

Printing capabilities of thermal transfer coders

SmartDate® Series ■ ■ ■



Marking and coding ■ ■ ■

For over a decade, Markem-Imaje has pioneered thermal transfer coding technology. Our comprehensive SmartDate® Series of coders provides the most reliable high quality codes on flow-wrappers, bags, tray seals, pouches, sachets, vacuum packs or labels.

Performance ■ ■ ■

Printer and Cassette – Durable wear resistant design. Adaptable for intermittent or continuous line configuration. Left or right hand operation. Meets extreme production line speeds. Multiple ribbon save features. Industry leading 0.5 mm gap between prints. Capable of serialized 2D codes.

Controller – Multiple user interface options including color touch screen and web pages. Dedicated buttons for frequently used functions. USB for image and file data transport. Equipped with power save mode.

Print Area –

SmartDate® X60:

Intermittent: 53 mm x 75 mm (2.1" x 3.0")

Continuous: 53 mm x 150 mm [(2.1" x 5.9") combined]

SmartDate® X40:

Intermittent: 32 or 53 mm x 75 mm (1.3" or 2.1" x 3.0")

Continuous: 32 or 53 mm x 100 mm (1.3" or 2.1" x 3.9")

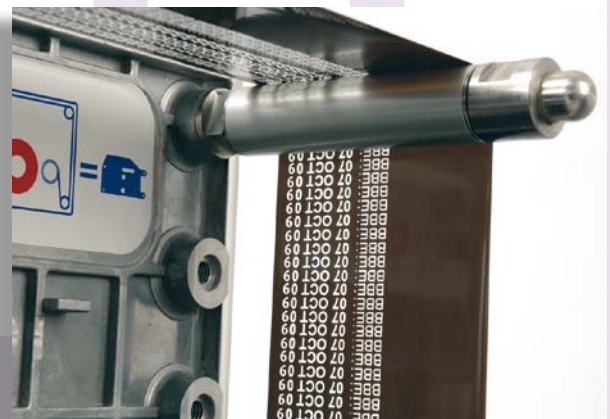
SmartDate® X60s (shuttled):

Continuous: 53 mm x 100 mm (2.1" x 3.9")

SmartDate® 5/128:

Intermittent: 128 mm x 75 mm (5.0" x 3.0")

Continuous: 128 mm x 150 mm (5.0" x 5.9")



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the team to trust ■ ■ ■

Selection of the most suitable thermal transfer coder ■ ■ ■

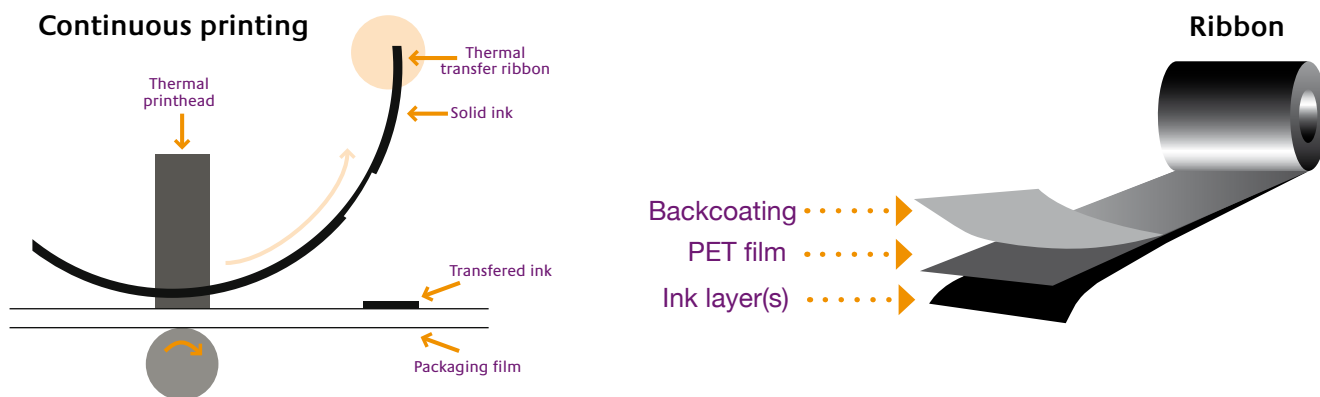
Thermal transfer technology ■ ■ ■

Thermal transfer technology combines a thermal printhead and a polyester ribbon coated with ink on one side. Heat transfers the ink from the ribbon onto the packaging film that is marked as it passes under the thermal printhead. The thermal printhead is made up of a row of independent tiny resistors mounted on a ceramic support. These resistors are then activated based on the characters to be printed, melting the ink on the ribbon and “transferring” the selected characters to the packaging film.



There are two types of thermal transfer coders depending on the application:

- Intermittent mode: Packaging film advances and then stops. The printhead lowers, moves along the packaging film and ribbon. The printhead prints. The printhead is raised, and returns to the home position, the ribbon advances and the process is repeated.
- Continuous mode: The packaging film is constantly moving. When triggered, the ribbon accelerates to the film speed, the printhead is lowered and printing begins. At the end of printing the printhead is raised to the home position and the ribbon stops moving.



Product comparison ■ ■ ■

		SmartDate® X40	SmartDate® X60	SmartDate® X60s	SmartDate® 5 / 128
Print area	Width	32 mm or 53 mm	53 mm	53 mm	128 mm
	Length	100 mm (cont.) 75 mm (int.)	150 mm (cont.) 75 mm (int.)	100 mm	150 mm (cont.) 75 mm (int.)
Print speed (mm/sec)*	Normal	600 mm/sec	1000mm/sec (at full 300dpi resolution)	1000mm/sec (at full 300dpi resolution)	600 mm/sec
	Hi-speed mode	N/A	1000 mm/sec	1200 mm/sec	N/A
	Digital Ribbon Save Print Mode	N/A	1200 mm/sec	1800 mm/sec	N/A
Ribbon length		1100 m	1100 m	1100 m	600 m
Ribbon width (Min)		20 mm	20 mm	20 mm	80 mm
Ribbon width (Max)		55 mm	55 mm	55 mm	130 mm
Ribbon save options	Interlace	Yes	Yes	Yes	Yes
	Radial Ribbon Save	Yes	Yes	Yes	Yes
	Multi-print signal	Yes	Yes	Yes	Yes
	Digital Ribbon Save Print Mode	N/A	Yes	Yes	N/A
	Negative ribbon advance	Yes	Yes	Yes	Yes
Intermittent/Continuous		Intermittent or Continuous	Combined	Continuous only	Combined
Left/Right Hand		Easy change, no parts required	Easy change, no parts required	Easy change, no parts required	Easy change, no parts required
Minimum print speed		20 mm/sec	10 mm/sec	10 mm/sec	20 mm/sec

*Maximum, minimum print speeds and the suitability of ribbons and ribbon saving techniques are dependant on the individual application
- if in doubt please contact your local presales team for further advice.

Ribbon comparison ■ ■ ■

SmartDate® TTR Grades:	Formula	Colors	Typical Speed [mm/s]	Notes
3410	Wax/resin	White, Red, Green, Blue - other colors on request	500	General purpose; color
3510	Wax/ higher resin	Black	600	General purpose: high mechanical resistance
7810	Wax/ higher resin	Metallic white	600	Requires less heat to transfer as compared to traditional whites
3710	Wax/resin	Black	300	Niche application: rough or porous substrates such as Kraft paper or Tyvek
3810	Wax/resin	Black	800 (1000 with X60)	General purpose
3820	Wax/resin	Black	800 (1000 with X60)	General purpose for increased uptime
5810	Wax/resin	Black	1000	General purpose: high speeds
3910	Resin	Black, White, Red, Green, Blue	300 (600 with X60)	Excellent mechanical resistance
6910	Resin	Black	200	Superior heat and solvent resistance
8810	Wax/resin	Black	600	Niche application: polyethylene printed in a cold environment

Interlaced mode ■ ■ ■

Maximize ribbon usage:

- First print uses every other pixel; the second print utilizes the unused ink leftover from the first print

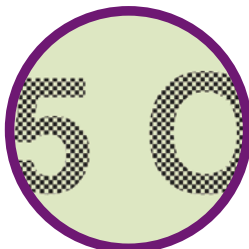
Without interlaced print



With interlaced print

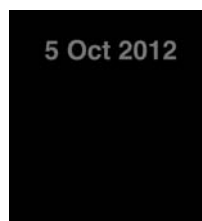


Interlaced print



Enlarged

Ribbon - First print



Ribbon - Second print



Radial ribbon save ■ ■ ■

Maximize ribbon usage:

- Moves image across ribbon in radial direction using the entire width of the ribbon



Printed ribbon with ribbon save

Print 1

Print 2

Print 3

13 May 12 13 May 12 13 May 12
13 May 12 13 May 12 13 May 12
13 May 12 13 May 12 13 May 12

Printed ribbon without ribbon save

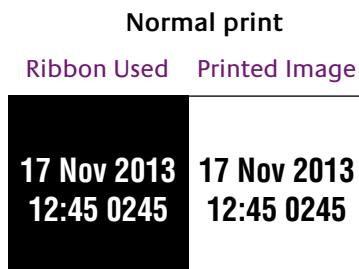
13 May 12 13 May 12 13 May 12

Wasted
ribbon

Digital Ribbon Save Print Mode ■ ■ ■

Maximize ribbon usage:

- Save on ribbon usage by assigning the Digital Ribbon Save Print Mode in advanced settings.



Normal printing mode

In Digital Ribbon Save Print Mode quality is equivalent to normal mode with a saving of up to 20%.

Advantages of the Digital Ribbon Save Print Mode :

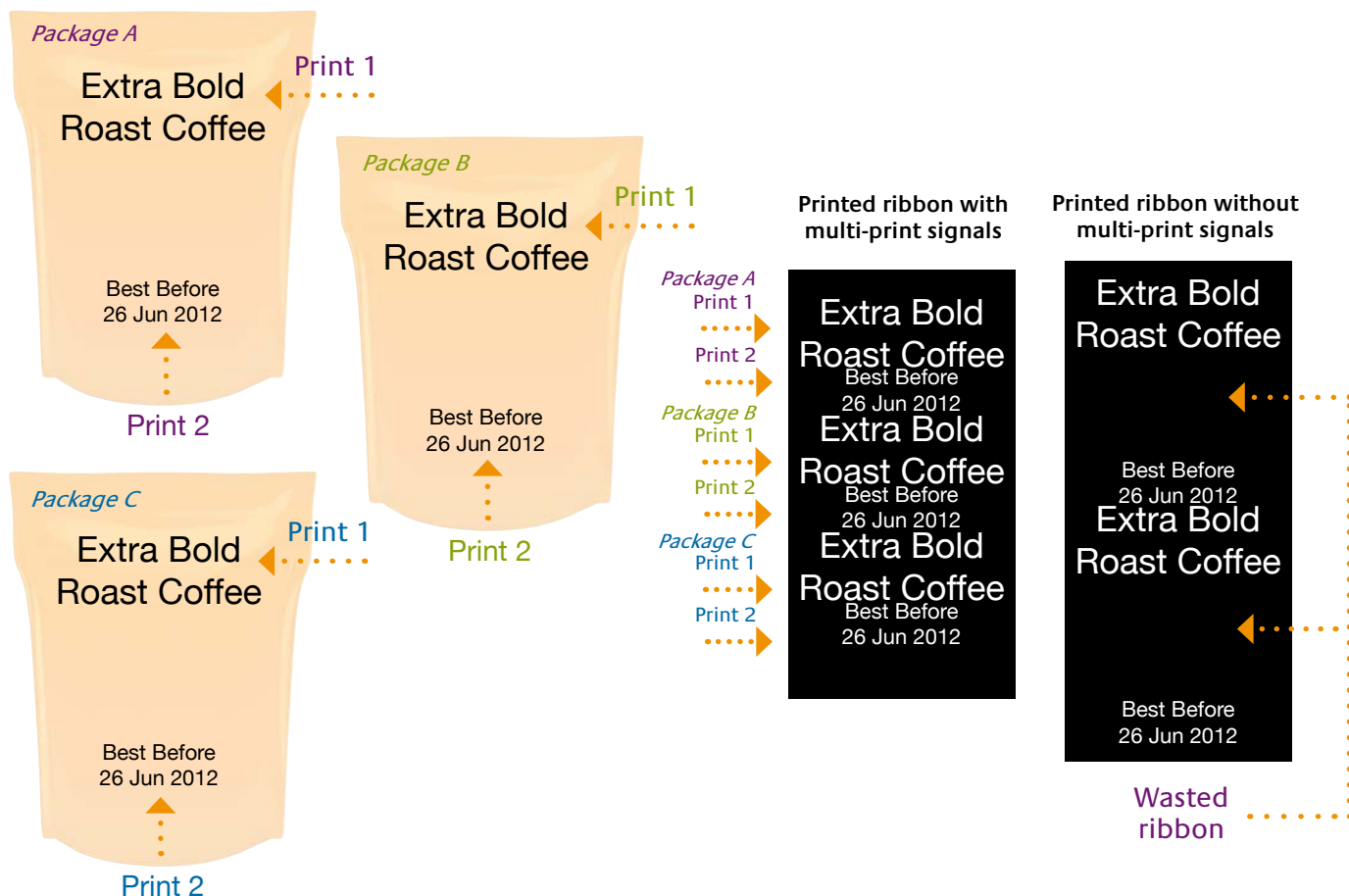
- Up to 20% ribbon saving
- Printing on higher material speeds



Multi-print signals ■ ■ ■

Maximize ribbon usage:

- Print different images on same substrate without additional adjustments



Examples of prints created in CoLOS® Professional ■ ■ ■

<p>Capability to mix different character heights (Including bold, italics or underline)</p> <p>Date & Time Formats (Automated, calculated, offset and linked dates)</p> <p>True Type Fonts</p>	<div><div>Produced</div><div><div>FEB 19 12</div><div>14:15:20</div><div>Shift 3</div></div><div><div>26 03 2013</div><div>10:50:19</div><div>A</div></div></div> <div><div><div><div>012345678912</div></div></div></div>
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The Markem-Imaje SmartDate® Series offers the versatility you expect at a lower cost of ownership for coding on flexible packaging films, foils and labels. Reliability combined with unique ribbon saving options ensure significant savings in consumables and maintenance costs. Use Markem-Imaje CoLOS® Enterprise software to network and manage your coders remotely.

Food

Designed to print crisp, clean codes on a variety of substrates used in retail food and food service – even on packaging lines that run around the clock.



Pharmaceutical

High quality, permanent codes on pharmaceutical packaging materials such as labels, blister packs and films.



Other

Whether you're producing trial sizes or family packages, SmartDate® thermal transfer coders are ideal for printing directly on labels or flexible film.



OEM

Markem-Imaje works closely with the leading OEM's in the packaging industry to ensure our products are designed for easy installation. Our products include an option to connect via a web browser as to integrate the coder controls to host packaging machines.



To learn more, visit www.markem-imaje.com

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