

## **PRESSTEK**

Presstek became a darling of the stock market thanks to its revolutionary concept of imaging plates directly on the press, thereby bypassing the usual prepress steps of imagesetting and platemaking. In addition to eliminating steps, Presstek's technology eliminated chemicals, as the plates used on press required no chemical processing. Presstek has been successful in marketing this technology, called Direct Imaging (DI), but not to the degree which market speculators envisioned.

In addition to offering DI technology to the press manufacturing industry, Presstek has adapted this technology to computer to plate. Presstek badged the laser technology used in their DI presses and platesetters Profire. Presstek's first attempt at applying Profire technology was the Pearlsetter, introduced in January 1996. Presstek offered chemical-free plates for imaging on the Pearlsetter, which were the first commercially viable processless plates on the market. However, engineering of the Pearlsetter proved troublesome, and this product was discontinued. Presstek's next application of Profire technology was the Dimension 400, introduced in 2000. This re-engineered model overcame the problems associated with the earlier Pearlsetter, but continued to be accepted by only a niche market, where simplicity of operation, small footprint, and environmental concern trumped the need for volume throughput. Presstek has continued to introduce new Dimension models of varying sizes and speed.

In mid-2005 Presstek introduced an entirely new compact small-format model, badged as the Vector TX52. This machine uses "SureFire" technology and images the newly developed Freedom plate. This technology utilizes a 1064 YAG laser. Unlike the Dimensions, which use an external wash unit, it is designed with an internal wash section. The result is a compact imaging device for smaller presses (up to 20 x 21") where press runs under 25,000 are the norm. At Drupa 2008, Presstek introduced a newer version of the TX52, the Vector FL52, which they state has a redesigned imaging system for better quality.

A serious caveat when purchasing either Vector model is that these machines can only be used with Presstek's ironically named "Freedom" plates. You must buy your plates from Presstek, and therefore must pay their prices, without the possibility of shopping for a better deal. You are also limited to the plate sizes that they offer. If considering one of these machines, it's imperative that you confirm that Presstek offers plates that match your press sizes.

In fact, all platesetters offered by Presstek require that you use their plates. The Dimensions and also the newly introduced Compass models must be used with Presstek's processless plates, which use "ablative" technology. With ablative technology, the emulsion of the printing plate is either loosened or actually removed by the laser beam, leaving only the positive image on the plate. A wash process is all that is required following the imaging of the plate for the plate to be used on press. While this has the advantage of eliminating the need for chemical processing, it does have the disadvantage of creating debris within the machine that must be dealt with. A vacuum system is included by Presstek to remove this debris, but still frequent internal cleaning of the machine is required.

Another concern with this technology is the amount of laser power required to image ablative plates. While standard thermal plates have a sensitivity of 120 to 150 mJ/cm<sup>2</sup>, the ablative emulsion on Presstek processless plates requires 600 mJ/cm<sup>2</sup>. Thus, significantly more laser power is required to image these plates, resulting in higher laser operating cost. Another possible source of added laser cost is the engineering feature that requires the laser head to expose the entire width of the drum regardless of the width of the media being exposed. If you always image the maximum size, this is of no concern, however if you use smaller media, you will incur additional unnecessary operating cost.

The processless plates offered by Agfa, Kodak, and Fuji over the last few years do not use ablative technology. The elimination of this technology in processless CTP correlates to less debris and maintenance and also less laser power required for imaging. Obviously this new plate technology threatens the future of Presstek's existing CTP technology and consumables market. Presstek has, as a defense, taken the position that these competitive plates are not authorized for use on their equipment. As a consequence, their use will void any responsibility for service or

warranty for problems that can be identified with the use of an unauthorized plate. This has not discouraged Agfa from distributing a white paper outlining the procedures required to image Azura plates on Presstek Dimensions, although the viability of this is unknown. Elsewhere in the world, Dimension customers have been successful in converting to Fuji processless plates.

A summary of Presstek platesetters can be found below.

<b>Model</b>	<b>Year</b>	<b>Max. &amp; Min. Plate Size</b>		<b>Thermal Laser - 830 nm</b>
Pearlsetter Beta	1996	(obsolete)		
Pearlsetter Upgrade	6/1997	(obsolete)		
Dimension 200	9/2000	21 x 20	9.45 x 9.45	ProFire ablative
Dimension 400	4/2000	30.71 x 26.77	9.45 x 9.45	ProFire ablative
Dimension 800	9/2000	44 x 32	44.5 x 9.45	ProFire ablative
Dimension 400 Excel	2004	30.7 x 26.77	9.45 x 9.45	ProFire Excel ablative
Dimension 200 Excel	2004	20.87 x 19.69	9.45 x 9.45	ProFire Excel ablative
Dimension 425 Excel	3/2005	30.24 x 25.2	12.6 x 9.45	ProFire Excel ablative
Dimension 450 Excel	3/2005	30.24 x 25.2	9.45 x 9.45	ProFire Excel ablative
Dimension 225 Excel	3/2005	22.68 x 22.05	12.6 x 9.45	ProFire Excel ablative
Dimension 250 Excel	3/2005	22.68 x 22.05	9.45 x 9.45	ProFire Excel ablative
Vector TX52	6/2005	20.9 x 19.88	14.38 x 13	Sure Fire 1064 nm YAG laser
Vector FL52	6/2008	20.6 x 20	15 x 11	Sure Fire 1064 nm YAG laser
Compass 4000 Series	6/2008	29.5 x 26.77	12.25 x 9	830 nm
Compass 8000 Series	6/2008	45.7 x 37.4	15 x 13	830 nm

See page 36 for productivity specs.