SCM

SUTURE CRIMPING MACHINE

IMA AUTOMATION

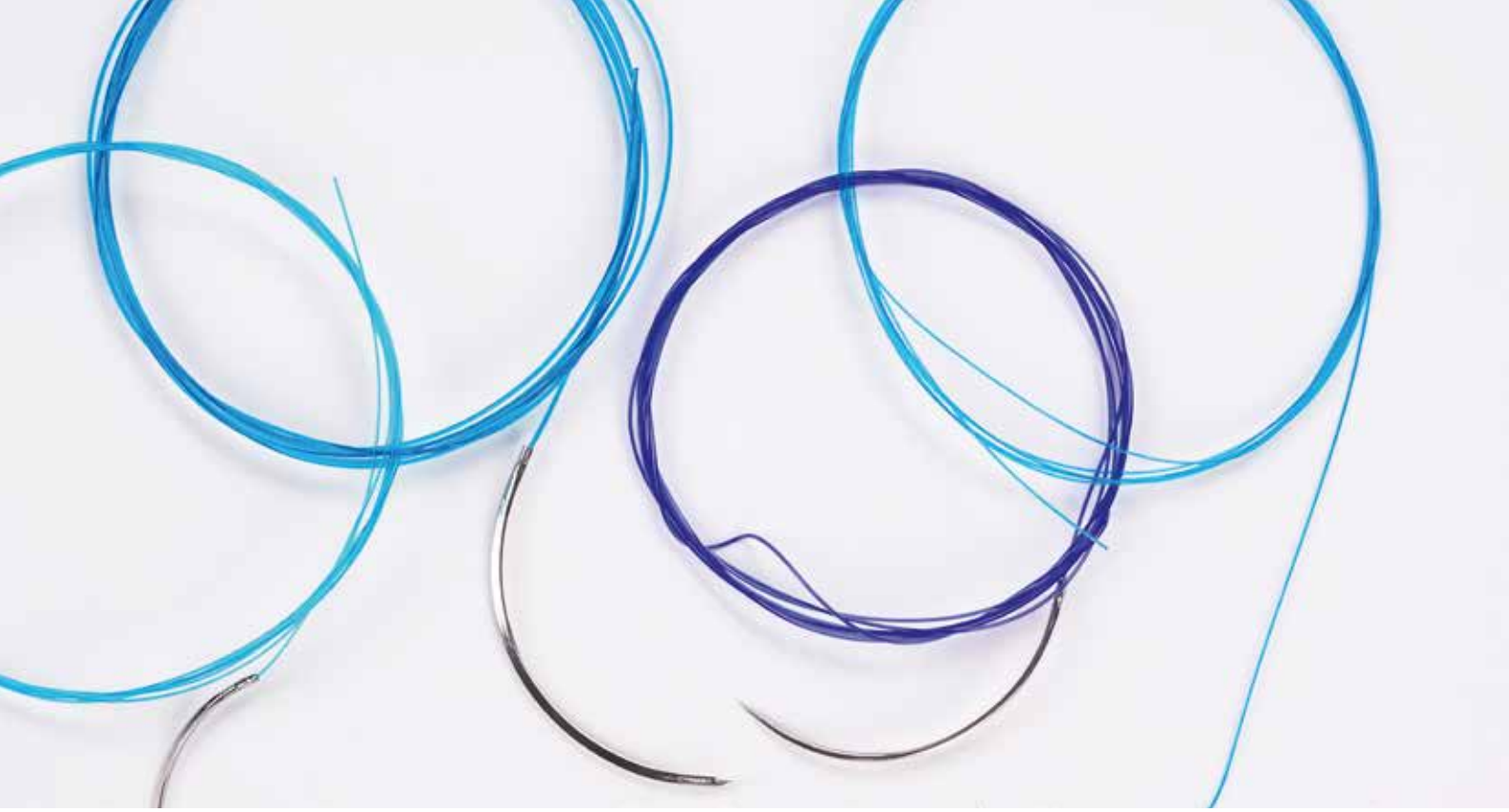
SCM SUTURE CRIMPING MACHINE

PUSHING THE STANDARD EVEN FURTHER

The SCM has been specifically designed for automated assembly and crimping of multivariant surgical sutures. It is well established on the market and has proven its capabilities throughout the world.

The machine is well established on the market and has proven its capabilities. Each suture is subjected to a pull test to guarantee a constant high-quality thread needle combination.
Finished and tested products are unloaded into stainless steel receptacles for easy handling.

- Widest product portfolio on the market
- High flexibility and low changeover time
- Fully automatic processing from feeding and thread stiffening to numerical crimping and pull testing
- Compact and optimized for clean room



Market leading performance:
up to 900 pph (with two crimps).

Quickest product **changeover** on the market: less than 10 minutes.

Compact design, optimised for clean room: 2.5m x 2.2m x 2.3 m, 1900 kg.

100% quality control with numercial pull testing and descructive testing: up to 20N pull test; over 50N descructive test.

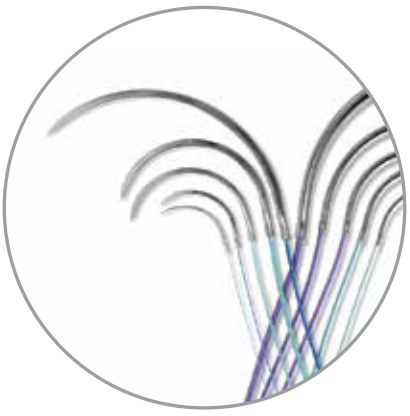
Numerical control of the crimping force: >1800 N.

Multifilament stiffening and precise cutting: <1% length deviation.

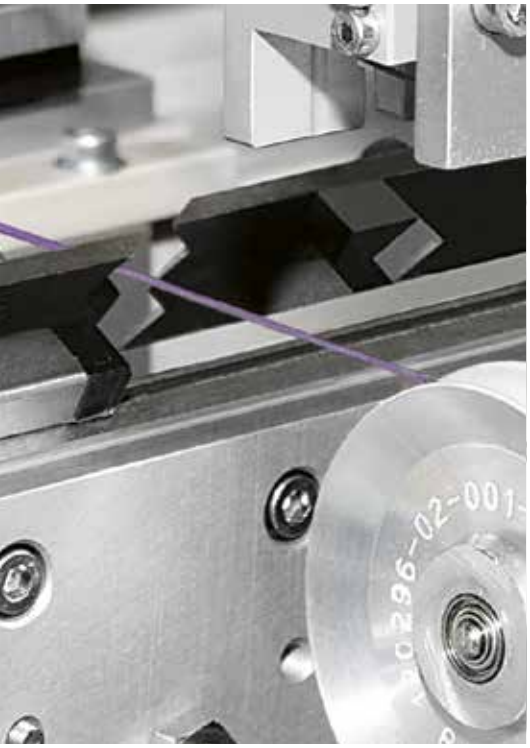
Full traceability down to each single suture: bar code scanner and log files.

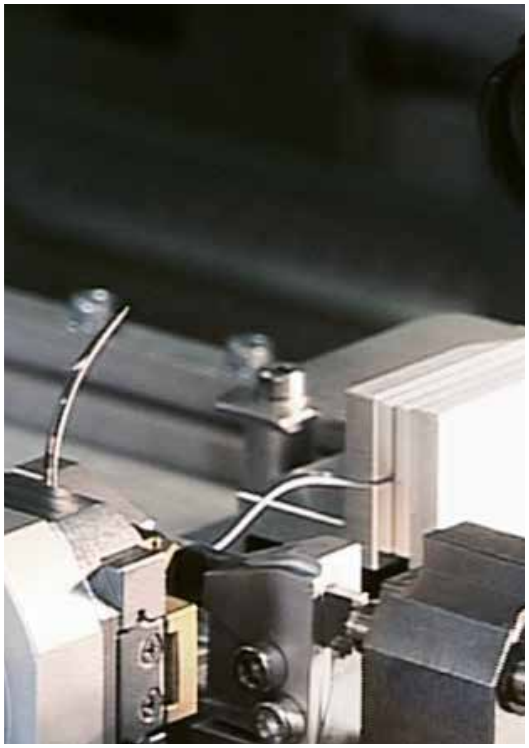
ADVANTAGES OF AUTOMATED SUTURE PRODUCTION

The SCM continuously produces a stable quality of sutures from start to finish and reliably guarantees a cost effective production in multishifts of up to 24/7. During machine operation, needles can be loaded in bulk and finished product unloaded without interruption.
A machine standstill is required only to change the thread spool or the product variant.
Despite the high degree of automation, the machine is very flexible and suitable for almost all common surgical sutures. This core advantage of the SCM leads to a minimum downtime and a maximum efficiency in production.



MAIN PROCESSES





LOADING & STIFFENING OF THE THREAD

During unwinding of thread from the spool, a controlled force is applied to guarantee a consistent product length. Detected knots in the thread are ejected automatically. Multifilament threads are stiffened thermally or with glue before being precisely cut to length.

- Automatic knot ejection
- Thermal stiffening
- Option: glue stiffening

LOADING OF NEEDLES AND ASSEMBLY ON A THREAD

Needles can be fed in bulk via a vibratory feeder. The storage container can be refilled during production, ensuring the machine's continuous performance. Needle and thread are aligned by means of a vision system before insertion.

- Bulk feeding, also during production
- USP 6-0 do USP 2 (EP0.7 to EP5)
- Recipe based detection & picking
- Vision guided assembly on thread

CRIMPING OF NEEDLE ONTO THREAD

One or multiple crimps with a monitored force are performed in this step. Between each crimping, the needle is turned to ensure highest quality. Number of crimps and crimping forces can be freely configured. The crimping tools are prevalent on the market.

- Numerical crimping
- Force monitoring of each crimp
- Standard tools prevalent on the market
- Number of crimps adjustable from 1 to 8 times

OPTIONAL PROCESSES

GLUE STIFFENING

- For products that cannot be stiffened thermally (e.g. silk)
- Fully integrated in automatic production cycle
- Easily adaptable via recipe

DOUBLE NEEDLE CAPABILITY

- For fully automatic production of double-armed sutures
- Integrated in standard machine footprint
- Full process control for both needle attachments

PULL TEST FOR QUALITY CHECK

After crimping, a pull test is performed to check the quality. A gripper, mounted on a numerical axis, holds the thread and pulls the suture until the maximum required force (1N to 20N) is reached. Selective destructive tests are also performed on this station.

- 100% quality testing
- Recipe based pull test force limits (1N-20N)
- Periodical destructive testing
- Full traceability

UNLOADING OF SUTURES

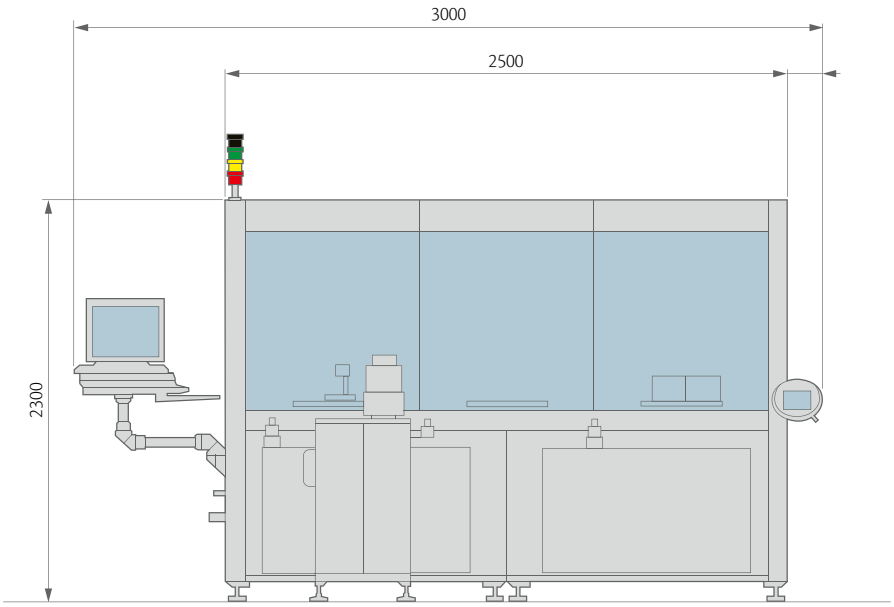
Finished good products are placed in two stainless steel receptacles. One receptacle is always accessible for manual unloading without machine or process interruption.

- Finished good products are placed in output drawers
- Bad products are ejected automatically
- Option: link to automatic winding equipment

AUTOMATIC WINDING

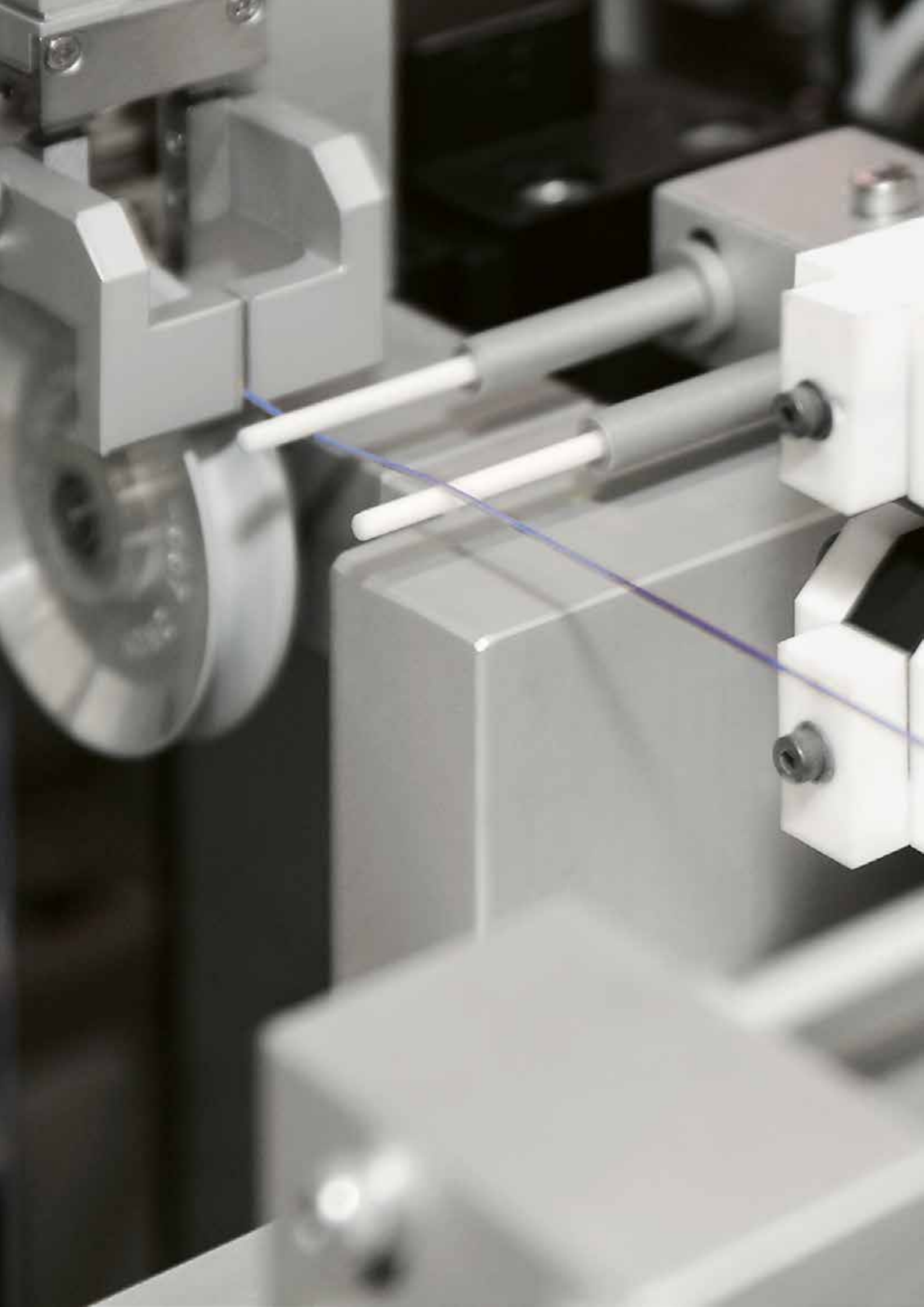
- Winding machine directly linked to crimping machine
- Customizable for your cardboard packaging
- Figure 8 and racetrack winding

TECHNICAL DATA



Typical throughput	~ 800 products/hour
Instant cycle time	4-5 seconds
Autonomy	approx. 2'000 products
Product changeover time	less than 10 minutes
Sutures	one armed suture with drilled end needles (option: double armed suture)
Needles	D- & H-types (3/8 & 1/2) / 10 to 48 mm (arc length)*
Needle design	ØR = Round-bodies, S = cutting, etc.*
Threads	mono- & multifilament / PA, PP, PGA, PVDF, PE*
Thread diameter & length	USP 6-0 to USP 2 (EP 0.7 to EP 5) from 300 mm to 1200 mm
Thread length deviation	< 1% of the thread's length
Noise level	< 75 dBA
Dimensions	2.500 x 2.200 x 2.300 mm (LxWxH)
Weight	1.900 kg
Power requirements	3x 400 VAC / 50/60 Hz / Pre-fuse 16A
Interface	HMI on handheld touchscreen & screen/keyboard

*Upon request, other needle shapes/lengths, thread materials/diameters/lengths and coatings could also be used



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December 2022 - 91SYSCMT00EN

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