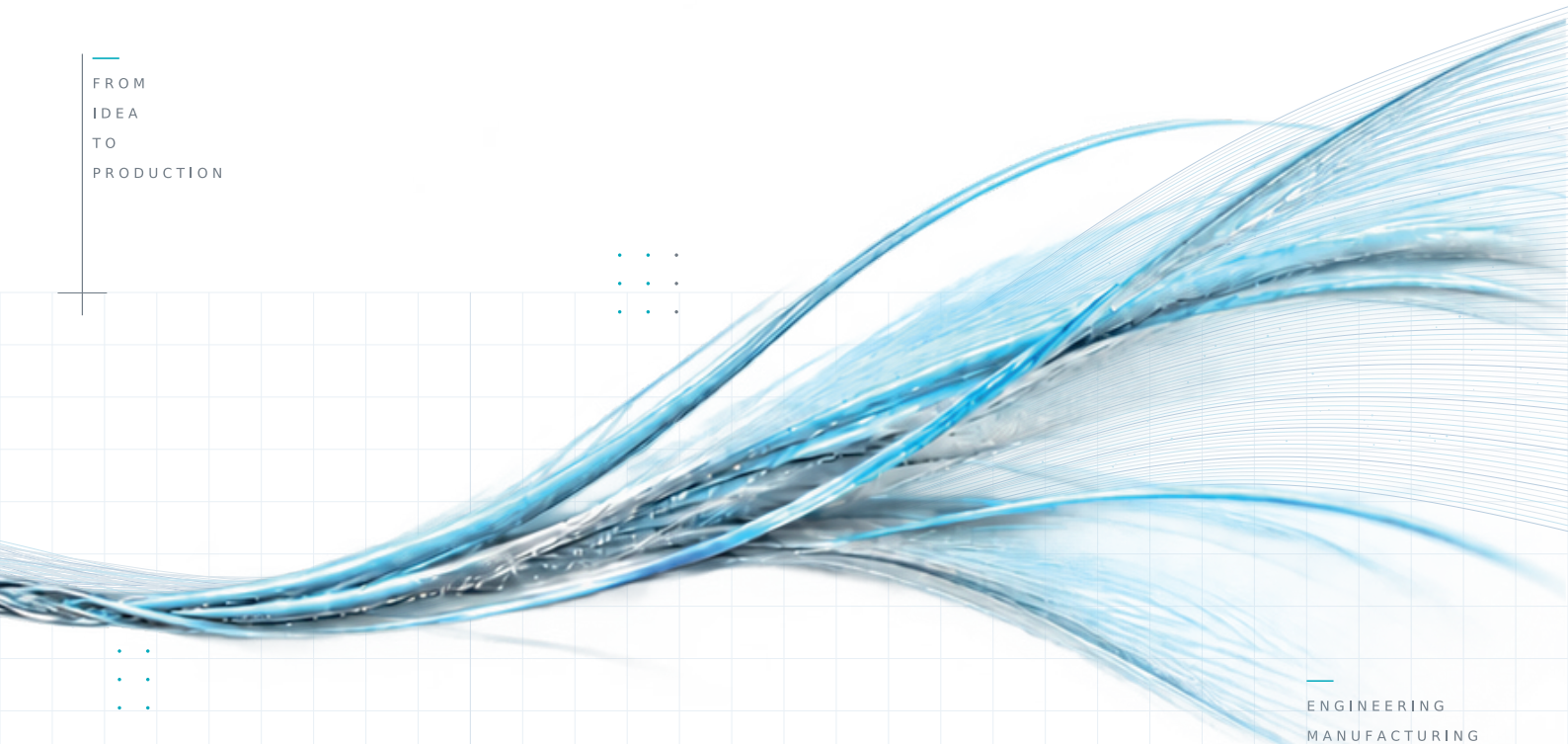
SUTURE
PRODUCTION

SURGYNIQUE
ENGINEERING SOLUTIONS

MEDICAL DEVICE
PRODUCTION SOLUTIONS

FROM
IDEA
TO
PRODUCTION



ENGINEERING
MANUFACTURING
BETTER
OUTCOMES

SRQ/CATALOG-26

SURGYNIQUE
ENGINEERING SOLUTIONS

ABOUT US

Engineering for Medical Device Production

Founded in 2020, Surgynique develops machinery and integrated engineering solutions for surgical suture and medical device manufacturers. We combine mechanical design, automation and software expertise to support projects from initial concept to production.

Suture Manufacturing Systems

Purpose-built equipment for suture preparation, needle attachment, testing,packaging, sterilization and drying.

R&D & Custom Machinery

Product development, prototyping and tailored machinery designed around your process and production requirements.

Qualification & Validation Support

Technical documentation and support for IQ, OQ, PQ and software validation activities.

30+
Countries Served

40+
Projects Delivered

20+
Machine Systems

SURGYNIQUE / İZMİR, TURKİYE



FROM CONCEPT TO PRODUCTION

Turnkey Suture Manufacturing Facilities

CE ISO 9001
QUALITY MANAGEMENT SYSTEM

From feasibility and facility planning to machinery integration and pilot production,
we bring equipment, process know-how and engineering support together in one coordinated project.

- **Feasibility & Production Planning**
- **Facility Layout & Cleanroom Design**
- **Machinery & Equipment Integration**
- **Technology Transfer & Process Know-How**

Planning / Engineering / Integration / Pilot Production

Precision at every stage.

Suture Production Equipment

WINDING, STIFFENING & CUTTING SOLUTIONS

SURGYWIND IR



WINDING & INFRARED STIFFENING & CUTTING MACHINE

SURGYWIND GLUE



MULTIFILAMENT WINDING & GLUE STIFFENING MACHINE

SURGYWIND MONO



MONOFILAMENT WINDING & CUTTING MACHINE

DRY STORAGE & HANDLING SOLUTIONS

SURGYDRY



DRY CABINETS

SURGYBOX



GLOVE BOX

QUALITY CONTROL & TESTING SOLUTIONS

SURGYFORCE



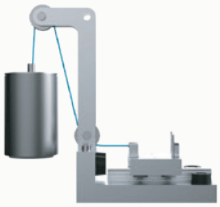
NEEDLE PENETRATION FORCE MEASURING & BENDING MOMENT TEST DEVICE

SURGYTEST



TENSILE TESTER

SURGYPULL



PULL TESTER

SURGYLEAK



POUCH LEAK TESTER

SURGYDIM



SUTURE DIAMETER MEASURING DEVICE

SURGYNIQUE
ENGINEERING SOLUTIONS

From assembly to completion.

Suture Production Equipment

CRIMPING SOLUTIONS

SURGYCRIMP



DRILLED & SUTURE CRIMPING MACHINE

CRIMP CHANNEL



CHANNEL TYPE NEEDLE CRIMPING MACHINE

CRIMP MICRO



OPHTHALMIC & MICRO NEEDLE CRIMPING MACHINE

CARD & TRAY WINDING SOLUTIONS

SURGYSETS



BARBED & CARD WINDING SETS

SURGYRACE



SEMI-AUTOMATIC RACE TRAY WINDING MACHINE

STERILIZATION & DRYING SOLUTIONS

SURGYSTER DRY



ETHYLENE OXIDE STERILIZATION & VACUUM DRYING MACHINE

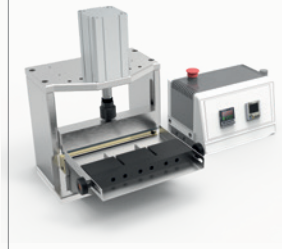
PACKAGING SOLUTIONS

SURGYPACK



MEDICAL DEVICE THERMOFORMING PACKAGING MACHINE

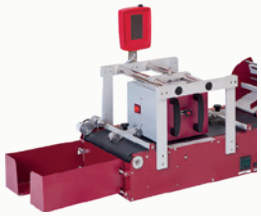
SURGYSEAL



BAR SEALER

PRINTING SOLUTIONS

SURGYPRINT

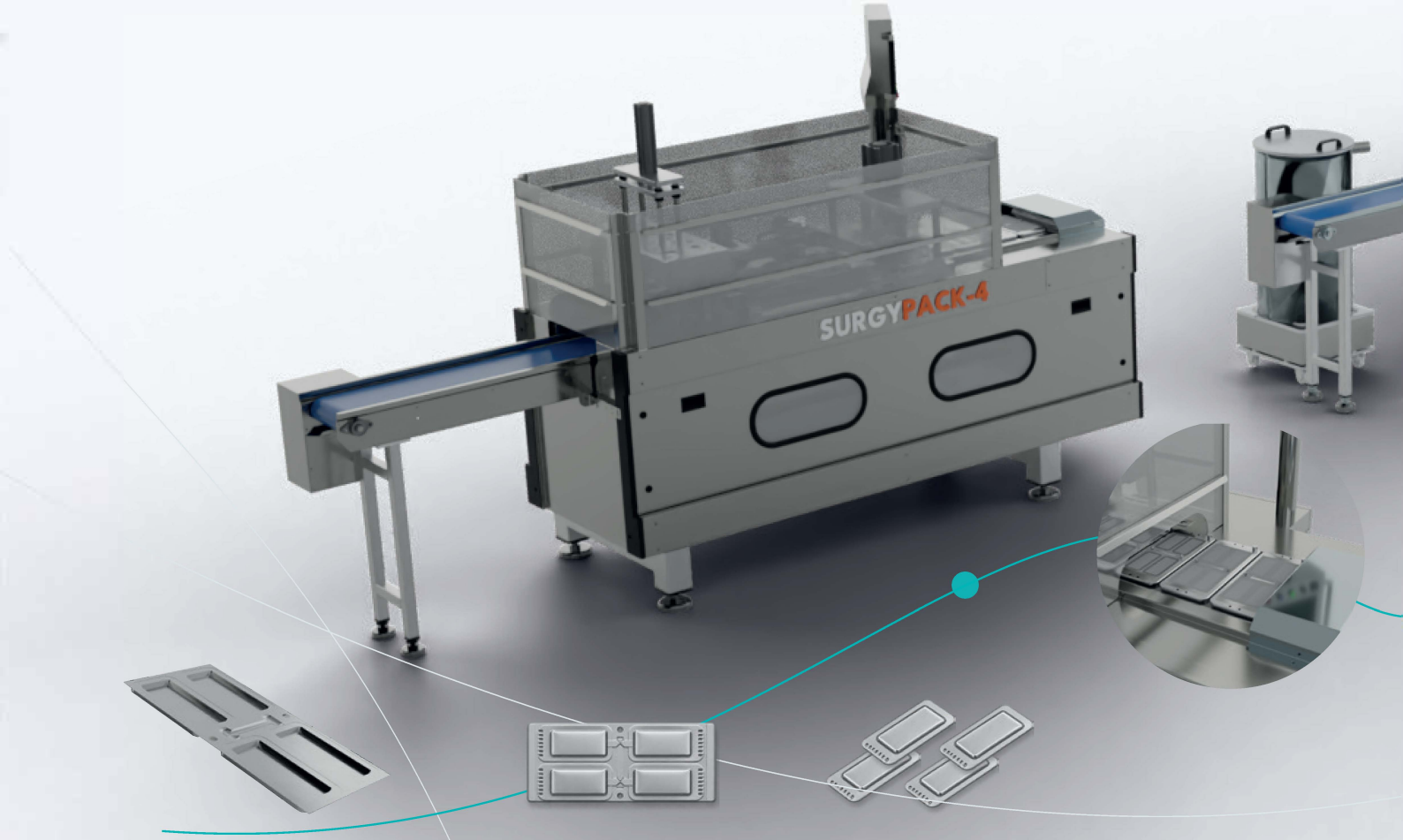


SUTURE CARD AUTONOMOUS PRINTING SYSTEM

SURGYPACK

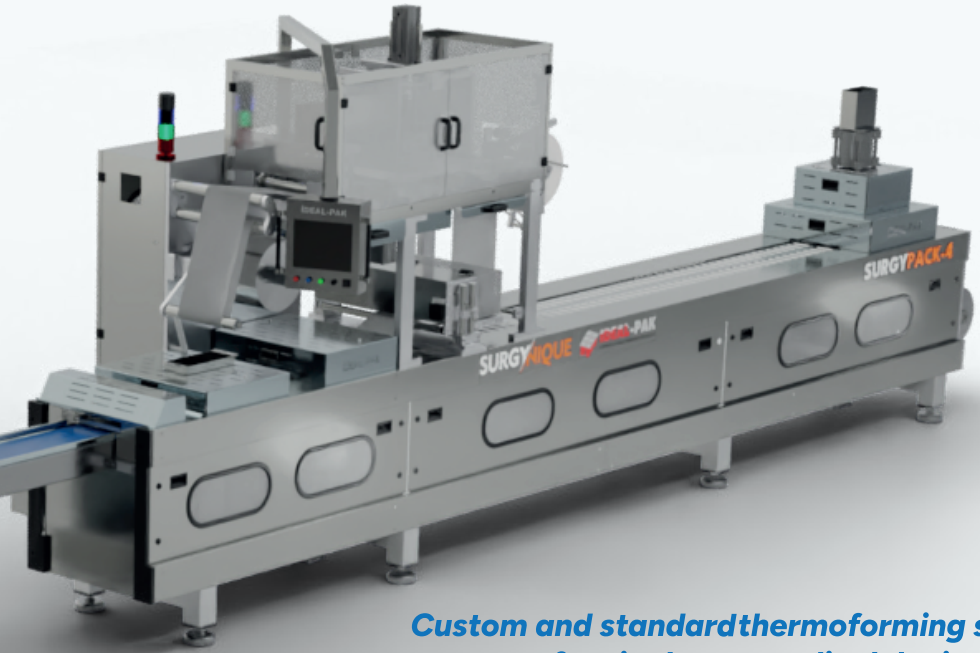
MEDICAL DEVICE THERMOFORMING PACKAGING MACHINE

- Aluminum-based thermoforming for surgical sutures
- Four-pouch format with Tyvek® window for absorbable sutures
- Integrated automatic sealing,cutting and thermal printing
- Reduced packaging material and production costs
- Robotic feeding and nesting options



SURGYNIQUE
ENGINEERING SOLUTIONS

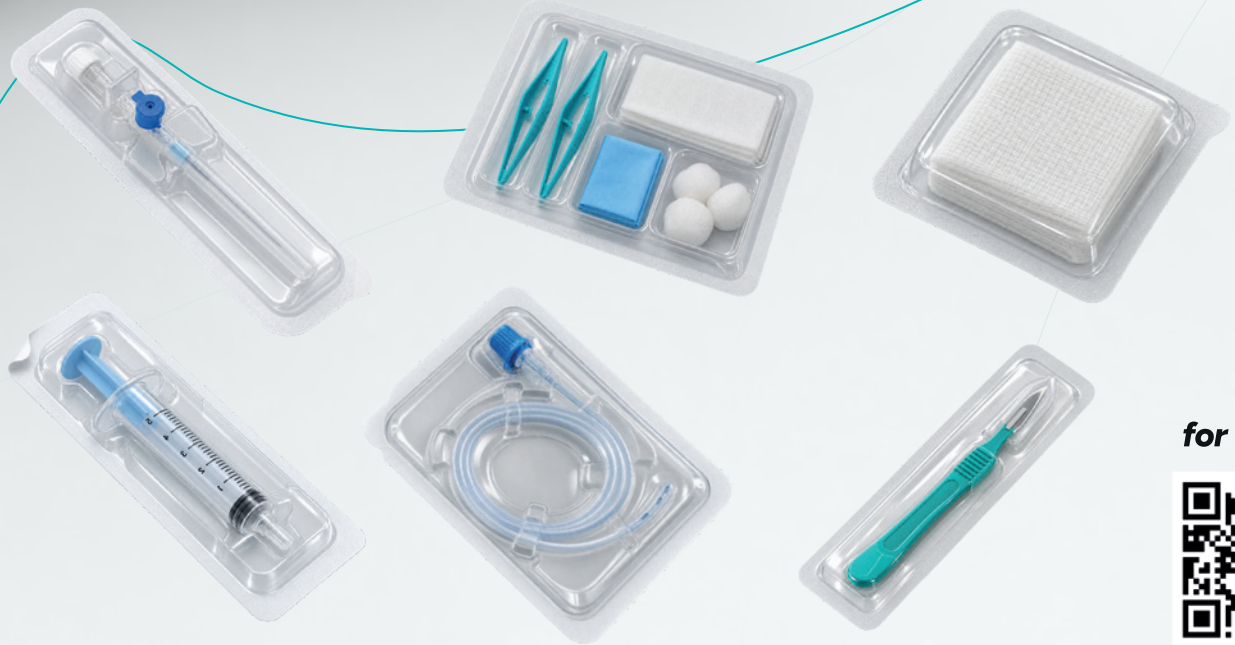
SURGYNIQUE
ENGINEERING SOLUTIONS



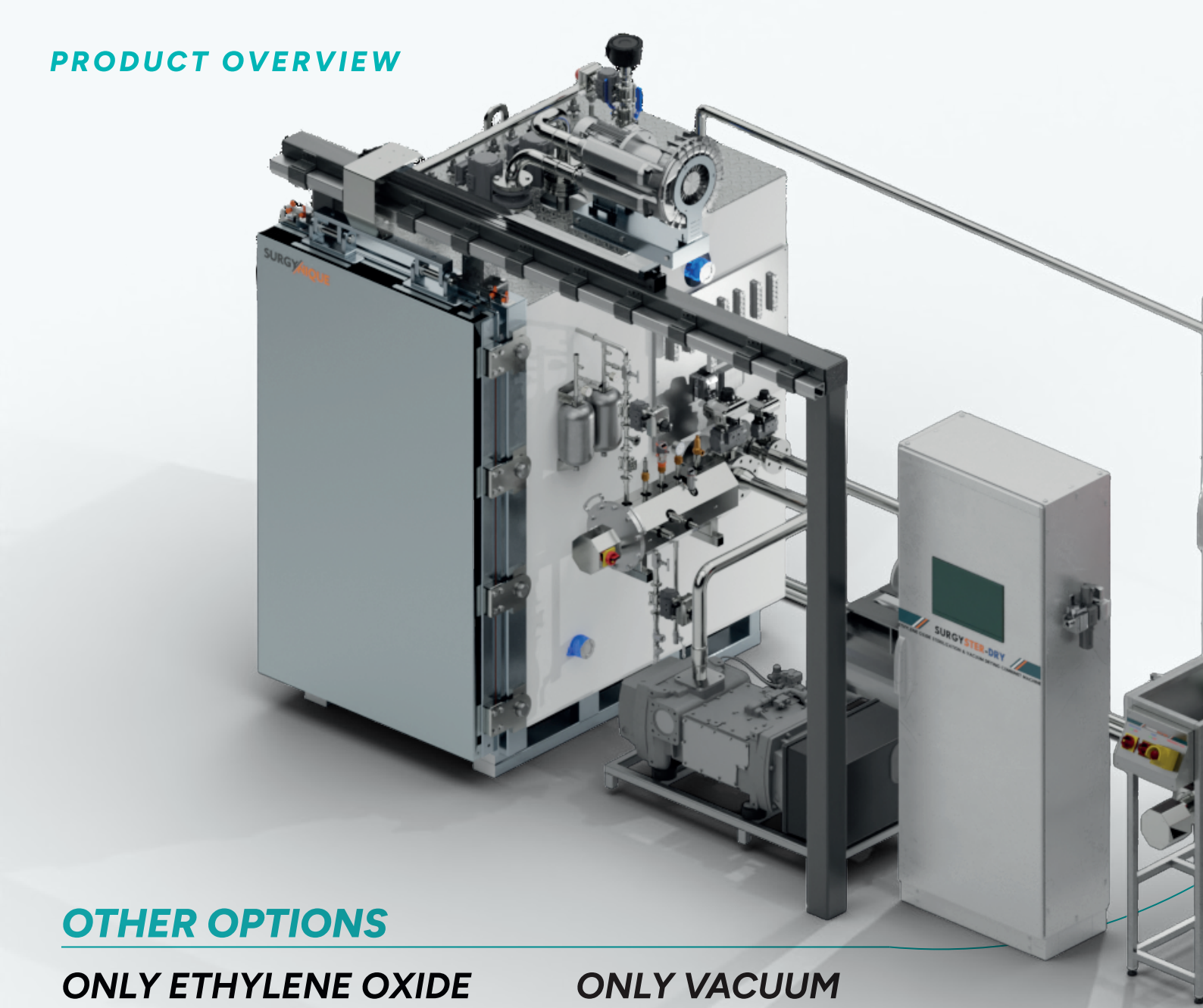
IN PARTNERSHIP WITH

IDEAL-PAK
Otomatik Ambalaj Makinaları Sanayi A.Ş.

Custom and standardthermoforming solutions for single use medical device



for details



OTHER OPTIONS

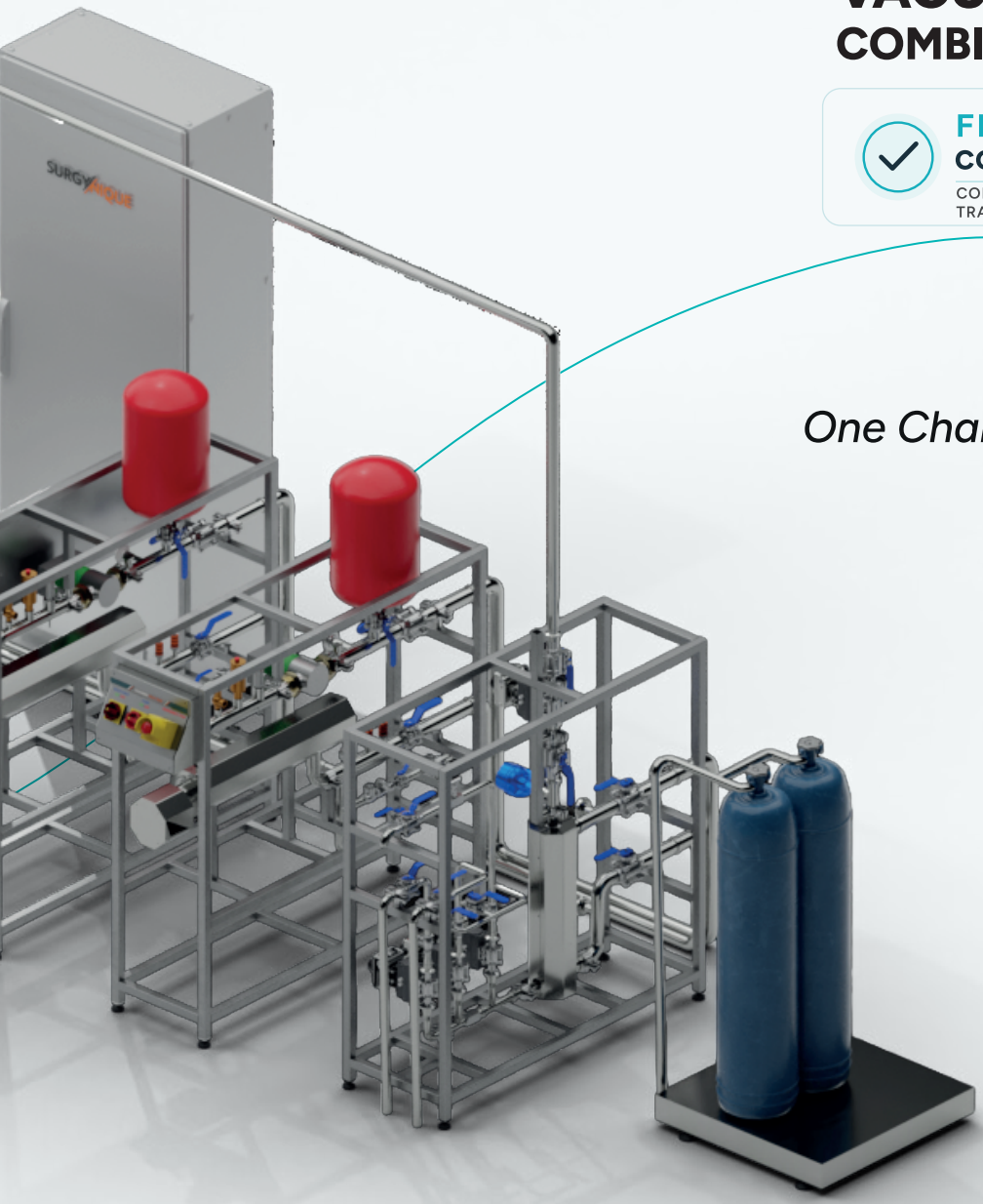
ONLY ETHYLENE OXIDE STERILIZATION MACHINE

ONLY VACUUM DRYING MACHINE

SURGYSTER - DRY

ETHYLENE OXIDE STERILIZATION & VACUUM DRYING COMBINED MACHINE

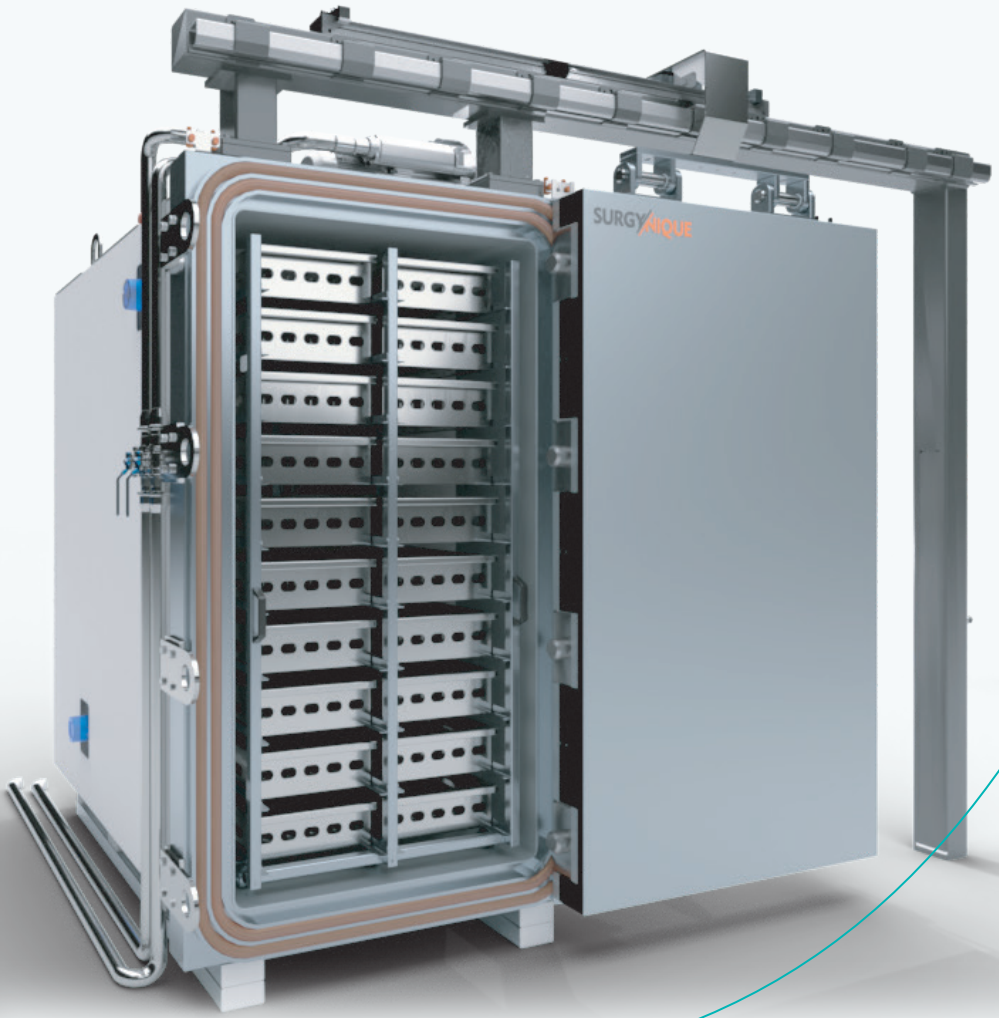
FDA | EU MDR
COMPLIANCE SUPPORT
CONTROLLED EO CYCLES /
TRACEABLE BATCH RECORDS



One Chamber, Many Tasks ...

for details

SURGYNIQUE
ENGINEERING SOLUTIONS



Chamber Volume *m3	Euro Pallet Capacity
1,6	-
2,8	-
6	2
10	4
15	6
20	8
27	10
34	12
40	14
44	16
50	18
62,5	24

Atex certified components

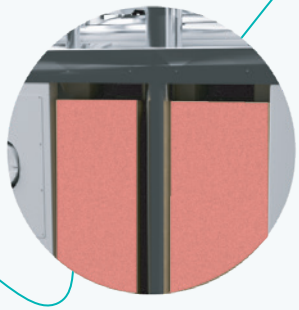
316L Stainless Steel Chamber - Modular Units for Easy Maintenance



Pneumatically actuated sliding doors with automatic locking system



Double inflatable gasket system for extra safety

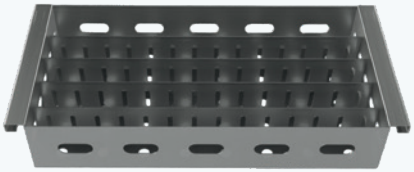


Thermal Isolation in chamber walls for Energy effciency.

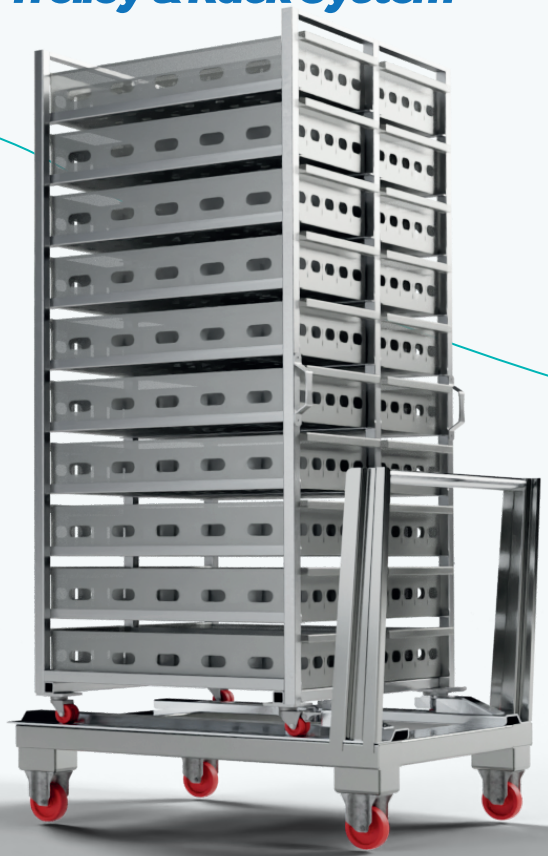


Water Jacket Heating System in All surfaces.

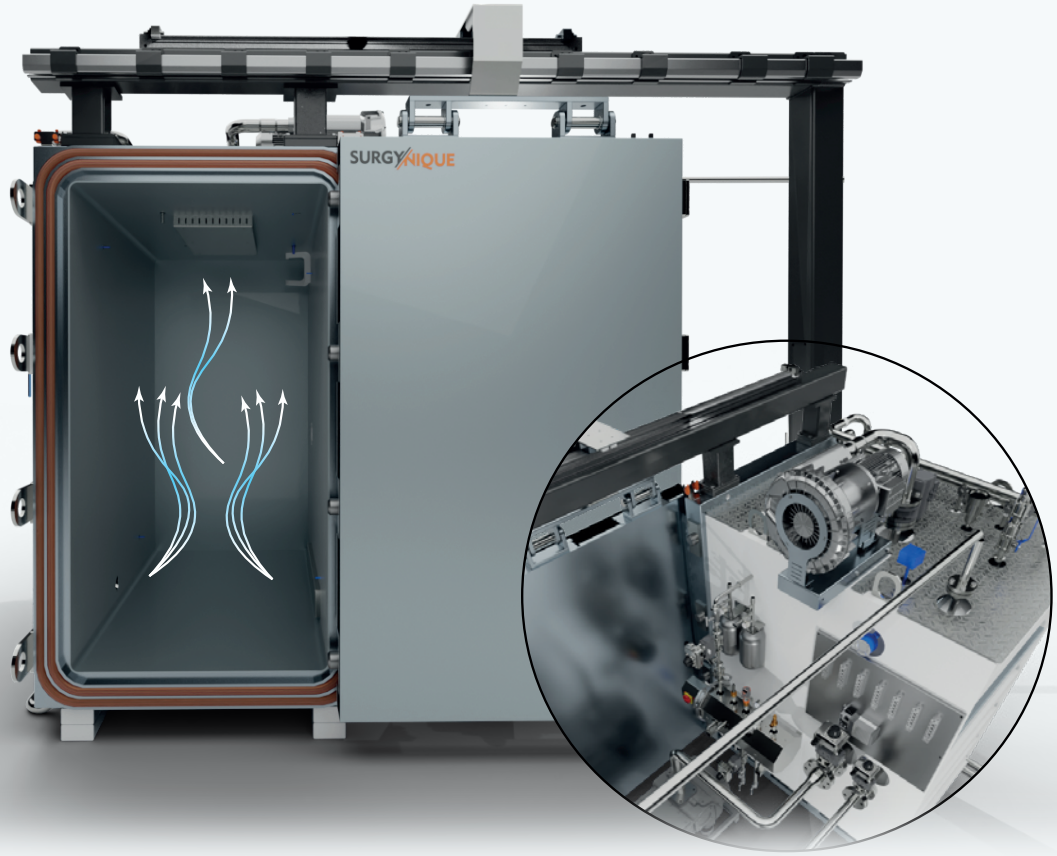
Custom Perforated Baskets for Uniform Gas Distribution



Easy-Handling Trolley & Rack System



Recirculation Unit



Unique Closed-Loop Blower Powered Gas Recirculation System

Homogeneous Gas and Temperature Distribution

Efficient Heat Transfer to the products

Better exposure to EO gas

ethylene oxide

The system helps maintain a homogeneous distribution of critical parameters such as temperature, relative humidity, and ethylene oxide (EO) concentration throughout the entire load. This uniformity is essential for achieving effective sterilization results and ensuring process reliability and validation compliance.

Heat Skid Unit



Controls the water jacket and vaporizer temperature according to the sensor feedback

Works as closed circuit

Heater power and flow rates are controlled

Vaporizer Unit

Heats the EO and Nitrogen gases

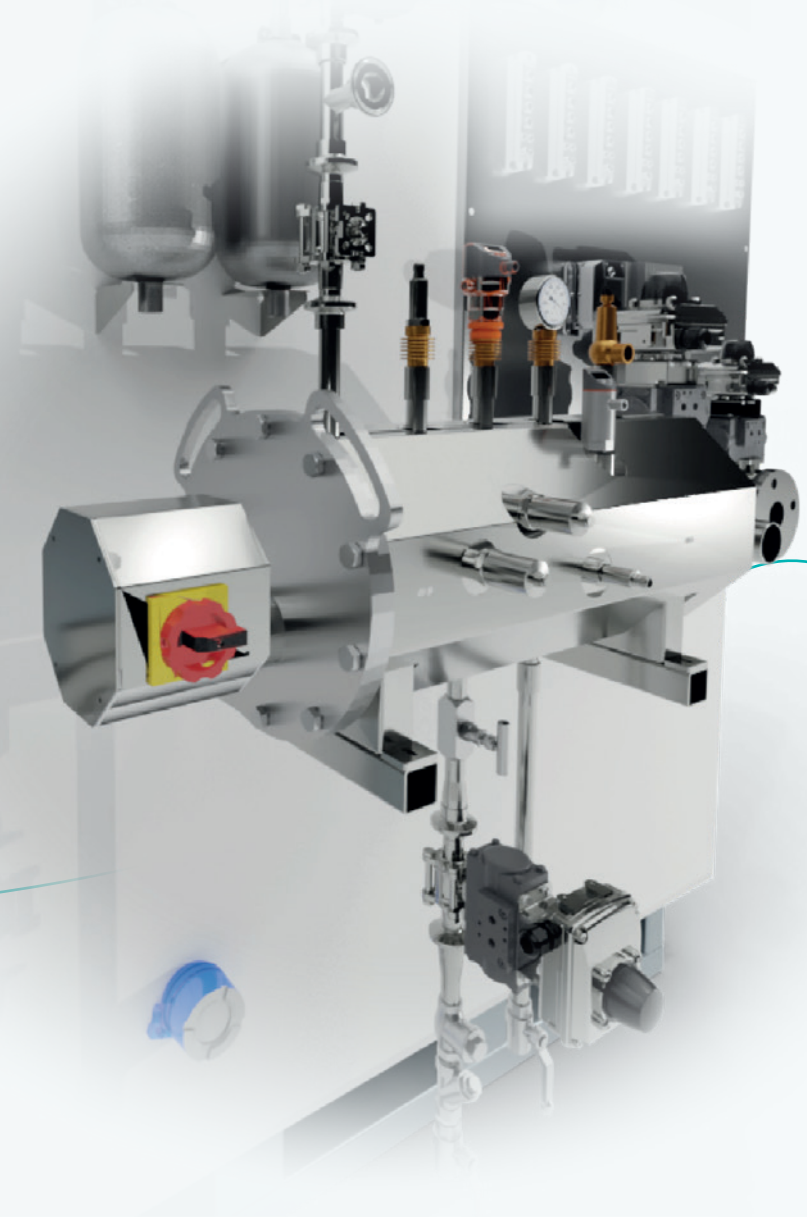
Helps Prevent Gas Freezing.

Pressure and Temperature continuosly monitored

Atex certified components



Steam Generator Unit



Controlling the humidity
in the chamber

Temperature and Water
level control

Pressure relief valve
for safety

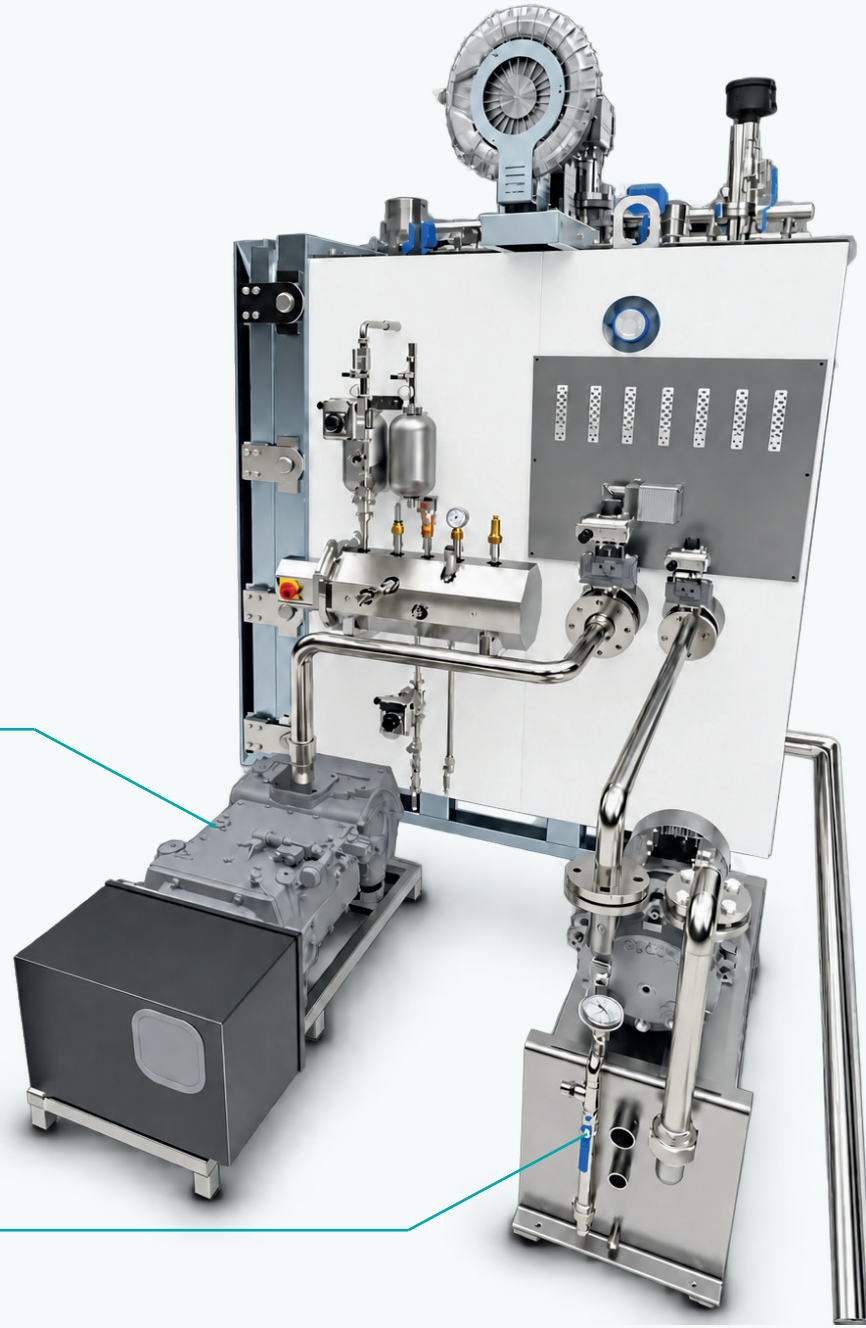
Equipped with Pressure
and Temperature Sensor & Switches

Automatic level indication
and filling

SURGYNIQUE
ENGINEERING SOLUTIONS

A two-stage Vacuum System

ensures rapid evacuation and
deep vacuum performance



Drying Process

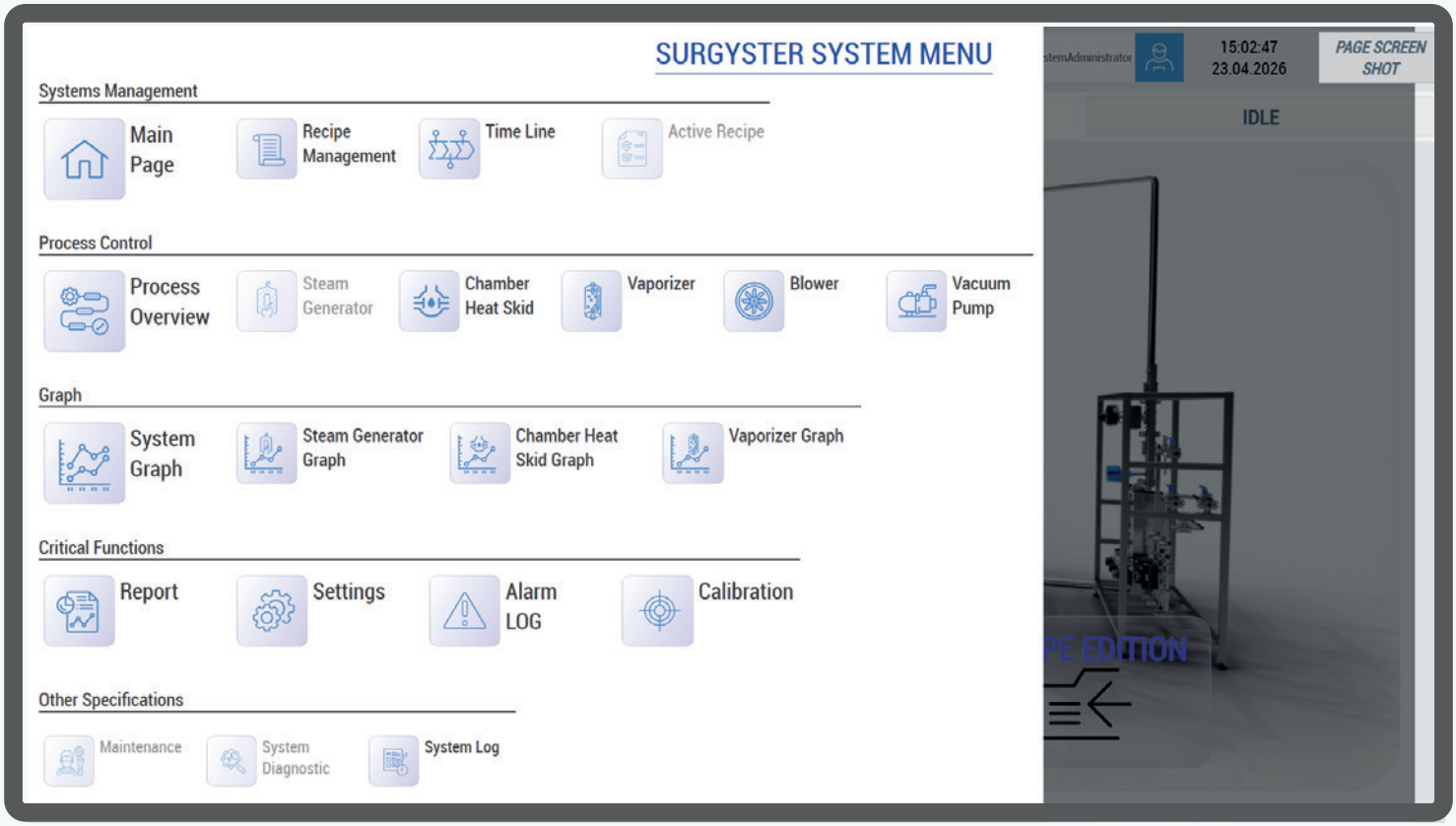
Dry Screw Vacuum Pump

Sterilization Process

Liquid Ring Pump



SURGYSTER DRY uses a Beckhoff PC-based PLC control system with a graphical HMI for operation and monitoring. Operators can manage recipes, view process parameters and trends, access individual system units, and review alarms and reports from a central interface. Dedicated calibration, diagnostics and system log pages support daily operation and maintenance.

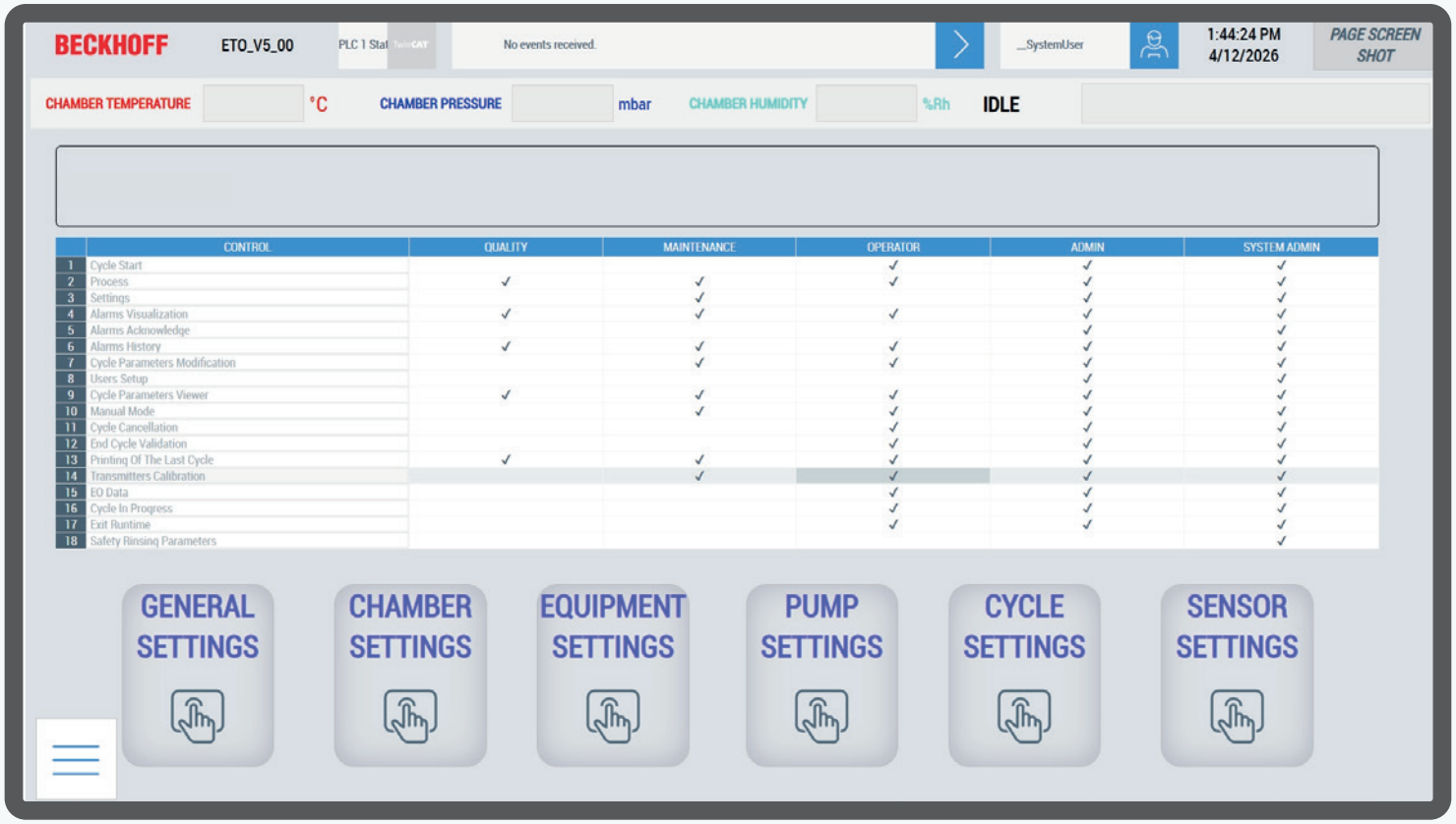


All System. One Interface. Complete Control.

Complete Process Control

Live Chamber Temperature, Pressure & Humidity

Clear Cycle Status at a Glance



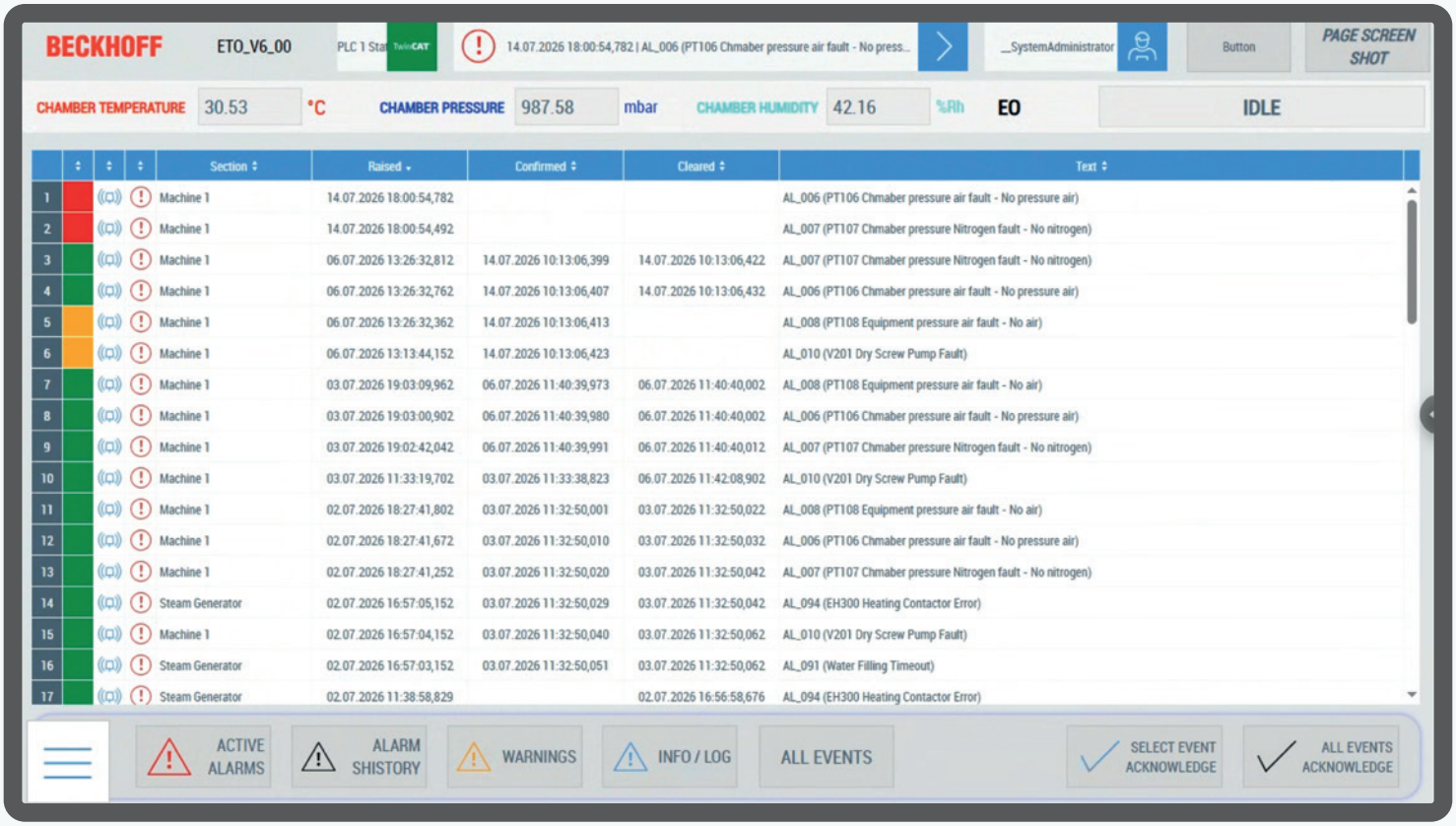
	CONTROL	QUALITY	MAINTENANCE	OPERATOR	ADMIN	SYSTEM ADMIN
1	Cycle Start			✓	✓	✓
2	Process	✓	✓	✓	✓	✓
3	Settings		✓		✓	✓
4	Alarms Visualization	✓	✓	✓	✓	✓
5	Alarms Acknowledge				✓	✓
6	Alarms History	✓	✓	✓	✓	✓
7	Cycle Parameters Modification		✓	✓	✓	✓
8	Users Setup				✓	✓
9	Cycle Parameters Viewer	✓	✓	✓	✓	✓
10	Manual Mode		✓	✓	✓	✓
11	Cycle Cancellation			✓	✓	✓
12	End Cycle Validation			✓	✓	✓
13	Printing Of The Last Cycle	✓	✓	✓	✓	✓
14	Transmitters Calibration		✓	✓	✓	✓
15	EO Data			✓	✓	✓
16	Cycle In Progress			✓	✓	✓
17	Exit Runtime			✓	✓	✓
18	Safety Rinsing Parameters					✓

The Right Access. The Right Control. At Every Level.

Role - Based Access Control

Advanced User Authorization Management

Detailed System Configuration

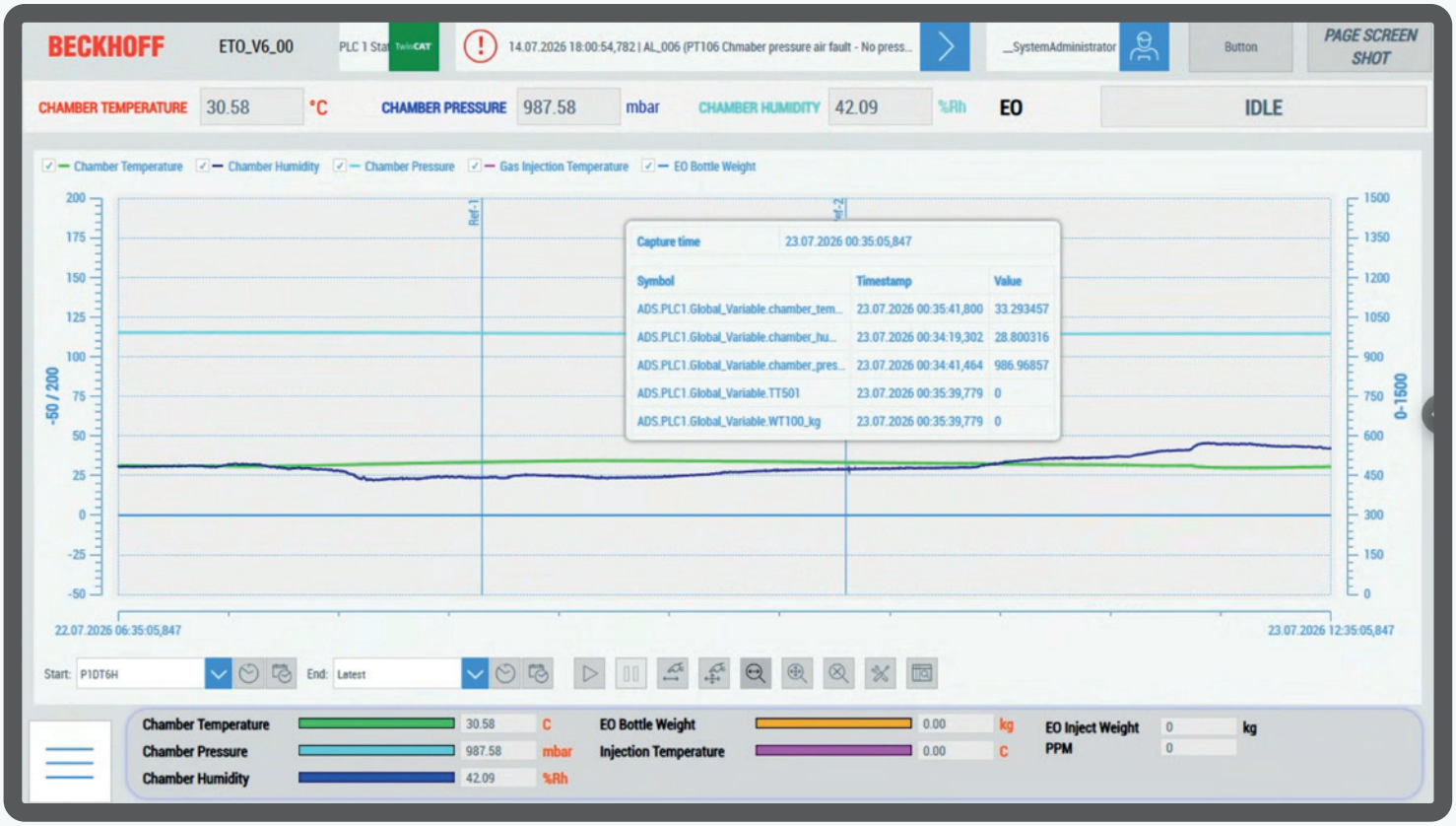


Every Alarm. Every Action. Fully Traceable.

Real-Time Alarm Monitoring

Time-Stamped Alarm History

Raised, Acknowledged & Cleared Records

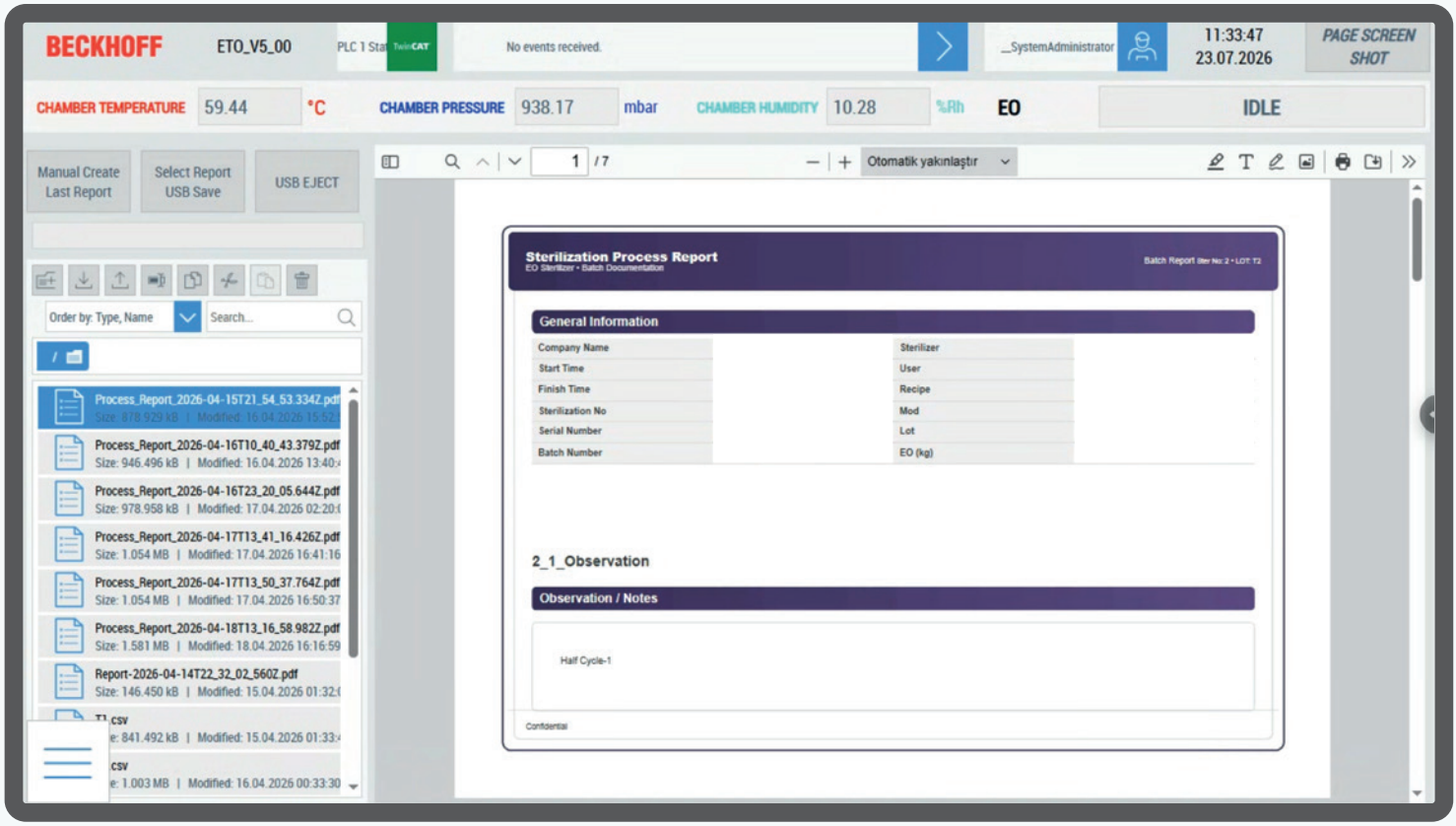


All Parameters. Every Moment. Clearly Visible.

Five Key Process Trends in One View

Time Cursor with Recorded Values

Live Readings at a Glance



All Cycle Details. Clearly Documented.

Batch-Specific Process Reports

Full Cycle History

Detailed Process Curves

Up to 5 Years of Report Storage *

*Capacity calculated based on one cycle per day.



WINDING
INFRARED
STIFFENING
CUTTING
MACHINE

5 times faster than a conventional heat stiffening machine.

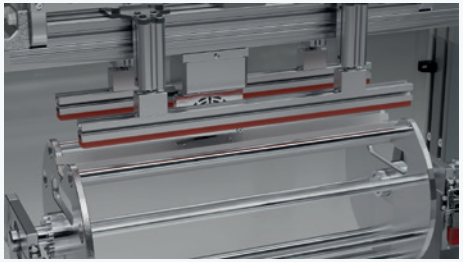
for details

Built for Speed. Engineered for Consistency.

No Glue required.

Standard operations ensure the same quality in every suture

High Speed Rotary Cutting Blade provides smooth cut



45 - 50 - 60 - 70- 75 - 90 - 100 - 120 - 150 cm

(Any custom size can be added)

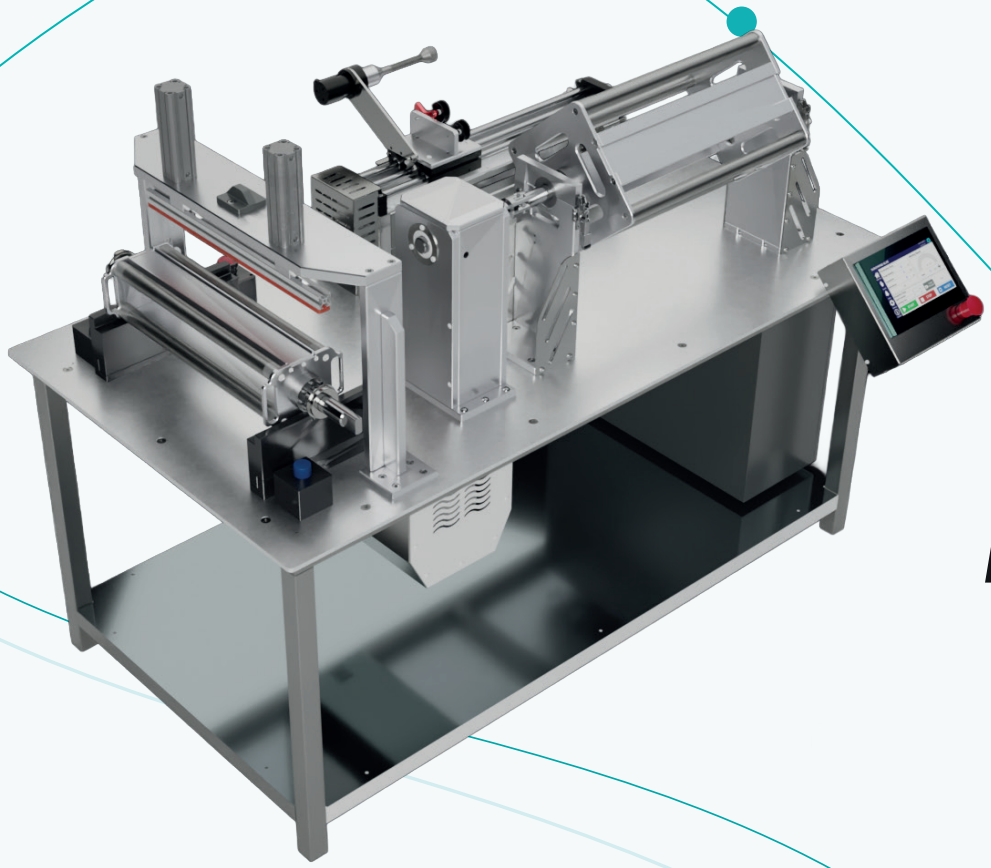
MULTIFILAMENT SUTURES

PGA	Heat	USP 5/0 to 5 *
PGA Rapid (Quick)	Heat	USP 5/0 to 5 *
PGLA	Heat	USP 5/0 to 5 *
PGLA Rapid (Quick)	Heat	USP 5/0 to 5 *
SILK	Glue	USP 7/0 to 5 *
UHMWPE	Heat / Glue	USP 6/0 to 2 *
POLYESTER	Heat / Glue	USP 6/0 to 2 *

MONOFILAMENT SUTURES

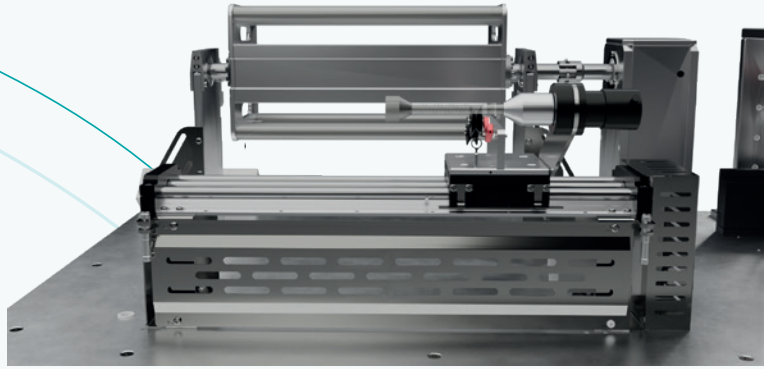
PGCL	Wind & Cut Mode	USP 6/0 to 2
PDO/PDS	Wind & Cut Mode	USP 6/0 to 2
PA (Nylon)	Wind & Cut Mode	USP 6/0 to 2

* Multifilament sutures can also be processed in wind & cut mode with glue application in smaller USP sizes like USP 6/0 to USP 8/0.



WINDING GLUE STIFFENING MACHINE

Low investment cost, High efficiency



for details

Fast Winding. Glue Stiffening Made Simple.

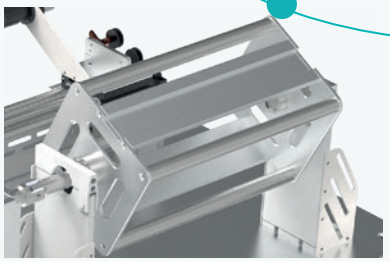
An economical solution for multifilament suture preparation. The machine winds sutures automatically to the preset count, while the operator performs glue stiffening and transfers the pulley to the cutting station for manual rotary-blade cutting.

Adjustable tension control depending on product type

Manual Cutting Station with Manual Cutting Blade

Automatic Winding- Manual Stiffening & Cutting

MULTIFILAMENT SUTURES		
PGA	Wind, Stiff with Glue., & Cut	45-150 cm
PGA Rapid (Quick)	Wind, Stiff with Glue., & Cut	45-150 cm
PGLA	Wind, Stiff with Glue., & Cut	45-150 cm
PGLA Rapid (Quick)	Wind, Stiff with Glue., & Cut	45-150 cm
SILK	Wind, Stiff with Glue., & Cut	45-150 cm
UHMWPE	Wind, Stiff with Glue., & Cut	45-150 cm
POLYESTER	Wind, Stiff with Glue., & Cut	45-150 cm



45 - 50 - 60 - 70- 75 -

90 - 100 - 120 - 150 cm

(Any custom size can be added)



MONOFILAMENT WINDING CUTTING MACHINE

Easy to use,
Double Capacity

for details

Precise Winding. Cut-to-Length Made Simple.

Winds monofilament sutures to a selected length and prepares them for cutting. Its dual-pulley design increases winding capacity, while adjustable speed and tension help accommodate different suture types.

Double pulley system allows to increase capacity

Adjustable tension control depending on product type

Manual Cutting Groove for Scissors

SUTURES		
PGA (W/O needle)	Wind, & Cut	USP 6/0 to 7
PGLA (W/O needle)	Wind, & Cut	USP 6/0 to 7
PGAR (W/O needle)	Wind, & Cut	USP 6/0 to 7
PGLAR (W/O needle)	Wind, & Cut	USP 6/0 to 7
PGCL	Wind, & Cut	USP 6/0 to 7
PDO	Wind, & Cut	USP 6/0 to 7
PP	Wind, & Cut	USP 6/0 to 7
PA	Wind, & Cut	USP 6/0 to 7
SILK(W/O needle)	Wind, & Cut	USP 6/0 to 7
UHMWPE	Wind, & Cut	USP 6/0 to 7



45 - 50 - 60 - 70- 75 -

90 - 100 - 120 - 150 cm

(Any custom size can be added)

DRY CABINETS

- Low-humidity storage for unfinished and finished absorbable sutures, preserving their physical and mechanical properties
- Rapid humidity reduction to below 1% RH with electronically controlled desiccant drying
- Automatic self-regeneration; no external nitrogen or dry-air supply required
- User-friendly interface with continuous monitoring, data logging and export
- 1500 L and 735 L capacities with adjustable modular shelving



Double Door
1500 L

for details

ADJUSTABLE

1 % RH



Single Door
735 L

Energy efficient.

Racks can be customized.

Different Sizes are available.

Keep your products Dry

SURGYBOX

GLOVE BOX



Easy and safe use with disposable gloves.

- High Energy Efficiency
- No need for nitrogen, provides rapid drying with the aid of internal drying unit
- Environment humidity adjustable up to 1 RH
- Adjustable and customizable compartment size and number
- Different sizes and capacities available
- Material input compartment option

for details

ADJUSTABLE

1 % RH ↓

Safe and Easy Operation in Low Humidity Environment



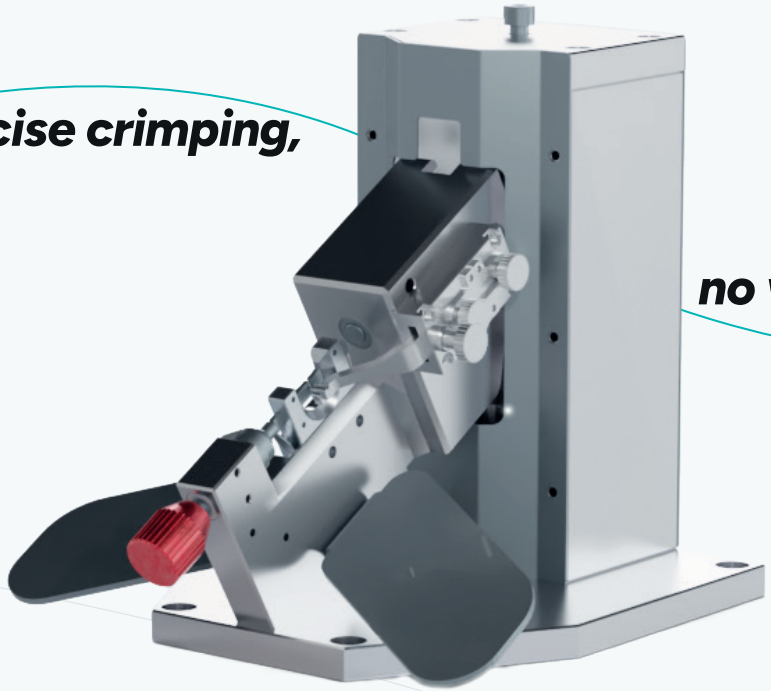
SURGYBOX	Number of Dryers	Number of Operators to Work Simultaneously
Single Compartment	1	1
Double Compartment	2	2
Triple Compartment	2	3

SURGYNIQUE
ENGINEERING SOLUTIONS

SURGYCRIMP

DRILLED END SUTURE CRIMPING MACHINE

Precise crimping,



no worries

Precise attachment operation

Manual and Pneumatic actuation options

Precise pressure adjustment knob

V-Guide option

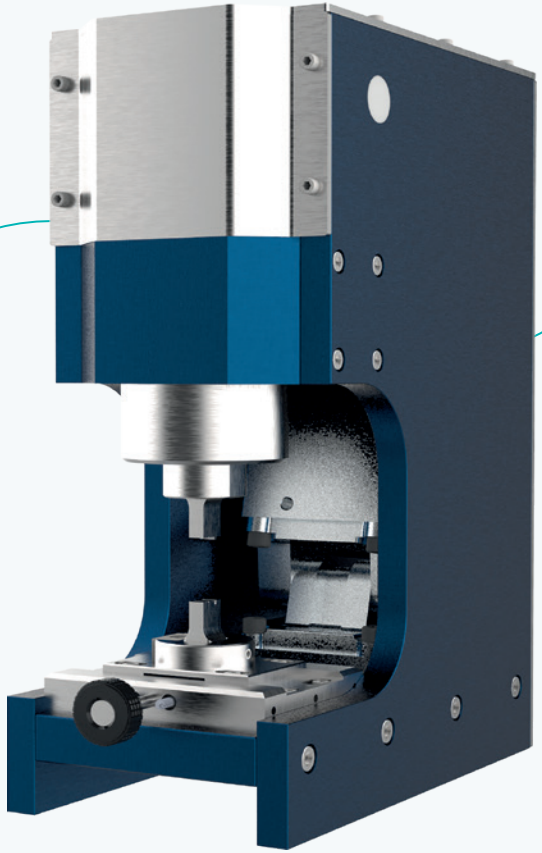
2D Camera option

for details

SURGYCRIMP CHANNEL

SURGYNIQUE
ENGINEERING SOLUTIONS

CHANNEL TYPE NEEDLE CRIMPING MACHINE



Reliable crimping for all size of Channel type needles.

for details

SURGYNIQUE
ENGINEERING SOLUTIONS

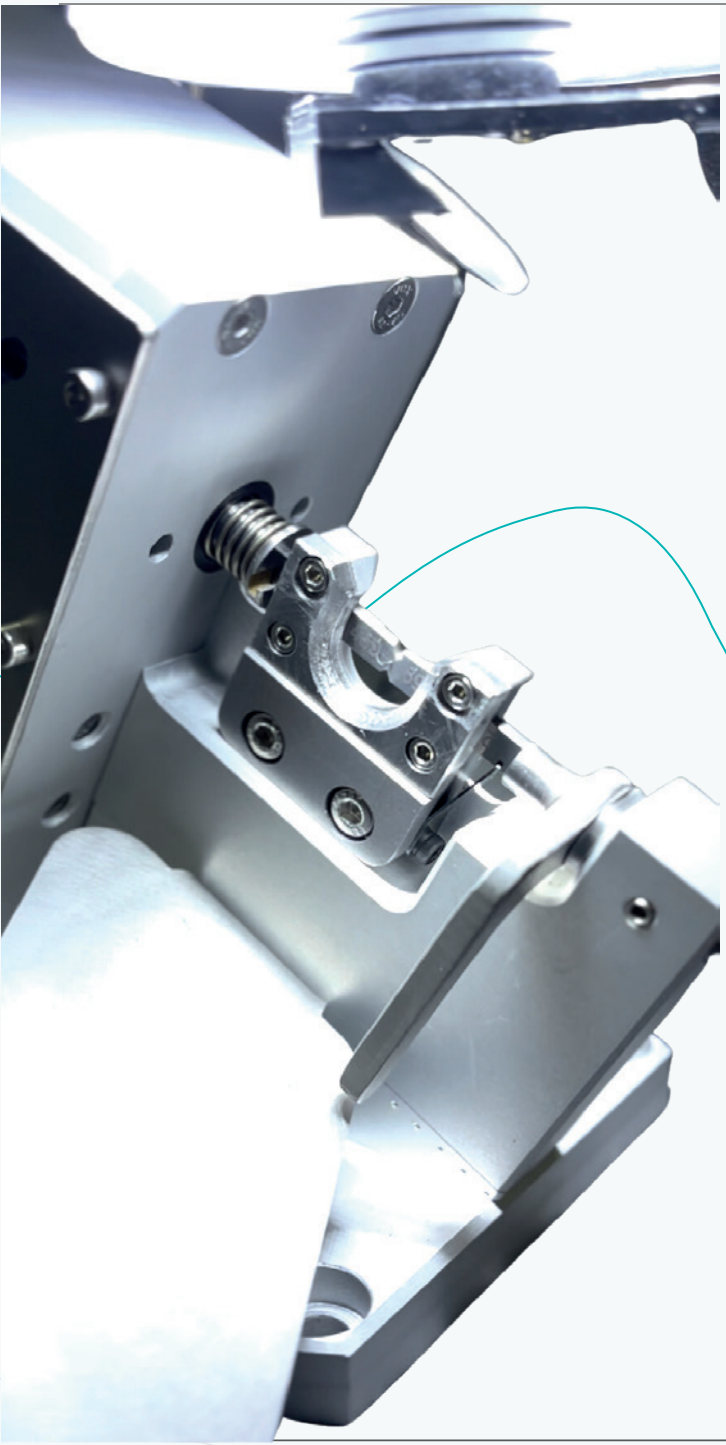
SURGYCRIMP MICRO

OPHTHALMIC AND MICRO NEEDLE CRIMPING MACHINE



3D Vision, comfortable operators, more productivity in micro sutures.

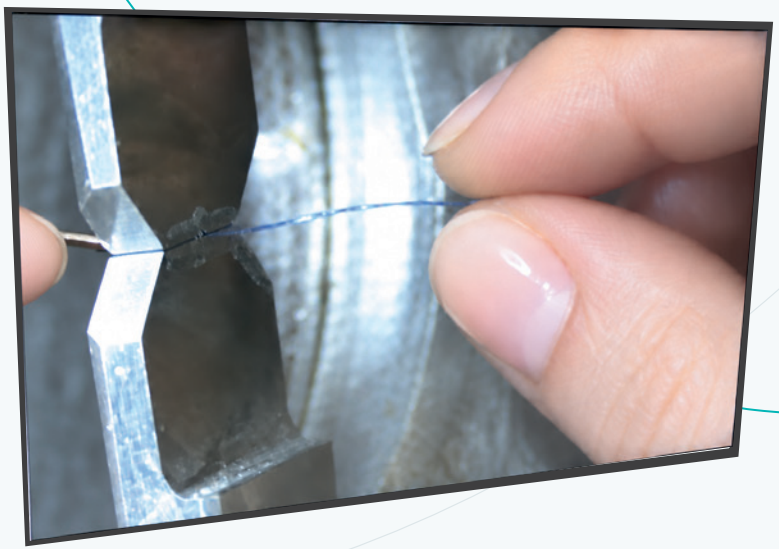
for details



Attaching small USP sutures to micro needles is a difficult job. Conventional Microscopes are lacking depth feeling and the Eye Piece might be very uncomfortable for the operator. This leads to fatigue of the operator and eventually the operator makes mistakes and has to take a break. The 3D microscope in this product provides excellent view of the attaching area and a lot of comfort to operator. The operator does not tire out and easily attaches the needle to the suture. The angle of view can easily be adjusted and for the operator and can see the attaching are clearly with the aid of TFT screen.

- 100 X optical zoom
- Does not tire out the operator
- Low scrap rates

Great 3D view enable easy assembly



NEEDLE PENETRATION FORCE & BENDING MOMENT TEST DEVICE

Be sure that,
Every pass is smooth.

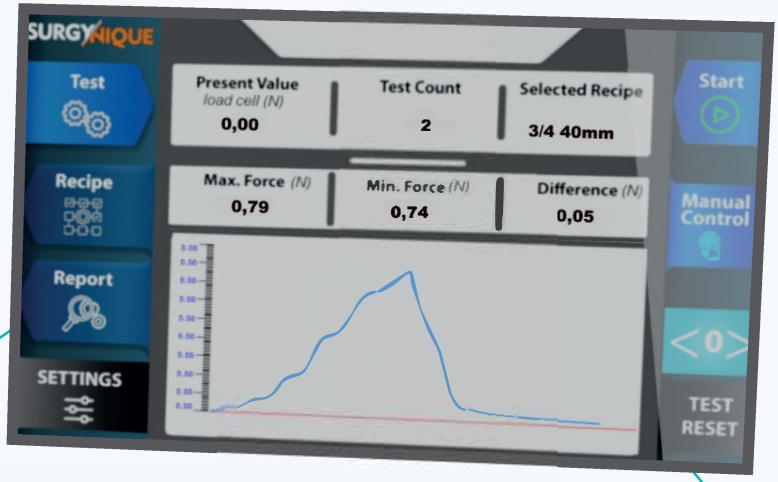


for details

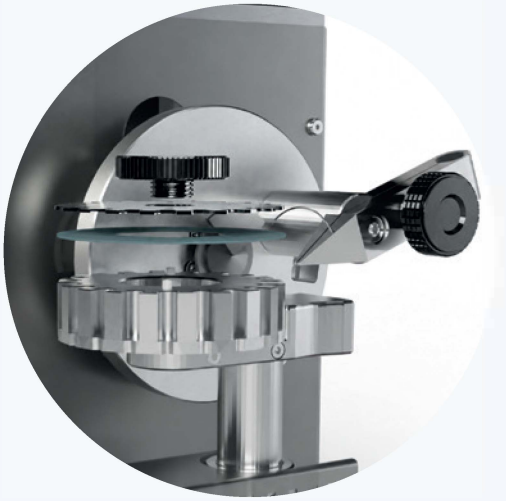
Bending Moment Test Fixture



One Click, Full Report



Penetration Force Test Fixture



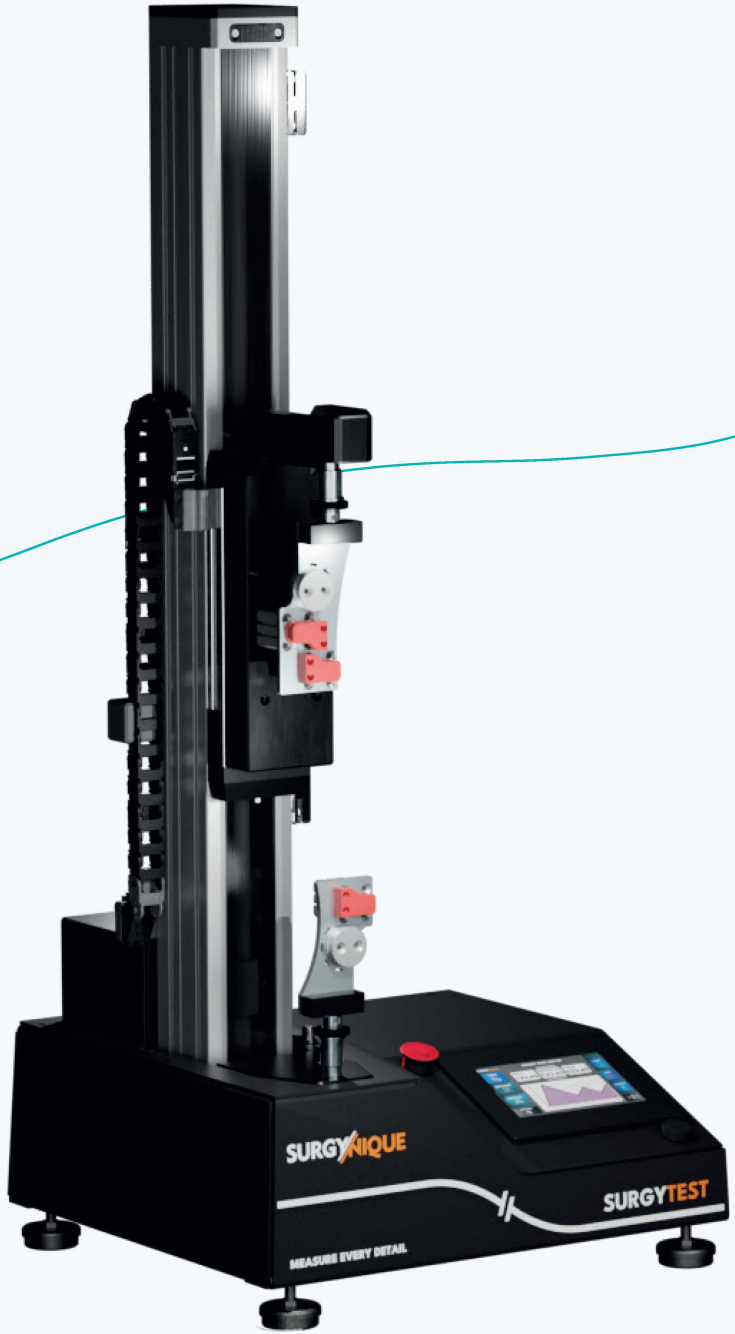
The Surgynique Needle Testing System evaluates curved and straight surgical needles through penetration testing according to ASTM F3014 and bending testing according to ASTM F1874. Its touchscreen interface and integrated software enable on-screen result monitoring, test reporting, and comparison.

SURGYNIQUE
ENGINEERING SOLUTIONS

SURGYTEST

TENSILE TESTER

Measure every detail easily



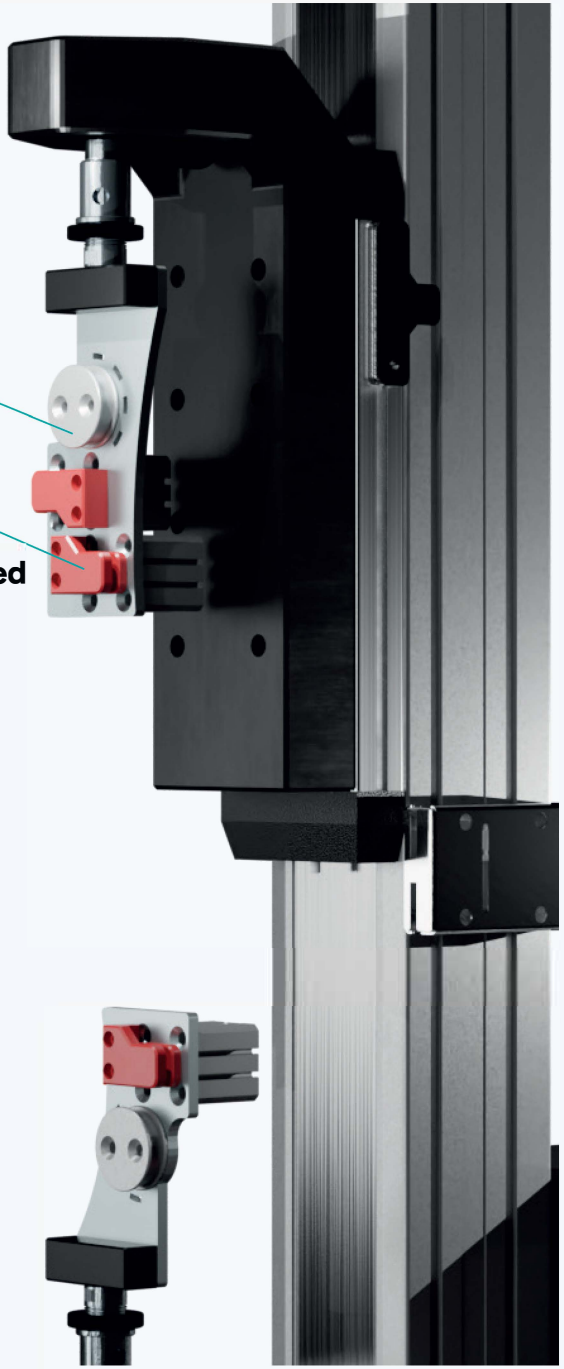
for details

Two Tests. One Fixture. No changeover.

Perform knot tensile and needle–suture attachment strength tests without changing the fixture.

NEEDLE ATTACHMENT STRENGTH

KNOT TENSILE

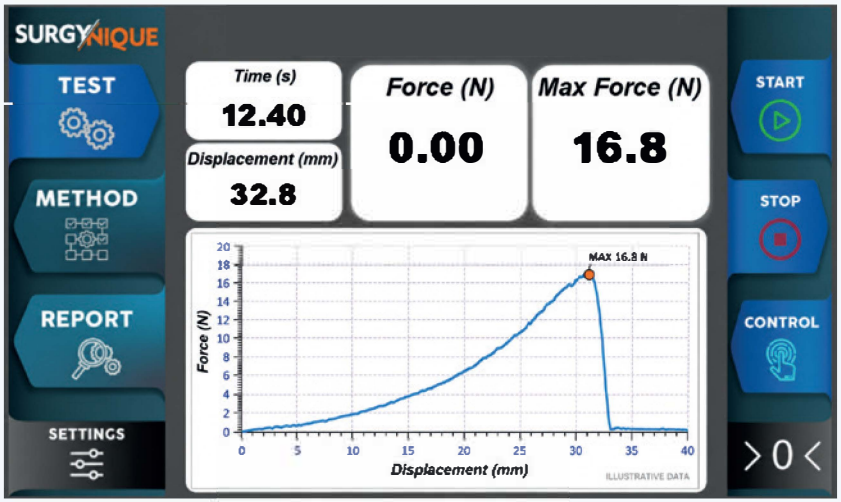


Automatic Stop after test

Optional pouch peeling force testing system

Pneumatic actuated locking system

Detailed Graphical Test Reports



SURGYNIQUE
ENGINEERING SOLUTIONS

SURGYPULL

PULL TESTER

Safe in every pull.



for details

MACHINERY OVERVIEW

Precision Pull Testing

Measure the pull strength of surgical sutures and needle attachments using selectable dead weights and a dynamometer.

Selectable Dead Weights

USP-standart dead weights to apply precise, known forces.

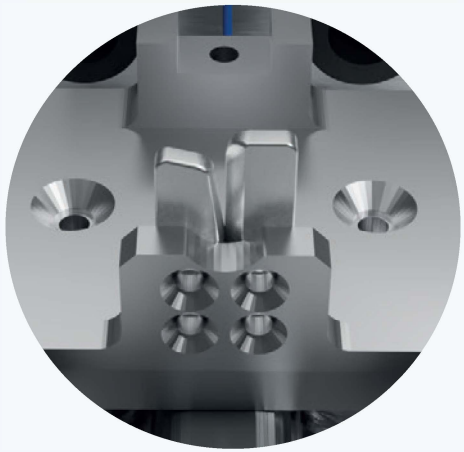
Dynamometer Measurement

The system can also be validated with a dynamometer for linear force measurement.

Smooth Universal Jaw

Versatile jaw structure suitable for all kinds of needle and surgical threads.





Weight Set

5 gr- 10 gr - 20 gr - 50 gr - 100 gr - 200 gr - 500 gr - 1000 gr

SURGYLEAK

LEAK TESTER



Make sure every pouch is SAFE !

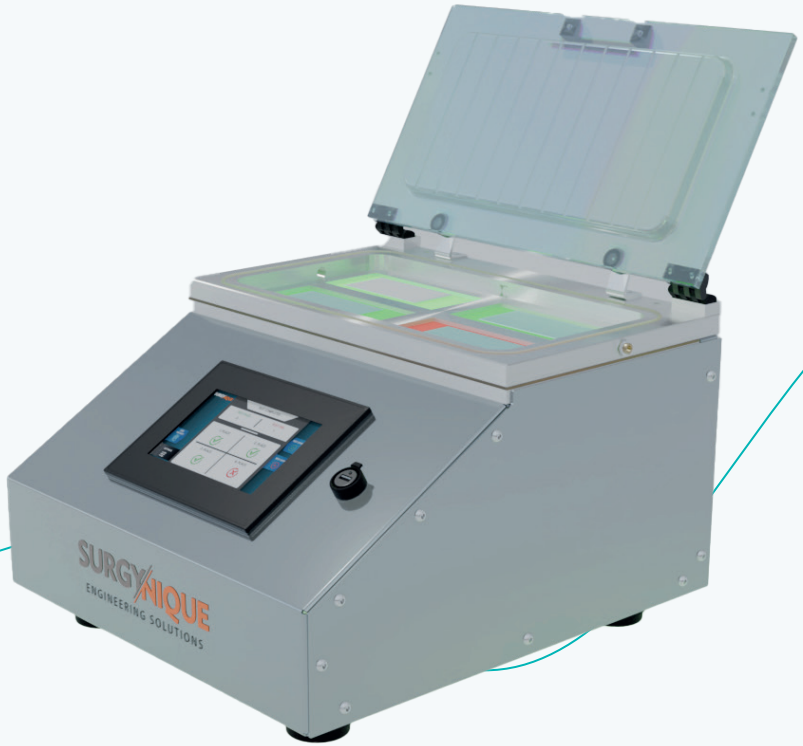
Non-Destructive

Pinholes - Seals

LED Indication

for details

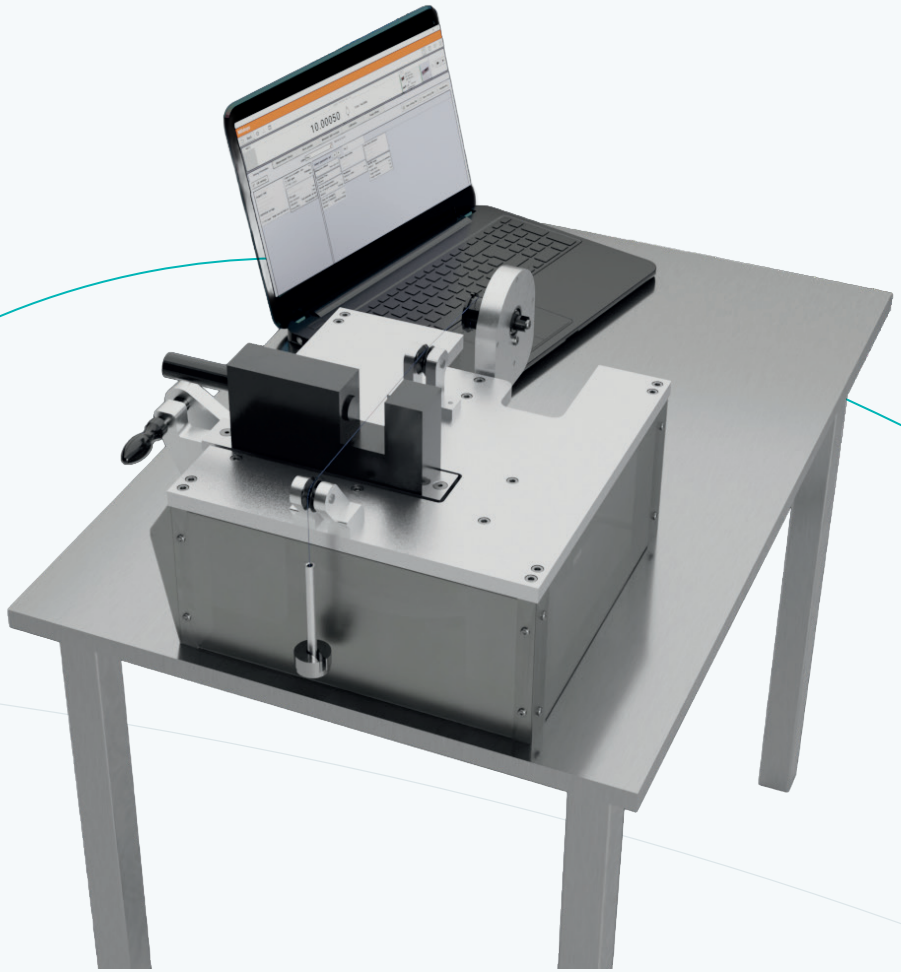
Detect Leaks.
Protect Product Integrity.



POUCH COMPATIBILITY
Aluminum Only Tearable
or Peelable Pouches

CAPACITY OPTIONS
4 Pouches
6 Pouches

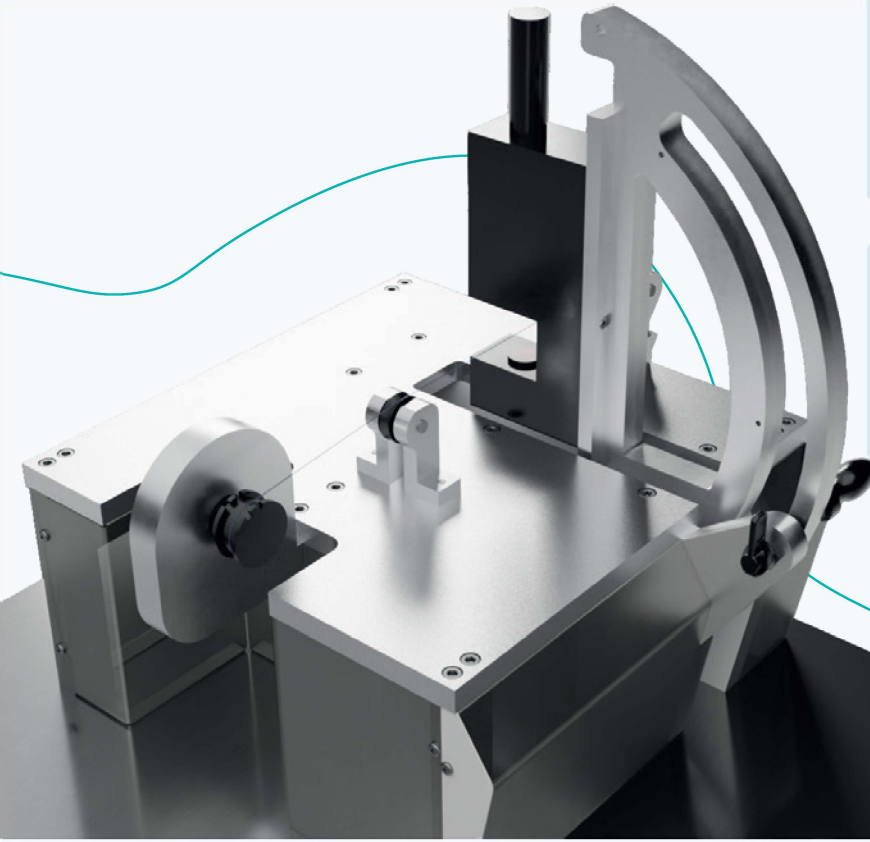
SUTURE CONTACTLESS DIAMETER MEASURING DEVICE



Precise measurement is easier now.

for details

Laser scanning measures suture diameter without physical contact. Adjustable tension, two-axis positioning and longitudinal sampling support consistent results and clear reports.



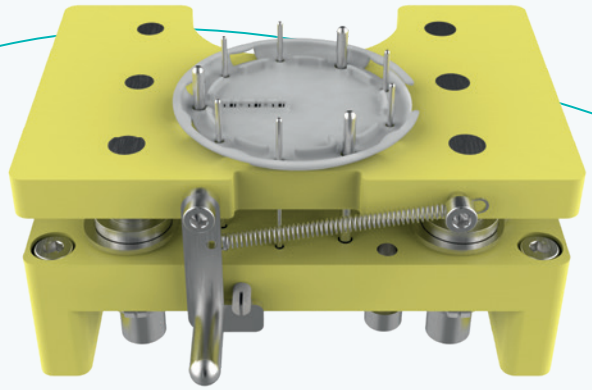
- Contactless Laser Scan
- Adjustable Tension
- Two-Axis Measurement
- Multi-Point Sampling

- Calibration Kit
- Software Reporting
- USP-EU Methods

SURGYNIQUE
ENGINEERING SOLUTIONS

SURGYTRAY SET

BARBED SUTURE WINDING SET

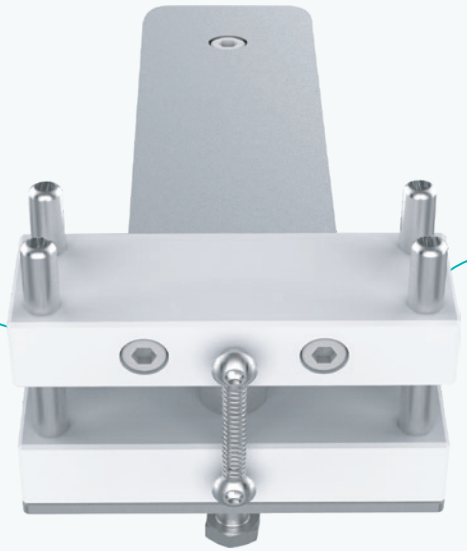


Compatible with plastic trays
for barbed sutures
Spring lock system for winding position
User friendly operation
Plastic tray can be supplied
Portable

for details

SURGYCARD SET

SUTURE CARD MANUAL WINDING SET



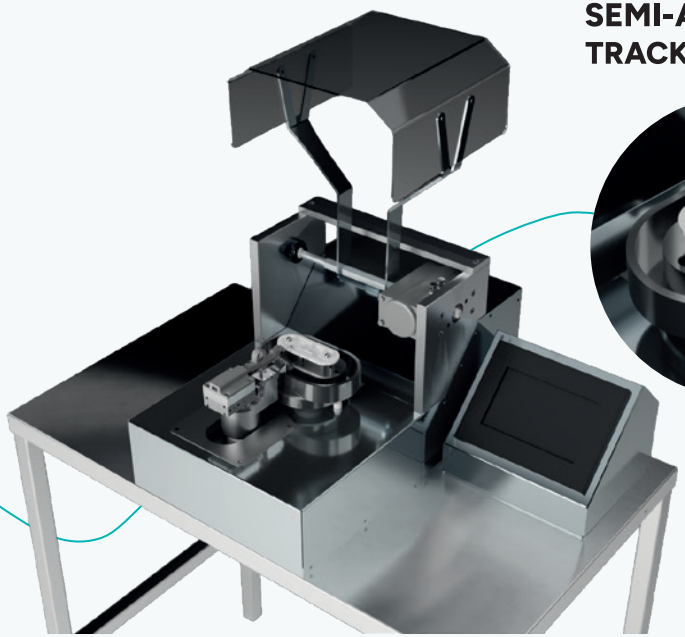
Compatible with suture cards
surgical sutures
Spring system for fast loading and
unloading position
User friendly operation
Low cost
Portable

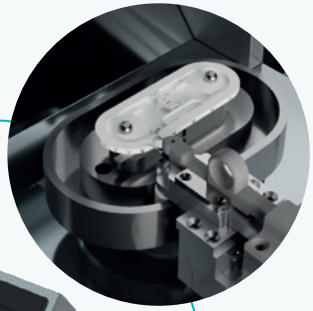
for details

SURGYRACE

SURGYNIQUE
ENGINEERING SOLUTIONS

SEMI-AUTOMATIC RACE TRACK SUTURE WINDING

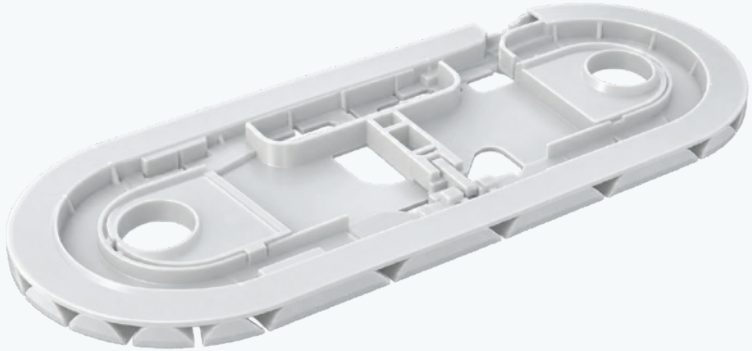


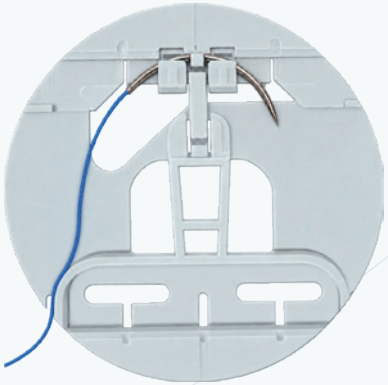


- Optional Label Printing & Assembly
- Safe winding operation not harming the product and operator
- High speed winding capability.
- Compact design and minimal working area requirement
- Fast Product Changeovers
- Precise Servo-Controlled Winding

Customizable, Cost Effective and Safe

Custom Machine Design to Match Your Track.





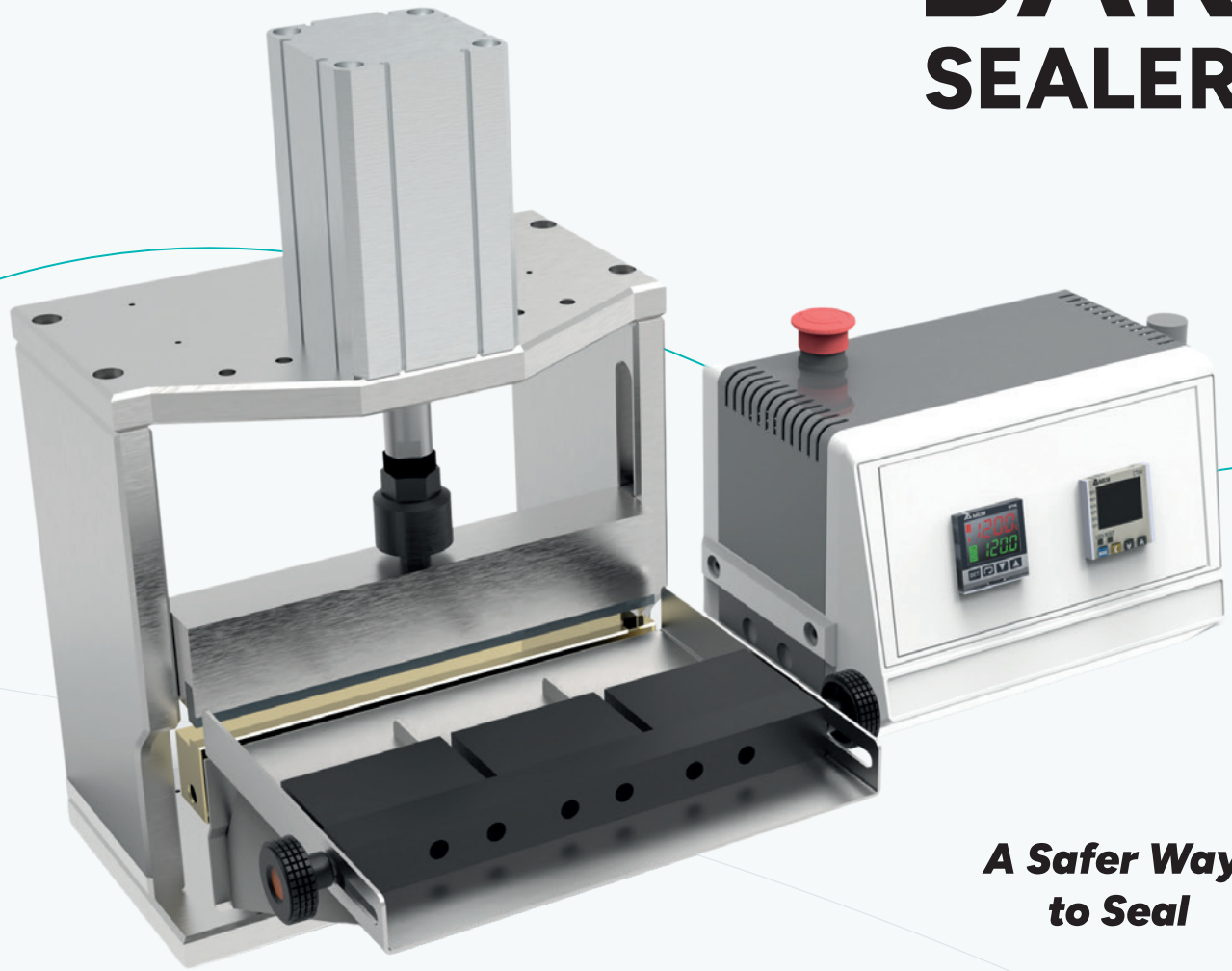
Needle Fixation Made Easy.

for details

SURGYNIQUE
ENGINEERING SOLUTIONS

SURGYSEAL

BAR SEALER



A Safer Way to Seal

for details

MACHINERY OVERVIEW

SURGYSEAL-BAR SEALER is a temperature, pressure and time-controlled pouch end sealing machine, specifically designed to seal medical device packaging. The system works with pressurized air and electrical supply. The machine provides perfect sealing especially in ***Aluminum pouches, Tyvek pouches and other medical device pouches.***

Temperature

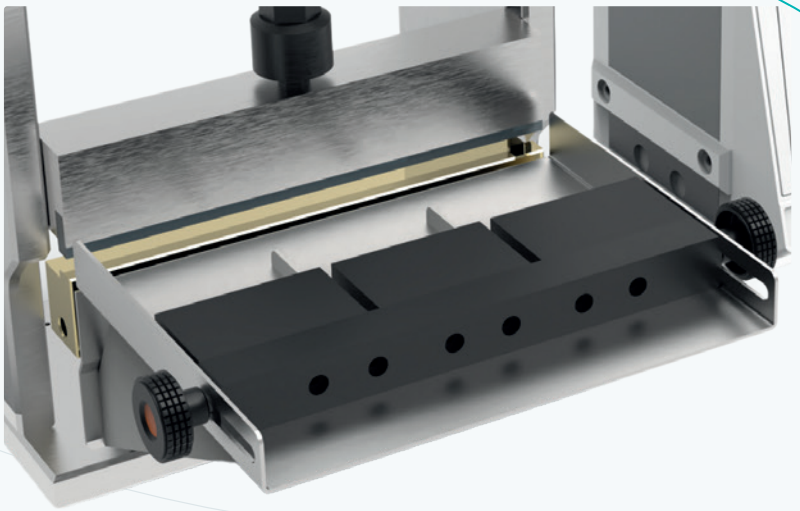
Controlled Heat

Sealing Time

Adjustable Process Time

Pressure

Controlled Force



Versatile Pouch Sealing

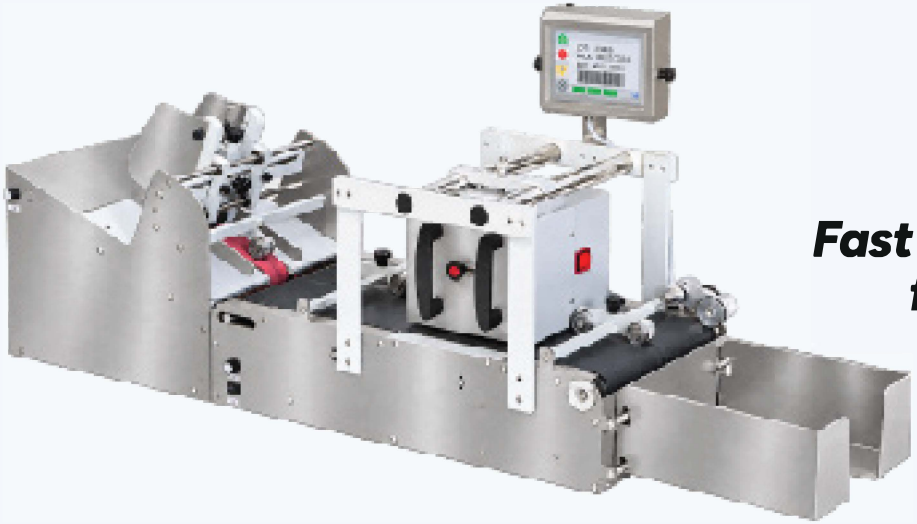
Aluminum / Tyvek / Medical Pouches

Seals up to 3 pouches at once

SURGYNIQUE
ENGINEERING SOLUTIONS

SURGYPRINT

SUTURE CARD AUTONOMOUS PRINTING SYSTEMS



Fast and high quality printing for your suture cards

Suture Card printing is one of the critical operations in Suture Manufacturing process. The variety of the products is so much that most of the companies can not handle to get and stock suture cards preprinted. The autonomous printing system effectively solves the problem. With the aid of its feeder and conveyor system, it can rapidly print Suture Cards according to the given design. The tolerance of positioning system is precise enough to print the design onto the card precisely.

Thermal Inkjet System Option

Ink Cartridge Based Printing

Servo Positioning

Thermal Transfer System Option

Ribbon Based Printing

Up to 60 Prints/Min

Automatic Card Feeding

Up to 15 Prints/Min

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Notes

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FOR A HEALTHIER TOMORROW

PRECISION.
INNOVATION.
ENGINEERING.