IRWIN TAPE DRIVES

We have at least eight models of Irwin tape drives:

model 420   -   20Mb external
model 220   -   20Mb internal
model 265   -   64Mb internal
model 2080   -   80Mb internal (used to be p/n 285)
model 485   -   80Mb external
model 785   -   80Mb external
model 2120   -   120Mb internal
model A250E -   250Mb external

MODEL 420

The 420 is 20Mb drive for PC's and XT's and sits external to the computer. It has two cables, one for power and one for signals.   The signal cable plugs into the external connector of the floppy drive controller.   In our PC's and XT's, this will usually be the standard IBM dual 360k floppy controller card.   The power cable connects to a jack (supplied with the Irwin drive) which is fitted to the rear plate of the PC or XT.
The tape used in the 420 is the DC1000.   It is blank and has to be initialised (servo-write then format) by the EZTAPE software before it can be used to backup files.

MODEL 220

The 220 is a 20Mb internal drive.   The 220 is no longer made.   All of the known 220's were fitted into PS/2 model 50's.
The 220 plugs into the slot provided in the PS/2 50 for a second floppy drive.   The drive does not plug directly into the spare floppy slot however - it requires an adaptor kit.   The adaptor kit was a 'T' board which replaced the existing 'T' board in the PS/2 50.
The tape used in the 220 is the DC1000.   It is blank and has to be initialised (servo-write then format) by the EZTAPE software before it can be used to backup files.

MODEL 265

The 265 is a 64Mb internal drive which was suitable for most members of the PS/2 family. The 265 is no longer made. All of the known 265's were fitted into PS/2 model 50's and 50Z's.
The 265 plugs into the slot provided in the PS/2 50 for a second floppy drive.   The drive does not plug directly into the spare floppy slot however - it requires an adaptor kit.   The adaptor kit for the PS/2 50 is an 8450E kit.   The 8450E kit is a 'T' board which replaces the existing 'T'

board in the PS/2 50.

The tape usually used for this drive is the DC2080. Even though the tape has a capacity of 80Mb, the 265 drive will only use 64Mb of it.

MODEL 2080   (old p/n = 285)

The 285 is an 80Mb internal drive which is suitable for most members of the PS/2 family.   It fits into the slot provided for a second floppy drive.   The drive does not plug directly into the spare floppy slot - it requires an adaptor kit.

        model 285 ==>   PS/2 models 50 to 80   -   kit 8470

The 8470 kit is an adaptor which allows the drive to plug into the existing 'T' board in PS/2 models 50 to 80.

During the time that we were ordering these drives, Irwin altered their part number scheme and as a result this drive became known as the 2080.

The tape usually used for this drive is the DC2080.

NOTE:Most 285 drives are capable of operation at 120Mb.   To determine this, run the EZINFO program found in EZTAPE version 2.10 and greater.

MODEL 485

The 485 is an 80Mb external drive which is used for PS2's in which there is no room in the computers chassis for the tape drive (eg. PS/2 model 55SX).

The 485 requires that an Irwin 4100MC controller board be fitted into the PS/2. Power for the drive is derived from the controller board.

The tape usually used for this drive is the DC2080.

NOTE:Most 485 drives are capable of operation at 120Mb.   To determine this, run the EZINFO program found in EZTAPE version 2.10 and greater.

MODEL 785

The 785 is effectively a 485 which has been mounted in an external chassis for the purpose of having it powered from a 240Vac source. Having the drive externally powered is an advantage when your system contains boards which are already loading the computer's power supply heavilly.

Like the 485, the 785 requires that an Irwin 4100MC controller board by fitted into the PS/2.

The tape usually used for this drive is the DC2080.

NOTE:Most 785 drives are capable of operation at 120Mb.   To determine this, run the

EZINFO program found in EZTAPE version 2.10 and greater.

MODEL 2120

The 2120 is a 120Mb internal drive which is suitable for most members of the PS/2 family.
It fits into the slot provided for a second floppy drive.   The drive does not plug directly into the spare floppy slot - it requires an adaptor kit or an Irwin 4100MC controller board.   Most 2120 drives were ordered with 4100MC boards.
The tape usually used for this drive is the DC2000-120.   This tape is preformatted to 120Mb and is ready for immediate use.

NOTE: Some of these units are labelled as part number 287

MODEL A250E

The A250E is an external unit which is by default powered from the PC.   There is an optional 'external power supply module' available.
The A250E's normal capacity is 120Mb but with the optional data compression this extends the capacity to 250Mb.   According to ACA Pacific, the compression is done by the drive itself however version 2.22 Eztape software is required in order to activate it.
Like the 485 and 785, the A250E requires that an Irwin 4100MC controller board by fitted into the PS/2.
The tape usually used for this drive is the DC2000-120.   This tape is preformatted to 120Mb and is ready for immediate use.

GENERAL

Do not trust the part or model number that is shown on the tape drive. Many drives have been upgraded to higher capacity types and some haven't had the part/model number modified.
In EZTAPE versions 2.10 and greater, there is a program called EZINFO.   EZINFO when run will interrogate the tape drive and report various details - one of which is the capacity of the drive.

If an external Irwin drive is positioned next to a powerful magnetic source (such as a VDU) it will usually misbehave.

Being tape drives, it was expected that the majority of problems with Irwin drives would be caused by dirty read/write heads and capstans, but this hasn't been the case.

In addition to the tape that is supplied with each drive, there are tapes available from the store.

DC1000   (capacity = 10-20 Mb)
DC2080   (capacity = 80Mb)
DC2000-120   (preformatted to 120Mb)

DC1000, DC2000 and DC2080 tapes are blank and need to be initialised before they can be used.   Initialising involves two steps:

a) Servo-writing the tape.
b) Formatting the tape.

For these tapes, this can take up to 2 hours.   The time is dependent on the tape, the drive type and whether or not the drive is connected to a 4100 controller board.

Preformatted tapes are available however you must use the correct tape for the particular drive (refer to page 2.1/4 'Cartridge interchangeability' of the following Irwin Technical Bulletin notes).
The preformatted tapes display the formatted capacity in different ways.   Some tapes use a suffix on the part number, eg DC2000-40 is 40Mb. Some will use the word 'formatted' or 'preformatted'on the lable together with the formatted capacity.

NOTE:You can't bulk erase a preformatted tape and then format it to a higher capacity (this is generally due to the length of the tape).

There are two types of 4100 controller boards - the 4100 and the 4100MC.
The 4100 is for machines with an ISA bus (XT,AT) and the 4100MC is for machines with a microchannel bus (eg. IBM PS/2-50).

The 4100MC board has no switches - it just plugs into the computer.

The 4100 board (also known as 4100A) is essentially a specialised floppy disk controller. With it's switches in the default settings it uses the same DMA channel and interrupt as floppy controllers however it is designed to co-exist with floppy controllers.

For some unknown reason, the 4100 board does not work properly in Terran T40 computers. This may be due to the fact that the floppy controller is built into the motherboard. The board to use in a T40 is the 4251.

All Irwin tape drives require 'EZTAPE' software in order to run.
We use seven known versions of EZTAPE:

vers 1.10   (supplied with model 420 drives)
vers 1.11   ("   "   "   "   )
vers 1.14   (supplied with model 265 drives)
vers 2.00   (supplied with model 285 drives)
vers 2.02   (supplied with model 485 and 785 drives)
vers 2.10   (supplied with model 485 and 2120 drives)
vers 2.22   (supplied with model A250E drives)

Most of these versions formats the tape slightly different. This coupled with the fact that the different types of drives appear to format the tape differently as well results in quite a few compatibility problems.
From experimentation, the following has been learnt:

a) Use the correct version of EZTAPE for a particular type of drive. Do not use another version unless ACA Pacific advises that it can be used.

b) In most situations, a drive will read (but can't write to) tapes that have been produced by an earlier version of EZTAPE.

c) Error messages that appear when using EZTAPE are generally not indicative of the actual problem.

d) In most cases, you must de-gauss and re-initialise tapes that you want to use on other types of drives (or with other versions of EZTAPE).

Examples:

a) A 265 cannot access a tape that has been initialised with EZTAPE vers 2.0
b) A 265 can't read a tape which has been initialised in a 285 drive.
c) EZTAPE vers 1.14 will not work with a 285.
d) Tapes initialised by vers 1.14 can be read by a 285 running 2.0 however, you can't

The 2120 drive with a 4100 controller board is 'completely backwards compatible'. It can read all formats and write the 80Mb and 120Mb formats.

Irwin tape drives (with EZTAPE software) are NOT designed for backing up to and from floppy disk drives (according to Ken Anderson at ACA PACIFIC).

Some applications store data in very large files. Whilst EZTAPE will back up these files to tape successfully, it has been found that EZTAPE may crash when restoring these large files. The remedy to this problem is to use the DOSONLY variable. Use of the DOSONLY variable is described in the EZTAPE user's manual.