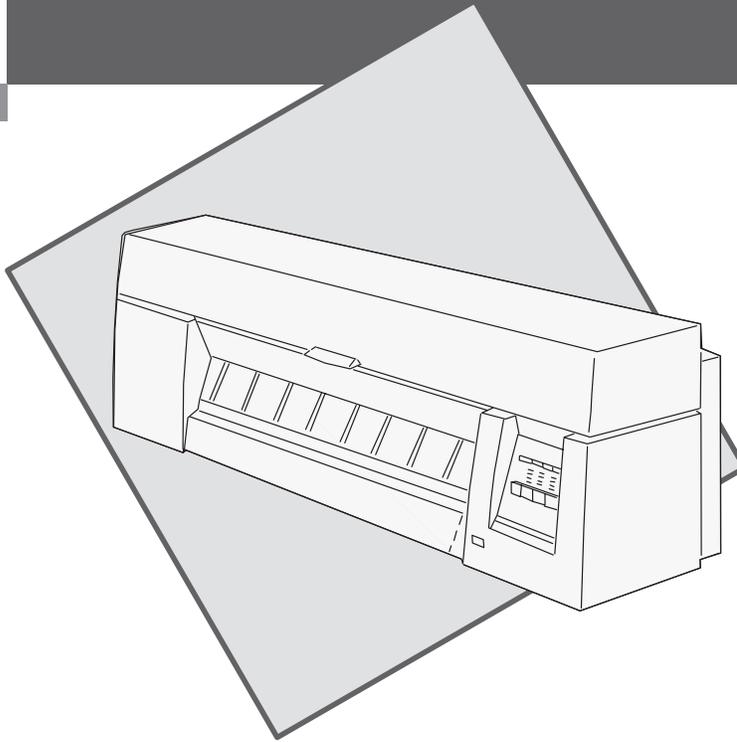


Product: 1996 HP DesignJet 230,250C,330 and 350C Plotters Service Repair Workshop Manual
Full Download: <https://www.arepairmanual.com/downloads/1996-hp-designjet-230250c330-and-350c-plotters-service-repair-workshop-manual/>



Service Manual

HP DesignJet 230,
HP DesignJet 250C,
HP DesignJet 330 and
HP DesignJet 350C
Plotters

Sample of manual. Download All 268 pages at:
<https://www.arepairmanual.com/downloads/1996-hp-designjet-230250c330-and-350c-plotters-service-repair-workshop-manual/>

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WARNING

The procedures described in this manual are to be performed by HP-qualified service personnel only.

Electrical Shock Hazard

Serious shock hazard leading to death or injury may result if you do not take the following precautions:

- Ensure that the ac power outlet (mains) has a protective earth (ground) terminal.
- Disconnect the plotter from the power source prior to performing any maintenance.
- Prevent water or other liquids from running onto electrical components or circuits, or through openings in the enclosure.

Electrostatic Discharge

Refer to the beginning of Chapter 6 of this manual, for precautions you should take to prevent damage to the plotter circuits from electrostatic discharge.

Safety Symbols

General definitions of safety symbols are given immediately after the table of contents.

Learning Products, Barcelona Division
Hewlett-Packard Española, S.A.
Avda. Graells, 501
08190 Sant Cugat del Vallès
Spain

Service Manual

HP DesignJet 230,
HP DesignJet 250C,
HP DesignJet 330 and
HP DesignJet 350C
Plotters

Using this Manual

Purpose

This manual contains information necessary to test, calibrate and service:

- HP DesignJet 230 plotters (models C4694A and C4695A)
- HP DesignJet 250C plotters (models C3190A and C3191A)
- HP DesignJet 330 plotters (models C4701A and C4702A)
- HP DesignJet 350C plotters (models C4699A and C4700A)

For information about using these plotters, refer to the corresponding user and quick-reference guides.

Readership

The procedures described in this manual are to be performed by HP-certified service personnel only.

Training

The HP ongoing training course CEV2-TIJ provides training for HP Customer Engineers and Authorized Dealers, on servicing the complete HP DesignJet series of large-format, thermal-inkjet plotters.

Part Numbers

Part numbers for plotter options, accessories and service parts are located in chapter 10.

Conventions

This manual contains information for the monochrome HP DesignJet 230 and 330 plotters and the color HP DesignJet 250C and 350C plotters. To highlight the differences between the various plotters the following symbols will be used in the left margin:

230
250C

This symbol indicates the information specific only to the HP DesignJet 230 and 250C.

330
350C

This symbol indicates the information specific only to the HP DesignJet 330 and 350C.

All other information not marked by these symbols is applicable to all plotters.

The term **D/A1-size plotters** refers generically to models C3190A, C4694A, C4699A and C4701A. The term **E/A0-size plotters** refers generically to models C3191A, C4695A, C4700A and C4702A.

A small arrow **▶** is used to indicate other parts of the Service Manual or User's Guide where you can find information related to the topic you are consulting.

The **§** symbol is used to indicate the name of a referenced paragraph.

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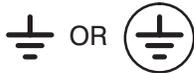
General Definition of Safety Symbols



International caution symbol (refer to manual): the product is marked with this symbol when it is necessary for the user to refer to the instruction manual in order to protect themselves and the instrument against damage.



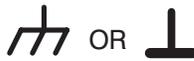
Indicates dangerous voltage (terminals fed from the interior by voltage exceeding 1000 volts must also be marked).



Protective conductor terminal. For protection against electrical shock in case of a fault. Used with field wiring terminals to indicate the terminal that must be connected to ground before operating equipment.



Low-noise or noiseless, clean ground (earth) terminal. Used for a signal common, as well as providing protection against electrical shock in case of a fault. A terminal marked with this symbol must be connected to ground in the manner described in the installation (operating) manual, and before operating the equipment.



Frame or chassis terminal. A connection to the frame (chassis) of the equipment, which normally includes all exposed metal.



Alternating current



Direct current



Alternating or direct current

WARNING

The WARNING sign denotes a hazard. It calls attention to a procedure, practice, or the like, which, if not correctly performed or adhered to, could result in personal injury.



Take care not to cut yourself on the encoder strip inside the plotter.

CAUTION

The CAUTION sign denotes a hazard. It calls attention to an operating procedure, practice, or the like, which, if not correctly performed or adhered to, could result in damage to or destruction of part or all of the product.

1

Product
Information

Description

Applications

HP DesignJet 230 and 330 (monochrome) and HP DesignJet 250C and 350C (color) plotters are large-format, ink-jet plotters that print output from software applications, on paper and other media.

The plotters produce large-format plots of high resolution and quality for the following sectors:

- Computer-aided design (CAD)
- Computer-aided manufacturing (CAM)
- Mapping
- Mechanical and architectural drawing
- General drafting

Drivers

Software drivers for the following applications are supplied with the plotters:

- AutoCAD for DOS
- AutoCAD for Windows
- MicroSoft Windows Applications

(Other application software ▶ User's Guide, chapter 1.)

Graphic Languages

The plotters accept drawing data in the following graphic languages:

- Hewlett-Packard Graphics Language (HP-GL), a vector language
- HP-GL/2, an enhanced version of HP-GL
- Hewlett-Packard Raster Transfer Language (HP-RTL), a raster language

When receiving HP-GL/2 data, the plotters can recognize and output the Kana-8, Kanji, and Roman character sets.

Device-Control Languages

The plotters support the following languages, enabling the user to read certain plotter settings from the computer:

- Printer Job Language (PJM)
- Printer Management Language (PML)

Interfaces

The plotters operate with a variety of computer systems through either the serial, RS-232-C port or the parallel, Bi-Tronics, extended-capability port (ECP).

An autoswitching feature enables the plotter to detect from which interface it is receiving data, so you can send data through either interface without having to change the plotter settings. (More on interfaces ▶ chapter 5, § *Input/Output Interfaces*.)

Network Connections

You can connect the plotters to a network through an optional *HP JetDirect EX* or *HP JetDirect EX Plus3* external print server. The range of network operating systems that are supported are as follows:

Local Area Network	Network Operating System	Computer Operating System
Ethernet	Novell Netware	DOS, Windows
	LAN Manager	DOS, Windows
	TCP/IP	HP-UX, Sun OS, Solaris
	TCP/IP	IBM AIX
	EtherTalk	Macintosh, Apple Products
Token Ring	Novell Netware	DOS, Windows
	LAN Manager	DOS, Windows
	TCP/IP	HP-UX, Sun OS, Solaris, IBM AIX

The print server includes a network autoswitching feature and can detect from which network it is receiving data. This enables you to send data through different networks without having to change the interface settings.

Memory

The plotters have a standard 4 megabytes of on-board random access memory (RAM). They also have one RAM-expansion socket, which can hold an optional 4-, 8-, 16- or 32-megabyte, single in-line memory module (SIMM). The maximum RAM is 36 MB.

Accuracy

The accuracy of the plotters in drawing a vector is ± 0.38 mm (0.015 in) or $\pm 0.2\%$ of the specified vector length, whichever is greater, at 23 °C (73 °F) at 50-60% relative humidity, on HP Inkjet 0.012-cm (0.0048-inch) polyester film.

Resolution

The resolution of the plotter output is measured in dots per inch (dpi). The plotter resolutions for different plot-quality settings are as follows (see also [chapter 5](#)):

Print Quality	Monochrome Plotting	Color Plotting
Fast	300 x 300 dpi	300 x 300 dpi
Normal	Addressable 600 x 600 dpi	300 x 300 dpi
Best	Addressable 600 x 600 dpi	300 x 300 dpi

230
250C

Legs

The plotter legs are optional. The E/A0-size legs include a media diverter to prevent large media sizes from hitting the ground. The D/A1-size legs have no media diverter.

330
350C

Roll-feed and Legs

The roll-feed assembly and legs are optional. The E/A0-size legs include a media diverter to prevent large media sizes from hitting the ground. The D/A1-size legs have no media diverter. For additional information on the roll-feed assembly [chapter 5](#).

330
350C

Upgrading a DesignJet 330

Users can order an upgrade kit to upgrade a DesignJet 330 to a Designjet 350C. The kit can be installed by the user. For additional information [User's Guide, chapter 6](#).

Media Types (See also [HP Media Reference Guide](#))

Monochrome Plotting	Color Plotting
Plain paper and plotter paper	HP special inkjet paper
Plain vellum (HP preferred)	or equivalent non-HP media
Plain translucent paper (HP preferred)	
HP single-matte polyester film	

330
350C

For additional media types available [User's Guide, chapter 2, § *Choosing media*](#).

Media Sizes

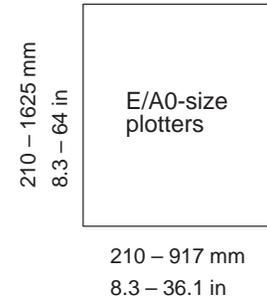
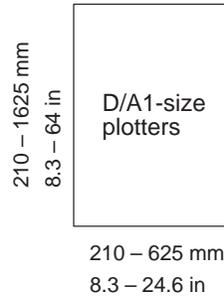
230
250C

The DesignJet 230 and 250C plotters handle only sheet media, not roll media.

330
350C

The DesignJet 330 and 350C plotters handle sheet media **and** roll media.

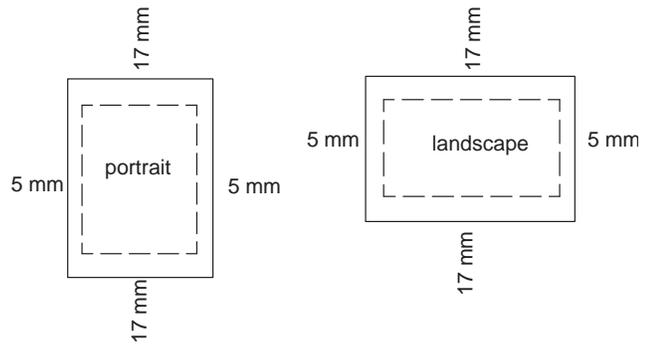
Sheet media must not exceed the maxima and minima shown here:



Media Margins

The media margins define the real available plotting area on the media:

17 mm = 0.67 in
5 mm = 0.2 in
All measurements +/- 2mm (0.08 in)



Notes

Site Planning and
Requirements

Power Requirements

HP DesignJet 230 and 330 and HP DesignJet 250C and 350C plotters have self-adjusting power supplies and do not require a voltage selector or switch settings prior to use. The table below lists the power requirements for the plotters.

Power Requirements

Source Voltage Requirements:	Voltage	Max current (rms)
	100 V ac	1.40 A
	120 V ac	1.17 A
	220 V ac	0.64 A
	240 V ac	0.60 A
Normal Operating Range:	90 to 264 V ac	
Frequency:	47-63 Hz	
Consumption:	140 watts maximum	

WARNING

The ac power outlet (mains) must have a protective earth (ground) terminal. Serious shock hazard leading to death or injury may result if the plotter is not properly grounded.

Choosing an Interface Cable

(Instructions ▶ User's Guide, chapter 1, § *Connect the plotter to your computer.*)

Serial (RS-232-C) Interface A short cable (less than 15 meters or 50 feet) is recommended for the RS-232-C interface. A longer cable is permissible, provided the load capacitance does not exceed 2500 picofarads.

Parallel (Bi-Tronics/Centronics) Interface Use a short cable (less than 2 meters or 6.6 feet) for the parallel interface.

(Interface descriptions ▶ Service Manual, chapter 5, § *Input/Output Interfaces.*)

230
250C

(Pin specifications ▶ User's Guide, chapter 5, § *Interface specifications.*)

330
350C

(Pin specifications ▶ User's Guide, chapter 10, § *Interface specifications.*)

(Cable part numbers ▶ Service Manual, chapter 10.)

Choosing a Suitable Plotter Environment

(Instructions ▶ User's Guide, chapter 1, § *Position the plotter.*)

Environmental Specifications

Hardware:		Environmental Class B2	
Operating environment:		Temperature	Relative Humidity
Plotter		0 to 55°C (32 to 131°F)	5-25%
With cartridges and media:		15 to 35°C (59 to 95°F)	20-80%
Storage environment:		Temperature	Relative Humidity
Plotter/media		-40 to +70°C (-40 to +158°F)	5-95%
Cartridges		-40 to +40°C (-40 to +104°F)	
Acoustics:*		Sound Pressure	Sound Power
Operating	D/A1-size plotters E/A0-size plotters	43 dB (Acoustic) 45 dB (A)	6.0 bels (A)
Idle		< 20 dB (A)	< 3.6 bels (A)

*These specifications are typical sound pressures at a one-meter bystander position. Idle specification assumes fan is off.

Plotter Dimensions and Weight

Plotter Model:	D/A1-size plotters	E/A0-size plotters
Length	1028 mm (40.5 in)	1327 mm (52.2 in)
Depth	237 mm (9.3 in)	237 mm (9.3 in)
Height (window closed)	327 mm (12.9 in)	327 mm (12.9 in)
Weight	26 kg (57.2 lb)	31 kg (68.2 lb)

Notes

Installation and
Configuration

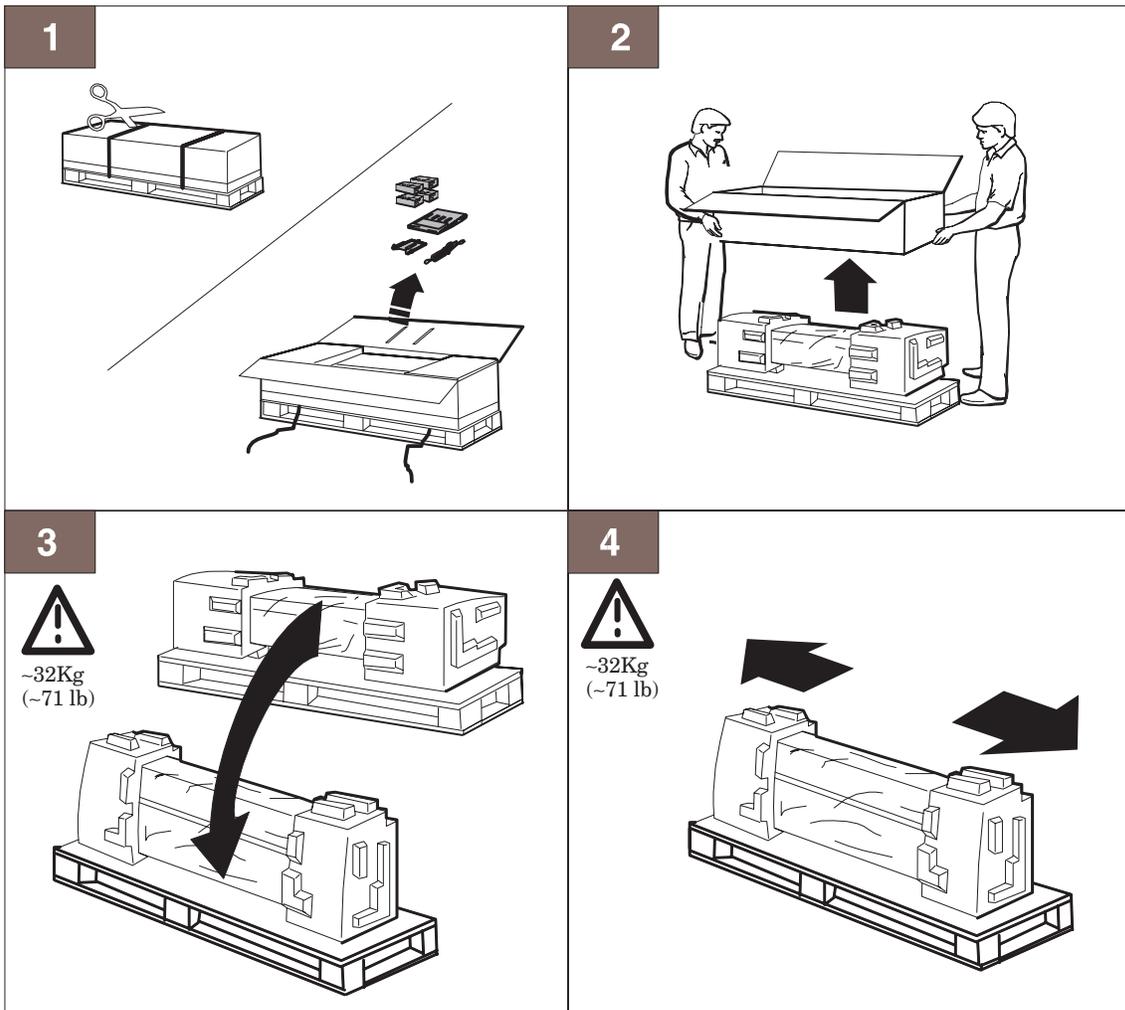
Unpacking and Assembling the Plotter

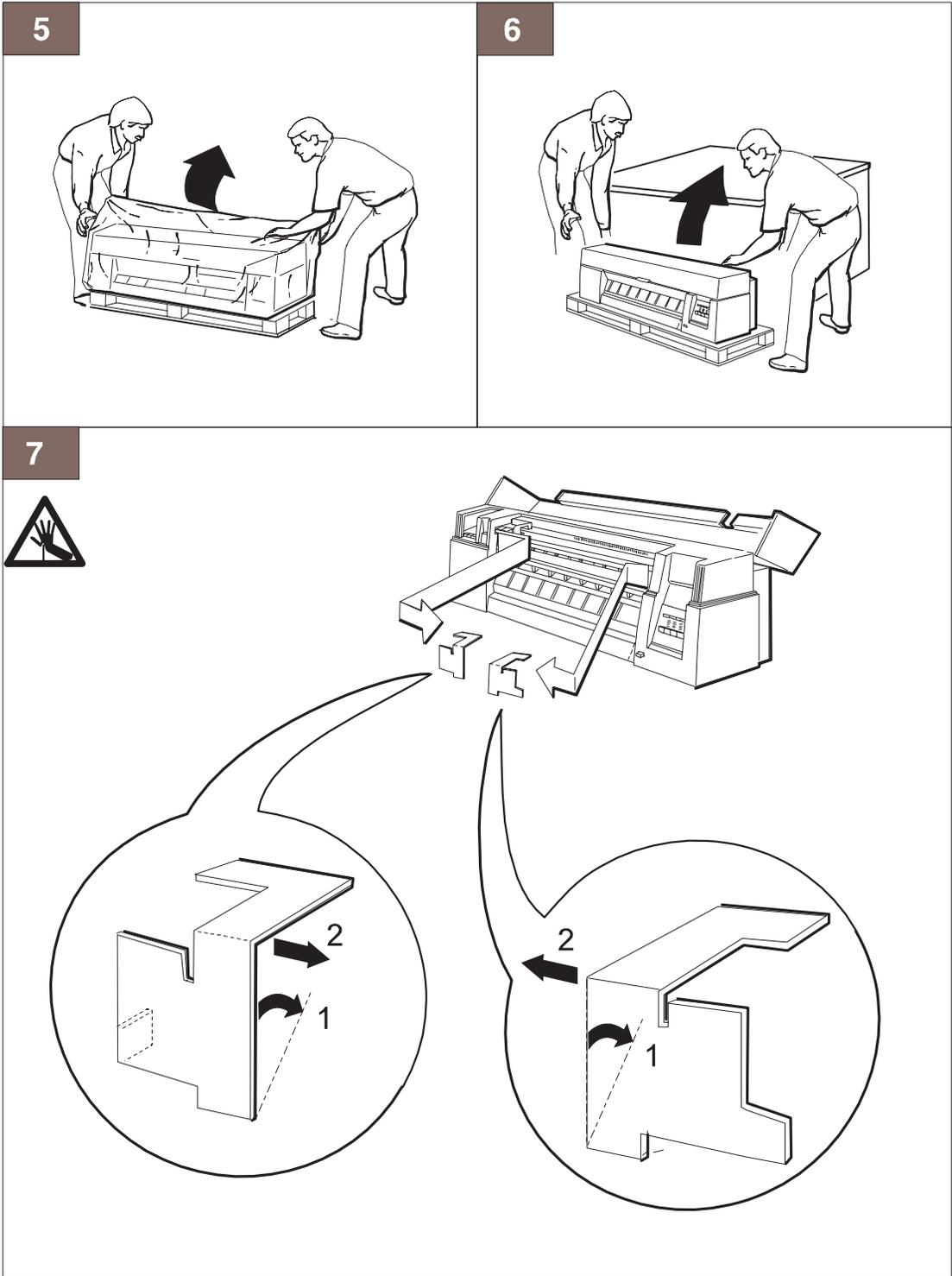
When the plotter arrives at the user site:

- 1 Inspect the shipping container for damage.

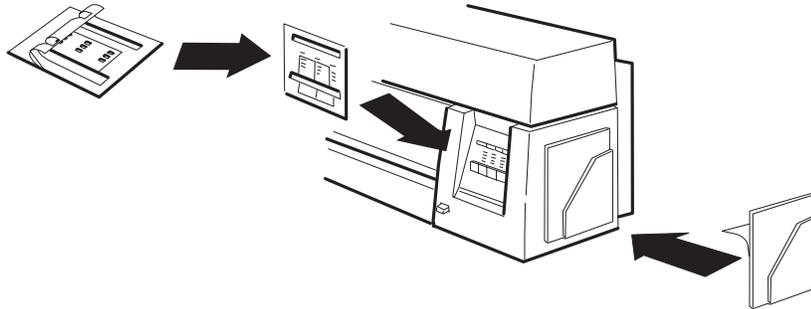
If the shipping container shows signs of damage, retain it until you have checked the contents of the shipment and verified the performance of the plotter.

- 2 Unpack and assemble the plotter, following the series of illustrations below.





8



Inspecting the Plotter for Damage

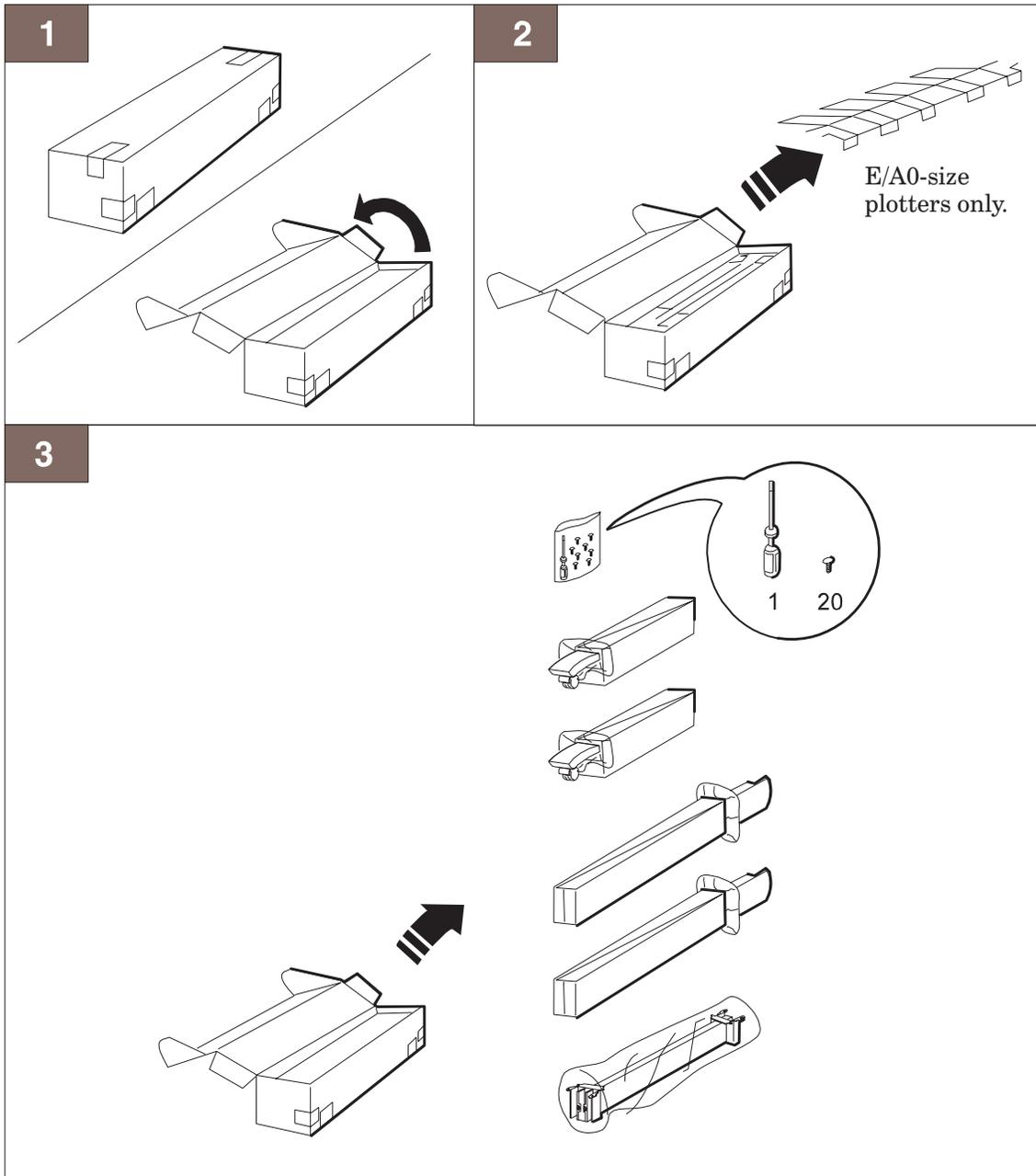
Visually inspect the plotter for damage, scratches, dents, or other mechanical defects. If the plotter is damaged in transit, notify the carrier and the nearest HP Sales and Support Office. Retain the shipping container and insulation material for the carrier's inspection. The Sales and Support Office will arrange for the repair or replacement of the plotter.

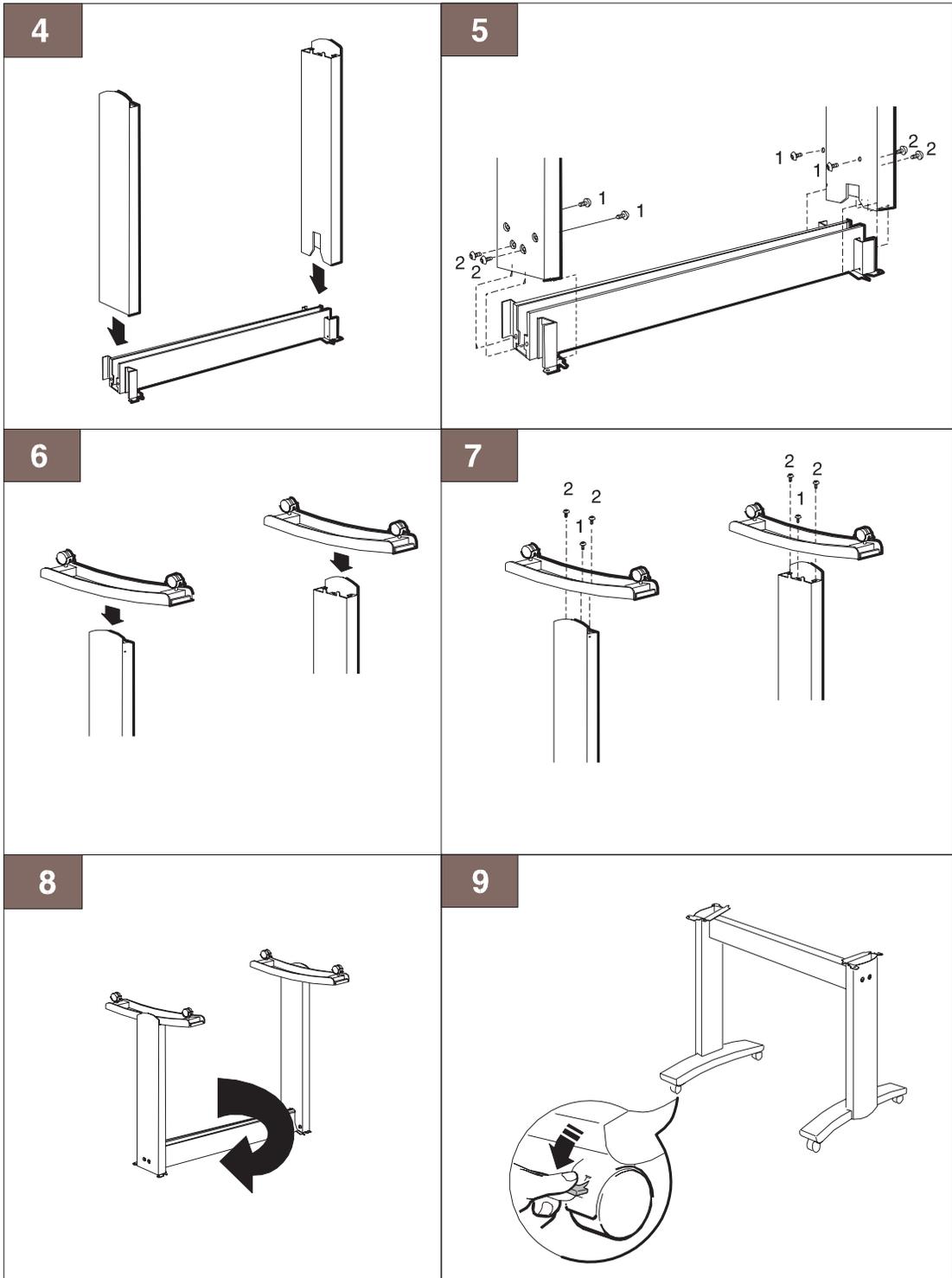
Repacking the Plotter

You can order a repacking kit if you need to repack the plotter and don't have the shipping container and insulation material. (Part numbers ▶ chapter 10.)

Assembling the Legs (Optional)

If the user has purchased the optional legs for the plotter, assemble them following the series of illustrations below:

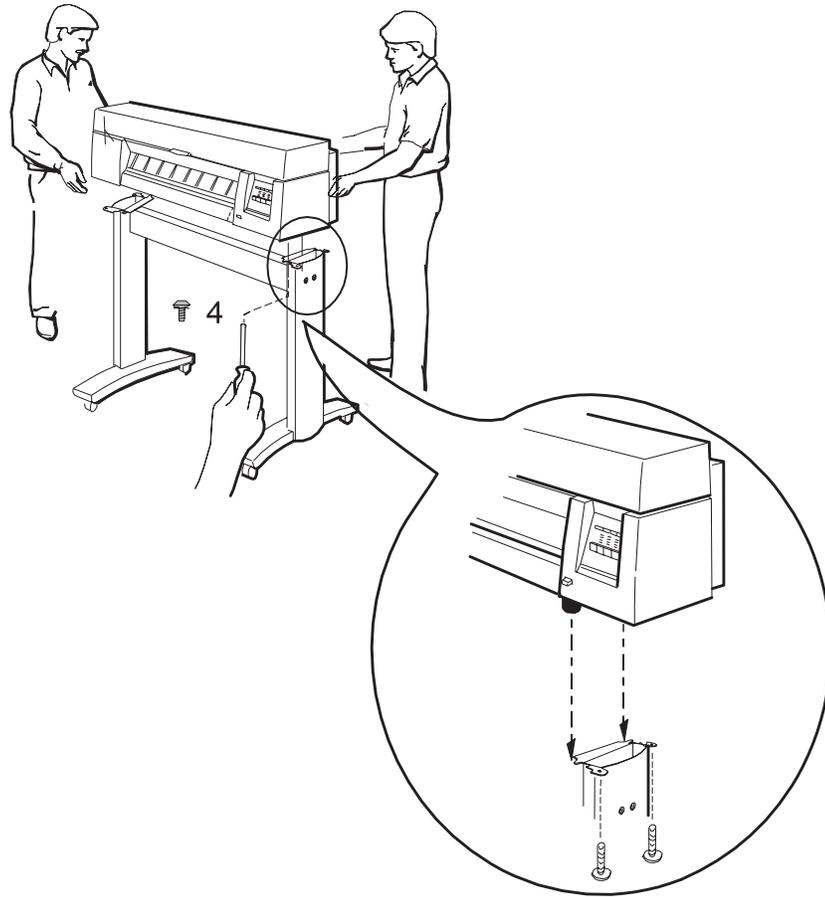




10

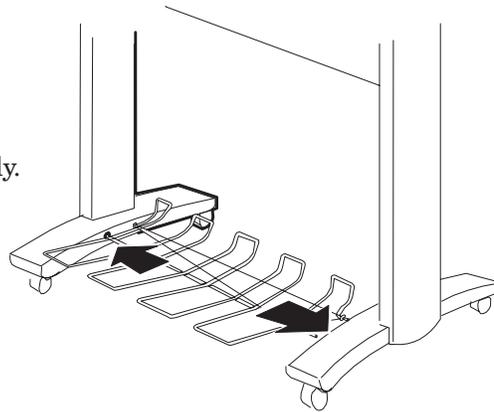


~32Kg
(~71 lb)



11

E/A0-size
plotters only.



330
350C

Assembling the Roll-Feed Assembly (Optional)

If the user has purchased the optional roll-feed assembly for the plotter, assemble it following the series of illustrations below:

