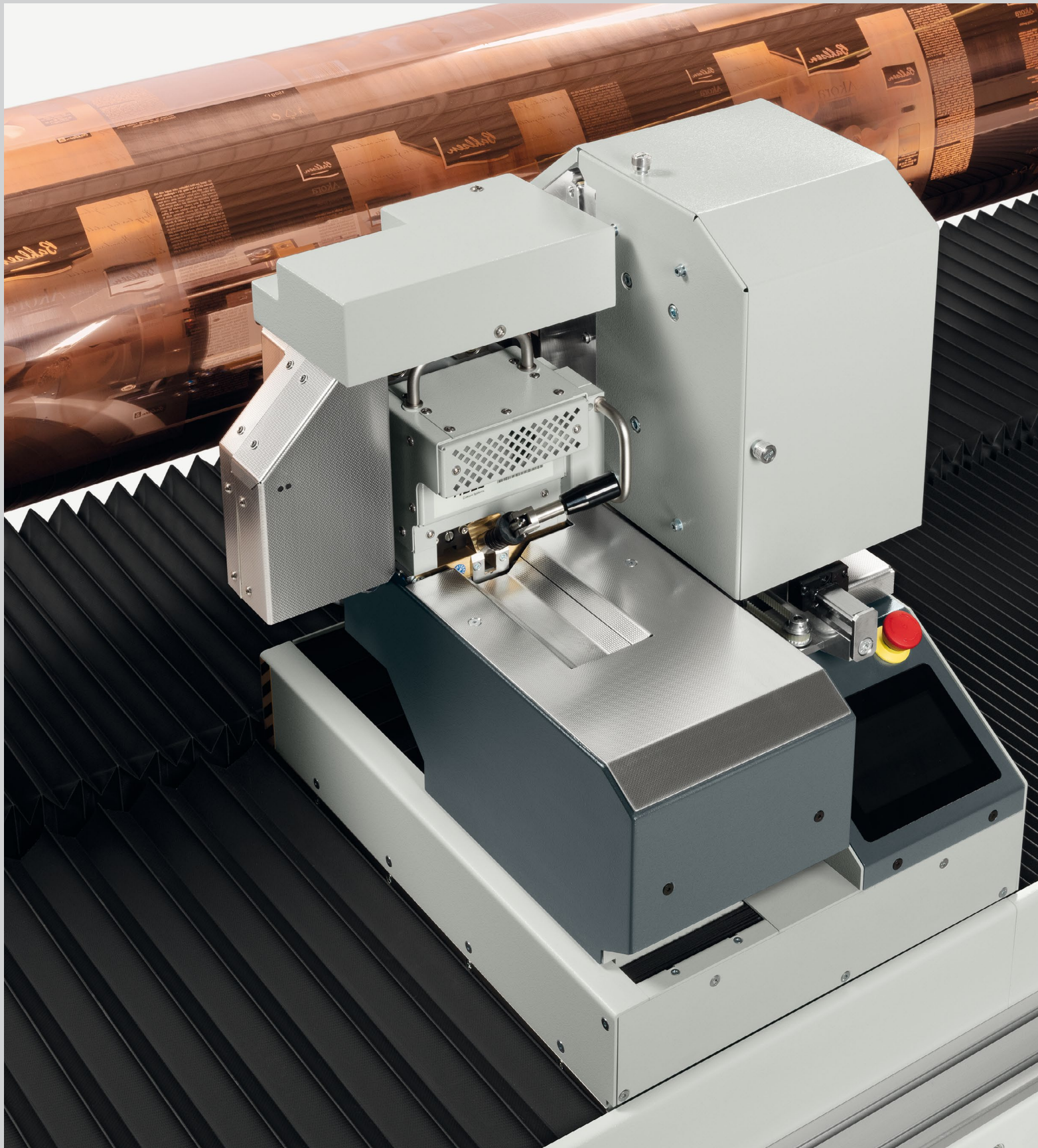




HelioKlischograph K500

THE BENCHMARK IN ENGRAVING





[The HelioKlischograph K500 is by far the most productive engraving machine in packaging gravure.

HelioKlischograph K500

The benchmark in engraving

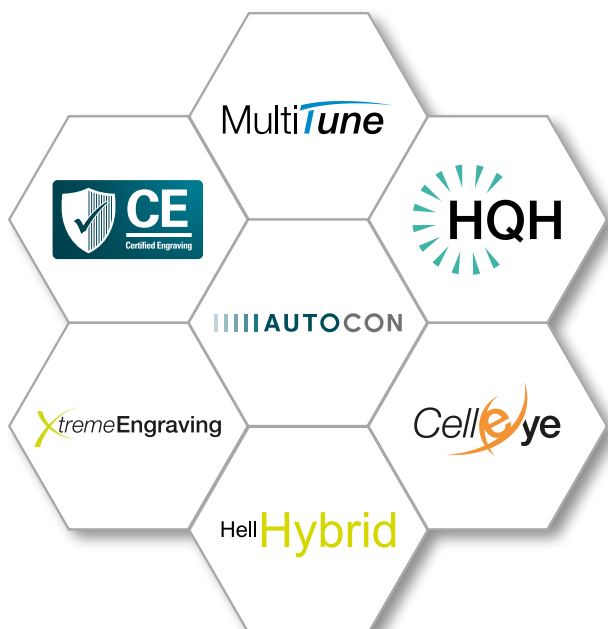
✪ **With an engraving frequency of up to 24 kHz, the HelioKlischograph K500 is not only the most successful engraving machine of all time but also the fastest. From the outset, the pioneering K500 has set new standards in its class. The HelioSprint III 12 kHz high-performance engraving system, Twain multi-head engraving, and linear drive ensure by far the quickest cylinder production in the industry.**

✪ Design criteria

- Up to 24 kHz engraving speed
- HD Gravure
- Integration into AutoCon lines
- Linear drive for shorter makeready times
- Motorised drive and bearing block
- Machine bed, engraving carriage, and bearing blocks are all cast parts
- Operated and controlled by an integrated PC

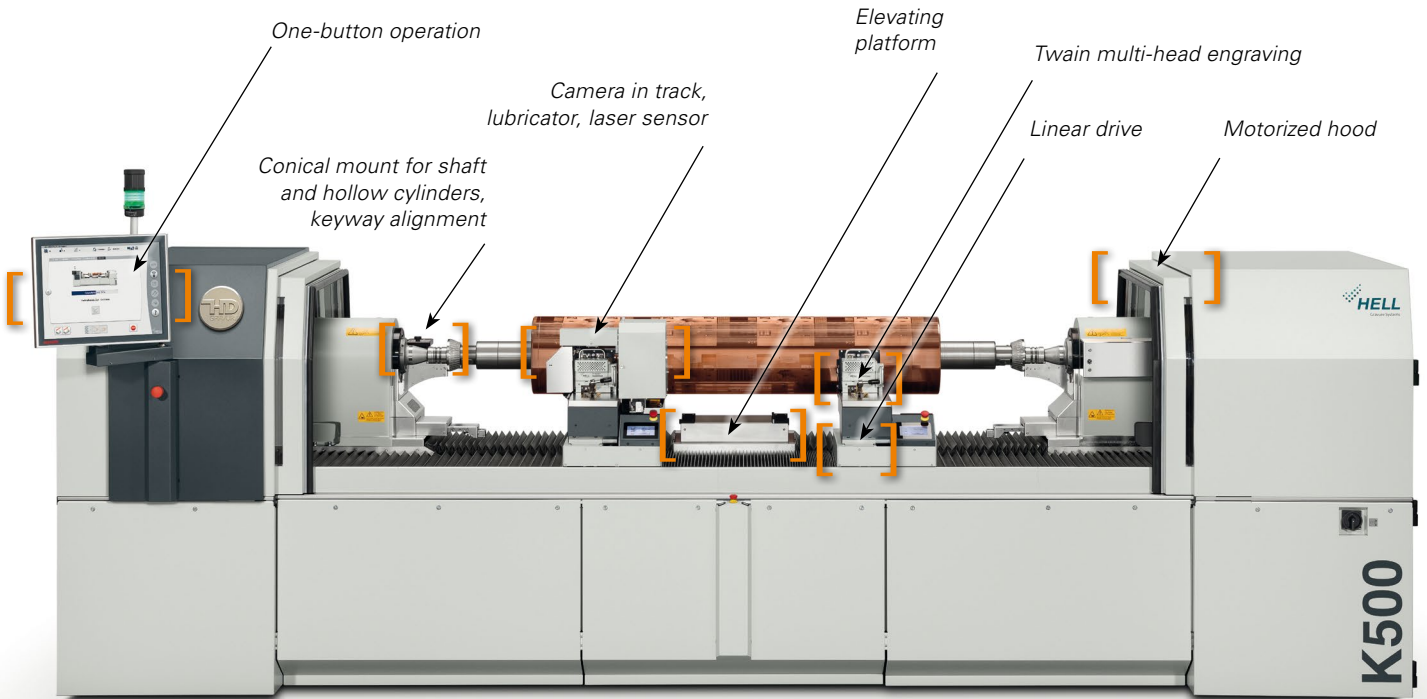
High-performance engraving in HD quality

The HelioKlischograph K500 represents the absolute high-end in electromechanical cylinder engraving. Equipped with all the top features of HD Gravure, the K500 achieves extremely fast and high-quality engraving results. HD Gravure is the new quality standard in packaging gravure. HD Gravure improves contour sharpness and the reproduction of fine details. Tight engraving tolerances ensure simplified colour matching in printing and increased reproducibility. Also included in the K500: the comprehensive automatic quality control with Certified Engraving.



Components and characteristics

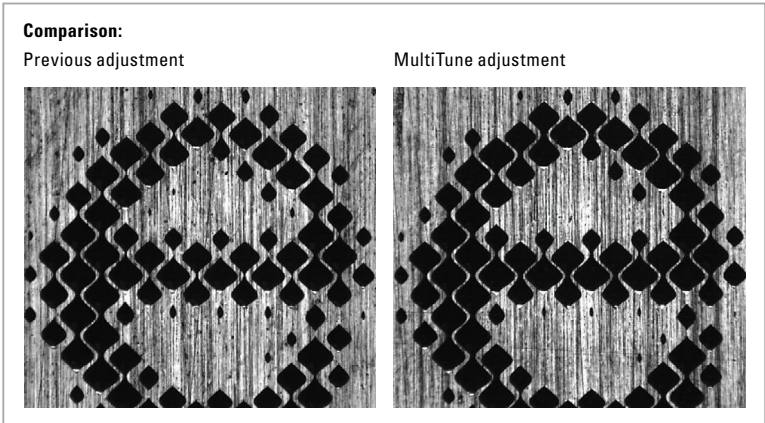
Quality for successful production



| | HelioSprint BC+ | HelioXtreme 32+ | HelioSprint III |
|------------------------|---|---|--|
| Type | Broadband | Hybrid | High performance |
| Frequency | Max. 9 kHz | Max. 9 kHz | 12 kHz |
| Performance < 0.2 | R60: 0.75 m ² /h R70: 0.55 m ² /h | R60: 0.75 m ² /h R70: 0.55 m ² /h | R60: 1.2 m ² /h R70: 0.88 m ² /h |
| Depth | Max. 70 µm | Max. 70 µm | Max. 65 µm |
| MultiTune | • | • | • |
| XtremeEngraving | – | 12 kHz | – |
| Screen | | | |
| - Nominal, < 0,2,3,4 | 54 - 100 | 54 - 100 | 60 - 100 |
| - XtremeEngraving | – | 14 - 118 | – |
| - Actual (l/cm) | 44 - 144 | 14 - 144 | 49 - 144 |
| Application | | | |
| - Technical | – | • | – |
| - Decoration | • | • | • |
| - Packaging | • | • | • |
| - Top linework quality | – | • | – |

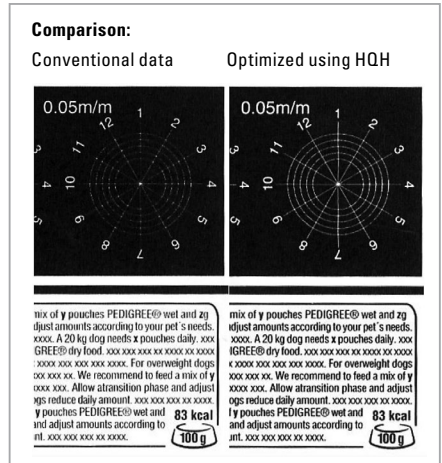
MultiTune

The HelioSprint MultiTune adjustment process provides a far more telling fingerprint of the engraving system than was previously possible. This enables the system to be adapted more precisely to the relevant screen / screen angle for sharper contours as well as less dragging and ringing during engraving.



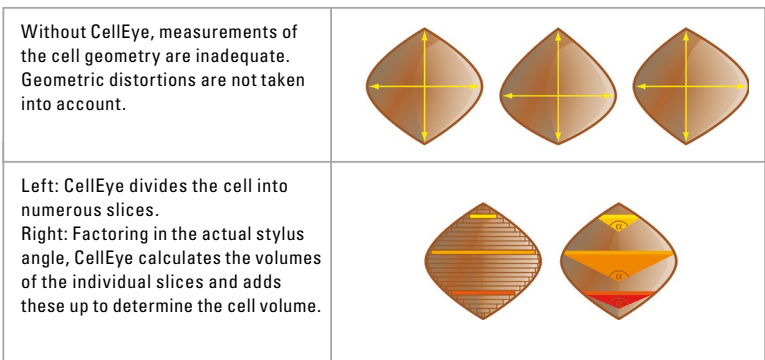
HQH (High Quality Hinting)

The K500 is equipped with HQH-embedded as standard. HQH (High Quality Hinting) improves the legibility and appearance of fine text and graphics. Repro data is generally prepared using manual correction in line with specific engraving requirements. HQH automates this process by examining engraving data for fine lines and text and automatically optimizing these elements according to preset criteria. Fine text thus remains legible and small graphics do not vanish in printing. HQH works in the background without any operator intervention by combining hot folder technology with job ticket control.



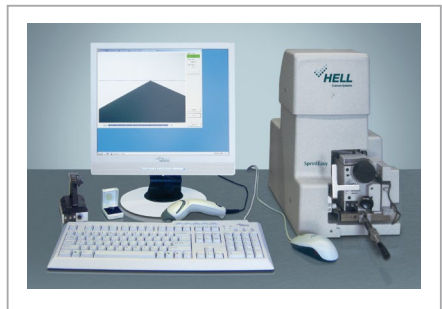
CellEye

The innovative CellEye cutting procedure is based on volume-oriented measurement of engraving cells and enables unique repeat accuracy for engraving cylinders. Calculation of the cell volume factors in the actual stylus angle and stylus wear and compensates for fluctuations in the engraving copper of different cylinders.



SprintEasy

Using CellEye in conjunction with the optional SprintEasy measuring station delivers optimum results. SprintEasy records the current stylus angle and enters this in the engraving head's touch memory. The repeat accuracy of cylinder engraving is thus assured at all times despite the natural process of stylus wear. Further features such as slide shoe setting and the stylus certificate make SprintEasy an indispensable tool for high-quality cylinder engraving.



XtremeEngraving

XtremeEngraving is an optional engraving process aimed at combining excellent contour definition with high print density. XtremeEngraving separates the engraving machine's write resolution from the selected screen. In principle, the Helioklischograph works like a laser imagesetter.

With a write resolution of up to 540 l/cm, XtremeEngraving achieves results of laser engraving quality while also supporting coarse screens with cross-diagonals of over 900 µm and engraving depths of up to 110 µm.

XtremeEngraving is fast! The HeliXtreme 32 engraving system supports both 9 kHz vibration engraving and 12 kHz XtremeEngraving. In the top right figure, XtremeEngraving takes only 1.5 times as long as vibration engraving.

XtremeEngraving is user-friendly! Automatic sequential engraving enables vibration engraving and XtremeEngraving to be combined on a single cylinder on the K500.

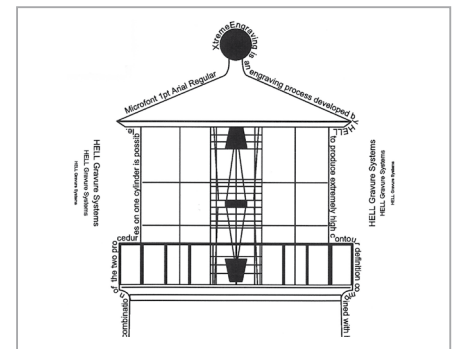
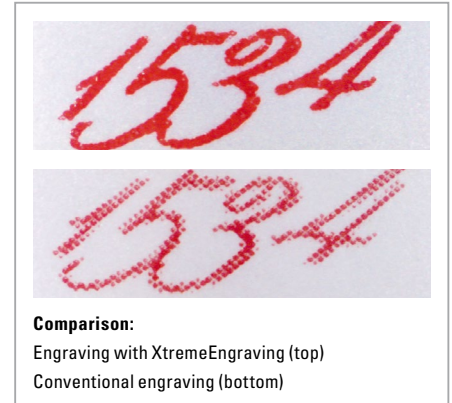
XtremeEngraving is used to reproduce logos, bar codes, labels, drug packaging, micro lettering, security features, and cigarette packaging. Screen rollers with high pickup volumes that are required to apply coatings or adhesives are a further application.

The benefits at a glance

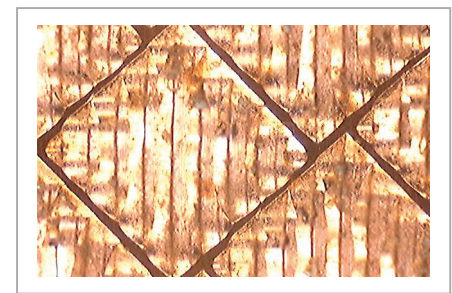
- Excellent contour definition combined with high print density
- Microtext
- High pickup volume for technical cylinders
- XtremeEngraving and vibration engraving with one engraving head
- Automatic sequential engraving

HellHybrid

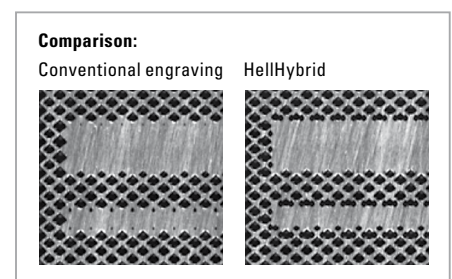
HellHybrid is an engraving process for achieving high contour sharpness with high productivity. In principle, the standard engraving is overlaid with an offset engraving, which produces very fine edge cells.



With XtremeEngraving, it is possible to legibly reproduce an outline with a 1 pt font in gravure.



XtremeEngraving achieves very large pickup volumes, with a depth of up to 110 µm and 914 µm cross-diagonals.

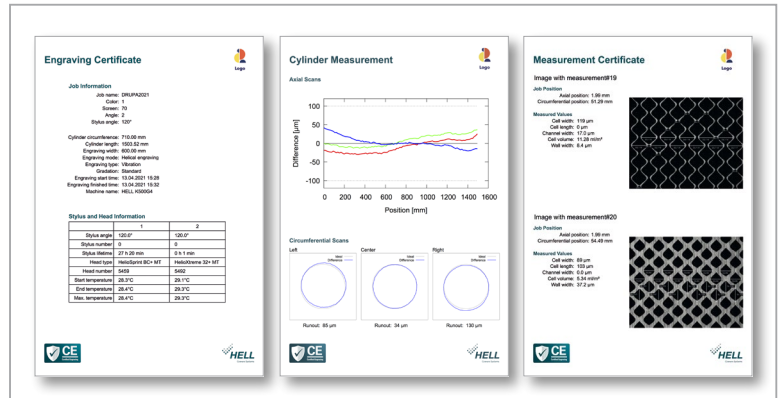


Comparison: Conventional engraving HellHybrid



(Certified Engraving)

The K500 is equipped with Certified Engraving as standard. Certified Engraving is a higher-level process that makes the cylinder manufacturing process safer and reduces the need for press proofs. Before engraving starts, „GeometryScan“ measures the engraving cylinder in terms of its geometric properties. After engraving, „MultiCheck“ checks and documents the engraving. Camera images and measured values, also from upstream process steps, are provided in the cylinder certificate.

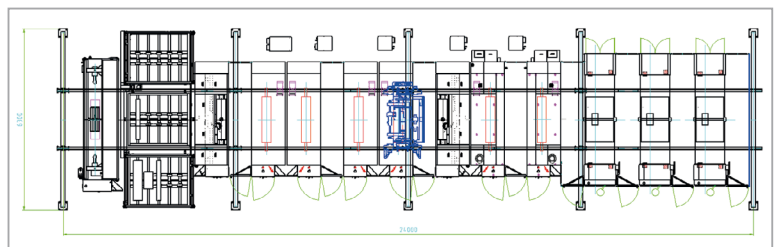


IIIIIIIIIAUTOCON

AutoCon is the fully automatic production line for rotogravure cylinders and a joint project between the Heliograph companies HELL Gravure Systems, K.Walter, Daetwyler Graphics and Bauer Logistics. A master computer controls all stages of cylinder production, from electroplating – including central supply of chemicals – to surface treatment, engraving, and cylinder logistics. This is the only systematically integrated end-to-end solution of its kind.



One example of the K500’s high level of integration into the AutoCon line is that the HelioKlischograph reports its configuration (type of engraving system, number of channels, stylus angle) to the line’s master computer, thereby enabling it to automatically assign the appropriate jobs.



The AutoCon 60 line is designed to produce 60 engraving cylinders per day.

Technical and functional details

All the benefits at a glance

| Basic data | | K500 G4 | |
|--|---|--|--|
| Basic unit (L x H x W) | 4563 x 1712 x 1245 mm | | |
| Space required incl. access area (L x W) | 6350 x 2882 mm | | |
| Weight | Approx. 3800 kg | | |
| | Hollow cylinder | Shaft cylinder | |
| Face width | 400 / 510 - 2300 mm | 400 - 2300 mm | |
| incl. shafts | | 600 - 2600 mm | |
| Circumference | 300 - 1500 mm / optional 200 - 1400 mm | 300 - 1500 mm / optional 200 - 1400 mm | |
| Cylinder weight | Max. 500 kg (600 kg in three-jaw chuck) | | |
| Cylinder mounting | Pivots with exchangeable inserts (three-jaw chuck on request) | | |
| Power supply | Single phase, 230 V, 50 / 60 Hz | | |
| Current consumption | 2.6 kVA mean, 3.8 kVA peak | | |
| Operating range / high-quality range | +18 to +25°C / +20 to +24°C | | |



Heliogravure comparison

| Basic engraving | K2 | K5 | K5 Smart | K500 G4 |
|--|---------|-----------------|-----------------|------------|
| Engraving system | 5 kHz | 9 kHz | 9 / 12 kHz | 9 / 12 kHz |
| Handling | Easy | Convenient | Assisted | Autonomous |
| Motorized support with integrated AF camera | • | • | • | • |
| Linear drive: Reduced setup times | | | | • |
| Symmetrical movement of head- and tailstock | | | | • |
| Twain double head engraving | | | | ◦ |
| One-button engraving | | | • | • |
| Fully automated cylinder production with AutoCon | | | | ◦ |
| HD Gravure | | | | |
| HQH embedded | • | • | • | • |
| HQH Pro | ◦ | ◦ | ◦ | ◦ |
| MultiTune | • | • | • | • |
| CellGuard | | Semi-automatic | Automatic | Automatic |
| CellEye | | | • | • |
| HellHybrid | | ◦ | • | • |
| XtremeEngraving | | ◦ | ◦ | ◦ |
| Certified Engraving | | | ◦ | • |
| Cylinder dimensions | | | | |
| Max. face width hollow cylinder | 1400 mm | 1300 / 2400* mm | 1300 / 2400* mm | 2300 mm |
| Max. total length shaft cylinder | 1460 mm | 1300 / 2580* mm | 1300 / 2580* mm | 2600 mm |
| Max. circumference | 1100 mm | 1200 mm | 1200 mm | 1500 mm |
| Max. weight | 150 kg | 300 kg | 300 kg | 500 kg |

• = Standard ◦ = Option * = XL Version

Subject to design modifications. Errors excepted.

Version: 21-07

HELL Gravure Systems GmbH & Co. KG

Philipp-Reis-Weg 5
24148 Kiel, Germany
Tel. +49 431 2377 0
Fax +49 431 2377 1235

info@hell-gravure-systems.com
www.hell-gravure-systems.com

A HELIOGRAPH HOLDING COMPANY