

# AR4400

## Технические характеристики

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# BST ELTROMAT REGISTER CONTROL: EFFECTIVE INCREASE IN QUALITY.

**In the printing industry, competition is tough and the requirements are rising constantly. Precise checking of the print is the prerequisite for excellent printed products – and for satisfied customers.**

## **Precision based on experience**

As a leading manufacturer of quality assurance systems for the web-processing industry, BST eltromat has performed more than 200,000 installations in more than 100 countries all over the world.

## **The economical solution for exact register settings**

**AR 4400** enables precise register adjustment with many machine types, such as offset, hybrid, and label printing machines. The precision solution features compact design, intuitive touch screen operation and low installation efforts.

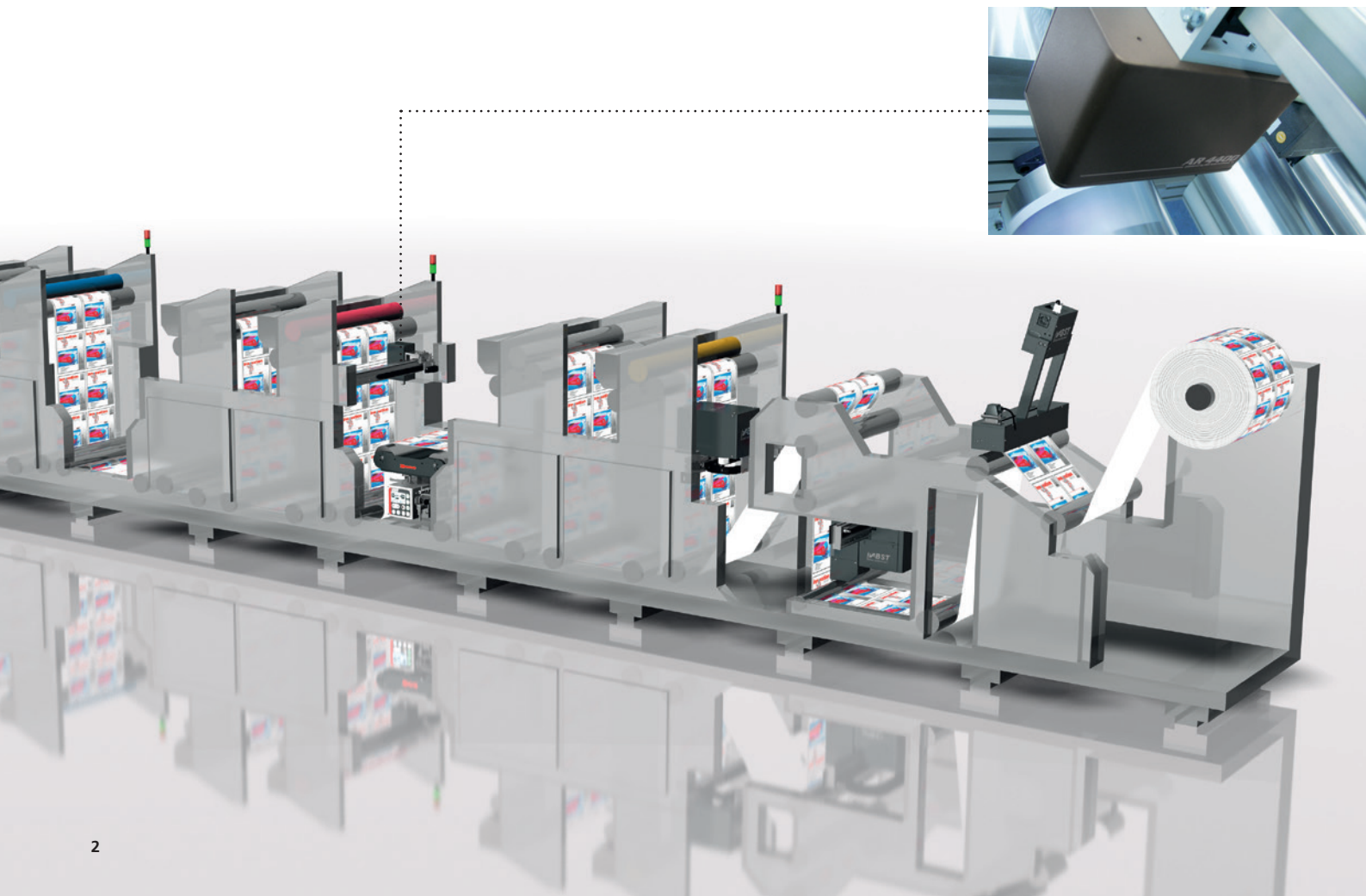
**The AR 4400** allows precise adjustment of color and front-to-back registers as well as reliable control of additional printing units (e.g. flexo printing units) or tool stations (e.g. rotary die-cutters).

The open system architecture of the **AR 4400** allows an easy and flexible machine integration and makes the system perfectly suited for retrofit projects.

## **AR 4400: Your benefits**

- fast **setup for printing**
- simple **operation**
- maximum **quality**
- increased **productivity**
- minimized **paper waste**
- higher **customer satisfaction**
- reduced **costs**

**Contact us:** We give you competent advice beginning at the concept phase and the project phase.



# EASY OPERATION. POWERFUL TECHNOLOGY.

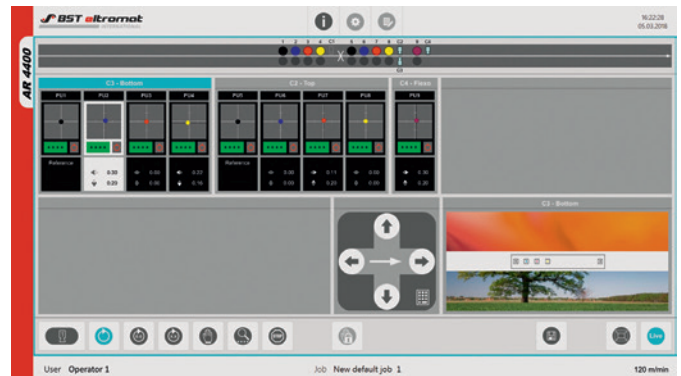
The system properties of the AR 4400 have been perfectly adapted to printing applications with the highest requirements for quality.

## Simple operation

- **intuitive use and clear display** for easy, fast and comfortable register control via TFT touchscreen
- **individually adaptable user interface** and **visualization of the resulting machine layout**
- **live-color image** of the registration mark field for easy assessment of quality and the position of the registration marks
- **graphical representation** of register deviations for each individual measuring point
- **easy selection and simultaneous adjustment** of register groups or all registers
- **fine adjustment** of registers convenient by using arrow buttons or entering numeric values



AR 4400 camera unit



Touchscreen for system operation and register display. The customized machine visualization allows for detailed and intuitive system operation.

## Powerful technology for first-class quality

- **AR 4400 camera unit** is a combined measurement and analyzing module with a compact design
- **RGB color camera** and **intelligent image processing algorithms** for secure and fast register mark detection even with rough material structures or poor contrast
- **Dual-Xenon flash** for optimal lighting even with critical substrates and reflecting materials
- **synchronized shutter** for absolute insensitivity to extraneous light
- **large camera field of view** for reliable detection of registration mark field, even with dynamic web stretching processes

## Options

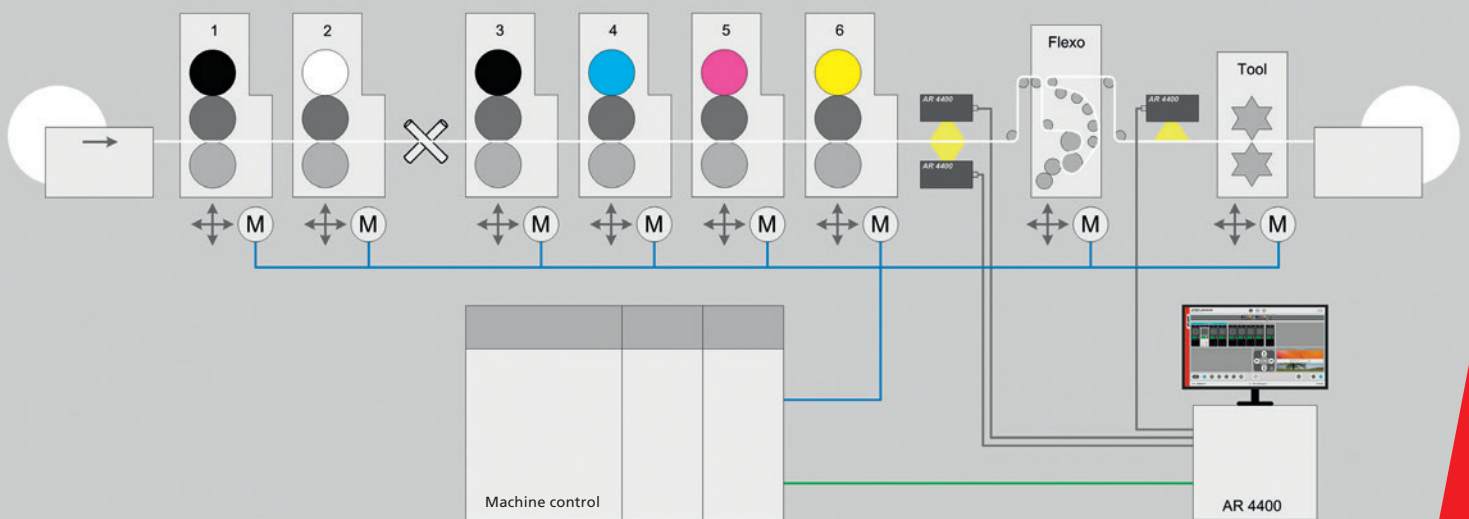
- **adjustable back strobe** for safe registration mark detection of low contrast inks on transparent substrates or for front-to-back register control
- **control module** for detection and analysis of semi-rotative processes
- **sensor traverse** for comfortable, lateral positioning of the camera unit
- **operator desk** in a width of 800 mm

# AT A GLANCE: THE AR 4400 REGISTER CONTROL SYSTEM.

## Clever planning

- **one measuring head model** for all register control points (web–web and web–cylinder); **one mark field** for control of color, front-to-back and cut-off register
- **proven BST eltromat register micro-marks** with diameters of only 0.5 mm–2 mm; **flexible arrangement of mark field** in web running or lateral direction; **different mark field configurations** for optimal adjustment to the particular environment
- **no additional marks** for control of tool stations and additional printing units
- **front-to-back register control** by web–cylinder measuring method, independent of the material (transparent/opaque); optional web–web measuring process in combination with back strobe
- **web–web measuring method** for additional printing units such as flexo printing units; web–cylinder measuring method for transparent varnish and tools
- up to **12 colors** controllable by only one camera unit
- up to **10 camera units** for max. **24 control stations** for precise register control at complex printing machines with a lot of color units and tools
- **intelligent camera unit** integrates major system components and usually renders an additional panel unnecessary
- **open system architecture** for flexible machine integration

## SYSTEM OVERVIEW



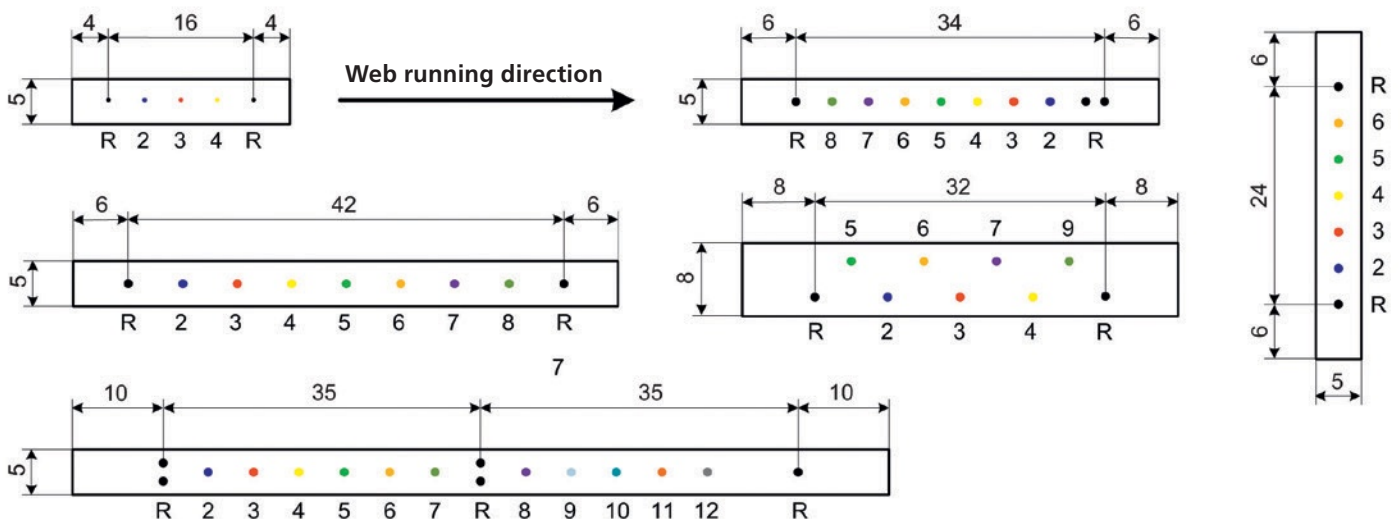
Example of a machine configuration for two-sided printing, an additional flexo unit and a cutting tool, all register controlled by the AR 4400.

# EXTREMELY VERSATILE FOR RELIABLE REGISTER CONTROL.

## Technical data

Number of control stations:	up to 24
Number of camera units:	up to 10
Camera type:	RGB digital camera
Camera resolution:	1024 x 768 pixels
Illumination:	integrated Dual-Xenon flash
Field of view:	50 mm x 37.5 mm
Micro-mark diameter:	0.5 mm to 2.0 mm
Number of marks per mark field:	max. 12
Measuring accuracy of color register (web–web):	0.01 mm
Measuring accuracy of cut-off register mark (web–cylinder):	up to 0.05 mm
Capture range of color register (web–web):	up to +/- 8 mm
Capture range of cut-off register mark (web–cylinder):	360°
Web speed:	max. 1000 m/min
Suitable materials:	paper, cardboard, film (transparent/opaque)
Interfaces:	CANopen, Ethernet, digital I/O (PWM), further ones upon request
Display/operation:	full HD touchscreen monitor
Service (remote access):	via the Internet by default
Protection class of camera unit:	IP 54
Supply:	100 V–240 V, 50/60 Hz
Ambient temperature:	min. 5°C, max. 40°C (monitor: see separate technical details)

## Mark field variants



Example for mark fields for four to twelve print units (dimensions in mm, not true to scale)  
R = reference mark



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