



The Harmony corrugator wet-end brings productivity, reliability, and competitive pricing in harmony.

## A Wet-End in Full Harmony – and Under Full Control

The Harmony corrugator wet-end perfectly balances productivity, reliability, and a competitive price – and with its intelligent Orchestro Control System a high-quality, consistent board production is a breeze.

Corrugated board producers have different requirements depending on the markets they operate in. When the markets are different, why should the wet-end equipment be the same? It should not – there is no one-size-fits-all corrugator or wet-end equipment. BW Papersystems offers modular corrugating solutions that are customised to the need of the board producer. With the Harmony corrugator wet-end, the company offers equipment that brings productivity, reliability, and competitive pricing in harmony.

With the growth in e-commerce, the demand for corrugated material in general is high. Depending on the regional market, demand can manifest itself in different ways. In North America and Western Europe, the growing e-commerce market generates demand for enhanced strength properties, high-quality printing, better print finishes and high-quality material to enhance brand identity on e-commerce packages

and to improve applications with direct food contact.

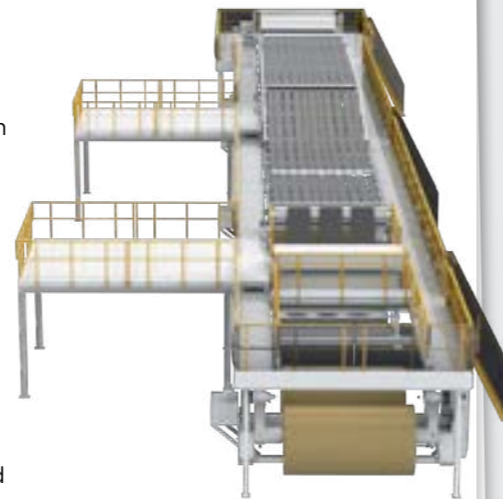
Translating these market needs into equipment requirements, results in a reliable, high output corrugator with advanced automation and controls that produces high-quality corrugated board. In the highly competitive European market, a competitive price-performance ratio is key. This is where the Harmony corrugator and its well-balanced features come into play. It is available in widths from 2500mm to 2850mm and speed ranges from 300 to 350 m/min., resulting in an average production capacity of approximately 12m sqm/month of quality board.

### Harmony Wet-End

The wet-end is where the foundation is laid for board quality in terms of flute integrity, flatness, and surface printability. The Harmony wet-end combines proven components from BW Papersystems, drawing on decades of experience and expert corrugating process know-how.

Modern corrugators are run with minimal operators, that is why BW Papersystems designs rollstands and splicers to include the highest level of automation to make the operation easy and reliable. Splice preparation

with the 'Auto Index' feature is simple and quick. The prepared splice is automatically positioned for the optimum splice seal. To prevent a tear out on unmarked paper mill splices, a Mill Splice Detect option is available. Splicers from BW Papersystems allow reliable splicing at high speeds and even with light paper grammages of 60 to 90 gsm. Rollstands can be equipped with dual size chucks for improved flexibility in the sourcing of paper. Automatic core ejection saves time for operators and reduces injury risk. The rollstand and splicer combination ensures the paper rolls keep rolling, web tension is accurate, and waste is kept to a minimum by avoiding paper breaks and ensuring



The Harmony's rollstand and splicer combination ensures accurate web tension and simple splice preparation.



The right level of automation makes the operation of BW Papersystems' rollstands and splicers as easy as possible.

simple splice preparation.

BW Papersystems' single facers are robust and easy to operate. The positive pressure machines are available as pressure-roll or pressure-belt type with quick flute change capability. The single facer provides a high level of automation, such as automatic cassette flute type detection, automatic glue dam positioning, automatic wrap arm control, metering roll and glue application gaps. An easy cleaning and maintenance access ensures higher uptime as it avoids dirt and debris build up. The single facer flute cartridge can be changed from the operator or drive side to suit an existing layout. Automation functionalities of the single facer are linked to the corrugator supervisory control system – the intelligent Orchestro Control System from BW Papersystems.

BW Papersystems preheaters and preconditioners are available in all sizes. The drums are driven at variable speed, ensuring a consistent web tension without causing tear outs or creating end-to-end warp. Accurate wrap arm position ensures a uniform heat transfer, with even web tension for production of flatter board. The preheaters are designed to work with modern corrugator process control systems, like Orchestro. The Wrap arms are automatically controlled to a desired paper temperature based on the order recipe or on feedback from an optional warp measuring device. With its 'Infusion' steam injection paper conditioning system,

BW Papersystems offers a remarkable method to properly precondition the paper. With the Infusion system fitted to a drum, a flat hotplate, or a curved hotplate, the single face or outside liner is impregnated with superheated steam that quickly boosts the paper temperature without over drying, making the paper pliable and ready for flute forming or to accept glue application. Glue cures faster and speeds are boosted better than with other heating plate, drum, or steam shower methods. The Infusion hotplates can be added to any corrugator single facer, glue machine or doublefacer.

In the Harmony wet-end, the glue machine applies the correct amount of starch to the single face

web, whether micro-flute or large flute types. Due to this product defects, such as wash-boarding, warp, and poor web edge bonding are avoided. The glue roll type is selected to meet a customer's production requirements. A rider roll or contact shoe system is available to keep the single face web against the glue roll with the correct amount of contact, to avoid crush and to pick up just enough glue for the bond to occur. The glue gap settings automatically adjust according to corrugator speed and product requirements. Glue machines can be installed as an individual machine or part of a wet-end line solution. When the glue machine is part of a full corrugator, the Orchestro supervisory system controls glue



Regardless of the flute size, the glue Machine always applies the right amount of starch.



The Cool-Vac doublefacer from BW Papersystems provides flat, dry and crushless corrugated sheets of highest quality.

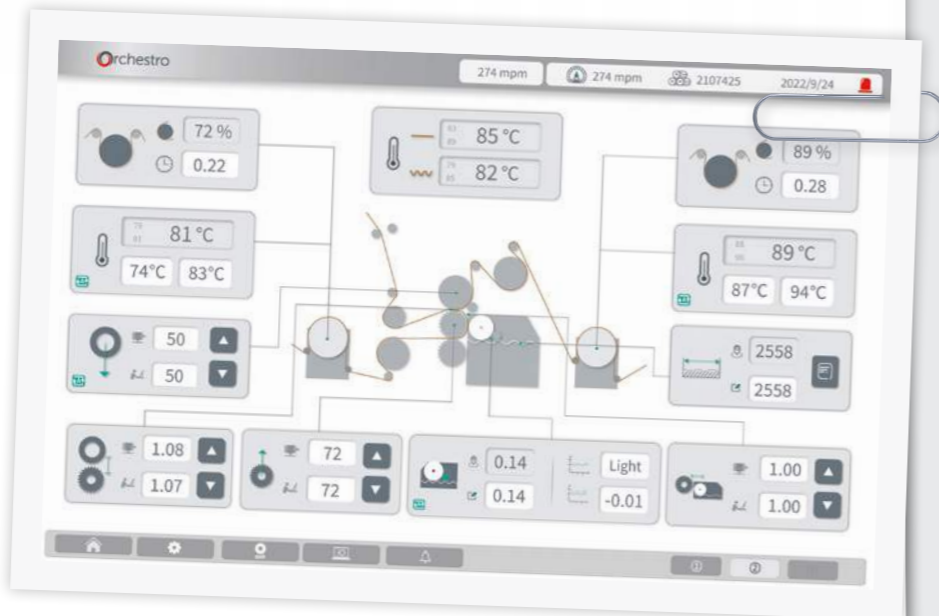
gaps and glue dam settings.

The Cool-Vac doublefacer produces flat, well-bonded, dry and crushless corrugated sheets of the highest quality - ready for immediate printing, folding, gluing, and die-cutting without additional curing time. The doublefacer is one of the key machines in the corrugating process. The Cool-Vac doublefacer eliminates crush and web weave and thereby improves board quality. The secret of the Cool-Vac; it combines a high energy heating section with a Vacuum Traction Section (VTS). This vacuum pulling section

reduces web crush, whilst removing excess moisture from the web prior to it entering the dry-end section of the corrugator. In contrast to this advanced technology, some conventional doublefacers squeeze the board to pull it forward, resulting in noticeable board crush and compromising the strength of the finished box. The Cool-Vac doublefacer is equipped with gun drilled (peripheral heated) hotplates, with a rapid condensation removal design, and the Infusion steam technology, for retaining box strength especially on lighter paper weights.

**Full Control Over the Wet-End**

The Harmony wet-end offers a balanced combination of



The Orchestra offers full control over the corrugator wet end.

productivity, reliability, and price-performance ratio - the Orchestra system has everything under control. For the doublefacer, Orchestra automatically controls steam and shoe pressure for each zone, based on the current production. Orchestra will automatically adjust its parameters for the next order with no operator intervention. For the single facer, it is automating the control of paper temperature, glue application, roll pressure and bridge storage control. The result - all shifts use the same operating procedures and settings, leading to a consistent production and maximised output. In addition, the system includes high

automation features such as speed synchronisation, automatic order change and closed loop process control for the whole corrugator. Orchestra uses technology to make production simple.

The Harmony wet-end from BW Papersystems is designed for medium to high volume production operations. Automation features and the intelligent Orchestra control system make it a good match for European corrugated plants. As with all BW Papersystems corrugators and components, customers can rely on decades of experience and expert know-how from its long heritage in the corrugating industry. [www.bwpapersystems.com](http://www.bwpapersystems.com)



# Harmony Corrugator



A corrugator, with modern controls, to maximize the production of light weight, recycled papers.



Available in two standard widths - 2500mm and 2850 mm widths



Crushless corrugator



Can be configured to run singlewall, doublewall and triplewall board

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