Roland

XY PLOTTER
DXY-1350A
DXY-1150A

USER'S MANUAL

Thank you very much for purchasing the DXY-1350A/1150A.

- To ensure correct and safe usage with a full understanding of this product's performance, please be sure to read through this manual completely and store it in a safe location.

- Unauthorized copying or transferral, in whole or in part, of this manual is prohibited.

- The contents of this operation manual and the specifications of this product are subject to change without notice.

- The operation manual and the product have been prepared and tested as much as possible. If you find any misprint or error, please inform us.

Roland DG Corporation

Table of Contents

To Ensure Safe Use

About ⚠WARNING and ⚠CAUTION Notices

⚠**WARNING**	Used for instructions intended to alert the user to the risk of death or severe injury should the unit be used improperly.
⚠**CAUTION**	Used for instructions intended to alert the user to the risk of injury or material damage should the unit be used improperly. * Material damage refers to damage or other adverse effects caused with respect to the home and all its furnishings, as well to domestic animals or pets.

About the Symbols

⚠	The △ symbol alerts the user to important instructions or warnings. The specific meaning of the symbol is determined by the design contained within the triangle. The symbol at left means "danger of electrocution."
🚫	The ⊘ symbol alerts the user to items that must never be carried out (are forbidden). The specific thing that must not be done is indicated by the design contained within the circle. The symbol at left means the unit must never be disassembled.
⛔	The ● symbol alerts the user to things that must be carried out. The specific thing that must be done is indicated by the design contained within the circle. The symbol at left means the power-cord plug must be unplugged from the outlet.

⚠WARNING

Do not disassemble, repair, or modify.
Doing so may lead to fire or abnormal operation resulting in injury.

Do not use with any power supply other than the dedicated AC adapter.
Use with any other power supply may lead to fire or electrocution.

Do not use with any electrical power supply that does not meet the ratings displayed on the AC Adapter.
Use with any other power supply may lead to fire or electrocution.

⚠**CAUTION**

⊘ **Do not use with a damaged power cord or a power outlet that is loose when the AC adapter is plugged in.**
Use with any other power supply may lead to fire or electrocution.
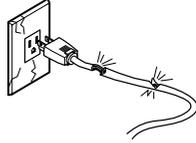
⊘ **Do not injure or modify the electrical power cord, nor subject it to excessive bends, twists, pulls, binding, or pinching, nor place any object of weight on it.**
Doing so may damage the electrical power cord, leading to electrocution or fire.
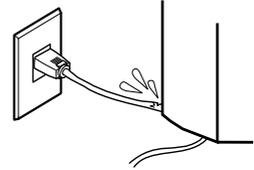
❶ **When unplugging the electrical power cord from the power outlet, grasp the plug, not the cord.**
Unplugging by pulling the cord may damage it, leading to fire or electrocution.
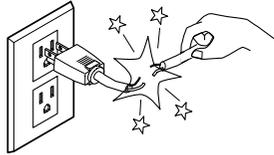
❶ **When not in use for prolonged periods, unplug the power cord from the electrical outlet.**
Failure to do so may result in danger of shock, electrocution, or fire due to deterioration of the electrical insulation.
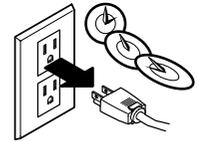
❶ **Install on a stable surface.**
Failure to do so may result in falling of the unit or AC adapter, leading to injury.
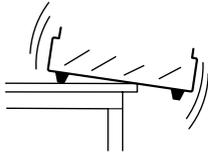
⊘ **Do not damage the electrostatic pad, or attempt to use tacks or the like to secure paper or other material to the pad.**
Doing so may lead to electrocution.
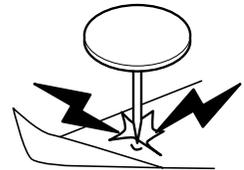
⊘ **Do not allow liquids, metal objects or flammables inside the machine.**
Fire may result.

3
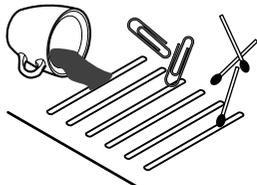
About the Labels Affixed to the Unit

These labels are affixed to the body of this product.
The following figure describes the location.

Model name
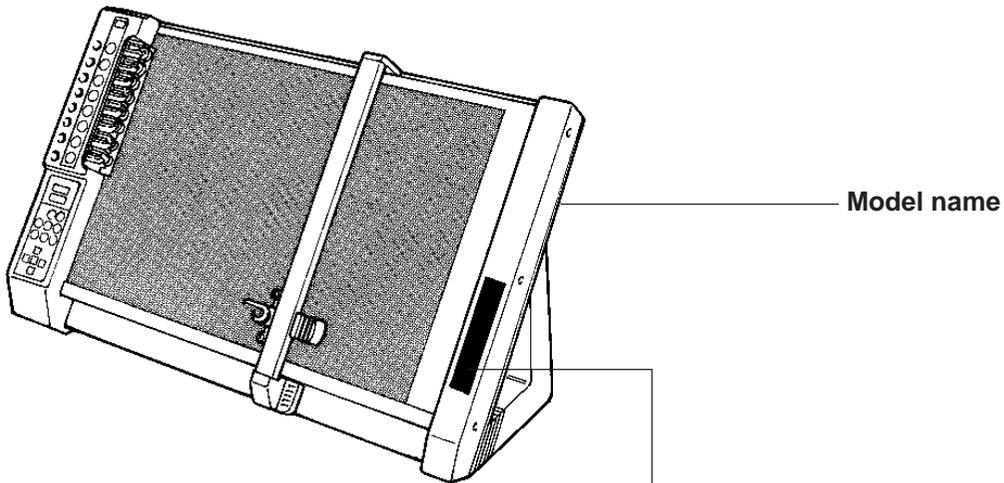
DXY-1350A

⚠ **CAUTION**
● Be careful to never scratch the electrostatic paper hold bed with a pointed object (whether it be a pin, knife, screwdriver, whatever).
By scratching the bed, not only can you cause a reduction in the quality of plots made, but doing so can be quite dangerous, since electrostatic energy at high-voltage courses through the bed.

● When you wish to clean the electrostatic paper hold bed after it becomes dirty, always use only methyl alcohol (industrial-use alcohol). Neutral detergents should never be used, since they will cause a deterioration in the paper holding ability of the bed.
Methyl alcohol is flammable and is toxic. Read and follow the instructions supplied with it, and make sure to handle it properly.

DXY-1150A

CAUTION
Don't put a floppy disk or magnetic card on this place.

Rear

CAUTION: INDOOR USE ONLY
WARNING: SHOCK HAZARD
-DO NOT OPEN
AVIS: RISQUE DE CHOC
ELECTRIQUE -NE PAS OUVRIR

CAUTION :The socket-outlet shall be installed near this AC-adaptor and shall be easily accessible.
ATTENTION :Veillez à connecter l'adaptateur à une prise murale facilement accessible afin de pouvoir rapidement débrancher la prise de l'adaptateur en cas de besoin.
ACHTUNG :Schließen Sie das Netzteil an eine leicht erreichbare Steckdose an,damit Sie den Stecker nötigenfalls sofort ziehen können.

Affixed to the 230 V/240 V adapter

Rating label
Use a rated power supply.
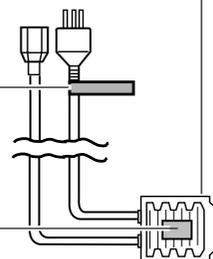
In addition to the ⚠**WARNING** and ⚠**CAUTION** symbols, the symbols shown below are also used.

| NOTICE | : Indicates information to prevent machine breakdown or malfunction and ensure correct use. |

: Indicates a handy tip or advice regarding use.

Checking Accessories

The following accessories are packed together with the main unit. Before using, be sure to check to make sure that all accessories have been included.

Stand x 2 (L and R)
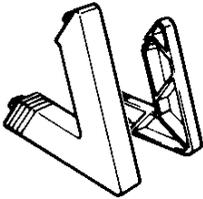
Exclusive AC adapter x 1
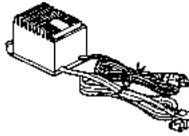
Metal strip (DXY-1150A only) x 3
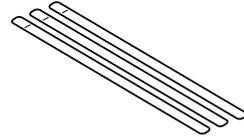
Paper clip (DXY-1150A only) x 1
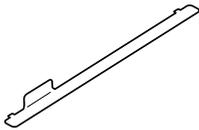
Rubber positioning sticker x 1 set

Transparent positioning sticker x 1 set
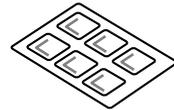
PLOTTER DRIVER for Windows® 3.1 x 1

PLOTTER DRIVER for Windows® 95 x 1

Paper (for self-test) x 2
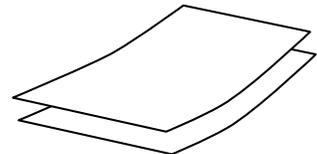
Standard ceramic pen (for self-test) x 1 set

Dust cover x 1
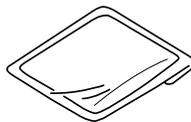
User's manual x 1

Part Names and Functions

Pen stand
 Pens can be stored here.

Pen stock
Pens are loaded here.

Drawing board
Paper is mounted here. (The DXY-1350A use electrostatic adsorption, and the DXY-1150A is equipped with a metal plate.)

Control panel
Used to make various settings and operate the DXY.

Arm
This part moves over the drawing board.

Pen carriage
Holds the pen when plotting.

Front View

Power switch

Pen type switch
Switches according to the type of pen in use. (See " Pens".)

Power connector
Connects to the AC adapter included with the main unit.

Side View

DIP switches
Used to make various settings.

Parallel connector (Centronics specifications)
Used for connection to the computer with a parallel cable.

Serial connector (RS-232C)
Used for connection to the computer with a serial cable.

Rear View

Control Panel

REPLOT LED (DXY-1350A only)
Lights up when replotting is possible.
[REPLOT MODE] key (DXY-1350A only)
Switches to the Replot mode. (See "Explanation of Functions and Operation".)

[REPLOT] key (DXY-1350A only)
Press this key while the REPLOT MODE LED is lit to execute replotting.

[PAPER HOLD] key (DXY-1350A only)
Causes paper to stick to the drawing board.
PAPER HOLD LED (DXY-1350A only)
Lights up during paper hold.

[PEN UP/DOWN] key
Press this key to move the pen up or down.

[ENTER] key
Use this key in combination with other keys to operate the DXY.

[P1] and **[P2]** scaling point keys
Pressing the **[P1]** or **[P2]** key moves the pen carriage to the specified position. (See "Explanation of Functions and Operation".)

[VIEW] key
Moves the carriage to the upper right of the drawing board and pauses operation. Pressing the key a second time return the pen carriage to the pen position it was at immediately before.
VIEW LED
Lights up during VIEW

[FAST] key
Pressing this key speeds up carriage movement.

▶ ▶ , ◀ , ▲ and ▼ position keys
Moves the pen carriage. Pressing two adjacent position keys at the same moves the pen carriage diagonally.

POWER/ERROR LED
Lights up when the power is turned on. This LED also blinks when an error has occurred.

On the DXY-1150A, only the pen number is shown. The following functions are available only on the DXY-1350A.

[PEN SPEED] key
Pen speed can be set by pressing this key and the ⊙ key. (See "Pens".)

[PENSELECT] key
The pen to be used can be selected while this key is held down.

8 420mm/sec
7 220mm/sec
6 160mm/sec
5 120mm/sec
4 90mm/sec
3 60mm/sec
2 40mm/sec
1 30mm/sec

1 30mm/sec — 8 420mm/sec

PEN SELECT

Step-by-Step Plotting

Operation Flow

When using the DXY, plotting is carried out using the sequence of steps described below. Refer to the pages indicated for each step for an explanation of how the operation is performed.

1	Set up the plotter.

2	Connect the AC adapter.

3	Connect the plotter to the computer.

Be sure to follow this procedure when using the DXY for the first time. If necessary, steps 4 and 5 should also be carried out.

4	Select the instruction set.

5	Make other required settings.

6	Load the pens.

These steps are carried out when the computer connection or the paper size has been changed. All of these settings are made using the DIP switches.

7	Turn on the power.

8	Load the paper.

9	Set pen speed.

1 0	Download plot data from the computer.

Unless the usage environment has been changed, these steps are all that needs to be done to make a plot.

Åù	Perform self-testing.

When using the DXY for the first time, or to confirm operation of the plotter, a self-test can be carried out to check the main unit for problems.

Setting Up the Stands

NOTICE Never install this unit in any of the following situations, as it could result in damage:
- Do not install the unit on an unstable surface.
- Places with excessive electrical noise.
- Places with excessive humidity or dust.
- The unit and AC adapter become hot during use. Avoid installation in an are a with poor heat-radiating characteristics (poor ventilation).
- Avoid subjecting the unit to severe vibration or shocks.
- Places exposed to strong illumination or direct sunlight.

To Use the DXY Upright

1

Install the left and right stands included with the plotter.
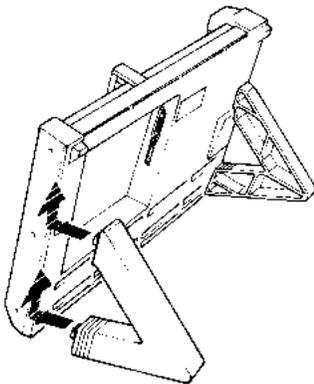
2

To prevent interference with the arm when it moves, do not place any objects in the shaded area shown below.

100 mm (3-15/16")
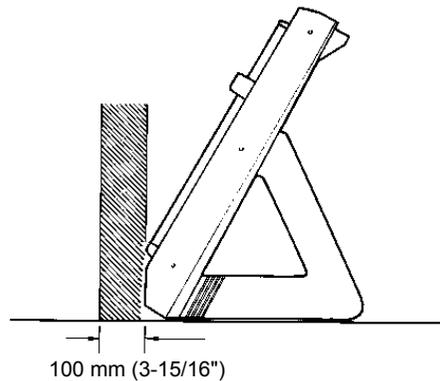
To Use the DXY Horizontally

1

To prevent interference with the arm when it moves, do not place any objects in the shaded area shown below.

30 mm (1-3/16")
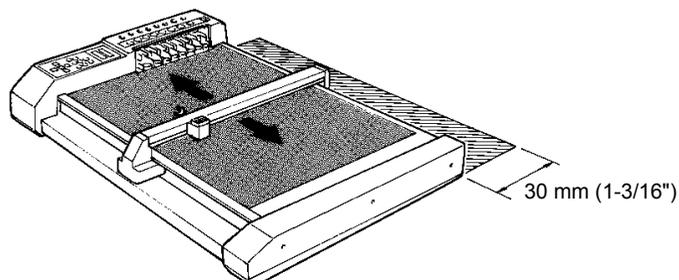
Connection

NOTICE
- ● Before connecting the cable, make sure the computer's power and the DXY's power switch are switched off.
- ● Securely connect the power cord, computer I/O cable and so on so that they will not be unplugged and cause failure during operation.

- ● The arm and pen carriage move when the unit is switched on and while performing plotting --keep hands and objects away at these times.
- ● The rail moves simultaneously when the power is switched on. Do not place anu object on the drawing board.

- ● First switch on the power to the computer, then turn on the DXY.

Power connector

Parallel connector

Host computer

AC Adapter

Parallel connector

Serial connector

RS-232C connector

Parallel connector

Parallel interface cable

Serial connector

Serial interface cable
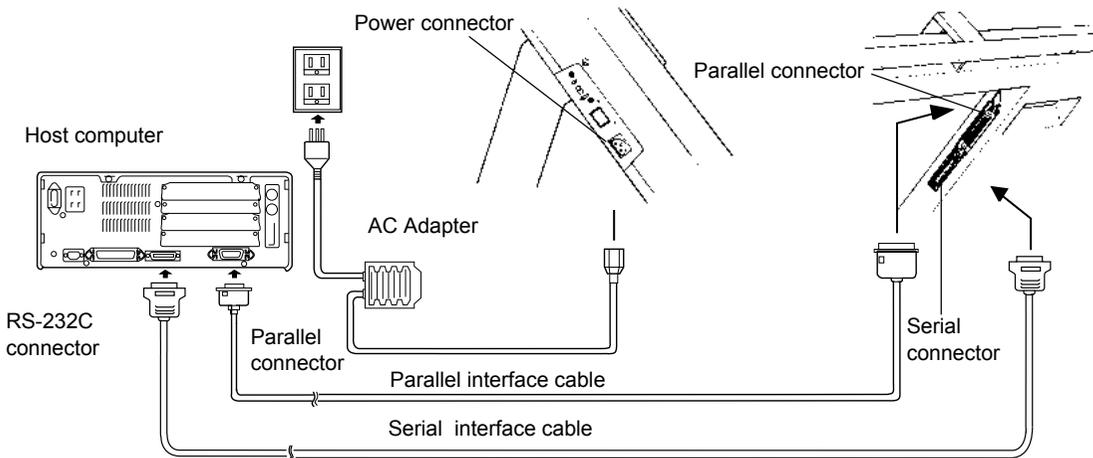
Loading the Pens

32 Color Plotter Pens Water Based Fiber Tipped Pen Thick Water Based Fiber Tipped Pen	MPP Ink Pen Refillable Ink Pen Standard Ceramic Pen
Front	Rear

About the Rubber Pen-cap Fitting

Before loading the pens make sure that the pen cap rubbers are set correctly (The pen cap rubber is mounted on the pen stock when the plotter is packed). The pen cap rubbers help prevent the pen tips from drying out, but they will not perform optimally unless they are mounted correctly.

Pen cap rubbers have fronts and backs, and either may be used depending on the type of pen each protects.

Removal
Pull the pen cap rubber off. They can be relatively easily removed from mechanical pencils and ballpoint pens.
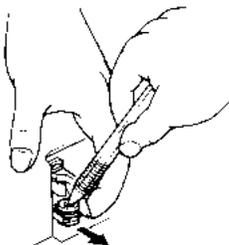
Mounting
While pressing the pen cap rubber on with your fingers, snap it onto the holder. In-correct mounting may result in ink leakage and improper pen exchange.
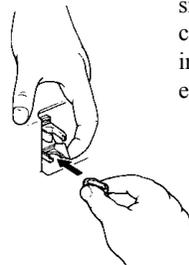
Loading the Pens

*For additional information on pen types (options), refer to "Pens".

NOTICE

● Load the pens only in the pen stock. Attempting to mount a pen directly in the pen carriage may cause faulty operation.

● Use only proprietary pens made exclusively for use with the DXY. Failure to do so may result in faulty operation because of differences in pen length.

● The effectiveness of the pen cap covers is only temporary. At the end of the work day, be sure to attach the special pen caps and store the pens.

Load the pens in the pen stock. The pen stock can hold eight pens at a time. Remove the cap from the pen, then while pressing down on the pen cap rubber with the tip of the pen as shown in the figure, gently press the pen into place so that the round ridge on the pen goes into the groove on the pen stock.

If the pen is not loaded correctly it will cause pen exchange errors. Be sure to load the pen correctly as shown below.

(2)

(1)
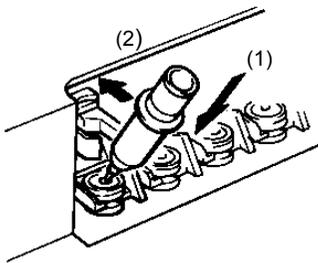
* When using ink pen
Before loading into the pen stock, write lightly on a scrap of paper and check ink flow.
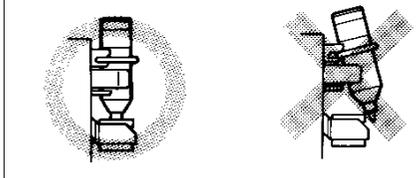
After use, remove the pens from the pen stock, cap securely, and store. Ink pen dry out especially rapidly, which can cause the ink at the tip to harden and interfere with normal use later.

Loading the Paper

* When using the plotter for the first time, be sure to peel the protective sheet (a sheet of thin, semitransparent vinyl) off the drawing board.

● Touching the surface of the paper with the hands may reduce plot quality because of the adsorption of skin oils.
● Adsorptive force may vary according to the type of paper. Adsorption of two or more sheets of paper is not possible.
● Adsorptive force is reduced in areas where temperature is extremely low. At such times, the paper will adsorb is allowed to stand for a short while (10 seconds) after placement on the drawing board. (DXY-1350A only)
● When opening a new package of paper, allow the paper to air for 30 minutes to an hour. This airing helps prevent contraction or expansion of the paper due to humidity or temperature.

How to Load Paper on the DXY-1350A

1

Make sure the PAPER HOLD LED is not lit.
Place the paper according to its size as shown in the figure. (See a description of the plotting area.)

ISO A3

ISO A4

ANSI B

ANSI A

Approx. 10 mm (3/8")

Approx.15 mm (9/16")
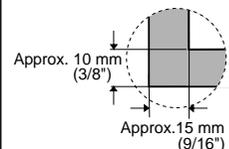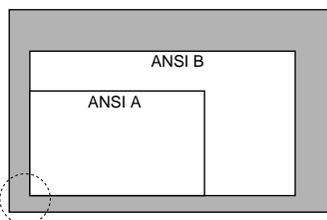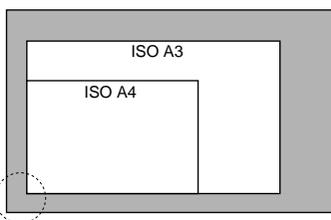
2

After positioning, turn on the **[PAPER HOLD]** key to secure the paper to the drawing board.

3

Remove bubbles and wrinkles from the paper by wiping with a dry cloth.
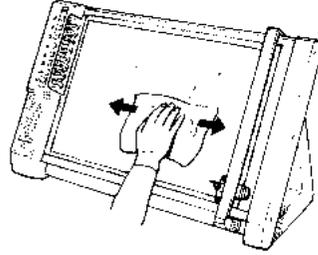
How to Load Paper on the DXY-1150A

1

As shown in the figure, use the paper clip on the left side of the unit to align the sheet of paper evenly with the drawing board.

Paper clip
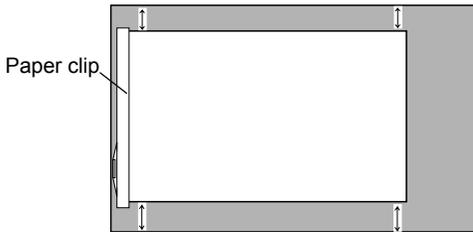
2

Remove bubbles and wrinkles from the paper, and install the metal plate on the left side of the sheet.

Metal Strip
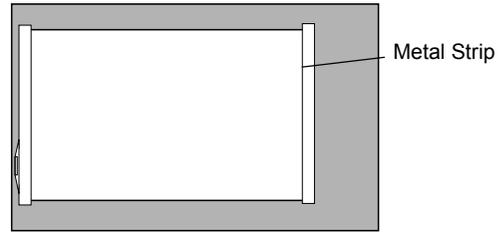
3

Install the metal plates at the top and bottom in the same way.
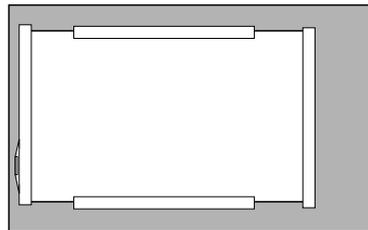
Rubber Positioning Stickers and Transparent Positioning Sticker

After plotting has been carried out a few times and the position of the paper becomes apparent, affix the transparent and rubber positioning stickers included with the plotter to the drawing board. This enables paper to loaded at the same place every time.

Transparent positioning sticker

Rubber positioning sticker
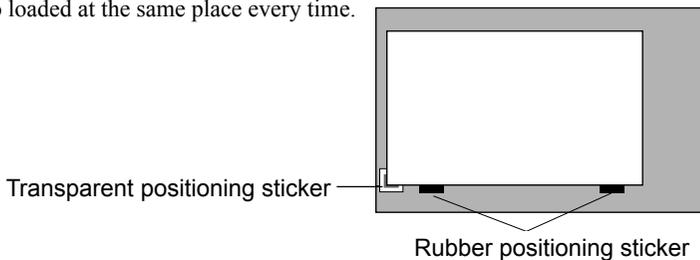
Self-testing

NOTICE | The arm and pen carriage move when the unit is switched on and while performing plotting --keep hands and objects away at these times.

Self-test Mode

A self-test can be carried out to check whether the DXY is functioning correctly. When doing this, the plotter does not have to be connected to the computer.

1. Load the pens included with the plotter in pen stocks 1 through 3. (See "Loading Pens.")
2. Turn on the power switch while holding down the **[ENTER]** key.
3. The pen carriage moves to the upper right of the main unit, and VIEW is enable (the VIEW LED lights up.)
4. Load an A3-size sheet of paper. (For instructions on loading paper, see "Loading the Paper" on pages 8 and 9 for the DXY-1350A or on page 9 for the DXY-1150A.)
5. Press the **[VIEW]** key to disable VIEW.
6. The DXY then plots the self-test pattern.
   When the pen is returned to the pen stock and the carriage moves to the upper right of the main unit, the self-test is finished.
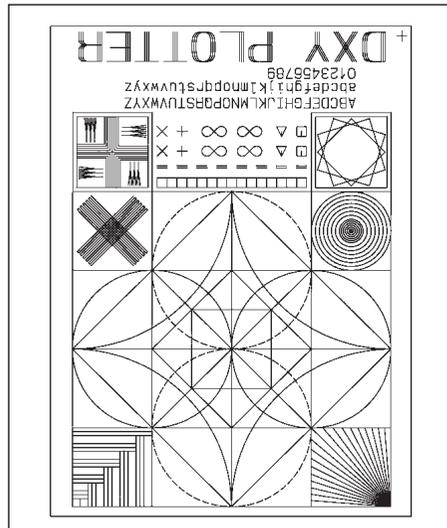
This is actually the bottom of the page.

The self-test plot is slightly larger than A4 size, so be sure to use A3-size paper.

Installing the DRIVER

The DXY-1350A/1150A comes with drivers for Windows 3.1 and Windows 95. Be sure to install the correct driver for your operating system.

About Installation

Be sure to read the notes on how to install the driver in the file Readme.doc on the Setup disk. In addition to an explanation of installation and setup methods, this file contains the latest information about the driver, the operating environment, and other important matters. You can view this file with a text editor such as Notepad.

Downloading Plot Data

Plot data is sent from the host computer (the program) to the DXY and plotted out.

Make the settings described below to match the program that you're using.

This example describes the general values for output (plotting). If you need detailed information about output methods, please see the documentation for the software you're using.

Outputting Data from a Windows-based Program

When you are asked to select a printer, choose the DXY-1350A or DXY-1150A driver. At the driver setup screen, make the setting for paper size, pen type, and so on.

Connecting with a Serial Cable

For the driver's port setting, set Flow control to [Hardware.]

For more information about other communication parameters, see "About the Settings for Communication Parameters."

Setup Screen for Windows 95
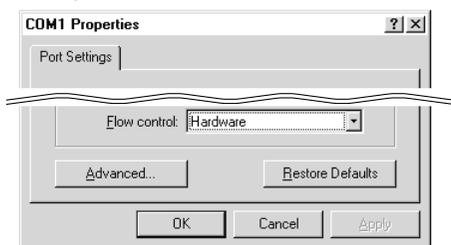
Setup Screen for Windows 3.1
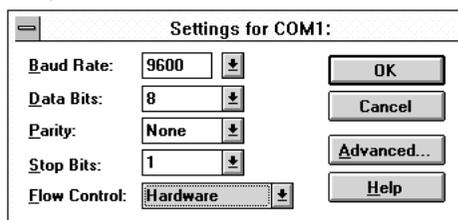
Selecting the Instruction Set

If you're using the driver for the DXY-1350A/1150A, select RD-GL I as the instruction set. See "DIP Switches" for information on how to make this setting.

Outputting Data from an MS-DOS-based Program

When outputting data from a program, make the settings for the values described below.

Sample Application Software Output Device Selection Screen

Select DXY-1350A, or DXY-1150A. If these selections are not available, choose any model in the DXY series. Also, if RD-GL II has been selected as the instruction set, choose either the DPX series, GRX series, or GSX series.

Select either the parallel (Centronics) or the serial (RS-232C) interface. Choose the one that the host computer and the DXY are connected by.
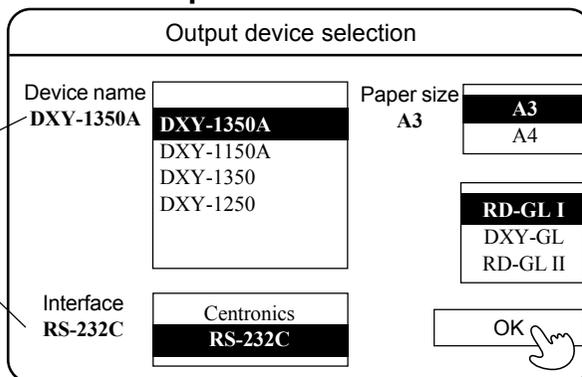
Select the paper size you will use.

Select the instruction set to be used.

Settings for Communication Parameters

Using a serial (RS-232C) cable to connect the DXY with the computer enables the Auto-Protocol function, which makes it unnecessary to set communication parameters on the DXY.

About Auto Protocol

Because the DXY can automatically determine communication parameters, plotting can be carried out simply by downloading the plot data from the computer.

In order for the parameter settings to be made automatically, make sure that DIP switch **[SW2-8]** on the back of the machine is set to **[AUTO.]**

Also, if the software is changed while in use, turn the power to the DXY off and then on again to enable the Auto Protocol function to make the automatic determination of the communication parameters.

Communication parameters can also be set without using Auto-Protocol, by follow the method described below.

- Setting DIP switch **[SW2-8]** to **"FIX"** disables the Auto-Protocol function. The parameters in effect when this is done are a **baud rate (serial transmission rate) of 9600, using and 7-bit data length with EVEN parity** checking and one stop bit.

- Auto-Protocol can also be disabled by switching on the power while holding down a **position** key and the **[ENTER]** key. The transmission rate is determined by which **position** key is held down. Communication parameters other than transmission rate are determined by the setting for DIP switch **SW 2-8**.

   * These settings are lost when the power is switched off, and must be made again after powerup.

Setting the baud rate

1200	**Turn on** the power while holding down the ▶ and (ENTER) keys.
2400	**Turn on** the power while holding down the ▼ and (ENTER) keys.
4800	**Turn on** the power while holding down the ◀ and (ENTER) keys.
9600	**Turn on** the power while holding down the ▲ and (ENTER) keys.

Setting communication parameters other than baud rate

DIP switch **[SW 2-8]** set to **"AUTO"**:
8-bit data length, no parity, 1 stop bit

DIP switch **[SW 2-8]** set to **"FIX"**:
7-bit data length, EVEN parity, 1 stop bit

After Plotting

1. Remove the paper.

DXY-1350A: Press the **[PAPER HOLD]** key to release the electrostatic adsorption and remove the paper.
DXY-1150A: Remove the paper clip, release the metal strips, and remove the paper.

2. Turn off the DXY.

Switch off the power to the DXY. If the plotter will not be used for a long time, the electrical cord should also be unplugged.

3. Remove the pens.

Remove all pens from the pen stock. Cap and store the pens after use.

Care and Maintenance

NOTICE   Be sure to turn off the power to the DXY before cleaning.

Never attempt to oil or lubricate the mechanism.

The drawing board for the DXY-1350A is an electrostatic pad. When cleaning the drawing board, never use water, silicone cloth, neutral detergent, solvent, or chemically-treated cloth. Such materials can permanently degrade the board's electrostatic adhesive force.

Cleaning the Main Unit

If the unit becomes dirty, wipe gently using a cloth moistened with water or anhydrous alcohol.

Cleaning the Drawing Board

Gently wipe with a soft cloth. If soiling is severe or the adsorptive force of the drawing board is weak (DXY-1350A only), wipe gently using a cloth moistened with ethyl alcohol. The DXY-1350A use an electrostatic adsorption drawing board, which must never come in contact with water, neutral detergents, solvents, silicone cloth, or any other type of chemically treated wiper cloths, as these will irrevocably diminish the electrostatic adsorptive force.

Cleaning the Pen Cap Rubbers

Ink buildup on the pen cap rubbers may soil plots. Remove the pen cap rubbers and wash with water. Replace them on the pen stock after allowing to dry completely (out of direct sunlight).

Explanation of Functions and Operation

The DXY has a range of functions that can be performed using the keys on the control panel. This section describes how to use these functions.

< Replotting (DXY-1350A Only) >

1. Before downloading the plot data, press the **[REPLOT MODE]** key. The REPLOT MODE LED lights up.
2. Use the computer software to download the plot data.
3. Load a sheet of paper and press the **[REPLOT]** key.
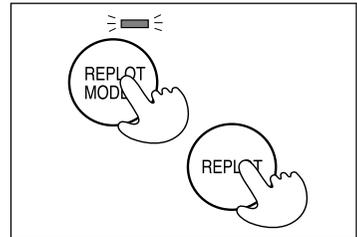
< Erasing Data in the Plotter >

1. Press the **[VIEW]** key.
   The pen carriage moves to the upper right of the main unit and stops.
2. While holding down the **[ENTER]** key, press the ▶ key.
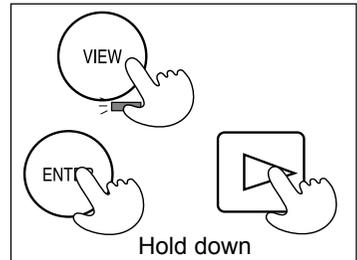
< Stopping a Plot >

1. Press the **[VIEW]** key.
   The pen carriage moves to the upper right of the main unit and stops.
2. Use the computer software to stop sending plot data to the DXY.
3. While holding down the **[ENTER]** key, press the ▶ key.
   Plot data remaining in the plotter is deleted.
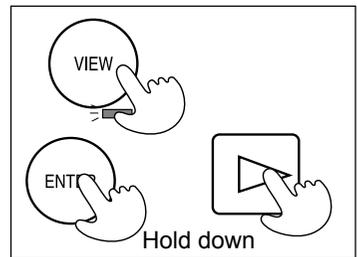
< Setting Scaling Points (P1 and P2) >

1. Use the ◀ , ▶ , ▲ , ▼ and **[FAST]** keys to move the pen carriage to the position for setting P1 or P2.
2. While holding down the **[ENTER]** key, press the **[P1]** or the **[P2]** key.
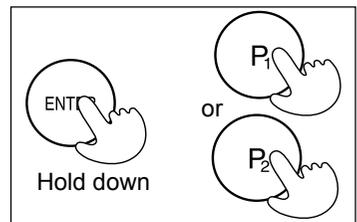
< Enabling the Non-buffer Mode >

In the Non-buffer mode, data downloaded from the computer is plotted simultaneously, with no data stored in the buffer within the DXY. This can be handy when debugging a program or testing connections.

1. Turn on the power while holding down the ◀ key.

< Enabling the List Mode >

In the List mode, data downloaded from the computer is printed as-is, without processing. This is handy for confirming program content.
1. Load paper and a pen (pen No. 1).
2. Turn on the power while holding down the **[VIEW]** key. The pen carriage grasps the pen, moves to the upper left, and awaits data from the computer.
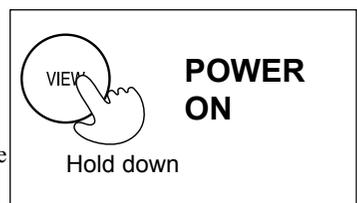
This section describes the pens optionally available for use with the DXY, as well as the DXY's pen-related functions. Compatibility exists for pens and paper. Please refer to the information contained here to select combinations with good compatibility.

By selecting optimum conditions for the pen and paper that are used, the DXY can achieve more accurate plots.

OHP Mode (Pen speed is controlled at 100 mm (13-15/16")/sec.)

Select this mode when using standard ceramic pens to make plots on OHP transparency sheets.
Turn on the power while holding down the **[FAST]** key.

Ink Pen Mode (Pen speed is controlled at 100 mm (13-15/16")/sec.)

Use this mode when plotting with MPP pens or refillable ink pens.

Turn on the power while holding down the ▼ key on the control panel.

Cutting Mode (Cutting Speed Controlled at 10 mm (3/8")/sec)

This mode is selected when using the DXY to carry out cutting. Use the DIP switches on the back of the machine to set the cutting offset, then turn on the power to the unit. (See "DIP Switches" for details on the cutting function.)

Setting Pen Speed (DXY-1350A Only)

While holding down the **[PEN SPEED]** key, press any one of the **[PEN SELECT]** keys from 1 to 8. The chart below shows the pen speeds that can be set with these keys. This function is handy when the optimum speed for the pens being used is known. Pen speed is set to the same value for all pens.

Pen No	1	2	3	4	5	6	7	8
Pen Speed	30 mm/sec 3/16"	40 mm/sec 9/16"	60 mm/sec 2-3/8"	90 mm/sec 3-9/16"	120 mm/sec 4-3/4"	160 mm/sec 6-5/16"	220 mm/sec 8-11/16"	420 mm/sec 16-9/16"
OHP Mode	30 mm/sec 3/16"	40 mm/sec 9/16"	60 mm/sec 2-3/8"	90 mm/sec 3-9/16"	100 mm/sec 3-15/16"	100 mm/sec 3-15/16"	100 mm/sec 3-15/16"	100 mm/sec 3-15/16"
Ink Pen Mode	30 mm/sec 3/16"	40 mm/sec 9/16"	60 mm/sec 2-3/8"	90 mm/sec 3-9/16"	120 mm/sec 4-3/4"	160 mm/sec 6-5/16"	200 mm/sec 7-7/8"	200 mm/sec 7-7/8"

Changing Maximum Plotting Speed

The DIP switches on the back of the DXY can be used to change the maximum plotting speed. When shipped from the factory, maximum plotting speed is set at 420 mm (16-9/16")/sec (all directions), but when set to **[FAST]** , maximum plotting speed is 600 mm (23-5/8")/sec (45° orientation).

Pen Type Switch

The pen type switch on the side of the main unit can be used to select **[Long]** or **[Short]** to match the pen holder in use. The descriptions of the different pens that are available also list the type to be set, so be sure to select the appropriate pen type.

Auto Pen-up and Auto Pen-return Functions

To prevent ink from running or blotting the paper, the DXY features an Auto Pen-up function, which automatically lifts the pen during plotting when approximately three seconds elapse with no data received from the computer. Moreover, is approximately 50 seconds pass with no plot data received, the Auto Return function automatically returns the pen from the carriage to the pen stock. Because there is a pen cap rubber fitted into the pen stock, this can prevent the pen tip from drying out.

Standard Ceramic Pen

Features

The pen tip is a ceramic tube, with ink flowing through it to form the line

Because pen tip diameter is uniform, line thickness is uniform from start until the ink runs out

Pen widths of 0.25 mm (0.00984"), 0.35 mm (0.0138"), 0.50 mm (0.50 mm), and 0.70 mm (0.0276") are available, allowing use for plots or business graphics.

Water-soluble ink available in eight colors (black, red, blue, green, orange, pink, brown and purple)

NOTE

Because these are dye-based inks, plots made with these pens will fade if left exposed to sunlight for long periods. Store plots made using these pens out of direct sunlight.

Pen cap rubber orientation	Plotting distance (with our standard paper)
	0.25 mm : 2000 m (0.00984":78740") 0.35 mm : 1300 m (0.0138" :51181") 0.50 mm : 700 m (0.0197" :27559") 0.70 mm : 400m (0.0276" :15748")
Applicable paper	
High-quality paper, tracing paper	
Pen type	Short

Water Based Fiber Tipped Pen

Features

Excellent coloration for colorful illustrations

Comes in eight colors (black, red, blue, green, brown, purple, pink, orange), and two pen tip thicknesses (0.3 mm (0.0118") and 0.6 mm (0.0236"))

NOTE

Long-term use will cause the pen tip to wear, causing a gradual increase in line width.

Because these are dye-based inks, plots made with these pens will fade if left exposed to sunlight for long periods. Store plots made using these pens out of direct sunlight.

Pen cap rubber orientation	Plotting distance (with our standard paper)
	0.3 mm : 400 m (0.0118":15748") 0.6 mm : 300 m (0.0236" :11811")
Applicable paper	
High-quality paper, coated paper, tracing paper water based OHP film	
Pen type	Short

32 Color Plotter Pens

Features

Variety of colors and shades for colorful expression

Optimum for illustrations, graphs and graphics

Fiber pen tip for simple use

Two pen tip thicknesses - 0.3 mm (0.0118") and 0.6 mm (0.0236")

Following pen colors available:

Pen cap rubber orientation	Plotting distance (with our standard paper)
	0.3 mm : 400 m (0.0118":15748") 0.6 mm : 300 m (0.0236 :11811")
Applicable paper	
High-quality paper, coated paper, tracing paper water based OHP film	
Pen type	Short

Black	Brown	Red	Yellow	Green	Blue	Violet	Magenta
Dark Brown	Mahogany	Poppy Red	Golden Yellow	Forest Green	Cobalt Blue	Dark Purple	Purple
Grey	Pine	Orange	Lime Green	Kelly Green	Sky Blue	Mauve	Rose Pink
Warm Grey	Beige	Peach	Lemmon Lime	Olive Green	Ice Blue	Turquoise	Pale Pink

NOTE

Long-term use will cause the pen tip to wear, causing a gradual increase in line width.

Because these are dye-based inks, plots made with these pens will fade if left exposed to sunlight for long periods. Store plots made using these pens out of direct sunlight.

Thick Water Based Fiber Tipped Pen

Features

Thick water-based fiber tipped pen draws a 2 mm thick line
Comes in eight colors (black, red, blue, green, orange, pink, brown, purple)
Optimum for advertising and illustration, because large areas can be colored quickly

NOTE

Plots made with these pens will fade if left exposed to sunlight for long periods. Store plots made using these pens out of direct sunlight.

Pen cap rubber orientation	Plotting distance (with our standard paper)
	2 mm : 100 m (1/16":3937")
Applicable paper	
High-quality paper, coated paper, tracing paper Water based OHP film	
Pen type	Short

MPP Pen

Features

No need to refill ink, and maintenance much simpler than refillable ink pens.
Plots sharp, attractive lines, with no change in line thickness or ink flow even over long periods of time.
Non-refillable ink pens come in paper and film types. Select the ink pen appropriate for the media you will be using.
When the film ink pen is used on film, the output can be erased with a commercially-available drafting ink eraser.
When the paper ink pen is used on tracing paper, the output can be erased with a commercially available ink eraser (unless paper moisture absorption is high).

Pen cap rubber orientation	Plotting distance (with our standard paper)
	0.25 mm : 2500 m (0.00984":98425") 0.35 mm : 1800 m (0.0138" :70866") (for paper) 0.50 mm : 1400 m (0.0197" :55118") 0.70 mm : 800 m (0.0276" :31496")
Applicable paper	
For paper: High-quality paper, tracing paper **For film:** Drafting film	
Pen type	Long

Refillable Ink Pen

Features

The same pen can be refilled and used any number of times.
Plots sharp, attractive lines, with no change in line thickness or ink flow even over long periods of time.
Refillable ink pens come in paper and film types. Select the ink pen appropriate for the media you will be using.
When the film ink pen is used on film, the output can be erased with a commercially-available drafting ink eraser.
When the paper ink pen is used on tracing paper, the output can be erased with a commercially available ink eraser (unless paper moisture absorption is high).

Pen cap rubber orientation	Plotting distance (with our standard paper)
	0.35 mm: 300 m (0.0138":11811") Pen tip will wear out in 6000 m (236220") to 10000 m (393700") of travel
Applicable paper	
For paper: High-quality paper, tracing paper **For film:** Drafting film	
Pen type	Long

Paper

This chapter describes the optional paper that can be used with the DXY. Refer to the table below in paper selection.

Paper type	Characteristics	Compatible pens	Dimensional stability
High-quality paper	This is the most economical white paper. It tends to contract and expand fairly easily, and ink will spread slightly, making it inappropriate for applications requiring high precision.	○ Refillable ink pen for paper ○ MPP pen for paper ○ 32 color plotter pens ◎ Water based fiber tipped pen ○ Thick water based fiber tipped pen ○ Standard Ceramic pen	×
Coated paper	Whiteness is higher than high-quality paper. This paper shows minimal contraction or expansion due to changes in environmental factors such as humidity.	○ Water based fiber tipped pen ○ Thick water based fiber tipped pen ◎ 32 color plotter pens	×
Tracing paper	Common natural type tracing paper. Suited to blueprints. Ink pen is the best pen type.	◎ Refillable ink pen for paper ◎ MPP pen for paper ○ 32 color plotter pens ○ Water based fiber tipped pen ○ Thick water based fiber tipped pen ○ Standard Ceramic pen	×
Drafting film	Polyester film, with a matte finish on both sides. Has low expansion and contraction, and shows small change over time, making it optimum for jobs where precision is essential. Use optional ink pens for film.	◎ Refillable ink pen for film ◎ MPP pen for film	◎
Water bas dOHP film	This is transparent film for use with overhead projector (OHP) devices.	◎ 32 color plotter pens	◎
Oil basedOHP film		◎ Oil based fiber tipped pen	◎

◎ Optimum   ○ Good

■ **Paper expands and contracts by absorbing the moisture in the air.**
  Always plot after getting the paper accustomed to the ambient temperature and humidity. This optimum time will vary with the specific paper type, but generally 30 to 60 minutes after removal from the paper bag is appropriate.
■ **Oil on the paper surface may cause poor performance**
  Take care when loading the paper to prevent transfer of oils or dirt from your hand to the paper surface.

Plot quality and paper

Plot quality changes with the following conditions:

Condition	Effect
Ambient temperature and humidity	Paper expansion and contraction causes offset and ink blotting
Pen speed	The line will be faint if the pen speed is too high
Pen force	Pen and paper will be damaged if set too high, and line will be faint is set too low
Paper type	Moisture absorption characteristics and surface roughness will affect line darkness, coloration and pen clogging.

When using paper not supplied by Roland DG Corp., observe the following points in making your selection:
■ Does the ink work well with the paper? (moisture absorption characteristics, coloration)
■ Is the ink faint? (at the rated pen speed)
■ Does the ink spread? (line thickness should not change with time)
■ Speed of drying (If one line crosses another, ink should not mix)
■ Does pen clog?
■ Other factors such as paper strength, etc.

Plotting Area

The maximum size of the plotting area varies according to the selected instruction set and operation steps, even when using the same size of paper. For an explanation of how to load and position paper, see "Loading the Paper" on pages 8 and 9.

● Size-reduced Plotting

The settings of the DIP switches on the back of the main unit of the DXY can be changed to reduce plot size and make ISO A0, A1, and A2-size plots on A3-size paper (or ANSI E, D, and C-size plots on ANSI B-size paper). This function is only effective when RD-GL II is selected as the instruction set and paper size is set at ISO A3 (or ANSI B) using the DIP switches. For details, see the plotting areas for size-reduced plotting that are given on the following page.

● Expand Mode

The DIP switch settings of the DXY can be used to set the plotting area. When DXY-GL or RD-GL I has been selected for the instruction set and the Expand mode is turned on, the size of the expanded plotting area matches ANSI B and ISO A3. When RD-GL II is chosen, the size of the plotting area when expanded varies according to paper size. The table below shows the size of the plotting area when the Expand mode is enabled.
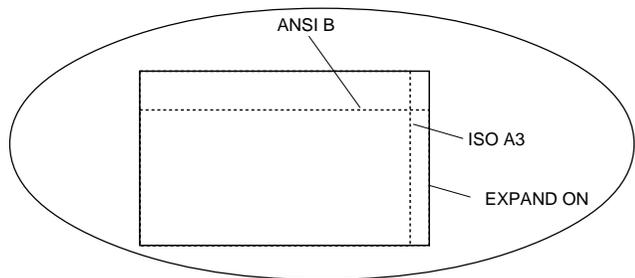
● RD-GL I, DXY-GL (1 step/0.025 mm)

Paper size	Maximum plotting area (mm) / (inch)	Maximum plotting area (coordinates)	DIP switch settings		
			SW1-1	SW1-2	SW1-5
ISO A3	403.95 × 276 15-7/8" × 10-13/16"	16158 , 11040	OFF	OFF	OFF
ISO A4	276 × 193.025 10-13/16" × 7-9/16"	11040 , 7721	OFF	ON	OFF
ANSI B	416 × 259.125 16-3/8" × 10-3/16"	16640 , 10365	ON	OFF	OFF
ANSI A	259.125 × 199.05 10-3/16" × 7-13/16"	10365 , 7962	ON	ON	OFF
EXPAND	431.8 × 297 17" × 11-11/16"	17272 , 11880	Varies according to paper size		ON

● DXY-GL (1 step/0.1 mm)

Paper size	Maximum plotting area (mm) / (inch)	Maximum plotting area (coordinates)	DIP switch settings		
			SW1-1	SW1-2	SW1-5
ISO A3	403.9 × 276 15-7/8" × 10-13/16"	4039 , 2760	OFF	OFF	OFF
ISO A4	276 × 193.0 10-13/16" × 7-9/16"	2760 , 1930	OFF	ON	OFF
ANSI B	416 × 259.1 16-3/8" × 10-3/16"	4160 , 2591	ON	OFF	OFF
ANSI A	259.1 × 199.0 10-3/16" × 7-13/16"	2591 , 1990	ON	ON	OFF
EXPAND	431.8 × 297 17" × 11-11/16"	4318 , 2970	Varies according to paper size		ON

● RD-GL II

Paper size	Maximum plotting area (mm) / (inch)	Maximum plotting area (coordinates)	DIP switch settings		
			SW1-1	SW1-2	SW1-5
ISO A3	390 × 267 (15-5/16" × 10-1/2")	± 7800, ± 5340	OFF	OFF	OFF
EXPAND	420 × 297 (16-1/2" × 11-11/16")	± 8400, ± 5940			ON
ISO A4	267 × 180 (10-1/2" × 7-1/16")	± 5340, ± 3600	OFF	ON	OFF
EXPAND	297 × 210 (11-11/16" × 8-1/4")	± 5940, ± 4200			ON
ANSI B	401.8 × 249.4 (15-13/16" × 9-13/16")	± 8036, ± 4988	ON	OFF	OFF
EXPAND	431.8 × 279.4 (17" × 11")	± 8636, ± 5588			ON
ANSI A	249.4 × 185.9 (9-13/16" × 7-5/16")	± 4988, ± 3718	ON	ON	OFF
EXPAND	279.4 × 215.9 (11" × 8-1/2")	± 5588, ± 4318			ON

● Plotting areas for size-reduced plotting

Paper	Normal Mode		Expand ON	
	Paper size	Size-reduced plotting area	Paper SIze	Size-reduced plotting area
ISO A0	1159 mm × 811 mm (45-5/8" × 31-7/8") (-23180, -16820) (23180, 16220)	390 mm × 267 mm (15-5/16" × 10-1/2") (When reduced to ISO A3 size)	1189 mm × 841 mm (46-3/4" × 33-1/16") (-23780, -16820) (23780, 16820)	420 mm × 297 mm (16-1/2" × 11-11/16") (When reduced to ISO A3 size)
ISO A1	811 mm × 564 mm (31-7/8" × 22-3/16") (-16220, -11280) (16220, 11280)		841 mm × 594 mm (33-1/16" × 23-3/8") (-16820-, 11880) (16820, 11880)	
ISO A2	564 mm × 390 mm (22-3/16" × 15-5/16") (-11280, -7800) (11280, 7800)		594 mm × 420 mm (23-3/8" × 16-1/2") (-11880, -8400) (11880, 8400)	
ANSI E	1087.6 mm × 833.6 mm (42-13/16" × 32-13/16") (-21752, -16672) (21752, 16672)	401.8 mm × 249.4 mm (15-13/16" × 9-13/16") (When reduced to ANSI B size)	1117.6 mm × 863.6 mm (44" × 34") (-22352, -17272) (22352, 17272)	431.8 mm × 279.4 mm (17" × 11") (When reduced to ANSI B size)
ANSI D	833.6 mm × 528.8 mm (32-13/16" × 20-13/16") (-16672, -10576) (16672, 10576)		863.6 mm × 558.8 mm (34" × 22") (-17272, -11176) (17272, 11176)	
ANSI C	528.8 mm × 401.8 mm (20-13/16" × 15-13/16") (-10576, -8036) (10576, 8036)		558.8 mm × 431.8 mm (22" × 17") (-11176, -8636) (11176, 8636)	

- Refer to the above chart when performing size-reduced plotting. Coordinate values are given beneath the indications in millimeters.
- When any member of the DPX Series has been selected as the output device for the computer, the position of the origin point differs from the DXY. For this reason, data outside the coordinates is not plotted when size-reduced plotting is carried out.

DIP Switches

* DIP switches settings must be made only when the power is turned off.

The DIP switches on the back of the main unit can be used in various combinations to enable a variety of plotting conditions. Please change these settings to match your needs. These are all set to OFF when the DXY-1350A/1150A is shipped from the factory.
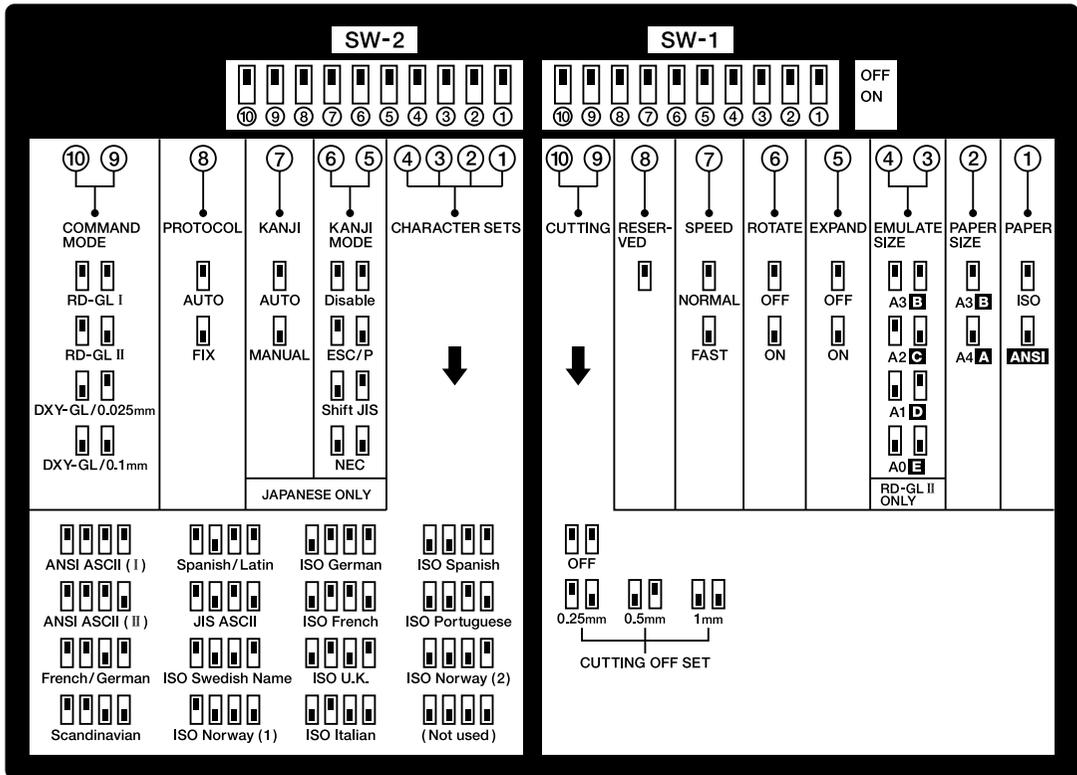
SW 1-1   ISO or ANSI
SW 1-2   Paper size

SW 1-1 selects either ANSI or ISO size. SW 1-2 selects ISO A3 or A4 (ANSI B or A) size paper.

SW 1-3 and -4 Size-reduced plotting

Enables plots for ISO A0, A1, or A2 paper size to be reduced in size for plotting on ISO A3-size paper. Change the switch settings to match the original size. Size-reduced plotting is enabled only when [A3 B] is selected with SW 1-2 and [RD-GL II] is chosen using SW 2-9 and -10.

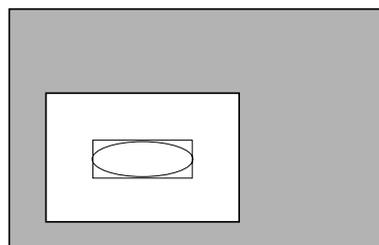## SW 1-5   Expanded plotting area

Set this switch to ON when an expanded plotting area is desired. For details, see " Plotting Area " .

SW 1-6   Plot rotation

When this switch is set to ON, the normal plot orientation is rotated 90°.
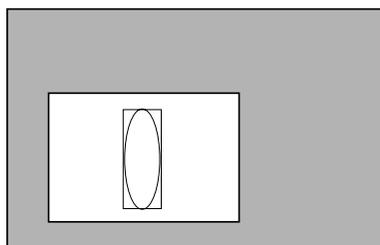
When OFF

When ON

SW 1-7   Plotting speed

This selects plotting speed. When shipped from the factory, this is set to [NORMAL], for a maximum plotting speed of 420 mm/sec in all directions. When [FAST] is selected, maximum plotting speed is set at 600 mm/sec (45° orientation).

SW1-9, -10 Performing Cutting

With the purchase of the optional Blade Holder Set (DXY-BHS), the DXY can be used to cut special sheets. In order to for corners to be cut accurately, the tip of the blade requires an offset. This switch is used to set the appropriate offset value for the blade. When using the blades included in the Blade Holder Set, this should be set to 0.25 mm.

Cautions When Performing Cutting

• Make sure that the installation of the DXY is flat and level.
• The DXY cannot be used to cut fluorescent or thick sheets.
• Pen changing is not performed when in the cutting mode. Be sure that the blade holder is installed in the pen carriage.
• When carrying out cutting, be sure to spread out a cutting-use protective pad to prevent damage to the drawing board.
• When cutting, use cellophane tape to secure the sheet and cutting-use protective pad in place. Because the metal plates and paper clips for the DXY-1150A make strike and damage the blade during cutting, use of these should be avoided.

SW 2-1 to -4   Character set selection

The DXY has 19 character sets, and this selects the one enabled when power is turned on. See "Character Sets" for a list of available character sets.

SW 2-8   Auto Protocol function

Set this to [AUTO] for automatic determination of communication parameters. When set to [FIX], communication parameters are a bit rate of 9,600 baud, even parity, data length of 7 bits, and one stop bit.

SW 2-9 and -10   Instruction set selection

Make this setting to correspond to the instruction set in use. When using DXY-GL, set the operation step at 1 step/ 0.1 mm (0.00394") or 1 step/0.025 mm (0.000984").
When performing output with the driver included with the DXY-1350A/1150A, select RD-GL I.

What to Do If...

If the DXY Doesn't Run...

Is the DXY power on?

  Turn on the power.

Is the DXY operating incorrectly

  Follow the procedure described under " Self-testing " to execute a self-test. If the self-test finds a problem,
  check to make sure that the problem is not due to the computer or the software.

● Computer

Is the computer set up correctly?

  Check the following items:

     • DIP switches   • Memory switches   • Interface board   • Other

  Read the computer user's manual and set it up correctly.

● Connection cable

Are the computer and the plotter linked with the right cable?

  The type of cable you need is determined by your computer and the software you are using. Even if the
  computer is the same, running different software may require a different cable. Use the cable specified in your
  software.

Is the cable making a secure connection?

  Connect securely.

● Software

Is the OS set up correctly?

  Check the following items:

     • Output port selection   • Output device selection   • Output port open   • Other

  Check the OS user's manual and set it up correctly.

Are the application software settings correct?

  Check the following items:

     • Output device specification (select a plotter name that matches the instruction system. If the wrong
  plotter is selected an incorrect instruction may be output, resulting in an error).

     • Communication parameters

     • Other

  Check the software user's manual and set it up correctly.

Pen is not grasped or returned normally

Is the pen loaded correctly?

  Please refer to "Loading the Pens" to install the pens correctly.

Is the pen cap rubber installed so that it is oriented correctly?

  Install the pen cap rubber correctly as described.

Plot quality is poor

Is the paper of the recommended type?

Refer to the chart shown in " Paper " and load a paper type that is suitable for the DXY.

Is the paper loaded correctly?

Read " Loading the paper ", and load the paper correctly.

Do the pens match the paper type?

Read " Pens " and "Paper ", and use an appropriate type of pen.

Are the DIP switches set for the Cutting Mode?

When plotting with a pen, be sure to set DIP switches SW1-9 and SW1-10 to OFF.

If DIP switches SW-1-9 and SW-1-10 are not both set to OFF, the DXY remains in the Cutting Mode. Attempting pen plotting while the Cutting Mode is enabled will result in poor output quality for text, circles, and other short lines. This is because the DXY is performing processing that enables a blade to cut the cutting sheet smoothly.

Plot size is wrong

If application software is being used, is the setting for the output size correct?

Read the operation manual for the software you are using, and make the correct settings for the plot size.

Are the DIP switch settings correct?

The DXY can reduce plot size to print ISO A0, A1, or A2-size plot data on A3-size paper (or ANSI E, D, or C-size data on B-size paper). Size-reduced plotting cannot be performed on A4-size paper (or ANSI A-size paper). To make size - reduced plot, see " Plotting Area " and "DIP Switches ".

Plotting position and range are different

If application software is being used, is the setting for the output position and range correct?

Read the operation manual for the software you are using, and make the correct settings for the output position and range.

Is the same instruction set selected for the computer and the DXY?

The settings for the computer and the DXY do not match. If you have selected either our DPX series, GRX series, or GSX series for the computer, select RD-GL II for the DXY. If our DXY series has been selected, choose either RD-GL I or DXY-GL for the DXY. In particular, when DXY-980A/880A has been selected, the setting for DXY-GL/0.1 mm (0.00394") is made. See "DIP Switches " for details.

Adsorptive force is poor (DXY-1350A only)

Did your remove the protection vinyl on the drawing board?

The protection vinyl could reduce adsorptive force, and you should remove it before use.

Serial data is not received correctly when using Auto-Protocol

Serial data may not be received correctly in cases such as these:
- Reception of serial data is started while in View mode
- Reception of serial data is started while the pen carriage is in motion because of a control-panel operation
Also, the unit may be unable to determine the protocol when the amount of serial data being input is small (approximately ten characters or less, depending on the header data). The pen carriage does not move and the control panel is inoperative until the protocol is determined.

If this happens, go to the "Sending Plotting Data" section and refer to "Settings for Communication Parameters" to make fixed settings for the serial port's baud rate and format.

List of DXY-GL Related Instructions

The list provides the instruction compatibility of the DXY-1350A/1150A with the DXY-GL I instruction system and the parameters of these instruction.

○ : Compatible.
● : Ignored.
✕ : Incompatible.

Instructions		Compati-bility	Format	Parameter		Range [Default value]
A	Circle center	○	A x,y	x,y	Center coordinate	: -32768.0000—+32767.4999
B	Line scale	○	B l	l	Pitch of dotted line	: 0—32767.4999 [80]
C	Circle	○	C x,y,r,ø1,ø2(,ød)	x,y	Center coordinate	: -32768.0000—+32767.4999
				r	Radius	: -32768.0000—+32767.4999
				ø1	Start angle	: -32767°—+32767°
				ø2	End angle	: -32767°—+32767°
				ød	Resolution	: 1.0000°—179.9999° [5°]
D	Draw	○	D x1,y1(,x2,y2,...,xn,yn)	xn,yn	Absolute coordinate	: -32768.0000—+32767.4999
E	Relative circle	○	E r,ø1,ø2(,ød)	r	Radius	: -32768.0000—+32767.4999
				ø1	Start angle	: -32767°—+32767°
				ø2	End angle	: -32767°—+32767°
				ød	Resolution	: 1.0000°—179.9999° [5°]
G	A + Circle	○	G r,ø1,ø2(,ød)	r	Radius	: -32768.0000—+32767.4999
				ø1	Start angle	: -32767°—+32767°
				ø2	End angle	: -32767°—+32767°
				ød	Resolution	: 1.0000°—179.9999° [5°]
H	Home	○	H	none		
I	Relative draw	○	Δx1,Δy1(,Δx2,Δy2...,Δxn,jyn)	Δxn,Δyn	Relative coordinate	: -32768.0000—+32767.4999
J	Pen change	○	J n	n	Pen number	: 0—8 [1]
K	A + %	○	K n,l1,l2	n	Percentage with respect to 0% of the uppermost part	: -9101—+9101
				l1	Distance of the end position from the center	: -32768.0000—+32767.4999
				l2	Distance of the starting position from the center	: -32768.0000—+32767.4999
L	Line type	○	L p	p	Line type	: -5—+5 [0]
M	Move	○	M x1,y1(,x2,y2,...,xn,yn)	xn,yn	Absolute coordinate	: -32768.0000—+32767.4999
N	Mark	○	N n	n		: 1—15
P	Print	○	P c1c2...cn	cn	Character	
Q	Alpha rotate	○	Q n	n	Angle(90°)	: 0—3 [0]
R	Relative move	○	R Δx1,Δy1(,Δx2,Δy2...,Δxn,Δyn)	Δxn,Δyn	Relative coordinate	: -32768.0000—+32767.4999
S	Alpha scale	○	S n	n	Character size	: 0—127 [3]
T	Hatching	○	T n,x,y,d,t	n	Slection of types of rectangle and hatching	: 0—3
				x,y	X axis and Y axis length	: -32768.0000—+32767.4999
				d	Spacing between hatching	: -32768.0000—+32767.4999
				t	Hatching angle	: 1—4
X	Axis	○	X p,q,r	p	Selection of axis	: 0 or 1
				q	Scale spacing	: -32768.0000—+32767.4999
				r	Number of repetitions	: 1.0000—32767.4999
Y	Curve	○	Y m,x1,y1,x2,y2,...,xn,yn	m	Selection of curved type	: 0—3
				xn,yn	Coordinate	: -32768.0000—+32767.4999
_	Relative curve	○	_ m,Δx1,Δy1(,Δx2,Δy2...,Δxn,Δyn)	m	Selection of curved type	: 0—1
				Δxn,Δyn	Relative coordinate	: -32768.0000—+32767.4999
^	Call RD-GLI	○	^ [RD-GLI instruction][parameter]...(,[parameter]) [terminator(;)]			

List of RD-GL I Related Instructions

The list provides the instruction compatibility of the DXY-1350A/1150A with the RD-GL I instruction system and the parameters of these instruction.

○ : Compatible.
● : Ignored.
✕ : Incompatible.

Instruction		Compati-bility	Format	Parameter		Range [Default value]	Note
AA	Arc Absolute	○	AA x,y,øc(,ød);	x,y	Center coordinate	: -32768.0000—+32767.4999	
				øc	Center angle	: -32768.0000°—+32767.4999°	
				ød	Resolution	: -32768.0000°—+32767.4999° [5°]	
AF	Advance Full Page	●	AF;	none			
AR	Arc Relative	○	AR Δx,Δy,øc(,ød);	Δx,Δy	Center coordinate	: -32768.0000—+32767.4999	
				øc	Center angle	: -32768.0000°—+32767.4999°	
				ød	Resolution	: -32768.0000°—+32767.4999° [5°]	
CA	Alternate Character Set	○	CA n; CA;	n	Character set number	: 0—4,6—9,30—39	
CI	Circle	○	CI r(,ød)	r	Radius	: -32768.0000—+32767.4999	
				ød	Resolution	: -32768.0000°—+32767.4999° [5°]	
CP	Character Plot	○	CP nx,ny ; CP ;	nx	Number of characters in X direction	: -128.0000—+127.9999	
				ny	Number of characters in Y direction	: -128.0000—+127.9999	
CS	Standard Character Set	○	CS n; CS;	n	Character set number	: 0—4,6—9,30—39	
DC	Digitize Clear	●	DC;	none			
DF	Default	○	DF;	none			
DI	Absolute Direction	○	DI run,rise; DI;	run=0	Vertical printing	: -128.0000—+127.9999 [1]	
				rise=0	Horizontal printing	: -128.0000—+127.9999 [0]	
DP	Digitize Point	●	DP;	none			
DR	Relative Direction	○	DR run,rise; DR;	run=0	Vertical printing	: -128.0000—+127.9999 [1]	
				rise=0	Horizontal printing	: -128.0000—+127.9999 [0]	
DT	Defile Label Terminator	○	DT t;	t	Label terminator		
EA	Edge Rectangle Absolute	○	EA x,y;	x,y	Absolute coordinate	: -32768.0000—+32767.4999	
ER	Edge Rectangle Relative	○	ER Δx,Δy;	Δx,Δy	Relative ccordinate	: -32768.0000—+32767.4999	
EW	Edge Wedge	○	EW r,ø1,øc(,ød);	r	Radius	: -32768.0000—+32767.4999	
				ø1	Start angle	: -32768.0000°—+32767.4999°	
				øc	Center angle	: -32768.0000°—+32767.4999°	
				ød	Resolution	: -32768.0000°—+32767.4999° [5°]	
FT	Fill Type	○	FT n,(d(,ø)); FT;	n	Hatching pattern	: 1—5 [1]	
				d	Spacing	: 0—32767.4999 [(P2-P1) x 0.01]	
				ø	Angle	: -32760°—+32760° [0°]	
IM	Input Mask	○	IM e; IM;	e	Error mask value	: 0—255 [223]	
IN	Initialize	○	IN;	none			
IP	Input P1 and P2	○	IP P1x,P1y(,P2x,P2y);	P1x,P1y	Coordinate of P1	: -32768.0000—+32767.4999 [Depends on the paper size]	
				P2x,P2y	Coordinate of P2	: -32768.0000—+32767.4999 [Depends on the paper size]	
IW	Input Window	○	IW LLx,LLy,URx,URy;	LLx,LLy	Coordinate of lower left corner	: -32768.0000—+32767.4999 [Depends on the paper size]	
				URx,URy	Coordinate of upper right corner	: -32768.0000—+32767.4999 [Depends on the paper size]	
LB	Label	○	LB c1c2.....cn [label terminator]	cn	Character string		
LT	Line Type	○	LT n(,l); LT;	n	Pattern number	: -128—+127 [Solid line]	
				l	Pitch length	: 0—127.9999% [4%]	
NR	Not Ready	○	NR;	none			
OA	Output Actual Position	○	OA;	none			

Instruction		Compati-bility	Format	Parameter		Range [Default value]	Note
OC	Output Commanded Position	○	OC;	none			
OD	Output Digitize	●	OD;	none			
OE	Output Error	○	OE;	none			
OF	Output Factor	○	OF;	none			40,40[TERM] (10,10[TERM]: DXY-GL 0.1mm mode)
OH	Output Hard-Clip Limits	○	OH;	none			
OI	Output Identification	○	OI;	none			1350(DXY-1350A) 1150(DXY-1150A)
OO	Output Option Parameter	○	OO;	none			0,1,0,0,1,0,0,0
OP	Output P1 and P2	○	OP;	none			
OS	Output Status	○	OS;	none			
OW	Output Window	○	OW;	none			
PA	Plot Absolute	○	PA x1,y1(,x2,y2.......,xn,yn); PA;	xn,yn	Absolute coordinate	: -32768.0000—+32767.4999	
PD	Pen Down	○	PD x1,y1(,x2,y2.......,xn,yn); PD;	xn,yn	Coordinate	: -32768.0000—+32767.4999	
PG	Page Feed	○	PG (n); PG;	n		: -32768—+32767	
PR	Plot Relative	○	PR x1,y1(,x2 ,y2...,xn,yn); PR;	xn,yn	Relative coordinate	: -32768.0000—+32767.4999	
PS	Paper Size	○	PS s;	s	Paper size	: 0—127	0—3 -> A3 4—127 -> A4
PT	Pen Thickness	○	PT d; PT;	d	Pen thickness	: 0.1—0.5 [0.3]	
PU	Pen Up	○	PU x1,y1(,x2,y2.......,xn,yn); PU;	xn,yn	Coordinate	: -32768.0000—+32767.4999	
RA	Shade Rectangle Absolute	○	RA x,y;	x,y	Absolute coordinate	: -32768.0000—+32767.4999	
RO	Rotate Coordinate System	○	RO n; RO;	n	Rotate angle	: 0,90 [0]	
RR	Shade Rectangle Relative	○	RR x,y;	x,y	Relative coordinate	: -32768.0000—+32767.4999	
SA	Select Alternate Set	○	SA;	none			
SC	Scaling	○	SC Xmin,Xmax,Ymin,Ymax; SC;	Xmin Ymin Xmax Ymax	P1 user X coordinate P1 user Y coordinate P2 user X coordinate P2 user Y coordinate	: -32768.0000—+32767.4999 : -32768.0000—+32767.4999 : -32768.0000—+32767.4999 : -32768.0000—+32767.4999	
SI	Absolute Character Size	○	SI w.h; SI;	w h	Character width Character height	: -128.0000—+127.9999 cm : -128.0000—+127.9999 cm	A3 -> "SI0.29,0.38;" A4 -> "SI0.19,0.27;"
SL	Character Slant	○	SL tanø; SL;	tanø	Character slant	: -128.0000—+127.9999 [0°]	
SM	Symbol Mode	○	SM s; SM;	s	Character or symbol		
SP	Select Pen	○	SP n; SP;	n	Pen number	: 0—8 [0]	
SR	Relative Character Size	○	SR w,h; SR;	w h	Character width Character height	: -128.0000—+127.9999% [0.75%] : -128.0000—+127.9999% [1.5%]	
SS	Select Standard	○	SS;	none			
TL	Tick Length	○	TL lp(,ln); TL;	lp ln	Tick length in positive direction Tick length in negative direction	: -128.0000—+127.9999 [0.5%] : -128.0000—+127.9999 [0.5%]	
UC	User Defined Character	○	UC (c),x1,y1(,(c) x2,y2...xn,yn); UC;	c xn yn	Pen control value Number of X grids Number of Y grids	: -128.0000—-99, +99—+127.9999 : -99—+99 : -99—+99	
VS	Velocity Select	○	VS s; VS;	s	Pen speed	: 0—127.9999 [42]	
WG	Shade Wedge	○	WG r,ø1,øc(,ød);	r ø1 øc ød	Radius Start angle Center angle Resolution	: -32768.0000—+32767.4999 : -32768.0000°—+32767.4999° : -32768.0000°—+32767.4999° : -32768.0000°—+32767.4999° [5°]	
XT	X-Tick	○	XT;	none			
YT	Y-Tick	○	YT;	none			

List of RD-GL II Related Instructions

The list provides the instruction compatibility of the DXY-1350A/1150A with the RD-GL II instruction system and the parameters of these instruction.

○: Compatible.
●: Ignored.
×: Incompatible.

* 1: - (2^{23})—$(2^{23}-1)$
* 2: - 0— + $(2^{23}-1)$
* 3: - (23) —+ $(2^{23}-1)$
* 4: - (2^{15})— + $(2^{15}-1)$

Instruction	Compatibility	Format	Parameter	Range ([ ]: Default)	Expanation
AA	○	AA x,y,øc(,ød);	x,y: Center coordinate øc: Center angle ød: Chord tolerance	: *1 : *3 : *3 [5°]	
AF	●	AF;	None		
AH	●	AH;	None		
AP	●	AP n; AP;	n: Pen control value	0-225 (Decimal fractions are rounded.)	
AR	○	AR x,y,øc(,ød);	x,y: Relative coordinates to the center øc: Center angle ød: Chord tolerance	: *1 : *3 : *3 [5°]	
BL	○	BL c1c2...cn 　　[label terminator] BL [label terminator]	cn: Character		The maximum character buffer capacity, including control characters (e.g., label terminator) is 150 characters. Characters more than 150 are ignored.
CA	○	CA n; CA;	n: Character set number	: -1,0-59,70,80,99,101	•Any character number without the range of *1 results in error (3). If a character number is within that range, it results in error (5) and the instruction is ignored.
CC	○	CC øc; CC;	øc: Center angle	: *3 [5°]	The maximum center angle is 45°. This means that even if specifying a center angle more than 45°, 45° will be set.
CI	○	CI r(,ød)	r: Radius ød: Chord tolerance	: *1 : *3 [5°]	
CM	○	CM n1(,n2);	n1: Character set mode n2: Fall back mode	0-3 　(Decimal fractions are rounded)　[0] : 0 or 1 　(Decimal fractions are rounded)　[0]	
CP	○	CP nx,ny ; CP　;	nx: The number of X-axis directional characters ny: The number of Y-axis directional characters	: *1 (Decimal fractions are rounded) : *1 (Decimal fractions are rounded)	If any pen moving distance exceeds 8388607 and also any pen movement to any coordinates exceeding *1, it results in error (3) and the instructions are ignored.
CS	○	CS n; CS;	n: Character set number	: -1,0—59,70,80,99,101	Any character number without the range of *1 results in error (3). If a character number is within that range, it results in error (5) and the instruction is ignored.
CT	○	CT n; CT;	n: Chord tolerance mode	: 0 or 1 　(Decimal fractions are rounded)　[0]	
DC	●	DC;	None		
DF	○	DF;	None		
DI	○	DI run,rise; DI;	run: X-axis directional vector rise: Y-axis directional vector	: *1 [1] : *1 [0]	
DL	○	DL n(,pc),x1,y1..... 　　(,pc).....,xn,yn; DL n; DL;	n: Character number pc: Pen control xn,yn: Grid coordinate values	: 33—126 (Decimal fractions are rounded) : -128 (Decimal fractions are rounded) : -127—+127 (Decimal fractions are rounded)	
DP	●	DP;	none		
DR	○	DR run,rise; DR;	run: X-axis directional vector rise: Y-axis directional vector	: *1 [1] : *1 [0]	
DS	○	DS s,n; DS;	s: Slot number n: Character set number	: 0—1 (RD mode) 　0—3 (ISO mode) 　(Decimal fractions are rounded) [0] : -1,0—60,70,80,99 　　(Decimal fractions are rounded)	

Instruction	Compatibility	Format	Parameter	Range ([ ]: Default)	Expansion
DT	○	DT t;	t: Label terminator	[[ETX] (03h)]	
DV	●	DV n; DV;	n: Character direction	: 0 or 1 [0] (Decimal fractions are rounded)	
EA	○	EA x,y;	x,y: Absolute coordinate diagonal to rectangle	: *1	
EC	●	EC n; EC;	None		
EP	○	EP;	None		
ER	○	ER x,y;	x,y: Relative coordinate diagonal to rectangle	: *1	
ES	○	ES w(,h);	w: Character spacing h: Line spacing	: *1 [0] : *1 [0]	
EW	○	EW r,ø1,øc(,ød);	r: Radius ø1: Start angle øc: Center angle ød: Chord tolerance	: *1 : *3 : *3 : *3 [5°]	
FP	○	FP;	None		
FR	●	FR;	None		
FS	●	FS f(,n); FS;	f: Pen force n: Pen number	: 1-16 : 1-8 [All eight pens]	
FT	○	FT n(,d(,ø)); FT;	n: Pattern d: Spacing ø: Angle	: 1—6 (Decimal fractions are rounded) : *1 [(P2x-P1x) x 0.01] : *3 [0°]	
GM	○	GM pl(,dl(,r1(,r2(,r3)))); GM;	pl: Polygon buffer dl: Downloadable character buffer r1.r2,r3: Ignored (Always 0)	The minimum, maximum and default values of each buffer are shown in the table below.	If a value other than 0 or less than the min. value is specified, the min. value will be set. If 0 is specified, 4 is set to the polygon buffer, 0 to the downloadable character buffer, and 0 to the pen sort buffer. If a value over the max. value is specified, the max. value will be set. If an odd value is specified, an even value from which 1 is subtracted will be set.
GP	●	GP g(,h(,i(,j))); GP;	g: Group number h: Pen number i: Number of pens j: Line length	1-8 (Decimal fractions are rounded.) 1-8 (Decimal fractions are rounded.) [Same as the group number] 1-8 (Decimal fractions are rounded.) [1] 1-5000(m) [100]	
IM	○	IM e; IM;	e: Error mask value	: 0-255 (Decimal fractions are rounded) [223]	
IN	○	IN n; IN;	n: excluding some defaults	: -1	
IP	○	IP P1x,P1y(,P2x,P2y); IP;	P1x,P1y: coordinate of P1 P2x,P2y: coordinate of P2	: *1 : *1	
IV	○	IV s,(,t); IV;	s: Slot number t: Character table	: 0—1 (RD mode) (Decimal fractions are rounded) 0—3 (ISO mode) (Decimal fractions are rounded) [0] : 0 or 1 (Decimal fractions are rounded) [0]	
IW	○	IW LLx,LLy,URx,URy; IW;	LLx,LLy: coordinate at the lower-left corner of a window URx,URy: coordinate at the lower-left corner of a window	: Maximum plotting area [Maximum plotting area] (Follows the panel key setting.)	Even if the parameter exceeds the maximum plotting area when it is within the *1 range, no error occurs.
KY	●	KY k(,f); KY;	k: Key f: Function	1—4 0—12	
LB	○	LB c1c2.....cn [label terminator]	cn: Character		

Instruc-tion	Compati-bility	Format	Parameter	Range ([ ]: Default)	Expanation
LO	○	LO n; LO;	n: Position number	: 1—9,11—19 (Decimal fractions are rounded) [1]	
LT	○	LT n(,l); LT;	n: Pattern number l: 1 pitch length	: -6—+6 : *2 (%) [4%]	
NR	○	NR;	None		
OA	○	OA;	None		
OC	○	OC;	None		X-axis and Y-axis coordinate values that are output are up to the forth decimal point and are real numbers within the *1 range.
OD	●	OD;	None		
OE	○	OE;	None		
OF	○	OF;	None		After receiving the OF instruction, the DXY-1350A/1150A always outputs the following values: 40,40[TERM]
OH	○	OH;	None		
OI	○	OI;	None		After receiving the OI instruction, the DXY-1350A/1150A outputs as follows: 1350 [TERM] DXY-1350A 1150 [TERM] DXY-1150A
OK	●	OK;	None		
OL	○	OL;	None		

OO	○	OO;	None		Four out of the eight optional parameters in the DXY-1350A/1150A are effective and makes the following integers ready to output.
					
					0, 1, 0, 0, 1, 1, 0, 1 [TERM]
					
					                    indicates a buffer that can be set by user.
					                    enables the polygon to be filled.
					                    indicates a circle or arc command.
					                    indicates the availability of pen replacement.

OP	○	OP;	None		
OS	○	OS;	None		
OT	○	OT;	None		
OW	○	OW;	None		
PA	○	PA x1,y1(,x2,y2 ...,xn,yn); PA;	xn,yn: Absolute coordinate	: *1	
PB	○	PB;	None		The maximum capacity of the character buffer is 150 characters.
PD	○	PD x1,y1(,x2,y2 ...,xn,yn); PD;	xn,yn: coordinate	: *1	
PG	○	PG (n); PG;	None		
PM	○	PM n;	n: Polygon mode	: 0,1,2 [PM0PM2;]	
PR	○	PR x1,y1(,x2 ,y2...,xn,yn); PR;	xn,yn : Relative coordinate	: *1	
PS	○	PS l(,w); PS;	l: The length of frame w: The width of frame	: *1 : *1	
PT	○	PT d; PT;	d: Pen tip size	: 0.1—5.0 (mm) [0.3mm]	
PU	○	PU x1,y1(,x2,y2 ...,xn,yn); PU;	xn,yn: Coordinate	: *1	
RA	○	RA x,y;	x,y: Absolute coordinate diagonal to rectangle	: *1	
RO	○	RO n; RO;	n: Rotation angle	: 0,90 [0°]	
RR	○	RR x,y;	x,y: Relative coordinate diagonal to rectangle	: *1	

Instruc-tion	Compati-bility	Format	Parameter	Range ([ ]: Default)	Expanation
SA	○	SA;	None		
SC	○	SC Xmin,Xmax,Ymin ,Ymax(,type(,left,bottom)); SC Xmin,Xfactor,Ymin ,Yfactor,type; SC;	Xmin,Ymin: User coordinate of P1 Xmax,Ymax: User coordinate of P1 type: Scaling type left bottom Xfactor: User X coordinate of P1 Yfactor: User Y coordinate of P2	: *1 : *1 : 0,1,2 : 0—100 (%) : 0—100 (%) : *1 : *1	
SG	●	SG g; SG;	g: Group number	: 0—8 [0]	
SI	○	SI w.h; SI;	w: Character width h: Character height	: *1 (cm) [0.285cm] : *1 (cm) [0.375cm]	
SL	○	SL tanø; SL;	tanø: Character slant	: *1 [0]	
SM	○	SM s; SM;	s: Character or symbol	: CHR$ (33)—CHR$ (58) ,CHR$ (60)—CHR$ (126) (If no parameter, symbol mode OFF)	
SP	○	SP n; SP;	n: Pen number	: 0—8 [0]	
SR	○	SR w,h; SR;	w: Character width h: Character height	: *1 (%) [0.285cm] : *1 (%) [0.375cm]	
SS	○	SS;	none		
TL	○	TL lp(,lm); TL;	lp: Tick length in positive direction lm: Tick length in negative direction	: *1 (%) [0.5%] : *1 (%) [0.5%]	
UC	○	UC (c),É¢x1,É¢y1((,c), É¢x2,É¢y2...,É¢xn,É¢yn); UC;	c: Pen cotrol value xn: Number of X-axis directional moving units yn: Number of Y-axis directional moving units	: -8388608—-9999,+9999—+8388607 : -9998—+9998 : -9998—+9998	• The number of allotted units of each font is as follows: Fixed character width font: 48(W) x 64(H) Optimum character width font: 42(W) x 72(H) • Normal characters are plotted within the following range. It means that if you define a character so as to be accommodated in there, it becomes the same size as a normal character. Fixed character width font: 32(W) x 32(H) Optimum character width font: 28(W) x 36(H)
UF	○	UF d1(,d2,.....d20); UF;	d1—d20: Hatching spacing partition ratio	: *2	The maximum number of parameter you can set is 20.
VS	○	VS v(,n); VS;	v: Pen speed n: Pen number	: 1-42 cm/sec [Value by automatic pen sensing] : 1-8 [All eight pens]	• The pen speed can be set in the unit of 1cm/sec. • The parameter range of 1—8388607 is for no error. • If the pen speed is set over 42, it will be set at 42. • If the pen number is set over 9, the instruction is ignored.
WD	●	WD c1c2.....cn [label terminator] WD [label terminator]	cn: Character		
WG	○	WG r,ø1,øc(,ød);	r: Radius ø1: Start angle øc: Center angle ød: Chord tolerance	: *1 : *3 : *3 : *3 [5°]	• You can input a polygon of up to 250 vertices into the polygon buffer in the state of being initialized. If you, however, input a polygon of vertices more than the buffer capacity, an error occurs.
XT	○	XT;	None		• The default tick length of X-axis is 0.5% of (P2y-P1y) in the positive and negative directions, respectively.
YT	○	YT;	None		• The default tick length of Y-axis is 0.5% of (P2x-P1x) in the positive and negative directions, respectively.

The Specifications of the Interface

Serial Interface (RS-232C)
● Connector

Signal Name	Terminal Number		Signal Name	Pin Connection
NC	25	13	NC	
NC	24	12	NC	
NC	23	11	NC	
NC	22	10	NC	
NC	21	9	NC	
DTR	20	8	NC	
NC	19	7	SG	
NC	18	6	DSR	
NC	17	5	CTS	
S.RXD	16	4	RTS	
NC	15	3	RXD	
S.TXD	14	2	TXD	
		1	FG	

Parallel Interface (in compliance with specifications of Centronics)
● Connector

Signal Name	Terminal Number		Signal Name	Pin Connection
NC	36	18	HIGH**	
HIGH*	35	17	GND	
NC	34	16	GND	
GND	33	15	NC	
HIGH*	32	14	NC	
NC	31	13	HIGH*	
	30	12	GND	
	29	11	BUSY	
	28	10	ACK	
	27	9	D7	
	26	8	D6	
	25	7	D5	
GND	24	6	D4	
	23	5	D3	
	22	4	D2	
	21	3	D1	
	20	2	D0	
	19	1	STROBE	

* = +5V, 3.3KΩ

** = +5V, 100Ω

Device control

Device control instructions are used to determine the communication sequence between the plotter and computer through RS-232C interface and/or tell the plotter the current computer state. Among them, some device control instructions set the output specifications of RD-GLI/II instructions.

Each device control instruction is organized with three letters: ESC (1Bh), "." and one uppercase letter. Device control instructions are of two types: one with parameters and the other without parameters.

Parameters can be omitted. A semicolon ";" is used as a delimiter to separate parameters if they are input in succession. A ";" without parameters means that parameters were omitted.

If parameters are omitted, the default value is set. For a device control instruction with parameters, a terminator needs to be input in order to signify the end of instructions. A colon ":" is used as the terminator which cannot be omitted. Please refer to the following table for device control instructions. Depending on the instruction set that has been selected, some device control instructions may be ignored.

○ : Compatible.
● : Ignored.

List of device control instructions

Instruction	Format	Parameter	Range ([ ] is default)	Explanation	RD-GL I	RD-GL II
Handshake Instructions						
ESC .B Output Remaining Buffer Capacity	[ESC].B	None		Outputs the current remaining buffer capacity.	○	○
ESC .M Set Handshake Output Specifications (1)	[ESC].M<P1>;<P2>;<P3>;<P4>;<P5>;<P6>:	P1:Delay time P2:Output trigger character P3:Echo terminator P4:Output terminator P5:Output terminator P6:Output initiator	0—32767(msec) [0(msec)] [0(Sets nothing)] [0(Sets nothing)] [13([CR])] [0] [0(Sets nothing)]	Sets handshake output specifications. Note:When you specify some values to <P4> and <P5>, always set 0 to <P6>. When you specify some value to <P6>, always set 0 to <P5>.	○	○
ESC .N Set Handshake Output Specifications (2)	[ESC].N<P1>;<P2>;<P3>;•••••;<P11>:	P1:Intercharacter delay P2—P11 :Xoff character (for Xon/Xoff) Immediate response character (for ENQ/ACK)	0-32767(msec) [0(msec)] [All 0(Sets nothing)]	Sets an intercharacter delay, and also an Xoff character for performing the Xon/Xoff handshake.	○	○

Instruction	Format	Parameter	Range ([ ] is default)	Explanation	RD-GL I	RD-GL II
ESC .H Sets ENQ/ACK Handshake Mode1	[ESC].H<P1>;<P2>; <P3>;••••••••;<P12>:	P1:The number of bytes for data block P2:ENQ character P3—P12 :ACK character (only when <P2> is set)	0-15358(byte) [80(byte)] [0(Sets nothing)] [All 0(Sets nothing)]	When receiving the ENQ character set by <P2>, compares the value set by <P1> and the remaining buffer capacity, and returns the ACK character to the host computer when the remaining buffer capacity is larger. The [ESC].H with no parameter performs a dummy handshake.	○	○
ESC .I Set Xon/Xoff Handshake and ENQ/ACK Hand- shak Mode2	[ESC].I<P1>;<P2>; <P3> ;••••••••;<P12>:	P1:Limit of the remaining buffer capacity (for Xon/Xoff) The number of data block bytes (for ENQ/ACK (mode2)) P2:ENQ character (for ENQ/ACK (mode2)) 0(for Xon/Xoff) P3—P12 :Xon character(for Xon/Xoff) ACK character (for ENQ/ACK (mode2))	0-15358(byte) [80(byte)] [0(Sets nothing)] [All 0(Sets nothing)]	Used for performing the Xon/Xoff handshake and the ENQ/ACK handshake mode 2. The [ESC].I instruction with no parameter per- forms a dummy handshake. In a dummy hand- shake, always returns the ACK character to the host computer, regardless of the remaining buffer capacity, when receiving the ENQ character.	○	○
ESC .P Select Handshake	[ESC].Pn:	n :Handshake type	0-3 [0]	Sets the type of handshake used. The types of handshakes corresponding to the para- meters 0 to 3 and the setting combinations of their equivalent device control instructions are as follows: _(see table below)_	●	○

Handshake type table (within ESC .P Explanation):

n	Handshake	Equivalent device control instruction
0	ENQ/ACK (dummy)	[ESC].I: [ESC].M: [ESC].N: [ESC].@:
1	Xon/Xoff	[ESC].I80;;17: [ESC].M50;;10;13: [ESC].N10;19: [ESC].@;0:
2	ENQ/ACK (mode 2)	[ESC].I80;5;6: [ESC].M;17;10;13: [ESC].N: [ESC].@;0:
3	Hardwire	[ESC].I: [ESC].M: [ESC].N: [ESC].@;1:

Status Instructions

Instruction	Format	Parameter	Range ([ ] is default)	Explanation	RD-GL I	RD-GL II
ESC .A Output Model Name	[ESC].A:	None		When receiving this instruction, returns the follow- ing numerals to the host computer. 1350 (DXY-1350A) 1150 (DXY-1150A)	●	○
ESC .O Output Status Word	[ESC].O:	None		Outputs the decimal value that represents the status of a plotter. This value is the sum of bits shown in the table below. _(see table below)_	○	○

Status word table (within ESC .O Explanation):

Bit No.	Bit value	Decimal value	Meaning
0	1		Unused (Always 0)
1	2		Unused (Always 0)
2	4		Unused (Always 0)
3	8	0	Data exist in I/O buffer
		8	No data exists in I/O buffer
4	16	0	Pause OFF
		16	Pause ON
5	32	32	Unused (Always 0)
6, 7	64, 128		Unused (Always 0)
8	256	256	Normal
		0	Expand
9	512	0	Always 0
10—15			Unused (Always 0)

Instruction	Format	Parameter	Range ([ ] is default)	Explanation	RD-GL I	RD-GL II
ESC .E Output RS-232C Error Code	[ESC].E	None		Outputs an error code related to RS-232C interface (see the table below), and clears the error simultaneously. At the same time, the error being displayed is canceled. **Error code / Meaning table:** **0** No I/O errors **10** During an output instruction being executed, another output instruction is sent (only the current instruction is effective) **11** An error occurs in a device control instruction. **12** Incorrect parameters are set to a device control instruction (the default value is set to the erroneous parameter) **13** Parameters are overflowing **14** The number of the parameters set is more than specified or a colon ':' was not used to terminate **15** Framing error, parity error or over-run error at the time of data receipt **16** The I/O buffer overflows (In this case, the plotter cannot draw properly.) **17** Baudrate is set incorrectly **18** Other I/O errors occur	○	○
ESC .L Output I/O buffer size	[ESC].L	None		Outputs the current logic size of the I/O buffer Note that the output is done only when the I/O buffer is empty.	○	○
ESC .T Set Each Buffer Size	[ESC].T<P1>;<P2>;<P3> ;<P4>;<P5>;<P6>:	P1: The size of the physical I/O buffer P2: The size of the polygon buffer P3: The size of the downloadable character buffer P4: Ignored P5: Ignored P6: Ignored	[5120 (byte)] [3072 (byte)] [0 (byte)]	Allocates the 18 KB data buffer to the I/O buffer, polygon buffer and downloadable character buffer by defining the parameters. A [ESC].T instruction without parameters allocates each buffer size to the default value, and then clears data in the buffers. If the sum of the four parameters exceeds 18KB, the allocation of the 18 KB data buffer is readjusted. The maximum vale, minimum value and default value of each buffer are shown in the table below. If specifying a value more than the maximum, the maximum value is set. If specifying a value other than 0 and less than the minimum, the minimum value is set. If 0 is specified, 2 is set to the I/O buffer, 4 to the polygon buffer, and 0 to the downloadable character buffer. **Buffer type / Min. value / Max. value / Default value** I/O buffer — 2 / 18KB / 5120 Polygon buffer — 4 / 18KB / 3072 Downloadable character buffer — 444 / 18KB / 0	●	○
ESC .S Output Each Buffer Size	[ESC].Sn:	n :Buffer type	0-6 [0]	Outputs the currently set capacity of a User-definable buffer. The each buffer capacity corresponding to the parameters 0 to 6 are as follows. 0: Whole data buffer capacity 1: Physical I/O buffer capacity 2: Polygon buffer capacity 3: Downloadable character capacity 4, 5: Outputs 0 always	●	○
Abort Instructions						
ESC .J Abort Device Cotrol Instruction	[ESC].J:	None		Aborts both the currently executed device control instruction and output.	○	○
ESC .K Abort RD-GLáU (RD-GLáV) Instruction	[ESC].K:	None		After executing only the current RD-GLII instruction, clears the data buffer.	○	○
ESC .R Initialize Device Control Instruction	[ESC].R:	None		Initializes all settings established by the device control instructions. However, each buffer size set by the [ESC].T instruction is taken over.	○	○
Monitor Mode Instructions						
ESC .Y ESC .(Plotter ON				Ignored.	●	●
ESC .Z ESC .) Plotter OFF				Ignored.	●	●
ESC .@ Set Monitor Mode and Control DTR				Ignored.	○	○
ESC Q Set Monitor Mode				Ignored.	○	○

List of Optional Cables

Model number		Connector Configurations	
		Computer side	Our product side
Parallel Connection (Conforms to Ceentronics Specs.)	XY-PC6S (2m)	XY-PC6S	
	XY-IPC (1.5m)	XY-IPC	
RS-232C Serial Connection	XY-RS-11 (1.5m)	Cable Wiring Diagrams	
	XY-RS-31 (3m)	XY-RS-11/31/51	XY-RS-13/33
	XY-RS-51 (5m)		
	XY-RS-13 (1.5m)		
	XY-RS-33 (3m)		
	XY-RS-14 (1.5m)	XY-RS-14/34	XY-RS-35
	XY-RS-34 (3m)		
	XY-RS-35 (3m) (AutoCAD™ custom)		
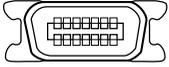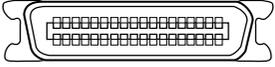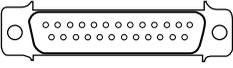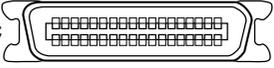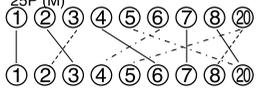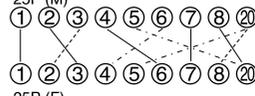
*   The dashed and the dotted lines shown on the cable wiring diagram above are intended to show the wiring more clearly. They are no different from the solid lines.

List of character sets

● **RD-GL I**

● RD-GL II

Character	Character Set No.		
	Fixed-Space Vector Font	Variable-Space Arc Font	Fixed-Space Arc Font
ANSI ASCII (1)	0	10	20
ANSI ASCII (2)	1	11	21
French/German	2	12	22
Scandinavian	3	13	23
Spanish/Latin	4	14	24
Special	5	15	25
JIS ASCII	6	16	26
Roman	7	17	27
Katakana	8	18	28
ISO I.R.V.	9	19	29

Automatic backspace.

Draws, at the current pen location, the symbols having codes 41-51 (hexadecimal) from character set numbers 5, 15, and 25.

Character	Character Set No.		
	Fixed-Space Vector Font	**Variable-Space Arc Font**	**Fixed-Space Arc Font**
ISO Swedish	30	40	50
ISO Swedish Name	31	41	51
ISO Norway (1)	32	42	52
ISO German	33	43	53
ISO French (1)	34	44	54
ISO U.K.	35	45	55
ISO Italian	36	46	56
ISO Spanish	37	47	57
ISO Portuguese	38	48	58
ISO Norway (2)	39	49	59
ISO French (2)	60	70	80
Drafting Set	99		

Specification of DXY-1350A/1150A

● The specifications of hardware

	DXY-1350A	DXY-1150A
Feature	Flatbed Plotter	
Max. plotting area	X axis: 432 mm (17"), Y axis: 297 mm (11-11/16")	
	(However, on the DXY-1150A no plotting can be done on the area under metal strips.)	
Media sizes	ISO A3, A4, ANSI A, B	
Number of pens	8	
Acceptable paper types	High quality paper, Tracing paper, Drafting film, Water based OHP film, Oil based OHP film	
Acceptable pen types	MPP pen, Refillable ink pen, 32 color plotter pens, Water based fiber tipped pen,	
	Thick water based fiber tipped pen, Standard ceramic pen, Oil based fiber tipped pen	
Paper holding method	Electrostatic Adsorption	Magnetic drawing board, metal strips and paper clip
Max. Plotting Speed	600 mm/sec. (23-5/8") (FAST mode)	
Mechanical resolution	0.0125 mm (0.000492") /step (micro-step control)	
Software resolution	RD-GL II, RD-GL I: 0.025 mm(0.000984") /step DXY-GL: 0.025 mm(0.000984") /step or 0.1 mm(0.00394") /step	
Distance accuracy	Whichever the greater value of +/-0.1 mm(0.00394") or +/-0.3 % of moving distance (with drafting film)	
Repetition accuracy	−0.1 mm (0.00394") or less (same pen / with drafting film)	
Interface	Parallel (in complieance with the specification of Centronics), Serial (RS-232C specification)	
Buffer size	1 Mbyte (384 Kbyte for replot buffer)	
Instruction system	DXY-GL, RD-GL I, RD-GL II	
Control switches	POSITION (▲, ▼, ◄, ►), FAST, P1, P2, ENTER, VIEW, PEN UP/DOWN, PAPER HOLD, PEN1—8, PEN SPEED, REPLOT MODE, REPLOT	POSITION (▲, ▼, ◄, ►), FAST, P1, P2, ENTER, VIEW, PEN UP/DOWN
LED	POWER/ERROR, PAPER HOLD, VIEW	POWER/ERROR, VIEW
Power consumption	Exclusive AC adapter DC +9.7 V 0.7 A, +31V 0.7 A	
Acoustic noise level	Standby mode: less than 27 dB (A) Drawing mode: less than 59 dB (A) (According to ISO 7779)	
External dimensions	615 mm(24-1/4") (W) x 412 mm(16-1/4") (D) x 113 mm(4-1/2") (H)	
Weight (Unit only)	5.7 kg (12.6 lb.)	
Operating temperature	5—40 C (41—104 F)	
Operating humidity	20%—80% (non-condensing)	
Accessories	Stand 2 (L and R), Exclusive AC adapter 1, Standard ceramic pen (for self-test) 1 set, Paper (for self-test) 2, Transparent positioning sticker 1 set, Rubber positioning sticker 1 set, Dust cover 1, User's manual 1, PLOTTER DRIVER for windows® 95 and windows® 3.1 *Metal strip (DXY-1150A only) 3, *Paper clip (DXY-1150A only) 1	

● Interface specifications

[Paralell]
Standard	Incompliance with the specifications of Centronics
Input signal	S̅T̅R̅O̅B̅E̅ (1 BIT), DATA (8 BITS)
Output signal	BUSY (1 BIT), A̅C̅K̅ (1BIT)
I/O signal level	TTL level
Transmission method	Asynchronous

[Serial]
Standard	RS-232C specifications
Transmission method	Asynchronous, duplex data transmision
Transmission speed	1200, 2400, 4800, 9600
Parity check	Odd, Even, None
Data bits	7 bits or 8 bits
Stop bits	1 bit or 2 bits

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