The Best Solution to Consistent Fill Weights

Plagued by overflowing cartridges?
Looking for a technique to improve your success rate?
Want a system to handle almost any cartridge?

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At Promax Imaging Ltd., we get many visitors looking for a method to improve their success rate when filling cartridges. And we always tell them: the first step to successful cartridge filling is to prepare the cartridges appropriately.

Where a fast turn around of cartridges from empty to product can be achieved, the investment of time and effort in emptying and cleaning cartridges is not always recognised. Simply topping up the ink is often seen as sufficient to requirements.

The reality is different: as new, smaller cartridges come to market that hold ever smaller quantities of ink, there is increasing need to ensure that empties reach standardised conditions before filling commences.

But old, dirty and contaminated cartridges certainly cannot be "topped up": they require extensive preparation to reclaim them as a viable product.

The best techniques for filling cartridges involve vacuum technology. The reason for this is simple: the best filling techniques are those that cause the minimum of damage to the physical integrity of the cartridge. If vacuum is the best way to get ink into a cartridge, then it is equally the best way to get cleaning products into – and out of – a cartridge.

As a result, Promax Imaging Ltd introduced its vacuum cleaning products just over two years ago. These products include:

- The Promax Imaging VB120 Vacuum Boiler cleaning system for high throughput production lines
- The Promax Imaging Mini-Boiler cleaning system for shop based and small scale remanufacturers
- The Promax Imaging Spinner: a simple pump or gravity centrifuge

- The Promax Imaging VO66 Vacuum Oven for drying cartridges on high throughput production lines

And COMING SOON

- The Promax Imaging MiniOven to bring the high technology of cartridge drying to the shop front and small remanufacturer.

Vacuum Technology Explained

Cleaning and drying cartridges under vacuum has a major advantage. Under vacuum, water boils at a lower temperature, so you can get all the advantages of a high temperature cleaning or drying cycle at much lower temperatures – and so remove the risk of damage to cartridges that heat would cause. In fact you can

- boil wash cartridges at temperatures that are so low you can put your hands in the water without harm
- dry cartridges at temperatures below the boiling point of water

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Vacuum Oven Technology

The Promax Imaging Vacuum Oven operates on scientific principles very similar to those used in freeze drying of frozen food products on a commercial scale. If you freeze fresh food in a domestic freezer, the cell structure frequently collapses, and, on defrosting the food items are not firm. Not so with industrially frozen food: and this is because the use of vacuum freezing prevents the collapse of cells – just as the Promax Imaging Vacuum Oven prevents the collapse of the cell structure of the cartridge sponge.

But of course we do not want frozen cartridges – so during the vacuum cycle, a series of blasts of hot air are forced through the Promax Imaging Vacuum Oven that literally sublimates (changes from ice to vapour) fluid in the cartridge. You do not see the water escape: it is released in vaporised form and removed by the powerful vacuum pump that operates the VO66 Vacuum Oven.

Advantages of a Vacuum Oven

Vacuum drying opens the cell structure of the sponge. As the cartridge delivers ink in use, the cell structure of the sponge closes. That is why it can be difficult to refill cartridges without them overflowing: the closed

cells will not accept new ink. Reopening the cell structure means fewer overflows, easier filling, and a better quality cartridge. It could increase your pass rates by anything up to 100% when used in conjunction with vacuum filling.

Vacuum drying removes the final moisture from cartridges that have been centrifuged. It does not matter how long you centrifuge a cartridge: there will always be a few millilitres that cannot be extracted.

Vacuum drying of cartridges can remove 3-4ml of fluid from a cartridge: quite a large amount considering that many cartridges today contain little more than twice this volume of ink.

Furthermore, as vacuum drying ensures a properly prepared sponge in the cartridge, there are no problems with moisture tracking – when traces of moisture left in the sponge leach the ink away from the print head, with the result that a cartridge that tests fine on filling fails after a few days.

Promax Imaging VO66 Vacuum Oven

The Promax Imaging VO66 Vacuum Oven will dry up to 66 large HP colour cartridges in just over one hour.

The VO66 oven has many advanced features including a fully programmable PLU control accessed from the front panel, enabling you to set your own programme cycles. There are also manual controls to over-ride the preset programming to facilitate one off drying routines on small or unusual batches of cartridges.

The oven has automatic temperature maintenance via an independent programmer on the front panel allowing the operator to increase or decrease the internal operating temperature to suit your own needs.

Our unique hot gas venting system combined with the full jacket heater which covers the entire surface area of the oven ensures even temperatures throughout. As a result rapid vaporisation occurs leaving the cartridge sponges dry and supple.

Operating at a vacuum of almost one atmosphere the extremely powerful pump (see below) has been specially designed to extract moisture at a rate of over 1 litre of water per hour. More than one oven at a time can be serviced by the pump, significantly cutting the cost of running multiple ovens.

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Availability

The V066 Oven is available to order. Shipment is generally 3-4 weeks from order. All V066 Ovens require a dedicated three phase industrial electrical supply to operate that will require a qualified electrician to set up and connect to the equipment.

* If you wish to purchase the Promax Imaging VO66 Vacuum Oven with the VB120 Boiler, a Vacuum Regulator can be used to run both machines from the Vacuum Oven pump.

Details of electrical requirements for Oven and Pump operation can be obtained by calling Promax Imaging on +44 (0) 1538 722121.

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