

Maximum register precision.  
Top quality.

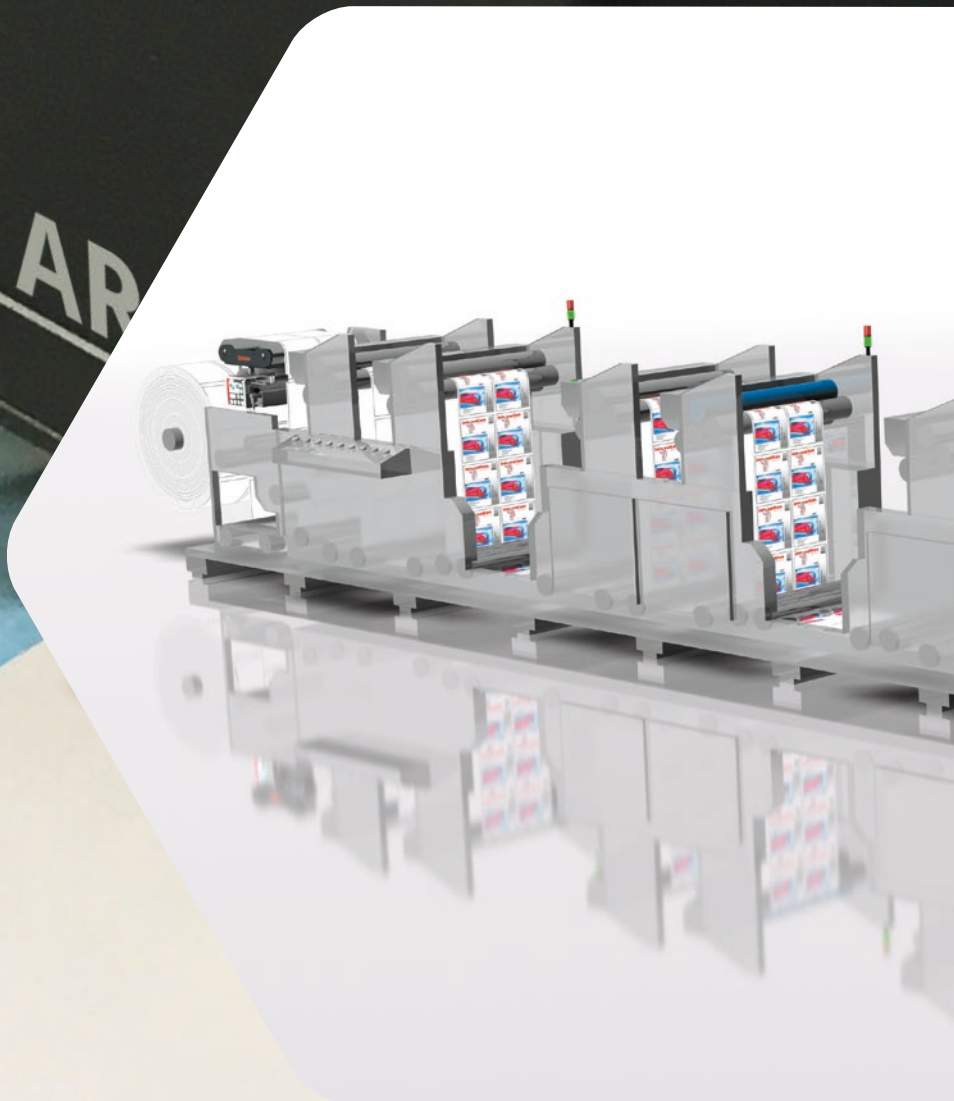
## AR 4400

*Precise control for  
flawless results*



*AR 4400*







Register control system AR 4400

## Improve quality efficiently

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 has performed more than 200.000 installations in more than 100 countries all over the world.

### The economical solution for exact register settings

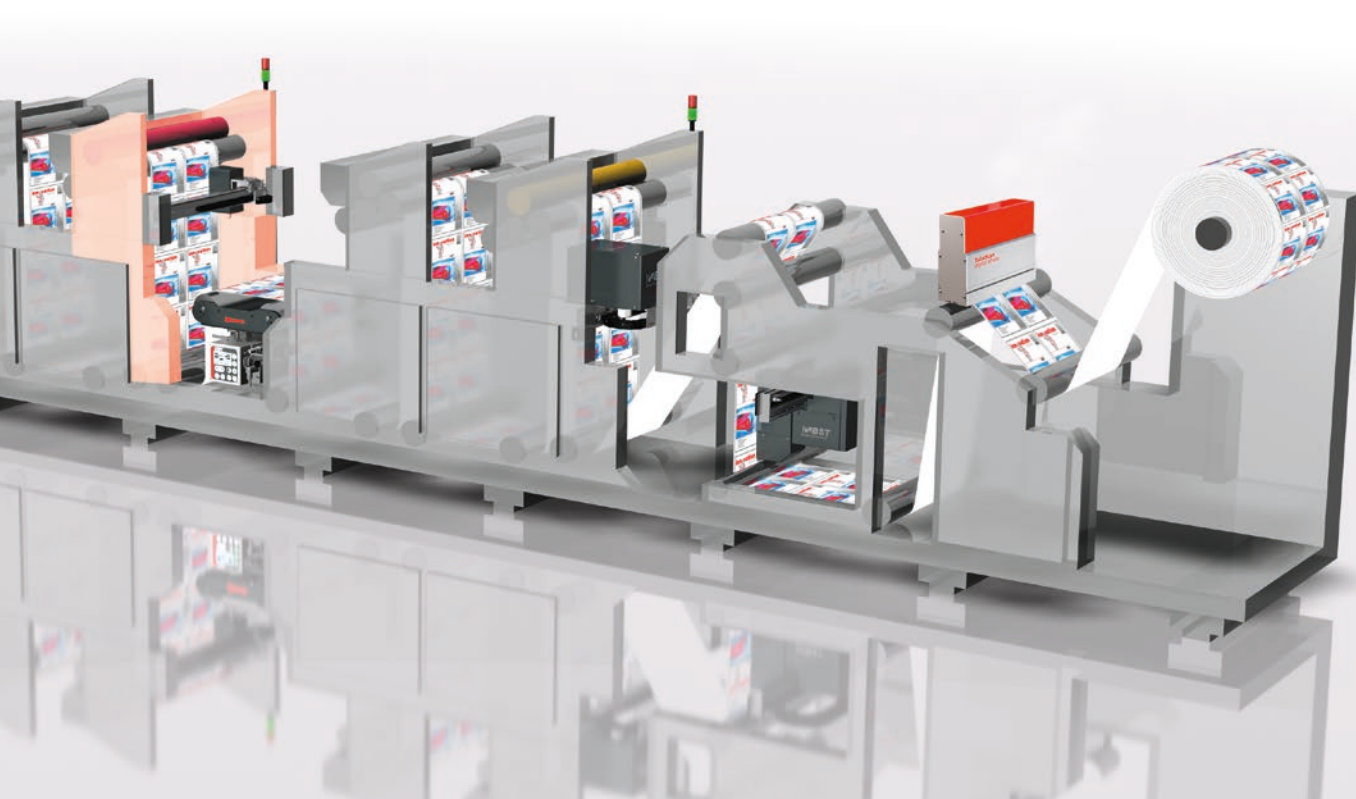
AR 4400 enables precise register adjustment with many machine types, such as offset, hybrid, and label printing machines. The precision solution features compact design, intuitive touch screen operation and low installation efforts.

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 diecutters).

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
- » Improved customer satisfaction
- » Reduced costs



Simple operation

# Impressive technology

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

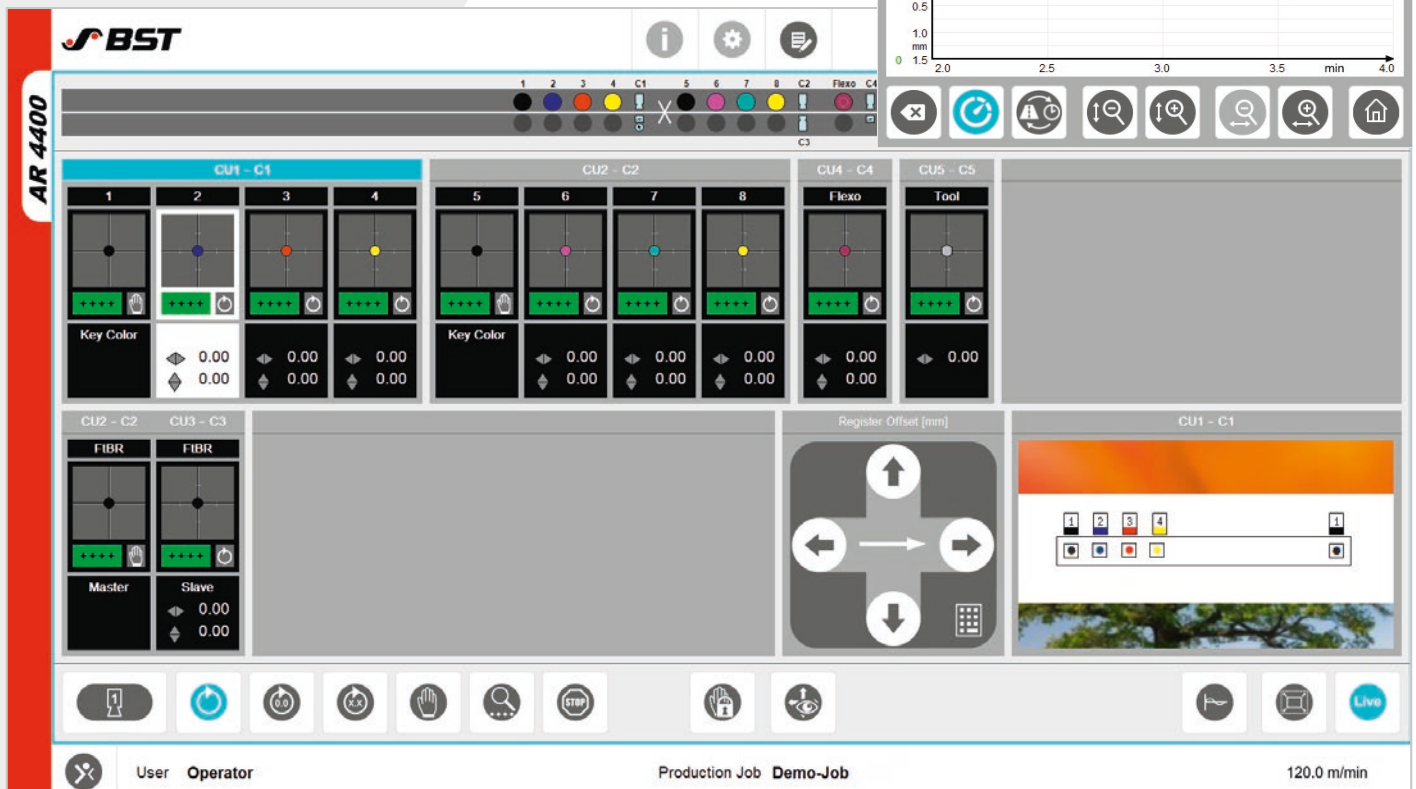
## Simple operation

- » Intuitive use and clear display for easy, fast and comfortable register control via TFT touch screen
- » 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 via convenient arrow keys or by entering the numerical value
- » RegiChart – trend display to visualize the register deviations over time or distance

RegiChart: Trend display for visualization



Touch screen for system operation and register display. The customized machine display makes system operation intuitive down to the smallest detail.

AR 4400

# Highest requirements

## 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

- » Adjustable 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 traverses for comfortable, lateral positioning of the camera unit
- » Operator desk in a width of 800 mm



AR 4400 camera unit

At a glance

# AR 4400 register control system

## Simply smarter planning

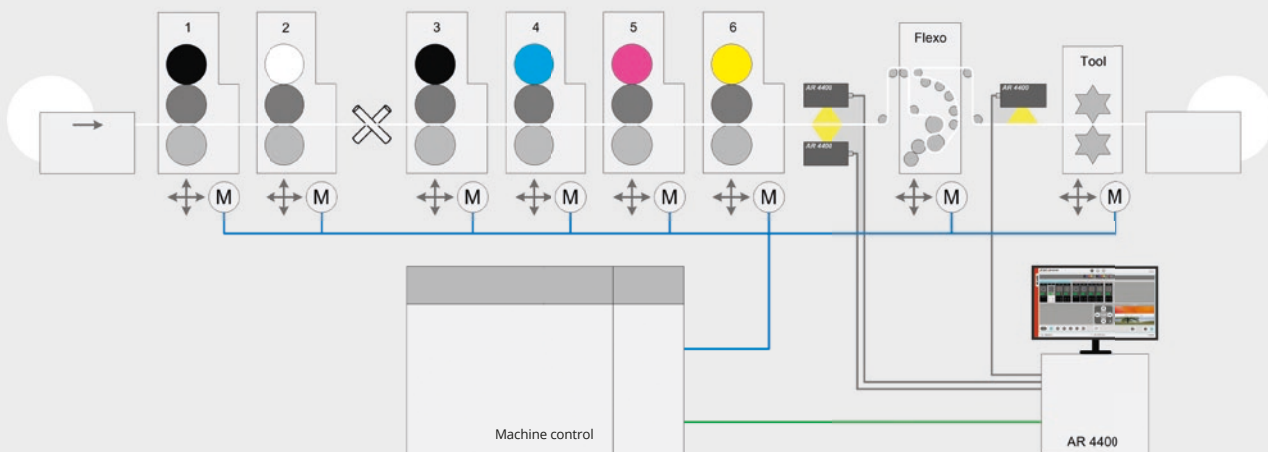
- » **One measuring head model** for all register control points (web–web and web–cylinder); **one mark field** for control of color, front-to-back and cut-off register
- » **Proven BST eltromat register micro-marks** with diameters of only 0.5 mm–2 mm; **flexible arrangement of mark field** in web running 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

Do you have special requirements?  
Just get in touch with us.  
We will be happy to advise you.



Your direct contact on  
our website:  
[bst.elexis.group/en/contact](http://bst.elexis.group/en/contact)

## System overview

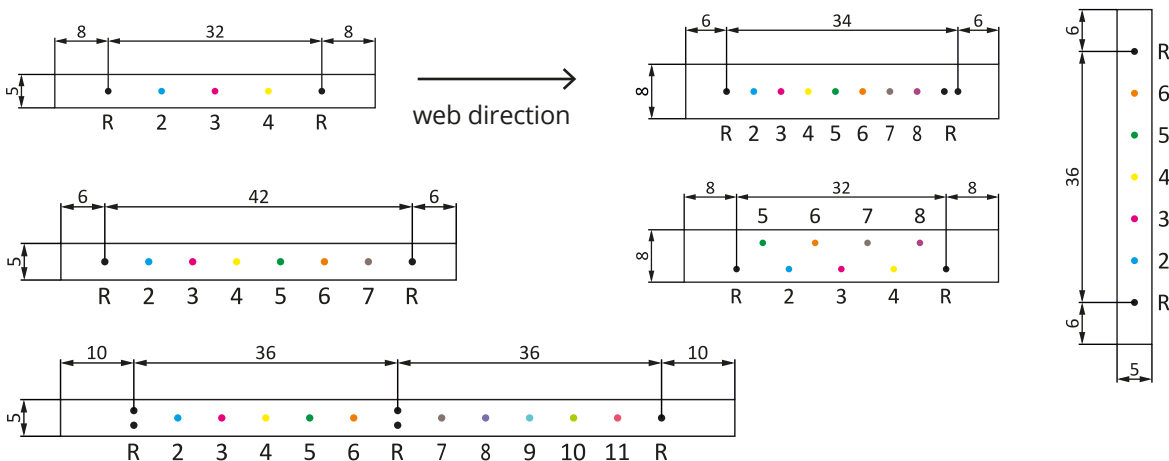


*Example of a machine configuration for two-sided printing, an additional flexo unit and a cutting tool, all register controlled by the AR 4400.*

# Technical overview

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	Adjustable xenon strobe illumination (for front- resp. backlight)
Field of view	50 mm x 37.5 mm
Diameter of marks	0.5 mm to 2.0 mm
Number of marks per mark field	12
Measurement accuracy of the color register (web-web)	0.01 mm
Measurement accuracy of the cut-off register (web-cylinder)	Up to 0.05 mm
Capture range of the color register (web-web)	Up to +/- 8 mm
Capture range of the cut-off register (web-cylinder)	360 °
Max. web speed	1000 m/min
Suitable materials	Paper, cardboard, foils/films (transparent/opaque)
Interfaces	CANopen, Ethernet, Digital I/O (PWM), others upon request
Display/operation	Full-HD touch screen monitor
Service (remote diagnostics)	Via the internet as standard
Protection class of the camera unit	IP 54
Power supply	100 V - 240 V, 50/60 Hz
Ambient temperature	Min. 5 °C, max. 40 °C (Monitor: see separate technical data)

## Mark field variants



Examples of mark patterns (measurements in mm, not to scale),  
R = Reference mark

Further special mark patterns  
can be found on our website:





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