

Printing to a Mac-only HP DeskWriter® from a Windows® PC®

Introduction

Got a "Mac-only" HP DeskWriter inkjet printer gathering dust? Want to connect it to a PC and print to it from Windows? Then this Application Guide is for you!

Hewlett-Packard® made two very similar series of desktop inkjet printers – the DeskJet® series for Windows / PCs, and the DeskWriter series for Apple® Macintosh® computers. The DeskWriter line has been discontinued in favor of the current DeskJet line, now that Macs use USB as their preferred means of connecting serial devices.

This Application Guide explains how to print from a PC running Windows 98 or Windows XP to an **HP DeskWriter 660C** inkjet printer that has only a mini-DIN-8 connector – a decidedly *nonstandard configuration* that is *not* supported by HP. An unused serial port (DB-9 or DB-25) is required to connect the PC to the DeskWriter 660C.

Cabling

DeskWriters with mini-DIN-8 (8-pin) connectors are normally connected to a Macintosh computer via a Macintosh *serial printer cable* with male mini-DIN-8 connectors on each end. Since these cables are not used in the PC world, a cable must be acquired or made to connect a DeskWriter to a PC's serial port.

A somewhat similar, widely-available and well-documented cable provides a good place to start – the Mac *modem cable* is a mini-DIN-8-to-DB-25 cable that facilitates connecting a Mac modem to a conventional (i.e. PC) RS-232 serial port. This is a *straight-*

though-style cable. The pinout can be found by opening the PICT resources of the Apple Modem Tool with ResEdit:

Modem Cable Pinout DIN-8 to DB-25

A DIN-8 to DB-25 cable should be used with this modem. The wiring diagram for this modem is shown below.

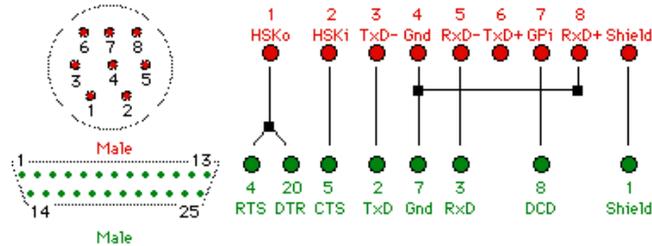


Figure 1: Modem Cable Pinout (from Apple). Differs from Serial Printer Cable Pinout.

Figure 1 shows the pinout of commercially available cables like the Belkin® F2V088-06 "6FT MAC MODEM DIN8M/DB25M" cable, described as "This modem cable interfaces the Mac+/SE/IIGS and Mac series II computers to all Apple peripherals with 8 pin mini din serial ports."

Mac serial printer cables differ from Mac modem cables in that they are *null-modem*-style cables. Therefore a Mac modem cable cannot be used (alone) to connect a DeskWriter to a PC. Belkin makes a very small number of mini-DIN-8-to-DB-25 Mac serial printer cables (e.g. F2V026-06), but they are configured to connect a mini-DIN-8 Mac to printers with a DB-25 female connector. Unfortunately this is the opposite of what we are looking for.

It turns out that what is needed to connect a DeskWriter to a PC is a *combination of the Apple modem cable and a null-modem cable* (fully wired). As a test, we connected a DeskWriter 660C to a PC's COM2 serial port (DB-9 male) with the following cables and adapters:

- Apple modem cable (min-DIN-8 male, DB-25 male)
- gender changer adapter (DB-25 female, DB-25 female)
- adapter (DB-25 male, DB-9 male)
- null modem cable (DB-9 female, DB-9 female)

Note A simpler cable can be assembled with, for example, an Apple modem cable and a null-modem cable with female DB-25 connectors on both ends.

If you'd like to make your own mini-DIN-8-to-DB-9 printer cable and you're handy with a soldering iron, refer to Figure 2.¹ You can make one from an existing Mac serial printer cable and a female

DB-9 connector and hood, available at many electronics stores for a combined cost of around \$10.

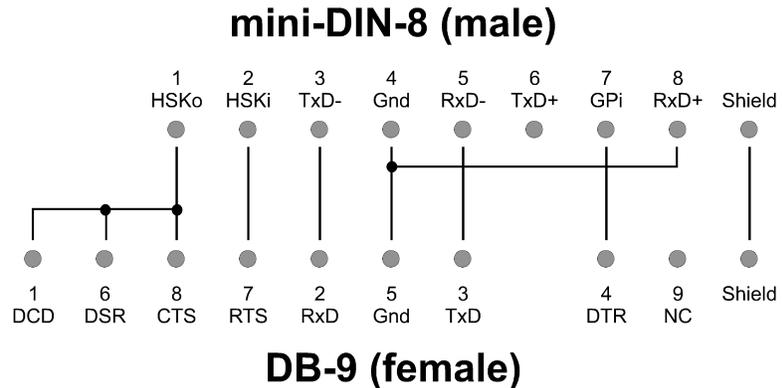


Figure 2: Pinout for mini-DIN-8-to-DB-9 Serial Printer Cable

You can connect the cable shown in Figure 2 directly between a PC's serial/COM port's DB-9 connector and a DeskWriter's mini-DIN-8 connector.

If you have an older PC with DB-25 connectors on one or more of its serial/COM ports, you'll need to make the cable shown in Figure 3.²

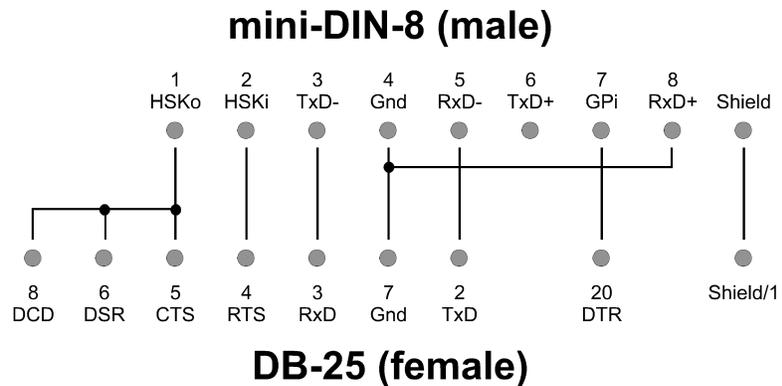


Figure 3: Pinout for mini-DIN-8-to-DB-25 Serial Printer Cable

Note The pinout on the side of the DB-25 connector in Figure 3 is completely different from that of the DB-9 connector in Figure 2.

Caution The DB-9 and DB-25 serial/COM port connectors on PCs are male / pin / plug type, and mate with female / receptacle / socket type connectors found on serial cables. PC's also have 25-pin female connectors – these are the parallel/LPT port connectors. Serial/COM and parallel/LPT ports are not interchangeable.

More Advice on Cabling

Assuming you already have a Mac modem cable (DB-25-to-mini-DIN-8), what you need is also a null-modem cable "inline" on your way to connecting the printer to your PC. Then, you need gender changers because nearly all null-modem cables these days have female DB-9s on each end.

There are also some molded DB-25-to-DB-9 adapters out there – but you will need one with the right sexes (DB-25 female, DB-9 male).

Table 1 (male = pin, female = socket) lists all the connectors and their sexes as an example of how to connect a typical PC (with DB-9 serial ports) to a DeskWriter. Each connection is made from one item's end B to the next item's end A.

Item	End A	End B
PC serial port	–	male DB-9
Null-modem cable	female DB-9	female DB-9
Adapter(s)	male DB-9	female DB-25
Mac modem cable	male DB-25	male mini-DIN-8
DeskWriter	female mini-DIN-8	–

Table 1: Example Connection using Readily Available Cables and Adapters

Note Null-modem cables are also sometimes called computer-to-computer or LapLink[®] cables. Regardless, cables with female DB-9s on each end are usually null-modem cables. Null modem cables are internally different from straight-through / extension cables, which are always female on one end and male on the other.

Software Configuration

Some Windows drivers for HP DeskJet printers appear to work properly with their DeskWriter equivalents having the same model number. In general, you should use the Windows printer driver for the DeskJet that is most similar to your DeskWriter.

Separate installation instructions for Windows 98 and Windows XP are presented below.

Drivers Details – Windows 98

For the DeskWriter 660C, the most obvious HP driver choice is the DeskJet 660 (Color) driver supplied with Windows 98. Version

4.00, using `hpdskjtb.drv`, will provide color and B&W output to the DeskWriter 660C, allows supports serial printing, but the color output is of very poor quality and the driver properties are very limited. Later versions of this driver (e.g. v9.02 and v11.0), available at HP's web site <http://www.hp.com/>, *do not support printing to the serial port*. Unfortunately, "tricks" like *redirecting printer port output* to the serial port via the DOS mode `LPTn=COMn` redirection command do not overcome this limitation.

Interestingly, a driver for a much more modern HP DeskJet series of printers does work, and it works very nicely. The drivers for the DeskJet 640C series (with USB and Parallel interfaces) are entirely compatible with the DeskWriter 660C, and support printing to a serial port. The "HP DeskJet 640 Series Printer Driver USB" driver, `dh653en.exe`³ v2.4.4, can be downloaded from HP. The startup screen is shown below:

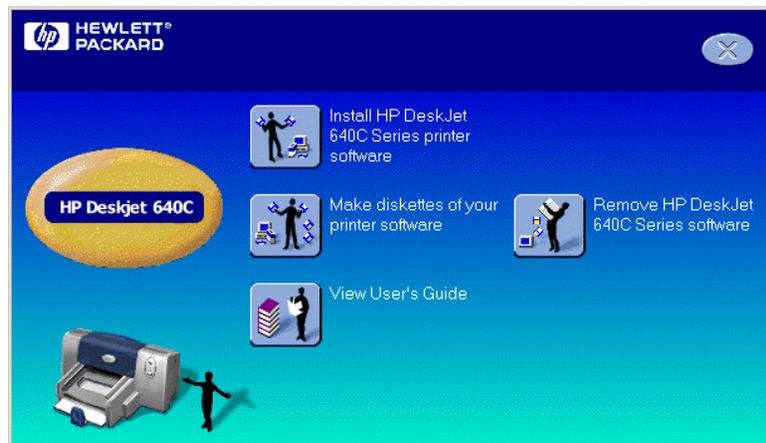


Figure 4: HP DeskJet 640C Printer Driver Installer

Run the setup program⁴ on your PC by selecting "Install HP DeskJet 640C Series printer software", and select a parallel port (e.g. LPT1:) even though your DeskWriter is not connected to said parallel port. Use the **Skip** option to disregard any problems the installer has communicating with the printer. After setup is complete, the printer driver will have been successfully installed.⁵



Figure 5: DeskJet 640C Printer Driver Installed

Now change the printer's Port selection to be the appropriate COM port on your PC by selecting the printer in Start → Settings → Printers, right-clicking, and selecting Properties → Details → Print to the following port:

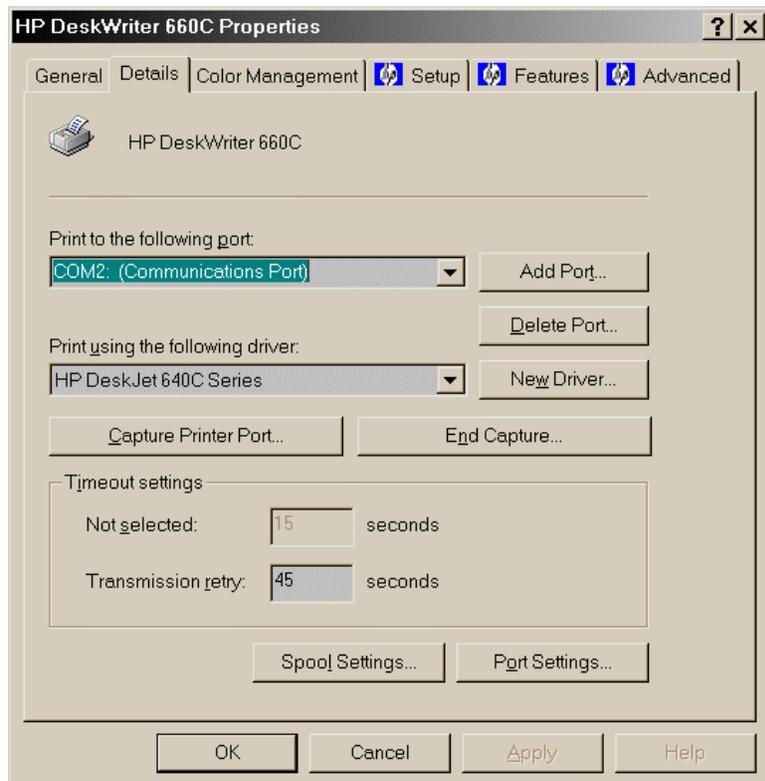


Figure 6: Printer Properties Screen

Note For the DeskJet 640C Series printer driver, the driver name that appears on the Windows 98 test page is `hp19xdr0.drv`.

Serial Port Settings

The DeskWriter series communicates at *57,600 baud* and with *hardware handshaking*.⁶ Therefore the serial communications (COM) port used on the PC must be configured appropriately.

After the printer has been installed, you'll need to change Bits per second to 57600 and Flow control to Hardware under Properties → Details → Port Settings (Windows 98) for the selected printer (HP DeskWriter 660C):

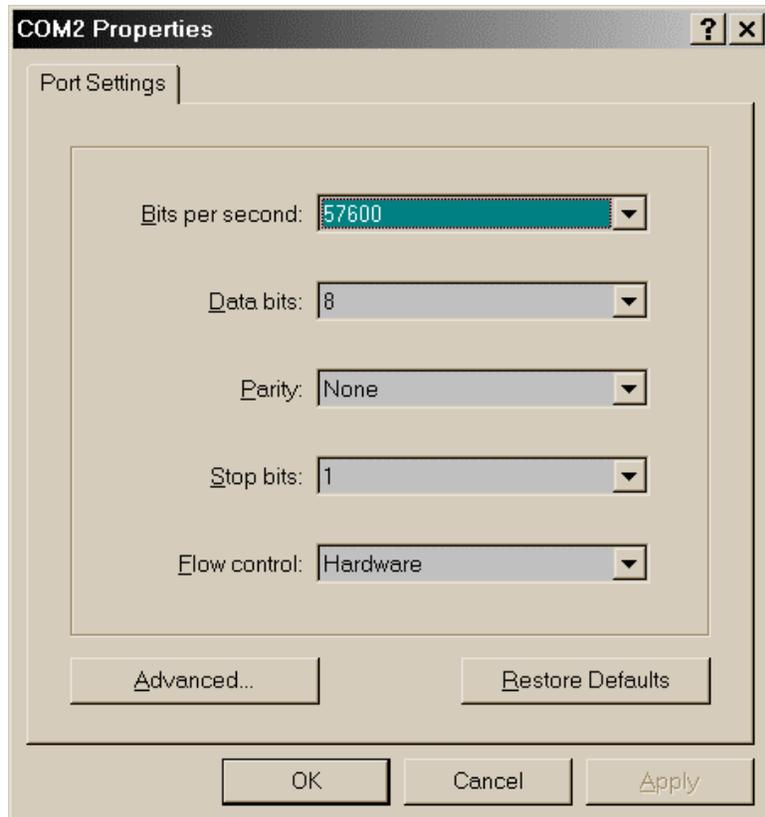


Figure 7: Serial Port Settings

Presto! You should now be able to print to your DeskWriter from Windows. And at 57,600bps, it's pretty quick, too!

Drivers Details – Windows XP

Similar to the situation with Windows 98, the most obvious "nearest" driver supplied with Windows XP – the driver for the DeskJet 660C – does not work as well as the driver supplied for the DeskJet 640C/642C/648C. Additionally, it's possible to choose a serial port directly when configuring adding the printer. The procedure is outlined below.

Under Start → Printers and Faxes, chose Add a printer to launch the Add Printer Wizard:



Figure 8: Add Printer Wizard

Click on Next. Select Local printer attached to this computer:

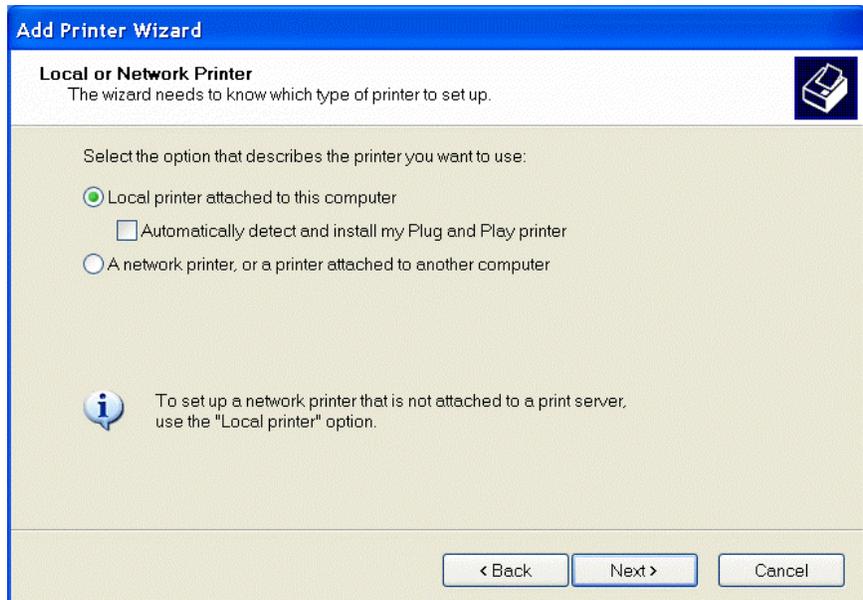


Figure 9: Selecting a Local Printer

Click on Next. Under Use the following port: select COM1 or the serial port you'll be using:

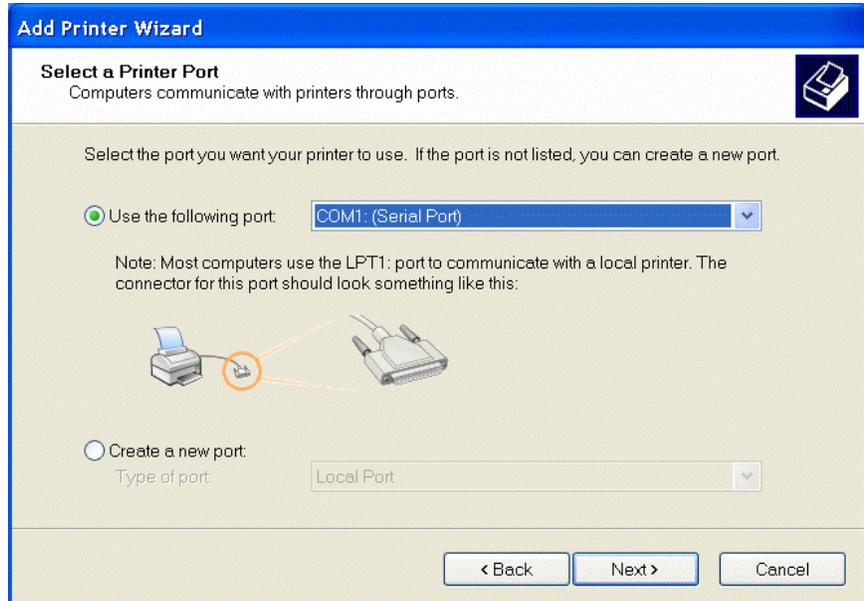


Figure 10: Choosing the Serial Port

Click on Next. Under Manufacturer select HP and under Printers select HP DeskJet 640C/642C/648C:

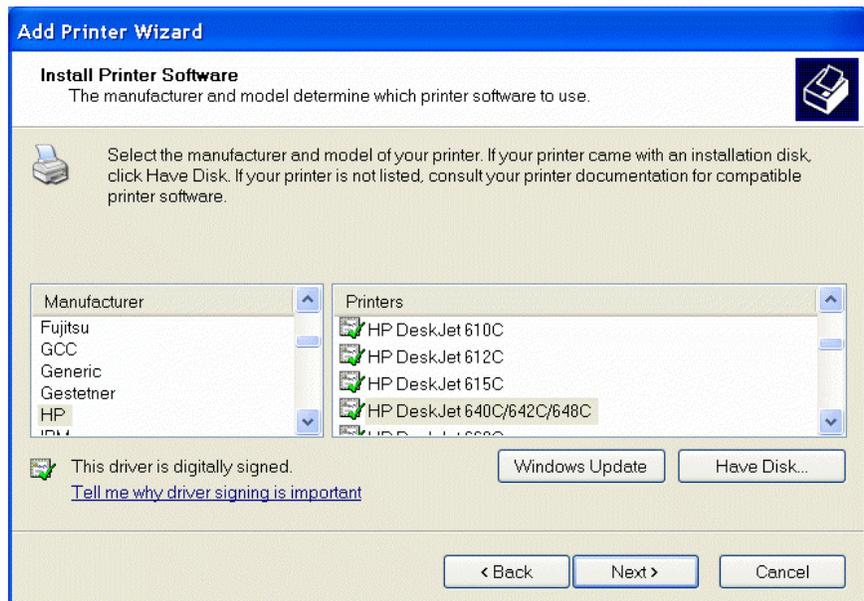


Figure 11: Selecting the Printer Driver

Click on Next. Give the printer a descriptive name, e.g. HP DeskWriter 660C:

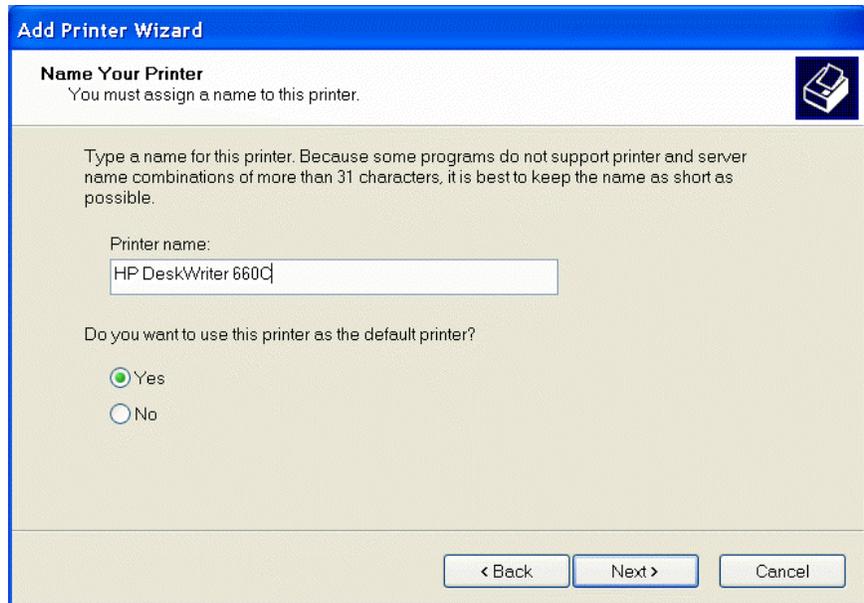


Figure 12: Naming the Printer

Click on **Next**. Decide whether you'll be sharing your printer across a network, and make the appropriate selection:

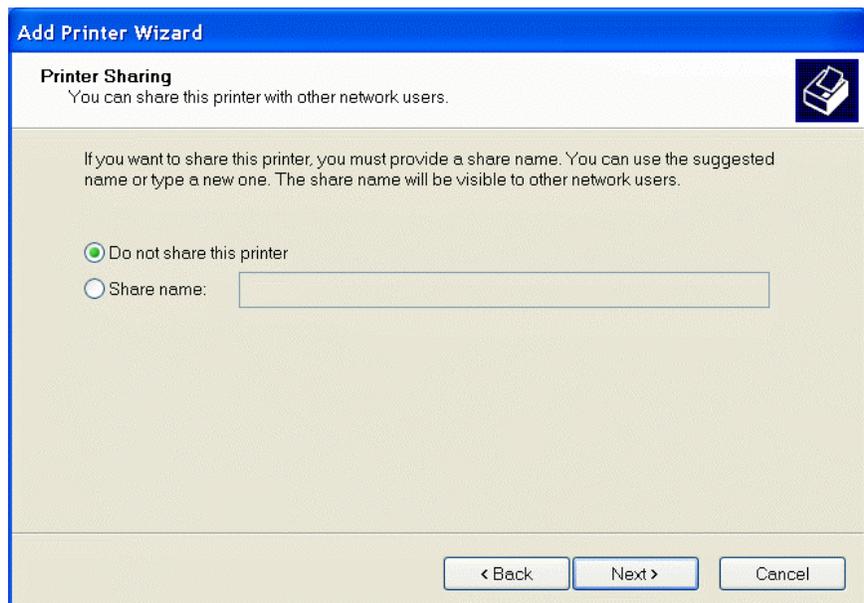


Figure 13: Choosing to Share the Printer

Click on **Next**. Since the printer's serial port has not yet been configured, choose **No** under **Do you want to print a test page?**

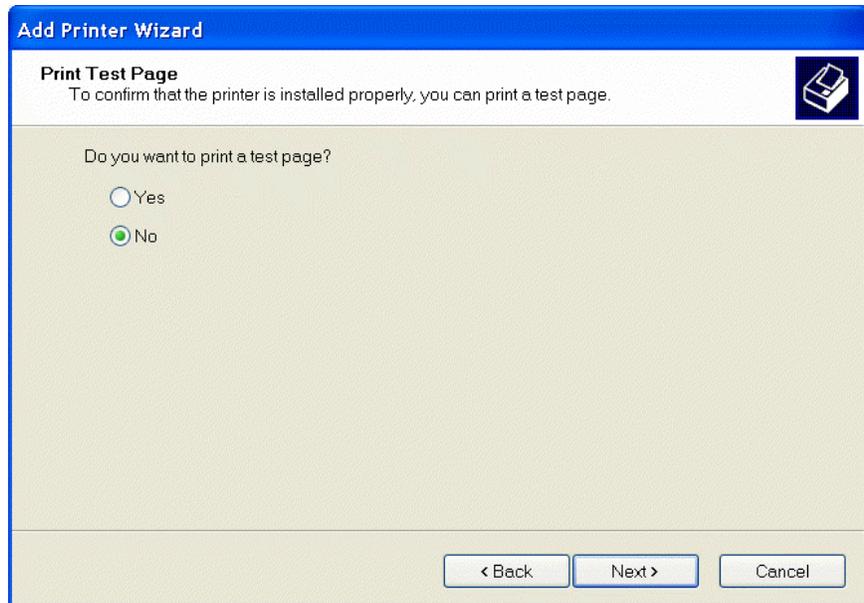


Figure 14: Avoiding the Test Page for Now

Click on Next. The Add Printer Wizard will display a summary page:



Figure 15: Add Printer Wizard Summary Page

Click on Finish to complete the driver installation. When done, select Start → Printers and Faxes to verify that the printer is now available:

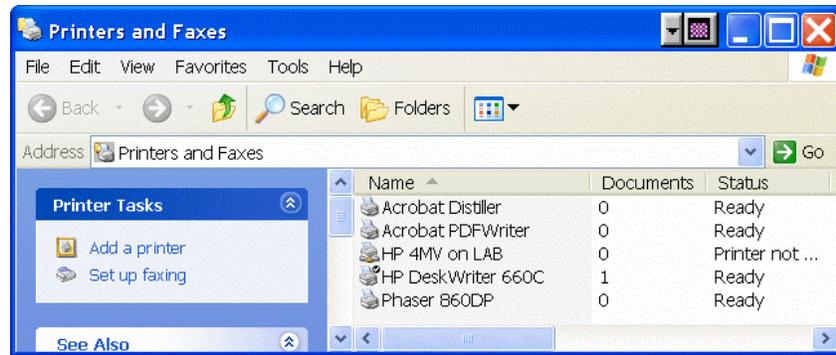


Figure 16: Printer after Successful Installation

Serial Port Settings

The DeskWriter series communicates at *57,600 baud* and with *hardware handshaking*. Therefore the serial communications (COM) port used on the PC must be configured appropriately.

In the Printers and Faxes window, right-click on the printer's icon, select Properties, then Ports:

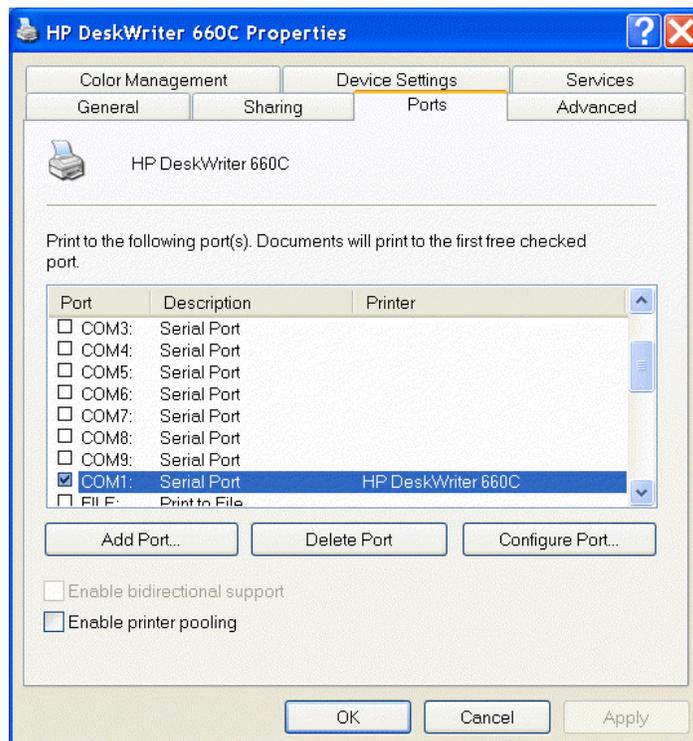


Figure 17: Configuring the Serial Port

Click on **Configure Port...** Change Bits per second to 57600 and Flow control to Hardware:

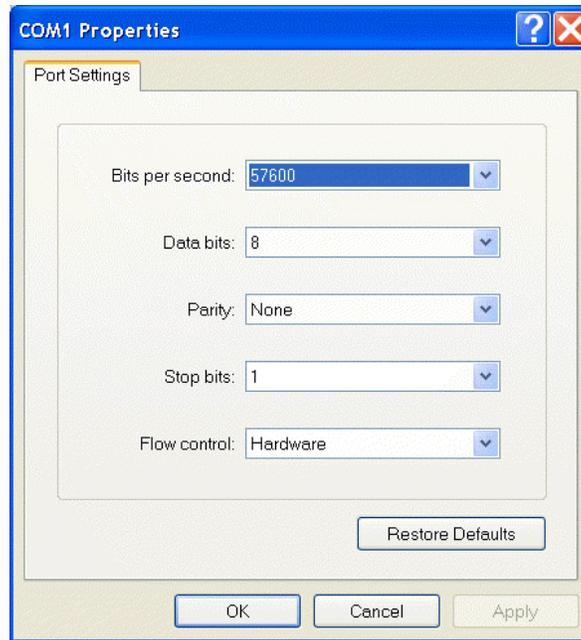


Figure 18: Avoiding the Test Page for Now

Click on OK. The printer is now configured for use.

Troubleshooting

Choosing the right HP driver can be difficult. It's a hit-or-miss affair to identify which HP DeskJet driver(s) will work when printing to a serial port. You may have to install several different printer DeskJet drivers before finding one that works with your DeskWriter.

Note Multiple drivers (e.g. HP DeskJet 640C Series and HP DeskJet 660 (Color)) can often coexist on the same PC, each directing output to the same COM port. So you can experiment with different drivers to find the one with the best output and feature set.

Note Few, if any HP DeskJet Windows 98 printer drivers offer the user the choice of a serial connection to the printer. The choices presented are usually a parallel or USB connection. After installing the driver / adding the new printer, you must manually change⁷ that printer driver's configuration to print to the serial port where your DeskWriter is connected.

Printing Test Pages

In Windows XP, you may receive an error message when printing a test page to your DeskWriter, even when the page has printed successfully. As long as your printer is working properly, you can safely ignore this message.

Other Operating Systems

You can print from Linux® to your DeskWriter using the cable detailed above. You'll need the right driver, of course.

Because the DOS mode command does not explicitly support 57,600bps and hardware handshaking, it is probably impossible to print to a DeskWriter from DOS.

Conclusion

With the appropriate cable and HP's Windows printer drivers for the DeskJet 640C, a PC running Windows 98 or Windows XP can print via a serial port to an older, "Mac-only" DeskWriter 660C.

Testimonials

*"Thank you for the info. I was able to get my
DeskWriter 600 working using your instructions.
Thanks much!"*

S. M.

*"Well, I've also tried to do everything as you said and
guess what??? It works. Fantastic. MUCHAS
GRACIAS, now I'll have less dust and more color!
Thanks!"*

F. B.

*"Thank you very much ... It is exactly what I was
looking for."*

W. W.

"That's fine! Thank You!"

Z. Z-G.

*"I followed your instructions ... and was able to get it
to work from Windows XP and with no issues. Thanks
again,"*

J. G.

"Thanks for explaining the cable connections in more detail. I was able to track down all the cables and get the printer going. It feels great to be reusing something old, rather than just sending it to a landfill when it is in perfect working order.

It's I am here and I've just printed a flat mate's acting contract, luckily my DeskWriter was going – it did a fine job."

J. S.

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- ¹ "NC" means not conected.
 - ² Pins not shown are not connected.
 - ³ dh652en.exe can also be used.
 - ⁴ enu\9x\disk1\setup.exe after running dh653en.exe .
 - ⁵ The printer has been renamed "HP DeskWriter 660C" from the default of "HP DeskJet 640C Series".
 - ⁶ Hence the need for a fully-wired null-modem cable.
 - ⁷ See Driver Details, above.