

New features for gravure cylinder production

Hell Gravure Systems revamps its entire range of engraving machines

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Even though laser engraving is becoming more important, most gravure cylinders worldwide are still produced using electromechanical engraving. With its HelioKlischograph (K) engravers, Hell Gravure Systems is an obvious market leader for gravure cylinder engraving machines and the company recently revamped its product portfolio. Following the unveiling of the new K2, the relaunch of the K5 and K5 Smart, and a major update to the K500, all HelioKlischograph models now benefit from enhanced performance capabilities.

All current HelioKlischograph models upgraded

The purpose of High Quality Hinting (HQH) is to improve the reproduction of fine text and line elements in gravure printing. 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 pre-set criteria.

The character recognition function ensures the characteristics of letters and symbols stay the same. Fine text thus remains legible and small graphics do not vanish in the print. Hell now equips all HelioKlischograph systems with the HQH function as standard, which upgrades the overall performance of the current models.

New process for adjusting engraving systems

Hell creates a fingerprint for each and every engraving head, describing its specific behaviour under engraving conditions. Measurements determine the characteristics of the engraving head which are stored in the touch memory for appropriate image signal compensation during engraving.

The new MultiTune adjustment process is intended to provide a far more telling fingerprint of the en-

graving system. The system is adapted more precisely to the relevant screen and screen angle for sharper contours and less dragging and ringing during engraving.

All new HelioKlischograph systems will be equipped with MultiTune as standard in the future. From the fourth quarter of 2018, the new process will also be available for old engraving systems as part of engraving head maintenance.

5 kHz engraving machine for entry-level users

The HelioKlischograph K2 from Hell is a new, manually operated entry-level machine for electromechanical cylinder engraving that benefits from a compact design. The machine configuration includes a motorized support, an integrated autofocus camera, and the 5 kHz engraving system. The maximum engravable face width of 1400 mm (55") makes the K2 ideal for engraving hollow cylinders. The new model integrates HQH to automatically improve very fine text and line elements, while MultiTune produces sharper text and reduces both dragging and ringing.

Upgraded with additional functions

According to Hell, the K5 is its most successful engraving machine to date. It is equipped with

the HelioSprint BC+ engraving system, which supports speeds of up to 9 kHz. In addition, it has been upgraded with a whole host of additional functions.

For example, it will have motorized support with integrated autofocus camera as standard in future. This combination enables semi-automatic cell measurement, thus eliminating the risk of inaccurate measurements caused by human error. Further new functions include the use of laser pointers to identify the starting point, quality documentation via cylinder certificates, faster setup thanks to two travel speeds, and the option of configuring the engraving parameters for full-tone cylinders directly on the machine. The K5 also integrates HQH and MultiTune.

K5 Smart with 12 kHz engraving system

The HelioKlischograph K5 Smart features a high level of automation. The only manual steps the machine operator needs to complete are inserting the cylinder and applying any lubrication required. All other steps are activated at the touch of a button. The CellEye volume-based cutting procedure standardizes engraving quality.

One recent development is that the K5 Smart can now also be equipped with the HelioSprint III 12 kHz engraving system. "Along with the fully automatic K500, that makes the K5 Smart the most productive engraver on the market," says Hell's sales and product manager Jan Breiholdt. The new K5 Smart also integrates HQH as standard and supports the MultiTune adjustment process for engraving systems.

Cleaning function gives degreasing bath less to do

The HelioKlischograph K500 is the high-end system for fully automatic cylinder engraving and is equipped with virtually all modules offered by Hell. The HelioSprint III 12 kHz engraving system, Twain multi-head engraving, and the linear drive ensure relatively rapid gravure cylinder production. Technologies such as XtremeEngraving,

CellEye, and SprintEasy deliver consistent, reproducible engraving quality, while integration into the fully automatic AutoCon production line results in highly automated gravure form manufacture. The HQH and MultiTune modules also form part of the standard equipment on the K500.

What's more, an automatic function has been created for the K500 that enables cylinders to be cleaned again after engraving. This reduces the amount of engraving oil in the degreasing bath. The cylinder cleaning function is available for the K500 G4 from Version 5.4.3 onward. Updates for the K500 G3 and K500 NT will follow.

For high productivity

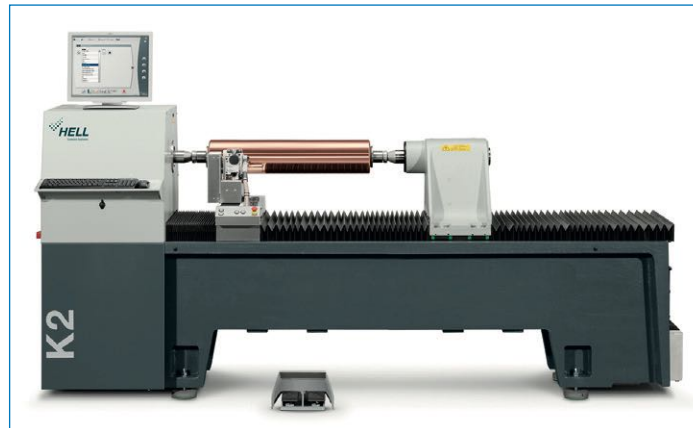
The Twain version of the K500 G4 is equipped with a second engraving head. Both heads position and engrave in accordance with the cylinder layout. Ideally, the two heads double the engraver's output by sharing the engraving work. The high travel speed results in much shorter makeready times.

A must for high-quality cylinder engraving

SprintEasy is the fundamental high-quality tool for cylinder engraving and is essential for optimum engraving quality. The measuring and setting station for engraving systems performs an initial check on engraving diamonds and enters the diamond's cutting angle in the engraving head's touch memory. The slide shoe is also adjusted quickly and precisely. SprintEasy provides a certificate that lists the operator, stylus manufacturer, stylus number, stylus angle, slide shoe position, engraving head number, touch memory version, and cumulative stylus service life.

Repeat-accurate cylinder engraving

CellEye is a cutting process for Helioklischograph systems that ensures outstanding repeat accuracy for packaging gravure cylinders. The process is based on volume-oriented measurement of engraving cells, taking into account



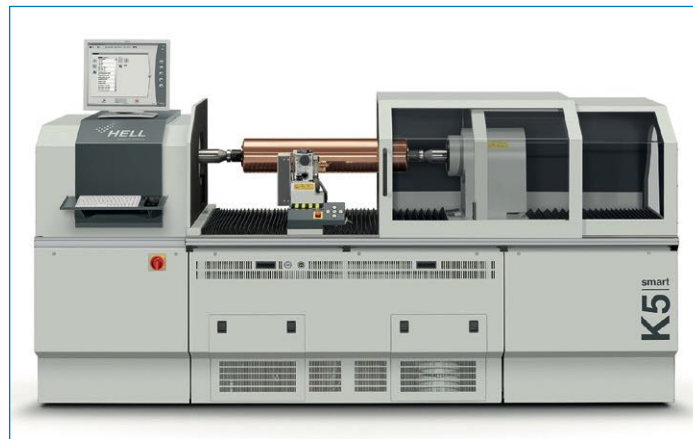
| The Helioklischograph K2

Source: Heli Gravure Systems



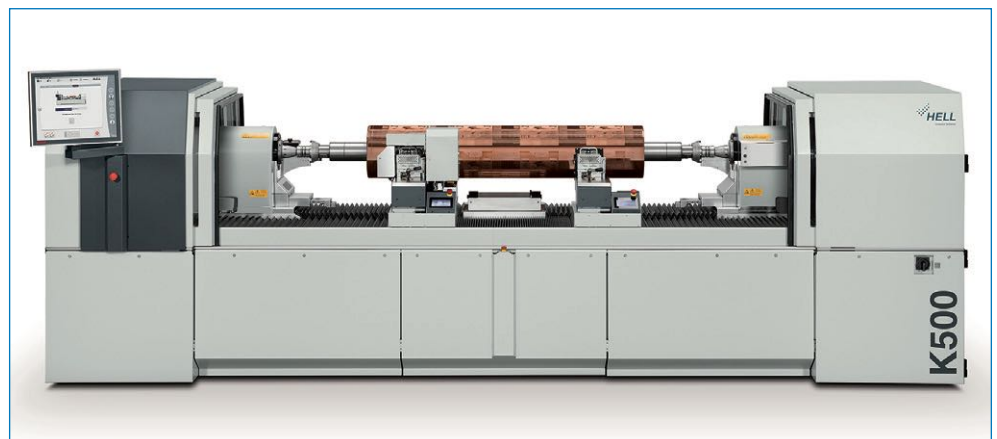
| The Helioklischograph K5

Source: Heli Gravure Systems



| The Helioklischograph K5 Smart

Source: Heli Gravure Systems



| The Helioklischograph K500

Source: Heli Gravure Systems

the actual stylus angle measured with SprintEasy.

5000th HelioSprint engraving system delivered

In 1998, Hell Gravure Systems was the first supplier to develop an electromagnetic engraving system with double the engraving speed at 8 kHz. Other attempts to increase the engraving speed, such as piezo-electric or magnetostrictive processes, have so far been unsuccessful. Ten years later, the company increased the engraving speed to 12 kHz with HelioSprint III. "Delivery of the 5000th HelioSprint engraving system in March 2018 provides impressive proof of just how successful electromagnetic engraving is," says Breiholdt.

In-house development of line and contone screens

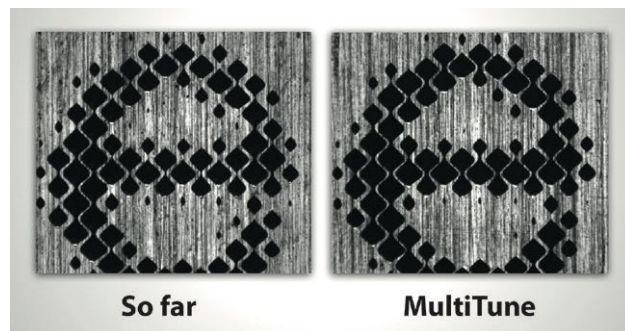
Cellaxy is a system for direct laser engraving of embossing forms and

gravure cylinders. Hell provides its Cellaxy customers with a set of tried-and-tested Helio-compatible screens as standard for cylinder manufacture. On this basis, it is possible to image both line and contone cylinders that can be combined with electromechanically engraved cylinders.

Moreover, the optional CellCreator makes it possible for users to edit pre-defined screens or develop their own screens. The software enables a separate cell description to be recorded for each density value. As a result, CellCreator enables users to adapt gravure forms very specifically to customer requirements and fully utilize the potential of direct laser engraving.

The next level

By revamping its product portfolio, Hell is taking its electromechanical cylinder engraving machines to the next level. All HelioKlischograph systems now feature more func-



tions, which are above all intended to deliver consistent and reproducible print quality. All engravers have at least a certain number of automation modules and the level of automation depends on the type of engraving machines the users ultimately opt for.

Hell is using this strategy to make further progress with the industrialization and standardization of gravure printing. In particular, this meets a key requirement of branded goods manufacturers – enhanced colour consistency for their packaging.

MultiTune creates sharper contours while also reducing dragging and ringing

HelioKlischograph comparison



Basic engraving	K2	K5	K5 Smart	K500 G4
Engraving system	5 kHz	9 kHz	9 / 12 kHz	9 / 12 kHz
Handling	Simple	User-friendly	Assisted	Independent
Motorized support with integrated AF camera	•	•	•	•
Test cut	Guided	Semi-automatic	Automatic	Automatic
HQH embedded	•	•	•	•
MultiTune	•	•	•	•
Engraving check			•	•
Cylinder certificate		•	•	•
Smart engraving				
HQH Pro	◦	◦	◦	◦
XtremeEngraving		◦	◦	◦
CellEye			•	•
One-button engraving			•	•
High-performance engraving				
Linear drive: Shorter makeready times				•
Symmetrical adjustment of bearing blocks				•
Twain double-head engraving				◦
Fully automatic cylinder production with AutoCon				◦
Cylinder dimensions				
Max. hollow cylinder face width	1400 mm	1300 / 2400* mm	1300 / 2400* mm	2400 mm
Max. shaft cylinder length incl. shafts	1460 mm	1300 / 2580* mm	1300 / 2580* mm	2700 mm
Max. circumference	1100 mm	1200 mm	1200 mm	1500 mm
Max. weight	150 kg	300 kg	300 kg	600 kg

• = Standard ◦ = Optional * = XL version