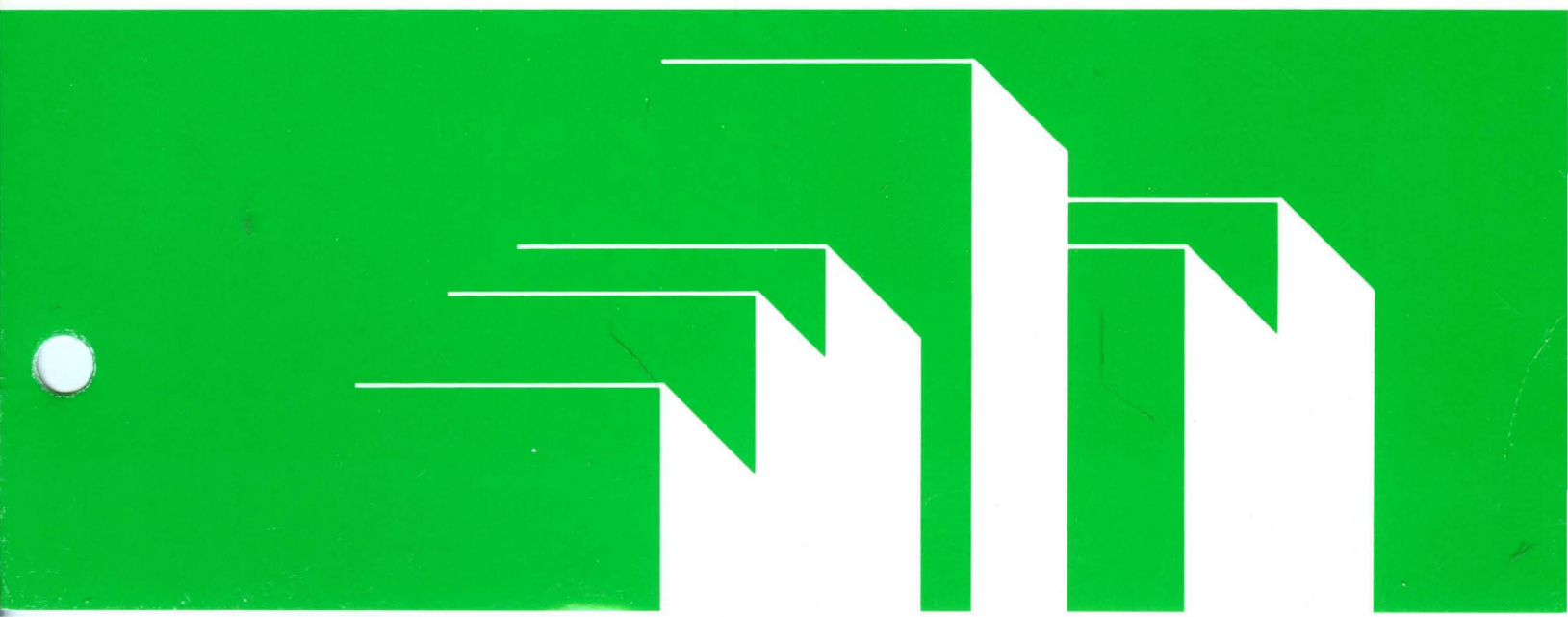
Publication Number
GC22-7064-10

IBM System/360
System/370
4300 Processors

Input/Output Equipment
Installation Manual—Physical Planning

IBM



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S360/S370/4300-15

Federal Communications Commission (FCC) Statement

Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions 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.

The preceding statement applies to equipment covered by this Installation Manual–Physical Planning (IM–PP). This equipment has been tested and found to comply with the limits for a Class A computing device as described.

For machines manufactured before January 1, 1981, the FCC does not require compliance. To determine the exact category of your machine, refer to the label attached to the machine.

CAUTION

The power attachment cable plug (when supplied) is approved for use with the particular machines and meets the relevant testing laboratory or country/test-house standards. For the user's safety, the plug must be connected to a properly wired and grounded receptacle. An improperly wired receptacle could place a hazardous voltage on accessible metal parts of the machine. The customer is responsible for receptacle wiring.

Eleventh Edition (July 1986)

This major revision obsoletes GC22-7064-8 and GC22-7064-9 and Technical Newsletters GN22-2319, GN22-2320, GN22-2321, GN22-2323, GN22-2325, GN22-2326, GN22-2328, GN22-2330, GN22-2331, and GN22-2333.

Changes or additions to the text and illustrations are indicated by a vertical line to the left of the change.

Changes are made periodically to the information herein; before using this publication in connection with the operation of IBM equipment, refer to the latest *IBM System/360 Bibliography*, GC20-0360, and *IBM System/370, 30xx, and 4300 Processors Bibliography*, GC20-0001, for the editions that are applicable and current.

References in this publication to IBM products, programs, or services do not imply that IBM intends to make these available in all countries in which IBM operates. Any reference to an IBM program product in this pubication is not intended to state or imply that only IBM's program product may be used. Any functionally equivalent program may be used instead.

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This manual contains information necessary for planning the physical installation of IBM input/output equipment.

The customer, in planning the installation, may request the assistance of an IBM Installation Planning representative.

This manual is divided into two sections with five reference appendixes:

- **Section 1** contains machine specifications and cabling information for input/output equipment.
- **Section 2** contains other general cabling information.

The five reference appendixes, which are listed in the Contents, contain additional information and cross-references.

The following publications may be used in conjunction with this manual depending on the specific system configuration:

IBM System/370 Input/Output Configurator, GA22-7002 (contains I/O priority device data)

IBM 3790 Communication System Installation Manual–Physical Planning, GA27-2769

IBM 3270 Information Display System Installation Manual–Physical Planning, GA27-2787

Assembly of Coaxial Cable and Accessories for Attachment to IBM Products, GA27-2805

Additional information about specific systems and machines can be found in the following publications:

IBM 3750 Switching System Installation Manual–Physical Planning, GA19-5003

IBM 3600 Plant Communication System Installation Manual–Physical Planning, GA24-3675

IBM 8100 Information System Installation Manual–Physical Planning, GA27-2877

IBM Communications Terminals Installation Manual–Physical Planning, GA27-3006

IBM Multiuse Communication Loop Planning and Installation Guide, GA27-3341

Note: This manual contains various plan views scaled in millimeters with the equivalent English measurements shown in parentheses. All applicable plan views are labeled metric. Those plan views scaled in English remain unchanged. All plan view pages show scale used.

This manual is a companion to and should be used with the following manuals:

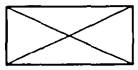
IBM System/360 Installation Manual–Physical Planning, GC22-6820
IBM System/360 World Trade Installation Manual–Physical Planning, GC19-0001
IBM System/370 Installation Manual–Physical Planning, GC22-7004
IBM General Information Manual: Installation Manual–Physical Planning, GC22-7072
IBM 4300 Processors Installation Manual–Physical Planning, GA24-3667

For the input/output products, 1xxx and 2xxx series, not listed in this manual, see *IBM Input/Output Equipment Reference Installation Manual–Physical Planning: System/360, System/370, 4300 Processors,* GC22-7069.

Section 1. Machine Specifications and Cabling Schematics

This chart shows standard symbols that are used in this Installation Manual–Physical Planning (IM–PP). Frame numbers are shown circled on plan views and cabling schematics, for example, (04) .

In Plan Views:



Cable Entry and Exit Area in Base of Machine. Locating dimensions are measured from edge of frame, not cover. This does not indicate floor cutout

Cable Exit Area, Recommended

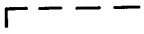
Power Cord Exit, 50/60 Hz

Power Cord Exit, 400 Hz

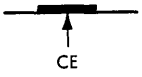
Power cords are supplied in 427-cm (14-foot) lengths, unless otherwise noted on the specification page. The length is measured from the symbol ⊕ or ◔ .

Swinging Gate

Standard Equipment Outline (Shows machine with covers closed)

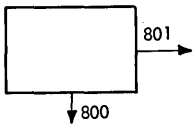


Optional Equipment Outline

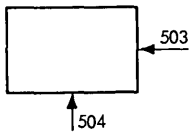


Customer Engineer Indicator Panel

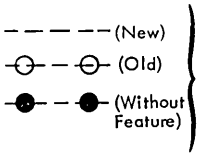
In Cabling Schematics:



Indicates Cable Group from a machine, and



Indicates Cable Group to a machine



Service Area Boundary (Service clearances are measured from machine with covers closed)

Casters
Locating dimensions are measured from edge of frame, not cover

Leveling Pads or Glides (3-1/2" [8.9 cm] Typical Diameter)
Locating dimensions are measured from edge of frame, not cover

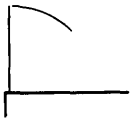
Legs

Nonraised Floor Cable Exit

Meter Location

Unit Emergency Power-Off Switch

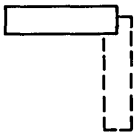
Hinged Covers



Single

Bifold

Offset Bifold



Tambour Canister

Abbreviations and Definitions

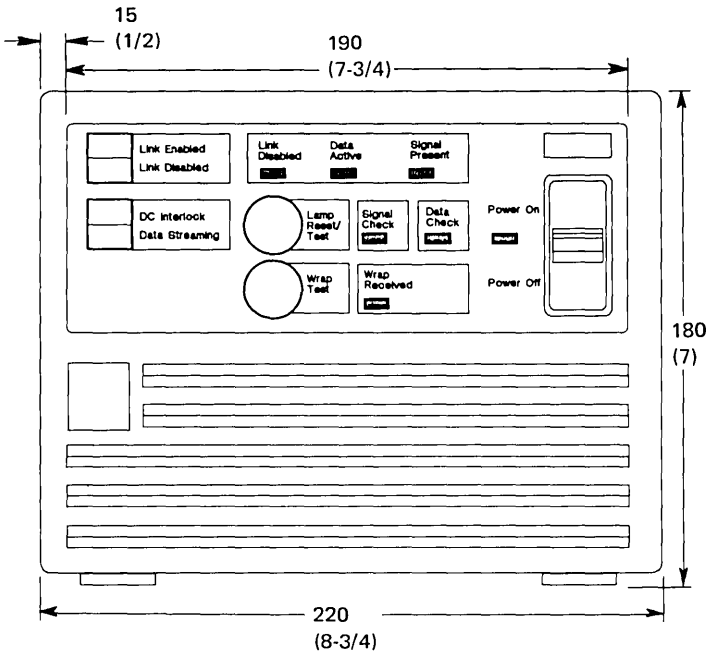
A	ampere
ac	alternating current
ADU	automatic dialing unit
ambient	environment
AWG	American wire gauge
blk mpxr	block multiplexer
B/M	bill of material
bpi	bits per inch
bps	bits per second
BSC	basic storage controller
BSM	basic storage module
BTU	British thermal unit
bus	one or more conductors used for transmitting signals or power
C	Celsius/coupler
CCITT	Consultant Committee of International Telephone & Telegraph (WT)
CDU	coolant distribution unit
CE	customer engineer
CER	customer engineering room
cfm	cubic feet per minute
ch	channel
chan	channel
cm	centimeter
cnsl	console
coax	coaxial
cond	conductor
conn	connector
cont	continuous
conv	converter
CRT	cathode-ray tube
C-T-C	connector-to-connector
CTCA	channel-to-channel adapter
ctrl	control
Cu	copper
CW	copperweld
DAA	Data Access Arrangement
DASD	direct-access storage device
DASF	direct access storage facility
DAU	data adapter unit
dB	decibel
dc	direct current
DCE	data circuit-terminating equipment
dist	distribution
dply	display
DRC	data recording control
EBCD	extended binary-coded decimal
EBCDIC	extended binary-coded decimal interchange code
EC	engineering change
EDR	effective data rate
EIA	Electronic Industry Association
EPO	sequence and control
F	Fahrenheit/front
FBM	field bill of material
FCC	Federal Communications Commission
FE	field engineering
FE DAU	Field Engineering Data Adapter Unit
fr	frame
ft	feet
gpm	gallons per minute
H	height/Hubbell
hp	high pressure/horsepower
Hz	hertz
I	impulsive noise
ICA	Integrated Communications Adapter
ID	identification
IDA	Integrated Data Adapter
IFA	Integrated File Adapter
IM–PP	installation manual–physical planning
in.	inch
I/O	input/output
IPA	Integrated Printer Adapter
IPCEA	International Power Cables Engineering Association
ISC	Integrated Storage Controls
kb	kilobyte
kbps	kilobytes per second
kcal/hr	kilocalories per hour
kg	kilogram
kg/m^2	kilograms per square meter
kVA	kilovolt ampere
kW	kilowatt
kybd	keyboard
L	left
LA	Line Adapter
lb	pound
LIB	line interface base
LIC	line interface coupler
$<L_{pA}>_m$	mean value of the space-averaged sound pressure emission levels at the one-meter positions
$lumens/m^2$	lumens per square meter
L_{WAd}	sound power emission level
m	meter
max	maximum
MCM	thousand circular mils
m^3/min	cubic meter per minute
MES	Miscellaneous Equipment Specification
mfg	manufacturing
MG	motor generator
min	minimum/minute
mm	millimeter
modem	modulator/demodulator
modulator/demodulator	device that modulates and demodulates signals transmitted over communication facilities
MP	multiprocessing
mpxr	multiplexer
ms	millisecond
MSC	mass storage control
MSF	mass storage facility
MSS	mass storage system
MTU	magnetic tape unit

N/A	not applicable, not available
NEC	National Electrical Code
NEMA	National Electrical Manufacturers' Association
NFPA	National Fire Protection Association
no.	number
nom	nominal
NTT	Nippon Telephone and Telegraph
OCR	optical character recognition
OD	outside diameter
OEM	original equipment manufacturer
oersted	centimeter-gram-second electromagnetic unit of magnetic intensity
opt	optional
P&S	Pass and Seymour
PCDU	power and coolant distribution unit
PDU	power distribution unit
pH	hydrogen-ion concentration
port	entry/exit in mass storage control of 3851 for attachment of external devices
ppm	parts per million
proc	processing
psi	pounds per square inch
psig	pounds per square inch gauge
PTT	postal telephone and telegraph
PVC	polyvinyl chloride
pwr	power
R	rear
R&S	Russell & Stoll
rdr	reader
rel	relative
rfi	radio-frequency interference
RPL	remote program loader
RPQ	Request for Price Quotation
rt	right
S	side
SC	specify code
SCU	storage control unit
SDA	Synchronous Data Adapter
SDLC	synchronous data link control
sec	second
seq	sequential
service clearance	minimum space required to allow working room for the machine operator and/or the customer engineer for servicing the unit
SF	special feature/sales feature
slr	selector
SNA	systems network architecture
std	standard
stg	storage
SVP	service processor
T	prominent discrete tones
TNL	Technical Newsletter
TPS	two-processor switch
UK	United Kingdom
UL	Underwriters Laboratory
UPS	uninterrupted power supply
U.S.	United States
V	volt
VFL	variable field length
W	watt
WE	Western Electric
WT	World Trade

3044 FIBER-OPTIC CHANNEL EXTENDER LINK

FRONT VIEW (Not to Scale)

English measurements are shown in parentheses.



SPECIFICATIONS

Dimensions:

	Front	Side	Height
mm	220	455	180
(inches)	(8-3/4)	(18)	(7)

Service Clearances:

	Front	Rear	Right	Left
mm	255	255	–	–
(inches)	(10)	(10)	(–)	(–)

Weight: 11.5 kg (25 lb)

Heat Output: 40 W (150 BTU/hr) to air

Airflow: 1 m^3/min (30 cfm)

Power Requirements:

kVA	0.12 (maximum)
Phases	1
Plug	NEMA 5-15P
Receptacle	NEMA 5-15R
Voltage	120 (50/60 Hz)
Power Cord Style	G1
Length	2.7 m (9 feet)

Note: The power cord to this unit has a separate grounding conductor. Power provided to this unit must also provide a separate grounding conductor.

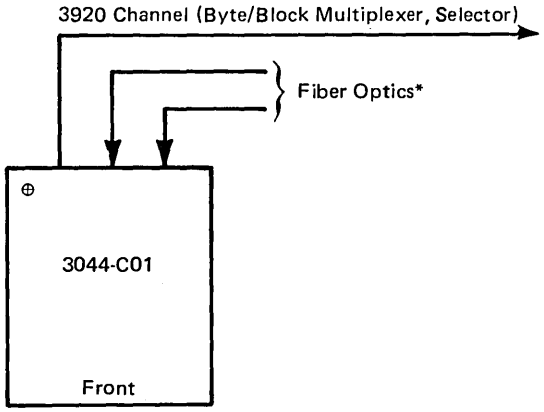
Environment, Operating:

Temperature	10°C-40.6°C (50°F-105°F)
Rel Humidity	8%-80%
Max Wet Bulb	26.7°C (80°F)

Environment, Nonoperating:

Temperature	10°C-51.7°C (50°F-125°F)
Rel Humidity	8%-80%
Max Wet Bulb	26.7°C (80°F)

3044 FIBER-OPTIC CHANNEL EXTENDER LINK CABLING SCHEMATIC

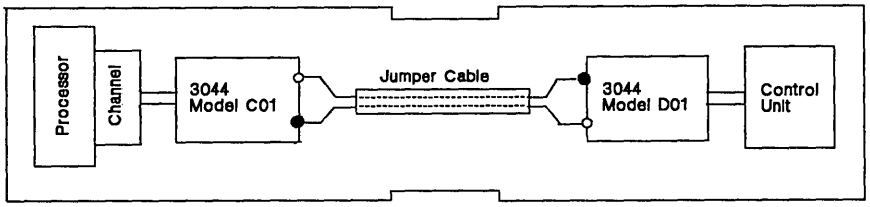


* Units (C01 and D01) can be spaced apart at distances up to and including 2 000 meters (6,600 feet).

Note: The 3044 requires an additional set of signal cables (bus and tag). These cables are not included with the 3044; they must be provided by the customer.

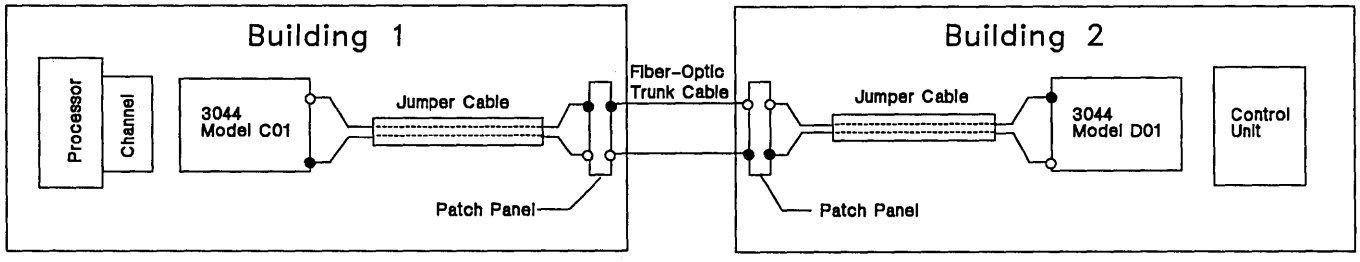
Group No.	*No. of Cables*	*From*	*To*	*Max Length m*	*(ft)*
3920	2	3044	–	61	(200)

Typical Configuration in One Building



Legend:
- o Indicates white-capped connector on jumper cable
- ● Indicates completely black connector on jumper cable

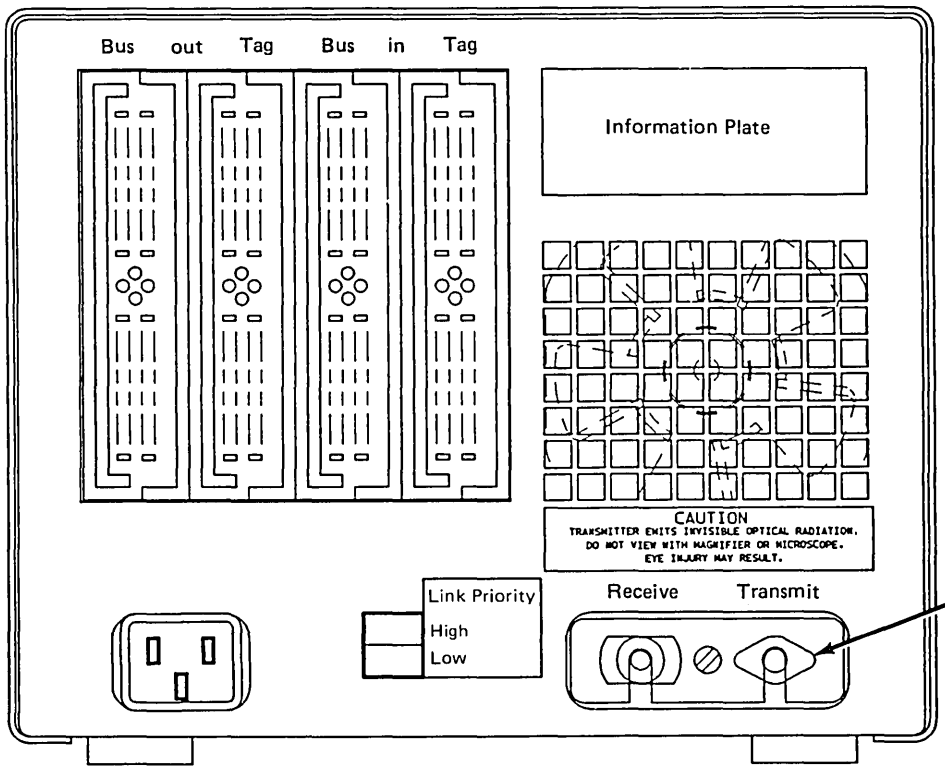
Typical Configuration Involving Two Buildings

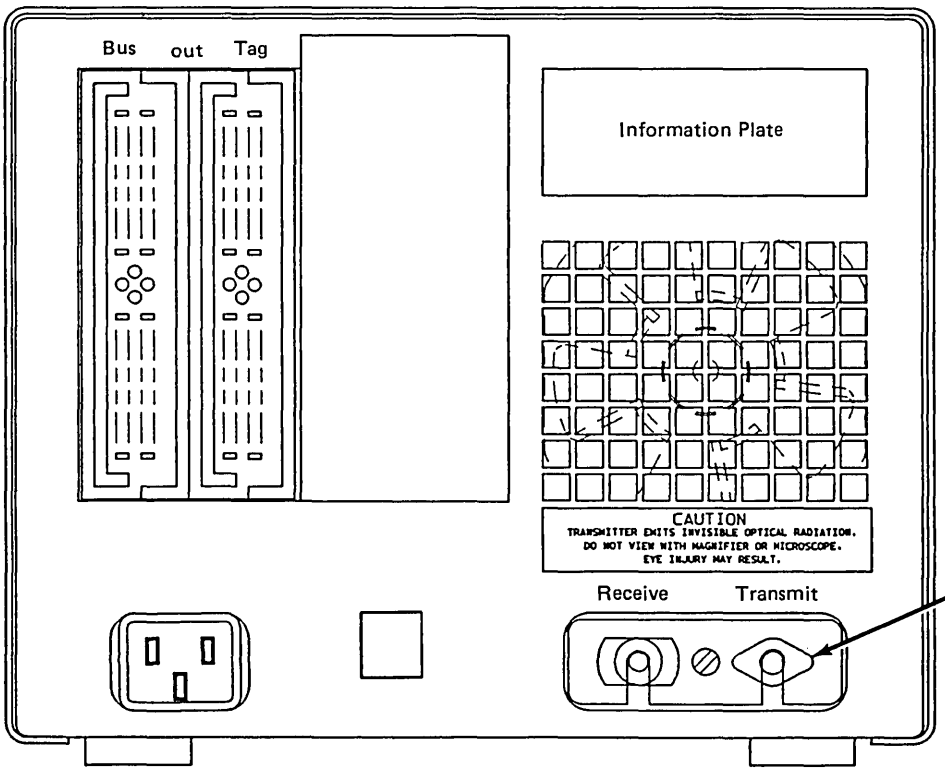


Legend:
- o Indicates white-capped/labeled connector
- ● Indicates completely black connector

Note: See *IBM 3044 Fiber-Optic Channel Extender Link: Fiber-Optic Cable Planning and Installation Guide,* GC22-7073, for additional information.

3044 FIBER-OPTIC CHANNEL EXTENDER LINK CABLING SCHEMATIC

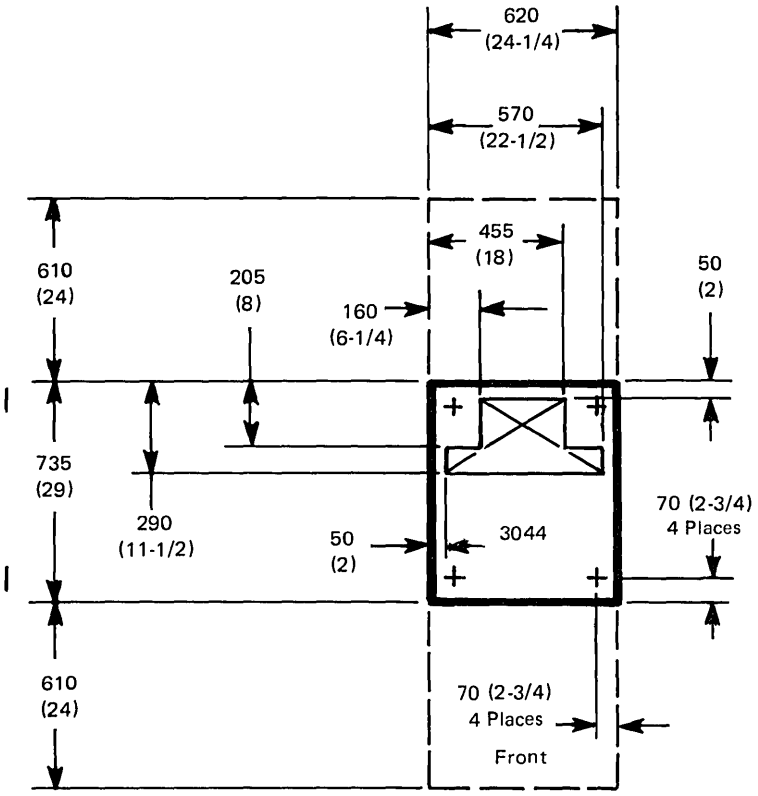




3044 FIBER-OPTIC CHANNEL EXTENDER LINK ENCLOSURE

PLAN VIEW (Not to Scale)

English measurements are shown in parentheses.



SPECIFICATIONS

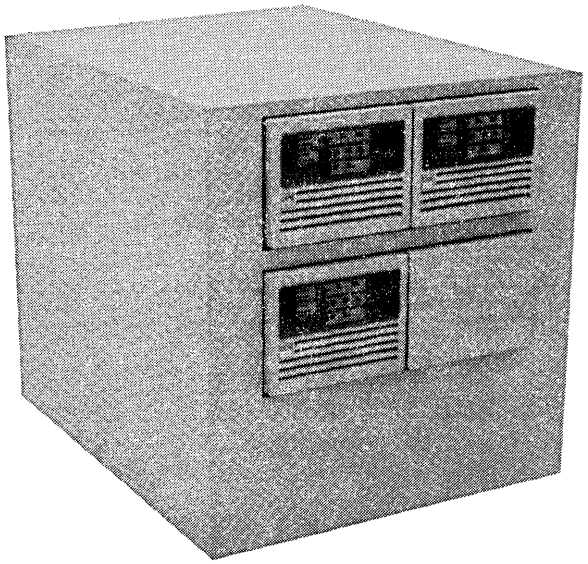
Dimensions:

	Front	Side	Height
mm	620	735	645
(inches)	(24-1/4)	(29)	(25-1/2)

Service Clearances:

	Front	Rear	Right	Left
mm	610	610	–	–
(inches)	(24)	(24)	(–)	(–)

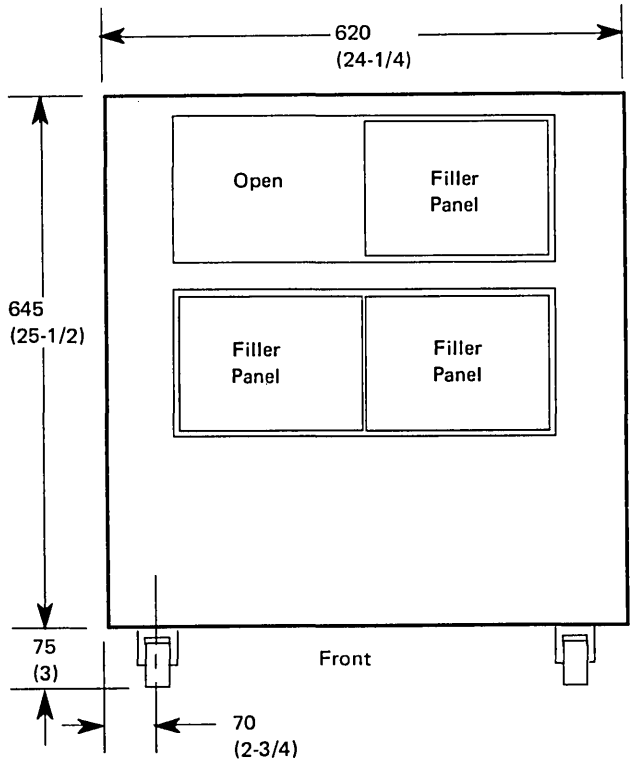
Weight: 60 kg (125 lb)

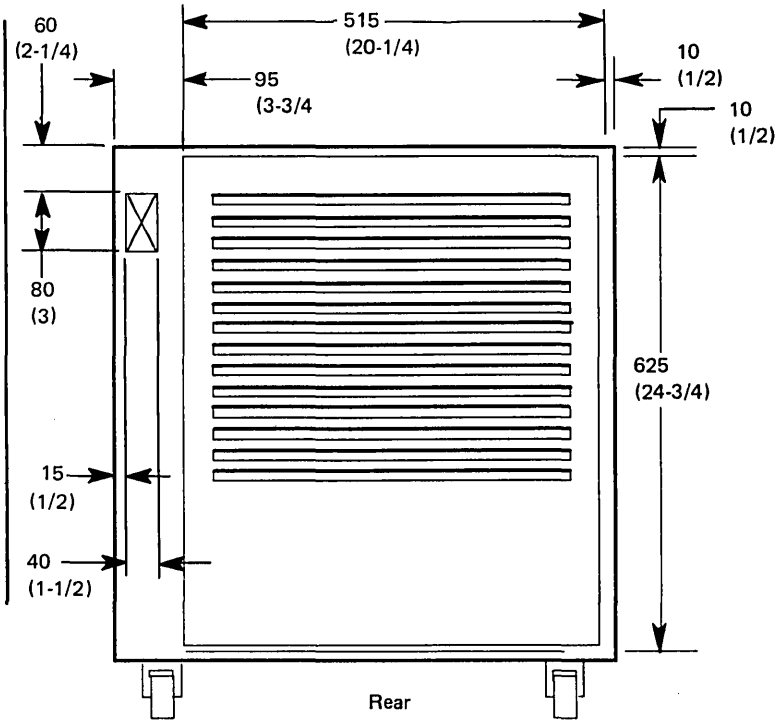


3044 FIBER-OPTIC CHANNEL EXTENDER LINK ENCLOSURE

PLAN VIEW (Not to Scale)

English measurements are shown in parentheses.



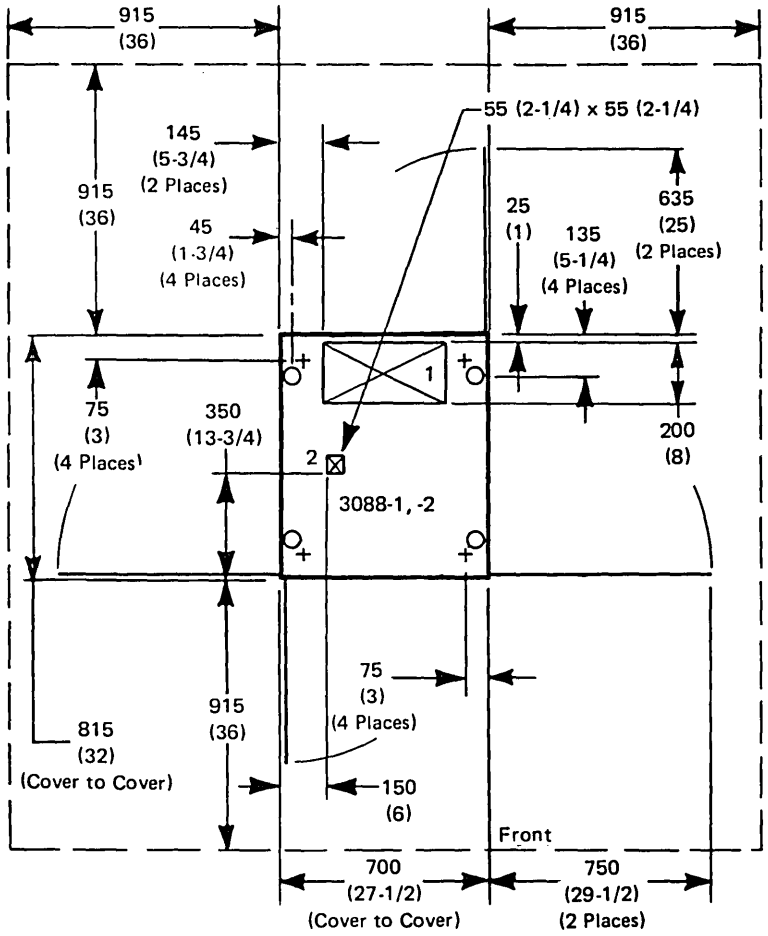


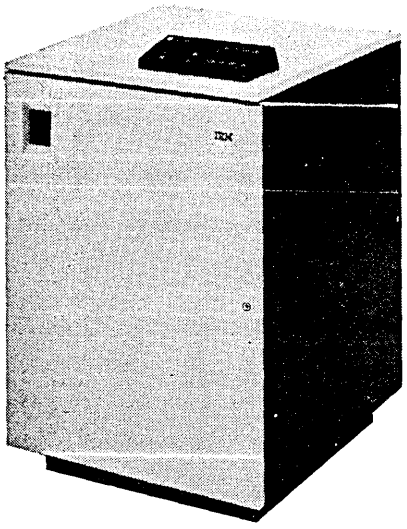
Note: The rear cover is hinged with a 90° swing and is removable. A removable access panel is located at the rear of the channel extender link enclosure for overhead installation of fiber-optic cables.

3088 MULTISYSTEM CHANNEL COMMUNICATION UNIT
MODELS 1 AND 2

PLAN VIEW (Metric Scale: 10 mm = 0.25 m)

English measurements are shown in parentheses.





3088 (Design Model)

SPECIFICATIONS

Dimensions:

	Front	Side	Height
mm	700	815	1 065
(inches)	(27-1/2)	(32)	(42)

Service Clearances:

	Front	Rear	Right	Left
mm	915	915	915	915
(inches)	(36)	(36)	(36)	(36)

Weight:	*Four-Way*	*Eight-Way*
kg	245	265
(lb)	(540)	(580)

Heat Output: 1 000 W (3,450 BTU/hr)

Airflow: 7 m^3/min (240 cfm)

Power Requirements:

kVA	1.2 (50/60 Hz)
Phases	1
Plug	R&S, 3720U-2
Connector	R&S, 3913U-2
Receptacle	R&S, 3743U-2

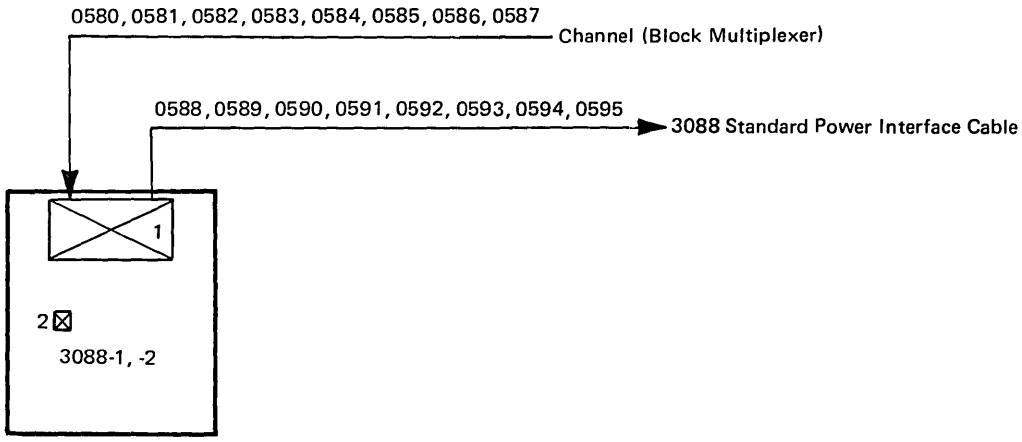
Environment, Operating:

Temperature	15.6°C-32.2°C (60°F-90°F)
Rel Humidity	20%-80%
Max Wet Bulb	22.8°C (73°F)

Environment, Nonoperating:

Temperature	10°C-43°C (50°F-110°F)
Rel Humidity	8%-80%
Max Wet Bulb	26.9°C (80°F)

3088 MULTISYSTEM CHANNEL COMMUNICATION UNIT MODELS 1 AND 2 CABLING SCHEMATIC



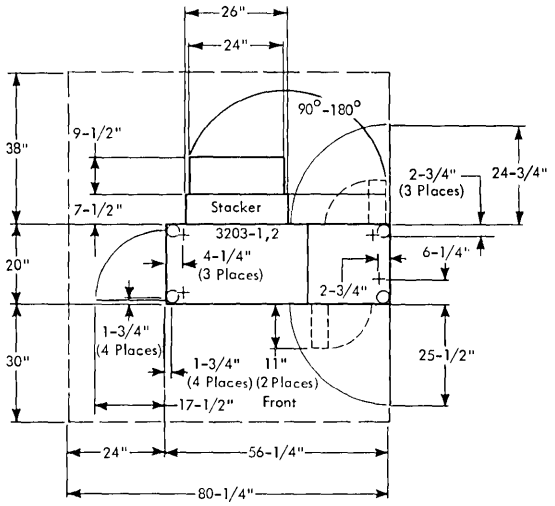
Group No.	*No. of Cables*	*From*	*To*	*Max Length m*	*(ft)*	*Notes*
0580, 0581, 0582, 0583	2 Per Interface	3088	–	121.9	(400)	1, 2, 3, 5
0584, 0585, 0586, 0587	2 Per Interface	3088	–	121.9	(400)	2, 3, 5
0588, 0589, 0590, 0591, 0592, 0593, 0594, 0595	1 Per Interface	3088	–	121.9	(400)	1, 2, 4

Notes:

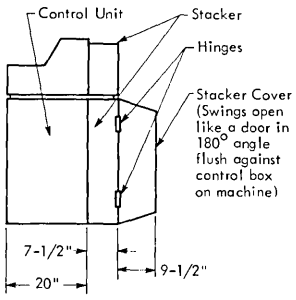
1. For 3088 Model 1 (four-way) configurations. A maximum length of 23 meters (75 feet) for each cable group will be provided without charge at initial installation of each Model 1.
2. For 3088 Model 2 (eight-way) configurations. A maximum length of 31 meters (100 feet) for each cable group will be provided without charge at each initial installation of each Model 2.
3. When a 3088 is attached to channel 5, B, or F (lower priority block multiplexer channel) and when short cable lengths (6.1 meters or 20 feet) are installed, the high-speed-transfer-mode data rate limiter must be set to 1.2 megabytes per second to avoid direct-access storage device (DASD) overrun problems on higher priority block multiplexer channels on the same 303X director.
4. Power sequence and control cables are optional.
5. The 121.9-meter (400-foot) maximum length must be reduced by 5 meters (15 feet) for each control unit connected between the system channel and the 3088. For detailed information, see the *3088 Multisystem Channel Communicaton Unit Product Description*, GA22-7081.

3203 PRINTER MODELS 1 AND 2

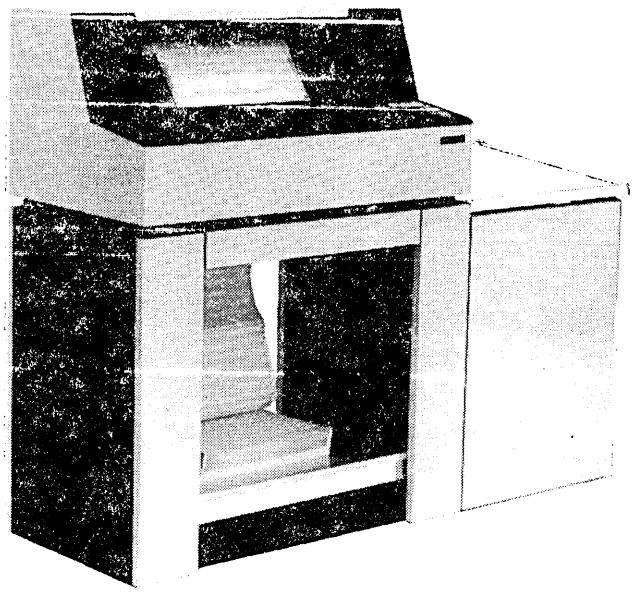
PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: No external cables are required for use with 3115-0, 3115-2, 3125-0, or 3125-2.



Side View



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	56-1/4	20	46-1/4
(cm)	(143)	(51)	(117)

Service Clearances:

	F	R	Rt	L
Inches	30	38	0	24
(cm)	(76)	(97)	(0)	(61)

Weight: 800 lb (370 kg)

Heat Output: 6,200 BTU/hr (1 600 kcal/hr)

Airflow: 350 cfm (10 m^3/min)

Power Requirements:*	*50 Hz*	*60 Hz*
kVA	2.3	2.1
Phases	3	3

Environment, Operating:

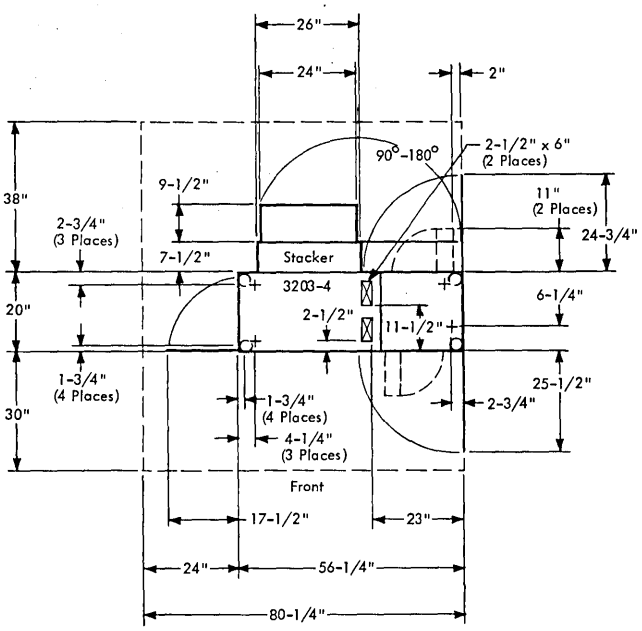
Temperature	60°F-100°F (16°C-38°C)
Rel Humidity	8%-80%
Max Wet Bulb	73°F (23°C)

Notes:

* Powered from and abutted to 3115-0, 3115-2, 3125-0, or 3125-2 when SF 4650 is installed

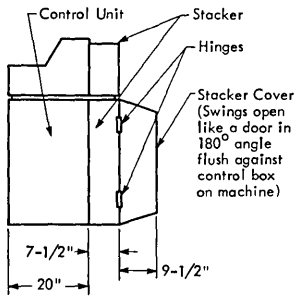
3203 PRINTER MODEL 4

PLAN VIEW (English Scale: 1/4 in. = 1 ft)

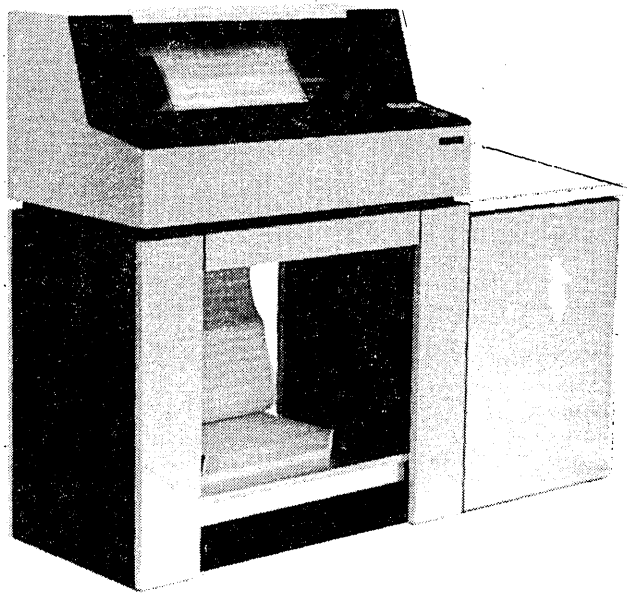


Notes:

1. Route cables through a single 3" x 7" raised-floor cutout located midway between the two 2-1/2" x 6" cable exits shown.
2. For cabling information, see 3138 or 3148.



Side View



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	56-1/4	20	46-1/4
(cm)	(143)	(51)	(117)

Service Clearances:

	F	R	Rt	L
Inches	30	38	0	24
(cm)	(76)	(97)	(0)	(61)

Weight: 800 lb (370 kg)

Heat Output: 6,200 BTU/hr (1 600 kcal/hr)

Airflow: 350 cfm (10 m^3/min)

Power Requirements: *	*50 Hz*	*60 Hz*
kVA	2.3	2.1
Phases	3	3

Environment, Operating:

Temperature	60°F-100°F (16°C-38°C)
Rel Humidity	8%-80%
Max Wet Bulb	73°F (23°C)

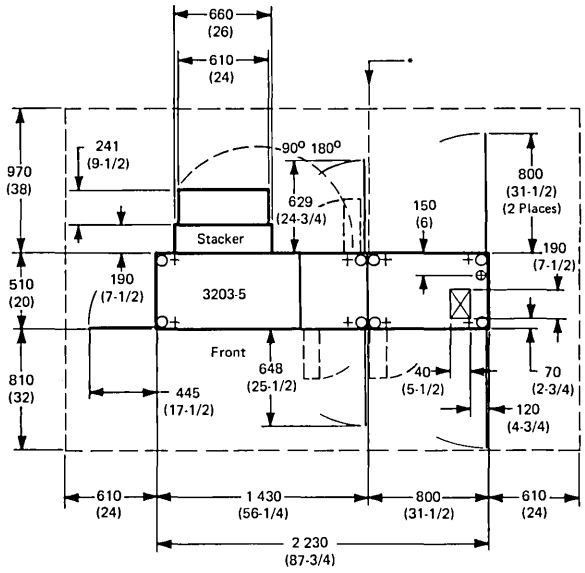
Notes:

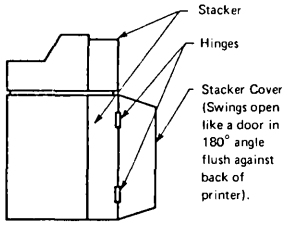
*Powered from 3138 or 3148 when SF 8075 or SF 8076 is installed.

3203 PRINTER MODEL 5

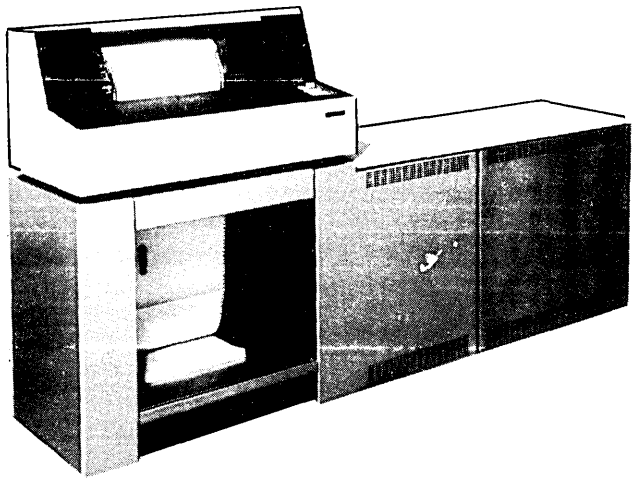
PLAN VIEW (Metric Scale: 10 mm = 0.5 m)

English measurements are shown in parentheses.





Side View



SPECIFICATIONS

Dimensions:

	Front	Side	Height
mm	2 230	510	1 170
(inches)	(87-3/4)	(20)	(46-1/4)

Service Clearances:

	Front	Rear	Right	Left
mm	810	970	610	610
(inches)	(32)	(38)	(24)	(24)

Weight: 485 kg (1,070 lb)

Heat Output: 2 400 W (8 150 BTU/hr)

Airflow: 15 m^3/min (530 cfm)

Acoustical Data:

For definitions, see "Acoustics" in Chapter 3 of *IBM General Information Manual: Installation Manual–Physical Planning,* GC22-7072.

L_{WAd}		$<L_{pA}>$ m		I	T
Operating (bels)	Idling (bels)	Operating (dB)	Idling (dB)		
8.1	—	64	—	No	No

Power Requirements:	*50 Hz*	*60 Hz*
Voltages	200, 220, 235, 380, 408 V	200, 208, 230 V
kVA	3.0	2.8
Phases **	3	3
Plug		R&S, 3760
Connector		R&S, 3934
Receptacle		R&S, 3754
Power Cord Style (see following page)		

Environment, Operating:

Temperature	16°C-38°C (60°F-100°F)
Rel Humidity	8%-80%
Max Wet Bulb	23°C (73°F)

Notes:

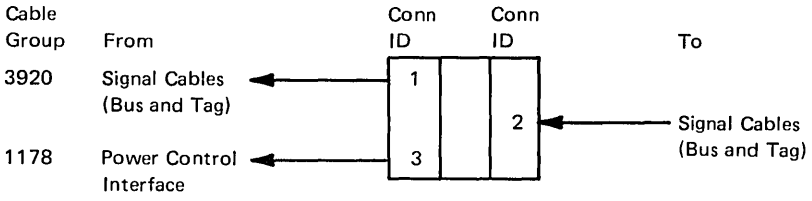
* The machine is separated at this point for shipment.

** Phase load imbalance (approximate) for 380/408 V = R : S : T = 1: 1.9 : 1.

3203 PRINTER MODEL 5 POWER CORD SPECIFICATIONS

	Length	*Cable Nominal OD*	*Number of Shields*	*Conductors*			
				Number	*Nominal OD*	*AWG No.*	*mm^2*
All 60 Hz; Japan 50/60 Hz	4.27 m (14 ft) (Chicago – 1.83 m) [6 ft])	15.37 mm (0.605 in.)	0	4	1.6 mm (0.064 in.)	14	
50 Hz (Except Japan)	4.27 m (14 ft)	11.0 mm (0.43 in.)	0	5	1.4 mm (0.055 in.)		1.5

3203 PRINTER MODEL 5 CABLING SCHEMATIC



From 3203

Group No.	*No. of Cables*	*Conn ID*	*Max Length*		*Comments*
			m	*(ft)*	
1178	1	3	46	(150)	Power control interface
3920	2	1	61	(200)	Bus and tag

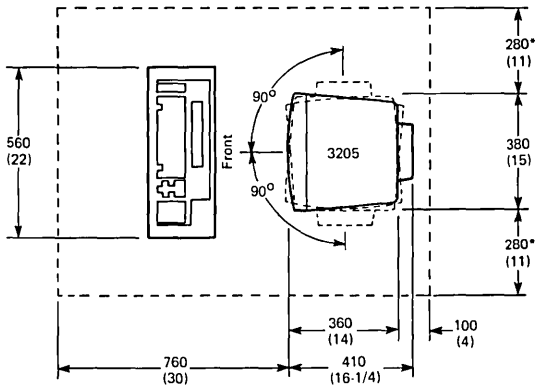
To 3203

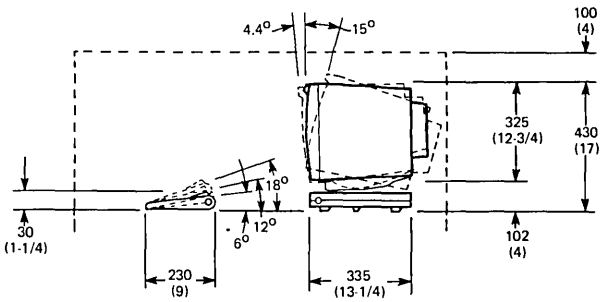
Conn ID	*Comments*
2	Bus and tag

3205 COLOR DISPLAY CONSOLE

PLAN VIEW (Metric Scale: 10 mm = 0.25 m)

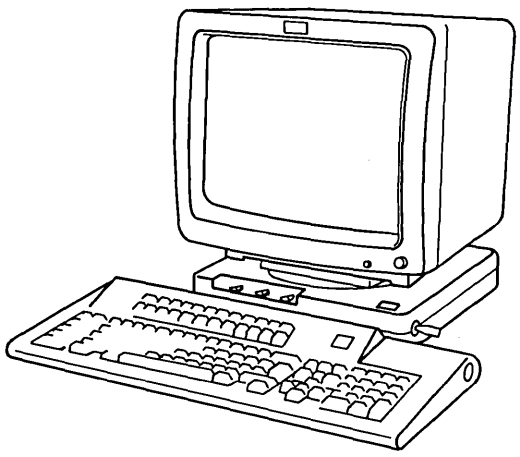
English measurements are shown in parentheses.





Side View

Note: Right and left service clearances can be reduced to the clearances required for 3205 cooling and operating: 100 mm (4 inches) on each side.



SPECIFICATIONS

Dimensions:

	Front	Side*	Height**
mm	380	410	430
(inches)	(15)	(16-1/4)	(17)

Service Clearances:

	Front***	Left	Rear	Right
mm	760	280	100	280
(inches)	(30)	(11)	(4)	(11)

Weight†: 16 kg (35 lb)

Heat Output: 250 W (850 BTU/hr)

Airflow: Natural convection

Power Requirements:

kVA	0.15
Phase	1
Ampacity	15

Environment, Operating:

Temperature	10°C-40°C (50°F-105°F)
Rel Humidity	8%-80%
Max Wet Bulb	27°C (80°F)

Environment, Nonoperating:

Temperature	5°C-52°C (41°F-125°F)
Rel Humidity	8%-80%
Max Wet Bulb	27°C (80°F)

Notes:

* Dimension does not include a keyboard. See plan view.

** The 3205 is installed on a customer-supplied desk or table. Recommended keyboard height (measured from the floor to the bottom of the 3205) is 660 mm (26 in.).

*** Each 3205 unit must have a keyboard. Keyboard feature adds 230 mm (9 in.) to front of display and can be moved up to 530 mm (21 in.) away from lower front of display.

† Keyboard feature adds about 4 kg (9 lb) for display console keyboard.

3205 COLOR DISPLAY CONSOLE

Power Cord and Plug Types:

For the United States and Canada, IBM supplies a power cord with an attached plug as follows:

Nonlocking Plug–NEMA 5-15P
125 Vac Rating, Specify Code 9891

The customer must provide the corresponding power outlet receptacle.

For World Trade countries other than Canada, IBM supplies the power cord with attached plug that corresponds to the power outlet receptacle that is most used in that country. Refer to Appendixes B, C, and D in *IBM 3270 Information Display System, Installation Manual–Physical Planning*, GA27-2787.

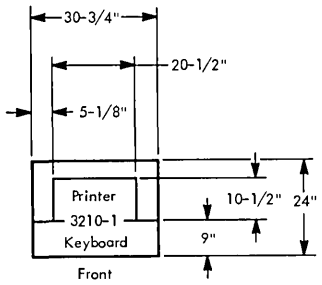
The machine is shipped with a 3-meter (10-foot) power cord unless otherwise specified.

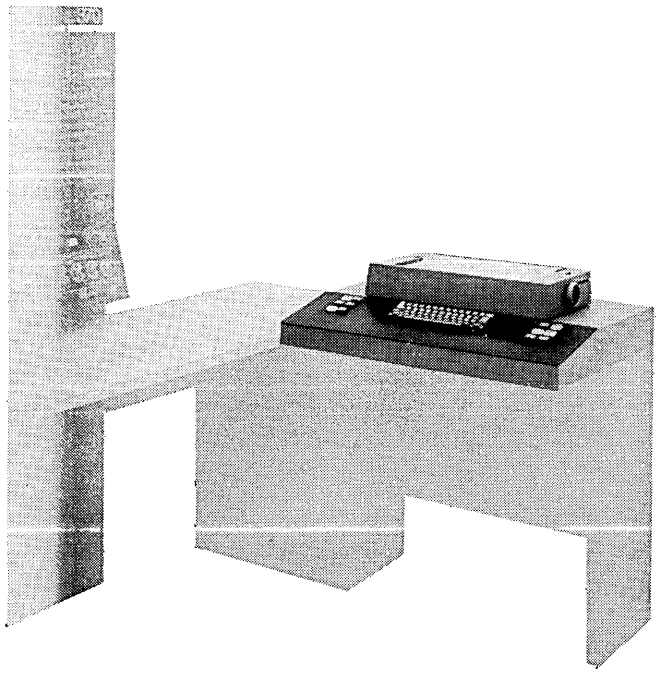
Signal I/O Control Cables:

For communication with the host processor, the 3205 uses a coaxial cable with a connector attached at both ends. This cable, shipped with the host processor, is 7.6 meters (25 feet) long.

3210 CONSOLE PRINTER-KEYBOARD MODEL 1

PLAN VIEW (English Scale: 1/4 in. = 1 ft)





SPECIFICATIONS

Dimensions:

	F	S	H
Inches	30-3/4	24	4*
(cm)	(78)	(61)	(10*)

Service Clearances:

	F	R	Rt	L
Inches	**	**	**	**
(cm)	(**)	(**)	(**)	(**)

Weight: 91 lb*** (42 kg***)

Heat Output: 500 BTU/hr (130 kcal/hr)

Airflow: 0 cfm (0 m^3/min)

Power Requirements:†

kVA	0.16

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

Notes:

* Height from floor is 32 inches (81 cm) when mounted on System/370 console table.

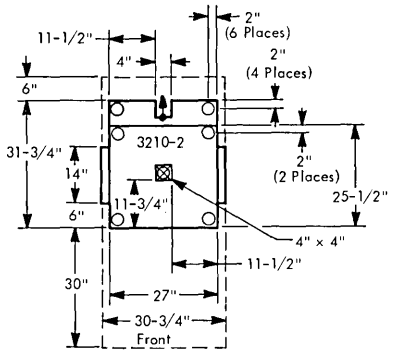
** Provide operator access and sufficient clearance for forms carrier and forms travel.

*** Does not include stand on which machine is placed or forms carrier.

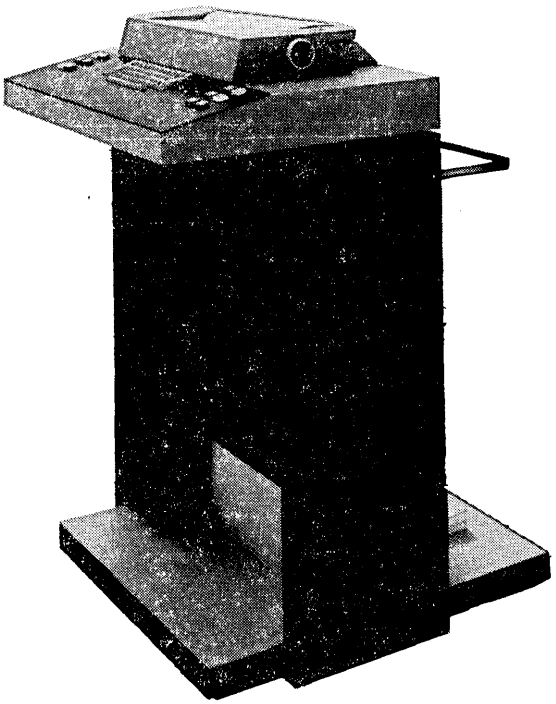
† Powered from System/370 processor.

3210 CONSOLE PRINTER-KEYBOARD MODEL 2

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see 3145 or 3155.



SPECIFICATIONS

Dimensions: *

	F	S	H
Inches	30-3/4	31-3/4	47
(cm)	(78)	(81)	(119)

Service Clearances:

	F	R	Rt	L
Inches	30	6	**	**
(cm)	(76)	(15)	(**)	(**)

Weight: 275 lb (130 kg)

Heat Output: 500 BTU/hr (130 kcal/hr)

Airflow: 0 cfm (0 m^3/min)

Power Requirements:***

kVA	0.16	
Phases	1	
	115 V	*208/230 V*
Plug	H or P&S, 5266	R&S, FS3720
Connector	H or P&S, 5269	R&S, FS3913
Receptacle	H or P&S, 5261 or 5262	R&S, FS3743

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

Notes:

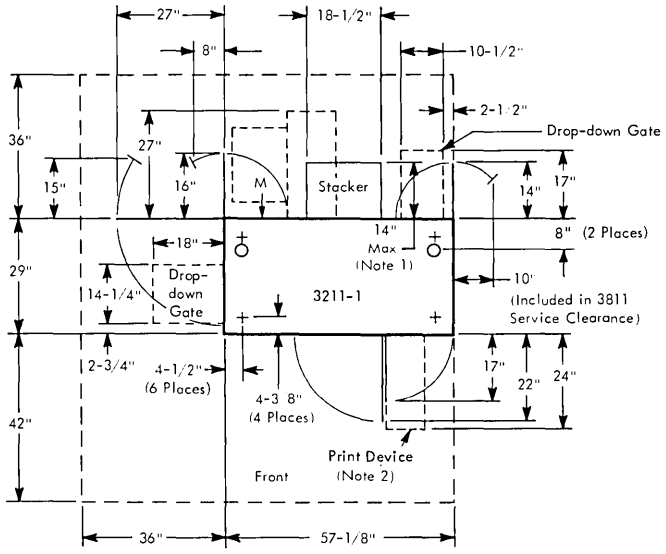
* Machine can be reduced to 30-3/4" x 25-1/2" x 47" (78 cm x 65 cm x 119 cm) for moving through 30-inch (76-cm) doors.

** Provide operator access to forms carrier on either right or left side.

*** For all 50-Hz and for 200 V, 60-Hz World Trade systems, power is supplied from System/370 processor. For all 115/208/230 V, 60-Hz systems, power is supplied from customer's branch circuit.

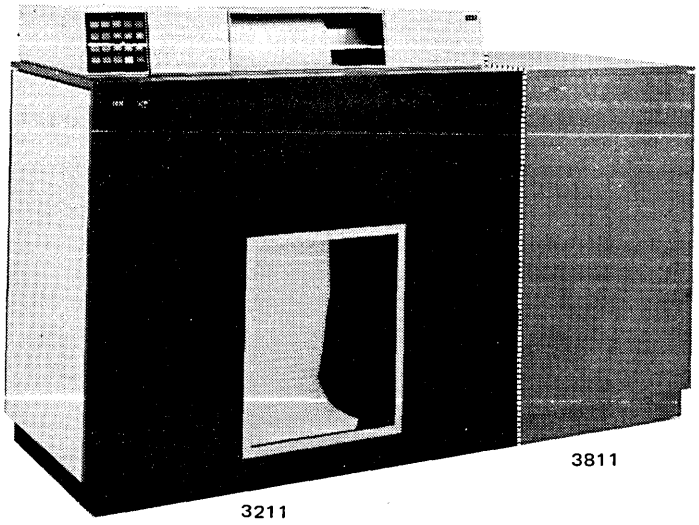
3211 PRINTER MODEL 1

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Notes:

1. Projection of stacker depends on height of paper forms. Dimension shown is maximum projection.
2. Print device swings open over the lower access doors.



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	57-1/8	29	53-1/2
(cm)	(145)	(74)	(136)

Service Clearances:

	F	R	Rt	L
Inches	42	36	0	36
(cm)	(107)	(91)	(0)	(91)

Weight: 1,400 lb (640 kg)

Heat Output:	*50 Hz*	*60 Hz*
BTU/hr	13,000	13,850
(kcal/hr)	(3 300)	(3 500)

Airflow:

cfm	500	500
(m^3/min)	(15)	(15)

Power Requirements:*

kVA	5.3	5.4

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

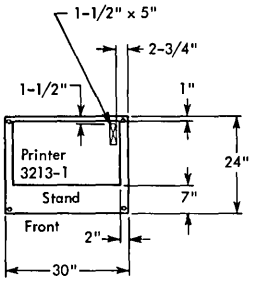
Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

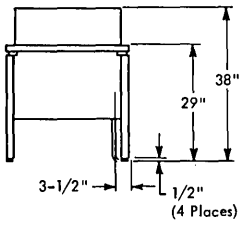
Notes:

* Powered from 3811 that is abutted to right end of 3211.

3213 CONSOLE PRINTER MODEL 1

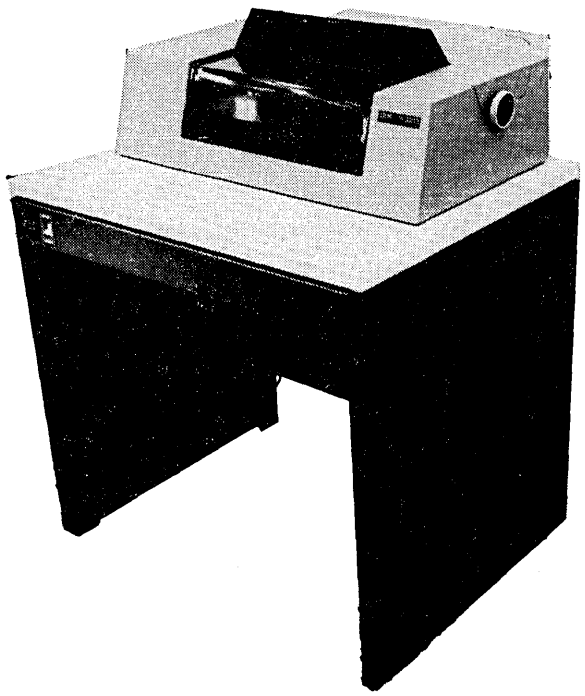
PLAN VIEW (English Scale: 1/4 in. = 1 ft)





Front View

Note: For cabling information, see 3158, 3158-3, or 3168-3.



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	30	24	38
(cm)	(76)	(61)	(97)

Service Clearances:

	F	R	Rt	L
Inches	*	*	*	*
(cm)	(*)	(*)	(*)	(*)

Weight: 190 lb (87 kg)

Heat Output: 600 BTU/hr (160 kcal/hr)

Airflow: 0 cfm (0 m^3/min)

Power Requirements:.**

kVA	0.2
Phases	1

Environment, Operating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	85°F (29°C)

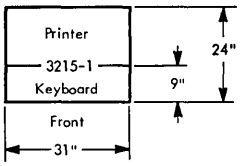
Notes:

* Provide for operator access and sufficient clearance for forms carrier and forms travel.

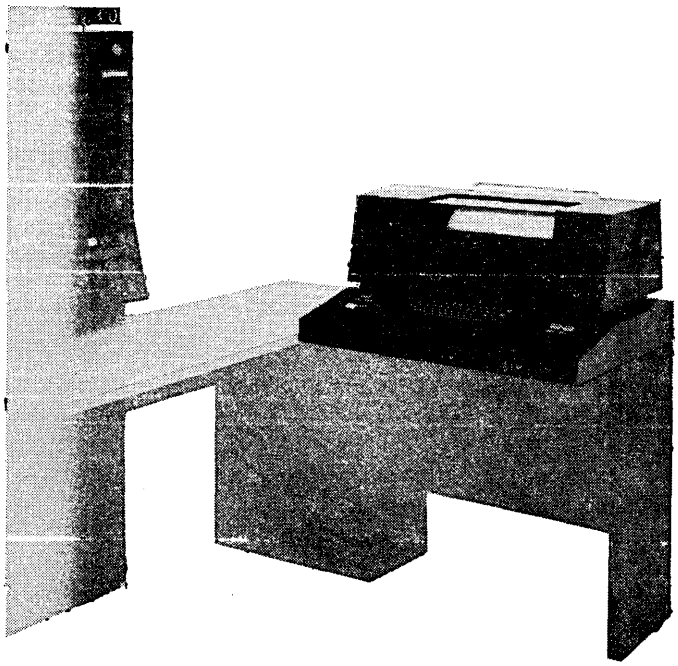
** Powered from 3158 or 3158-3 when SF 7840 is installed, or from 3168-3 when SF 7850 is installed.

3215 CONSOLE PRINTER-KEYBOARD MODEL 1

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: No external cables are required for use with 3135, 3145, or 3155.



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	31	24	13*
(cm)	(79)	(61)	(33*)

Service Clearances:

	F	R	Rt	L
Inches	**	**	**	**
(cm)	(**)	(**)	(**)	(**)

Weight: 180 lb*** (82 kg***)

Heat Output: 600 BTU/hr (160 kcal/hr)

Airflow: 0 cfm (0 m^3/min)

Power Requirements:†
kVA 0.2

Environment, Operating:
Temperature 50°F-110°F (10°C-43°C)
Rel Humidity 8%-80%
Max Wet Bulb 85°F (29°C)

Environment, Nonoperating:
Temperature 50°F-125°F (10°C-52°C)
Rel Humidity 8%-80%
Max Wet Bulb 85°F (29°C)

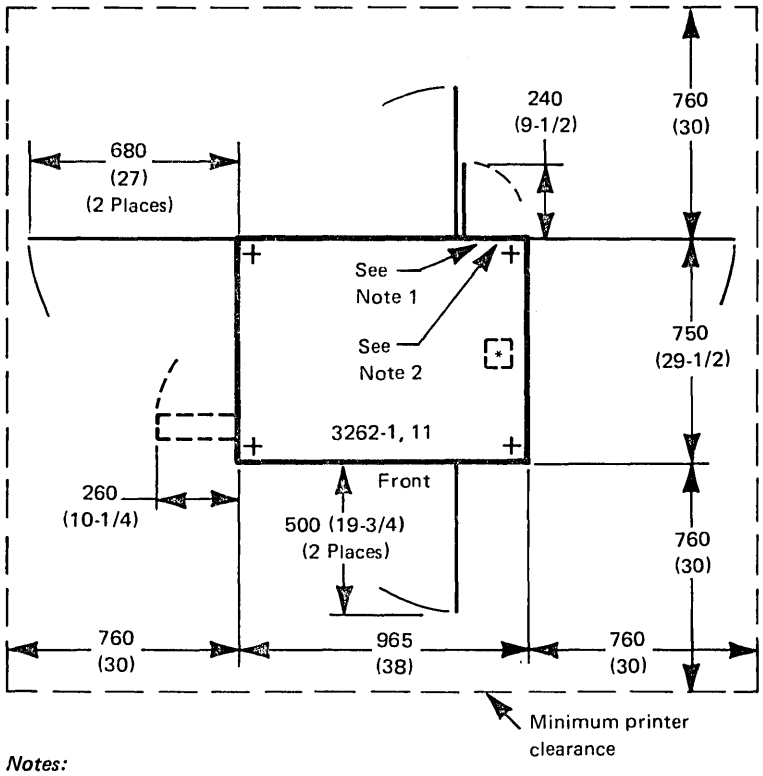
Notes:
* Height from floor is 41 inches (104 cm) when mounted on System/370 console table.
** Provide for operator access and sufficient clearance for forms carrier and forms travel.
*** Does not include stand on which machine is placed or forms carrier.
† Powered from System/370 processor.

3262 LINE PRINTER MODELS 1 AND 11

(Customer Setup Designated)

PLAN VIEW (Metric Scale: 10 mm = 0.25 m)

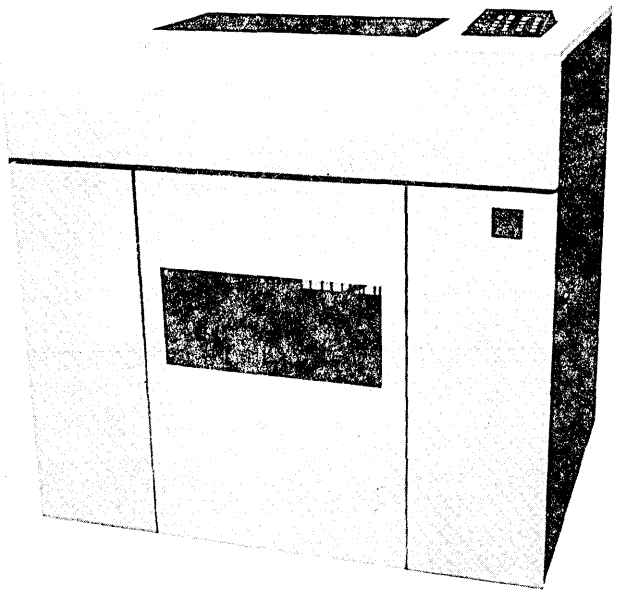
English measurements are shown in parentheses.



Notes:

1. Signal cable connector location.*
2. Power cable location.*
3. Height with cover raised: 1 715 mm (67-1/2 in.)

* Both cables can be routed through a single 64-mm (2-1/2-in.) hole in raised floor. Recommended location for the hole is centered between the front and back of the machine, and 100 mm (4 in.) in from the right side.



SPECIFICATIONS

Dimensions:

	Front	Side	Height
mm	965	750	1 000
(inches)	(38)	(29-1/2)	(39-1/2)

Service Clearances:

	Front	Rear	Right	Left
mm	760	760	760	760
(inches)	(30)	(30)	(30)	(30)

Weight: 245 kg (540 lb)

Heat Output: 1 100 W (3,750 BTU/hr)

Power Requirements:*

	50 Hz	60 Hz
kVA	1.4	1.2
Phases	1	1

Voltages

50 Hz: 100, 110, 200, 220, 230, 240

60 Hz: 100, 110, 120, 127

Power Cord:

The machine is shipped with a 4.3-m (14-ft) power cord unless otherwise specified. For a 1.8-m (6-ft) cord, specify code 9511.

Plug Types:

For the United States and Canada, IBM supplies power cord with attached nonlocking type (H) plug, unless otherwise specified as:

- Locking type (J) (Feature 9081)
- Watertight type (A1) (Feature 9080)
  (required where connection is beneath raised floor)

For other World Trade countries, IBM supplies the power cord with attached plug corresponding to the power outlet most commonly used in that country. (Refer to "Appendix D. Plugs and Receptacles.")

Environment, Operating:

Temperature	10°C-41°C (50°F-105°F)
Rel Humidity	8%-80%
Max Wet Bulb	27°C (80°F)

Environment, Operating Optical Character Recognition (OCR) Applications:

Temperature	16°C-29°C (60°F-85°F)
Rel Humidity	20%-52%
Max Dew Point	18°C (65°F)

Environment, Nonoperating:

Temperature	10°C-52°C (50°F-125°F)
Rel Humidity	8%-80%
Max Wet Bulb	27°C (80°F)

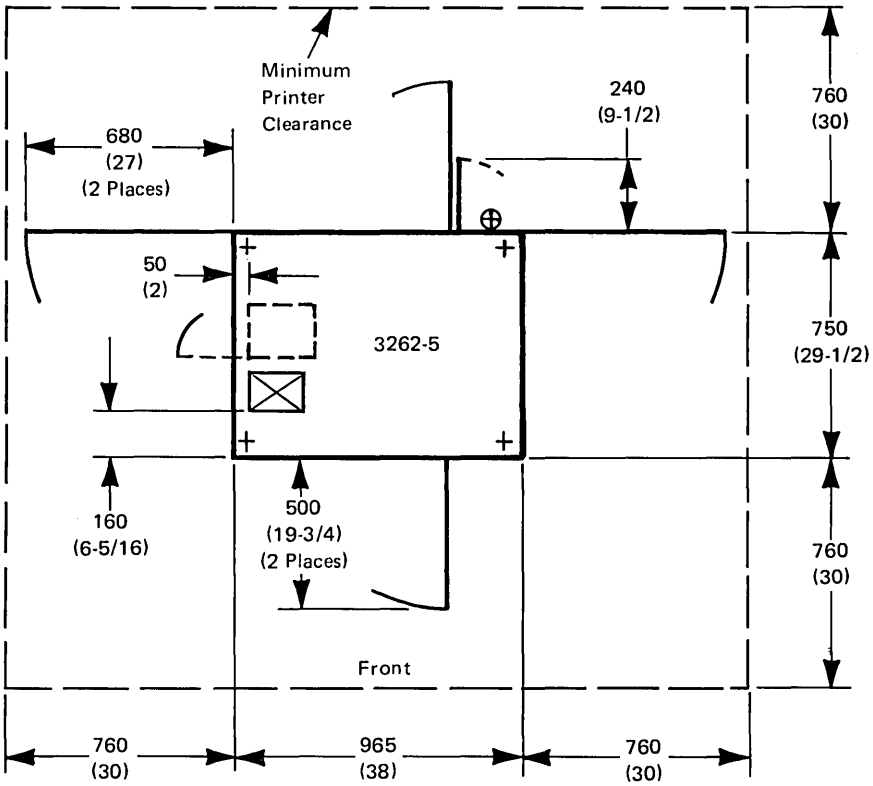
Notes:

* Branch circuit requires a delayed-action fuse or circuit breaker with a high-surge tolerance for transformer (high-magnetic) applications.

3262 PRINTER MODEL 5

PLAN VIEW (Metric Scale: 10 mm = 0.25 m)

English measurements are shown in parentheses.



SPECIFICATIONS

Dimensions:

	F	S	H
mm	965	750	1 000
(inches)	(38)	(29-1/2)	(39-1/2)

Service Clearances:

	F	R	Rt	L
mm	760	760	760	760
(inches)	(30)	(30)	(30)	(30)

Weight: 250 kg (550 lb)

Heat Output: 1 100 W (3,750 BTU/hr)

Acoustical Data:
For definitions, see "Acoustics" in Chapter 3 of *IBM General Information Manual: Installation Manual–Physical Planning,* GC22-7072.

L_{WAd}		$<L_{pA}>$ m		I	T
Operating (bels)	Idling (bels)	Operating (dB)	Idling (dB)		
8.1	N/A	64.0	N/A	No	No

Power Requirements: *

	50 Hz	60 Hz
kVA	1.4	1.2
Phases	1	1
Voltages		
50 Hz:	100, 110, 200, 220, 230, 240	
60 Hz:	100, 110, 120, 127	

Power Cord: See Appendix A, cord style A9. The machine is shipped with a 4.3-m (14-ft) power cord unless specify code 9986 is ordered for a 1.8-m (6-ft) cord.

Plug Types: See Appendix D.
For the United States, Canada, and Japan, IBM supplies power cord with attached watertight plug (A1), Russell & Stoll 3720U-1.

Receptacle or Connector (Customer Provided):
Watertight receptacle: R&S, 3743U-1
Watertight connector: R&S, 3913U-1
Service rating for the required receptacle/connector is 20 A at 120 V nominal.

Environment, Operating:

Temperature	10°C-32°C (60°F-90°F)
Rel Humidity	8%-80%
Max Wet Bulb	23°C (73°F)

Environment, Operating
Optical Character Recognition (OCR) Applications:

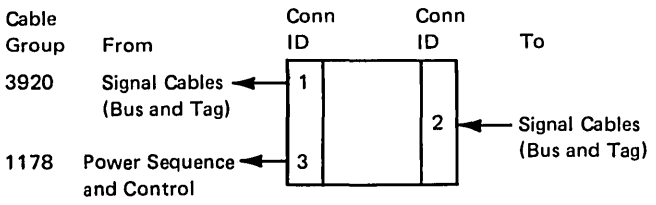
Temperature	16°C-29°C (60°F-85°F)
Rel Humidity	20%-52%
Max Wet Bulb	22°C (72°F)

Environment, Nonoperating:

Temperature	10°C-43°C (50°F-110°F)
Rel Humidity	8%-80%
Max Wet Bulb	23°C (73°F)

Notes:
* Branch circuit requires a delayed-action fuse or circuit breaker with a high-surge tolerance for transformer (high-magnetic) applications.

3262 PRINTER MODEL 5 CABLING SCHEMATIC



From 3262-5

Group No.	*No. of Cables*	*Conn ID*	*Max Length*		*Comments*	*Notes*
			m	*(ft)*		
1178	1	3	46	(150)	Power sequence and control	1
3920	2	1	122	(400)	Bus and tag	2

To 3262-5

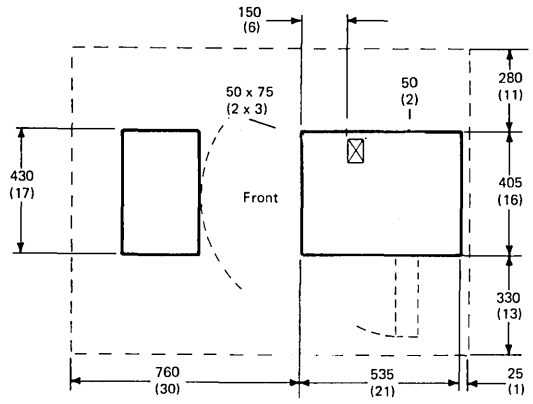
Conn ID	*Comments*
2	Bus and tag

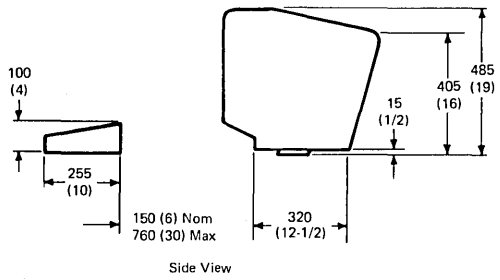
Notes:
1. Cable group 1178, power sequence and control, is optional.
2. Maximum cumulative X-length is 122 m (400 ft) unless modified by system or channel limitation. Maximum cable length must be reduced by 5 m (15 ft) for each control unit between the 3262-5 and the channel.

3278 DISPLAY CONSOLE MODEL 2A

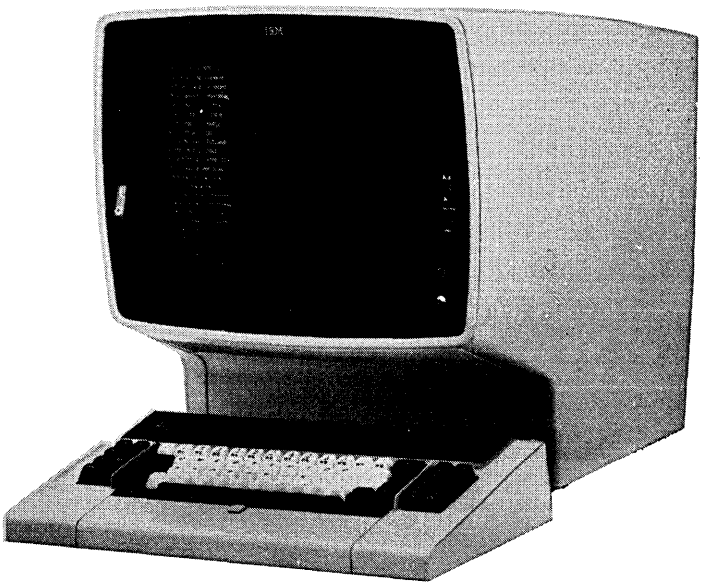
PLAN VIEW (Metric Scale: 10 mm = 0.25 m)

English measurements are shown in parentheses.





Side View



SPECIFICATIONS

Dimensions:

	Front*	Side*	Height**
mm	405	535	485
(inches)	(16)	(21)	(19)

Service Clearances:

	F***	R	Rt	L	T
mm	760	25	330	280	155
(inches)	(30)	(1)	(13)	(11)	(6)

Weight: 40 kg (80 lb) Display
6 kg (13 lb) Keyboard

Heat Output: 130 W (450 BTU/hr)

Airflow: Convection †

Acoustical Data:

For definitions, see "Acoustics" in Chapter 3 of *IBM General Information Manual: Installation Manual–Physical Planning,* GC22-7072.

L_{WAd}		$<L_{pA}>_m$		I	T
Operating (bels)	Idling (bels)	Operating (dB)	Idling (dB)		
N/A	N/A	25	N/A	No	No

Power Requirements:

kVA 0.2
Phase 1
Voltage
United States/Canada/Saudi Arabia
60 Hz 120
WT Americas/Far East
50 Hz 100, 110, 200, 220, 230, 240
60 Hz 100, 110, 120, 127
WT Europe/Middle East/Africa
50 Hz 220, 240

(For additional power and cabling information, see following page.)

Environment, Operating:

Temperature	10°C-40°C (50°F-105°F)
Rel Humidity	8%-80%
Max Wet Bulb	27°C (80°F)

Environment, Nonoperating:

Temperature	10°C-52°C (50°F-125°F)
Rel Humidity	8%-80%
Max Wet Bulb	27°C (80°F)

Notes:

* Dimension does not include keyboard. See plan view.

** The 3278-2A is mounted on a customer-supplied table (also available from IBM). Recommended keyboard height (measured from the floor to the bottom of the 3278-2A) is 735 mm (29 in.).

*** Keyboard feature adds 255 mm (10 in.) to front of display and can be moved up to 760 mm (30 in.) away from lower front of display.

† The feet provide space between bottom of unit and supporting surface to allow airflow for cooling. Take care that paper, books, etc., do not impede the airflow in this space.

Power Cord and Plug Types:

For the United States and Canada, the machine is shipped with a 2.8-m (9-ft) power cord and a NEMA 5-15P non-locking plug unless otherwise specified.

For 1.8-m (6-ft) cord, specify code 9511.
For 3.7-m (12-ft) cord, specify code 9512.
For 4.5-m (15-ft) cord, specify code 9513.

Locking Plug–NEMA L5-15P
125 Vac Rating, Specify Code 9890
Waterproof Plug–R&S 3720U-1
125 Vac Rating, Specify Code 8802

Note: The waterproof plug is only available with 1.8-m (6-ft) and 4.5-m (15-ft) cords.

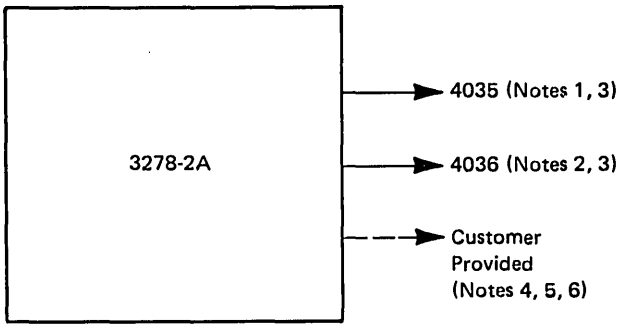
The customer must provide the corresponding power receptacle. For the waterproof power receptacle, use R&S 3743U-1 or for the power outlet connector, use R&S 3913U-1.

For World Trade countries other than Canada, IBM supplies the power cord with attached plug that corresponds to the power outlet receptacle that is most used in that country. Refer to "3278" in Appendixes B, C, and D in *IBM 3270 Information Display System, Installation Manual–Physical Planning,* GA27-2787.

Cabling: The 3278 Model 2A attaches only to a 3081, 3083, 3084, 4331, or 4341 processor. Refer to the appropriate cabling schematic in *IBM 4300 Processor Installation Manual–Physical Planning*, GA24-3667, or *IBM System/370 Installation Manual–Physical Planning*, GC22-7004.

3278 DISPLAY CONSOLE MODEL 2A

CABLING SCHEMATIC



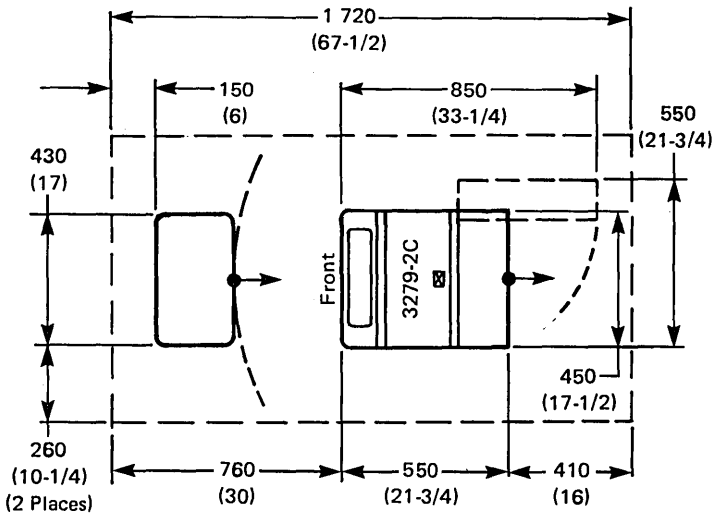
Notes:

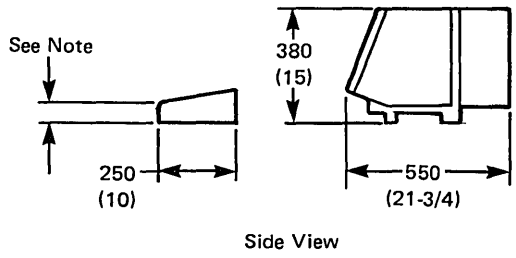
1. Signal cable.
2. Control cable.
3. Fixed length for SF 4631, 4632, and 4634 (for WT, SF 2720, 2727, and 2728) shipped with processor.
4. Used for SF 4633 (for WT, SF 2729).
5. Cable group 4824 when ordered for attachment to a 4341 Processor will provide up to 30.5 meters (100 feet) of coaxial signal cable.
6. Additional coaxial signal cable, if required, up to a maximum total cable length of 1 500 meters (4,925 feet) must be purchased and installed by the customer. Follow the specifications and the instructions of the 3278 Model 2 in the *IBM 3270 Information Display System Installation Manual–Physical Planning,* GA27-2787.

3279 COLOR DISPLAY CONSOLE MODEL 2C

PLAN VIEW (Metric Scale: 10 mm = 0.25 m)

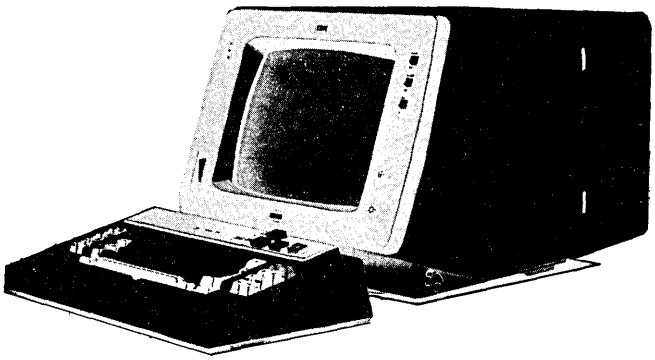
English measurements are shown in parentheses.





Side View

Note: 100 mm (4-1/4 in.) for display console keyboard with operator control panel; 90 mm (3-1/2 in.) for display console keyboard without operator control panel.



SPECIFICATIONS

Dimensions:

	Front	Side*	Height**
mm	450	550	380
(inches)	(17-1/2)	(21-3/4)	(15)

Service Clearances:

	Front***	Left	Rear	Right
mm	760	300	410	30
(inches)	(30)	(12)	(16)	(1)

Weight†: 30 kg (60 lb)

Heat Output: 250 W (850 BTU/hr)

Airflow: Natural convection

Acoustical Data:

For definitions, see "Acoustics" in Chapter 3 of *IBM General Information Manual: Installation Manual–Physical Planning,* GC22-7072.

L_{WAd}		$<L_{pA}>_m$			
Operating (bels)	Idling (bels)	Operating (dB)	Idling (dB)	I	T
N/A	N/A	37	N/A	No	No

Power Requirements:

kVA	0.3
Phase	1
Ampacity	15

Environment, Operating

Temperature	10°C-40°C (50°F-105°F)
Rel Humidity	8%-80%
Max Wet Bulb	27°C (80°F)

Environment, Nonoperating:

Temperature	10°C-52°C (52°F-125°F)
Rel Humidity	8%-80%
Max Wet Bulb	27°C (80°F)

Notes:

* Dimension does not include a keyboard. See plan view.

** The 3279 is installed on a customer-supplied desk or table. Recommended keyboard height (measured from the floor to the bottom of the 3279) is 660 mm (26 in.).

*** Each 3279 unit must have a keyboard. Keyboard feature adds 250 mm (10 in.) to front of display and can be moved up to 530 mm (21 in.) away from lower front of display.

† Keyboard feature adds about:
4.5 kg (10 lb) for display console keyboard without operator control panel.
8.0 kg (17 lb) for display console keybaord with operator control panel.

3279 COLOR DISPLAY CONSOLE MODEL 2C

Power Cord and Plug Types:

For the United States and Canada, IBM supplies a power cord with an attached plug as follows:

Locking Plug–NEMA L5-15P
125 Vac Rating, Specify Code 9890
Nonlocking Plug–NEMA 5-15P
125 Vac Rating, Specify Code 9891
Waterproof Plug–RS3720U-1,
125 Vac Rating, Specify Code 8802

Note: The waterproof plug is available only with a 1.8-meter (6-foot) or a 4.5-meter (15-foot) cord.

The customer must provide the corresponding power outlet receptacle.

For World Trade countries other than Canada, IBM supplies the power cord with attached plug that corresponds to the power outlet receptacle that is most used in that country. Refer to "3279" in Appendixes B, C, and D in *IBM 3270 Information Display System, Installation Manual–Physical Planning*, GA27-2787.

The machine is shipped with a 2.8-meter (9-foot) power cord unless otherwise specified. For a 1.8-meter (6-foot) cord, specify code 9511; for a 4.5-meter (15-foot) cord, specify code 9513.

Signal I/O Control Cables:

For a display console with operator control panel, no attachment cables are required if the console keyboard includes an operator control panel (keyboards SF 2720, 2727, 2728, 4631, 4632, and 4634). Fixed-length (7.6-meter [25-foot]) cables are furnished by IBM.

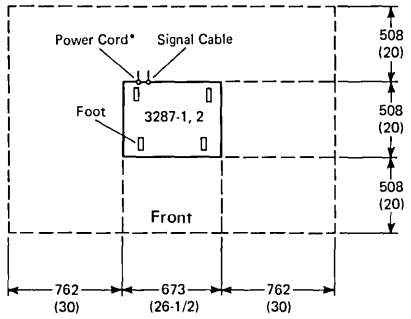
For a display console without operator control panel, cable group 4824 is required if the console keyboard does not include an operator control panel (keyboards SF 2729 and 4634). This cable group supplies a coaxial signal cable of up to 30.5-meter (100-foot) length.

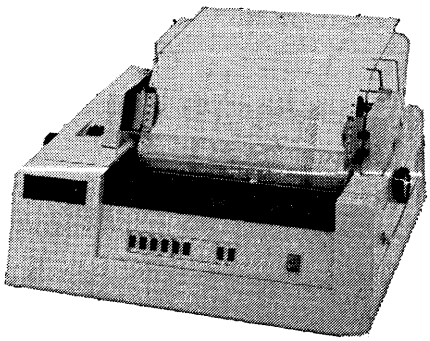
The customer may extend the coaxial signal cable to a maximum length of 1 500-meters (4,925-feet) using coaxial cable as outlined for the 3279 in the *IBM 3270 Information Display System Installation Manual–Physical Planning*, GA27-2787.

3287 PRINTER MODELS 1 AND 2

PLAN VIEW (Metric Scale: 10 mm = 0.5 m)

English measurements are shown in parentheses.





SPECIFICATIONS

Dimensions:

	Front	Side	Height
mm	673	508	254**
(inches)	(26-1/2)	(20)	(10)**

Service Clearances:***

	Front	Rear	Right	Left
mm	508	508	762	762
(inches)	(20)	(20)	(30)	(30)

Weight: 31 kg (68 lb)

Heat Output: 250 W (853 BTU/hr)

Airflow: 2 m^3/min (70 cfm)

Power Requirements:†

kVA	0.25
Phases	1
Signal Cables††	

Environment, Operating:

Temperature	10°C-41°C (50°F-105°F)
Rel Humidity	8%-80%
Max Wet Bulb	27°C (80°F)

Environment, Nonoperating:

Temperature	10°C-52°C (50°F-125°F)
Rel Humidity	8%-80%
Max Wet Bulb	27°C (80°F)

Notes:

* Power cord length of 2.8 m (9 feet) is supplied as standard. (Optional lengths available are: 1.8 m [6 feet], 3.7 m [12 feet], and 4.5 m [15 feet].)

** 292 mm (11-1/2 inches) with forms tractor.

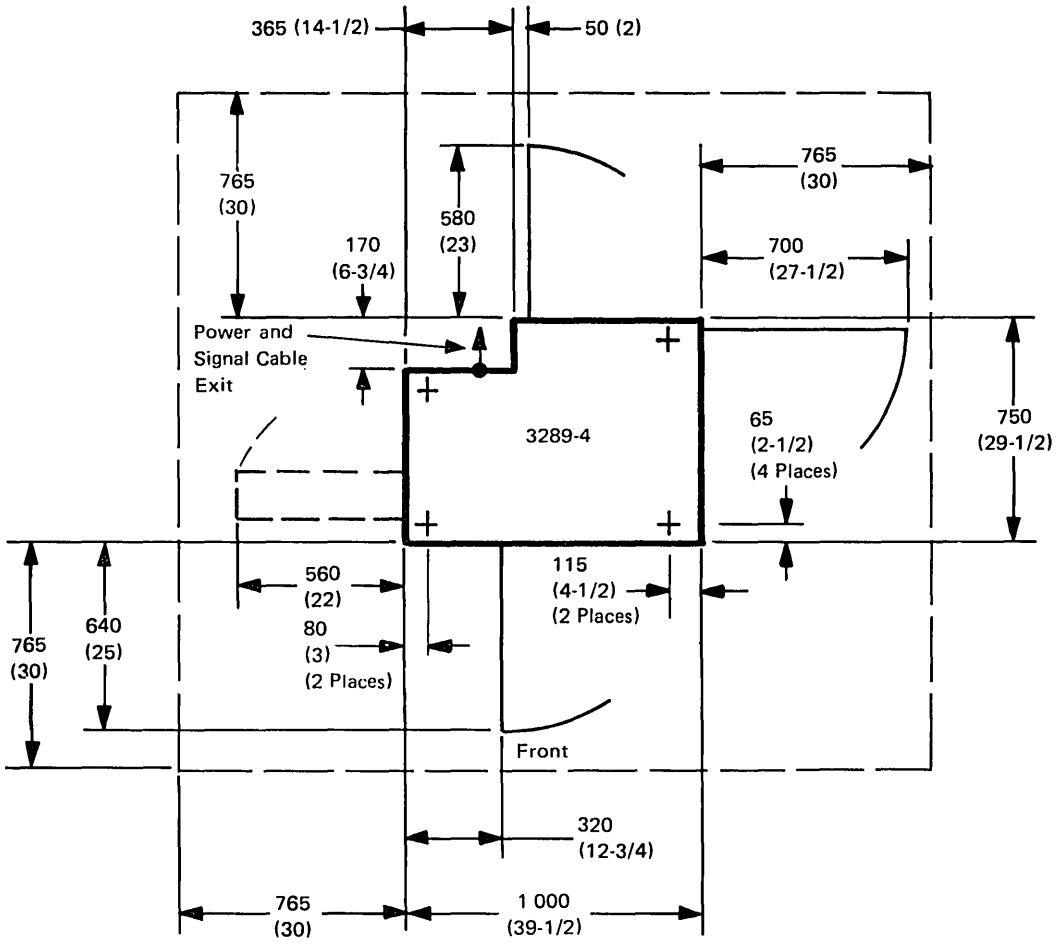
*** A 1 016-mm (40-inch) service clearance (measured from the table top) is required above the 3287.

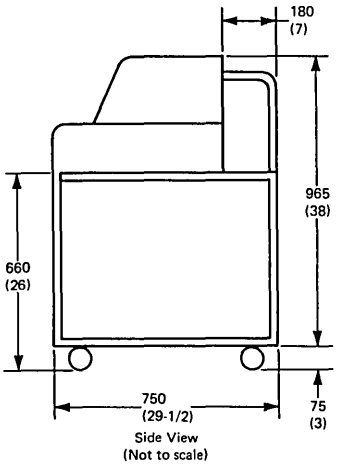
† For safety, each branch circuit must be grounded using a dedicated wire conductor or a continuous metal conduit. The dedicated wire conductor is recommended.

†† For attachment to 3081, 3138, or 3148, see 3081, 3083, 3084, 3138, or 3148 (GC22-7004) cabling schematic pages for appropriate IBM cable group number. Maximum cable length is 610 m (2,000 feet).

3289 LINE PRINTER MODEL 4
(Customer Setup Designated)

PLAN VIEW (Metric Scale: 10 mm = 0.25 m)





3289 LINE PRINTER MODEL 4

SPECIFICATIONS

Dimensions:

	Front	Side	Height
mm	1 000	750	1 040
(inches)	(39½)	(29½)	(41)

Service Clearances:

	Front	Rear	Right	Left
mm	765	765	765	765
(inches)	(30)	(30)	(30)	(30)

Weight: 200 kg (440 lb)

Heat Output: 410 W (1,400 BTU/hr)

Airflow: Convection only

Power Requirements:

kVA 0.6
Phase 1
Voltage United States/Canada/Saudi Arabia
60 Hz 120 V
WT Americas/Far East
50 Hz 100, 110, 200, 220, 230, 240 V
60 Hz 100, 110, 120, 127 V
WT Europe/Middle East/Africa
50 Hz 200, 240 V

Power Cord and Plug Types:

For the United States and Canada, IBM supplies a power cord with an attached plug, as follows:

Locking plug–NEMA L5-15P
125 Vac rating, specify code 9890
Nonlocking plug–NEMA 5-15P
125 Vac rating, specify code 9891

The customer must provide the corresponding power outlet receptacle.

For other World Trade countries, IBM supplies the power cord and attached plug that is most used in that country. Refer to the *IBM 3289 Printer Model 4 Planning and Site Preparation Guide,* GA27-3198.

The machine is shipped with a 2.8-meter (9-foot) power cord unless otherwise specified. The power cord is also available in the following lengths: 1.8 meters (6 feet), 3.7 meters (12 feet), and 4.5 meters (15 feet).

Signal Cable:

Coaxial signal cable (maximum length 1 500 meters [4,920 feet]) must be supplied and installed by the customer. Follow specifications and instructions for the 3278 Model 2 in the *IBM 3270 Information Display System Installation Manual–Physical Planning,* GA27-2787.

Environment, Operating:*

Temperature $10^{o}C$-$41^{o}C$ ($50^{o}F$-$105^{o}F$)
Rel Humidity 8% - 80%

Notes:

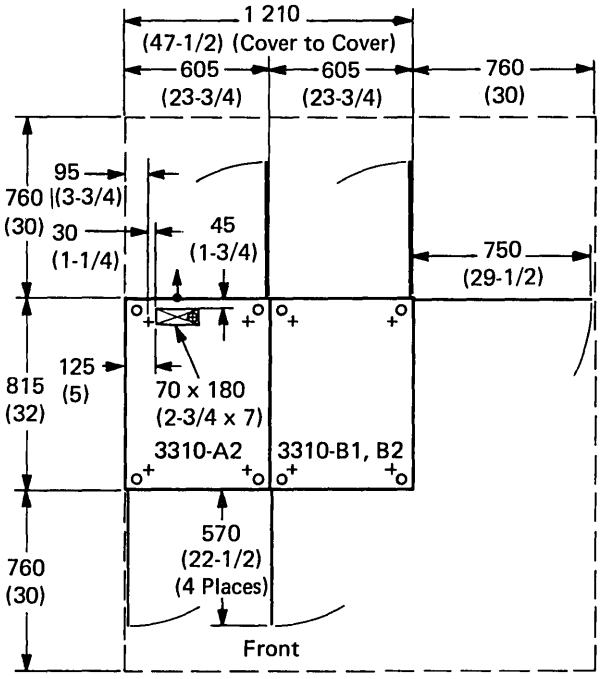
* For optimum paper feeding and stacking, a temperature in the range of $15.6^{o}C$ to $37.8^{o}C$ ($60^{o}F$ to $100^{o}F$) is recommended. The recommended relative humidity range is 26% to 62%.

3310 DIRECT ACCESS STORAGE DEVICE MODELS A2, B1, AND B2

Maximum configuration of 3310 Models A2, B1, and B2

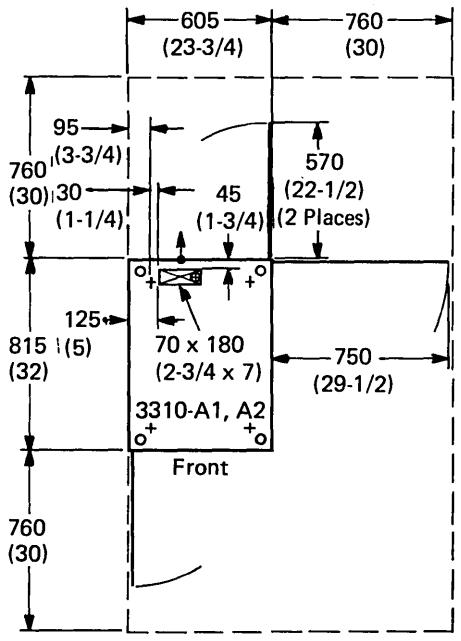
PLAN VIEW (Not to scale)

English measurements are shown in parentheses.

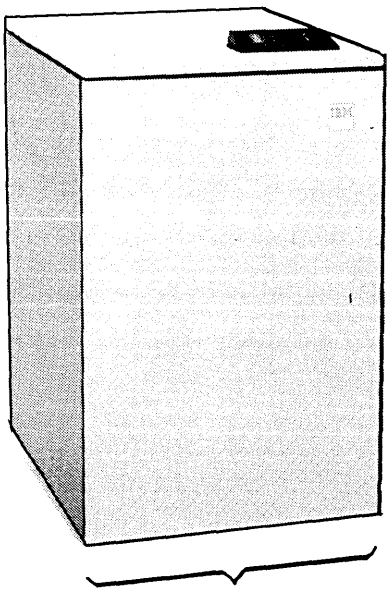


3310 DIRECT ACCESS STORAGE DEVICE MODELS A1 AND A2

PLAN VIEW (Not to scale)



3310 DIRECT ACCESS STORAGE DEVICE MODELS A1 AND A2



3310 Models A1 and A2 (Design Model)

SPECIFICATIONS

Dimensions:

	Front	Side	Height
mm	603	813	1 000
(inches)	(23-3/4)	(32)	(39-1/2)

Service Clearances:

	Front	Rear	Right	Left
mm	762	762	762*	0
(inches)	(30)	(30)	(30*)	(0)

Weight:	Model A1	Model A2
kg	136	160
(lb)	(300)	(350)

Heat Output:	Model A1	Model A2
W	170	250
(BTU/hr)	(600)	(900)

Airflow:	Model A1	Model A2
m^3/min	0.5	0.5
(cfm)	(10)	(10)

Power Requirements:

	Model A1	Model A2
kVA	0.3	0.5
Phase	1	1
Plug	R&S, 3720 U2	R&S, 3720 U2
Receptacle	R&S, 3743 U2	R&S, 3743 U2
Connector	R&S, 3913 U2	R&S, 3913 U2
Power Cord		
Style	A1	A1

Environment, Operating:

Temperature	10°C-41°C (50°F-105°F)
Rel Humidity	8%-80%
Max Wet Bulb	27°C (80°F)

Environment, Nonoperating:

Temperature	10°C-52°C (50°F-125°F)
Rel Humidity	8%-80%
Max Wet Bulb	27°C (80°F)

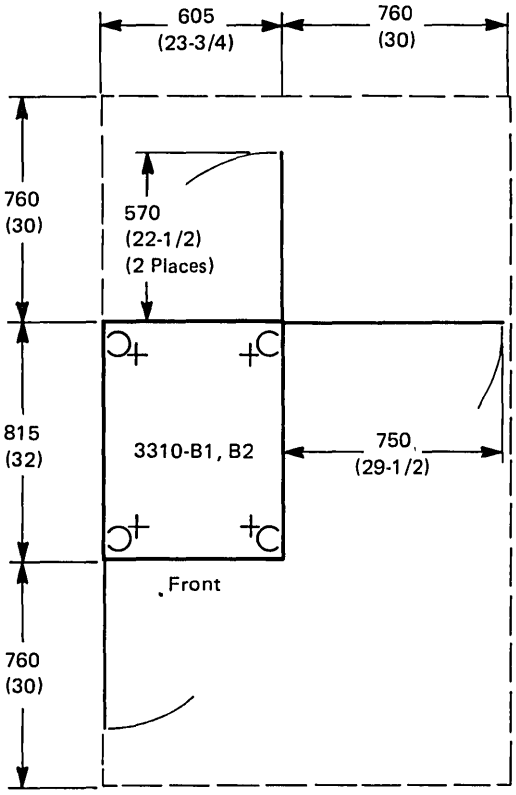
Notes:

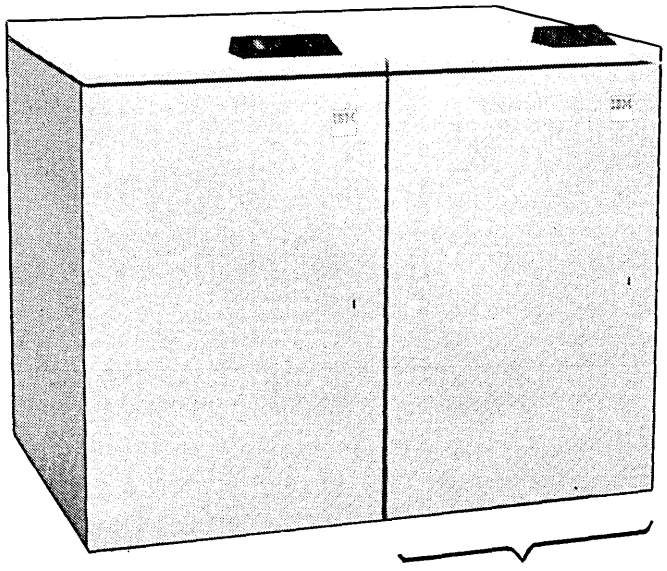
* Service clearance is 760 mm (30 in.) if this is an end device.

3310 DIRECT ACCESS STORAGE DEVICE MODELS B1 AND B2

PLAN VIEW (Metric Scale: 10 mm = 0.25 m)

English measurements are shown in parentheses.





3310 Models B1 and B2 (Design Model)

SPECIFICATIONS

Dimensions:

	Front	Side	Height
mm	605	815	1 000
(inches)	(23-3/4)	(32)	(39-1/2)

Service Clearances:

	Front	Rear	Right	Left
mm	760	760	760	0
(inches)	(30)	(30)	(30)	(0)

Weight:	**Model B1**	**Model B2**
kg	110	136
(lb)	(240)	(300)

Heat Output:	**Model B1**	**Model B2**
W	140	230
(BTU/hr)	(500)	(800)

Airflow:	**Model B1**	**Model B2**
m^3/min	0.5	0.5
(cfm)	(10)	(10)

Power Requirements:*

	Model B1	Model B2
kVA	0.2	0.4

Environment, Operating:

Temperature	10 °C to 41 °C (50 °F to 105 °F)
Rel Humidity	8%-80%
Max Wet Bulb	27 °C (80 °F)

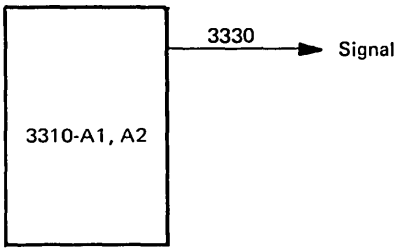
Environment, Nonoperating:

Temperature	10 °C to 52 °C (50 °F to 125 °F)
Rel Humidity	8%-80%
Max Wet Bulb	27 °C (80 °F)

Notes:

* Powered from Model A1 or A2.

3310 DIRECT ACCESS STORAGE DEVICE MODELS A1 AND A2 CABLING SCHEMATIC



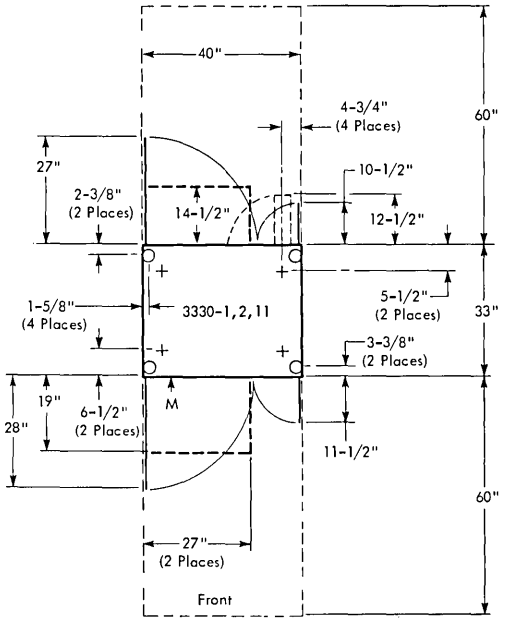
Group No.	*No. of Cables*	*From*	*To*	*Max Length m*	*(ft)*	*Notes*
3330	2	3310-A1/A2	DASD Adapter	–	–	See Note
3330	2	3310-A1/A2	3310-A1/A2, 3340-A2, 3370-A1	–	–	See Note

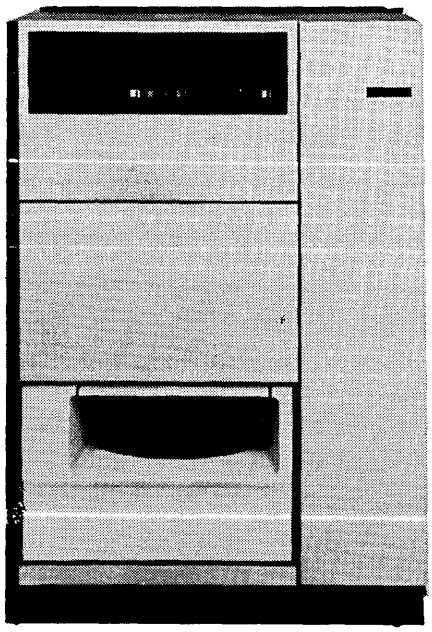
Note: A total of 61 meters (200 feet) of cable is available to attach up to four strings of 3310/3340/3370 Direct Access Storage devices. Up to two strings may be 3340s.

The last 3310-A1/A2 must be within 30 meters (100 feet) of the 4331 Processor. This maximum length must be reduced by 3 meters (10 feet) for each direct access storage device connected between the 3310-A1/A2 and the processor.

3330 DISK STORAGE MODELS 1, 2, AND 11

PLAN VIEW (English Scale: 1/4 in. = 1 ft)





3330-2

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	40*	33	60
(cm)	(102*)	(84)	(152)

Service Clearances:

	F	R	Rt	L
Inches	60	60	0	0**
(cm)	(152)	(152)	(0)	(0**)

Weight:	*Models 1 and 11*	*Model 2*
lb	1,450***	1,100
(kg)	(660***)	(500)

Heat Output:

BTU/hr	9,450	7,200
(kcal/hr)	(2 400)	(1 850)

Airflow:

cfm	600	600
(m^3/min)	(17)	(17)

Acoustical Data:

For definitions, see "Acoustics" in Chapter 3 of *IBM General Information Manual: Installation Manual–Physical Planning,* GC22-7072.

L_{WAd}		$< L_{pA} >$ m		I	T
Operating (bels)	Idling (bels)	Operating (bels)	Idling (dB)		
8.1	8.1	61	61	No	No

Power Requirements:†

kVA	3.4	2.4

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

Notes:

* The end drive dimension is 41" (104 cm) with a 1-inch (3-cm) cover added. Up to four 3330-1's or 3330-2's can be attached to a 3830-1. Up to three 3330-1's, 3330-2's, or 3330-11's can be attached to a 3333-1 or 3333-11.

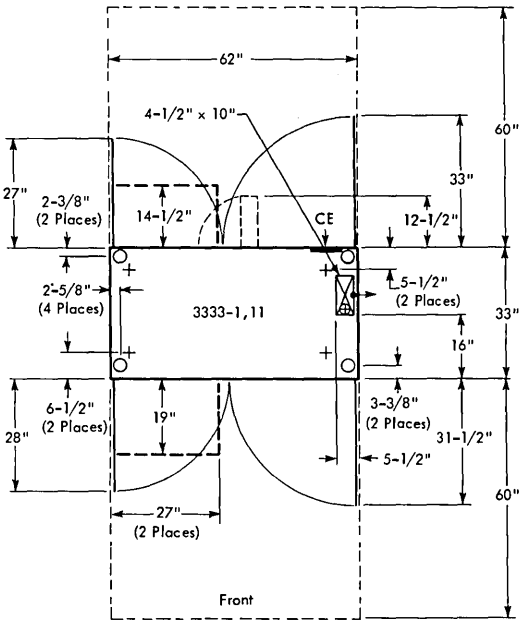
** Service clearance is 24" (61 cm) if this is an end device. See 3333 and 3830-1 machine specifications pages.

*** Based on IBM's method of calculating floor loading, a disk storage facility with more than three devices attached exceeds 75 pounds per square foot (370 kg/m^2) distributed floor loading. The installation site, therefore, should be reviewed by a qualified consultant.

† Powered from 3333-1, 3333-11, or 3830-1.

3333 DISK STORAGE AND CONTROL MODELS 1 AND 11

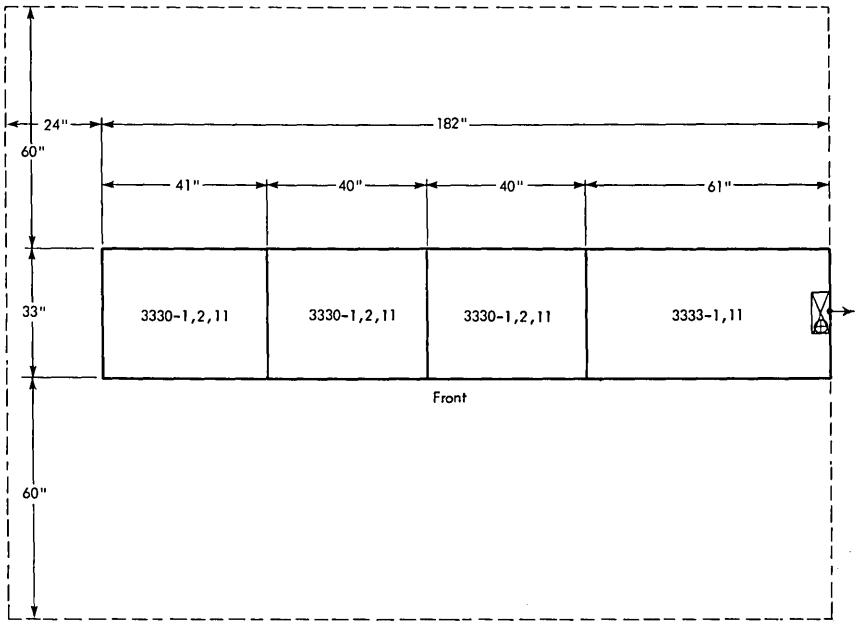
PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see Section 2, "Machines with Integral or Abutted Controls."

3333-1 OR 3333-11 AND 3330-1, 3330-2, OR 3330-11 DISK STORAGE FACILITY (MAXIMUM CONFIGURATION)

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: The 24" (61 cm) end service clearance (right or left) is required for any configuration. The left service clearance is preferred.

3333 DISK STORAGE AND CONTROL MODELS 1 AND 11

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	62*	33	60
(cm)	(157*)	(84)	(152)

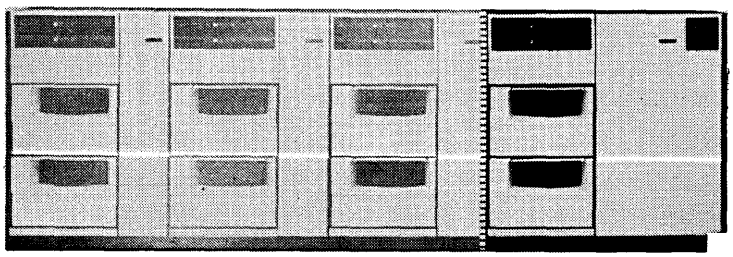
Service Clearances:

	F	R	Rt	L
Inches	60	60	0	0
(cm)	(152)	(152)	(0)	(0)

Weight: 1,850 lb** (840 kg**)

Heat Output: 12,000 BTU/hr (3 050 kcal/hr)

Airflow: 850 cfm (25 m^3/min)



3330-1 3330-1 3330-1 3333-1

Acoustical Data:

For definitions, see "Acoustics" in Chapter 3 of *IBM General Information Manual: Installation Manual–Physical Planning,* GC22-7072.

L_{WAd}		$<L_{pA}>$ m		I	T
Operating (bels)	Idling (bels)	Operating (dB)	Idling (dB)		
8.2	8.2	62	62	No	No

Power Requirements:

kVA	4.0
Phases	3
Plug	R&S, SC7328
Connector	R&S, SC7428
Receptacle	R&S, SC7324
Power Cord Style	E7

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

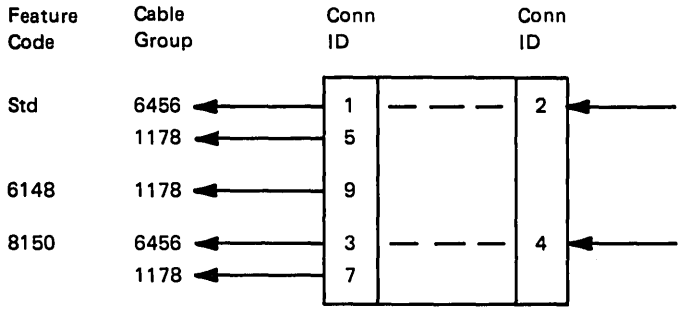
Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

Notes:

* Dimension is 61" (155 cm) when a 3333 is bolted to the right end of a 3330. Up to three 3330-1's, 3330-2's, or 3330-11's can be attached, in any combination, to a 3333-1 or 3333-11.

** Based on IBM's method of calculating floor loading, a disk storage facility consisting of more than three devices exceeds 75 pounds per square foot (370 kg/m^2) distributed floor loading. The installation site, therefore, should be reviewed by a qualified consultant.

3333 DISK STORAGE AND CONTROL MODELS 1 AND 11 CABLING SCHEMATIC



From 3333

Feature Code	*Group No.*	*No. of Cables*	*Conn ID*	*Max Length*		*Model*	*Notes*
				m	*(ft)*		
Std	6456	2	1	61	(200)	1, 11	1, 2
	1178	1	5	61	(200)	1, 11	4
6148	1178	1	9	61	(200)	1, 11	5
8150	6456	2	3	61	(200)	1, 11	1, 2, 3
	1178	1	7	61	(200)	1, 11	4

To 3333

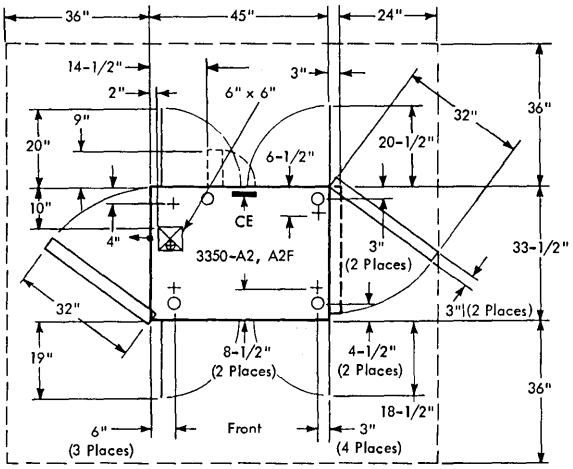
Feature Code	*Conn ID*	*Model*	*Notes*
Std	2	1, 11	1, 2
8150	4	1, 11	1, 2, 3

Notes:

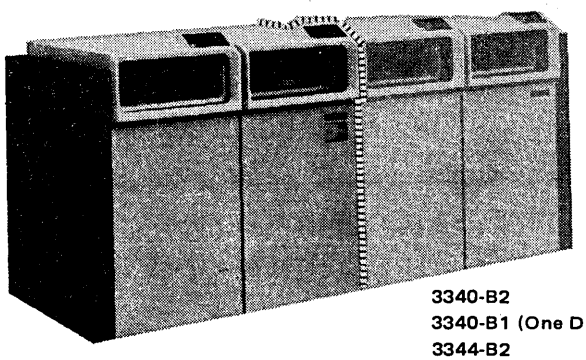
1. A maximum cable length of 61 meters (200 feet) is available to attach as many as four 3333s to a control device.
2. Maximum available cable length must be reduced by 4.5 meters (15 feet) for each unit in excess of three, connected between a 3333 and a control device.
3. String switch feature is available for the attachment of a 3333 to a second control device.
4. Power sequence and control; cable is optional.
5. Required for SF 6148 (remote switch).

3340 DIRECT ACCESS STORAGE MODEL A2

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see Section 2, "Machines with Integral or Abutted Controls."



3340-A2

3340-B2
3340-B1 (One Drive)
3344-B2
3344-B2F

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	45*	33-1/2	46-1/2
(cm)	(114*)	(85)	(118)

Service Clearances:

	F	R	Rt	L
Inches	36	36	0**	36
(cm)	(91)	(91)	(0**)	(91)

Weight: 900 lb (410 kg)

Heat Output: 6,500 BTU/hr (1 650 kcal/hr)

Airflow: 400 cfm (12m^3/min)

Acoustical Data:
For definitions, see "Acoustics" in Chapter 3 of *IBM General Information Manual: Installation Manual–Physical Planning*, GC22-7072.

L_{WAd}		$<L_{pA}>_m$		I	T
Operating (bels)	Idling (bels)	Operating (dB)	Idling (dB)		
7.6	7.6	59	59	No	No

Power Requirements:

kVA	2.2
Phases	3
Plug	R&S, FS3760
Connector	R&S, FS3934
Receptacle	R&S, FS3754
Power Cord Style	D2

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

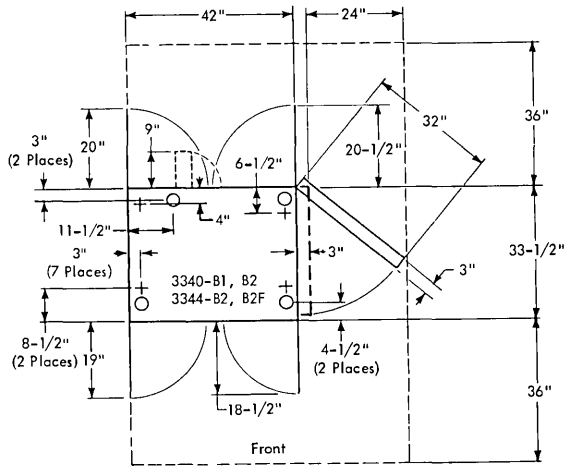
Notes:

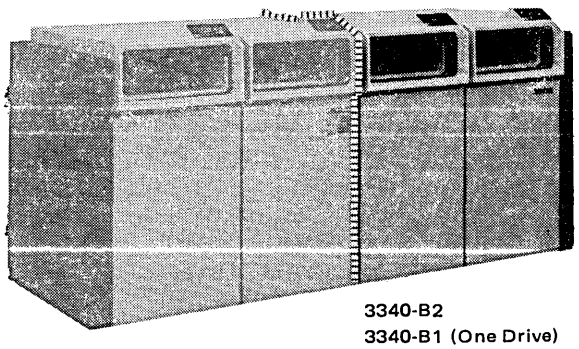
* The standalone dimension is 48" (122 cm) with a 3-inch (8-cm) end cover added. Up to three 3340-B1s, 3340-B2s, 3344-B2s, or 3344-B2Fs, in any combination, can be attached to a 3340-A2.

** Service clearance is 24" (61 cm) if 3340-B1s, 3340-B2s, 3344-B2s, or 3344-B2Fs are not attached.

3340 DIRECT ACCESS STORAGE MODELS B1 AND B2
3344 DIRECT ACCESS STORAGE MODELS B2 AND B2F

PLAN VIEW (English Scale: 1/4 in. = 1 ft)





3340-A2

3340-B2
3340-B1 (One Drive)
3344-B2
3344-B2F

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	42*	33-1/2	46-1/2
(cm)	(107*)	(85)	(118)

Service Clearances:

	F	R	Rt	L
Inches	36	36	0**	0
(cm)	(91)	(91)	(0**)	(0)

Weight:

	3340-B1	*3340-B2, 3344-B2, and 3344-B2F*
lb	600	750
(kg)	(280)	(350)

Heat Output:

BTU/hr	3,500	5,000
(kcal/hr)	(890)	(1 300)

Airflow:

cfm	400	400
(m^3/min)	(12)	(12)

Acoustical Data:

For definitions, see "Acoustics" in Chapter 3 of *IBM General Information Manual: Installation Manual–Physical Planning,* GC22-7072.

	L_{WAd}		$<L_{pA}>_m$		I	T
	Operating (bels)	Idling (bels)	Operating (dB)	Idling (dB)		
3340-B1, B2	7.6	7.6	59	59	No	No
3344-B2, B2F	7.4	7.4	57	57	No	No

Power Requirements:***

kVA	1.2	1.7
Phases	3	3

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

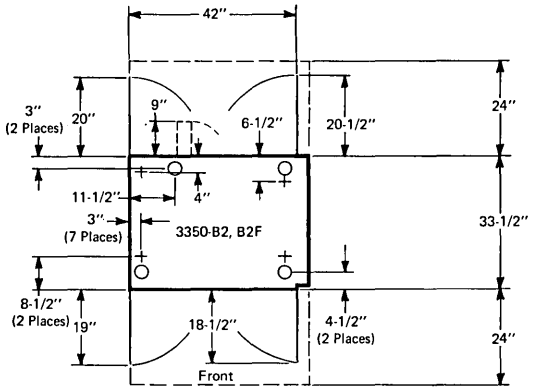
Notes:

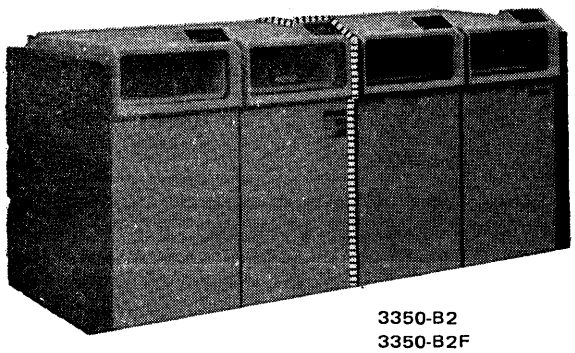
* The end machine dimension is 45" (114 cm) with a 3-inch (8-cm) cover added.

** Service clearance is 24" (61 cm) if this is an end machine.

*** Powered from 3340-A2.

PLAN VIEW (English Scale: 1/4 in. = 1 ft)





3350-B2
3350-B2F

3350-A2
3350-A2F

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	42*	33-1/2	46-1/2
(cm)	(107*)	(85)	(118)

Service Clearances:

	F	R	Rt	L
Inches	24	24	0	0
(cm)	(61)	(61)	(0)	(0)

Weight: 800 lb (370 kg)

Heat Output: 5,800 BTU/hr (1 500 kcal/hr)

Airflow: 400 cfm (12 m^3/min)

Acoustical Data:
For definitions, see "Acoustics" in Chapter 3 of *IBM General Information Manual: Installation Manual–Physical Planning*, GC22-7072.

L_{WAd}		$<L_{pA}>$ m		I	T
Operating (bels)	Idling (bels)	Operating (dB)	Idling (dB)		
7.5	7.5	58.0	58.0	No	No

Power Requirements:**

kVA	1.9
Phases	3

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

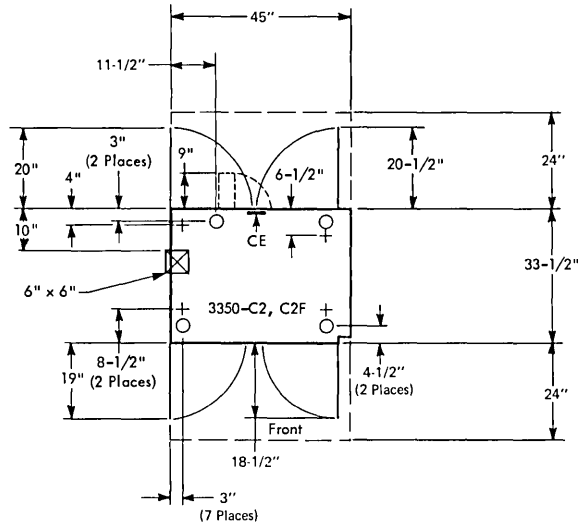
Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

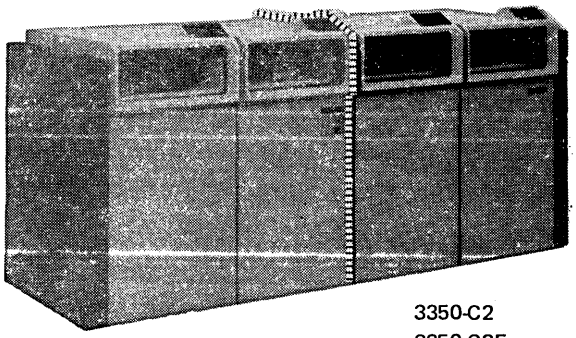
Notes:
* The end device dimension is 45" (114 cm) with a 3-inch (8 cover added.
** Powered from 3350-A2 or 3350-A2F.

3350 DIRECT ACCESS STORAGE MODELS C2 AND C2F

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see Section 2, "Machines with Integral or Abutted Controls."



3350-A2
3350-A2F

3350-C2
3350-C2F

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	45	33-1/2	46-1/2
(cm)	(114)	(85)	(118)

Service Clearances:

	F	R	Rt	L
Inches	24	24	0	0
(cm)	(61)	(61)	(0)	(0)

Weight: 1,050 lb (480 kg)

Heat Output: 6,500 BTU/hr (1 650 kcal/hr)

Airflow: 400 cfm (12 m^3/min)

Acoustical Data:
For definitions, see "Acoustics" in Chapter 3 of *IBM General Information Manual: Installation Manual–Physical Planning,* GC22-7072.

L_{WAd}		$<L_{pA}>_m$		I	T
Operating (bels)	Idling (bels)	Operating (dB)	Idling (dB)		
7.5	7.5	58.0	58.0	No	No

Power Requirements: *

kVA	2.1
Phases	3

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

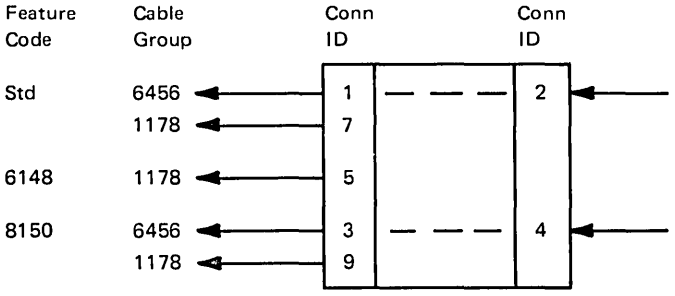
Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

Notes:

*Powered from 3350-A2 or 3350-A2F.

3350 DIRECT ACCESS STORAGE MODELS A2, A2F, C2, AND C2F CABLING SCHEMATIC



From 3350

Feature Code	*Group No.*	*No. of Cables*	*Conn ID*	*Max Length*		*Model*	*Notes*
				m	*(ft)*		
Std	6456	2	1	61	(200)	A2, A2F, C2, C2F	1, 2
	1178	1	7	61	(200)	A2, A2F	4
6148	1178	1	5	61	(200)	A2, A2F, C2, C2F	5
8150	6456	2	3	61	(200)	A2, A2F, C2, C2F	1, 2, 3
	1178	1	9	61	(200)	A2, A2F	4

To 3350

Feature Code	*Conn ID*	*Model*	*Notes*
Std	2	A2, A2F, C2, C2F	1, 2
8150	4	A2, A2F, C2, C2F	1, 2, 3

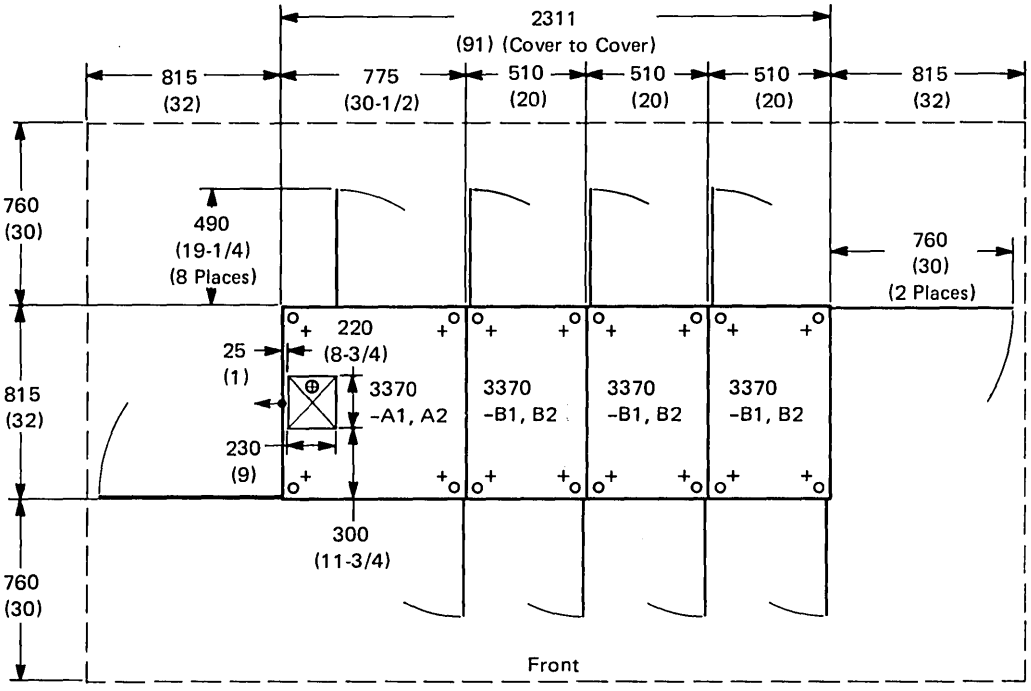
Notes:

1. A maximum cable length of up to 61 meters (200 feet) is available to attach as many as four 3350-A2s or 3350-A2Fs and four 3350-C2s or 3350-C2Fs to a control device.
2. Each 3350-A2 or 3350-A2F can attach one 3350-C2 or 3350-C2F.
3. String switch feature is available for the attachment of a 3350 to a second control device.
4. Power sequence and control; cable is optional.
5. Required for SF 6148 (remote switch).

3370 DIRECT ACCESS STORAGE MODELS A1, A2, B1, AND B2 (MAXIMUM CONFIGURATION)

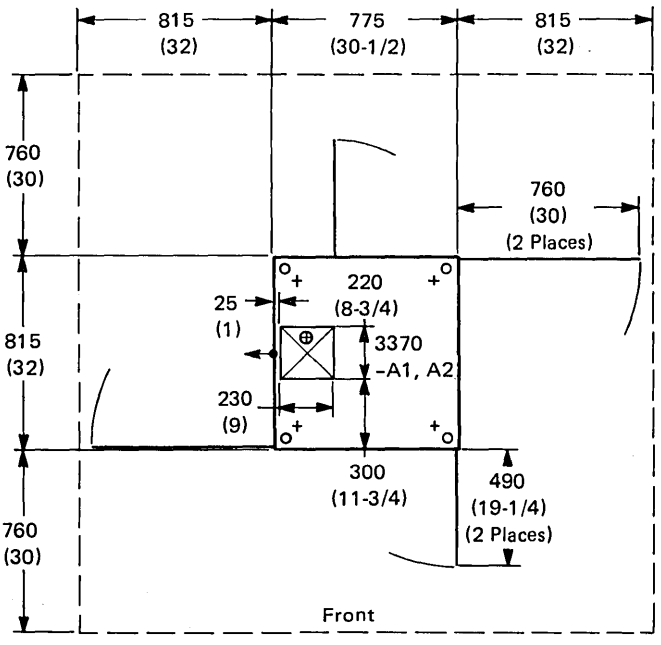
PLAN VIEW (Not to scale)

English measurements are shown in parentheses.

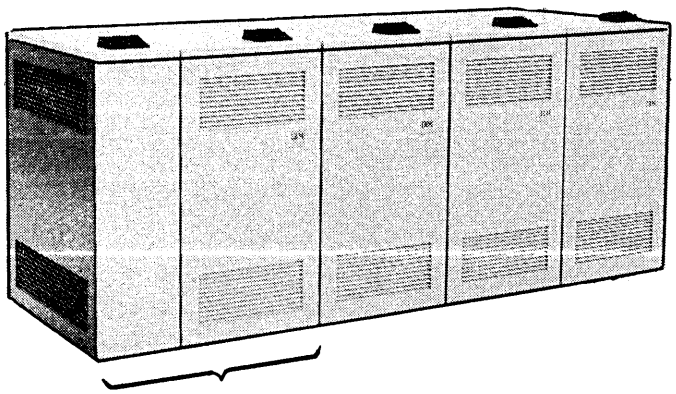


3370 DIRECT ACCESS STORAGE MODELS A1 AND A2

PLAN VIEW (Not to scale)



3370 DIRECT ACCESS STORAGE MODELS A1 AND A2



3370-A1, A2

SPECIFICATIONS

Dimensions:

	Front	Side	Height
mm	775	815	1 000
(inches)	(30-1/2)	(32)	(39-1/2)

Service Clearances:

	Front	Rear	Right	Left
mm	760	760	815*	815
(inches)	(30)	(30)	(32*)	(32)

Weight: 260 kg (580 lb)

Heat Output:**

Airflow: 5.5 m^3/min (190 cfm)

Acoustical Data:

For definitions, see "Acoustics" in Chapter 3 of *IBM General Information Manual: Installation Manual–Physical Planning,* GC22-7072.

L_{WAd}		$<L_{pA}>_m$		I	T
Operating (bels)	Idling (bels)	Operating (dB)	Idling (dB)		
7.8	7.8	58.0	58.0	No	No

Power Requirements:

kVA**	
Phases	3
Plug	R&S, 3730
Receptacle	R&S, 3744
Connector	R&S, 3914
Power Cord Style	B2

Environment, Operating:***

Temperature	16°C-32°C (60°F-90°F)
Rel Humidity	8%-80%
Max Wet Bulb	23°C (73°F)

Environment, Nonoperating:

Temperature	10°C-43°C (50°F-110°F)
Rel Humidity	8%-80%
Max Wet Bulb	27°C (80°F)

Notes:

* Service clearance is 815 mm (32 in.) if this is an end device.

** Varies with supply voltage.

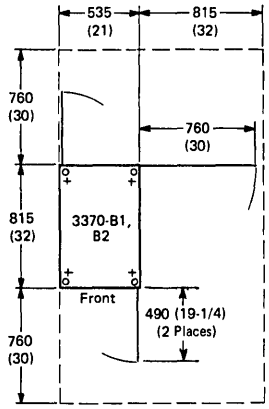
Volts	*kVA*	*Watts*	*BTU/hr*
200/208	1.0	640	2,200
220	1.2	680	2,350
235/240	1.3	720	2,500

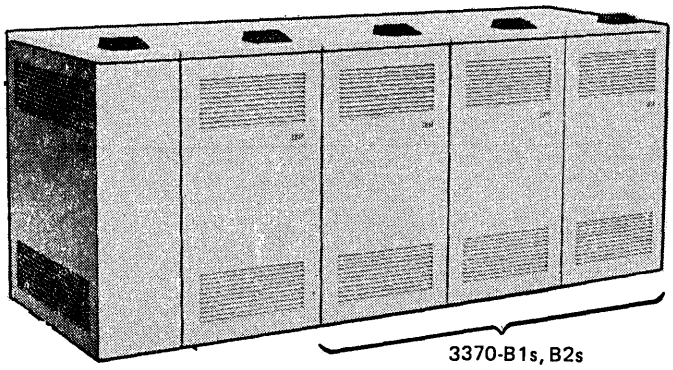
*** Biocides containing organometallic oxide *must not* be used in the air-conditioning systems of buildings containing these machines.

3370 DIRECT ACCESS STORAGE MODELS B1 AND B2

PLAN VIEW (Metric Scale: 10 mm = 0.5 m)

English measurements are shown in parentheses.





SPECIFICATIONS

Dimensions:

	Front	Side	Height
mm	535*	815	1 000
(inches)	(21*)	(32)	(39-1/2)

Service Clearances:

	Front	Rear	Right	Left
mm	760	760	815**	0
(inches)	(30)	(30)	(32**)	(0)

Weight: 170 kg (375 lb)

Heat Output:***

Airflow: 3.6 m^3/min (130 cfm)

Acoustical Data:

For definitions, see "Acoustics" in Chapter 3 of *IBM General Information Manual: Installation Manual–Physical Planning*, GC22-7072.

L_{WAd}		$<L_{pA}>$ m			
Operating (bels)	Idling (bels)	Operating (dB)	Idling (dB)	I	T
7.8	7.8	58.0	58.0	No	No

Power Requirements:†

kVA***
Phases 3

Environment, Operating:††

Temperature	16°C-32°C (60°F-90°F)
Rel Humidity	8%-80%
Max Wet Bulb	23°C (73°F)

Environment, Nonoperating:

Temperature	10°C-43°C (50°F-110°F)
Rel Humidity	8%-80%
Max Wet Bulb	27°C (80°F)

Notes:

* The effective width of Model B1 or B2 when attached to a Model A1 or A2 or to another Model B1 or B2 is 510 mm (20 in.).

** Service clearance is 815 mm (32 in.) if this is an end device.

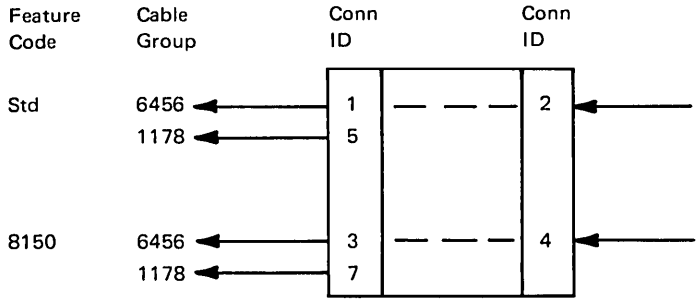
*** Varies with supply voltage.

Volts	*kVA*	*Watts*	*BTU/hr*
200/208	0.7	420	1,450
220	0.9	460	1,650
235/240	1.0	500	1,700

† Powered from a 3370 Model A1 or A2.

†† Biocides containing organometallic oxide *must not* be used in the air-conditioning systems of buildings containing these machines.

3370 DIRECT ACCESS STORAGE MODELS A1 AND A2 CABLING SCHEMATIC



From 3370

Feature Code	*Group No.*	*No. of Cables*	*Conn ID*	*Max Length*		*Model*	*Notes*
				m	*(ft)*		
Std	6456	2	1	61	(200)	A1, A2	1
	1178	1	5	61	(200)	A1, A2	3
8150	6456	2	3	61	(200)	A1, A2	1, 2
	1178	1	7	61	(200)	A1, A2	3

To 3370

Feature Code	*Conn ID*	*Model*	*Notes*
Std	2	A1, A2	1
8150	4	A1, A2	1, 2

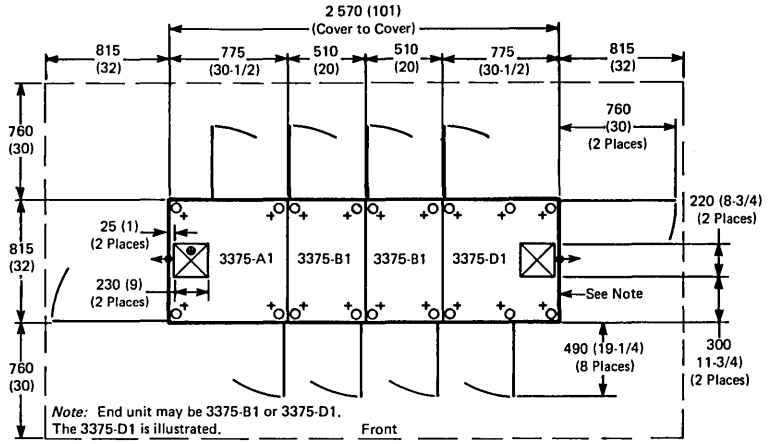
Notes:

1. A maximum cable length of 61 meters (200 feet) is available to attach as many as four 3370-A1s or A2s to a control device or to an intervening disk storage unit.
2. String switch feature (SF 8150) is available for the attachment of a 3370-A1 or A2 to a second control device.
3. Power sequence and control; cable is optional.

3375 DIRECT ACCESS STORAGE MODELS A1, B1, AND D1 (MAXIMUM CONFIGURATION)

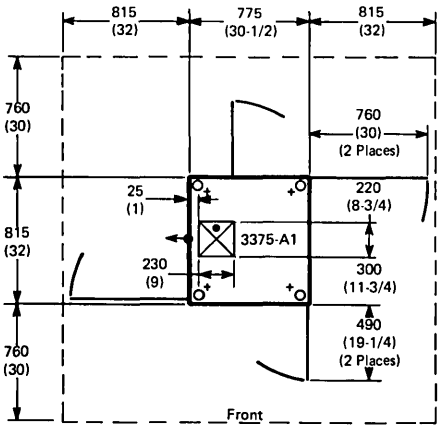
PLAN VIEW (Metric Scale: 10 mm = 0.5 m)

English measurements are shown in parentheses.

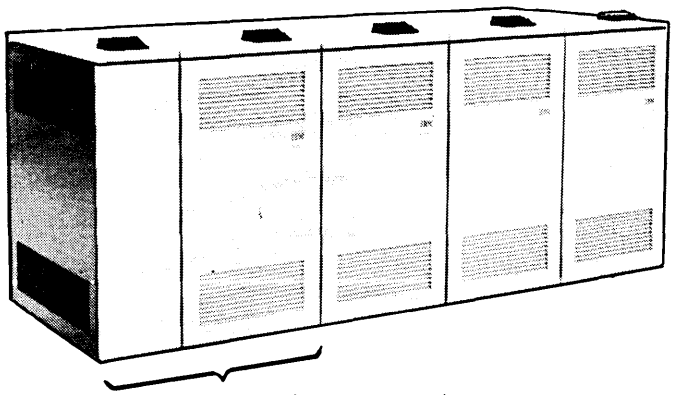


3375 DIRECT ACCESS STORAGE MODEL A1

PLAN VIEW (Not to scale)



3375 DIRECT ACCESS STORAGE MODEL A1



3375-A1 (Design Model)

SPECIFICATIONS

Dimensions:

	Front	Side	Height
mm	775	815	1 000
(inches)	(30-1/2)	(32)	(39-1/2)

Service Clearances:

	Front	Rear	Right	Left
mm	760	760	815*	815
(inches)	(30)	(30)	(32*)	(32)

Weight: 260 kg (580 lb)

Heat Output:**

Airflow: 5.5 m^3/min (190 cfm)

Acoustical Data:

For definitions, see "Acoustics" in Chapter 3 of *IBM General Information Manual: Installation Manual–Physical Planning,* GC22-7072.

L_{WAd}		$<L_{pA}>$ m		I	T
Operating (bels)	Idling (bels)	Operating (dB)	Idling (dB)		
7.7	7.7	58.0	53.0	No	No

Power Requirements:

kVA**	
Phases	3
Plug	R&S, 3730
Receptacles	R&S, 3744
Connectors	R&S, 3914
Power Cord Style	B2

Environment, Operating:***

Temperature	16°C-32°C (60°F-90°F)
Rel Humidity	8%-80%
Max Wet Bulb	23°C (73°F)

Environment, Nonoperating:

Temperature	10°C-43°9C (50°F-110°F)
Rel Humidity	8%-80%
Max Wet Bulb	27°C (80°F)

Notes:

* Service clearance is 815 mm (32 in.) if this is an end device.

** Varies with supply voltage.

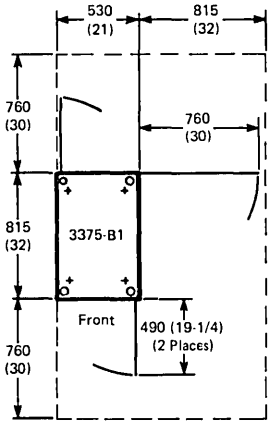
Volts	*kVA*	*Watts*	*BTU/hr*
200/208	1.0	640	2,200
220	1.2	680	2,350
235/240	1.3	720	2,500

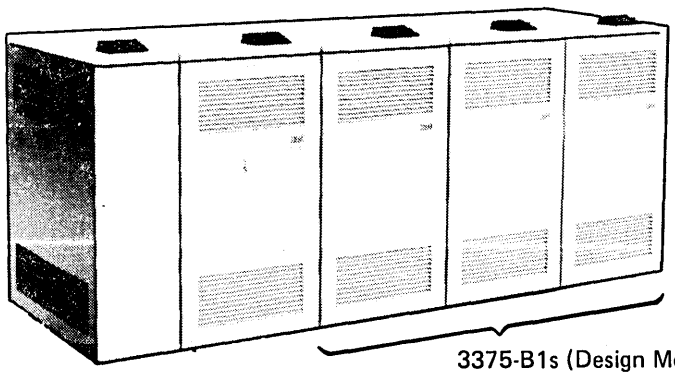
*** Biocides containing organometallic oxide *must not* be used in the air-conditioning systems of buildings containing these machines.

3375 DIRECT ACCESS STORAGE MODEL B1

PLAN VIEW (Metric Scale: 10 mm = 0.5 m)

English measurements are shown in parentheses.





3375-B1s (Design Model)

SPECIFICATIONS

Dimensions:

	Front	Side	Height
mm	530*	815	1 000
(inches)	(21*)	(32)	(39-1/2)

Service Clearances:

	Front	Rear	Right	Left
mm	760	760	815**	0
(inches)	(30)	(30)	(32**)	(0)

Weight: 170 kg (380 lb)

Heat Output:***

Airflow: 3.6 m^3/min (130 cfm)

Acoustical Data:

For definitions, see "Acoustics" in Chapter 3 of *IBM General Information Manual: Installation Manual–Physical Planning,* GC22-7072.

L_{WAd}		$<L_{pA}>_m$		I	T
Operating (bels)	Idling (bels)	Operating (dB)	Idling (dB)		
7.7	7.7	58.0	53.0	No	No

Power Requirements:†

kVA***
Phases 3

Environment, Operating:††

Temperature	16°C-32°C (60°F-90°F)
Rel Humidity	8%-80%
Max Wet Bulb	23°C (73°F)

Environment, Nonoperating:

Temperature	10°C-43°C (50°F-110°F)
Rel Humidity	8%-80%
Max Wet Bulb	27°C (80°F)

Notes:

* The effective width of Model B1 when attached to a Model A1 or another Model B1 is 510 mm (20 in.).

** Service clearance is 815 mm (32 in.) if this is an end device.

*** Varies with supply voltage.

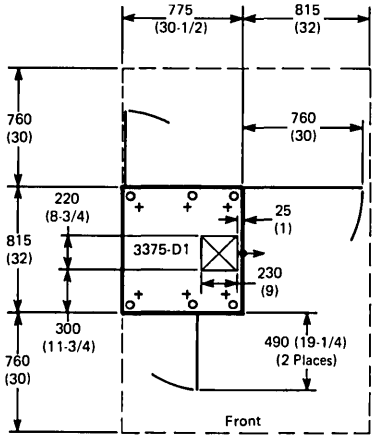
Volts	*kVA*	*Watts*	*BTU/hr*
200/208	0.7	420	1,450
220	0.9	460	1,650
235/240	1.0	500	1,700

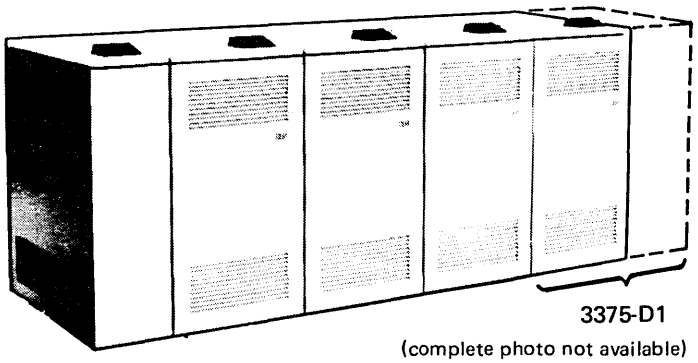
† Powered from a 3370 Model A1 or A2.

†† Biocides containing organometallic oxide *must not* be used in the air-conditioning systems of buildings containing these machines.

3375 DIRECT ACCESS STORAGE MODEL D1

PLAN VIEW (Metric Scale: 10 mm = 0.5 m)
English measurements are shown in parentheses.





3375-D1
(complete photo not available)

SPECIFICATIONS

Dimensions:

	Front	Side	Height
mm	775	815	1 000
(inches)	(30-1/2)	(32)	(39-1/2)

Service Clearances:

	Front	Rear	Right	Left
mm	760	760	815	0
(inches)	(30)	(30)	(32)	(0)

Weight: 250 kg (550 lb)

Heat Output:*

Airflow: 5.5 m^3/min (190 cfm)

Acoustical Data:
For definitions, see "Acoustics" in Chapter 3 of *IBM General Information Manual: Installation Manual–Physical Planning,* GC22-7072.

L_{WAd}		$<L_{pA}>$ m		I	T
Operating (bels)	Idling (bels)	Operating (dB)	Idling (dB)		
7.7	7.7	58.0	53.0	No	No

Power Requirements:**

kVA*
Phases 3

Environment, Operating:***

Temperature	16°C-32°C (60°F-90°F)
Rel Humidity	8%-80%
Max Wet Bulb	23°C (73°F)

Environment, Nonoperating:

Temperature	10°C-43°C (50°F-110°F)
Rel Humidity	8%-80%
Max Wet Bulb	27°C (80°F)

Notes:

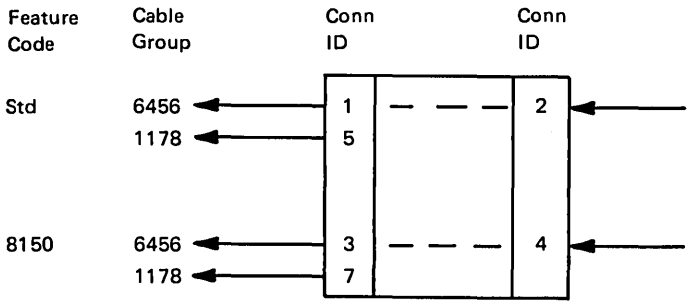
* Varies with supply voltage.

Volts	*kVA*	*Watts*	*BTU/hr*
200/208	0.9	590	2,000
220	1.1	630	2,150
235/240	1.2	670	2,300

** Powered from a 3375 Model A1.

*** Biocides containing organometallic oxide *must not* be used in the air-conditioning systems of buildings containing these machines.

3375 DIRECT ACCESS STORAGE MODELS A1 AND D1 CABLING SCHEMATIC



From 3375

Feature Code	*Group No.*	*No. of Cables*	*Conn ID*	*Max Length*		*Model*	*Notes*
				m	*(ft)*		
Std	6456	2	1	61	(200)	A1, D1	1, 3
	1178	1	5	61	(200)	A1, D1	4
8150	6456	2	3	61	(200)	A1, D1	1, 2, 3
	1178	1	7	61	(200)	A1, D1	4

To 3375

Feature Code	*Conn ID*	*Model*	*Notes*
Std	2	A1, D1	1, 3
8150	4	A1, D1	1, 2, 3

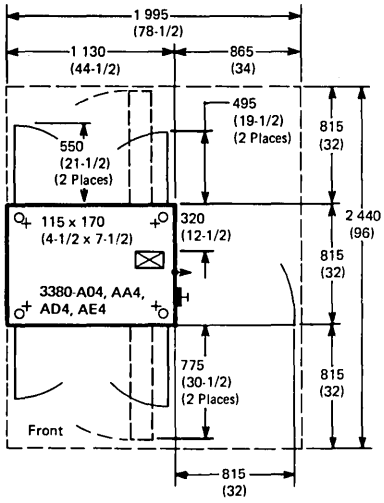
Notes:

1. A maximum cable length of 61 meters (200 feet) is available to attach as many as four 3375-A1s and/or 3375-D1s to a control device.
2. String switch feature (SF 8150) is available for the attachment of a 3375-A1 or 3375-D1 to a second control device.
3. A 3375-A1 and 3375-D1 in the same string cannot attach to the same control device.
4. Power sequence and control; cable is optional.

3380 DIRECT ACCESS STORAGE MODELS A04, AA4, AD4, AND AE4

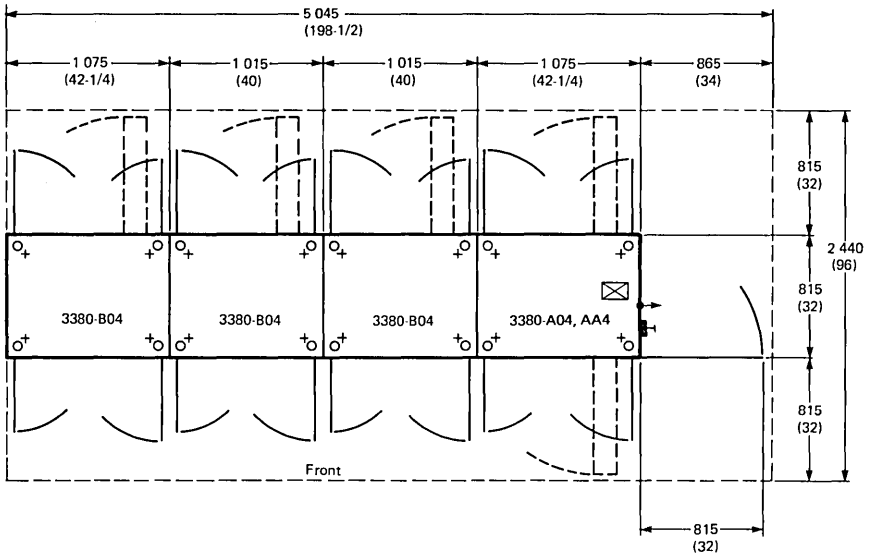
PLAN VIEW (Metric Scale: 10 mm = 0.5 m)

English measurements are shown in parentheses.



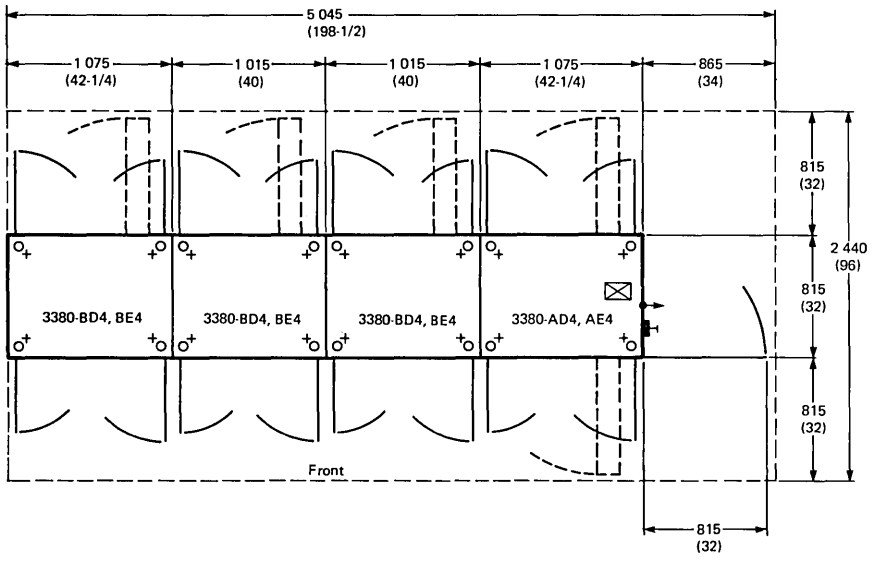
3380 DIRECT ACCESS STORAGE MODELS A04, AA4, AND B04 (Maximum Configuration)

PLAN VIEW (Metric Scale: 10 mm = 0.5 m)

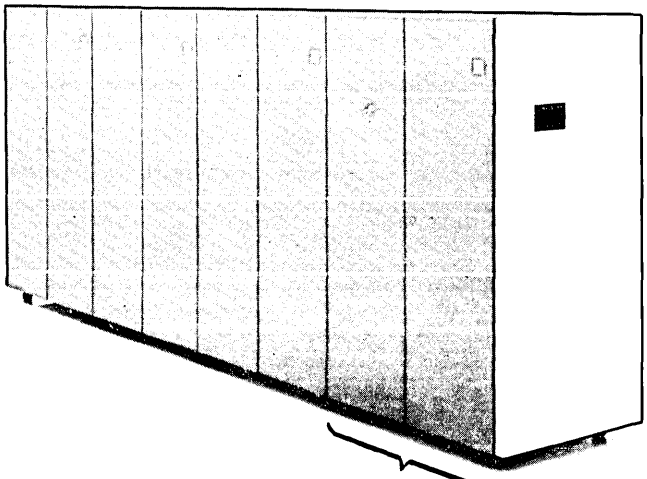


3380 DIRECT ACCESS STORAGE MODELS AD4, AE4, BD4, AND BE4 (Maximum Configuration)

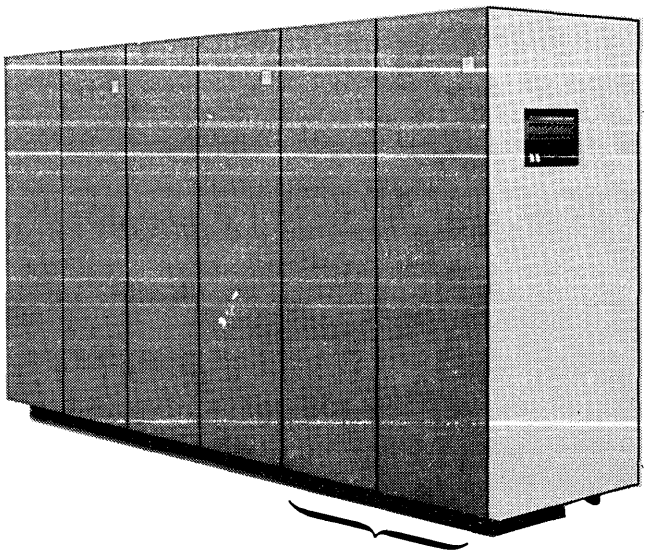
PLAN VIEW (Metric Scale: 10 mm = 0.5 m)



3380 DIRECT ACCESS STORAGE MODELS A04, AA4, AD4, AND AE4



3380-A04, AA4



3380-AD4, AE4

SPECIFICATIONS

Dimensions:

	Front	Side	Height
mm	1 130*	815	1 790
(inches)	(44-1/2*)	(32)	(70-1/2)

Service Clearances:

	Front	Rear	Right	Left
mm	815	815	865	0
(inches)	(32)	(32)	(34)	(0)

Weight: 545 kg (1,200 lb)

Heat Output and Power Requirements:**

Voltage	*Max kVA*	*Max W*	*Max (BTU/hr)*
200/208	2.5	1 780	(6,100)
220/380	2.9	1 870	(6,400)
230/400	3.1	1 850	(6,350)
240/415	3.3	1 880	(6,450)
Phases	3		
Plug	R&S, 7328		
Receptacle	R&S, 7324		
Connector	R&S, 7428		
Power Cord Style	E1		

Airflow: 8.5 m^3/min (300 cfm)

Acoustical Data:

For definitions, see "Acoustics" in Chapter 3 of *IBM General Information Manual: Installation Manual–Physical Planning,* GC22-7072.

L_{WAd}		$<L_{pA}>_m$		I	T
Operating (bels)	Idling (bels)	Operating (dB)	Idling (dB)		
7.7	7.7	56.0	56.0	No	No

Environment, Operating:***

Temperature	16°C-32°C (60°F-90°F)
Rel Humidity	20%-80%
Max Wet Bulb	26°C (78°F)

Environment, Nonoperating:

Temperature	10°C-43°C (50°F-110°F)
Rel Humidity	8%-80%
Max Wet Bulb	27°C (80°F)

Environment, Storage: (Maximum 1 year)

Temperature	1°C-60°C (34°F-140°F)
Rel Humidity	5%-80%
Wet Bulb Range	1°C-29°C (34°F-85°F)

Notes:

* Front dimension is 1 075 mm (42-1/2 in.) when Model B04, BD4, or BE4 is attached.

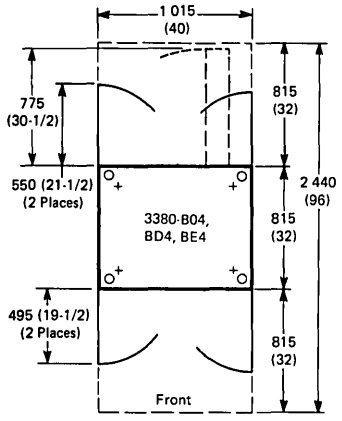
** Values vary with input voltage, installed features, and manufacturing variations.

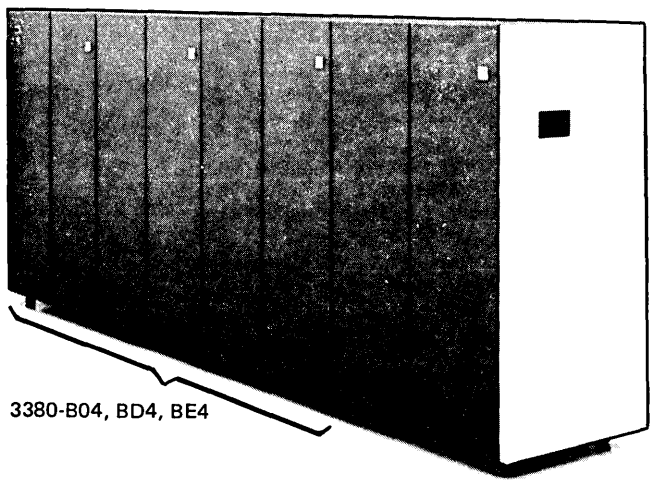
*** Biocides containing organometallic oxide *must not* be used in the air-conditioning systems of buildings containing these machines.

3380 DIRECT ACCESS STORAGE MODELS B04, BD4, AND BE4

PLAN VIEW (Metric Scale: 10 mm = 0.5 m)

English measurements are shown in parentheses.





SPECIFICATIONS

Dimensions:

	Front	Side	Height
mm	1 015*	815	1 790
(inches)	(40*)	(32)	(70-1/2)

Service Clearance:

	Front	Rear	Right	Left
mm	815	815	0	0
(inches)	(32)	(32)	(0)	(0)

Weight: 455 kg (1,000 lb)

Heat Output and Power Requirements:**

Voltage	*Max kVA*	*Max W*	*Max (BTU/hr)*
200/208	1.9	1 300	(4,450)
220/380	2.3	1 440	(4,950)
230/400	2.6	1 420	(4,900)
240/415	2.8	1 500	(5,300)

The Model Bxx units are powered from the Model Axx.

Phases 3

Airflow: 6.2 m^3/min (220 cfm)

Acoustical Data:

For definitions, see "Acoustics" in Chapter 3 of *IBM General Information Manual: Installation Manual–Physical Planning,* GC22-7072.

L_{WAd}		$<L_{pA}>_m$		I	T
Operating (bels)	Idling (bels)	Operating (dB)	Idling (dB)		
7.7	7.7	56.0	56.0	No	No

Environment, Operating:***

Temperature	16°C-32°C (60°F-90°F)
Rel Humidity	20%-80%
Max Wet Bulb	26°C (78°F)

Environment, Nonoperating:

Temperature	10°C-43°C (50°F-110°F)
Rel Humidity	8%-80%
Max Wet Bulb	27°C (80°F)

Environment, Storage: (Maximum 1 year)

Temperature	1°C-60°C (34°F-140°F)
Rel Humidity	5%-80%
Wet Bulb Range	1°C-29°C (34°F-85°F)

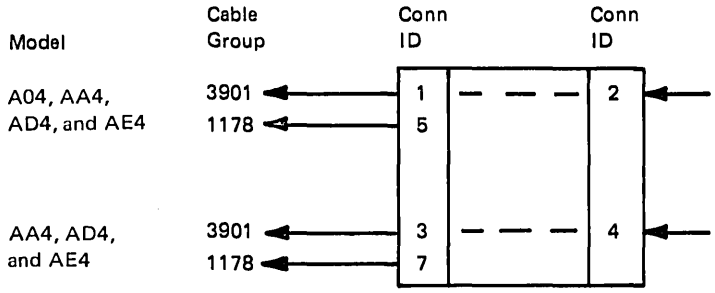
Notes:

* Front dimension is 1 075 mm (42-1/4 in.) when this is an end device.

** Values vary with input voltage, installed features, and manufacturing variations.

*** Biocides containing organometallic oxide *must not* be used in the air-conditioning systems of buildings containing these machines.

3380 DIRECT ACCESS STORAGE MODELS A04, AA4, AD4, AND AE4 CABLING SCHEMATIC



From 3380

Feature Code	*Group No.*	*No. of Cables*	*Conn ID*	*Max Length*		*Model*	*Notes*
				m	*(ft)*		
Std	3901	1	1	61	(200)	A04, AA4, AD4, AE4	1, 2, 4
	1178	1	5	61	(200)	A04, AA4, AD4, AE4	5
Std	3901	1	3	61	(200)	AA4, AD4, AE4	1, 2, 3, 4, 6
	1178	1	7	61	(200)	AA4, AD4, AE4	5

To 3380

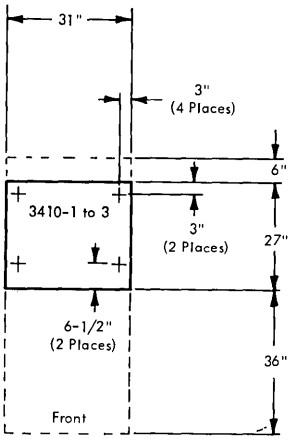
Feature Code	*Conn ID*	*Model*	*Notes*
Std	2	A04, AA4, AD4, AE4	1, 2, 4
Std	4	AA4, AD4, AE4	1, 2, 3

Notes:

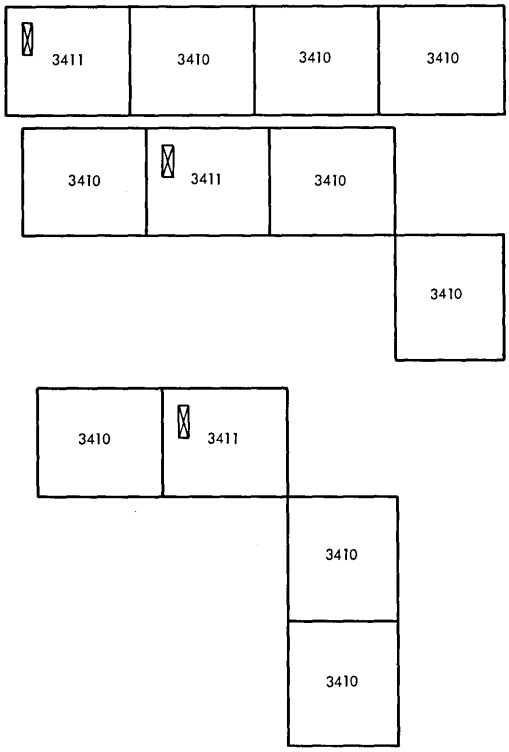
1. A maximum cable length of 61 meters (200 feet) is available to attach as many as two 3380-AA4s or 3380-A04s to a control device.
2. As many as two Model A04s may be attached to one control device. Models AA4, AD4, and AE4 may be attached to two control devices. A Model A04 and a Model AA4, AD4, or AE4 may not share the same control device.
3. Two Model AA4s, AD4s, or AE4s may share control devices in any combination. If two AA4s, two AD4s, two AE4s, one AA4 and one AD4, one AA4 and one AE4, or one AD4 and one AE4 share a control device, both must be attached to the same second control device.
4. The 3380 Model B04 may be attached to a 3380 Model A04, AA4, or B04. The 3380 Models BD4 and BE4 may be attached to a 3380 Model AD4, AE4, BD4, or BE4 in any combination (except only one Axx unit for each string). Other combinations are not allowed.
5. The power sequence and control cable is connected to the 3380 for remote power-on functions. The cable is required for the 3380 Models A04 and AA4. It is optional for the 3380 Models AD4 and AE4 because these models have a local On/Off switch. See Section 2 of this manual for a description of the power sequence and control function.
6. Do not connect two cable groups 3901 together to extend their length. Submit an RPQ to connect the shield for applications where additional length is required.

3410 MAGNETIC TAPE UNIT MODELS 1 TO 3

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Typical Tape Unit Layouts



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	31	27	39
(cm)	(79)	(69)	(99)

Service Clearances:

	F	R	Rt	L
Inches	36	6	0*	0*
(cm)	(91)	(15)	(0*)	(0*)

Weight: 180 lb (82 kg)

Heat Output: 850 BTU/hr (220 kcal/hr)

Airflow: 60 cfm (2 m^3/min)

Acoustical Data:
For definitions, see "Acoustics" in Chapter 3 of *IBM General Information Manual: Installation Manual–Physical Planning,* GC22-7072.

L_{WAd}		$<L_{pA}>_m$		I	T
Operating (bels)	Idling (bels)	Operating (dB)	Idling (dB)		
7.9	7.3	58.0	53.0	No	No

Power Requirements:**

kVA	0.3

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

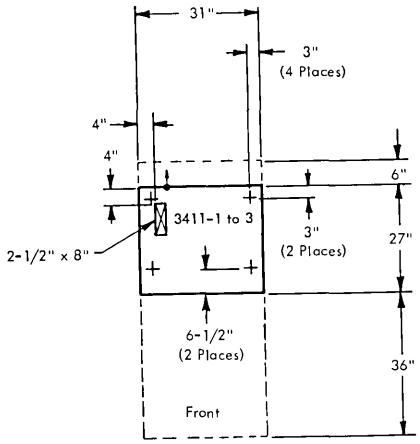
Notes:

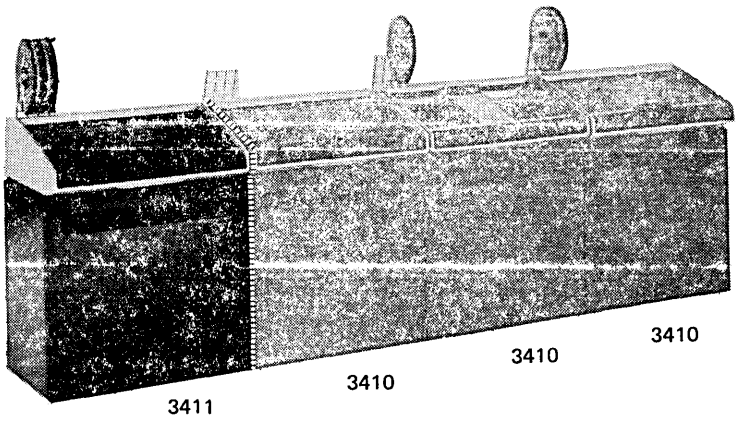
* The 3410 can be attached to either side of the 3411, with a maximum of three devices on a side.

** Powered from 3411.

3411 MAGNETIC TAPE UNIT AND CONTROL MODELS 1 TO 3

PLAN VIEW (English Scale: 1/4 in. = 1 ft)





SPECIFICATIONS

Dimensions:

	F	S	H
Inches	31	27	39
(cm)	(79)	(69)	(99)

Service Clearances:

	F	R	Rt	L
Inches	36	6	0*	0*
(cm)	(91)	(15)	(0*)	(0*)

Weight: 325 lb (150 kg)

Heat Output: 3,500 BTU/hr (890 kcal/hr)

Airflow: 200 cfm (6 m^3/min)

Acoustical Data:
For definitions, see "Acoustics" in Chapter 3 of *IBM General Information Manual: Installation Manual–Physical Planning,* GC22-7072.

L_{WAd}		$<L_{pA}>_m$		I	T
Operating (bels)	Idling (bels)	Operating (dB)	Idling (dB)		
7.9	7.3	58.0	53.0	No	No

Power Requirements:	*60 Hz All and 50 Hz Model 1*	*50 Hz Models 2 and 3*
kVA	1.2	1.2
Phases	1	3
Plug	R&S, FS3750	
Connector	R&S, FS3933	
Receptacle	R&S, FS3753	
Power Cord Style	A2	D2

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

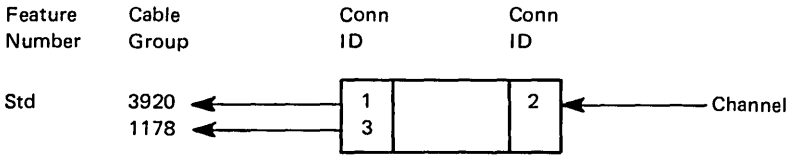
Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

Notes:

*The 3410 can be attached to either side of the 3411, with a maximum of three devices on a side. The 3411 Model 1 can have up to three 3410s attached (total capability of four tape units). The 3411 Models 2 and 3 can have a maximum of five 3410s attached (total capability of six tape units). All devices are physically attached at the front corner, allowing up to 90° swing between devices.

3411 MAGNETIC TAPE UNIT AND CONTROL MODELS 1 TO 3 CABLING SCHEMATIC



From 3411

Feature Code	*Group No.*	*No. of Cables*	*Conn ID*	*Max Length*		*Model*	*Notes*
				m	*(ft)*		
Std	1178	1	3	45	(150)	All	2, 3
	3920	2	1	61	(200)	All	1, 2

To 3411

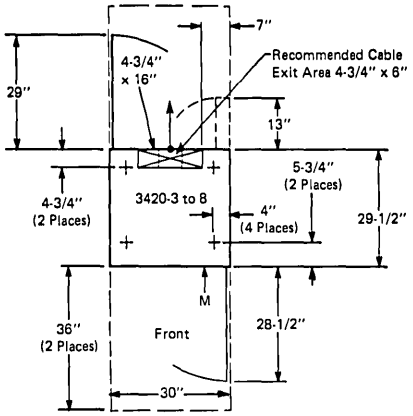
Feature Code	*Conn ID*	*Model*	*Notes*
Std	2	All	1

Notes:

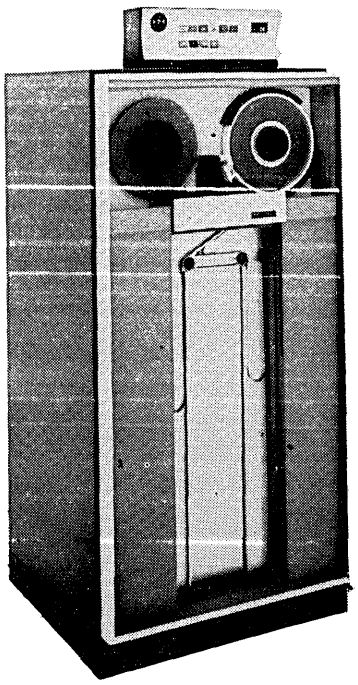
1. As many as 61 meters (200 feet), unless modified by the general control-to-channel cabling schematic, available to attach up to eight control units.
2. As many as eight tape control units (any combination of 3803s and 3411s) may be attached to the 3800 Printing Subsystem with the Tape-to-Printing Subsystem feature installed. However, only one tape control unit can be active at a time. The 3800 provides power sequence and control for one 3411 or 3803 (cable group 1178). Any additional tape control units must receive their power sequence and control from another source.
3. Power sequence and control. This machine must have the power sequence and control installed for proper operation.

3420 MAGNETIC TAPE UNIT MODELS 3 TO 8

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see 3803.



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	30	29-1/2	67
(cm)	(76)	(75)	(170)

Service Clearances:

	F	R	Rt	L
Inches	36	36	0	0
(cm)	(91)	(91)	(0)	(0)

Weight: 800 lb (370 kg)

Acoustical Data:
For definitions, see "Acoustics" in Chapter 3 of *IBM General Information Manual: Installation Manual–Physical Planning*, GC22-7072.

	L_{WAd}		$<L_{pA}>_m$		I	T
	Operating (bels)	Idling (bels)	Operating (dB)	Idling (dB)		
3420-3	7.8	7.5	57.0	54.0	No	No
3420-8	8.0	7.4	58.0	53.0	No	No

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

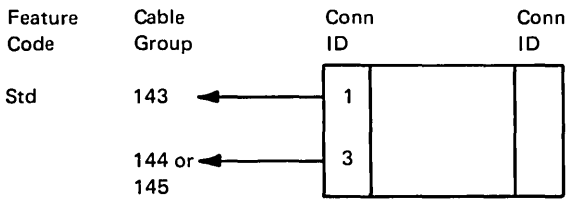
Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

Details (By Model)

Model	*Heat Output BTU/hr (kcal/hr)*		*Airflow cfm (m^3/min)*	*kVA**	
	Operating	*Ready*		*Operating*	*Ready*
3	4,400 (1 150)	3,900 (990)	360 (11)	1.6	1.4
4	4,500 (1 150)	4,000 (1 050)	360 (11)	1.7	1.5
5	4,400 (1 150)	3,900 (990)	360 (11)	1.6	1.4
6	5,600 (1 450)	4,000 (1 050)	360 (11)	1.9	1.5
7	5,600 (1 450)	4,800 (1 250)	360 (11)	2.0	1.7
8	8,400 (2 150)	5,800 (1 500)	360 (11)	2.9	2.1

Notes:
* Powered from 3803.

3420 MAGNETIC TAPE UNIT MODELS 3 TO 8 CABLING SCHEMATIC



From 3420

Feature Code	*Group No.*	*No. of Cables*	*Conn ID*	*Max Length*		*Model*	*Notes*
				m	*(ft)*		
Std	143	1	1	36.5	(120)	All	–
	144	1	3	36.5	(120)	All	1
	145	1	3	36.5	(120)	All	1

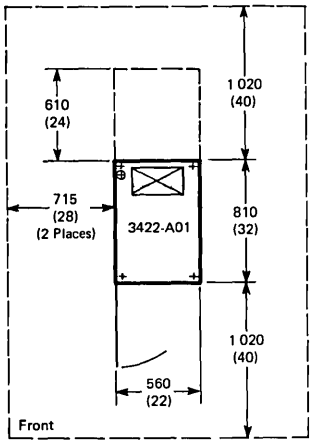
Note:
1. Power cable. Use group 144 for 60 Hz and group 145 for 50 Hz.

3422 MAGNETIC TAPE SUBSYSTEM

MINIMUM CONFIGURATION

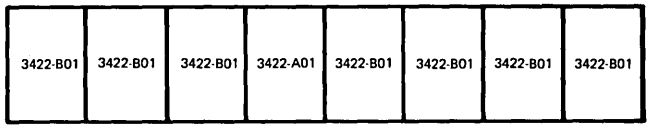
PLAN VIEW (Metric Scale: 10 mm = 0.5 m)

English measurements are shown in parentheses.

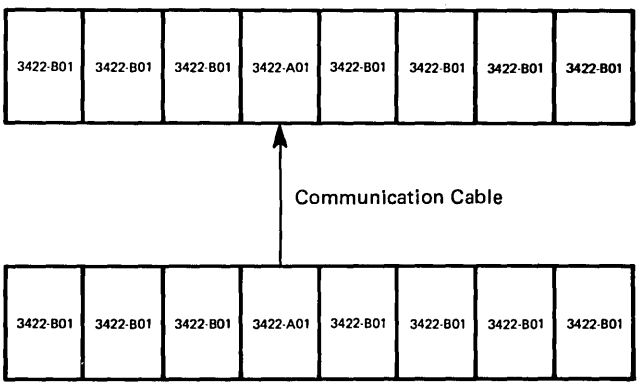


Typical Tape Unit Layouts

1 x 8 Configuration

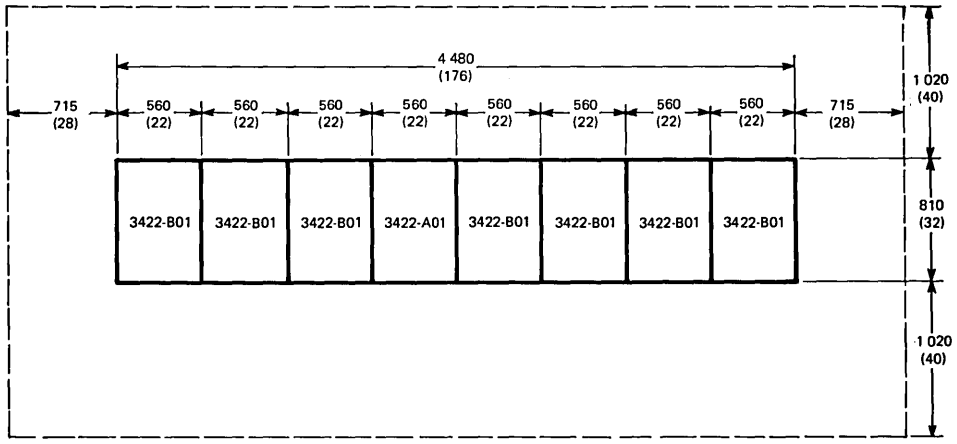


2 x 16 Configuration



MAXIMUM CONFIGURATION

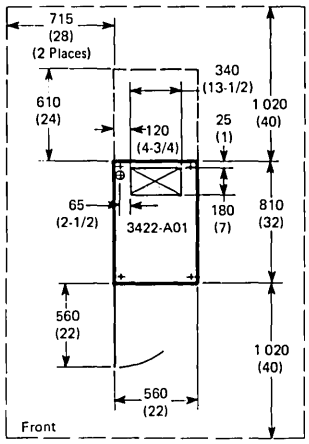
PLAN VIEW (Metric Scale: 10 mm = 0.5 m)



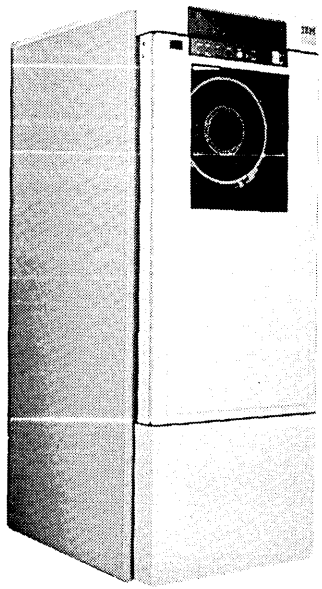
3422 MAGNETIC TAPE UNIT AND CONTROL MODEL A01

PLAN VIEW (Metric Scale: 10 mm = 0.5 m)

English measurements are shown in parentheses.



Note: Rear cover is removable.



SPECIFICATIONS

Dimensions:

	Front	Side	Height
mm	560	810	1 500
(inches)	(22)	(32)	(60)

Service Clearances:*

	Front	Rear	Right	Left
mm	1 020	1 020	715	715
(inches)	(40)	(40)	(28)	(28)

Weight: 295 kg (650 lb)

Heat Output: 1 950 W (6 650 BTU/hr)

Airflow: 18.5 m^3/min (650 cfm)

Power Requirements:**

kVA	2.3
Phases	3
Plug	R&S, 7328
Receptable	R&S, 7324
Connector	R&S, 7428
Power Cord Style	E4

Environment, Operating:

Temperature	16°C-32°C (60°F-90°F)
Rel Humidity	20%-80%
Max Wet Bulb	26°C (78°F)

Environment, Nonoperating:

Temperature	10°C-43°C (50°F-110°F)
Rel Humidity	8%-80%
Max Wet Bulb	27°C (80°F)

Notes:

* These service clearances are needed to meet the 342-kilogram-per-square-meter (70-pound-per-square-foot) distributed floor loading as calculated by IBM. The installation site should be reviewed by a structural engineer if the installation will reduce the service clearance below 1 020 mm (40 inches). Right and left service clearances apply only at the end of the subsystem string.

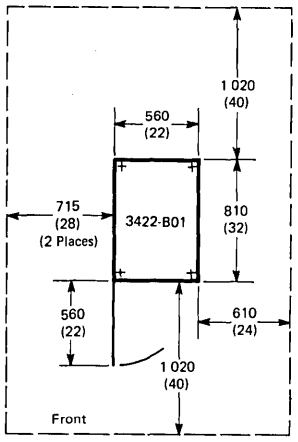
** For Canadian installations, branch circuit breakers are 50 A maximum.

Model B can be attached to either side of Model A, with a maximum of four devices on a side. The interconnection between units is by a flat cable. To minimize phase imbalance, Model A must be attached at either end of the string if the total number of devices exceeds three devices.

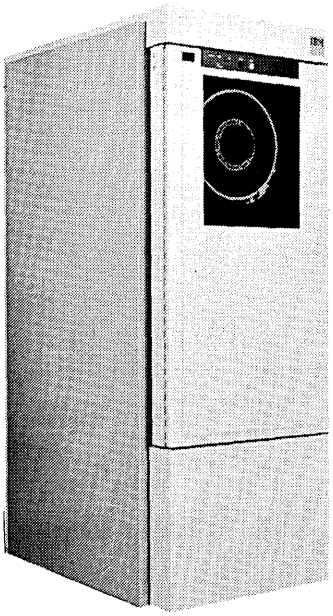
3422 MAGNETIC TAPE UNIT MODEL B01

PLAN VIEW (Metric Scale: 10 mm = 0.5 m)

English measurements are shown in parentheses.



Note: Rear cover is removable.



SPECIFICATIONS

Dimensions:

	Front	Side	Height
mm	560	810	1 500
(inches)	(22)	(32)	(60)

Service Clearances:*

	Front	Rear	Right	Left
mm	1 020	1 020	715	715
(inches)	(40)	(40)	(28)	(28)

Weight: 270 kg (600 lb)

Heat Output: 1 275 W (4,350 BTU/hr)

Airflow: 11 m^3/min (390 cfm)

Power Requirements:

kVA	1.5

Environment, Operating:

Temperature	16°C-32°C (60°F-90°F)
Rel Humidity	20%-80%
Max Wet Bulb	26°C (78°F)

Environment, Nonoperating:

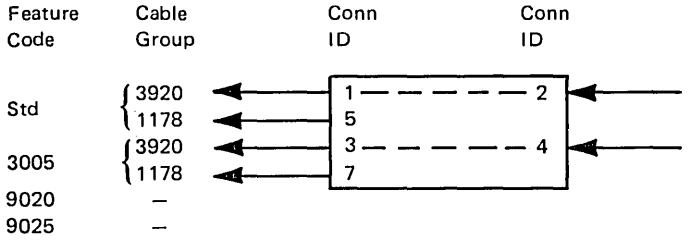
Temperature	10°C-43°C (50°F-110°F)
Rel Humidity	8%-80%
Max Wet Bulb	27°C (80°F)

Notes:

* These service clearances are needed to meet the 342-kilogram-per-square-meter (70-pound-per-square-foot) distributed floor loading as calculated by IBM. The installation site should be reviewed by a structural engineer if the installation will reduce the service clearance below 1 020 mm (40 inches). Right and left service clearances apply only at the end of the subsystem string.

Model B can be attached to either side of Model A, with a maximum of four devices on a side. The interconnection between units is by a flat cable.

3422 MAGNETIC TAPE UNIT AND CONTROL MODEL A01 CABLING SCHEMATIC



From 3422

Feature Code	*Group No.**	*No. of Cables*	*Conn ID*	*Max Length*		*Model*	*Notes*
				m	*(ft)*		
Std	3920	2	1	122	(400)	A01	1, 2
	1178	1	3	122	(400)	A01	2, 3
3005	3920	2	5	122	(400)	A01	1, 2
	1178	1	7	122	(400)	A01	2, 3
9020	–	2	–	10	(30)	A01	4
9025	–	2	–	30	(100)	A01	4

*Cable group 0185 may be ordered as an alternative to cable group 3920.

To 3422

Feature Code	*Conn ID*	*Model*	*Notes*
Std	2	A01	1
3005	4	A01	1

Notes:

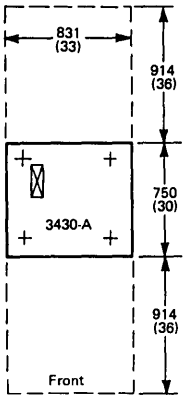
1. The rate of data transfer varies on nondata-streaming channels depending on the cable length. The maximum cable length must be reduced by 4.5 meters (15 feet) for each unit connected between the 3422 Tape Control and the channel. The maximum cable length of 122 meters (400 feet) can be used only if it is supported by the attaching processor channel.
   Signal cable lengths are limited to 122 meters (400 feet) for data-streaming-mode channels and to 60 meters (200 feet) for interlock-mode channels.
2. One channel attachment is standard on the 3422 Tape Control. A second channel, feature code 3005, is available. Order cable groups 3920 and 1178 for each channel attachment. The maximum length applies to each channel attachment.
3. Power sequence and control cable 1178 (one for each using channel) is optional.
4. All fixed-length cables required for the communicator feature must be ordered separately. Only one feature code (9020 or 9025) is needed to connect two tape controls. The cable length for feature code 9020 is 10 meters (30 feet) and for 9025 it is 30 meters (100 feet).
5. All cables required to connect the tape units to the tape control are supplied by IBM and are shipped with the tape unit; no separate cable order is required.

3430 MAGNETIC TAPE SUBSYSTEM

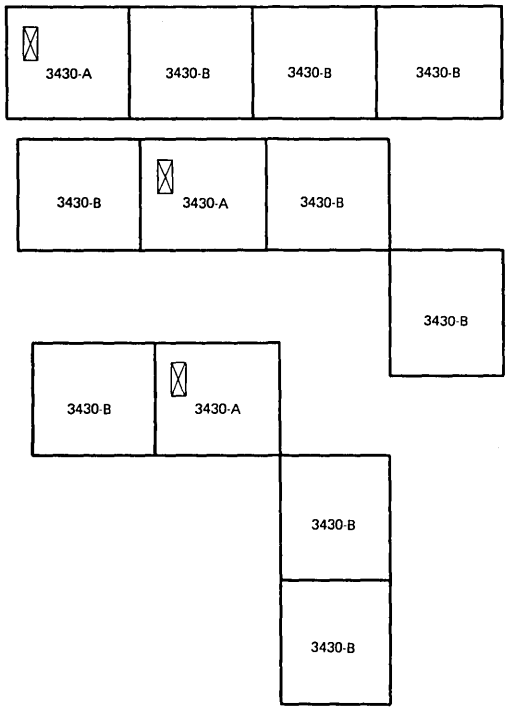
MINIMUM CONFIGURATION

PLAN VIEW (Metric Scale: 10 mm = 0.5 m)

English measurements are shown in parentheses.

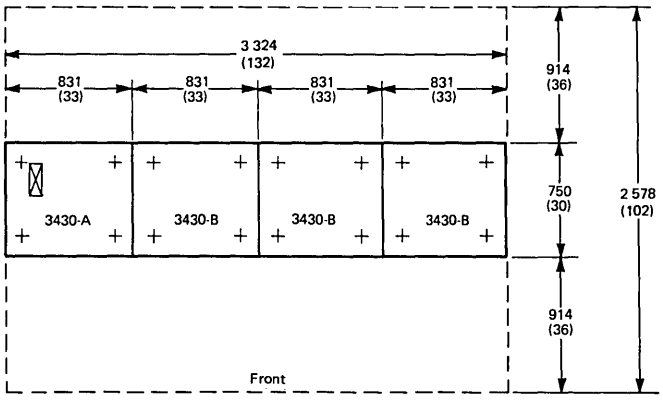


Typical Tape Unit Layouts



MAXIMUM CONFIGURATION

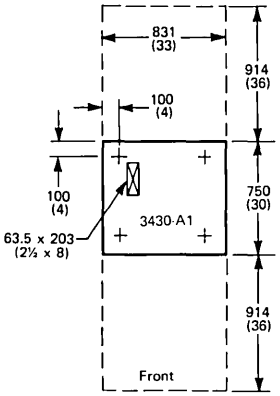
PLAN VIEW (Metric Scale: 10 mm = 0.5 m)

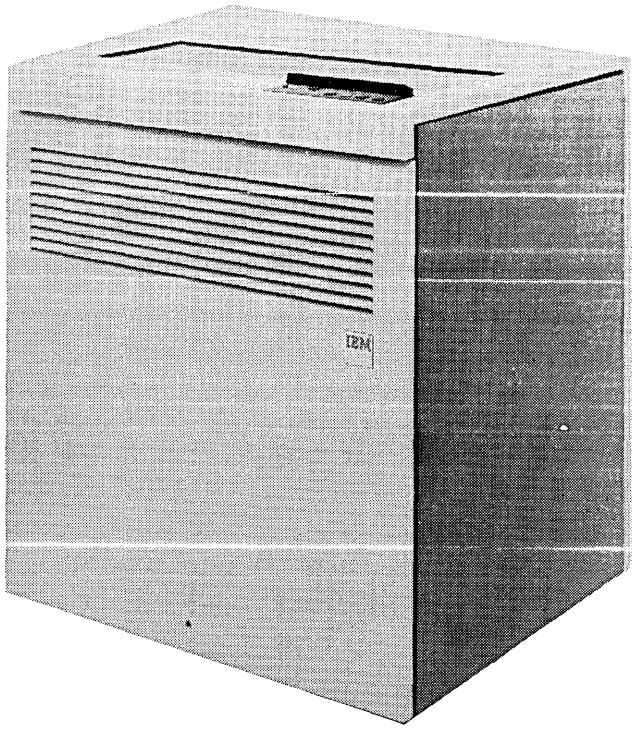


3430 MAGNETIC TAPE UNIT AND CONTROL MODEL A1

PLAN VIEW (Metric Scale: 10 mm = 0.5 m)

English measurements are shown in parentheses.





SPECIFICATIONS

Dimensions:

	Front	Side	Height
mm	831	750	1 000
(inches)	(33)	(30)	(39)

Service Clearances:

	Front	Rear	Right	Left
mm	914	914	0*	0*
(inches)	(36)	(36)	(0*)	(0*)

Weight: 215 kg (470 lb)

Heat Output: 1 100 W (3,700 BTU/hr)

Airflow: 6 m³/min (200 cfm)

Acoustical Data:

For definitions, see "Acoustics" in Chapter 3 of *IBM General Information Manual: Installation Manual–Physical Planning,* GC22-7072.

L_{WAd}		$<L_{pA}>$ m		I	T
Operating (bels)	Idling (bels)	Operating (dB)	Idling (dB)		
7.3	6.4	56.0	48.0	No	No

Power Requirements:

kVA	1.2
Phases	1
Plug	R&S, FS3720
Receptacle	R&S, FS3743
Connector	R&S, FS3913
Power Cord Style	A2

Environment, Operating:

Temperature	16°C-32°C (60°F-90°F)
Rel Humidity	20%-80%
Max Wet Bulb	26°C (78°F)

Environment, Nonoperating:

Temperature	10°C-43°C (50°F-110°F)
Rel Humidity	8%-80%
Max Wet Bulb	27°C (80°F)

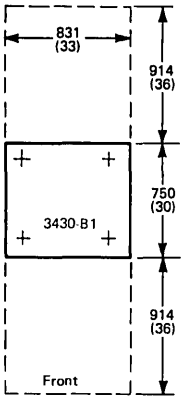
Note:

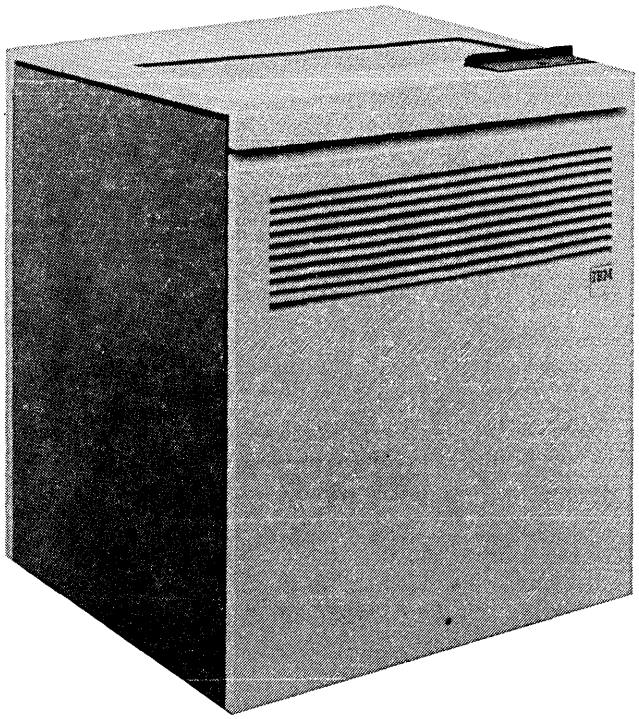
*The Model B1 can be attached to either side of the Model A1, with a maximum of three devices on a side. All devices are physically attached at the front corner, allowing up to 90° swing between devices.

3430 MAGNETIC TAPE UNIT MODEL B1

PLAN VIEW (Metric Scale: 10 mm = 0.5 m)

English measurements are shown in parentheses.





SPECIFICATIONS

Dimensions:

	Front	Side	Height
mm	831	750	1 000
(inches)	(33)	(30)	(39)

Service Clearances:

	Front	Rear	Right	Left
mm	914	914	0*	0*
(inches)	(36)	(36)	(0*)	(0*)

Weight: 155 kg (340 lb)

Heat Output: 360 W (1,250 BTU/hr)

Airflow: 2 m^3/min (60 cfm)

Power Requirements: **

kVA 0.4

Environment, Operating:

Temperature	16°C-32°C (60°F-90°F)
Rel Humidity	20%-80%
Max Wet Bulb	26°C (78°F)

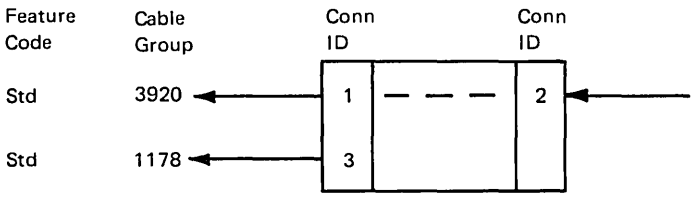
Environment, Nonoperating:

Temperature	10°C-43°C (50°F-110°F)
Rel Humidity	8%-80%
Max Wet Bulb	27°C (80°F)

Notes:

*The Model B1 can be attached to either side of the Model A1, with a maximum of three devices on a side.
**Powered from Model A1.

3430 MAGNETIC TAPE UNIT AND CONTROL MODEL A1 CABLING SCHEMATIC



From 3430

Feature Code	*Group No.*	*No. of Cables*	*Conn ID*	*Max Length*		*Model*	*Notes*
				m	*(ft)*		
Std	3920	2	1	122	(400)	A1	1
	1178	1	3	122	(400)	A1	2

To 3430

Feature Code	*Conn ID*	*Model*	*Notes*
Std	2	A1	1

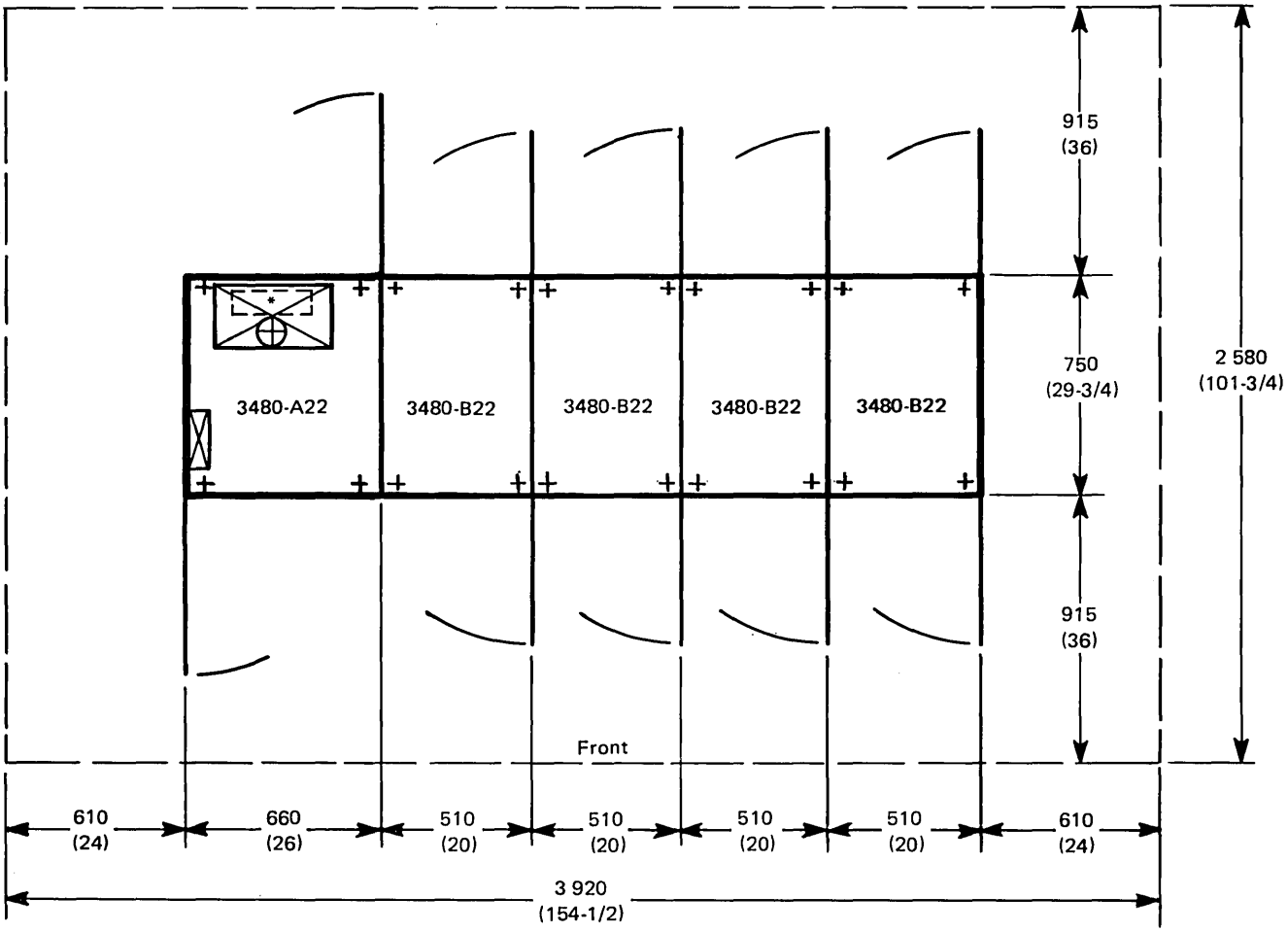
Notes:

1. Maximum cable length must be reduced by 4.5 meters (15 feet) for each device connected between a 3430 and the attached channel.
2. Power sequence and control; cable is optional.

3480 MAGNETIC TAPE SUBSYSTEM

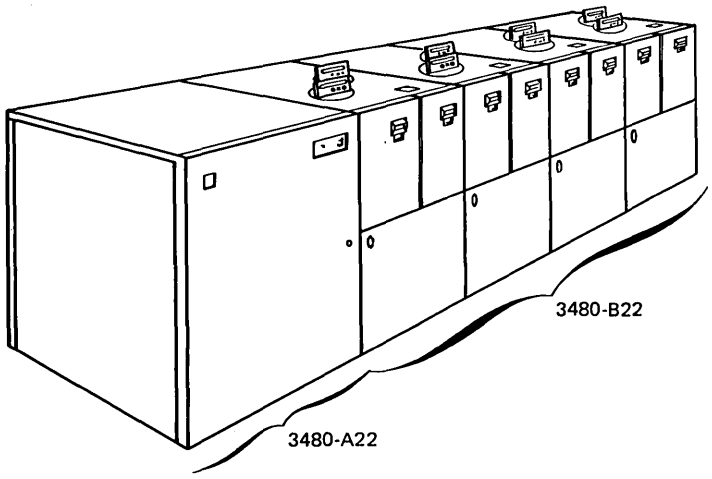
PLAN VIEW (Metric Scale: 10 mm = 0.25 m)

English measurements are shown in parentheses.



Notes:

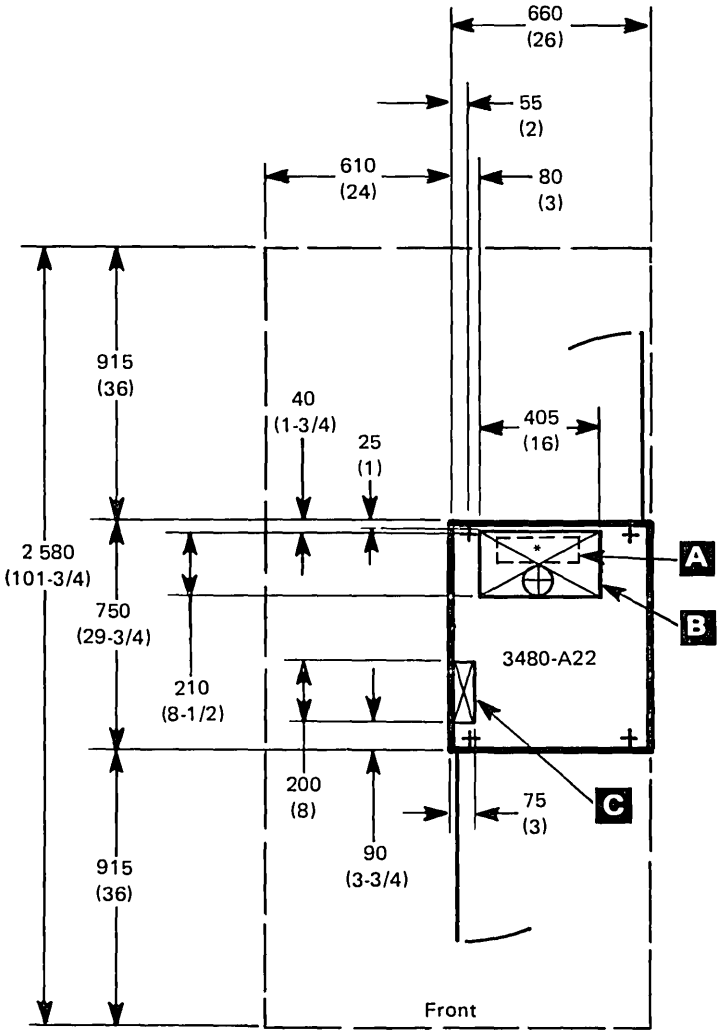
1. Model B22 tape units are shipped without side covers and are bolted together during installation.
2. The internal cables that connect the Model B22 tape units are not long enough to permit corner installations.



3480 CONTROL UNIT MODEL A22

PLAN VIEW (Metric Scale: 10 mm = 0.25 m)

English measurements are shown in parentheses.



Note: The 3480 Control Units with the dual-control-unit-communications coupler feature are interconnected with fixed-length cables. These fixed-length cables have an entry/exit point at either **B** (newer-level devices) or **C** (early-level devices). Early-level devices may use either the side cable entry/exit floor cutout **C** or the rear cable entry/exit floor cutout **A** (6" x 12").

Newer-level devices must use the rear cable entry/exit floor cutout **A** . Cable length measurements must be made between these cable entry/exit locations on the two control units.

See the table on page 3480.5 for the serial number range of the newer-level devices.

SPECIFICATIONS

Dimensions:

	Front	Side	Height
mm	660	750	1 000
(inches)	(26)	(29-3/4)	(39-1/2)

Service Clearances:

	Front	Rear	Right	Left
mm	915	915	0	610
(inches)	(36)	(36)	(0)	(24)

Weight: 195 kg (430 lb)

Heat Output: 1 kW (3,400 BTU/hr)

Airflow: 12 m^3/min (400 cfm)

Power Requirements:

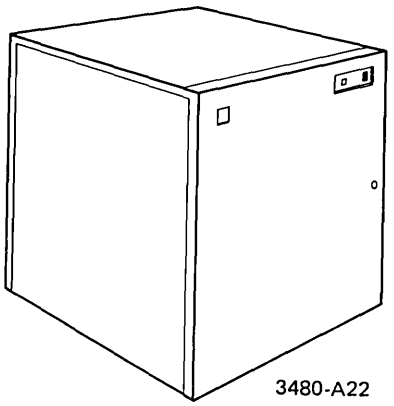
kVA	1
Phases	3
Plug	R&S, 3760
Receptacle	R&S, 3754
Connector Housing	R&S, 3934
Power Cord Style	D4

Environment, Operating:

Temperature	15°C-32°C (60°F-90°F)
Rel Humidity	20%-80%
Max Wet Bulb	25.6°C (78°F)

Environment, Nonoperating:

Temperature	10°C-43°C (50°F-110°F)
Rel Humidity	8%-80%
Max Wet Bulb	26.7°C (80°F)



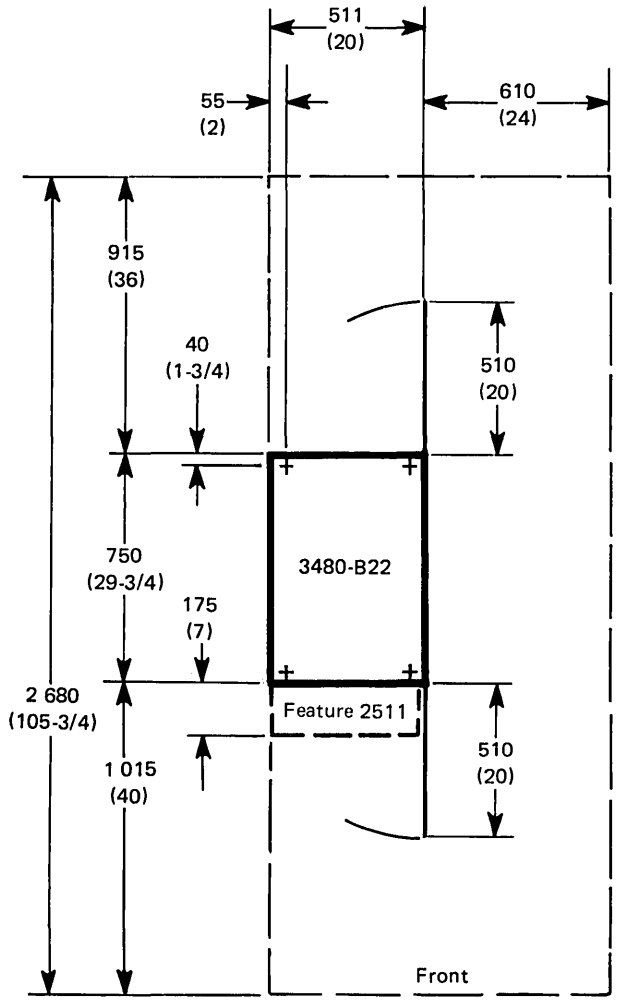
3480-A22

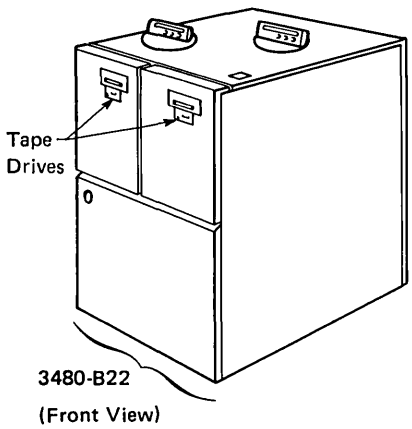
(Front View)

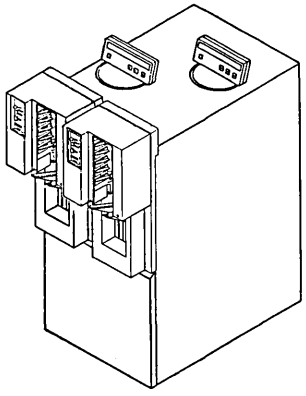
3480 TAPE UNIT MODEL B22

PLAN VIEW (Metric Scale: 10 mm = 0.25 m)

English measurements are shown in parentheses.







3480-B22 with
Feature 2511 Installed

SPECIFICATIONS

Dimensions:

	Front	Side	Height
mm	510	750	1 000*
(inches)	(20)	(29-3/4)	(39-1/2)*

Service Clearances:

	Front	Rear	Right	Left
mm	915**	915	610***	0
(inches)	(36)**	(36)	(24)***	(0)

Weight: 155 kg (340 lb)

Heat Output: 800 W (2,700 BTU/hr)

Airflow: 12 m^3/min (400 cfm)

Acoustical Data:

For definitions, see "Acoustics" in Chapter 3 of *IBM General Information Manual: Installation Manual–Physical Planning,* GC22-7072.

L_{WAd}		$<L_{pA}>_m$		I	T
Operating (bels)	Idling (bels)	Operating (dB)	Idling (dB)		
7.3	7.4	55.0	56.0	No	No

Power Requirements: †

kVA	0.9
Phases	3

Environment, Operating:

Temperature	15.6°C-32.0°C (60°F-90°F)
Rel Humidity	20%-80%
Max Wet Bulb	25.6°C (78°F)

Environment, Nonoperating:

Temperature	10°C-43°C (50°F-110°F)
Rel Humidity	8%-80%
Max Wet Bulb	26.7°C (80°F)

Notes:

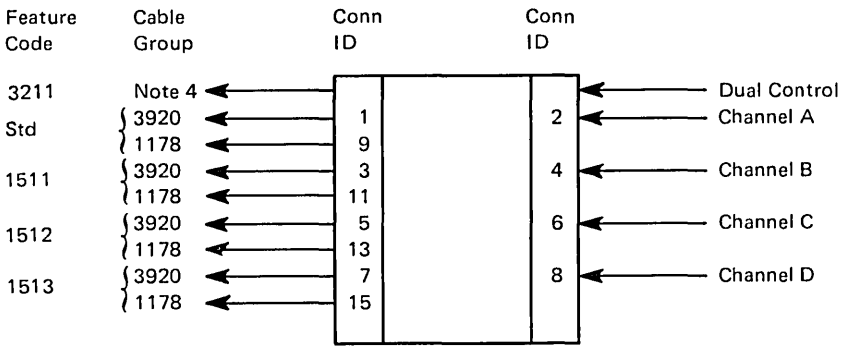
*The operator's control panel extends an additional 80 mm (3-1/4 inches) above the top cover.

**Feature 2511 requires an additional 100 mm (4 inches) of service clearance at the front of the 3480-B22.

***The right service clearance applies to only the rightmost tape unit attached to a control unit.

†Power is received from the 3480 Control Unit.

3480 MAGNETIC TAPE SUBSYSTEM CABLING SCHEMATIC



From 3480

Feature Code	*Group No.**	*No. of Cables*	*Conn ID*	*Max Length*		*Model*	*Notes*
				m	*(ft)*		
3211	None	2	None	6	(20)	A22	4
Std	3920	2	1	122	(400)	A22	1, 2
	1178	1	9	122	(400)	A22	2, 3
1511	3920	2	3	122	(400)	A22	1, 2
	1178	1	11	122	(400)	A22	2, 3
1512	3920	2	5	122	(400)	A22	1, 2
	1178	1	13	122	(400)	A22	2, 3
1513	3920	2	7	122	(400)	A22	1, 2
	1178	1	15	122	(400)	A22	2, 3

*Cable group 0185 may be ordered as an alternative to cable group 3920.

To 3480

Feature Code	*Conn ID*	*Model*	*Notes*
3211	None	A22	4
Std	2	A22	2
1511	4	A22	2
1512	6	A22	2
1513	8	A22	2

Notes:

1. The rate of data transfer varies on non-data-streaming channels depending on the cable length.

   The maximum cable length must be reduced by 4.5 meters (15 feet) for each unit connected between the 3480 Control Unit and the channel.

   The maximum effective data rate (EDR) of 1.5M bytes per second can be realized on a non-data-streaming channel up to a total cable length of 25 meters (80 feet). The subsystem will function with lengths beyond 25 meters (80 feet), but the data rate will decrease as the cable length is increased. The maximum cable length of 122 meters (400 feet) will limit the channel's effective data rate to approximately 650K bytes per second.
2. One channel attachment is standard on the 3480 Control Unit. Three channel attach (first, second, and third) additional features 1511, 1512, and 1513 are available. Order one cable group 3920 and 1178 for each channel attachment. The maximum length applies to each channel attachment.
3. Sequence and control cable (one for each using channel) is optional.
4. The dual-control-unit-communications-coupler feature (two fixed-length cables) is available on a purchase-only basis. Only one feature is needed to couple two Model A22s together. The feature should be ordered as feature 3211 when the subsystem and the feature are shipped together from the plant. For separate shipment of the feature, also order feature 3211.
5. All cables required to connect the 3480 Tape Units to the 3480 Control Unit are supplied by IBM and are shipped with the tape unit.

3480 MAGNETIC TAPE SUBSYSTEM CABLING SCHEMATIC (CONTINUED)

Intermixing Early-Level and Newer-Level Machines

A field bill of material (FBM) is required to intermix early-level and newer-level machines.

Note: To ensure no system degradation, only one FBM should be used per string.

The FBM can be ordered with one of the following numbers:

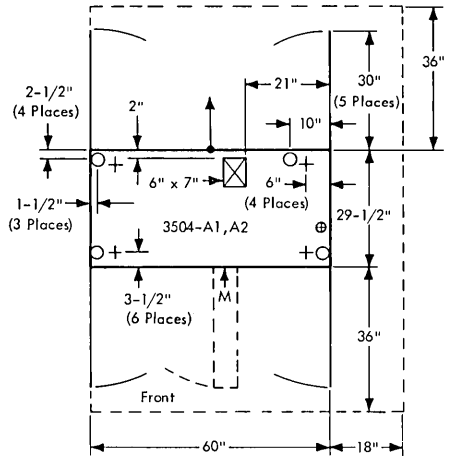
- If you are attaching a newer-level B22 to the immediate right of an early-level A22 or B22, order B/M 8576623.
- If you are attaching an early-level B22 to the immediate right of a newer-level A22 or B22, order B/M 8576624.

The following table shows the range of the newer-level machine serial numbers. Serial numbers lower than those listed are early-level machines.

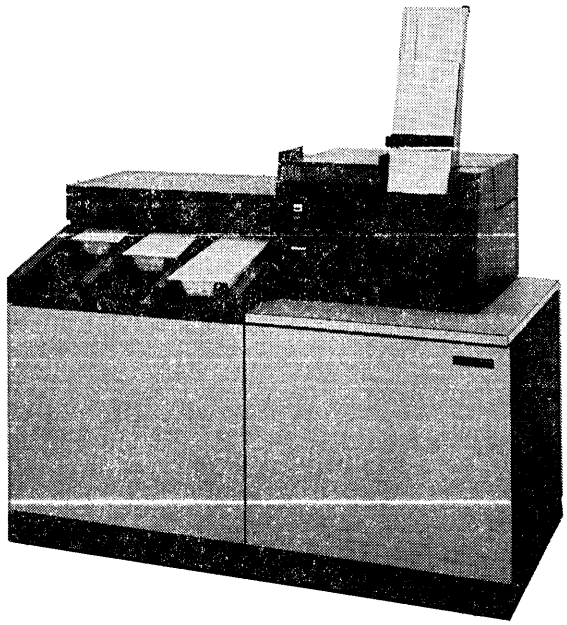
Machines Built In:	*Model A22 Serial Numbers*	*Model B22 Serial Numbers*
U.S.A., 60 Hz	15101 through 29999	60101 through 89999
U.S.A., 50 Hz	00-M0301 through 00-M9999	00-N0301 through 00-N9999
Valencia, Spain	77-C0101 through 77-E9999	77-H0101 through 77-K9999
Martinez, Argentina	80-R0101 through 80-R9999	80-X0101 through 80-Z9999

3504 CARD READER MODELS A1 AND A2

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see 3125-0 or 3125-2.



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	60	29-1/2	44
(cm)	(152)	(75)	(112)

Service Clearances:

	F	R	Rt	L
Inches	36	36	18	0
(cm)	(91)	(91)	(46)	(0)

Weight:	*50 Hz*	*60 Hz*
lb	600	600
(kg)	(280)	(280)

Heat Output:		
BTU/hr	4,600	4,200
(kcal/hr)	(1 200)	(1 100)

Airflow:		
cfm	250	250
(m^3/min)	(8)	(8)

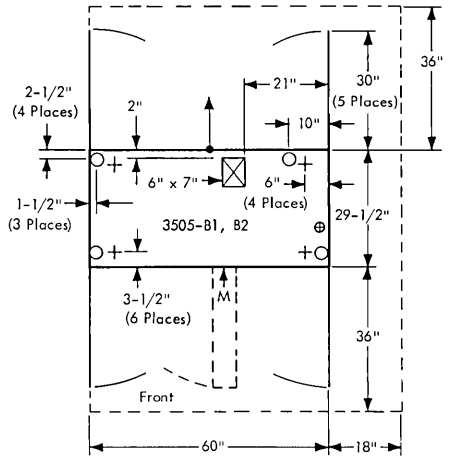
Power Requirements:*		
kVA	1.9	1.6

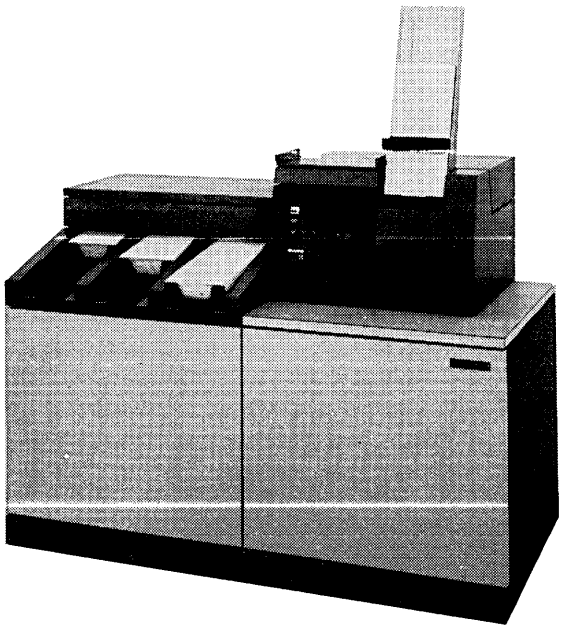
Notes:

* Powered from 3125-0 or 3125-2 when SF 4680 is installed.

3505 CARD READER MODELS B1 AND B2

PLAN VIEW (English Scale: 1/4 in. = 1 ft)





SPECIFICATIONS

Dimensions:

	F	S	H
Inches	60	29-1/2	44
(cm)	(152)	(75)	(112)

Service Clearances:

	F	R	Rt	L
Inches	36	36	18	0
(cm)	(91)	(91)	(46)	(0)

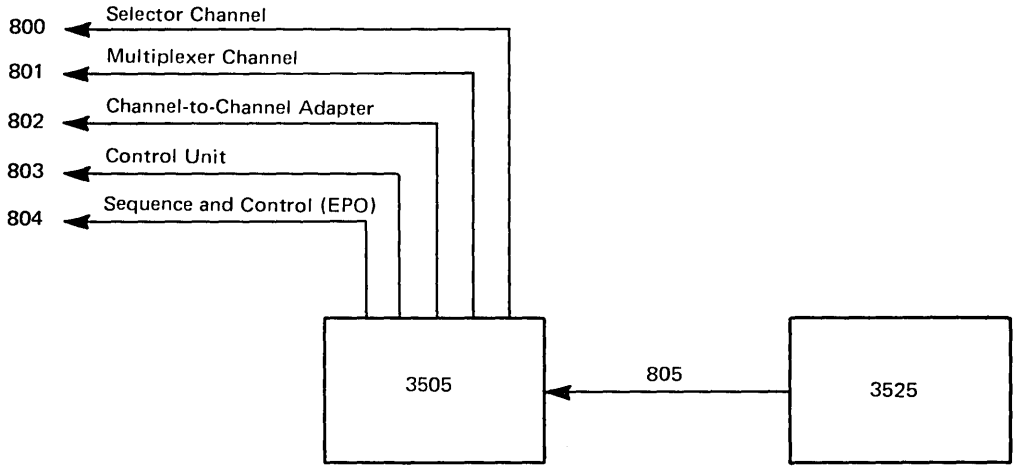
Weight:	*50 Hz*	*60 Hz*
lb	900	900
(kg)	(410)	(410)

Heat Output:		
BTU/hr	5,200	4,600
(kcal/hr)	(1 350)	(1 200)

Airflow:		
cfm	250	250
(m^3/min)	(8)	(8)

Power Requirements:		
kVA	2.2	1.9
Phases	3	3
Plug	R&S, FS3760	
Connector	R&S, FS3934	
Receptacle	R&S, FS3754	
Power Cord Style	D1	

3505 CARD READER AND 3525 CARD PUNCH CABLING SCHEMATIC



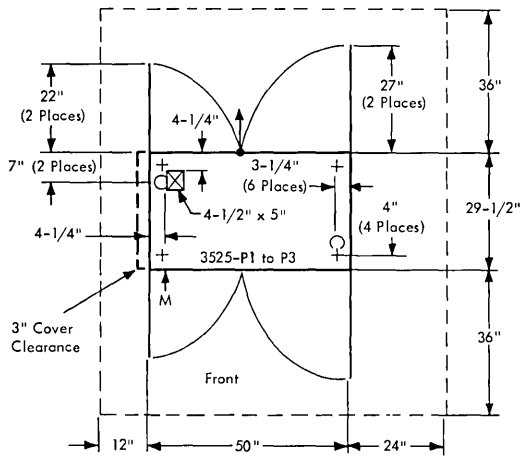
Group No.	*No. of Cables*	*From*	*To*	*Max Length (ft)*	*Notes*
800	2	3505	Selector Channel	–	1
801	2	3505	Multiplexer Channel	–	1
802	2	3505	Channel-to-Channel Adapter	–	1,3
803	2	3505	Control Unit	–	1
804	1	3505	Channel	150	2
805	4	3525	3505	20	–

Notes:

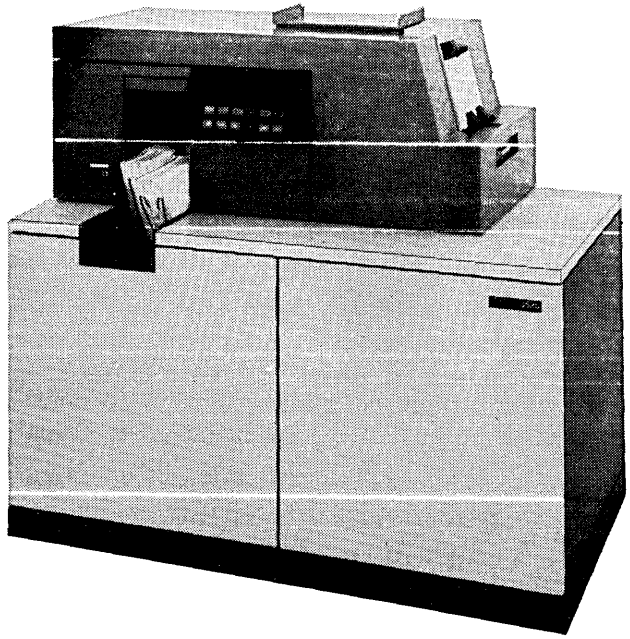
1. Total cable length of 200 feet (unless modified by general control-to-channel cabling schematic) available to attach up to eight control units.
2. Power sequence and control cable. This machine must have the power sequence and control cable installed for proper operation.
3. To channel-to-channel adapter (SF 1850).

3525 CARD PUNCH MODELS P1 TO P3

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see 3505 and 3125.



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	50	29-1/2	45
(cm)	(127)	(75)	(114)

Service Clearances:

	F	R	Rt	L
Inches	36	36	24	12
(cm)	(91)	(91)	(61)	(30)

Weight:	*50 Hz*	*60 Hz*
lb	850	850
(kg)	(390)	(390)

Heat Output:		
BTU/hr	4,800	4,400
(kcal/hr)	(1 250)	(1 150)

Airflow:		
cfm	200	200
(m^3/min)	(6)	(6)

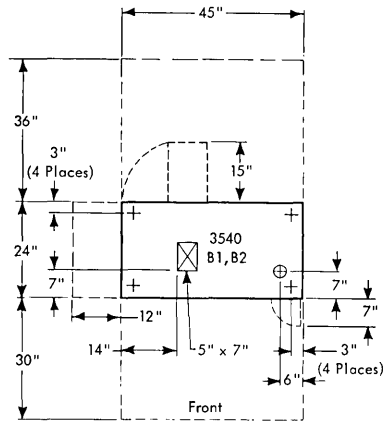
Power Requirements:*		
kVA	1.8	1.6

Notes:

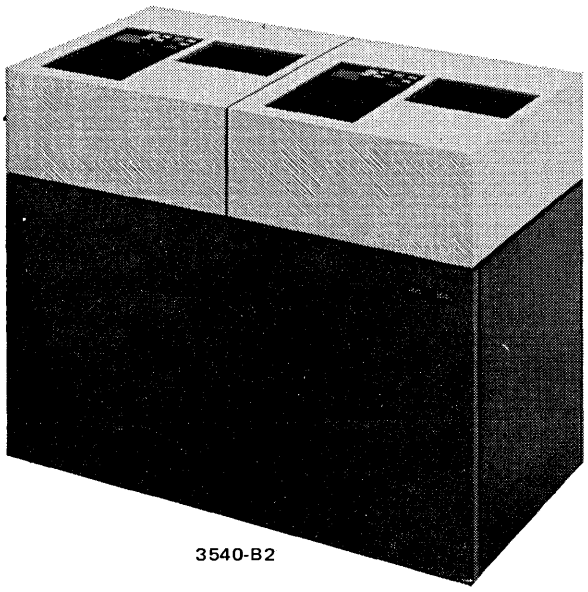
* Powered from 3505, or from 3125-0 or 3125-2 when SF 4685 is installed.

3540 DISKETTE INPUT/OUTPUT UNIT
MODELS B1 AND B2

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see Section 2, "Machines with Integral or Abutted Controls."



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	45	24	37
(cm)	(114)	(61)	(94)

Service Clearances:

	F	R	Rt	L
Inches	30	36	0	12
(cm)	(76)	(91)	(0)	(30)

Weight:	*Model B1*	*Model B2*
lb	380	440
(kg)	(180)	(200)

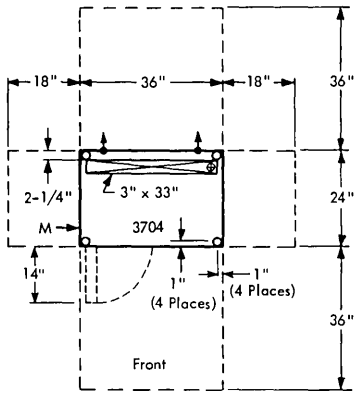
Heat Output:		
BTU/hr	1,600	2,150
(kcal/hr)	(410)	(550)

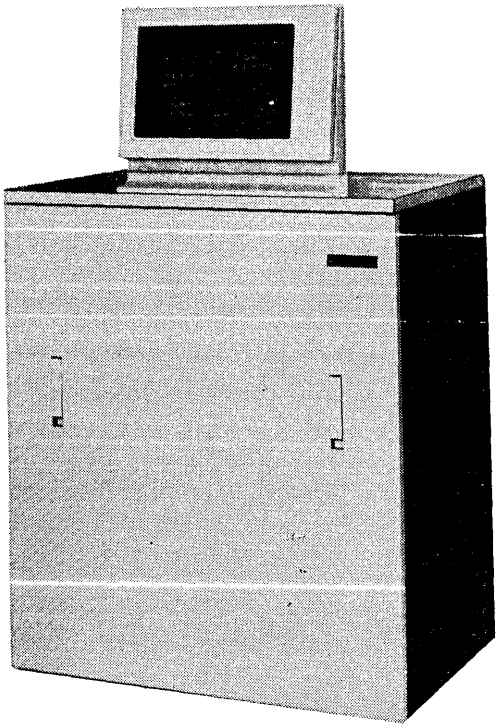
Airflow:		
cfm	150	150
(m^3/min)	(5)	(5)

Power Requirements:		
kVA	0.6	0.8
Phases	1	1
Plug	R&S, FS3720	
Connector	R&S, FS3913	
Receptacle	R&S, FS3743	
Power Cord Style	A1	

3704 COMMUNICATIONS CONTROLLER

PLAN VIEW (English Scale: 1/4 in. = 1 ft)





SPECIFICATIONS

Dimensions:

	F	S	H
Inches	36	24	57*
(cm)	(91)	(61)	(145*)

Service Clearances:

	F	R	Rt	L
Inches	36	36	18	18
(cm)	(91)	(91)	(46)	(46)

Weight: 390 lb (180 kg)

Heat Output: 5,600 BTU/hr (1 450 kcal/hr)

Airflow: 500 cfm (15 m^3/min)

Power Requirements:

kVA	2.2
Phases	1
Plug	R&S, FS3720
Connector	R&S, FS3913
Receptacle	R&S, FS3743
Power Cord Style	A2

Environment, Operating:

Temperature	60°F-100°F (16°C-38°C)
Rel Humidity	8%-80%
Max Wet Bulb	78°F (26°C)

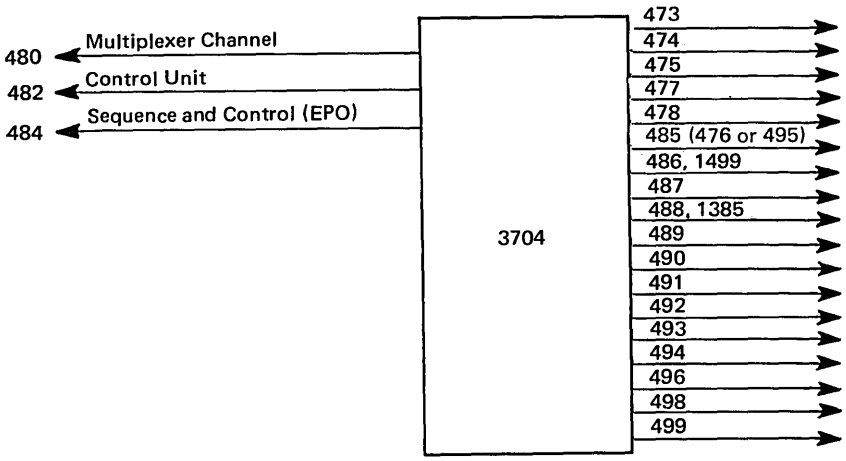
Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	85°F (29°C)

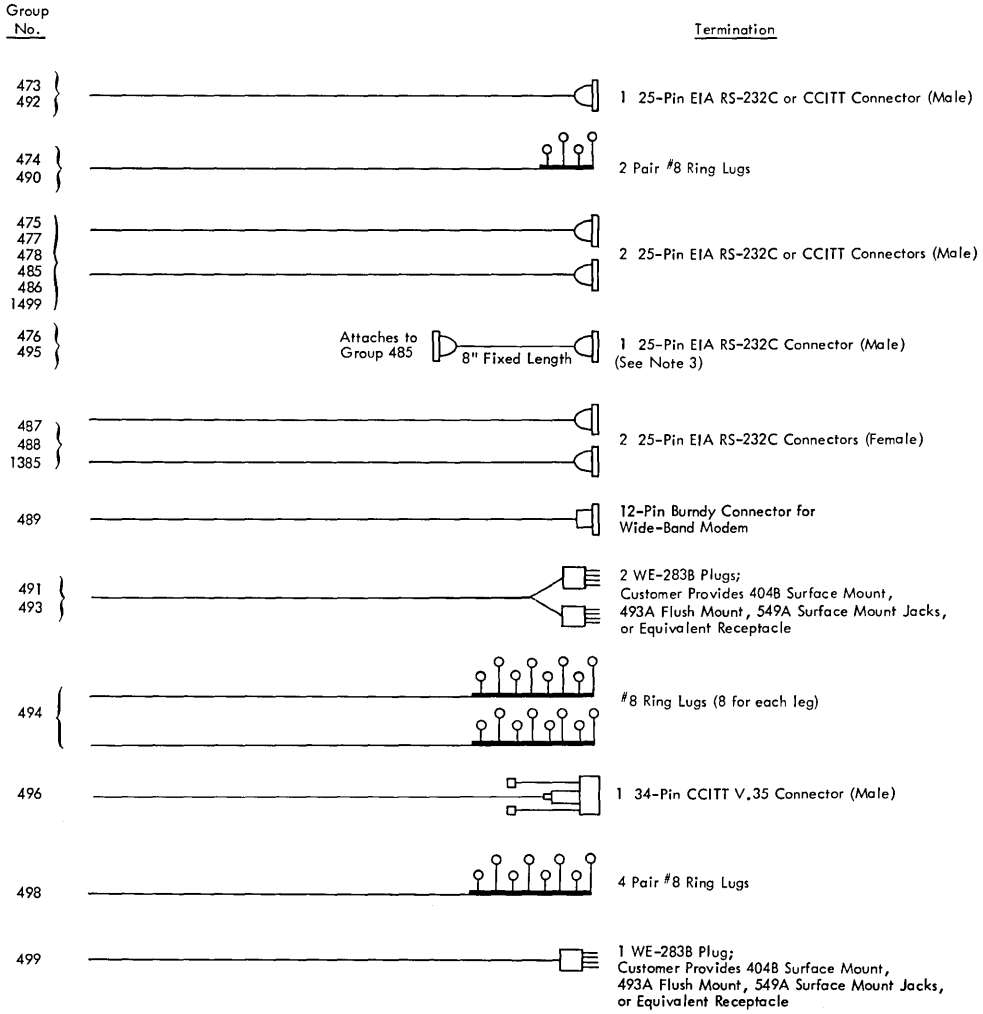
Notes:

*Height from base of machine to countertop is 42" (107 cm).

3704 COMMUNICATIONS CONTROLLER CABLING SCHEMATIC



Cables for IBM and Non-IBM Devices



3704 COMMUNICATIONS CONTROLLER CABLING SCHEMATIC

Feature Code	*Group No.*	*Line Set Type*	*No. of Cables*	*From*	*To*	*Max Length (ft)*	*Notes*
–	480	–	2	3704	Multiplexer Channel	–	1
–	482	–	2	3704	Control Unit	–	1
–	484	–	1	3704	Channel	150	2
2944	496	1K	1	3704	Modem	45	12,14
4709	498	LIB 9	1	3704	Common-Carrier CBS Data Coupler	45	14
4711	475 or	1A	2	3704	Two Modems	45	7,14
–	477 or	1A	2	3704	Two Modems	45	7,11,14
–	478	1A	2	3704	Two Modems	45	7,11
4712	492	1B	1	3704	One Low-Speed Duplex Modem	45	14
4713	487	1C	2	3704	Two Directly Attached Terminals	195	14, 16
4714	476 or	1D	1	3704	Modem End of 485	8"	3,14
–	477 or	1A/1D	2	3704	Two Modems	45	9,11,14
–	478 or	1A/1D	2	3704	Two Modems	45	9,11,14
–	485 or	1D	2	3704	Two Modems	45	3,9,10,14
–	495	1D	1	3704	Modem End of 485	8"	3,14
4715	486	1E	2	3704	Two Autocall Devices	45	14
–	1499	1E	2	3704	Two World Trade Autocall Devices	45	12,14,17
4716	488	1F	2	3704	Two Directly Attached Terminals	95	14, 16
–	1385	1F	2	3704	Two Directly Attached Terminals	95	14, 15, 16
4717	489	1G	1	3704	Wide-Band Modem	45	14
4718	473	1H	1	3704	Modem	45	14
4719	–	1J	–	–	–	–	
4721	474	2A	1	3704	Common-Carrier Terminal Strip	45	13,14
–	490	2A	1	3704	Common-Carrier Terminal Strip	45	4,14
4731	491	3A	1	3704	Common-Carrier Telephone Jack	45	14
4732	491	3B	1	3704	Common-Carrier Telephone Jack	45	14
4741	491	4A	1	3704	Common-Carrier Telephone Jack	45	14
4742	491	4B	1	3704	Common-Carrier Telephone Jack	45	14
4743	491	4C	1	3704	Common-Carrier Telephone Jack	45	14
4751	493	1L	1	3704	Common-Carrier Telephone Jack	45	5,14
4752	493	1M	1	3704	Common-Carrier Telephone Jack	45	5,14
4754	499	1X	1	3704	Common-Carrier Telephone Jack	45	14
4755	499	1Y	1	3704	Common-Carrier Telephone Jack	45	14
4761	494	1P	2	3704	Common-Carrier CBS Data Coupler	45	6,14
4771	498	1Q	1	3704	Common-Carrier CBS Data Coupler	45	14
4781	499	8A	1	3704	Common-Carrier Telephone Jack	45	14
4782	498	8B	1	3704	Common-Carrier CBS Data Coupler	45	14
4784	499	10A	1	3704	Common-Carrier Telephone Jack	45	14
4785	499	8C	1	3704	Common-Carrier Telephone Jack	45	14
4786	498	8D	1	3704	Common-Carrier CBS Data Coupler	45	14

Notes:

1. Total cable length of 200 feet (unless modified by general control-to-channel cabling schematic) available to attach up to eight control units.
2. Sequence and control (EPO).
3. One required for each SF 4717, *except* in Germany. See Note 11. In U.S. and Canada, SF 4714 may require either cable group 476 or 495 depending on the following:
   a. One or two of group 476 required in addition to group 485 for switched network modems that use either "Ring-Indicate" or "Coupler-Cut-Through" on pin 23. (Pin 18 is not used.)
   b. One or two of group 495 required in addition to group 485 for modems using a contact closure interface between pins 19 and 20. Group 495 provides compatibility between 3704 25-pin EIA RS-232C voltage interface and the modem contact closure interface. Cable includes a jumper between pins 19 and 20 and removes the "Data Terminal Ready" voltage from pin 20.
4. One required for each SF 4721, *except* in Germany. See Note 13.
5. One required when two SF 4751s or 4752s are attached. Use cable group 499 when only one SF 4751 or 4752 is attached.
6. One required when two SF 4761s are attached. Use cable group 498 when one SF 4761 is attached.
7. One required for each SF 4711, *except* in Germany. See Note 11.

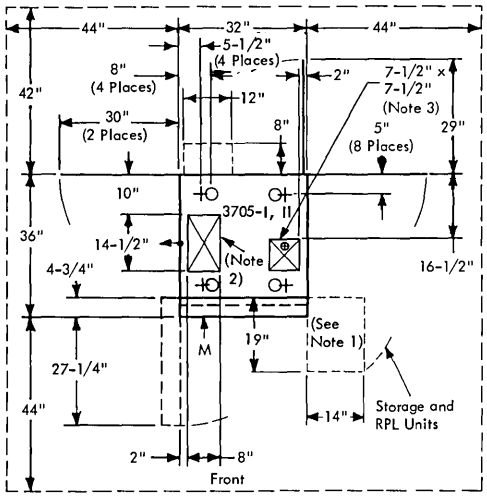
Notes: (Continued)

8. External cable is not supplied for SF 4719 (Line Set Type 1J). The cable-connecting hardware is supplied for this feature. See *IBM 3704 and 3705 Communications Controllers,* OEMI, GA27-3053, for pin designations. Any customer-supplied protective conduit must *not* extend above the lower machine frame (2-1/2").
9. For SF 4714, at transmission rates above 7,200 bps, the cable length is limited to 25 feet maximum in U.S. and Canada. At rates above 4,800 bps, the length is limited to 25 feet maximum in World Trade countries.
10. For SF 4714 (Line Set Type 1D, cable group 485). If a longer cable length is desired at the higher speeds, contact the IBM Marketing Representative.
11. One required for each SF 4711 or 4714 in Germany depending on the following:
    a. For IBM modems, use group 477. (Provides a shielded cable for compliance with radio-frequency-interference regulations.)
    b. For PTT mandatory modems, use group 478. (Pins 14 and 18 are not used.)
12. For World Trade countries only.
13. One required for each SF 4721 in Germany. (Provides a shielded cable for compliance with radio-frequency-interference regulations.)
14. See "Cables for IBM and Non-IBM Devices" for cable specifications.
15. If attaching an IBM SNA terminal, group 1385 must be used (whether used in SNA mode or not); otherwise, order group 488.
16. The total length (including any directly attached terminal cable) must not exceed 100 feet for SF 4716 or 200 feet for SF 4713.
17. SF 4715 requires one group 1499 when attaching French cauducee automatic calling devices.

3705-I OR 3705-II COMMUNICATIONS CONTROLLER

3705-I OR -II BASIC MODULE

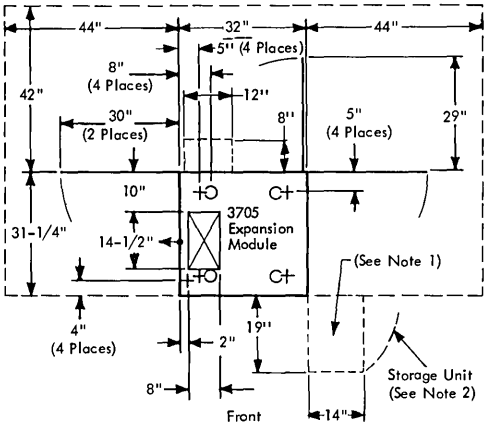
PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Notes:
1. For full 180° swing, remove adjacent machine cover.
2. Signal cable entry.
3. Power cable entry.

3705-I OR -II EXPANSION MODULE

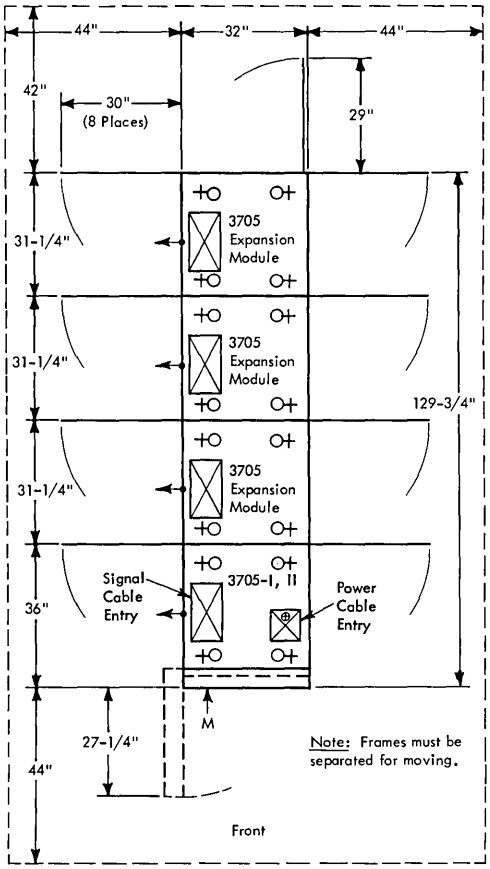
PLAN VIEW (English Scale: 1/4 in. = 1 ft)

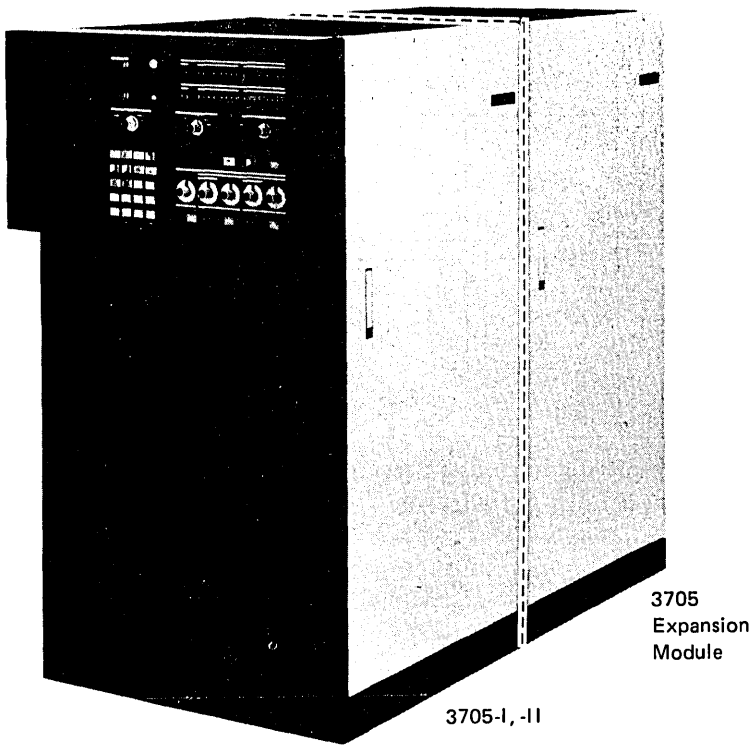


Notes:
1. For full 180° swing remove adjacent machine cover.
2. Storage unit in the first expansion module of 3705-II, Models J, K, and L only.

3705-I OR -II MAXIMUM CONFIGURATION

PLAN VIEW (English Scale: 1/4 in. = 1 ft)





3705-I OR 3705-II COMMUNICATIONS CONTROLLER

SPECIFICATIONS

Model	*Dimensions* in. (mm)*			*Service Clearances in. (mm)*				*Weight lb (kg)*
	Front	*Side*	*Height*	*Front*	*Rear*	*Right*	*Left*	
A or E	32 (810)	36 (910)	60 (1 520)	44 (1 120)	42 (1 070)	44 (1 120)	44 (1 120)	1,010 (460)
B, F, or J	32 (810)	67¼ (1 710)	60 (1 520)	44 (1 120)	42 (1 070)	44 (1 120)	44 (1 120)	1,920 (880)
C, G, or K	32 (810)	98½ (2 500)	60 (1 520)	44 (1 120)	42 (1 070)	44 (1 120)	44 (1 120)	2,830 (1 300)
D, H, or L	32 (810)	129¼ (3 300)	60 (1 520)	44 (1 120)	42 (1 070)	44 (1 120)	44 (1 120)	3,740 (1 700)

*Shipping dimensions are 32" x 36" x 60" (810 mm x 910 mm x 1 520 mm). Removal of the covers reduces the width to 29½" (750 mm). The front panel can be removed to make the unit 29½" x 30" x 60" (750 mm x 760 mm x 1 520 mm).

Model	*Heat Output BTU/hr (kcal/hr)*	
	60 Hz	*50 Hz*
A or E	6,400 (1 650)	7,170 (1 850)
B or F	12,800 (3 250)	14,340 (3 650)
C or G	19,200 (4 850)	21,510 (5 450)
D or H	25,600 (6 500)	28,680 (7 250)
J	11,300 (2 850)	12,900 (3 250)
K	16,900 (4 300)	19,400 (4 900)
L	22,500 (5 700)	25,800 (6 500)

Airflow (3705-I or 3705-II):
cfm 880
(m^3/min) (25)

Environment, Operating (3705-I or 3705-II):
Temperature 50°F-100°F (10°C-38°C)*
Rel Humidity 8%-80%
Max Wet Bulb 78°F (26°C)

*The upper temperature limit must be derated 1°F (0.6°C) for each 250 feet (76 meters) of elevation above 3,000 feet (914 meters).

Environment, Nonoperating (3705-I or 3705-II):
Temperature 50°F-100°F (10°C-40°C)
Rel Humidity 8%-80%
Max Wet Bulb 80°F (26.7°C)

Note:
The 3705 with remote program loader (RPL) is attached to the host processor through another 3705 by a type 3002 private line data channel with type C2 conditioning, a CCITT recommended M102 data channel, or equivalent privately supplied channel.

3705-I OR 3705-II COMMUNICATIONS CONTROLLER

SPECIFICATIONS (Continued)

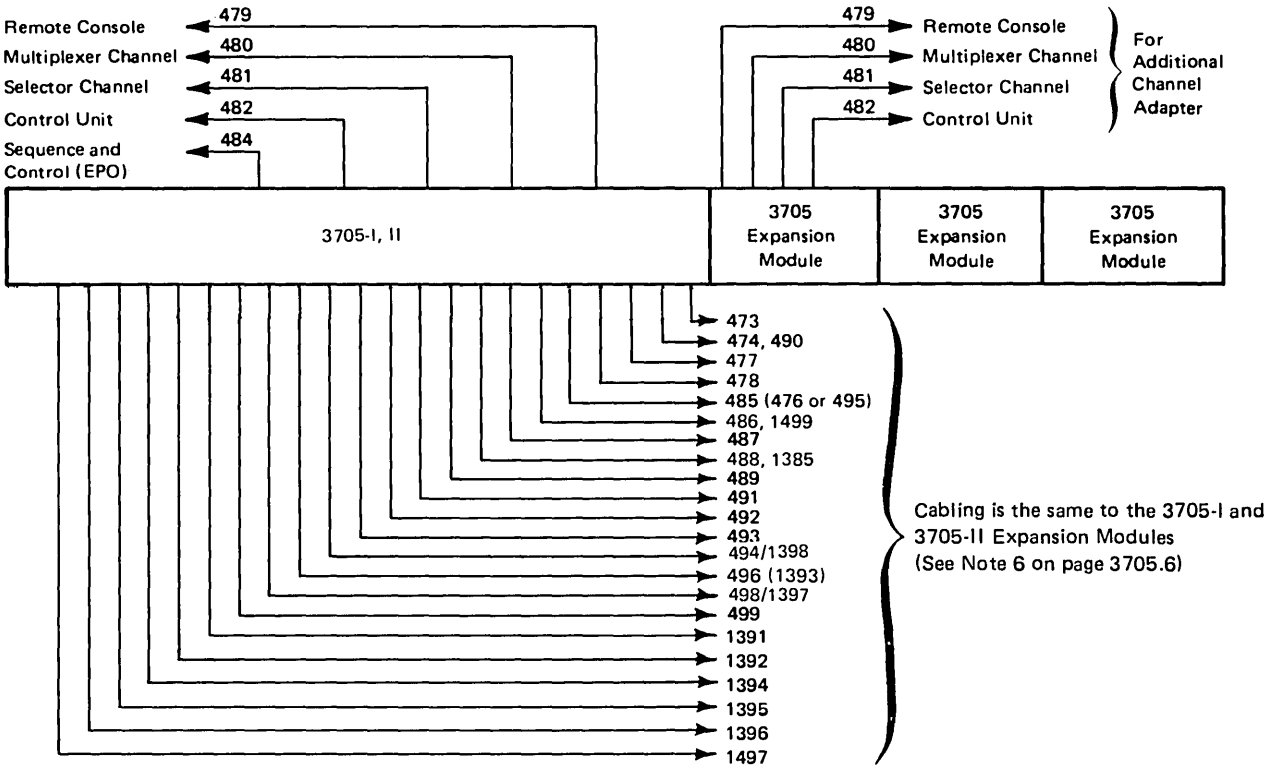
Specification	*Model*	*60 Hz*			*50 Hz ****				
Volts	All	200*	208	230	200	220	235	380	408
Phase	All	3	3	3	3	3	3	3	3
kVA	A or E	2.5	2.5	2.5	2.8	2.8	2.8	2.8	2.8
	B or F	5.0	5.0	5.0	5.6	5.6	5.6	5.6	5.6
	C or G	7.5	7.5	7.5	8.4	8.4	8.4	8.4	8.4
	D or H	10.0	10.0	10.0	11.2	11.2	11.2	11.2	11.2
	J	5.3	5.3	5.3	5.9	5.9	5.9	5.9	5.9
	K	7.9	7.9	7.9	8.9	8.9	8.9	8.9	8.9
	L	10.6	10.6	10.6	11.9	11.9	11.9	11.9	11.9
Branch Circuit (Amperes)	A or E	–	30	30	–	–	–	–	–
	B, F, or J	–	30	30	–	–	–	–	–
	C, G, or K	–	60	60	–	–	–	–	–
	D, H, or L	–	60	60	–	–	–	–	–
Max Cont Load (Amperes)	A or E	7.2	6.9	6.3	8.1	7.3	6.9	4.3	4.0
	B or F	14.4	13.9	12.6	16.2	14.7	13.8	8.5	7.9
	J	15.3	14.7	13.3	17.0	15.5	14.5	9.0	8.3
	C or G	21.7	20.8	18.8	24.2	22.0	20.6	12.8	11.9
	K	22.8	21.9	19.8	25.7	23.4	21.9	13.5	12.6
	D or H	28.9	27.8	25.1	32.3	29.4	27.5	17.0	15.8
	L	30.6	29.4	26.6	34.4	31.2	29.2	18.1	16.8
Power Cord Style**	A or E	F1	–	–	D2	D2	D2	D2	D2
	B, F, or J	F2	–	–	E1	E1	E1	D2	D2
	C, D, H, K, or L	F2	–	–	E2	E2	E2	E1	E1
Plug Type	A, B, E, F, or J	–	D	D	–	–	–	–	–
	C, D, G, H, K, or L	–	E	E	–	–	–	–	–
Power Cord Length (ft)	All	14	14	14	14	14	14	14	14
Length (m)	All	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27

*World Trade

**When field converting to Model A, B, E, F, or J from Model C, D, G, H, K, or L, a new power cord will not be shipped. Existing cord assembly should be used.

***For the 3705-II, 50 Hz only, the phase may be unbalanced to a ratio of 1.3 to 1.

3705-I OR 3705-II COMMUNICATIONS CONTROLLER AND 3705 EXPANSION MODULE CABLING SCHEMATIC



Cable Ordering

All 60-Hz machines for WT Europe/Middle East/Africa (E/ME/A) are shipped from Raleigh, North Carolina, U.S.A. Cables for these machines must be ordered by an exception order telex according to the exception order process.

3705-I OR 3705-II COMMUNICATIONS CONTROLLER AND 3705 EXPANSION MODULE CABLING SCHEMATIC

Feature Code	*Group No.*	*Line Set Type*	*No. of Cables*	*From*	*To*	*Max Length (ft)*	*Meters*	*Notes*
1543	479		1	3705-I, II or 3705 Expansion Module	Remote Console	150	45.7	4
–	480		2	3705-I, II or 3705 Expansion Module	Multiplexer Channel	–		1
–	481		2	3705-I, II or 3705 Expansion Module	Selector Channel	–		1
–	482		2	3705-I, II or 3705 Expansion Module	Control Unit	–		1
–	484		1	3705-I, II	Channel	150	45.7	15
2944	496	1K	1	3705-I, II or 3705 Expansion Module	One High-Speed Modem	45	13.7	7,21
4707	498	LIB 7	1	3705-I, II or 3705 Expansion Module	Data Coupler	45	13.7	18
4711	477 or	1A	2	3705-I, II or 3705 Expansion Module	Two IBM Modems	45	13.7	7,10,20
	478 or	1A	2	3705-I, II or 3705 Expansion Module	Two Non-IBM Modems	45	13.7	7,10,20
	485	1A	2	3705-I, II or 3705 Expansion Module	Two Modems	45	13.7	8,10,20
4712	492	1B	1	3705-I, II or 3705 Expansion Module	One Low-Speed Duplex Modem	45	13.7	20
4713	487	1C	2	3705-I, II or 3705 Expansion Module	Two Directly Attached Terminals	195	59.4	12,20
4714	473 or	1D	1	3705-I, II or 3705 Expansion Module	One Medium-Speed Duplex Modem–BSC, SDLC	45	13.7	
	477 or	1D	2	3705-I, II or 3705 Expansion Module	Two IBM Modems	45	13.7	5,7,10
	478 or	1D	2	3705-I, II or 3705 Expansion Module	Two Non-IBM Modems	45	13.7	5,7,10
	485 or	1D	2	3705-I, II or 3705 Expansion Module	Two Modems–S/S, BSC, SDLC	45	13.7	2,5,10,11
	487 or	1D	2	3705-I, II or 3705 Expansion Module	Two Directly Attached Terminals–S/S	195	59.4	19
	488 or	1D	2	3705-I, II or 3705 Expansion Module	Two Directly Attached Terminals–BSC	95	28.9	12,13
	1385 or	1D	2	3705-I, II or 3705 Expansion Module	Two Directly Attached Terminals–SDLC/BSC	95	28.9	12,13
	492	1D	1	3705-I, II or 3705 Expansion Module	One Low-Speed Duplex Modem–S/S	45	13.7	
4715	486 or	1E	2	3705-I, II or 3705 Expansion Module	Two Autocall Units	45	13.7	
	1499	1E	2	3705-I, II or 3705 Expansion Module	Two WT Autocall Units	45	13.7	7,14
4716	488 or	1F	2	3705-I, II or 3705 Expansion Module	Two Directly Attached Terminals	95	28.9	12,20
	1385	1F	2	3705-I, II or 3705 Expansion Module	Two Directly Attached Terminals	95	28.9	12,13,20
4717	489	1G	1	3705-I, II or 3705 Expansion Module	Wide-Band Modem	45	13.7	
4718	473	1H	1	3705-I, II or 3705 Expansion Module	One Medium-Speed Duplex Modem	45	13.7	20
4719	None	1J	0					3
4720	496	1S	1	3705-I, II or 3705 Expansion Module	One High-Speed Modem	45	13.7	8
4721	490 or	2A	1	3705-I, II or 3705 Expansion Module	Common-Carrier Terminal Strip	45	13.7	8,9
	474	2A	1	3705-I, II or 3705 Expansion Module	Common-Carrier Terminal Strip	45	13.7	7,9
4722	489	1GA	1	3705-I, II or 3705 Expansion Module	Wide-Band Modem	45	13.7	16
4723	489	1TA	1	3705-I, II or 3705 Expansion Module	Wide-Band Duplex Modem	45	13.7	16
4725	489	1T	1	3705-I, II or 3705 Expansion Module	One Wide-Band Duplex Modem	45	13.7	
4726	1497	1U	1	3705-I, II or 3705 Expansion Module	One High-Speed Duplex Modem	45	13.7	
4727	1394	1W	1	3705-II or 3705 Expansion Module	One Directly Attached Device	145	44.2	22
4728	1395	1Z	1	3705-II or 3705 Expansion Module	One Directly Attached Device	145	44.2	22
4731	491	3A	1	3705-I, II or 3705 Expansion Module	Common-Carrier Telephone Jack	45	13.7	
4732	491	3B	1	3705-I, II or 3705 Expansion Module	Common-Carrier Telephone Jack	45	13.7	
4741	491	4A	1	3705-I, II or 3705 Expansion Module	Common-Carrier Telephone Jack	45	13.7	
4742	491	4B	1	3705-I, II or 3705 Expansion Module	Common-Carrier Telephone Jack	45	13.7	
4743	491	4C	1	3705-I, II or 3705 Expansion Module	Common-Carrier Telephone Jack	45	13.7	
4751	499	5A	1	3705-I, II	Common-Carrier Telephone Jack	45	13.7	6
4752	499	5B	1	3705-I, II	Common-Carrier Telephone Jack	45	13.7	6
4754	499	11A	1	3705-I, II	Common-Carrier Telephone Jack	45	13.7	6
4755	499	11B	1	3705-I, II	Common-Carrier Telephone Jack	45	13.7	6
4761	498	6A	1	3705-I, II or 3705 Expansion Module	Data Coupler	45	13.7	18
4781	493	8A	1	3705-I, II or 3705 Expansion Module	Common-Carrier Telephone Jack	45	13.7	

3705-I OR 3705-II COMMUNICATIONS CONTROLLER AND 3705 EXPANSION MODULE CABLING SCHEMATIC

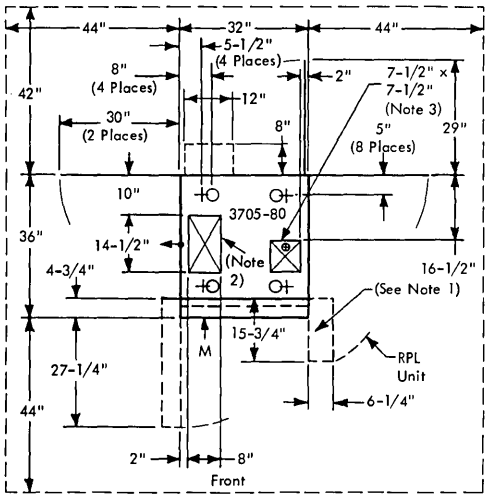
Feature Code	*Group No.*	*Line Set Type*	*No. of Cables*	*From*	*To*	*Max Length (ft)*	*Meters*	*Notes*
4782	494 or	8B	2	3705-I, II or 3705 Expansion Module	Data Coupler, OEM	45	13.7	18
	1398	8B	2	3705-II or 3705 Expansion Module	Data Coupler, IBM	45	13.7	
4784	499	10A	1	3705-I, II or 3705 Expansion Module	Common-Carrier Telephone Jack	45	13.7	
4785	493	12A	1	3705-I, II or 3705 Expansion Module	Common-Carrier Telephone Jack	45	13.7	
4786	494	12B	2	3705-I, II or 3705 Expansion Module	Data Coupler	45	13.7	18
4791	498 or	9A	1	3705-I, II or 3705 Expansion Module	Data Coupler, OEM	45	13.7	18
	1397	9A	1	3705-II or 3705 Expansion Module	Data Coupler, IBM	45	13.7	
5655	1391 or	1N	1	3705-II or 3705 Expansion Module	One Duplex DCE	45	13.7	
	1392	1N	2	3705-II or 3705 Expansion Module	Two Half-Duplex DCEs	45	13.7	17
5656	1391	1R	1	3705-II or 3705 Expansion Module	One Duplex DCE	45	13.7	

Notes:

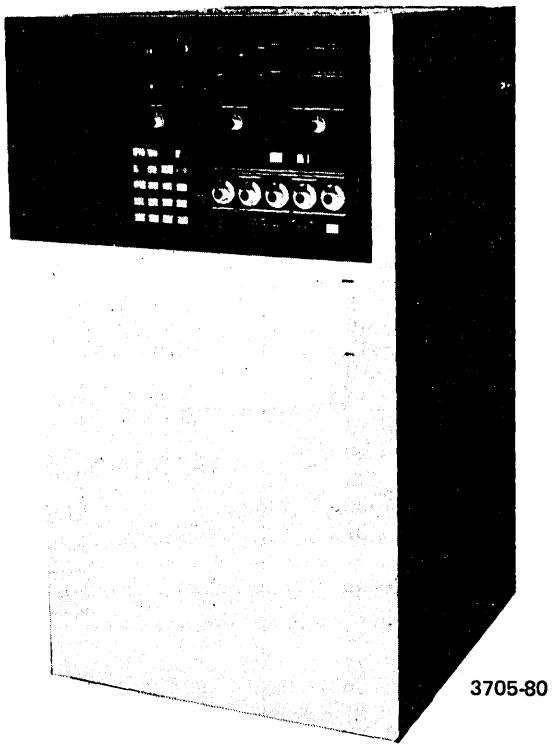
1. Total cable length of 60.96 meters (200 feet) (unless modified by general control-to-channel schematic) is available to attach up to eight control units.
2. SF 4714 requires cable group 485 and may require either group 476 or 495 as specified below:
   a. One or two of group 476 is required for switched network modems that use either "Ring-Indicate" or "Coupler-Cut-Through" on pin 23. (Pins 18 and 23 are not used.)
   b. One or two of group 495 is required for modems using a contact closure interface between pins 19 and 20. Group 495 provides compatibility between the 3705 25-pin EIA RS-232C voltage interface and the modem contact closure interface. Cable includes a jumper between pins 19 and 20 and removes the "Data Terminal Ready" voltage from pin 20.
3. Cable-connecting hardware is supplied for SF 4719; external cable is not supplied. See *IBM 3704 and 3705 Communications Controllers, Original Equipment Manufacturer's Information,* GA27-3053, for pin designations. Any customer-supplied protective conduit must *not* extend above the lower machine frame more than 66 mm (2.6 inches).
4. In addition to the two sets of channel cables chosen, one cable group 479 is required if the type 3 channel adapters interface enable/disable switch is to be placed on the remote console (3058 or 3068).
5. The maximum cable length is 7.62 meters (25 feet) when the rate exceeds 7,200 bps in U.S. and Canada or 4,800 bps in World Trade countries.
6. SF 4751, 4752, 4754, and 4755 do not apply to the 3705 Expansion Module.
7. For World Trade countries only.
8. For U.S. and Canada.
9. In World Trade countries *except* Germany, SF 4721 requires one cable group 490. In Germany, SF 4721 requires one cable group 474 (provides a shielded cable).
10. In World Trade countries *except* Germany, SF 4711 and SF 4714 require one cable group 485. In Germany, SF 4711 and SF 4714 require either one group 477 when using IBM modems (provides a shielded cable) or one group 478 when using PTT mandatory modems (pins 14 and 18 are not used). United States and World Trade–for SF 4714 at transmission rates above 7200 bps U.S. or 4800 bps WT the cable maximum length is 7.62 meters (25 feet).
11. For SF 4714 (Line Set Type 1D, cable group 485). If a longer cable length is desired at the higher speeds, contact the IBM Marketing Representative.
12. The total cable length (including any directly-attached terminal cable) must not exceed 30.48 meters (100 feet) for SF 4716 and SF 4714 nor 60.96 meters (200 feet) for SF 4713.
13. Order cable group 1385 for attaching a BSC or SNA terminal. Cable group 488 is shown for reference only.
14. SF 4715 requires one group 1499 when attaching French Caducee automatic calling units; otherwise, order group 486.
15. Power sequence and control; cable is optional.
16. Operates only with a Type 3HS Communication Scanner.
17. SF 5655 using cable group 1392 also requires one cable group 1396. Each 3705 or 3705 expansion module (3706) requires only one 1396 cable group.
18. FCC registered protective coupler (CBS type) or equivalent.
19. For SF 4714 (Line Set Type 1D, cable group 487), the total cable length must not exceed 30.48 meters (100 feet) for S/S operation at 2400 bps or 60.96 meters (200 feet) for S/S operation at line speeds up to and including 1200 bps.
20. This line set will not be available for a 3705 after December 1, 1980. Its functions can now be performed by a 1D line set if appropriate cables are installed. See SF 4714. Consult your IBM Marketing Representative for details on cable requirements.
21. If SF 2944 is for attachment to a French 48K bps modem, one cable group 1393 is also required.
22. Total cable length, including the attached device cable, must not exceed 60.96 meters (200 feet).

3705-80 COMMUNICATIONS CONTROLLER

PLAN VIEW (English Scale: 1/4 in. = 1 ft.)



Notes:
1. For full 180° swing, remove adjacent machine cover.
2. Signal cable entry.
3. Power cable entry.



3705-80 COMMUNICATIONS CONTROLLER

SPECIFICATIONS

Model	*Dimensions* in. (mm)*			*Service Clearances in. (mm)*				Weight lb (kg)
	Front	Side	Height	Front	Rear	Right	Left	
All	32 (810)	36 (910)	60 (1 520)	44 (1 120)	42 (1 020)	44 (1 120)	44 (1 120)	1,010 (460)

*Shipping dimensions are 32" x 36" x 60" (810 mm x 910 mm x 1 520 mm). Removal of the covers reduces the width to 29½" (750 mm). The front panel can be removed to make the unit 29½" x 30" x 60" (750 mm x 760 mm x 1 520 mm).

Model	*Heat Output BTU/hr (kcal/hr)*	
	60 Hz	*50 Hz*
All	6,400 (1 650)	7,170 (1 850)

Model	*Specification*	*60 Hz*			*50 Hz*,***				
All	Volts	200*	208	230	200	220	235	380	408
All	Phase	3	3	3	3	3	3	3	3
All	kVA	2.5	2.5	2.5	2.8	2.8	2.8	2.8	2.8
All	Branch Circuit (Amperes)	–	30	30	–	–	–	–	–
All	Max Cont Load (Amperes)	7.2	6.9	6.3	8.1	7.3	6.9	4.3	4.0
All	Power Cord Style	F1	–	–	D2	D2	D2	D2	D2
All	Plug Type	–	D	D	–	–	–	–	–
All	Power Cord Length (ft)	14	14	14	14	14	14	14	14
All	Length (m)	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27

*World Trade

**For the 3705-80, 50 Hz only, the phase may be unbalanced to a ratio of 1.3 to 1.

Airflow: 880 cfm (25 m^3/min)

Environment, Operating:

Temperature	50°F-100°F (10°C-38°C)*
Rel Humidity	8%-80%
Max Wet Bulb	78°F (26°C)

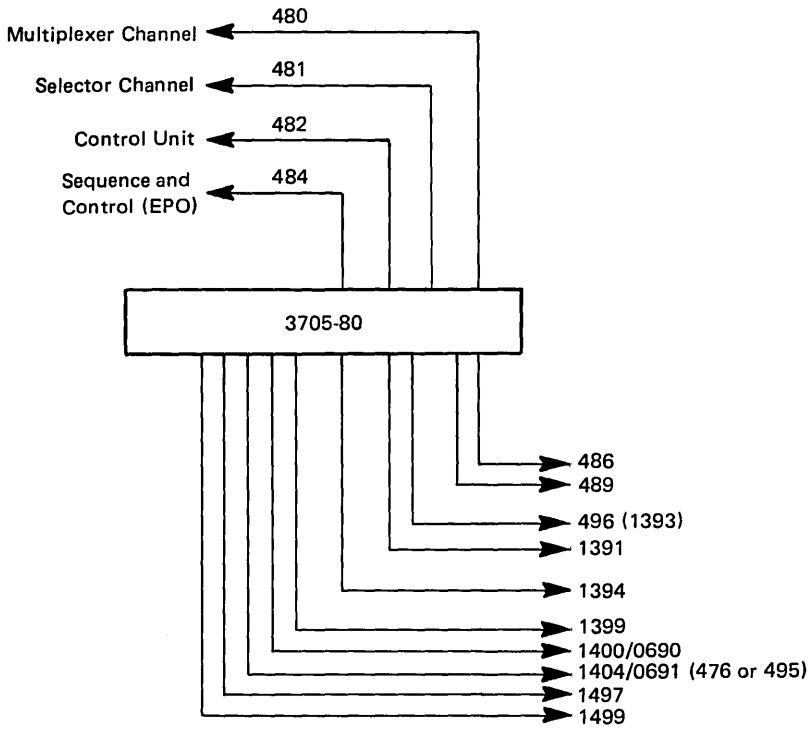
*The upper temperature limit must be derated 1°F (0.6°C) for each 250 feet (76 meters) of elevation above 3,000 feet (914 meters).

Environment, Nonoperating:

Temperature	50°F-110°F (10°C-40°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (26.7°C)

Note:
The 3705 with the remote program loader (RPL) is attached to the host processor through another 3705 by a type 3002 private line data channel with type C2 conditioning, a CCITT recommended M102 data channel, or equivalent privately supplied channel.

3705-80 COMMUNICATIONS CONTROLLER CABLING SCHEMATIC



Cable Ordering

All 60-Hz machines for WT Europe/Middle East/Africa (E/ME/A) are shipped from Raleigh, North Carolina, U.S.A. Cables for these machines must be ordered by an exception order telex according to the exception order process.

3705-80 COMMUNICATIONS CONTROLLER
CABLING SCHEMATIC

Feature Code	*Group No.*	*Line Set Type*	*No. of Cables*	*From*	*To*	*Max Length (ft)*	*Meters*	*Notes*
–	480		2	3705-80	Multiplexer Channel	–		1
–	481		2	3705-80	Selector Channel			1
–	482		2	3705-80	Control Unit	–		1
–	484		1	3705-80	Channel	150	45.7	3
–	1399		1	3705-80	One Directly Attached S/S Terminal	195	59.4	8, 9
–	1400 or 0690		1	3705-80	One Directly Attached Synchronous Terminal	95	29.0	8, 10, 14
–	1404 or 0691		1	3705-80	One Modem	45	13.7	2, 8, 12, 15
–	1391	LS8	1	3705-80	One DCE	45	13.7	4, 8, 13
5657	1391	LS8	1 1	3705-80	One Duplex or Half-Duplex DCE, Medium Speed	45	13.7	4
5658	1391	LS9	1	3705-80	One Duplex or Half-Duplex DCE, High Speed	45	13.7	
6712	496	LS2	1	3705-80	One High-Speed Modem	45	13.7	5
	1497	LS2	1	3705-80	One High-Speed Duplex Modem	45	13.7	5
6713	489	LS3	1	3705-80	Wide-Band Modem	45	13.7	6
6714	486 or	LS4	2	3705-80	Two WT Autocall Units	45	13.7	7
	1499	LS4	2	3705-80	Two WT Autocall Units	45	13.7	7
6715	1394	LS5	1	3705-80	One Directly Attached Terminal	145	44.2	11

Notes:

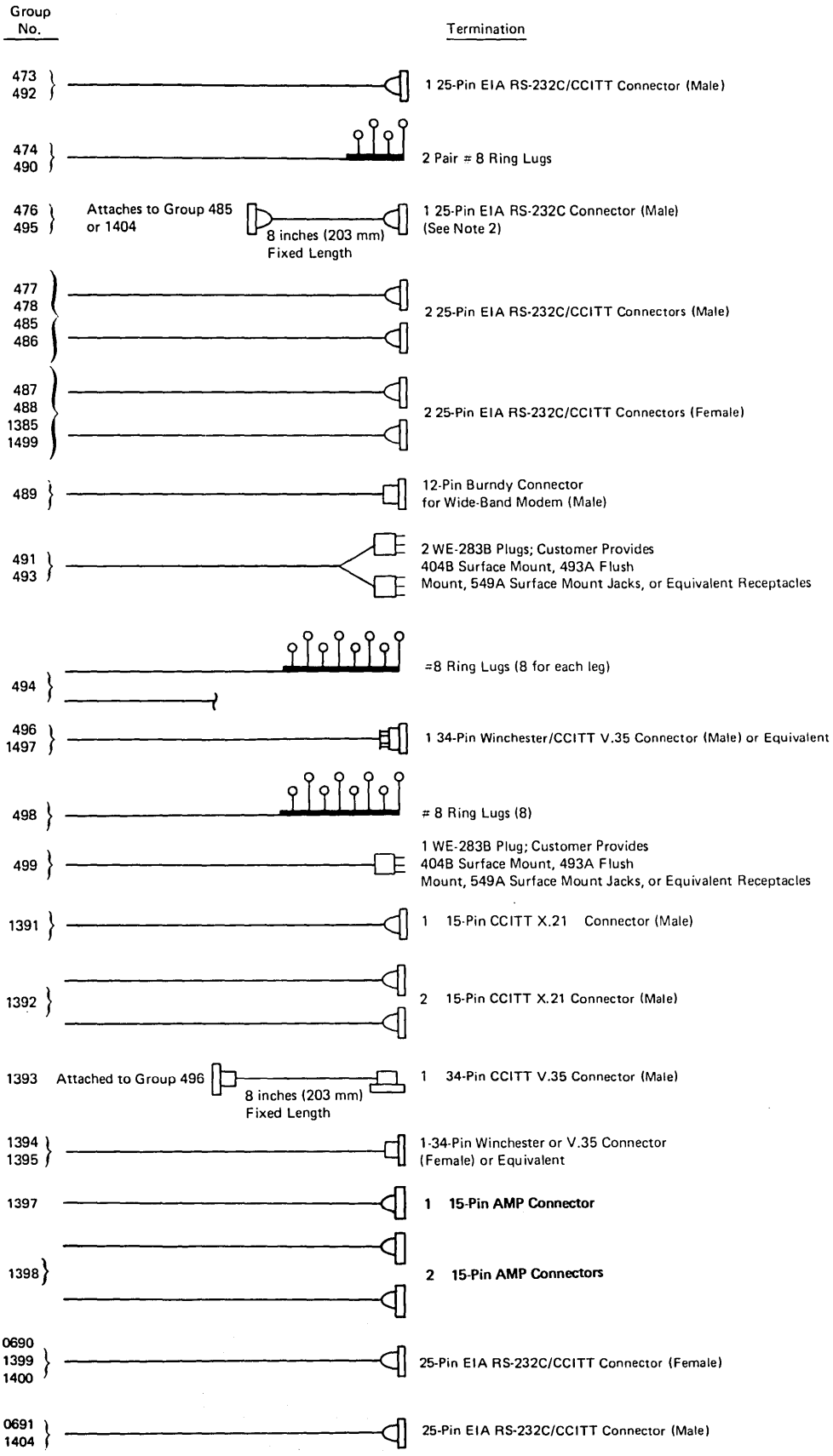
1. Total cable length of 60.96 meters (200 feet) (unless modified by general control-to-channel cabling schematic) is available to attach up to eight control units.
2. Cable group 1404 or 0691 may require either group 476 or 495 as specified below:
   a. Group 476 is required for switched network modems that use either "Ring-Indicate" or "Coupler-Cut-Through" on pin 23. (Pins 18 and 23 are not used.)
   b. Group 495 is required for modems using a contact closure interface between pins 19 and 20. Group 495 provides compatibility between the 3705 25-pin EIA RS-232C voltage interface and the modem contact closure interface. Cable includes a jumper between pins 19 and 20 and removes the "Data Terminal Ready" voltage from pin 20.
3. Power sequence and control; cable is optional.
4. The LS8 line set requires two cable groups 1391.
5. SF 6712 requires two cable groups 496 for attaching two half-duplex modems, or one cable group 1497 for attaching one duplex modem. Attachment of two half-duplex French 48K bps modem requires two cable groups 496 and two cable groups 1393. Attachment of one half-duplex French 48K bps modem requires one cable group 496 and one cable group 1393.
6. SF 6713 using a duplex modem requires one cable group 489. SF 6713 using two half-duplex modems requires two cable groups 489.
7. SF 6714 can handle a maximum of four autocall units. SF 6714 using four French Caducee autocall units requires two cable groups 1499. Otherwise, order two cable groups 486.
8. The number of communication lines/devices that can be attached to basic line attachment hardware in individual models of the 3705-80 and the maximum number of cable groups required for each model are:
   3705-80, M81–4 devices/lines–order 4 (maximum) of cable groups 1399, 1400/0690, or 1404/0691*
   3705-80, M82–10 devices/lines–order 10 (maximum) of cable groups 1399, 1400/0690, or 1404/0691*
   3705-80, M83–16 devices/lines–order 16 (maximum) of cable groups 1399, 1400/0690, or 1404/0691*
   3705-80, M84–10 devices/lines–order 4 (maximum) of cable groups 1399, 1400/0690, or 1404/0691*
   (for attaching 4 devices/lines) and order 6 (maximum) of cable group 1391
   (for attaching 6 lines)
   *A combination of cable groups 1399, 1400/0690, and 1404/0691 can be ordered; however, the number of cable groups ordered must not exceed the maximum number of groups shown.
9. The total cable length (including any directly attached terminal cable) must not exceed 30.48 meters (100 feet) for S/S operation at 2400 bps or 60.96 meters (200 feet) for S/S operation at line speeds up to and including 1200 bps.
10. The total cable length (including any directly-attached terminal cable) must not exceed 30.48 meters (100 feet).
11. The LS5 line set can handle two devices. SF 6715 requires one cable group 1394 to attach to each device. Total cable length, including the attached device cable, must not exceed 60.96 meters (200 feet).
12. For operation at 19.2K bps, cable length must not exceed 6.85 meters (22.5 feet).

Notes (Continued):

13. Three LS8 line sets are provided as basic hardware segments of the 3705-80 Model 84.
14. Order cable group 1400 for a fixed-length cable 13.5 meters (45 feet) long, if possible. Order cable group 0690 for a shorter cable of any length if cable group 1400 is not suitable. For a longer cable (maximum length of 35 meters [115 feet]), order a cable, part 1733746, on an MES order.
15. Order cable group 1404 for a fixed-length cable 13.5 meters (45 feet) long if possible. Order cable group 0691 for a shorter cable of any length if cable group 1404 is not suitable. For a longer cable (maximum of 35 meters [115 feet]), order a cable, part 1736733, on an MES order.

    When the DCE is an IBM 3863, 3864, or 3865 Modem, the maximum length is 100 meters (328 feet) if the suffix level of the modem (two alphabetic characters on the data tag) is FG or later for the U.S. and Americas/Far East, or KF or later for Europe/Middle East/Africa. For modems with an earlier suffix, the modem must have engineering change (EC) 344120 installed if data multiplexer feature 3260 *is not* installed, or EC 323406 if data multiplexer feature 3260 *is* installed to use the longer cable length.

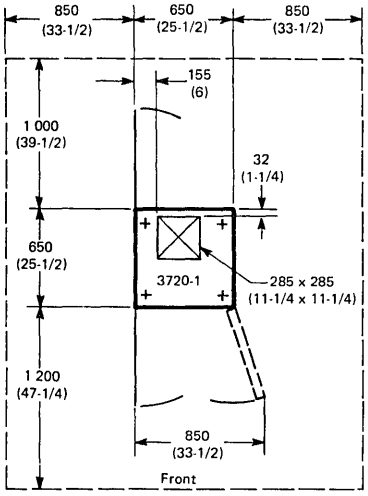
Cables for IBM and Non-IBM Devices

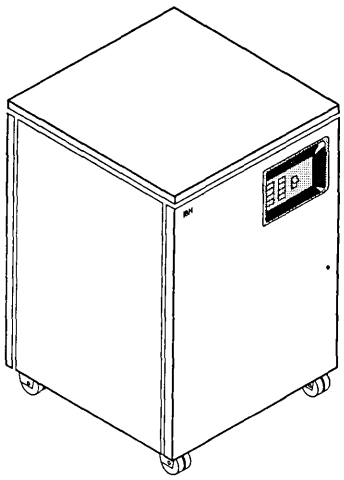


3720 COMMUNICATION CONTROLLER MODEL 1

PLAN VIEW (Metric Scale: 10 mm = 0.5 m)

English measurements are shown in parentheses.

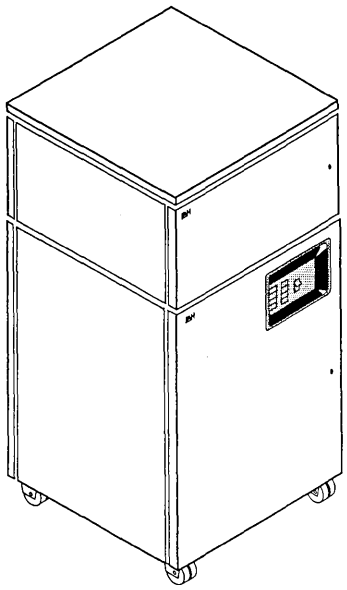




3720 Model 1

Notes:

1. The 3721 expansion unit is placed on top of the 3720 base unit, and therefore should be installed after the base unit is installed. The top cover of a 3720 Model 1 or Model 2 is removed when a 3721 expansion unit is installed and the top cover is placed on top of the 3721.
   When planning multiple base unit/expansion unit configurations, consider that unit weights and heat outputs are additive.
2. A ventilation system is contained within the 3720 Model 1. The 3721 expansion unit does not contain a ventilation system. When an expansion unit is installed on top of a base unit, the ventilation system of the base unit provides ventilation for the expansion unit.
   Direction of airflow is from top to bottom. To maintain airflow, the casters must not be removed from the 3720 Model 1.



3720 Model 1 with 3721 Expansion Unit

3720 COMMUNICATION CONTROLLER MODEL 1

SPECIFICATIONS*

Dimensions:

	Front	Side	Height
mm	650	650	1 000
(inches)	(25-1/2)	(25-1/2)	(39-1/2)

Service Clearances:

	Front	Rear	Right	Left
mm	1 200	1 000	850**	850**
(inches)	(47-1/4)	(39-1/2)	(33-1/2)**	(33-1/2)**

Weight: 155 kg (340 lb)

Heat Output: 515 W (1,755 BTU/hr)

Airflow:

	50 Hz	60 Hz
m^3/min	8.7	9.5
(cfm)	(300)	(330)

Power Requirements:

kVA	0.8***, 1.2†
Phases	1
Voltages (Nominal)	100-127, 200-240
Frequency	47-63 Hz
Plug	R&S, 3720
Connector	R&S, 3913
Receptacle	R&S, 3743
Power Cord Style	A1
Power Cord Length††	4.3 m (14 ft)

Environment, Operating:

Temperature	16°C-38°C (60°F-100°F)
Rel Humidity	8%-80%
Max Wet Bulb	23°C (73°F)

Environment, Nonoperating:

Temperature	10°C-43°C (50°F-110°F)
Rel Humidity	8%-80%
Max Wet Bulb	27°C (80°F)

Acoustical Data:

For definitions, refer to "Acoustics" in Chapter 3 of *IBM General Information Manual Installation Manual–Physical Planning,* GC22-7072 (no operator position).

	L_{WAd}		$<L_{pA}>_m$		I	T
	Operating (bels)	Idling (bels)	Operating (dB)	Idling (dB)		
*	7.6	7.6	56	56	No	No
**	7.0	7.0	51	51	No	No

*120 V, 60 Hz
**220 V, 50 Hz

Notes:

*For additional planning information on the 3720 Communication Controller Model 1, cable ordering information, and information on the 3721 expansion unit, refer to the *IBM 3720 and 3721 Communication Controller Planning and Site Preparation Guide,* GA33-0061.

**No service clearance is required at the two sides of the 3720 Model 1, so that units can be positioned side by side, except for the first and last unit in a row. They should be clear of walls and adjacent machines by 850 mm (33-1/2 inches).

***The given kVA values are the maximum possible. Whatever is the machine configuration or the machine voltage, the primary current will never exceed 12 amperes.

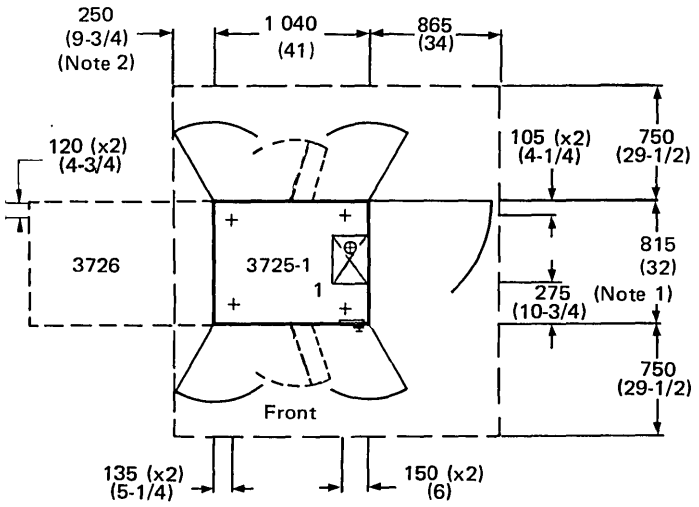
†With 3721 expansion unit installed.

††In Chicago, Illinois, USA, specify code 9986 for a 1.8-m (6-ft) cord.

3725 COMMUNICATION CONTROLLER MODEL 1

PLAN VIEW (Metric Scale: 10 mm = 0.5 m)

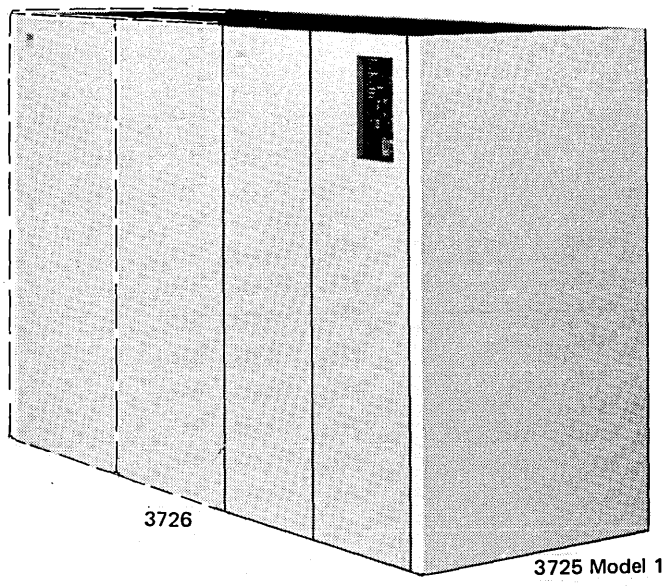
English measurements are shown in parentheses.



Notes:

1. If required, the width can be reduced to 750 mm (29-1/2 inches).
2. The service clearance can be reduced to 0 when a 3726 is installed or when another machine is abutted to the left side of the 3725 Model 1, if the covers can be opened as shown on the plan view.
3. A raised floor is not mandatory if the 3725 Model 1 has no channel connection. However, the cables should be protected with ramps or trenches.
4. Caster and cable hole locating dimensions are measured from edge of frame, not cover.
5. Ground plates are delivered with the 3725 Model 1. These plates are installed by the service representative during machine installation. Cutaways in the plates correspond to the existing cable hole shown in the plan view.

Cable Entry/Exit Number	Dimensions (Millimeters)	Dimensions (Inches)
1	320 x 250	12-1/2 x 9-3/4



3725 COMMUNICATION CONTROLLER MODEL 1

SPECIFICATIONS

Dimensions:

	Front	Side	Height
mm	1 040	815	1 525
(inches)	(41)	(32)	(60)

Service Clearances:

	Front	Rear	Right	Left
mm	750	750	865	250
(inches)	(29-1/2)	(29-1/2)	(34)	(9-3/4)

Weight: 400 kg (880 lb)

Heat Output:	*50 Hz*	*60 Hz*
W	1 900	1 900
(BTU/hr)	(6,500)	(6,500)

Airflow:	*50 Hz*	*60 Hz*
m^3/min	12.5	12.5
(cfm)	(430)	(430)

Power Requirements:	*50 Hz*	*60 Hz*
kVA	2.1	1.9
Phases	1	1
Voltages*	200, 220, 230, 240	200, 208, 220, 240
Frequency	50 (±0.5)	60 (±0.5)
Plug**	R&S, 3720	
Connector**	R&S, 3913	
Receptacle**	R&S, 3743	
Power Cord Style	A1	
Power Cord Length**	4.3 m (14 ft)	

Environment, Operating:

Temperature	16°C-38°C (60°F-100°F)
Rel Humidity	8%-80%
Max Wet Bulb	23°C (73°F)

Environment, Nonoperating:

Temperature	10°C-43°C (50°F-110°F)
Rel Humidity	8%-80%
Max Wet Bulb	27°C (80°F)

Notes:

* United States/Canada:
60 Hz: 208 V or 240 V
WT Americas/Far East:
50 Hz: 200 V, 220 V, 230 V, or 240 V
60 Hz: 200 V, 208 V, 220 V, or 240 V
WT Europe/Middle East/Africa:
50 Hz: 220 V, 230 V, or 240 V
60 Hz: 220 V

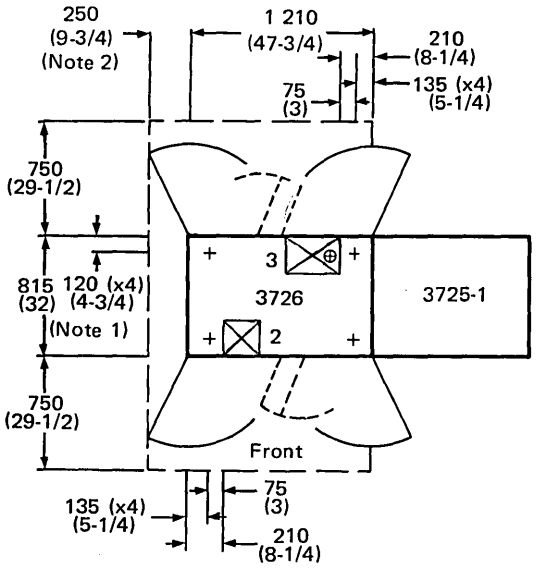
** In Chicago, Illinois, U.S.A., specify code 9986 for a 1.8-m (6-ft) cord.

Note: Although the maximum current consumption does not exceed 15 A, the power receptacle at the customer premises should be able to handle inrush current up to 20 A (to support quick on and off switching of the 3725 Model 1/3726).

3726 COMMUNICATION CONTROLLER EXPANSION

PLAN VIEW (Metric Scale: 10 mm = 0.5 m)

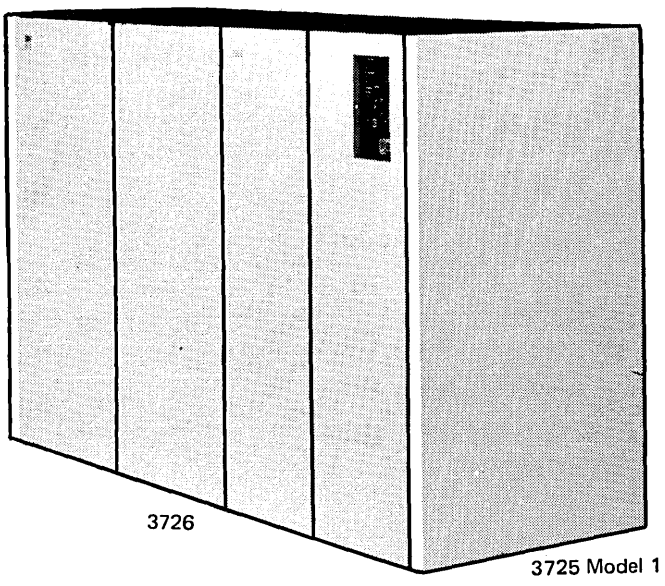
English measurements are shown in parentheses.



Notes:

1. If required, the width can be reduced to 750 mm (29-1/2 inches).
2. The service clearance can be reduced to 0 when another machine is abutted to the left side of the 3726, if the covers can be opened as shown on the plan view.
3. Caster and cable hole locating dimensions are measured from edge of frame, not cover.
4. Ground plates are delivered with the 3726. These plates are installed by the service representative during machine installation. Cutaways in the plates correspond to the existing cable holes shown in the plan view.

Cable Entry/Exit Number	Dimensions (Millimeters)	Dimensions (Inches)
2	250 x 250	9-3/4 x 9-3/4
3	360 x 250	14-1/4 x 9-3/4



3726 COMMUNICATION CONTROLLER EXPANSION

SPECIFICATIONS

Dimensions:

	Front	Side	Height
mm	1 210	815	1 525
(inches)	(47-3/4)	(32)	(60)

Service Clearances:

	Front	Rear	Right	Left
mm	750	750	0	250
(inches)	(29-1/2)	(29-1/2)	(0)	(9-3/4)

Weight: 600 kg (1 320 lb)

Heat Output:	*50 Hz*	*60 Hz*
W	2 500	2 400
(BTU/hr)	(8,550)	(8,200)

Airflow:	*50 Hz*	*60 Hz*
m^3/min	12.5	12.5
(cfm)	(430)	(430)

Power Requirements:	*50 Hz*	*60 Hz*
kVA	2.5	2.4
Phases	1	1
Voltages*	200, 220, 230, 240	200, 208, 220, 240
Frequency	50 (±0.5)	60 (±0.5)
Plug**	R&S, 3720	
Connector**	R&S, 3913	
Receptacle**	R&S, 3743	
Power Cord Style	A1	
Power Cord Length**	4.3 m (14 ft)	

Environment, Operating:

Temperature	16°-38°C (60°F-100°F)
Rel Humidity	8%-80%
Max Wet Bulb	23°C (73°F)

Environment, Nonoperating:

Temperature	10°C-43°C (50°F-110°F)
Rel Humidity	8%-80%
Max Wet Bulb	27°C (80°F)

Notes:

* United States and Canada:
60 Hz: 208 V or 240 V
WT Americas/Far East:
50 Hz: 200 V, 220 V, 230 V, or 240 V
60 Hz: 200 V, 208 V, 220 V, or 240 V
WT Europe/Middle East/Africa:
50 Hz: 220 V, 230 V, or 240 V
60 Hz: 220 V

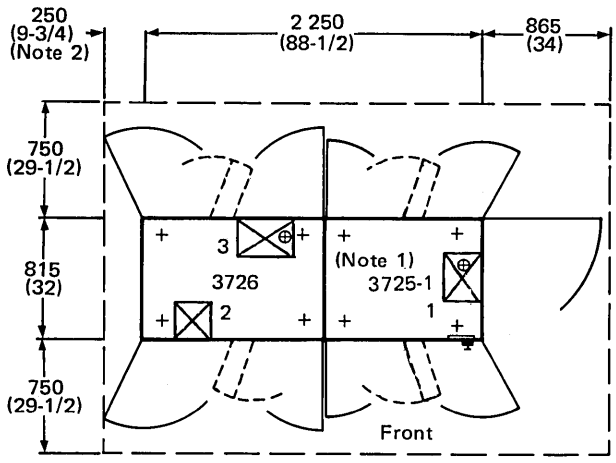
** In Chicago, Illinois, U.S.A., specify code 9986 for a 1.8-m (6-ft) cord.

Note: Although the maximum current consumption does not exceed 15 A, the power receptacle at the customer premises should be able to handle inrush current up to 20 A (to support quick on and off switching of the 3725 Model 1/3726).

3725 MODEL 1/3726 MAXIMUM CONFIGURATION

PLAN VIEW (Metric Scale: 10 mm = 0.5 m)

English measurements are shown in parentheses.



Notes:

1. The right side of the 3726 is bolted to the left side of the 3725 Model 1. The frames must be separated for moving.
2. The service clearance can be reduced to 0 when another machine is abutted to the left side of the 3726, if the covers can be opened as shown on the plan view.

When the 3725 Model 1 and 3726 are bolted together, the front dimension is 2 250 mm (88-1/2 in.)

For weight, heat output, airflow, and power requirements, add the 3725 Model 1 specifications to the 3726 specifications.

OPERATOR CONSOLES FOR 3725 MODEL 1/3726

The operator console for the 3725 Model 1 is the IBM 3727 Operator Console, which consists of three elements: a keyboard, a logic, and a display.

One primary console is required within 5 m (16 ft) of the 3725 Model 1 (cable entry/exit hole) with no intervening walls, doors, or obstructions.

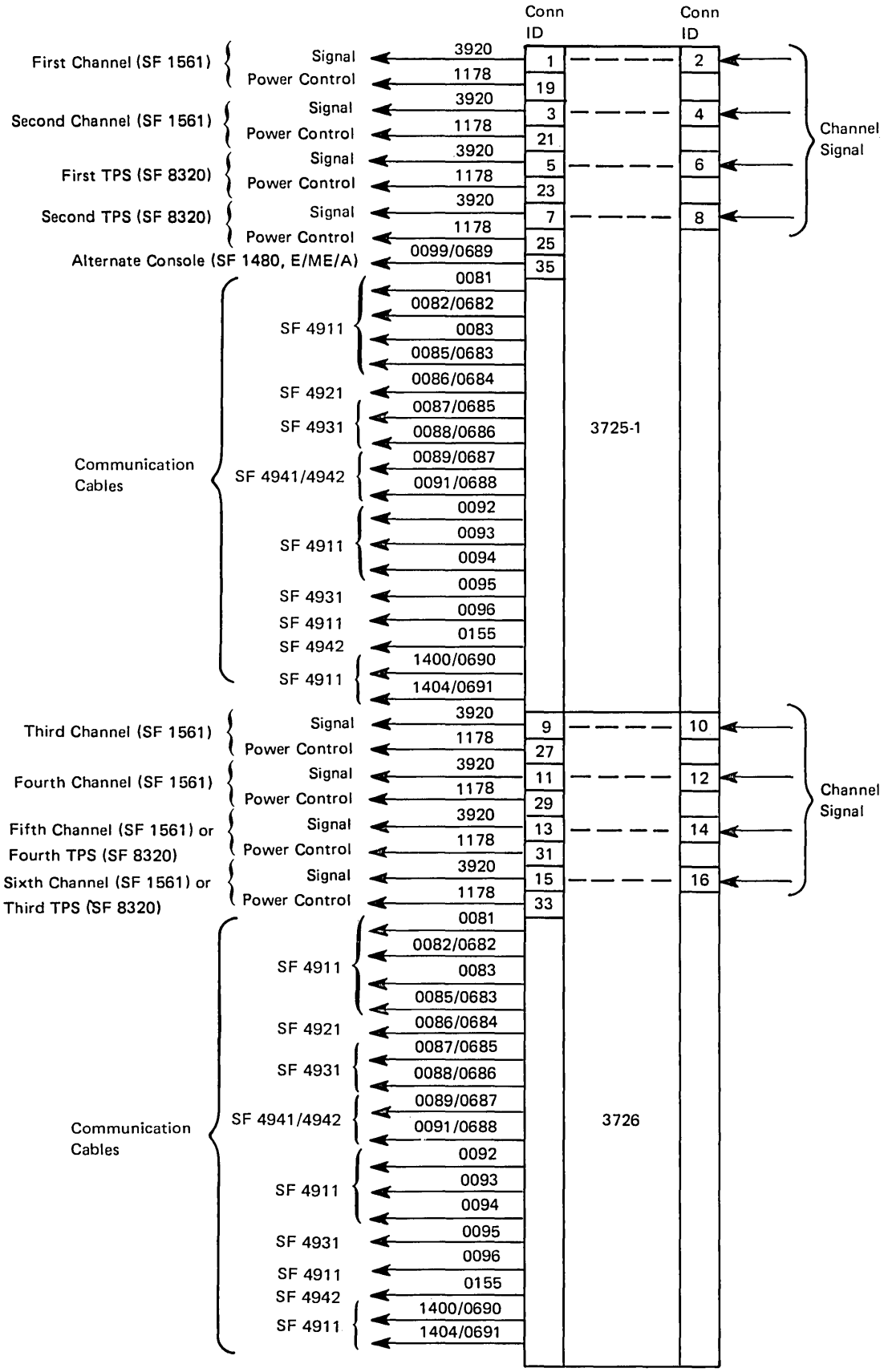
An alternate operator console (optional) may be connected to the 3725 Model 1 by a 150-m (492-ft) cable. This cable must be ordered. (See the cabling schematic on page 3725/3726.6.)

The customer must supply tables for the consoles. The recommended table height is 735 mm (29 in.)

CHANNEL CABLES: SPECIAL CONSIDERATIONS

If the 3725/3726 is to be installed in the same channel string as a device using the command retry and/or bus extension features, System/370 type channel interface cables must be ordered.

3725 MODEL 1/3726 COMMUNICATION CONTROLLER AND EXPANSION CABLING SCHEMATIC



CABLE ROUTING TO 3725 MODEL 1/3726 COMMUNICATION CONTROLLER AND EXPANSION

Channel Cables

Feature Code	*Conn ID*	*Frame (Note 4)*	*Cable Hole*	*Comments*	*Notes*
1561	2	01	1	First channel	
1561	4	01	1	Second channel	
1561	10	02	3	Third channel	3
1561	12	02	3	Fourth channel	3
1561	14	02	3	Fifth channel	1, 3
1561	16	02	3	Sixth channel	2, 3
8320	6	01	1	First two-processor switch	
8320	8	01	1	Second two-processor switch	
8320	16	02	3	Third two-processor switch	2, 3
8320	14	02	3	Fourth two-processor switch	1, 3

Notes:
1. Fifth channel (SF 1561) and fourth two-processor switch (SF 8320) are mutually exclusive.
2. Sixth channel (SF 1561) and third two-processor switch (SF 8320) are mutually exclusive.
3. 3726 only.
4. Frame 01 is the 3725 Model 1 base frame; frame 02 is the 3726 expansion frame.

Communication Cables

Feature Code	*Feature Quantity*	*Frame*	*Cable Hole*	*Comments*
3602 4771/2	0 0	01	1	Line address 0-63
3602 4771/2	0 1	01	1	Line address 64-95
3602 4771/2	0 2	02	2	Line address 96-127
3602 4771/2	0 3	02	2	Line address 128-159
3602 4771/2	0 4	02	2	Line address 160-191
3602 4771/2	1 5	02	3	Line address 192-223
3602 4771/2	1 6	02	3	Line address 224-255

Note: No connector ID is required for communication cables. Contact your IBM representative.

3725 MODEL 1/3726 COMMUNICATION CONTROLLER AND EXPANSION CABLE ORDERING

Cable	*Country*	*Ordering Instructions*
Power cable and primary operator console signal cable	All countries	Do not order these cables. They are supplied with a fixed length: Power cable: Chicago, Illinois, U.S.A. (SC 9986): 1.8 m (6 ft) Other locations: 4.3 m (14 ft) Primary operator console signal cable: All locations: 7.5 m (25 ft)
Channel and communication cables, and alternate operator console signal cable	North America, Latin America, Taiwan	1. Order channel cables by cable group number, up to the maximum length, as shown under "3725 Model 1/3726 Custom-Length Cables." 2. Whenever possible, order communcation cables and alternate operator console signal cable at standard lengths by group number, as shown under "3725 Model 1/3726 Standard Communication Cables for North America, Latin America, and Taiwan." 3. If the standard lengths shown are not suitable, order custom-length cables as shown under "3725 Model 1/3726 Custom-Length Cables."
	Far East, except Taiwan	Order all cables by cable group number as shown under "3725 Model 1/3726 Custom-Length Cables."
	WT Europe/Middle East/Africa (E/ME/A) (SC 2999)	60-Hz Machines: All 60-Hz machines are shipped from Raleigh, North Carolina, U.S.A. Cables for these machines must be ordered by an exception order telex according to the exception order process. 50-Hz Machines, Standard Cables: If the standard cables supplied automatically with the machines meet the customer's requirements, do not order cables (see "Standard Cables" that follows). 50-Hz Machines, Nonstandard Cables: If the types and/or lengths of the standard cables do not meet the customer's requirements: 1. Order the cables through an exception telex order. 2. Use the cable part numbers. 3. Specify the cable length up to the maximum length (see "3725 Model 1/3726 Custom-Length Cables.")

Standard Cables

In WT Europe/Middle East/Africa (E/ME/A), the following cables are automatically supplied, at the standard lengths, according to the ordered features:

Feature Code	*Name*	*Country*	*Cable Group*	*No. of Cable Groups*	*Standard Length* *m*	*(ft)*
1480	Alternate operator console	E/ME/A	0099	1	13.5	(45)
1561	Channel adapter	E/ME/A	3920	1	7.5	(25)
			1178	1	18.0	(60)
4911	LIC1	E/ME/A except UK and Belgium	1404	4	13.5	(45)
		UK	0092	4	13.5	(45)
		Belgium	0096	4	13.5	(45)
4921	LIC2	E/ME/A	0086	1	13.5	(45)
4931	LIC3	E/ME/A except France	0087	1	13.5	(45)
		France	0095	1	13.5	(45)
4941	LIC4A	E/ME/A	0089	4	13.5	(45)
4942	LIC4B	E/ME/A except France	0091	1	30.0	(100)
		France Transfix	0155	1	13.5	(45)
4991	TIC1	E/ME/A	–	1	9.0	(30)
8320	TPS	E/ME/A	3920	1	12.0	(40)
			1178	1	18.0	(60)

3725 MODEL 1/3726 STANDARD COMMUNICATION CABLES FOR NORTH AMERICA, LATIN AMERICA, AND TAIWAN

Order the standard length cable groups shown below if possible. For shorter cables or for an alternate operator console cable up to 20-meters (64-feet) long, order the cable groups shown under "3725 Model 1/3726 Custom-Length Cables." For longer cables, order cables by part number on an MES order as shown under "3725 Model 1/3726 Custom-Length Cables."

Feature Code	*Group No.*	*No. of Cables*	*Length*		*Comments*	*Notes*
			m	*(ft)*		
4911 (L1C1)	0099	1	13.5	(45)	Alternate operator console	
	0082	1	13.5	(45)	V.25/RS-366 autocall unit	1, 3
	0085	1	13.5	(45)	V.24/RS-232C direct attachment, asynchronous	1, 3
	1400	1	13.5	(45)	V.24/RS-232C direct attachment, synchronous	1, 3
	1404	1	13.5	(45)	V.24/RS-232C DCE	1, 3
4921 (LIC2)	0086	1	13.5	(45)	Wide-band DCE	2, 3
4931 (LIC3)	0087	1	13.5	(45)	V.35 DCE	2, 3
	0088	1	30	(100)	V.35 direct attachment	2, 3
4941 (LIC4A)	0089	1	13.5	(45)	X.21 DCE	1, 3
	0091	1	30	(100)	X.21 direct attachment	1, 3
4942 (LIC4B)	0089	1	13.5	(45)	X.21 DCE	2, 3
	0091	1	30	(100)	X.21 direct attachment	2, 3
4991 (TIC1)	1666	1	23	(75)	IBM Token-Ring Network attachment	2, 3, 4

Notes:

1. Four cable groups must be ordered for each LIC.
2. One cable group must be ordered for each LIC or TIC.
3. *Introduction to the IBM 3725 Model 1 Communication Controller,* GA33-0010, lists terminals that may be connected to various LIC types.
4. When the 3725 is to be installed in an IBM Token-Ring Network where IBM Cabling System Type 3 Specified Media (telephone twisted pair) is used, a Data Grade Media to Type 3 Filter is required between the IBM 3725 TIC cable and the telephone twisted pair wiring. Refer to *IBM Token-Ring Network Twisted Pair Media Guide,* GA27-3714. Consult the IBM Token-Ring Network Installation Planning Representative for further information.

				U.S. and A/FE Regular Order		*MES Order or E/ME/A Telex Order*						
				Max Length		*Max Length*						
Feature Code	*Group No.*	*No. of Cables*	*Conn ID*	*m*	*(ft)*	*m*	*(ft)*	*Part*	*Frame*	*Cable Hole*	*Comments*	*Notes*
1480	0689	1	35	20	(64)	150	(492)	2667243	01	1	Alternate operator console	10
1561	3920	2	1	62	(200)	62	(200)	5353920	01	1	First channel	
	1178	1	19	45	(150)	45	(150)	5351178	01	1	Power sequence and control, first channel (optional)	
1561	3920	2	3	62	(200)	62	(200)	5353920	01	1	Second channel	
	1178	1	21	45	(150)	45	(150)	5351178	01	1	Power sequence and control, second channel (optional)	
1561	3920	2	9	62	(200)	62	(200)	5353920	02	3	Third channel	
	1178	1	27	45	(150)	45	(150)	5351178	02	3	Power sequence and control, third channel (optional)	
1561	3920	2	11	62	(200)	62	(200)	5353920	02	3	Fourth channel	
	1178	1	29	45	(150)	45	(150)	5351178	02	3	Power sequence and control, fourth channel (optional)	
1561	3920	2	13	62	(200)	62	(200)	5353920	02	3	Fifth channel	8
	1178	1	31	45	(150)	45	(150)	5351178	02	3	Power sequence and control, fifth channel (optional)	8
1561	3920	2	15	62	(200)	62	(200)	5353920	02	3	Sixth channel	9
	1178	1	33	45	(150)	45	(150)	5351178	02	3	Power sequence and control, sixth channel (optional)	9
4911 (LIC1)	0081	1	Not Required	13.5	(45)	35	(115)	2667349, 6089076*	01, 02	1, 2, 3	V.24 DCE, Japan NTT	4, 7
	0083	1				35	(115)	1733914, 6406254*	01, 02	1, 2, 3	V.25 auto-call unit, French Caducee	4
	0092	2				35	(115)	1736733, 1743584, 6089075*	01, 02	1, 2, 3	V.24 DCE, UK	4, 7
	0093	1		13.5	(45)	35	(115)	2667696, 6089078*	01, 02	1, 2, 3	V.25 NTT auto-call unit, Japan	4
	0094	2				35	(115)	1733747, 6089077*, 674570	01, 02	1, 2, 3	V.25 auto-call unit, UK	4
	0096	2				35	(115)	1736733, 1489985, 6089075*	01, 02	1, 2, 3	V.24 DCE, Belgium	4, 7

*LIC1 cables are 13.5 m (45 ft) or less only.

				U.S. and A/FE Regular Order		*MES Order or E/ME/A Telex Order*						
				Max Length		*Max Length*						
Feature Code	*Group No.*	*No. of Cables*	*Conn ID*	*m*	*(ft)*	*m*	*(ft)*	*Part*	*Frame*	*Cable Hole*	*Comments*	*Notes*
4911 (LIC1) (continued)	0682	1	Not Required	13.5	(45)	35	(115)	1733747, 6089077*	01, 02	1, 2, 3	V.25/RS-366 auto-call unit (except French Caducee, UK, Japan)	4
	0683	1		13.5	(45)	35	(115)	2667351	01, 02	1, 2, 3	V.24/RS-232C direct attachment, asynchronous	4
	0690	1		13.5	(45)	Note 1		1733746	01, 02	1, 2, 3	V.24/RS-232C direct attachment, synchronous	4
	0691	1		10.6	(35)	35	(115)	1736733, 6089075*	01, 02	1, 2, 3	V.24/RS-232C DCE (except Japan NTT, UK, Belgium)	4, 7
4921 (LIC2)	0684	1		10.6	(35)	13.5	(45)	1733817	01, 02	1, 2, 3	Wide-band modem	5
4931 (LIC3)	0095	2		10.6	(35)	35	(115)	1733820, 1749352	01, 02	1, 2, 3	V.35 DCE, French PTT	5, 11
	0685	1		10.6	(35)	35	(115)	1733820	01, 02	1, 2, 3	V.35 DCE (except French PTT modem)	5, 11
	0686	1		13.5	(45)	150	(492)	1733822	01, 02	1, 2, 3	V.35 direct attachment	5, 12
4941 (LIC4A)	0687	1		13.5	(45)	Note 2		1733825	01, 02	1, 2, 3	X.21 DCE	4
	0688	1		30	(100)	Note 3		2667352	01, 02	1, 2, 3	X.21 direct attachment	4
4942 (LIC4B)	0155	1				Note 2		2667777	01, 02	1, 2, 3	X.21 DCE, French Transfix	5
	0687	1		13.5	(45)	Note 2		1733825	01, 02	1, 2, 3	X.21 DCE (except French Transfix)	5
	0688	1		30	(100)	Note 3		2667352	01, 02	1, 2, 3	X.21 direct attachment	5
4991 (TIC1)	1667	1		23	(75)	76	(250)	61X3229**	01, 02	1, 2, 3	IBM Token-Ring Network attachment	5, 13
8320	3920	2	5	62	(200)	62	(200)	5353920	01	1	First two-processor switch	
	1178	1	23	45	(150)	45	(150)	5351178	01	1	Power sequence and control, first TPS (optional)	
8320	3920	2	7	62	(200)	62	(200)	5353920	01	1	Second two-processor switch	
	1178	1	25	45	(150)	45	(150)	5351178	01	1	Power sequence and control, second TPS (optional)	
8320	3920	2	15	62	(200)	62	(200)	5353920	02	2	Third two-processor switch	9
	1178	1	33	45	(150)	45	(150)	5351178	02	2	Power sequence and control, third TPS (optional)	9
8320	3920	2	13	62	(200)	62	(200)	5353920	02	2	Fourth two-processor switch	8
	1178	1	31	45	(150)	45	(150)	5351178	02	2	Power sequence and control, fourth TPS (optional)	8

*LIC1 cables are 13.5 m (45 ft) or less only.

**Not for E/ME/A. For longer or shorter than standard cables for E/ME/A, contact your referenced distributors of the IBM Cabling System. The length of each TIC cable must meet IBM Cabling System specifications.

3725 MODEL 1/3726 CUSTOM-LENGTH CABLES (Continued)

Notes:

1. A maximum distance of 35 m (115 ft) meets the CCITT specifications. However, if the terminal is a 3725, it operates correctly up to 150 m (492 ft).
2. Maximum length:

Up to 56,000 bps	150 m (492 ft)
Up to 128,000 bps	60 m (197 ft)
Above 128,000 bps	30 m (98 ft)

3. The maximum distance to meet the CCITT specifications is:

Up to 56,000 bps	150 m (492 ft)
Above 56,000 bps	60 m (197 ft)

   However, if the terminal is a 3725, it operates correctly:

Up to 19,200 bps	600 m (1,969 ft)
Up to 64,000 bps	300 m (984 ft)
Up to 128,000 bps	150 m (492 ft)
Up to 256,000 bps	60 m (200 ft)

4. Four cable groups can be ordered for each LIC.
5. One cable group can be ordered for each LIC or TIC.
6. *Introduction to the IBM 3725 Model 1 Communication Controller,* GA33-0100, lists the terminals that may be connected to various LIC types.
7. When the DCE is an IBM 3863, 3864, or 3865 Modem, the maximum length is 100 m (328 ft) if one of the following conditions is fulfilled:
   a. The suffix level (two alphabetic characters on the date tag) is FG or later for U.S. and A/FE, or KF or later for E/ME/A.
   b. If the suffix level is earlier with data multiplexer feature 3260 not installed, the modem must have EC 344120 installed.
   c. If the suffix level is earlier with data multiplexer feature 3260 installed, the modem must have EC 323406 installed.
8. Fifth channel (SF 1561) and fourth two-processor switch (SF 8320) are mutually exclusive.
9. Sixth channel (SF 1561) and third two-processor switch (SF 8320) are mutually exclusive.
10. Feature 1480 is required in E/ME/A only.
11. For speeds $\geq$ 64,000 bps, the maximum cable length is 13.5 m (45 ft).
12. For speeds $\geq$ 64,000 bps, the maximum cable length is 35 m (115 ft).
13. When the 3725 is to be installed in an IBM Token-Ring Network where IBM Cabling System Type 3 Specified Media (telephone twisted pair) is used, a Data Grade Media to Type 3 Filter is required between the IBM 3725 TIC cable and the telephone twisted pair wiring. Refer to *IBM Token-Ring Network Twisted Pair Media Guide*, GA27-3714. Consult the IBM Token-Ring Network Installation Planning Representative for further information.

3725 MODEL 1/3726 COMMUNICATION CONTROLLER AND EXPANSION TRANSMISSION CABLE TERMINATION

Cable Group	*Interface*	*Connector*		
		Male/Female	*No. of Pins*	*Type*
0081	V.24 DCE (Japan)	Male	25	NTT with test/operate switch
0082	V.25/RS-366 autocall unit (except French Caducee, Japan, and UK)	Male	25	ISO 2110
0083	V.25 autocall unit (French Caducee)	Female	25	ISO 2110
0085	V.24/RS-232C direct attachment (asynchronous)	Female	25	ISO 2110
0086	Wide-band DCE	Male	12	MD 12 MPX
0087	V.35 DCE (except French PTT modems)	Male	34	ISO/DIS 2593
0088	V.35 direct attachment	Female	34	ISO/DIS 2593
0089	X.21 DCE	Male	15	ISO 4903
0091	X.21 direct attachment	Female	15	ISO 4903
0092	V.24 DCE (UK) (Note 1)	Male	25	ISO 2110
0093	V.25/NTT autocall unit (Japan)	Male	25	NTT with test/operate switch
0094	V.25 autocall unit (UK) (Note 2)	Male	25	ISO 2110
0095	V.35 DCE (French PTT modems) (Note 3)	Male	34	ISO/DIS 2593
0096	V.24 DCE (Belgium) (Note 4)	Male	25	ISO 2110
0155	French Transfix	Male	15	ISO 4903
1400	V.24/RS-232C direct attachment (synchronous)	Female	25	ISO 2110
1404	V.24/RS-232C DCE (except Japan, Belgium, and UK)	Male	25	ISO 2110

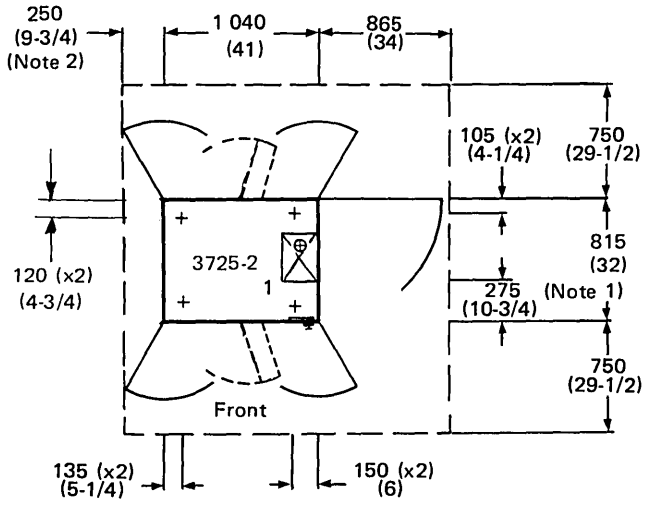
Notes:

1. Cable group 0092 includes cable 0092A and cable adapter 0092B.
2. Cable group 0094 includes cable 0094A and cable adapter 0094B.
3. Cable group 0095 includes cable 0095A and cable adapter 0095B.
4. Cable group 0096 includes cable 0096A and cable adapter 0096B.

3725 COMMUNICATION CONTROLLER MODEL 2

PLAN VIEW (Metric Scale: 10 mm = 0.5 m)

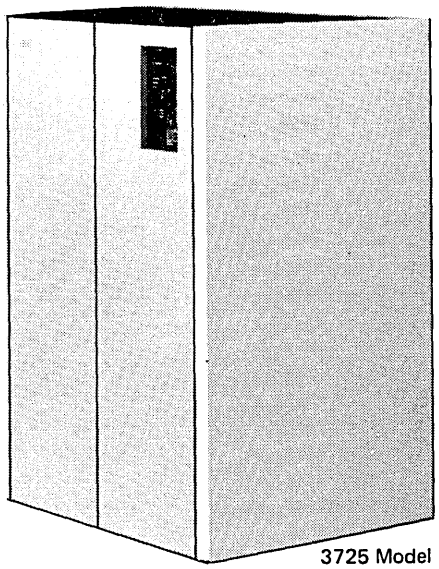
English measurements are shown in parentheses.



Notes:

1. If required, the width can be reduced to 750 mm (29-1/2 inches).
2. The service clearance can be reduced to 0 when another machine is abutted to the left side of the 3725 Model 2, if the covers can be opened as shown on the plan view.
3. A raised floor is not mandatory if the 3725 Model 2 has no channel connection. However, the cables should be protected with ramps or trenches.
4. Caster and cable hole locating dimensions are measured from edge of frame, not cover.
5. Ground plates are delivered with the 3725 Model 2. These plates are installed by the service representative during machine installation. Cutaways in the plates correspond to the existing cable hole shown in the plan view.

Cable Entry/Exit Number	Dimensions (Millimeters)	Dimensions (Inches)
1	320 x 250	12-1/2 x 9-3/4



3725 Model 2

3725 COMMUNICATION CONTROLLER MODEL 2

SPECIFICATIONS

Dimensions:

	Front	Side	Height
mm	1 040	815	1 525
(inches)	(41)	(32)	(60)

Service Clearances:

	Front	Rear	Right	Left
mm	750	750	865	250
(inches)	(29-1/2)	(29-1/2)	(34)	(9-3/4)

Weight: 400 kg (880 lb)

Heat Output:	*50 Hz*	*60 Hz*
W	1 900	1 900
(BTU/hr)	(6,500)	(6,500)

Airflow:	*50 Hz*	*60 Hz*
m^3/min	12.5	12.5
(cfm)	(430)	(430)

Power Requirements:	*50 Hz*	*60 Hz*
kVA	2.1	1.9
Phases	1	1
Voltages*	200, 220, 230, 240	200, 208, 220, 240
Frequency	50 (±0.5)	60 (±0.5)
Plug		R&S, 3720
Connector		R&S, 3913
Receptacle		R&S, 3743
Power Cord Style	A1	
Power Cord Length**	4.3 m (14 ft)	

Note: Although the maximum current consumption does not exceed 15 A, the power receptacle at the customer premises should be able to handle inrush current up to 20 A (to support quick on and off switching of the 3725 Model 2).

Environment, Operating:

Temperature	16°C-38°C (60°F-100°F)
Rel Humidity	8%-80%
Max Wet Bulb	23°C (73°F)

Environment, Nonoperating:

Temperature	10°C-43°C (50°F-110°F)
Rel Humidity	8%-80%
Max Wet Bulb	27°C (80°F)

Notes:

* United States/Canada:
60 Hz: 208 V or 240 V
WT Americas/Far East:
50 Hz: 200 V, 220 V, 230 V, or 240 V
60 Hz: 200 V, 208 V, 220 V, or 240 V
WT Europe/Middle East/Africa:
50 Hz: 220 V, 230 V, or 240 V
60 Hz: 220 V

** In Chicago, Illinois, U.S.A., specify code 9986 for a 1.8-m (6-ft) cord.

OPERATOR CONSOLES FOR THE 3725 MODEL 2

The operator console for the 3725 Model 2 is the IBM 3727 Operator Console, which consists of three elements: a keyboard, a logic, and a display.

One primary console is required within 5 m (16 ft) of the 3725 Model 2 (cable entry/exit hole) with no intervening walls, doors, or obstructions.

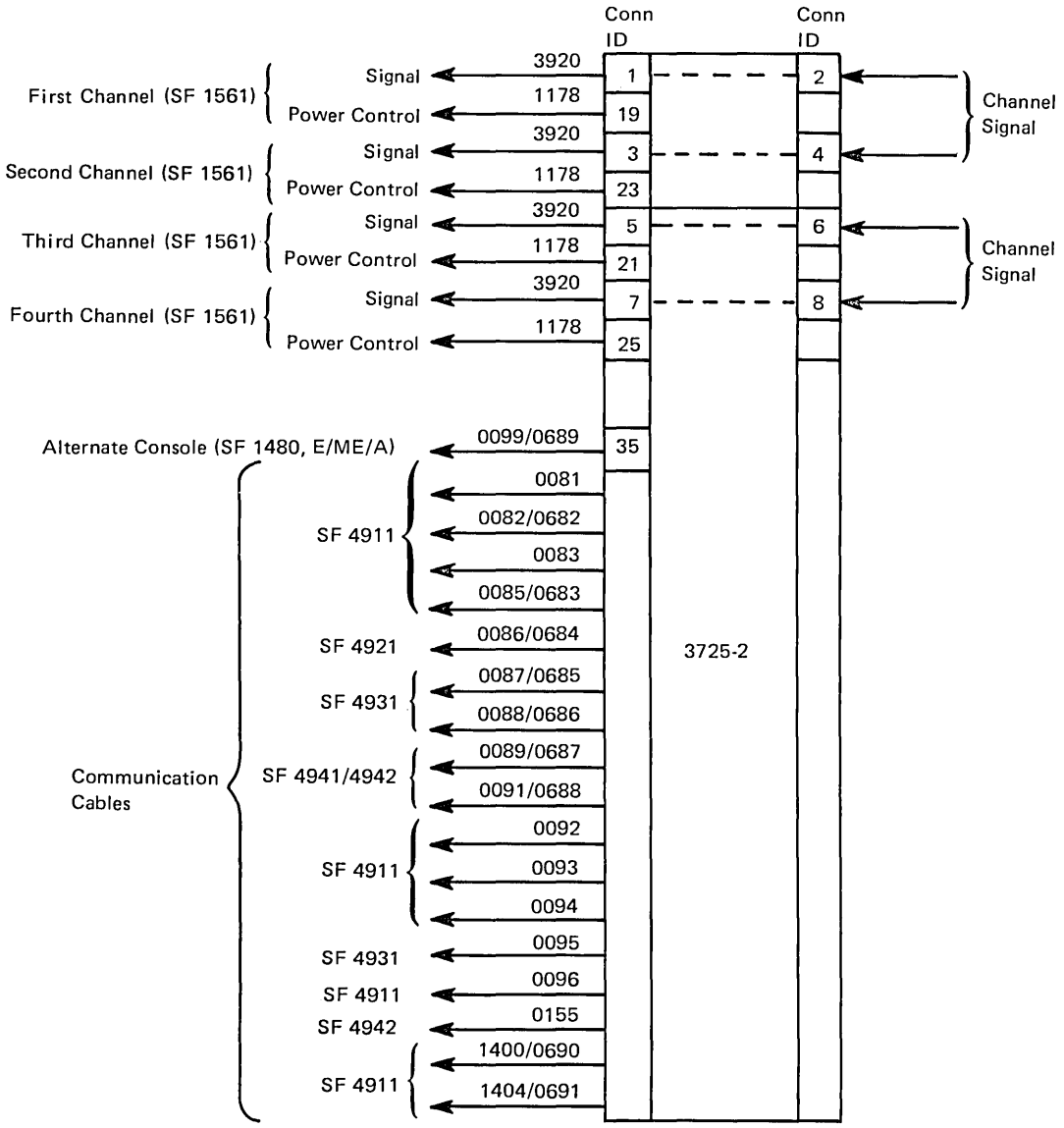
An alternate operator console (optional) may be connected to the 3725 Model 2 by a 150-m (492-ft) cable. This cable must be ordered. (See the cabling shcematic on page 3725/3726.15.)

The customer must supply tables for the consoles. The recommended table height is 735 mm (29 in.).

CHANNEL CABLES: SPECIAL CONSIDERATIONS

If the 3725 Model 2 is to be installed in the same channel string as a device using the command retry and/or bus extension features, System/370 type channel interface cables must be ordered.

3725 COMMUNICATION CONTROLLER MODEL 2 CABLING SCHEMATIC



3725 COMMUNICATION CONTROLLER MODEL 2 CABLE ORDERING

Cable	*Country*	*Ordering Instructions*
Power cable and primary operator console signal cable	All countries	Do not order these cables. They are supplied with a fixed length: Power cable: Chicago, Illinois, U.S.A. (SC 9986): 1.8 m (6 ft) Other locations: 4.3 m (14 ft) Primary operator console signal cable: All locations: 7.5 m (25 ft)
Channel and communication cables, and alternate operator console signal cable	North America, Latin America, Taiwan	1. Order channel cables by cable group number, up to the maximum length, as shown under "3725 Model 2 Custom-Length Cables." 2. Whenever possible, order communcation cables and alternate operator console cable at standard lengths by group number, as shown under "3725 Model 2 Standard Communication Cables for North America, Latin America, and Taiwan." 3. If the standard lengths shown are not suitable, order custom-length cables as shown under "3725 Model 2 Custom-Length Cables."
	Far East, except Taiwan	Order all cables by cable group number as shown under "3725 Model 2 Custom-Length Cables."
	WT Europe/Middle East/ Africa (E/ME/A) (SC 2999)	60-Hz Machines: All 60-Hz machines are shipped from Raleigh, North Carolina, U.S.A. Cables for these machines must be ordered by an exception order telex according to the exception order process. 50-Hz Machines, Standard Cables: If the standard cables supplied automatically with the machines meet the customer's requirements, do not order cables (see "Standard Cables" that follows). 50-Hz Machines, Nonstandard Cables: If the types and/or lengths of the standard cables do not meet the customer's requirements: 1. Order the cables through an exception telex order. 2. Use the cable part numbers. 3. Specify the cable length up to the maximum length (see "3725 Model 2 Custom-Length Cables").

Standard Cables

In WT Europe/Middle East/Africa (E/ME/A), the following cables are automatically supplied, at the standard lengths, according to the ordered features:

Feature Code	*Name*	*Country*	*Cable Group*	*No. of Cable Groups*	*Standard Length m*	*(ft)*
1480	Alternate operator console	E/ME/A	0099	1	13.5	(45)
1561	Channel adapter	E/ME/A	3920	1	7.5	(25)
			1178	1	18.0	(60)
4911	LIC1	E/ME/A except UK and Belgium	1404	4	13.5	(45)
		UK	0092	4	13.5	(45)
		Belgium	0096	4	13.5	(45)
4921	LIC2	E/ME/A	0086	1	13.5	(45)
4931	LIC3	E/ME/A except France	0087	1	13.5	(45)
		France	0095	1	13.5	(45)
4941	LIC4A	E/ME/A	0089	4	13.5	(45)
4942	LIC4B	E/ME/A except France	0091	1	30.0	(100)
		France Transfix	0155	1	13.5	(45)
4991	TIC1	E/ME/A	–	1	9.0	(30)

3725 MODEL 2 STANDARD COMMUNICATION CABLES FOR NORTH AMERICA, LATIN AMERICA, AND TAIWAN

Order the standard length cable groups shown below if possible. For shorter cables or for an alternate operator console signal cable up to 20 meters (64 feet) long, order the cable groups shown under "3725 Model 2 Custom-Length Cables." For longer cables, order cables by part number on an MES order as shown under "3725 Model 2 Custom-Length Cables."

Feature Code	*Group No.*	*No. of Cables*	*Length*		*Comments*	*Notes*
			m	*(ft)*		
4911 (L1C1)	0099	1	13.5	(45)	Alternate operator console	
	0082	1	13.5	(45)	V.25/RS-366 autocall unit	1, 3
	0085	1	13.5	(45)	V.24/RS-232C direct attachment, asynchronous	1, 3
	1400	1	13.5	(45)	V.24/RS-232C direct attachment, synchronous	1, 3
	1404	1	13.5	(45)	V.24/RS-232C DCE	1, 3
4921 (LIC2)	0086	1	13.5	(45)	Wide-band DCE	2, 3
4931 (LIC3)	0087	1	13.5	(45)	V.35 DCE	2, 3
	0088	1	30	(100)	V.35 direct attachment	2, 3
4941 (LIC4A)	0089	1	13.5	(45)	X.21 DCE	1, 3
	0091	1	30	(100)	X.21 direct attachment	1, 3
4942 (LIC4B)	0089	1	13.5	(45)	X.21 DCE	2, 3
	0091	1	30	(100)	X.21 direct attachment	2, 3
4991 (TIC1)	1666	1	23	(75)	IBM Token-Ring Network attachment	2, 3, 4

Notes:

1. Four cable groups must be ordered for each LIC.
2. One cable group must be ordered for each LIC or TIC.
3. *Introduction to the IBM 3725 Model 1 Communication Controller,* GA33-0010, lists terminals that may be connected to various LIC types.
4. When the 3725 is to be installed in an IBM Token-Ring Network where IBM Cabling System Type 3 Specified Media (telephone twisted pair) is used, a Data Grade Media to Type 3 Filter is required between the IBM 3725 TIC cable and the telephone twisted pair wiring. Refer to *IBM Token-Ring Network Twisted Pair Media Guide*, GA27-3714. Consult the IBM Token-Ring Network Installation Planning Representative for further information.

Feature Code	Group No.	No. of Cables	Conn ID	U.S. and A/FE Regular Order Max Length m	U.S. and A/FE Regular Order Max Length (ft)	MES Order or E/ME/A Telex Order Max Length m	MES Order or E/ME/A Telex Order Max Length (ft)	Part	Frame	Cable Hole	Comments	Notes
1480	0689	1	35	20	(64)	150	(492)	2667243	01	1	Alternate operator console	8
1561	3920	2	1	62	(200)	62	(200)	5353920	01	1	First channel	
	1178	1	19	45	(150)	45	(150)	5351178	01	1	Power sequence and control, first channel (optional)	
1561	3920	2	3	62	(200)	62	(200)	5353920	01	1	Second channel	
	1178	1	23	45	(150)	45	(150)	5351178	01	1	Power sequence and control, second channel (optional)	
1561	3920	2	5	62	(200)	62	(200)	5353920	01	1	Third channel	
	1178	1	21	45	(150)	45	(150)	5351178	01	1	Power sequence and control, third channel (optional)	
1561	3920	2	7	62	(200)	62	(200)	5353920	01	1	Fourth channel	
	1178	1	25	45	(150)	45	(150)	5351178	01	1	Power sequence and control, fourth channel (optional)	
4911 (LIC1)	0081	1	Not Required	13.5	(45)	35	(115)	2667349, 6089076*	01, 02	1, 2, 3	V.24 DCE, Japan NTT	4, 7
	0083	1				35	(115)	1733914, 6406254*	01, 02	1, 2, 3	V.25 auto-call unit, French Caducee	4
	0092	2				35	(115)	1736733, 1743584, 6089075*	01, 02	1, 2, 3	V.24 DCE, United Kingdom	4, 7
	0093	1		13.5	(45)	35	(115)	2667696, 6089078*	01, 02	1, 2, 3	V.25 NTT auto-call unit, Japan	4
	0094	2				35	(115)	1733747, 6089077*, 674570	01, 02	1, 2, 3	V.25 auto-call unit, UK	4
	0096	2				35	(115)	1736733, 1489985, 6089075*	01, 02	1, 2, 3	V.24 DCE, Belgium	4, 7
	0682	1		13.5	(45)	35	(115)	1733747, 6089077*	01, 02	1, 2, 3	V.25/RS-366 auto-call unit (except French Caducee, UK, Japan)	4
	0683	1		13.5	(45)	35	(115)	2667351	01, 02	1, 2, 3	V.24/RS-232C direct attachment, asynchronous	4
	0690	1		13.5	(45)	Note 1		1733746	01, 02	1, 2, 3	V.24/RS-232C direct attachment, synchronous	4
	0691	1		10.6	(35)	35	(115)	1736733, 6089075*	01, 02	1, 2, 3	V.24/RS-232C DCE (except Japan NTT, UK, Belgium)	4, 7

*LIC1 cables are 3.5 m (45 ft) or less only.

				U.S. and A/FE Regular Order		*MES Order or E/ME/A Telex Order*						
				Max Length		*Max Length*						
Feature Code	*Group No.*	*No. of Cables*	*Conn ID*	*m*	*(ft)*	*m*	*(ft)*	*Part*	*Frame*	*Cable Hole*	*Comments*	*Notes*
4921 (LIC2)	0684	1	Not Required	10.6	(35)	13.5	(45)	1733817	01, 02	1, 2, 3	Wide-band modem	5
4931 (LIC3)	0095	2				35	(115)	1733820, 1749352	01, 02	1, 2, 3	V.35 DCE, French PTT	5, 9
	0685	1		10.6	(35)	35	(115)	1733820	01, 02	1, 2, 3	V.35 DCE (except French PTT modem)	5, 9
	0686	1		13.5	(45)	150	(492)	1733822	01, 02	1, 2, 3	V.35 direct attachment	5, 10
4941 (LIC4A)	0687	1		13.5	(45)	150	(492)	1733825	01, 02	1, 2, 3	X.21 DCE	4
	0688	1		30	(100)	Note 3		2667352	01, 02	1, 2, 3	X.21 direct attachment	4
4942 (LIC4B)	0155	1				Note 2		2667777	01, 02	1, 2, 3	X.21 DCE, French Transfix	5
	0687	1		13.5	(45)	Note 2		1733825	01, 02	1, 2, 3	X.21 DCE (except French Transfix)	5
	0688	1		30	(100)	Note 3		2667352	01, 02	1, 2, 3	X.21 direct attachment	5
4991 (TIC1)	1667	1		23	(75)	76	(250)	61X3229*	01, 02	1, 2, 3	IBM Token-Ring Network attachment	5, 13

*Not for E/ME/A. For longer or shorter than standard cables for E/ME/A, contact your referenced distributors of the IBM Cabling System. The length of each TIC cable must meet IBM Cabling System specifications.

3725 MODEL 2 CUSTOM-LENGTH CABLES

Notes:

1. A maximum distance of 35 m (115 ft) meets the CCITT specifications. However, if the terminal is a 3725, it operates correctly up to 150 m (492 ft).
2. Maximum length:

Up to 56,000 bps	150 m (492 ft)
Up to 128,000 bps	60 m (197 ft)
Above 128,000 bps	30 m (98 ft)

3. The maximum distance to meet the CCITT specifications is:

Up to 56,000 bps	150 m (492 ft)
Above 56,000 bps	60 m (197 ft)

   However, if the terminal is a 3725, it operates correctly:

Up to 19,200 bps	600 m (1,969 ft)
Up to 64,000 bps	300 m (984 ft)
Up to 128,000 bps	150 m (492 ft)
Up to 256,000 bps	60 m (200 ft)

4. Four cable groups can be ordered for each LIC.
5. One cable group can be ordered for each LIC.
6. *Introduction to the IBM 3725 Model 2 Communication Controller,* GA33-0021, lists the terminals that may be connected to various LIC types.
7. When the DCE is an IBM 3863, 3864, or 3865 Modem, the maximum length is 100 m (328 ft) if one of the following conditions is fulfilled:
   a. The suffix level (two alphabetic characters on the date tag) is FG or later for U.S. and A/FE, or KF or later for E/ME/A.
   b. If the suffix level is earlier with data multiplexer feature 3260 not installed, the modem must have EC 344120 installed.
   c. If the suffix level is earlier with data multiplexer feature 3260 installed, the modem must have EC 323406 installed.
8. Feature 1480 is required in E/ME/A only.
9. For speeds ≥ 64,000 bps, the maximum cable length is 13.5 m (45 ft).
10. For speeds ≥ 64,000 bps, the maximum cable length is 35 m (115 ft).
11. When the 3725 is to be installed in an IBM Token-Ring Network where IBM Cabling System Type 3 Specified Media (telephone twisted pair) is used, a Data Grade Media to Type 3 Filter is required between the IBM 3725 TIC cable and the telephone twisted pair wiring. Refer to *IBM Token-Ring Network Twisted Pair Media Guide,* GA27-3714. Consult the IBM Token-Ring Network Installation Planning Representative for further information.

3725 COMMUNICATION CONTROLLER MODEL 2 TRANSMISSION CABLE TERMINATION

Cable Group	*Interface*	*Connector*		
		Male/Female	*No. of Pins*	*Type*
0081	V.24 DCE (Japan)	Male	25	NTT with test/operate switch
0082	V.25/RS-366 autocall unit (except French Caducee, Japan, and UK)	Male	25	ISO 2110
0083	V.25 autocall unit (French Caducee)	Female	25	ISO 2110
0085	V.24/RS-232C direct attachment (asynchronous)	Female	25	ISO 2110
0086	Wide-band DCE	Male	12	MD 12 MPX
0087	V.35 DCE (except French PTT modems)	Male	34	ISO/DIS 2593
0088	V.35 direct attachment	Female	34	ISO/DIS 2593
0089	X.21 DCE	Male	15	ISO 4903
0091	X.21 direct attachment	Female	15	ISO 4903
0092	V.24 DCE (UK) (Note 1)	Male	25	ISO 2110
0093	V.25/NTT autocall unit (Japan)	Male	25	NTT with test/operate switch
0094	V.25 autocall unit (UK) (Note 2)	Male	25	ISO 2110
0095	V.35 DCE (French PTT modems) (Note 3)	Male	34	ISO/DIS 2593
0096	V.24 DCE (Belgium) (Note 4)	Male	25	ISO 2110
0155	French Transfix	Male	15	ISO 4903
1400	V.24/RS-232C direct attachment (synchronous)	Female	25	ISO 2110
1404	V.24/RS-232C DCE (except Japan, Belgium, and UK)	Male	25	ISO 2110

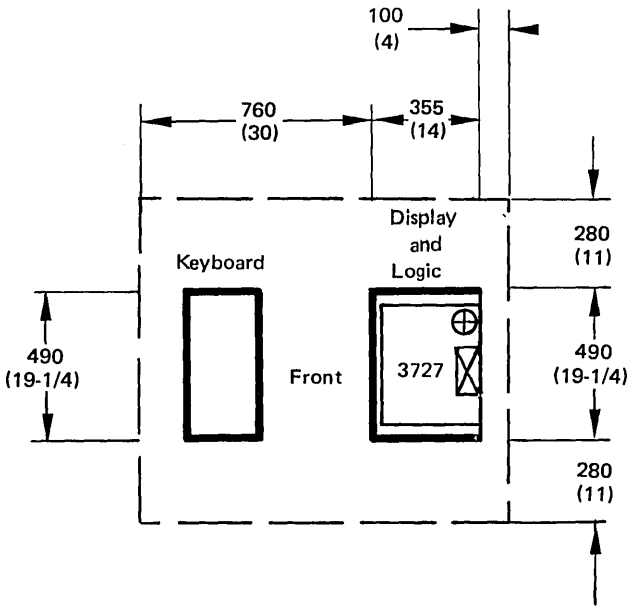
Notes:

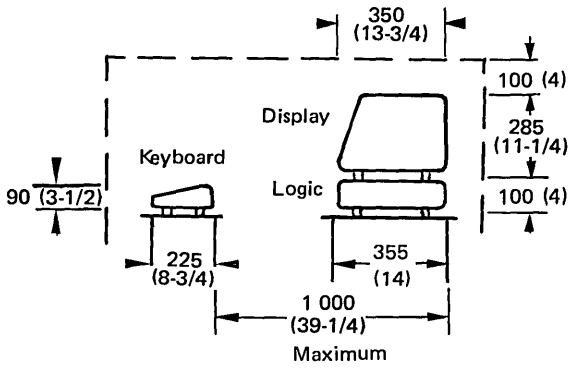
1. Cable group 0092 includes cable 0092A and cable adapter 0092B.
2. Cable group 0094 includes cable 0094A and cable adapter 0094B.
3. Cable group 0095 includes cable 0095A and cable adapter 0095B.
4. Cable group 0096 includes cable 0096A and cable adapter 0096B.

3727 OPERATOR CONSOLE

PLAN VIEW (Metric Scale: 10 mm = 0.25 m)

English measurements are shown in parentheses.





Side View

Cable Entry/Exit: 100 x 60 mm (4 x 2-1/4 in.)

Note: When the 3725 Model 1 or 2 is installed without a raised floor (no channel connection), a cable entry/exit hole is not necessary for the console.

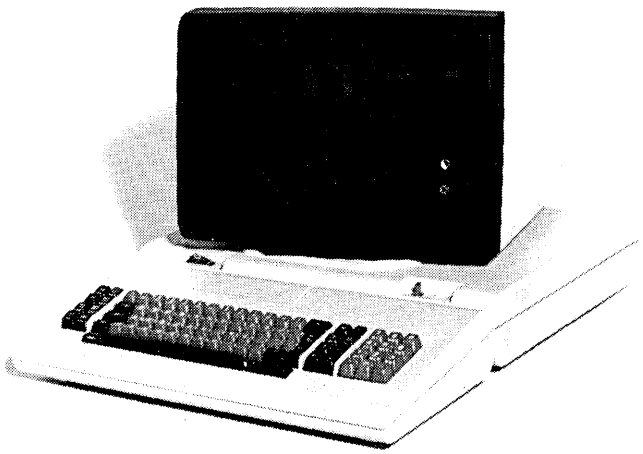
The IBM 3727 Operator Console is used for the IBM 3725 Model 1/3726 Communication Controller and Expansion or 3725 Communication Controller Model 2. The 3727 consists of three elements: a logic, a display, and a keyboard.

One primary console is required within 5 m (16 ft) of the 3725 Model 1 or 3725 Model 2 (cable entry/exit hole) with no intervening walls, doors, or obstructions.

An alternate operator console (optional) may be connected to the 3725 by a 150-m (492-ft) cable. This cable must be ordered. (See the cabling schematic on page 3727.3).

The IBM 7427 Console Switching Unit allows one primary console or one alternate console to be shared among several controllers.

The customer must supply tables for the console. The recommended table height is 735 mm (29 in.).



3727 OPERATOR CONSOLE

SPECIFICATIONS

Dimensions:	Front	Side	Height
Display:			
mm	380	350	285
(inches)	(15)	(13-1/4)	(11-1/4)
Keyboard:			
mm	490	225*	90
(inches)	(19-1/4)	(8-3/4*)	(3-1/2)

*In WT Europe/Middle East/Africa, a palm rest and an antiglare filter are automatically supplied. With the palm rest attached, the keyboard side is 285 mm (11 in.).

Logic:			
mm	490	355	100
(inches)	(19-1/4)	(14)	(4)

Service Clearances:

	Front	Rear	Right	Left	Top
mm	760	100	280	280	100
(inches)	(30)	(4)	(11)	(11)	(4)

Weight:	*kg*	*(lb)*
Display	7	(15)
Keyboard	5.5	(12)
Logic	5	(11)

Heat Output: 50 Hz or 60 Hz: 50 W (171 BTU/hr)

Airflow: Natural convection

Power Requirements:

kVA	0.12 (50 Hz or 60 Hz)
Phases	1
Voltages	50 Hz/60 Hz: 100-127/200-240
Power Cord Style	Three-wire, grounded

Environment, Operating:

Temperature	10°C-41°C (50°F-105°F)
Rel Humidity	8%-80%
Max Wet Bulb	27°C (80°F)

Environment, Nonoperating:

Temperature	1°C-60°C (33°F-140°F)
Rel Humidity	5%-80%
Max Wet Bulb	29°C (85°F)

Power Cord and Plug Types:

For the United States and Canada, the machine is shipped with a 1.8-m (6-ft) power cord and a NEMA 5-15P nonlocking plug.

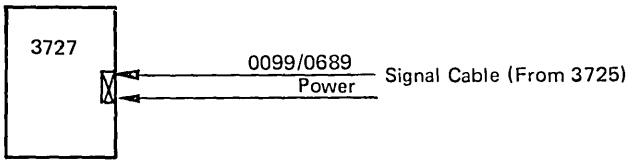
For World Trade countries other than Canada, the machine is shipped with a 3-m (10-ft) power cord with attached plug that corresponds to the power outlet receptacle that is most used in that country.

The customer must provide the corresponding power receptacle.

Notes:

1. The signal ground of the console is permanently connected to its frame ground.
2. To avoid noise, it is recommended that the 3727 and the 3725 use the same equipment ground path.
3. If the 3725 and the 3727 are simultaneously accessible (for example, in the same room), they must use the same equipment ground path.

3727 OPERATOR CONSOLE CABLING SCHEMATIC



Signal Cables

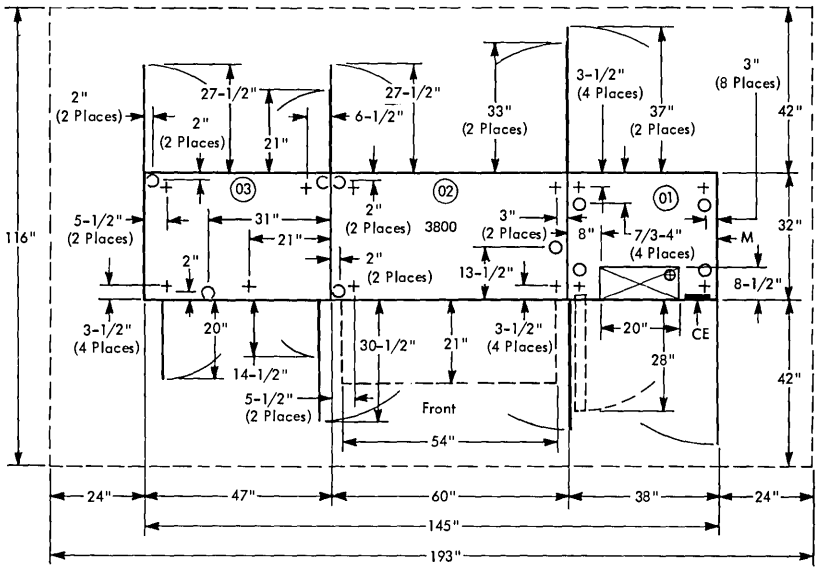
Primary Operator Console: This cable is supplied with the 3725. Its length is fixed: 7.5 m (25 ft).

Alternate Operator Console: This cable must be ordered as indicated in the 3725 Model 1/3726 or 3725 Model 2 machine specifications and cabling schematic, as appropriate.

Standard length (E/ME/A)	14 m (45 ft)
Maximum length	150 m (492 ft)
Cable group number	0099/0689

3800 PRINTING SUBSYSTEM MODELS 1-3 AND 8 WITH BURSTER-TRIMMER-STACKER

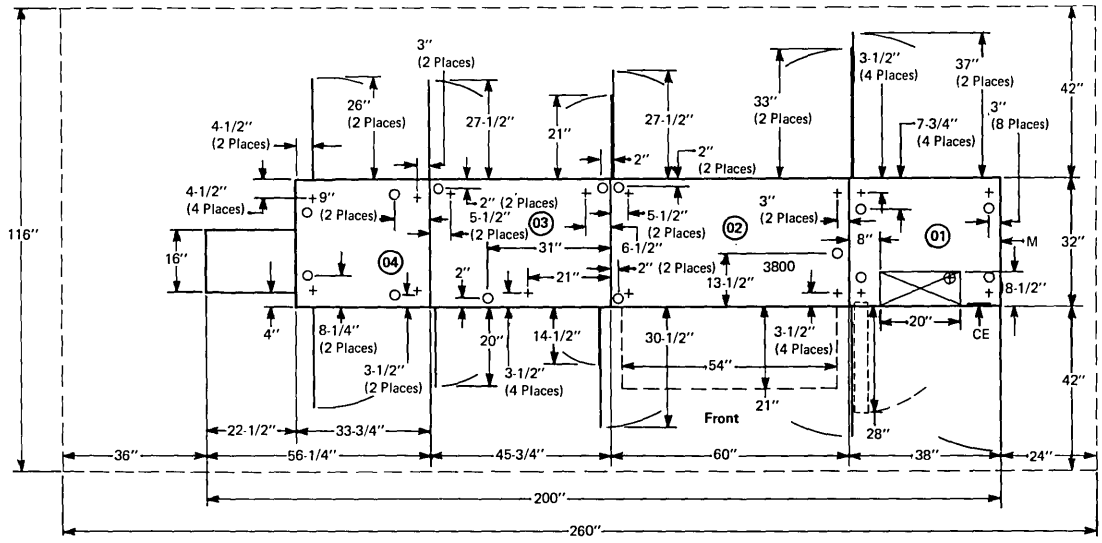
PLAN VIEW (WITHOUT BURSTER-TRIMMER-STACKER), English Scale: 1/4 in. = 1 ft



Notes:

1. Machine has no kickstrips. Nonraised floor cables may exit at any point from frame 01.
2. Single leveling pad on right side of frame 02 supports an installed weight of 900 lb (410 kg).

PLAN VIEW (WITH BURSTER-TRIMMER-STACKER), English Scale: 1/4 in. = 1 ft



Notes:

1. Machine has no kickstrips. Nonraised floor cables may exit at any point from frame 01.
2. Single leveling pad on right side of frame 02 supports an installed weight of 900 lb (410 kg).

3800 PRINTING SUBSYSTEM MODELS 1-3 AND 8 WITH BURSTER-TRIMMER-STACKER

Details (By Frame)

Frame	*Dimensions F x S x H inches (mm)*	*Weight lb (kg)*	*Airflow cfm (m^3/min)*	*Heat Output BTU/hr (W)*	*Power Requirements kVA*
01	38 32 60 (970) (810) (1 520)	750 (340)	225 (7)	*	**
02	60 32 60 (1 520) (810) (1 520)	1,670 (760)	800 (23)	*	**
03	45-3/4 32 60 (1 160) (810) (1 520)	875 (400)	250 (8)	*	**
04	56-1/4 32 60 (1 430) (810) (1 520)	550 (250)	–	700 (200)	0.25

Notes:

* The heat output and power requirements vary with operating status, paper size, and paper weight. Values shown apply with or without burster-trimmer-stacker feature.

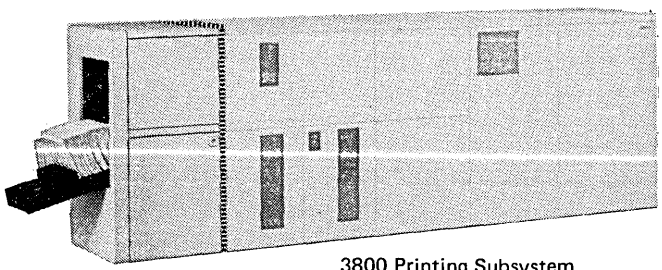
** The machine consumes 14.0 kVA for approximately one minute after initial power on and when changing from idle to run.

*** See Details (By Frame).

† A floor-to ceiling height of 86 inches (2 180 mm) is required to open the top cover.

†† See plan view.

††† This power is consumed by internal control circuitry required to ensure normal machine power-on sequencing. If the branch circuit power is disconnected, an extended warmup period (up to two hours) may be required before processing can start.



Burster-Trimmer-Stacker Feature

3800 Printing Subsystem (Model 1 Shown)

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	***	32	60†
(mm)	(***)	(810)	(1 520 †)

Service Clearances:

	F	R	Rt	L
Inches	42	42	24	††
(mm)	(1 070)	(1 070)	(610)	(††)

Power and Heat Dissipation Requirements:*

Requirements	*Power kVA*	*BTU/hr (W)*
Idle Status**	3.5	11,000 (3 250)
Power Off ††† (Branch Circuit Power On)	0.2	650 (200)
Min Size and Weight Paper	7.0	21,000 (6 150)
Max Size and Weight Paper	10.0	31,500 (9 250)

Phases	3
Plug	R&S, SC7328
Connector	R&S, SC7428
Receptacle	R&S, SC7324
Power Cord Style	E7

Acoustical Data:

For definitions, see "Acoustics" in Chapter 3 of *IBM General Information Manual: Installation Manual–Physical Planning,* GC22-7072.

L_{WAd}		$<L_{pA}>_m$		I	T
Operating (bels)	Idling (bels)	Operating (dB)	Idling (dB)		
8.6	7.9	64.0	60.0	No	No

Environment, Operating:

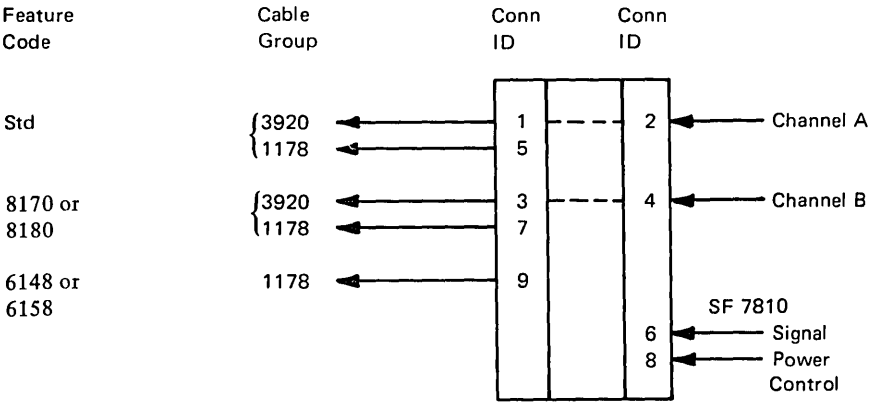
Temperature	60°F-85°F (16°C-29°C)
Rel Humidity	20%-80%
Max Wet Bulb	73°F (23°C)

Environment:

Toner, paper, and ink (present on preprinted forms) is momentarily heated to approximately 350°F (177°C) during the printing process. As a result, chemical compounds may be released. Normally concentrations of these materials do not reach objectionable levels in a typical data processing installation. However, the use of supplemental filtration, exhaust, and/or dilution with building or outside air is recommended to ensure positive control of the installation environment.

Experience has shown that chemical compounds containing amines, such as cyclohexylamine, morpholine, and diethylaminoethanol, may cause degraded printer performance when they are introduced into the printer area. Under extreme conditions, total print loss may occur for short periods of time.

3800 PRINTING SUBSYSTEM MODELS 1-3 AND 8 CABLING SCHEMATIC



From 3800

Feature Code	*Group No.*	*No. of Cables*	*Conn ID*	*Max Length*		*Model*	*Notes*
				m	*(ft)*		
Std	3920	2	1	61	(200)	All	1
	1178	1	5	61	(200	All	3
6148	1178	1	9	61	(200)	1,2	4
6158	1178	1	9	122	(400)	3,8	4
8170	3920	2	3	61	(200)	1,2	1,2
	1178	1	7	61	(200)	1,2	3
8180	3920	2	3	122	(400)	3,8	1,2
	1178	1	7	122	(400)	3,8	3

To 3800

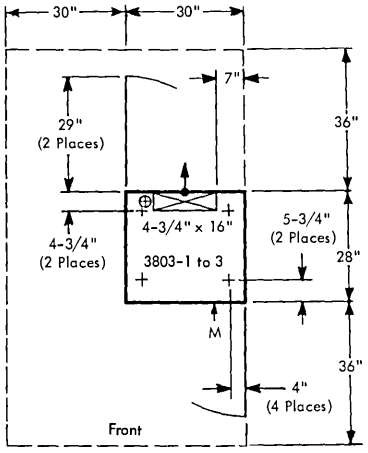
Feature Code	*Conn ID*	*Model*	*Notes*
Std	2	All	1
7810	6	1	5
	8	1	3,5
8170	4	1,2	1,2
8180	4	3,8	1,2

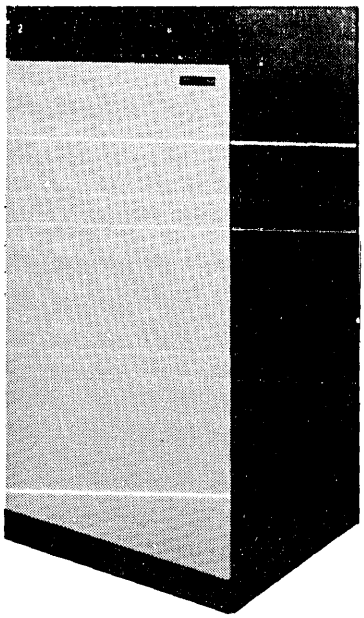
Notes:

1. Maximum channel cable length will vary by model.
   a. A maximum cable length of 61 meters (200 feet) is available to attach a Model 1 or 2 to a channel. The 61-meter (200-foot) cable length must be reduced by 4.5 meters (15 feet) for each control unit connected between the Model 1 or 2 and the channel.
   b. A maximum cable length of 122 meters (400 feet) is available to attach a Model 3 or 8 to a channel. The 122-meter (400-foot) cable length must be reduced by 4.5 meters (15 feet) for each control unit connected between the Model 3 or 8 and the channel.
2. Special features may be ordered for connecting more than one channel. For channel switching, one set of cable groups is required for each channel. Maximum cable length applies to each channel.
3. Power sequence and control cable. This machine must have the power sequence and control cable installed for proper operation.
4. Required for SF 6148 and SF 6158 (remote switch).
5. As many as eight tape control units (any combination of 3803s and 3411s) may be attached only to the IBM 3800 Printing Subsystem Model 1, with the Tape-to-Printing Subsystem feature installed. Only one unit can be active at a time. The 3800 provides power sequence and control for one 3411 or 3803. Any additional tape control units must receive power sequence and control from another source.

3803 TAPE CONTROL MODELS 1 TO 3

PLAN VIEW (English Scale: 1/4 in. = 1 ft)





SPECIFICATIONS

Dimensions:

	F	S	H
Inches	30	28	60
(cm)	(76)	(71)	(152)

Service Clearances:

	F	R	Rt	L
Inches	36	36	0*	30*
(cm)	(91)	(91)	(0*)	(76*)

Weight: 600 lb (280 kg)

Heat Output:	*Models 1 & 3*	*Model 2*
BTU/hr	3,800	5,700
(kcal/hr)	(960)	(1 450)

Airflow:

cfm	360	360
(m^3/min)	(11)	(11)

Power Requirements:**

kVA	1.2	1.8
Phases	3	3
	*Standard***	*With SF* 9001***
Plug	R&S, SC7328	R&S, JPS1034H
Connector	R&S, SC7428	R&S, JCS1034H
Receptacle	R&S, SC7324	R&S, JRSR1034H
Power Cord Style	E3 – *50 Hz*	
	E10 – *60 Hz*	

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

Notes:

*The 30-inch (76-cm) side clearance is recommended on the left side when compatible with machine layout.

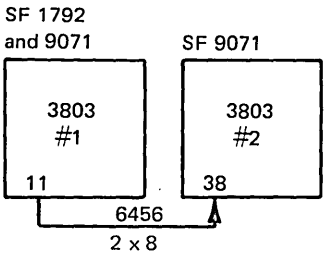
**A 50-Hz 3803 provides power for up to eight 3420s (any model).
A 60-Hz 3803 provides power for up to eight 3420s Models 3 through 7.
When the 60-Hz tape subsystem includes 3420-8's, one 3803 may power a maximum of six 3420-8's.
See your IBM representative for valid combinations of drives. Maximum continuous operating current will not exceed 46 A per phase.

***With SF 9001 installed, the 3803-2 may power a maximum of eight 3420s (any model). Maximum continuous operating current will not exceed 56 A per phase.

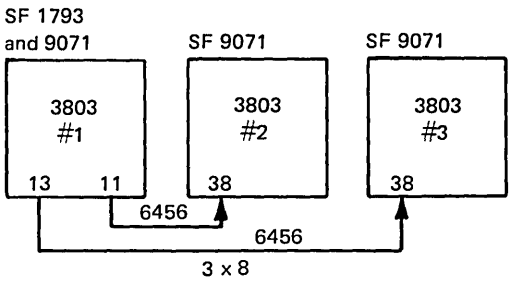
3803 TAPE CONTROL MODELS 1 TO 3 CABLING SCHEMATIC OF TAPE SWITCHING 3803 MODELS 1 AND 2

As many as eight 3420 Magnetic Tape Units can be attached to the 3803s #1.

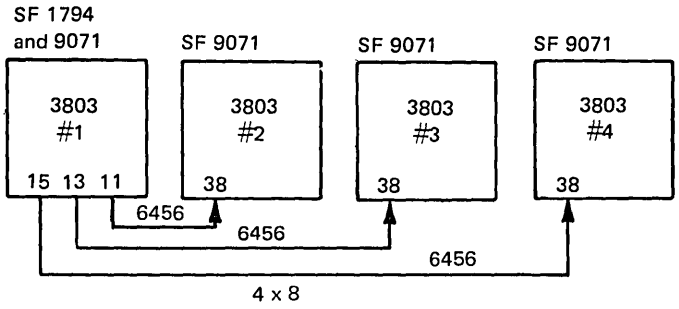
2 Control Units



3 Control Units

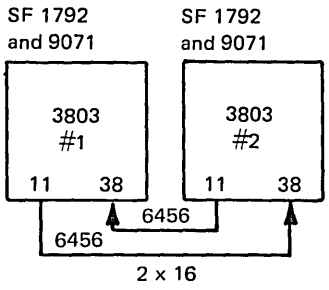


4 Control Units

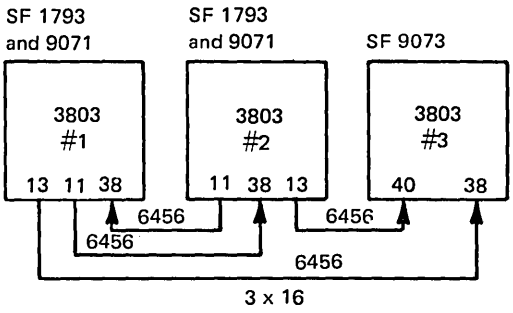


As many as eight 3420 Magnetic Tape Units can be attached to the 3803-1 and as many as eight 3420 Magnetic Tape Units can be attached to the 3803-2.

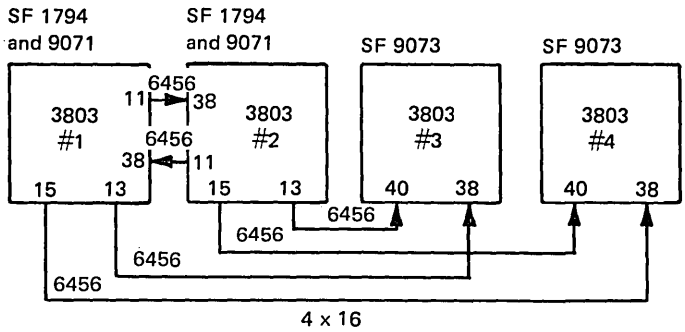
2 Control Units



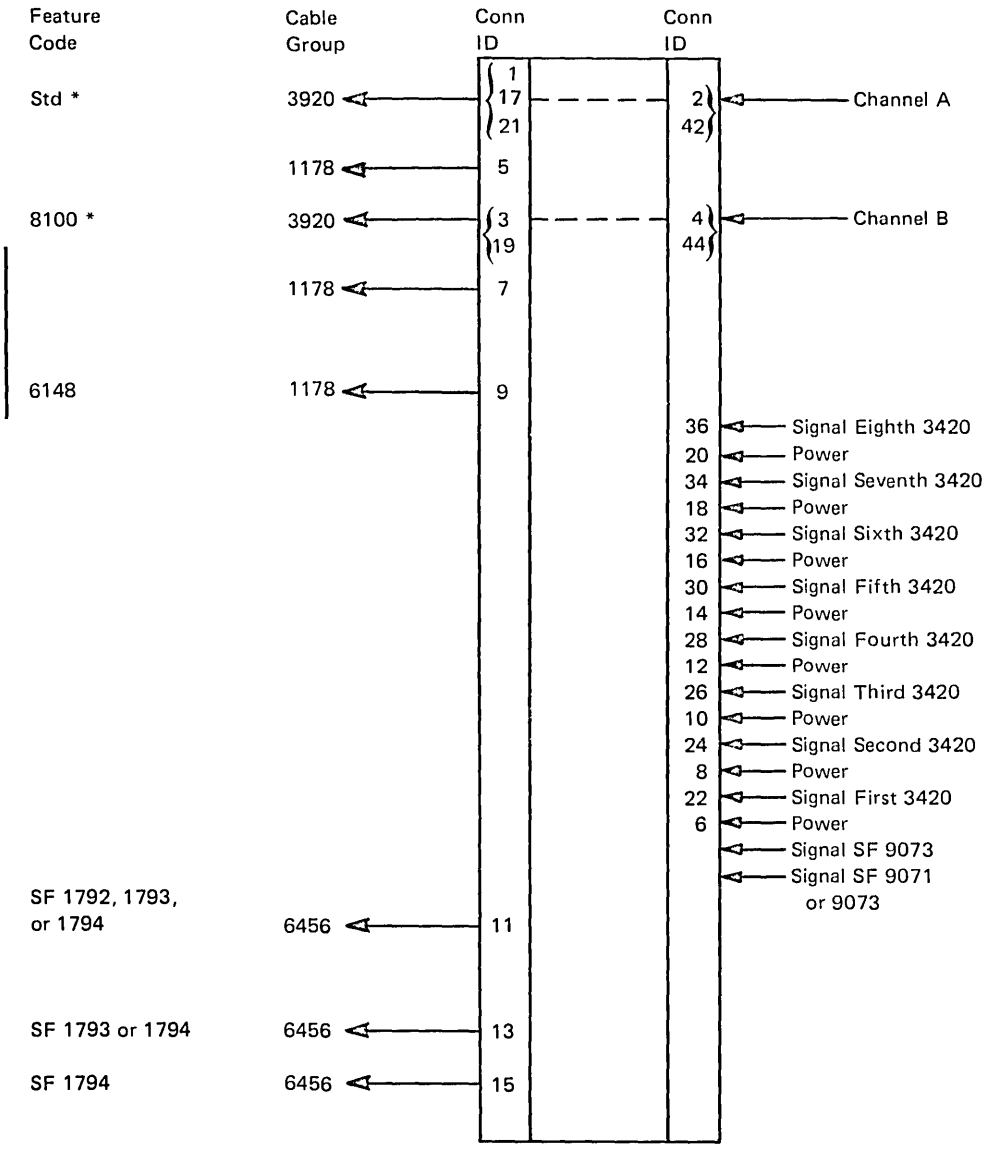
3 Control Units



4 Control Units



3803 TAPE CONTROL MODELS 1 TO 3 CABLING SCHEMATIC



*Model dependent; see *Note 9.*

3803 TAPE CONTROL MODELS 1 TO 3 CABLING SCHEMATIC

From 3803

Feature Code	*Group No.*	*No. of Cables*	*Conn ID*	*Max Length*		*Model*	*Notes*
				m	*(ft)*		
Std	3920	2	1	61	(200)	2	1,2,9
	3920	2	17	61	(200)	1	1,2,9
	3920	2	21	61	(200)	3	1,2,9
	1178	1	5	46	(150)	All	3
1792, 1793, or 1794	6456	2	11	26	(85)	1, 2	4
1793 or 1794	6456	2	13	26	(85)	1, 2	4
1794	6456	2	15	26	(85)	1, 2	4
6148	1178	1	9	46	(150)	1, 2	5
8100	3920	2	3	61	(200)	1, 2	1,9
	3920	2	19	61	(200)	1	1,9
	1178	1	7	46	(150)	1, 2	3

To 3803

Feature Code	*Conn ID*	*Model*	*Notes*
Std	2	2	8,9
Std	42	1	8,9
Std	6	All	6
Std	22	All	7
Std	8	All	6
Std	24	All	7
Std	10	All	6
Std	26	All	7
Std	12	All	6
Std	28	All	7
Std	14	All	6
Std	30	All	7
Std	16	All	6
Std	32	All	7
Std	18	All	6
Std	34	All	7
Std	20	All	6
Std	36	All	7
9071 or 9073	38	1, 2	4
9073	40	1, 2	4
8100	4	1, 2	8,9
8100	44	1	8,9

3803 TAPE CONTROL MODELS 1 TO 3 CABLING SCHEMATIC

Notes:

1. Up to 61 meters (200 feet) is available to attach up to eight control units (unless modified by general control to channel cabling schematic). Cable length between a 3803 with a 3420 Model 6 or Model 8 attached (at 6,250 bpi) and the channel is shown in the following table:

	Max Length with 3420 Model 8 Attached		*Max Length with 3420 Model 6 Attached*	
To	*m*	*(ft)*	*m*	*(ft)*
2860	22	(72)	61	(200)
2880	36	(119)	61	(200)
Block Multiplexer or 3800	22*, 31	(72*, 103)	61	(200)
Selector Channel	22*, 36	(72*, 119)	61	(200)

*On System/370 Model 135/138, 4331 Processor Model Group 2, and 4361 Processors.

For each control unit connected between the 3803 and the channel, the cable length shown must be reduced by 4.5 meters (15 feet) if a 3420 Model 6 is attached, or 20 feet if the 3420 Model 8 is attached.

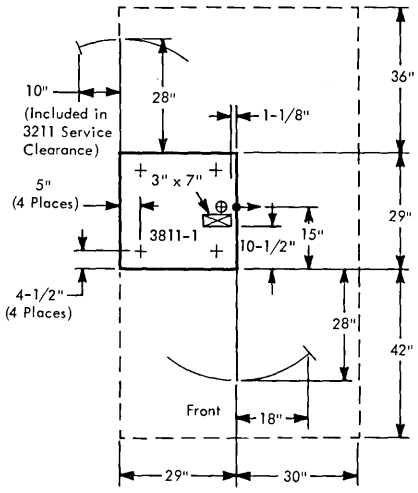
SF 8100 may be ordered to connect a 3803 Model 1 or 2 to a second channel. Maximum length limitations apply to each channel attachment.

2. Maximum cable length available to connect the 3803 Model 3 to a 3115 or 3125 is 8.5 meters (28 feet).
3. Power sequence and control cable. This machine must have the power sequence and control cable installed for proper operation. External shield of this cable provides an electrical ground reference between the 3803 and the data processing system. This ground reference must be maintained to ensure proper operation of the magnetic tape subsystem. Maximum length is 10.7 meters (35 feet) when attached to a 3115 or a 3125.
4. Signal cabling provides for switching of up to sixteen 3420 Magnetic Tape Units among up to four 3803 Models 1 and 2. (See page 3803.4.) Signal cable length from a 3420 to a 3803 (cable group 143) and signal cable length from the 3803 to the most remote 3803 (one cable group 6456) in the tape switching subsystem must not exceed 36.5 meters (120 feet).

   Up to eight 3420 Magnetic Tape Units may be attached to each of the first and second 3803 units.
5. Required for remote switching feature (SF 6148). This cable must be purchased by the customer. Consult your IBM representative for price and ordering procedure.
6. Power connectors for up to eight tape units. When the number of 3420 Magnetic Tape Units to be attached exceeds the specifications shown on page 3803.1, power for each extra machine may be provided by another 3803 or SF 9001 may be installed.
7. Signal cable connections for up to eight tape units.
8. Channel signal attachment from another control device.
9. Specify 3803 Conn IDs 1, 2, 3, and/or 4 for cable orders for 3803 Models 1 and 2. Specify Conn ID 21 for cable orders for 3803 Model 3.
   Some 3803 Model 1 units shipped before 1980 may not have EC 733814 installed; substitute Conn ID:
   17 for 1
   42 for 2
   19 for 3
   44 for 4
   for cable orders for these units.

3811 PRINTER CONTROL UNIT MODEL 1

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	29	29	46
(cm)	(74)	(74)	(117)

Service Clearances:

	F	R	Rt	L
Inches	42	36	30	0*
(cm)	(107)	(91)	(76)	(0*)

Weight:	*50 Hz*	*60 Hz*
lb	820	750
(kg)	(380)	(350)

Heat Output:		
BTU/hr	7,000	5,600
(kcal/hr)	(1 800)	(1 450)

Airflow:		
cfm	180	180
(m^3/min)	(6)	(6)

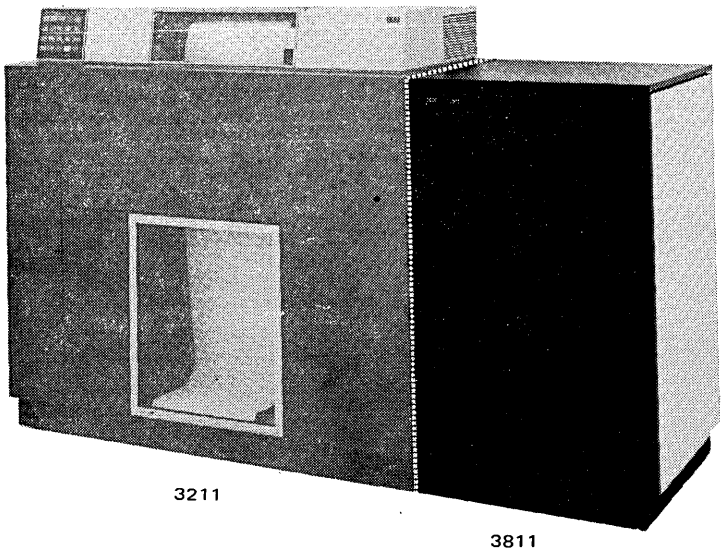
Power Requirements:		
kVA	2.7	1.9
Phases	3	3
Plug	R&S, FS3760	
Connector	R&S, FS3934	
Receptacle	R&S, FS3754	
Power Cord Style	D1	

Environment, Operating:	
Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

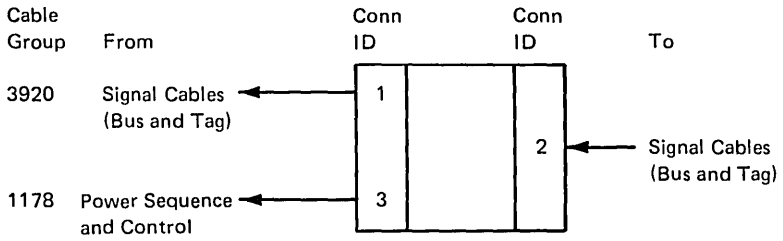
Environment, Nonoperating:	
Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

Notes:

* The 3811 abuts and attaches to the right side of a 3211.



3811 PRINTER CONTROL UNIT MODEL 1 CABLING SCHEMATIC



From 3811

Group No.	*No. of Cables*	*Conn ID*	*Max Length*		*Comments (see Note)*
			m	*(ft)*	
1178	1	3	46	(150)	Power sequence and control
3920	2	1	61	(200)	Bus and tag

To 3811

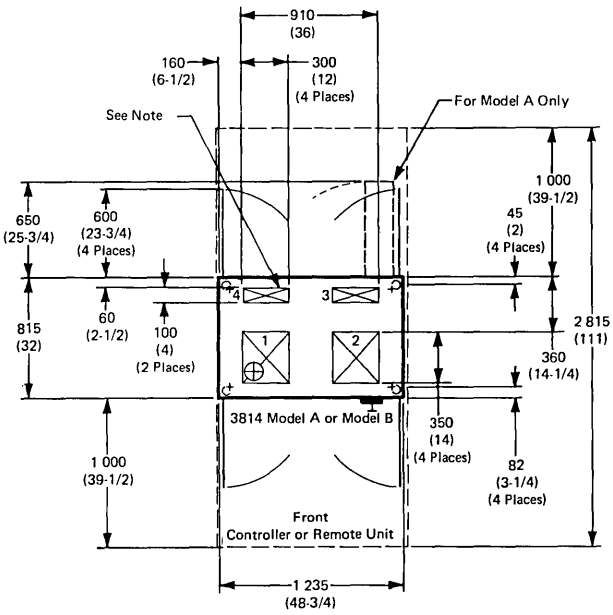
Conn ID	*Comments*
2	Bus and tag

Note: Cable group 1178, power sequence and control, is optional.

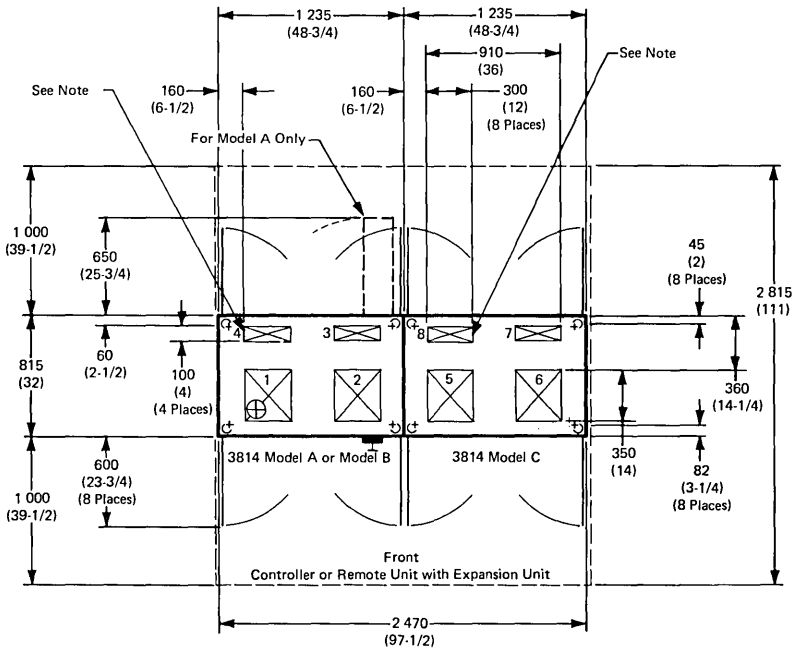
3814 SWITCHING MANAGEMENT SYSTEM MODELS A1-A4, B1-B4, AND C1-C4

PLAN VIEW (Metric Scale: 10 mm = 0.5 m)

English measurements are shown in parentheses.



Model A or Model B



Model A or Model B with Model C

Note: Cable entry/exit holes #4 and #8 are only for remote two-channel switch cables.

3814 SWITCHING MANAGEMENT SYSTEM MODELS A1-A4, B1-B4, AND C1-C4

SPECIFICATIONS

Dimensions:

	Front	Side	Height
mm	1 235*	815	1 200**
(inches)	(48-3/4*)	(32)	(47-1/4**)

Service Clearances:

	Front	Rear	Right	Left
mm	1 000	1 000	0	0
(inches)	(39-1/2)	(39-1/2)	(0)	(0)

Weight:

	Model A	Model B	Model C
kg	380	350	340
(lb)	(840)	(780)	(750)

Heat Output:

	Model A or Model B	Model A or Model B with Model C
	1 420 W (4,820 BTU/hr)	2 360 W (8,030 BTU/hr)

Airflow: 18 m^3/min (640 cfm)

Power Requirements:

	Model A or Model B	Model A or Model B with Model C
kVA	1.5	2.6
Phases	1	
Plug	R&S, FS3720	
Connector	R&S, FS3913	
Receptacle	R&S, FS3743	
Power Cord Style	A2	

See *** under Notes.

Environment, Operating:

Temperature	10°C-32°C (50°F-90°F)
Rel Humidity	8%-80%
Max Wet Bulb	23°C (73°F)

Environment, Nonoperating:

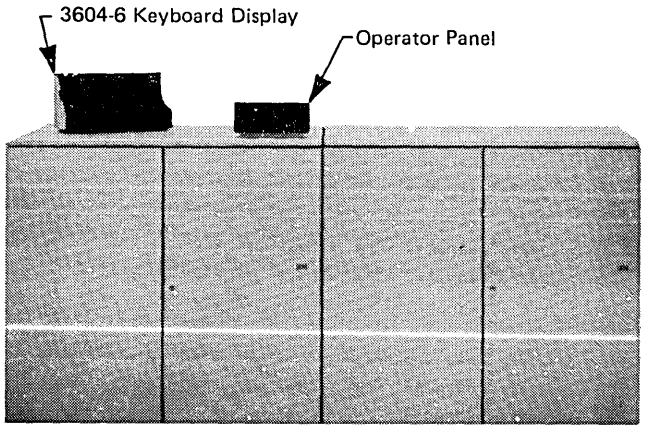
Temperature	10°C-43°C (50°F-110°F)
Rel Humidity	8%-80%
Max Wet Bulb	27°C (80°F)

Notes:

* Front dimension is 2 470 mm (97-1/4 in.) when expansion unit (Model C) is added to Model A or Model B.

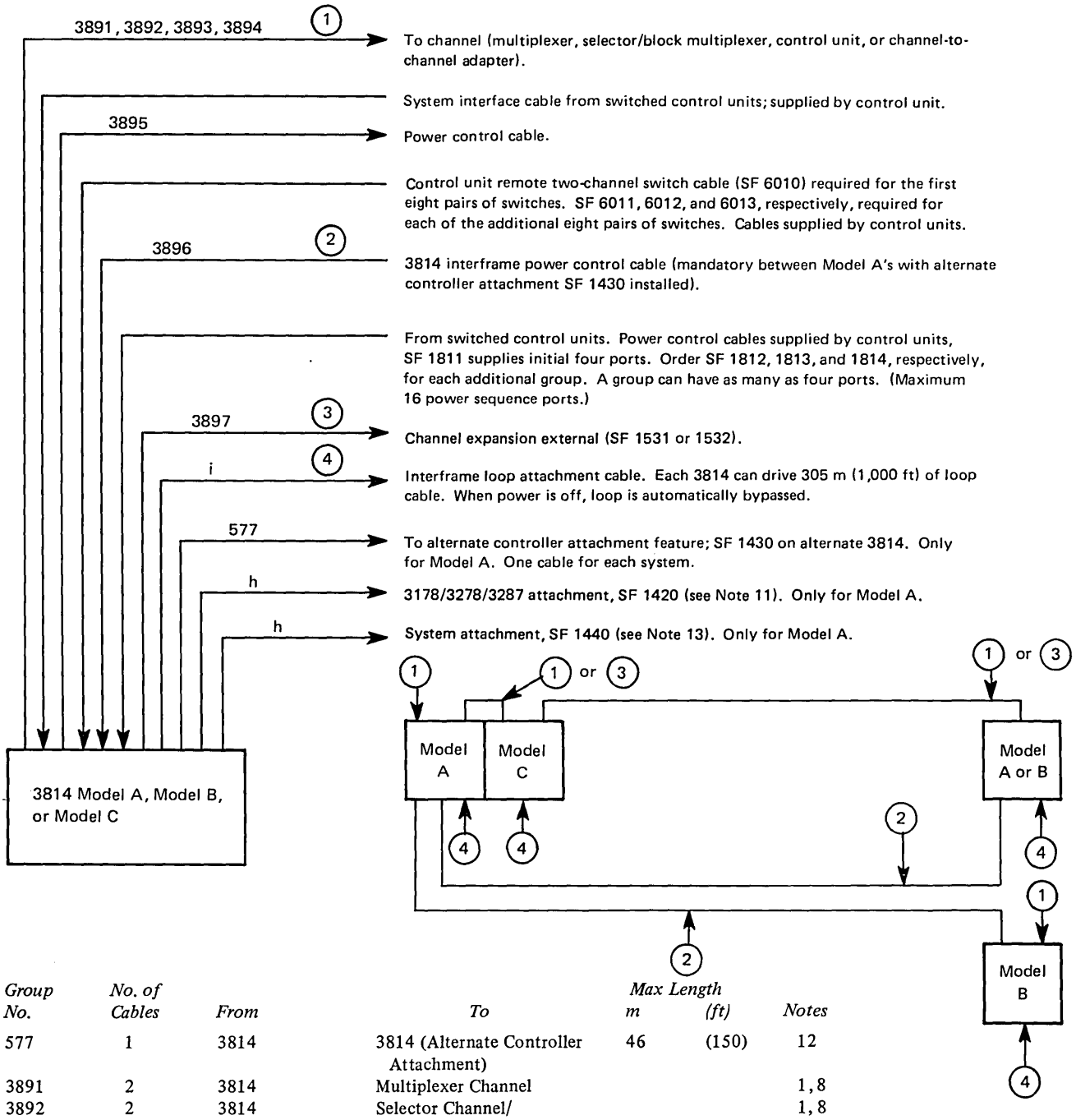
** Operator panel height of 145 mm (6 in.) is not included.

*** When in a service mode, a duplex receptacle is required within 1.0 meter (3-1/2 feet) of the 3814 to provide power for a 3604-6 keyboard display.



3814 Model A (with IBM 3604 Keyboard Display Model 6) and Model C

3814 SWITCHING MANAGEMENT SYSTEM MODELS A1-A4, B1-B4, AND C1-C4 CABLING SCHEMATIC



Group No.	*No. of Cables*	*From*	*To*	*Max Length m*	*(ft)*	*Notes*
577	1	3814	3814 (Alternate Controller Attachment)	46	(150)	12
3891	2	3814	Multiplexer Channel			1,8
3892	2	3814	Selector Channel/ Block Multiplexer Channel			1,8
3893	2	3814	Control Unit			1,8,9
3894	2	3814	Channel-to-Channel Adapter			1,8
3895	1	3814	Channel	46	(150)	2
3896	1	3814	3814	46	(150)	3
3897	8	3814	3814			7,8
i	1	3814	3604-6	–	–	4,5,6,10
i	1	3604-6	3814	–	–	4,5,10
i	1	3814	3814	–	–	4,10
h	1	3178/3278/3287	3814	1 500	(4,925)	11,13
h	1	3814	3274	2 000	(6,575)	11,13

3814 SWITCHING MANAGEMENT SYSTEM
MODELS A1-A4, B1-B4, AND C1-C4 CABLING SCHEMATIC

Notes:

1. System interface cable. One group number required for each channel attachment. Each Model A1, A2, B1, B2, C1, and C2 requires four cable group numbers for channel attachments. Each Model A3, A4, B3, B4, C3, and C4 requires eight cable group numbers for channel attachments.
2. Power control cable. One cable group required per system attachment; maximum of four cable groups is basic. For additional four cable groups, order SF 6350, system power sequence–additional.
3. Interframe power control cable. Order one cable for each remote unit (mandatory between Model As with SF 1430, alternate controller attachment).
4. Customer-supplied cable. Each 3814 can drive 305 meters (1,000 ft) of loop cable. When power is off, loop is automatically bypassed. For further information on customer-supplied loop cables, see Appendix B of this manual.
5. Physical planning information for 3604-6 and installation of the loop cable is in *IBM 3600 Finance Communication System Installation Manual–Physical Planning,* GA27-2766.
6. Cabling to the first 3604-6 from controller is limited to 10 meters (33 ft) for servicing without SF 1420.
7. Order one group number for SF 1531 and one group number for SF 1532.
8. Maximum channel to control unit cable length is determined by individual control unit requirements. See individual control units.
9. On 3814s without internal channel expansion feature, interface cables in groups of four bus and tag pairs must be ordered to connect each 4 x 4 switch matrix. Each matrix enters and exits the cable hole directly below the matrix. Keep the length of these cables to a minimum as they will reduce the maximum allowable cable length.
10. When selecting the length of the loop cables connected to the 3814 Models A1-A4, an additional 2 meters (6 feet) must be added to the length of either cable. This extra length is rolled up under the 3814 and used only for servicing.
11. Customer-supplied cable. One for each 3178, 3278, or 3287, to a maximum of 1 500 m (4,925 ft), must be purchased and installed by the customer, with a maximum of two 3178s or 3278s and three 3287s with SF 1420. Follow the specifications and the instructions in *IBM 3270 Information Display System Installation Manual–Physical Planning,* GA27-2787. See Note 5 on page 3814.8.
12. Alternate controller connection cable. Order one for each 3814 system with the alternate controller attachment feature (SF 1430) installed.
13. Customer-supplied cable. One for each 3274, to a maximum of 2 000 m (6,575 ft), must be purchased and installed by the customer, with a maximum of two 3274s with SF 1440. Follow the specifications and the instructions in *IBM 3270 Information Display System Installation Manual–Physical Planning,* GA27-2787.

3814 Switching Management System Cabling Considerations

When a 3814 logical matrix is configured using physical matrices that are interconnected by external cables, these interconnecting cables must be included in the control unit-to-channel cable length.

Dedicated Path

For each dedicated path, review the following:

1. The number of allowable control units per channel.
   a. Find the equivalent control unit positions for the 3814 (see Table 1).
   b. Add the equivalent control unit positions for the other dedicated control units.
   c. The sum must not exceed eight per dedicated path.
2. The maximum channel cable length restriction is control-unit dependent and in all situations is the cumulative cable length from the channel to the control unit including all cabling associated with the 3814.
3. Priority considerations as outlined in Chapter 5 of *IBM 3814 Switching Management System Product Description,* GA22-7075.

Dedicated Control Units	
Switch Sizes	*3814 Equivalent Control Unit Positions*
4 x 4	1
4 x 8	1
4 x 12	2
4 x 16	2
8 x 4	1
8 x 8	1
8 x 12	2
8 x 16	2
12 x 4	1
12 x 8	1
16 x 4	1
16 x 8	1

Table 1

Switchable Interface

For each switchable interface, review the following:

1. Class 1 control units (nondata streaming):
   a. Equivalent control unit positions from the channel through the switch; eight are allowed per switchable interface, including the dedicated control units between the 3814 and the channel.
   b. Maximum cable length:
      Two methods to determine cable length restrictions are:
      1) Use Table 2 to assign the 3814 zero-control-unit positions and to reduce the normal control unit cable length. This method allows eight class 1 control units to be attached.
      2) Use Table 3 to assign the 3814 as representing intervening control units. If this method is used, the number of class 1 control units is restricted.

The maximum channel cable length restriction is control-unit dependent and in all situations is the cumulative cable length from the channel to the control unit including all cabling associated with the 3814. If the Table 3 method is used, the cable length must be reduced for those control units that require reduction for intervening control units.

	For Class 1 Control Units on a Switchable Interface			
3814 Matrix Size	*N = 1 to 4 Subtract: Meters (Feet)*	*N = 5 to 8 Subtract: Meters (Feet)*	*N = 9 to 12 Subtract: Meters (Feet)*	*N = 13 to 16 Subtract: Meters (Feet)*
4 x N	12.1 (40)	13.8 (45)	15.3 (50)	16.5 (54)
8 x N Ch: 1-4	12.1 (40)	13.8 (45)	15.3 (50)	16.5 (54)
Ch: 5-8	15.3 (50)	16.5 (54)	18.0 (59)	19.2 (63)
12 x N Ch: 1-4	12.1 (40)	13.8 (45)	N/A	N/A
Ch: 5-8	15.3 (50)	16.5 (54)	N/A	N/A
Ch: 9-12	18.0 (59)	19.2 (63)	N/A	N/A
16 x N Ch: 1-4	12.1 (40)	13.8 (45)	N/A	N/A
Ch: 5-8	15.3 (50)	16.5 (54)	N/A	N/A
Ch: 9-12	18.0 (59)	19.2 (63)	N/A	N/A
Ch: 13-16	20.8 (68)	22.3 (73)	N/A	N/A

N/A = Not Applicable (for Tables 2 and 3)

Note: For use of Table 2, see Example of Table 2 Use.

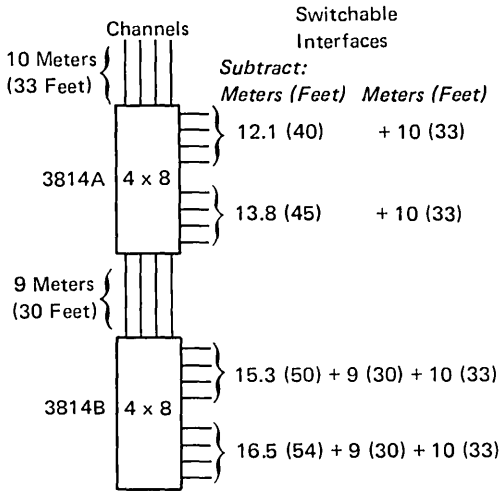
Table 2

	For Class 1 Control Units on a Switchable Interface, the 3814 Can Be Considered Representing This Many Intervening Control Units			
3814 Matrix Size	*N = 1 to 4*	*N = 5 to 8*	*N = 9 to 12*	*N = 13 to 16*
4 x N	3	3	4	4
8 x N Ch: 1-4	3	3	4	4
Ch: 5-8	3	4	4	5
12 x N Ch: 1-4	3	3	N/A	N/A
Ch: 5-8	4	4	N/A	N/A
Ch: 9-12	4	5	N/A	N/A
16 x N Ch: 1-4	3	3	N/A	N/A
Ch: 5-8	4	4	N/A	N/A
Ch: 9-12	4	5	N/A	N/A
Ch: 13-16	5	5	N/A	N/A

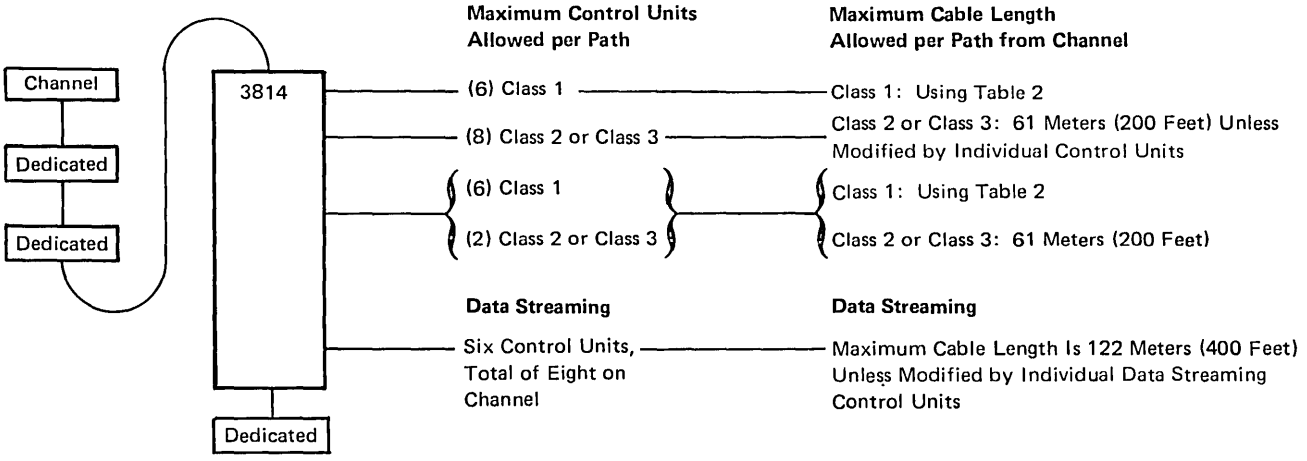
Note: An alternate approach to using Table 2 is to treat the 3814 as representing intervening control units. If this approach is used, Class 1 control units that are affected by intervening control units should use the values as stated in Table 3.

Table 3. Alternate Method for Evaluating 3814 Cabling Restrictions

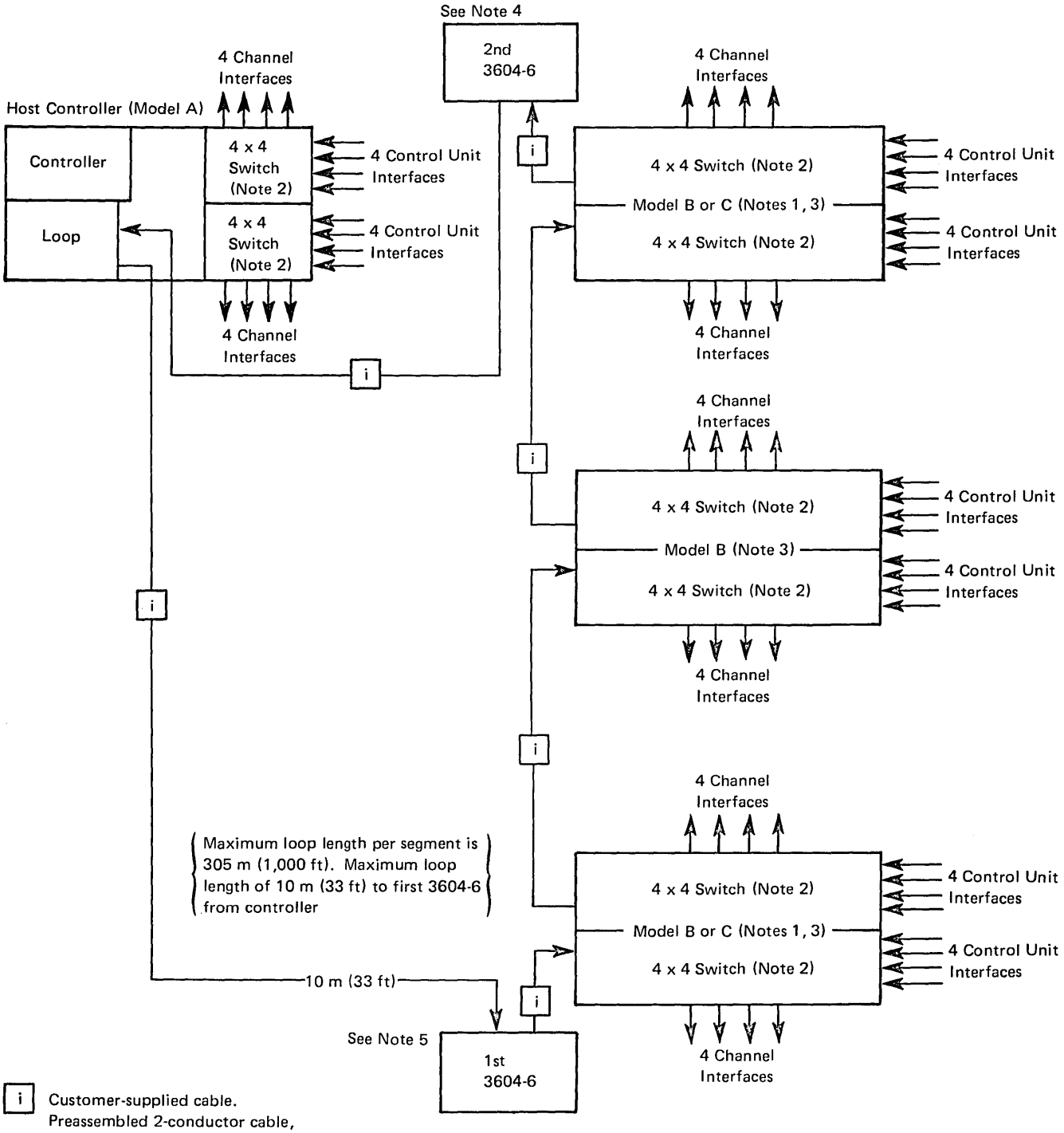
2. Class 2 or Class 3 control units (nondata streaming):
   a. Equivalent control unit positions from the 3814; eight are allowed excluding dedicated control units.
   b. Maximum cable length is determined by individual control unit restrictions as measured from the channel through the 3814.
3. Data streaming control units:
   a. Equivalent control unit positions from the channel through the switch; eight are allowed per switchable interface, including the dedicated control units between the 3814 and the channel. The 3814 is assigned zero control unit positions.
   b. Maximum cable length is determined by individual control unit restrictions as measured from the channel through the 3814.
4. A maximum of eight control units is allowed per switchable interface.
5. Dedicated control units after the 3814 do not count for switchable interface.



Example of Table 2 Use



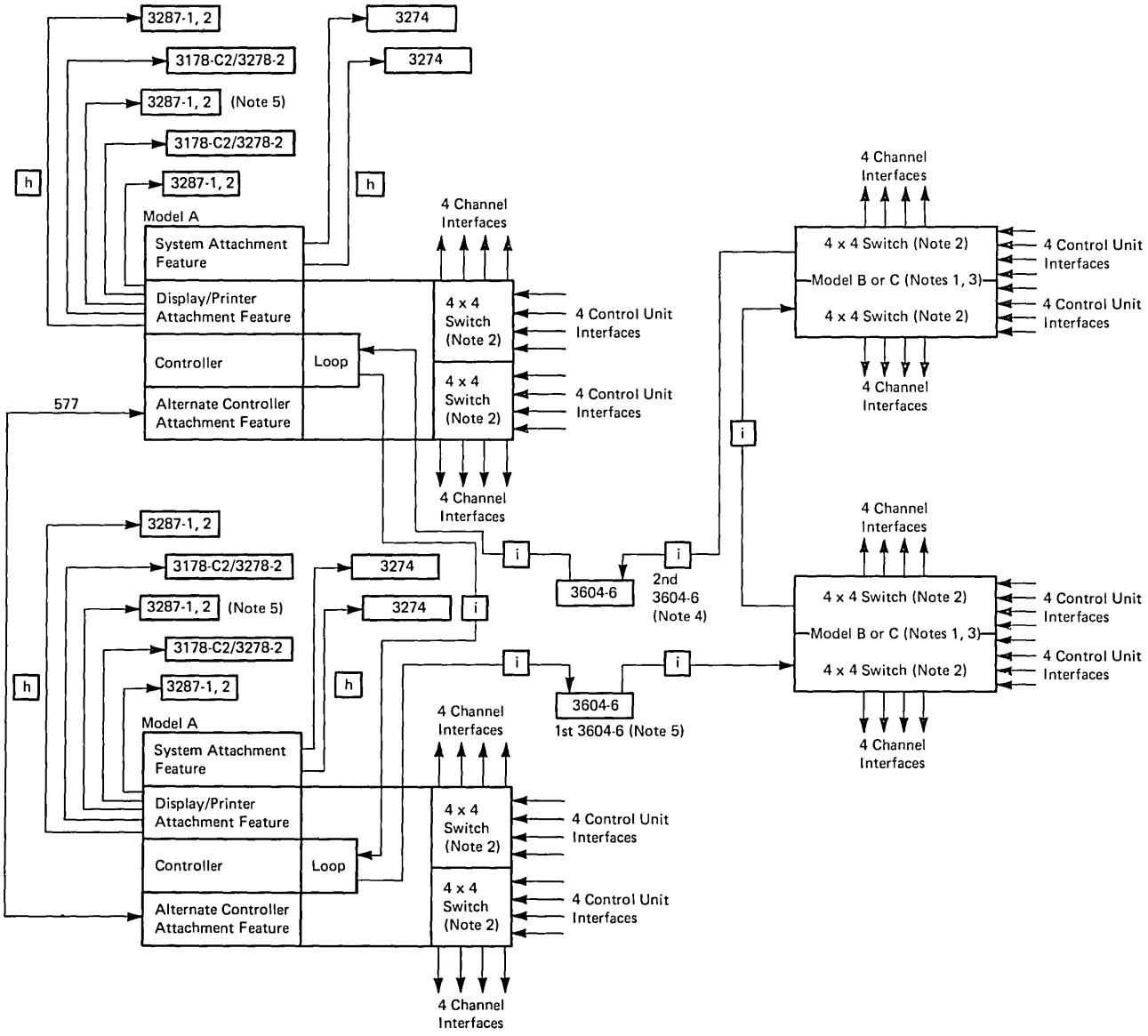
3814 SWITCHING MANAGEMENT SYSTEM COMPONENT DIAGRAM EXAMPLE



Notes:

1. Each 3814 Switching Management System can have a maximum of two Model Cs.
2. The controller can control a maximum of eight 4 x 4 switches in four frames.
3. Valid combinations: Standalone—Model A or Model B
   In combination—Model A and Model C
   Model B and Model C
4. The second 3604-6 may be cabled into any position on the loop after the first 3604-6.
5. For best serviceability, one 3604-6 should be installed within 10 m (33 ft) of the Model A controller and on the same building floor.

3814 SWITCHING MANAGEMENT SYSTEM COMPONENT DIAGRAM EXAMPLE, WITH ALTERNATE CONTROLLER ATTACHMENT FEATURE, DISPLAY/PRINTER ATTACHMENT FEATURE, AND SYSTEM ATTACHMENT FEATURE



h Customer-supplied cable. Preassembled coaxial cable, IBM part 2577672 or equivalent.

i Customer-supplied cable. Preassembled 2-conductor cable, IBM part 1563155 or equivalent.

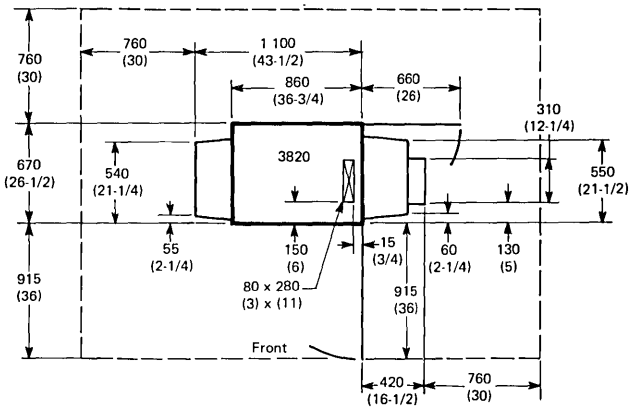
Notes:

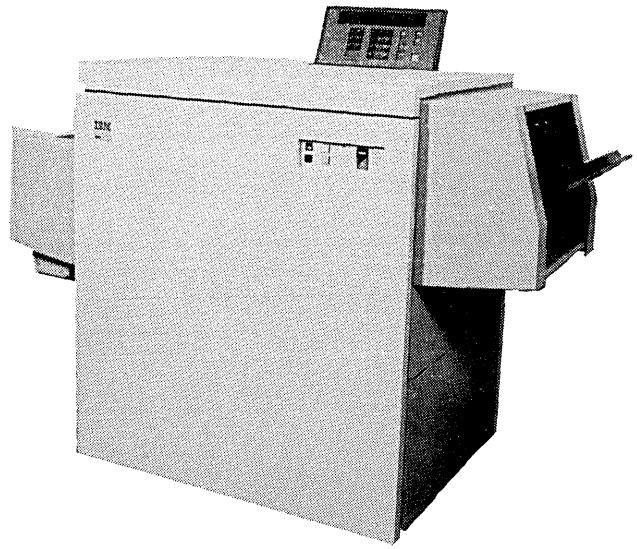
1. Each 3814 Switching Management System can have a maximum of two Model Cs.
2. The controller can control a maximum of eight 4 x 4 switches in four frames.
3. Valid combinations: Standalone—Model A or Model B
   In combination—Model A and Model C
   Model B and Model C
4. The second 3604-6 may be cabled into any position on the loop after the first 3604-6.
5. For best serviceability, either a 3604-6, 3178-C2, or 3278-2 should be installed within 30 m (100 ft) of the Model A controller and on the same building floor.

3820 PAGE PRINTER

PLAN VIEW (Metric Scale: 10 mm = 0.5 m)

English measurements are shown in parentheses.





SPECIFICATIONS

Dimensions:

	Front	Side	Height
mm	1 520	670	1 190
(inches)	(60)	(26-1/2)	(47)

Service Clearances:

	Front	Rear	Right	Left
mm	915	760	760	760
(inches)	(36)	(30)	(30)	(30)

Weight: 259 kg (570 lb)

Heat Output:

Operating:	1 340 W (4,600 BTU/hr)
Nonoperating:	477 W (1,650 BTU/hr)

Power Requirements:

	50 Hz	*60 Hz*
Voltages	100, 200, 220, 230, 240	120, 200
kVA	1.8	1.8
Ampacity	10 A	20 A
Phases	1	1
Plug		NEMA L5-20P (120 V ac only)
Receptacle		NEMA L5-20R (120 V ac only)

Power Cord Style (see following page)

Note: All 50-Hz machines are shipped with transformers set to 220 V ac. 60-Hz machines are shipped with transformers set to 220 V ac except for domestic (U.S.) and Canadian machines which are set to 120 V ac only.

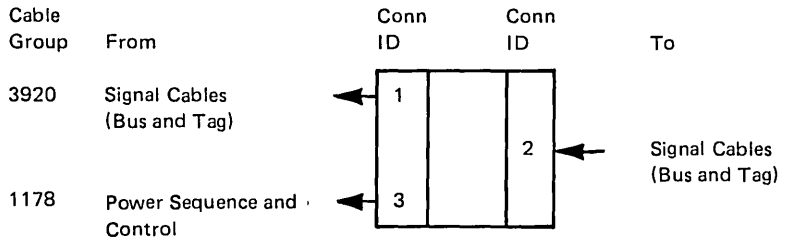
Environment, Operating:

Temperature	16°C-32°C (60°F-90°F)
Rel Humidity	8%-80%
Max Wet Bulb	23°C (73°F)

3820 PAGE PRINTER POWER CORD SPECIFICATIONS

	Length	Cable Nominal OD	Number of Shields	Conductors		
				Number	Nominal OD	AWG No.
All 60 Hz Chicago, Illinois, U.S.A.	3.35 m (11 ft) 1.83 m (6 ft)	15.8 mm (0.62 in.)	0	3	1.63 mm (0.064 in.)	12
50 Hz (Except Japan and Australia)	3.35 m (11 ft)	8.9 mm (0.35 in.)	0	3	1.5 mm (0.059 in.)	14
50/60 Hz Japan	4.13 m (13-1/2 ft)	8.36 mm (0.33 in.)	0	3	–	18
50/60 Hz Australia	4.43 m (14-1/2 ft)	8.36 mm (0.33 in.)	1	3	–	18

3820 PAGE PRINTER CHANNEL FEATURE CABLING SCHEMATIC (Note 1)



From 3820

Group No.	*No. of Cables*	*Conn ID*	*Max Length*		*Comments*	*Notes*
			m	*(ft)*		
3920	2	1	61	(200)	Bus and tag	2
1178	1	3	46	(150)	Power sequence and control	3

To 3820

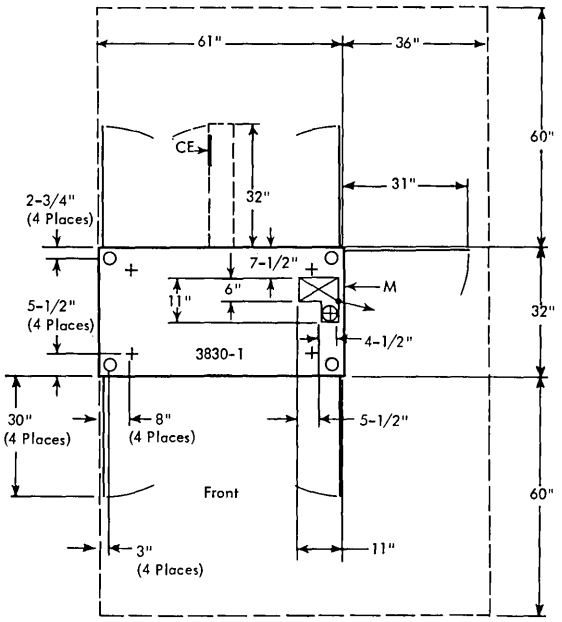
Conn ID	*Comments*
2	Bus and tag

Notes:

1. Channel Interface (feature 3055) cables are not required for EIA Communications Interface (feature 3050).
2. Maximum cumulative X-length is 61 meters (200 ft), unless modified by system or channel limitation. Maximum cable length must be reduced by 5 meters (15 feet) for each control unit connected between the 3820 and the channel.
3. Cable group 1178, power sequence and control cable, is optional.

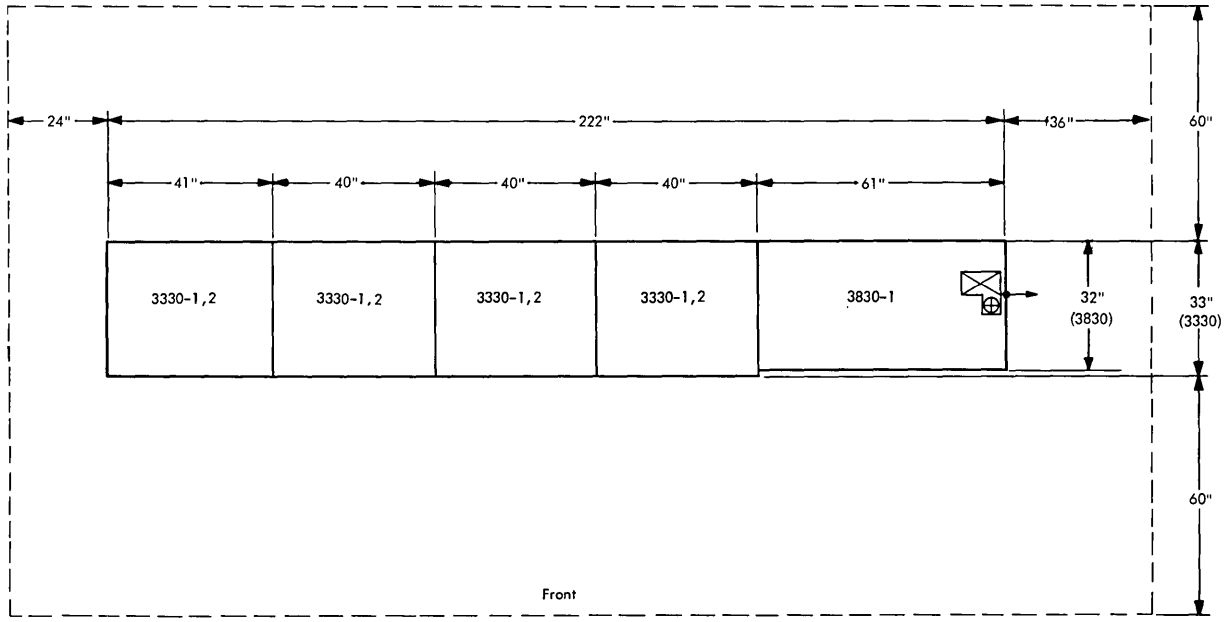
3830 STORAGE CONTROL MODEL 1

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



3830-1 AND 3330-1 OR 3330-2 DISK STORAGE FACILITY (MAXIMUM CONFIGURATION)

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: Left service clearance required for any configuration of storage control and disk storage modules. The facility contains one storage control and from one to four disk storage modules. See 3330 and 3830 specifications.

3830 STORAGE CONTROL MODEL 1

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	61	32	60
(cm)	(155)	(81)	(152)

Service Clearances:

	F	R	Rt	L
Inches	60	60	36	0*
(cm)	(152)	(152)	(91)	(0*)

Weight: 1,600 lb (730 kg)

Heat Output: 10,500 BTU/hr (2 650 kcal/hr)

Airflow: 1,160 cfm (33 m^3/min)

Power Requirements:

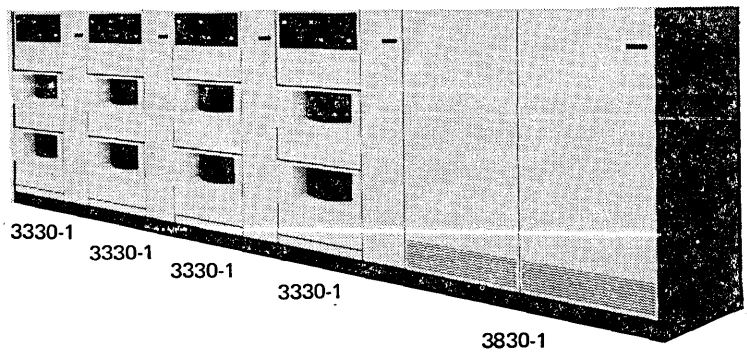
kVA	3.2
Phases	3
Plug	R&S, SC7328
Connector	R&S, SC7428
Receptacle	R&S, SC7324
Power Cord Style	E7

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

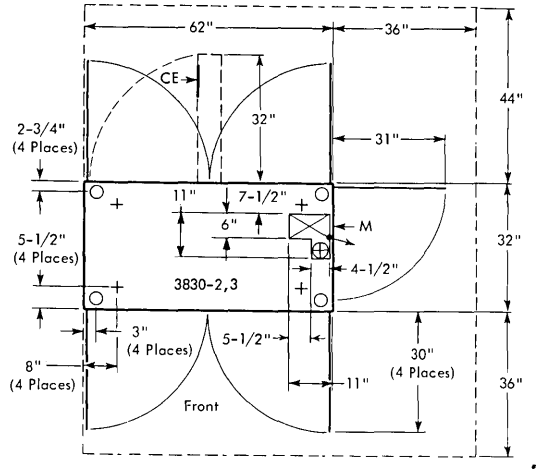


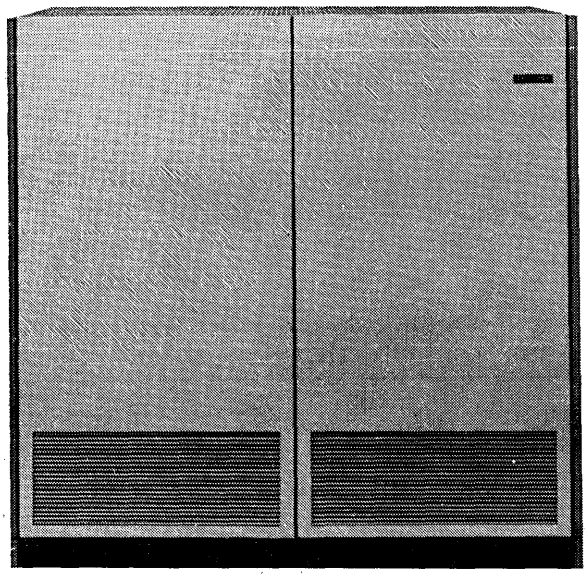
Notes:

* The 3830-1 abuts and attaches to the right end of a 3330-1 or a 3330-2.

3830 STORAGE CONTROL MODELS 2 AND 3

PLAN VIEW (English Scale: 1/4 in. = 1 ft)





SPECIFICATIONS

Dimensions:

	F	S	H
Inches	62	32	60
(cm)	(157)	(81)	(152)

Service Clearances:

	F	R	Rt	L
Inches	36	44	36	0
(cm)	(91)	(112)	(91)	(0)

Weight: 1,600 lb (730 kg)

Heat Output: 10,500 BTU/hr (2 650 kcal/hr)

Airflow: 1,160 cfm (33 m^3/min)

Power Requirements:

kVA	3.3
Phases	3
Plug	R&S, FS3730
Connector	R&S, FS3914
Receptacle	R&S, FS3744
Power Cord Style	B2

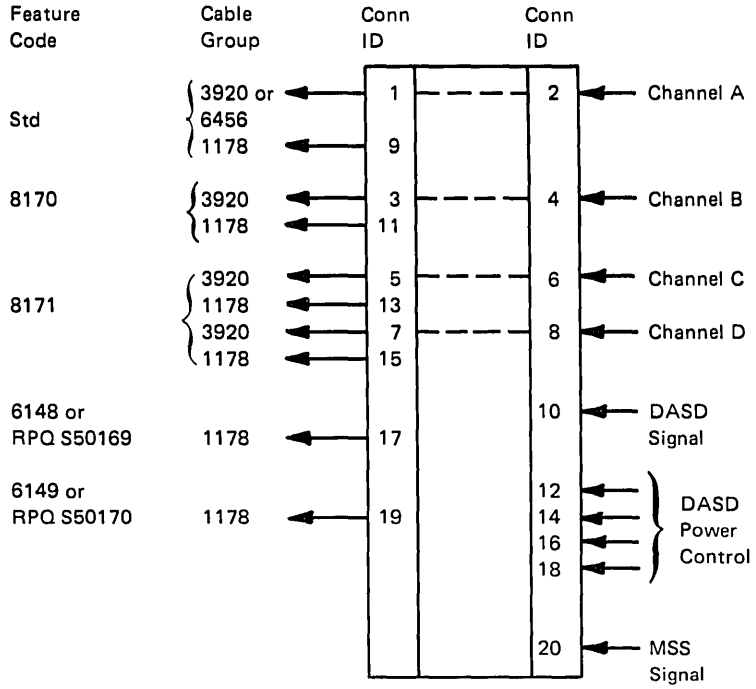
Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

3830 STORAGE CONTROL MODELS 1, 2, AND 3 CABLING SCHEMATIC



From 3830

Feature Code	*Group No.*	*No. of Cables*	*Conn ID*	*Max Length*		*Model*	*Notes*
				m	*(ft)*		
Std	3920	2	1	72	(250)	1, 2	1, 2
	6456	2	1	91	(300)	3	5
	1178	1	9	85	(280)	All	3
8170	3920	2	3	75	(250)	All	1, 2
	1178	1	11	85	(280)	All	3
8171	3920	2	5	85	(280)	All	1, 2
	1178	1	13	85	(280)	All	3
	3920	2	7	85	(280)	All	1, 2
	1178	1	15	85	(280)	All	3
6148	1178	1	17	46	(150)	2, 3	4
6149	1178	1	19	46	(150)	2, 3	4
RPQ S50169	1178	1	17	46	(150)	1	4
RPQ S50170	1178	1	19	46	(150)	1	4

To 3830

Feature Code	*Conn ID*	*Model*	*Notes*
Std	2	All	1, 2
8170	4	All	1, 2
8171	6	All	1, 2
	8	All	1, 2
Std	10	2, 3	6, 9, 10
Std	12	2, 3	8
Std	14	2, 3	8
Std	16	2, 3	8
Std	18	2, 3	8
Std	20	3	7, 10

3830 STORAGE CONTROL MODELS 1, 2, AND 3 CABLING SCHEMATIC

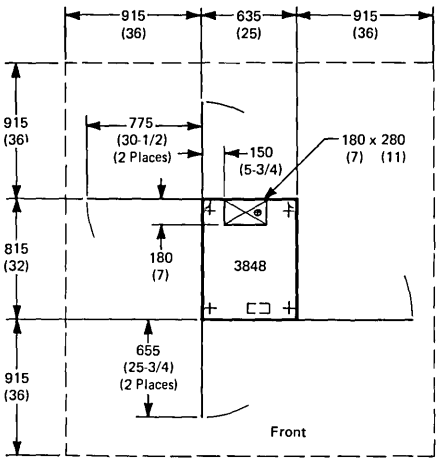
Notes:

1. Maximum length is increased to 85 meters (280 feet) when SF 9318 for Model 2 or SF 9320 for Model 3 is installed.
2. Maximum length must be reduced by 4.5 meters (15 feet) for each control device connected between a 3830 and the attaching channel.
3. Power sequence and control; cable is optional.
4. Remote switch is required for SF 6148, SF 6149, RPQ S50169 or RPQ S51070.
5. Maximum cumulative cable length of 91 meters (300 feet) is available to attach as many as seven devices to the standard port of the 3851 or eight devices to an optional port of the 3851. The most remote 3830-3, controlling the 3330, 3333, and/or 3350 containing control information for the mass storage system, must be within 45 meters (150 feet). See "General Cabling Schematics" under "3850 Mass Storage System."
6. Signal from DASD.
7. Signal from MSS.
8. Power control.
9. The attachment options for the 3830 Model 2 are:
   a. As many as four 3333s, 3340-A2s, and/or 3350-A2s, -A2Fs, -C2s, or -C2Fs in any combination.
   b. As many as four 3333s (any model) and/or 3350-A2s, or 3350-A2Fs in any combination. Each 3350-A2 or 3350-A2F can attach one 3350-C2 or 3350-C2F for a maximum of four 3350-A2s or 3350-A2Fs and four 3350-C2s or 3350-C2Fs.
   c. As many as two 3340-A2s can attach 3344. Attachment of one or more 3340-A2s with 3344s is mutually exclusive with attachment of either 3333s or 3350s.
10. The attachment options for the 3830 Model 3 are:
    a. As many as four strings of 3333s and/or 3350s in any combination.
    b. As many as four data recording controllers (DRCs) on the mass storage system.

3848 CRYPTOGRAPHIC UNIT

PLAN VIEW (Metric Scale: 10 mm = 0.5 m)

English measurements are shown in parentheses.



SPECIFICATIONS

Dimensions:

	Front	Side	Height
mm	640	820	1 020
(inches)	(25)	(32)	(40)

Service Clearances:

	Front	Rear	Right	Left
mm	920	920	920	920
(inches)	(36)	(36)	(36)	(36)

Weight: 181 kg (400 lb)

Heat Output: 800 W (2,750 BTU/hr)

Airflow: 6.5 m^3/min (220 cfm)

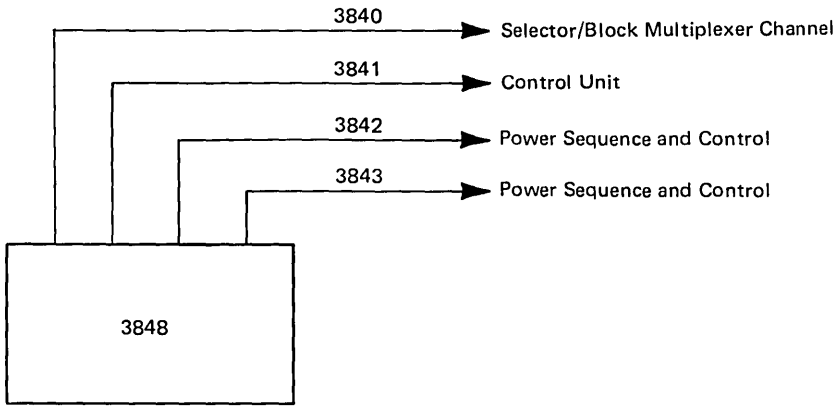
Power Requirements:

kVA	0.8
Phases	1
Plug	R&S, FS3720
Connector	R&S, FS3913
Receptacle	R&S, FS3743
Power Cord Style	A6

Environment, Operating:

Temperature	16°C-32°C (60°F-90°F)
Rel Humidity	20%-80%
Max Wet Bulb	23°C (73°F)

3848 CRYPTOGRAPHIC UNIT CABLING SCHEMATIC



Group No.	*No. of Cables*	*From*	*To*	*Max Length meters*	*(ft)*	*Notes*
3840	2	3848	Sel/Blk Mpx Chan	–	–	2
3841	2	3848	Control Unit	–	–	2
3842	1	3848	Channel	45	(148)	1
3843	1	3848	Channel	122	(400)	1

Notes:

1. Power sequence and control; cable is optional. Select 3842 or 3843.
2. For detailed information, refer to *IBM 3848 Cryptographic Unit Product Description and Operating Procedures,* GA22-7073.

3850 MASS STORAGE SYSTEM

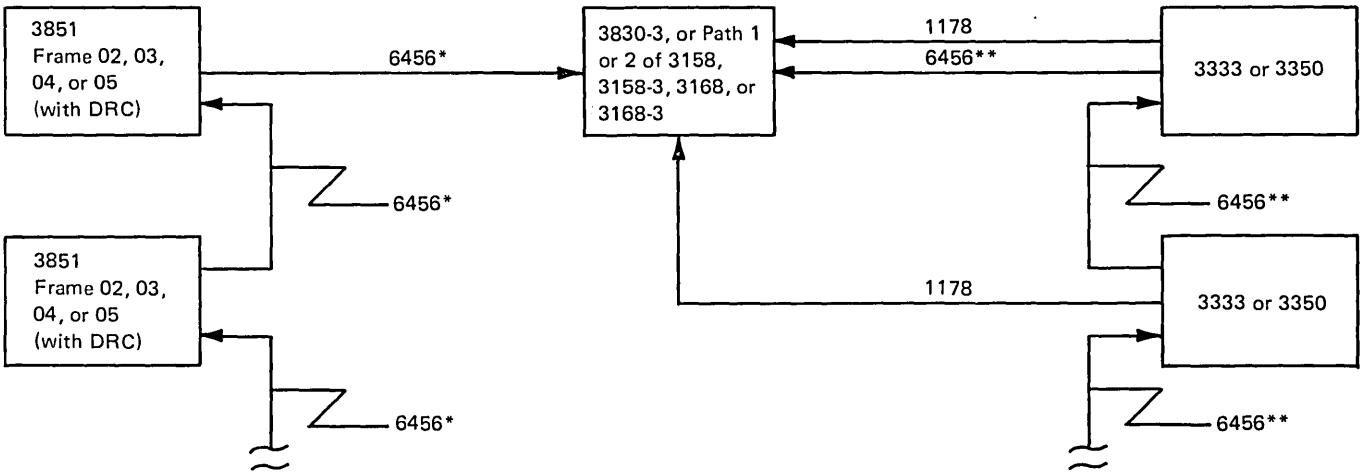
Individual cable paths interconnect various machines and functions of the IBM 3850 Mass Storage System. The following information includes the general cabling schematics and cable length limitations of the system.

1. Connection to system channels. (See Section 2, "General Cabling Information.")
   a. The 3850 Mass Storage Facility frame 01 contains a control unit function. The A-series 3851 (frame 01) requires one position on a channel. The B-series 3851 (frame 01) requires two positions on a channel. (See "3851 Mass Storage Facility Cabling Schematic.") The 3851 can be attached to a maximum of four channels. The maximum cumulative cable length for each channel is 61 meters (200 feet).
   b. The 3830 Storage Control Model 3 requires a position on a block multiplexer channel. The 3830-3 can be attached to a maximum of three channels. Maximum cable length varies. (See "3830 Storage Control Models 1, 2 and 3 Cabling Schematic.")
   c. System/370 Model 158 or 168 may have integrated storage controls (SF 4650) with staging adapter (SF 7220) installed on the 3158, 3158-3, 3168, or 3168-3. Each ISC path can be attached to a maximum of two block multiplexer channels. The maximum cumulative cable length for each channel varies. (See System/370 Models 158 and 168 cabling information for specifications.)
2. Connection of a 3333, 3350-A2/3350-A2F, and 3350-C2/3350-C2F to integrated storage controls or 3830-3. (See individual unit cabling schematics.)

General Cabling Schematics

The following schematics show the cable paths required within the mass storage system.

A. Data Recording Controller* (DRC) and 3333 or 3350 to 3830 Model 3, or Staging Adapter (SF 7220) of a 3158, 3158-3, 3168, or 3168-3



Maximum of four DRCs

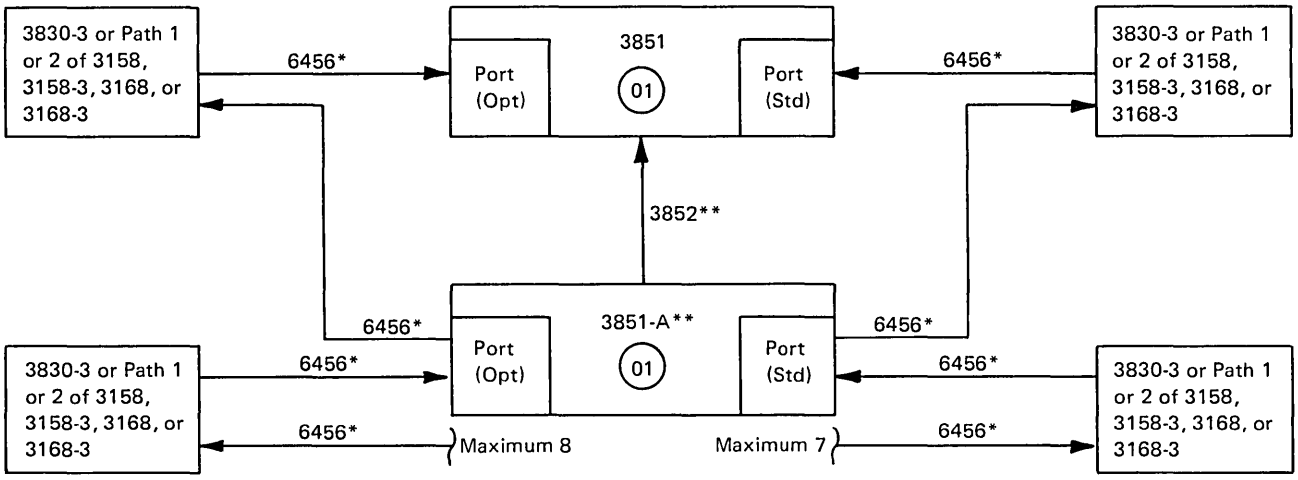
Maximum of four 3333s, 3350-A2s, or 3350-A2Fs in any combination. Each 3350-A2 or 3350-A2F can also attach one 3350-C2 or 3350-C2F.

*Each frame (02, 03, 04, and 05) may contain one data recording controller (DRC). The number of frames and DRCs included in the 3851 Mass Storage Facility varies depending on model. Each DRC can be attached to two staging adapters and/or 3830 Model 3. A maximum of four DRCs can be attached to each staging adapter or 3830 Model 3. The DRCs can be part of the same, or different, 3851s in the same 3850 Mass Storage System.

**Special features may be ordered to connect a 3333, 3350-A2, 3350-A2F, 3350-C2, or 3350-C2F to two ISCs and/or 3830-3.

General Cabling Schematics (Continued)

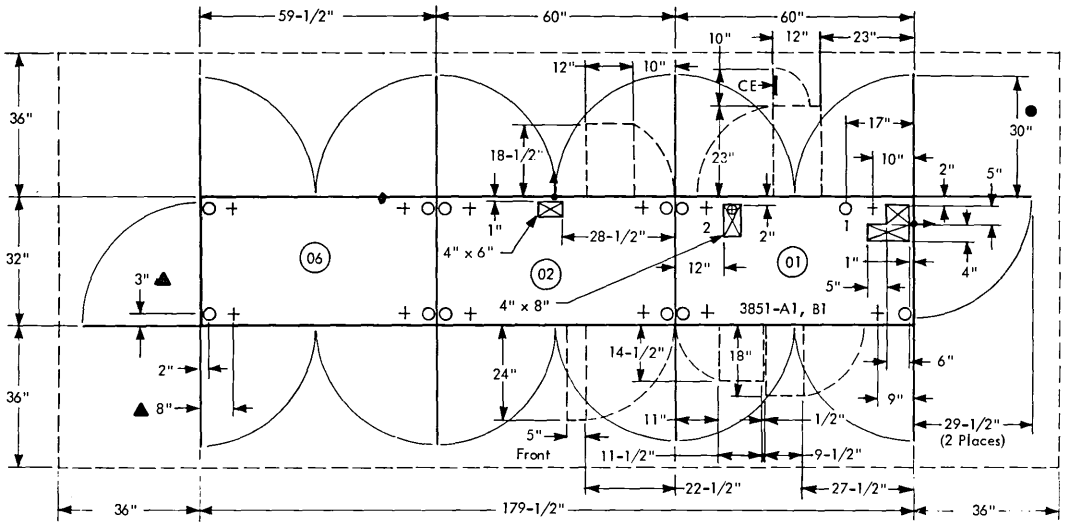
B. 3830 Model 3 or Staging Adapter (SF 7220) of a 3158, 3158-3, 3168, or 3168-3 to the Mass Storage Control Port of a 3851 Mass Storage Facility



*Maximum cumulative cable length for each path is 91 meters (300 feet). The most remote 3158, 3158-3, 3168, or 3830-3 controlling the DASD devices, which contain control information for the mass storage system, must be within 45 meters (150 feet) from the primary and secondary 3851.

**This section fo the diagram shows the connection of two A-series 3851s in the same mass storage system. Cable group 3852 connects the secondary (#2) A-series 3851 to the primary (#1) A-series 3851. Maximum cable length is 91 meters (300 feet). If SF 4901 (for the optional port) is installed on the primary A-series 3851 (#1), it should also be installed on the secondary 3851 (#2). The 3851 (#2) should be separately connected to both the standard port and the optional port. Standard port and optional port cable paths should not be cross-connected.

PLAN VIEW (MINIMUM CONFIGURATION)* English Scale: 1/4 in. = 1 ft



*The number of frames included in the 3851 Mass Storage Facility (and cable entry holes required for frames 03, 04, and 05) is model dependent as shown in the following table. Note that frames 01, 02, and 06 (and cable entry holes shown in the plan views for them) are used with all models.

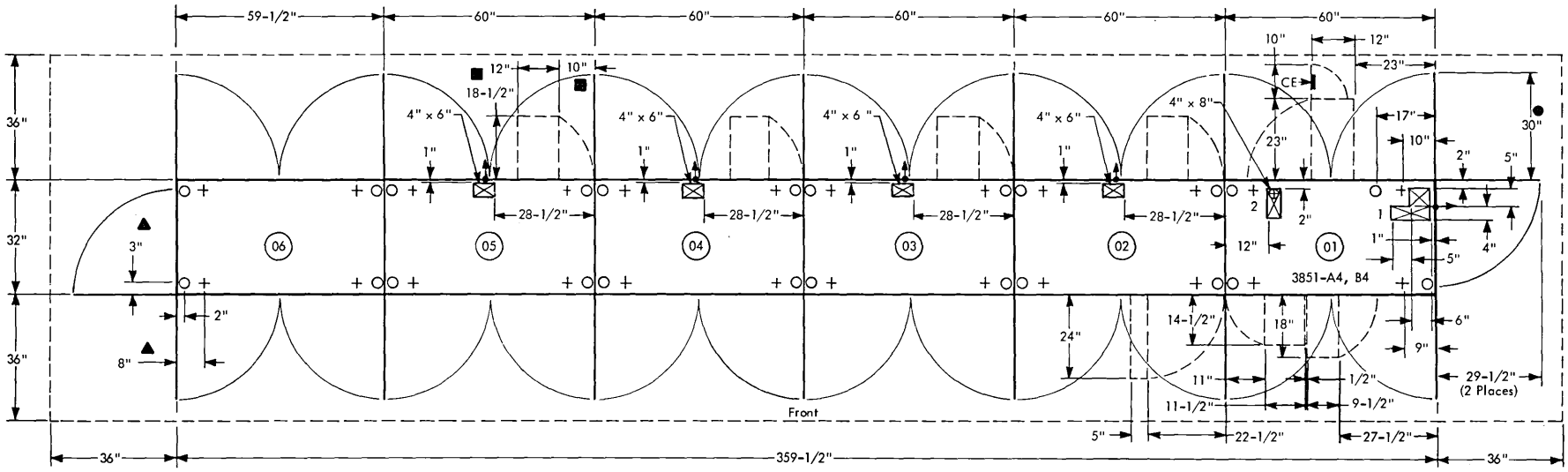
Models	Frames Included	Cable Entry for Frame
A01, B01	01, 02, 06	01, 02
A11, B11	01, 02, 03, 06	01, 02
A21, B21	01, 02, 03, 04, 06	01, 02
A31, B31	01, 02, 03, 04, 05, 06	01, 02
A02, B02	01, 02, 03, 06	01, 02, 03
A12, B12	01, 02, 03, 04, 06	01, 02, 03
A22, B22	01, 02, 03, 04, 05, 06	01, 02, 03
A03, B03	01, 02, 03, 04, 06	01, 02, 03, 04
A13, B13	01, 02, 03, 04, 05, 06	01, 02, 03, 04
A04, B04	01, 02, 03, 04, 05, 06	01, 02, 03, 04, 05

▲ Typical dimensions for casters and leveling pads for frames 01, 02, 03, 04, 05, and 06.

● Typical dimensions for front and rear cover swings on all frames.

■ Typical dimensions for rear gate on frames 02, 03, 04, 05.

PLAN VIEW (MAXIMUM CONFIGURATION)* English Scale: 1/4 in. = 1 ft



3851 MASS STORAGE FACILITY

SPECIFICATIONS

Details (By Frame)

Frame	Weight lb (kg)	Airflow cfm (m^3/min)	Heat Output BTU/hr (kcal/hr)
01 (A-models)	1,720 (780)	630 (18)	11,500 (2 900)
01 (B-models)	1,970 (900)	730 (21)	17,700 (4 500)
02	1,765* (810*)	500 (15)	7,500 (1 900)
03, 04, or 05 (With DRC)	2,020* (920*)	500 (15)	7,500 (1 900)
03, 04, or 05 (Without DRC)	1,330* (605*)	–	–
06	765 (350)	–	–

Note:

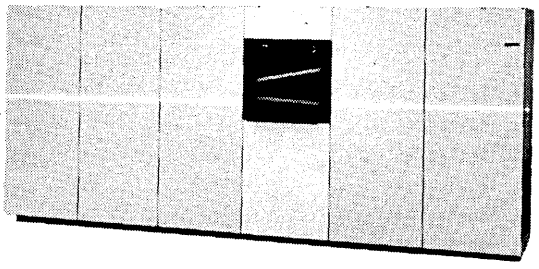
*Weight includes a maximum complement of cartridges:

235 lb (110 kg) for frame 02 and

446 lb (210 kg) each for frames 03, 04, and 05

Totals (By Model)

Model	Weight* lb (kg)	Airflow cfm (m^3/min)	Heat Output BTU/hr (kcal/hr)	kVA
A01	4,250 (1 950)	1,130 (32)	19,000 (4 800)	6.2
A02	6,270 (2 850)	1,630 (47)	26,500 (6 700)	8.6
A03	8,290 (3 800)	2,130 (61)	34,000 (8 600)	11.0
A04	10,310 (4 700)	2,630 (75)	41,500 (10 500)	13.4
A11	5,580 (2 250)	1,130 (32)	19,000 (4 800)	6.2
A12	7,600 (3 450)	1,630 (47)	26,500 (6 700)	8.6
A13	9,620 (4 400)	2,130 (61)	34,000 (8 600)	11.0
A21	6,910 (3 150)	1,130 (32)	19,000 (4 800)	6.2
A22	8,930 (4 000)	1,630 (47)	26,500 (6 700)	8.6
A31	8,240 (3 750)	1,130 (32)	19,000 (4 800)	6.2
B01	4,500 (2 050)	1,230 (35)	25,200 (6 400)	8.2
B02	6,520 (3 000)	1,730 (49)	32,700 (8 250)	10.7
B03	8,540 (3 900)	2,230 (64)	40,200 (10 150)	13.2
B04	10,560 (4 800)	2,730 (78)	47,700 (12 050)	15.6
B11	5,830 (2 650)	1,230 (35)	25,200 (6 400)	8.2
B12	7,850 (3 600)	1,730 (49)	32,700 (8 250)	10.7
B13	9,870 (4 500)	2,230 (64)	40,200 (10 150)	13.2
B21	7,160 (3 250)	1,230 (35)	25,200 (6 400)	8.2
B22	9,180 (4 200)	1,730 (49)	32,700 (8 250)	10.7
B31	8,490 (3 850)	1,230 (35)	25,200 (6 400)	8.2



3851 MASS STORAGE FACILITY

SPECIFICATIONS

Dimensions:

	Front	Side	Height
Inches	**	32	75-1/2
(cm)	(**)	(81)	(192)

Service Clearances:

	Front†	Rear†	Right	Left
Inches	36	36	36	36
(cm)	(91)	(91)	(91)	(91)

Acoustical Data:
For definitions, see "Acoustics" in Chapter 3 of *IBM General Information Manual: Installation Manual–Physical Planning*, GC22-7072.

L_{WAd}		$<L_{pA}>_m$		I	T
Operating (bels)	Idling (bels)	Operating (dB)	Idling (dB)		
8.4	8.4	58.0	57.0	No	No

Power Requirements:*

Phases	3
Plug	R&S, SC7328
Connector	R&S, SC7428
Receptacle	R&S, SC7324
Power Cord Style	E7

Environment, Operating:

Temperature	60°F-85°F (16°C-29°C)
Rel Humidity	20%-80%
Max Wet Bulb	70°F (21°C)

Environment, Nonoperating:

Temperature	50°F-90°F (10°C-32°C)
Rel Humidity	8%-80%
Max Wet Bulb	70°F (21°C)

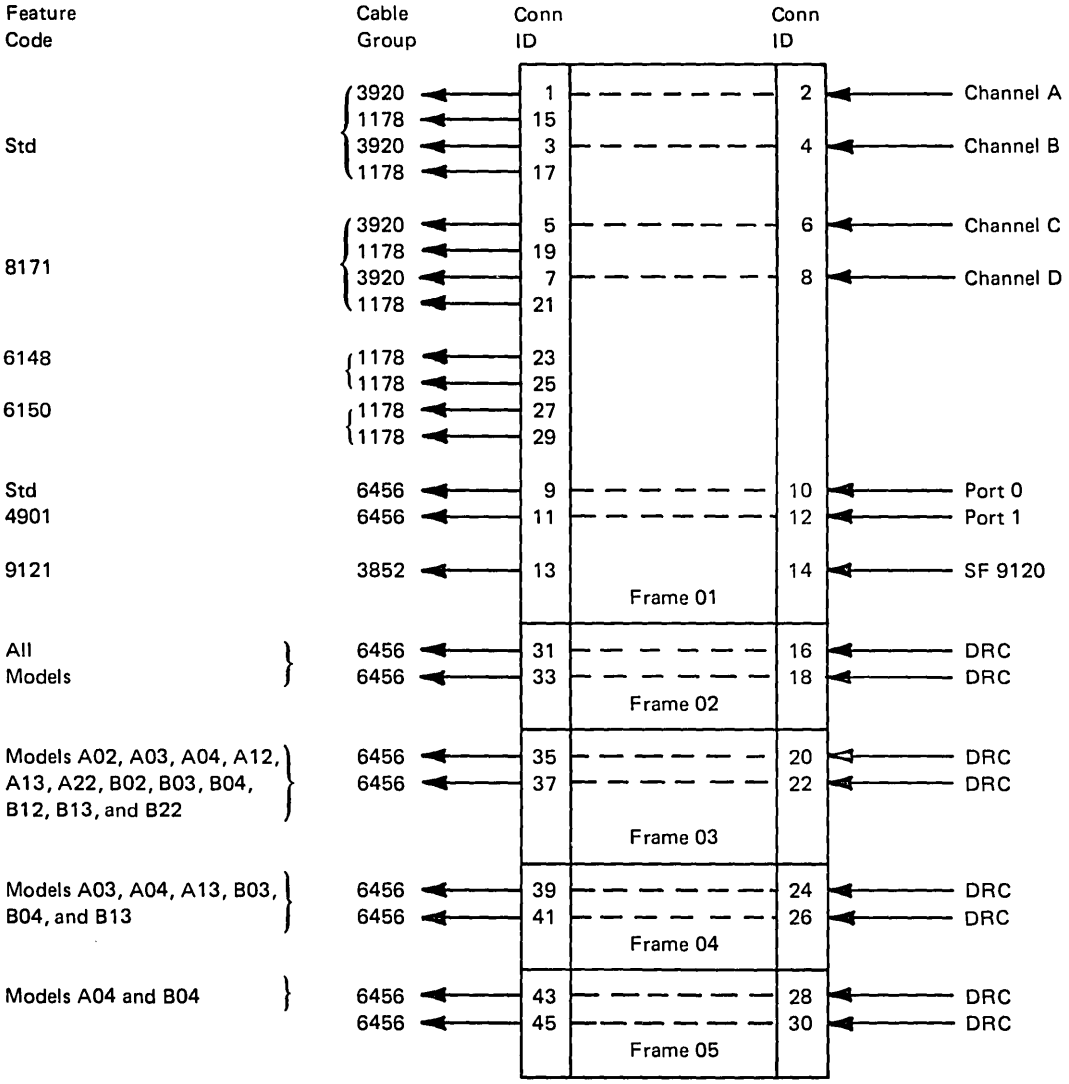
Notes:

* See Totals (By Model) for kVA.

** See plan view.

† Based on IBM's method of computation, the 3851 Model A03 and larger exceed 75 lb/ft^2 (370 kg/m^2) distributed floor loading when specified service clearances are used. Additional front and/or rear service clearances may be required to meet the building floor live-load rating.

3851 MASS STORAGE FACILITY CABLING SCHEMATIC



3851 MASS STORAGE FACILITY CABLING SCHEMATIC

From 3851

Feature Code	*Group No.*	*No. of Cables*	*Conn ID*	*Max Length*		*Model*	*Notes*
				m	*(ft)*		
Std	3920	2	1	61	(200)	All	1, 2, 5, 9
	1178	1	15	–	–	All	6
Std	3920	2	3	61	(200)	All	1, 2, 5, 9
	1178	1	17	–	–	All	6
Std	6456	2	9	91	(300)	All	3, 10
Std	6456	2	31	61	(200)	All	4, 9
Std	6456	2	33	61	(200)	All	4, 9
Std	6456	2	35	61	(200)	*	4, 9
Std	6456	2	37	61	(200)	*	4, 9
Std	6456	2	39	61	(200)	*	4, 9
Std	6456	2	41	61	(200)	*	4, 9
Std	6456	2	43	61	(200)	*	4, 9
Std	6456	2	45	61	(200)	*	4, 9
4901	6456	2	11	91	(300)	*	3, 11
6148	1178	1	23	61	(200)	All	7
6148	1178	1	25	61	(200)	All	7
6150	1178	1	27	61	(200)	B	7
6150	1178	1	29	61	(200)	B	7
8171	3920	2	5	61	(200)	All	1, 2, 5, 9
	1178	1	19	–	–	All	6
	3920	2	7	61	(200)	All	1, 4, 5, 9
	1178	1	21	–	–	All	6
9121	3852	1	13	–	–	A	8, 9

*Model dependent; see cabling schematic on page 3851.4.

3851 MASS STORAGE FACILITY CABLING SCHEMATIC

To 3851

Feature Code	*Conn ID*	*Model*	*Notes*
Std	2	All	1, 2, 5, 9
Std	4	All	1, 2, 5, 9
Std	10	All	3, 10
Std	16	All	4, 9
Std	18	All	4, 9
Std	20	*	4, 9
Std	22	*	4, 9
Std	24	*	4, 9
Std	26	*	4, 9
Std	28	*	4, 9
Std	30	*	4, 9
4901	12	All	3
8171	6	All	1, 2, 5, 9
	8	All	1, 2, 5, 9
9120	14	A	8

*Model dependent; see cabling schematic on page 3851.4.

Notes:

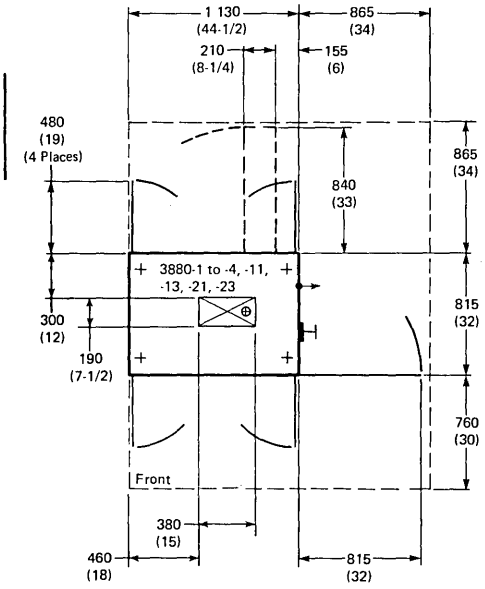
1. Total cable length of 61 meters (200 feet) is available to attach as many as eight control units (unless modified by general control-to-channel cabling schematic).
2. Special features may be ordered for connecting 3851 to more than one channel. One set of cables is required for each channel. Maximum cable length applies to each channel.
3. A maximum cumulative cable length of 91 meters (300 feet) is available to attach seven devices to the standard port. An additional 91-meter (300-foot) cable length is available to attach eight devices to the optional port. The 3830 Model 3 controlling the DASD devices, which contain control information for the mass storage system, must be within 45 meters (150 feet) of the primary and secondary 3851.
4. Each frame 02, 03, 04, or 05 may be attached to two cable paths. Maximum cumulative cable length is 61 meters (200 feet) for each path.
5. An A-series 3851 (frame 01) requires one position on a channel. A B-series 3851 (frame 01) requires two positions on a channel.
6. Power sequence and control cable. This machine must have the power sequence and control cable installed for proper operation.
7. Required for remote-switch attachment features. Specify:
   a. One for A- or B-models with SF 6148 and without SF 8171
   b. Two for A- or B-models with SF 6148 and with SF 8171
   c. Three for B-models with SF 6150 and without SF 8172
   d. Four for B-models with SF 6150 and with SF 8172
8. Required when two A-series are part of a mass storage system.
9. See "General Cabling Schematics" under "3850 Mass Storage System" for additional information.
10. Port 0 standard.
11. Port 1 SF 4901.

3880 STORAGE CONTROL MODELS 1-4, 11, 13, 21, AND 23

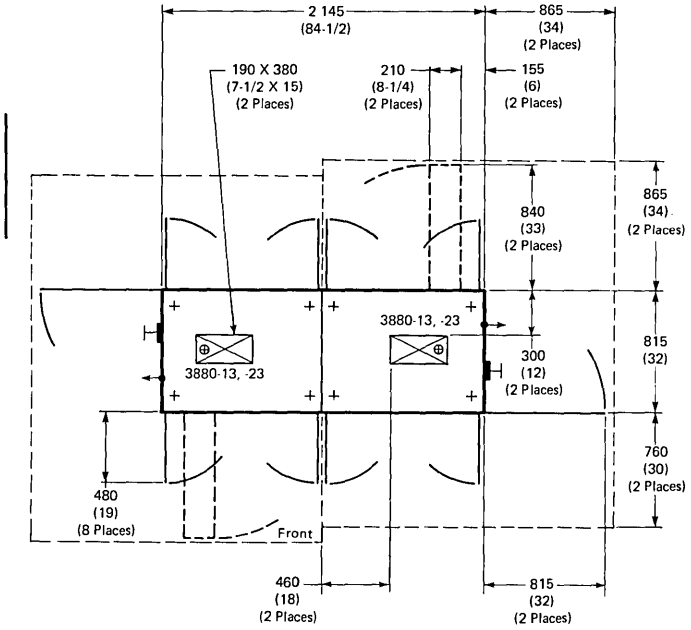
PLAN VIEW (Metric Scale: 10 mm = 0.5 m)

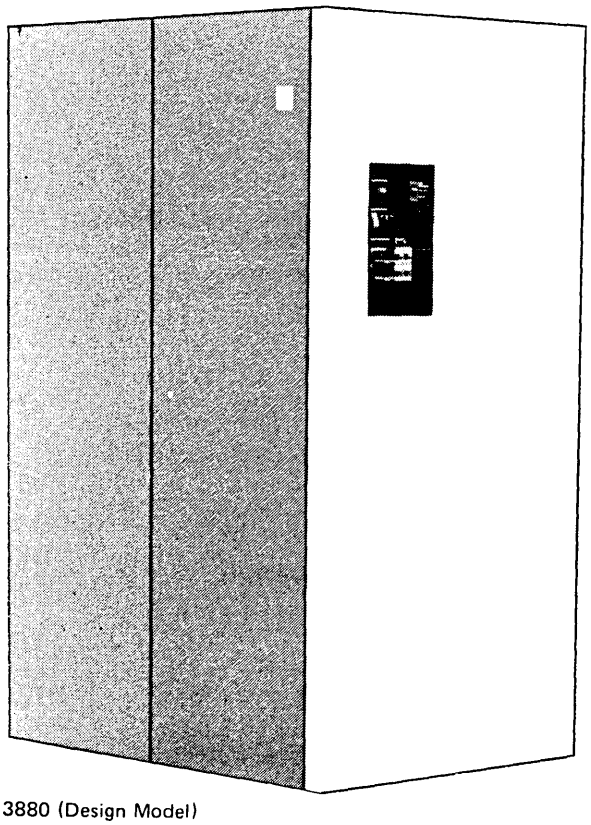
English measurements are shown in parentheses.

Single-Frame Configuration



Dual-Frame Configuration (Model 13 or 23*)





3880 (Design Model)

*Two Model 13s or 23s may be bolted together in a dual-frame configuration. The cover on the zero-clearance end of each frame is removed before the frames are bolted together.

CAUTION

If a dual-frame 3880 Model 23 is to be installed on a non-raised floor or on a raised floor that has no metallic shielding, RETAIN, search argument 3880 TIP 781.

3880 STORAGE CONTROL MODELS 1-4, 11, 13, 21, AND 23

SPECIFICATIONS

Dimensions:

	Front	Side	Height
Single Frame:			
mm	1 130	815	1 790
(inches)	(44-1/2)	(32)	(70-1/2)
Dual Frame:			
mm	2 145	815	1 790
(inches)	(84-1/2)	(32)	(70-1/2)

Service Clearances:

	Front	Rear	Right	Left
mm	760	865	865	0
(inches)	(30)	(34)	(34)	(0)

Dual Frame: See the dual-frame plan view on page 3880.1.

	Models 1-3	*Model 4*	*Models 11 and 13*	*Models 21 and 23*
Weight:				
kg	325	315	545	525
(lb)	(720)	(690)	(1,200)	(1,150)
Heat Output:				
W	1 600	750	2 300*	2 500**
(BTU/hr)	(5,500)	(2,500)	(7,700)	(8,550**)
Airflow:				
m^3/min	9.0	9.0	15.0	30.3
(cfm)	(320)	(320)	(530)	(1,070)

Acoustical Data:

For definitions, see "Acoustics" in Chapter 3 of *IBM General Information Manual: Installation Manual–Physical Planning*, GC22-7072.

	L_{WAd}		$<L_{pA}>_m$		I	T
	Operating (bels)	Idling (bels)	Operating (dB)	Idling (dB)		
3880-13	7.7	7.7	53.0	53.0	No	No
3880-23	8.0	8.0	56.0	56.0	No	No

Power Requirements:

kVA	1.7	0.9	2.5*	2.8**
Phases	3	3	3	3
Plug	R&S, 3730	R&S, 3730	R&S, 3730	R&S, 3730
Receptacle	R&S, 3744	R&S, 3744	R&S, 3744	R&S, 3744
Connector	R&S, 3914	R&S, 3914	R&S, 3914	R&S, 3914
Power Cord Style	B2	B2	B2	B2

A phase imbalance will exist depending on cache size, channel configuration, and power configuration.

Typical Configurations and Measurements

Power Configuration	*Amperes in Phase*			*Channel Configuration*	*Cache Size (M-bytes)*
	A	*B*	*C*		
60-Hz Delta	8.65	9.67	7.54	8	16
50-Hz Delta	5.92	8.00	7.29	4	32
50-Hz Wye	4.33	2.90	4.71	4	16

Environment, Operating:

Temperature	16°C-32°C (60°F-90°F)
Rel Humidity	20%-80%
Max Wet Bulb	26°C (78°F)

Environment, Nonoperating:

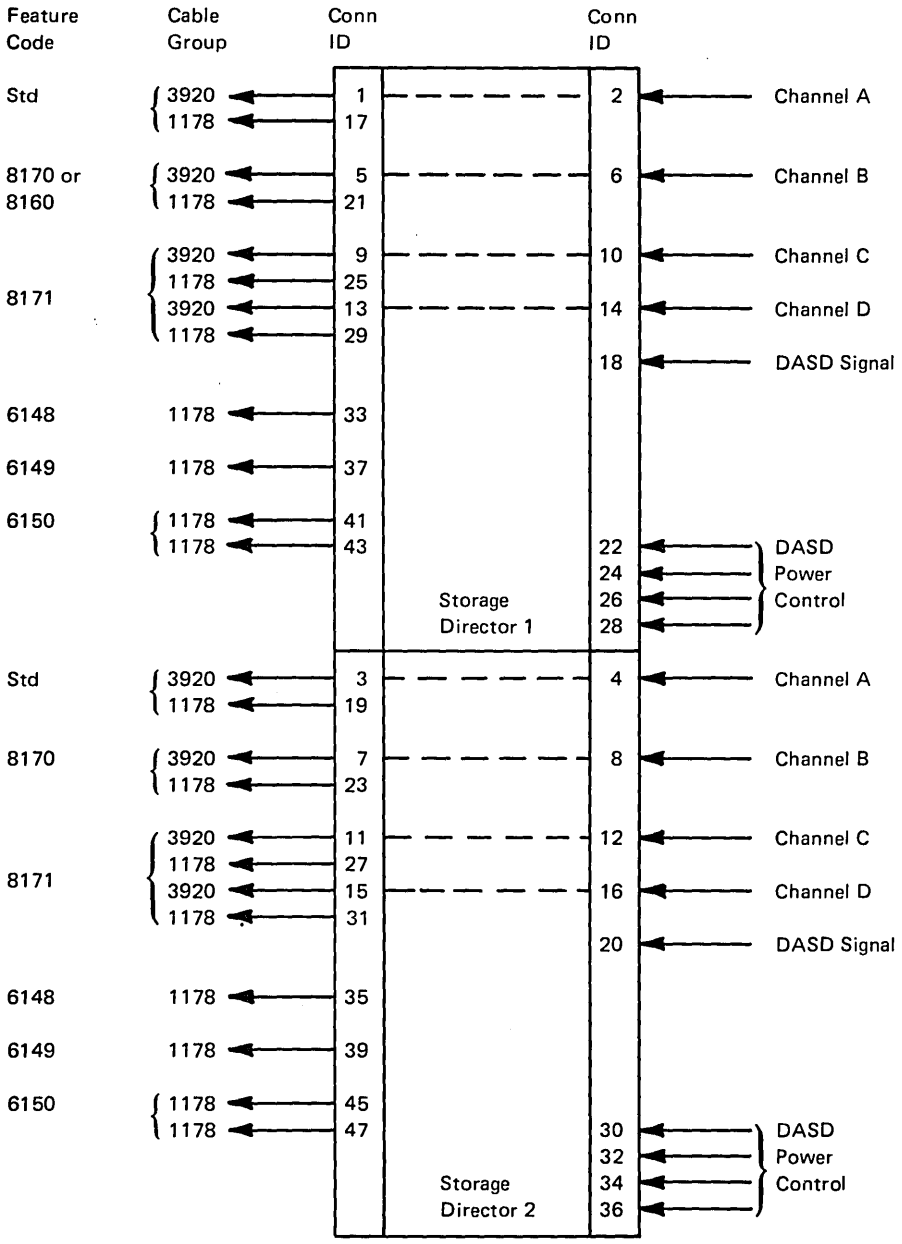
Temperature	10°C-43°C (50°F-110°F)
Rel Humidity	8%-80%
Max Wet Bulb	27°C (80°F)

Notes:

* On the Model 13 with the eight-channel-switch feature, heat output is 2 560 W (8,800 BTU/hr) and kVA is 3.2.

** On the Model 23 with the eight-channel-switch feature, heat output is 2 830 W (9,700 BTU/hr) and kVA is 3.3.

3880 STORAGE CONTROL MODELS 1-4, 11, 13, 21, AND 23 CABLING SCHEMATIC



3880 STORAGE CONTROL MODELS 1-4, 11, 13, 21, AND 23 CABLING SCHEMATIC

From 3880

Feature Code	*Group No.**	*No. of Cables*	*Conn ID*	*Max Length*		*Model*	*Notes*
				m	*(ft)*		
Std	3920	2	1	122	(400)	4	1, 6, 7
	1178	1	17	122	(400)	4	3
Std	3920	2	1	122	(400)	1, 2, 3, 11, 13, 21, 23	1, 6, 7
	1178	1	17	122	(400)	1, 2, 3, 11, 13, 21, 23	3
	3920	2	3	122	(400)	1, 2, 3, 11, 13, 21, 23	1, 6, 8
	1178	1	19	122	(400)	1, 2, 3, 11, 13, 21, 23	3
8160	3920	2	5	122	(400)	4	1, 2, 6, 7
	1178	1	21	122	(400)	4	3
8170	3920	2	5	122	(400)	1, 2, 3, 11, 13, 21, 23	1, 2, 6, 7
	1178	1	21	122	(400)	1, 2, 3, 11, 13, 21, 23	3
	3920	2	7	122	(400)	1, 2, 3, 11, 13, 21, 23	1, 2, 6, 8
	1178	1	23	122	(400)	1, 2, 3, 11, 13, 21, 23	3
8171	3920	2	9	122	(400)	1, 2, 3, 11, 13, 21, 23	1, 2, 6, 7
	1178	1	25	122	(400)	1, 2, 3, 11, 13, 21, 23	3
	3920	2	11	122	(400)	1, 2, 3, 11, 13, 21, 23	1, 2, 6, 8
	1178	1	27	122	(400)	1, 2, 3, 11, 13, 21, 23	3
	3920	2	13	122	(400)	1, 2, 3, 11, 13, 21, 23	1, 2, 6, 7
	1178	1	29	122	(400)	1, 2, 3, 11, 13, 21, 23	3
	3920	2	15	122	(400)	1, 2, 3, 11, 13, 21, 23	1, 2, 6, 8
	1178	1	31	122	(400)	1, 2, 3, 11, 13, 21, 23	3
6148	1178	1	33	122	(400)	1, 2, 3, 11, 13, 21, 23	5, 7
	1178	1	37	122	(400)	1, 2, 3, 11, 13, 21, 23	5, 8
6149	1178	1	35	122	(400)	1, 2, 3, 11, 13, 21, 23	5, 7
	1178	1	39	122	(400)	1, 2, 3, 11, 13, 21, 23	5, 8
6150	1178	1	41	122	(400)	1, 2, 3, 13, 23	2, 5, 7
	1178	1	43	122	(400)	1, 2, 3, 13, 23	2, 5, 7
	1178	1	45	122	(400)	1, 2, 3, 13, 23	2, 5, 8
	1178	1	47	122	(400)	1, 2, 3, 13, 23	2, 5, 8

*Cable group 0185 may be ordered as an alternate for cable group 3920.

3880 STORAGE CONTROL MODELS 1-4, 11, 13, 21, AND 23 CABLING SCHEMATIC

To 3880

Feature Code	*Conn ID*	*Model*	*Notes*
Std	2	4	1, 7
Std	2	1, 2, 3, 11, 13, 21, 23	1, 7
	4	1, 2, 3, 11, 13, 21, 23	1, 8
8160	6	4	1, 2, 7
8170	6	1, 2, 3, 11, 13, 21, 23	1, 2, 7
8170	8	1, 2, 3, 11, 13, 21, 23	1, 2, 8
8171	10	1, 2, 3, 11, 13, 21, 23	1, 2, 7
	12	1, 2, 3, 11, 13, 21, 23	1, 2, 8
	14	1, 2, 3, 11, 13, 21, 23	1, 2, 7
	16	1, 2, 3, 11, 13, 21, 23	1, 2, 8
Std	18	1, 2, 3, 11, 13, 21, 23	4, 5, 7
	20	1, 2, 3, 11, 13, 21, 23	4, 8, 9
Std	22	1, 2, 3, 11, 13, 21, 23	3, 7, 9
	24	1, 2, 3, 11, 13, 21, 23	3, 7, 9
	26	1, 2, 3, 11, 13, 21, 23	3, 7, 9
	28	1, 2, 3, 11, 13, 21, 23	3, 7, 9
Std	30	1, 2, 3, 11, 13, 21, 23	3, 8, 9
	32	1, 2, 3, 11, 13, 21, 23	3, 8, 9
	34	1, 2, 3, 11, 13, 21, 23	3, 8, 9
	36	1, 2, 3, 11, 13, 21, 23	3, 8, 9

Notes:

1. A 3880 Model 1, 2, 3, 11, 13, 21, or 23 each contain two storage directors. A 3880 Model 4 contains one storage director. Each storage director can be attached to a system channel directly or by means of intervening control devices. Available cable lengths are computed as follows:
   a. For attachment of one storage director of a 3880 to a 2880, maximum length is 85 meters (280 feet). This maximum length is increased to 107 meters (350 feet) if SF 6550 is installed.
   b. For attachment of one storage director of a 3880 to a 3031, 3032, 3033, 3042-2, 3082, 4331 Model Group 2, or 4341, maximum length is 122 meters (400 feet). With SF 6550 installed, the maximum length is reduced to 107 meters (350 feet).
   c. For attachment of one storage director of a 3880 with 3370-A1s or 3375-A1s to a 4331 Model Group 2 or to a 4341, maximum length is 61 meters (200 feet). Maximum length may be increased to 122 meters (400 feet) when the data-streaming-storage-director-to-channel protocol is used.
   d. Maximum length for attachment to a 3158 is 75 meters (250 feet). If SF 6550 is installed, the maximum length is increased to 110 meters (325 feet).
   e. Maximum length for all other channels is 75 meters (250 feet).
   f. These maximum lengths must be reduced by 4.5 meters (15 feet) for each control unit or storage director connected between a storage director of a 3880 and a channel.
   g. Models 13 and 23 in a dual-frame configuration are cabled in the same manner as two single 3880 Model 13s or 23s.
2. Special features may be ordered to attach each storage director to more than one channel.
   a. SF 8160 provides the second channel attachment for the storage director on 3880 Model 4.
   b. SF 8170 provides the second channel attachment for each storage director on 3880 Models 1, 2, 3, 11, 13, 21, and 23.

      SF 8170 is the minimum configuration for the 3880 Models 21 and 23.

3880 STORAGE CONTROL MODELS 1-4, 11, 13, 21, AND 23 CABLING SCHEMATIC

Notes (Continued):

c. SF 8171 provides two additional channel attachments for each storage director on 3880 Models 1, 2, 3, 11, 13, 21, and 23.
d. SF 8172 (eight-channel switch) internally connects the two storage directors so that each director has access to all eight channels on 3880 Models 1, 2, 3, 13, and 23.

3. Power sequence and control cable. This cable is optional and should be ordered if the installation uses power sequencing controls.
4. Attachment options for each of the 3880 are shown in the following table:

Model	*Attachment Options*
1	Each storage director can attach: • As many as four 3340-A2s or • As many as four 3370-A1s or • As many as four 3375-A1s or 3375-D1s or • As many as four 3333s (any model) and/or 3350-A2s and 3350-A2Fs in any combination. Each 3350-A2 or 3350-A2F can attach one 3350-C2 or 3350-C2F for a maximum of four 3350-A2s or 3350-A2Fs and four 3350-C2s or 3350-C2Fs.
2	Storage director 1 provides for the attachment as described above for one 3880 Model 1 storage director. Storage director 2 provides for the attachment of either as many as two 3380-A4s or as many as two 3380-AA4s.
3	Each storage director can attach as many as two 3380-AA4s, -AD4s, or -AE4s in any combination. Two 3380-A4s can attach; however, 3380 Model A4 cannot be attached to the same director with any other model of 3380.
4	The storage director can attach as many as four 3370s or 3375s. The 3370s and 3375s cannot be attached at the same time.
11	Storage director 1 can attach only one string of 3350s. Storage director 2 can attach as many as four strings of 3333s/3330s and/or 3350s in any combination.
13	The 3880 Model 13 can attach one or two strings of 3380-AA4s. Each 3380-AA4 can attach up to three additional 3380-B4s. Each string of 3380-AA4s must be attached to both storage directors of the same 3880 Model 13. The 3880 Model 13 in a dual-frame configuration (two 3880s bolted together providing four storage directors) can attach as many as two strings of 3380-AA4s to each frame. Each 3380-AA4 unit can attach up to three additional 3380-B4s. The 3380 strings must be cross-connected to the storage directors in alternate 3880s to enhance data availability.
21	The 3880 Model 21 can attach one or two strings of 3350-A2s or 3350-A2Fs (each with one 3350-B2 or 3350-B2F or 3350-C2 or 3350-C2F). Each 3350-A2 or 3350-A2F or 3350-C2 or 3350-C2F must be attached to both storage directors of the same 3880.
21	The 3350-A2s/3350-A2Fs and 3350-C2s/3350-C2Fs attached to the 3880 Model 21 must have a string switch installed and each leg of the string switch must be attached to the same 3880.
23	The 3880 Model 23 can attach as many as two 3380-AA4s, -AD4s, or -AE4s in any combination. Each 3380-AA4 can attach up to three additional 3380-B4s. Each 3380-AD4 or -AE4 can attach up to three additional 3380-BD4s or 3380-BE4s. Each string of 3380-AA4s, -AD4s, and -AE4s must be attached to the same 3880 Model 23. The 3880 Model 23 in the dual-frame configuration (two 3880s bolted together providing four storage directors) can attach as many as two 3380-AA4s, -AD4s or -AE4s to each frame in any combination. Additional 3380-Bs can be attached as previously described. The 3380 strings must be cross-connected to the storage directors in alternate 3880s to enhance data availability.

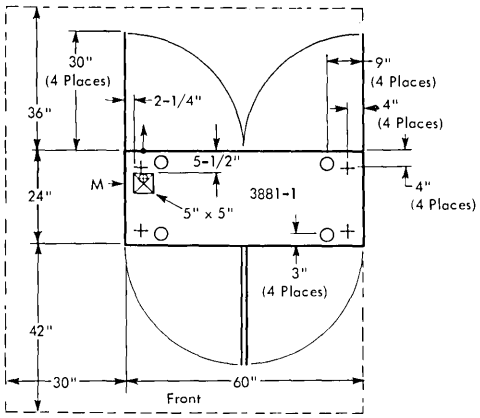
3880 STORAGE CONTROL MODELS 1-4, 11, 13, 21, AND 23 CABLING SCHEMATIC

Notes (Continued):

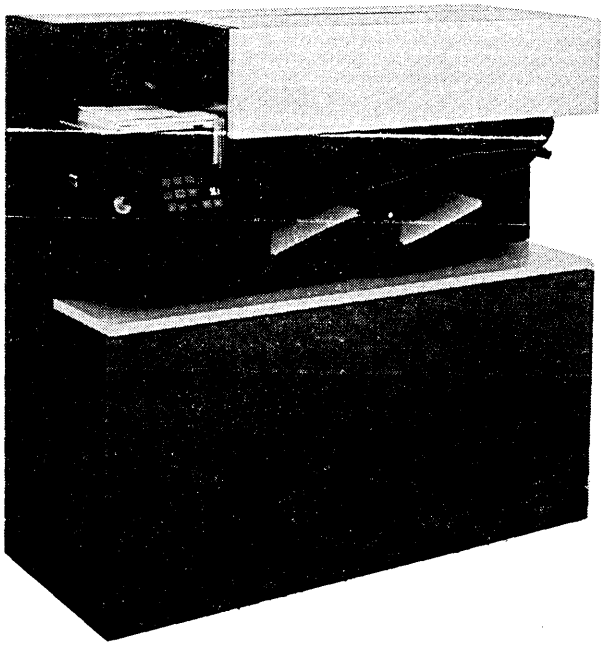
5. Required for SF 6148, SF 6149, and SF 6150. Two cable groups (1178) may be ordered for SF 6148 and SF 6149. Four cable groups may be ordered for SF 6150.
6. Specify cable group 790 (instead of cable group 3920) to connect both storage directors of a 3880 to the same channel. Group 790 is a fixed-length, 765-mm (2-1/2 ft) cable. This cable, however, must be ordered at 610-mm (2-ft) length and both connector identifiers (IDs) given; for example, from connector ID 3 to connector ID 2. *This cable cannot be ordered by metric measure or by inches; it must be ordered at a 2-foot length.* Not available with SF 8172.
7. Storage director 1.
8. Storage director 2.
9. From DASD.

3881 OPTICAL MARK READER MODEL 1

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see Section 2, "Machines with Integral or Abutted Controls."



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	60	24	55
(cm)	(152)	(61)	(140)

Service Clearances:

	F	R	Rt	L
Inches	42	36	0	30
(cm)	(107)	(91)	(0)	(76)

Weight: 875 lb (400 kg)

Heat Output: 3,500 BTU/hr (890 kcal/hr)

Airflow: 25 cfm (1 m^3/min)

Power Requirements:

kVA	1.2
Phases	1
Plug	R&S, FS3750
Connector	R&S, FS3933
Receptacle	R&S, FS3753
Power Cord Style	A2

Environment, Operating:

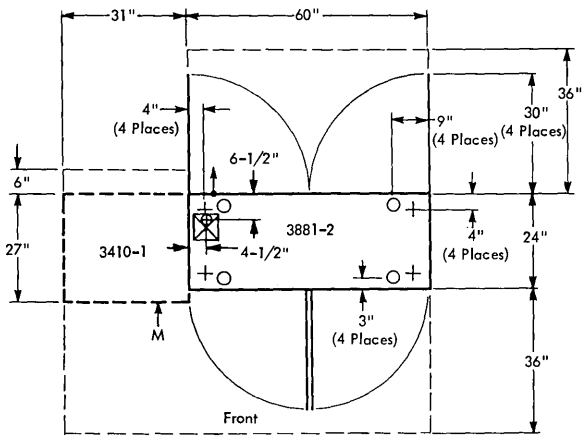
Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

3881 OPTICAL MARK READER MODEL 2

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	60	24	55
(cm)	(152)	(61)	(140)

Service Clearances:

	F	R	Rt	L
Inches	36	36	*	*
(cm)	(91)	(91)	(*)	(*)

Weight: 875 lb (400 kg)

Heat Output: 3,500 BTU/hr (890 kcal/hr)

Airflow: 25 cfm (1 m^3/min)

Power Requirements:**

kVA	1.2
Phases	1
Plug	R&S, FS3750
Connector	R&S, FS3933
Receptacle	R&S, FS3753
Power Cord Style	A2

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

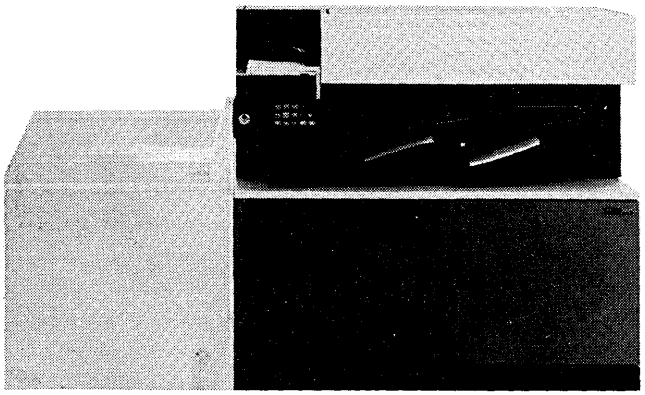
Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

Notes:

* Clearance should be provided on either side for access to rear of machine. The 3881-2 and the 3410-1 are physically attached at the front corner. The attachment is flexible, allowing a swing of up to 90° between devices.

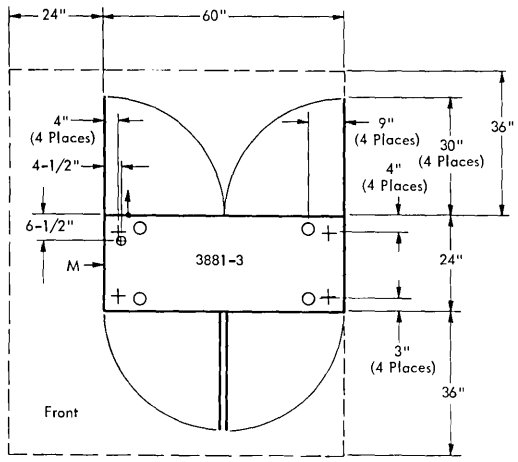
** The 3410-1 is powered from 3881-2.

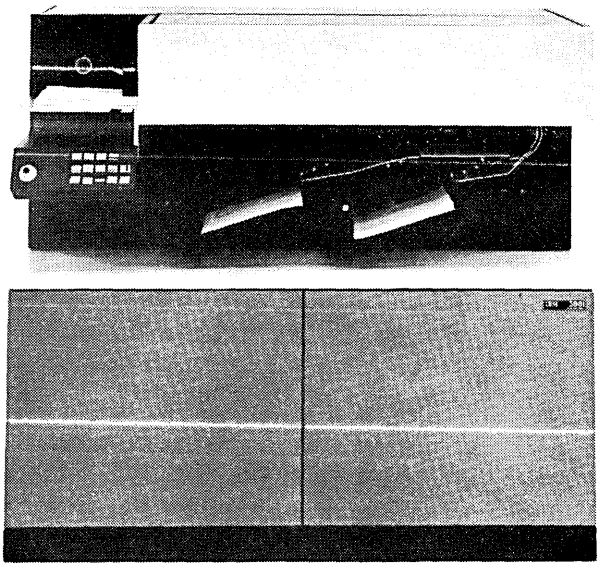


3410-1 3881-2

3881 OPTICAL MARK READER MODEL 3

PLAN VIEW (English Scale: 1/4 in. = 1 ft)





SPECIFICATIONS

Dimensions:

	F	S	H
Inches	60	24	55
(cm)	(152)	(61)	(140)

Service Clearances:

	F	R	Rt	L
Inches	36	36	0	24
(cm)	(91)	(91)	(0)	(61)

Weight: 925 lb (420 kg)

Heat Output: 3,800 BTU/hr (960 kcal/hr)

Airflow: 25 cfm (1 m^3/min)

Power Requirements:

kVA	1.3
Phases	1
Plug	R&S, FS3750
Connector	R&S, FS3933
Receptacle	R&S, FS3753
Power Cord Style	A2

Environment, Operating:

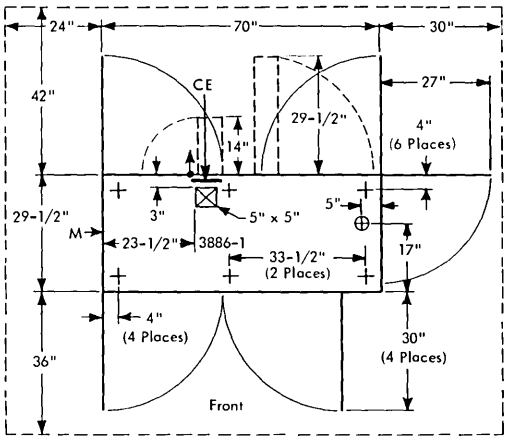
Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

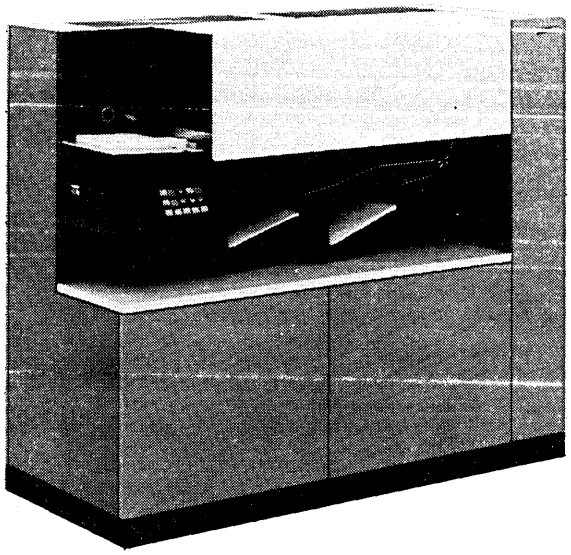
Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

3886 OPTICAL CHARACTER READER MODEL 1

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: For cabling information, see Section 2, "Machines with Integral or Abutted Controls."



SPECIFICATIONS

Dimensions:*

	F	S	H
Inches	70	29-1/2	60
(cm)	(178)	(75)	(152)

Service Clearances:

	F	R	Rt	L
Inches	36	42	30	24
(cm)	(91)	(107)	(76)	(61)

Weight: 1,550 lb (710 kg)

Heat Output: 7,000 BTU/hr (1 800 kcal/hr)

Airflow: 820 cfm (24 m^3/min)

Power Requirements:

kVA	2.3
Phases	3
Plug	R&S, FS3760
Connector	R&S, FS3934
Receptacle	R&S, FS3754
Power Cord Style	D1

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

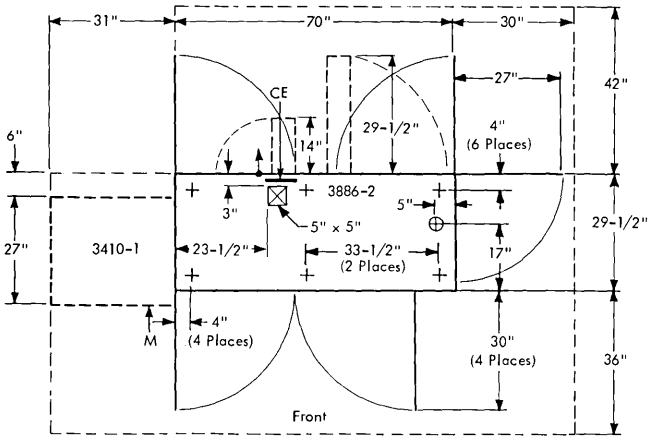
Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

Notes:

* If required, specify SF 9840 for upending kit.

3886 OPTICAL CHARACTER READER MODEL 2

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



SPECIFICATIONS

Dimensions:*

	F	S	H
Inches	70	29-1/2	60
(cm)	(178)	(75)	(152)

Service Clearances:

	F	R	Rt	L
Inches	36	42	**	**
(cm)	(91)	(107)	(**)	(**)

Weight: 1,550 lb (710 kg)

Heat Output: 7,600 BTU/hr (1 950 kcal/hr)

Airflow: 820 cfm (24 m^3/min)

Power Requirements:***

kVA	2.5
Phases	3
Plug	R&S, FS3760
Connector	R&S, FS3934
Receptacle	R&S, FS3754
Power Cord Style	D1

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

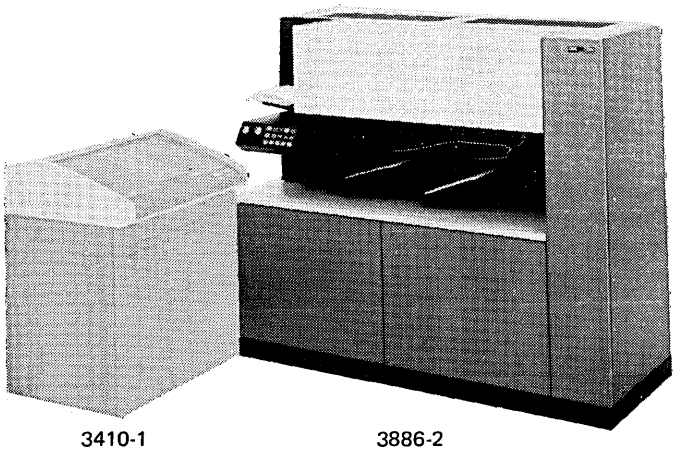
Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

Notes:

* If required, specify SF 9840 for upending kit.

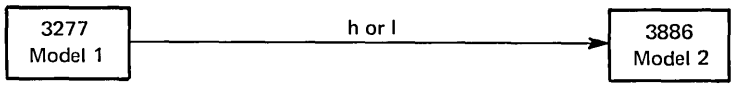
** Clearance should be provided on either side for access to rear of machine. The 3886-2 and the 3410-1 are physically attached at the front corner. The attachment is flexible, allowing a swing of up to 90° between devices.

*** The 3410-1 is powered from 3886-2.



3410-1 3886-2

3886 OPTICAL CHARACTER READER MODEL 2 CABLING SCHEMATIC

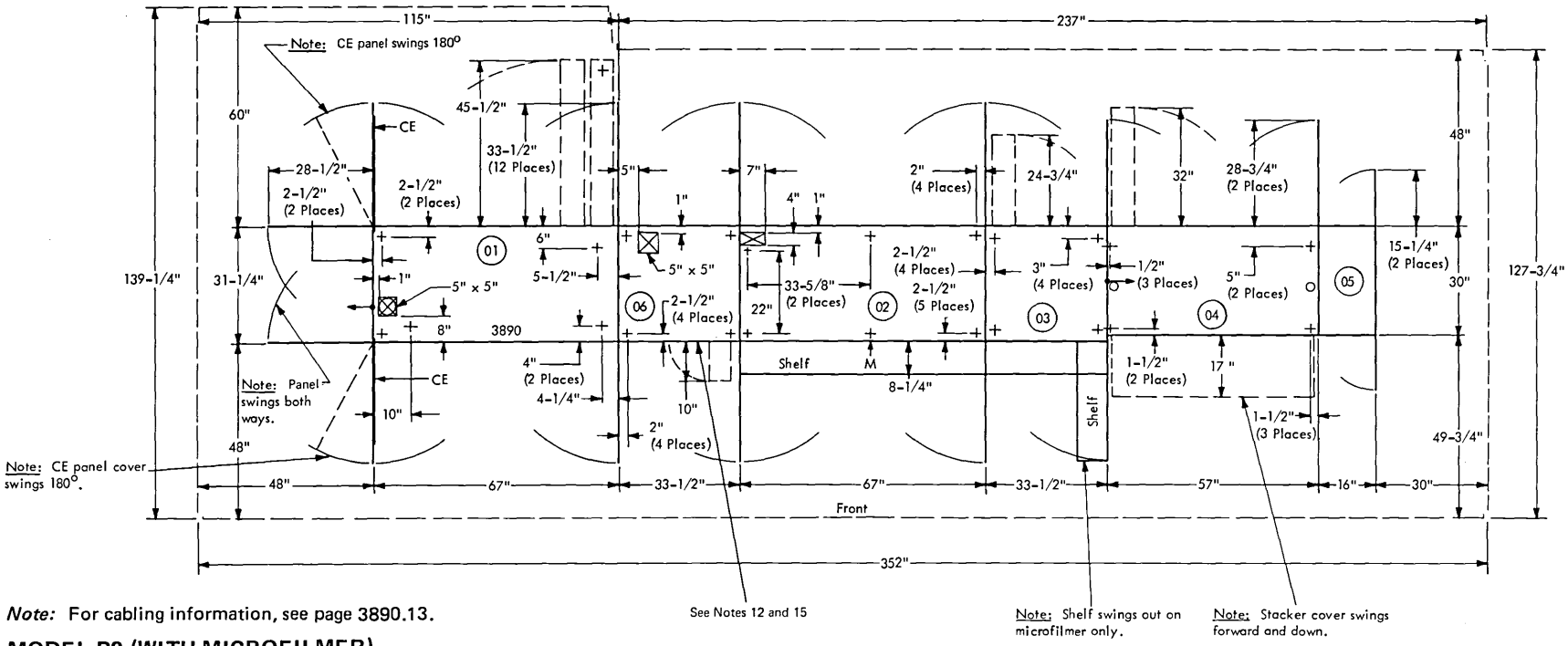


Group No.	*No. of Cables*	*From*	*To*	*Max Length (ft)*	*Notes*
h or l	1	3277-1	3886-2	2,000	1, 2

Notes:

1. Required for SF 8701.
2. Customer supplied, installed, and maintained; maximum length not to exceed 2,000 feet. Cables may be ordered through IBM Branch Office via MES (Miscellaneous Equipment Specification). See Appendix B for cable specifications and IBM part numbers.

PLAN VIEW (MODEL B1 WITH MICROFILMER), English Scale: 1/4 in. = 1 ft (See Note 11)



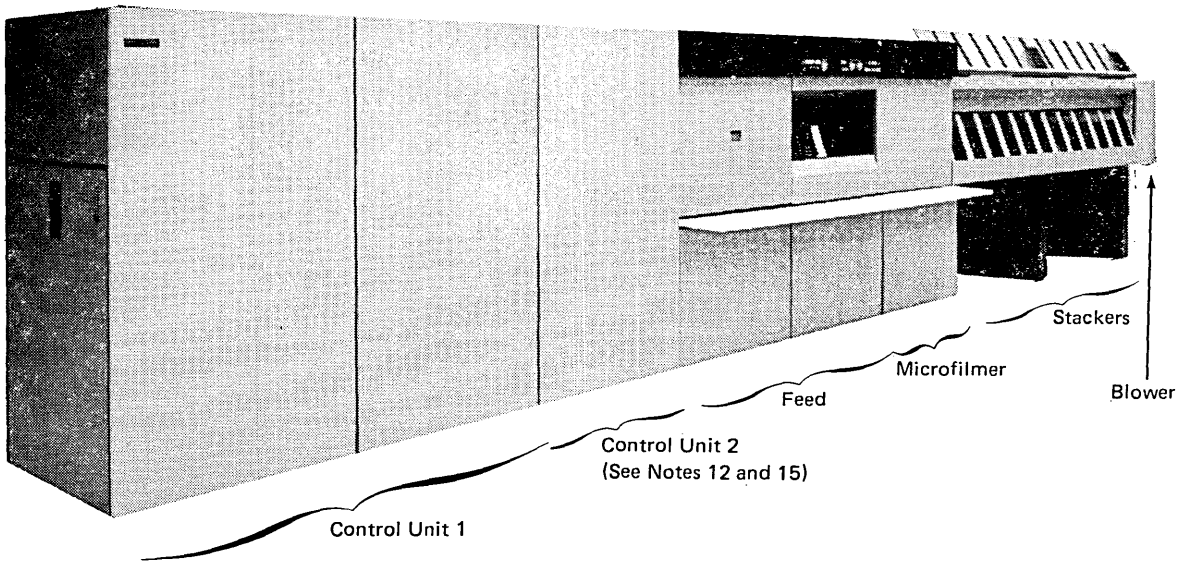
Note: For cabling information, see page 3890.13.

See Notes 12 and 15

Note: Shelf swings out on microfilmer only.

Note: Stacker cover swings forward and down.

MODEL B2 (WITH MICROFILMER)



3890 DOCUMENT PROCESSOR (50 HZ)

Details (By Frame)

Frame	Installed Dimensions F x S x H inches (mm)	Weight lb (kg) 50 Hz 200/235/380/408 V 60 Hz 200 V Note 12	Weight lb (kg) 50 Hz 220 V	Weight lb (kg) 60 Hz 208/240 V Notes 12, 15	Airflow cfm (m^3/min)	Heat Output BTU/hr (W) 50 Hz 200/235/380/408 V 60 Hz 200 V Note 12	Heat Output BTU/hr (W) 50 Hz 220 V	Heat Output BTU/hr (W) 60 Hz 208/240 V Notes 12, 16	kVA 50 Hz 200/235/380/408 V 60 Hz 200 V Note 12	kVA 50 Hz 220 V	kVA 60 Hz 208/240 V Notes 12, 16
Control Unit 1 (Frame 01)	67 x 31-1/4 x 60 (1 705 x 795 x 1 525) Note 1	2,300 (1 045)	2,300 (1 045)	2,300 (1 045)	800 (23)	11,200 (3 290)	11,200 (3 290)	11,200 (3 290)	4.1	4.1	4.1
Control Unit 2 (Frame 06)	33-1/2 x 31-1/4 x 60 (855 x 795 x 1 525) Note 2	385 (175) Note 14	225 (105) Note 14	Note 7	Note 13	11,700 (3 430) Note 8	11,700 (3 430) Note 8	Note 7	3.8 Notes 8, 10	3.8	Note 7
Feed (Frame 02)	67 x 31-1/4 x 60 (1 705 x 795 x 1 525) Note 3	1,850 (840)	1,850 (840)	1,850 (840)	300 (9)	15,800 (4 640)	15,800 (4 640)	15,800 (4 640)	5.8 Note 10	5.8 Note 10	5.8 Note 10
Microfilmer (Frame 03)	33-1/2 x 31-1/4 x 60 (855 x 795 x 1 525) Note 4	720 (330)	720 (330)	720 (330)	357 (11)	9,300 (2 730)	9,300 (2 730)	9,300 (2 730)	3.4 Note 10	3.4 Note 10	3.4 Note 10
Stacker (Frame 04)	57 x 30 x 60 (1 450 x 765 x 1 525) Note 5	850 (390) Note 6	850 (390) Note 6	850 (390) Note 6	115 (4)	4,600 (1 350)	4,600 (1 350)	4,600 (1 350)	1.7 Note 10	1.7 Note 10	1.7 Note 10
Blower (Frame 05) End of Last Stacker	16 x 30 x 52-1/2 (410 x 755 x 1 335)	30 (14)	30 (14)	30 (14)	30 (1)	4,100 (1 210)	4,100 (1 210)	4,100 (1 210)	1.5 Note 10	1.5 Note 10	1.5 Note 10

Plan View Metric Equivalents

Dimensions inches	Dimensions mm	Dimensions inches	Dimensions mm
352	8 940	17	430
237	6 020	16	405
139-1/4	3 535	15-1/4	385
127-3/4	3 245	10-1/5	265
115	2 920	10	255
67	1 700	8-1/4	210
60	1 525	8	200
57	1 450	7	180
49-3/4	1 265	6	150
48	1 220	5-1/2	140
45-1/2	1 155	5	125
33-5/8	855	4-1/4	110
33-1/2	850	4	100
32	815	3	75
31-1/4	795	2-1/2	65
30	760	2	50
28-3/4	730	1-1/2	40
28-1/2	725	1	25
24-3/4	630	1/2	15
22	560		

Branch Circuit Requirements

Hz	50					60		
Voltage	200	220	235	380	408	200	208	240
Phases	3	3	3	3	3	3	3	3
Ampacity	90	90	90	50	50	100	100	100
Maximum Continuous Load (Amperes) for: 3890 Model								
A1	48	43	41	25	23	48	46	42
A2	53	48	45	28	26	53	51	46
A3	58	53	50	31	29	58	56	51
A4	63	58	54	33	31	63	61	55
A5	69	62	58	36	34	69	66	60
A6	73	66	62	38	36	73	70	64
B2	43	48	45	28	26	53	52	47
B2	58	53	50	31	29	58	56	51
B3	63	57	54	33	31	63	61	55
B4	68	62	58	36	34	68	66	60
B5	73	67	62	39	36	73	71	64
B6	78	71	67	41	39	78	75	68
C1	53	48	45	28	26			
C2	58	53	50	31	29			
C3	63	58	54	34	31			
C4	68	62	58	36	34			
C5	74	67	63	39	36			
C6	78	71	66	41	38			
D1	58	53	50	31	29			
D2	64	58	54	34	31			
D3	69	63	59	36	34			
D4	74	67	63	39	36			
D5	79	72	67	42	39			
D6	83	76	71	44	41			
If SF 5111 (microfilmer) is not installed, subtract amperes (A) from Maximum Continuous Load	9.8	8.9	8.4	5.2	4.8	9.8	9.5	8.5
Plug	R&S, JPS1034H							
Connector	R&S, JCS1034H					208 and 240 V		
Receptacle	R&S, JRSR1034H					60 Hz Only		
Power Cord Style	F2					Note 12		

3890 DOCUMENT PROCESSOR (50 HZ)

Totals (By Model) Note 9

Model	Power Option			Microfilmer (SF 5111)	Weight lb (kg) Note 6	Length inches (mm)	Airflow cfm (m^3/min)	Heat Output BTU/hr (W)	kVA
	50 Hz 200/235/ 380/408 V 60 Hz 200 V	50 Hz 220 V	60 Hz 208/240 V Note 15						
A1	X				5,415 (2 460)	241-1/2 (6 135)	1,245 (36)	35,800 (10 500)	13.1
	X			X	6,135 (2 790)	275 (6 985)	1,602 (46)	45,100 (13 220)	16.5
		X			5,255 (2 385)	241-1/2 (6 135)	1,245 (36)	35,800 (10 500)	13.1
		X		X	5,975 (2 715)	275 (6 985)	1,602 (46)	45,100 (13 220)	16.5
			X		5,030 (2 285)	208 (5 285)	1,245 (36)	35,800 (10 550)	13.1
			X	X	5,750 (2 610)	241-1/2 (6 135)	1,602 (46)	45,100 (13 220)	16.5
A2	X				6,265 (2 845)	298-1/2 (7 585)	1,360 (39)	40,400 (11 850)	14.8
	X			X	6,985 (3 170)	332 (8 435)	1,717 (49)	49,700 (14 570)	18.2
		X			6,105 (2 770)	298-1/2 (7 585)	1,360 (39)	40,400 (11 850)	14.8
		X		X	6,825 (3 100)	332 (8 435)	1,717 (49)	49,700 (14 570)	18.2
			X		5,880 (2 670)	265 (6 730)	1,360 (39)	40,400 (11 850)	14.8
			X	X	6,600 (2 995)	298-1/2 (7 585)	1,717 (49)	49,700 (14 570)	18.2
A3	X				7,115 (3 230)	355-1/2 (9 030)	1,475 (42)	45,100 (13 220)	16.5
	X			X	7,835 (3 555)	389 (9 885)	1,832 (52)	54,300 (15 920)	19.9
		X			6,955 (3 155)	355-1/2 (9 030)	1,475 (42)	45,100 (13 220)	16.5
		X		X	7,675 (3 485)	389 (9 885)	1,832 (52)	54,300 (15 920)	19.9
			X		6,730 (3 055)	322 (8 180)	1,475 (42)	45,100 (13 220)	16.5
			X	X	7,450 (3 380)	355-1/2 (9 030)	1,832 (52)	54,300 (15 920)	19.9
A4	X				7,965 (3 615)	412-1/2 (10 480)	1,590 (45)	49,700 (14 570)	18.2
	X			X	8,685 (3 940)	446 (11 300)	1,947 (56)	59,000 (17 300)	21.6
		X			7,805 (3 545)	412-1/2 (10 480)	1,590 (45)	49,700 (14 570)	18.2
		X		X	8,525 (3 870)	446 (11 300)	1,947 (56)	59,000 (17 300)	21.6
			X		7,580 (3 440)	379 (9 625)	1,590 (45)	49,700 (14 570)	18.2
			X	X	8,300 (3 765)	412-1/2 (10 480)	1,947 (56)	59,000 (17 300)	21.6
A5	X				8,815 (4 000)	469-1/2 (11 930)	1,705 (49)	54,300 (15 920)	19.9
	X			X	9,535 (4 330)	503 (12 780)	2,062 (59)	63,600 (18 650)	23.3
		X			8,655 (3 930)	469-1/2 (11 930)	1,705 (49)	54,300 (15 920)	19.9
		X		X	9,375 (4 255)	503 (12 780)	2,062 (59)	63,600 (18 650)	23.3
			X		8,430 (3 825)	436 (11 075)	1,705 (49)	54,300 (15 920)	19.9
			X	X	9,150 (4 155)	469-1/2 (11 930)	2,062 (59)	63,600 (18 650)	23.3
A6	X				9,665 (4 385)	526-1/2 (13 375)	1,820 (52)	59,000 (17 300)	21.6
	X			X	10,385 (4 715)	560 (14 225)	2,177 (62)	68,300 (20 020)	25.0
		X			9,505 (4 315)	526-1/2 (13 375)	1,820 (52)	59,000 (17 300)	21.6
		X		X	10,225 (4 640)	560 (14 225)	2,177 (62)	68,300 (20 020)	25.0
			X		9,280 (4 210)	493 (12 520)	1,820 (52)	59,000 (17 320)	21.6
			X	X	10,000 (4 540)	526-1/2 (13 375)	2,177 (62)	68,300 (20 020)	25.0

3890 DOCUMENT PROCESSOR (50 HZ)

Totals (By Model) Note 9

Model	Power Option			Microfilmer (SF 5111)	Weight lb (kg) Note 6	Length inches (mm)	Airflow cfm (m^3/min)	Heat Output BTU/hr (W)	kVA
	50 Hz 200/235/ 380/408 V 60 Hz 200 V	50 Hz 220 V	60 Hz 208/240 V Note 15						
B1	X				5,690 (2 705)	241-1/5 (6 135)	1,505 (43)	41,000 (12 020)	15.0
	X			X	6,410 (2 910)	275 (6 985)	1,862 (53)	50,300 (14 750)	18.4
		X			5,530 (2 510)	241-1/2 (6 135)	1,505 (43)	41,000 (12 020)	15.0
		X		X	6,250 (2 835)	275 (6 985)	1,862 (53)	50,300 (14 750)	18.4
			X		5,245 (2 380)	241-1/2 (6 135)	1,505 (43)	41,000 (12 020)	15.0
			X	X	5,965 (2 705)	275 (6 985)	1,862 (53)	50,300 (14 750)	18.4
B2	X				6,450 (2 925)	298-1/2 (7 585)	1,620 (46)	45,600 (13 370)	16.7
	X			X	7,260 (3 295)	332 (8 435)	1,977 (56)	54,900 (16 100)	20.1
		X			6,380 (2 895)	298-1/2 (7 585)	1,620 (46)	45,600 (13 370)	16.7
		X		X	7,100 (3 220)	332 (8 435)	1,977 (56)	54,900 (16 100)	20.1
			X		6,095 (2 965)	298-1/2 (7 585)	1,620 (46)	45,600 (13 370)	16.7
			X	X	6,815 (3 950)	332 (8 435)	1,977 (56)	54,900 (16 100)	20.1
B3	X				7,390 (3 355)	355-1/2 (9 030)	1,735 (49)	50,300 (14 750)	18.4
	X			X	8,110 (3 680)	389 (9 885)	2,092 (59)	59,500 (17 300)	21.8
		X			7,230 (3 280)	355-1/2 (9 030)	1,735 (49)	50,300 (14 750)	18.4
		X		X	7,725 (3 505)	389 (9 885)	2,090 (59)	59,500 (17 300)	21.8
			X		6,945 (3 150)	355-1/2 (9 030)	1,735 (49)	50,300 (14 750)	18.4
			X	X	7,665 (3 480)	389 (9 885)	2,090 (59)	50 500 (17 300)	21.8
B4	X				8,240 (3 740)	412-1/2 (10 480)	1,850 (53)	54,900 (16 100)	20.1
	X			X	8,960 (4 605)	446 (11 300)	2,207 (62)	64,200 (18 820)	23.5
		X			8,080 (3 665)	412-1/2 (10 480)	1,850 (53)	54,900 (16 100)	20.1
		X		X	8,800 (3 995)	446 (11 300)	2,207 (62)	64,200 (18 820)	23.5
			X		7,795 (3 540)	412-1/2 (10 480)	1,850 (53)	54,900 (16 100)	20.1
			X	X	8,515 (3 860)	446 (11 300)	2,207 (62)	64,200 (18 820)	23.5
B5	X				9,090 (4 125)	469-1/2 (11 930)	1,965 (56)	59,500 (17 300)	21.8
	X			X	9,810 (4 450)	503 (12 780)	2,322 (66)	68,800 (19 940)	25.2
		X			8,930 (4 050)	469-1/2 (11 930)	1,965 (56)	59,500 (17 300)	21.8
		X		X	9,650 (4 380)	503 (12 780)	2,322 (66)	68,800 (19 940)	25.2
			X		8,645 (3 925)	469-1/2 (11 930)	1,965 (56)	59,500 (17 300)	21.8
			X	X	9,365 (4 250)	503 (12 780)	2,322 (66)	68,800 (19 900)	25.2
B6	X				9,940 (4 510)	526-1/2 (13 375)	2,080 (59)	64,200 (18 820)	23.5
	X			X	10,660 (4 835)	560 (14 225)	2,437 (69)	73,500 (21 550)	26.9
		X			9,780 (4 440)	526-1/2 (13 375)	2,080 (59)	64,200 (18 820)	23.5
		X		X	10 500 (4 765)	560 (14 225)	2,437 (69)	73,500 (21 550)	26.9
			X		9,495 (4 310)	526-1/2 (13 375)	2,080 (59)	64,200 (18 820)	23.5
			X	X	10,215 (4 635)	560 (14 225)	2,437 (69)	73,500 (21 550)	26.9

3890 DOCUMENT PROCESSOR (50 HZ)

Totals (By Model) Note 9

Model	Power Option			Microfilmer (SF 5111)	Weight lb (kg) Note 6	Length inches (mm)	Airflow cfm (m^3/min)	Heat Output BTU/hr (W)	kVA
	50 Hz 200/235/ 380/408 V 60 Hz 200 V	50 Hz 220 V	60 Hz 208/240 V Note 12						
C1	X				5,740 (2 605)	241-1/2 (6 135)	1,945 (55)	40,400 (11 850)	14.8
	X			X	6,460 (2 930)	275 (6 985)	2,302 (66)	49,700 (14 570)	18.2
		X			5,580 (2 535)	241-1/2 (6 135)	1,945 (55)	40,400 (11 850)	14.8
		X		X	6,300 (2 860)	275 (6 985)	2,302 (66)	49,700 (14 570)	18.2
C2	X				6,550 (2 975)	298-1/2 (7 580)	2,060 (59)	45,300 (13 280)	16.6
	X			X	7,310 (3 320)	332 (8 435)	2,417 (69)	54,600 (16 010)	20.0
		X			6,430 (2 920)	298-1/2 (7 580)	2,060 (59)	45,300 (13 280)	16.6
		X		X	7,150 (3 245)	332 (8 435)	2,417 (69)	54,600 (16 010)	20.0
C3	X				7,440 (3 375)	355-1/2 (9 030)	2,175 (62)	50,200 (14 720)	18.4
	X			X	8,160 (3 705)	389 (9 880)	2,532 (72)	59,500 (17 440)	21.8
		X			7,280 (3 305)	355-1/2 (9 030)	2,175 (62)	50,200 (14 720)	18.4
		X		X	8,000 (3 630)	389 (9 880)	2,532 (72)	59,500 (17 440)	21.8
C4	X				8,290 (3 765)	412-1/2 (10 480)	2 290 (65)	54,900 (16 100)	20.1
	X			X	9,010 (4 090)	446 (11 330)	2,647 (75)	64,200 (18 820)	23.5
		X			8,130 (3 690)	412-1/2 (10 480)	2 290 (65)	54,900 (16 100)	20.1
		X		X	8,850 (4 015)	446 (11 330)	2,647 (75)	64,200 (18 820)	23.5
C5	X				9,140 (4 150)	469-1/2 (11 925)	2,405 (68)	60,100 (17 620)	22.0
	X			X	9,860 (4 475)	503 (12 775)	2,762 (79)	69,400 (20 350)	25.4
		X			8,980 (4 075)	469-1/2 (11 925)	2,405 (68)	60,100 (17 620)	22.0
		X		X	9,700 (4 400)	503 (12 775)	2,762 (79)	69,400 (20 350)	25.4
C6	X				9,990 (4 535)	526-1/2 (13 375)	2,520 (72)	63,900 (18 720)	23.4
	X			X	10,710 (4 860)	560 (14 225)	2,877 (82)	73,200 (21 460)	26.8
		X			9,830 (4 460)	526-1/2 (13 375)	2,520 (72)	63,900 (18 720)	23.4
		X		X	10,550 (4 790)	560 (14 225)	2,877 (82)	73,200 (21 460)	26.8

3890 DOCUMENT PROCESSOR (50 HZ)

Totals (By Model) Note 9

Model	Power Option			Microfilmer (SF 5111)	Weight lb (kg) Note 6	Length inches (mm)	Airflow cfm (m^3/min)	Heat Output BTU/hr (W)	kVA
	50 Hz 200/235/ 380/408 V 60 Hz 200 V	50 Hz 220 V	60 Hz 208/240 V Note 12						
D1	X				5,800 (2 635)	241-1/2 (6 135)	1,945 (55)	45,600 (13 630)	16.7
	X			X	6,520 (2 960)	275 (6 985)	2,302 (66)	54,900 (16 100)	20.1
		X			5,640 (2 560)	241-1/2 (6 135)	1,945 (55)	45,600 (13 630)	16.7
		X		X	6,360 (2 885)	275 (6 985)	2,302 (66)	54,900 (16 100)	20.1
D2	X				6,650 (3 020)	298-1/2 (7 580)	2,060 (59)	50,500 (14 810)	18.5
	X			X	7,360 (3 340)	332 (8 435)	2,417 (69)	59,800 (17 530)	21.9
		X			6,490 (2 945)	298-1/2 (7 580)	2,060 (59)	50,500 (14 810)	18.5
		X		X	7,210 (3 275)	332 (8 435)	2,417 (69)	59,800 (17 530)	21.9
D3	X				7,500 (3 405)	355-1/2 (9 030)	2,175 (62)	55,400 (16 240)	20.3
	X			X	8,220 (3 730)	389 (9 880)	2,532 (72)	64,700 (18 970)	23.7
		X			7,340 (3 330)	355-1/2 (9 030)	2,175 (62)	55,400 (16 240)	20.3
		X		X	8,060 (3 660)	389 (9 880)	2,532 (72)	64,700 (18 970)	23.7
D4	X				8,350 (3 790)	412-1/2 (10 480)	2,290 (65)	60,100 (17 620)	22.0
	X			X	9,060 (4 110)	446 (11 330)	2,647 (75)	69,400 (20 350)	25.4
		X			8,190 (3 715)	412-1/2 (10 480)	2,290 (65)	60,100 (17 620)	22.0
		X		X	8,910 (4 045)	446 (11 330)	2,647 (75)	69,400 (20 350)	25.4
D5	X				9,200 (4 175)	469-1/2 (11 925)	2,405 (68)	65,300 (19 140)	23.9
	X			X	9,920 (4 500)	503 (12 775)	2,762 (79)	74,500 (21 840)	27.3
		X			9,040 (4 105)	469-1/2 (11 925)	2,405 (68)	65,300 (19 140)	23.9
		X		X	9,760 (4 430)	503 (12 775)	2,762 (79)	74,500 (21 840)	27.3
D6	X				10,050 (4 560)	526-1/2 (13 375)	2,520 (72)	69,100 (20 260)	25.3
	X			X	10,760 (4 885)	560 (14 225)	2,877 (82)	78,400 (22 980)	28.7
		X			9,890 (4 490)	526-1/2 (13 375)	2,520 (72)	69,100 (20 260)	25.3
		X		X	10,610 (4 815)	560 (14 225)	2,877 (82)	78,400 (22 980)	28.7

3890 DOCUMENT PROCESSOR (50 HZ)

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	Note 11	Note 11	60
(mm)	Note 11	Note 11	(1 525)

Service Clearances: See plan view.

Environment, Operating:

Temperature 65°F-80°F (18°C-27°C)
Rel Humidity 20%-65%

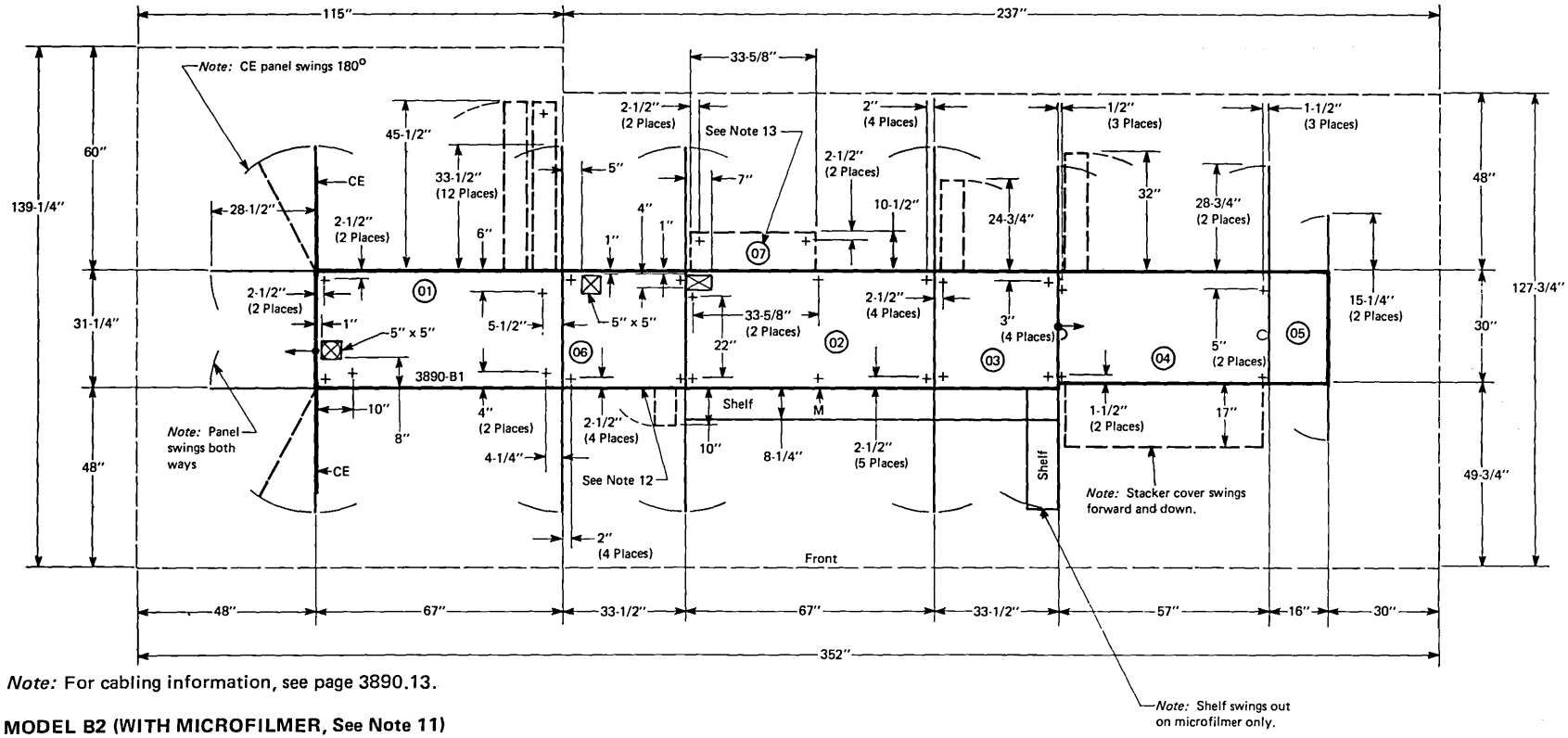
Floor Requirements:

Maximum machine length is 637 in. (16 180 mm). Normal raised floor construction providing ±0.10 in. (±2.54 mm) overall facilitates installation.

Notes:

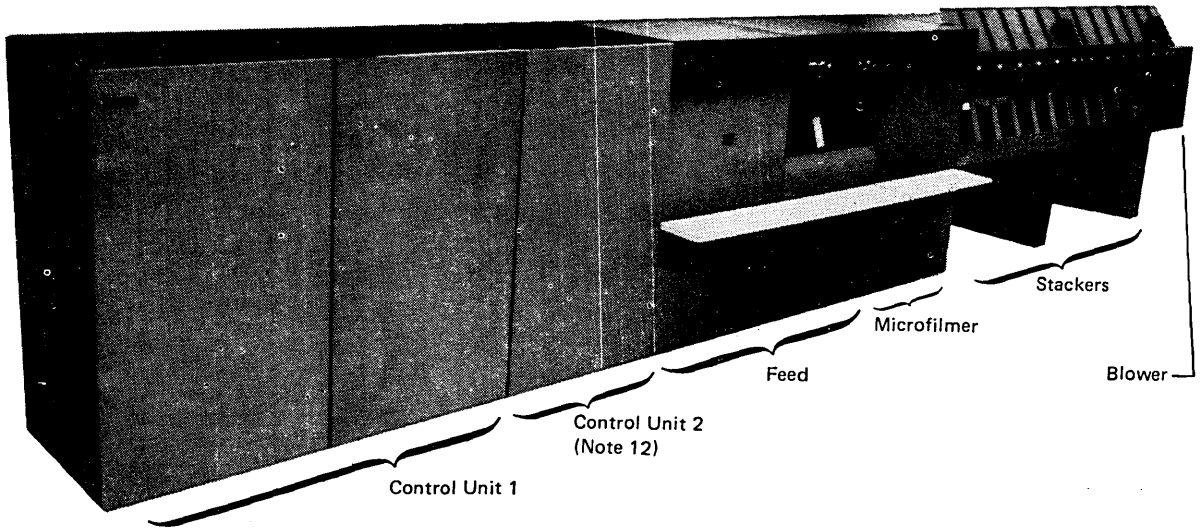
1. Unless otherwise specified, the shipping dimensions for frame 01 are 67 in. x 31-1/4 in. x 60-1/4 in. (1 705 mm x 795 mm x 1 535 mm). Removal of the side covers reduces the width to 29 in. (740 mm). If further reduction in length is required, see the IBM representative to request an upending kit. This modifies the unit to 60 in. x 30-1/4 in. x 71 in. (1 525 mm x 770 mm x 1 805 mm).
2. Unless otherwise specified, the shipping dimensions for frame 06 are 33-1/2 in. x 31-1/4 in. x 60-1/4 in. (855 mm x 795 mm x 1 535 mm). Removal of the front and rear covers reduces the width to 29 in. (740 mm).
3. Unless otherwise specified, the shipping dimensions for frame 02 are 70-3/4 in. x 31-1/2 in. x 60-1/4 in. (1 800 mm x 795 mm x 1 535 mm). Removal of the rear cover reduces the width to 30-1/4 in. (770 mm). Removal of the lower front cover and partially raising the top covers further reduces the width to 29 in. (740 mm). If further reduction in size is required, see the IBM representative for specifying an upending kit. This modifies the unit to 60 in. x 30-1/4 in. x 75-1/2 in. (1 525 mm x 770 mm x 1 920 mm).
   The side dimension is 39-1/2 in. (1 005 mm), including 8-1/4 in. (210 mm) for the shelf.
   The height dimension is 90 in. (2 290 mm) with the cover above the shelf raised to the service position.
4. Unless otherwise specified, the shipping dimensions for frame 03 are 34-1/4 in. x 31-1/4 in. x 60-1/4 in. (870 mm x 795 mm x 1 535 mm). Removal of the rear covers reduces the width to 30-1/4 in. (770 mm). Removal of the front covers and partially raising the top cover further reduces the width to 29 in. (740 mm).
   The side dimension is 39-1/2 in. (1 005 mm), including 8-1/4 in. (210 mm) for the shelf.
   The height dimension is 86-1/4 in. (2 195 mm) with the cover above the shelf raised to the service position.
5. Shipping length for frame 04 is 64 in. (1 630 mm); shipping height is 61-1/2 in. (1 590 mm). Unless otherwise specified, the end stacker unit is shipped with frame 05 assembled. Shipping length is 75 in. (1 910 mm).
   These units are shipped separately by request or are automatically shipped separately if upending kits are specified for frame 01 or frame 02.
   The number of stackers varies by model number. The front dimension for installed stackers is found by multiplying the length of one stacker, 57 in. (1 450 mm), by the model number. (For Model A6 or E6, 57 in. [1 450 mm] x 6 = stacker dimension plus 16 in. [410 mm] for frame 05.)
6. The weight of customer's trays and documents is not included.
7. The 60 Hz, 208/240 V Models A1-A6 do not require frame 06.
8. Maximum value. See Totals (By Model) for actual values by feature and power option.
9. Select the model desired and use the values from the line for the power option and microfilmer (SF 5111) option required.
10. Powered from frame 01.
11. See "Plan View Metric Equivalents" on page 3890.2.
12. 60 Hz is not applicable to Models C1-C6 and D1-D6.
13. Models C1-C6, 700 (20).
    Models D1-D6, 960 (28).
14. Models C1-C6, add 325 (150).
    Models D1-D6, add 385 (180).
15. References to 60-Hz 3890 Models A and B do not apply if the 3890 has the monolithic storage device (instead of the core storage device). The 60-Hz, 208/240 V 3890 Models A and B with monolithic storage do not have frame 06.

PLAN VIEW (MODEL B1 WITH MICROFILMER), English Scale: 1/4 in. = 1 ft (See Notes 10, 11)



Note: For cabling information, see page 3890.13.

MODEL B2 (WITH MICROFILMER, See Note 11)



3890 DOCUMENT PROCESSOR (60 HZ)

Details (By Frame)

Frame	*Installed Dimensions F x S x H inches (mm)*	*Weight lb (kg)*	*Airflow cfm (m^3/min)*	*Heat Output BTU/hr (W)*	*kVA*
Control Unit 1 (Frame 01)	67 x 31-1/4 x 60 (1 700 x 795 x 1 525) See Note 2	2,300 (1 050)	800 (23)	11,200 (3 290)	4.1
Control Unit 2 (Frame 06) See Notes 1,12	33-1/2 x 31-1/4 x 60 (850 x 795 x 1 525) See Note 3	215 (100)	260 (7.5)	5,200 (1 530) See Note 8	1.9 See Notes 8,9
Feed (Frame 02)	67 x 31-1/4 x 60 (1 700 x 795 x 1 525) See Note 4	1,850 (840)	300 (8.5)	15,800 (4 640)	5.8 See Note 9
Document Coding SF 3551 (Frame 07)	33-5/8 x 10-1/2 x 60 (855 x 265 x 1 525)	290 (135)	190 (5.5)	1 708 (510)	0.5
Microfilmer (SF 5111) (Frame 03) See Note 11	33-1/2 x 31-1/4 x 60 (850 x 795 x 1 525) See Note 5	720 (330)	357 (10.5)	9,300 (2 730)	3.4 See Note 9
Stacker (Frame 04)	57 x 30 x 60 (1 450 x 765 x 1 525) See Note 6	850 (390) See Note 7	115 (3.5)	4,600 (1 350)	1.7 See Note 9
Blower (Frame 05) End of Last Stacker	16 x 30 x 52-1/2 (410 x 765 x 1 335)	30 (14)	30 (1)	4,100 (1 210)	1.5 See Note 9

3890 DOCUMENT PROCESSOR (60 HZ)

Totals (By Model)

Model See Notes 11, 12	*Weight lb (kg) See Note 7*	*Length inches (mm)*	*Airflow cfm (m^3/min)*	*Heat Output BTU/hr (W)*	*kVA*
A1	5,030 (2 265)	208 (5 285)	1,245 (35.5)	35,800 (10 500)	13.1
With SF 5111	5,750 (2 610)	241-1/2 (6 135)	1,602 (45.5)	45,100 (13 220)	16.5
A2/E2	5,880 (2 670)	265 (6 735)	1,360 (38.5)	40,400 (11 850)	14.8
With SF 5111	6,600 (2 995)	298-1/2 (7 585)	1,717 (49)	49,700 (14 570)	18.2
A3/E3	6,730 (3 055)	322 (8 180)	1,475 (42)	45,100 (13 220)	16.5
With SF 5111	7,450 (3 380)	355-1/2 (9 030)	1,832 (52)	54,300 (15 920)	19.9
A4/E4	7,580 (3 440)	379 (9 630)	1,590 (45)	49,700 (14 570)	18.2
With SF 5111	8,300 (3 765)	412-1/2 (10 480)	1,947 (55.5)	59,000 (17 300)	21.6
A5/E5	8,430 (3 825)	436 (11 075)	1,705 (48.5)	54,300 (15 920)	19.9
With SF 5111	9,150 (4 155)	469-1/2 (11 930)	2,062 (58.5)	63,600 (18 650)	23.3
A6/E6	9,280 (4 210)	493 (12 525)	1,820 (52)	59,000 (17 300)	21.6
With SF 5111	10,000 (4 540)	526-1/2 (13 375)	2,177 (62)	68,300 (20 020)	25.0
B1	5,245 (2 380)	241-1/2 (6 135)	1,505 (43)	41,000 (12 020)	15.0
With SF 5111	5,965 (2 710)	275 (6 985)	1,862 (53)	50,200 (14 720)	18.4
B2/F2	6,095 (2 765)	298-1/2 (7 585)	1,620 (46)	45,600 (13 370)	16.7
With SF 5111	6,815 (3 095)	332 (8 435)	1,977 (56)	54,900 (16 100)	20.1
B3/F3	6,945 (3 155)	355-1/2 (9 030)	1,735 (50)	50,200 (14 720)	18.4
With SF 5111	7,665 (3 480)	389 (9 885)	2,092 (60)	59,500 (17 440)	21.8
B4/F4	7,795 (3 540)	412-1/2 (10 480)	1,850 (53.5)	54,900 (16 100)	20.1
With SF 5111	8,515 (3 865)	446 (11 330)	2,207 (63)	65,000 (19 060)	23.5
B5/F5	8,645 (3 925)	469-1/2 (11 930)	1,965 (56)	59,500 (17 440)	21.8
With SF 5111	9,365 (4 250)	503 (12 780)	2,322 (66)	68,800 (20 170)	25.2
B6/F6	9,495 (4 310)	526-1/2 (13 375)	2,080 (59)	65,000 (19 060)	23.5
With SF 5111	10,215 (4 635)	560 (14 225)	2,437 (69)	73,400 (21 520)	26.9

3890 DOCUMENT PROCESSOR (60 HZ)

Branch Circuit Requirements

Hz *Voltage* *Phases* *Ampacity*	*60* *208* *3* *100*	 *240* *3* *100*
Maximum Continuous Load (Amperes) for:		
Model A1	46	42
Model A2/E2	51	46
Model A3/E3	56	51
Model A4/E4	61	55
Model A5/E5	66	60
Model A6/E6	70	64
Model B1	52	47
Model B2/F2	56	51
Model B3/F3	61	55
Model B4/F4	66	60
Model B5/F5	71	64
Model B6/F6	75	68
If SF 5111 (microfilmer) is not installed, subtract these values from Maximum Continuous Load. See Note 11.	9.5	8.5
If SF 3551 (document coding) is not installed, subtract these values from Maximum Continuous Load.	3.5	3.0
Plug Connector Receptacle	R&S, JPS1034H R&S, JCS1034H R&S, JRSR1034H	

SPECIFICATIONS

Dimensions:

	F	S	H
Inches	Note 10	Note 10	60
(mm)	(Note 10)	(Note 10)	(1 525)

Service Clearances:

	F	R	Rt	L
Inches	Note 10	Note 10	Note 10	Note 10
(mm)	(Note 10)	(Note 10)	(Note 10)	(Note 10)

Environment, Operating:

Temperature	65°F-80°F (18°C-27°C)
Rel Humidity	20%-65%

Floor Requirements:

Floor beneath machine must be level with maximum variance of 2 in. (55 mm). Maximum machine length is 637 in. (16 180 mm). Normal raised floor construction providing ±0.10 in. (±2.54 mm) overall facilitates installation.

3890 DOCUMENT PROCESSOR (60 HZ)

Notes:

1. Required for Models B1-B2 and F2-F6 that have core storage.
2. Unless otherwise specified, the shipping dimensions for frame 01 are 67 in. x 31-1/4 in. x 60-1/4 in. (1 700 mm x 790 mm x 1 530 mm). Removal of the side covers reduces the width to 29 in. (740 mm). If further reduction in length is required, see the IBM representative to request an upending kit. This modifies the machine to 60 in. x 30-1/4 in. x 71 in. (1 520 mm x 770 mm x 1 800 mm).
3. Unless otherwise specified, the shipping dimensions for frame 06 are 33-1/2 in. x 31-1/4 in. x 60-1/4 in. (850 mm x 790 mm x 1 530 mm). Removal of the front and rear covers reduces the width to 29 in. (740 mm).
4. Unless otherwise specified, the shipping dimensions for frame 02 are 70-3/4 in. x 31-1/2 in. x 60-1/4 in. (1 800 mm x 800 mm x 1 530 mm). Removal of the rear cover reduces the width to 30-1/4 in. (770 mm). Removal of the lower front cover and partially raising the top covers further reduces the width to 29 in. (740 mm). If further reduction in size is required, see the IBM representative for specifying an upending kit. This modifies the machine to 60 in. x 30-1/4 in. x 75-1/2 in. (1 520 mm x 770 mm x 1 920 mm).

   The side dimension is 39-1/2 in. (1 000 mm), including 8-1/4 in. (210 mm) for the shelf.
5. Unless otherwise specified, the shipping dimensions for frame 03 are 34-1/4 in. x 31-1/4 in. x 60-1/4 in. (870 mm x 790 mm x 1 530 mm). Removal of the rear covers reduces the width to 30-1/4 in. (770 mm). Removal of the front covers and partially raising the top cover further reduces the width to 29 in. (740 mm).

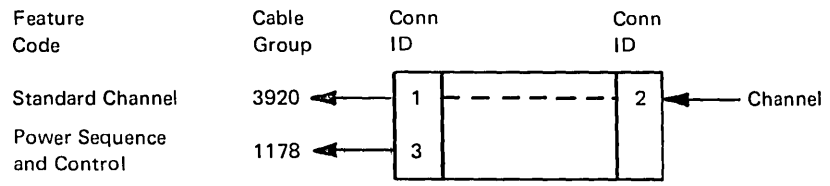
   The side dimension is 39-1/2 in. (1 000 mm), including 8-1/4 in. (210 mm) for the shelf.

   The height dimension is 86-1/4 in. (2 190 mm) with the cover above the shelf raised to the service position.
6. Shipping length for frame 04 is 64 in. (1 630 mm); shipping height is 61-1/2 in. (1 590 mm). Unless otherwise specified, the end stacker unit is shipped with frame 05 assembled. Shipping length is 75 in. (1 910 mm).

   These units are shipped separately by request or are automatically shipped separately if upending kits are specified for frame 01 or frame 02.

   The number of stackers varies by model number. The front dimension for installed stackers is found by multiplying the length of one stacker, 57 in. (1 450 mm), by the model number. (For Model A6 or E6, 57 in. [1 450 mm] x 6 = stacker dimension plus 16 in. [410 mm] for frame 05.)
7. The weight of customer's trays and documents is not included.
8. Maximum values (Models A6, B6, E6, and F6). See Totals (By Model) for actual values with or without SF 5111 (microfilmer) installed. See Note 11.
9. Powered from control unit 1 (frame 01).
10. See "Plan View Metric Equivalents" on page 3890.2.
11. SF 5111 (microfilmer) is standard on Models E2-E6 and F2-F6.
12. References to 60-Hz 3890 Models B and F do not apply if the 3890 has the monolithic storage device (instead of the core storage device). The 60-Hz 3890 Models B and F with monolithic storage do not have frame 06, but do have the physical characteristics of Models A and E, respectively.
13. Frame 07 is currently available on Models A1-A6 and B1-B6 only.

3890 DOCUMENT PROCESSOR (ALL MODELS) CABLING SCHEMATIC



From 3890

Feature Code	*Group No.*	*No. of Cables*	*Conn ID*	*Max Length*		*Model*	*Notes*
				m	*(ft)*		
Std	3920	2	1	61.0	(200)	All	1, 2
Opt	1178	1	3	45.7	(150)	All	2, 3

To 3890

Conn ID	*Model*	*Notes*
2	All	1, 2

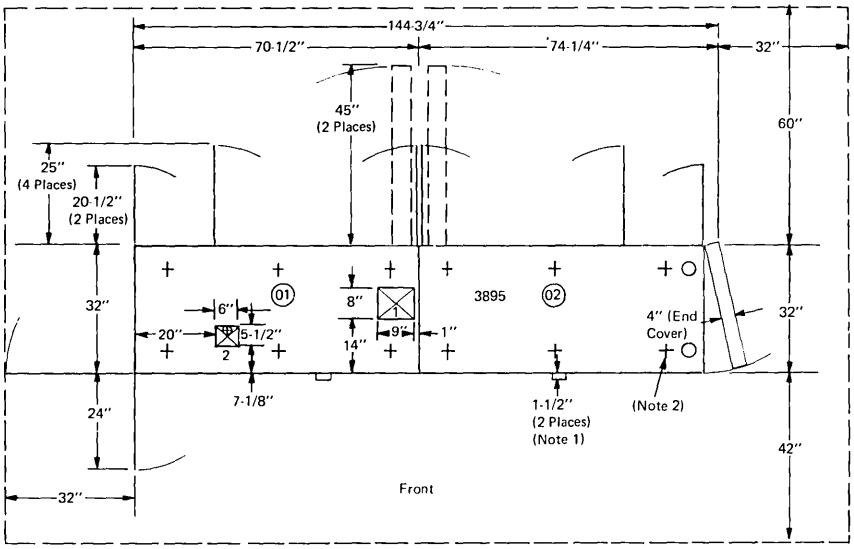
Notes:

1. When a 3890 (60 Hz) is installed on a raised floor, cables enter the machine through the cable entry in the first module to the right of frame 01; that is, frame 06 for Models B, C, D, and F, or frame 02 for Models A and E. When a 3890 is installed on a nonraised floor, cables must be routed under frame 01, and must exit at the left end of the machine; or they must be routed under frame 06 for Models B, C, D, and F, frame 02, and if installed, frame 03, and must exit under the first stacker. The sequence and control (EPO) cable enters the machine through frame 02 for Model A or frame 06 for Models B, C, D, and E.

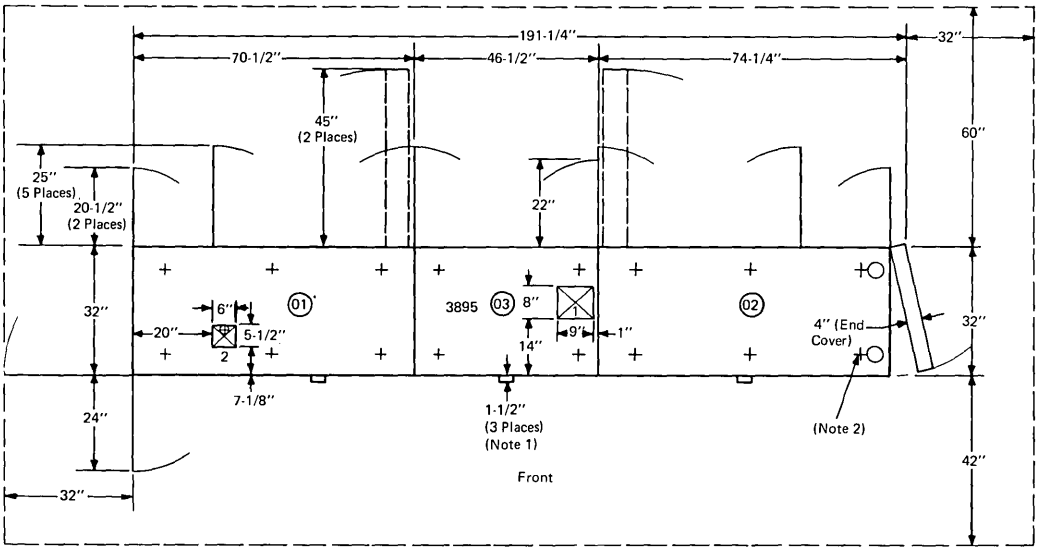
   When a 3890 (50 Hz) is installed on a raised floor, cables enter the machine through the cable entry in frame 06. When a 3890 (50 Hz) is installed on a nonraised floor, cables must be routed under frame 01, and must exit at the left end of the machine; or they must be routed under frame 06, frame 02, and if installed, frame 03, and must exit under the first stacker. The sequence and control (EPO) cable enters the machine through frame 06.
2. In Note 1, references to 3890 Models B and F (60 Hz) do not apply if the 3890 has the monolithic storage device (instead of the core storage device). The 3890 Models B and F (60 Hz) with monolithic storage do not have frame 06, but do have the physical characteristics of Models A and E, respectively.
3. Cable group 1178 should be ordered only when the customer wants to enable power sequence and control.

3895 DOCUMENT READER/INSCRIBER (60 HZ)

PLAN VIEW (WITHOUT MICROFILMING FEATURE, SF 5110), English Scale: 1/4 in. = 1 ft



PLAN VIEW (WITH MICROFILMING FEATURE, SF 5110), English Scale: 1/4 in. = 1 ft



Notes:

1. Handles on covers are not removable. Covers can be raised for clearance.
2. Except for the two fixed casters on the right end of frame 02, all casters have a 5/8" vertical adjustment.

SPECIFICATIONS

Dimensions: *

	Front	Side	Height
Inches	**	**	60***
(cm)	(**)	(**)	(153***)

Service Clearances:

	Front	Rear	Right	Left
Inches	42	60	32	32
(cm)	(107)	(152)	(81)	(81)

Weight: 3,900 lb (1 780 kg)
4,700 lb (2 150 kg)†

Heat Output: 33,500 BTU/hr (8 450 kcal/hr)
37,500 BTU/hr (9 500 kcal/hr)†

Airflow: 1,850 cfm (53 m^3/min)
2,250 cfm (63 m^3/min)†

Power Requirements:

kVA	12.5 (14.3 with microfilming feature)
Branch Circuit Amperes	60
Phases	3
Plug	R&S, SC7328
Connector	R&S, SC7428
Receptacle	R&S, SC7324
Power Cord Length	14 feet (4.3 m)

Environment, Operating:

Temperature	60^oF-85^oF (16^oC-30^oC)
Rel Humidity	20%-80%
Max Wet Bulb	73^oF (23^oC)

Environment, Nonoperating:

Temperature	50^oF-110^oF (10^oC-43^oC)
Rel Humidity	8%-80%
Max Wet Bulb	80^oF (27^oC)

Notes:

* Dimensions shown on plan view are with covers. If further reduction in shipping size is required, request the IBM representative to specify an upending kit. This reduces the *upended* dimensions (without covers) to:

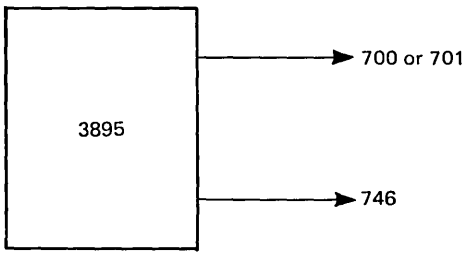
	Front	Side	Height
Frame 01	29-1/2" (75 cm)	59" (150 cm)	74" (188 cm)
Frame 02	29-1/2" (75 cm)	59" (150 cm)	75" (191 cm)

** See plan view.

*** Top cover when raised is 81 inches (206 cm) above floor level.

† With microfilming feature.

3895 DOCUMENT READER/INSCRIBER CABLING SCHEMATIC (60 HZ)



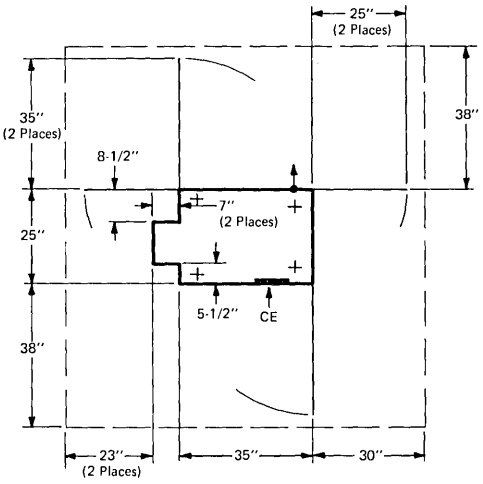
Group No.	*No. of Cables*	*From*	*To*	*Max Length (ft)*	*Notes*
700	2	3895	Multiplexer Channel	200	1
701	2	3895	Control Unit	200	1
746	2	3895	Selector or Block-Multiplexer Channel	200	1

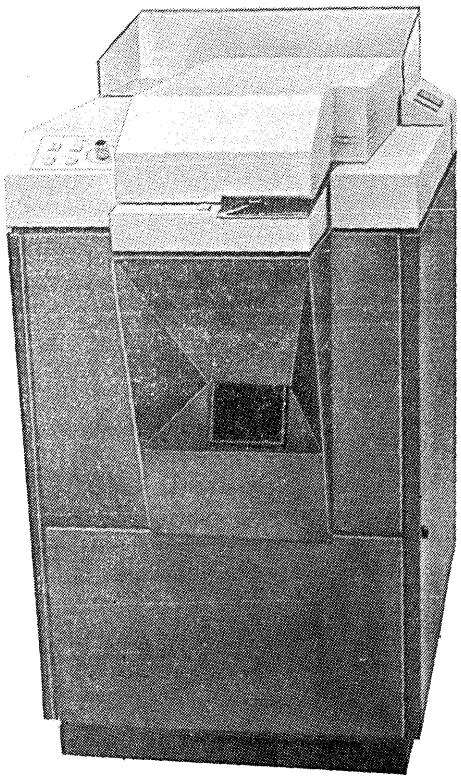
Notes:

1. Total cable length of 200 feet (unless modified by general control-to-channel cabling schematic) available to attach up to eight control units. (See *IBM System/370 Installation Manual–Physical Planning*, GC22-7004.) Cables are attached through cable entry/exit 1.

3896 TAPE-DOCUMENT CONVERTER (60 HZ)

PLAN VIEW (English Scale: 1/4 in. = 1 ft)





SPECIFICATIONS

Dimensions:

	Front	Side	Height
Inches	42	25	47
(cm)	(107)	(64)	(119)

Service Clearances:

	Front	Rear	Right	Left
Inches	30*	30*	30	23
(cm)	(76*)	(76*)	(76)	(58)

Weight: 900 lb (410 kg)

Heat Output:** 7,000 BTU/hr (1 800 kcal/hr)

Airflow: 200 cfm (6 m^3/min)

Power Requirements:

kVA	4.3
Phase	1
Branch Circuit Amperes***	30
Plug †	NEMA Type 14-30 P
Receptacle††	NEMA Type 14-30 R
Power Cord Length	10 feet (3 m)

Environment, Operating:

Temperature	60°F-85°F (16°C-30°C)
Rel Humidity	20%-80%
Max Wet Bulb	73°F (23°C)

Notes:

* Covers can be removed for servicing.

** Based on 60% duty cycle. For continuous operation, heat output is 13,000 BTU/hr (3 300 kcal/hr).

*** The 3896 should be the only load connected to the branch circuit.

† With both neutral and equipment ground.

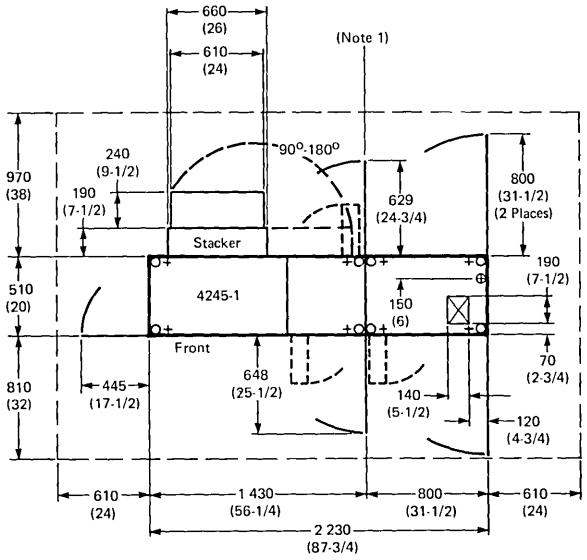
†† Receptacles:

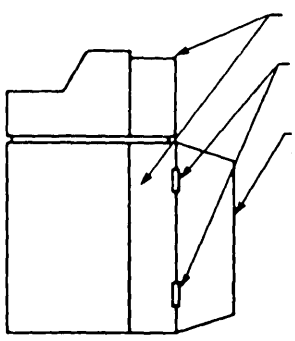
Hubbel 9430
General Electric 4193-1 (surface)
General Electric 4193-3 (flush)
or equivalent

4245 PRINTER MODEL 1

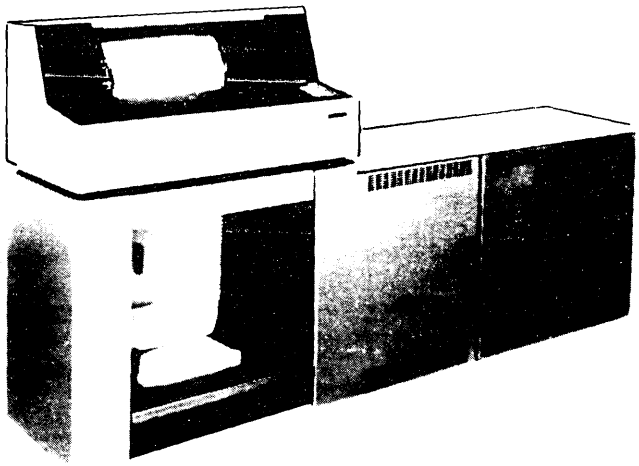
PLAN VIEW (Metric Scale: 10 mm = 0.5 m)

English measurements are shown in parentheses.





Side View



SPECIFICATIONS

Dimensions:

	Front	Side w/o stacker	Side with stacker	Height
mm	2 230	510	940	1 170
(inches)	(87-3/4)	(20)	(37)	(46-1/4)

Service Clearances:

	Front	Rear	Right	Left
mm	810	970	610	610
(inches)	(32)	(38)	(24)	(24)

Weight: 500 kg (1,100 lb)

Heat Output (approx): 3 250 W (11,100 BTU/hr)

Airflow: 18 m^3/min (640 cfm)

Acoustical Data:
For definitions, see "Acoustics" in Chapter 3 of *IBM General Information Manual: Installation Manual–Physical Planning*, GC22-7072.

L_{WAd}		$<L_{pA}>_m$		I	T
Operating (bels)	Idling (bels)	Operating (dB)	Idling (dB)		
N/A	N/A	63.5	51.5	No	No

Power Requirements:

	50 Hz	*60 Hz*
Voltages	200, 220, 380, 400, 415 V	200, 208, 220, 240, 380 V
kVA	4.0	3.8
Phases (Note 2)	3	3
Plug		R&S, 3760
Connector		R&S, 3934
Receptacle		R&S, 3754

Power Cord Style (see following page)

Environment, Operating:

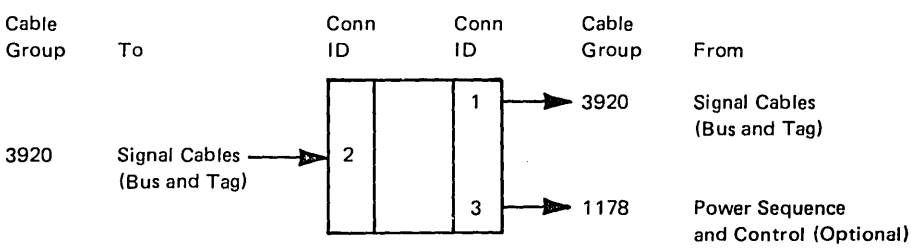
Temperature	16°C-32°C (60°F-90°F)
Rel Humidity	8%-80%
Max Wet Bulb	23°C (73°F)

Notes:
1. The machine is separated at this point for shipment.
2. Phase load imbalance (approximate) for 380/400 V = R : S : T = 1 : 1.7 : 1.

4245 PRINTER MODEL 1 POWER CORD SPECIFICATIONS

	Length	Cable Nominal OD	Number of Shields	Conductors		
				Number	Nominal OD	AWG No.
All 60 Hz: Japan 50/60 Hz	4.27 m (14 ft) Chicago, Illinois, U.S.A. – 1.83 m (6 ft)	15.4 mm (0.604 in.)	0	4	1.63 mm (0.064 in.)	14
50 Hz (Except Japan)	4.27 mm (14 ft)	11 mm (0.43 in.)	0	5	1.38 mm (0.054 in.)	–

4245 PRINTER MODEL 1 CABLING SCHEMATIC



From 4245-1

Group No.	No. of Cables	Conn ID	Max Length m	Max Length (ft)	Comments	Notes
3920	2	1	122	(400)	Bus and tag	1
1178	1	3	46	(150)	Power sequence and control	2

To 4245-1

Conn ID	Comments
2	Bus and tag

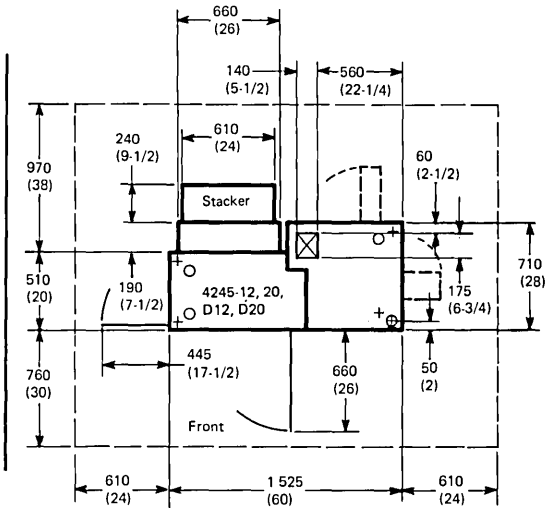
Notes:

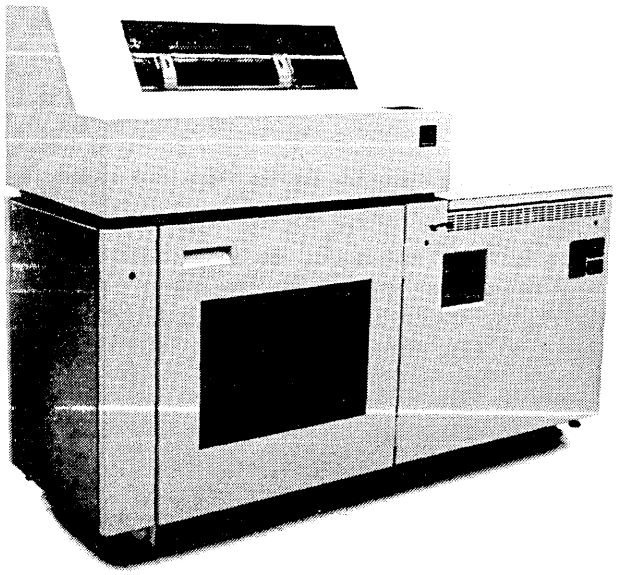
1. Maximum cumulative X-length is 122 meters (400 feet), unless modified by system or channel limitation. Maximum cable length must be reduced by 5 meters (15 feet) for each control unit connected between the 4245 and the channel.
2. Cable group 1178, power sequence and control cable, is optional.

4245 PRINTER MODELS 12 AND 20 (CHANNEL ATTACHED) AND MODELS D12 AND D20 (COAXIAL CABLE ATTACHED, CHANNEL PROTOCOL)

PLAN VIEW (Metric Scale: 10 mm = 0.5 m)

English measurements are shown in parentheses.





SPECIFICATIONS

Dimensions:

	Front	Side w/o stacker	Side with stacker	Height
mm	1 525	710	950	1 170
(inches)	(60)	(28)	(37-1/2)	(46-1/4

Service Clearances:

	Front	Rear	Right	Left
mm	760	970	610	610
(inches)	(30)	(38)	(24)	(24)

Weight: 410 kg (910 lb)

Heat Output (approx):

	Model 12	*Model 20*
W	2 000	2 500
(BTU/hr)	(6,850)	(8,550)

Airflow: 17 m^3/min (600 cfm)

Acoustical Data:

For definitions, see "Acoustics" in Chapter 3 of *IBM General Information Manual: Installation Manual–Physical Planning,* GC22-7072.

	L_{WAd}		$<L_{pA}>$ m		I	T
	Operating (bels)	Idling (bels)	Operating (dB)	Idling (dB)		
4245-12 50 Hz	7.9	6.6	62.0	50.0	No	No
4245-12 60 Hz	7.8	6.9	63.0	52.5	No	No
4245-20 50 Hz	7.5	6.5	63.5	50.0	No	No
4245-20 60 Hz	7.9	6.8	62.0	52.5	No	No

Power Requirements:

		50 Hz	*60 Hz*
Voltages		200, 220, 380, 400, 415 V	200, 208, 220, 240, 380 V
kVA	Model 12	2.6	2.6
	Model 20	3.1	3.1
Phases		3	3
Inrush Current		160 A maximum	
Power Factor		Better than 0.9	
Plug		R&S, 3760	
Connector		R&S, 3934	
Receptacle		R&S, 3754	
Power Cord Style		(see following page)	

Environment, Operating:

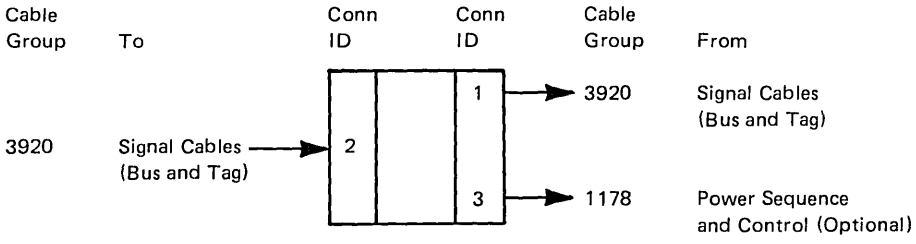
Temperature	16°C-32°C (60°F-90°F)
Rel Humidity	8%-80%
Max Wet Bulb	23°C (73°F)

4245 PRINTER MODELS 12, 20, D12, AND D20 POWER CORD SPECIFICATIONS

	Length	Cable Nominal OD	Number of Shields	Conductors		
				Number	Nominal OD	AWG No.
All 60 Hz: Japan 50/60 Hz	4.27 m (14 ft) Chicago, Illinois, U.S.A. – 1.83 m (6 ft)	15.4 mm (0.604 in.)	0	4	1.63 mm (0.064 in.)	14
50 Hz (Except Japan)	4.27 m (14 ft)	11 mm (0.43 in.)	0	5*	1.38 mm (0.054 in.)	–

*For Brazil and Taiwan, 60 Hz

4245 PRINTER MODELS 12, 20, D12, AND D20 CABLING SCHEMATIC



From 4245

Group No.	*No. of Cables*	*Max Length*			*Comments*	*Notes*
		Conn ID	*m*	*(ft)*		
3920	2	1	127	(416)	Bus and tag	1, 3
1178	1	3	46	(150)	Power sequence and control	2

To 4245

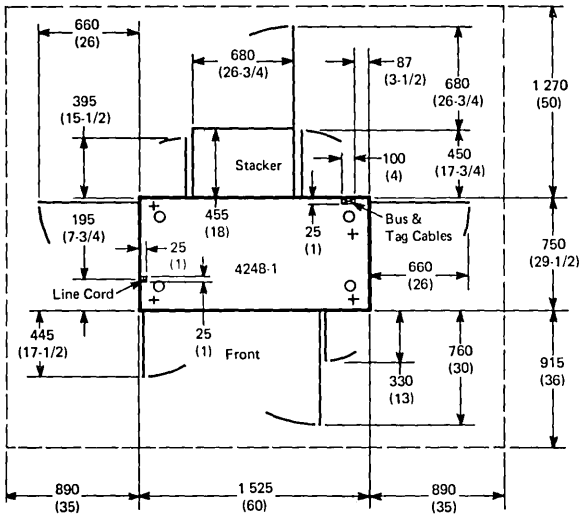
Conn ID	*Comments*
2	Bus and tag

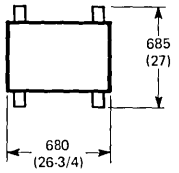
Notes:
1. Used on Models 12 and 20 only.
2. Used on Models 12, 20, D12, and D20 if remote power control is needed.
3. Maximum cable length must be reduced by 5 meters (15 feet) for each additional control unit between the 4245 and the channel.
4. Coaxial signal cables (a maximum length of 1 500 meters (4,920 feet)) for Models D12 and D20 are supplied by the customer. See *Assembly of Coaxial Cable and Accessories for Attachment to IBM Products*, GA27-2805.

4248 PRINTER MODEL 1

PLAN VIEW (Metric Scale: 10 mm = 0.25 m)

English measurements are shown in parentheses.

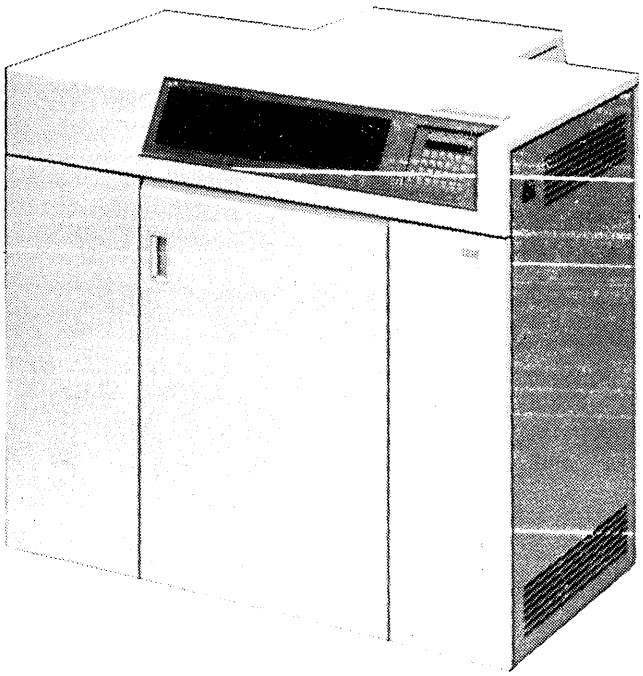




Shipping dimensions of stacker with outriggers.

Notes:

1. The stacker contains light-sensitive sensors: Do not expose the stacker door to direct sunlight.
2. A 150 mm x 150 mm (6 in. x 6 in.) floor cutout is recommended to accommodate the external cables. Locate the cutout at the right rear corner of the printer (where the bus and tag cables are indicated on the plan view).



4248 PRINTER MODEL 1

SPECIFICATIONS

Dimensions: (With Covers and Stacker)

	Front	Side	Height	Height
mm	1 525	1 220	1 350	1 420*
(inches)	(60)	(48)	(53)	(56*)

Side Dimension: (Without Stacker)

mm	–	750	–	–
(inches)	–	(29-1/2)	–	–

Height (Cover Raised):

mm	–	–	2 032	–
(inches)	–	–	(80)	–

Service Clearances:

	Front	Rear	Right	Left
mm	915	1 270	890	890
(inches)	(36)	(50)	(35)	(35)

Weight:
With Stacker 865 kg (1,910 lb)
Without Stacker 725 kg (1,600 lb)

Heat Output: 50 Hz 4 500 W (15,400 BTU/hr)
60 Hz 3 800 W (13,000 BTU/hr)

Airflow: 21 m^3/min (725 cfm)

Acoustical Data:
For definitions, see "Acoustics" in Chapter 3 of *IBM General Information Manual: Installation Manual–Physical Planning,* GC22-7072.

L_{WAd}		$<L_{pA}>_m$		I	T
Operating (bels)	Idling (bels)	Operating (dB)	Idling (dB)		
8.3	N/A	62.0	N/A	No	No

Power Requirements:

	50 Hz	*60 Hz*
kVA	5	4
Phases	3	3

Voltages

	Nominal	*Minimum*	*Maximum*
50 Hz	200	180	220
	220	193	238
	230	202	249
	240	210	259
	380	333	410
	400	350	432
	415	363	448
60 Hz	200	180	220
	208	180	220
	220	193	238
	240	208	254

Power Cord:

	Standard	*Optional*
meters	4.3	1.8
(feet)	(14)	(6)

Power Cord Style: D2 (See Appendix A.)

U.S.A. and Canada: (See Appendix D.)
Plug R&S, 3760 (Provided by IBM)
Receptacle R&S, 3754 (Provided by Customer)
Connector R&S, 3934 (Provided by Customer)

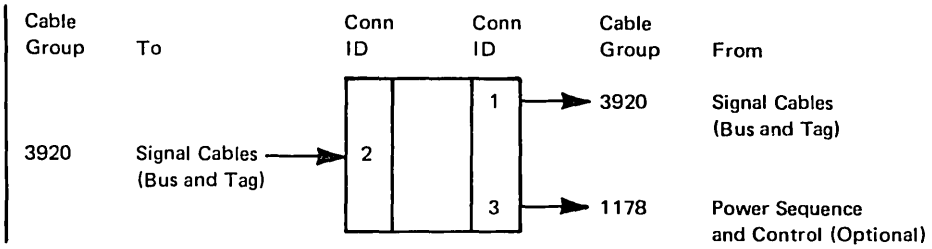
Environment, Operating:
Temperature 16°C-32°C (60°F-90°F)
Rel Humidity 8%-80%
Max Wet Bulb 23°C (73°F)

OCR Applications
Temperature 16°C-29°C (60°F-85°F)
Rel Humidity 20%-70%
Max Wet Bulb 21°C (70°F)

Environment, Nonoperating:
Temperature 10°C-43°C (50°F-110°F)
Rel Humidity 8%-80%
Max Wet Bulb 27°C (80°F)

Note:
*Height includes Attention light.

4248 PRINTER MODEL 1 CABLING SCHEMATIC



From 4248-1

Group No.	*No. of Cables*	*Conn ID*	*Max Length*		*Comments*	*Notes*
			m	*(ft)*		
3920	2	1	122	(400)	Bus and tag	1
1178	1	3	46	(150)	Power sequence and control	2

To 4248-1

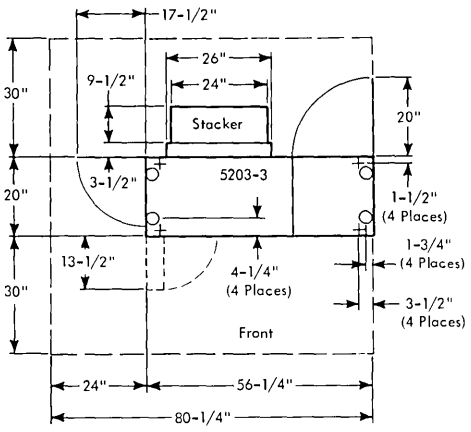
Conn ID	*Comments*
2	Bus and tag

Notes:

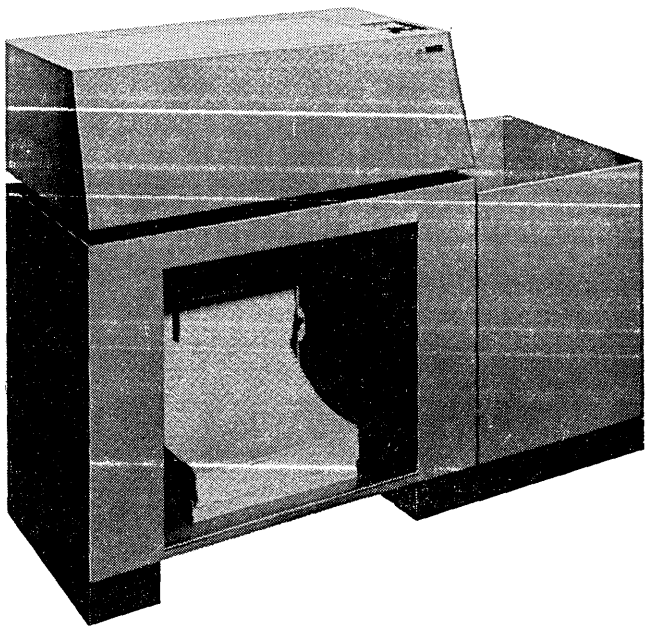
1. Maximum cumulative X-length is 122 m (400 ft) unless modified by system or channel limitation. Maximum cable length must be reduced by 5 m (15 ft) for each control unit connected between the 4248 and the channel.
2. Cable group 1178, power sequence and control, is optional.

5203 PRINTER MODEL 3

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: No external cables are required for use with 3115-0 or 3115-2.



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	56-1/4	20	41-1/2
(cm)	(143)	(51)	(105)

Service Clearances:

	F	R	Rt	L
Inches	30	30	0	24
(cm)	(76)	(76)	(0)	(61)

Weight: 475 lb (220 kg)

Heat Output: 3,300 BTU/hr (840 kcal/hr)

Airflow: 300 cfm (9 m^3/min)

Power Requirements:*

kVA	1.1
Phases	3

Environment, Operating:

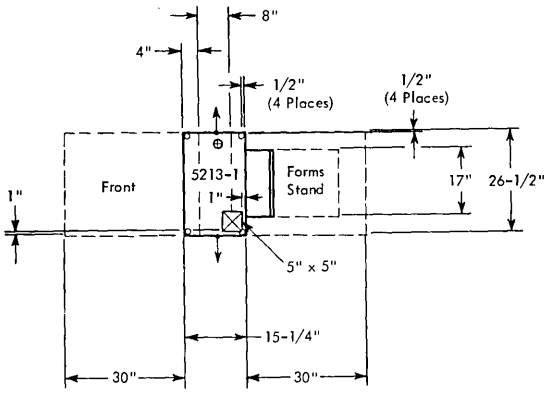
Temperature	60°F-100°F (16°C-38°C)
Rel Humidity	8%-80%
Max Wet Bulb	73°F (23°C)

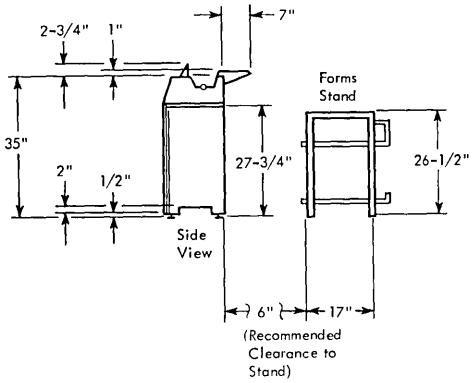
Notes:

* Powered from and abutted to 3115-0 or 3115-2 when SF 4690 is installed.

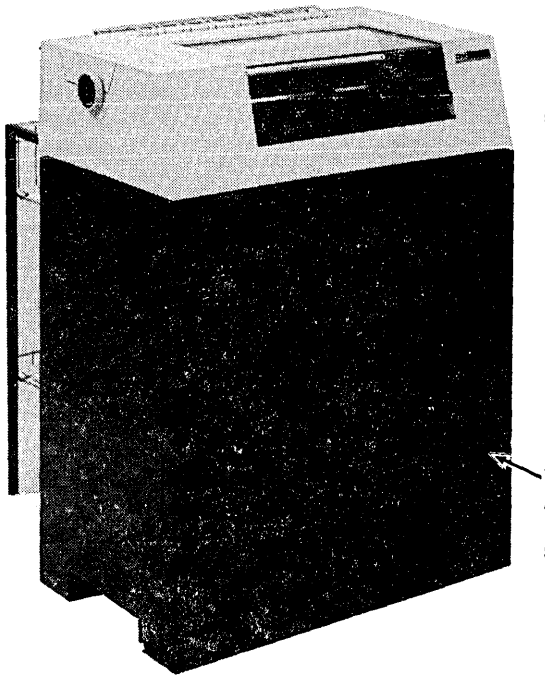
5213 CONSOLE PRINTER MODEL 1 (WITH 3115-0, 3115-2, 3125-0, OR 3125-2)

PLAN VIEW (English Scale: 1/4 in. = 1 ft)





Note: For cabling information, see 3115-0, 3115-2, 3125-0, or 3125-2.



SPECIFICATIONS

Dimensions:*

	F	S	H
Inches	26-1/2	15-1/4	37-3/4
(cm)	(67)	(39)	(96)

Service Clearances:

	F	R	Rt	L
Inches	30	30**	0	0
(cm)	(76)	(76**)	(0)	(0)

Weight: 135 lb (62 kg)

Heat Output: 250 BTU/hr (64 kcal/hr)

Airflow: Convection only

Power Requirements:*	*50 Hz*	*60 Hz*
kVA	0.1	0.2

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	20%-80%
Max Wet Bulb	78°F (26°C)

Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

Notes:

* Dimensions are with base frame installed.

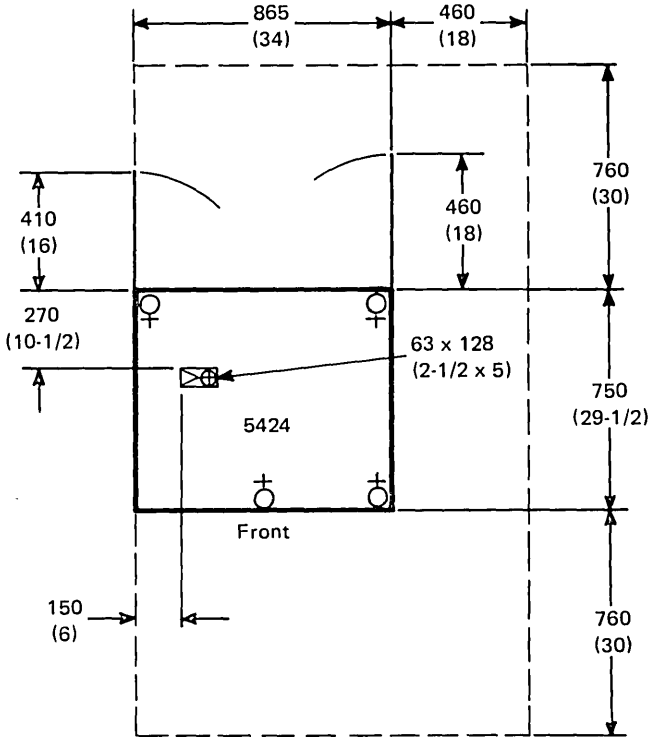
** A 6-inch (15-cm) clearance is recommended to forms stand (SF 4450), if used.

*** Powered from 3115-0, 3115-2, 3125-0, or 3125-2 when SF 4692 is installed.

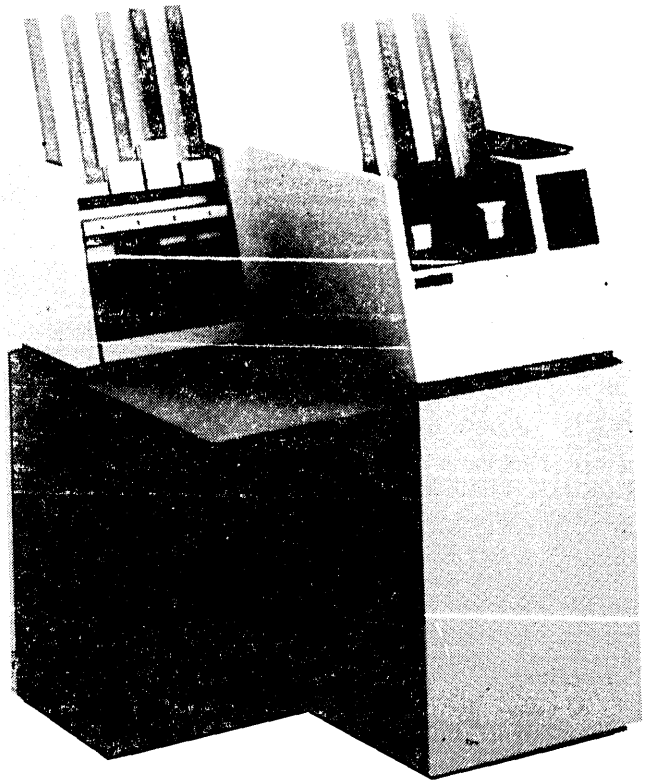
5424 MULTI-FUNCTION CARD UNIT MODELS A1, A2, K1, K2, AND K3 (WITH SF 6510)

PLAN VIEW (Metric Scale: 10 mm = 0.25 m)

English measurements are shown in parentheses.



Note: Two 10-foot (3-meter) signal cables and a 15.6-foot 5-meter) dc common (ground) cable are supplied.



SPECIFICATIONS

Dimensions:

	Front	Side	Height
mm	865	750	1 400
(inches)	(34)	(29½)	(55)

Service Clearances:

	Front	Rear	Right	Left
mm	760	760	460	0
(inches)	(30)	(30)	(18)	(0)

Weight: 260 kg (570 lb)

Heat Output: 880 W (3,000 BTU/hr)

Airflow: Convection

Power Requirements:

kVA	1.3		
Phases	1		
Voltages			
50 Hz	200	220	235
60 Hz	200*	208	230
Plug	R&S, FS3720 (Provided by IBM)		
Receptacle	R&S, FS3743 (Provided by Customer)		
Connector	R&S, FS3913 (Provided by Customer)		
Power Cord Style	A6		

Environment, Operating:

Temperature	16°C-38°C (50°F-110°F)
Rel Humidity	8%-80%
Max Wet Bulb	23°C (73°F)

Environment, Nonoperating:

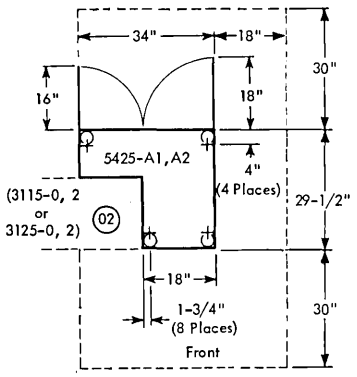
Temperature	10°C-43°C (50°F-110°F)
Rel Humidity	8%-80%
Max Wet Bulb	27°C (80°F)

Notes:

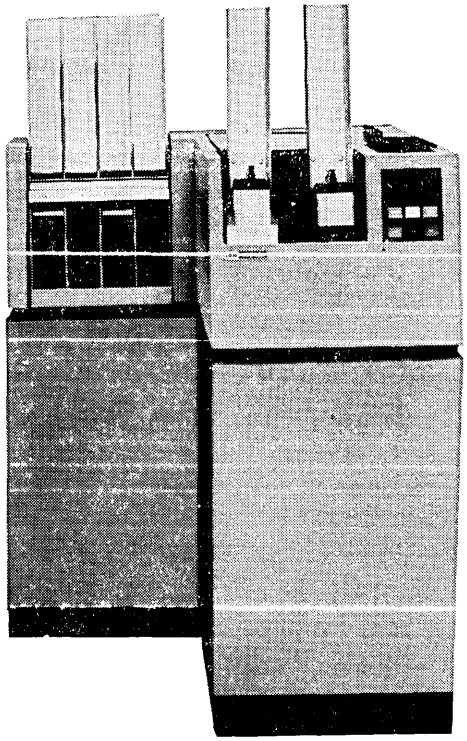
* Not available in U. S.

5425 MULTI-FUNCTION CARD UNIT MODELS A1 AND A2

PLAN VIEW (English Scale: 1/4 in. = 1 ft)



Note: No external cables are required for use with 3115-0, 3115-2, 3125-0, or 3125-2.



SPECIFICATIONS

Dimensions:

	F	S	H
Inches	34	29-1/2	55
(cm)	(86)	(75)	(140)

Service Clearances:

	F	R	Rt	L
Inches	30	30	18	0*
(cm)	(76)	(76)	(46)	(0*)

Weight: 450 lb (210 kg)

Heat Output: 2,000 BTU/hr (510 kcal/hr)

Airflow: Convection only

Power Requirements:**

kVA	0.8

Environment, Operating:

Temperature	60°F-100°F (16°C-38°C)
Rel Humidity	8%-80%
Max Wet Bulb	78°F (26°C)

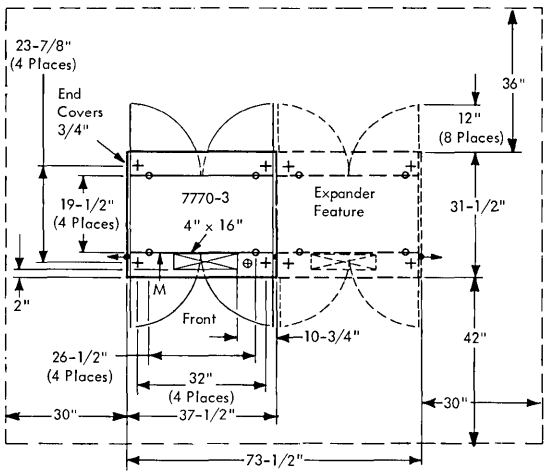
Notes:

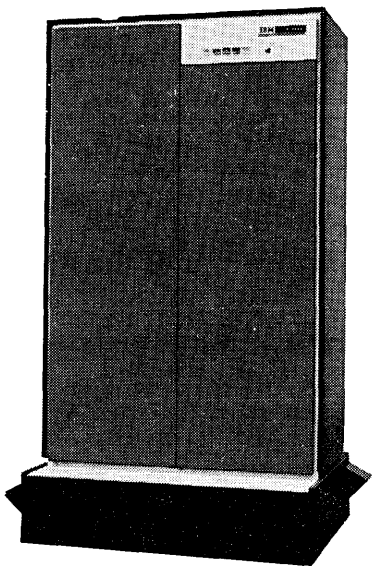
*The 5425 Model A1 or A2 attaches to the right end of the 3115-0 or 3115-2 (frame 02) or the 3125-0 or 3125-2 (frame 02) configuration 1 only.

** Powered from 3115-0, 3115-2, 3125-0, or 3125-2 when SF 4695 is installed.

7770 AUDIO RESPONSE UNIT MODEL 3

PLAN VIEW (English Scale: 1/4 in. = 1 ft)





SPECIFICATIONS

Dimensions:

	F	S	H
Inches	37-1/2*	31-1/2	70
(cm)	(95*)	(80)	(178)

Service Clearances:

	F	R	Rt	L
Inches	42	36	30	30
(cm)	(107)	(91)	(76)	(76)

Weight:	*16 Lines*	*48 Lines*
lb	600	1,200
(kg)	(280)	(550)

Heat Output:		
BTU/hr	4,800	7,200
(kcal/hr)	(1 250)	(1 850)

Airflow:		
cfm	400	800
(m^3/min)	(12)	(23)

Power Requirements:			
kVA	*50 Hz*	1.4	2.0
	60 Hz	1.6	2.4
Phases		1	1
Plug		R&S, FS3720	
Connector		R&S, FS3913	
Receptacle		R&S, FS3743	
Power Cord Style		A3	A3

Environment, Operating:

Temperature	60°F-90°F (16°C-32°C)
Rel Humidity	8%-80%
Max Wet Bulb	78°F (26°C)

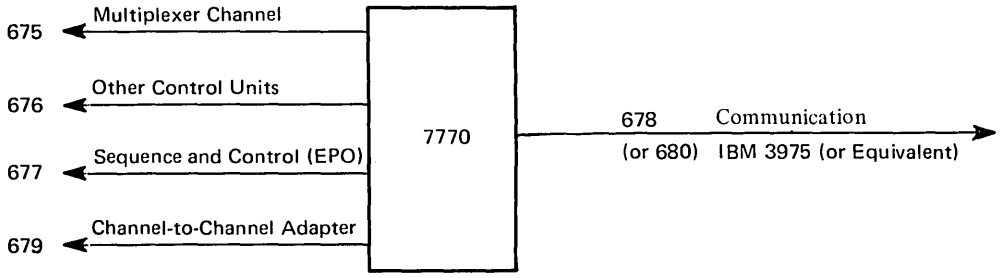
Environment, Nonoperating:

Temperature	50°F-110°F (10°C-43°C)
Rel Humidity	8%-80%
Max Wet Bulb	80°F (27°C)

Notes:

* Dimension is 73-1/2" (187 cm) with expander feature.

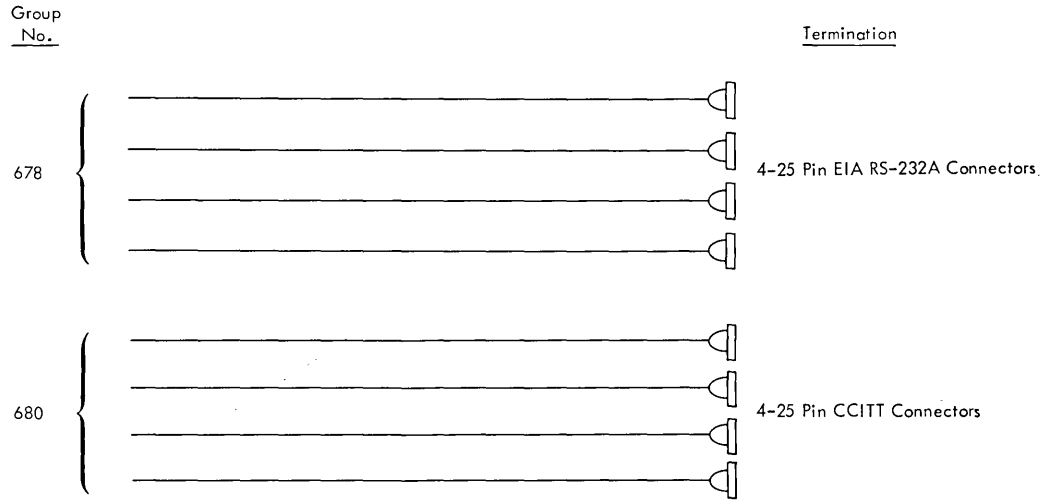
7770 AUDIO RESPONSE UNIT CABLING SCHEMATIC



Group No.	*No. of Cables*	*From*	*To*	*Max Length (ft)*	*Notes*
675	2	7770	Multiplexer Channel	–	1
676	2	7770	Control Unit	–	1
677	1	7770	Channel	150	2
678	4	7770	Communication	40	4,5
(or 680)	4	7770	IBM 3975	40	4,5,6
679	2	7770	Channel-to-Channel Adapter	–	1,3

Notes:
1. Total cable length of 200 feet (unless modified by general control-to-channel cabling schematic) available to attach up to eight control units.
2. Sequence and control (EPO).
3. To channel-to-channel adapter (SF 1850).
4. One group for each four data sets.
5. See "Cables for IBM and Non-IBM Devices" for cable specifications.
6. For 50-Hz machines, use group number in parentheses.

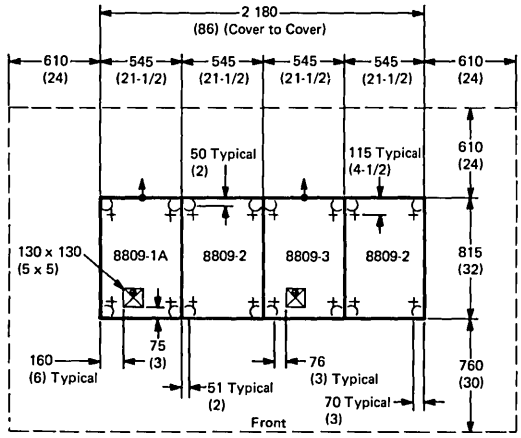
Cables for IBM and Non-IBM Devices



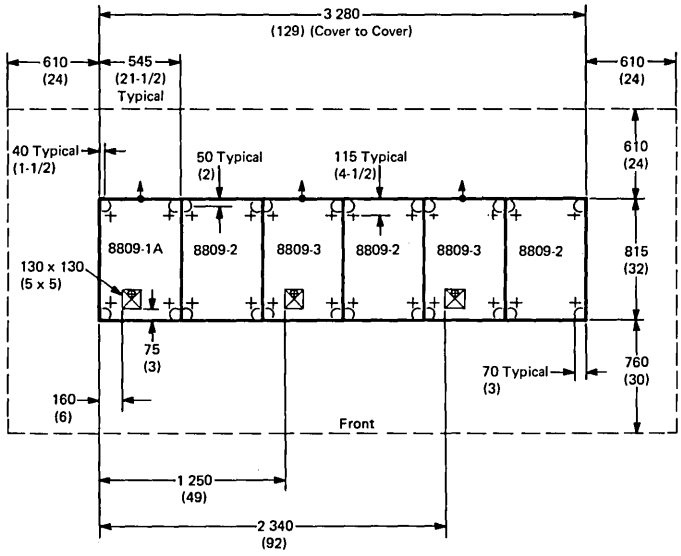
8809 MAGNETIC TAPE UNIT MODELS 1A, 2, AND 3

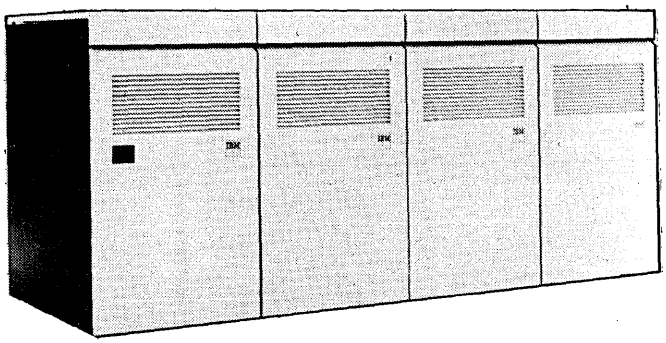
PLAN VIEW (Metric Scale: 10 mm = 0.5 m)

English measurements are shown in parentheses.



Maximum Configuration





SPECIFICATIONS

Dimensions:

	Front	Side	Height
mm	545	815	1 000
(inches)	(21-1/2)	(32)	(39-1/2)

Service Clearances:

	Front	Rear	Right*	Left*
mm	760	610	610	610
(inches)	(30)	(24)	(24)	(24)

	Model		
Weight:	**1A**	**2**	**3**
kg	137	98	129
(lb)	(302)	(215)	(285)

	Model		
Heat Output:	**1A**	**2**	**3**
W	425	380	425
(BTU/hr)	(1 450)	(1 300)	(1 450)

	Model		
Airflow:	**1A**	**2**	**3**
m^3/min	2.8	2.8	2.8
(cfm)	(100)	(100)	(100)

	Model		
Power Requirements:	**1A**	**2****	**3**
kVA	0.66	0.5	0.66
Phases	1	1	1
Plug	NEMA 5-15P or NEMA 6-15P		
Receptacle/Connector	NEMA 5-15R or NEMA 6-15R		
Power Cord Style	A1		

For machines with waterproof plug, specify feature SF 9950:

	125 V	*250 V*
Plug:	R&S, 3720U-1	R&S, 3720U-2
Connector:	R&S, 3743U-1	R&S, 3743U-2
Receptacle:	R&S, 3913U-1	R&S, 3913U-2

Environment, Operating:

Temperature	16°C-38°C (60°F-100°F)
Rel Humidity	8% to 80%
Max Wet Bulb	26°C (78°F)

Environment, Nonoperating:

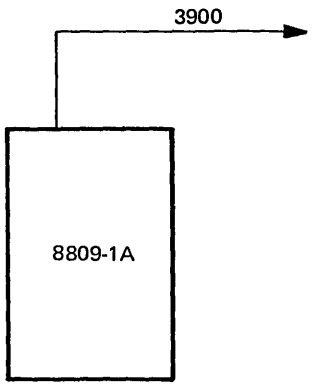
Temperature	10°C-43°C (50°F-110°F)
Rel Humidity	8% to 80%
Max Wet Bulb	27°C (80°F)

Notes:

*Required clearance when the tape unit is at the end of the 8809 series.

**Model 2 receives power from a Model 1A or 3.

8809 MAGNETIC TAPE UNIT MODELS 1A, 2, AND 3 CABLING SCHEMATIC

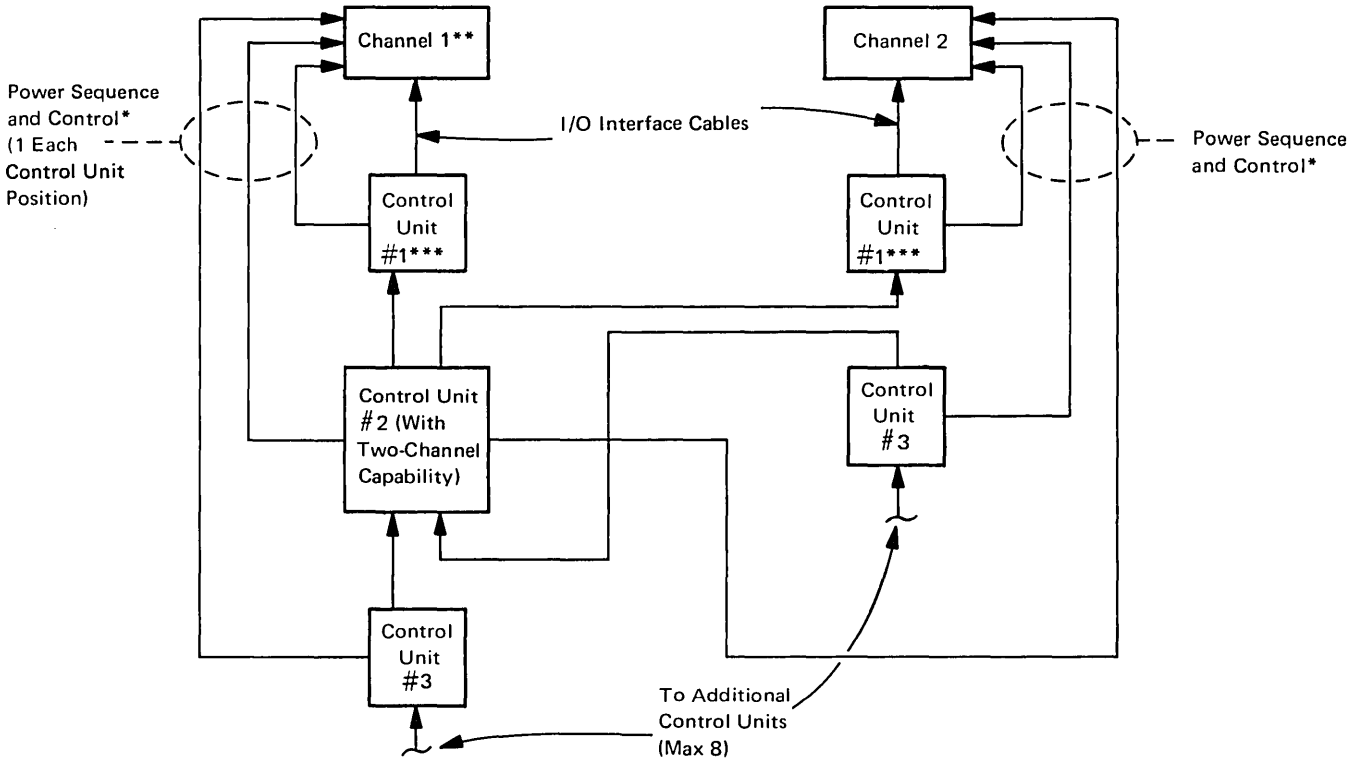


Group No.	*No. of Cables*	*From*	*To*	*Max Length m*	*(ft)*	*Notes*
3900	2	8809-1A	4331	30	(98)	1, 2, 3

Notes:
1. The 8809 must be the only unit attached to the cable signal path.
2. If more than three 8809 Models 2 or 3 are attached to a Model 1A, the maximum cable length is 15 meters (49 feet).
3. Cable length used must be equal to or greater than 4 meters (13 feet).

GENERAL CONTROL-TO-CHANNEL CABLING

Generally, the cable available to connect up to eight control units to a channel is limited to 200 feet. Exceptions to this are noted on the cabling schematics for the individual control units. (See also "System/370 Model 145 Cabling Schematic.") All control units are connected to the channels serially. All channels exceeding 100 feet must be reviewed and approved by the Installation Planning representative.



* On IBM 3032 and 3033 Processor Complexes, the power sequence and control cables (no EPO) go to the PDU. On the IBM 3031 Processor Complex, the power sequence and control cables (no EPO) go to the 3031 Processor (frame 02).

** The channel may be a separate machine (such as the IBM 2860) or integral to the system processor.

*** Machines with two-byte interface must be installed first on the channel.

CHANNEL-TO-CHANNEL ADAPTER CABLING

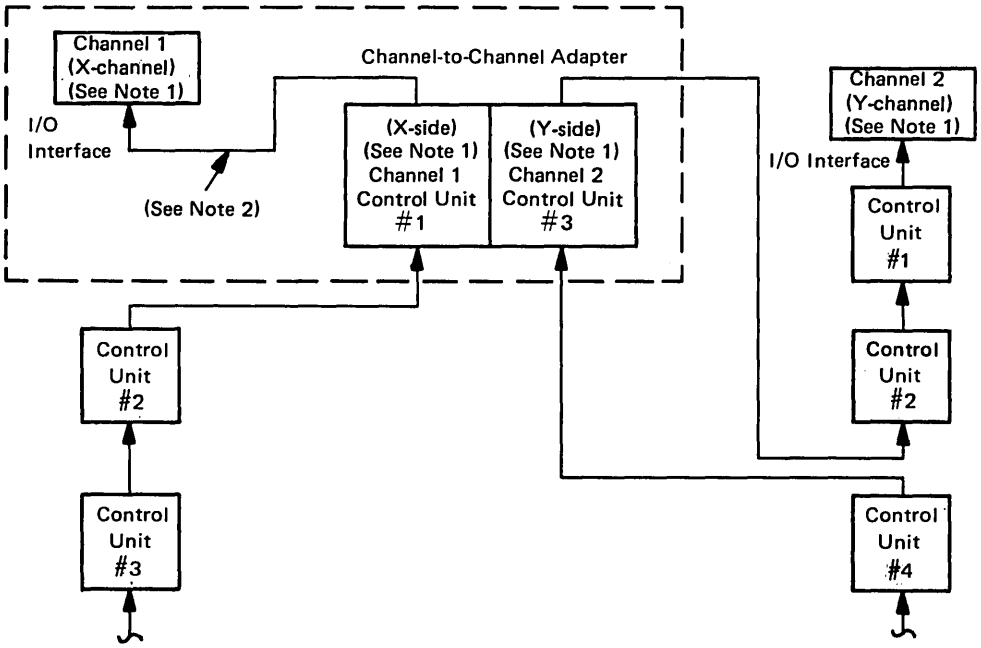
The channel-to-channel adapter (CTCA), SF 1850 and SF 1851, is considered as if it were a control unit on each of the channels affected, except when the Model 145 is the host system. The adapter then requires two control unit positions on both X- (host) and Y- (guest) interfaces. For the IBM 3081 Processor Complex, the adapter reduces the maximum external I/O interface cable length for the Y- (guest) channel with the CTCA by 9.1 meters (30 feet). The adapter requires external cables to both the host and guest channels, except the IBM 2860 Selector Channel.

The channel-to-channel adapter can be installed as follows:

1. *IBM 2860 Selector Channel:* The host side is physically wired internally, first on the channel and then to the select out line (highest priority). The guest side may be cabled in any control unit physical position and any priority position on the select out or select in line.
2. *IBM System/370 Models 145, 155, 158, IBM 3031 and 3032 Processors (with Director 1), and 3081, 3083, and 3084 Processors:* The CTCA is in the same frame as the channel connectors and may be assigned to any control unit position(s) or any priority on the host or guest channel. When the CTCA is physically the first control unit on the host channel, specify 1.2 meters (4 feet) of cable to connect the CTCA to channel connectors.
3. *IBM 3032 Processor (with Director 2) and IBM 3033 Processors:* The CTCA is in a different frame than the channels and can be assigned any control unit position or priority on the host or guest channel. When the CTCA is physically the first control unit on the host channel, specify 3 meters (10 feet) of cable for the 3032 and 1.8 meters (6 feet) of cable for the 3033.

In each of the preceding steps, the guest-side (Y) cabling should be specified as required.

Channel-to-Channel Adapter in First Control Unit Position

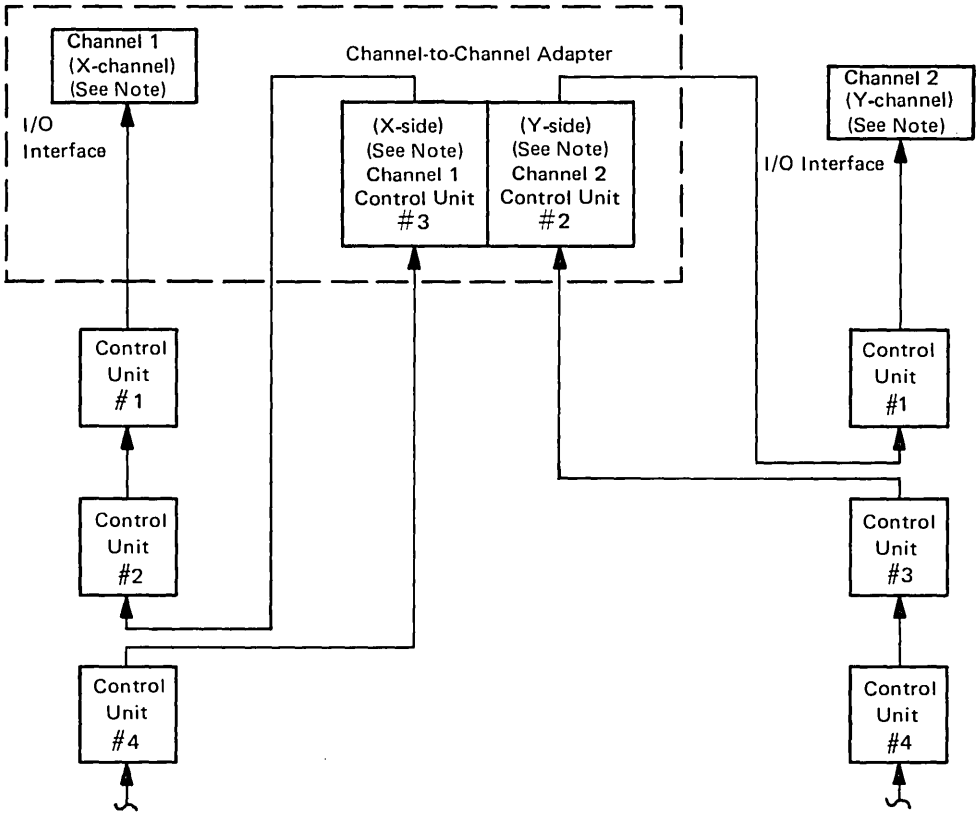


Notes:

1. X refers to the host channel; Y refers to the guest channel.
2. X-side; internal machine wiring (IBM 2860 Selector Channel).

CHANNEL-TO-CHANNEL ADAPTER CABLING

Channel-to-Channel Adapter in Any Control Unit Position



Note: X refers to the host channel; Y refers to the guest channel.

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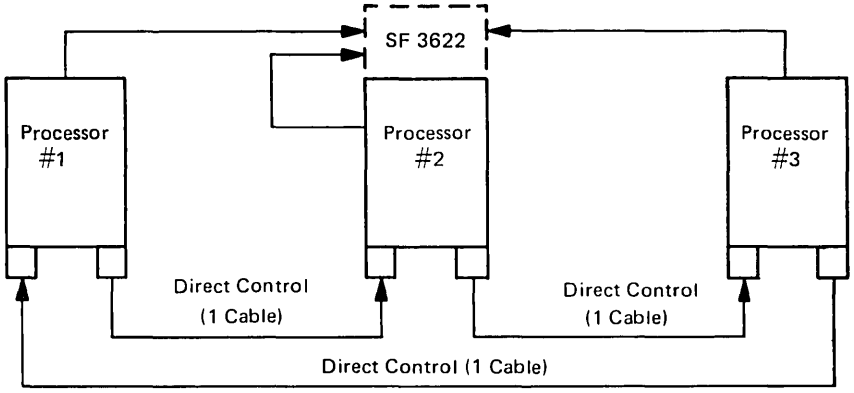
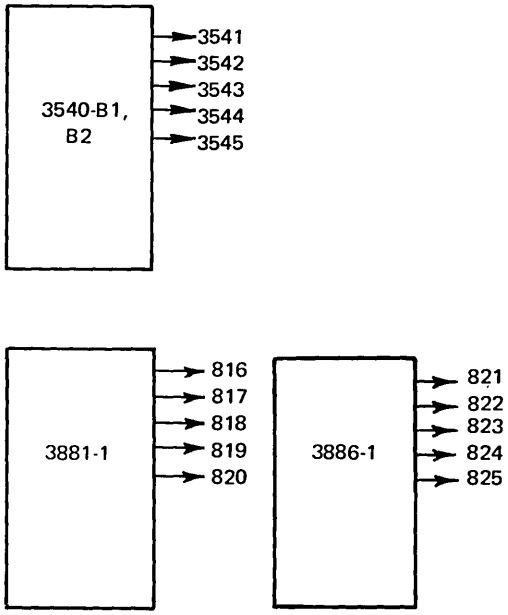
DIRECT CONTROL CABLING

Multiple Processors (Notes 1 and 2)



Notes:
1. Cabling shown above is in addition to basic channel requirements.
2. Processor may be System/360 or System/370.

MACHINES WITH INTEGRAL OR ABUTTED CONTROLS



MACHINES WITH INTEGRAL OR ABUTTED CONTROLS

Group No.	*No. of Cables*	*From*	*To*	*Max Length (ft)*	*Notes*
816	2	3881-1	Multiplexer Channel	–	1
817	1	3881-1	Channel	150	2
818	2	3881-1	Selector Channel	–	1
819	2	3881-1	Channel-to-Channel Adapter	–	1, 3
820	2	3881-1	Control Unit	–	1
821	2	3886-1	Multiplexer Channel	–	1
822	1	3886-1	Channel	150	2
823	2	3886-1	Selector Channel	–	1
824	2	3886-1	Channel-to-Channel Adapter	–	1, 3
825	2	3886-1	Control Unit	–	1
3541	2	3540	Multiplexer Channel	–	1
3542	1	3540	Channel	150	2
3543	2	3540	Selector Channel	–	1
3544	2	3540	Channel-to-Channel Adapter	–	1, 3
3545	2	3540	Control Unit	–	1

Notes:

1. Total cable length of 200 feet (unless modified by general control-to-channel schematic) available to attach as many as eight control units.
2. Power sequence and control. This machine must have the power sequence and control installed for proper operation.
3. To channel-to-channel adapter (SF 1850).
4. See the following page.

MACHINES WITH INTEGRAL OR ABUTTED CONTROLS

Notes: (Continued)

4. The "to" machine and attachment options for 3310-A1, A2/B1, B2; 3333/3330, 3340-A2/3340-B1 or B2; 3340-A2/3344-B2 or B2F, and 3350-A2 or A2F/3350-B2 or B2F/3350-C2 or C2F or 3370 A1, B1 are shown in the following table. Unless otherwise specified, each DASD string may contain up to four attached machines.

To Machine	*Frame*	*Attachment Options*
3115-0 (DDA)	01	One 3340-A2 with one 3340-B1 or B2.
3115-2 (DDA)	01	One 3340-A2 with up to three 3340-B1s, 3340-B2s, or 3344s.
3125-0 (DDA)	01	One 3333-1 with one 3330-1 or 2 *or* One 3340-A2 with up to three 3340-B1s or B2s.
3125-2 (DDA)	01	Two 3340-A2 each controlling up to three 3340-B1s or 3340-B2s or one 3333-1 with one 3330-1 or 2. One 3340-A2 can attach 3344(s).
3135, 3138 (IFA, SF 4655)	01	Up to three 3333s and/or 3340-A2s. One 3340-A2 can attach 3344(s). The 3340-A2 with 3344(s) and the 3333 are mutually exclusive.
3145, 3148 (ISC, SF 4660)	03	Up to four 3333s, 3340-A2s and/or 3350-A2s or A2Fs in any combination. Up to two 3340-A2 can attach 3344(s). Attachment of one or more 3340-A2s with 3344(s) is mutually exclusive with attachment of either 3333s or 3350-A2s or A2Fs. Each 3350-A2 or A2F can attach one 3350-C2 or C2F for a maximum of four 3350-A2s or A2Fs and four 3350-C2s or C2Fs.
3158, 3158-3/3168, 3168-3 (ISC per path, SF 4650). Power sequence and control (cable group 3332 not required for 3350-C2) enters frame 15 (3067-2, 3) on 3168 or 3168-3	02	Up to four 3333s, 3340-A2s and/or 3350-A2s or A2Fs in any combination. Up to two 3340-A2s can attach 3344(s). Attachment of one or more 3340-A2s with 3344(s) is mutually exclusive with attachment of either 3333s or 3350-A2s or A2Fs. Each 3350-A2 or A2F can attach one 3350-C2 or C2F for a maximum of four 3350-A2s or A2Fs and four 3350-C2s or C2Fs.
3158, 3158-3/3168, 3168-3 (ISC per path, SF 4650, with staging adapter, SF 7220). Power sequence and control (cable group 3332) enters frame 15 (3067-2, 3) on 3168 or 3168-3	02	Up to four 3333s and/or 3350-A2s or A2Fs in any combination. At least one 3333 is required for staging or destaging operations.
3345 Model 3, 4, or 5 for System/370 Model 145 (signal, cable group 3330 only). Power sequence and control (cable group 3332 not required for 3350-C2) enters frame 03	02	Up to four 3333s, 3340-A2s and/or 3350-A2s or A2Fs in any combination. Up to two 3340-A2s can attach 3344(s). Attachment of one or more 3340-A2s with 3344(s) is mutually exclusive with attachment of either 3333s or 3350-A2s or A2Fs. Each 3350-A2 or A2F can attach one 3350-C2 or C2F for a maximum of four 3350-A2s or A2Fs and four 3350-C2s or C2Fs.
3830-2	–	Up to four 3333s, 3340-A2s and/or 3350-A2s or A2Fs in any combination. Up to two 3340-A2s can attach 3344(s). Attachment of one or more 3340-A2s with 3344(s) is mutually exclusive with attachment of either 3333s or 3350-A2s or A2Fs. Each 3350-A2 or A2F can attach one 3350-C2 or C2F for a maximum of four 3350-A2s or A2F2s and four 3350-C2s or C2Fs.
3830-3	–	Up to four 3333s and/or 3350-A2s or A2Fs in any combination.
3880	–	See "3880 Storage Control Models 1-4, 11, 13, 21, and 23 Cabling Schematic."
4331 DASD Adapter (SF 3201)	–	Up to four strings of 3310/3340/3370 direct access storage devices may be attached. Up to two strings may be 3340s.

Appendix A. Power Cord Style Specifications and Plug Installation (World Trade Reference)

CABLE SPECIFICATIONS

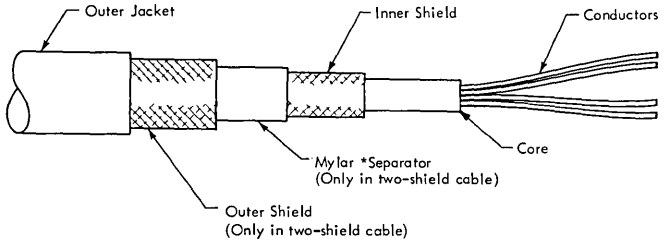
Power Cord Style	*Cable Nominal OD inches (mm)*	*Number of Shields*	*Conductors*		
			Quantity	*Nominal OD* inches (mm)*	*AWG No.*
A1	0.520 (13.2)	1	3	0.064 (1.6)	14
A2	0.510 (13.0)	1	3	0.081 (2.1)	12
A3	0.570 (14.5)	1	3	0.102 (2.6)	10
A4	0.375 (9.5)	1	3	0.051 (1.3)	16
A5	0.390 (9.9)	0	3	0.051 (1.3)	16
A6	0.560 (14.2)	0	3	0.064 (1.6)	14
A8	0.390 (9.9)	0	3	0.064 (1.6)	14
A9	0.374 (9.5)	0	3	0.040 (1.0)	18
B1	0.713 (18.1)	0	5	0.102 (2.6)	10
B2	0.693 (17.6)	1	5	0.064 (1.6)	14
D1	0.792 (20.1)	2	5	0.102 (2.6)	10
D2	0.750 (19.0)	1	5	0.102 (2.6)	10
D3	0.642 (16.3)	2	5	0.064 (1.6)	14
D4	0.914 (23.2)	2	4	0.102 (2.6)	10
E1	1.024 (26.0)	1	5	0.129 (3.3)	8
E2	1.400 (35.6)	0	5	0.232 (5.9)	4
E3	1.200 (30.5)	2	5	0.184 (4.7)	6
E4	1.200 (30.5)	0	5	0.184 (4.7)	6
E5	1.200 (30.5)	1	5	0.184 (4.7)	6
E6	1.240 (31.5)	2	4	0.184 (4.7)	6
E7	1.440 (36.6)	1	5	0.232 (5.9)	4
E8	0.974 (24.7)	0	5	0.129 (3.3)	8
E9	0.949 (24.1)	1	4	0.184 (4.7)	6
E10	1.340 (34.0)	1	4	0.232 (5.9)	4
F1	1.400 (35.6)	0	5	0.292 (7.4)	2
F2	1.646 (41.8)	1	5	0.292 (7.4)	2
F3	1.646 (41.8)	0	5	0.292 (7.4)	2
F4	1.293 (32.8)	1	4	0.292 (7.4)	2
G1			3	0.040 (1.0)	18
G2					
G3	0.360 (9.1)	0	–	0.051 (1.3)	16
G4	0.365 (9.3)	1	–	0.040 (1.0)	18

* This diameter refers to solid, bare wire.

HOW TO INSTALL A POWER PLUG ON SHIELDED CABLE

To make power cable shielding effective, the shield or shields must be properly terminated at the plug end of the cable. Because different plugs are used in different countries, slight changes to the following instructions may be needed.

Names of Bulk Cable Components



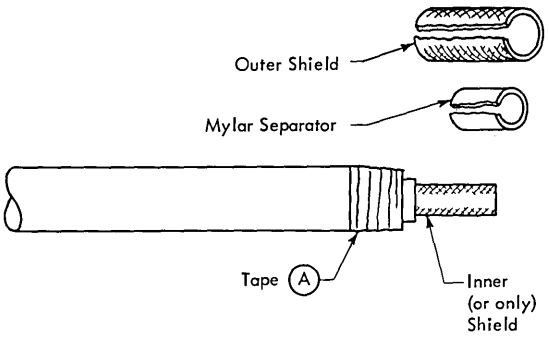
* Trademark of E.I. du Pont de Nemours & Co. (Inc.)

Preparing Bulk Cable End for the Plug

Dimensions given are for reference only. Use your own discretion to assure proper assembly of the cable and plug.

Step 1: Remove the outer jacket for 1-1/2 inches (38 mm) from the end for 15 A-30 A cables or 2-3/4 inches (70 mm) from the end for 45 A-60 A cables. If this is a one-shield cable, go to step 4.

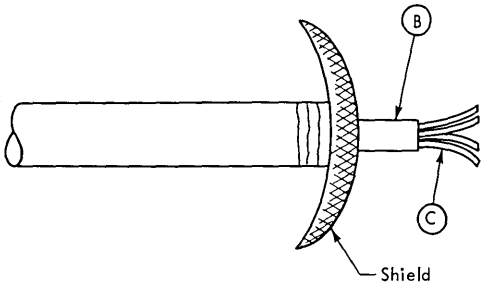
Step 2: (For two-shield cables only.) Remove the outer shield as far back as the outer jacket. The Mylar separator is exposed. Wrap one full turn of electrical tape over the separator and another full turn of tape over the cut end of the outer shield; overlap onto the outer jacket. This tape is used to assure complete electrical isolation between the inner and the outer shields. (See (A).)



Step 3: (For two-shield cables only). Remove the Mylar separator for 1 inch (25 mm) from the end for 15 A-30 A cables or 2-1/4 inches (57 mm) from the end for 45 A-60 A cables. Do not cut the inner shield.

Step 4: Do not cut the inner (or only) shield. Unbraid and carefully comb out the shield for 1 inch (25 mm) from the end for 15 A-30 A cables or 2-1/4 inches (57 mm) from the end for 45 A-60 A cables. The core is exposed. (See (B) .)

Step 5: Remove the cable core for a minimum of 3/4 inch (19 mm) from the end; the conductors are exposed. (See (C) .)

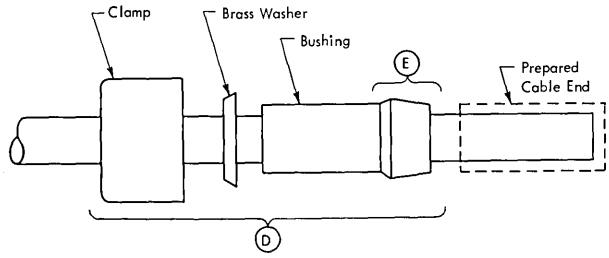


Step 6: Carefully lay the shield back over the cable outer jacket; wrap tape around the shield for temporary protection. Note that on two-shield cables, the outer shield must be insulated from the plug cap, equipment ground (earth) wire, and conduit; the outer shield is grounded at the machine end only. The inner (or only) shield should be grounded through the shell of the plug to the branch circuit conduit. Three-hundred-sixty-degree grounding of the shield to the plug shell is desirable; that is, contact should be between the shield and the shell at all points around the edge, not just at one point.

Installing the Plug

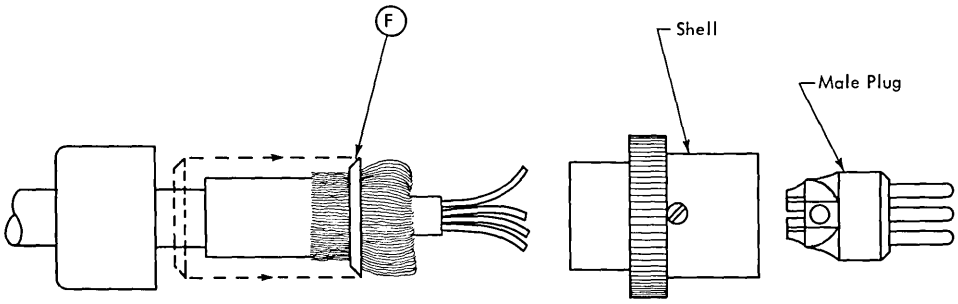
These steps show the attachment of one type of plug; modifications will be needed to allow for the different physical designs of plugs used in various countries.

Install the clamp, brass washer, and bushing over the prepared cable end as shown at (D) . Take the protective tape off the shield and slide the bushing over against the shield. Carefully lay the shield back over (E) of the bushing; be sure to spread the strands of the shield evenly over the bushing surface.



Slide the brass washer over the shield and up against the mating surface of the bushing at (F) . Wrap tape around the shield for one full turn and trim off the remaining shield strands. Install the clamp and be sure that the mating surface is tightly against the brass washer.

Install the proper terminals and put the rest of the plug assembly together.



CABLES BY MACHINE

Machine	Model	Cable Group Number	IBM Preassembled Cable Assembly	Customer-Assembled Cables		Connector Installation Tools	Cable Description
				Bulk IBM Part No.	Connector Group		
3262	1 and 11	None	2577672	323921	1836418	None	For indoor use. (Note 1)
3262	1 and 11	None	1833108	5252750	1836419	None	Intended for indoor/outdoor use. (Notes 2 and 3)
3277/3886	1/2	h	2577672	323921	1836418	None	Used to attach a display to a control unit. For indoor use. (Note 1)
3277/3886	1/2	I	1833108	5252750	1836419	None	Used to attach a display to a control unit. Intended for indoor/outdoor use. (Notes 2 and 3)

Notes:
1. IBM connector kit 1836418 contains two BNC connectors (IBM 1836444; commercial source is Bendix 30220-3). Maximum cable length is 2,000 feet.
2. IBM connector kit 1836419 contains two BNC connectors (IBM 1836477; commercial source is Bendix 39100-16). Maximum cable length is 2,000 feet.
3. Bulk cable (IBM 5252750) is a special RG62A/U outdoor coaxial cable. Jacket must meet the minimum requirements for underground feeder and branch circuit cable (UL subject 493). It must also be weatherproof and sunlight resistant.

Part to Be Ordered	Specify via MES*
Bulk Cable (outdoor)	IBM part 5252750, including cable length
Bulk Cable (indoor)	IBM part 323921, including cable length
Preassembled Cables (outdoor)	IBM part 1833108, including cable length
Preassembled Cables (indoor)	IBM part 2577672, including cable length
BNC-Type Connectors (outdoors) (two in kit; one kit per cable length)	Connector group IBM part 1836419
BNC-Type Connectors (indoors) (two in kit; one kit per cable length)	Connector group IBM part 1836418

*MES = Miscellaneous Equipment Specification submitted by IBM Marketing Representative

Coaxial Signal Cable and Components

CABLE DESCRIPTIONS

Part 323921—Commercial Designation RG62A/U*

Conductor	*AWG Size*	*OD Inches (mm)*	*Insulation Type*	*Cover*	*Shield*
Copperweld** Solid-40% Conductivity	#22	0.242 (6.1)	Flame-Retardant Polyethylene	PVC Color Black Average Thickness 0.031 inch (0.79 mm)	Copper Braid 90% Minimum Coverage

Source: IBM or customer-selected source.
* Must meet specifications listed here.
** Maximum resistance of 44 ohms/1000 feet.

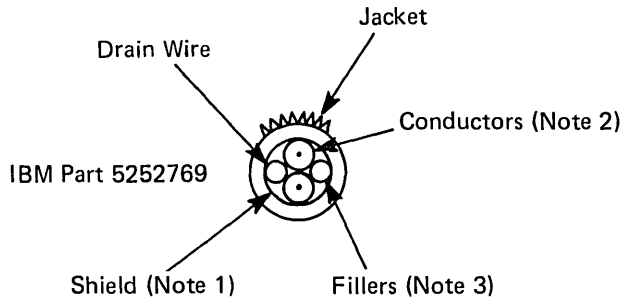
Part 5252750—Commercial Designation RG62A/U* (Modified for Outdoor Use per UL Subject 493)

Conductor	*AWG Size*	*OD Inches (mm)*	*Insulation Type*	*Cover*	*Shield*
Copperweld Solid-40% Conductivity	#22	0.260 (6.6)	Flame-Retardant Polyethylene	PVC (UL Subject 493) Color Black Polyester Tape** Average Thickness 0.040 inch (1.02 mm)	Copper Braid 90% Minimum Coverage

Source: IBM or customer-selected source.
* Must meet specifications listed here. Jacket must have vapor barrier. Must meet minimum requirements and have a thicker jacket for underground feeder and branch circuit cable. Also must be weather proofed and sunlight resistant.
** Must be 0.001 inch (0.03 mm) thick between shield and cover.

Part 5252769—Bulk Cable Specification for Loop Cable on 3814

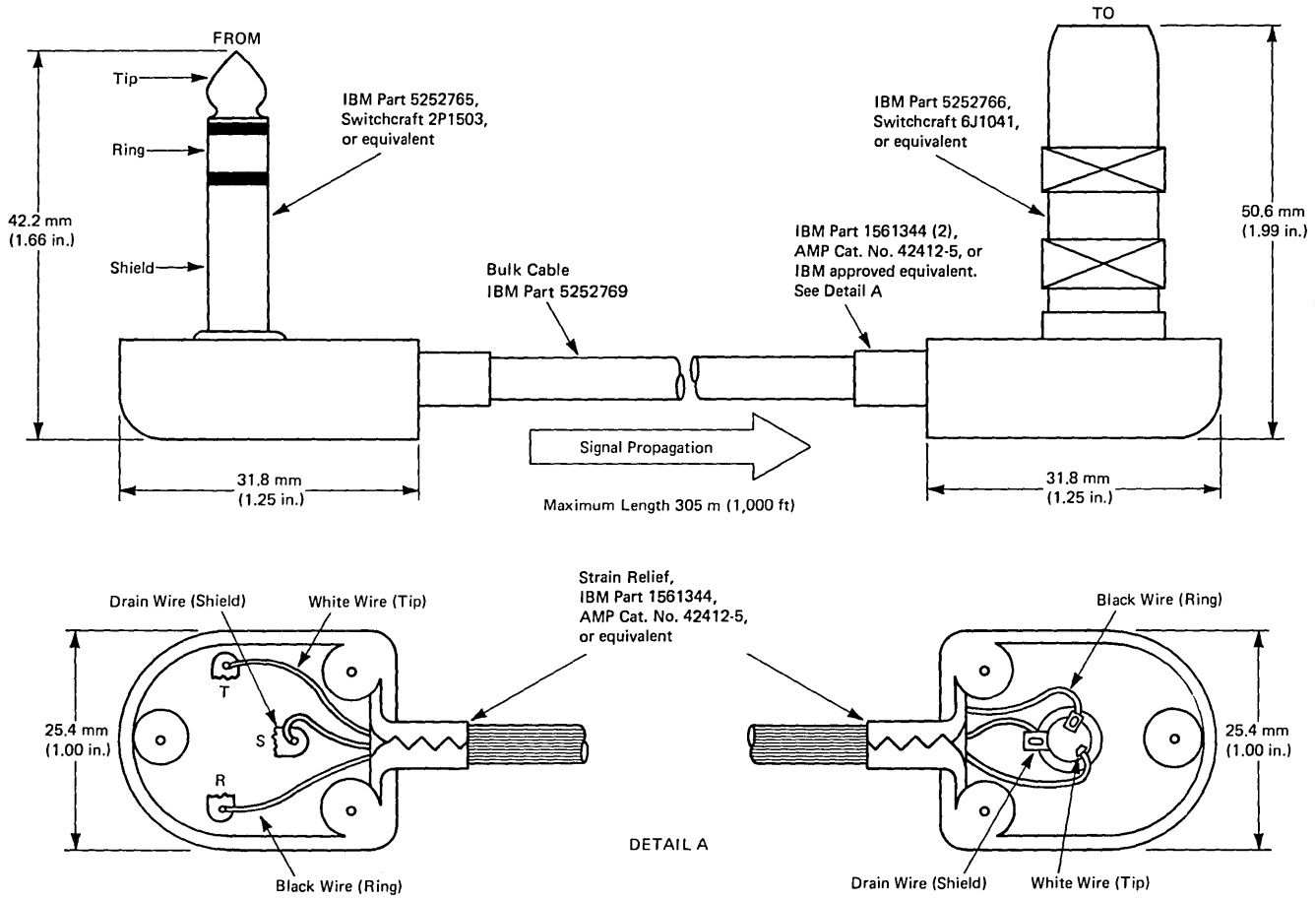
Cable Details	
Number of Conductors	2
Shield(s)	1 (Note 1)
Outside Diameter	5 mm (0.180 in.)
Mandrel Radius	25 mm (1.0 in.)
Cover	
Material	PVC
Nominal Thickness	1 mm (0.035 in.)
Color	White
Individual Conductors	
Wires	#22 AWG, 0.3255 mm^2 (0.0392 sq. in.) (Note 2)
Insulation	
Material	SR-PVC
Nominal Thickness	0.229 mm (0.009 in.)
Color: Wire 1	Black
Wire 2	White
UL Style, Primary Conductors	1061
UL Style, Cable	2464



Notes:

1. Shield: Aluminum polyester tape with 10% minimum overlap and a #22 AWG, 0.3255 mm^2 (0.0392 sq. in.) [7/30 stranding], tinned copper drain wire.
2. Conductors: Tinned copper #22 AWG, 0.3255 mm^2 (0.0392 sq. in.) [7/30 stranding]. Wire numbers 1 and 2 to be twisted together with a 32-mm (1.25-in.) left-hand lay.
3. Fillers as required to effect circular cross-section.

Part 1563155—Loop Cable Assembly (Cable Group I) on 3814



Assembly Details:

1. Terminate both ends of cable per Detail A.
   a. Remove 38.1 mm (1-1/2 in.) of outer jacket and foil shield.
   b. Skin and tin white and black leads 9.5 mm (3/8 in.). Cut shield lead to 19.0 mm (3/4 in.).
   c. Crimp strain relief over cable jacket, flush with jacket end as shown. Use AMP crimp tool, AMP Cat. No. 69474-3.
   d. Solder shield drain wire to shield contact.
   e. Solder white lead to tip contact (T) and black lead to ring contact (R).
   f. Reassemble housing with ears of strain relief located per Detail A.
2. Solder to good commercial practice.
3. Shown in cabling figures as "i."

Appendix C. Template Index

Legend:

T = World Trade Template
K = World Trade Adhesive Template

Metric Scale: 10 mm = 0.5 m (1:50)

Type	Model	Order (Form) Number (Scale 1:48)	Order (Form) Number* (Scale 1:50)
3044		GX22-7110	GX22-7110
3088	1, 2	GX22-7096	GX22-7096
3203	1, 2 (With Model 125)	GX22-7021	T 57 486 K 57 487
3203	1, 2 (With Model 115)	GX22-7028	T 57 486 K 57 487
3203	4 (With Model 138)	GX22-7058	T 57 566 K 57 567
3203	4 (With Model 138)	GX22-7059	T 57 566 K 57 567
3203	5	GX22-7070	
3205		GX22-7111	GX22-7111
3210	1	GX22-6859	—
3210	1 (With Model 145)	GX22-7005	—
3210	1 (With Model 135)	GX22-7008	—
3210	2	GX22-6859	T 57 286 K 57 388
3210	2 (With Model 145)	GX22-7005	—
3210	2 (With Model 155)	GX22-7006	—
3211	1	GX22-6834	T 57 336 K 57 370
3213	1	GX22-6859	T 57 458 K 57 459
3213	1 (With Model 168)	GX22-7022	—
3213	1 (With Model 158)	GX22-7023	—
3215	1	GX22-6859	—
3215	1 (With Model 145)	GX22-7005	—
3215	1 (With Model 155)	GX22-7006	—
3215	1 (With Model 135)	GX22-7008	—
3262	1, 5, 11	GX22-7082	GX22-7082
3287	1, 2	GX22-7066	GX22-7066
3289	4	—	GX22-7091
3310	A1, A2, B1, B2	GX22-7080	GX22-7080
3330	1, 2	GX22-7047	T 57 337 K 57 371
3330	11	GX22-7047	—
3333	11	GX22-7047	—
3340	A1, B1, B2	GX22-7029	T 57 524 K 57 525
3333	1	GX22-7047	T 57 454 K 57 455
3344	B2, B2F	GX22-7029	T 57 524 K 57 525
3350	A2, A2F, B2, B2F, C2, C2F	GX22-7057	—
3370	A1, A2, B1, B2	GX22-7079	GX22-7079
3375	A1, B1, D1	GX22-7088	GX22-7088
3380	A04, AA4, AD4, AE4, B04, BD4, BE4	GX22-7089	GX22-7089
3410	1-3	GX22-7035	T 57 452 K 57 453
3411	1-3	GX22-7035	T 57 452 K 57 453
3420	3-8	GX22-7030	T 57 501 K 57 505
3422	A01, B01	GX22-7115	GX22-7115
3430	A, B	GX22-7101	GX22-7101
3480		GX22-7103	GX22-7103
3504	A1, A2	GX22-6834	T 57 514 K 57 515
3505	B1, B2	GX22-6834	T 57 514 K 57 515
3525	P1-P3	GX22-6834	T 57 514 K 57 515
3540	B1, B2	GX22-7045	T 57 482 K 57 483
3704		GX22-7032	T 57 470 K 57 471
3705		GX22-7051	T 57 520 K 57 521
3720		GX22-7116	GX22-7116
3725 3726 3727	1, 2	GX22-7100	GX22-7100

Type	Model	Order (Form) Number (Scale 1:48)	Order (Form) Number* (Scale 1:50)
3705	Expansion Module	GX22-7051	T 57 520 K 57 521
3800	1-3, 8	GX22-7054	GX22-7054
3803	1-3	GX22-7030	T 57 501 K 57 505
3811	1	GX22-6834	T 57 336 K 57 370
3814	A1-A4, B1-B4, C1-C4	GX22-7090	GX22-7090
3830	1	GX22-7047	T 57 538 K 57 539
3830	2, 3	GX22-7047	T 57 454 K 57 455
3848		GX22-7085	—
3851	A1-A4, A11-A13, A21, A22, A31, B1-B4, B11-13, B21, B22, B31	GX22-7053	T 57 530 K 57 531
3880	1-4, 11, 13, 21, 23	GX22-7076	GX22-7076
3881	1-3	GX22-7052	T 57 460 K 57 461
3886	1, 2	GX22-7052	T 57 480 K 57 482
3890	A1-A6, B1-B6	—	T 57 496 K 57 497
3890	B1	GX22-7031	—
3895		GX22-7063	
3896		GX22-7064	
4245	1, 12, 20	GX22-7105	GX22-7105
4248	1	GX22-7106	GX22-7106
5203	3 (With Model 115)	GX22-7028	—
5203	3		T 57 488 K 57 489
5213	1	GX22-6859	T 57 468 K 57 469
5213	1 (With Model 125)	—	T 47 468 K 57 469
5424	A1, A21, B1, K2, K3	GX22-7084	—
5425	A1, A2 (With Model 125)	GX22-7021	T 57 468 K 57 469
5425	A1, A2 (With Model 115)	GX22-7028	—
5425	A1, A2	—	T 57 276 K 57 198
7770	3	GX22-6857	T 57 278 K 57 198
8809	1A, 2, 3	GX22-7074	GX22-7074

*WT templates are available from:

IBM Deutschland
CE Information Dept. 7902
Pascalstrasse 100
7000 Stuttgart 80
West Germany

Appendix D. Plugs and Receptacles

	60-Hz Power Receptacles and Plugs								400-Hz Power Receptacles and Plugs
Plug Type	A[4]	A1[4]	A2[4]	B[4]	C[4]	D[4]	E[4]	F[4]	G[4]
Plug [1,2]	(R&S) 3720	(R&S) 3720U-1	(R&S) 3720U-2	(R&S) 3730	(R&S) 3750	(R&S) 3760	(R&S) 7328	(R&S)J JPS-1034H	(R&S) JPS-1534LK
Receptacle: NEMA or [2] R&S	(R&S) 3743	(R&S) 3743U-1	(R&S) 3743U-2	(R&S) 3744	(R&S) 3753	(R&S) 3754	(R&S) 7324	(R&S) JRSR-1034H (R&S) JRSA-1034H[8]	(R&S) JRSR-1534LK (R&S) JRSA-1534LK[8]
Inline[7]	(R&S) 3913	(R&S) 3913U-1	(R&S) 3913U-2	(R&S) 3914	(R&S) 3933	(R&S) 3934	(R&S) 7428	(R&S) JCS-1034H	(R&S) JCS-1534LK Inline[7]
Schematic: Face of Receptacle				 [5]		 [5]		 [5]	
Service Rating: Amperes Nominal Voltage	20 208/240	20 120	15 208/240	15 208/240	30 208/240	30 208/240	60 208/240	100 208/240	150 208/240
Phases	1	1	1	3	1	3	3	3	3
Wires[3]	3	3	3	4	3	4	4	4	4

60-Hz Power Receptacles and Plugs						
H	J[6]	K	L[6]	M	N[6]	R
NEMA 5-15P	NEMA L5-15P	NEMA 6-15P	NEMA L6-15P	NEMA 5-20P	NEMA L5-20P	NEMA 5-30P
NEMA 5-15R	NEMA L5-15R	NEMA 6-15R	NEMA L6-15R	NEMA 5-20R	NEMA L5-20R	NEMA 5-30R
NEMA 5-15R	NEMA L5-15R	NEMA 6-15R	NEMA L6-15R	NEMA 5-20R	NEMA L5-20R	NEMA 5-30R
						
15 120	15 120	15 208/240	15 208/240	20 120	20 120	30 120
1	1	1	1	1	1	1
3	3	3	3	3	3	3

[1] These plug types (or equivalent) are supplied with the machines. Customer provides matching receptacles.

[2] For U.S. and Canada, NEMA = National Electrical Manufacturer's Association; R&S = Russellstoll.

[3] Number of wires includes one insulated equipment grounding conductor green or green and yellow.

[4] Plug types A, B, C, D, E, F, and G are watertight.

[5] The 3-phase receptacle must be wired for correct phase rotation; looking at the face of the receptacle and a clockwise direction from the ground pin, the sequence will be phase 1, phase 2, and phase 3.

[6] Plug types J, L, and N are locking style.

[7] When an R&S inline connector is used with flexible metal conduit or liquid tight flexible metal conduit, an R&S FSA or JPA adapter is required.

[8] Includes angular adapter.

Appendix E. Inch-to-Millimeter Conversion Table

in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
1/8	3.2	48	1 220	98	2 490	148	3 760	198	5 030	248	6 300	298	7 570	348	8 840
1/4	6.4	48-1/2	1 230	98-1/2	2 500	148-1/2	3 770	198-1/2	5 040	248-1/2	6 310	298-1/2	7 580	348-1/2	8 850
3/8	9.5	49	1 230	99	2 510	149	3 780	199	5 050	249	6 320	299	7 590	349	8 860
1/2	12.7	49-1/2	1 260	99-1/2	2 530	149-1/2	3 800	199-1/2	5 070	249-1/2	6 340	299-1/2	7 610	349-1/2	8 880
5/8	15.8	50	1 270	100	2 540	150	3 810	200	5 080	250	6 350	300	7 620	350	8 890
3/4	19	50-1/2	1 280	100-1/2	2 550	150-1/2	3 820	200-1/2	5 090	250-1/2	6 360	300-1/2	7 630	350-1/2	8 900
7/8	22	51	1 300	101	2 570	151	3 840	201	5 110	251	6 380	301	7 650	351	8 920
1	25	51-1/2	1 310	101-1/2	2 580	151-1/2	3 850	201-1/2	5 120	251-1/2	6 390	301-1/2	7 660	351-1/2	8 930
1-1/2	40	52	1 320	102	2 590	152	3 860	202	5 130	252	6 400	302	7 670	352	8 940
2	50	52-1/2	1 330	102-1/2	2 600	152-1/2	3 870	202-1/2	5 140	252-1/2	6 410	302-1/2	7 680	352-1/2	8 950
2-1/2	60	53	1 350	103	2 620	153	3 890	203	5 160	253	6 430	303	7 700	353	8 970
3	80	53-1/2	1 360	103-1/2	2 630	153-1/2	3 900	203-1/2	5 170	253-1/2	6 440	303-1/2	7 710	353-1/2	8 980
3-1/2	90	54	1 370	104	2 640	154	3 910	204	5 180	254	6 450	304	7 720	354	8 990
4	100	54-1/2	1 380	104-1/2	2 650	154-1/2	3 920	204-1/2	5 190	254-1/2	6 460	304-1/2	7 730	354-1/2	9 000
4-1/2	110	55	1 400	105	2 670	155	3 940	205	5 210	255	6 480	305	7 750	355	9 020
5	130	55-1/2	1 410	105-1/2	2 680	155-1/2	3 950	205-1/2	5 220	255-1/2	6 490	305-1/2	7 760	355-1/2	9 030
5-1/2	140	56	1 420	106	2 690	156	3 960	206	5 230	256	6 500	306	7 770	356	9 040
6	150	56-1/2	1 440	106-1/2	2 710	156-1/2	3 980	206-1/2	5 250	256-1/2	6 520	306-1/2	7 790	356-1/2	9 060
6-1/2	170	57	1 450	107	2 720	157	3 990	207	5 260	257	6 530	307	7 800	357	9 070
7	180	57-1/2	1 460	107-1/2	2 730	157-1/2	4 000	207-1/2	5 270	257-1/2	6 540	307-1/2	7 810	357-1/2	9 080
7-1/2	190	58	1 470	108	2 740	158	4 010	208	5 280	258	6 550	308	7 820	358	9 090
8	200	58-1/2	1 490	108-1/2	2 760	158-1/2	4 030	208-1/2	5 300	258-1/2	6 570	308-1/2	7 840	358-1/2	9 110
8-1/2	220	59	1 500	109	2 770	159	4 040	209	5 310	259	6 580	309	7 850	359	9 120
9	230	59-1/2	1 510	109-1/2	2 780	159-1/2	4 050	209-1/2	5 320	259-1/2	6 590	309-1/2	7 860	359-1/2	9 130
9-1/2	240	60	1 520	110	2 790	160	4 060	210	5 330	260	6 600	310	7 870	360	9 140
10	250	60-1/2	1 540	110-1/2	2 810	160-1/2	4 080	210-1/2	5 350	260-1/2	6 620	310-1/2	7 890	360-1/2	9 160
10-1/2	270	61	1 550	111	2 820	161	4 090	211	5 360	261	6 630	311	7 900	361	9 170
11	280	61-1/2	1 560	111-1/2	2 830	161-1/2	4 100	211-1/2	5 370	261-1/2	6 640	311-1/2	7 910	361-1/2	9 180
11-1/2	290	62	1 570	112	2 840	162	4 110	212	5 380	262	6 650	312	7 920	362	9 190
12	300	62-1/2	1 590	112-1/2	2 860	162-1/2	4 130	212-1/2	5 400	262-1/2	6 670	312-1/2	7 940	362-1/2	9 210
12-1/2	320	63	1 600	113	2 870	163	4 140	213	5 410	263	6 680	313	7 950	363	9 220
13	330	63-1/2	1 610	113-1/2	2 880	163-1/2	4 150	213-1/2	5 420	263-1/2	6 690	313-1/2	7 960	363-1/2	9 230
13-1/2	340	64	1 630	114	2 900	164	4 170	214	5 440	264	6 710	314	7 980	364	9 250
14	360	64-1/2	1 640	114-1/2	2 910	164-1/2	4 180	214-1/2	5 450	264-1/2	6 720	314-1/2	7 990	364-1/2	9 260
14-1/2	370	65	1 650	115	2 920	165	4 190	215	5 460	265	6 730	315	8 000	365	9 270
15	380	65-1/2	1 660	115-1/2	2 930	165-1/2	4 200	215-1/2	5 470	265-1/2	6 740	315-1/2	8 010	365-1/2	9 280
15-1/2	390	66	1 680	116	2 950	166	4 220	216	5 490	266	6 760	316	8 030	366	9 300
16	410	66-1/2	1 690	116-1/2	2 960	166-1/2	4 230	216-1/2	5 500	266-1/2	6 770	316-1/2	8 040	366-1/2	9 310
16-1/2	420	67	1 700	117	2 970	167	4 240	217	5 510	267	6 780	317	8 050	367	9 320
17	430	67-1/2	1 710	117-1/2	2 980	167-1/2	4 250	217-1/2	5 520	267-1/2	6 790	317-1/2	8 060	367-1/2	9 330
17-1/2	440	68	1 730	118	3 000	168	4 270	218	5 540	268	6 810	318	8 080	368	9 350
18	460	68-1/2	1 740	118-1/2	3 010	168-1/2	4 280	218-1/2	5 550	268-1/2	6 820	318-1/2	8 090	368-1/2	9 360
18-1/2	470	69	1 750	119	3 020	169	4 290	219	5 560	269	6 830	319	8 100	369	9 370
19	480	69-1/2	1 770	119-1/2	3 040	169-1/2	4 310	219-1/2	5 580	269-1/2	6 850	319-1/2	8 120	369-1/2	9 390
19-1/2	500	70	1 780	120	3 050	170	4 320	220	5 590	270	6 860	320	8 130	370	9 400
20	510	70-1/2	1 790	120-1/2	3 060	170-1/2	4 330	220-1/2	5 600	270-1/2	6 870	320-1/2	8 140	370-1/2	9 410
20-1/2	520	71	1 800	121	3 070	171	4 340	221	5 610	271	6 880	321	8 150	371	9 420
21	530	71-1/2	1 820	121-1/2	3 090	171-1/2	4 360	221-1/2	5 630	271-1/2	6 900	321-1/2	8 170	371-1/2	9 440
21-1/2	550	72	1 830	122	3 100	172	4 370	222	5 640	272	6 910	322	8 180	372	9 450
22	560	72-1/2	1 840	122-1/2	3 110	172-1/2	4 380	222-1/2	5 650	272-1/2	6 920	322-1/2	8 190	372-1/2	9 460
22-1/2	570	73	1 850	123	3 120	173	4 390	223	5 660	273	6 930	323	8 200	373	9 470
23	580	73-1/2	1 870	123-1/2	3 140	173-1/2	4 410	223-1/2	5 680	273-1/2	6 950	323-1/2	8 220	373-1/2	9 490
23-1/2	600	74	1 880	124	3 150	174	4 420	224	5 690	274	6 960	324	8 230	374	9 500
24	610	74-1/2	1 890	124-1/2	3 160	174-1/2	4 430	224-1/2	5 700	274-1/2	6 970	324-1/2	8 240	374-1/2	9 510
24-1/2	620	75	1 910	125	3 180	175	4 440	225	5 720	275	6 990	325	8 260	375	9 530
25	640	75-1/2	1 920	125-1/2	3 190	175-1/2	4 460	225-1/2	5 730	275-1/2	7 000	325-1/2	8 270	375-1/2	9 540
25-1/2	650	76	1 930	126	3 200	176	4 470	226	5 740	276	7 010	326	8 280	376	9 550
26	660	76-1/2	1 940	126-1/2	3 210	176-1/2	4 480	226-1/2	5 750	276-1/2	7 020	326-1/2	8 290	376-1/2	9 560
26-1/2	670	77	1 960	127	3 230	177	4 500	227	5 770	277	7 040	327	8 310	377	9 580
27	690	77-1/2	1 970	127-1/2	3 240	177-1/2	4 510	227-1/2	5 780	277-1/2	7 050	327-1/2	8 320	377-1/2	9 590
27-1/2	700	78	1 980	128	3 250	178	4 520	228	5 790	278	7 060	328	8 330	378	9 600
28	710	78-1/2	1 990	128-1/2	3 260	178-1/2	4 530	228-1/2	5 800	278-1/2	7 070	328-1/2	8 340	378-1/2	9 610
28-1/2	720	79	2 010	129	3 280	179	4 550	229	5 820	279	7 090	329	8 360	379	9 630
29	740	79-1/2	2 020	129-1/2	3 290	179-1/2	4 560	229-1/2	5 830	279-1/2	7 100	329-1/2	8 370	379-1/2	9 640
29-1/2	750	80	2 030	130	3 300	180	4 570	230	5 840	280	7 110	330	8 380	380	9 650
30	760	80-1/2	2 040	130-1/2	3 310	180-1/2	4 580	230-1/2	5 850	280-1/2	7 120	330-1/2	8 390	380-1/2	9 660
30-1/2	770	81	2 060	131	3 330	181	4 600	231	5 870	281	7 140	331	8 410	381	9 680
31	790	81-1/2	2 070	131-1/2	3 340	181-1/2	4 610	231-1/2	5 880	281-1/2	7 150	331-1/2	8 420	381-1/2	9 690
31-1/2	800	82	2 080	132	3 350	182	4 620	232	5 890	282	7 160	332	8 430	382	9 700
32	810	82-1/2	2 100	132-1/2	3 370	182-1/2	4 640	232-1/2	5 910	282-1/2	7 180	332-1/2	8 450	382-1/2	9 720
32-1/2	830	83	2 110	133	3 380	183	4 650	233	5 920	283	7 190	333	8 460	383	9 730
33	840	83-1/2	2 120	133-1/2	3 390	183-1/2	4 660	233-1/2	5 930	283-1/2	7 200	333-1/2	8 470	383-1/2	9 740
33-1/2	850	84	2 130	134	3 400	184	4 670	234	5 940	284	7 210	334	8 480	384	9 750
34	860	84-1/2	2 150	134-1/2	3 420	184-1/2	4 690	234-1/2	5 960	284-1/2	7 230	334-1/2	8 500	384-1/2	9 770
34-1/2	880	85	2 160	135	3 430	185	4 700	235	5 970	285	7 240	335	8 510	385	9 780
35	890	85-1/2	2 170	135-1/2	3 440	185-1/2	4 710	235-1/2	5 980	285-1/2	7 250	335-1/2	8 520	385-1/2	9 790
35-1/2	900	86	2 180	136	3 450	186	4 720	236	5 990	286	7 260	336	8 530	386	9 800
36	910	86-1/2	2 200	136-1/2	3 470	186-1/2	4 740	236-1/2	6 010	286-1/2	7 280	336-1/2	8 550	386-1/2	9 820
36-1/2	930	87	2 210	137	3 480	187	4 750	237	6 020	287	7 290	337	8 560	387	9 830
37	940	87-1/2	2 220	137-1/2	3 490	187-1/2	4 760	237-1/2	6 030	287-1/2	7 300	337-1/2	8 570	387-1/2	9 840
37-1/2	950	88	2 240	138	3 510	188	4 780	238	6 050	288	7 320	338	8 590	388	9 860
38	970	88-1/2	2 250	138-1/2	3 520	188-1/2	4 790	238-1/2	6 060	288-1/2	7 330	338-1/2	8 600	388-1/2	9 870
38-1/2	980	89	2 260	139	3 530	189	4 800	239	6 070	289	7 340	339	8 610	389	9 880
39	990	89-1/2	2 270	139-1/2	3 540	189-1/2	4 810	239-1/2	6 080	289-1/2	7 350	339-1/2	8 620	389-1/2	9 890
39-1/2	1 000	90	2 290	140	3 560	190	4 830	240	6 100	290	7 370	340	8 640	390	9 910
40	1 020	90-1/2	2 300	140-1/2	3 570	190-1/2	4 840	240-1/2	6 110	290-1/2	7 380	340-1/2	8 650	390-1/2	9 920
40-1/2	1 030	91	2 310	141	3 580	191	4 850	241	6 120	291	7 390	341	8 660	391	9 930
41	1 040	91-1/2	2 320	141-1/2	3 590	191-1/2	4 860	241-1/2	6 130	291-1/2	7 400	341-1/2	8 670	391-1/2	9 940
41-1/2	1 050	92	2 340	142	3 610	192	4 880	242	6 150	292	7 420	342	8 690	392	9 960
42	1 070	92-1/2	2 350	142-1/2	3 620	192-1/2	4 890	242-1/2	6 160	292-1/2	7 430	342-1/2	8 700	392-1/2	9 970
42-1/2	1 080	93	2 360	143	3 630	193	4 900	243	6 170	293	7 440	343	8 710	393	9 980
43	1 090	93-1/2	2 370	143-1/2	3 640	193-1/2	4 910	243-1/2	6 180	293-1/2	7 450	343-1/2	8 720	393-1/2	9 990
43-1/2	1 100	94	2 390	144	3 660	194	4 930	244	6 200	294	7 470	344	8 740	394	10 010
44	1 120	94-1/2	2 400	144-1/2	3 670	194-1/2	4 940	244-1/2	6 210	294-1/2	7 480	344-1/2	8 750	394-1/2	10 020
44-1/2	1 130	95	2 410	145	3 680	195	4 950	245	6 220	295	7 490	345	8 760	395	10 030
45	1 140	95-1/2	2 430	145-1/2	3 700	195-1/2	4 970	245-1/2	6 240	295-1/2	7 510	345-1/2	8 780	395-1/2	10 050
45-1/2	1 160	96	2 440	146	3 710	196	4 980	246	6 250	296	7 520	346	8 790	396	10 060
46	1 170	96-1/2	2 450	146-1/2	3 720	196-1/2	4 990	246-1/2	6 260	296-1/2	7 530	346-1/2	8 800	396-1/2	10 070
46-1/2	1 180	97	2 460	147	3 730	197	5 000	247	6 270	297	7 540	347	8 810	397	10 080
47	1 190	97-1/2	2 480	147-1/2	3 750	197-1/2	5 020	247-1/2	6 290	297-1/2	7 560	347-1/2	8 830	397-1/2	10 100
47-1/2	1 210														

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