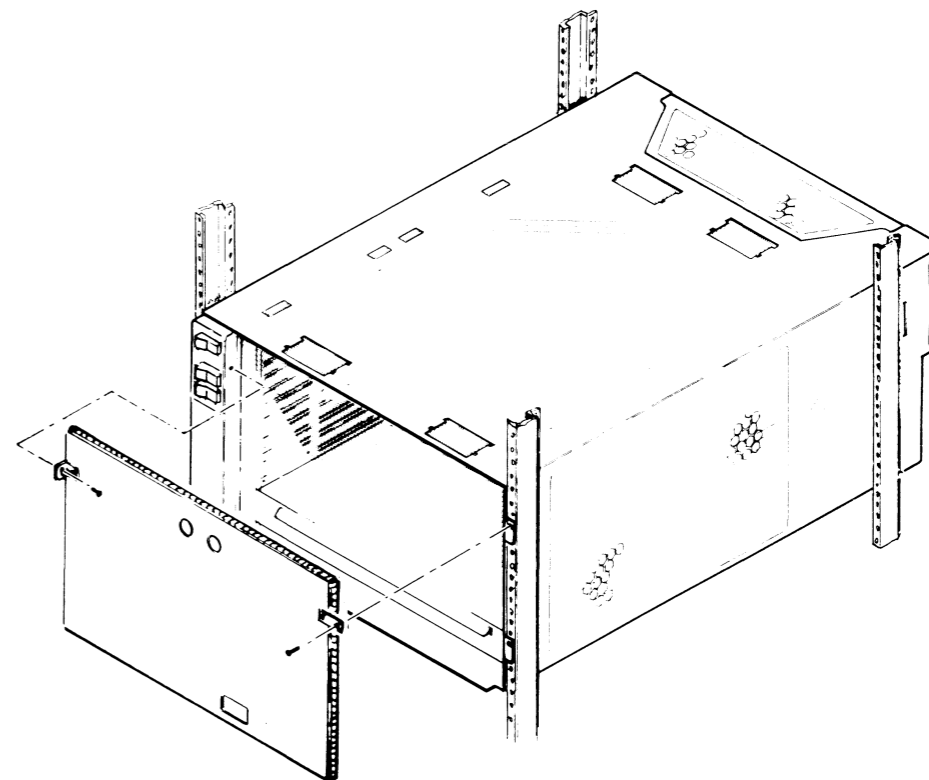
CABINET MOUNTING (CONT)

INSERTING POWER SUPPLY

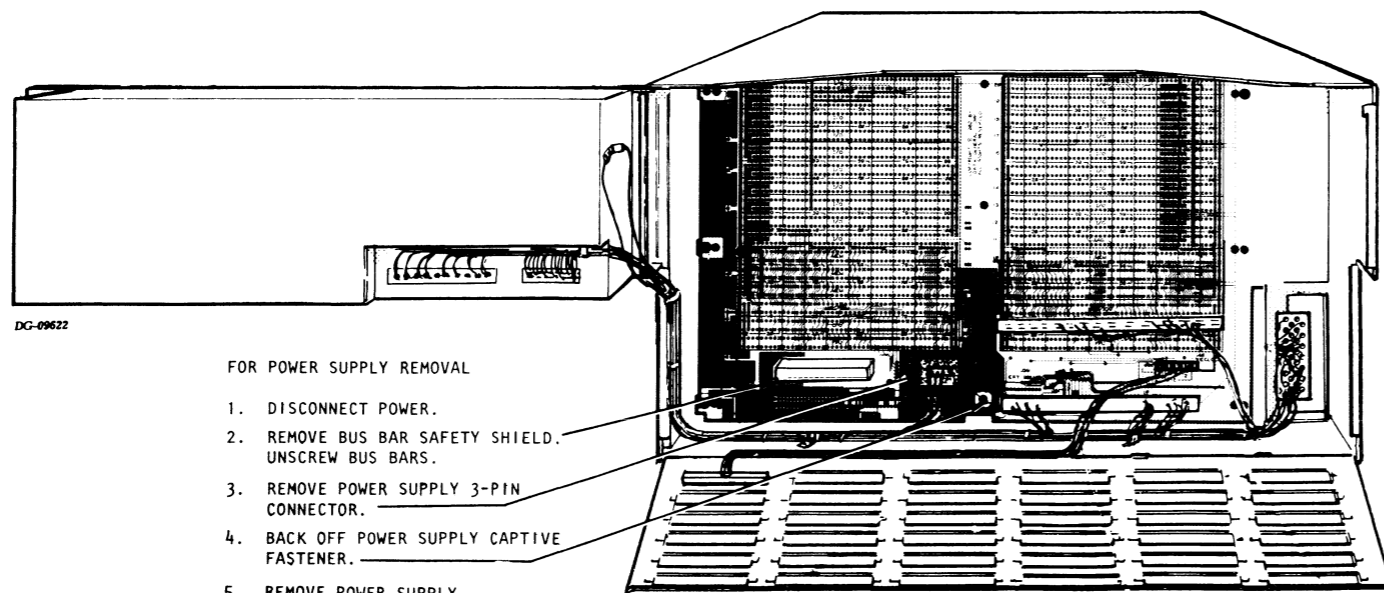


OBSERVE REAR VIEW OF CHASSIS BELOW.
TO INSTALL POWER SUPPLY, PERFORM
IN REVERSE THE REMOVAL PROCEDURE SHOWN.

INSTALLING RFI SHIELD



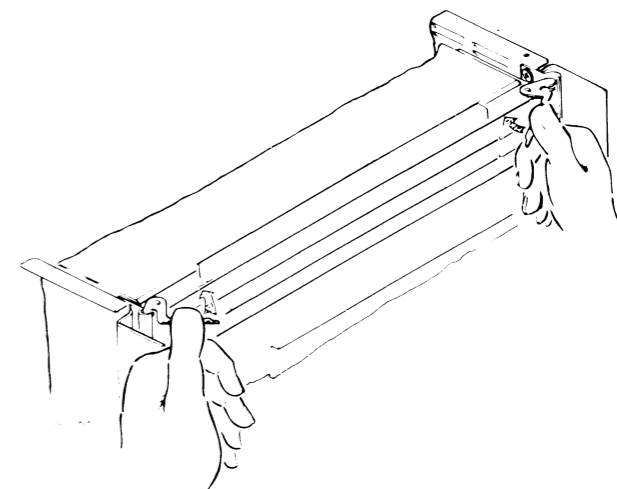
REMOVING POWER SUPPLY



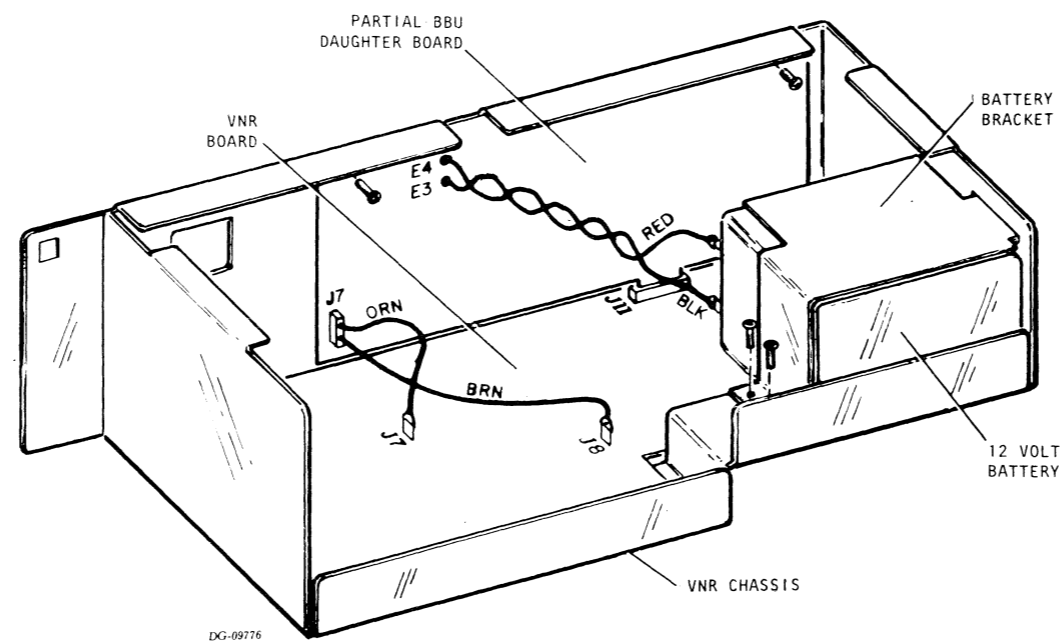
FOR POWER SUPPLY REMOVAL

1. DISCONNECT POWER.
2. REMOVE BUS BAR SAFETY SHIELD.
UNSCREW BUS BARS.
3. REMOVE POWER SUPPLY 3-PIN
CONNECTOR.
4. BACK OFF POWER SUPPLY CAPTIVE
FASTENER.
5. REMOVE POWER SUPPLY.

INSERTING PC BOARD



PARTIAL BATTERY BACKUP INSTALLATION



ASSEMBLIES:

- | | | |
|----|-----------------|-------------------|
| 1. | VNR CHASSIS | 005-018913 (100V) |
| | | 005-018436 (120V) |
| | | 005-018915 (220V) |
| 2. | PARTIAL BBU PCB | 005-019498 |
| 3. | PARTIAL BBU KIT | 005-020102 |

STEPS:

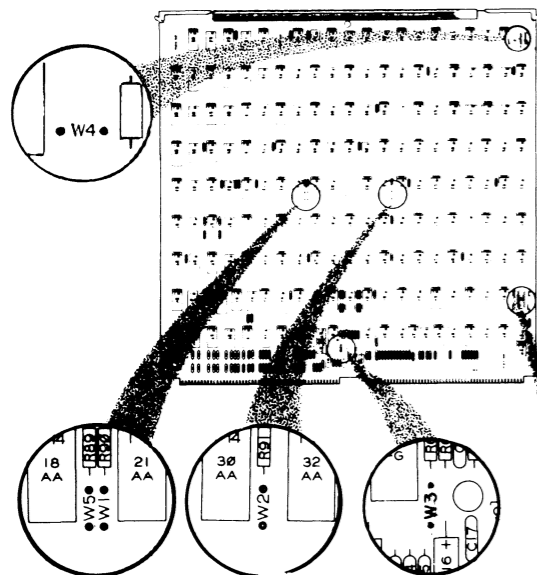
1. INSTALL DAUGHTER BOARD INTO J11 ON VNR BOARD.
2. INSTALL BATTERY AND BATTERY BRACKET.
3. INSTALL WIRE JUMPER KIT (018-001606) AS SHOWN.

TAILORING JUMPERING

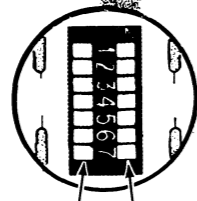
(For CS Series 200 PCB's, see 010-000339)

6070 CARTRIDGE DISK

Ref DGC Dwg No 107-000839 Rev 05



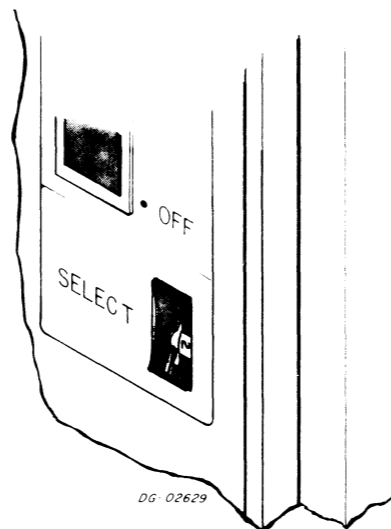
HEAD SELECTION JUMPERS		
W1	OUT	FOR 20MBYTE DISC
W2	IN	
W5	IN	
W3	OUT	FOR SINGLE PROCESSOR
	IN	FOR DUAL PROCESSOR
W4	IN	FOR NOVA 4/C ONLY
	OUT	FOR OTHER PROCESSORS



PUSH SWITCH BUTTON (OFF) THIS SIDE PUSH SWITCH BUTTON (ON) THIS SIDE

DG-04549

UNIT SELECT SWITCH

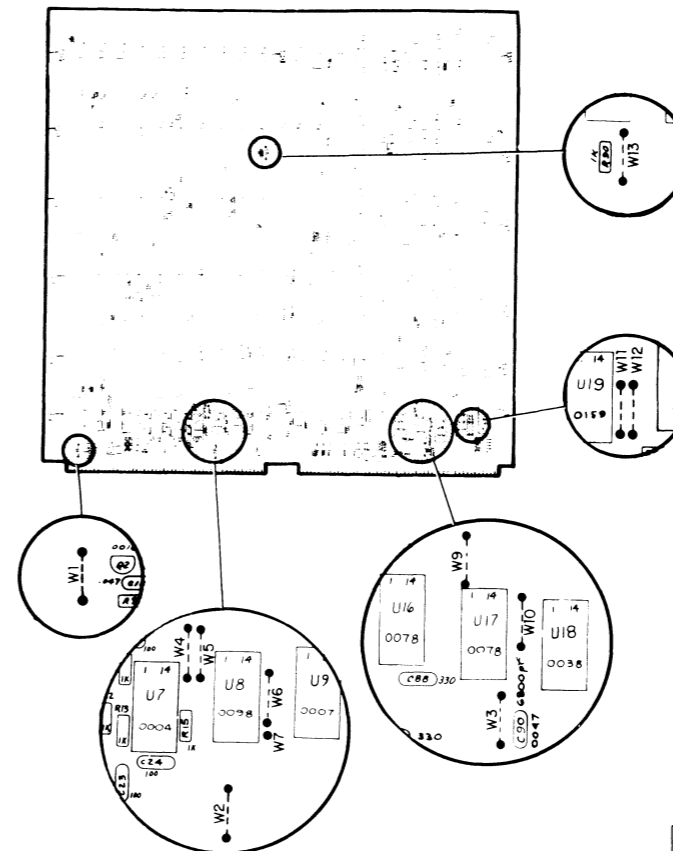


DG-02629

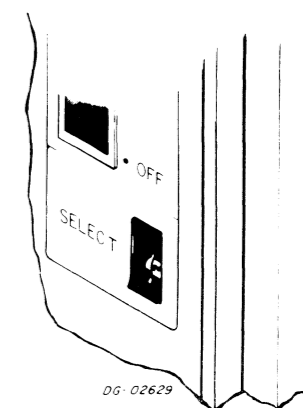
CONTROLLER DEVICE SELECT		
SWITCH NUMBER	DEVICE CODE 33	DEVICE CODE 73
1	OFF	ON
2	ON	ON
3	ON	ON
4	OFF	OFF
5	ON	ON
6	ON	ON
7	OFF	OFF

6045 CARTRIDGE DISK

Ref DGC Dwg No 003-000187 Rev 38



UNIT SELECT SWITCH



DG-02629

CONFIGURATION JUMPERS	
W1	IN - FACTORY TEST OUT - NORMAL OPERATION
W2	IN - FUTURE USE OUT - NORMAL OPERATION
W3	IN - SINGLE PROCESSOR OUT - DUAL PROCESSOR
W11	IN - NORMAL OPERATION OUT - FACTORY TEST ONLY
W12	IN - FACTORY TEST ONLY OUT - NORMAL OPERATION
W13	IN - NORMAL OPERATION OUT - FUTURE USE

DEVICE CODE SELECTION

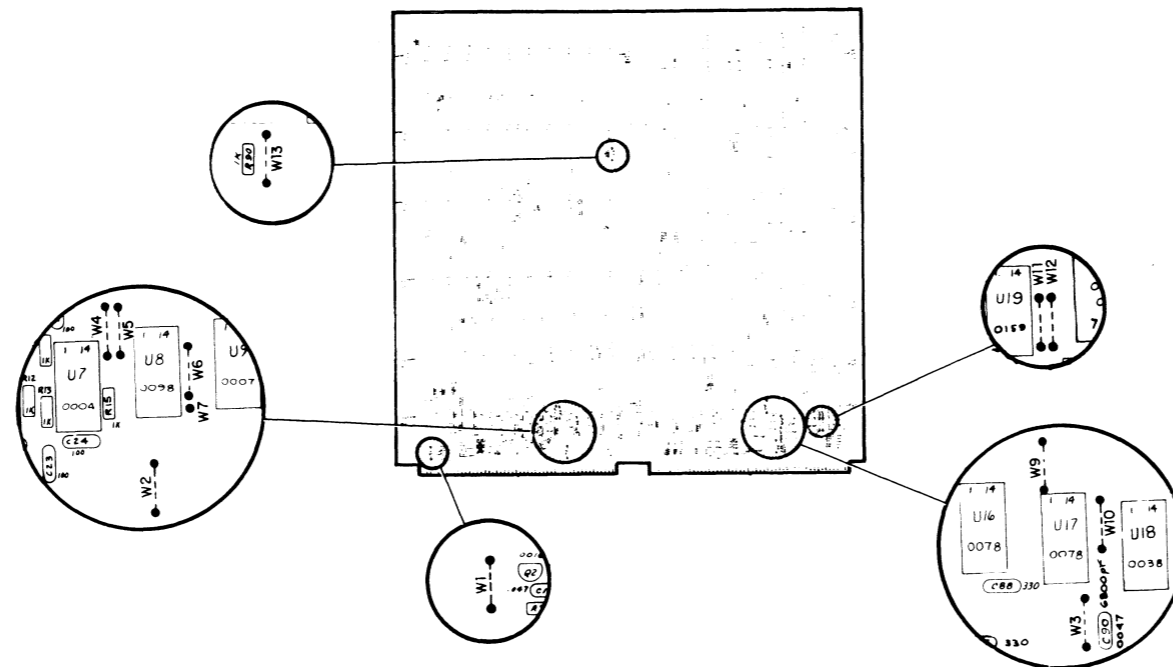
JUMPER POSITION	DEVICE CODE 33	DEVICE CODE 73	DEVICE CODE 32	DEVICE CODE 72
W4	IN	IN	OUT	OUT
W5	OUT	OUT	IN	IN
W6	IN	OUT	IN	OUT
W7	OUT	IN	OUT	IN
W9	OUT	IN	OUT	IN
W10	IN	IN	OUT	OUT

TAILORING JUMPERING

(For CS Series 200 PCB's, see 010-000339)

6031 DISKETTE DRIVE

Ref DGC Dwg 003-000187 Rev 38



DEVICE CODE SELECTION

JUMPER POSITION	DEVICE CODE 33	DEVICE CODE 73	DEVICE CODE 32	DEVICE CODE 72
W4	IN	IN	OUT	OUT
W5	OUT	OUT	IN	IN
W6	IN	OUT	IN	OUT
W7	OUT	IN	OUT	IN
W9	OUT	IN	OUT	IN
W10	IN	IN	OUT	OUT

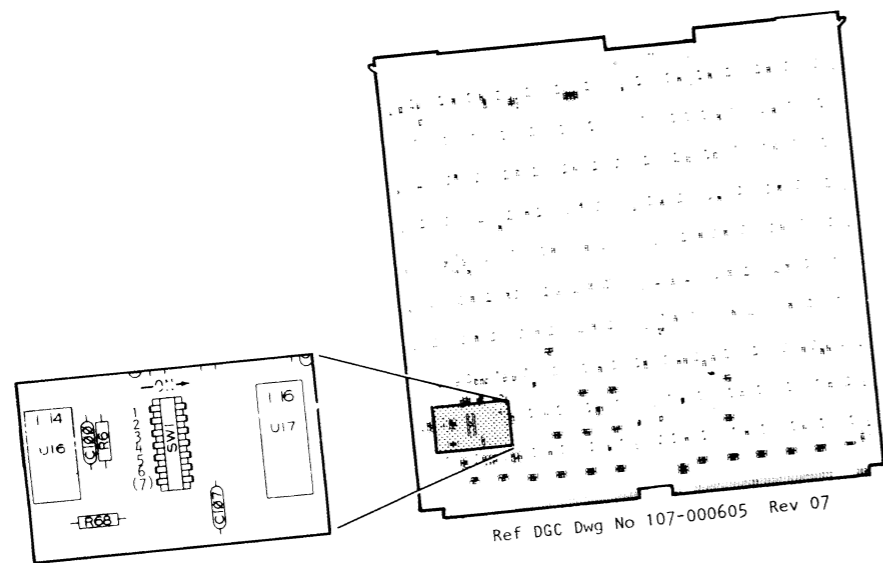
CONFIGURATION JUMPERS

W1	IN - FACTORY TEST OUT - NORMAL OPERATION
W2	IN - FUTURE USE OUT - NORMAL OPERATION
W3	IN - SINGLE PROCESSOR OUT - DUAL PROCESSOR
W11	IN - NORMAL OPERATION OUT - FACTORY TEST ONLY
W12	IN - FACTORY TEST ONLY OUT - NORMAL OPERATION
W13	IN - NORMAL OPERATION OUT - FUTURE USE

**TAILORING
JUMPERING**

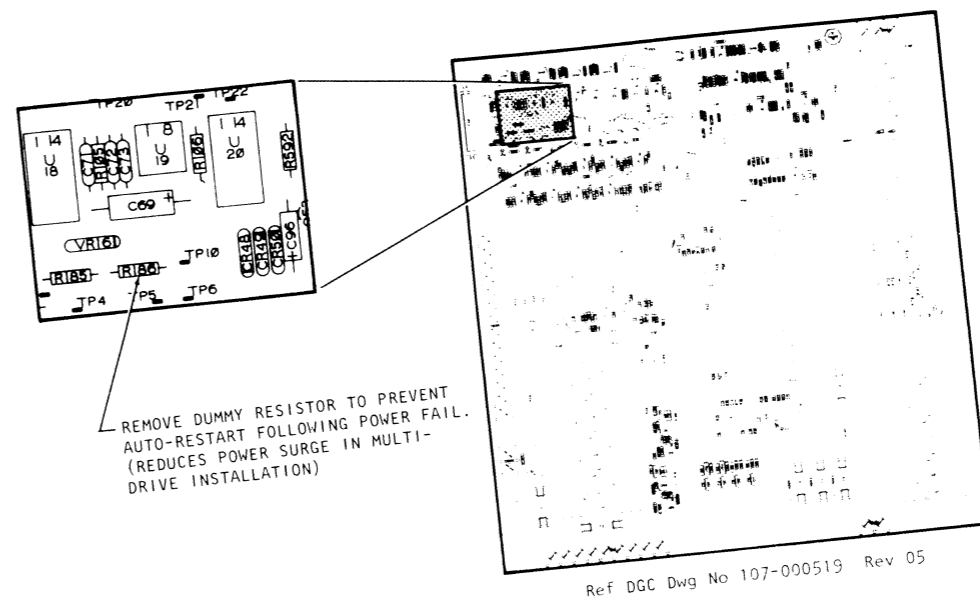
6060, 6061, 6067 DISK PACK DISKS

CONTROLLER BOARD SWITCH



DEVICE CODE	"ON"
27	2, 4, 5, 6
57	1, 2, 4, 5, 6
SINGLE PROCESSOR	7

DC POWER CONTROL BOARD



CS/40 SYSTEM UPGRADES TO CS SERIES 200

CABLE CHANGES MODEL 947I

FOR SYSTEMS WITH FCC EMC NON-COMPLIANT CPU:-

SERIAL PRINTERS	DELETE OLD CABLE(S)	ADD NEW CABLE(S)
6041,6193	005-009692	005-018250 (20ma)
6041,6193	005-008181	005-018250 (EIA)
4320,4322	005-015267	005-015268 (20ma)
4320,4322	005-015277	005-015275 (EIA)
4422	005-018318	005-013249 + 005-018249 (EIA)

PIO PRINTERS

SERIAL PRINTERS	DELETE OLD CABLE(S)	ADD NEW CABLE(S)
9125,9128	005-009061	005-007874
9260,9261	005-009061	005-007874
9613,9129	005-009060	005-001356

DISPLAY TERMINALS

SERIAL PRINTERS	DELETE OLD CABLE(S)	ADD NEW CABLE(S)
6053,6093	005-007636	005-018250 (20ma)
6053,6093	005-008181	005-018250 (EIA)
6108	005-014695	005-014689 (20ma)
6108	005-014690	005-014695 (EIA)

DISK STORAGE

FOR THE FOLLOWING DISK STORAGE SYSTEMS DELETE THE OLD INTERNAL CABLE, 005-001802 AND ADD THE NEW INTERNAL CABLE, 005-012472. ALL OTHER EQUIPMENT IS THE SAME.

DISK MODEL NUMBERS:-----	6031-B	6045	6060	6098
	6097-A	6070	6061	6099

* SYSTEM POWER SUFFIXES

SUFFIX	DESCRIPTION
BLANK	120 VAC
2	220 VAC
4	240 VAC

MAG TAPE

SAME AS FOR THE DISK STORAGE UNITS.

MAG TAPE MODEL NUMBERS:---- 6021 AND 6026

UPGRADE COMPONENTS

COMPONENT	MODEL/PART#	NOTES
S/140, 512KB CABINET LABEL DOCUMENTATION PACKAGE LICENSE TO USE RODS MTG KIT ULM/5	8678-RA 002-021792 005-020624 3359-10N 005-015512	"DATA GENERAL CS SERIES 200" FOR SERIES 200 SYSTEM USED ONLY IN SYSTEM WITH FCC EMC NON-COMPLIANT CPU

SEPARATE COMPONENTS

COMPONENT	MODEL/PART #	NOTES
LINE PRINTER CONTROLLER ULM-5PCB's	4014/4034 4241 4242 4243	OPTION - FOR PIO PRINTER OPTION - FOR ASYNC OPTION - FOR SYNC OPTION - FOR SYNC/ASYNC
CSI-2/1 PCB	4345/4346	OPTION - FOR 2-LINE/2-LINE CHARACTER SYNC INTERFACE
BSI-1 PCB AMI-8	4348 4340/4389	OPTION - FOR BIT - SYNC INTERFACE ASYNC MODEM INTERFACE WITH MODEM CONTROL
ATI-16	4342/4387	ASYNC TERMINAL INTERFACE WITHOUT MODEM CONTROL
ASYNC LINE CONTROLLER PCB	4078-P	OPTION - FOR CONCURRENCY

CABLE CHANGES

FOR SYSTEMS WITH FCC EMC COMPLIANT CPU:-

SERIAL PRINTERS	DELETE OLD CABLE(S)	ADD NEW CABLE(S)
6041,6193	005-009692	005-018250 (20ma)
6041,6193	005-008181	005-018250 (EIA)
4320,4322	005-015267	005-015268 (20ma)
4320,4322	005-015277	005-015275 (EIA)
4422	005-018318	005-013258 + 005-013259 (EIA)

PIO PRINTERS

SERIAL PRINTERS	DELETE OLD CABLE(S)	ADD NEW CABLE(S)
9125,9128	005-009061	005-013262 + 005-013265 + 005-012367
9260,9261	005-009061	005-013262 + 005-013265 + 005-012367
9129,9613	005-009060	005-013262 + 005-013265 + 005-013281

DISPLAY TERMINALS

SERIAL PRINTERS	DELETE OLD CABLE(S)	ADD NEW CABLE(S)
6053,6093	005-007636	005-013260 + 005-013280 (20ma)
6053,6093	005-008181	005-013258 + 005-013280 (EIA)
6108	005-014695	005-013258 (20ma)
6108	005-014690	005-013260 (EIA)

DISK STORAGE

FOR THE FOLLOWING DISK STORAGE UNITS DELETE THE INTERNAL CABLE, 005-001802 AND THE EXTERNAL CABLE 005-002208 AND ADD THE NEW CABLES AS SHOWN:

DISK MODEL NUMBERS:-----	6098,6100	6099,6103	6097-A	6045,6070	6060,6061,6067	6031-B
	005-018631 + 005-019268 + 005-019437	005-019499 + 005-019268	005-019500 + 005-019437	005-019332 + 005-018765	005-019332 + 005-018765	005-018382 + 005-018765

NOTE: NEW CABLES INDICATED FOR THE MODELS 6060, 6061 AND 6067 ARE FOR ATTACHING THE CPU TO THE DISK ADAPTER. USE THE EXISTING CABLES FOR ATTACHING THE ADAPTER TO THE DISK DRIVES.

MAG TAPE

REMOVE THE SAME INTERNAL AND EXTERNAL CABLES AS INDICATED FOR THE DISK STORAGE UNITS. ADD THE NEW CABLES INDICATED.

6061,6026	005-018382 + 005-018765
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NOTES:

FOR THE SERIES 200, AN EXTERNAL CABLE IS REQUIRED FOR SYNCHRONOUS COMMUNICATIONS. TWO CABLES WHICH CAN BE USED ARE AS FOLLOWS: 1084M, A 25 FOOT MODEM CABLE FOR CONNECTING CS/200 TO BELL 201, 203, 208, 209 SYNCHRONOUS DATA SETS OR 103, 202, 133 ASYNCHRONOUS SETS OR EQUIVALENT; 1085M, A MODEM CABLES USED WITH BELL 303 SERIES DATA SETS.

IMPORTANT

PRIOR TO ORDER PLACEMENT, IT IS RECOMMENDED THAT A SITE SURVEY BE PERFORMED BY DATA GENERAL SERVICE PERSONNEL. THIS SURVEY IS TO DETERMINE WHAT CABLES AND OTHER COMPONENTS SHOULD BE ORDERED IN ADDITION TO THE BASIC UPGRADE KIT. FOR INSTALLATIONS WHERE REMOTE DEVICES ON THE SYSTEM HAVE THEIR CABLING ENCLOSED WITHIN THE CONSTRUCTION (E.G. CONDUIT OR OTHER RELATIVELY INACCESSIBLE ROUTING), CONSIDERATION SHOULD BE GIVEN FOR MODIFICATION OF THE CABLE INTERFACE, EITHER BY CHANGING THE CABLE CONNECTOR OR BY ADDITION OF AN ADAPTER CABLE.

UPGRADE PROCEDURE

MODEL 9471

FOR THESE SYSTEMS, THE UPGRADE IS TO A MODEL 9941 CS SERIES 200 WITH 512 KB MEMORY. IN THE FOLLOWING PROCEDURE, REFERENCE IS MADE TO THE CS SERIES 200 INSTALLATION DATA SHEETS 010-000310 WHICH ARE INCLUDED ON THE NEW DOCUMENTATION PACKAGE 005-020624.

CAUTION BACK-UP ALL DISK FILES BEFORE BEGINNING THE UPGRADE PROCEDURES.

NOTES FOR THE DISASSEMBLY OF CS/40 SYSTEM:

1. DISCONNECT ALL CABLES TO THE CONVENIENCE PANEL PCB. REMOVE THE CONVENIENCE PANEL PCB AND ITS MOUNTING HARDWARE. THESE CABLES, THE MOUNTING HARDWARE AND THE CONVENIENCE PANEL WILL NOT BE USED IN THE NEW CONFIGURATION.
2. REMOVE ALL DISK, TAPE AND PRINTER CONTROLLER PCB'S. THESE WILL BE USED IN THE NEW CONFIGURATION.
3. REMOVE THE CPU CHASSIS (MODEL 8609-HS, 8586-S OR 8586-MS) AND MOUNTING HARDWARE. DELETE THE COMBO MUX PCB AND CABLE, THE SYNC LINE MUX PCB (005-009349) AND CABLES 005-005629 AND 005-009028. THESE BOARDS AND CABLES WILL NOT BE USED IN THE NEW SYSTEM.

NOTES FOR THE ASSEMBLY OF THE CS SERIES 200 FCC EMC NON-COMPLIANT CPU:

1. INSTALL THE CPU CHASSIS, MODEL 8678-RA (S/140; 512 KB MEMORY) AND ITS MOUNTING HARDWARE. INSTALL THE ERCC PCB AND THE PIO PCB (IF PRESENT), AND EITHER THE AMI, ATI OR ULM PCB. NOTE THAT THE PCB'S AND THEIR CABLES CARRIED OVER FROM THE CS/40 SHOULD BE RECONFIGURED PER THE SLOT ASSIGNMENTS FOR THE CS SERIES 200 (SEE SHEETS 1 THROUGH 3 OF THE CS SERIES 200 INSTALLATION DATA SHEETS TO DETERMINE THE PROPER SLOT ASSIGNMENTS AND TAILORING FOR EACH PCB). MAKE SURE THAT THE MEMORY TERMINATORS ARE PLACED IN THE LAST MEMORY SLOT (BELOW SLOT 13).
2. INSTALL THE EIA CONNECTOR PANEL (SEE SHEET 9 OF S/140 CPU INSTALLATION DATA SHEET, 010-000232).
3. INSTALL THE INTERNAL CABLE (PROVIDED IN ATI, AMI OR ULM KIT) TO THE CPU CHASSIS AND THE EIA CONNECTOR PANEL (SEE SHEET 1 THROUGH 3 OF CS SERIES 200 INSTALLATION DATA SHEETS).
4. RECONFIGURE CABLES THAT ATTACH SERIAL PRINTERS AND TERMINALS TO THE CONVENIENCE PANEL. CONNECT CABLES FROM THE SERIAL PRINTER(S) AND TERMINALS TO THE EIA CONNECTOR PANEL(S) (SEE SHEET 2 OF CS SERIES 200 INSTALLATION DATA SHEETS).
5. IF A PIO PRINTER IN THE NEW CONFIGURATION, CONNECT THE NEW INTERNAL CABLE TO THE NEW PRINTER BOARDS, AND CONNECT THE NEW EXTERNAL PRINTER CABLE TO THE PADDLEBOARD (SEE SHEET 8 OF S/140 CPU INSTALLATION DATA SHEET 010-000232).
6. IF SYNCHRONOUS COMMUNICATIONS ARE TO BE USED, ADD THE APPROPRIATE SYNC BOARD FOR YOUR CONFIGURATION (SEE SHEET 1 OF CS SERIES 200 INSTALLATION DATA SHEETS).
7. FOR THE DISK STORAGE SUB-SYSTEMS, DELETE OLD INTERNAL CABLE, 005-001802 AND ADD NEW CABLE, 005-012472.
8. INSTALL LABEL 002-021792 OVER THE EXISTING LABEL AT THE TOP OF THE CABINET.
9. VERIFY CORRECT SYSTEM OPERATION USING SYSTEM DIAGNOSTICS.
10. LOAD THE OPERATING SOFTWARE AS DESCRIBED IN THE DOCUMENTATION ACCOMPANYING THE SOFTWARE PACKAGE. RELOAD THE BACKED-UP DISK FILES.

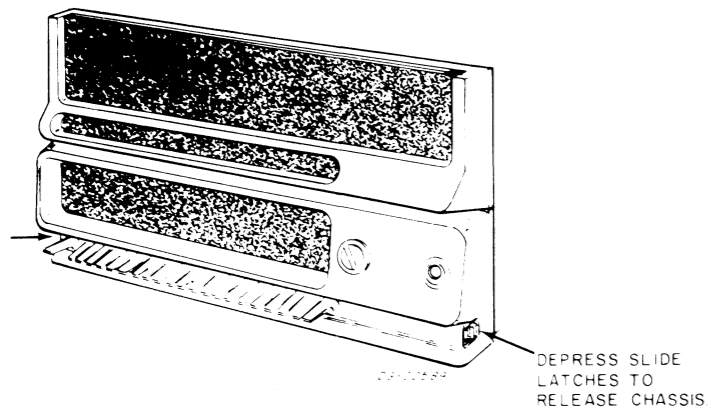
NOTES FOR THE ASSEMBLY OF THE CS SERIES 200 FCC EMC COMPLIANT CPU:

1. INSTALL THE CPU CHASSIS, MODEL 8678-RA (S/140; 512 KB MEMORY) AND ITS MOUNTING HARDWARE. INSTALL THE ERCC PCB AND PIO PCB (IF PRESENT), AND EITHER THE AMI, ATI OR ULM PCB. NOTE THAT THE PCB'S CARRIED OVER FROM THE CS/40 SHOULD BE RECONFIGURED PER THE SLOT ASSIGNMENTS FOR THE CS SERIES 200 (SEE SHEETS 1 THROUGH 3 OF THE CS SERIES 200 INSTALLATION DATA SHEETS TO DETERMINE THE PROPER SLOT ASSIGNMENTS AND TAILORING FOR EACH PCB). MAKE SURE THAT THE MEMORY TERMINATORS ARE PLACED ON THE LAST MEMORY SLOT (BELOW SLOT 13).
2. CONNECT THE INTERNAL CABLE (PROVIDED IN AMI, ATI OR ULM KIT) TO THE CPU CHASSIS (SEE SHEETS 1 THROUGH 3 OF THE CS SERIES 200 INSTALLATION DATA SHEETS).
3. RECONFIGURE CABLES THAT ATTACH SERIAL PRINTERS AND TERMINALS TO THE CPU CHASSIS (SEE SHEET 2 OF THE CS SERIES 200 INSTALLATION DATA SHEETS).
4. IF A PIO PRINTER IS PRESENT IN THE NEW CONFIGURATION, INSTALL THE PROPER NEW CABLES, PER SHEET 1 OF THIS DOCUMENT, BETWEEN THE PRINTER AND THE CPU CHASSIS.
5. FOR THE DISK STORAGE AND THE MAG TAPE UNITS, DELETE THE OLD INTERNAL CABLE, 005-001802, AND THE OLD EXTERNAL CABLE 005-002208. ADD NEW CABLES, PER SHEET 1 OF THIS DOCUMENT, CONNECTING THE PERIPHERAL TO THE CPU CHASSIS.
6. IF SYNCHRONOUS COMMUNICATIONS ARE TO BE USED, ADD THE APPROPRIATE SYNC BOARD FOR YOUR CONFIGURATION (SEE SHEET 1 OF THE CS SERIES 200 INSTALLATION DATA SHEETS).
7. INSTALL LABEL 002-021792 OVER THE EXISTING LABEL AT THE TOP OF THE CABINET.
8. VERIFY CORRECT SYSTEM OPERATION USING SYSTEM DIAGNOSTICS.
9. LOAD THE OPERATING SOFTWARE AS DESCRIBED IN THE DOCUMENTATION ACCOMPANYING THE SOFTWARE PACKAGE. RELOAD THE BACKED-UP DISK FILES.

CS/40 TO SERIES 200B UPGRADE

NOVA 3

LATCH RELEASE

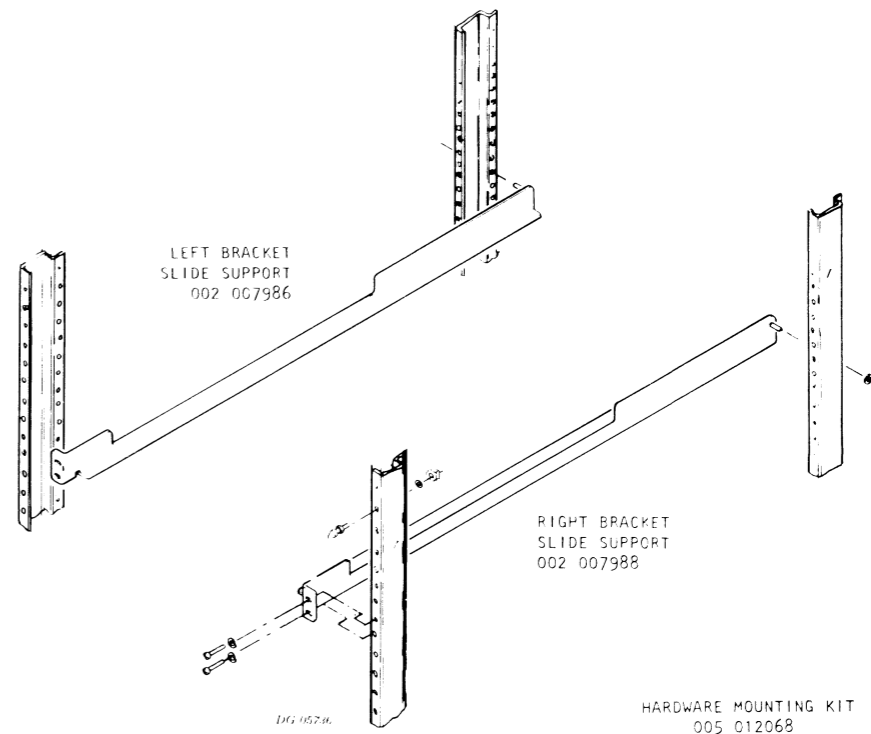


MODEL 9471

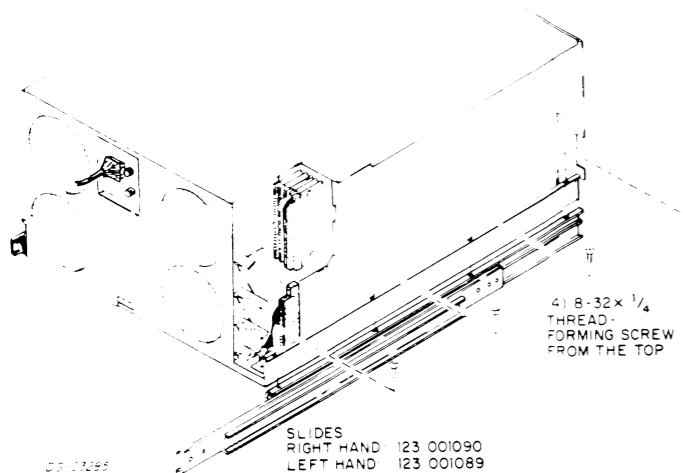
1. **CAUTION** REMOVE ALL POWER PLUGS FROM WALL OUTLETS.
2. REMOVE DEVICE CABLES FROM PADDLEBOARDS.
3. REMOVE NOVA 3 CHASSIS.
4. REMOVE SLIDERAILS FROM CABINET.
5. REMOVE SLIDERAILS FROM KIT.
6. MOUNT S/140 CHASSIS.
7. INSERT MEMORY PCB'S AND CPU.
8. MOVE CONTROLLER BOARDS FROM OLD TO NEW CHASSIS.
9. INSTALL PRIORITY JUMPERS AND MEMORY TERMINATORS.
10. CONNECT DEVICE CABLES.

NOTE: CHASSIS WILL BE PRE-WIRED FOR CS/200 USE EXCEPT FOR PRIORITY JUMPERS.

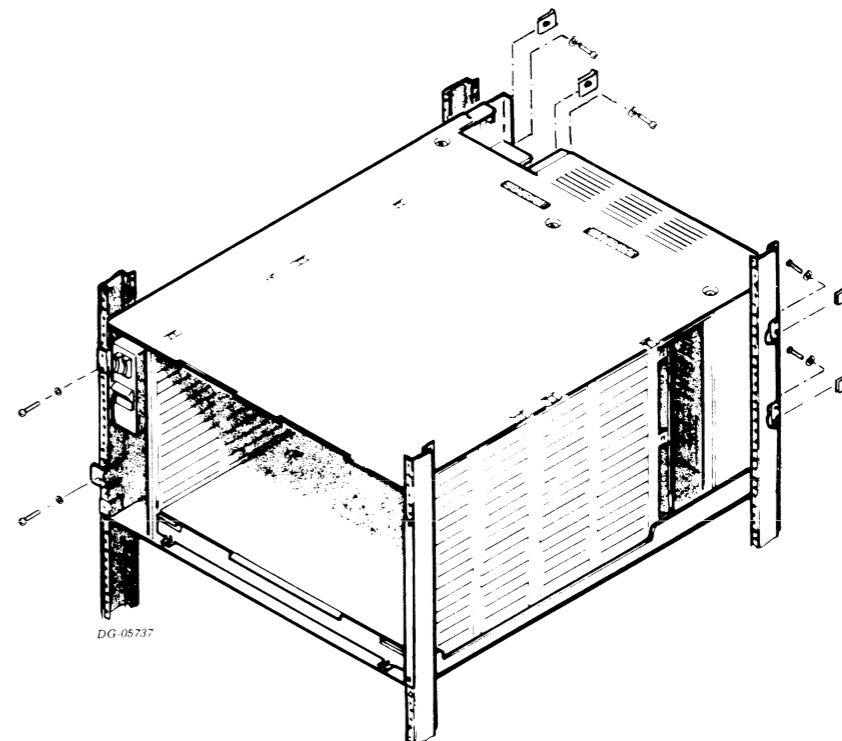
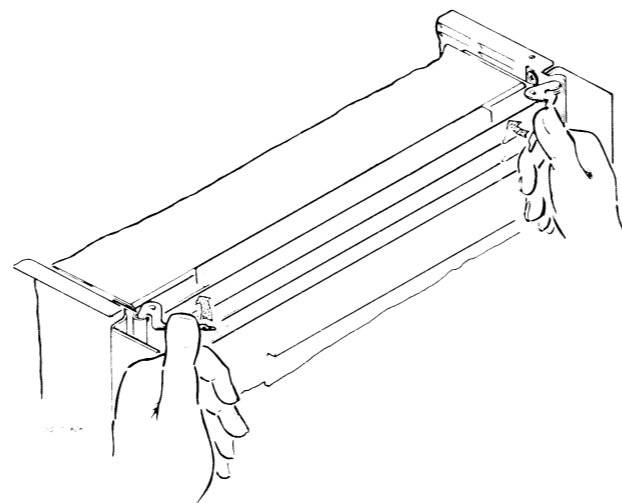
S/140 CABINET MOUNTING



REMOVING SLIDES FROM CHASSIS



INSERTING MEMORY PC BOARD

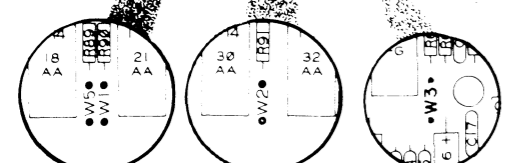


TAILORING JUMPERING

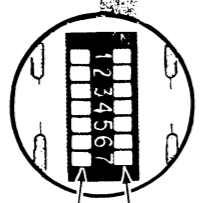
(For CS Series 200 PCB's, see 010-000310)

6070 CARTRIDGE DISK

Ref. DGC Diag No. 107-000839 Rev. 05

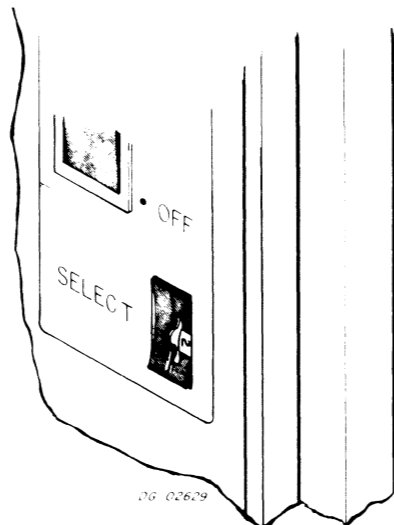


HEAD SELECTION JUMPERS		
W1	OUT	FOR
W2	IN	20MBYTE
W5	IN	DISC
W3	OUT	FOR SINGLE PROCESSOR
	IN	FOR DUAL PROCESSOR
W4	IN	FOR NOVA 4/C ONLY
	OUT	FOR OTHER PROCESSORS



PUSH SWITCH BUTTON (OFF) THIS SIDE
PUSH SWITCH BUTTON (ON) THIS SIDE

UNIT SELECT SWITCH

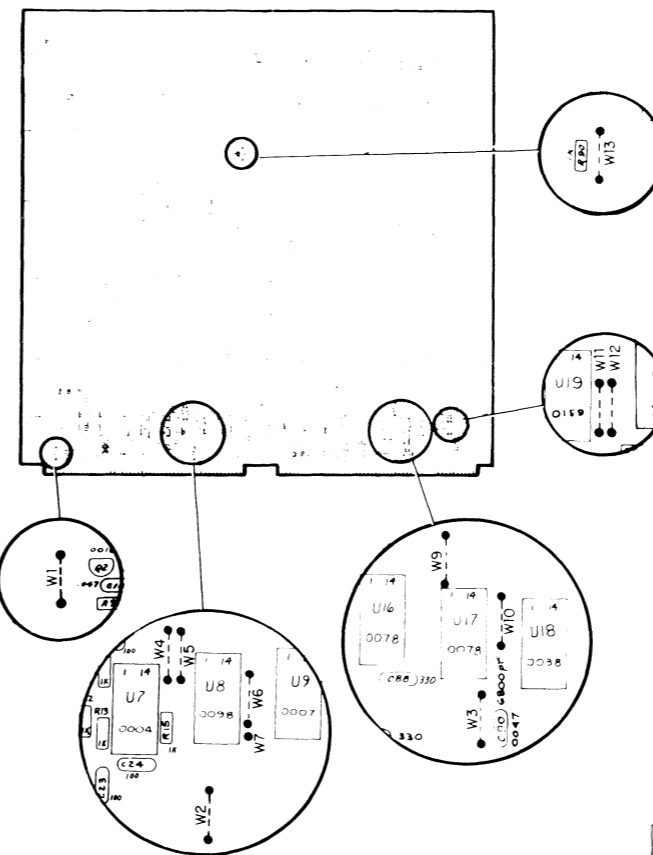


CONTROLLER DEVICE SELECT		
SWITCH NUMBER	DEVICE CODE 33	DEVICE CODE 73
1	OFF	ON
2	ON	ON
3	ON	ON
4	OFF	OFF
5	ON	ON
6	ON	CN
7	OFF	OFF

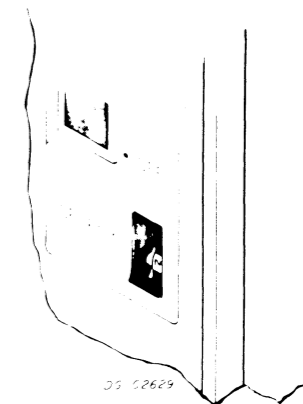
DG-04549

6045 CARTRIDGE DISK

Ref. DGC Diag No. 003-000137 Rev. 38



UNIT SELECT SWITCH



CONFIGURATION JUMPERS

W1	IN	-	FACTORY TEST
	OUT	-	NORMAL OPERATION
W2	IN	-	FUTURE USE
	OUT	-	NORMAL OPERATION
W3	IN	-	SINGLE PROCESSOR
	OUT	-	DUAL PROCESSOR
W11	IN	-	NORMAL OPERATION
	OUT	-	FACTORY TEST ONLY
W12	IN	-	FACTORY TEST ONLY
	OUT	-	NORMAL OPERATION
W13	IN	-	NORMAL OPERATION
	OUT	-	FUTURE USE

DEVICE CODE SELECTION

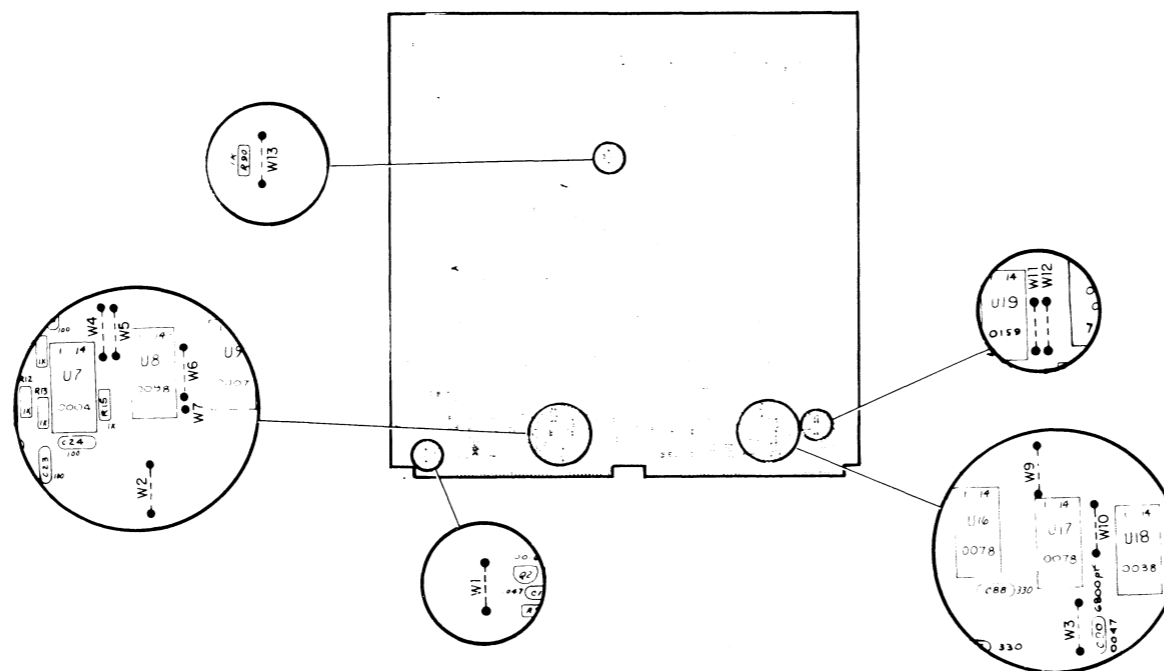
JUMPER POSITION	DEVICE CODE 33	DEVICE CODE 73	DEVICE CODE 32	DEVICE CODE 72
W4	IN	IN	OUT	OUT
W5	OUT	OUT	IN	IN
W6	IN	OUT	IN	OUT
W7	OUT	IN	OUT	IN
W9	OUT	IN	OUT	IN
W10	IN	IN	OUT	OUT

TAILORING JUMPERING

(For CS Series 200 PCB's, see 010-000310)

6031 DISKETTE DRIVE

Ref DGC Dwg 003-000187 Rev 38



DEVICE CODE SELECTION

JUMPER POSITION	DEVICE CODE 33	DEVICE CODE 73	DEVICE CODE 32	DEVICE CODE 72
W4	IN	IN	OUT	OUT
W5	OUT	OUT	IN	IN
W6	IN	OUT	IN	OUT
W7	OUT	IN	OUT	IN
W9	OUT	IN	OUT	IN
W10	IN	IN	OUT	OUT

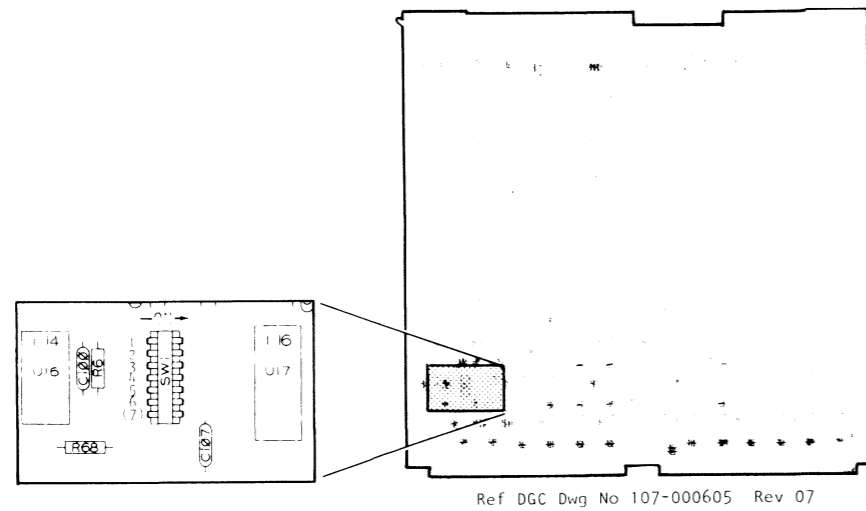
CONFIGURATION JUMPERS

W1	IN - FACTORY TEST
	OUT - NORMAL OPERATION
W2	IN - FUTURE USE
	OUT - NORMAL OPERATION
W3	IN - SINGLE PROCESSOR
	OUT - DUAL PROCESSOR
W11	IN - NORMAL OPERATION
	OUT - FACTORY TEST ONLY
W12	IN - FACTORY TEST ONLY
	OUT - NORMAL OPERATION
W13	IN - NORMAL OPERATION
	OUT - FUTURE USE

**TAILORING
JUMPERING**

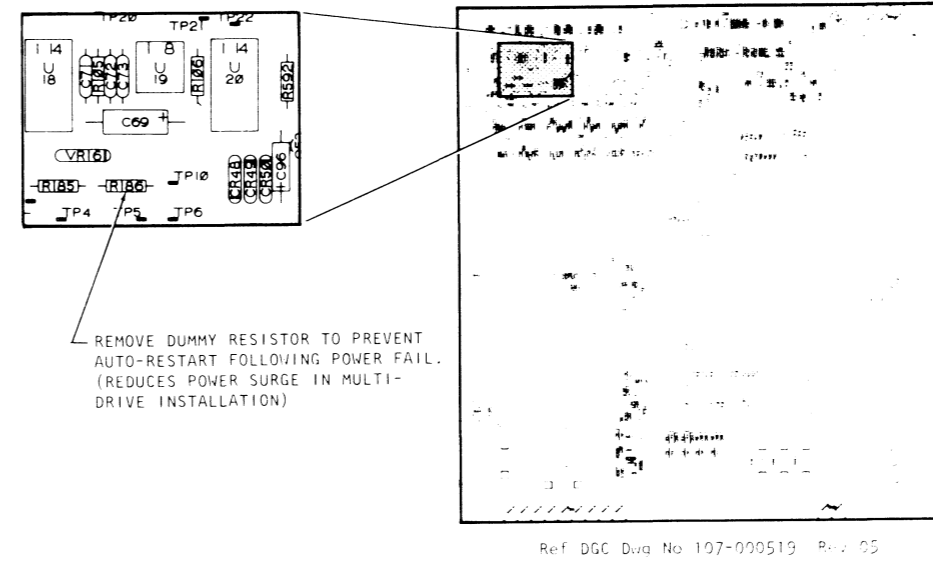
6060, 6061, 6067 DISK PACK DISKS

CONTROLLER BOARD SWITCH



DEVICE CODE	"ON"
27	2, 4, 5, 6
57	1, 2, 4, 5, 6
SINGLE PROCESSOR	7

DC POWER CONTROL BOARD



CS/ 10 SYSTEM UPGRADES TO CS SERIES 100

IMPORTANT

PRIOR TO ORDER PLACEMENT, IT IS RECOMMENDED THAT A SITE SURVEY BE PERFORMED BY DATA GENERAL SERVICE PERSONNEL. THIS SURVEY IS TO DETERMINE WHAT CABLES AND OTHER COMPONENTS SHOULD BE ORDERED IN ADDITION TO THE BASIC UPGRADE KIT. FOR INSTALLATIONS WHERE REMOTE DEVICES ON THE SYSTEM HAVE THEIR CABLING ENCLOSED WITHIN THE CONSTRUCTION (E.G. CONDUIT OR OTHER RELATIVELY INACCESSIBLE ROUTING), CONSIDERATION SHOULD BE GIVEN FOR MODIFICATION OF THE CABLE INTERFACE, EITHER BY CHANGING THE CABLE CONNECTOR OR BY ADDITION OF AN ADAPTER CABLE.

Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

UPGRADE COMPONENTS

CI System (Kit Model 9767-Y) *

COMPONENT	MODEL/PART NO	NOTES
S/20 CPU/CHASSIS	8733-NA	INCLUDES 256kb MEMORY
IPM-1, 4kb PCB	005-015693	
I/O BUS CABLE (DISK)	005-019643	REPLACES 005-015745
I/O BUS ADAPTER, INTERNAL	005-019434	REPLACES 005-015746
I/O BUS CABLE, INTERNAL	005-109437	
EIA INTERFACE CABLE	005-013258	TO MODEL 6629 TERMINAL
CPU TO TERM. ADAPTER CA, EXT	005-021269	
MODEL LABEL	002-008327	APPLY TO MODEL 6629 TERMINAL
CABINET LABEL	002-021791	"DATA GENERAL CS SERIES 100"
PROCESSOR PANEL LABEL	002-012261	"DATA GENERAL"
DOCUMENTATION PACKAGE	005-019429	FOR SERIES 100 SYSTEMS
LICENSE TO USE RDOS	3818-10N	

C3 Disk System (Kit Model 9768-Y) *

COMPONENT	MODEL/PART NO	NOTES
S/20 CPU/CHASSIS	8733-NA	INCLUDES 256kb MEMORY
I/O BUS CABLE (DISK)	005-019643	REPLACES 005-015745
EIA INTERFACE CABLE	005-013258	TO MODEL 6629 TERMINAL
CPU TO TERM. ADAPTER CA, EXT	005-021269	
MODEL LABEL	002-008327	APPLY TO MODEL 6629 TERMINAL
CABINET LABEL	002-021791	"DATA GENERAL CS SERIES 100"
PROCESSOR PANEL LABEL	002-012261	"DATA GENERAL"
DOCUMENTATION PACKAGE	005-019429	FOR SERIES 100 SYSTEMS
LICENSE TO USE RDOS	3818-N	

Separately Ordered Components

COMPONENT	MODEL/PART NO	NOTES
DISK DRIVE UNIT (5MB OR LARGER)	CUSTOMER SELECTED	REQUIRED, IF NOT ALREADY PRESENT IN CS/10 SYSTEM.
4-LINE ASYNC MUX PCB	4227-P (INCLUDES 4225-S, 4227-S)	REQUIRED FOR MULTIPLE TERMINAL/SERIAL PRINTER.
SINGLE LINE ASYNC PCB	4207-S	OPTION - FOR TERMINAL OR SERIAL PRINTER
LINE PRINTER CONTROLLER	4221-S	OPTION - FOR PIO PRINTER

* SYSTEM POWER SUFFIXES (Y)

Y	=	DESCRIPTION
BLANK		120 VAC
2		220 VAC
4		240 VAC

CABLE CHANGES

SERIAL PRINTERS	DELETE OLD CABLE	ADD NEW CABLE
6041/6193	005-014757	005-013258 + 005-013280
4320/4322	005-014756	005-015275 EIA
4422	005-018271	005-013258 + 005-013259
4354	005-016839	005-013258 + 005-013264 (EIA)
4354	005-014689	005-013260 + 005-013263 (20ma)
PIO PRINTERS		
9610/9611	005-014770	005-013265 + 005-013281
9260/9261	005-014769	005-013265 + 005-013267
9293/9198	005-012932	005-013265
DISPLAY TERMINALS		
6053/6093	005-007637	005-013258 + 005-013280 (EIA)
6053/6093	005-018250	005-013260 + 005-013280 (20ma)
6108	005-014694	005-013258 (EIA)
6108	005-014689	005-013260 (20ma)

1. THE SERIES 100 SYSTEM DOES NOT SUPPORT USE OF THE RD-1 REMOTE DIAGNOSTIC MODEM.
2. THE CS SERIES 100 SYSTEM DOES NOT SUPPORT USE OF THE 20mA BUSY SIGNAL. THEREFORE, THE REMOTE 20mA TP1 AND TP2 PRINTERS ARE LIMITED TO A MAXIMUM BAUD RATE OF 300 AND 1200 RESPECTIVELY.
3. IF THE MODEL 6629 TERMINAL IS CONNECTED TO EITHER THE MODEL 4207 OR THE MODEL 4227 ASYNC INTERFACE PCB, THE CORRESPONDING CLEAR-TO-SEND JUMPERS MUST BE REMOVED. FOR ALL OTHER TERMINALS, THESE JUMPERS MUST BE IN.

Warning: This computer was designed for use with shielded cables in order to meet FCC specifications. Although use with cables which are not shielded is permitted, such use may cause interference with radio or television transmissions, and as before, the user is responsible to correct such interference.

C1 DISKETTE/DISK SYSTEMS (Models 9320, 9321, 9322) UPGRADE PROCEDURE

FOR THESE SYSTEMS THE UPGRADE IS TO A MODEL 90150CS SERIES 100 WITH 256 KB OF MEMORY. FOR THE MODEL 9320, THE UPGRADE WILL INCLUDE THE ADDITION OF A DISK DRIVE (5 MB OR LARGER). IN THE FOLLOWING PROCEDURE, REFERENCE IS MADE TO THE CS SERIES 100 INSTALLATION DATA SHEETS 010-000378 WHICH IS INCLUDED IN THE NEW DOCUMENTATION PACKAGE 005-021297. ALSO SEE SHEET 4 OF THIS IDS FOR CPU/TERMINAL CONNECTIONS.

CAUTION

IF UPGRADING A MODEL 9321 OR 9322, IT IS ESSENTIAL THAT THE DISK BE COMPLETELY BACKED-UP ON OTHER MEDIA, EITHER DISKETTE OR MAGNETIC TAPE. THIS IS REQUIRED BECAUSE, IN RELOCATING THE DISK DRIVE WITHIN THE CABINET, THE DISK MODULE CAN BE DISTORTED TO THE EXTENT THAT EXISTING DATA ON THE DISK CANNOT BE READ RELIABLY. THUS, AFTER INSTALLING OR RELOCATING A DISK DRIVE, THE DISK MODULE MUST BE GIVEN SUFFICIENT TIME TO "SETTLE" BACK INTO ITS ORIGINAL SHAPE BEFORE WRITING DATA ONTO IT. (SEE FIELD ALERT BULLETIN S1118)

CONVERT CS/10 CPU/TERMINAL TO MODEL 6629 TERMINAL

NOTE THAT WITH COMPLETION OF THIS PROCEDURE, THE RESULTING MODEL 6629 TERMINAL EMULATES THE FUNCTION OF A DASHER 6053 DISPLAY TERMINAL AND WILL BE USED AS THE MASTER CONSOLE TERMINAL.

1. ON THE CPU/TERMINAL, REMOVE THE FRONT AND REAR ACCESS PANELS TO THE LOGIC CHASSIS.
2. IF PRESENT, REMOVE I/O BUS JUMPER PLUG 111-001353 FROM W1 (SEE SHEET 4 OF THIS IDS).
3. DISCONNECT ALL CABLES CONNECTED TO THE "A" CONNECTORS ON THE REAR LOGIC BACKPANEL.
4. REMOVE ALL LOGIC PCB'S FROM THE LOGIC CHASSIS. EXCEPT FOR THE IPM-1 64 KB PCB AND THE SYNC LINE CONTROLLER PCB, THESE PCBs WILL BE USED IN THE NEW CONFIGURATION.
5. RECONFIGURE JUMPERING ON THE VIDEO INTERFACE PCB (IPM-2A) SO THAT JUMPER W1 IS IN AND JUMPERS W6 AND W7 ARE OUT. SET CONFIGURATION SWITCHES AS INDICATED ON SHEET 5 OF THIS IDS. RE-INSTALL THE PCB INTO SLOT 7.
6. CONFIGURE JUMPERS ON THE NEW IPM-1 4-KB PCB (005-015693) PER SHEET 5 OF THIS IDS AND INSTALL THE PCB INTO SLOT 6 OF THE LOGIC CHASSIS.
7. CONNECT NEW CABLE 005-021269 TO THE IPM-2A PCB CONNECTOR (SLOT 7) AT REAR OF THE LOGIC BACKPANEL.
8. INSTALL MODEL LABEL, 002-008327, WITH "6629" MARKING OVER THE EXISTING MODEL LABEL ON THE REAR OF THE CONSOLE TERMINAL.

RELOCATE/INSTALL DISK/DISKETTE DRIVES

1. IF A MODEL 9320, REMOVE THE 005-015746 CABLE THAT CONNECTS TO THE DISKETTE DRIVE. THIS CABLE WILL NOT BE USED IN THE NEW CONFIGURATION.
2. IF A MODEL 9321 OR 9322, REMOVE THE 005-015745 CABLE THAT CONNECTS TO THE DISK DRIVE UNIT. THIS CABLE WILL NOT BE USED IN THE NEW CONFIGURATION.
3. REMOVE THE TOP 1.75-INCH PANEL FROM THE CABINET AND REPOSITION THE DISK/DISKETTE DRIVE UNIT(S) UPWARD BY 1.75-INCHES SO THAT THE DISKETTE DRIVE IS LOCATED AT TOP OF THE CABINET (SEE CS SERIES 100 INSTALLATION DATA SHEETS 010-00378). IF A NEW DISK DRIVE UNIT IS BEING ADDED, REFER TO THE INSTALLATION DATA SHEETS ACCOMPANYING THE DRIVE UNIT. THE DEVICE CODE FOR THE DISK UNIT MUST BE SET FOR 26.
4. CONNECT NEW CABLE 005-019643 TO J3 ON THE DISK DRIVE CONTROLLER PCB.

INSTALL S/20 CPU/CHASSIS

IN THIS PROCEDURE, BEFORE INSTALLATION OF CHASSIS INTO THE CABINET, THE CPU CHASSIS IS TO BE COMPLETELY ASSEMBLED, INCLUDING INSERTION OF THE PCBs AND CONNECTION OF CABLES. REFER TO THE S/20 INSTALLATION DATA SHEETS (010-000350) AND THE CS SERIES 100 INSTALLATION DATA SHEETS (010-000378) FOR ASSEMBLY DETAILS.

1. ASSEMBLE THE S/20 CHASSIS WITH THE SPU PCB, THE 256 KB MEMORY PCB, AND THE BATTERY BACKUP PCB. IN CONFIGURING THE SPU, CLEAR-TO-SEND JUMPER W3 MUST BE REMOVED. SET THE BAUD RATE FOR 9600 HZ.

2. INSTALL THE FOLLOWING PCB'S INTO THE INDICATED SLOT LOCATIONS AND CONNECT THE REFERENCED CABLE FROM INTERFACE PCB TO CPU BULKHEAD.

PCB	SLOT	CABLE NO.
COMMUNICATIONS CONTROLLER (4225-S)	3	NONE
4-LINE ASYNCHRONOUS INTERFACE (4227-S)	4	005-019984
ASYNCHRONOUS LINE INTERFACE (4207-S) - OPTIONAL	6	005-019971
DISKETTE CONTROLLER - OPTIONAL	8	005-019434
LINE PRINTER CONTROLLER (4221-S) - OPTIONAL	7	005-019973 SEE P10 CABLES (SHT 1, THIS IDS)

3. INSTALL PRIORITY JUMPERS ON THE LOGIC BACKPANEL AS INSTRUCTED BY THE S/20 INSTALLATION DATA SHEETS (010-000350). ATTACH EIA INTERFACE CABLE, 005-013258, TO THE CPU BULKHEAD CONNECTOR.
4. INSTALL THE COMPLETED LOGIC CHASSIS INTO THE BOTTOM LOCATION OF THE CABINET (REFER TO THE INSTALLATION DATA SHEETS ACCOMPANYING THE S/20 UNIT).

SYSTEM CONFIGURATION

1. INTERCONNECT UNITS ACCORDING TO THE CS SERIES 100 INSTALLATION DATA SHEET, 010-000378. ATTACH EIA INTERFACE CABLE 005-013258 TO TERMINAL ADAPTER CABLE 005-021269. USE THE 005-019437 CABLE FOR CONNECTING THE DISKETTE DRIVE AND THE 005-019643 CABLE FOR CONNECTING THE DISK DRIVE. CABLES FOR THE PRINTERS AND TERMINALS ARE RECONFIGURED AS DEFINED UNDER HEADING "CABLE CHANGES".
2. INSTALL PANELS TO FRONT AND REAR OF CABINET AND 6629 TERMINAL.
3. INSTALL LABEL 002-012261 (DATA GENERAL) OVER THE S/20 LABEL ON THE PROCESSOR FRONT PANEL AND THE 002-021791 LABEL (DATA GENERAL CS SERIES 100) OVER EXISTING LABEL AT TOP OF CABINET.
4. ALLOW "SETTLING" TIME FOR THE DISK DRIVE UNIT PER FIELD ALERT BULLETIN S1118. RUN SYSTEM DIAGNOSTICS TO VERIFY CORRECT SYSTEM OPERATION. RE-INITIALIZE THE DISK AND LOAD THE OPERATING SOFTWARE AS DESCRIBED IN THE DOCUMENTATION ACCOMPANYING THE SOFTWARE PACKAGE. THEN RELOAD THE BACK-UP DATA FILES.

C3 DISK SYSTEMS (Models 9323, 9324) UPGRADE PROCEDURE

FOR THESE SYSTEMS, THE UPGRADE IS TO A MODEL 90150CS SERIES 100 WITH 256 KB OF MEMORY. IN THE FOLLOWING PROCEDURES, REFERENCE IS MADE TO THE CS SERIES 100 INSTALLATION DATA SHEETS 010-00378 WHICH IS INCLUDED IN THE NEW DOCUMENTATION PACKAGE 005-021297. ALSO SEE SHEET 4 OF THIS IDS FOR CPU/TERMINAL AND ASYNC MUX/PLUG PANEL CONNECTIONS.

CAUTION

PRIOR TO UPGRADING THESE SYSTEMS, IT IS ESSENTIAL THAT THE DISK BE COMPLETELY BACKED-UP ON OTHER MEDIA, EITHER DISKETTE OR MAGNETIC TAPE. THIS IS REQUIRED BECAUSE IN RELOCATING THE DISK DRIVE WITHIN THE CABINET, THE DISK MODULE CAN BE DISTORTED TO THE EXTENT THAT EXISTING DATA ON THE DISK CANNOT BE READ RELIABLY. THUS, AFTER INSTALLING OR RELOCATING A DISK DRIVE, THE DISK MODULE MUST BE GIVEN SUFFICIENT TIME TO "SETTLE" BACK INTO ITS ORIGINAL SHAPE BEFORE WRITING DATA ONTO IT (SEE FIELD ALERT BULLETIN S1118).

CONVERT CS/10 CPU/TERMINAL TO MODEL 6629 TERMINAL

NOTE THAT WITH COMPLETION OF THIS PROCEDURE, THE RESULTING MODEL 6629 TERMINAL EMULATES THE FUNCTION OF A DASHER 6053 DISPLAY TERMINAL AND WILL BE USED AS THE MASTER CONSOLE TERMINAL.

1. ON THE CPU/TERMINAL, REMOVE THE FRONT AND REAR ACCESS PANELS TO THE LOGIC CHASSIS.
2. DISCONNECT ALL CABLES CONNECTED TO THE "A" CONNECTORS ON THE REAR LOGIC BACKPANEL. ALSO DISCONNECT THE CABLE CONNECTION TO J13 EXTERNAL POWER CONNECTOR.
3. REMOVE ALL LOGIC PCBs FROM THE LOGIC CHASSIS EXCEPT FOR THE IPM-1 4KB PCB (SLOT 6) AND THE IPM-2A PCB (SLOT 7). WITH EXCEPTION OF THE IPM-1 64 KB PCB, THE BANK SELECT/MEMORY PCB, AND THE SYNC LINE CONTROLLER PCB, THESE PCBs WILL BE USED IN THE NEW CONFIGURATION.
4. CONNECT NEW CABLE 005-21269 TO THE IPM-2A PCB CONNECTOR (SLOT 7) AT REAR OF THE LOGIC BACKPANEL. NOTE THAT THE JUMPER AND SWITCH SETTINGS FOR THE IPM-2A PCB ARE THE SAME AS WAS CONFIGURED FOR CS/10 (SEE SHEET 5 OF THIS IDS).
5. INSTALL MODEL LABEL, 002-008327, WITH "6629" MARKING OVER THE EXISTING MODEL LABEL ON THE REAR OF THE CONSOLE TERMINAL.

RELOCATE/INSTALL DISK/DISKETTE DRIVES

1. REMOVE THE 005-015737 CABLE CONNECTED TO J9 ON THE ASYNC MUX/PLUG PCB 005-015626 (LOCATED INSIDE REAR PANEL OF CABINET). THIS CABLE WILL NOT BE USED IN THE NEW CONFIGURATION.
2. REMOVE THE 005-015745 CABLE CONNECTED BETWEEN J10 ON THE ASYNC MUX/PLUG PCB AND THE DISK DRIVE UNIT. THIS CABLE WILL NOT BE USED IN THE NEW CONFIGURATION.
3. REMOVE THE ASYNC MUX/PLUG PCB FROM INSIDE THE REAR PANEL OF THE CABINET. THIS PCB WILL NOT BE USED IN THE NEW CONFIGURATION.
4. REMOVE THE TOP 1.75-INCH PANEL FROM THE CABINET AND REPOSITION THE DISK/DISKETTE DRIVE UNIT(S) UPWARD BY 1.75-INCHES SO THAT THE DISKETTE DRIVE IS LOCATED AT TOP OF THE CABINET (SEE CS SERIES 100 INSTALLATION DATA SHEETS 010-00378). THE DEVICE CODE FOR THE DISK DRIVE UNIT MUST BE SET FOR 26.

INSTALL S/20 CPU/CHASSIS

IN THIS PROCEDURE, BEFORE INSTALLATION OF CHASSIS INTO THE CABINET, THE CPU CHASSIS IS TO BE COMPLETELY ASSEMBLED, INCLUDING INSERTION OF THE PCBs AND CONNECTION OF CABLES. REFER TO THE S/20 INSTALLATION DATA SHEETS (010-000350) AND THE CS SERIES 100 INSTALLATION DATA SHEETS (010-000378) FOR ASSEMBLY DETAILS.

1. ASSEMBLE THE S/20 CHASSIS WITH THE SPU PCB, THE 256 KB MEMORY PCB, AND THE BATTERY BACKUP PCB. IN CONFIGURING THE SPU, CLEAR-TO-SEND JUMPER W3 MUST BE OUT.

2. INSTALL THE FOLLOWING PCBs INTO THE INDICATED SLOT LOCATIONS AND CONNECT THE REFERENCE CABLE FROM THE INTERFACE PCB TO THE CPU BULKHEAD.

PCB	SLOT	CABLE NO.
COMMUNICATIONS CONTROLLER (4225-S)	4	NONE
4-LINE ASYNCHRONOUS INTERFACE (4227-S)	5	005-019984
ASYNCHRONOUS LINE INTERFACE (4207-S) - OPTIONAL	6	005-019971
LINE PRINTER CONTROLLER (4221-S) - OPTIONAL	7	005-019973 SEE P10 CABLES (SHEET 1, THIS IDS)

3. INSTALL THE PRIORITY JUMPERS ON THE LOGIC BACKPANEL AS INSTRUCTED BY THE S/20 INSTALLATION DATA SHEET 010-000350. ATTACH EIA INTERFACE CABLE, 005-013258, TO THE CPU BULKHEAD CONNECTOR.
4. INSTALL THE COMPLETED LOGIC CHASSIS INTO THE BOTTOM LOCATION OF THE CABINET (REFER TO THE INSTALLATION DATA SHEETS ACCOMPANYING THE S/20 UNIT).

SYSTEM CONFIGURATION

1. INTERCONNECT UNITS ACCORDING TO THE CS SERIES 100 INSTALLATION DATA SHEET 010-000378. ATTACH EIA INTERFACE CABLE 005-013258 TO TERMINAL ADAPTER CABLE 005-021269. USE THE 005-019643 CABLE FOR CONNECTING THE DISK DRIVE. CABLES FOR THE PRINTERS AND TERMINALS ARE RECONFIGURED AS DEFINED UNDER HEADING "CABLE CHANGES".
2. INSTALL PANELS TO FRONT AND REAR OF CABINET AND 6629 TERMINAL.
3. INSTALL LABEL 002-012261 (DATA GENERAL) OVER THE S/20 LABEL ON THE PROCESSOR FRONT PANEL AND THE 002-021791 LABEL (DATA GENERAL CS SERIES 100) OVER EXISTING LABEL AT TOP OF CABINET.
4. ALLOW "SETTLING" TIME FOR THE DISK DRIVE UNIT PER FIELD ALERT BULLETIN S1118. RUN SYSTEM DIAGNOSTICS TO VERIFY CORRECT SYSTEM OPERATION. RE-INITIALIZE THE DISK AND LOAD THE OPERATING SOFTWARE AS DESCRIBED IN THE DOCUMENTATION ACCOMPANYING THE SOFTWARE PACKAGE. THEN RELOAD THE BACK-UP DATA FILES.

ORIGINAL CS/10 INTERCONNECTION

CAUTION

WHEN MAKING CONNECTION TO THE IPM1 "A" CONNECTOR, TAKE CARE THAT THE CONNECTOR IS INSTALLED WITH THE KEY FITTING INTO THE MATCHING SLOT OF THE "A" CONNECTOR. IF FOR SOME REASON THE KEY IS MISSING, ORIENT THE CONNECTOR SO THAT PIN 1 OF THE CONNECTOR MATCHES PIN 1 ON THE PCB. (PIN 1 IS AT THE BOTTOM OF THE "A" CONNECTOR). IF THE CONNECTOR IS INSTALLED THE OPPOSITE WAY, CIRCUIT IC'S CAN BE DAMAGED WHEN POWER IS APPLIED.

C1 DISKETTE SYSTEMS

MODEL 9320

DESTINATION	CABLE NO.	TERMINAL CONNECTOR
DISKETTE DRIVE	005-015746	SLOT 1
TP1 OR TP2 PRINTER	005-014757	SLOT 7
LETTER QUAL. PRINTER	005-014756	SLOT 7
SYNC COMMUNICATIONS	005-014768	SLOT 3
4422 SERIAL PRINTER	005-018271	SLOT 7

} "A" CONNECTORS

C1 DISK SYSTEMS

MODELS 9321, 9321W, 9322, 9322W

DESTINATION	CABLE NO.	TERMINAL CONNECTOR
TP1 OR TP2 PRINTER OR LETTER QUALITY PRINTER	005-014757	SLOT 7
LINE PRINTER	005-014756	SLOT 7
OR LP2 PRINTER	005-014769	SLOT 1
J3 DISC CONTROLLER	005-014770	SLOT 1
SYNC COMM DEVICE	005-015745	SLOT 6 (SEE CAUTION)
MAG TAPE DRIVE	005-14768	SLOT 3 (NOTE)
4422 SERIAL PRINTER	005-015745	SLOT 6 (SEE CAUTION)
	005-018271	SLOT 7

} "A" CONNECTORS

NOTE: IF NO LINE PRINTER, SYNC COMM IS IN SLOT 5.

C3 SYSTEMS

MODELS 9323, 9323W, 9324, 9324W

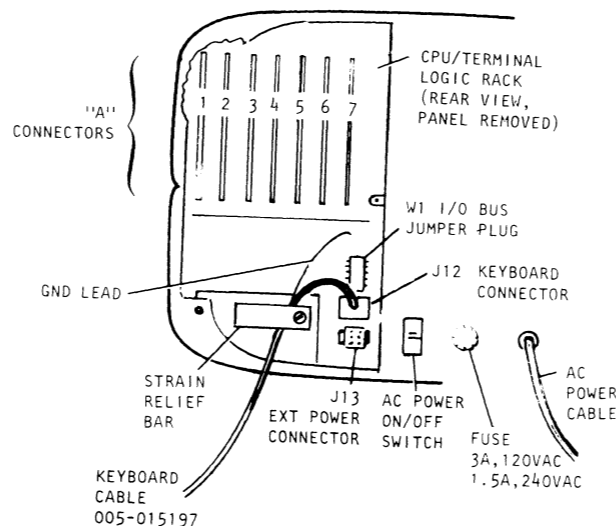
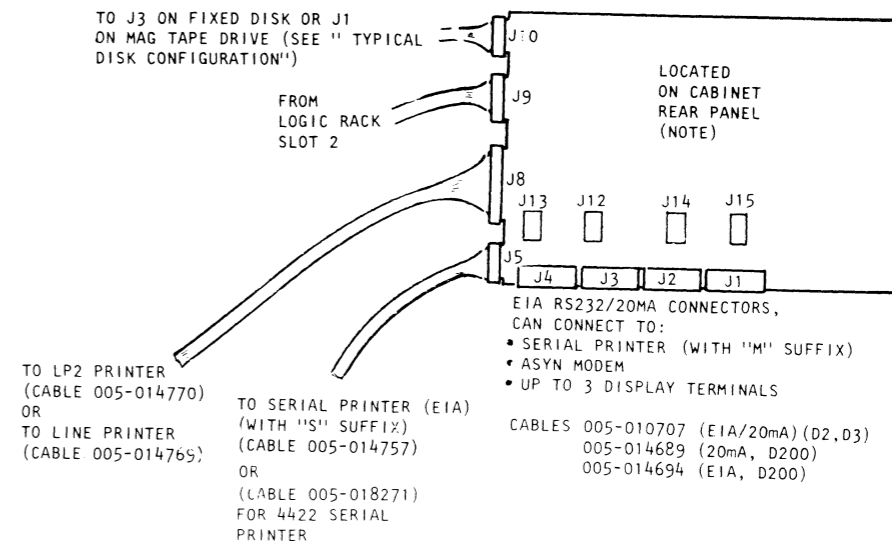
DESTINATION	CABLE NO.	TERMINAL CONNECTOR(S)
J9 ASYNC MUX/PLUG PCB	005-015737	SLOT 2 (SEE CAUTION) J13 (POWER)
SYNC COMM DEVICE	005-014768	SLOT 3

} "A" CONNECTORS

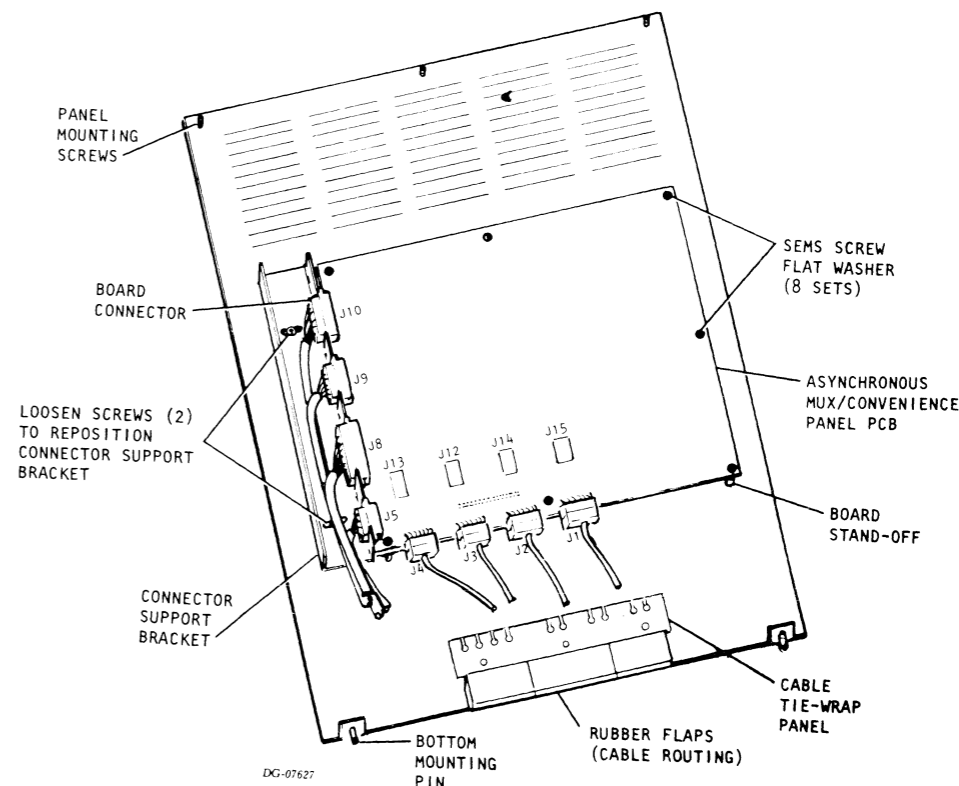
CHASSIS SLOT ASSIGNMENTS

SLOT	C1 DISKETTE - 9320	C1 FIXED DISK - 9321(W), 9322(W)	C3 FIXED DISK - 9323(W), 9324(W)	NEW 6629 TERMINAL
1	DISKETTE CONTROLLER (P/O 6096-SB)	LINE PRINTER CONTROLLER (4221-S)	BANK SELECT / MEMORY	
2			PROCESSOR/MEMORY (IPM-1, 64KB)	
3	SYNC COMMUNICATIONS	SYNC COMMUNICATIONS (NOTE 3)	SYNC COMMUNICATIONS	
4				
5		SYNC COMMUNICATIONS (NOTE 3)		
6	PROCESSOR/MEMORY (IPM-1, 64KB)	PROCESSOR/MEMORY (IPM-1, 64KB)	PROCESSOR/RAM/ROM (IPM-1, 4KB)	PROCESSOR/RAM/ROM (IPM-1, 4KB)
7	VIDEO INTERFACE (IPM-2A)	VIDEO INTERFACE (IPM-2A)	VIDEO INTERFACE (IPM-2A)	VIDEO INTERFACE (IPM-2A)

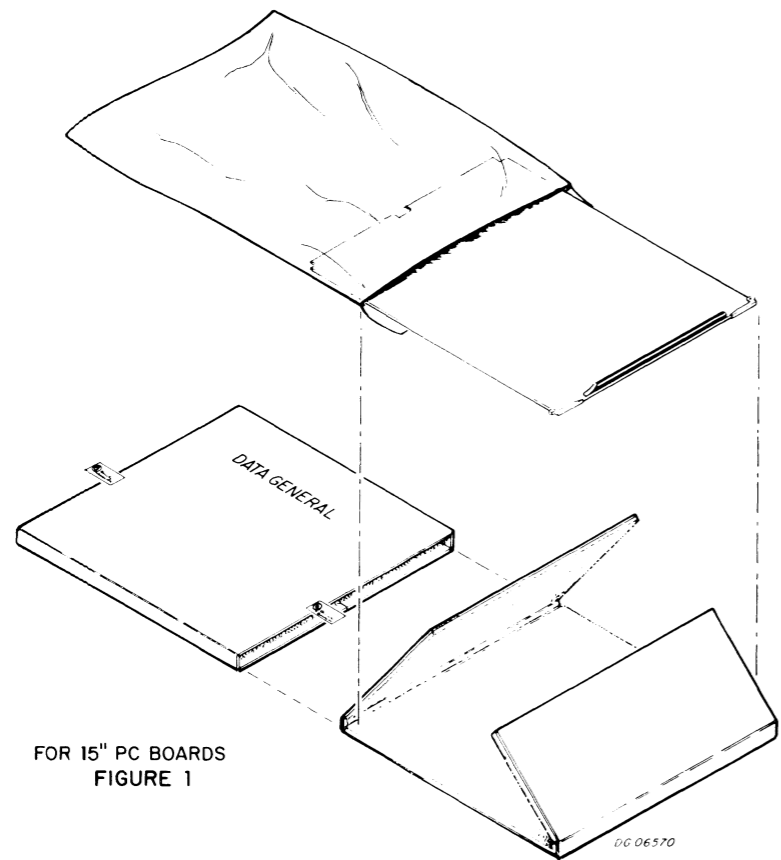
ASYNCHRONOUS MULTIPLEXOR/PLUG PANEL PCB



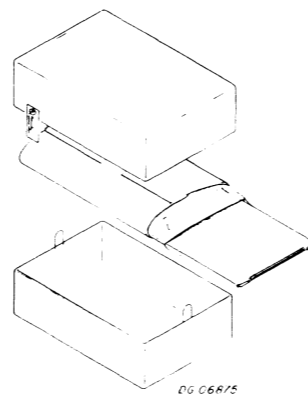
REAR PANEL, CABINET (INSIDE VIEW)



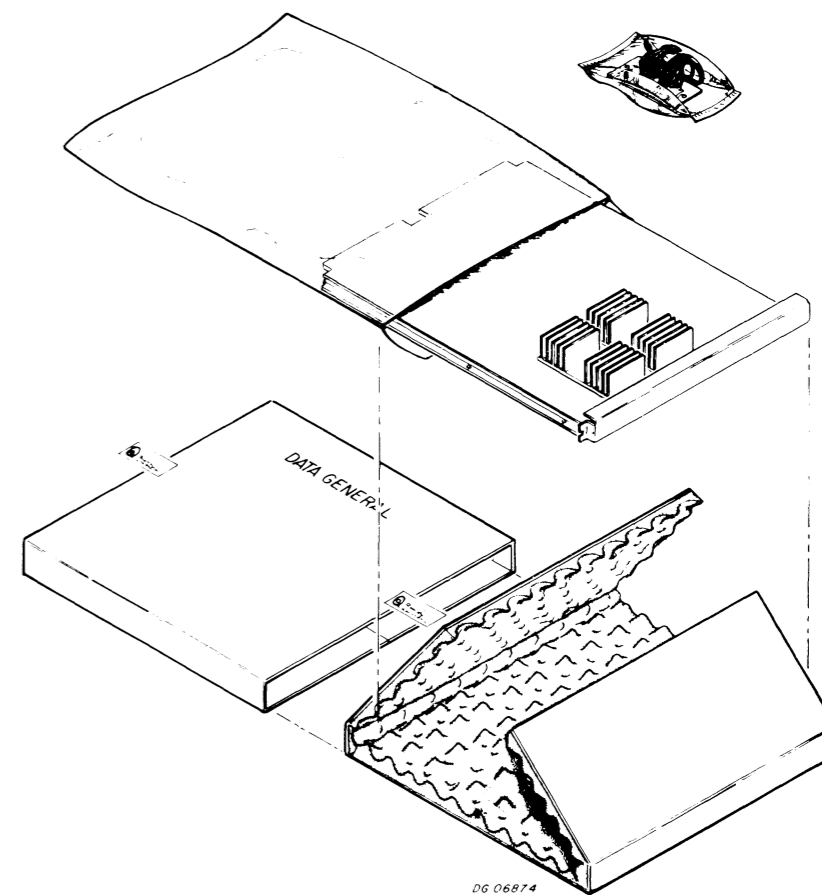
PACKAGING



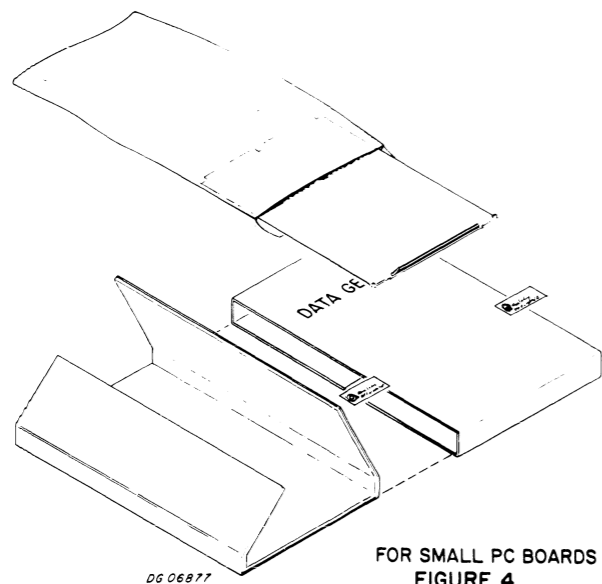
FOR 15" PC BOARDS
FIGURE 1



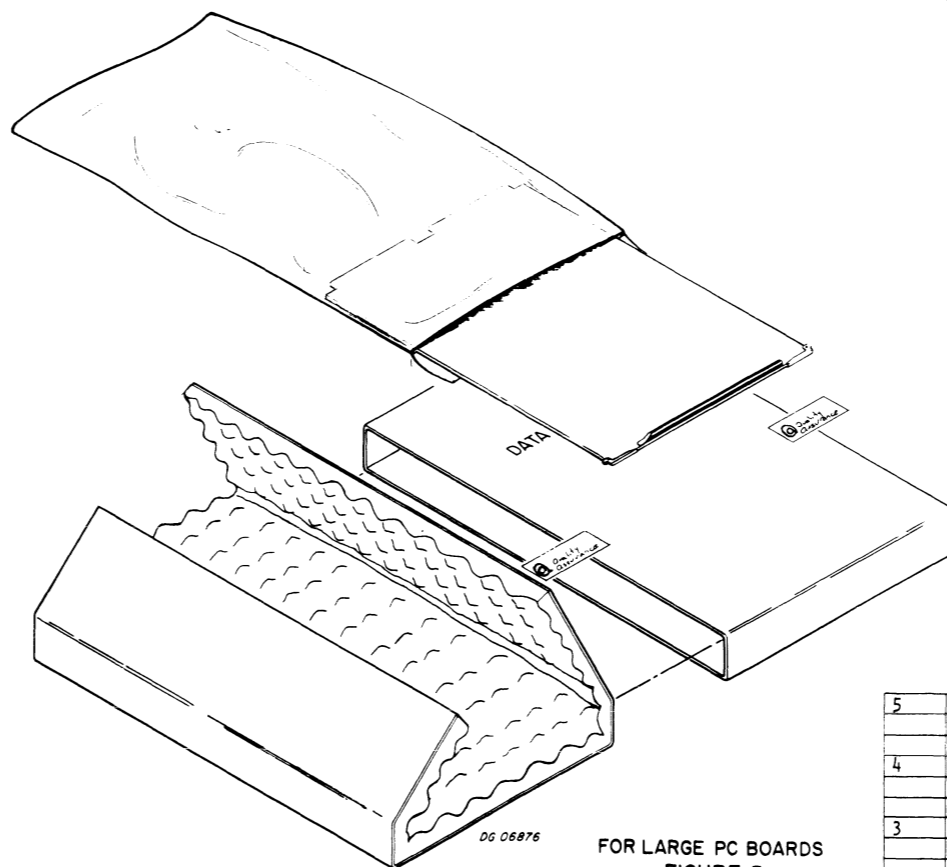
FOR SMALL PC BOARDS
FIGURE 2



FOR 16" PC BOARDS
FIGURE 3

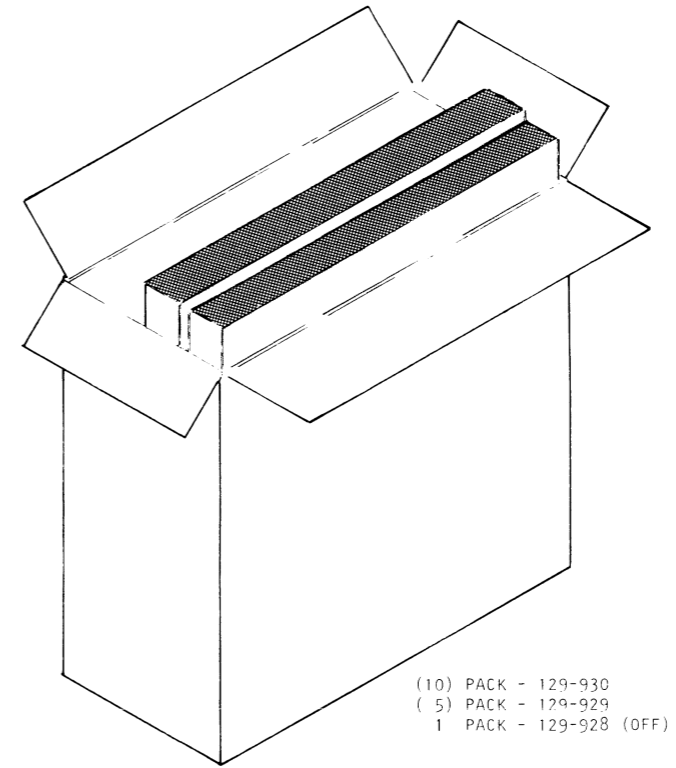
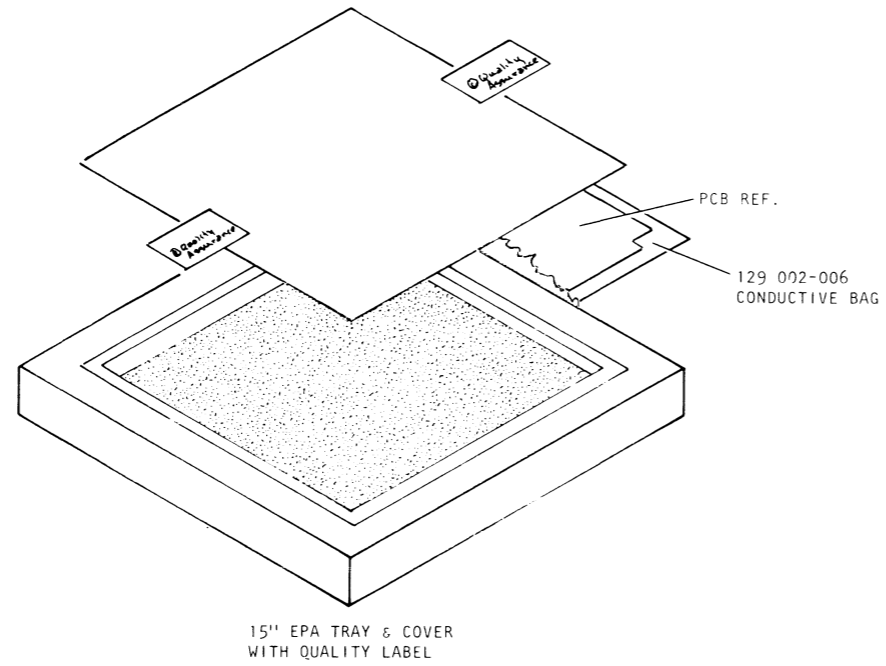


FOR SMALL PC BOARDS
FIGURE 4

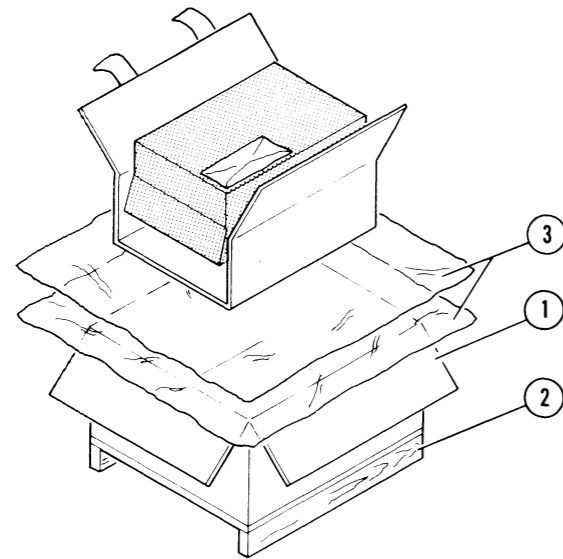


FOR LARGE PC BOARDS
FIGURE 5

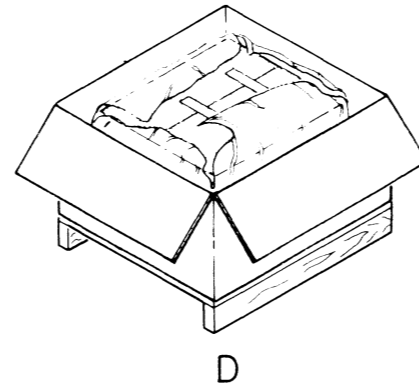
5	1	TWO PIECE FOLDER	136-000231
	1	PLASTIC BAG OR FILM	129-000315
	2	QUALITY ASSURANCE LABEL	119-000136
4	1	TWO PIECE FOLDER	136-000258
	1	PLASTIC BAG 6 X 12	129-000034
	2	QUALITY ASSURANCE LABEL	119-000136
3	1	TWO PIECE FOLDER	136-000259
	1	PLASTIC BAG 16 X 21	136-000315
	2	QUALITY ASSURANCE LABEL	119-000136
2	1	MASON MAILER P94	136-000233
	1	PLASTIC BAG 6 X 12	129-000034
	1	QUALITY ASSURANCE LABEL	119-000136
1	1	TWO PIECE FOLDER	129-000805
	1	PLASTIC BAG 16 X 21	136-000315
	2	QUALITY ASSURANCE LABEL	119-000136
ITEM	QTY	DESCRIPTION	PART NO.



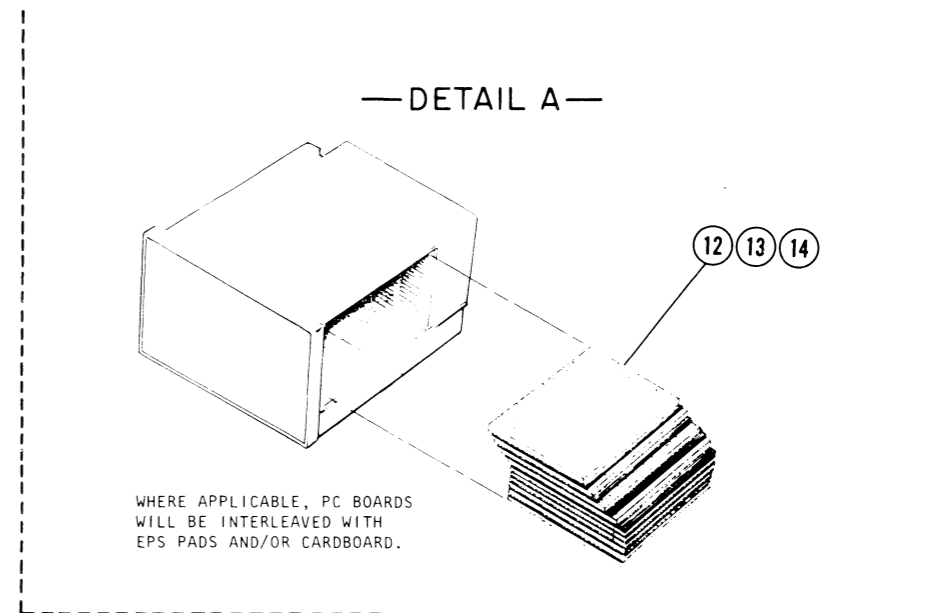
REF	129	000	929	RSC (HOLDS 5 TRAYS)		A/R
7	129	000	136	QUALITY ASSURANCE LABEL		2
6A	129	000	930	RSC (HOLDS 10 TRAYS)		1
5	129	000	927	COVER		1
4	129	000	839	15" EPA		*10
3	129	000	030	LABEL		1
2	129	000	027	SEALING TAPE		24"
1	129	002	006	CONDUCTIVE BAG 18"x18"	RELEASED ON ECO 15150	*10
ITEM	CODE	DWG	NO.	DESCRIPTION	CIRCUIT REFERENCE	TOTAL QTY



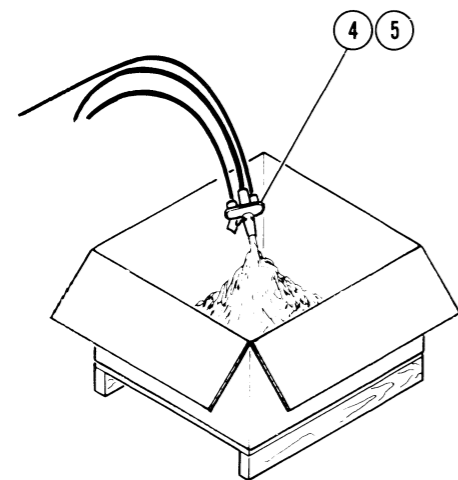
A



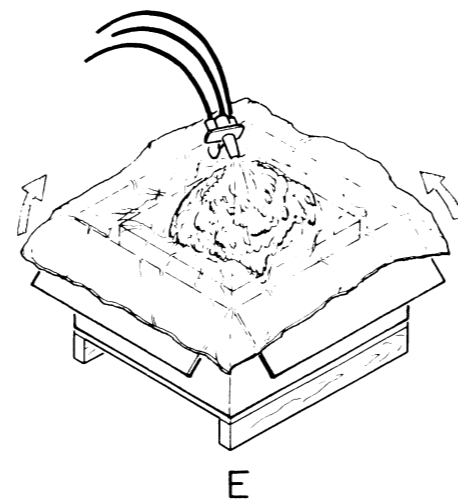
D



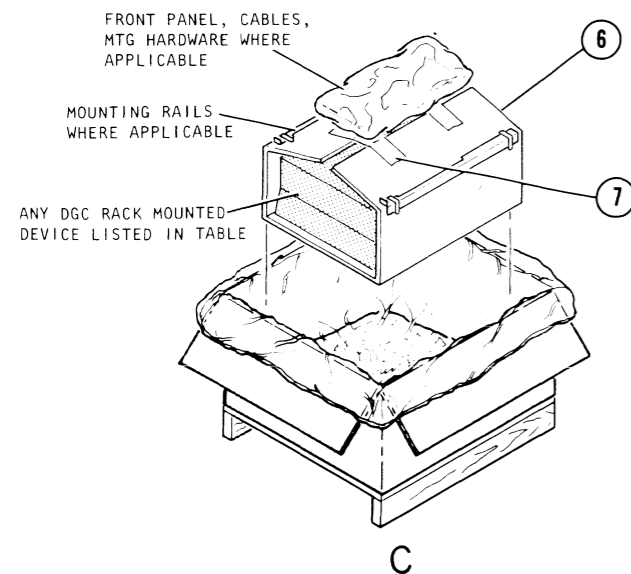
WHERE APPLICABLE, PC BOARDS WILL BE INTERLEAVED WITH EPS PADS AND/OR CARDBOARD.



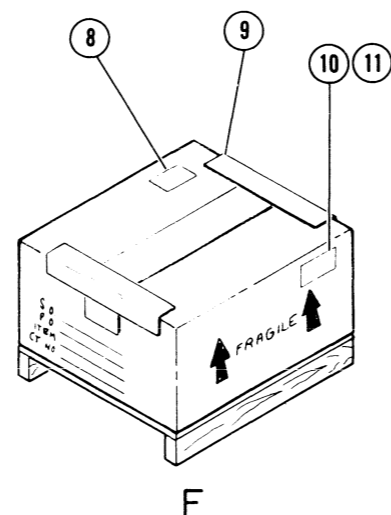
B



E



C



F

GENERAL PROCEDURE FOR FOAM-IN-PLACE PACKAGING

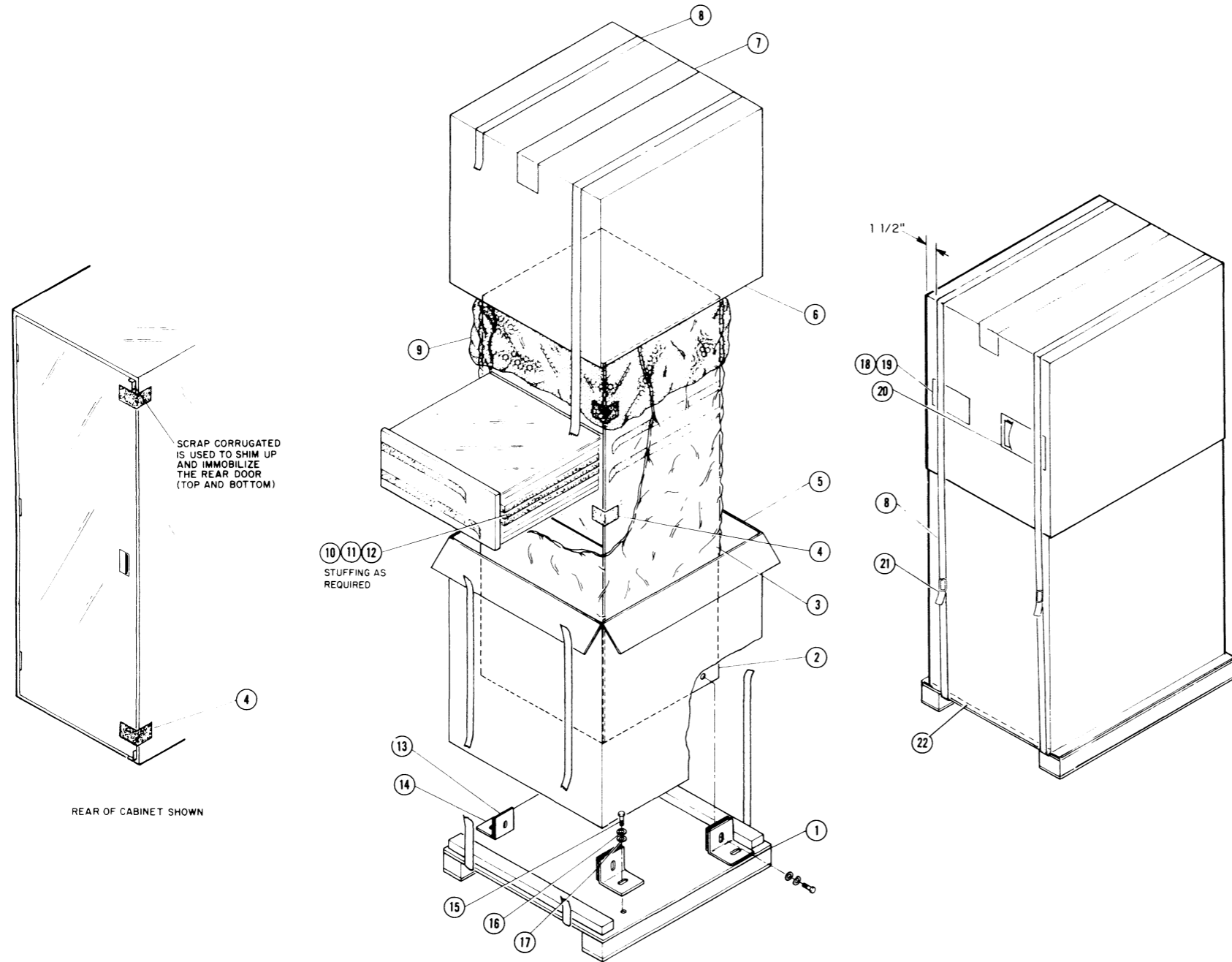
- A. SET UP CARTON. CUT 2 SHEETS OF POLYTHYLENE FILM 6 FEET LONG. WRAP PRODUCT IN SLEEVE AND CLOSE WITH PERMACEL TAPE.
- B. SPRAY FOAM INTO BOTTOM OF CARTON TO FORM 4-INCH THICK CUSHION.
- C. AS FOAM RISES, PLACE ONE SHEET OF POLYFILM OVER FOAM, AND PRODUCT OVER FILM.
- D. WRAP EXCESS FILM AROUND PRODUCT.
- E. PLACE THE SECOND SHEET OF FILM OVER THE PRODUCT. MAKE CERTAIN THAT THE FILM CONFORMS TO SPACES AROUND THE PRODUCT. SPRAY FOAM AROUND AND OVER THE PRODUCT. AS THE FOAM EXPANDS, FOLD THE FILM AND CARTON FLAPS OVER IT, FORMING A MOLDED CAP. OPEN AND INSPECT FOR VOIDS. FILL ANY VOIDS.
- F. CLOSE AND SEAL CARTON. APPLY LABEL AND COVER WITH CLEAR SCOTCH TAPE.

NOTE	RACK MOUNTED DEVICE	B.O.M.
SEE DETAIL A	21" RACK MOUNTS	044-000052
	5.25" RACK MOUNTS	044-000053
	10.5" RACK MOUNTS	044-000054
	14" RACK MOUNTS	044-000055
	8.75" RACK MOUNTS	044-000056
	7" RACK MOUNTS	044-000057

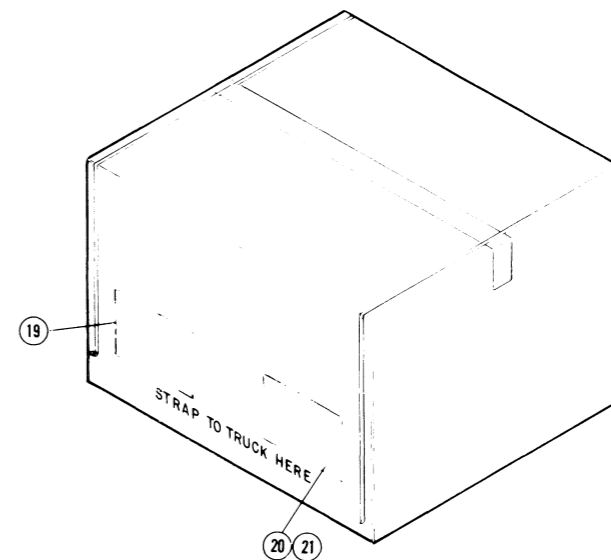
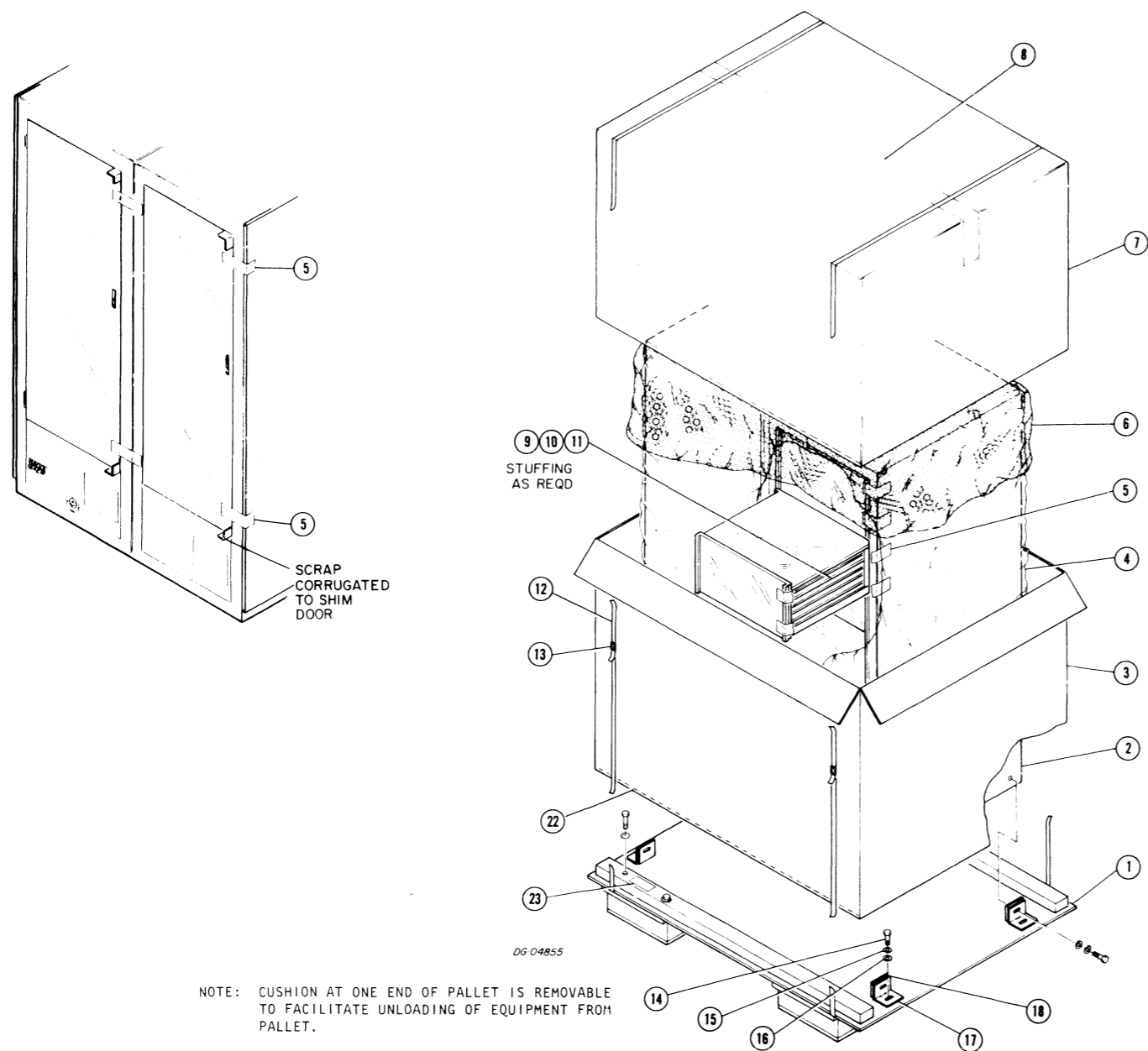
ELEMENTS OF SHIPPING PACKAGE (044)

ITEM	DESCRIPTION	PART NO.						
1	RSC 36 x 27 x 30	129-000325			1			1
	RSC 36 x 27 x 19.25	129-000318	1	1			1	1
2	PALLET 36 x 27	129-000316	1	1	1	1	1	1
3	POLYFILM 100"	129-000315	A/R	A/R	A/R	A/R	A/R	A/R
4	PART "A" FOAM IN PLACE (LB.)	129-000319	1.7	1.8	2.25	2	1.6	2.75
5	PART "B" FOAM IN PLACE (LB.)	129-000320	1.7	1.8	2.25	2	1.6	2.75
6	SLEEVE	129-000326			1			1
	SLEEVE	129-000321	1	1		1	1	1
7	PERMACEL TAPE	129-000026	1FT	1FT	1FT	1FT	1FT	1FT
8	PKG LIST ENVELOPE	129-000042	1	1	1	1	1	1
9	TAPE	129-000027	A/R	A/R	A/R	A/R	A/R	A/R
10	DGC SHIPPING LABEL	129-000030	1	1	1	1	1	1
11	CLEAR SCOTCH TAPE	129-000051	2FT	2FT	2FT	2FT	2FT	2FT
12	CARDBOARD 14 1/2 x 14 1/2	129-000044	A/R	A/R	A/R	A/R	A/R	A/R
13	EPS PAD 1/2"	129-000052	A/R	A/R	A/R	A/R	A/R	A/R
14	EPS PAD 1"	129-000053	A/R	A/R	A/R	A/R	A/R	A/R

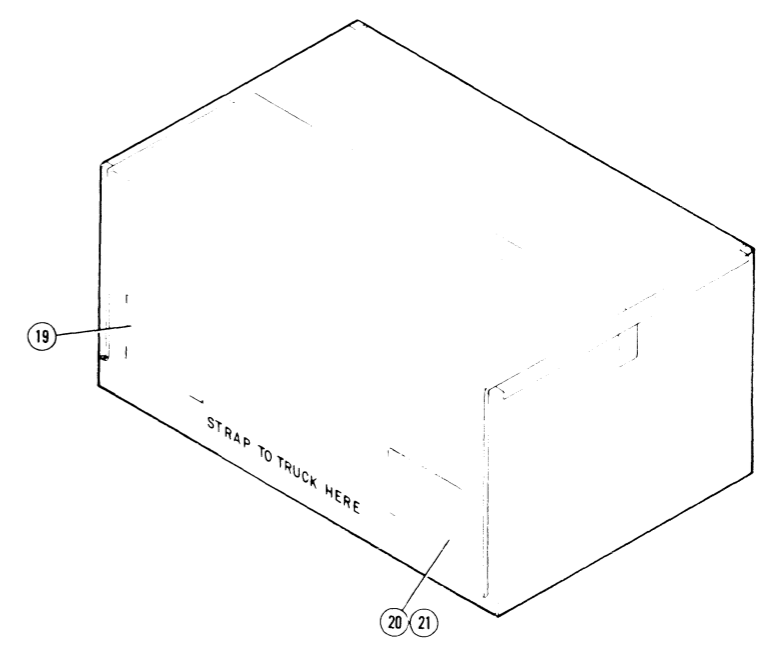
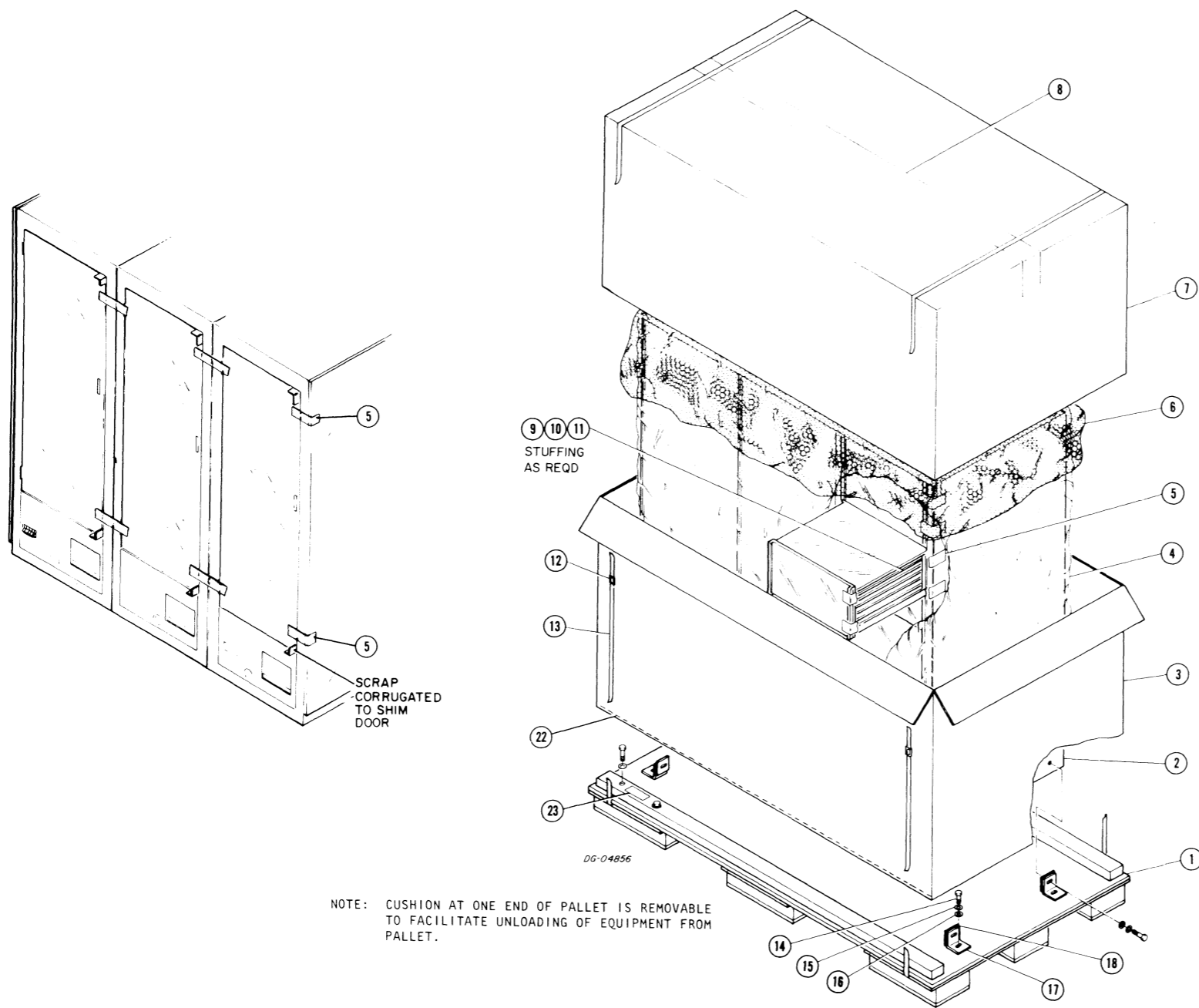
FOAM-IN-PLACE PROCEDURE



22	A/R	1" CROWN, 1" LEG STAPLE	129-000165
21	2	BUCKLE, AVB-4	129-000025
20	1	ENVELOPE, PACKING LIST 6 3/4 x 5	129-000042
19	A/R	WATER GLASS	
18	1	LABEL, SHIPPING	129-000030
17	8	WASHER, FLAT 3/8	106-000621
16	8	LOCK WASHER, SPLIT, 3/8	106-000622
15	8	BOLT, HEX.HD. 3/8-16 x 1	106-000618
14	4	BRACKET, SHIPPING	002-005294
13	4	D/C SEPARATOR	129-000206
12	A/R	14 1/2 x 14 1/2 "C" FLUTE CORR. PAD	129-000044
11	A/R	14 1/2 x 14 1/2 x 1 EPS PAD 1"	129-000053
10	A/R	14 1/2 x 14 1/2 x 1/2 EPS PAD 1"	129-000052
9	6 FT	AIRCAP	129-000035
8	45 FT	STRAPPING, POLYPROPYLENE	129-000123
7	54"	TAPE, CLOSURE	129-000027
6	1	HALF SLOTTED CONTAINER	129-000367
5	1	TUBE	129-000366
4	A/R	TAPE, FILAMENT, 2"	129-000370
3	1	POLYBAG	129-000133
2	1	CABINET, SINGLE BAY	
1	1	PALLET	129-000324
ITEM	QTY.	DESCRIPTION	PART NO.



23	2	LABEL, UNLOADING INSTRUCTIONS	129-000380
22	A/R	1" CROWN, 1" LEG STAPLE	129-000165
21	2 FT	2" CLEAR SCOTCH TAPE	129-000051
20	1	PACKING LIST ENV. 6 3/4 x 5	129-000042
19	1	DGC SHIPPING LABEL	129-000030
18	4	D/C SEPARATOR	129-000206
17	4	BRACKET, SHIPPING	002-005294
16	8	WASHER, FLAT, 3/8	106-000621
15	8	LOCK WASHER, SPLIT, 3/8	106-000622
14	8	BOLT, HEX. HD. 3/8-16 x 1	106-000618
13	2	BUCKLE, AVB-4	129-000025
12	50 FT	POLYPROPYLENE STRAPPING	129-000123
11	A/R	14 1/2 x 14 1/2 x 1" EPS PAD	129-000053
10	A/R	14 1/2 x 14 1/2 x 1/2 EPS PAD	129-000052
9	A/R	14 1/2 x 14 1/2 "C" FLUTE CORE	129-000044
8	12 FT	CLOSURE TAPE	129-000027
7	1	HALF SLOTTED CONTAINER	129-000336
6	8 FT	AIRCAP	129-000035
5	A/R	2" FILAMENT TAPE	129-000370
4	1	POLYBAG 48 x 34 x 71 x 0.003	129-000170
3	1	TUBE	129-000334
2	1	CABINET, DOUBLE BAY	
1	1	PALLET	129-000323
ITEM	QTY.	DESCRIPTION	PART NO.



NOTE: CUSHION AT ONE END OF PALLET IS REMOVABLE TO FACILITATE UNLOADING OF EQUIPMENT FROM PALLET.

23	2	LABEL, UNLOADING INSTRUCTIONS	129-000380
22	A/R	1" CROWN, 1" LEG STAPLE	129-000165
21	2 FT	2" CLEAR SCOTCH TAPE	129-000051
20	1	PACKING LIST ENV. 6 3/4 x 5	129-000042
19	1	DGC SHIPPING LABEL	129-000030
18	4	D/C SEPARATOR	129-000206
17	4	BRACKET, SHIPPING	002-005294
16	8	WASHER, FLAT, 3/8	106-000621
15	8	LOCK WASHER, SPLIT, 3/8	106-000622
14	8	BOLT, HEX. HD 3/8-16 x 1	106-000618
13	50 FT	POLYPROPYLENE STRAPPING	129-000123
12	2	BUCKLE, AVB-4	129-000025
11	A/R	14 1/2 x 14 1/2 x 1 EPS PAD	129-000053
10	A/R	14 1/2 x 14 1/2 x 1/2 EPS PAD	129-000052
9	A/R	14 1/2 x 14 1/2 "C" FLUTE CORE	129-000044
8	14 FT	REINFORCED SEALING TAPE 3"	129-000027
7	1	HALF SLOTTED CONTAINER	129-000335
6	12 FT	AIRCAP	129-000035
5	A/R	2" FILAMENT TAPE	129-000370
4	1	POLYBAG 80 X 34 X 71	129-000368
3	1	TUBE	129-000333
2	1	CABINET, THREE BAY	
1	1	PALLET	129-000322
ITEM	QTY.	DESCRIPTION	PART NO.

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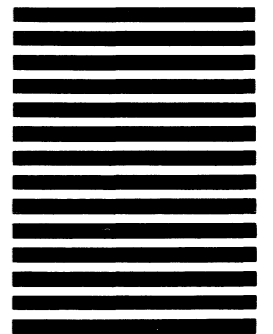
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