

## **Apple Floppy Drives**

Apple produced a number of external floppy drives for the Apple II and early Macintoshes. This document contains images of some 3.5" and 5.25" drives plus notes on their application. Only drives sold under the Apple brand are listed; drives for PowerBooks are not included.

Links to more detailed information on usage of each drive are provided at the bottom of the page. Usually it is harmless if the wrong drive is connected to the wrong computer, but some combinations will cause damage.

- **Never connect an Apple II 5.25" drive to a Macintosh 19 pin floppy port.**
- Apple II and III 5.25" drives are all 140K in size and use the GCR recording technique. GCR disks cannot be read by standard PC disk controllers.
- 3.5" 400K and 800K drives use the GCR recording technique. GCR disks cannot be read by standard PC disk controllers.
- 3.5" 1.4M drives can use both GCR and MFM recording techniques; the MFM technique is used to create 720K or 1440K PC format floppy disks. MFM disks can only be read/created by an Apple II with the "Superdrive" controller or a Mac with FDHD ROMs.
- 3.5" drives designed for use on the Apple II have eject buttons and pass through connectors for daisy chaining drives.
- Drives often have a paper label such as "Drive 1", "Drive 3" etc. This label is for the benefit of the computer user. Drives are identical no matter what the paper label says.

### **Macintosh 400K (M0130)**

The M0130 was designed for use with the original Mac 128K and 512K. It will also work with the Mac Plus and early Mac SE (non FDHD). Apple advise against using the drive with Macs which use an FDHD controller although one person has reported using it with a Mac SE/30.

The M0130 will not work with any Apple II unless a third party disk controller is used. A third party controller was also built to use the M0130 with a PC.

It is one of two Apple 3.5" drives in a beige case.



### **Apple 3.5" External (A9M0106)**

The Apple 3.5" External was designed for use with Macintoshes and Apple IIs with a suitable 800K disk controller (eg the Apple IIs built-in controller or the "SuperDrive controller" in a IIe). Note the eject button and the daisy chain



connector (not shown) at the rear. The daisy chain connector should only be used when the drive is used with an Apple II.

The drive can be used on any Mac with an external 19 pin floppy connector. The Mac 512K should use this as a second disk with the HD20 INIT installed on the internal 400K boot floppy. The HD20 INIT provides HFS support for the original Mac ROMs; it is not needed for later Macs.

### **Macintosh 800K (M0131)**

The M0131 can be used on Macs in the same way as the Apple 3.5" External. It is not intended for use with the Apple II (there is no eject button) but will work with third party disk controllers. The Mac 512K should use this as a second disk with the HD20 INIT installed on the internal 400K boot floppy.

The M0131 was first produced Apple's switch to platinum. Known versions are beige with a brown cable. Later platinum versions may exist, in which case they will have a grey cable.



### **Unidisk 3.5" Drive (A2M2053)**

The Unidisk 3.5" has a white case and is designed only for use with Apple IIs. The Iie and earlier require the "Liron" controller card and a ROM upgrade is needed for the early Iic. The drive has a pass through connector.

The IIgs supports the Unidisk 3.5" but the drive is slower than the Apple 3.5" External which should be used in preference. The drive is white to match the Apple Iic case.

(Photo courtesy of Bryan Villados.)



### **Apple FDHD External (G7287)**

The FDHD External uses a similar case to the 3.5" External but the 800K mechanism has been upgraded to a 1.4M mechanism. With appropriate software, it is capable of reading PC format disks in both the Mac and Apple IIgs.



It was designed for use with Macs with an FDHD disk controller (eg SE FDHD, SE/30, IIX, IICi). If used with a Mac that doesn't have an FDHD controller, it will operate as an 800K drive. It should not be used with the Mac 128K or 512K.

The FDHD can also be used with Apple IIs fitted with a "SuperDrive controller" or a suitable third party disk controller. If used with a IIGs that doesn't have a "SuperDrive controller", it will operate as an 800K drive.

### **Disk II**

The Disk II was Apple's first drive for use with the Apple II. It is attached to the disk controller by a ribbon cable; this can be changed for a 19 pin D connector so that the drive can be used with later Apple II models or the 5.25" drive controller card.

The Apple III and III+ can use a Disk II with a modified analog card; I have not found details of these modifications on the web.



### **Bell and Howell Disk II**

The Bell and Howell drive was manufactured by Apple. It is identical to the Disk II apart from the case colour and labels.

(Photo and information courtesy of Brian Villados.)



### **Disk IIc (A2M4050)**

This is the first Apple II drive to feature a 19 pin D connector. Its case matches the Apple IIc for which it was designed. The Disk IIc is a half height drive; it does not have a daisy chain pass through port. The drive is white to match the Apple IIc case.

(Photo courtesy of Brian Villados.)



### **Unidisk 5.25" Drive (A9M0104)**

The Unidisk 5.25" was Apple's replacement for the Disk II. It is a half height drive in a beige case and uses the 19 pin D connector. It was



the first 5.25" drive to feature a pass through port.

(Photo courtesy of Bryan Villados.)

### **Apple 5.25" Drive (A9M0107)**

From the outside, the Apple 5.25" drive appears to be a platinum cased Unidisk 5.25" drive. This confusion is repeated in many Apple technical documents.

Generally, the Unidisk 5.25" and Apple 5.25" drives are interchangeable. However the Unidisk version requires -12V and cannot be used with the LC Apple IIe Workstation card.

Note that the platinum drive shown opposite appears to be darker than the Unidisk 5.25" owing to sunlight exposure. The best way to identify these drives is by checking the label on the underside.



### **Duodisk 5.25" Drive (A9M0108)**

The DuoDisk is effectively two Unidisk 5.25" drives in a single enclosure. It has a beige case and no pass through port.

The drive may need to be modified to work with a IIgs (see Apple II FAQs).

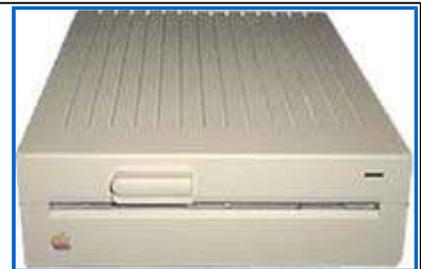


### **Apple PC 5.25" Drive (A9M0110)**

Apple's first IBM PC compatibility product was a 360KB floppy drive. It was designed for use with either a NuBus controller card or an SE PDS controller card. It will also work with early AST or Orange PC processor cards.

According to Apple, the drive and controller cards are not compatible with Macs with FDHD ROMs.

(Photo and information courtesy of [Fabrice Montupet](#).)



### **Apple Disk III (A3M004)**

The Disk III is designed for use with the Apple

III or III+. The two models have different floppy connectors and an adapter may be required (see links below).

(Photo courtesy of Sckop at [http://www.apple2world.jp/.](http://www.apple2world.jp/))



### Compatibility Chart

Apple Model	Adapter Requirement	External Drives
Apple IIe or earlier	Disk II or Apple 5.25" controller	Disk II, Disk IIc, Unidisk 5.25", Apple 5.25", DuoDisk 5.25"
Apple IIe or earlier	"Liron" controller	Unidisk 3.5"
Apple IIe or earlier	"Superdrive" controller	Unidisk 3.5", Apple 3.5", Apple FDHD
Apple IIe or earlier	Laser "Universal Disk Controller"	?? Unidisk 3.5", Apple 3.5"
Apple IIc	May require ROM update	Unidisk 3.5"
Apple IIc	None	Disk II (modified cable), Disk IIc, Unidisk 5.25", Apple 5.25", DuoDisk 5.25" (one drive only)
Apple IIc+	None	Apple 3.5", Unidisk 3.5", Apple 5.25", Unidisk 5.25", Disk II (modified cable)
Apple IIgs	None	Disk II (modified cable), Disk IIc, Unidisk 5.25", Apple 5.25", DuoDisk 5.25" (modified board)
Apple IIgs	None	Unidisk 3.5", Apple 3.5"
Apple IIgs	"Superdrive" controller	Apple FDHD
LC family Macintosh	LC IIe Workstation card	Unidisk 3.5", Apple 5.25"
	800K drive requires HD20 INIT for HFS support. HD20	

Mac 128K, 512K	INIT does not work with Mac 128 which can use drives only as MFS devices.	M0130, M0131, Apple 3.5"
Mac 512Ke, Plus, SE (not FDHD)	None	M0130, M0131, Apple 3.5"
Mac SE FDHD, SE/30, Classic, Classic II, Portable	None	M0131, Apple 3.5", Apple FDHD
Mac IICx, IICI, IISI	None	M0131, Apple 3.5", Apple FDHD
Mac SE, Mac II	PC drive card	Apple PC 5.25"

### Apple II and III Links

Apple II Frequently Asked Questions --

<http://home.swbell.net/rubywand/A2FAQs2CONTENT.html>

Steven Weyhrich's Apple II history pages -- <http://apple2history.org/intro/intro.html>

Apple III Frequently Asked Questions -- <http://www.wap.org/a3/a3faq.html>

Apple IIc: How to Determine If It Needs UniDisk ROM Upgrade --

<http://docs.info.apple.com/article.html?artnum=10098>

Apple IIc Plus: External Drive Configurations -- <http://docs.info.apple.com/article.html?artnum=3435>

Floppy Disk Drives: Apple III Plus External Drive Adapter --

<http://docs.info.apple.com/article.html?artnum=150>

Apple III+: External Drive Adapter Pin Configuration --

<http://docs.info.apple.com/article.html?artnum=1228>

Another page about Apple disk drives (in French) --

<http://perso.wanadoo.fr/fabrice.montupet/lecteur.htm>

### Macintosh Links

Macintosh: Support for External Floppy Drives -- <http://docs.info.apple.com/article.html?artnum=5911>

What are the pinouts for the external Disk Drive Connector? --

<http://docs.info.apple.com/article.html?artnum=966>

Apple PC 5.25 Drive: Description -- <http://docs.info.apple.com/article.html?artnum=10314>

Macintosh II PC 5.25 Floppy Disk Controller Card: Description --

<http://docs.info.apple.com/article.html?artnum=2178>

Macintosh SE PC 5.25 Floppy Disk Controller Card: Description --  
<http://docs.info.apple.com/article.html?artnum=2179>

Tips on using floppy drives with the 128K and 512K Macs:

<http://www.mac128.com/>

### **Can you help?**

If you have any corrections, please mail me, Phil Beesley, at [beesley@mandrake.demon.co.uk](mailto:beesley@mandrake.demon.co.uk). All photos copyright of the author unless otherwise stated.

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