Flash memory or ROM

The formatter system includes firmware code that controls the product stored in either flash memory or ROM, depending on when the product was manufactured. Initially the formatters in all manufactured units are built with flash memory. As the product manufacturing matures, the code is stored in standard read-only-memory (ROM).

Units with firmware code in flash memory allow the firmware code to be recovered or updated. The firmware update/recovery process is described in Chapter 6. Units with firmware code in ROM will not require firmware code recovery or updating.

Standard Boot Process

When the product is unplugged or the power is off, the firmware code is stored on the formatter in two blocks. The first block of code is an executable boot block (about 64K of code). The second block of code is a compressed version of the product control code.

When the product is powered up, the boot block decompresses the product control code and stores it in RAM. Then the product performs a full startup with the control code running from RAM.

Product startup messages

The LED display contains different messages depending upon the progress of the boot process:

Table 13. Product startup messages

Message	Cause	Solution
	(Blank display for many seconds after power on). Boot block failure.	The flash memory requires a DIMM recovery of the firmware code (see Chapter 6).
`Contact Service`	Control code failure.	The flash memory requires a DIMM recovery of the firmware code (see Chapter 6).
`Hewlett Packard <<<`	Moving cursor HP display. The product is starting up.	Wait until Ready display.
`Ready.....`	Product startup is complete and the product is ready for action.	Begin using product.