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# DS990 System Model 1 Site Preparation and Installation

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Part No. 2262325-9701  
15 February 1979



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# TEXAS INSTRUMENTS

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## MANUAL REVISION HISTORY

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## SECTION I

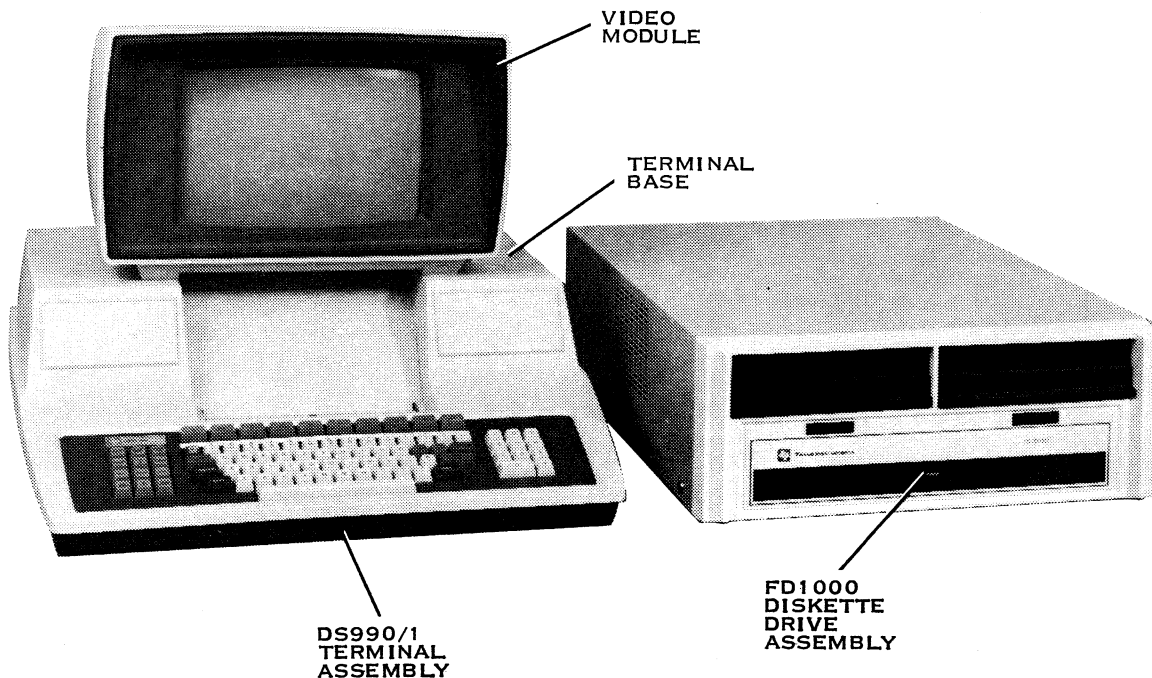
### GENERAL DESCRIPTION

#### 1.1 GENERAL

This manual contains instructions and information for site preparation and installation of the DS990 Model 1 (DS990/1) Intelligent Terminal System shown in figure 1-1. General descriptive information is provided in this section of the manual. The site preparation and installation instructions are provided in Sections II, III and IV of this manual under the following major headings:

- Site preparation
- Unpacking
- Installation

The DS990/1 Intelligent Terminal System includes one DS990/1 terminal assembly and one FD1000 diskette drive assembly. Optional DS990/1 systems may include two FD1000 assemblies. Each FD1000 assembly has one or two FD1000 double-sided, double-density (DSDD) diskette drives. Therefore, a DS990/1 system may have from one to four FD1000 DSDD diskette drives.



(A) 138870

Figure 1-1. DS990/1 Intelligent Terminal System



## 1.2 EQUIPMENT DESCRIPTION

A rear view of the DS990/1 system is shown in figure 1-2. The terminal configuration chart located on the rear of the DS990/1 terminal assembly is marked to show the configuration of the equipment that is received. The terminal configuration charts for the U.S.A. and European systems are shown in figure 1-3. Each entry on the configuration chart contains one or more blank spaces. If these spaces are filled in or checked off, then that particular option is installed. Where spaces are left blank, that option is not installed. The systems and communications equipment associated with the different configurations are defined in tables 1-1 and 1-2. Table 1-3 describes the communications equipment circuit cards. Table 1-4 describes the communications equipment interface cables. The optional Model 810 printer that is used with the DS990/1 system is shown in figure 1-4.

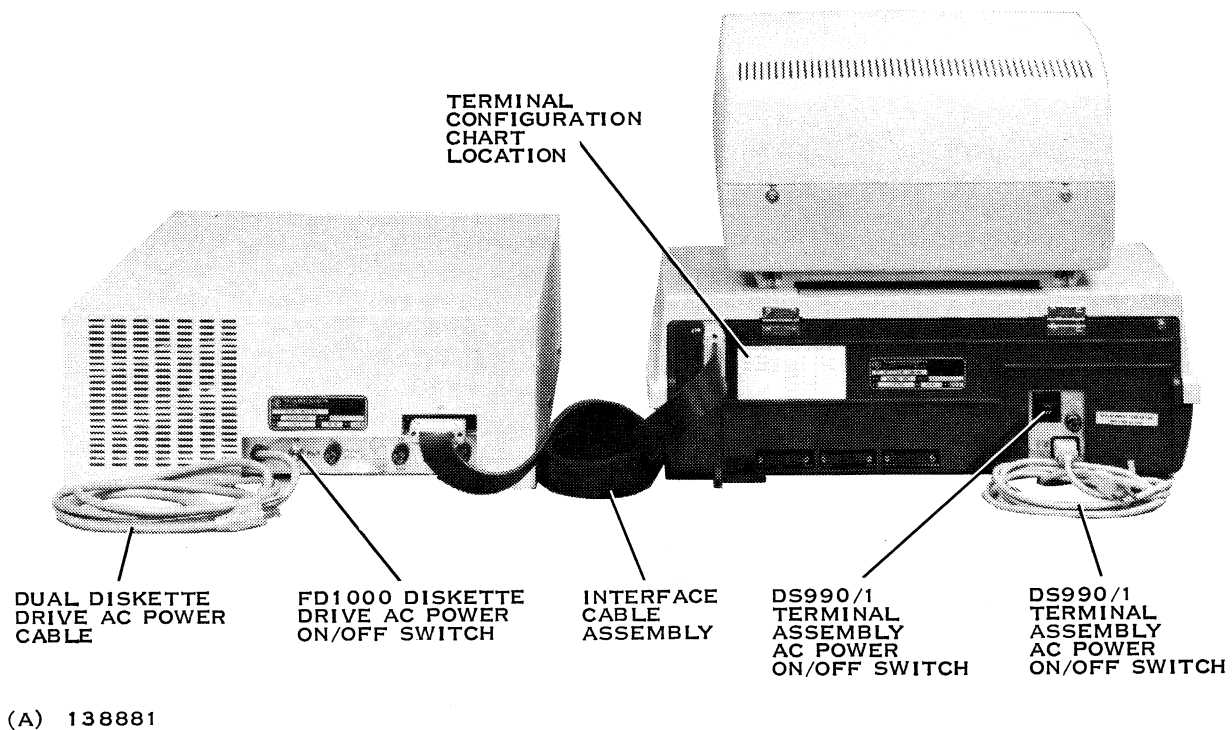


Figure 1-2. Rear View of DS990/1 Intelligent Terminal System



DS990/1 INTELLIGENT TERMINAL CONFIGURATION			
P/N 2267375	7	S E N	MC
P/N 2263582	7	P E A O	C
P/N 2263583	100	I N	GPH
	200	I A	
	M	I D	
	85	S N	

(A) 140995

Figure 1-3. Terminal Configuration Chart

Table 1-1. DS990/1 System Equipment

Configuration	Part Number(s)	Equipment Description
71S	2263582-0005 2267375-0001,-0003, -0005, -0007, -0009, -0011, -0013, -0015 2263583-0009	DS990/1 terminal assembly without internal printer
71P	2263582-0006 2267375-0002, -0004, -0006, -0008, -0010, -0012, -0014, -0016 2263583-0010	DS990/1 terminal assembly with internal printer
100		Designates 100 V, 50/60 Hz option
7FS	2263583-0005	DS990/1 terminal assembly without internal printer (230 V, 50 Hz)
7FP	2263583-0006	DS990/1 terminal assembly with internal printer (230 V, 50 Hz)
200		Designates 200 V, 50 Hz option



Table 1-1. DS990/1 System Equipment (Continued)

Configuration	Part Number	Equipment Description
851*	2267370-0005	One FD1000 diskette drive assembly (115 V, 60 Hz) with one FD1000 diskette drive
851*	2267370-0006	One FD1000 diskette drive assembly (230 V, 50 Hz) with one FD1000 diskette drive
851*	2267370-0007	One FD1000 diskette drive assembly (100 V, 50 Hz) with one FD1000 diskette drive
851*	2267370-0008	One FD1000 diskette drive assembly (100 V, 60 Hz) with one FD1000 diskette drive
852*	2267370-0001	One FD1000 diskette drive assembly (115 V, 60 Hz) with two FD1000 diskette drives
852*	2267370-0002	One FD1000 diskette drive assembly (230 V, 50 Hz) with two FD1000 diskette drives
852*	2267370-0003	One FD1000 diskette drive assembly (100 V, 50 Hz) with two FD1000 diskette drives
852*	2267370-0004	One FD1000 diskette drive assembly (100 V, 60 Hz) with two FD1000 diskette drives
853*	2267370-0001 and -0009	Two FD1000 diskette drive assemblies (115 V, 60 Hz) with three FD1000 diskette drives
853*	2267370-0002 and -0010	Two FD1000 diskette drive assemblies (230 V, 50 Hz) with three FD1000 diskette drives
853*	2267370-0003 and -0011	Two FD1000 diskette drive assemblies (100 V, 50 Hz) with three FD1000 diskette drives
853*	2267370-0004 and -0012	Two FD1000 diskette drive assemblies (100 V, 60 Hz) with three FD1000 diskette drives
854*	2267370-0001 and -0013	Two FD1000 diskette drive assemblies (115 V, 60 Hz) with four FD1000 diskette drives
854*	2267370-0002 and -0014	Two FD1000 diskette drive assemblies (230 V, 50 Hz) with four FD1000 diskette drives
854*	2267370-0003 and -0015	Two FD1000 diskette drive assemblies (100 V, 50 Hz) with four FD1000 diskette drives
854*	2267370-0004 and -0016	Two FD1000 diskette drive assemblies (100 V, 60 Hz) with four FD1000 diskette drives
—	0993100-0101	Keyboard kit (United States)
UKB	0993100-0102	Keyboard kit (United Kingdom)
FKB	0993100-0103	Keyboard kit (France)
GKB	0993100-0104	Keyboard kit (Germany)
DKB	0993100-0105	Keyboard kit (Denmark/Norway)
SKB	0993100-0106	Keyboard kit (Finland/Sweden)
JKB	0993100-0107	Keyboard kit (Japan)





**Table 1-1. DS990/1 System Equipment (Continued)**

Configuration	Part Number	Equipment Description
M64**	A { 2263555-0002	LO 32K-byte RAM circuit card, slot A5
	↑	
	or { 2263555-0005	HI 32K-byte RAM circuit card, slot A7
	↓	
	B 2267360-0002	64K-byte circuit card, slot A5
GPH	993101-0001	Graphics kit which includes:
		<ul style="list-style-type: none"> <li>• ROM (32 × 8 bit words), part number 972923-0001, U25 on VDU circuit card.</li> <li>• ROM (32 × 8 bit words), part number 972923-0002, U14 on VDU circuit card.</li> </ul>

\*Configuration numbers 851 through 854 include the DS990/1 terminal assembly and the FD1000 diskette drive assembly(s).

\*\*64K-bytes of RAM consist of two 32K-byte RAM circuit cards or one 64K-byte circuit card.

**Table 1-2. DS990/1 System Communications Equipment**

Configuration	Circuit Card	DS990/1 Slot	Interface Cable	Connector on DS990/1	Associated Communications Device
E3N	0993059	A10	0993204	J6	103/113 data set
E3A	0993059	A10	0993204	J6	103/113 data set
	0993079	A12	0993206	J8	801 ACU set
E2N	0993059	A10	0993205	J6	202 data set
					*Async 212 data set
E2A	0993059	A10	0993205	J6	202 data set
					*Async 212 data set
	0993079	A12	0993206	J8	801 ACU set
E1N	0993076	A10	0993206	J6	201/208 data set
					*212 Sync data set
E1A	0993076	A10	0993206	J6	201/208 data set
					*212 Sync data set
	0993079	A12	0993206	J8	801 ACU set
I2N	0993059	A10	0993207	J8	CBS1001F data coupler
	0993086	A11			
I2A	0993059	A10	0993207	J8	CBS1001F data coupler
	0993086	A11			
	0993079	A12			
I2D	0993059	A10	0993208	J8	Leased line
	0993086	A11			



Table 1-2. DS990/1 System Communications Equipment (Continued)

Configuration	Circuit Card	DS990/1 Slot	Interface Cable	Connector on DS990/1	Associated Communications Device
IIN	0993076 0993088	A10 A11	0993207/ 0993209	J8	CBS1001F data coupler
I1A	0993076 0993088 0993079	A10 A11 A12	0993207/ 0993209	J8	CBS1001F data coupler
I1D	0993076 0993088	A10 A11	0993208	J8	Leased line
S3N	0993059	A9	0993204	J7	103/113 data set
S2N	0993059	A9	0993205	J7	202 data set *Async data set
S1N	0993076	A9	0993206	J7	201/208 data set *212 Sync data set
OAC	0933059	A9	0993210	J7	EIA devices
OSC	0993076	A9	0993210	J7	EIA devices
MC0	0993059	A9	0993239	J7	810 printer interface only
MC1	0993059	A9	0993239	J7	Includes 810A printer (BSC+FUL), part number 993117-0001
MC2	0993059	A9	0993239	J7	Includes 810B printer (VCO+FUL), part number 993117-0002

**NOTES**

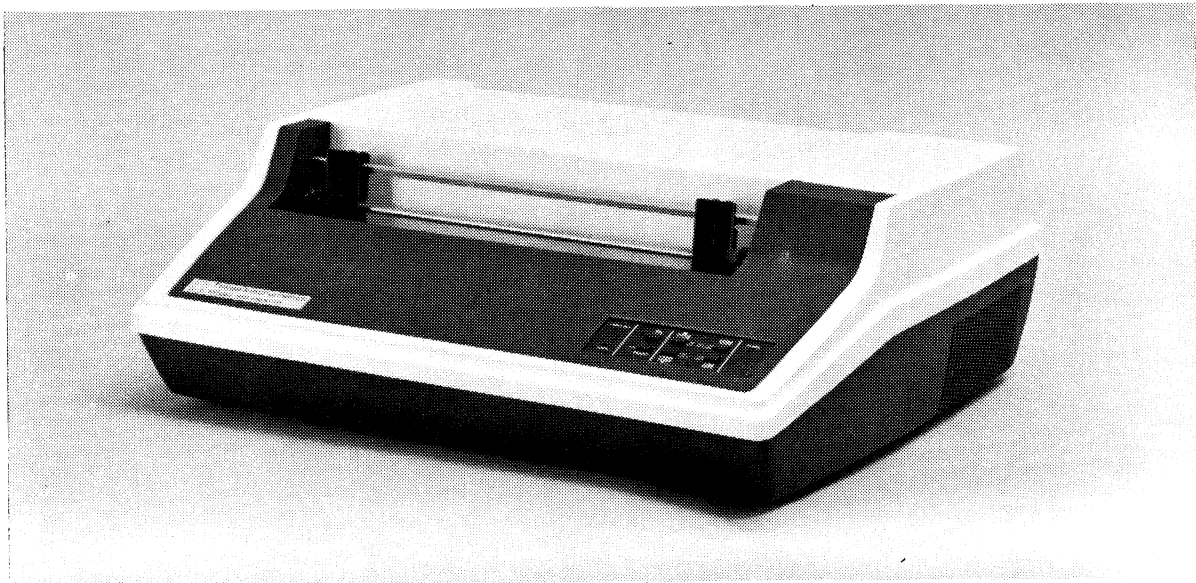
1. BSC indicates basic Model 810 printer.
2. VCO indicates Model 810 printer with vertical forms control and compressed print.
3. FUL indicates full 96-character ASCII code.
4. \* Indicates 212 data set may be set for asynchronous or synchronous communication.

**Table 1-3. Communications Equipment Circuit Card Descriptions**

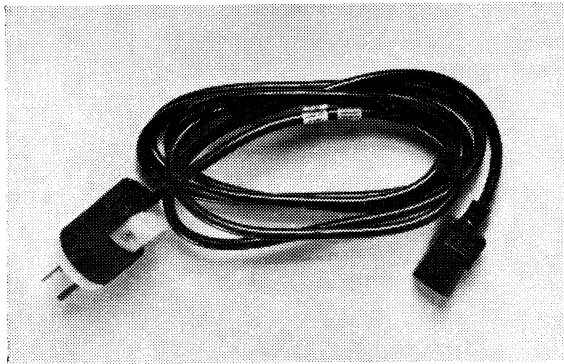
<b>Circuit Card Part Number</b>	<b>Description</b>
993059-0001	Asynchronous data set interface circuit card
993079-0001	Auxiliary data set interface ACU circuit card
993076-0001	Synchronous data set interface circuit card
993086-0001	202 type asynchronous modem circuit card
993088-0001	201 type synchronous modem circuit card

**Table 1-4. Communications Equipment Interface Cable Descriptions**

<b>Cable Part Number</b>	<b>Length</b>	<b>Functional Description</b>
993204-0001	1.83 m (6 ft.)	Interfaces between connectors J6 or J7 on DS990/1 terminal and the 103/113 data set.
993205-0001	1.83 m (6 ft.)	Interfaces between connectors J6 or J7 on DS990/1 terminal and the 202/212 data set.
993206-0001	1.83 m (6 ft.)	Interfaces between connectors J6, J7 or J8 on DS990/1 terminal and the 201/801 data set.
993207-0001	1.83 m (6 ft.)	Interfaces between connector J8 on DS990/1 terminal and the CBS1001F data coupler.
993208-0001	1.83 m (6 ft.)	Interfaces between connector J8 on DS990/1 terminal and leased lines.
993209-0001	1.83 m (6 ft.)	Interfaces between connector J8 on DS990/1 terminal and CBS1001F data couplers.
993210-0001	1.83 m (6 ft.)	Interfaces between connector J7 on DS990/1 terminal and EIA data terminals.
993239-0001	3.66 m (12 ft.)	Interfaces between connector J7 on DS990/1 terminal and the 810 printer.

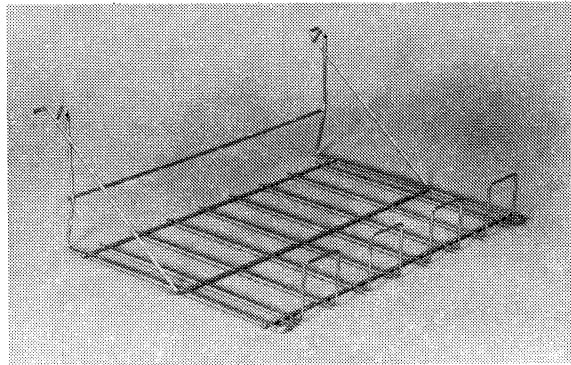


MODEL 810 PRINTER



POWER CABLE  
PART NO. 996289-1

(A) 139169



PAPER BASKET,  
PART NO. 994176-0001  
(OPTIONAL)

Figure 1-4. Optional Model 810 Printer



**SECTION II**  
**SITE PREPARATION**

**2.1 GENERAL**

Site preparation includes a detailed discussion of the power, space, environmental, special supply and communications requirements for the DS990/1 system.

**2.2 POWER REQUIREMENTS**

The power requirements for each component in the DS990/1 system are given in table 2-1. These power requirements list the load current for each voltage and frequency that the components of the DS990/1 system require.

**CAUTION**

To ensure a stable ac line voltage, do not operate heavy current devices, such as air conditioners, fans, heaters, etc., on the same ac power line with the DS990/1 system.

A suggested method of determining if the user's existing site ac input power line is adequate for the DS990/1 is as follows:

1. Determine what voltage and frequency are available at the site where the DS990/1 system is to be used.
2. Using the voltage and frequency determined in step 1, refer to table 2-1 and calculate the total load current the DS990/1 system requires.
3. Using standard testing techniques, load the site ac input power line to the total load current calculated in step 2; then measure the voltage and frequency on this power line.
4. Compare the voltage and frequency measured in step 3 with the requirements listed in table 2-1 for the FD1000 diskette drive assembly that has the most stringent tolerances.

If the existing site ac input power line does not supply the required ac power for the DS990/1 system, a new dedicated ac power circuit is recommended. The user is advised to install the new dedicated ac power circuit, when required, in accordance with the applicable national and local electrical codes. The site ac input power line should be available before the DS990/1 system is received if the user wishes to operate the system immediately.

The user should ensure that the plug at the site ac input power line termination is compatible with the applicable plugs provided on the components of the DS990/1 system. Refer to table 2-1 and figures 2-1 through 2-3 for the ac power plug types provided.



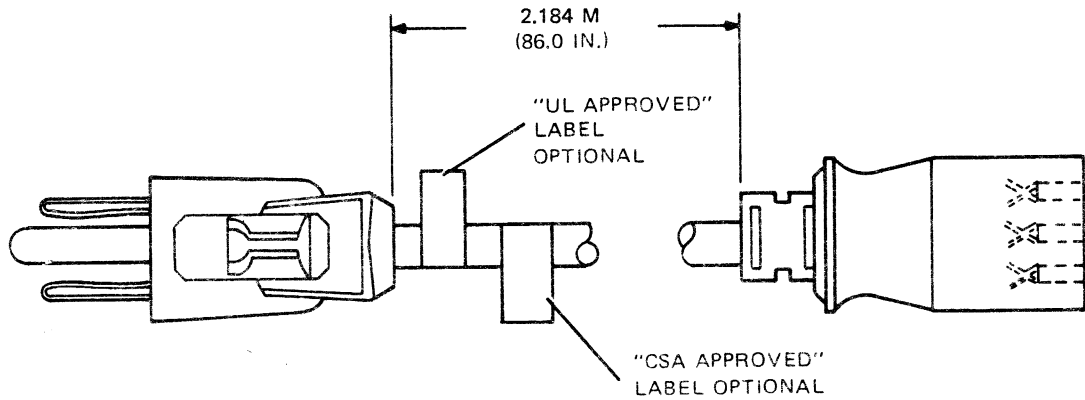
Table 2-1. DS990/1 System Component Specifications

Component	Specifications			
DS990/1 terminal assembly (includes terminal base and video module)	Input power:	100±10 V, 50±3.0 Hz, 2.0 A 100±10 V, 60±3.0 Hz, 2.0 A 115±12 V, 60±3.0 Hz, 2.0 A 230±23 V, 50±3.0 Hz, 1.0 A		
	Power cables lengths and plug types:	<b>Figure</b>	<b>Use</b>	<b>Part Number</b>
		2-1	U.S.A.	996289-0001
		2-2	Optional connectors	996348-0001
		2-3	European	996290-0001
	Power dissipation:	250 W maximum		
	Operating temperature:	10°C (50°F) to 35°C (95°F) ambient		
	Nonoperating temperature:	-30°C (-22°F) to 70°C (158°F)		
	Operating humidity:	20 to 80% relative humidity without condensation		
	Nonoperating humidity:	10 to 95% relative humidity without condensation		
	Dimensions:	474 mm (18.25 in.) high		
		591 mm (23.25 in.) deep		
		584 mm (23 in.) wide		
Weight:	29.5 kg (65 lbs)			
FD1000 assembly with two diskette drives	Input power:	100±10 V, 50±1.0 Hz, 1.5 A 100±10 V, 60±1.2 Hz, 1.5 A 230±23 V, 50±1.0 Hz, 0.75 A		
	Power cable plug types:	<b>Voltage</b>	<b>Plug Type</b>	
		100 V, 50 Hz	Standard three-prong plug	
		100 V, 60 Hz	Standard three-prong plug	
		115 V, 60 Hz	Standard three-prong plug	
		230 V, 50 Hz	See male connector, figure 2-3 (European).	
	Power cable length:	2.44 m (8 ft.)		
	I/O cable length (one FD1000 assembly):	1.83 m (6 ft.)		
	I/O cable length (two FD1000 assemblies):	2.29 m (7.5 ft.)		
	Power dissipation:	130 W maximum		
	Operating temperature:	10°C (50°F) to 38°C (100°F) ambient		
	Operating humidity:	20 to 80% relative humidity without condensation		
	Dimensions:	178 mm (7 in.) high		
635 mm (25 in.) deep				
483 mm (19 in.) wide				
Weight:	20.4 kg (45 lbs), FD1000 assembly with two drives 15 kg (33 lbs), FD1000 assembly with one drive			



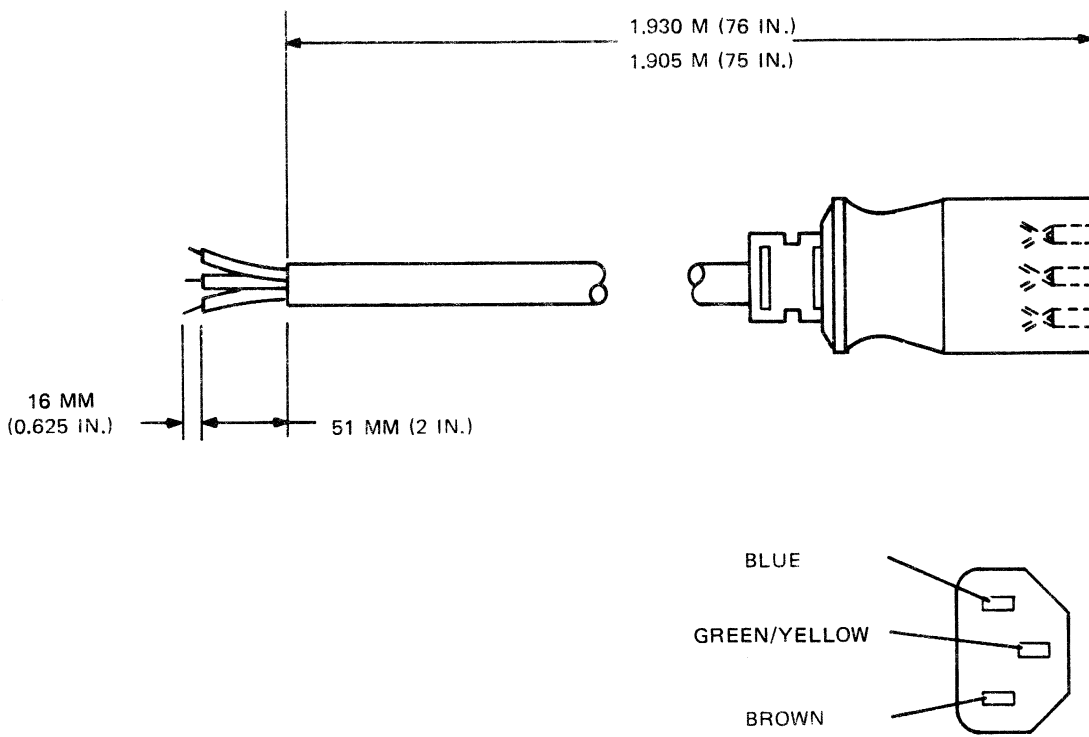
Table 2-1. DS990/1 System Component Specifications (Continued)

Component	Specifications			
Model 810 printer (optional)	Input power:	100±10 V, 50±3.0 Hz, 2.5 A 100±10 V, 60±3.0 Hz, 2.5 A 115±12 V, 60±3.0 Hz, 2.5 A 230±23 V, 50±3.0 Hz, 1.5 A		
	Power cable lengths and plug types:	<b>Figure</b>	<b>Use</b>	<b>Part Number</b>
		2-1	U.S.A.	996289-0001
		2-2	Optional connectors	996348-0001
		2-3	European	996290-0001
I/O cable length:	3.66 m (12 ft.)			
Power dissipation:	200 W maximum			
Operating temperature:	5°C (41°F) to 40°C (104°F) ambient			
Operating humidity:	5 to 90% relative humidity without condensation			
Dimensions:	203 mm (8 in.) high			
	508 mm (20 in.) deep			
	654 mm (25.75 in.) wide			
Weight:	25 kg (55 lbs)			



(A) 139165

Figure 2-1. Terminal Assembly Power Cord (100/115 V, U.S.A.)



(A) 139154

Figure 2-2. Terminal Assembly Power Cord (Optional Connectors)



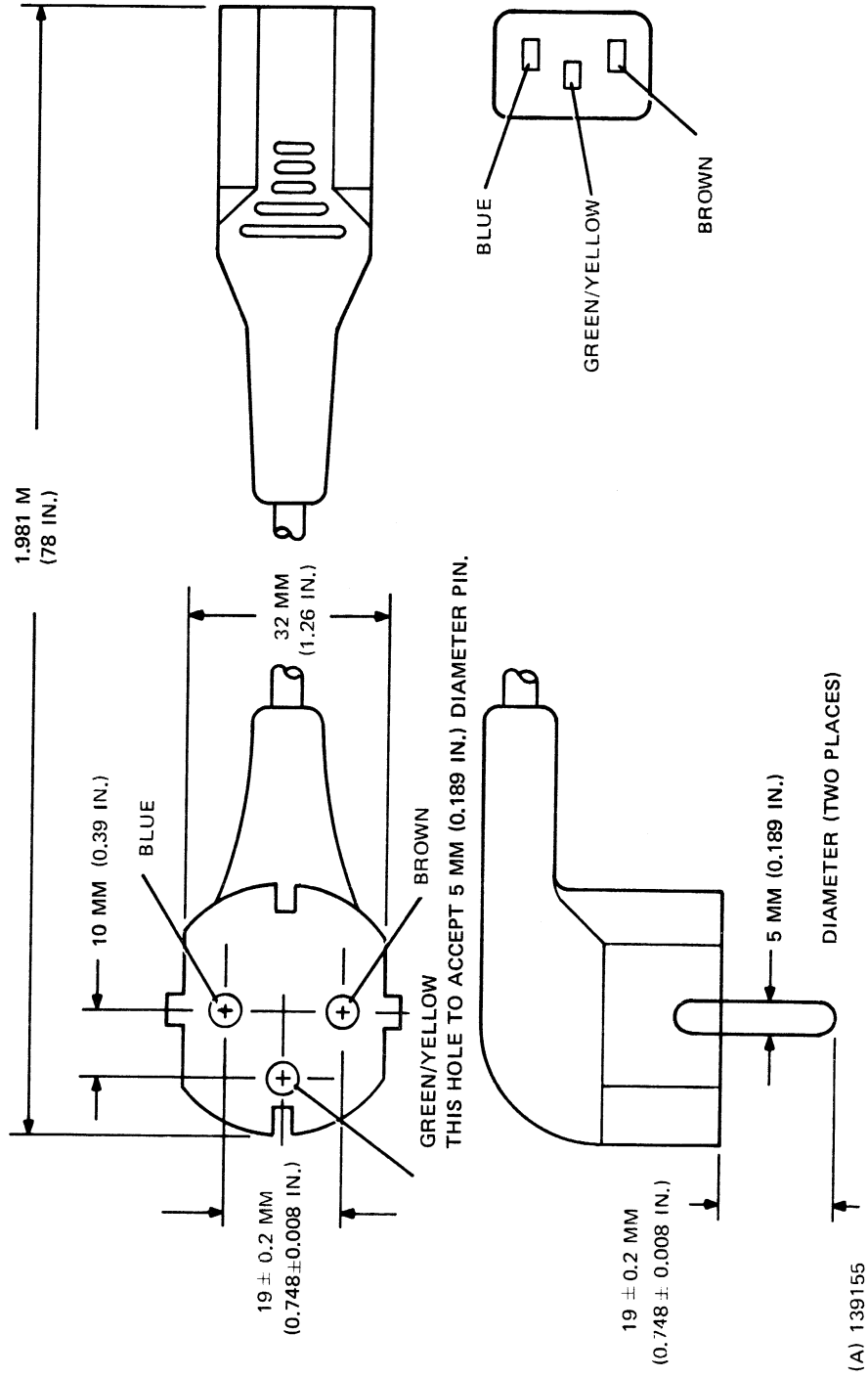


Figure 2-3. Terminal Assembly Power Cord (230 V, European)



### 2.3 SPACE REQUIREMENTS

Space requirements for the basic DS990/1 system must include ventilation, cabling, operator, and service personnel space, in addition to space for the system components. Figures 2-4 and 2-5 show the typical floor plan layouts of the DS990/1 system with one or two FD1000 assemblies. Table 2-1 lists the dimensions of each system component and the lengths of all associated cables. The component dimensions and cable lengths should be used to plan the placement of the system components at each site. The component dimensions and cable lengths should also be used to plan additional space for expansion and growth of the DS990/1 system when applicable.

The basic DS990/1 system includes one FD1000 assembly (part numbers 2267370-0001 through -0008). An optional DS990/1 system is available with a second FD1000 assembly (part numbers 2267370-0009 through -0016). When a second FD1000 assembly is added to a basic DS990/1 system, the additional FD1000 assembly must be connected on the drive cable between the DS990/1 terminal assembly and the existing FD1000 assembly. This equipment arrangement keeps the FD1000 diskette drive with the line termination at the end of the interface cable (i.e., the point most remote from the FD1000 controller on the interface cable).

Storage space is also required for thermal printing paper and operating diskettes, depending on the quantity and size of the paper rolls and the diskette storage containers. To determine the required storage space, refer to table 2-2.

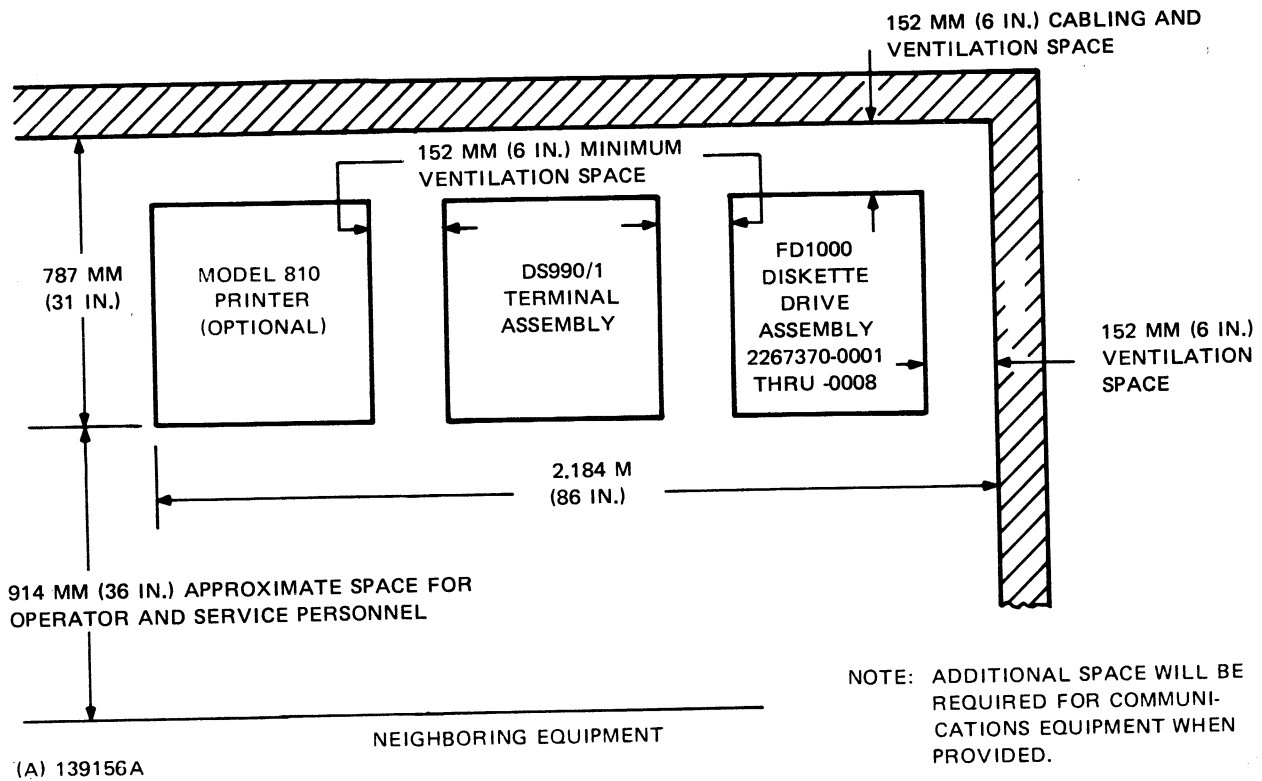
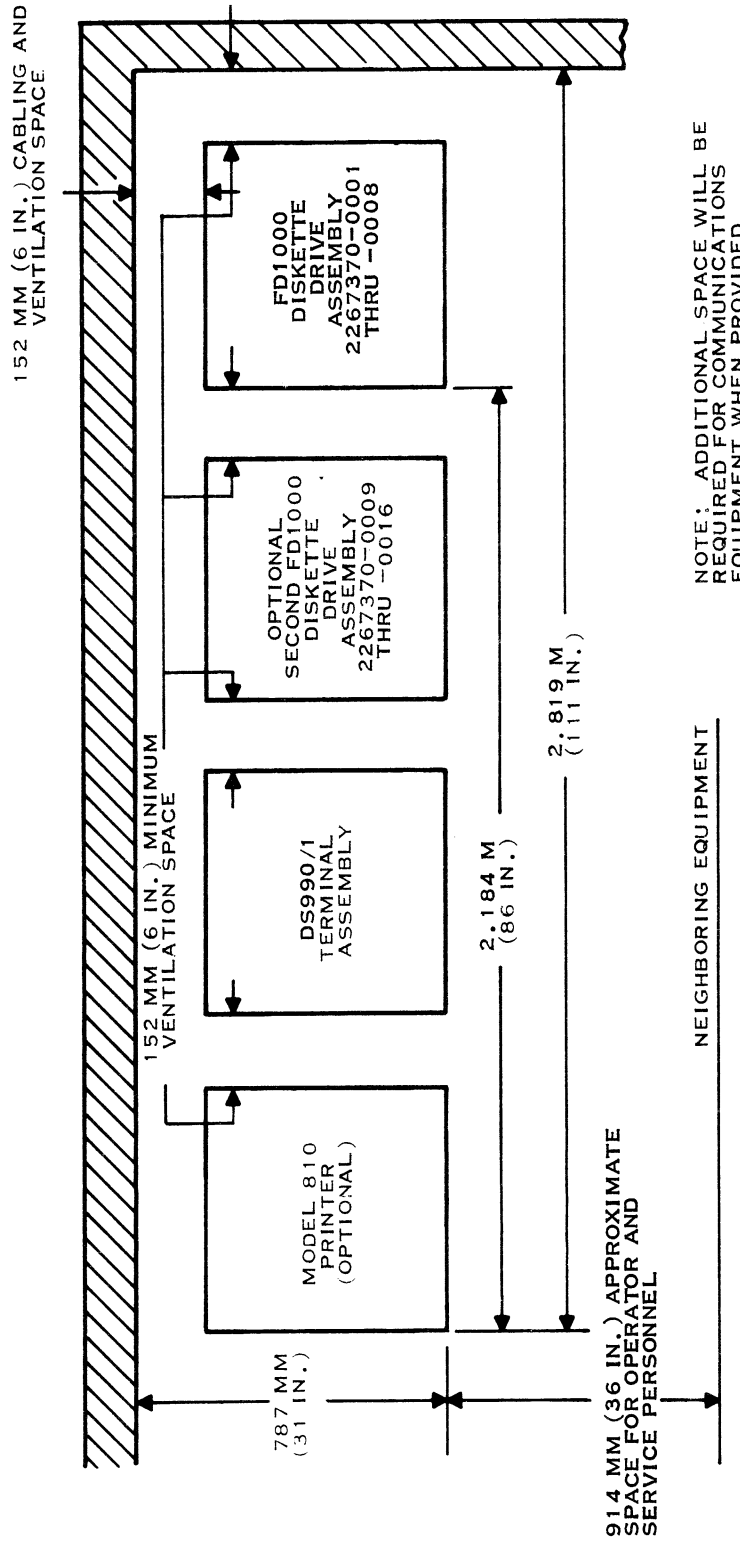


Figure 2-4. Typical Floor Plan Layout of the DS990/1 System with One FD1000 Assembly



(A) 139156A

Figure 2-5. Typical Floor Plan Layout of the DS990/1 System with Two FD1000 Assemblies



## 2.4 ENVIRONMENTAL REQUIREMENTS

The environmental requirements for the DS990/1 system, including the optional Model 810 printer, are listed below. The components of the DS990/1 system are equipped with fans for air circulation. Most air-conditioned sites with a reasonable amount of room require no additional air conditioning. If the DS990/1 system is located in a small enclosed office, verify that the ambient temperature and relative humidity stay within the system operation range.

- System operating temperature — 10°C (50°F) to 35°C (95°F)
- System operating humidity — 20 to 80% relative humidity without condensation
- System power dissipation — 380 W without Model 810 printer, 580 with Model 810 printer
- System weight (one FD1000 assembly) — 50 kg (110 lbs) without Model 810 printer, 75 kg (165 lbs) with Model 810 printer
- System weight (two FD1000 assemblies) — 70 kg (155 lbs) without Model 810 printer, 95 kg (210 lbs) with Model 810 printer
- Electrostatic discharge — To reduce the possibility of false or spurious electronic signals caused by electrostatic discharges, it is important to keep the relative humidity in the equipment operating area within the system operating range. Electrostatic discharges may also be reduced by using conductive floor mats that are grounded, or carpets designed to reduce the generation of static electricity.

## 2.5 SPECIAL SUPPLIES

Special supplies required to operate the DS990/1 system are listed in table 2-2. These supplies include:

- Thermal printing paper
- Diskettes
- Model 810 printer paper
- Model 810 printer ribbons

The quantity of supplies required will depend on the size of the DS990/1 system and the amount of system usage. It is recommended that the user have sufficient supplies on hand before the system equipment is received. For additional information the user should contact the nearest Texas Instruments Incorporated Sales Office.



Table 2-2. Supplies Required to Operate the DS990/1 System

Item	Description	
Thermal printing paper (part number 972603-0001)	Paper dimensions on each roll:	216 mm (8.5 in.) wide 30.5 m (100 ft.) long
	Roll dimensions:	51 mm (2 in.) in diameter 217 mm (8.54) long
	Roll weight:	363 g (0.8 lbs)
	Carton dimensions (24 rolls):	229 mm (9 in.) high 210 mm (8.25 in.) wide 311 mm (12.25 in.) long
	Carton weight (24 rolls):	11 kg (25 lbs)
	Storage requirements:	Store in a cool, dry place with a median temperature of 24°C (75°F) and a median relative humidity of 45%.
	Single-sided diskette (part number 945965-xxxx, ANSI STD X3B8), or double-sided diskette (part number 2261687-xxxx)	Diskette dimensions (jacket):
Carton dimensions: (10 diskettes):		222-mm (8.75-in.) square 38-mm (1.5-in.) thick
Storage requirements:		Temperature - 10°C (50°F) to 45°C (113°F) Relative humidity - 8 to 80%
Model 810 printer paper	Paper width (sprocket drive adjustment):	76 to 381 mm (3 to 15 in.)
	Storage requirements:	Store in a cool, dry place with a median temperature of 24°C (75°F) and a median relative humidity of 45%.
	A typical carton of 3,200 sheets that are 279 mm (11 in.) by 376 mm (14.785 in.) (example: Moore Business Forms, Inc. form number 1412 RH, lined paper with sprocket drive) has the following dimensions and weight:	
	Carton dimensions:	305 mm (12 in.) high 292 mm (11.5 in.) wide 387 mm (15.25 in.) long
Carton weight:	23 kg (50 lbs)	
A typical carton of 3,200 sheets that are 241 mm (9.5 in.) by 279 mm (11 in.) (example: Moore Business Forms, Inc. form number 9510 L, clear paper with sprocket drive) has the following dimensions and weight:		
Carton dimensions:	305 mm (12 in.) high 267 mm (10.5 in.) wide 292 mm (11.5 in.) long	
Carton weight:	11 kg (25 lbs)	

**Table 2-2. Supplies Required to Operate the DS990/1 System (Continued)**

Item	Description	
Model 810 printer ribbon (part number 996241-xxxx)	Single-ribbon	89 mm (3.5 in.) high
	carton dimensions:	40 mm (1.56 in.) wide
		89 mm (3.5 in.) long
	Six-ribbon	89 mm (3.5 in.) high
	carton dimensions:	121 mm (4.75 in.) wide
		179 mm (7.06 in.) long
	Storage requirements:	Store in a cool, dry place having a median temperature of 24°C (75°F) and a median relative humidity of 45%.

**2.6 COMMUNICATIONS REQUIREMENTS**

The user should prepare the site for the selected communications equipment before delivery of the DS990/1 system. Advanced site preparation will minimize delays in getting a system in operation after it is received.

Typical communications devices associated with the DS990/1 system are as follows:

- 103/113 data set
- 201/208 data set
- 202 data set
- 212 data set
- CBS1001F data coupler (Type II data lines)
- 801 ACU set
- Leased line
- EIA devices

**2.7 DELIVERY REQUIREMENTS**

If the user's site is located above the first floor level, special arrangements may be required to have the DS990/1 system delivered to the user's site. These arrangements, when required, should be made before delivery so that the equipment will not remain unprotected on a loading dock.



## SECTION III

### UNPACKING

#### 3.1 GENERAL

Instructions for unpacking, inventorying and inspecting the following components of the DS990/1 system are provided in separate paragraphs under the following headings:

- Terminal base
- Video module
- FD1000 diskette drive assembly
- Model 810 printer

Visually inspect each shipping container and the unpacked components for shipping damage. Report any shipping damage and/or missing components in accordance with local practices and procedures. Fill out and return to Texas Instruments, Inc., any applicable forms included in the shipping containers.

#### NOTE

Be sure to fill out and return the software subscription card, if this service was purchased, in order to receive software updates.

#### CAUTION

Do not discard any packing materials until unpacking, inventorying and inspection have been completed for each component in the DS990/1 system.

#### 3.2 TERMINAL BASE

Perform the following procedure to unpack, inventory and inspect the contents of the terminal base shipping container shown in figure 3-1.

#### WARNING

**The terminal base weighs approximately 18 kg (40 lbs). To avoid back injuries, two persons should lift the terminal base from the shipping container.**

1. Open the shipping container carefully.
2. Unpack the shipping container and check that the following items are present and do not have shipping damage:
  - Terminal base with cover
  - Power cable (refer to table 2-1)



- Interface cable, part number 2267374-0001 (one FD1000 assembly), or 2267376-0001 (two FD1000 assemblies)
- Operator's maintenance kit, part number 2262516-0001

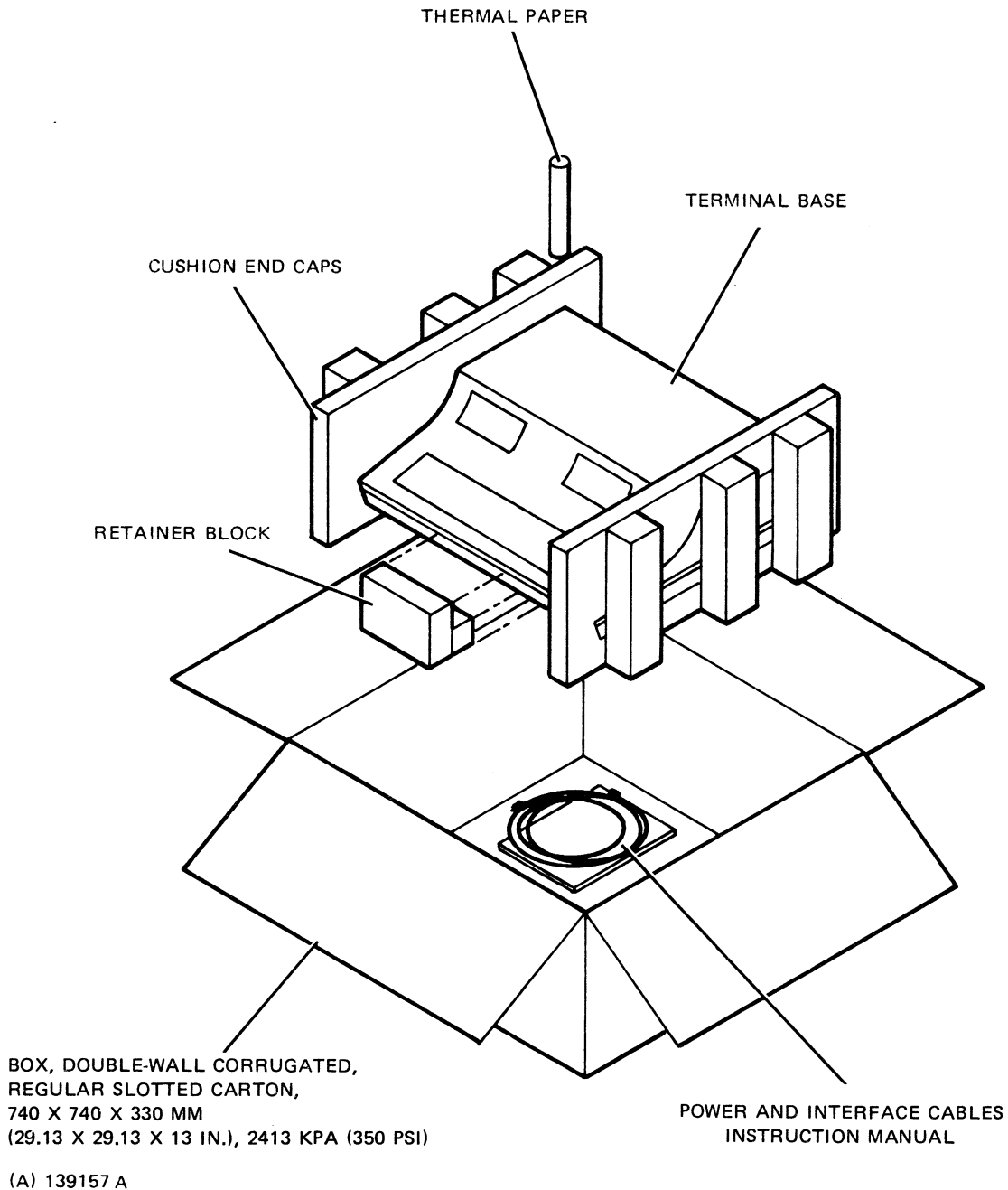


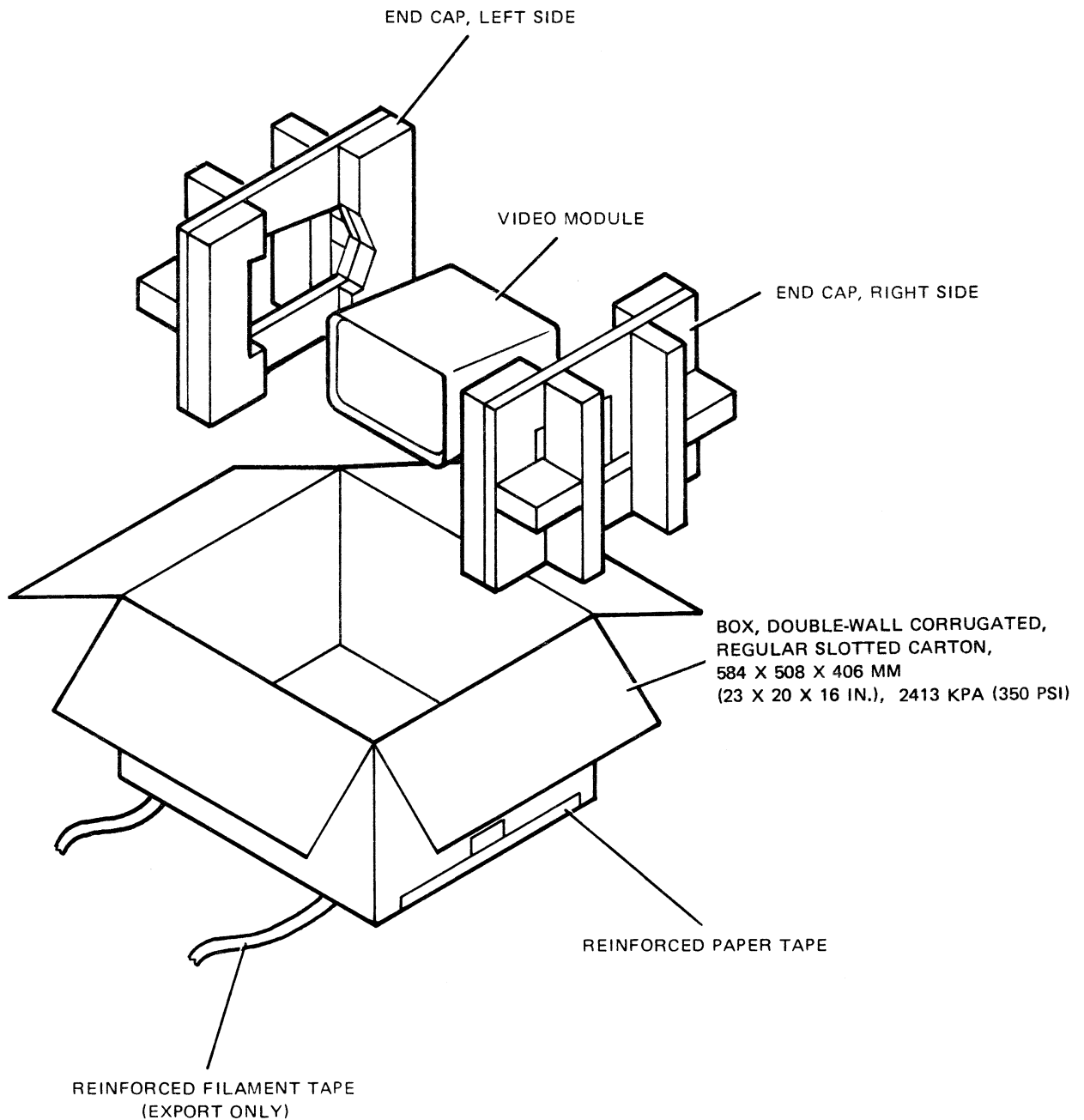
Figure 3-1. DS990/1 Terminal Base Shipping Container, Exploded View





### 3.3 VIDEO MODULE

Perform the following procedure to unpack, inventory and inspect the contents of the video module shipping container shown in figure 3-2.



(A) 139158 A

Figure 3-2. DS990/1 Video Module Shipping Container, Exploded View



**CAUTION**

The video module weighs approximately 9 kg (20 lbs) and has a glass CRT. Use care when lifting the video module from the shipping container.

1. Open the shipping container carefully.
2. Unpack the shipping container and check that the video module does not have shipping damage.
3. Place the video module on a table using care not to damage the mounting feet and interface connector on the bottom side of the video module.

**3.4 FD1000 DISKETTE DRIVE ASSEMBLY**

Perform the following procedure to unpack, inventory and inspect the contents of the FD1000 diskette drive assembly shipping container shown in figure 3-3.

**WARNING**

**The FD1000 diskette drive assembly weighs approximately 20.4 kg (45 lbs). To avoid back injuries, two persons should lift the diskette drive assembly from the shipping container.**

1. Open the shipping container carefully.
2. Unpack the shipping container and check that the dual diskette drive assembly does not have shipping damage.

**3.5 MODEL 810 PRINTER (OPTIONAL)**

Perform the following procedure to unpack, inventory and inspect the contents of the Model 810 printer shipping container shown in figure 3-4.

**WARNING**

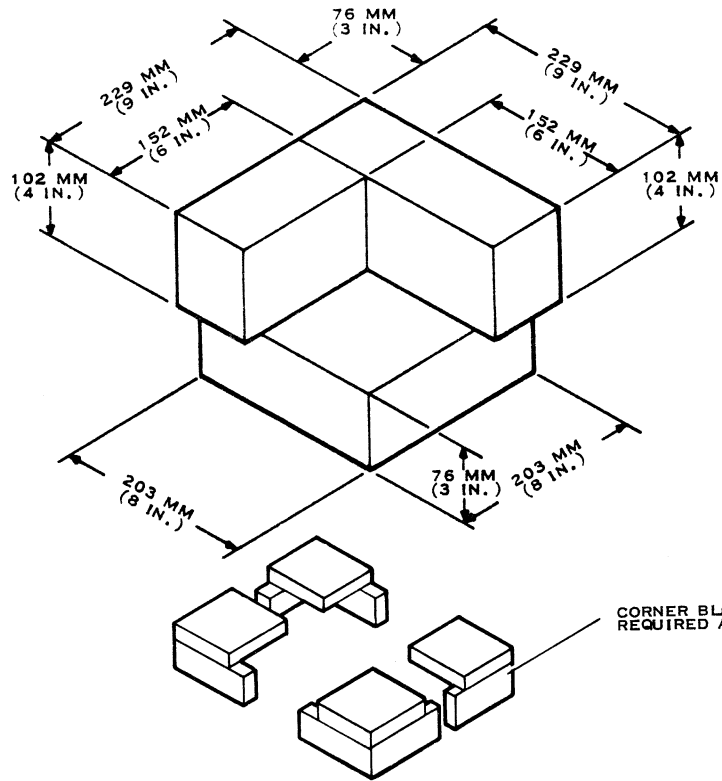
**The Model 810 printer weighs approximately 25 kg (55 lbs). To avoid back injuries, two persons should lift the printer from the shipping container.**

1. Open the shipping container carefully.
2. Unpack the shipping container and check that the printer does not have shipping damage. *Model 810 Printer Installation and Operation Manual*, part number 939460-9701, should be included.
3. Remove the four screws and flat washers from the bottom of the printer. These screws hold the internal drive mechanisms in place during shipment.
4. Open the access door, remove the styrofoam block covering the printhead, and manually slide the printhead from stop to stop.
5. Check that the printhead and the attached wire rope that pulls the printhead from side to side moves freely, and that the wire rope is not unstrung.
6. Close the access door.

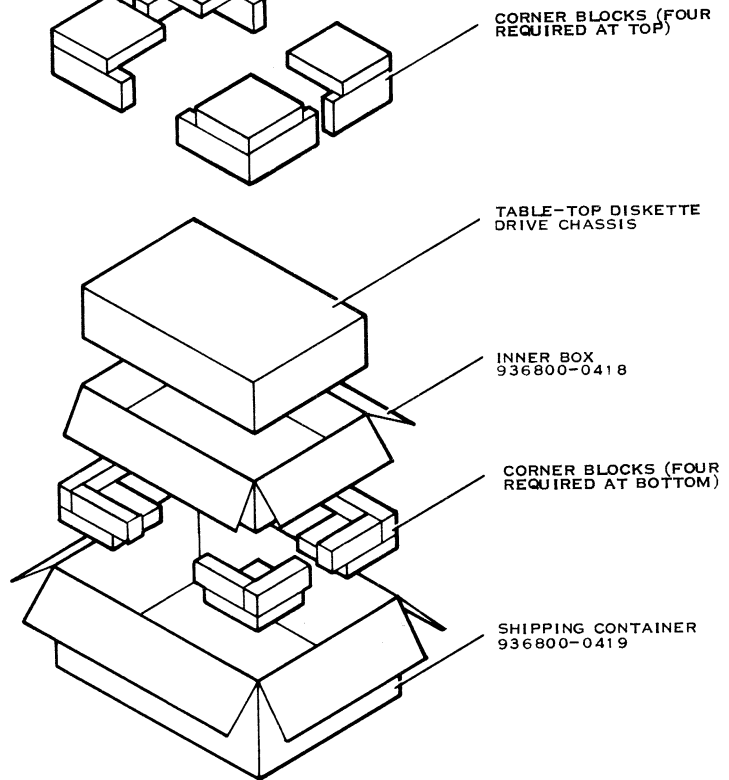


CORNER BLOCK DETAIL  
936578 (NOT TO SCALE)

1. PLACE UNIT IN INNER BOX, MAKING SURE THERE WILL BE NO MOVEMENT AFTER BOX IS CLOSED.
2. CLOSE INNER BOX.
3. PLACE FOUR CORNER BLOCKS IN BOTTOM OF SHIPPING CONTAINER, ONE BLOCK IN EACH CORNER.
4. PLACE CLOSED INNER BOX ON CORNER BLOCKS IN BOTTOM OF SHIPPING CONTAINER.
5. MAKE SURE THE SIDES OF ALL CORNER BLOCKS ARE FITTED AROUND THE SIDES AND ENDS OF THE INNER BOX.
6. PLACE FOUR CORNER BLOCKS ON THE TOP CORNERS OF THE CLOSED INNER BOX. MAKE SURE THE FOUR CORNER BLOCKS ARE FITTING, PER NOTE 5.
7. CLOSE AND SEAL SHIPPING CONTAINER. UNIT IS NOW PACKAGED FOR SHIPMENT.
8. MARK SHIPPING CONTAINER WITH THE PROPER "UP" AND "FRAGILE" SIGNS.



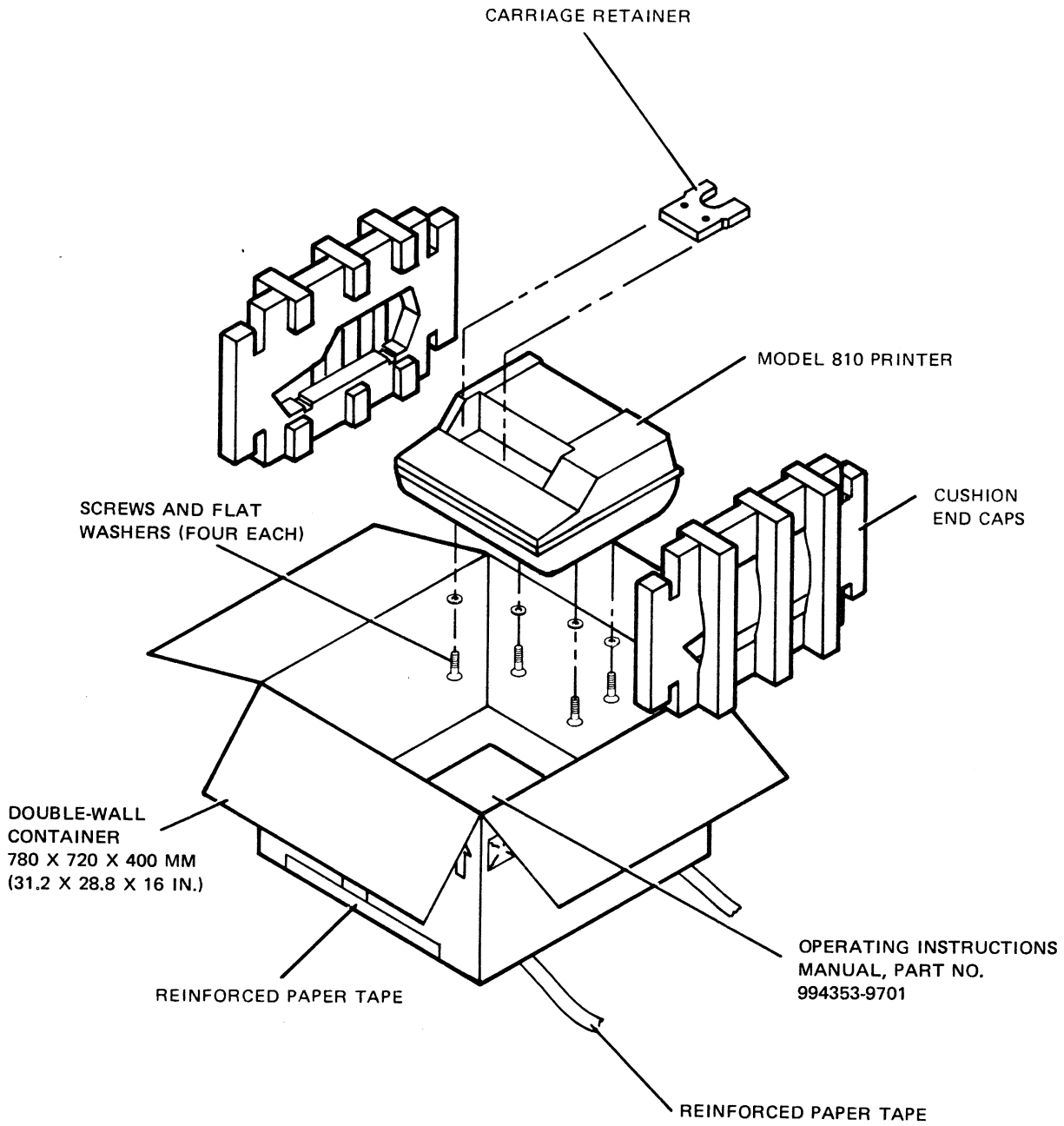
NOTE: CORNER BLOCK PARTS ARE MADE FROM POLYURETHANE (ETHER) WITH A DENSITY OF 84 KG/M<sup>3</sup> (4.0 LB/FT<sup>3</sup>). THE PARTS ARE HELD TOGETHER WITH GLUE OR HOT MELT ADHESIVE.



BOX	INSIDE DIMENSIONS			KILOPASCALS	VARIETY	STYLE
	LENGTH	WIDTH	DEPTH			
936800-0418	654 MM (25.75 IN.)	495 MM (19.5 IN.)	178 MM (7.0 IN.)	1896.125 (275 PSI)	SINGLE WALL	REGULAR SLOTTED CARTON
936800-0419	819 MM (32.25 IN.)	660 MM (26.0 IN.)	343 MM (13.5 IN.)	2413.25 (350 PSI)	DOUBLE WALL	REGULAR SLOTTED CARTON

(B) 140964

Figure 3-3. FD1000 Diskette Drive Assembly Shipping Container, Exploded View



(A) 139160A

Figure 3-4. Model 810 Printer Shipping Container, Exploded View



## SECTION IV

### INSTALLATION

#### 4.1 GENERAL

Instructions for installing the DS990/1 system are provided in separate paragraphs under the following headings:

- Component assembly
- Component placement
- Cable connections
- Communications equipment connections
- Checkout procedures

#### 4.2 COMPONENT ASSEMBLY

The only components that need assembling are the video module and the terminal base. Perform this assembly as follows using a screwdriver when indicated:

1. Place the video module on top of the terminal base. The front feet of the video module should be placed in the slots on the terminal base cover, as shown in figure 4-1.
2. Lift the rear of the video module (no more than approximately 30°) and connect the interface cable from the terminal base to the connector located near the right rear foot of the video module. Lower the video module to the terminal base so that the rear feet of the video module fit into the slots of the terminal base.
3. Using a screwdriver, adjust the two foot-adjusting screws at the rear feet of the video module clockwise until the video module is held firmly to the terminal base.

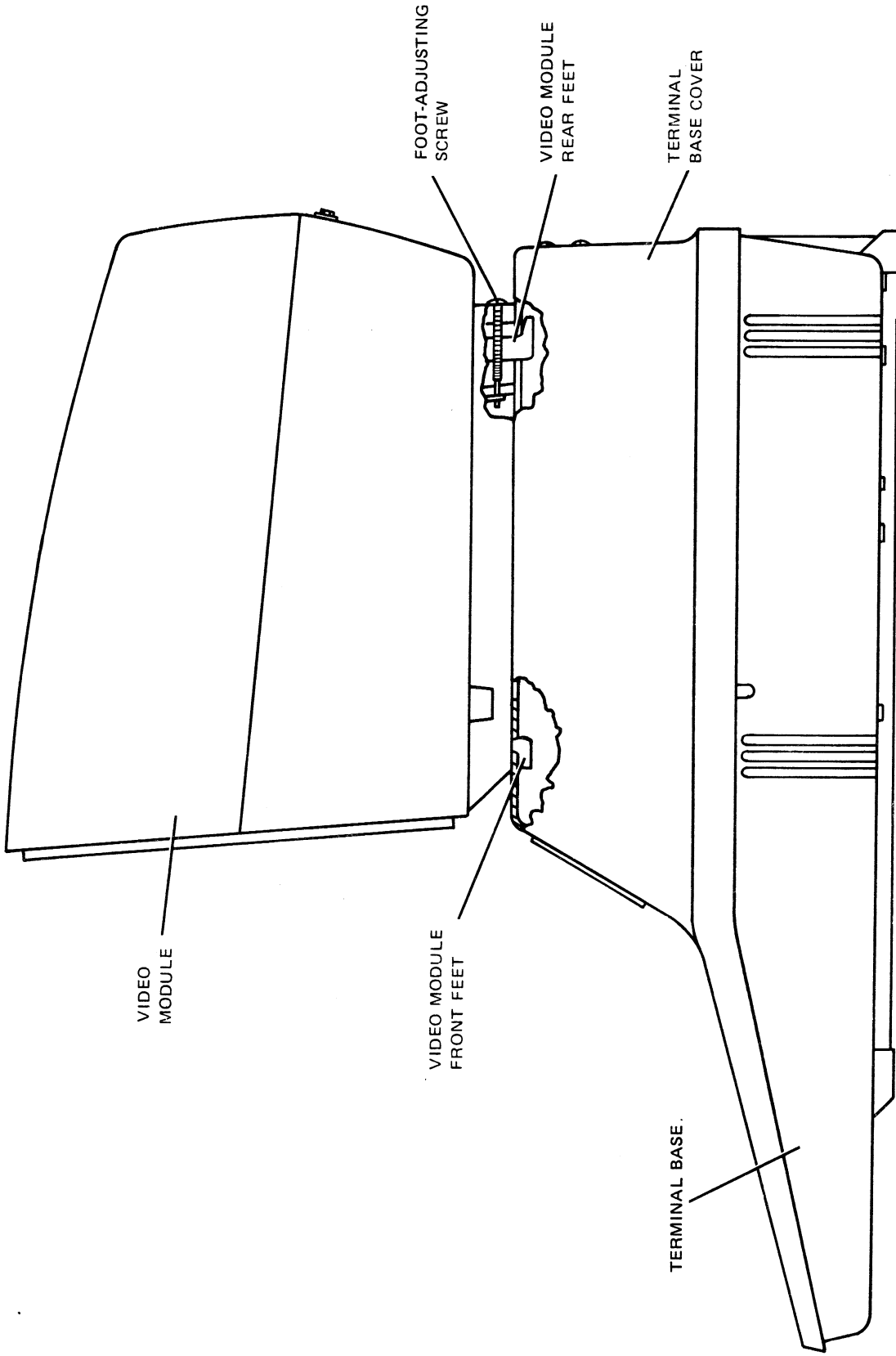
#### 4.3 COMPONENT PLACEMENT

Place the DS990/1 terminal assembly and the FD1000 diskette drive assembly on an appropriate table. Allow space for ventilation, cabling and operator and service personnel, as shown in figures 2-4 or 2-5 for typical installations. Refer to figure 2-4 for DS990/1 systems with one FD1000 assembly from part numbers 2267370-0001 through -0008, and to figure 2-5 when two FD1000 assemblies from part numbers 2267370-0009 through -0016 are used. When two FD1000 assemblies are used, place the assembly with the line termination at the end of the interface cable (the point most remote from the FD1000 controller on the interface cable).

#### WARNING

**To avoid back injuries, use proper lifting techniques when lifting heavy items. Also, have sufficient personnel available to carry heavy items properly.**

Check that ac power outlets are available and close enough for the equipment power cables to reach. Also check that interface cables will reach between the components. Refer to table 2-1 for all cable lengths and plug types.



(A) 139161

Figure 4-1. Installation of Video Module on Terminal Base



### 4.4 CABLE CONNECTIONS

Typical cable connections for the DS990/1 system are shown in figures 4-2 and 4-3. Refer to figure 4-2 when one FD1000 assembly is used, and to figure 4-3 when two FD1000 assemblies are used. The cable connections for the typical communications equipment are shown in figure 4-4.

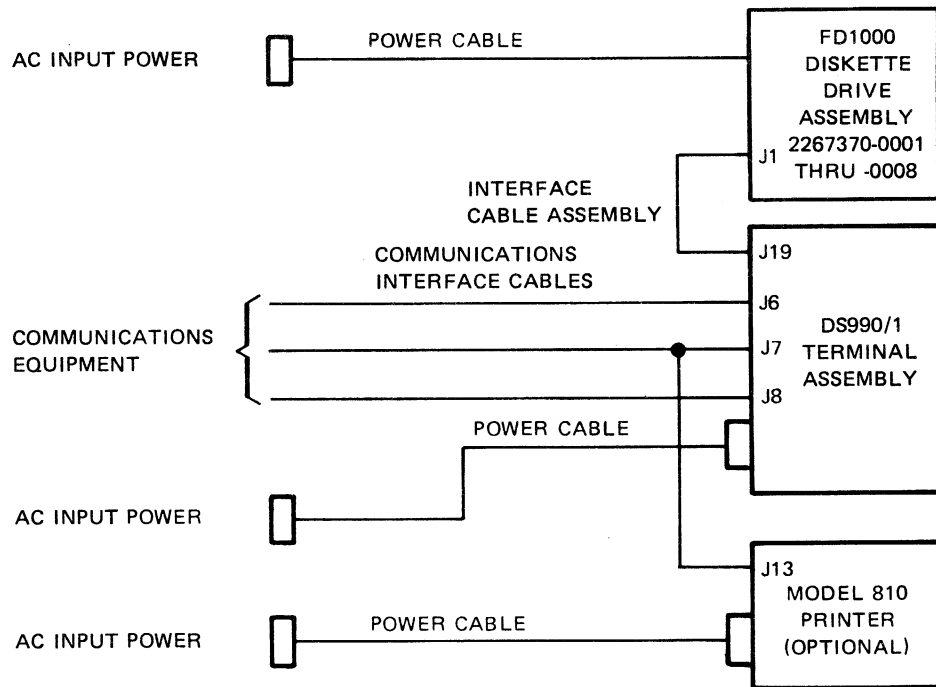
### 4.5 CENTRALIZED DISPATCHING SERVICE

Customer satisfaction is the primary goal of Texas Instruments Incorporated. To meet this goal, the Field Information System was developed and implemented. The Field Information System is a nationwide, computerized network that facilitates the entry, dispatch and completion of all customer service requests.

To initiate any service request, a customer should use the Centralized Dispatch telephone number assigned to the area in which he is located (figure 4-5). The customer should provide the dispatcher with the following: customer name, the address of the product needing service, telephone number, the name of a contact, the model and serial numbers of the product, a description of the problem, and a purchase order number (if equipment is purchased and not covered by warranty or a maintenance agreement). The dispatcher enters this information into the Field Information System. If the service request is for equipment located in another geographical area, the Field Information System automatically transfers the request to the TI Service Office nearest the equipment needing service.

The dispatcher at the location nearest the equipment will assign the service request to a Customer Engineer. When the Customer Engineer completes the service request, all pertinent data is entered into the system, and a real-time service status is maintained.

The Field Information System enables Texas Instruments to provide fast, efficient service to every customer, whether his operations are concentrated in one geographical area or nationwide.



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Figure 4-2. Typical Connection Diagram with One FD1000 Assembly

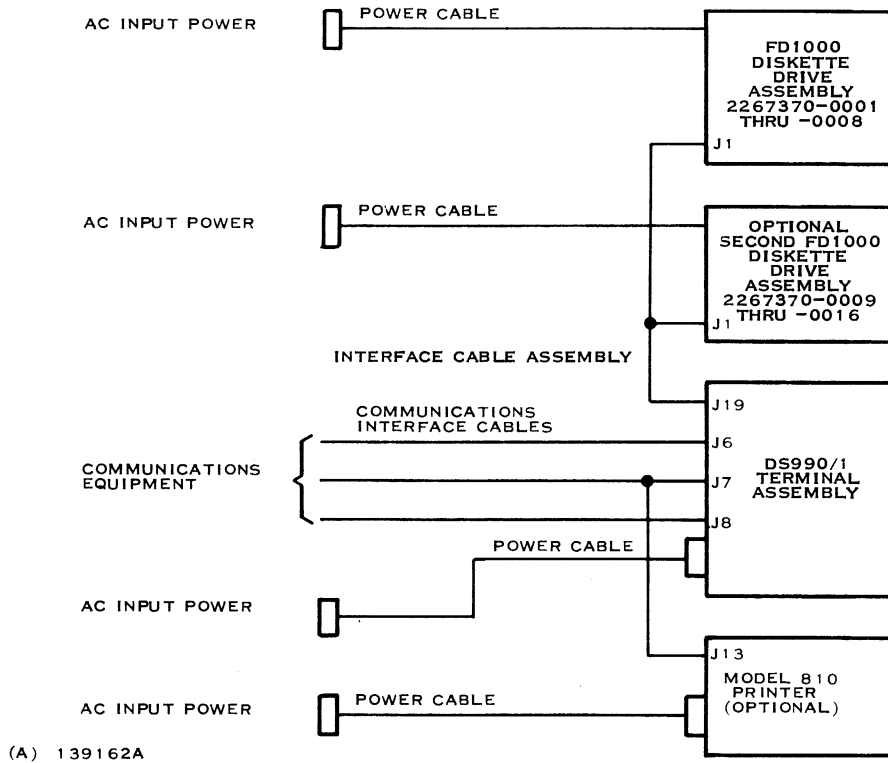


Figure 4-3. Typical Connection Diagram with Two FD1000 Assemblies



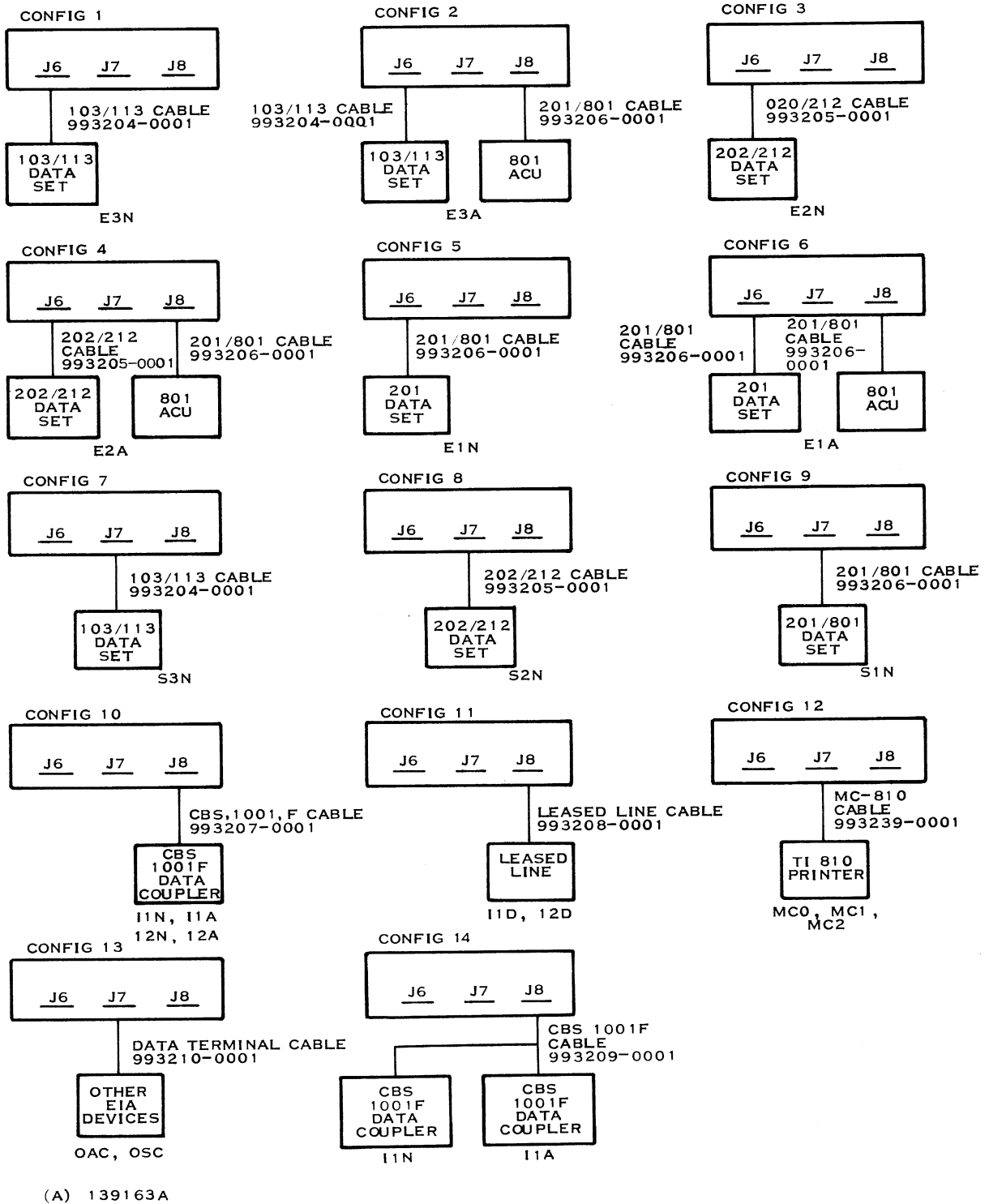
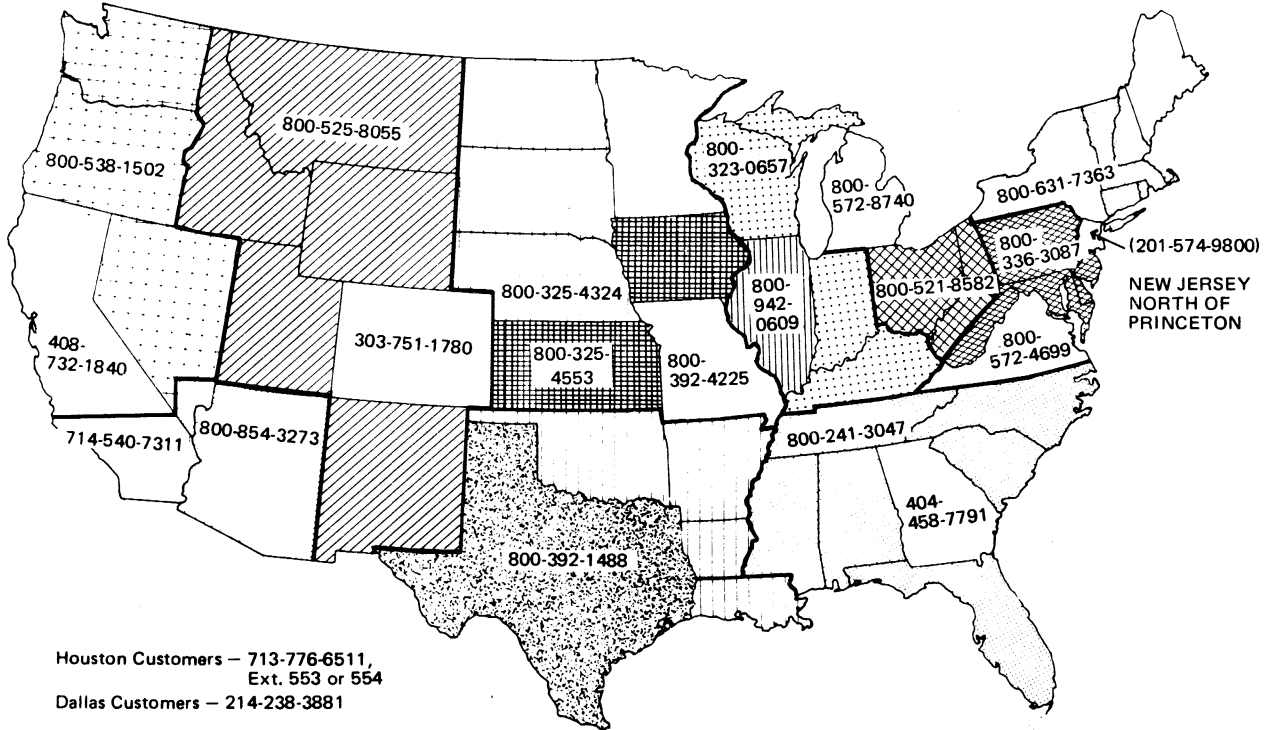


Figure 4-4. Communications Equipment Cable Connections



# Centralized Dispatch Telephone Numbers for Requesting Service



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Figure 4-5. Map of Centralized Dispatch Telephone Numbers in the United States



## APPENDIX A

## OPTION LIST FOR SHUGART SA850 DRIVES

Table A-1 lists the available jumper options for the Shugart SA850 drives which may be part of the FD1000 diskette drive assembly. Under normal conditions, the option jumpers will be installed correctly and no further changes are needed. The list of jumper options is provided for reference only.

Table A-1. Option List for Shugart SA850 Drives

Option Designator	DS01 (As-Only Drive)	DS01 (Not-Only Drive)	DS02	DS03	DS04
Terminator (3H)	x		x		
DS1	x	x			
DS2			x		
DS3				x	
DS4					x
A (shunt 4H)	x	x	x	x	x
B (shunt 4H)					
I (shunt 4H)	x	x	x	x	x
R (shunt 4H)	x	x	x	x	x
S (shunt 4H)	x	x	x	x	x
X (shunt 4H)	x	x	x	x	x
Z (shunt 4H)	x	x	x	x	x
HL (shunt 4H)					
2S	x	x	x	x	x
C					
N					
Y					
HI	x	x	x	x	x
DC	x	x	x	x	x
DL	x	x	x	x	x
DS					
HLL	x	x	x	x	x
S1	x	x	x	x	x
S2					
S3					
IW					
IT					
RM	x	x	x	x	x
RS					
850/851	850	850	850	850	850
-5/-15 V	-5	-5	-5	-5	-5

NOTE: x indicates jumper present.



**APPENDIX B**  
**OPTION LIST FOR QUME DT/8 DRIVES**

Table B-1 lists the available jumper options for the Qume DT/8 drives which may be part of the FD1000 diskette drive assembly. Under normal conditions the option jumpers will be installed correctly and no further changes are needed. The list of jumper options is provided for reference only.

**Table B-1. Option List for Qume DT/8 Drives**

Option Designator	DS01 (As-Only Drive)	DS01 (Not-Only Drive)	DS02	DS03	DS04
Terminators (1TM, 2TM)	x		x		
DCS1	x	x			
DS2			x		
DS3				x	
DS4					x
A (shunt pack)	x	x	x	x	x
B (shunt pack)					
I (shunt pack)	x	x	x	x	x
R (shunt pack)	x	x	x	x	x
S (shunt pack)	x	x	x	x	x
X (shunt pack)	x	x	x	x	x
Z (shunt pack)	x	x	x	x	x
HL (shunt pack)					
2S	x	x	x	x	x
Y					
DC	x	x	x	x	x
DL	x	x	x	x	x
DS					
S1	x	x	x	x	x
S2					
S3					
NP					
RR	x	x	x	x	x
RI	x	x	x	x	x
WP	x	x	x	x	x

NOTE: x indicates jumper present.

# USER'S RESPONSE SHEET

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Manual Date: 15 February 1979 Date of This Letter: \_\_\_\_\_

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Please list any discrepancy found in this manual by page, paragraph, figure, or table number in the following space. If there are any other suggestions that you wish to make, feel free to include them. Thank you.

Location in Manual

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Location in Manual	Comment/Suggestion
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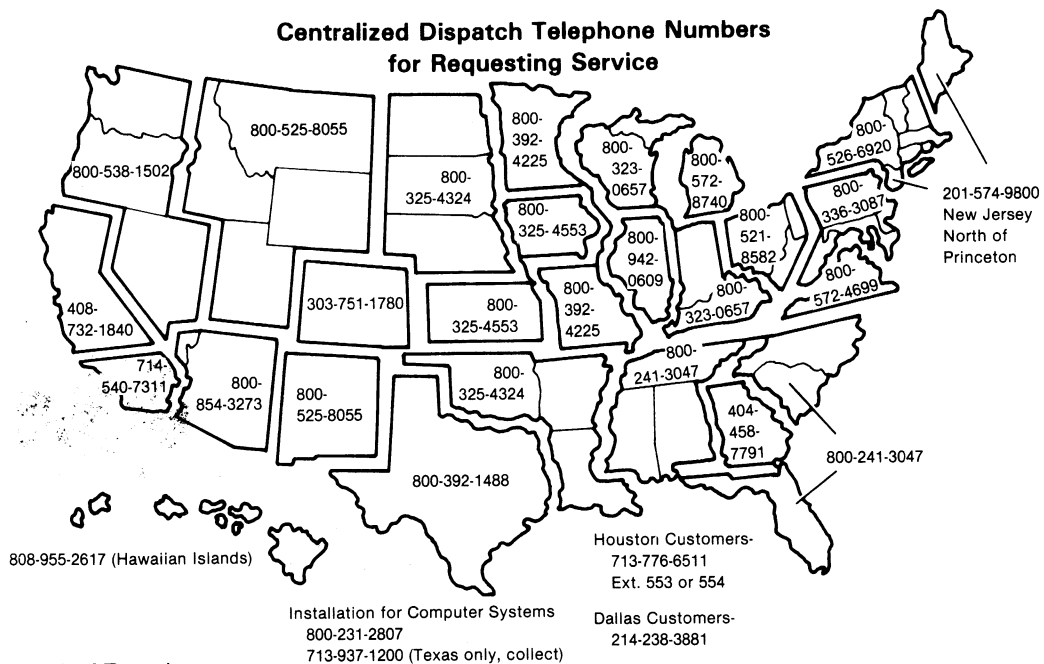
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