zemat TECHNOLOGY GROUP

European Funds
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MACHINES FOR CONVEYOR BELTS

60 YEARS STRONG
1957-2017

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1957-2017

Reliable conveyor belt systems are at the core of every manufacturing or logistic operation. They must run constantly and provide dependable product conveying solution 24/7.

At Zemat Technology Group, for over 60 years now, we are perfecting the polymer bonding technologies using Radio Frequency and InfraRed heat to deliver the most reliable belt producing machines (RF/HF welders and IR heat sealers), for the belting industry. Our design engineers and technicians are passionate about inventing and creating new bonding solutions to the ever-changing and innovative polymer world.

High Frequency also know as Radio Frequency, RF welding or dielectric sealing is a technology that uses electromagnetic energy to form a permanent bond in polymers, as strong as the original thermoplastic material.

We have our own EU certified production control and EMC laboratory providing validation of each required process parameters and the whole technological production cycle. The Zemat Technology Group TESTLAB is fully compliant and certified with ISO 17025. If required we can provide a control and process control system which is in line with the standards of continuous auditing of the manufacturing process required by the corporate industrial sector.

BELTA series machines and special tooling are custom designed for the global belting industry and are build entirely in Europe. We have offices in the USA and commercial and technical presence in many countries around the world, including Australia.

www.zemat.com


TECHNOLOGY WITH
A HUMAN TOUCH

CONVEYOR BELT MACHINES FOR THE XXI CENTURY

The modern industrial Thermoplastic Elastomers used presently by the leaders of the belting industry deserve the best machines for profiles, cleats and sidewalls and splicing.

BELTA High Frequency series welders are designed and built specifically for demanding production needs of conveyor belts manufacturing companies. The power outputs of 10-20kW and multi-step smooth power control allow unsurpassed production flexibility for various sizes and shapes. They implement the most advanced technological custom made tooling to make all of cleated and sidewalled belts easily in a minimum time frame.

- PVC and TPU belts
- Chamfers, V-notches, rounded corners, staggered cleats, profiled cleats, scoop cleats, v-guide cleats, and gusset reinforced cleats
- Corrugated sidewalls
- Edgecapping

Our innovative RF technology of rigid composite Polyurethane joining for food and medical industry creates the best transportation belts for strictest sanitary conditions and the most demanding customers. Remote touch screen HMI and powerful PLC provide full programming and process control capability, recipe memory storage and secure VPN connection for diagnostics and IO connection.

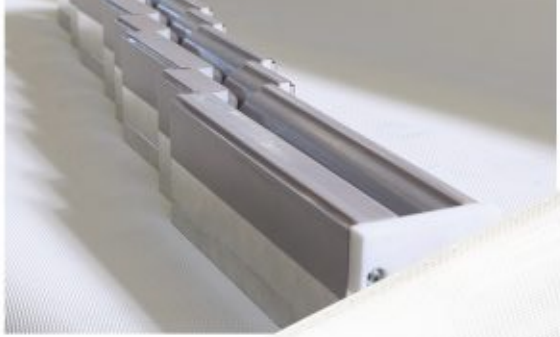
APPLIED EXPERTISE IN BELTING TERMOPLASTICS RF WELDING & SEALING

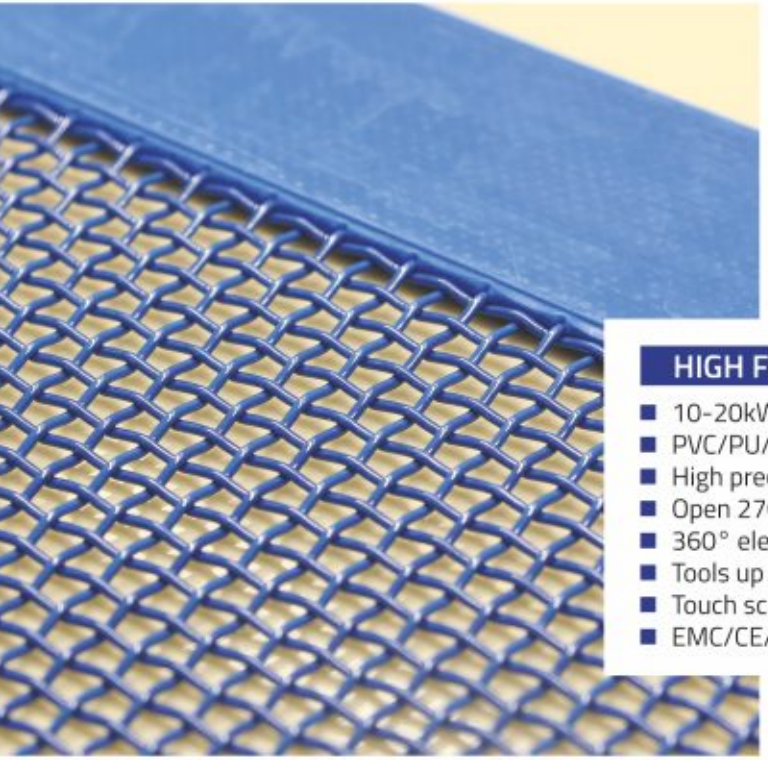
INDUSTRIAL AND FOOD GRADE BELTING WELDING AND SEALING TECHNOLOGIES

BELTA series machines provide endless joining and fabrications of various shape cleats, scoop flights, V-guides and sidewalls can be done easily with BELTA machines thanks to a large welding table and electrode holder allowing positioning of tooling 360° in circumference.

BELTA model is equipped with special quick change electrode holder. Side rolls mounted on the edges of the work table allow easy handling of long belts and precision weld positioning for fast production setup as well as ergonomic work space for operators.

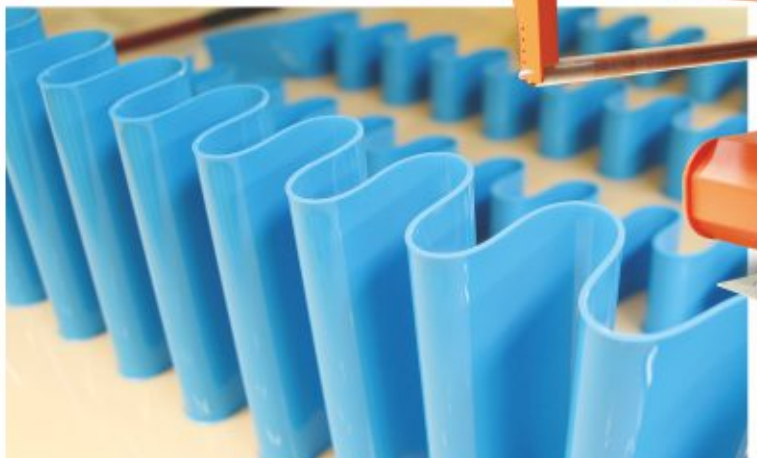
With the use of touch screen HMI and programmable PLC operator can easily input multiple weld/seam recipes. BELTA series machines have RF power outputs from 10kW to 20kW or more per request for heavy production loads and various material thicknesses and cleat heights (10-150mm/0.5-6").
All these options make this machine a perfect tool for high end production where precision, durability and strength is the key.





HIGH FREQUENCY (RF) WELDING

- 10-20kW Multi-step smooth control RF power
- PVC/PU/TPU/TPE belts, cleats and sidewalls
- High precision pneumatic or hydraulic drive
- Open 270° work table access
- 360° electrode rotation
- Tools up to 1200mm (48") long
- Touch screen HMI with memory
- EMC/CE/UL Compliant



CUSTOM MADE SOLUTION
FOR PVC/PU/TPU/TPE CONVEYOR BELT PRODUCTION

STANDARD FEATURES

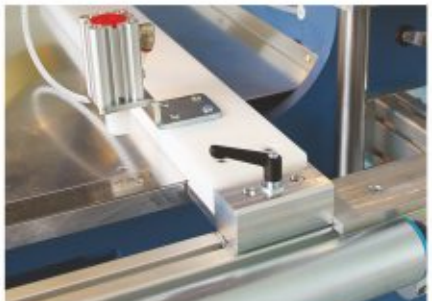
- Automated HF weld cycles, easy setup and operation
- ATS™ Autotuning and ultrafast ARC limiter
- Fully HF shielded and filtered work area
- Output overload protection with warning indicator/reset
- Smooth switchable power output settings
- Hi-Q Gen4 stable RF generator
- C-frame welded heavy duty structure
- Fully CE, UL, FCC, OSHA Compliant

OPTIONAL FEATURES

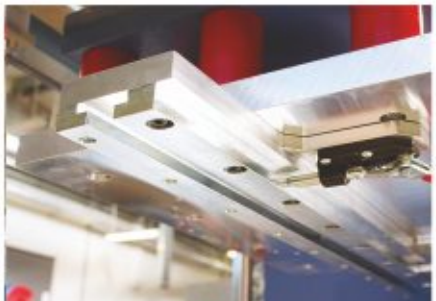
- Additional electrode holders for multiple parallel welding
- at one cycle
- Expanded HMI functionality - saving power level and press force
- Triple cylinder for expanded downstroke pressure
- Additional table for larger belts widths
- 550mm electrode stroke for welding cleats up to 250mm height
- Wheels for easy movement of the machine

V-guide insert and ruler

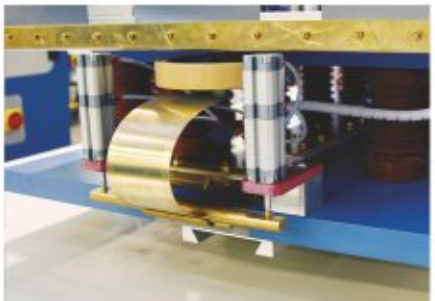
Belt edge stops and pneumatic belt holders



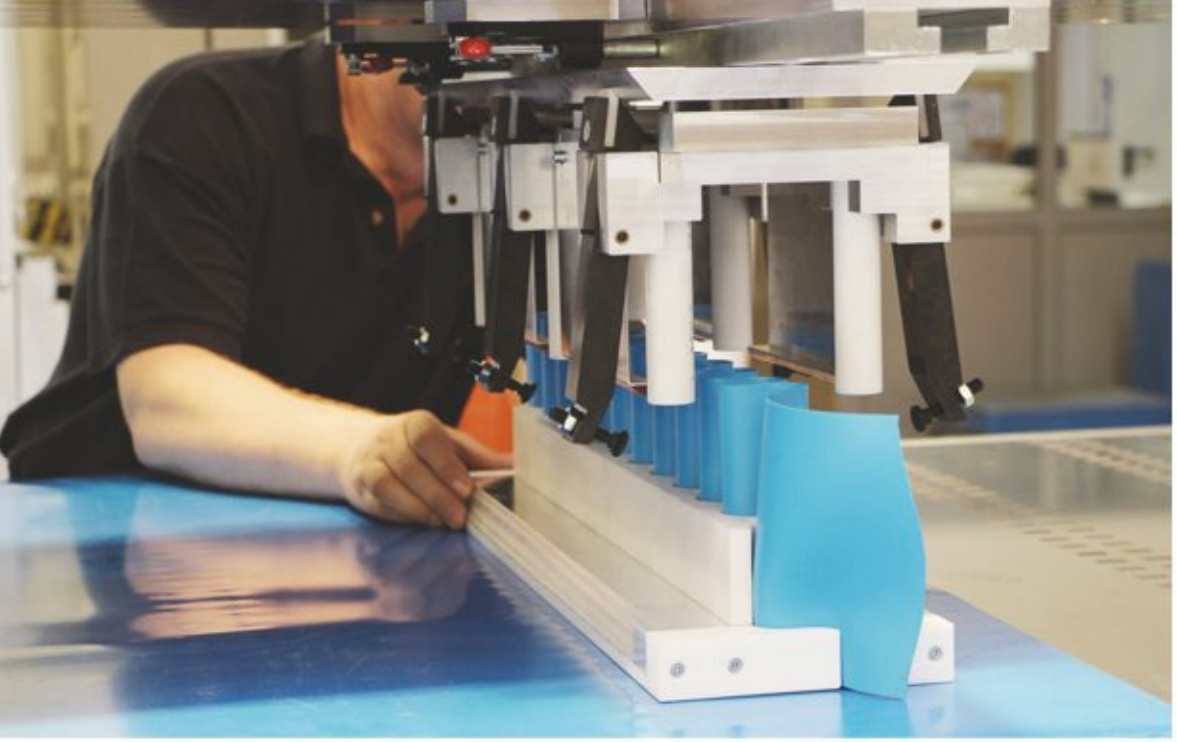
360° electrode rotation and fast on/off clamping

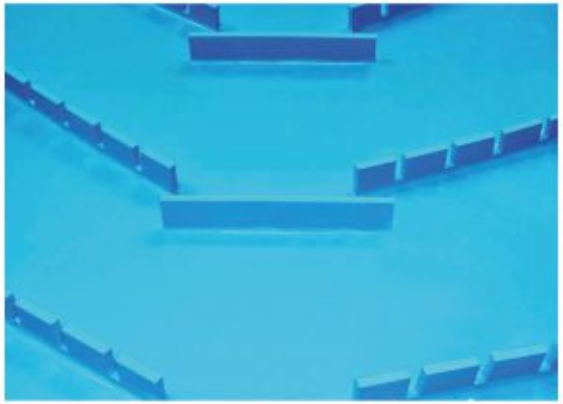


Proportional HF power distribution system



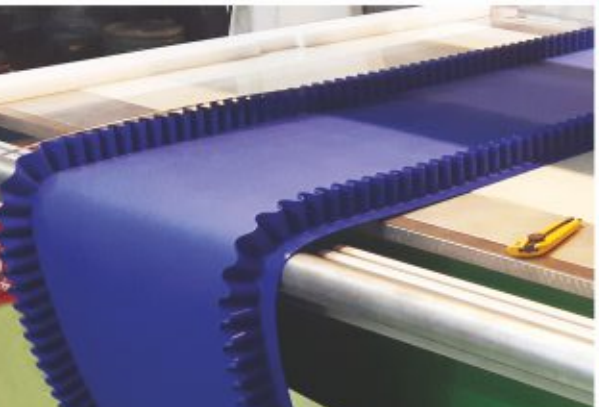
Touch screen HMI/PLC, cycle memory and ATS™ power control

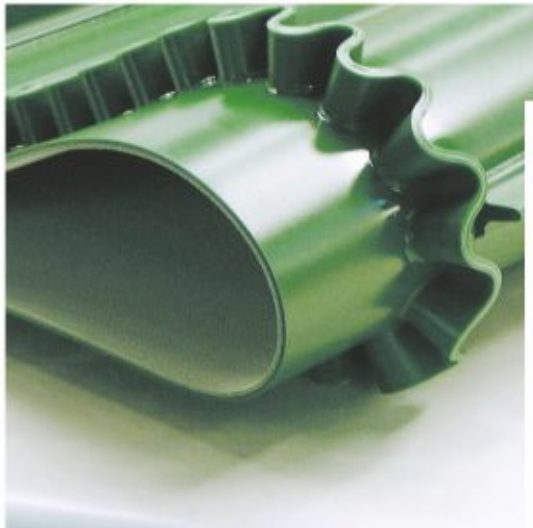




TOOLING OPTIONS

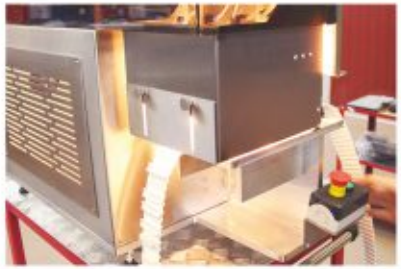
- Special design tooling for cleats and sidewalls
- Electrodes 50-1200mm (2”-48”) long
- Cleats and sidewalls up to 150mm (6”) tall
- Solid or sectional electrodes
- Custom cleat shapes - with or without base
- V-guides and Chevron shape welding

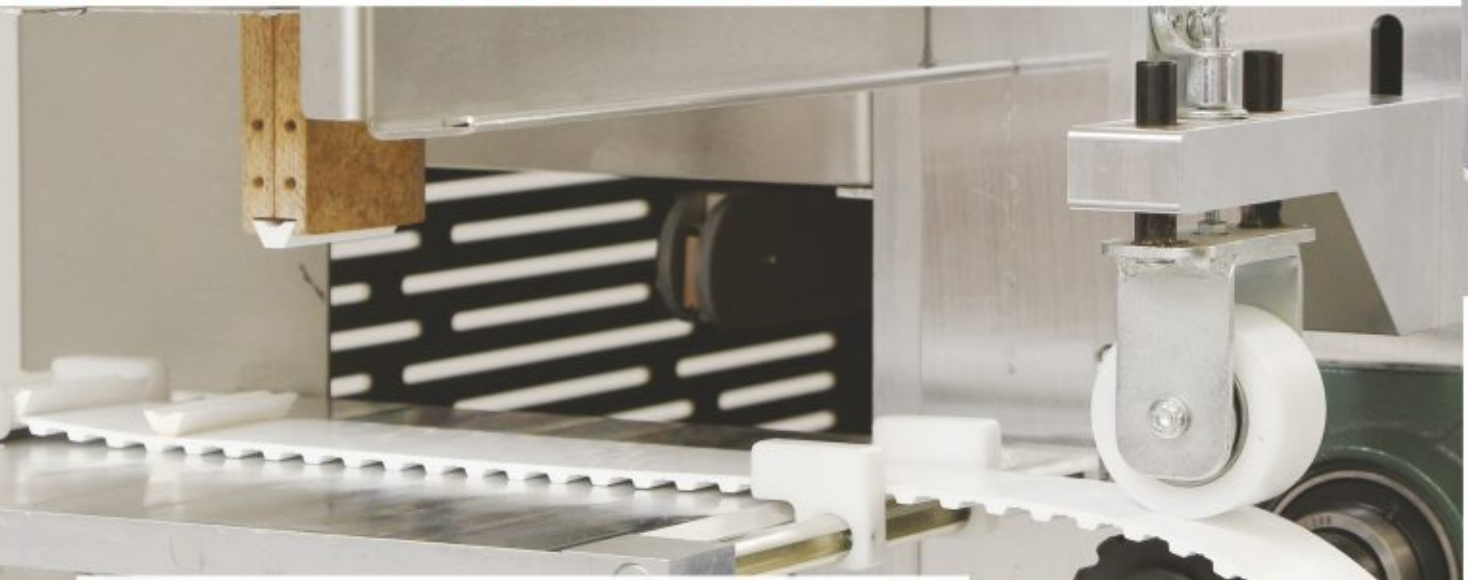




BELTA IR WELDER

AUTOMATIC INFRARED CLEAT SEALING MACHINE FOR TIMING BELTS





Controlled InfraRed heating and automatic indexing of distance between welded profiles/cleats.
This machine is specifically designed to accommodate the various sizes and shapes of profiles welded onto the timing belt up to 6" in width.

The indexing is made with standard sprocket wheel specific to the geometry of timing timing belt. The HMI controls the encoder and circular rotation advancing the timing belt at a preset value for the next cleat to be welded. The whole welding operation is **fully automatic** with a manual inserting of the welded profiles into a clamping tool.

TECHNICAL SPECIFICATION

- Power supply: 230V; 50/60Hz
- Installed power: 1000W
- Heating element: Halogen InfraRed
- Timing belt width: up to 150mm (6")
- Cleat/profile height: up to 150mm (6")
- Full power output control of heating element
- Heating time control
- Full pressure control during welding
- Pneumatic drive of heating element
- Pneumatic downstroke pressure
- Pneumatic grip/clamping of profiles/cleats
- Automatic Indexing of profiles/cleats for welding
- Fully automated weld cycles with weld cycle recipes memory
- Touch screen programmable HMI/PLC with control panel
- Built in work space/electrode illumination
- CE, EMC, EU, FCC and OSHA compliant

BELTA AC
FINGER SPLICING PRESSES FOR PVC & PU BELTING

AIR COOLED HEAT PRESS

- Lightweight aluminum construction
- Low profile: 300mm (12") height
- Work temperature: 200°C (392°F)
- Automatic temperature control
- Fast belt splicing cycle: less than 12 minutes total
- All-in-One unit, no external control box or air pump required
- Belt splicing has never been easier and more efficient
- Various lengths: 300/600/900/1200/1500/1800/2100mm (12"- 82")
- Effective width: 130mm (5")
- Power consumption: 1.6kW-8.8kW
- Voltage: 110V/220V/480V
- Weight: 22-134kg (40-260lb)

PNEUMATIC FINGER PUNCHING MACHINES

Length: 1000-2500mm (40"-98")
Width: 650mm (25")

MANUAL FINGER PUNCHING MACHINES

Length: 300-1200mm (12"-48")
Width: 390mm (15")

BELT SPLITTING MACHINE

Belt thickness: 1-5mm
Multi-layer splitting
Layer thickness accuracy: 0.4mm

Belta High Frequency Welders

Technical specification	Belta 10	Belta 15	Belta 20
HF output power	10 kW	15 kW	20 kW
Weld surface (up to 40cm² from 1kW)	≤400 cm²	≤600 cm²	≤800 cm²
Installed power	15 kW	22 kW	30 kW
Power supply	3x400 V ; 50Hz		
Main fuse	32 A	40 A	
Working frequency	27,12 MHz ± 0,6% | Hi-Q Gen5 HF Generator		
Electron tube	air cooled metal-ceramic triode		
Antiflash system	ultra-fast solid state ZTG AntiFlash™		
Autotuning system	standard, ATS™		
Control system	PLC and 10" touch screen HMI		
Maximum electrode length	800 mm	1200 mm	
Electrode pneumatic press (at 0,8 MPa)	1600 kg	2500 kg	
Electrode pressure control (0,1-0,8 MPa)	280 - 1600 kg	320 - 2500 kg	
Compressed air consumption	≤120 nl/cycle	≤180 nl/cycle	
Cylinder/electrode stroke	up to 300 mm (optional: 400, 550mm)		
Electrode mount	QuickGRIP, pneumatic		
Electrode rotation	360°		
Shielded work area	standard		
Maximum belt width	1200 mm	1800 mm	
Standard upper weld platen sizes	400 x 600 mm 500 x 700 mm	1200 x 650 mm 1000 x 600 mm	
Work table size	1000 x 1200 mm	1200 x 1800 mm	
Weight	1600 kg	2600 kg	

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