



MÜHLBAUER'S QUALIFIED CONSUMABLES

CARD BODY PRODUCTION





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MÜHLBAUER GROUP AT A GLANCE

MÜHLBAUER'S BUSINESS UNITS AND SITES

Founded in 1981 in the heart of Bavaria, the Mühlbauer Group has ever since grown to a leading global player in the fields of Parts & Systems, Semiconductor Related Products, Document Solution Related Products and TECURITY® Solutions. With around 3,500 employees, technology centers in Germany, Malaysia, Slovakia, the U.S.A. and Serbia and 35 sales and service locations worldwide, Mühlbauer created a strong competence network around the globe.

We continuously invest in the latest technologies and innovative processes to enhance our competences and provide you with optimized solutions. Our in-house precision part production MPS – Mühlbauer Parts & Systems – guarantees unlimited flexibility and highest customer satisfaction.

Our business unit AUTOMATION does not only develop and assemble individually customized production systems, but also provides matching software solutions for the production process of Document and Solution Related Products. Vision inspection technologies as well as semiconductor and RFID applications complete our comprehensive portfolio.

Our business unit TECURITY® is established as a competent partner for the implementation of security systems for identifying and verifying both documents and individuals. Our clients benefit from more than three decades experiential value which we have gained during the realization of over 300 ID projects worldwide.



Mühlbauer
Bosnia & Herzegovina



Mühlbauer
China



Mühlbauer
Germany



Mühlbauer
Malaysia



Mühlbauer
Serbia

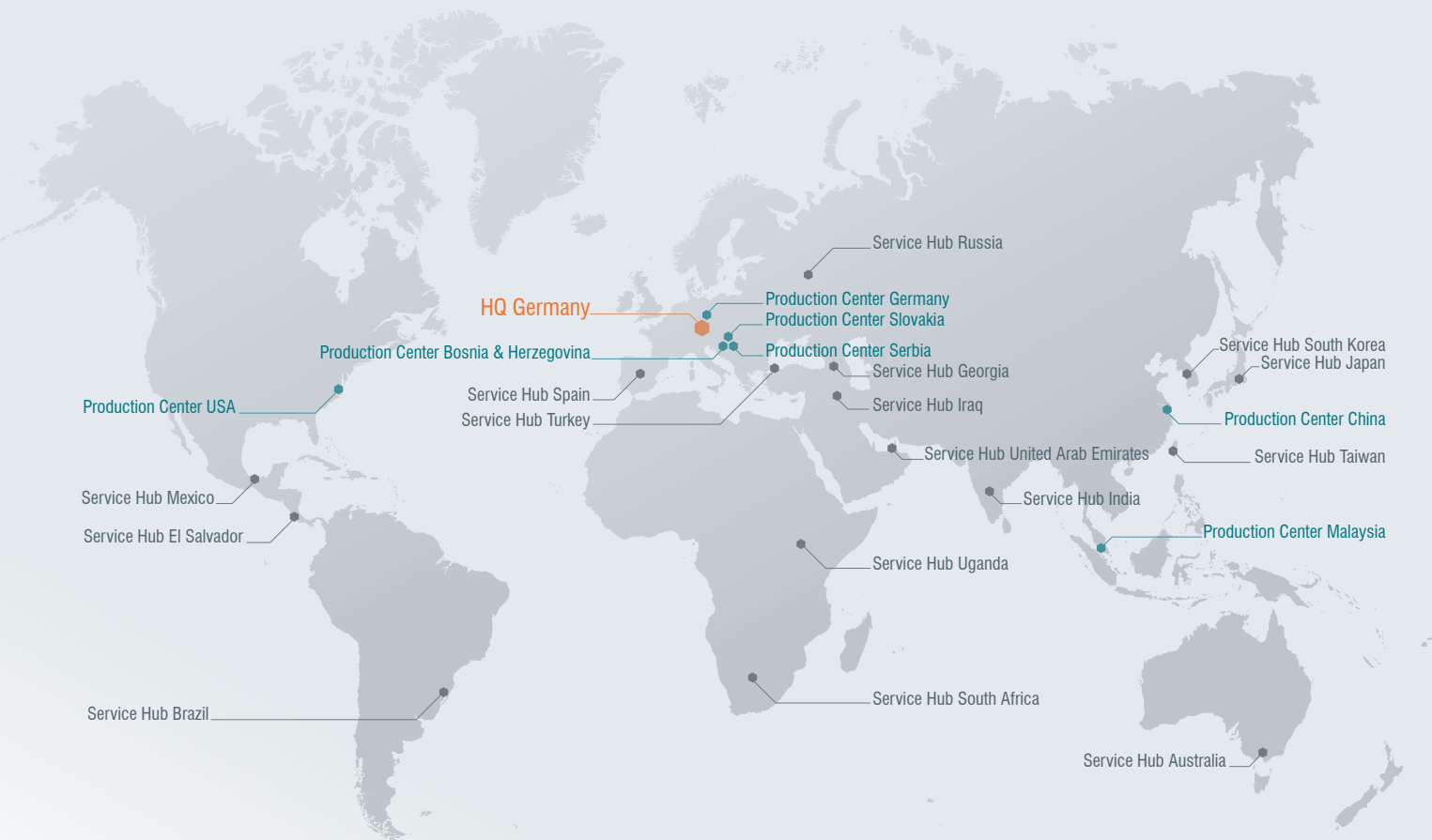


Mühlbauer
Slovakia



Mühlbauer
USA





MPS
Precision Parts & Surface Engineering



AUTOMATION
Production Equipment & Systems



WORLD OF SECURITY®
Government & Technology Solutions

SHEET HOT STAMPING

HOT STAMPING SYSTEMS FOR THE APPLICATION OF SECURITY FEATURES



SSH 2008/2
Semi-Automatic Sheet-Layers
Hot Stamping System



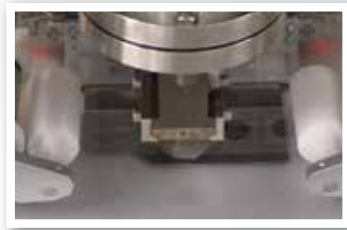
ASH 10000
Fully Automatic Sheet-Layers
Hot Stamping System



■ Signature Panel Foil



■ Hologram Foil



■ For this process, MB offers stamps in different dimensions and geometries - see E-kat.

Security Features Foils

Description	Item Number	Dimensions
Signature Panel Foil with Fine Green Stripes	36992693	86mm x 305m
Signature Panel Foil White	1000005026	86mm x 305m
Signature Panel Foil White Blank	36995924	86mm x 305m
Signature Panel Foil with Grey Spiderweb	2776000000	86mm x 305m
Hologram Foil	36994042	35mm x 122m

Foils come in different qualities and are customized according to customer's request
Range and yield depends on customer's application design

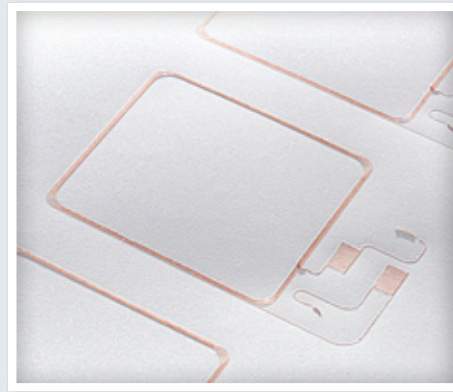


WIRE EMBEDDING

RFID INLAY PRODUCTION SYSTEM



MTT 2462 A
Wire Embedding and RFID
Inlay Production System



■ Copper Antenna Wire 124/45R



■ Thermode



■ Sonotrode

SHEET HOT STAMPING
WIRE EMBEDDING

MAGNETIC
STRIPES APPLICATION
SHEET COLLATING

SHEET LAMINATION
CARD HOT STAMPING

SMART CARD MILLING
CHIP IMPLANTING

COMBINED
MILLING & IMPLANTING
SCP 501 / 801 / 1501

ADHESIVE APPLICATION

Copper Wires & Accessories

Description	Item Number	Diameter	Dimensions / Range
Copper Wires Spool 124/45R (AB15 Grade 1B)	27070002	0.10 mm	1.0 kg = Approx. 13.60 km 2.0 - 2.5kg on 1 roll
Copper Wires Spool 124/45R (P155 Grade 1B)	27070003	0.10 mm	1.0 kg = Approx. 13.72 km 2.0 - 2.5kg on 1 roll
Copper Wires Spool 124/45R (Cul P155 Grade 1)	2778000003	0.08 mm	1.0 kg = Approx. 21.39 km 2.0 - 2.5kg on 1 roll
Thermode	6000061973		Lifespan up to 40,000 welding cycles
Sonotrode	60922571		Lifespan up to 100,000 antennas
Wire Cutter	60836896		Lifespan up to 100,000 cuts

Copper Wires come in different qualities and are customized according to customer's request and recommendation

MAGNETIC STRIPES APPLICATION

TAPE LAYERING SYSTEM



MAE 12
Tape Layering System



- Magnetic Stripes Transferred onto Overlay Foil



Different colors and customization available on request
Range depends on customer's process



SHEET COLLATING

SHEET COLLATING SYSTEMS FOR THE APPLICATION OF SECURITY CORE FOILS



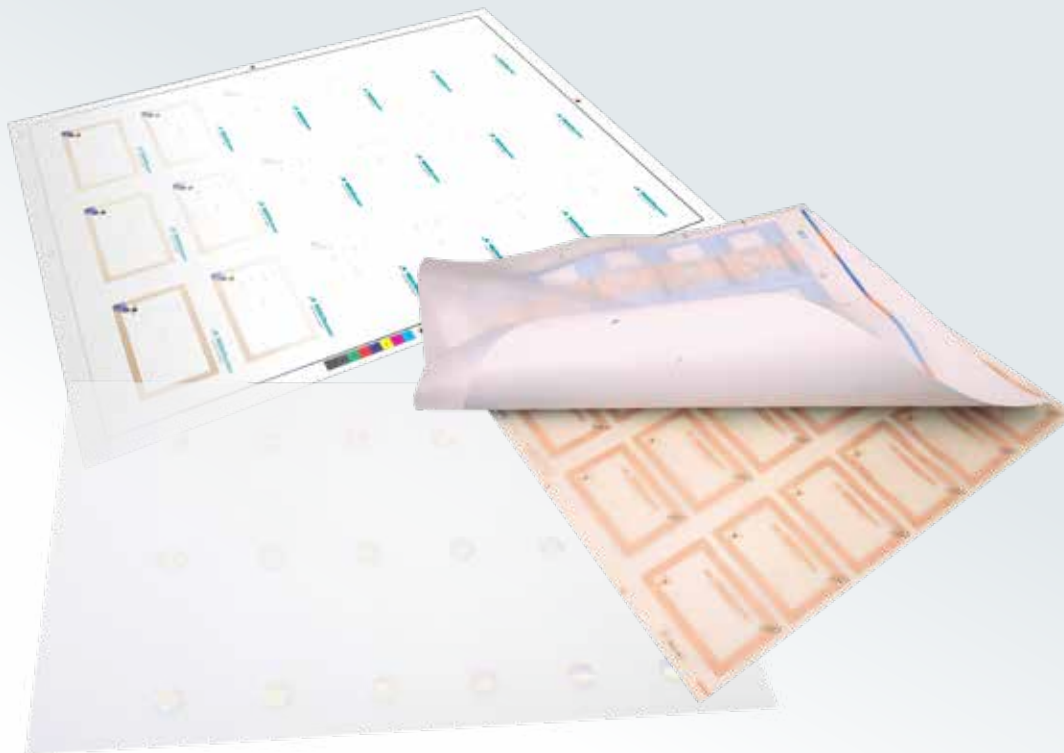
SSC 2502
Semi-Automatic Sheet Collating System



SSC 200
Semi-Automatic Sheet Collating System



ASC 2900
Automatic Sheet Collating System



SHEET HOT STAMPING
WIRE EMBEDDING

MAGNETIC STRIPES APPLICATION
SHEET COLLATING

SHEET LAMINATION
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CHIP IMPLANTING

COMBINED MILLING & IMPLANTING
SCP 501 / 801 / 1501

ADHESIVE APPLICATION

PC, PVC, PET-G Foils and further materials available on request
Different dimensions and degrees of thickness possible

SHEET LAMINATION

SHEET COLLATING SYSTEMS FOR THE APPLICATION OF SECURITY CORE FOILS



LP 5570
Sheet Lamination System for
Complex Card Constructions



LP 5570 ecoLINE
Sheet Lamination System for PVC &
PC Volume Production



Lamination Plates
with Security Patterns
available on request!



Different qualities and dimensions available depending on customer's request

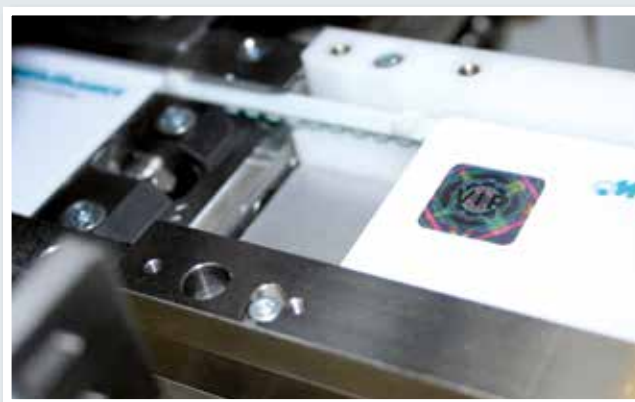


CARD HOT STAMPING

HOT STAMPING SYSTEMS FOR THE APPLICATION OF SECURITY FEATURES



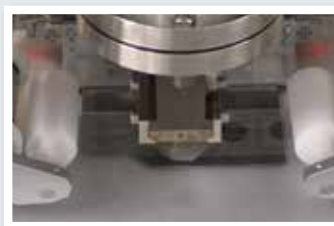
CHS 6001
Fully Automatic Card Hot
Stamping System



■ Signature Panel Foil



■ Hologram Foil



■ For this process, MB offers stamps in different dimensions and geometries - see E-kat.

Security Features Foils

Description	Item Number	Dimensions
Signature Panel Foil with Fine Green Stripes	36992693	86mm x 305m
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Signature Panel Foil White Blank	36995924	86mm x 305m
Signature Panel Foil with Grey Spiderweb	2776000000	86mm x 305m
Hologram Foil	36994042	35mm x 122m

Foils come in different qualities and are customized according to customer's request
Range and yield depends on customer's application design

SHEET HOT STAMPING
WIRE EMBEDDING

MAGNETIC
STRIPES APPLICATION
SHEET COLLATING

SHEET LAMINATION
CARD HOT STAMPING

SMART CARD MILLING
CHIP IMPLANTING

COMBINED
MILLING & IMPLANTING
SCP 501 / 801 / 1501

ADHESIVE APPLICATION

SMART CARD MILLING

MILLING OF CAVITIES FOR IC MODULES IN PLASTIC CARDS



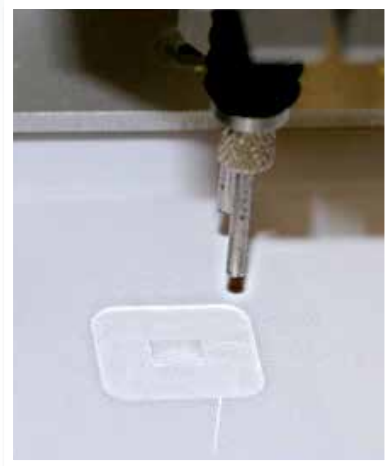
SCM 501
Fully-Automatic Milling of Cavities for IC Modules into Plastic Cards



SCM 5001
Fully-Automatic Milling of Cavities for IC Modules into Plastic Cards

Over 35 Years of Experience In Milling of PC, PVC and Mixed Card Material

- Approx. 130 different milling cutters in MB Product Portfolio
- Milling cutters in Carbide, PCD and CVD material available
- Ranging from single lip to three-lips
- Milling cutters with diameters ranging from 0.5mm to 4.6mm
- Sets with different diameters and qualities of cutters available for testing to find your best solution
- Evaluated cutters for FBC- and DICL-processes
- Special cavities and sizes on request



■ Milling Cutter Sample Set



Overview Milling Cutter Carbide and PCD

Description	Item Number	Size	Lips
Carbide Milling Cutter	30010088	1.00	1-lip
Carbide Milling Cutter	1000006320	1.20	2-lips
PCD-Cutter	3001401216	1.10	1-lip
PCD-Cutter	30010084	1.20	
PCD-Cutter	3001401217	1.30	
PCD-Cutter	3001401218	1.40	
Carbide Milling Cutter	1000005176	1.30	1-lip
Carbide Milling Cutter	30010068 / 3106000186	1.50	1-lip/2-lips
PCD-Cutter	30010064	1.50	1-lip
Carbide Milling Cutter	30010069	1.70	1-lip
Carbide Milling Cutter	3001401192 / 3001401196	1.80	1-lip/2-lips
Carbide Milling Cutter	30010070 / 30010105	2.00	1-lip/2-lips
PCD-Cutter	30010061	2.00	1-lip
PCD-Cutter	30010053	2.40	1-lip
Carbide Milling Cutter	30010071	2.40	1-lip
Carbide Milling Cutter	30010072	2.60	1-lip
PCD-Cutter	30010067	2.60	1-lip
PCD-Cutter	30010040	2.80	1-lip
Carbide Milling Cutter	30010073	2.80	1-lip
PCD-Cutter	30010089	2.90	1-lip
PCD-Cutter	30010058	3.00	1-lip
Carbide Milling Cutter	30010074	3.00	1-lip
Carbide Milling Cutter	30010144	3.00	3-lips
Carbide Milling Cutter	30010153	3.00	2-lips
Carbide Milling Cutter	30010167	3.00	2-lips
Carbide Milling Cutter	61035277	3.00	1-lip
Carbide Milling Cutter	3699000904	3.00	1-lip
Carbide Milling Cutter	3106000136	3.00	2-lips
PCD-Cutter	30010082	3.20	1-lip
PCD-Cutter	30010096	3.50	1-lip
PCD-Cutter	30010045	3.60	1-lip
Carbide Milling Cutter	30010075	3.60	1-lip
Carbide Milling Cutter	30010137	3.60	2-lips
Carbide Milling Cutter	30010140	3.60	3-lips
Carbide Milling Cutter	30010168	3.60	2-lips
Carbide Milling Cutter	61035365	3.60	1-lip
Carbide Milling Cutter	3699000945	3.60	1-lip
CVD-Cutter	3001401214	1.50	1-lip
CVD-Cutter	3001401207	3.00	1-lip
CVD-Cutter	3001401215	3.60	1-lip
CVD-Cutter	3001401208	4.60	1-lip

SHEET HOT STAMPING

WIRE EMBEDDING

MAGNETIC
STRIPES APPLICATION
SHEET COLLATING

SHEET LAMINATION
CARD HOT STAMPING

SMART CARD MILLING
CHIP IMPLANTING

COMBINED
MILLING & IMPLANTING
SCP 501 / 801 / 1501

ADHESIVE APPLICATION

Overview Milling Cutter Carbide and PCD

Description	Item Number	Size	Lips
Carbide Milling Cutter	3106000092	3.60	2-lips
PCD-Cutter	30010060	4.00	1-lip
Carbide Milling Cutter	30010076	4.00	1-lip
Carbide Milling Cutter	30010155	4.00	3-lips
Carbide Milling Cutter	30010157	4.00	2-lips
Carbide Milling Cutter	61035175	4.00	1-lip
Carbide Milling Cutter	3001401201	4.40	2-lips
Carbide Milling Cutter	3001401197	4.00	1-lip
Carbide Milling Cutter	3106000185	4.00	2-lips
Carbide Milling Cutter	30010086	4.20	1-lip
PCD-Cutter	30010039	4.40	1-lip
Carbide Milling Cutter	30010077	4.40	1-lip
Carbide Milling Cutter	30010154	4.40	3-lips
Carbide Milling Cutter	30010158	4.40	2-lips
Carbide Milling Cutter	30010169	4.40	2-lips
Carbide Milling Cutter	61034972	4.40	1-lip
Carbide Milling Cutter	3699000947	4.40	1-lip
Carbide Milling Cutter	3106000147	4.40	2-lips
PCD-Cutter	30010097	4.50	1-lip
PCD-Cutter	30010057	4.60	1-lip
Carbide Milling Cutter	30010079	4.60	1-lip
Carbide Milling Cutter	3106000093	4.60	2-lips
Carbide Milling Cutter	30010143	4.60	2-lips
Carbide Milling Cutter	30010145	4.60	3-lips
Carbide Milling Cutter	30010170	4.60	2-lips
Carbide Milling Cutter	61035366	4.60	1-lip
Carbide Milling Cutter	3699000905	4.60	1-lip
Carbide Milling Cutter	30010113	7.00	3-lips
Carbide Milling Cutter	85050379	10.00	3-lips
Carbide Milling Cutter	30010187	13.00	3-lips
Carbide Milling Cutter	30010188	15.00	3-lips



CHIP IMPLANTING

MODULE IMPLANTING SYSTEMS FOR SMART CARDS



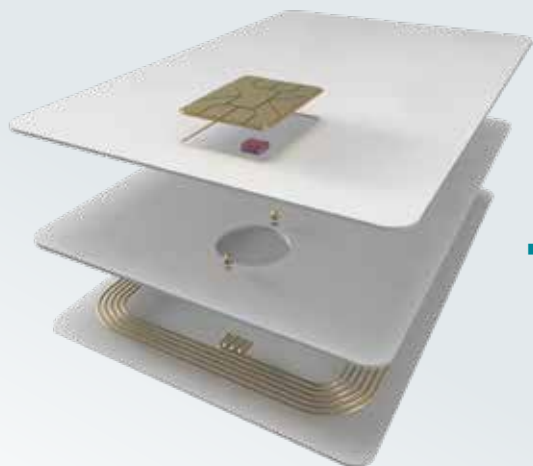
SCI 202
Fully-Automatic Implanting of IC Modules into Plastic Cards



SCI 5001
Fully-Automatic Implanting of IC Modules into Plastic Cards



DICL 5000
Fully-Automatic Cavity Milling and Implanting of Modules for Dual Interface Cards



■ Dual Interface Card Construction



Product recommendations for chip modules with different operating systems
Mediation of contacts to different chip manufacturers possible

- SHEET HOT STAMPING
- WIRE EMBEDDING
- MAGNETIC STRIPES APPLICATION
- SHEET COLLATING
- SHEET LAMINATION
- CARD HOT STAMPING
- SMART CARD MILLING
- CHIP IMPLANTING
- COMBINED MILLING & IMPLANTING
SCP 501 / 801 / 1501
- ADHESIVE APPLICATION

COMBINED MILLING & IMPLANTING

FULLY-AUTOMATIC CAVITY MILLING AND IMPLANTING OF IC MODULES INTO PLASTIC CARDS



CMI 202
Low Volume Combined Milling & Implanting System



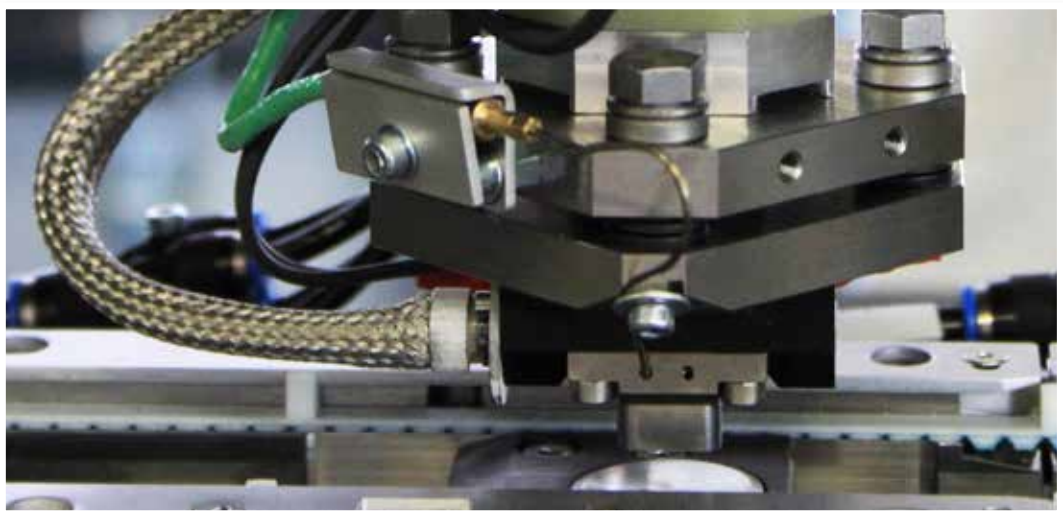
CMI 5001
High Volume Combined Milling & Implanting System



■ CNC Milling Station



■ Chip Implanting



■ Stamping Station: Crimping, Soldering & Cold Press Process
Item number for the above described processes are available in the electrical spare part catalogue



LAMINATION SYSTEM FOR CHIP MODULES



CML 201

Glue Tape Lamination System for a Wide Range of IC Module Tapes



- Heat Activated Foil (HAF)

Chip Module Adhesive / HAF

Description	Item Number	Range
MB CMA 6000 100m for PVC Card Material - Standard Quality	38080266	Modul M3 approx. 21,000 modules Modul M4,M5, approx. 14,000 modules
MB CMA 6000 200m for PVC Card Material - Standard Quality	1000006027	
MB CMA 6010 200m for PVC Card Material - Premium Quality	2768000001	Modul M3 approx. 42,000 modules Modul M4,M5, approx. 28,000 modules
MB CMA 6011 200m recommended for PC Card Material	2768000002	

SHEET HOT STAMPING
WIRE EMBEDDING

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ADHESIVE APPLICATION

ADHESIVE APPLICATION

ADHESIVE FOR DUAL INTERFACE CARD PRODUCTION

MB TeConnect® Technology



DICL 5000
Fully-Automatic Dual Interface
Card Production Line



- MB TeC5000 with Precision Dosing Needle

MB TeC5000 Paste

Description	Item Number	Yield
MB TeC5000 35g	2767000002	Approx. 10,000 Cards/ Cartridge*
LL Dosing Needle	2227000003	Approx. 10,000 Cards*

*Depends on production shift / uninterrupted production



MB FLEXIBLE BUMP TECHNOLOGY



MFB 2500
Fully-Automatic Preparation of Dual Interface Card Bodies



CMFB 2500
Fully-Automatic Preparation of Dual Interface Card Bodies



■ Flexible Bump Set



SHEET HOT STAMPING
WIRE EMBEDDING

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COMBINED MILLING & IMPLANTING
SCP 501 / 801 / 1501

ADHESIVE APPLICATION

Flexible Bump Glue

Description	Item Number	Yield
Glue "Flexible Bump" 100g	38080288	Approx. 25,000 Cards*
Glue "Flexible Bump" 200g	38080220	Approx. 45,000 Cards*
Glue "Flexible Bump" 400g	38080175	Approx. 90,000 Cards*
Replacement Spindle Body	36991345	1-shift approx. 7,690 Cards* 2-shift approx. 14,280 Cards* 3-shift approx. 25,000 Cards*
Precision Dosing Needle	22990189	Approx. 2000 Cards*
Cartridge 5cm ³	2270008	Approx. 3845 cards for 1 Shift*
Plug 5cm ³	22990233	
Cartridge 10cm ³	22990085	Approx. 7690 cards for 1 Shift*
Plug 10cm ³	22190037	
Addition Roll	35020113	Approx. 500,000 Cards*

*Depends on production shift / uninterrupted production



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