

# Overview of technology trends and innovation potential in rotogravure cylinder manufacturing

- 1) About K.Walter and Heliograph HOLDING
- 2) Plating to Size
- 3) Key Process Copper Plating
- 4) New Copper Surface Process Technology
- 5) Chrome Process, Status Quo and future developments
- 6) Our solutions for the rotogravure Industry



# Agenda

1) About K.Walter and Heliograph Holding

## About Us

Our corporate headquarters with cutting-edge production halls and office buildings are located in Krailling, not far from Munich. Here, on a site that spans around 10,000 square meters, our approximately 70 employees design and manufacture state-of-the-art electroplating units for gravure form production and develop highly efficient process technologies and customized solutions for system integration that are tailored precisely to our customers' requirements.

Our comprehensive portfolio is rounded off by high-performance measuring technology that provides highly accurate and reliable results.



K. Walter's headquarter in Krailling near Munich

### Products



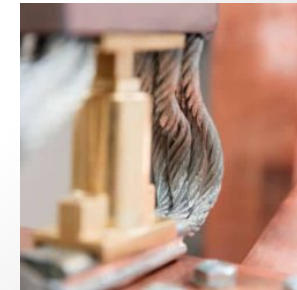
### Processes



### Consumables



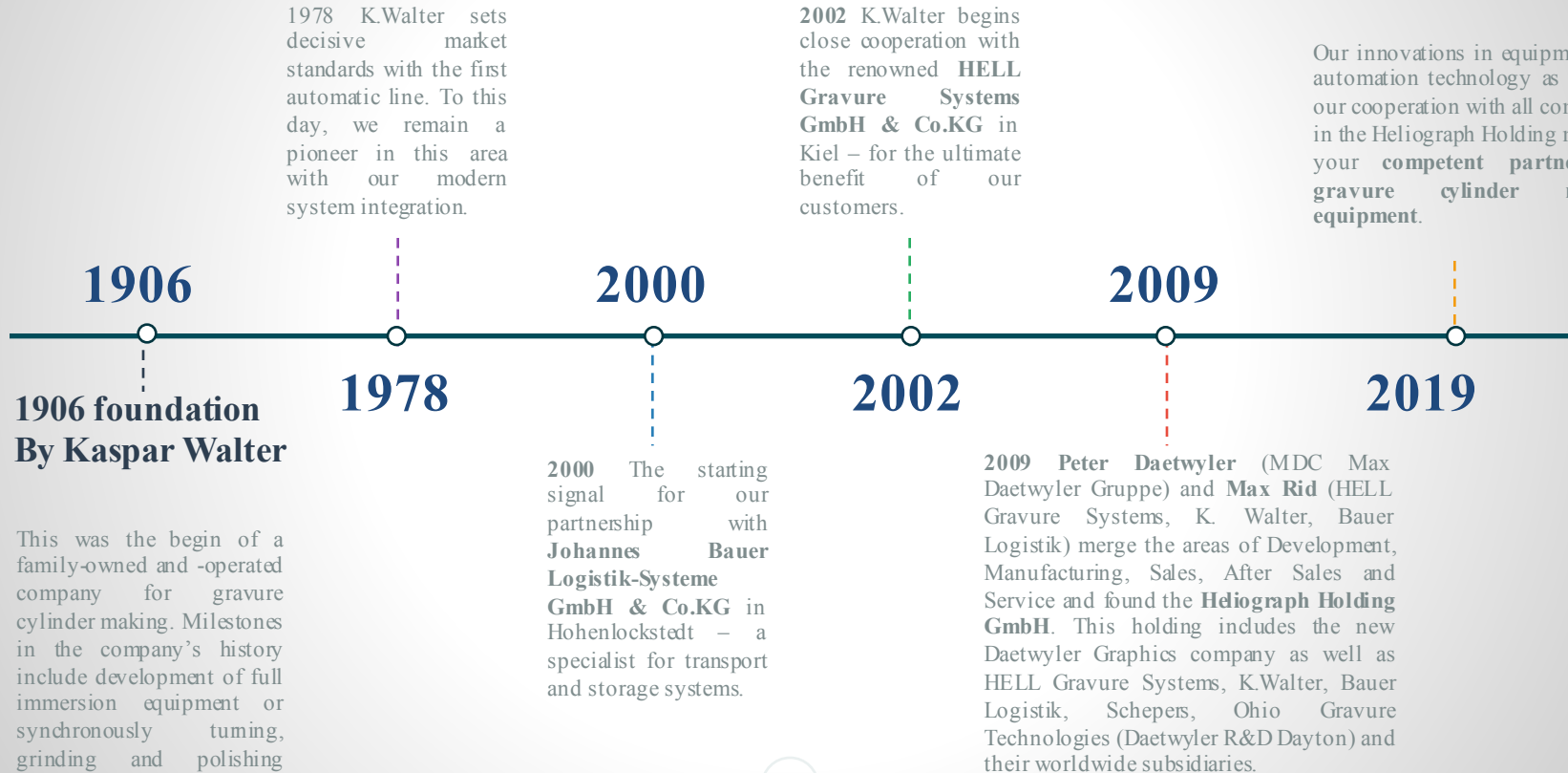
### Service



## About Us

## Today and tomorrow

Our innovations in equipment and automation technology as well as our cooperation with all companies in the Heliograph Holding make us your **competent partner for gravure cylinder making equipment.**





heliograph HOLDING



## GRAVURE CYLINDER MAKING EQUIPMENT



Heliograph Holding Companies

***Heliograph Holding is represented  
through Daetwyler Graphics India  
Pvt. Ltd. (Pune)***



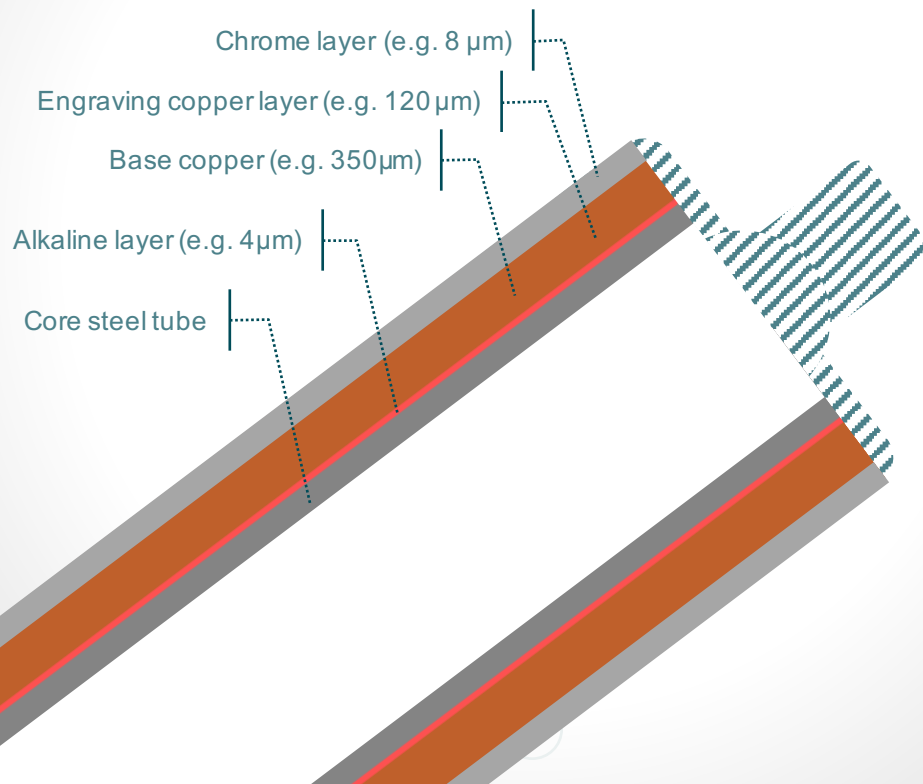
# Agenda

Plating to Size „what's behind the buzz word“



# HELIOCOPPER® WORKFLOW

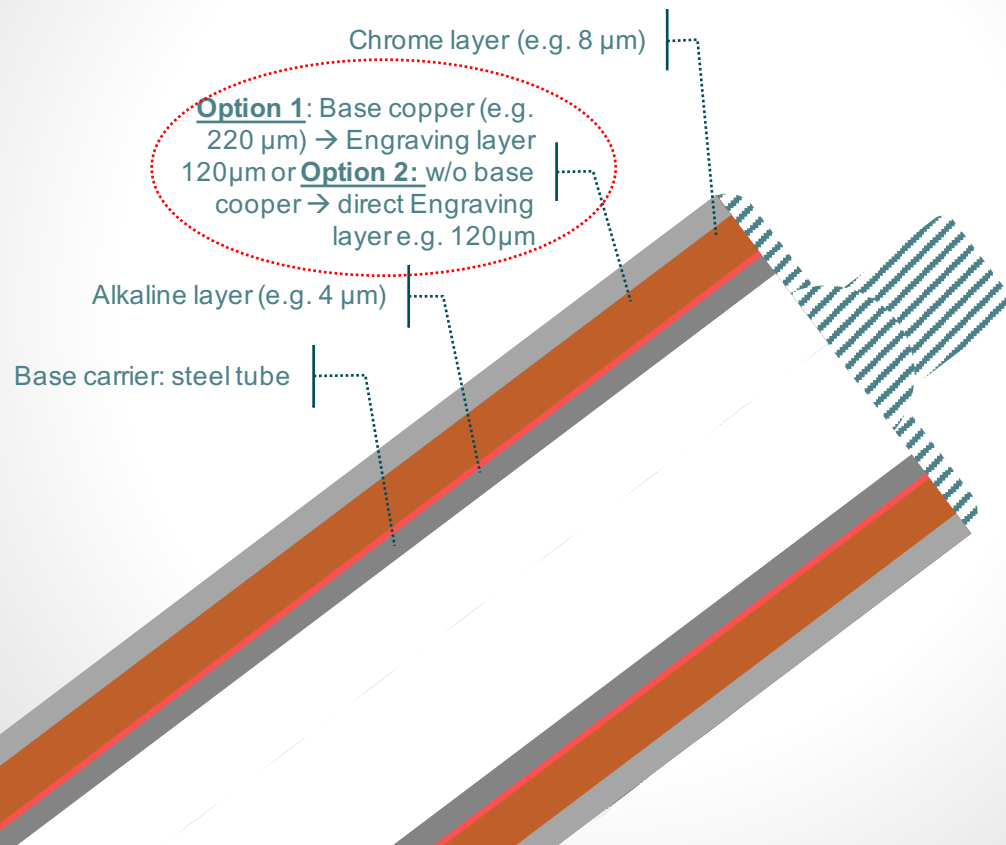
## Oversize Plating





# HELIOCOPPER® WORKFLOW

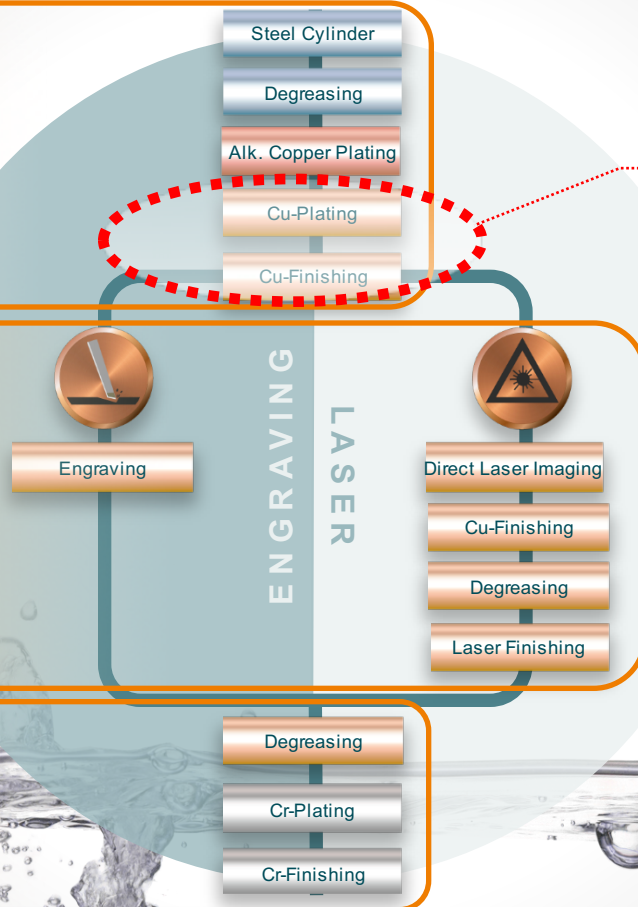
## Plating to Size



## PRE-IMAGING

## IMAGING

## POST-IMAGING



Option 1:  
reduced base copper thickness  
(from e.g. 350µm to 220µm)

Result in downstream process  
→ reduced surface cutting

- copper saving,
- less cylinder production time

Option 2:  
Only copper engraving layer  
(e.g. 120µm)

Result in downstream process  
→ post Cu finishing without cutting\*

- copper saving,
- less cylinder production time

\*depends on steel cylinder quality



# Agenda

Key Process Copper Plating – CuMax technology

# CuMax: the latest technology for high quality and fastest copper plating

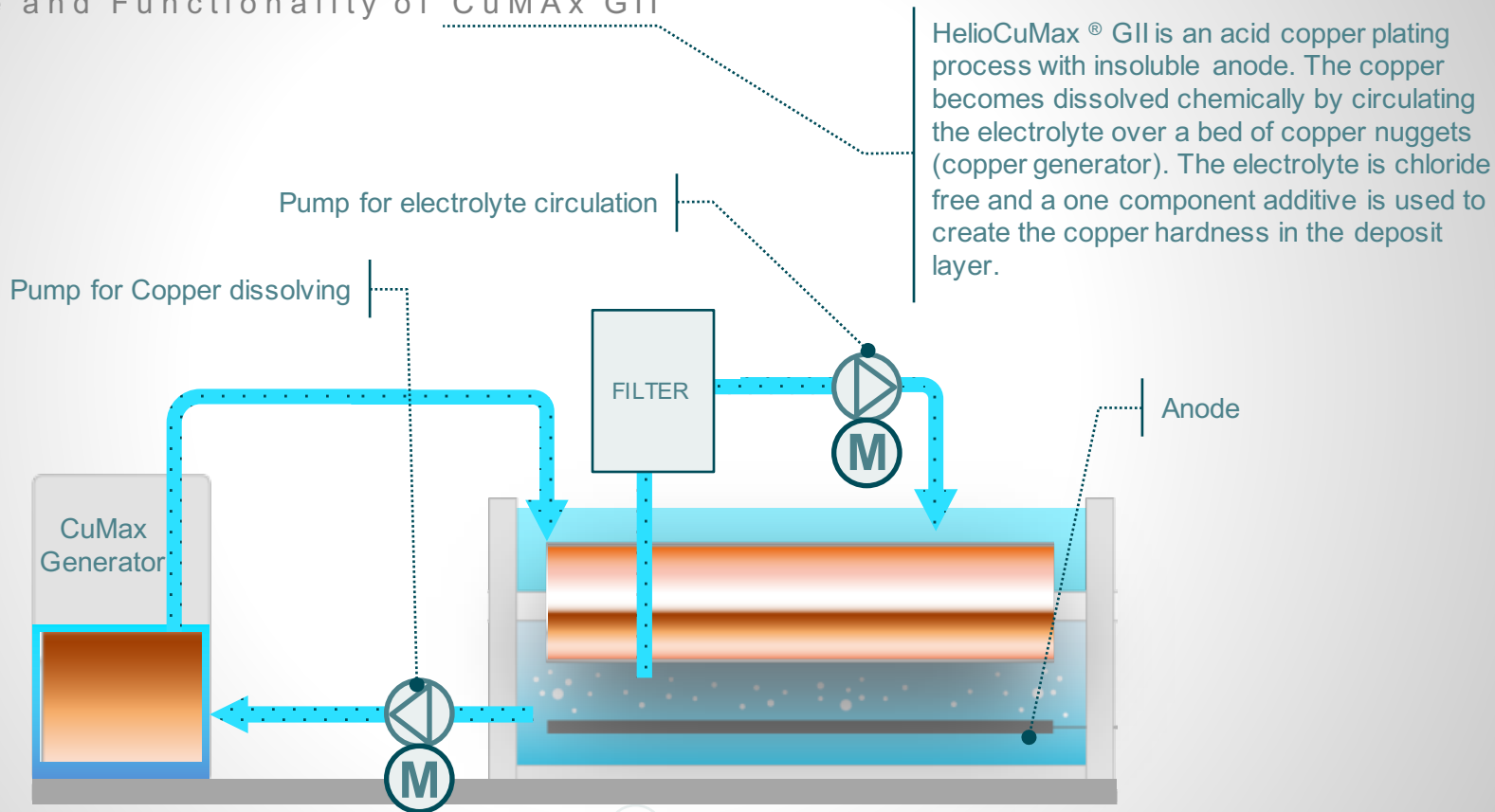
## Key Advantages CuMax:

- Fastest plating up to  $4,5 \mu\text{m}/\text{min}$  (depends on machine type)
- No copper nuggets in the working area for much higher purity than conventional copper plating
- More uniform copper deposition < 5% allocation over entire cylinder face length
- Stable copper hardness of 200 – 230 HV
- Homogeneous, stable copper structure due to high quality additive
- Improved cylinder geometry through optimized current shield design
- No anode maintenance required
- Purity of copper is 100%- copper is consumed 100%
- Copper sulfate concentration is measured and leveled automatically

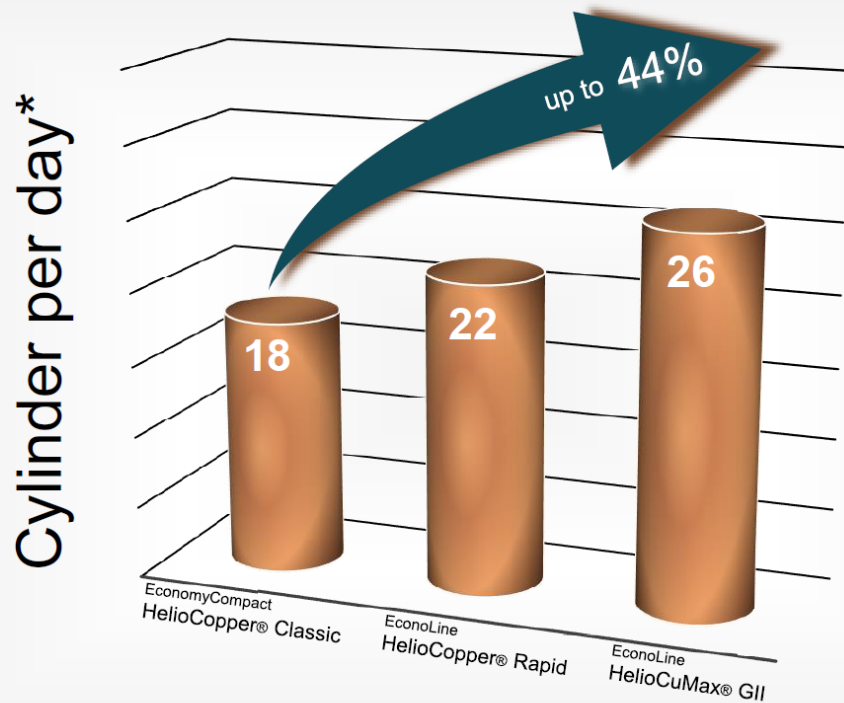


# HELIOCUMAX®

## Principle and Functionality of CuMax GII



## CuMax –copper plating technology-



\*calculated with 22h working time (23h for CuMax) and 200µm average layer thickness




# Agenda

New Copper Surface Process technology –HelioBrush® -



# HelioBrush®

## Key Messages



Unique tool to achieve predictable, stable and controllable results independent from circumference and size of cylinder

Well-compact homogeneous surface due to closer Rz and Rmax values

Better print results due to less likelihood for hazing with higher roughness values

HelioBrush® provides a long life time. Less sludge, filter and stone usage guaranteed

HelioBrush® machined copper cylinders eliminate the usage of the paperband head for crosshatch pattern

HelioBrush® machined copper cylinder have less loss of Rz value once chrome coated ( $R_z \text{ in Cu} = R_z \text{ in Cr}$ )



# HelioBrush®

What's new

Retrofit available for any CFM built since 2009

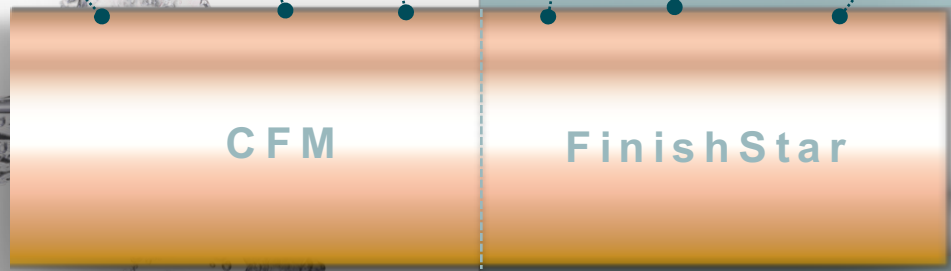
Retrofit for any FinishStar P 1610 Cu built since 2009

Cross hatch type pattern feasible with HelioBrush®

Cross hatch type pattern feasible with HelioBrush®

Tool carriage equipped with cutting tool, one stone – and HelioBrush® module

Tool carriage equipped with band-, stone and HelioBrush® module

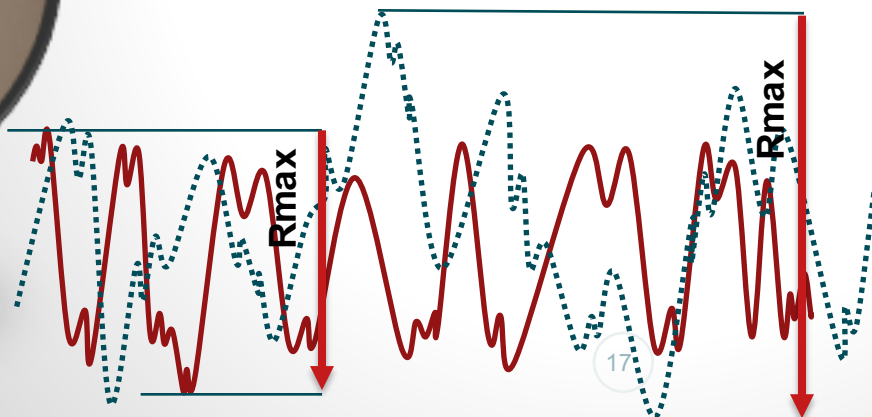
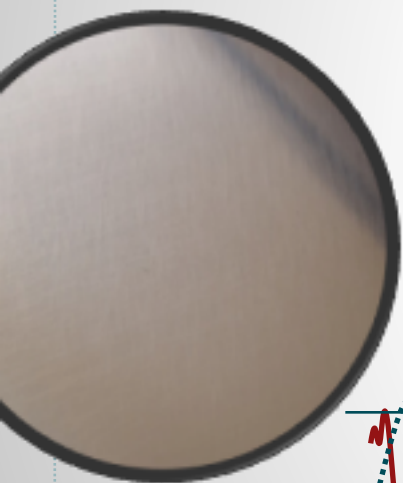


CFM

FinishStar

## CFM 1610 Series HelioBrush

- ▶ Homogenous surface after polishing
- ▶ Rz close to Rmax with HelioBrush®
- ▶ Rmax with stone > Rmax with HelioBrush®
- ▶ Roughness value remains the same after chrome plating
- ▶ Less hazing at higher roughness values
- ▶ Cross hatch with different angles possible





HelioBrush®

Roughness value table





# Agenda

Chrome Process, Status Quo and future developemts



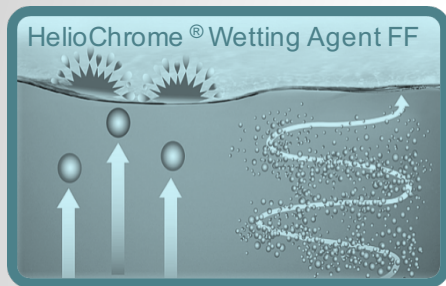
## CHROMIUM TRIOXIDE AUTORISATION AGREED



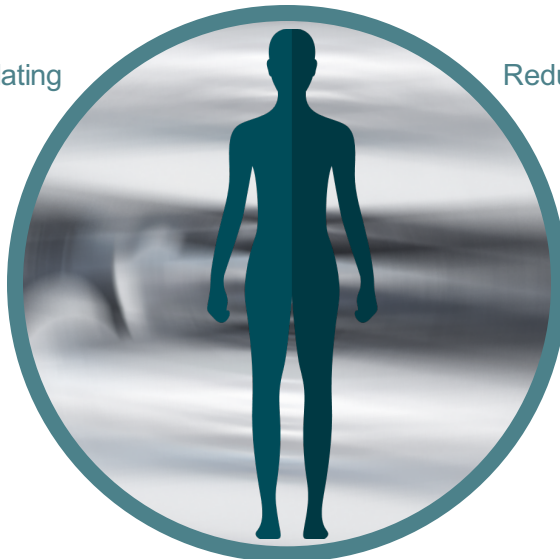
The European Commission has agreed to authorize the use of Cr(VI) for functional hard chrome plating (application 2, incl. “gravure”) for seven years. The authorization period begins on the sunset date of September 21, 2017 and is thus valid till September 21, 2024.

# Our new standards for chrome plating

Reduce exposure at plating



Reduce exposure with dosing



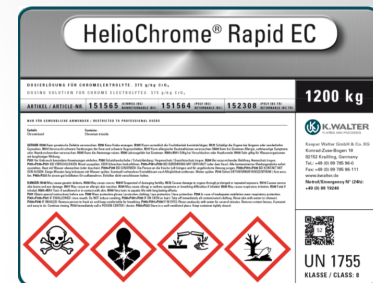
Reduce exposure at maintenance



Negative pressure monitoring



Reduce exposure at handling





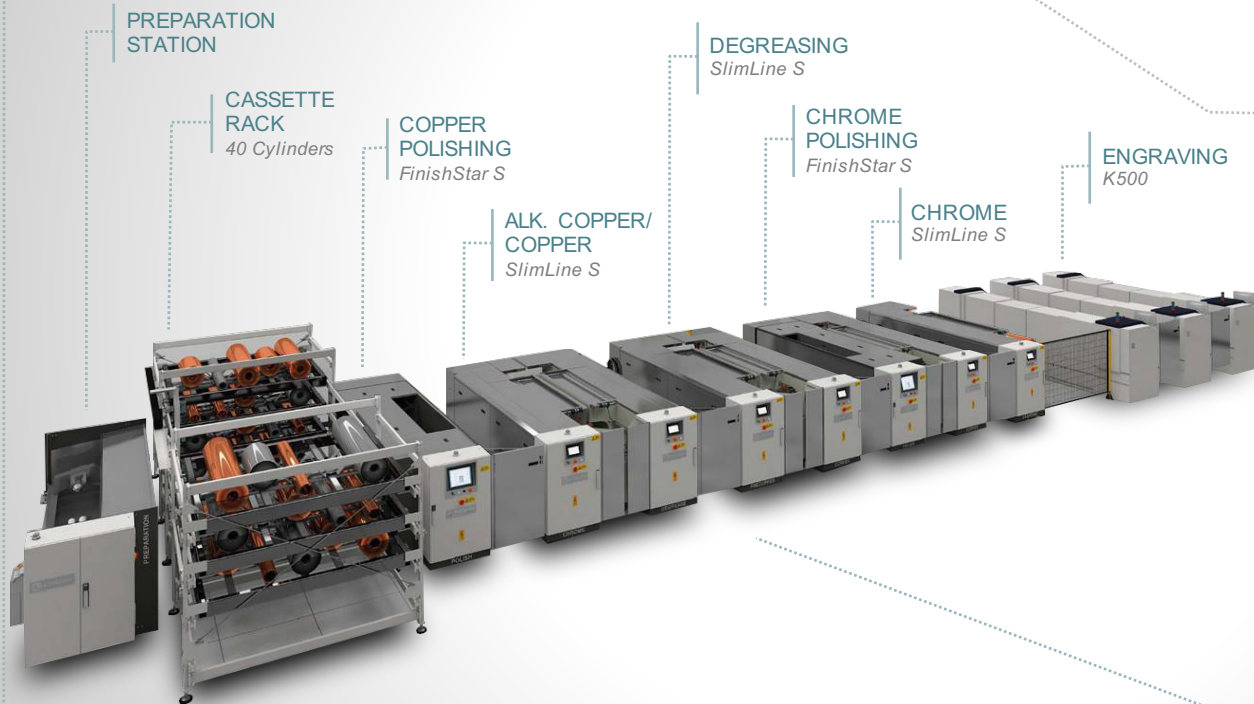
## Agenda

Our Solutions

# AUTOCON-LINE COPPER ENGRAVING CHROME

All processes in one line!

# 60



## LINE CONFIGURATION

| Production Capacity – 22h/Day   | 60<br>Cylinders |
|---------------------------------|-----------------|
| Preparation Station             | 1               |
| Cassette Rack – 40 Cylinders    | 1               |
| FinishStar S – Copper Polishing | 1               |
| SlimLine S – Alk. Copper        | 1               |
| SlimLine S - Copper             | 2               |
| SlimLine S - Degreasing         | 2               |
| FinishStar S – Chrome Polishing | 1               |
| SlimLine S - Chrome             | 1               |
| K500 - Engraving                | 3               |
| Storage Capacity                | 40 Cylinders    |
| Line Dimensions – in m (L x W)  | 24 x 6.3        |
| Footprint in m <sup>2</sup>     | 151             |

### Note:

- 2 µm alkaline Cu- layer
- 100 µm Cu- layer
- 6 µm Cr- layer

|                 | SlimLine S 1210 | SlimLine S 1410 |
|-----------------|-----------------|-----------------|
| Cylinder type   | hollow only     | hollow only     |
| Face length     | 400 - 1200 mm   | 600 - 1400 mm   |
| Circumference   | 450 - 1000 mm   | 450 - 1000 mm   |
| Cylinder weight | max. 150 kg     | max. 150 kg     |







# Thank you for your attention:

Contact:

**Kaspar Walter GmbH & Co. KG**

**Markus Amendt**

**Sales Manager**

Phone +49 8978596140

[M.Amendt@kwalter.de](mailto:M.Amendt@kwalter.de)



**K.WALTER**  
PLATING AND PROCESSES

Contact:

**Daetwyler Graphics India Pvt. Ltd.**

**Sunil Chandwadkar**

**Sr. Manager Sales.**

Phone: +91 9594568800

[schandwadkar@daetwyler-graphics.in](mailto:schandwadkar@daetwyler-graphics.in)



**Daetwyler**  
Graphics