

The laser versus CIJ debate

Laser coders as an alternative to continuous inkjet (CIJ) have been available for primary packaging and other small character coding applications for over 10 years and for much of this time the proponents of the two technologies have been unyielding in their claims as to which is better. The debate has been passionate and has generally revolved around the cleanliness and reliability of laser versus the versatility and lower up front cost of CIJ. Both sides have offered comprehensive cost of ownership calculations which support their cases but in the final analysis users have chosen lasers because of its fundamental characteristics and have been willing to accept whatever higher costs there may or may not be.

However the debate has now changed as a consequence of two major developments. First of these is the introduction and increasingly widespread acceptance of lower cost vector writer lasers. These have been sold and used in Japan for 5 years or so but their uptake in Europe and the US only really began 3 years ago. Because these lasers are lower cost the upfront capital penalty of a laser is much reduced and cost of ownership calculations now show a more even balance without resorting to penalizing CIJ for its impact on lost production.

The second development has been the consolidation of coding and marking which has seen CIJ companies acquiring laser technology and beginning to offer both to their customers. This has resulted in selling being focused more on matching technology to customers' needs and less on forcing the sale of a particular product. This of course brings the main coding companies into line with value added distributors who have practiced this solution based selling for years.



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So: the emotion has gone out of the laser vs inkjet debate. How then does a customer choose? Laser or inkjet?

CIJ has no doubt made tremendous strides in improving its reliability but it is a fact that it still needs service, that start up and shut down procedures need to be followed and that at its heart is an ink system that marries so many technologies that it is surprising that it is as reliable as it is. By contrast laser runs and runs and runs. Start up and shut down are no more complicated or time consuming than simply switching on and switching off. And the integration of a laser source and optical components practices physics at its most straight forward. This means that if it's uptime you want to maximize then choose a laser.

Both technologies benefit from developments in computer chips and related technologies to enable them to operate as they do. But whereas with laser this largely stays hidden, in CIJ it is manifest in a

sophisticated user interface which is necessary because of its more extensive service needs. In fact many laser applications need no user intervention from day one and any message changes are easily handled by a simple handheld device. Users basing their choice on ease of use should probably opt for laser.

Laser companies used to extol the virtues of laser's permanent code. But if it's a wash off code that's needed then CIJ is the only choice. Laser is also somewhat monochromic and cannot match the choice of colors offered by CIJ. And because vector writer lasers used in primary packaging are CO2 based forget about them when it comes to bare metal substrates and to many plastics. Lasers are also limited in speed so that for applications requiring 2 lines of print 2m/s is an effective limit and may be much lower for some substrates. This means that substrate, durability, speed and appearance may mean that the user does not have a laser option.

Sometimes the laser versus CIJ debate focuses too much on rating laser on CIJ's terms. If this constraint is lifted it is surprising what you can do with a laser which is simply impossible with CIJ. For starters lasers can code stationary substrates. This opens up many more coding opportunities. And then lasers code



messages and not lines and so a laser is just as happy (or nearly so) coding a tall thin message as coding a long short one. This means that codes can be applied perpendicular to the direction of substrate movement. Finally the code applied by a laser can be varied continuously and step-wise by changing lens. A laser can code a message as small as any printed by a CIJ and smaller and can also code one up to 800mm square. Try that with a CIJ!

Finally, cost of ownership. This depends. Factories running 24 hours a day, 7 days a week will probably find the total cost of laser including the higher up front charge lower than the total cost

of a CIJ. By the same token anyone running a laser or CIJ intermittently one shift a day, 5 days a week will probably be better off with the CIJ.

This change in the laser versus CIJ debate is good news for customers and a challenge for the salesperson. They will have to wrestle with the responsibility of helping the customer to make an informed choice. But ultimately it probably means that laser use will increase considerably and that the technology will account for some 30 to 50% of small character sales within 5 years.



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