Definition : **PoweRec** = **P**lextor **O**ptimised **W**riting **E**rror **R**eduction **C**ontrol

The most important challenge facing CD-Recorders is to write high-quality discs with perfect readability on all available CD-ROM drives. Plextor recorders have a substantial database of parameters that allow writing to a range of currently available CD-R media. This will assure compatibility with a wide range of media and players.

Plextor's Expertise :

But not every media is suitable for recording at high speeds. For this reason, Plextor has developed a new technology that will guarantee the highest possible recording speed and quality.

How Does PoweRec Work?

PoweRec technology consists out of several unique functions that prevent write errors and as such offer the best quality recording.

- The first function will identify and test the target disc and select an optimised write strategy for this media. Running OPC will overcome the variation in dye characteristics over the disc.

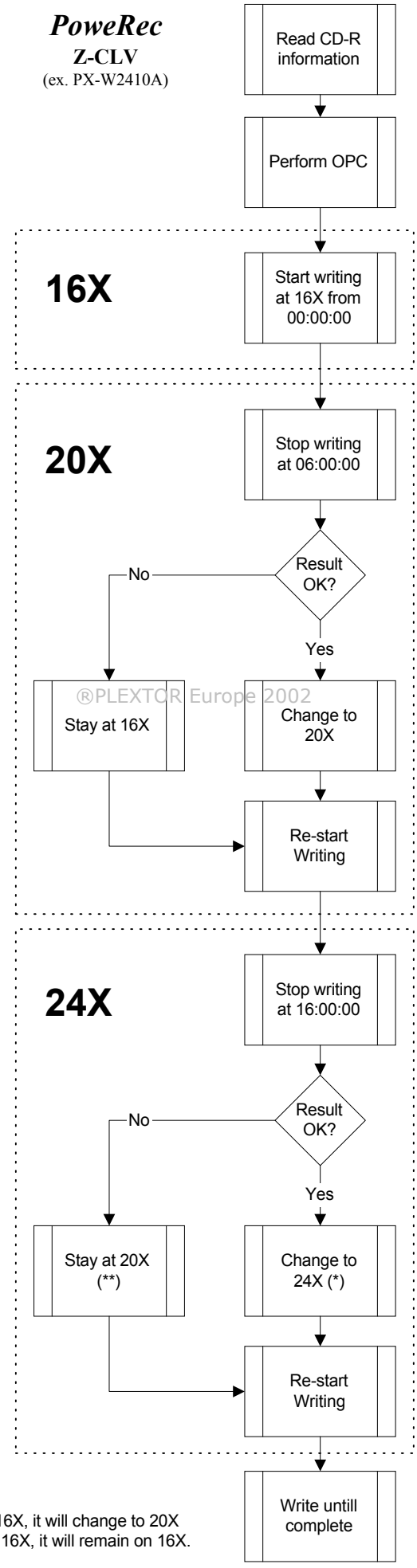
- During writing, real-time write quality monitoring ensures the best write quality for the selected speed. If write errors are likely to occur, the recording speed will be decreased automatically by the drive.

- In addition, PoweRec will act in a similar way for speed- and area switching in Z-CLV recordings. The write quality at the end of a zone will determine the recording speed in the next zone. If reasonable quality cannot be guaranteed, the drive will decide to maintain the current speed.

- For CAV-mode recordings, Plextor developed a unique and fine-tuned mechanism that offers a combination of speed and quality. As explained in the CAV chapter, the write strategy will change every 1X speed step while the laser power is adjusted every 1 minute position change.

  Besides this, PoweRec will also use a double safety system to watch over the CAV writing process:
  - **Continuous monitoring** of the write result will cause the drive to switch to CLV mode if the error signals exceed a certain threshold.
  - Simultaneously a **thermistor-based circuit** will adjust the Laser Power should the drive's internal temperature rise too much.

PoweRec
Z-CLV
(ex. PX-W2410A)



Start of the write process:
Read the information on the blank media.

Perform Optimum Power Calibration in order to optimize the parameters for this media.

Start the write process, and write at 16X during the first 6 minutes of the disc.

When the drive reaches the 6 minutes position, the write process is stopped by means of BURN-Proof technology.

Test if the write quality is good enough to increase the speed.

Change the parameters for 20X writing:
- increase the write speed
- increase the laser power

The write process is started again by means of BURN-Proof technology.

When the drive reaches the 16 minutes position, the write process is stopped by means of BURN-Proof technology.

Test if the write quality is good enough to increase the speed.

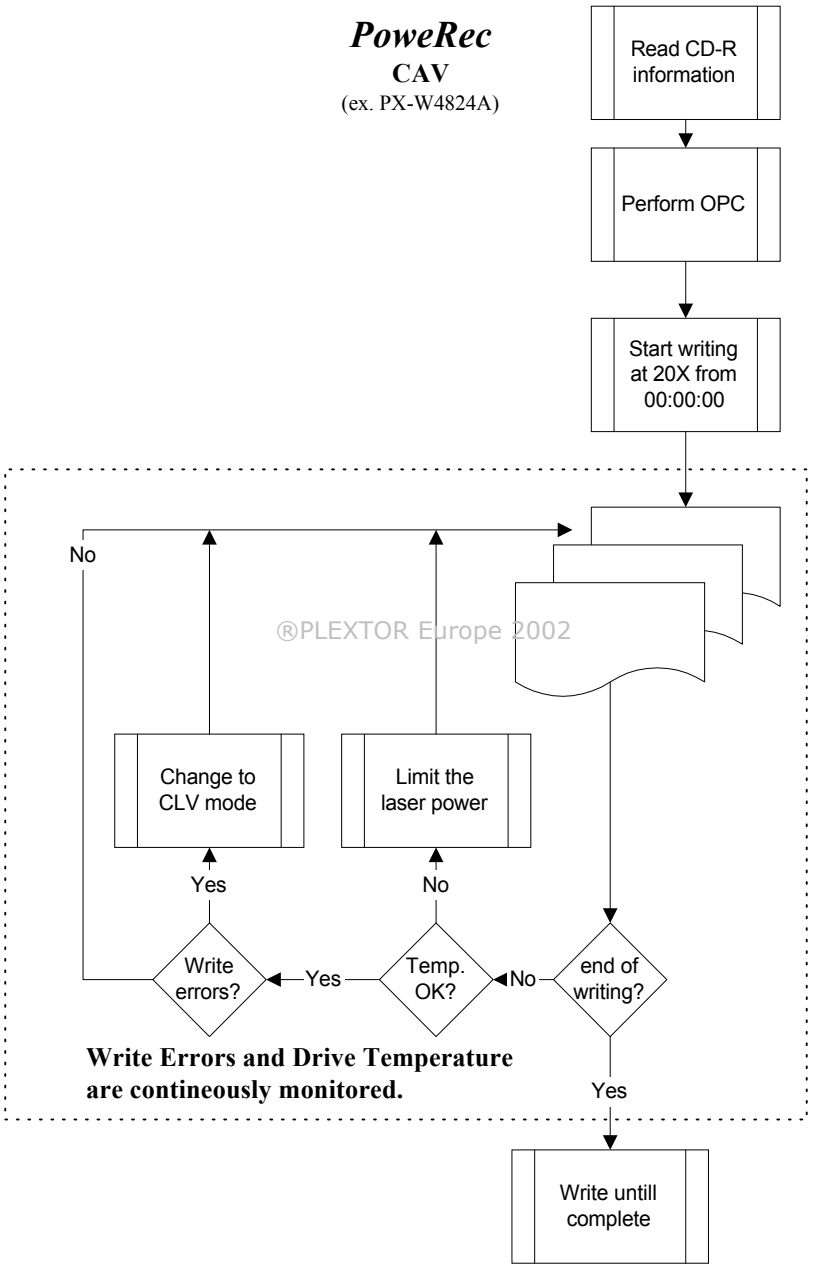
Change the parameters for 24X writing (*) :
- increase the write speed
- increase the laser power

The write process is started again by means of BURN-Proof technology.

When all data is written, the write process is finished.

Note:
(*) If the write speed was 16X, it will change to 20X
(**) If the write speed was 16X, it will remain on 16X.

PoweRec
CAV
(ex. PX-W4824A)



Start of the write process:
Read the information on the blank media.

Perform Optimum Power Calibration in order to optimize the parameters for this media.

Start the write process, and write at 20X.

Gradually increase writing speed

<- change the write strategy every 1X increase

<- change the laser power every 1 Min increase

Write Errors and Drive Temperature are contineously monitored.

When all data is written, the write process is finished.

Warning:

Disabling the PoweRec function permits to write all media at the highest speed.
In this case, the user should understand that the write quality cannot be guaranteed.