



DPS 52

DPS 62



USER'S GUIDE



DPS 52 *User's Guide*

Contents

Introduction	1
Printer.....	1
Media	1
Digital Inks	1
Software.....	1
Operation	2
Start-Up / Auto Shut-Off / Power-Down	2
Print Mode	2
Maintenance Mode	2
Printing.....	2
Ink Filling & Replenishment	3
Nozzle Firing Check	4
Material Handling	5
Control Panel.....	5
Nozzle Dryer.....	6
Nozzle Dryer Height & Substrate Thickness.....	6
Air Supply.....	7
Infrared (IR) Heater	7
Ventilation	8
Safety	8
Maintenance.....	9
Color Profiling.....	9
Appendix.....	10
Recommended Tool Set.....	10
Spare Parts.....	10
Approved Substrates	11

Tables and Figures

Figure 1:	Ink order diagram.....	3
Figure 2:	Nozzle firing check – Normal and Abnormal Patterns	4
Figure 3:	Control Panel layout	5
Figure 4:	Infrared (IR) heater control knob	8
Table 1:	Ink order	3
Table 2:	Recommended nozzle dryer settings by substrate.....	6
Table 3:	Recommended IR dryer settings by substrate.....	7
Table 4:	Recommended maintenance functions.....	9

Introduction

Printer

The DPS 52 printer is specifically designed and tested for many sampling and coloration applications, including wallcovering, flooring, indoors graphics, and high pressure laminates.

Space Requirements - DPS 52 has an approximate footprint of 3 feet by 8 feet (0.92 m x 2.5 m). DPS recommends approximately 2 feet of working space around the machine; a four-foot area is needed in the front.

Electrical Requirements - For North American installations, the printer will require two (2) 110v outlets. If possible, the outlets should operate on separate circuits. The first outlet powers the printer and the control panel while the second provides power for the IR heater and nozzle dryer. For installations outside North America, the printer will require two (2) 230v outlets.

Environmental Requirements - For optimum performance, DPS 52 should be located in a dust free, temperature controlled, well ventilated area. (Recommended temperature range: 18 – 35°C / 35 – 65% relative humidity).

Media

See Appendix for a list of substrates approved for use with DPS 52.

Inks

DPS has formulated a proprietary line of water based, pigment inks for use with DPS 52. The inks are specifically formulated to print on untreated, supported wallcovering media as well as other home decorative media (e.g. Vinyl flooring, high pressure laminate paper, and non-wovens). Some substrates may need additional treatment to provide best results, please contact your DPS representative for more information.

Software

DPS recommends AVA's CAD software for the MAC platform, Onyx Graphics Postershop and Adobe Photoshop for the Windows platform, and Sophis Systems' CAD software for the Linux platform.

Important note: *For best results, CAD software used to drive DPS 52 must have profiling capability. Profile capable software will enable the user to match the ink and media together for smooth color reproduction. Please consult your software vendor prior to purchase and installation.*

Operation

Start-Up / Auto Shut-Off / Power Down

To begin using DPS 52, press the power button to the “ON” position. This will allow you to use the printer for normal operations. Please refer to the Mimaki JV2-II Series Instructional Manual, section 2.12, to define all normal operations.

Auto Shut-Off: The DPS 52 control panel has two system modes, “Hand” and “Auto”. “Hand” mode allows the user to manually control power supply to the nozzle dryer and IR heater. The nozzle dryer and IR heater will turn on and off automatically in “Auto” mode.

To power down, turn off the nozzle dryer, IR power switch, and the System power switch on the DPS control panel. Once the control panel is off, press the printer power switch to the “OFF” position.

Print Mode

In normal operation, the printer will access certain firmware functions once it is turned on. This is known as the “Print Mode”. The print mode allows a user to access all routine functions such as printing and head cleaning. While in print mode, users can also set quality variables such as number of passes and print job resolution. For more detailed machine operation, users need to access the printer’s “Maintenance Mode.” The maintenance mode provides options for automatic head flushing, ink line flushing and filling.

Important: *Normal operations can also be performed while inside the Maintenance Mode.*

Maintenance Mode

To access the DPS 52 maintenance mode, press the printer power button to the “ON” position. Quickly press the “Function” and “Remote” buttons simultaneously. (Both buttons are on the main control console which is located at the bottom right of the DPS 52.) When you hear a beep, release the buttons and you will see two additional categories in the console menu. Choose the maintenance option that you require and DPS 52 will complete the task.

Printing

Before beginning a print job, make sure that all of the print heads are working properly (See nozzle firing check on page 4). Set the IR and nozzle dryer settings to their appropriate levels on the DPS control panel (settings are

determined by substrate type). Adjust all print settings in your “RIP” software for sizing and quality.

At the time of installation it is important to align the print head nozzles in both the x and y directions. This can be performed using the “Print Adjust” function (see JV2-II Series Instruction Manual, section 4.2). If you experience a registration problem this function should eliminate the problem.

Ink Filling & Replenishment

THE DPS 52 includes six 250ml bottles that replace the normal Mimaki ink cartridges. When the bottles are nearly empty, simply refill the bottles after you complete the current print job. DPS does not recommend that you refill the bottles while printing. **CAUTION: The ink order is very important to high-quality printing. Please refer to Table 1 below for the appropriate ink order.**

1	2	3	4	5	6	7
No Ink in Position # 1	Black	Cyan	Light Cyan	Magenta	Light Magenta	Yellow

Table 1: Ink order

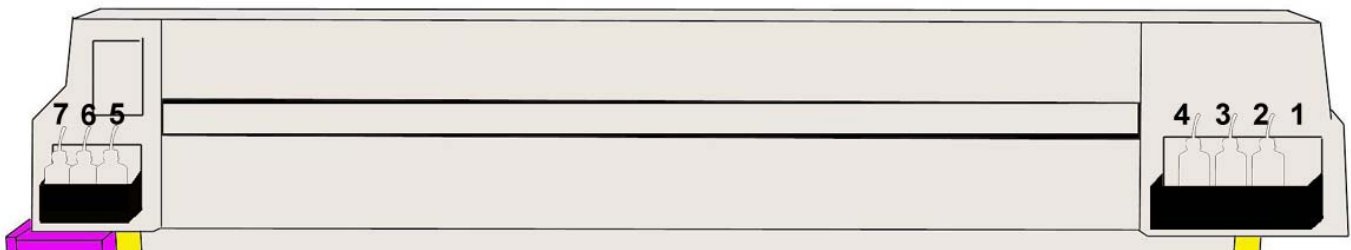


Figure 1: Ink order diagram (View from back of DPS 52)

CAUTION / WARNING – The water based pigment ink supplied for DPS 52 has been carefully manufactured to maintain print quality and prevent print head contamination. **Under no circumstances should you add any other components to the ink (including water).** Adding components to digital ink can damage the print heads, leading to expensive repairs and possible head replacement. DPS will not be held responsible for any machine problems that occur due to ink contamination.

Nozzle Firing Check

Before starting a print job, DPS recommends that you perform a test draw of the print nozzles. The test draw print is used to make sure that the print head nozzles are firing properly. Please refer to the Mimaki JV2-II Series Instruction Manual, section 4.10 for instructions on performing the test draw. After the print has completed, there should be 64 nozzles printed for each color. (Figure 2 below shows a normal and abnormal test draw) If there are nozzles missing, perform a “standard” clean cycle to correct the problem. If one or two standard cleaning cycles does not fix the misprint, please refer to the following checklist:

1. Clean the maintenance assembly with a Q-tip or damp (de-ionized water) paper towel. Then perform a standard clean. Check test draw. If not acceptable, proceed to step 2.
2. Clean the wiper with a Q-tip or damp paper towel. Replace if required. Then perform a standard clean. Check test draw. If not acceptable, proceed to step 3.
3. Align the print heads left/right and up/down for proper capping with the maintenance assembly. Normally, a downwards adjustment will improve capping and cleaning. Perform a standard clean. Check test draw. If not acceptable, proceed to step 4.
4. Replace the maintenance assembly. This part will eventually wear out due to heavy use or very infrequent use. Perform a standard clean. Check test draw. If not acceptable, please contact DPS for further troubleshooting assistance.

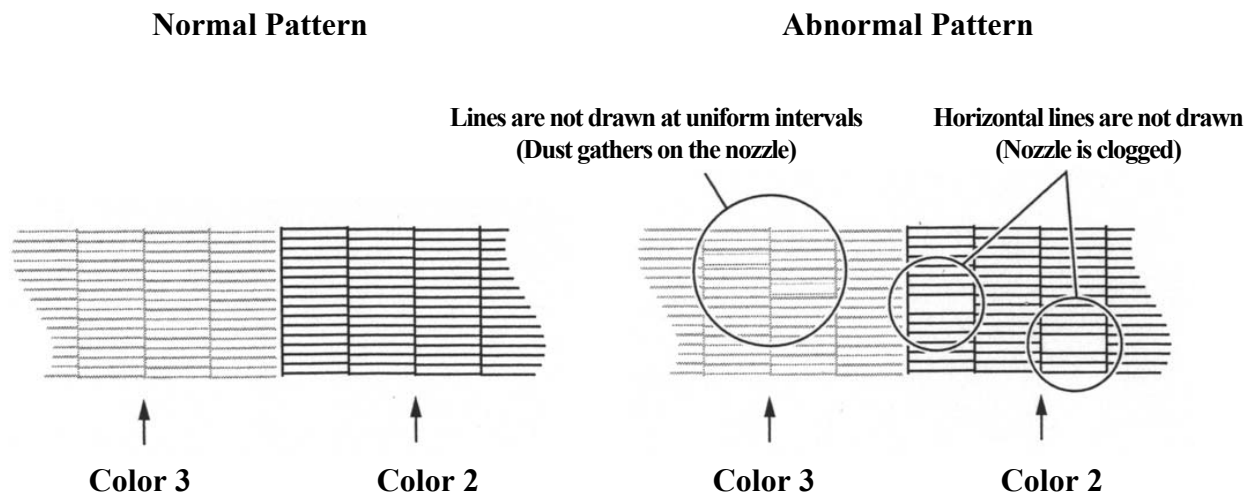


Figure 2: Nozzle firing check – Normal and Abnormal pattern

Material Handling

DPS 52 can successfully print a wide variety of substrates. We recommend that you pay close attention when preparing to print a new substrate. Each substrate will require slightly different print quality, nozzle dryer, and IR heater settings. You may need to prepare a test piece of each substrate before beginning a long print job. Please see below for DPS' tips on how to achieve successful material handling:

1. DPS has offset the machine's initial printing location 65 mm left to account for the nozzle dryer's position. Please do not attempt to adjust this setting. For substrates with edges that tend to curl, we recommend that you use paper guides or other appropriate edge flattening mechanisms.
2. Whenever possible, printing onto a roll of substrate is recommended. Using a roll will maximize substrate stability during the printing process. Load rolls so that the leader stock is attached to the rewind section when you start printing. Make sure rewind motor is on during printing.
3. DPS 52 has been designed to allow printing on substrates not originally intended for use with Mimaki's JV2. As a result, we do not recommend that you use the cutting feature included with the plotter. Use an external cutter (e.g. snap blade cutter) for substrate trimming.

Caution: Do not use substrates with ragged edges or edges with excessive curling. When using the IR heater, make sure substrates do not get too close to the heating element or the safety bars.

Control Panel

The DPS control panel is located on the right side of the printer. Figure 1 outlines the various controls. The panel controls the nozzle dryer (air and heat) and the infrared (IR) heater. The automatic shut-off/turn-on feature is also controlled on this panel.

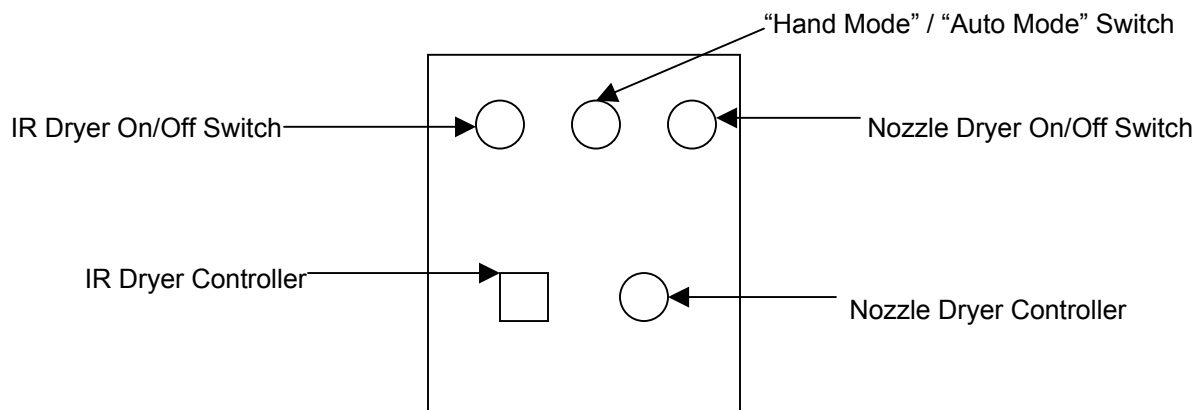


Figure 3: Control Panel Layout

Nozzle Dryer

The nozzle dryer has been designed to allow users to print on the widest variety of substrates. By fixing the ink drops as soon as they are printed, DPS 52 can provide excellent print quality on substrates that cannot be printed otherwise. However, the use of heat near printing substrates can cause problems if the machine is not carefully monitored. Care must be taken not to exceed the “melt” or “burn” temperature of each substrate. The nozzle dryer has the capacity to produce very high temperatures; therefore, it is essential to adjust the controller to the minimum heat level required for each substrate type.

CAUTION: SUBSTRATES CAN BURN IF THE NOZZLE DRYER IS LEFT IN A STATIONARY POSITION FOR LONGER THAN 10 SECONDS IN “HAND MODE”. IF YOU ARE USING THE NOZZLE DRYER WHILE PRINTING, WE STRONGLY RECOMMEND THAT YOU ENGAGE THE AUTOMATIC SHUT-OFF FEATURE ON THE CONTROL PANEL. DO NOT LEAVE DPS 52 UNATTENDED.

<u>Media/Substrate</u>	<u>Nozzle Dryer Settings</u>
Ink Jet Receptive Substrate	1 to 5
Uncoated Paper	1 to 7
Coated Paper	3 to 7
Plastisol (PVC) Coated Paper	3 to 10
Supported Calendered Vinyl	8 to 10
Laminate Paper	1 to 5

Table 2: Recommended nozzle dryer settings by substrate

Note: Your settings and results may vary due to differences in substrate construction and ink coverage. It is advised to test heater settings with each new substrate.

Nozzle Dryer Height and Substrate Thickness

The maximum substrate thickness for use in DPS 52 is approximately 1.5 mm. During installation, DPS 52's print heads will be adjusted to the appropriate height for each customer's typical substrates. Each time you load a new substrate into the printer, make sure that the print heads and nozzle dryer do not touch any section of the substrate. Contact with a substrate can damage print heads.

The nozzle heater height has been carefully set 1 – 2 mm above the height of the print heads. If you need to change these settings, please contact your service provider.

Air Supply

Your authorized service provider will calibrate the nozzle dryer air adjustment valves (supply and exhaust air) during the installation process. These settings do not need to be altered.

Infrared Heater

An Infrared (IR) heating source has been installed on DPS 52 to provide final ink drying when necessary. Use of the IR heater will ensure that printed samples reach their full level of water resistance and tape adhesion. If physical properties are not desired, lower settings can be used to ensure wind up without marking. Recommended IR heater set points are listed below in Table 3.

Media/Substrate	IR Dryer Setting (Seconds)	Approximate Surface Temperature (°C)
Ink Jet Receptive Substrate	0 to 6	< 70
Uncoated or Laminate Paper	1 to 6	< 70
Coated Paper	1 to 6	< 110
Plastisol (PVC) Coated Paper	4 to 8	< 130
Supported Calendered Vinyl	4 to 8	< 130

Table 3: Recommended IR heater settings by substrate

Adjust the IR control knob (red needle) on the DPS control panel to reach desired web temperature (see Figure 4 below). The IR control is designed to establish a duty cycle, which limits the total time the heating element is engaged. The green needle (large dial) establishes the length of time the heater will be “off” and the red needle (small dial) establishes the length of time the heater will be “on”. The green needle or “off” cycle has been preset at 12 seconds. The user can adjust the red needle or “on” cycle from 0 to 12 seconds. Substrates should be tested early in the printing cycle for heat stability. (Web temperature on most wallpaper substrates should not exceed 130°C). DPS recommends that the IR heater should be run at the coolest temperature possible. This will ensure long run capability. ***Do not run the machine unnecessarily hot; this can cause drying-in of the print heads.***



Figure 4: IR heater control knob

After the completion of a print job, excess printed material can be manually fed through IR heater. (Put printer on “local” and press “V” until printed material passes through IR heater). Please refer to the Mimaki JV2-II Series Instruction Manual, section 1.27 for instructions on “local” and “remote” operation. DPS has also developed a special page advance file to automate the curing / feeding process. Contact your DPS Representative for more information.

WARNING: The IR heater can cause substrates to burn. Do not leave machine unattended. When printing stops, check to see if the IR heater is turned-off. Note that the mode switch should be in the “Auto” position when using the IR Heater. DPS recommends that you install a fire extinguisher near the DPS 52.

Ventilation

The DPS 52 includes two heating devices, a nozzle dryer and an IR Heater. When either or both are operating it is advised to keep the work area well ventilated. We recommend fresh air circulation in the room where the DPS 52 is in operation. DPS inks are non-hazardous; however, adequate ventilation is very important.

Safety

Please follow all local guidelines for workplace safety. DPS 52 should not be in operation unless an attendant is in the room. DPS does not recommend leaving the printer unattended for long periods (e.g. more than one hour). It is also recommended to use the Automatic Shut-Off feature at all times. In addition, a fire extinguisher (CO2 type) should be located in the working area of the printer.

Maintenance

The DPS 52 requires routine maintenance for trouble free printing. Most importantly, try to use your printer at least once a day; frequent use will stretch the maintenance schedule. Please see Table 4 below for recommended maintenance procedures.

Part	Maintenance Function	Frequency
Wiper	Wipe rubber side with Q-Tip	Daily
Capping Station	Rinse with Warm Water	Weekly
Dampers	Replace	Every 2 months
Wiper	Replace	Every 3-6 months
Waste Container	Empty	As Required
Capping Station	Replace	Every 3-6 months
Print Heads	Manually Wipe with Damp Tissue Paper	Monthly

Table 4: Recommend Maintenance Functions for DPS 52

Color Profiling

DPS ink must be profiled with each new substrate to optimize color matching and pattern reproduction. There are many software solutions which offer profiling. You will need the following:

- (a) Color management software with profiling capability.
- (b) X-Rite or compatible spectrophotometer

Contact your software vendor for more information.

Appendix

Recommended Tool Set

Tool	Function
Cotton Swabs (Q tips)	Aid in cleaning capping station and wiping assembly
De-ionized Water	Moisten Q-tips or towels used near print heads
Forceps/Tweezers	For replacing capping station
Needle nose pliers	For replacing dampers
Measuring Tape	For measuring media widths
Snap Blade Cutter	For cutting media
Phillips / Flat Head Screwdriver	General Use

Spare Parts

Part Number*	Description
E002 Ink Refills	(See below)
SPA-0088	DPS 52 Print Head Wiper
M002593	Print Head Cleaning Station
M1033926	DPS Ink Dampers (Filters)
IJ1920A-001	Ink Jet Print Heads

* All parts are available from Digital Printing Systems. Please contact us at (845) 365-6400 for pricing and delivery information. Ink Refills can be ordered in 500 ml quantities. Please order by color name – Cyan, Magenta, Yellow, Black, Light Cyan, and Light Magenta.

Approved Substrates

WALLCOVERING

Manufacturer	Product Code	Description	Nozzle Dryer Comment
Monadnock	CP687	Ink Jet Strippable Wallpaper	No Heat While Printing
Monadnock	C2189-085	Coated Strippable Wallpaper	Requires Heat While Printing
Monadnock	Most Flexo / Gravure Wallcovering papers		Requires Heat While Printing
Dexter	12002A, 7140R	Non-woven wallcovering	No Heat While Printing
Speciality Coatings	XER3	Plastisol Coated Paper	Requires Heat While Printing
Speciality Coatings	SMW3	Matte Plastisol Coated Paper	Requires Heat While Printing
Metsa Serla	Cresta D2	Coated Peelable Wallpaper	Requires Heat While Printing
Metsa Serla	Cresta D1, D	Uncoated Peelable Wallpaper	No Heat While Printing
Cham Paper / Hunsfos	VMT Smooth	Coated Peelable Wallpaper	Requires Heat While Printing
Cham Paper / Hunsfos	VMT Matte	Coated Peelable Wallpaper	Requires Heat While Printing
Fibermark	Varitess 290.150	Acrylic Coated Non-Woven	Requires Heat While Printing
CBC	12001C	Coated Strippable Wallpaper	Requires Heat While Printing
Valentine	Scr / Grav	Coated Strippable Wallpaper	Requires Heat While Printing
Valentine	RD #865H	Ink Jet Paper	No Heat While Printing

TEXTILE FABRICS

Manufacturer	Product Code	Description	Nozzle Dryer Comment
Various	N / A	Prepare for Print Cotton	Requires Heat While Printing
Various	N / A	Prepare for Print Cotton / Poly Blends	Requires Heat While Printing
Various	N / A	Prepare for Print Rayon	Requires Heat While Printing
Various	N / A	Prepare for Print Silk	Requires Heat While Printing

GRAPHICS

Manufacturer	Product Code	Description	Nozzle Dryer Comment
Avery	IPM Banner	Ink Jet Banner Paper	No Heat While Printing
Avery	IPM 2031	Ink Jet Banner Vinyl	No Heat While Printing
Rexam	GFTRP	Tear Resistant Paper	No Heat While Printing
Rexam	GFIOB2	Indoor / Outdoor Banner	Requires Heat While Printing
Rexam	DMIBOP10	Wet Strength Paper	No Heat While Printing
Rexam	DMVB15	Scrim Vinyl	Requires Heat While Printing

LAMINATES

Manufacturer	Product Code	Description	Nozzle Dryer Comment
Inveresk	PIP	Impregnated Paper	Requires Low Heat While Printing
Mead	Overlay (bulky)	Alpha Cellulose Paper	Requires Low Heat While Printing
Mead	WPB-PDF11	Print Base	Requires Low Heat While Printing
Munksjo	F5H-3184-AP-80	Print Base	Requires Low Heat While Printing

The above list contains substrates that have been tested and approved by DPS. It is important to note that many other substrates will work with DPS 52. Please contact us for more information.