



TAILORED WIRE PLACEMENT (TWP) TAILORED TUBE PLACEMENT (TTP)

Revolutionizing integration of functionality in textile products.



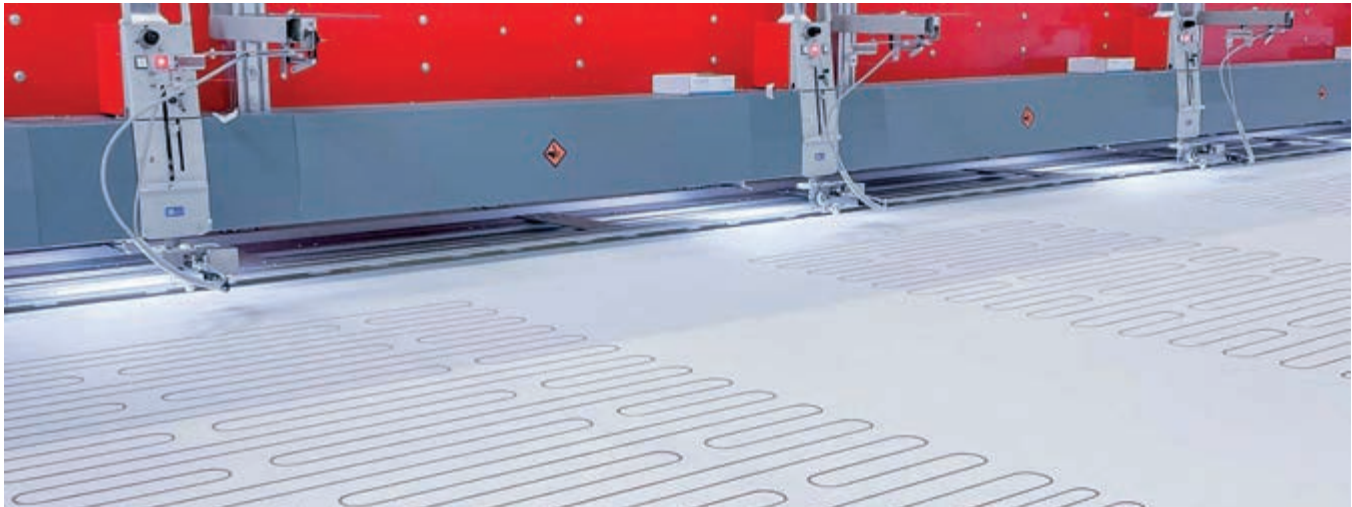


TAILORED WIRE PLACEMENT (TWP) TAILORED TUBE PLACEMENT (TTP)

Introducing Tailored Wire Placement (TWP) and Tailored Tube Placement (TTP), embroidery technologies revolutionizing integration of functionality in textile products:

- Offers customizable layout design and heating power distribution.
- Compatible with diverse carrier materials like fabrics, nonwoven fabrics, meshes, and foils.
- Facilitates seamless integration of technology, such as thermoswitches, enhancing textile functionality.

APPLICATIONS



Tailored Wire Placement

- Automotive industry
- Aerospace and wind energy
- Heating systems and smart textiles
- Medical technology
- Consumer electronics and wearable technology
- Industrial heating applications
- Home appliances and comfort systems

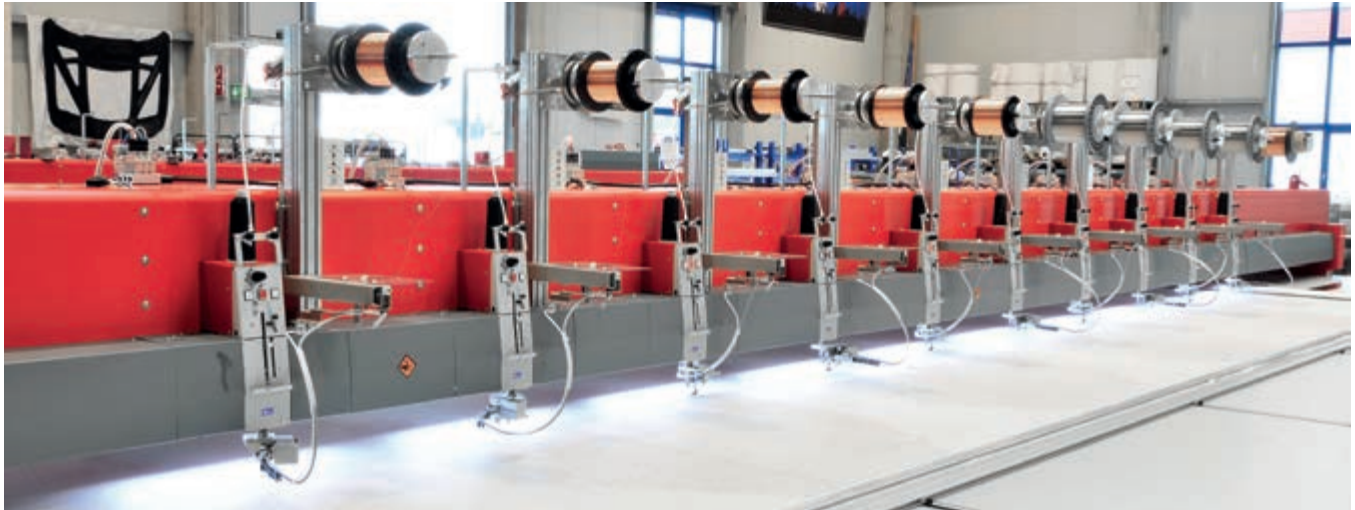


Tailored Tube Placement

- Automotive industry
- Aerospace and lightweight structures
- Medical technology and wearable systems
- Fluid and pneumatic systems
- Cooling and thermal management applications
- Consumer electronics and smart devices
- Home appliances and functional textiles



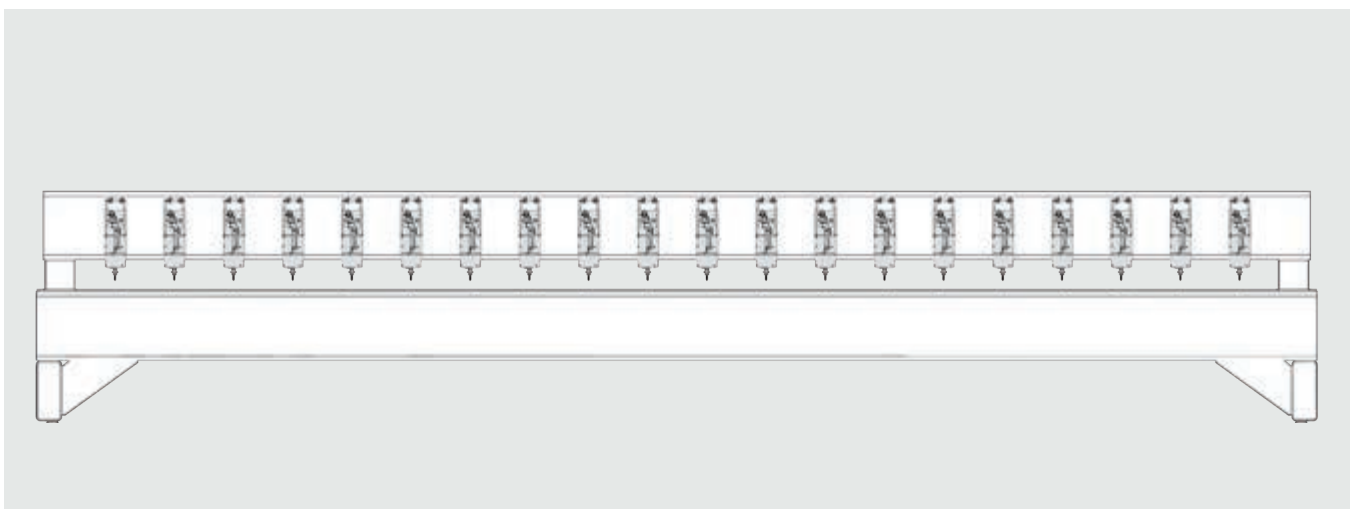
HIGHLY SCALABLE PROCESS



Scalability in quantity

- For mass production of relatively large components, 8-head or 10-head machines have been proven which can place 8 - 10 components at the same time.
- For smaller components, machines with up to 20 heads are available.

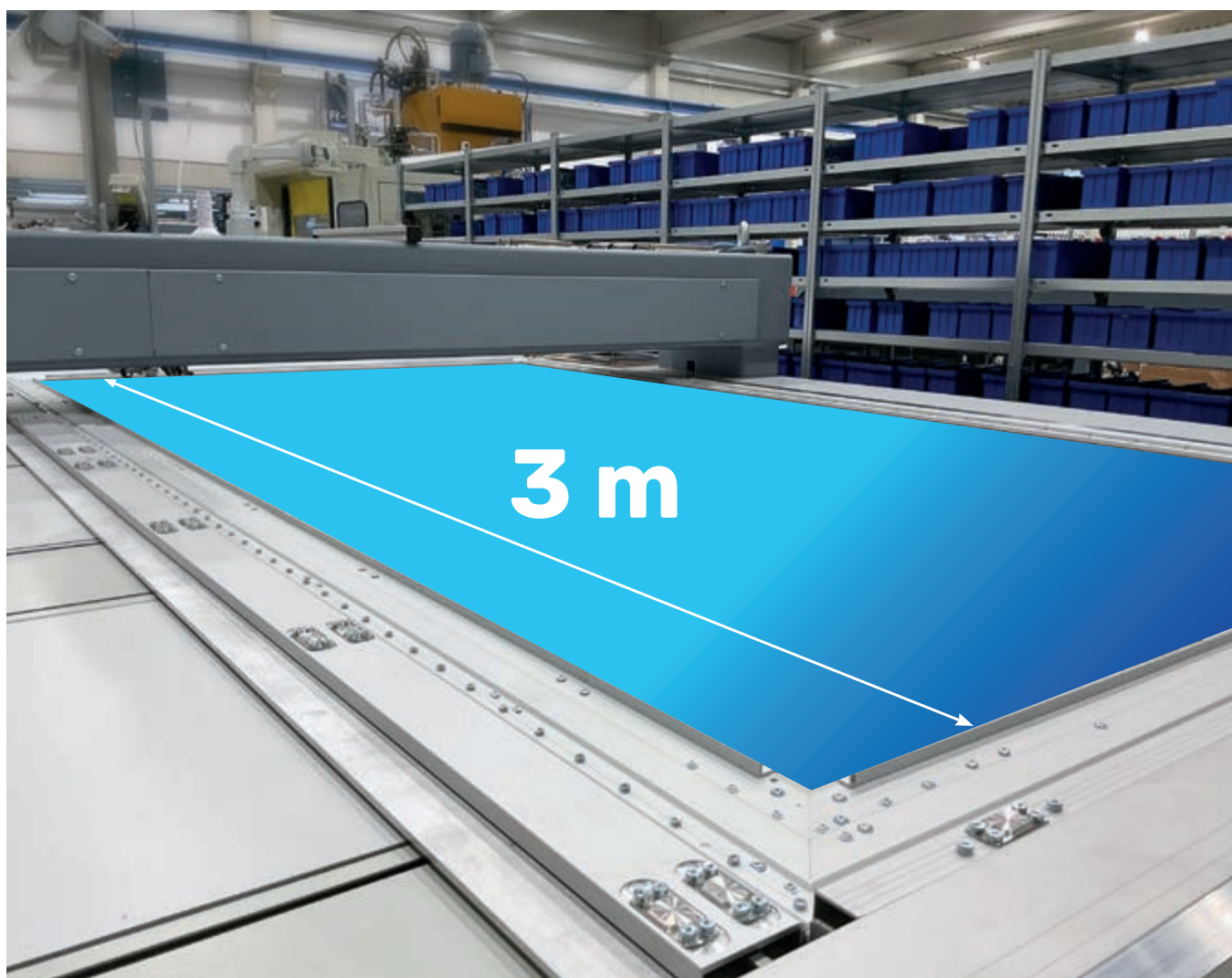
up to 20 components

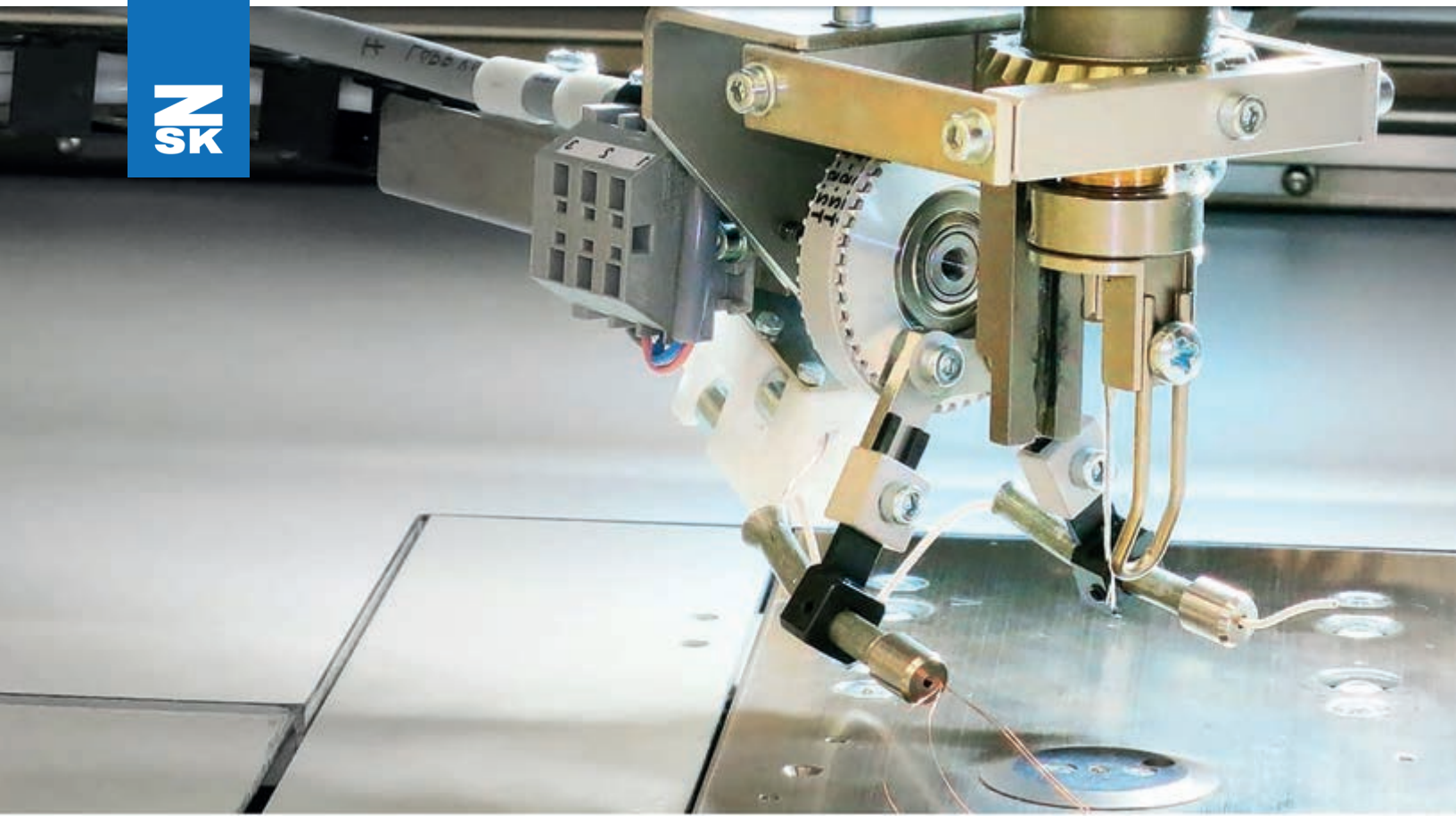


Scalability in size

- ZSK offers machines with the largest laying field.
- The repertoire of ZSK technical embroidery machines ranges from the smallest TWP / TTP machine with a laying field of 600 x 400 mm to the largest of 3.000 x 2.100 mm.
- In case of multi-head machines, automatic head selection allows laying fields up to 7.200 x 3.000 mm.

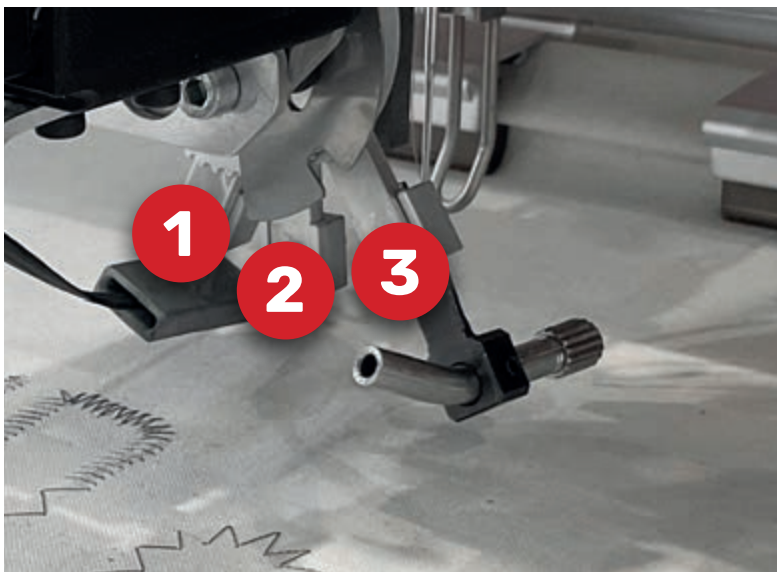
up to 21,6 m² possible laying field size

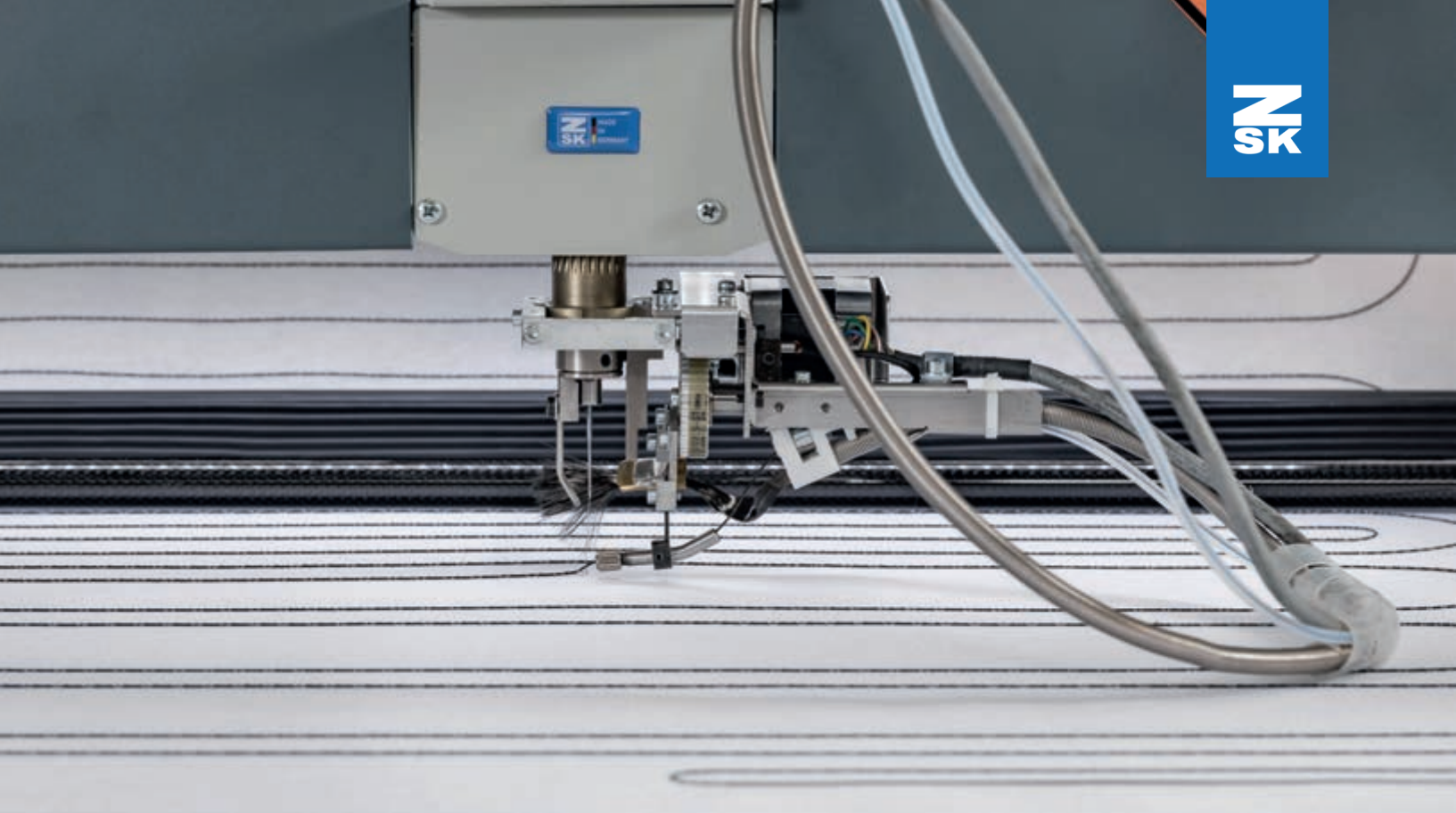




SWITCHING / COMBINING MEDIA

- ZSK offers a patented method for automatic switching up to 4 media, which enables independent or parallel laying of media.
- Limitless selection of wires: Stainless steel, copper, coated wires, optical fiber cable, hybrid wires such as stainless steel and PES
- Possible wire / tube diameter: 0.07 mm - 6 mm
- Automatic alternation enables integration of wires, tubes, cables and fibers.
- Automated material switching with 3 materials for less manual material switches.



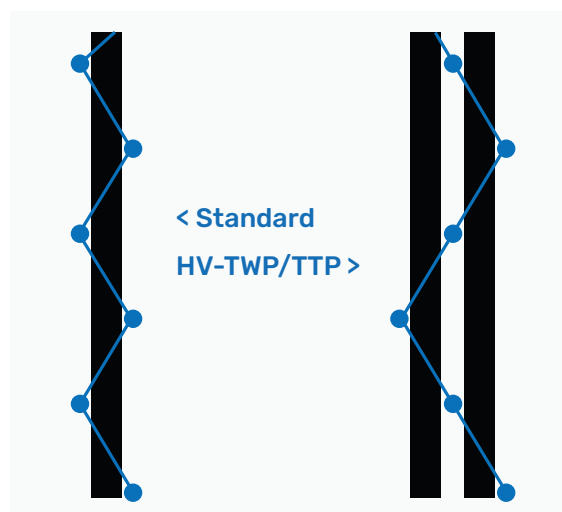


HIGHLY EFFICIENT PROCESS

High Volume - TWP / TTP (HV-TWP / HV-TTP)

- ZSK, in collaboration with Nobrak SAS, has developed a patented process for individual or parallel placement of up to 3 media.
- The innovation maximizes the placement volume of wires / tubes, leading to a significant increase in productivity for mass production applications.

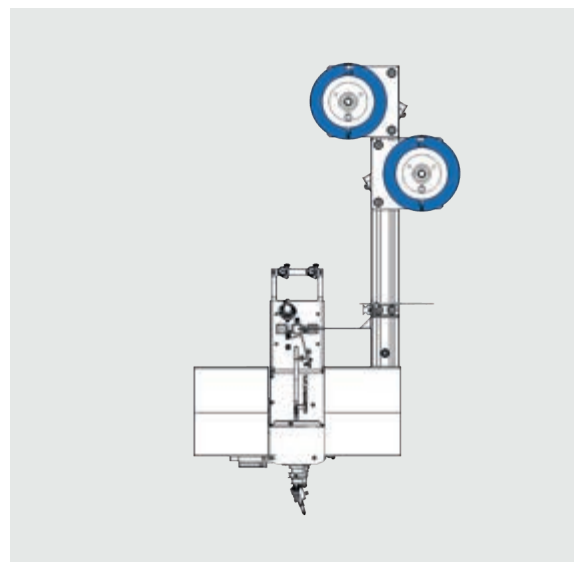
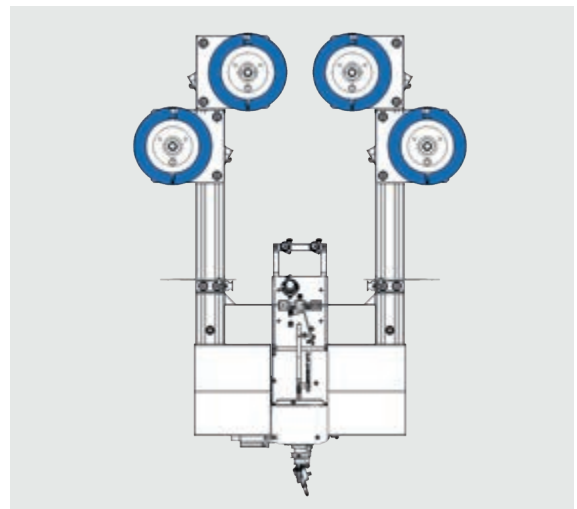
300% increase in volume





MEDIA SUPPLY

- Four big wire rolls (right & left) up to 10kg per roll
- Twin active supply units for wire.
- Zig Zag layer motor inside for small rolls. (prototyping, small scale production)
- Zig Zag layer motor outside of the head with automatic changer between two wires
- Pneumatic wire/fibre cutter
- Automatic bobbin changer for W-head
- End-of-wire detection
- Wire-hit detection

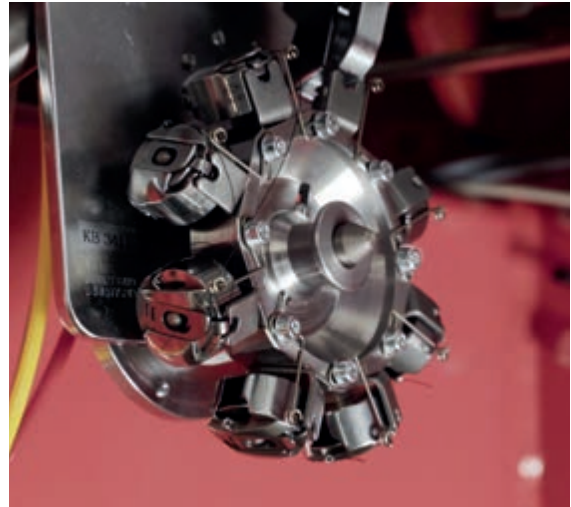


AUTOMATED PROCESS

Automatic bobbin changer

- The automatic bobbin changer has a magazine for 8 bobbins.
- In the control unit you can set marker when bobbin changes should take place automatically.

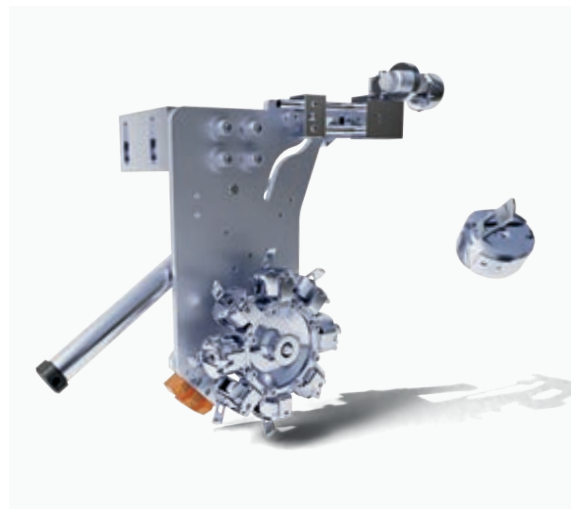
12% increase in up-time



Large capacity rotary hook and suitable Auto Select bobbin changer

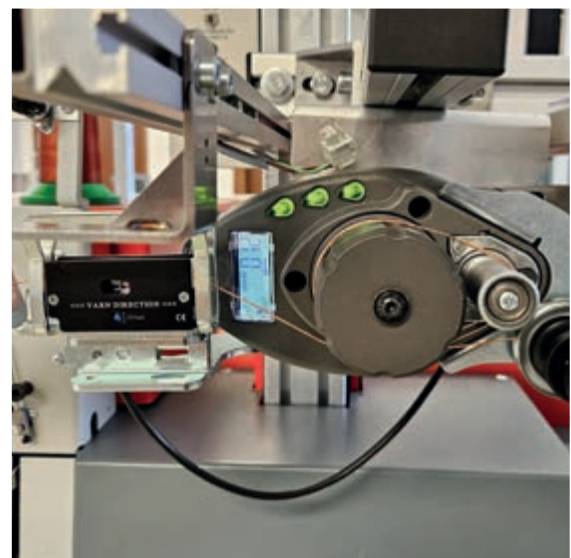
- ZSK offers bobbins with about 50% more thread capacity compared to the ZSK standard bobbin.
- Even this standard bobbin offers more thread in comparison to competitors bobbins.

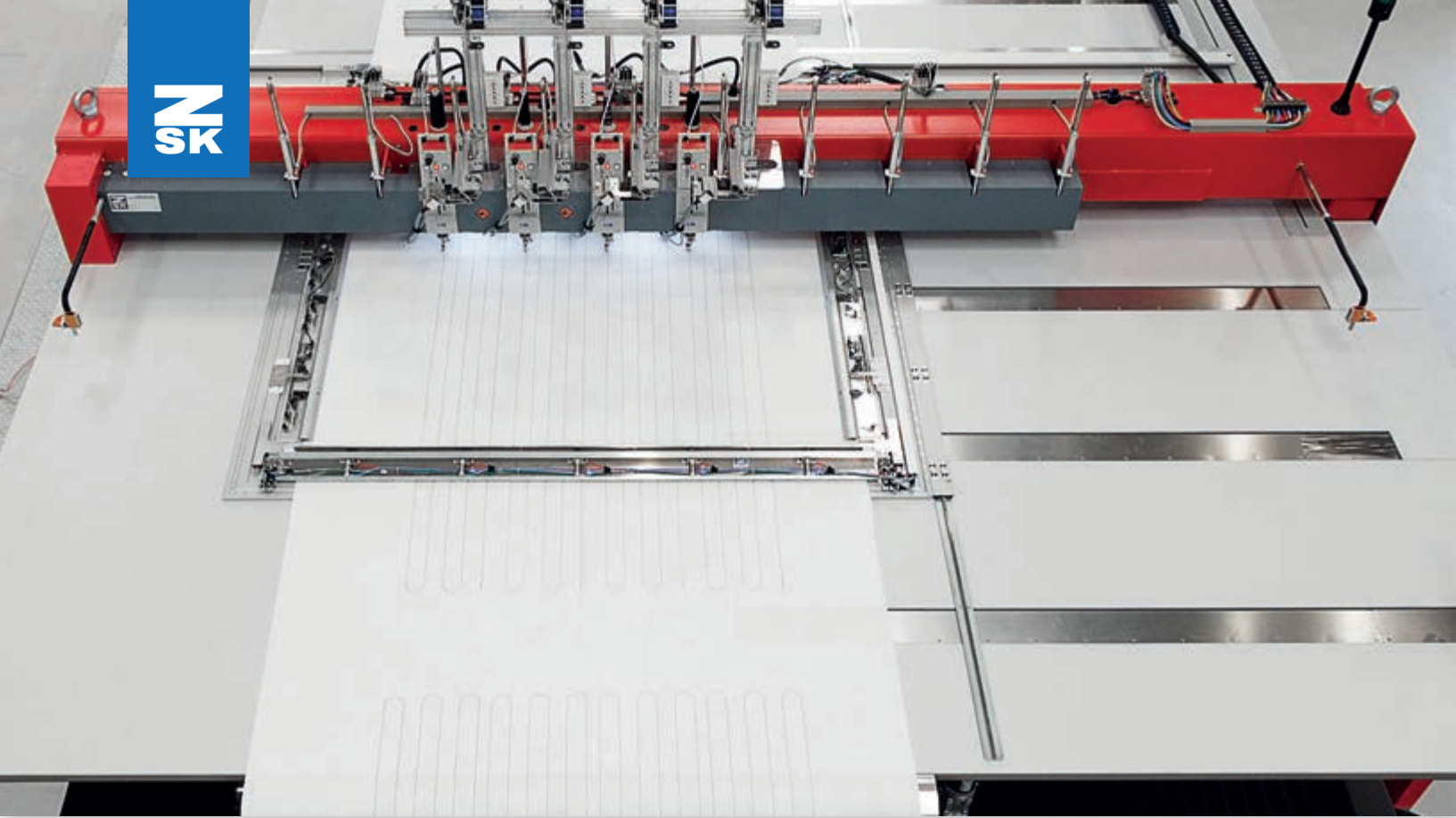
50% additional bobbin thread



Optional Features

- **Digital Tensioning System:**
 - Active digital control of upper thread and wires
 - Remote control and live tension monitoring
 - Suitable for single- and multi-head machines
- **Wire-hit detection:** If the needle hits a laid wire, the machine stops automatically and identifies the affected laying head. The defective part can then be marked for removal. This function is mandatory in many industries, such as the production of heated car seats.





CONTINUOUS PRODUCTION

Various automation solutions enable laying up continuous wires in a continuous production process.

- Roll2Cut pull through system.
- Roll2Roll pull through system.
- Pull through from back to front and reverse enables almost endless embroidery fields with electrical connection on one side.
- Pneumatic clamping system.
- Pneumatic fiber cutter.





ZSK SERVICE AND SUPPORT

Behind the success of ZSK's technical embroidery machines is a team with many years of experience. We do not only sell a machine, we are ready to share our experience with our customer. Because only the success of our customers ultimately leads to our success.

- Exchange of knowledge
- Training
- Prototyping
- Production support

UNWIND3D a division of ZSK

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Get in touch

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