Wide Web Flexo Printing Product Portfolio


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Content

Introduction to AV Flexologic

AV Flexologic
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AV Flexologic BV's mission is to deliver highly innovative solutions for the Flexographic industry, focusing on the graphics and press departments. We strive to save cost while increasing efficiency and quality for our customers.

We believe it is possible to prevent all prepress-related press downtime, while at the same time increase prepress department's efficiency and overall productivity. We achieve this by digitalizing traditional workflows and continuously improving on existing equipment with advanced technology and inventing new equipment.

AV Flexologic invented camera mounting in the 1980's. AV Flexologic then went on to invent fully automatic mounting, with the introduction of the first Fully Automatic Mounting Machine 'FAMM' in 2006. Through research and development and superb levels of automation, but with a personal touch, AV Flexologic has become the world market leader.

AV Flexologic is part of the **Color Control Group**, which is owned by the **Otten** family. Piet and Martijn, father and son, run their business with a high attention to detail, and care for every customer, large or small. A passion for innovation runs throughout the company, where each level of the company is striving to be one step ahead of customer needs.

While highly specialized in the field of flexographic plate mounting machines, **Color Control Group** has recently started to expand its product portfolio to include products such as sleeves from Tech Sleeves, automated sleeve storage system and cutting systems. Other time and cost saving prepress equipment include devices such as a 'tape applicator' a plate and tape 'demounter' and 'TIR' laser scanning devices.

Mounting Machines

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Introduction of mounting concepts

AV Flexologic offers a full range of flexo plate mounting machines, from completely manual to fully automatic. This section describes the 4 different concepts that can be identified in flexographic plate mounting machines, from entry-level to fully robotic:

Manual **(Sleevemounter)**

Manual mounting is done with a basic machine. This machine is used for mounting one plate at a time and long job runs.

Motorized **(MOM DD+)**

The cameras, cylinder rotation and vertical movement of the cylinder are motorized. The front and back table support enables the operator to achieve high precision mounting and optimal plate positioning.

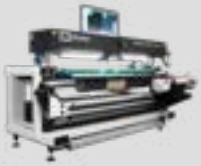
Semi-automatic **(SAMM)**

The machines have a robotic mounting table to position the plates based on measurements coming from the image recognition system. Because of that, operator dependency is eliminated and a higher efficiency and accuracy of the mounting process is ensured.

Fully-automatic **(FAMM)**

The operator only puts the plate on a conveyor belt and the machine does the rest, which results in optimal operator efficiency, speed and quality. Ideal for customers who mount a large amount of sleeves per day, and/or a large number of plates per sleeve.

Widths of machines

Mounting machine	Widths [mm]	Widths [Inch]	Max Repeat [mm/Inch]
 Sleevemounter	≤ 1300	52"	1350 / 53"
 MOM DD+ E	≤ 1100, 1300, 1700	43", 52", 67"	850 / 34"
 MOM DD+ Pro	≤ 1300, 1700, 2200	52", 67", 87"	1350 / 53"
 SAMM 2.0	≤ 1100, 1300, 1700, 2200	43", 52", 67", 87"	1350 / 53"
 FAMM 2.0	≤ 1500, 1700, 2500	59", 67", 98"	1350 / 53"

Standard & Optional Mounting Concepts

Mounting concept	Sleevemounter	MOM	SAMM	FAMM
Plate positioning	Manual	Manual + assistance	Automatic	Automatic
Camera positioning	Manual	Motorized	Automatic	Automatic
Cylinder rotation	Manual	Motorized	Automatic	Automatic
Cylinder movement	Manual	Motorized	Automatic	Automatic
Quality check	Manual	Optional Automatic	Automatic	Automatic
Front table		Manual	Automatic	Automatic
Pressure roller		Motorized	Automatic	Automatic
Conveyor belt				Automatic
Manipulator				Automatic

Features & Options	Details	Sleeve-mounter	MOM DD+ E	MOM DD+ Pro	SAMM 2.0	FAMM 2.0
HD Ethernet Cameras	pg 32	✔	✔	✔	✔	✔
Air cylinder	pg 32	✔	✔	✔	✔	✔
Windows 10 mounting software	pg 32	✔	✔	✔	✔	✔
Overlay	pg 32	✔	✔	✔	✔	✔
Digital Zooming capability	pg 33		✔	✔	✔	✔
40" HD Monitor	pg 33		✔	✔	✔	✔
Laser pointers	pg 33		✔	✔	✔	✔
Vertical Movement of Cylinder	pg 33		✔	✔	✔	✔
Fixed distance from lens to plate	pg 33		✔	✔	✔	✔
Motorized cameras	pg 33		✔	✔	✔	✔
Synchronized front table movement	pg 34		✔	✔	✔	✔
Digital Calibration System	pg 34		✔	✔	✔	✔
Pressure roller	pg 34		✔	✔	✔	✔
Motorized rotation of cylinder	pg 32	O	O	✔	✔	✔
Image Recognition Software	pg 34			O	✔	✔
Quality report	pg 35			O	✔	✔
Quality check with image recognition	pg 35			O	✔	✔
Vacuum table	pg 35				✔	✔
DOAL Lights	pg 35				✔	✔
Robotic positioning	pg 35				✔	✔
Automatic repeat detection	pg 36				✔	✔
Automatic mandrel rotation	pg 36				O	✔
Automatic pressure roller	pg 34				O	✔
Motorized table movement	pg 36				O	✔
Robotic manipulator	pg 36					✔
Conveyor belt	pg 36					✔
Fully Automatic	pg 36					✔
Critical Spare Parts Package	pg 32	O	O	O	O	O
Tape roll holder	pg 32	O	O	O	O	
Tape holder on precision rail	pg 33		O	O	O	
Barcode Scanner	pg 33		O	O	O	O
Automatic Easyreg detection	pg 34		O	O	O	O
Shaft Coupling for cylinders	pg 34			O	O	
Cutting knife for plates	pg 34			O	O	
Tape applicator	pg 35			O	O	
TIR Sleeve measurement	pg 35			O	O	O
Cutting knife for tape*				O	O	
Sleeve Tracking System**	pg 35			O	O	O

✔ = Included O = Optional

*only in combination with tape applicator

**only in combination with TIR

Sleevemounter

Widths

Width [mm]	≤ 1300
Width [inch]	52”
Max repeat [mm/inch]	1350 / 53”

Description

The **AV Flexologic Sleevemounter** is our entry-level flexo plate mounting machine with a chromed custom-made air mandrel. The Sleevemounter is ideal for flexo printers who mount mainly 1 plate per color and print mainly long job runs.

Workflow

The operator manually sets the cameras to a fixed position to which he/she mounts 1 plate per color. The HD cameras with optical lenses and digital zoom function are mounted on precision grinded and temperature treated camera beam to ensure the best calibration for high quality results. The camera beam is parallel to the air mandrel, and is fitted with high precision linear guides. The Sleevemounter is equipped with a bracket on the right-hand side that can be opened by hand for exchanging printing sleeves on the air mandrel or on an adapter mounted on the mandrel.

The images of the cameras are displayed on a split screen 22" touchscreen monitor. Encoders fixed to the cameras track the physical position of the cameras and positioning coordinates are displayed real-time on the monitor. Through the touchscreen monitor the operator has a choice of hairlines, e.g. single crosses, double movable lines, sizable circles and combinations. Using the Overlay system, snapshots of the mounting position can be taken and displayed faded on the monitor to mount image on image.

Optionally an extra set of mounting cameras can be installed on this machine to be able to easily mount 2 flexographic plates per sleeve. Motorized rotation and a tape roll holder.

Features

- HD Ethernet Cameras
- Mounting Table
- 22" Touchscreen interface
- Custom-made chromed air mandrel
- Windows 10 mounting software
- Overlay feature
- Digital Zoom capability
- Networking capability
- Teamviewer support
- Temperature-treated high accuracy milled camera beam
- Digital readout of position of cameras
- Sectoring system for staggered mounting

Options

- Additional set of cameras
- Motorized rotation of cylinder
- Barcode Scanner for job entry
- Tape roll holder
- Critical Spare Parts Package

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MOM DD+

The **MOM DD+ series** are Direct Drive sleeve-dedicated machines equipped with motorized cameras, high precisions zero-backlash cylinder rotation and vertical cylinder movement for optimal plate positioning. The MOM DD+ is offered in two versions: MOM DD+ E and MOM DD+ Pro. Equipped with a Windows-10 based operating system with advanced AV-MOM mounting software, developed completely by AV Flexologic. The basis is a recipe system which lets the users enter job-specific information such as width of the plate, repeat of the sleeve and angle of sectors if working with lane mounting using multiple plates. This information can be recalled at any time. The HD camera system in combination with the HD touchscreens make digital zooming possible up to 170x magnification. The overlay software feature enables the operator to display a half-transparent image of a snapshot taken of a plate vs an original image. The overlay feature is very useful when remounting or replacing a plate on a sleeve which has come off press. The operator simply loads the sleeve and takes a snapshot of the mounted plate, after which the plate can be removed from the sleeve and the snapshot is used as a reference to mount a new plate.

MOM DD+ E

Widths

Width [mm]	≤ 1100, 1300, 1700
Width [inch]	43", 52", 67"
Max repeat [mm/inch]	850 / 34"

Description

The **MOM DD+ E-series** is a unique and versatile flexo plate mounting machine, engineered as an entry-level motorized mounting machine while still being equipped with key features of AV Flexologic plate mounting technology.

MOM DD+ Pro

Widths

Width [mm]	≤ 1300, 1700, 2200
Width [inch]	52", 67", 87"
Max repeat [mm/inch]	1350 / 53"

Description

The **MOM DD+ Pro** is our high-end motorized mounting machine, which is the flexo industry standard for manual positioning of plates. Key options are available such as image recognition, a tape applicator, automatic W&H Easyreg detection, and a digital TIR measuring system, which can also map the full surface of the sleeve. The MOM DD+ Pro comes standard with an open-cell pressure roller.

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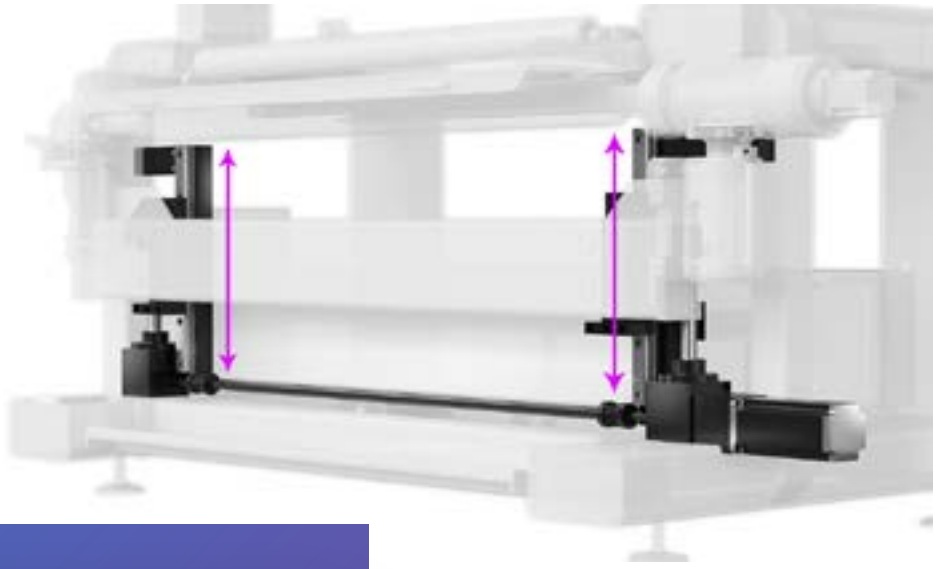
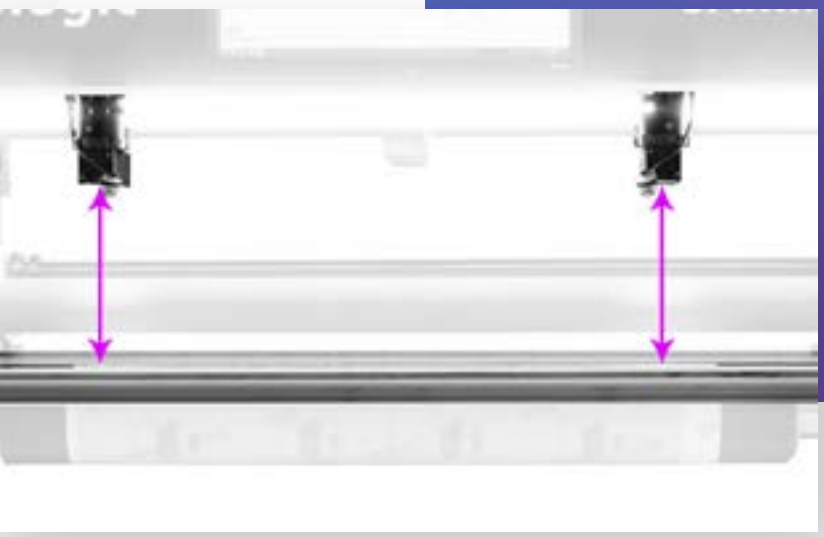
MOM DD+

Unique features

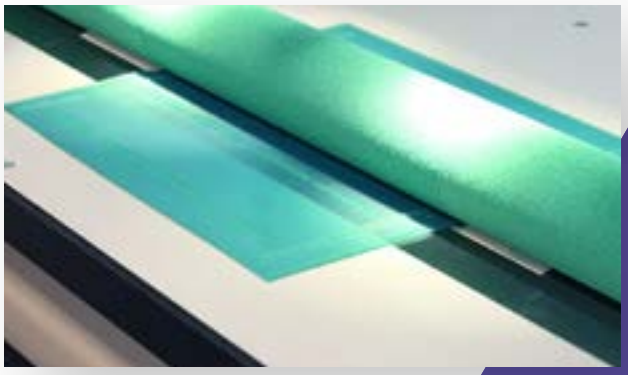
Vertically moving cylinder

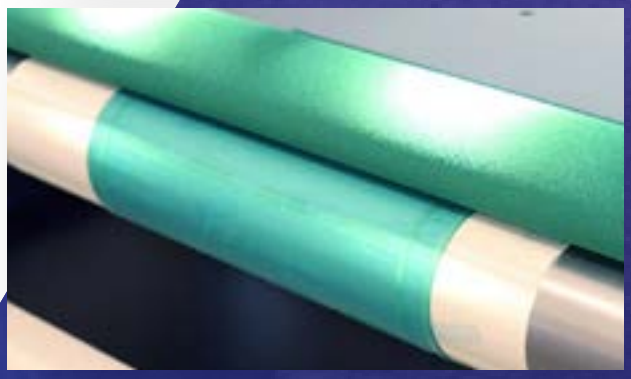
A key feature of the MOM mounting machines is the **vertically moving cylinder**. There are several advantages of having the cylinder move vertically towards a fixed-height mounting table. For one this ensures a **fixed distance from the lens to the plate**, eliminating the need to focus the camera lenses. Avoiding focusing the lenses also means avoiding the parallax effect common to most plate mounting machines on the market since when changing the focus distance the 'focal point' also varies which distorts the calibration of the cameras. To ensure a fixed distance from the camera to the printing plate, instead of focusing the cameras to compensate diameter variations of the sleeve, the height of the cylinder is adjusted depending on the outer diameter of the sleeve.





An added advantage of the vertically moving cylinder up to the fixed-height mounting table is the elimination of disturbance of the plate upon fixation to the adhesive on the sleeve. This results in the highest fixation accuracy, and therefore a high plate mounting accuracy compared to mounting machines which have a stationary cylinder. The chromed cylinder cantilevers out for easy changing of sleeves and for space saving purposes.





Pressure roller

Combining a fixed-height mounting table with a full-width and open-cell **pressure roller** is the ideal combination for a motorized mounting machine. The fixed height mounting table supports the plate during the manual positioning process, and thus makes it much easier to place the plate into a tight register position.

When the plate is in position and the cylinder moves up to fix the plate to the adhesive on the sleeve, the pressure roller is lowered to fix the plate firmly onto the adhesive without air inclusions. The sleeve is rotated both ways to finalize the mounting process. Compared to traditional mounting machines, the pressure roller saves enormous operator time and reduces press downtime due to the elimination of air enclosures in between adhesive (tape or twinlock) and the printing plate.

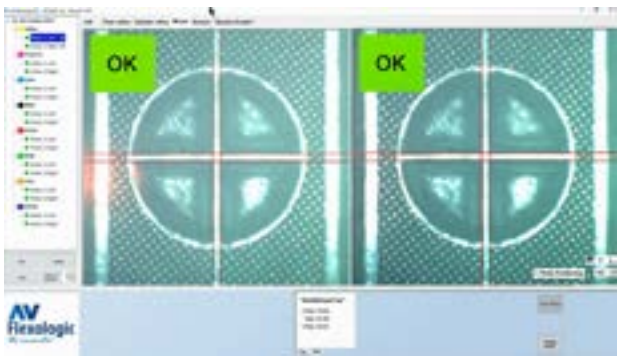
MOM DD+

Unique options MOM DD+ Pro

Starting from the MOM DD+ Pro, there are several unique options which are offered to improve prepress workflow as well as prevent press downtime, such as a tape applicator and a T.I.R. scanning device. Since these options are applicable on more types of machines they are explained and displayed in more detail in the options overview section on this page.

Image recognition system

Unique to the MOM DD+ Pro is the optional image recognition system. Using image recognition the mounting marks can be recognized as with the SAMM and FAMM automatic mounting machines. As an 'in-between' solution for customers who have a limited budget but still want to benefit from the advantages of image recognition, AV Flexologic has developed image recognition based quality control and intelligent positioning assistant on the MOM DD+ Pro. With the positioning assistant the workflow remains the same where the operator positions the plate manually, however the image recognition system constantly measures the position of the mounting marks. When the operator has positioned the plate by hand to within a user-set tolerance, the MOM gives the 'OK' and the cylinder automatically moves up to fix the plate to the adhesive on the sleeve.



Automatic Easyreg detection

Another feature which uses image recognition is the automatic zero-setting feature for detecting a visual mark on the edge of the sleeve. The machine automatically scans the edge of the sleeve to look for the visual mark. Once this mark is recognized, the sleeve is centered and set to zero on this visual mark, to which the plates are mounted. The printing press picks up this mark (such as the W&H Easyreg mark) and the registration of the decks is done automatically. It is also possible to detect the precise location of a magnet in the edge of the sleeve for printing presses such as BOBST, SOMA and Allstein.

Features	MOM DD+ E	MOM DD+ Pro
Max Repeat size	850 mm / 33”	1350 mm / 53”
HD Ethernet cameras	✔	✔
Zero-backlash & high precision motorized rotation of cylinder	✔	✔
Laser pointers for easy pre-positioning	✔	✔
High precision motorized cameras	✔	✔
Digital calibration system	✔	✔
Fixed-height Mounting Table	✔	✔
Vertically moving cylinder	✔	✔
22” Touchscreen interface	✔	✔
Chromed custom air mandrel	✔	✔
Windows 10 mounting software	✔	✔
Overlay software feature	✔	✔
Networking & Teamviewer capability	✔	✔
Temperature-treated high accuracy milled camera beam	✔	✔
Zoom capability	Up to 120x	Up to 170x
Fixed distance from lens to plate	✔	✔
Pressure roller	O	✔
Barcode Scanner for job entry	O	O
Tape roll holder	O	O
40” HD Flatscreen monitor		✔
Cutting knife for plates		O
Automatic Easyreg detection using image recognition		O
Mounting mark image recognition for plate positioning assist		✔
Mounting mark image recognition for quality control		O
Tape Applicator		O
Cutting knife for tape*		O
TIR Sleeve measurement		O
Sleeve Tracking System**		O

*only in combination with tape applicator

✔ = Included O = Optional
**only in combination with TIR

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SAMM 2.0

The patented **SAMM 2.0** is AV Flexologic's solution to common industry trends. Building on 10+ years of experience with automatic mounting machines using vision technology, the SAMM and FAMM are the most accurate and fastest mounting machines in the world.

SAMM 2.0

Widths

Width [mm]	≤ 1100, 1300, 1700, 2200
Width [inch]	43", 52", 67", 87"
Max repeat [mm/inch]	1350 / 53"

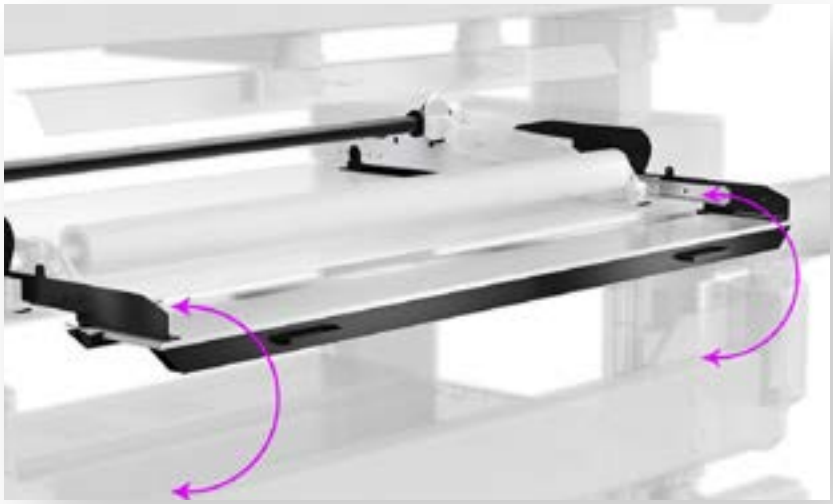
Description

The **SAMM 2.0** is the second generation SAMM. The SAMM 2.0 is very versatile and has many popular options available such as a nip-roll assisted tape applicator, TIR scanning device and cutting knives for plates or tape. The SAMM 2.0 is offered in the full wide-web flexo repeat range and printing widths.

Motorized front table

An added advantage of the SAMM 2.0 is the optional motorized front table, which enables the machine to **fully automatically mount** individual printing plates without operator interaction, keeping the performance of the mounting job with an accuracy of 5 microns. During the time the machine is mounting each plate, the operator can prepare the next plate or perform another preparatory or finishing operation.

Unique option of SAMM 2.0



Trends & Implications

- Higher quality demands
- Lead times on print jobs are getting shorter
- Shorter print jobs are getting more frequent

Return on investments

- Elimination of press downtime due to mounting mistakes
- Higher productivity - less operator time required per mounted plate
- Faster press startup – reduction in changeover times and waste material

Other benefits

- An increase in quality of printed final product
- Streamlined workflow
- No more bottlenecks in prepress
- Ability to measure and quality reporting improves traceability
- Incredible consistency
- No operator dependency

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SAMM 2.0

Features

- Vacuum table
- Image Recognition Software
- Quality report
- Automatic quality check using image recognition
- Motorized rotation of cylinder
- DOAL Lights
- Robotic positioning
- HD Ethernet Cameras
- Air cylinder
- Windows 10 mounting software
- Overlay
- Digital Zoom capacity
- 40'' HD Monitor
- Laser pointers
- Pressure roller
- Vertical Movement of Cylinder
- Fixed distance from lens to plate
- Motorized cameras
- Digital Calibration System
- Easymount® software
- Automatic repeat detection

Options

- Automatic Easyreg detection
- Tape holder on precision rail
- Tape roll holder
- Barcode Scanner
- Tape applicator
- Cutting knife for tape*
- Cutting knife for plates
- TIR Sleeve Measurement
- Sleeve Tracking System**
- Automatic plate mounting with auto mandrel rotation
- Automatic moving pressure roller
- Motorized front table movement

Testimonials

Coveris is the partner of choice for the world's leading brands because of their long history of delivering innovative and high quality packaging solutions. The company is based in the United States, where the Automatic SAMM 2.0 was installed recently. Coveris states the following with regards to their investment and the added value the machine brought to their company:

"By introducing the SAMM 2.0 in our workflow we have reduced our press downtime and waste related to plate lifts and air bubbles. We also improved efficiency and increased mounting consistency to the press department. So far, the SAMM has eliminated our air bubbles and reduced plate lifts by over 75%; in turn, we have significantly reduced our press downtime caused by prepress-related issues."

COVERIS
HIGH PERFORMANCE PACKAGING

Anagram International is another satisfied company, which boosted the efficiency and productivity of the prepress department by investing in the SAMM 2.0. This is what Anagram International states about the advantages of using the SAMM 2.0:

"Since introducing the SAMM 2.0 into our workflow, we have realized significant workflow and productivity gains such as: 1 hour of additional mounting capacity in an 8-hour shift and 300 hours of additional press time annually due to full EasyReg functionality. The SAMM 2.0 is preferred by all over the previous mounting devices, due to the improved registration and the color-to-color accuracy. The machine recognizes pin holes from existing plates, in addition to marks on new plates, while it has improved operator ergonomics and offers higher operator satisfaction.

So far, the calculated return on investment will be approximately 14 months, based in press and mounting productivity gains."

anagram

SAMM 2.0

Testimonials

SDR PACK is located in Italy and produces flexible packaging on all types of plastic film. The company purchased recently two Automatic SAMM 2.0 and states the following:

"When we decided to add more mounting machinery to our prepress department, our choice immediately fell on AV Flexologic because the company has the best available technologies in the market and longest experience in automatic plate mounting. Following, we got in touch with them and visited their stand at the event in Italy in 2015. Afterwards, we purchased two automatic mounting machines by AV Flexologic.

Investing money in the SAMM 2.0 1300 was a great decision! The SAMM 2.0 is a perfect combination of innovations that ensure better quality and higher productivity. Thanks to incredible precision of the SAMM the productivity in the prepress department is very high. The SAMM 2.0 mounts plates extremely fast, it takes only from 60 to 40 minutes for a 11 colors job. Besides, it's operator independent and very easy to use.

We are very happy with purchasing two SAMM's 2.0 – the machines are extremely accurate and helping us to achieve a great print performance."

SDR PACK

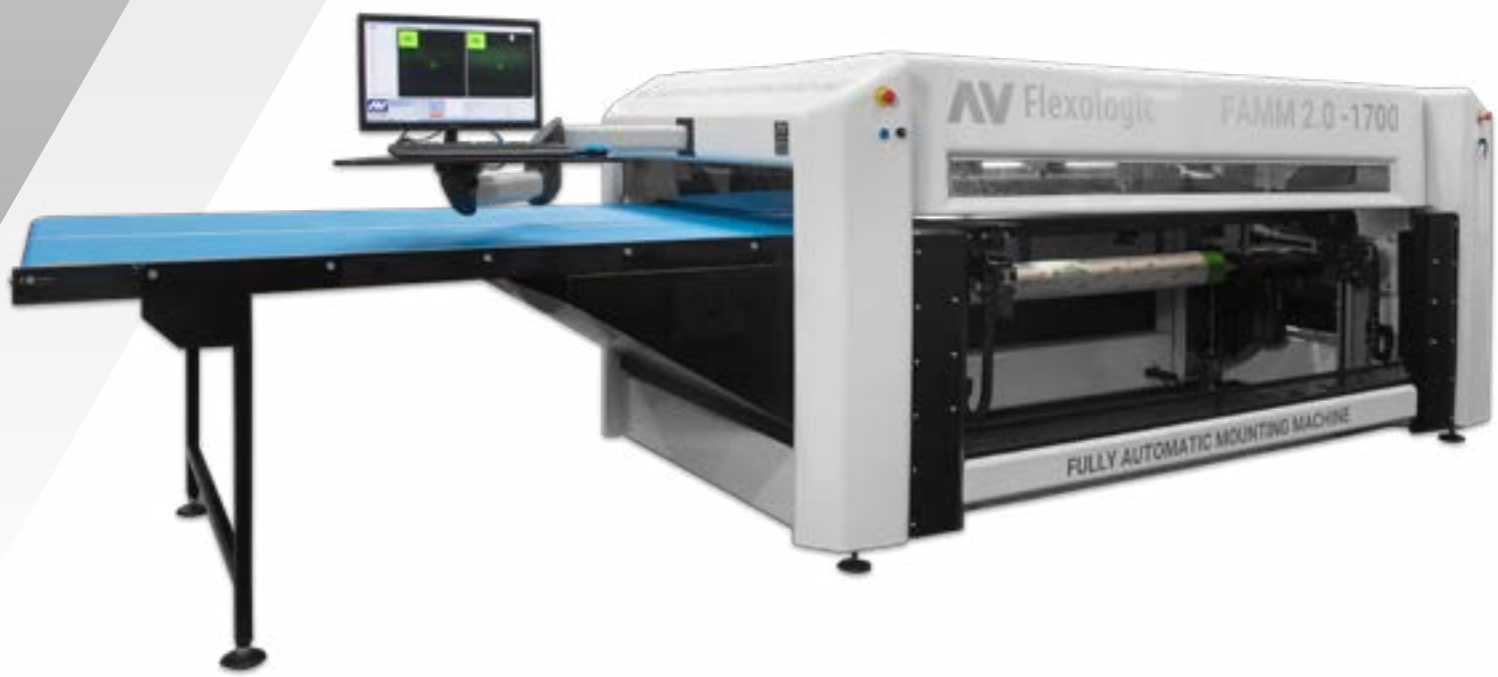
References

Business Case Study

A flexo printer in South America purchased a SAMM in 2014. This company is mounting between 15.000 and 17.000 sleeves per year and has 3 flexo printing presses. The chart below illustrates what the SAMM has done for this plant's workflow.

FAMM 2.0

- ✔ A reduction of waste in the production process
- ✔ Reduction of man-hours
- ✔ Reduction of waste material in press startup
- ✔ Reduction of press downtime
- ✔ High quality color-to-color registration
- ✔ Elimination of human-dependent variables
- ✔ Removal of inconsistencies in the production process
- ✔ No operator dependency
- ✔ Improved traceability



Widths

Width [mm]	≤ 1500, 1700, 2500
Width [inch]	59", 67", 98"
Max repeat [mm/inch]	1350 / 53"

Description

The **FAMM 2.0** is the second generation Fully Automatic Mounting Machine. The FAMM 2.0 automatically mounts multiple plates after one another, and will mount a plate extremely accurately every 45 seconds **without operator interaction**. The only action left to the operator is to load a sleeve and lay the plates on the conveyor belt.

Workflow

The operator presses start, after which the machine takes over. During the time the machine is mounting, the operator has time available to perform other offline tasks, such as applying tape, preparing plates, finishing sleeves, etc. The overall efficiency of the mounting and complete prepress department is boosted tremendously by introduction of a FAMM 2.0.

Being able to measure the positions of mounting marks using ground-breaking image recognition technology down to 1µm (0.001mm or 0.4*10-4 Inch) during the plate mounting process provides a phenomenal print quality to printers end customers. This image recognition technology on the FAMM 2.0 enables Flexo printers to take total control of total process and improves traceability, while removing operator dependency.

The optimized workflow around a FAMM in prepress enables a qualitative approach to increase overall plant output and productivity. Important best practices upon introduction of a FAMM include setting up an internal just-in-time system which reduces Work In Progress. Flexible production system that enables users to respond to changes in market demand rapidly are vital for a flexo printer's growth strategy.

An important thing to note is the mounting mark specifications to optimally benefit from the FAMM's capabilities. In case a mounting mark is not recognized for whatever reason (for example damage of the mounting mark), the FAMM is able to operate in semi-automatic mode, in which the operator indicates to the machine where the mounting mark is and the machine takes over from there.

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FAMM 2.0

Business Case Study

Amcor Melbourne is a leading flexo printing plant with 6 printing presses recently purchased a FAMM. This company handles 22.000 – 24.000 sleeves annually. See the chart below.

Manual Mounting		Fully-Automatic Mounting		Advantages
3 traditional manual mounting machines	VS	1 FAMM replaces 3 traditional mounters as the FAMM is three times more efficient	→	Quick and spot on mounting. Your operator can attend other tasks while the machine mounts
3 operators in the mounting department per shift	VS	1 operator in the mounting department per shift	→	€80,000 annual savings (based on average yearly expenses of a US employee)
15-20 hours of mounting related press downtime (per week)	VS	0 hours of mounting related press downtime (per week)	→	€375,000 annual savings (based on average downtime costs per hour for a wide web printing press)

References

Testimonials

2 months after installation of the FAMM 1st generation at Amcor Moorabbin (Melbourne, Australia)

"In 2011 I travelled to Cumbria to see the FAMM in action at the SGS plant that serviced Amcor in the region. I was instantly intrigued at the simplicity and incredibly efficient output of the FAMM. I then travelled to Holland and viewed 2 FAMM's in operation at Elopak, again incredible output. We started our capital expenditure in 2012 with the view of installing a FAMM in Moorabbin, Australia early 2013. Within 24 hours of the machine being delivered, we were mounting plates for all 6 printing machines at Moorabbin, and haven't looked back. It replaced the incumbent 3 manual mounting machines and is currently keeping up with the daily demands of around 120 sleeves per day. The machine is nowhere near capacity and we anticipate output levels rising to well over 200 sleeves per day, potentially servicing other Amcor sites. ***It is incredibly safe, efficient and accurate, the three things most critical to our business... my only regret is not having it at our plant earlier."***

1 year after installation of the FAMM 1st generation at Amcor Moorabbin (Melbourne, Australia)

"Just an update on the FAMM 1700 that was installed at Amcor Moorabbin, April 2013.

Before the FAMM was installed we employed 13 people in our mount/strip/sleeve/plate library area. We currently employ 8. Before the FAMM installation we were encountering in the vicinity of 15-20 hours down time per week across 6 machines due to miss registration, particularly on Novo 1 (Pepsico 1555mm).

Currently the downtime directly attributed to the FAMMs mounting, is zero. We still encounter issues where Twinlocks are not prepared correctly as well as sleeves where tape is not prepared correctly.

None of these issues are related in any way to the FAMM. For some older plates where microdots are either damaged or at times non existent, the FAMM is required to operate in semi auto mode, only adding around 60 seconds to the already short mounting time. The FAMM has delivered extensive safety performances regarding plate laying and manual handling, as well as an incredible quality record I would never imagined could have been possible. I would recommend to any printer that if volumes are warranted, the purchase of a FAMM is something that should be seriously considered. Amcor Moorabbin currently is mounting around 150 sleeves per day, and nowhere near full capacity on the FAMM. Our sister plant at Acacia Ridge is preparing a CER for approval with the view of also installing a FAMM at the plant in Brisbane over the next 12 months. The machine is basically maintenance free and is extremely simple to use. Please let me know if you require any more information."

amcor

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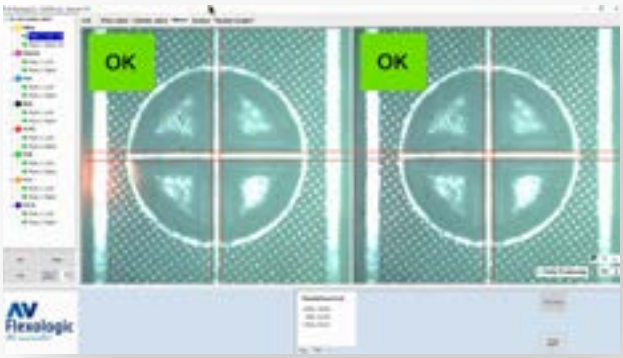
FAMM 2.0

Unique features of FAMM 2.0

The **FAMM 2.0** is the top of the line of AV Flexologic mounting machines for mounting flexographic printing plates onto sleeves. The reduction of the mounting related press downtime and the optimized workflow around the machine make the FAMM the world's most accurate, fast and consistent mounting machine.

Speed and high accuracy

Due to the patented **Image Recognition Technology** and **Automatic positioning**, the machine automatically and extremely accurately mounts multiple plates with a precision of 5 microns. A **Stationary Third Camera** helps recognize the mounting marks faster to begin the mounting process, while a **Light Beam** executes the sleeve change in 10 seconds. All these features allow the machine to mount with an "Average" Maximum Capacity up to 700 sleeves per day.



Fully Automatic and no operator interaction

While the plates are automatically mounted onto the sleeves, the only action needed from the operator is to load a sleeve and place the plates on the conveyor belt, thus, the operator can attend other tasks while the machine is mounting plates.

Quality reporting after mounting

After the mounting process the FAMM goes back to the idle position to conduct a Quality report to monitor the quality of the jobs.

Features

- HD Ethernet Cameras
- Air cylinder
- Windows 10 mounting software
- Overlay
- Motorized rotation of cylinder
- Digital Zooming capability
- 40" HD Monitor
- Laser pointers
- Vertical Movement of Cylinder
- Fixed distance from lens to plate
- Motorized cameras
- Synchronized front table movement
- Digital Calibration System
- Pressure roller
- Image Recognition Software
- Quality report
- Automatic quality check using image recognition
- Vacuum table
- DOAL Lights
- Robotic positioning
- Easymount
- Automatic repeat detection
- Automatic mandrel rotation
- Automatic pressure roller
- Motorized table movement
- Fully Automatic

Options

- Automatic Easyreg detection (W&H)
- Magnet zero-setting (BOBST, SOMA, Allstein)
- Critical Spare Parts Package
- Barcode Scanner
- TIR Sleeve measurement
- Sleeve Tracking System

Features & Options Overview

Tape roll holder

A simple tape roll holder can be added (on all machines apart from the FAMM) for holding the tape in front of the sleeve to assist the operator with tape application. A metal bar with cones to hold the tape roll in place.

HD Ethernet cameras

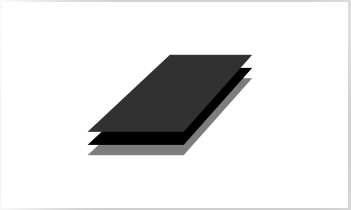
Using the latest technology in high-speed Ethernet cameras on all of the mounting equipment, AV Flexologic ensures crisp and sharp ultra-high-resolution images, enabling an efficient and accurate mounting process.

Custom made Air Cylinder

All sleeve-dedicated AV Flexologic mounting equipment is equipped with a high-precision chromed mounting mandrel. The cylinders are produced in Germany by a specialist company under the strictest tolerances. The cylinder is custom-made to fit press requirements.

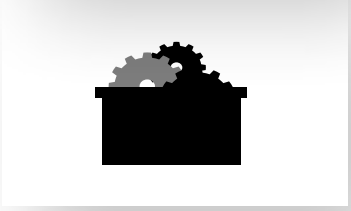
Windows 10 mounting software

Striving for the latest up to date technology, the SAMM 2.0 is equipped with Windows 10, which is fully compatible with our software.



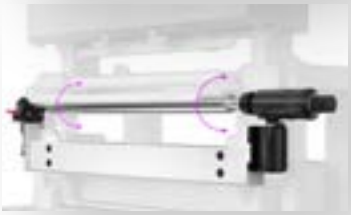
Overlay

Once the first plate is in the right position, the overlay module enables the operator to take snapshots of the mounting marks, which are then shown semi-transparently when mounting the other plates.



Critical spare parts package

It is recommended to opt for a critical spare parts package, which is available for all equipment. AV Flexologic has spare parts warehouses in Western Europe: Alphen aan den Rijn, The Netherlands (HQ), North America: New Hudson, Michigan, USA and Eastern Europe: Cluj-Napoca, Romania.



Motorized rotation cylinder

The chromed cylinder is driven by a high quality electric motor which is joined to a high-precision, zero backlash gear reducer called a 'harmonic drive'. This ensures maximum possible precision in the rotational (Y) direction of the mounting process. Starting or recalling a job and moving to the right mounting position for each plate is done within seconds.

Tape holder on precision rail

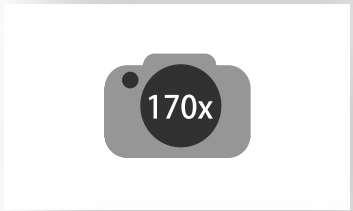
A tape holder can optionally be added to MOM and SAMM machines on precision linear guides. The linear guides make sure the tape roll is completely parallel to the sleeve when applying tape and assist the operator to easily move the tape along the side of the sleeve.

Barcode scanner

A barcode scanner can be optionally added to the MOM, SAMM or FAMM for automatic loading of the jobs. The jobs are then usually made offline in prepress to optimize the machine Operation Equipment Effectiveness (OEE).

Digital zoom capability

Combining HD cameras with HD flatscreen monitors enables mounting equipment to zoom digitally up to 170x.



40'' HD Monitor

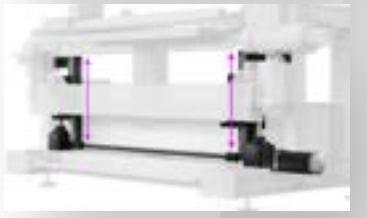
To be able to optimally view the mounting marks during the mounting process, the MOM and SAMM machines have a large-format HD Mounting monitor mounted on top of the machine. In combination with the HD Ethernet cameras. The magnified images are viewed with a high level of detail, making the machine more accurate and user-friendly.

Laser pointers

Laser pointers are mounted next to the cameras to indicate where the field of view of the cameras is. The mounting marks can be easily positioned in a fraction of time, instead of having to search for the mounting marks in the camera image each time.

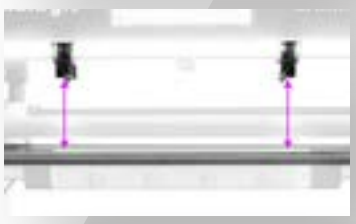
Vertical movement of cylinder

The cylinder moves vertically on high-precision linear guides. Advantages are that by moving the cylinder towards the plate, the plate is not disturbed in the final stage of the mounting process, meaning the 'fixation' accuracy of the plate to the sleeve is very high. Also, fixed distance from lens to plate means that there is no need to focus the lenses, ensuring the highest accuracy and user-friendliness.



Fixed distances from the lens to plate

The table is in a fixed height, so the cylinder moves up vertically when the plate is in position to fix the plate to the sleeve's adhesive layer (tape or twinlock). One of the advantages is that a fixed working height ensures best operator ergonomics.



Motorized cameras

The cameras are operated directly from the computer interface.

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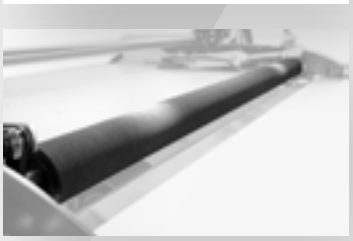
Features & Options Overview

Synchronized front table movement

Because of this feature the front table moves with the same speed and at the same height throughout the entire process of plate mounting. This results into an increased mounting accuracy.

Digital calibration system

Digital Y-calibration of the camera beam: the camera images are used in a calibration procedure to create a lookup table and digitally 'straighten' any deviations in the camera beam, down to 10 µm over the entire width of the camera beam / sleeve. For every x-position of the camera the y-deviation is recalled, the image is automatically digitally adjusted, ensuring 100x more accurate mounting. Additionally, the measured Y-deviation is stored in a lookup table.



Pressure roller

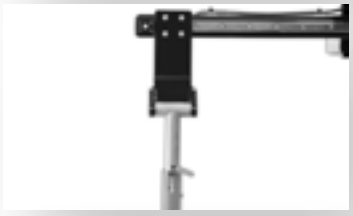
The pressure roller has become a standard feature in AV Flexologic flexo plate mounting machines over recent years. The roller is used to apply the plates evenly over the carrier such as a sleeve, cylinder or Mylar. The use of the pressure roller eliminates the typical 'hand-rolling'. The feature saves time and avoids un-ergonomic working procedures.

Automatic easyreg detection

Using our patented image recognition system, a visual mark on the edge of a sleeve such as the W&H Easyreg strip can be automatically 'set to zero' on the MOM, SAMM and FAMM mounting machines by simply pushing a button. The camera automatically homes in on the Easyreg mark and also automatically 'sets zero' in X and Y direction with 0.001mm (1µm) accuracy.

Shaft coupling for cylinders

Shaft coupling for cylinders is driven by a harmonic drive. The shaft coupling is mounted on precision rails and can slide onto the cylinder shaft using a hand wheel that actuates the horizontal movement. The coupling is manually fastened by a locking mechanism that tightens a collar around the shaft, preventing any play. The shaft diameter should be the same for all cylinders.



Cutting knife for plates

A special cutting knife designed to cut plates at an angle of 45º or 90º. That helps the operator cut plates easily in the wanted size.

Image recognition software

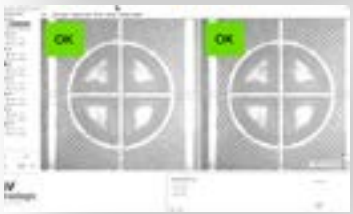
Specialized software developed by AV Flexologic can 'recognize' the mounting marks on the printing plates, which are used as the references for the mounting process. The ability to measure the positions not only during mounting but also after plates have been mounted provides endless possibilities to enhance a flexo printing production workflow.

Quality report

After each plate is mounted, the MOM, SAMM and FAMM mounting machines have the ability to automatically check the tolerance of mounted plates using image recognition. A pdf quality report is generated on-the-fly with ability to check top and bottom.

Quality check with image recognition

The image recognition system measures the exact positions of the mounting marks and thus how accurately the printing plate is fixed on the sleeve. The tolerance of the report settings determines whether a plate is judged as mounted 'OK' or 'NOT OK'.



Tape applicator

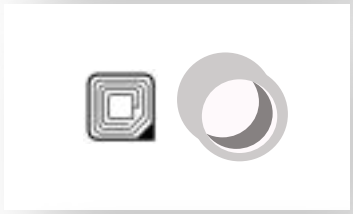
The tape applicator assists the tape application and adds speed to the workflow by allowing a fast an accurate tape application and minimum waste of materials.

TIR sleeve measurement

The TIR system is designed to measure the '3D landscape' of sleeves and cylinders by using a laser to scan an adjustable grid pattern across and around the sleeve. With this information, it is possible to know the condition of every sleeve that you have in inventory, which helps save valuable time in your press department. It is also possible to build a database to help track the condition of your sleeve inventory over time.

Sleeve tracking system

Feature on the TIR. A database that tracks sleeves using the sleeve ID, which can be read using a barcode or RFID chip. The TIR sleeve measurement is then stored in this central database. Things such as run length, run times can also be added.



Vacuum table

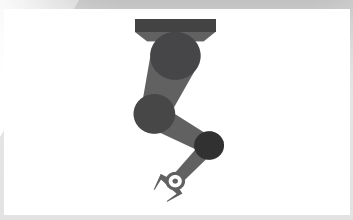
To ensure highly accurate positioning, the vacuum system fixates the plate to the robotic table before positioning.

DOAL lights

The image recognition system includes special DOAL lights with a half-transparent mirror which provide the best recognition conditions for automatic mounting. The light comes from the side and is reflected down in the same direction the camera is looking. When the light hits the plate surface it reflects straight back up into the lens.

Robotic positioning

Driven by the AV Flexologic software, the robotic table positions the mounting plate with high accuracy, each and every time. After positioning the vertically moving cylinder automatically comes up.



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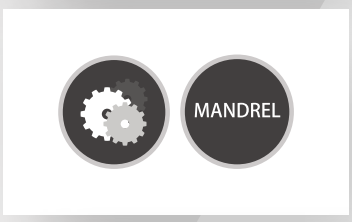
Features & Options Overview

Automatic repeat detection

With this feature the machine automatically detects the repeat size of the sleeve.

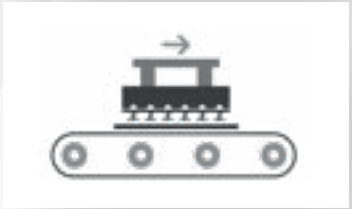


Automatic mandrel rotation

The automatic mandrel rotation combined with the one piece fully automatic mounting table allows for automatic plate mounting without operator interaction.

Motorized table movement

With this addition, the machine mounts one plate fully automatically, keeping the performance of the mounting job with an accuracy of 5 microns.



Robotic manipulator

FAMM's robotic manipulator picks up the plates and places them in the correct mounting position. Because of that, the accuracy of the mounting is ideal.

Conveyor belt

The operator simply places the to-be-mounted plates on the conveyor belt and the machine does the rest. The conveyor belt transports the plates to the pick-up position where a camera recognizes the mounting mark.

Fully automatic

The machine mounts the plates automatically, without operator interference.

Features & Options	Sleeve-mounter	MOM DD+ E	MOM DD+ Pro	SAMM 2.0	FAMM 2.0
HD Ethernet Cameras	✔	✔	✔	✔	✔
Air cylinder	✔	✔	✔	✔	✔
Windows 10 mounting software	✔	✔	✔	✔	✔
Overlay	✔	✔	✔	✔	✔
Digital Zoom capability		✔	✔	✔	✔
40" HD Monitor		✔	✔	✔	✔
Laser pointers		✔	✔	✔	✔
Vertical Movement of Cylinder		✔	✔	✔	✔
Fixed distance from lens to plate		✔	✔	✔	✔
Motorized cameras		✔	✔	✔	✔
Synchronized front table movement		✔	✔	✔	✔
Digital Calibration System		✔	✔	✔	✔
Pressure roller		O	✔	✔	✔
Motorized rotation of cylinder	O	✔	✔	✔	✔
Image Recognition Software			O	✔	✔
Quality report			O	✔	✔
Quality check w/ image recognition			O	✔	✔
Vacuum table				✔	✔
DOAL Lights				✔	✔
Robotic positioning				✔	✔
Automatic repeat detection				✔	✔
Automatic mandrel rotation				O	✔
Automatic pressure roller				O	✔
Motorized table movement				O	✔
Robotic manipulator					✔
Conveyor belt					✔
Fully Automatic					✔
Critical Spare Parts Package	O	O	O	O	O
Tape roll holder	O	O	O	O	
Tape holder on precision rail		O	O	O	
Barcode Scanner		O	O	O	O
Automatic Easyreg detection		O	O	O	O
Shaft Coupling for cylinders			O	O	
Cutting knife for plates			O	O	
Tape applicator			O	O	
TIR Sleeve measurement			O	O	O
Cutting knife for tape*			O	O	
Sleeve Tracking System**			O	O	O

✔ = Included O = Optional

*only in combination with tape applicator

**only in combination with TIR

Max Repeat Size					
[mm / inch]	1350 / 53"	850 / 34"	1350 / 53"	1350 / 53"	1350 / 53"

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Supporting equipment

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Introduction of supporting equipment

AV Flexologic offers a wide range of supporting equipment for further pre-press optimization:

Sleeve Storage

Organizes the storage of your sleeves, while preventing sleeve damage and extending the life of your sleeves.

TIR

Analyses the quality of the printing sleeve or cylinder by measuring the '3D landscape' of the surface.

Demounter

The safest way to demount tape and plates from your sleeves. Protects plates against damage and allows quick return on investment.

Tape Applicator

Applies the tape completely aligned and without air bubbles.

Carousel sleeve cleaner

Cleans ink from sleeves and plates. Ideal for cleaning multiple sleeves at once.

Tech Cart®

Used for easy transportation of printing sleeves, anilox sleeves and/or bridges. It is specifically designed to eliminate discomfort.

Sleeve Change Stand

Stand-alone simple frame fitted with a custom-made chromed mandrel for putting on and taking off sleeves from bridges.

Plate Cutting Table

Specially designed to cut straight through polymer plate material.

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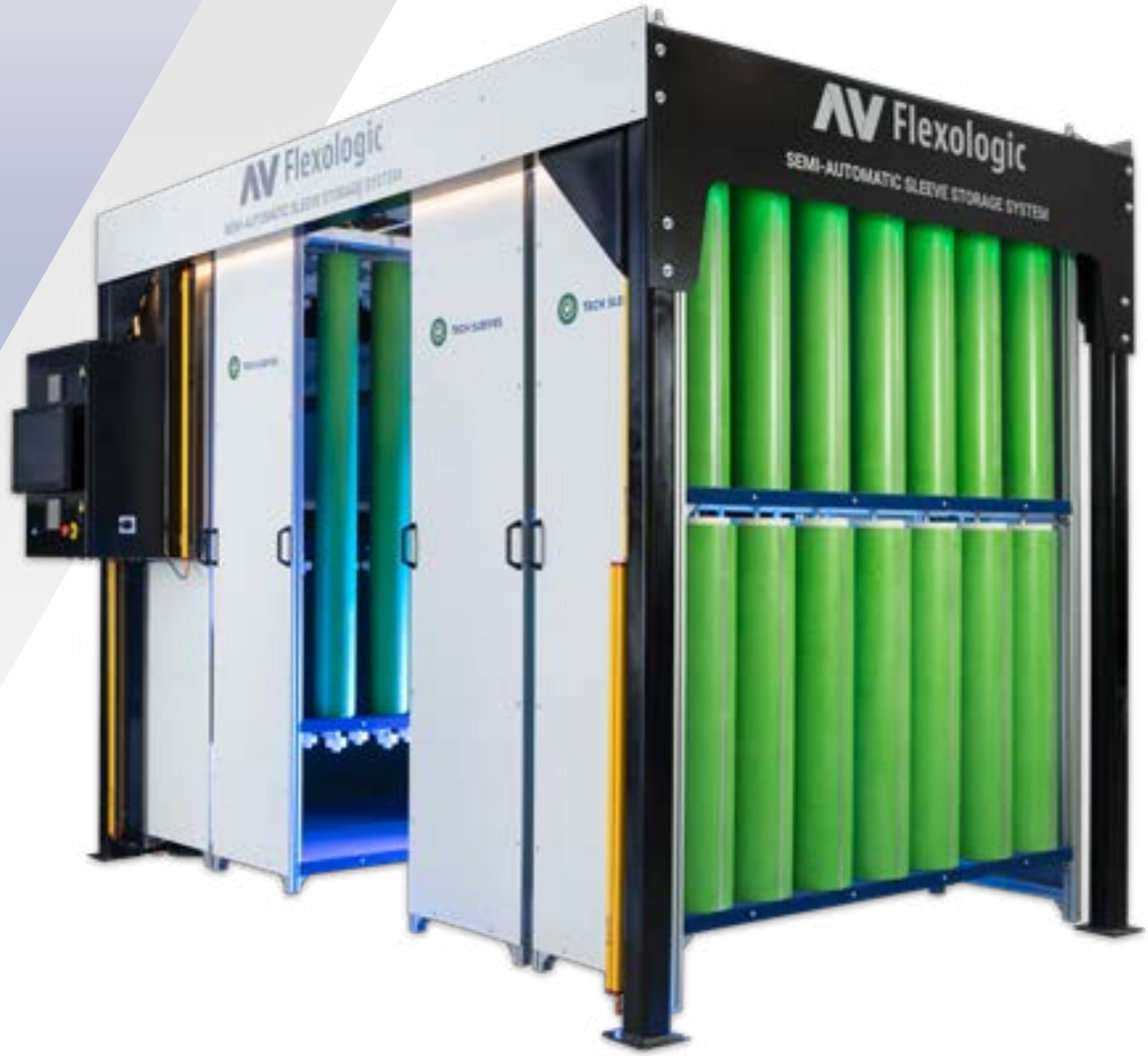
Sleeve Storage



Description

This customized **Sleeve Storage** system allows easy access, storage and retrieval of sleeves with an optional Semi-automatic feature. The Semi-Automatic feature entails that the horizontal movement of the racks is motorized by use of electric motors. This feature allows the user to input a repeat number or job on a touchscreen interface, through which the racks automatically “open” to the specific rack where the sleeves are stored.

Details

The operator enters a repeat size on the **22" touchscreen interface**. The system then automatically 'opens' to this specific job. All racks can move simultaneously so the correct sleeve racks are opened within a minimal amount of time. A **pressure-sensitive floor mat** is placed along the complete length of the system, disabling movement of racks when it is triggered (for example when someone steps on the mat).

Repeat sizes are programmed into a database during installation. Each repeat size corresponds with a specific location in the system. Custom ERP connections can be made for even higher levels of automation and planning of production workflow.

Given the space restrictions, the sleeve storage system is custom engineered to store **sleeves of different dimensions**. We suggest to use a multiple level system, the easiest to handle sleeves on the upper level. Features of the sleeve storage system include a customized steel frame that accommodates suspended sleeve racks and a holder on the ceiling that prevents the sleeves from falling off when the racks move. This system can also be expanded in the future with additional racks.

Options

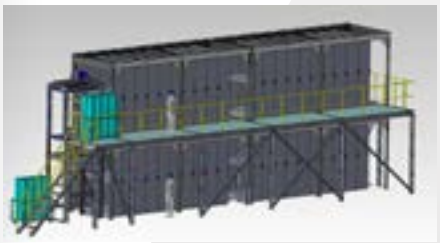
- Manual
- Semiautomatic

Benefits

- Custom Engineered
- Sturdy modular design
- Made from tubular steel
- Organized way of storage
- Prevents sleeve damage

Safety features

- Multiple light beam safety devices



Advantage of Semi-automatic Sleeve Storage

- ✔ Easy and fast retrieval of sleeves
- ✔ No manual labor required to move sleeve racks
- ✔ Possibility to connect to ERP system for further automation
- ✔ Automatic security system

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TIR

Description

The **TIR** measurement system is the winner of the International print & innovation award 2015. It analyses the quality of the printing sleeve or cylinder by measuring the '3D landscape' of the surface. This information gives a thorough insight on the condition of the printing sleeve or the cylinder. With that, the TIR builds up a record of the exact condition of each printing sleeve or cylinder in stock. Subsequently the printing sleeves can be placed in the press with the right pre-settings.

Details

A high-quality laser takes the measurements with an accuracy of 5 microns. The accuracy of the TIR system allows monitoring the distance between the guiding rail and the full length of the axis. It calibrates any irregularities to ensure precision on micron level. A full report is generated to keep track of any irregularities. The operator can pre-set specific tolerances that define whether the sleeve is still usable.

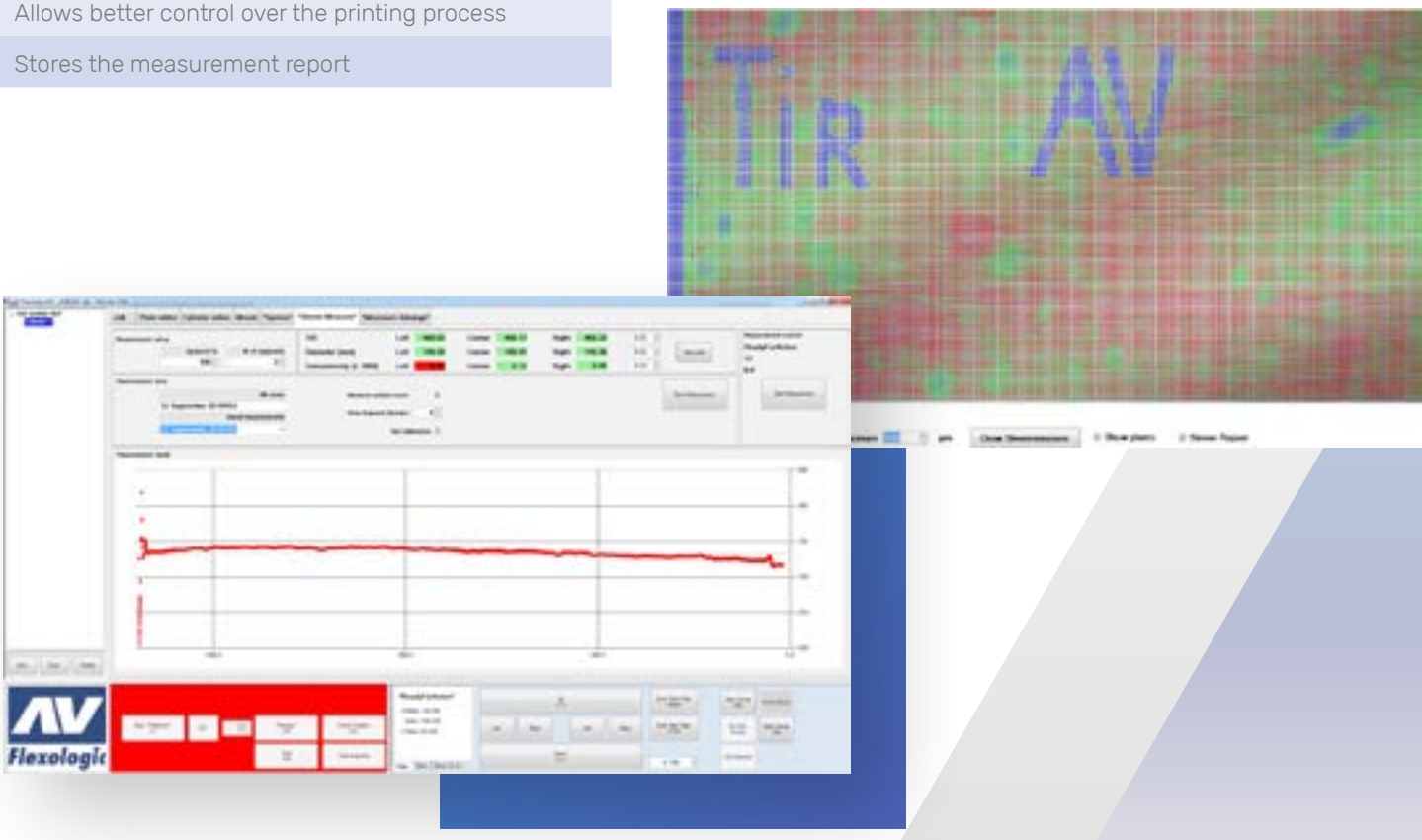
The ability to check the exact condition of each sleeve is essential for high-speed production with minimum pressure settings on the press. Worn out or damaged sleeves are easily detected, which prevents bad quality sleeve related downtime in the printing presses. It also helps to create an inventory of sleeves that are fit for use. The operator can pre-set specific tolerances that define whether a sleeve is still usable or not. In the image portrayed here it's visible how the TIR System measures the 3D surface of the sleeve, in which the blue spots indicate bulges on the sleeve's surface and the red spots indicate the dents. Bulges, dents and other imperfections such as the loss of roundness of the sleeve can seriously harm the print quality. With the TIR, press down time due to worn out sleeves can be prevented.

Advantages

- Reduction in press downtime due to worn out printing sleeves which end up in the flexographic printing press
- Quick and easy usage
- Rigid steel construction
- Prevent press downtime
- Identify out-of-spec. sleeves
- Allows better control over the printing process
- Stores the measurement report

Options

- Tape applicator for applying double-sided adhesive mounting tape
- Cutting knife with an adjustable depth to prevent sleeve damage while cutting tape



TIR

TIR	Left	0.38	Center	0.38	Right	0.38	0.10
Diameter	Left	152.90	Center	152.90	Right	152.90	0.10
Concentricity (x 1000)	Left	0.00	Center	0.01	Right	0.01	0.10

The jury of the Flexotech International Print & Innovation Awards stated that:

"The TIR Sleeve Measurement system is tackling a new problem in the process and will no doubt help improve quality and reduce downtime to further enhance the competitiveness of our industry."

Analyzing and interpreting the data
The measured data is analyzed in both horizontal and vertical direction and gives:

- **An overall average**
- **A maximum and minimum**
- **Out-of-roundness**
- **Topography of the complete sleeve**

The actual measured data is added to the record of the sleeve. The operator can also print out a quality report of the topography of the sleeve.

This data can be analyzed so as to determine which are the lowest plate points of the print. Using this data will determine how to adjust the final pressure. It can also determine if the sleeve is still in optimal condition or needs to be scrapped.

The TIR System can provide a sleeve tracking system with an XML system where it is possible to enter all relevant data of each sleeve. The computer can be used to enter all data and manage the total sleeve inventory. One can define how often a measurement is needed for an approved sleeve. In case one fills in every 10 times the sleeve goes into the TIR / Taping system then it will appear when this sleeve is used after every 10 times that a recheck on the measurement is done.

Each sleeve will be given a unique number and an RFID tag is applied to the sleeve.

Demounter

Description

The **Demounter** is a machine designed to prevent damaging the printing plates. The Demounter efficiently removes the flexographic printing plates and mounting tape from sleeves, without any damage. Along with saving plates, the machine will also save time and allow the operator to focus on other activities in the prepress department. A motor driven silicon roller generates friction to pull the printing plates and mounting tape off the printing sleeve or cylinder. The roller divides equal force along the entire width of the printing plate, as opposed to the edges, which protects the printing plates from any damage.

Details

The operator loads the printing sleeve onto the shaft (one-size-fits-all), peels of the edge of the printing plate and holds it against the silicon roller.
The foot pedal is pressed to move the silicon roller.
The operator unloads the printing sleeve from the shaft.

Advantages

- Reduces costs due to damaged printing plates allowing a quick return on investment
- Saves time in prepress department
- Easy to use and minimal force required
- Rigid steel construction
- Plug-and-play

Specifications

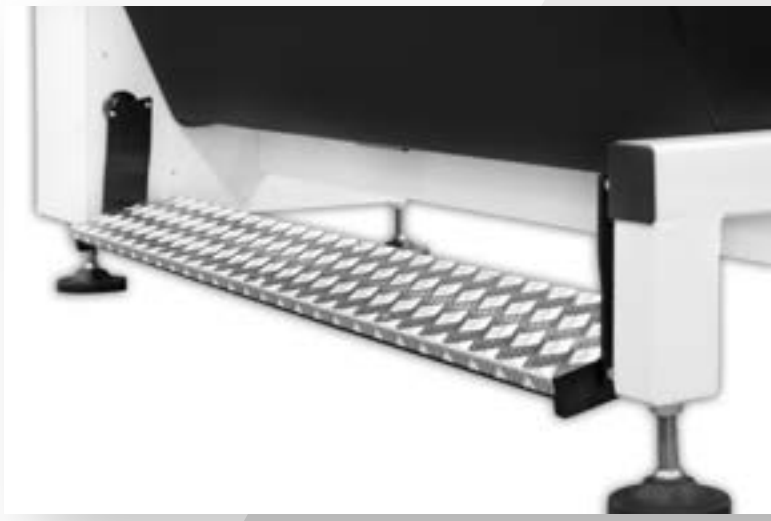
- Widths: 1700, 2000 and 2500mm
- Plates: All thicknesses
- Tape: All types

Options

- Pneumatic cones for applying tape
- Cutting knife

Versions

- Sleeves
- Cylinders



Tape Applicator

Description

The **Tape Applicator** is a machine designed to efficiently apply tape onto sleeves and achieve straight alignment and no air inclusions.

Details

The tape applicator is fitted with a custom-made chromed mandrel. The tape dispenser is positioned by hand. Precision holes and a fine tuner ensure that stretches of tape can be perfectly aligned next to each other. A rubber roller ensures the tape is applied without air inclusions. The rotation of the sleeve is motorized and operated with foot pedals. The sturdy frame and strong support rail ensures precise application throughout the years.

Technical Details

Max Sleeve Width 1700 mm / 67 Inch
Max Repeat Length 1300 mm / 51.18 Inch
Length x Width x Height 2300x700x1460 mm
Electrical Connection 1x220VAC+(PE) +/- 10% 50/60 Hz 6 Amp
Air Pressure 6 bar
Net Weight Approx. (Kg) 350

Carousel sleeve cleaner

Description

The **Carousel Sleeve Cleaner** is used for cleaning flexo and variable offset sleeves. This machine can clean up to 6 sleeves in one sequence.

Details

The Carousel Sleeve Cleaner is used for cleaning flexo and variable offset sleeves. This machine can clean up to 6 sleeves in one sequence.

The sleeves automatically enter the washing section of the Carousel Sleeve Cleaner, which saves time when cleaning multiple sleeves. The sleeve diameters are automatically detected during the cleaning sequence. Due to a special cone system, the inside of the sleeves remain dry and several different internal sleeve sizes can be cleaned in one run. The Carousel is also able to cope with heavy weight sleeves. The sleeves are cleaned with a two brush system, each having a different rotation speed.

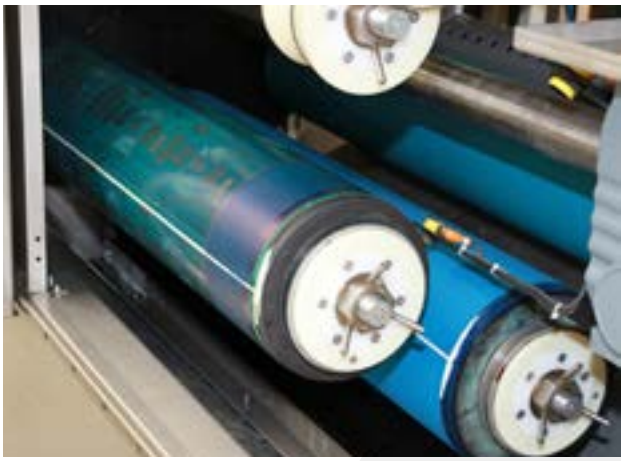
A spraying system in combination with a brush tray assures optimum use of cleaning liquid and proper cleaning of the sleeve and the photopolymer plates on the sleeve. Care is taken to use as little cleaning liquid as possible. The time the sleeve is exposed to the cleaning liquid is kept to a minimum.

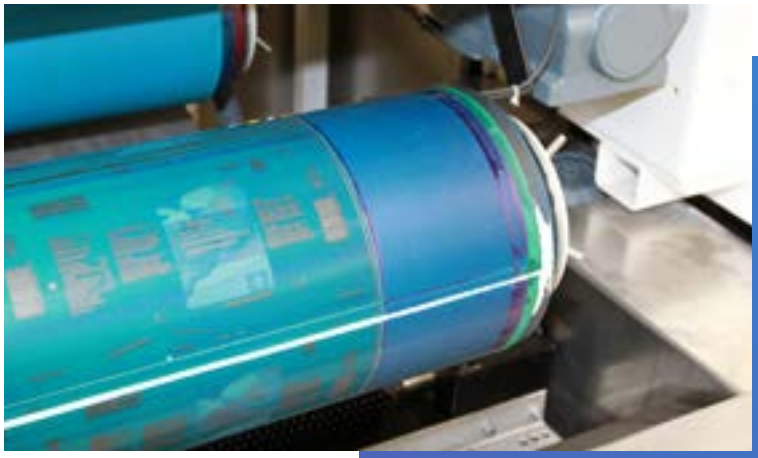
Features

- Fully automatic
- Different wash programs
- A different wash program can be used for each sleeve position
- Adjustable brush pressure
- Minimum and maximum levels in the tank are indicated and the machine is provided with alarms
- Password settings for sensitive settings such as brush pressure and maintenance interval times

Measurements

- 2300 x 1515 x 1244 mm / 90.5 x 59.6 x 49.1 inch
- approx. 700 kg
- Maximum sleeve length: 1700 mm / 66.9 inch





Workflow

Two tanks of 60 liters each contain the clean and the processed liquid. Two pumps supply the system with the necessary liquid. During the washing cycle the liquid from the process tank is used and circulated. Afterwards, the remaining residues are flushed away with clean liquid. The sleeves are dried drip free by means of an air blower system. Special drying systems can be added on request.

AV Flexologic
We innovate!

Tech Cart®

Description

Tech Cart® is used for easy transportation of printing sleeves, anilox sleeves and/or bridges.

Details

It is a sleeve carriage or a sleeve cart, specifically designed to eliminate discomfort. By holding the sleeves horizontally, it ensures that you can load and unload the sleeves without any extra physical effort. With the 360° rotating wheels and cart handle, you can easily maneuver the cart around.

Along with convenience, Tech Cart® also ensures safety for the sleeves. The felt covered sleeve holder prevents the inner core of the sleeve from scratches. The edge of the sleeve is protected by the rubber end ring on each sleeve holder. The tubular steel structure makes the cart extremely sturdy. Moreover, Tech Cart® can be customized to hold the number of sleeves you need and suit the sleeve sizes as per your requirement. Tech Cart® is thus the ultimate way to transport your sleeves.

Features

- Customized engineering
- Ergonomically designed
- Sturdy tubular steel structure
- Felt covered sleeve holder
- Rubber end rings
- 360° rotating wheels
- Cart handle

Benefits

- Easy transportation of sleeves
- Easy loading/unloading
- No physical heavy lifting
- No damages to sleeves during transportation

AV Flexologic
We innovate!

Sleeve Change Stand

Description

This **Sleeve change stand** is a stand-alone simple frame fitted with a custom-made chromed mandrel for putting on and taking off sleeves from bridges.

Workflow

An air connection is provided for the mandrel and a separate air selection handle for separate air bridges is included. This simple solution has proven to be useful and increase efficiency when placed next to the printing press to reduce job changeover times and increase Overall Equipment Effectiveness (OEE). The sleeve change stand could also be used in prepress to reduce operator time spent on capital equipment and increase OEE in prepress.

Plate Cutting Table

Description

Sturdy table construction, a holding bar which is pneumatically operated by means of switch and a rotary knife on a rail to ensure a perfect cut is what makes this **Cutting table** specially designed to cut strait through polymer plate material.

Workflow

After positioning the plate the holder bar is pressed down pneumatically by activating the switch. The operator slides the knife through the material. Upon returning the knife automatically the switch is activated to release the press down holding bar.

AV Flexologic
We innovate!

Sleeves & Bridges

TECH SLEEVES

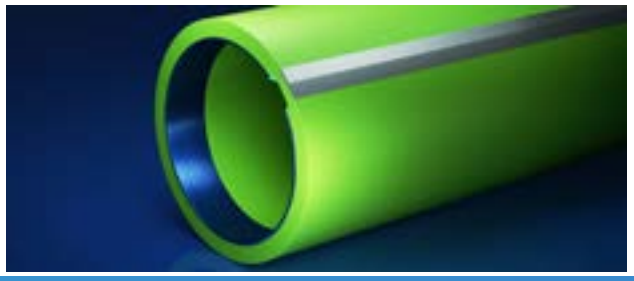
Introduction of sleeves & bridges

At **Tech Sleeves®**, we manufacture composite printing sleeves and bridges (adapters) for the global flexographic industry. By using the highest quality of materials, we ensure durability, consistency and dimensional stability.

The core of our sleeves and bridges are built using 2-component vinyl-ester epoxy resin combined with Spherecore and Dyneema®. This leads to an ultra-high strength composite core that guarantees form stability and ensures resistance to bouncing. **Tech Sleeves®** and **Tech Bridges®** are qualified for high printing speed of up to 800m/min, or 2,624 ft/min.

In addition to these high quality materials, Tech Sleeves® also offers additional features like sealed ends, the full inner metal ring, the metal cutting line and an outer metal ring to increase the sleeve and bridge lifetime. RFID chips and magnets can be added to both sleeves and bridges on request.

Tech Sleeves® offers a variety of sleeves and bridges depending on the needs of the customers.



Tech Sleeves®

Tech Sleeves® are available in 3 different versions:

- Tech®
- Tech®Pro
- Tech® Pro+

Tech Bridges®

Due to its application, **Tech Bridge®** is only available in our most advanced version:

- Tech® Pro+

TECH SLEEVES

Tech Sleeve® Thin

Description

Tech Sleeves® Thin is perfect for applications when the outer diameter for printing is almost the same size or just slightly bigger than the printing cylinder. The high quality materials used to build the Tech Sleeve® Thin ensure durability, consistency and dimensional stability.

Cross-section

1

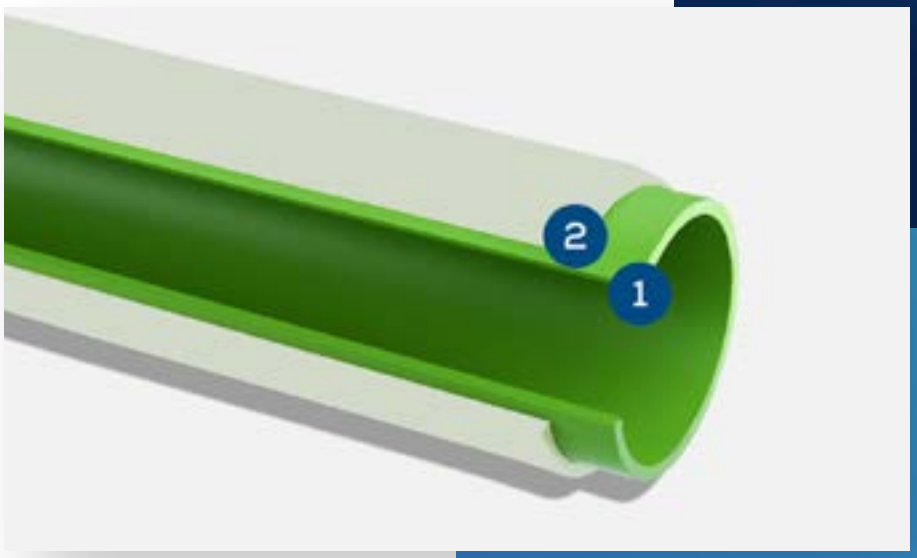
Dyneema® Layer

- Flexible and expandable innermost core. (1 mm)
- Contains Dyneema® that offers maximum strength with minimum weight.
- Dyneema® doesn't fray and is up to 40% stronger than aramid fibers such as Kevlar®.
- Prevents slipping of the sleeve on the mandrel.
- Extremely durable and resistant to moisture, UV light and chemicals.

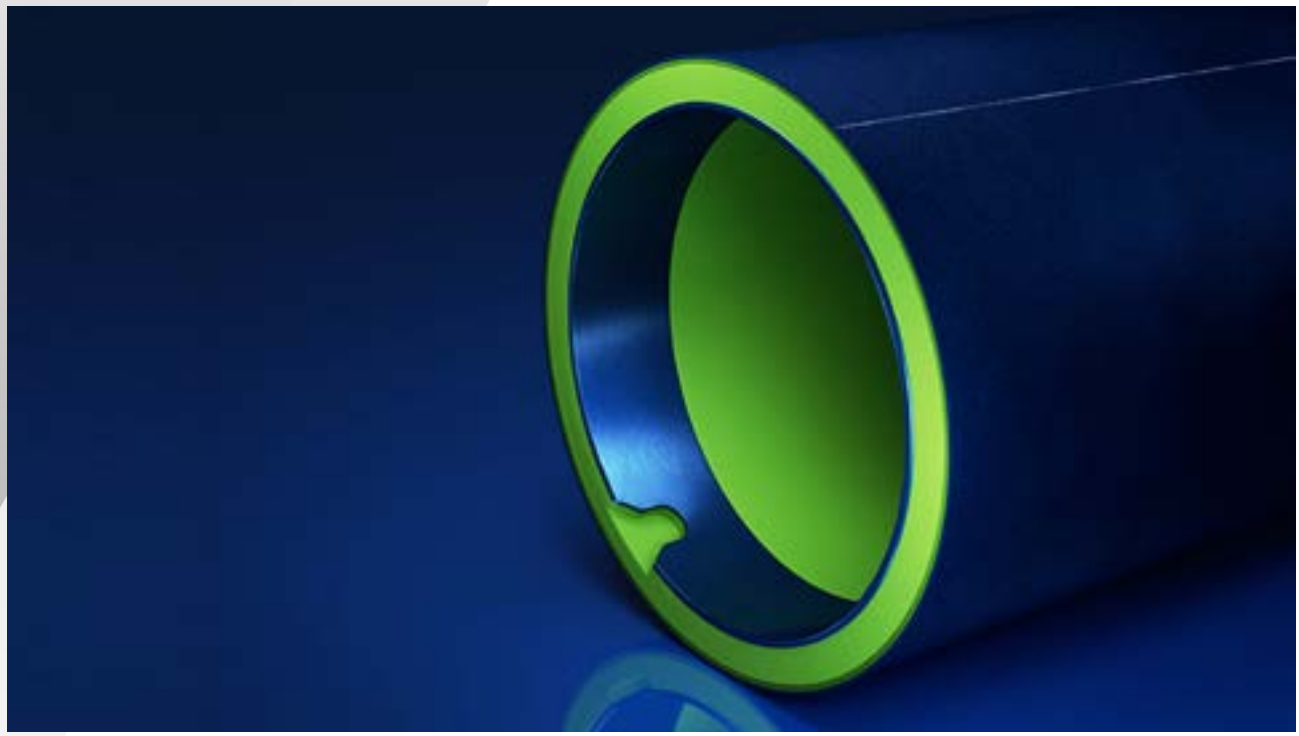
2

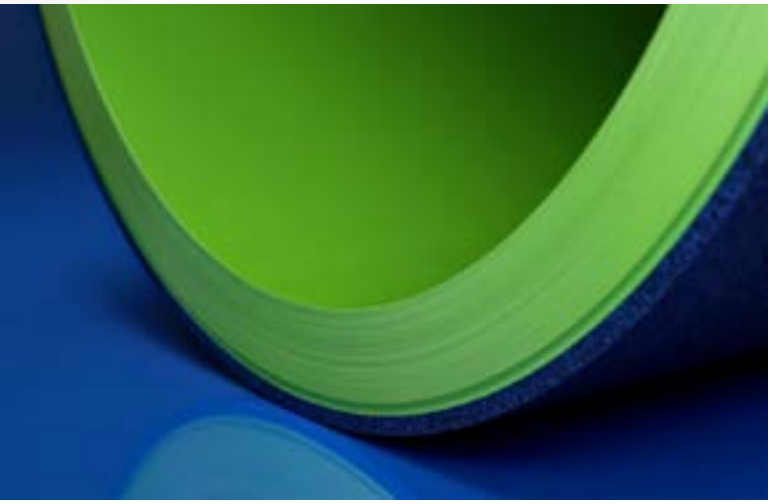
Infused thin layer

- The Dyneema® layer is infused with Epoxy Vinyl-Ester-Resin.
- Light weight with extreme high flexural strength and form stability.
- Ultra-high-strength composite core reduces bouncing at high speed.
- High chemical and temperature resistance with excellent tape mount and demount properties.



Tech Sleeve® Soft





Description

Tech Sleeve® Soft is an investment for the future. It is designed to eliminate the need for compressible double sided mounting tape as the surface is up to 50% compressible without bulging. It is available in densities of 40, 50 and 60 ShA. The wall thickness range is between 2.6 - 100 mm.(0.1 - 3.9 inch).

Cross-section

1

Innermost Core

- Flexible and expandable innermost core. (1 mm)
- Contains Dyneema® that offers maximum strength with minimum weight.
- Dyneema® doesn't fray and is up to 40% stronger than aramid fibers such as Kevlar®.
- Prevents slipping of the sleeve on the mandrel.
- Extremely durable and resistant to moisture, UV light and chemicals.

2

Foam Layer

- Compressible Foam Layer. (1 mm)
- The compressible Foam Layer has high rebound resilience and is up to 50% compressible without bulging.
- Reduces bouncing and enables the sleeve to have a perfect fit on the mandrel.
- Resistant to permanent deformation, good abrasion resistance from aging, weathering and cleaning solvents used for polymer plate cleaning.

3

Techcore

- Stitched, Bonded and Compressed Techcore material in various thicknesses.
- Contains a filament fiber base which is volumized by fiberglass infused with Epoxy Vinyl-Ester-Resin.
- Light weight with extreme high flexural strength and form stability.
- Ultra-high-strength composite core reduces bouncing at high speed.

4

Outer surface layer

- The Outer Surface Layer contains Epoxy Vinyl-ester-resin reinforced with technical filaments and polyester fleece. (2 mm.)
- High chemical and temperature resistance with excellent tape mount and demount properties.

5

Outer compressible surface layer

- The compressible surface layer consists of cellular, water crossed-linked foamed polyurethane.
- The compressible outer layer is available in 40, 50 or 60 ShA.
- Designed to eliminate the need of compressible double sided mounting tape.
- Saves time and money on tape because of its compressibility

Features

Registration slot
1 zero axial line

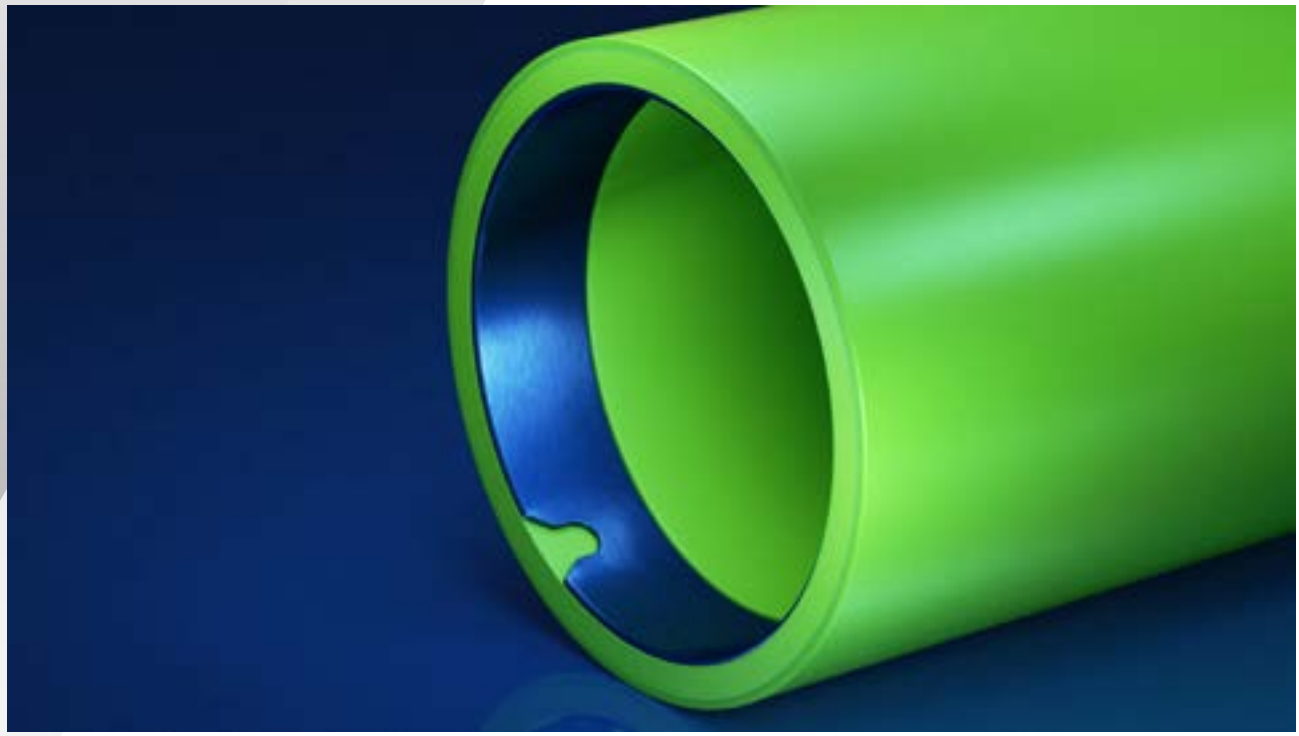
Options

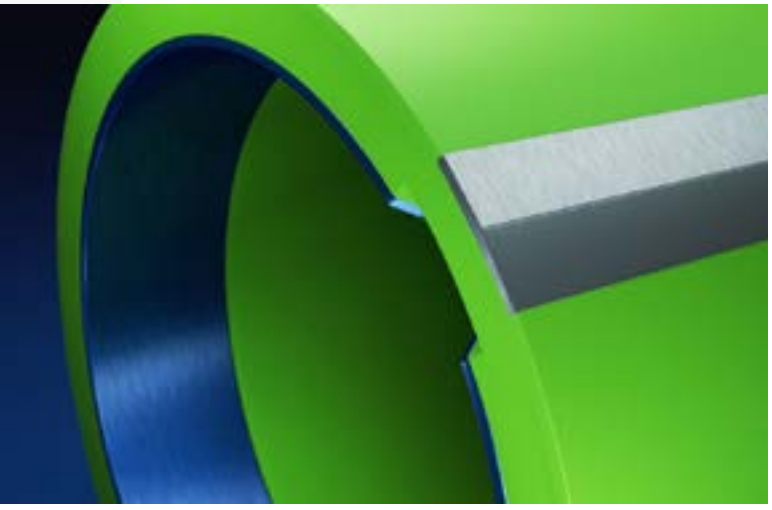
Metal ring including registration slot
Sealed ends
Metal cutting line
Conductive by use of Carbon
Additional mounting lines and slots
RFID chips and magnets

Tech Sleeve Soft	Tech®	Tech® Pro	Tech® Pro+
Zero line axial	•	•	•
Sealed edges both sides		•	•
Inner metal ring incl. registration slot			•

TECH SLEEVES

Tech Sleeve® Hard





Description

Tech Sleeve® Hard has an ultra high strength composite core making it suitable for high speed printing. It is very light and easy to handle. Tech Sleeve® Hard is available in Tech, Tech Pro and Tech Pro+ versions.

Cross-section

1

Innermost Core

- Flexible and expandable innermost core. (1 mm)
- Contains Dyneema® that offers maximum strength with minimum weight.
- Dyneema® doesn't fray and is up to 40% stronger than aramid fibers such as Kevlar®.
- Prevents slipping of the sleeve on the mandrel.
- Extremely durable and resistant to moisture, UV light and chemicals.

2

Foam Layer

- Compressible Foam Layer. (1 mm)
- The compressible Foam Layer has high rebound resilience and is up to 50% compressible without bulging.
- Reduces bouncing and enables the sleeve to have a perfect fit on the mandrel.
- Resistant to permanent deformation, good abrasion resistance from aging, weathering and cleaning solvents used for polymer plate cleaning.

3

Techcore

- Stitched, Bonded and Compressed Techcore material in various thicknesses.
- Contains a filament fiber base which is volumized by fiberglass infused with Epoxy Vinyl-Ester-Resin.
- Light weight with extreme high flexural strength and form stability.
- Ultra-high-strength composite core reduces bouncing at high speed.

4

Outer surface layer

- The Outer Surface Layer contains Epoxy Vinyl-ester-resin reinforced with technical filaments and polyester fleece. (2 mm.)
- High chemical and temperature resistance with excellent tape mount and demount properties.

Features

Registration slot
1 zero axial line

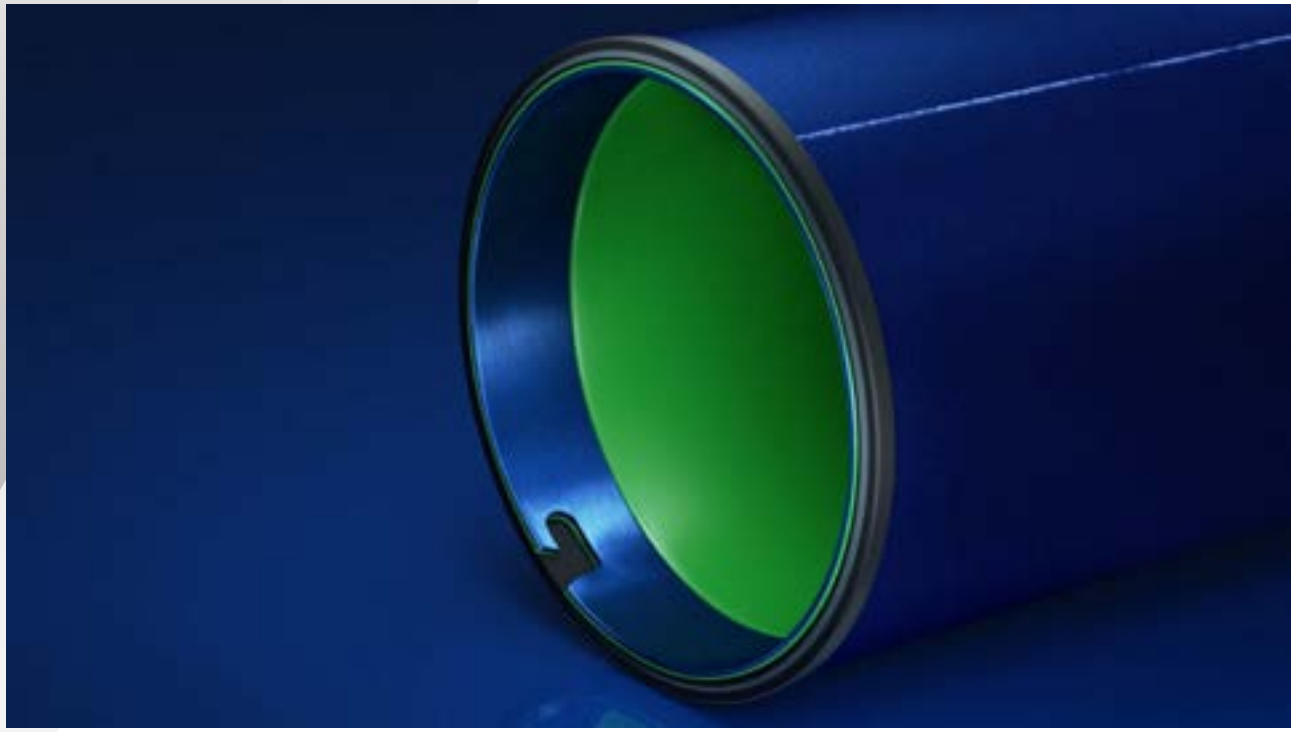
Options

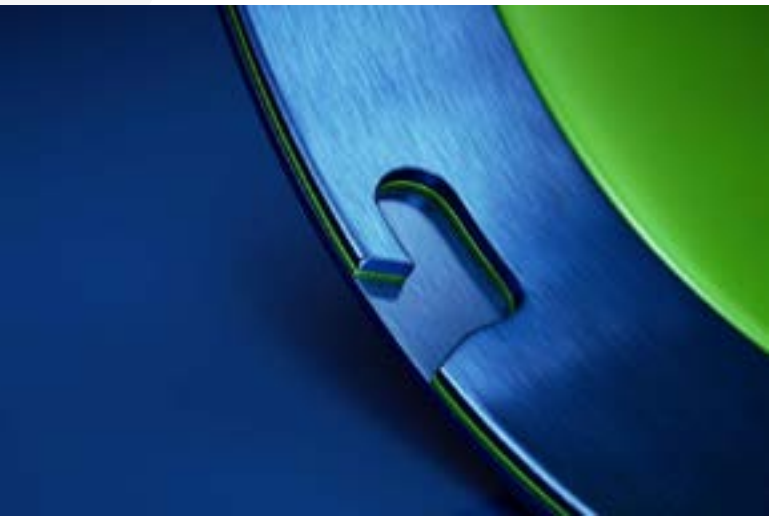
Metal ring including registration slot
Sealed ends
Metal cutting line
Conductive by use of Carbon
Additional mounting lines and slots
RFID chips and magnets

Tech Sleeve Hard	Tech®	Tech® Pro	Tech® Pro+
Zero line axial	•	•	•
Sealed edges both sides		•	•
Inner metal ring incl. registration slot			•

TECH SLEEVES

Tech Bridge® Soft





Description

Tech Bridge® Soft is used to print with “In The Round” or seamless (thin) sleeves. The soft outer layer of the adapter provides the compressibility needed for the required print impression. Tech Bridge® soft adapters can be supplied in various shore hardness’s of 40, 50 and 60 ShA. It is available with a separate air connection or as air-through.

Cross-section

1 **Innermost Core**

- Flexible and expandable innermost core. (1 mm)
- Contains Dyneema® that offers maximum strength with minimum weight.
- Dyneema® doesn't fray and is up to 40% stronger than aramid fibers such as Kevlar®.
- Prevents slipping of the sleeve on the mandrel.
- Extremely durable and resistant to moisture, UV light and chemicals.

2 **Foam Layer**

- Compressible Foam Layer. (1 mm)
- The compressible Foam Layer has high rebound resilience and is up to 50% compressible without bulging.
- Reduces bouncing and enables the sleeve to have a perfect fit on the mandrel.
- Resistant to permanent deformation, good abrasion resistance from aging, weathering and cleaning solvents used for polymer plate cleaning.

3 **Techcore**

- Stitched, Bonded and Compressed Techcore material in various thicknesses.
- Contains a filament fiber base which is volumized by fiberglass infused with Epoxy Vinyl-Ester-Resin.
- Light weight with extreme high flexural strength and form stability.
- Ultra-high-strength composite core reduces bouncing at high speed.

4 **Outer surface layer**

- The Outer Surface Layer contains Epoxy Vinyl-ester-resin reinforced with technical filaments and polyester fleece. (2 mm.)
- High chemical and temperature resistance with excellent tape mount and demount properties.

5 **Outer compressible surface layer**

- The compressible surface layer consists of cellular, water crossed-linked foamed polyurethane.
- The compressible outer layer is available in 40, 50 or 60 ShA.
- Designed to eliminate the need of compressible double sided mounting tape
- Saves time and money on tape because of its compressibility

Features

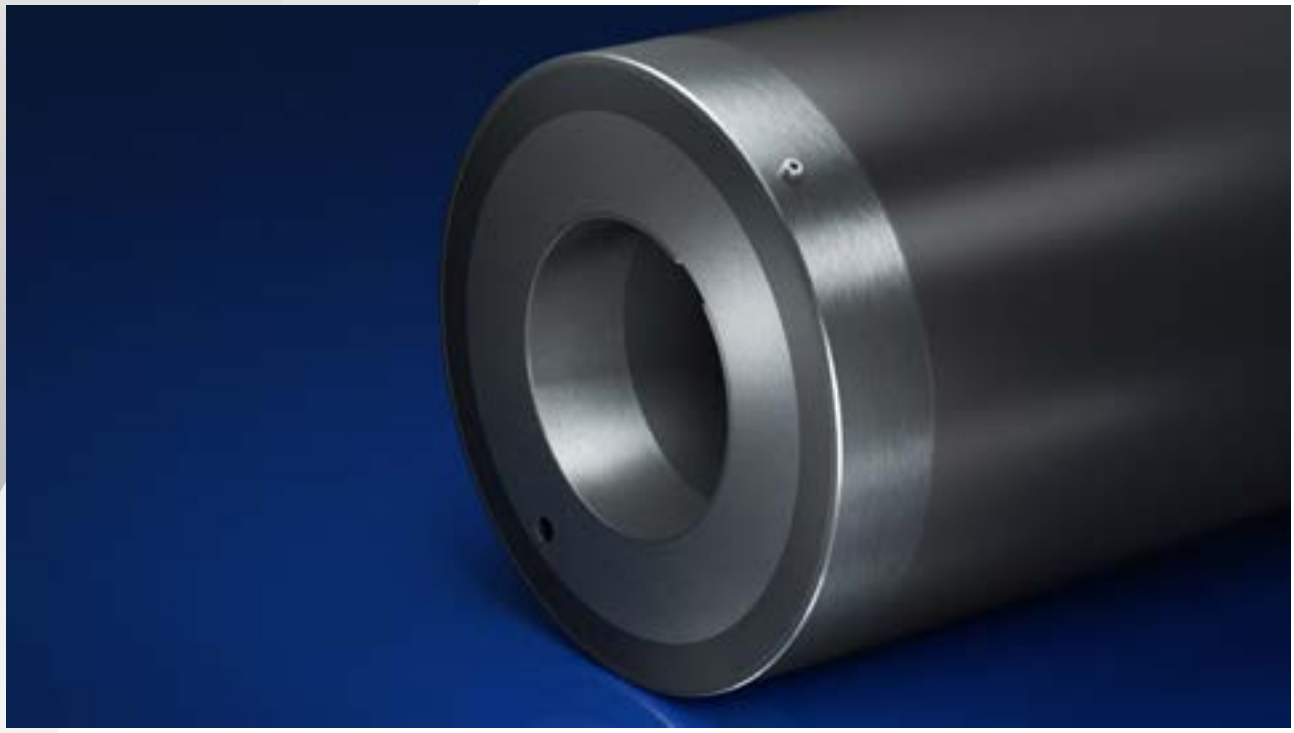
Sealed ends
Full inner metal ring
Werkstoff-S Endstop ring

Options

Conductive by use of Carbon
Air-through or separate air
RFID chips and magnets

Tech Bridge Soft	Tech® Pro+
Inner metal ring including Bayonet slot	•
Werkstoff- S Endstop ring	•
Air through or Separate Air	•
Sealed ends	•

Tech Bridge® Hard



Description

Tech Bridge® hard has an ultra high strength composite core complemented by a fiber-reinforced outer shell, which makes it suitable for high speed printing. It is available with a separate air connection or as air-through. Miller valves are standard for Separate Air Tech Bridges® Hard that have a minimum wall thickness of more than 25mm. This high quality Hard Coated Bridge Sleeve is suitable for all plate sleeves.

Cross-section

1

Innermost Core

- Flexible and expandable innermost core. (1 mm)
- Contains Dyneema® that offers maximum strength with minimum weight.
- Dyneema® doesn't fray and is up to 40% stronger than aramid fibers such as Kevlar®.
- Prevents slipping of the sleeve on the mandrel.
- Extremely durable and resistant to moisture, UV light and chemicals.

2

Foam Layer

- Compressible Foam Layer. (1 mm)
- The compressible Foam Layer has high rebound resilience and is up to 50% compressible without bulging.
- Reduces bouncing and enables the sleeve to have a perfect fit on the mandrel.
- Resistant to permanent deformation, good abrasion resistance from aging, weathering and cleaning solvents used for polymer plate cleaning.

3

Techcore

- Stitched, Bonded and Compressed Spherecore material in various thicknesses.
- Contains a filament fiber base which is volumized by fiberglass infused with Epoxy Vinyl-Ester-Resin.
- Light weight with extreme high flexural strength and form stability.
- Ultra-high-strength composite core reduces bouncing at high speed.

4

Outer surface layer

- The Outer Surface Layer contains Epoxy Vinyl-ester-resin reinforced with technical filaments and polyester fleece. (2 mm.)
- High chemical and temperature resistance with excellent tape mount and demount properties.

Features

Sealed ends
Full inner metal ring

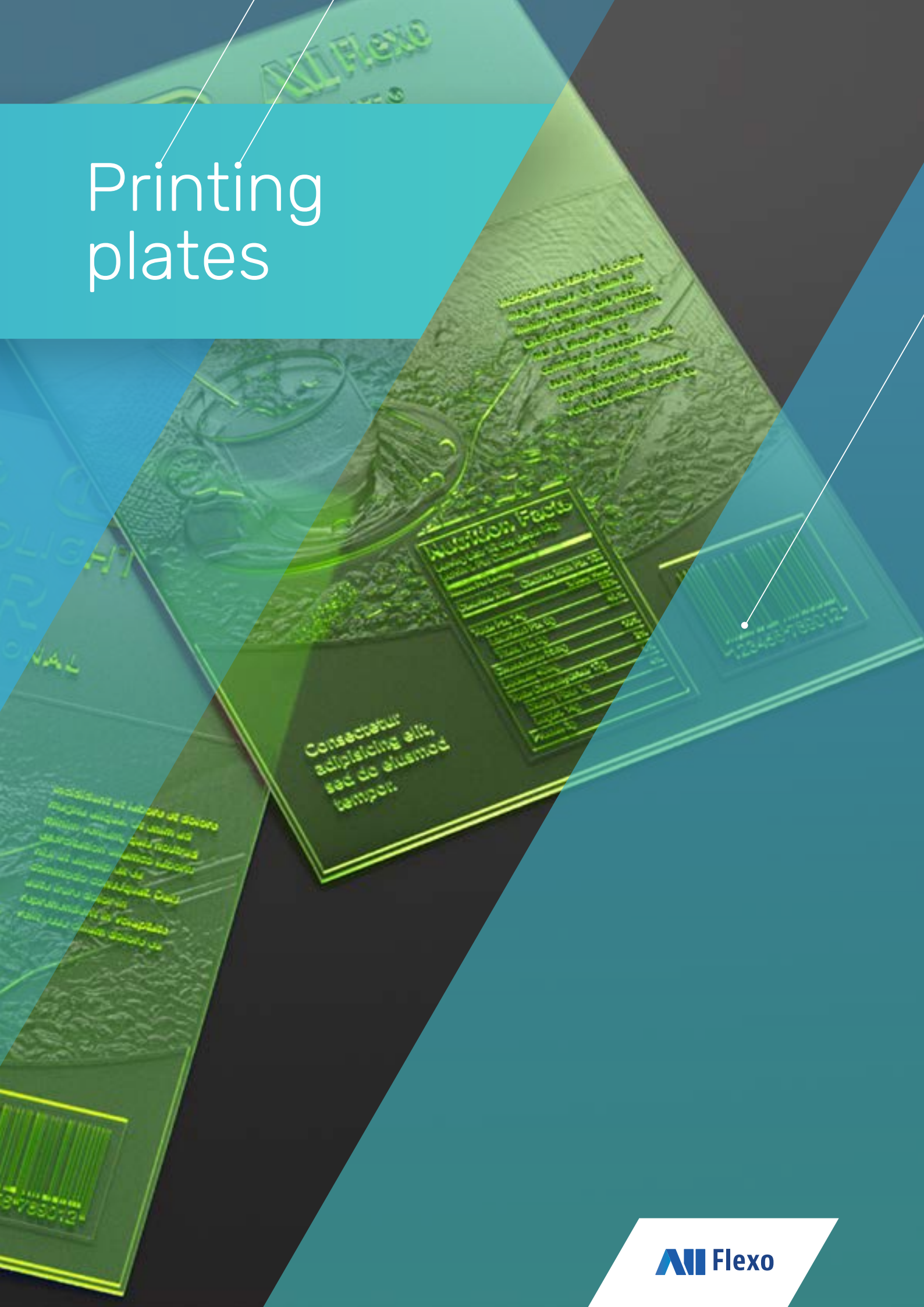
Options

Conductive by use of Carbon
Air-through or separate air
Outer metal ring incl. pin
RFID chips and magnets

Tech Bridge Hard	Tech® Pro+
Full Inner metal ring	•
Miller Valves *	•
Air through or Separate Air	•
Sealed Edges	•
Outer metal ring incl. pin	•

* Miller valves are standard for separate Air Tech Bridge® Hard that have a min wall thickness of more than 25 mm

Printing plates



All Flexo

TOYOBO Cosmolight®

Description

Toyobo is the worldwide leading water-washable printing plate manufacturer for flexographic and letterpress printing. Toyobo's water-wash products are for printers who demand the highest print quality, while being able to operate in a solvent-free operation, fast processing and limited required processing equipment.

Thanks to Toyobo's many resources and experience in chemistry it can continuously develop high performance products for the flexo printing industry. Due to the unique material and structure of the plates, the phenomenal ink transfer is complemented by a low dot-gain with press ready plates in under 1 hr.

Printing plates

Toyobo printing plates are offered for flexo and letterpress in CTP as well as conventional analog film-based processing in the following range:

- **Flexo Digital Cosmolight® CTP**
- **Letterpress Digital Printight® CTP**
- **Flexo Analog Cosmolight®**
- **Letterpress Analog Printight®**

Toyobo Cosmolight®

Toyobo Cosmolight® CTP plates are revolutionary water-wash digital flexo plates that are durable to water-based ink and solvent based UV-ink. Toyobo Cosmolight® CTP plates can be used in all CTP imaging devices. Cosmolight® CTP plates are available in 3 versions:

Cosmolight® QZ
Cosmolight® QS
Cosmolight® QH

Cosmolight® flexo plates have a black layer mask as well as an oxygen-inhibition layer integrated into the plate, sealing the plate automatically for any oxygen-inhibition effects. The result is an extremely high-quality print due to a flat top dot, small dot gain and high ink transfer. Toyobo Comolight® CTP plates are certified by Esko for Full HD. Cosmolight® will outperform thermal plates and can compete with solvent-based plates on the market.

Besides an excellent print quality, Cosmolight® plates mitigate the use of hydrocarbon based solvents or even aggressive cleaning chemicals such as sodium hydroxide ('Caustic Soda') in prepress. The only 'chemical' to be used in the entire process is a detergent, similar to dishwashing soap. We recommend the use of Cosmosoap to ensure optimum dissolving of the polymer material.

For high-volume customers, we recommend using an Aquasupreme or Cosmoline with optional centrifugal filtration system to remove the polymer particles in solid form, which can be disposed as household waste.

TOYOBO Cosmolight®

CTP Plate making process:

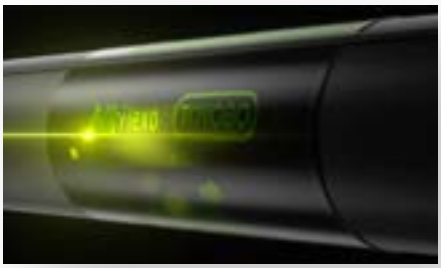
There are 6 steps in the Cosmolight® CTP plate-making process which are described below. The only equipment that is required is a 'combi processor' - a combined washout, exposure & dryer unit such as an **Aquasupreme** or **Cosmoline** and a laser ablation device for imaging the plate.

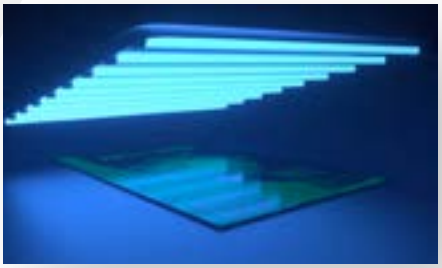
1

Back exposure - Expose the back of the plate with UV-A for setting the floor thickness in combi processor

Laser Ablation in imaging device such as ESKO CDI or Xeikon Thermoflexx

2



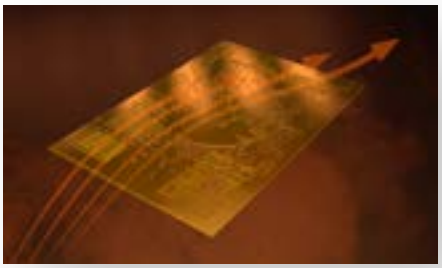


3

Main Exposure - UV-A exposure in combi processor

Washout - Process the plate in combi processor

4

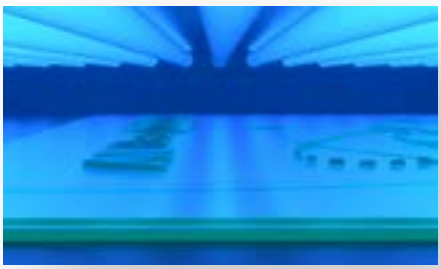


5

Drying - Heated air drying with dryer in combi processor

Post-exposure - Expose to UV-A and UV-C light again to complete photo curing in combi processor and to eliminate the tackiness of the plate surface.

6



Cosmoline

The Cosmoline inline washer and drying unit processes photopolymer plates. The operator feeds a plate into the machine on one side and the plate exits on the other side. The plate is washed out with a strong water flow in a mixture of water and 2% soap.

Aquasupreme

With this stainless steel plate processing machine the water washable plates are processed in a very short period of time. The machine is equipped with PLC and touch screen display for all plate processing functions (back-exposure, post-exposure, main exposure, pump control, washout time, after clean, dryer temperature, operational hours, anti-tacking).


STEEL
BLADES
Tech
Rounded
2

Tech Blades

Introduction of Tech Blades

Tech Blades offer very high quality and long lasting doctor blades, which has been specifically developed for flexographic printing. Taking into account the needs and requirements of the industry, Tech Blades uses a raw material from Sweden which has the purest steel content available on the market worldwide. No non-metallic components such as sulfates can be found in Tech Blades' steel (as is common in steel coming from Asia).

Tech Blades has partnered with an experienced producer and production uses the best equipment available on the market worldwide. Therefore Tech Blades is able to offer very strict tolerances of a few micron combined with a phenomenal surface finish.

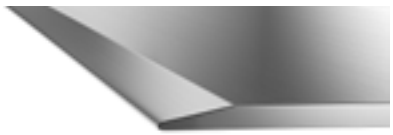
Tech Blades offers doctor blades specialized for the worldwide flexographic printing industry. Extreme smoothness, straightness, uniform wear and surgical precision is what qualifies a Tech Blade, resulting in the lowest doctor blade pressure required.

Tech Blades	Alloy Content or coated	Anti corrosion	Wear resistance out of 30	Brittle-ness	Special application
Steel Blades					
Tech Basic	Zero	No	1	Low	Entry level
Tech Basic+	Low chrome	No	1.5-3	Slightly	Entry level
Tech Chrome	High Chrome	Yes	1.5-3	Slightly	Water-based inks & coatings Coating stations
Tech Vanadium	Chrome, Molibdem, Nickel, Vanadium	Yes	5-10	Low	Used on - white decks - very long print jobs - very abrasive inks
Coated Blades					
Tech Tough	Coated	Yes	10	Low	High Hardness, can run above 2 Million meters without changing.
Tech Smooth	Coated	Yes	15	Low	Very low friction, no heating of the blade at all. Up to 3 Million metres
Tech Ultimate	Coated	Yes	30	Low	Can run up to 5-6 million meters
Plastic Blades					
Tech Plastic	Plastic	Yes	Depends on application	N/A	Corrugated market, old generation. Sometimes used as containment blade

Edge Profiles

All Tech Blades are offered with these edge profiles:

- **Rounded Edge** The tip of the Tech Blades is rounded so there is no running-in time required as the initial angle is always correct. Our rounded doctor blade is long lasting and has a high blade rigidity. Applications include medium printing definition & full tones.



- **A Beveled Edge** gives a Tech Blade that bit of extra strength to deal with high pressure working conditions. Combining a very thing rounded tip with a straight pre-honed sturdy bevel tip, this edge profile suits short flexo print runs very well.

- **The Lamella Edge** profile is specifically engineering for HD Flexo printing. Slower & more uniform blade wear combined with high blade stiffness result in a perfect working angle and a longer (and happier) life for your Tech Blade.

Blade Specification	Value	Remark
Flatness maximum deviation	0,3%	across the strip width
Width tolerance (blade)	± 0,10 mm	for blade width ≤ 50 mm
	± 0,15 mm	for blade width > 50 mm
Thickness tolerance	± 0,009 mm	for blade thickness ≤ 0,152 mm
	± 0,011 mm	for blade thickness > 0,152 mm
Width Tolerance	± 0,025 mm	
Thickness Tolerance	± 0,003 mm	
Contact Edge Roughness	Ra 0,10 ± 0,05 µm	

Steel Blades

Description

Tech Steel Doctor Blades are special due to the use of the highly refined, purest form of raw material available worldwide. Tech Steel Blades have an extremely pure chemical composition, small size of carbides, very high density and therefore no porosity. This results in a very uniform and slow blade wear throughout the entire length of the blade.

Tech Basic

Tech Basic is our no-nonsense entry level doctor blade for Flexo printing. A simple, allround doctor blade made from high quality pure steel.

Tech Basic+

Tech Basic+ is our 1-up from Tech Basic. Due to the use of chrome Tech Basic+ features a wear resistance which can be up to 3 times longer than Tech Basic.

Tech Chrome

Tech Chrome has a high chrome content making this blade our stainless steel champion for water-based inks and coating stations.

Tech Vanadium

Tech Vanadium is the ultimate steel blade for Flexo printing. Composed with a high alloy content with exotic compounds resulting in an extremely long lasting doctor blade (10x longer than Tech Basic). Used when printing long runs, white decks or with very abrasive inks, Tech Vanadium will outperform any non-coated steel doctor blade on the market for Flexo printing.

Coated Blades

Description

Tech Coated Doctor Blades are engineered to last long. By being able to run millions of meters, the offset in cost saving more than doubles the slightly higher investment in these premium blades. (ROI Calculation example with a visual like Provident)

Tech Tough

Tech Tough is nickel plated for high Hardness. Tech Tough can run over 2 Million meters without changing the blade. Tech Tough raises the bar and sets the standard for long-lasting doctor blades used in flexo printing.

Tech Smooth

Tech Smooth features very low friction and therefore induces no heating of the blade at all. No thermal deformation resulting in an even longer lasting blade since the wear of the anilox is also less. 3 Million metres or more is no exception for Tech Smooth.

Tech Ultimate

Tech Ultimate is the longest lasting blade on the market with instantaneous payback. Tech Ultimate has a unique coating which combines hardness and smoothness in the best possible way, so that 5-6 Million print meters can be achieved without replacing the blade.

Plastic Blades

Description

Tech Plastic Doctor Blades is mainly used for the postprint corrugated market running older presses. Tech Plastic blades can also be used as an ink containment blade.


STEEL BLADES
Tech Vanadium
PLASTIC BLADES
Tech Plastic
COATED BLADES
Tech Ultimate
STEEL BLADES
Tech Vanadium
COATED BLADES
Tech Ultimate
PLASTIC BLADES


TechBlades

TechBlades


Flexologic
We innovate!