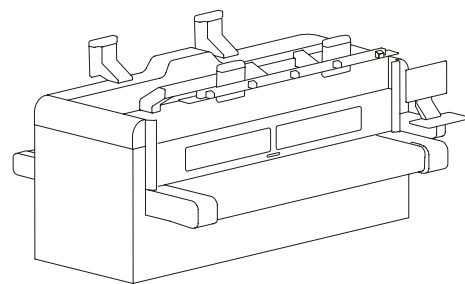# SIGMA 300

TRI
CUTTING HEADS

EFFICIENT
COMPACT
VERSATILE

TESEO
OPTIMIZEYOURBUSINESS

SIGMA 300

HIGH PERFORMANCE SYSTEM
FOR LEATHER CUTTING
AND FABRICS

SIGMA 300 has a working area moved by conveyors, for continuous automatic cutting of leather and materials in rolls (synthetic and fabrics).
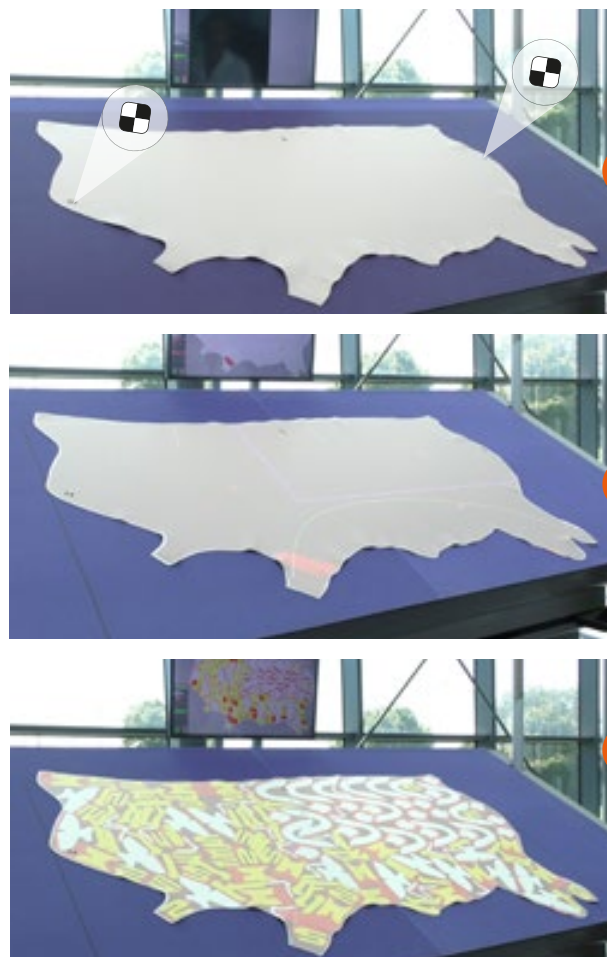
3 INDEPENDENT
MULTI-TOOL HEADS
ARE BETTER THAN 2

The secret is not just adding cutting heads but being able to let them work synergistically. In 2006 TESEO introduced the first machine with 3 cutting heads which handles the individual units in a continuous manner without interference even in the same area of the leather, thanks to an innovative software, increasing the productivity of 60% (compared to the same machine equipped with only 2 cutting heads).

The third head marked the turning point: in this decade, it has evolved and improved thanks to the experience gained with over 4.000 systems installed within the largest companies in the world, in various sectors such as footwear, leather goods, automotive and furniture.

6 DIGITAL COLOUR
PROJECTORS

5 HIGH RES
CAMERAS

UP TO 3 MULTI-TOOLS
CUTTING HEADS

TRI
CUTTING
HEADS

SAVING
OFF-BOARD AND ON-BOARD NESTING

OFF-BOARD INSPECTION AND NESTING PROCESS

OFF-BOARD NESTING ON MOB

Leather inspection and classification table, provided with Meti software, useful for manual or automatic scanning and nesting. 3000×1200 mm sectorized and vacuum surface.
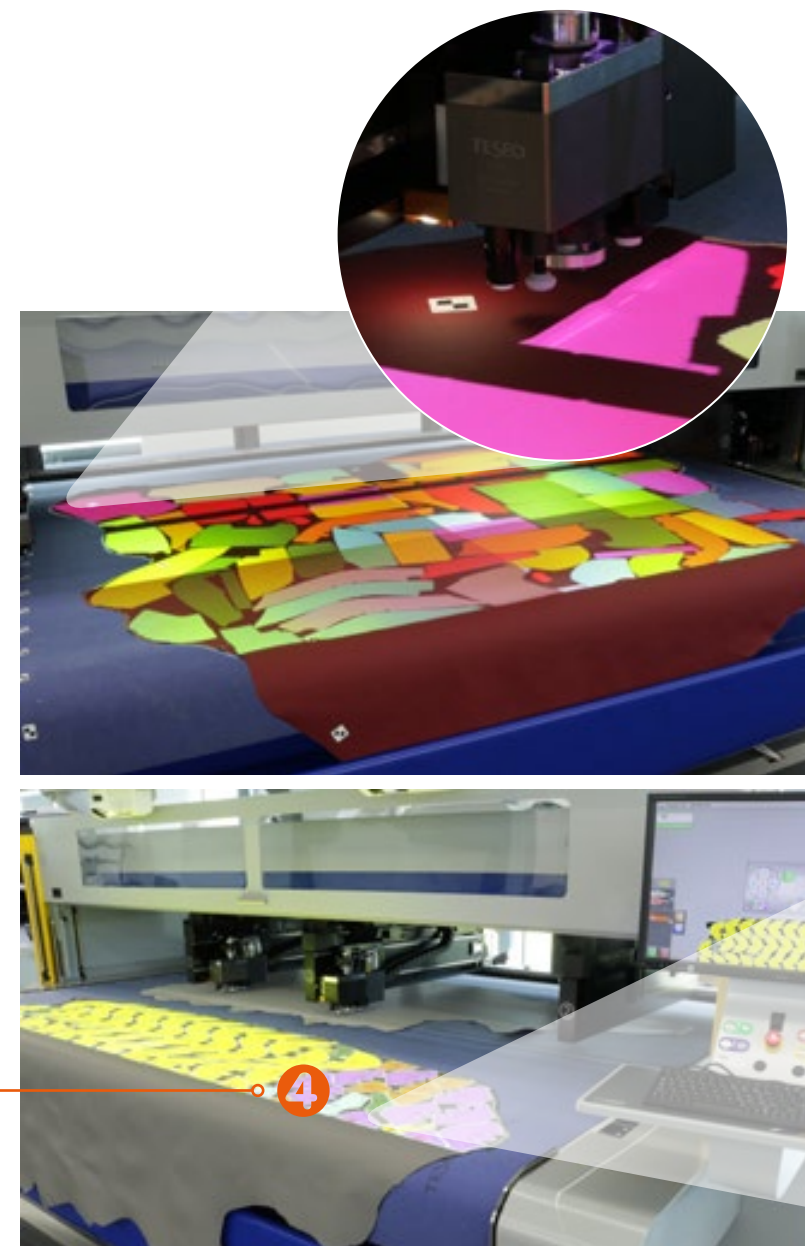
ROT (Reference Optical Tag)

1. ROT POSITIONING
2. SCANNING
3. NESTING

The leather is scanned and marked with defects and quality areas. Once the leather is ready, the software performs the automatic nesting.
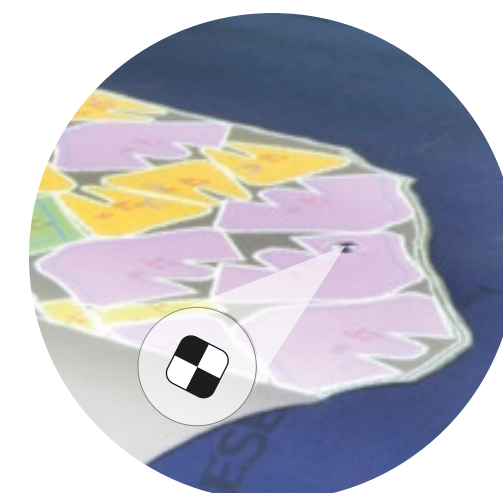
4. ON-BOARD REPOSITIONING

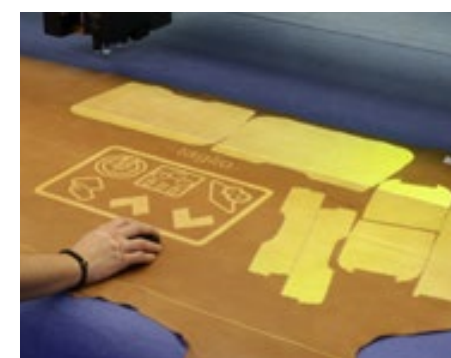The leather now can be automatically re-positioned and cut in any Teseo's cutting machine.

MOB 300K

ON-BOARD **AUTOMATIC** NESTING ON **SIGMA 300**

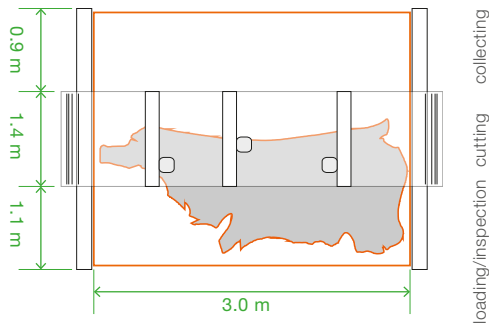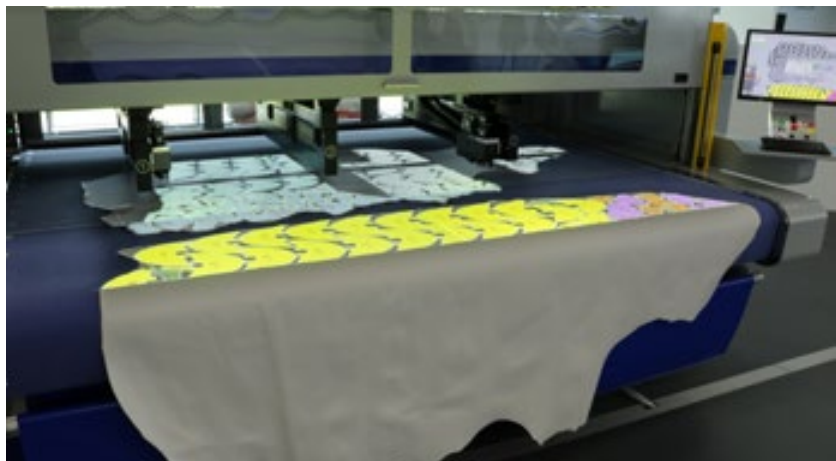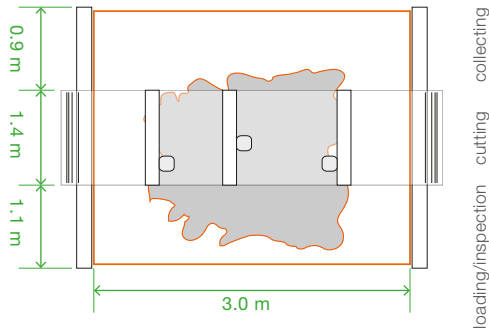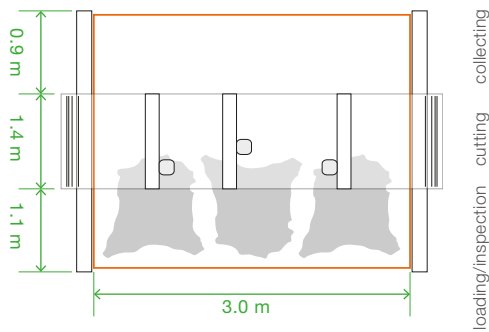Teseo's algorithms will automatically place pieces to be cut on the available material, optimizing the yield.

ON-BOARD **MANUAL** NESTING ON **SIGMA 300**

The operator can also manually place parts in the front area of the **SIGMA 300**.

VERSATILITY

LEATHER

THE SIGMA 300 CAN PROCESS HIDES OF DIFFERENT SIZES, WITH A CONSTANT OPTIMIZATION OF THE 3 CUTTING HEADS.


FABRIC AND SYNTHETIC

The working surface with moving belt on conveyor makes it ideal for the cutting of materials in rolls. The material moves on automatically and continuously; the automatic nesting maximizes the material consumption. The width of the work surface (3000 mm) allows to simultaneously cut even **2 parallel rolls** for an even higher production.

UP TO 8 LAYERS

Maximum precision and cutting efficiency for materials from **1 up to 8** layers, thickness up to **12 mm**.
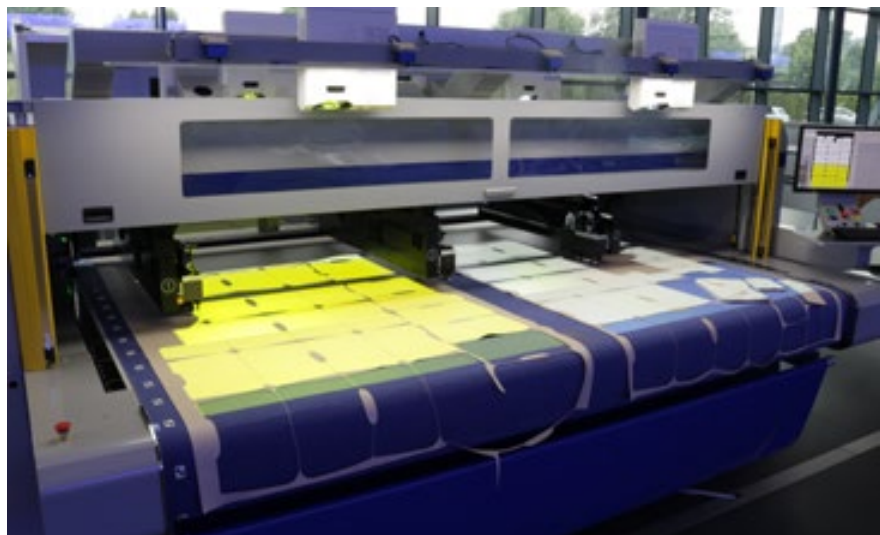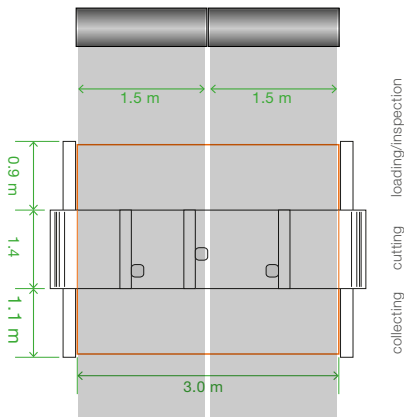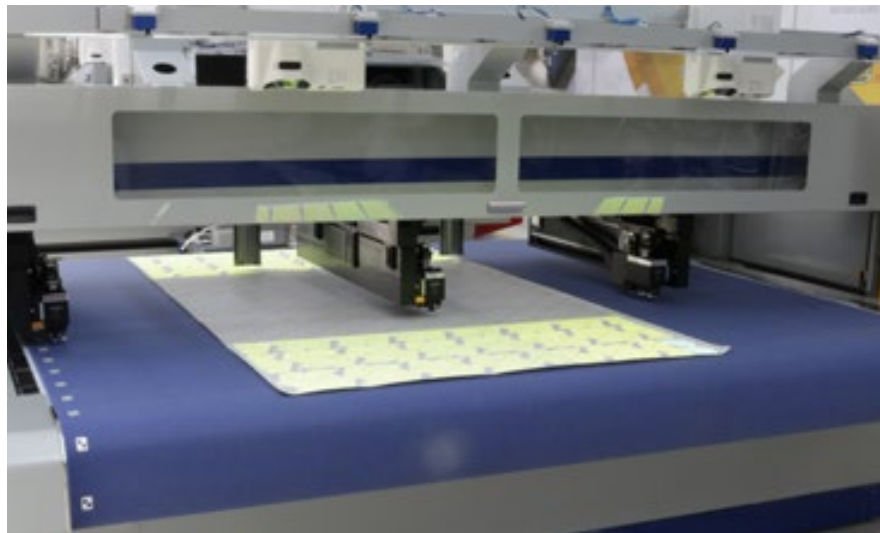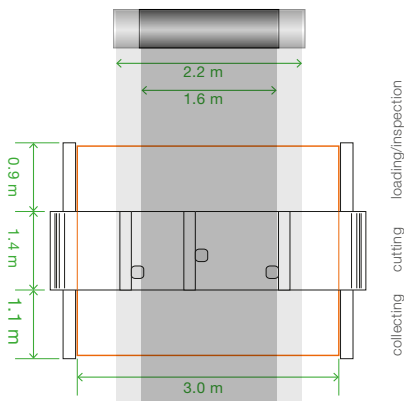
HIGH ACCURACY
FOR YOUR LOGOS

SHERLOCK

Sherlock is a precision optical recognition system developed by TESEO. Installed directly on the cutting heads, it is able to **recognize any kind of pattern** of the material that needs to be cut: logos, textures, designs or lines.

Automatic alignment through reference points (notches, points, seams, logos and perimeter edge).
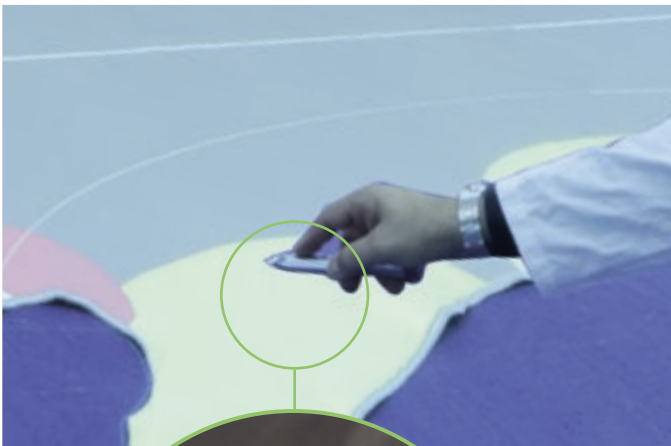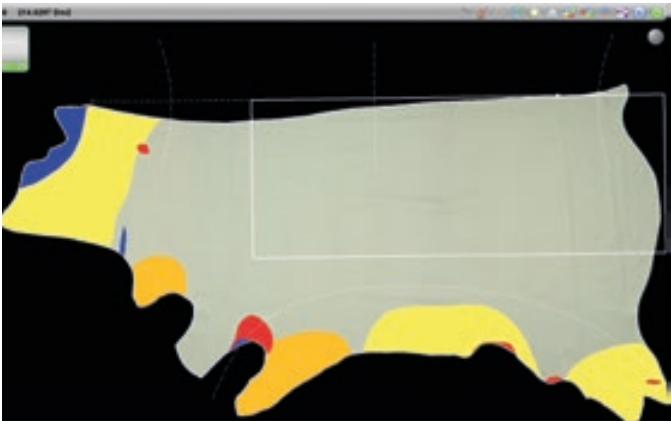
0,05 mm
PRECISION

Sherlock will automatically adapt in real-time the theoretical nesting to the actual pattern of the material, pieces by pieces.

SCANNING AND
QUALITY CONTROL

MHS SOFTWARE ALLOWS TO CAPTURE THE IMAGE OF THE HIDE AND ITS DEFECTS, THANKS TO THE HIGH RESOLUTION CAMERAS.

6 PROJECTORS
HD

5 HIGH RESOLUTION CAMERAS

The scan takes only **3 seconds**, it covers the whole working area and it is steady to ensure a perfect quality of the picture, highlighting even the smallest detail of the leather texture (resolution 0.25 mm).

The mark of the quality areas, the direction lines of the leather and every reference traces are shown instantly on the hide, exactly where it will be cut.
This ensures the highest accuracy of nesting and the absolute control in each stage.

WIRELESS **O**PTICAL **P**EN

The exclusive **WOP system** allows to mark virtually the defects and the different quality areas, without leaving any trace on the leather.
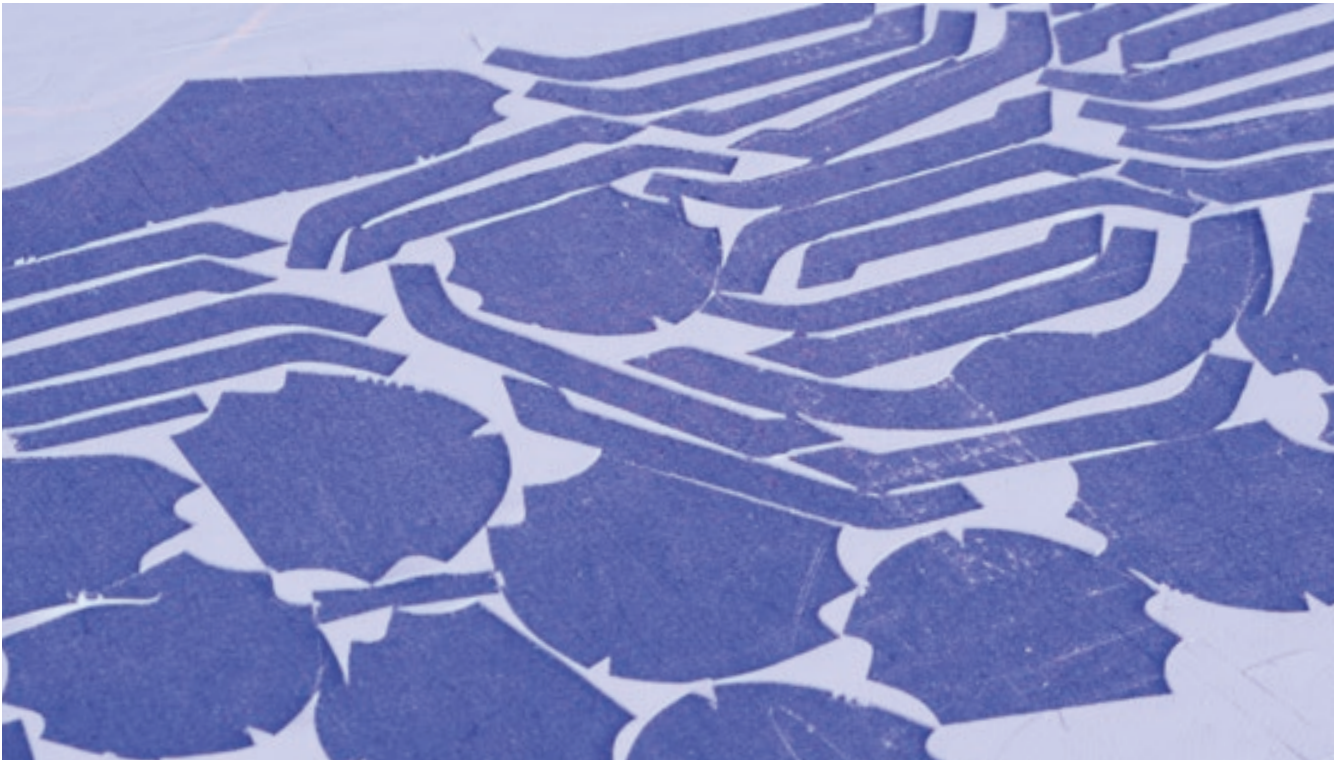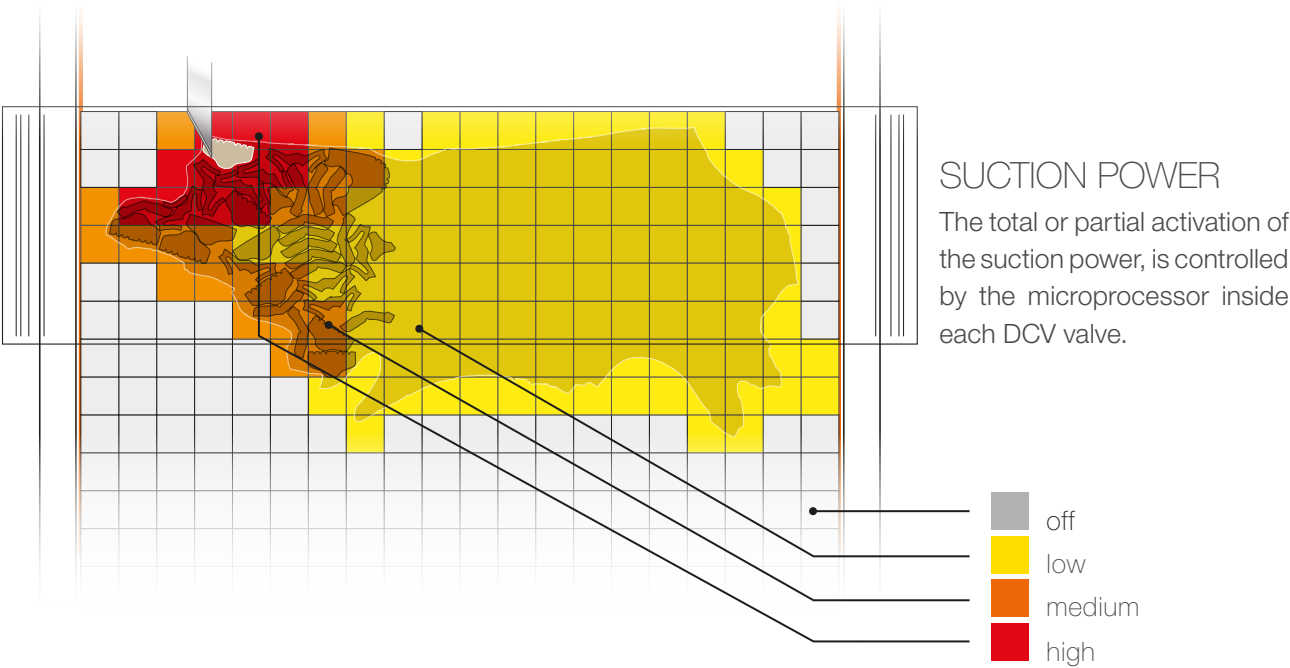
VACUUM SYSTEM
THE POWER IS IN THE AIR

The vacuum surfaces consist of **independent and dynamic small sectors (200)** of 150x150 mm. They are led by a software that recognizes the shape of the material and the position of the cutting head. The system automatically activates, with different power, only those areas interested by the cutting operations.

With this **patent TESEO** focuses the suction only where it is really needed, for the highest accuracy and speed.

ENERGY SAVING

LOW CONSUMPTION AIR

LOWER SIDE

150 mm

150 mm
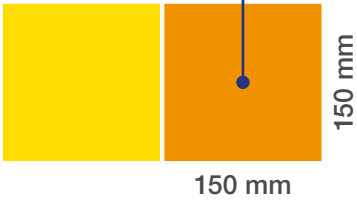
INTELLIGENT

The vacuum system activates **only the necessary sectors and requires** a low consumption vacuum pump (less than 15 Kw), saving up to **40%** of energy compared to all the other solutions.

ONLY IN TESEO CONVEYOR SYSTEMS THE
VACUUM ALWAYS FOLLOWS THE CUTTING HEAD

SUCTION POWER

The total or partial activation of the suction power, is controlled by the microprocessor inside each DCV valve.

- off
- low
- medium
- high


- • NO PAPER OR FILM NEEDED
- • ZERO BUFFER
- • LEATHER SAVING

The vacuum, concentrated only in the cutting zone, allows the maximum of the performance **without having to use plastic or paper film** to keep the pieces blocked. The ability to cut up to the edges and to Ø mm between one piece and another, allows a further **considerable saving of material**.

ASSISTED COLLECTING
OF THE CUT PARTS

SIGMA 300 is equipped with an high brightness color projection system, which directly projects on the hide to make the activity of collecting of cut parts faster and easier.
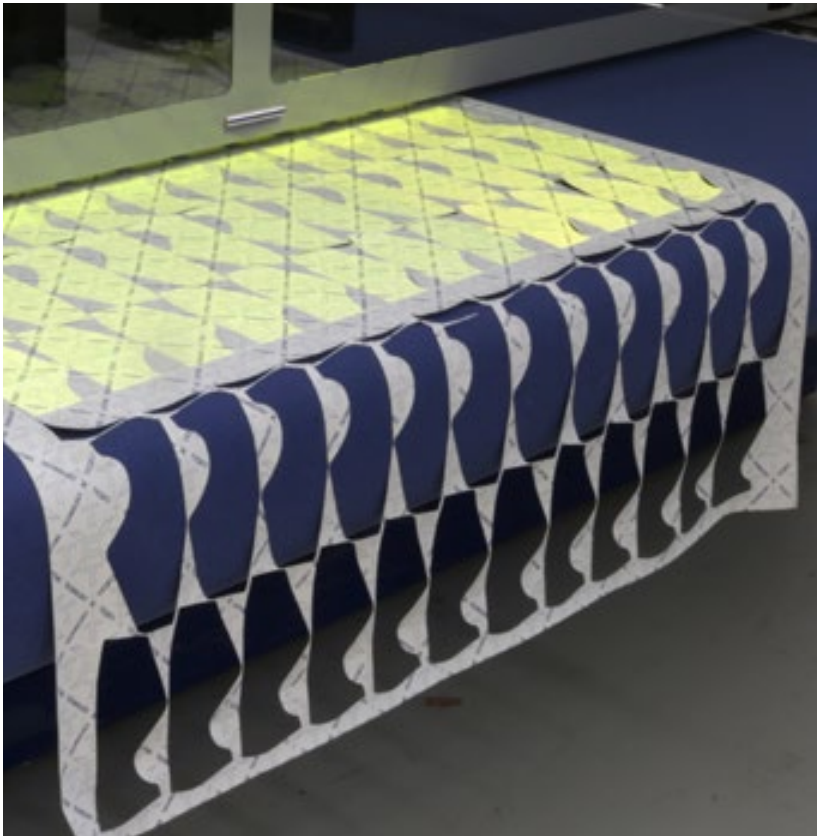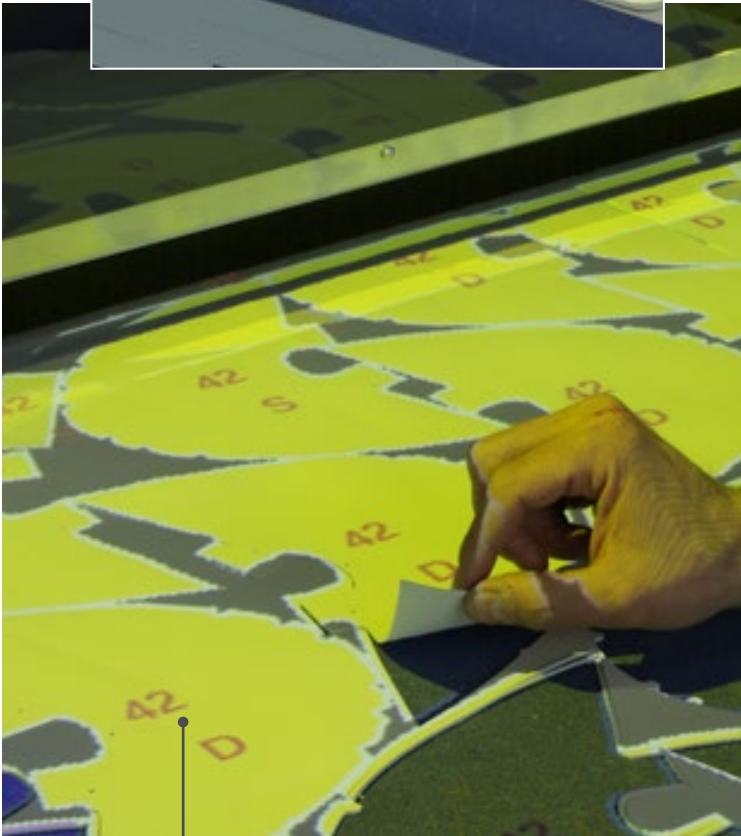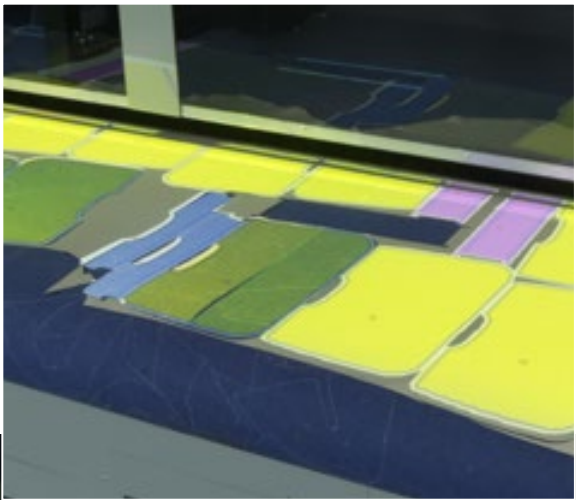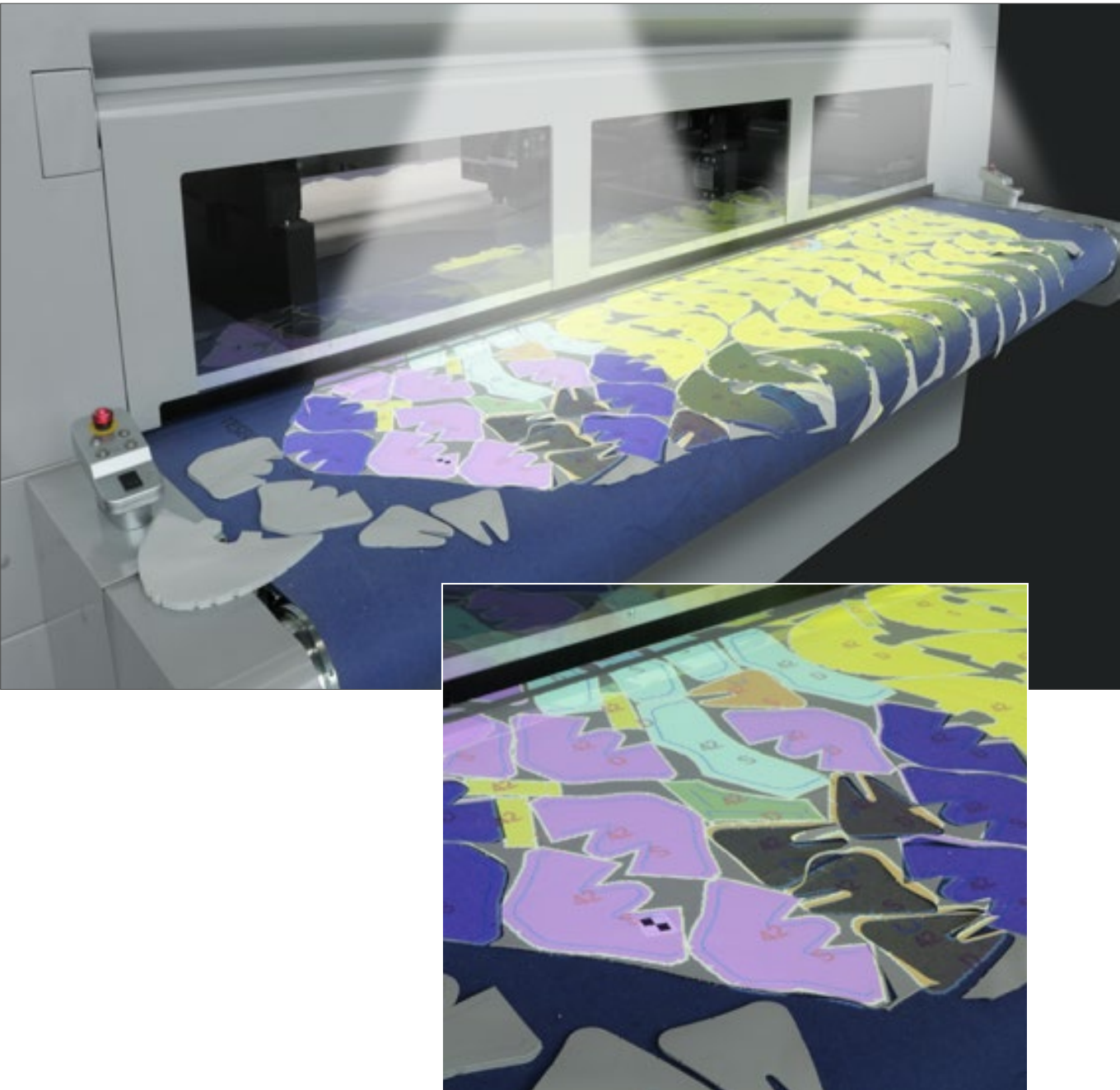
🟩	size 34
🟥	size 37
🟧	size 39
🟦	size 39
🟨	size 42

COLLECTING

the cut parts is easier and faster when you can separate different **items** or different **sizes** by their colour, you also avoid mistakes while assembling the product.

🟩 # EU126176_03
🟪 # EU126164_01
🟧 # EU126175_02
🟦 # EU126254_01

-40%
USED
SPACE

75 mm

REAL DIMENSION

115 mm

270 mm

115 mm

ULTRA COMPACT CUTTING HEADS

We concentrated the reknown reliability and performances in just **7.5** cm.

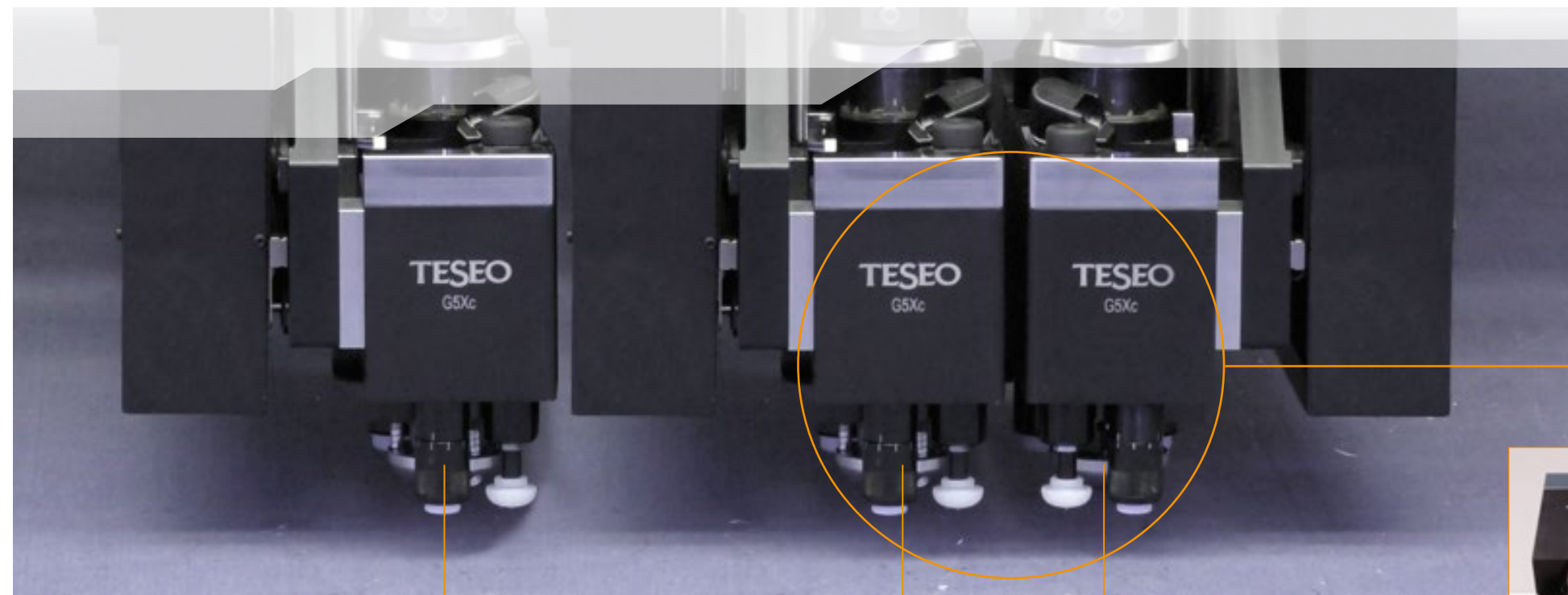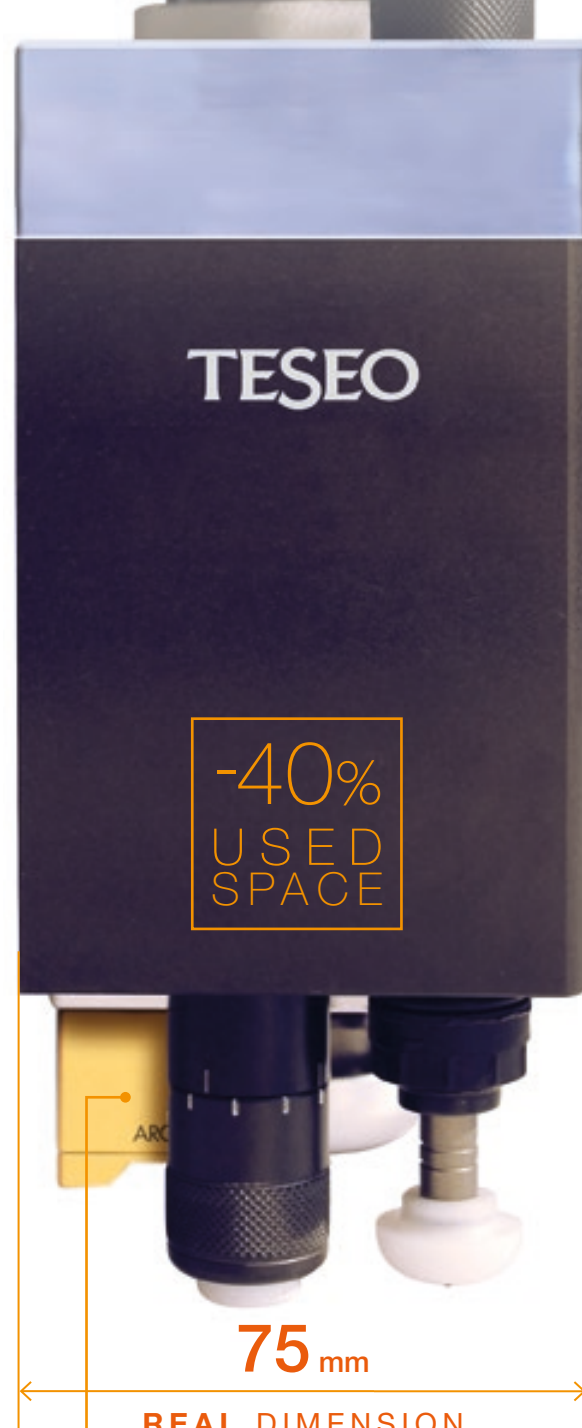The willingness to adopt the fourth cutting head has stimulated the search for solutions designed to save space, so that the different heads could better interact. The result is an exceptional head, with **5** tools, that occupies less space (**-40**%).

But not only: the small size and the increased mechanical stiffness, allow this technological jewel a greater dynamism and an improved reliability.

270 mm
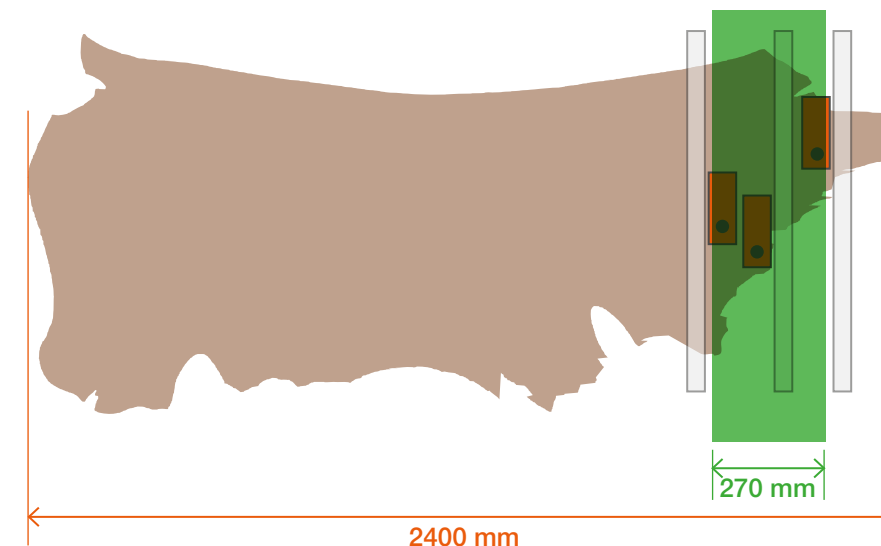
2400 mm

The compactness of TESEO arms and heads makes SIGMA 300 extremely efficient, even on 2400 mm hides

ARGHON is a **dual optical sensor camera with powerful micro computer**.
It processes 100 scans per second with 0,02 mm resolution.

ARGHON

Thanks to the **3D** vision, ARGHON is constantly capable of measuring the wear of the cutting carpet and the hide thickness, detecting variations in height.

ARGHON recognizes the effective execution of cut and punches for an **automatic quality control**.

ARGHON recognizes details size less than **0.1 mm**. It enables a better recognition of **ROT** (Reference Optical Tag) for automatic hide re-positioning.

+53%
PRODUCTION

3 HEADS
259 PAIRS/HOUR
27,5 m²/h

2 HEADS
169 PAIRS/HOUR
18 m²/h
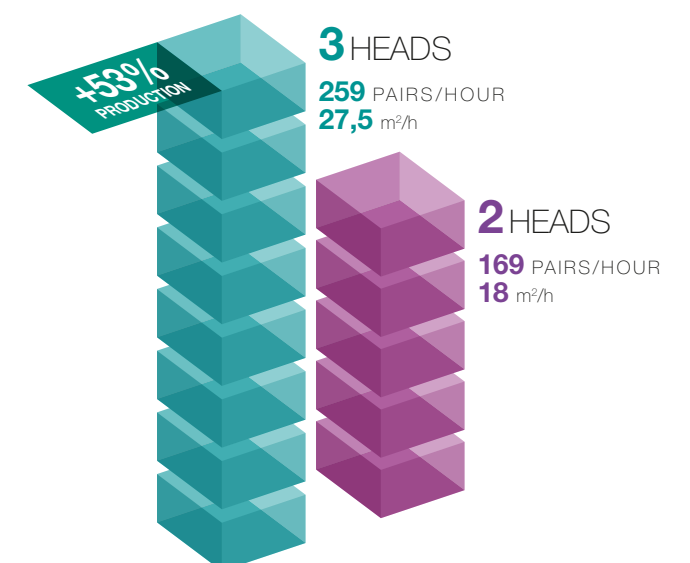
SINCE
1993
TESEO
INVENTED
THE FIRST
OSCILLATING
KNIFE
FOR LEATHER

UP TO
6
TOOLS

❶ Blade for fast cutting

❷ ❸ Pen and punch for the signature

❹ ❺ ❻ Up to 3 different diameter dies: from 0.8 to 12 mm

FAULT TOLERANCE

ALWAYS AVAILABLE IN REAL TIME

The cutting head tool-stand are independent and **always available** (installed in parallel under the cutting head). The choice of the punches to use involves only its activation via software **without waiting**. The tools can be deactivated individually in case of a fault, **without harmful machine downtimes.**

FAST, LIGHTWEIGHT AND QUIET
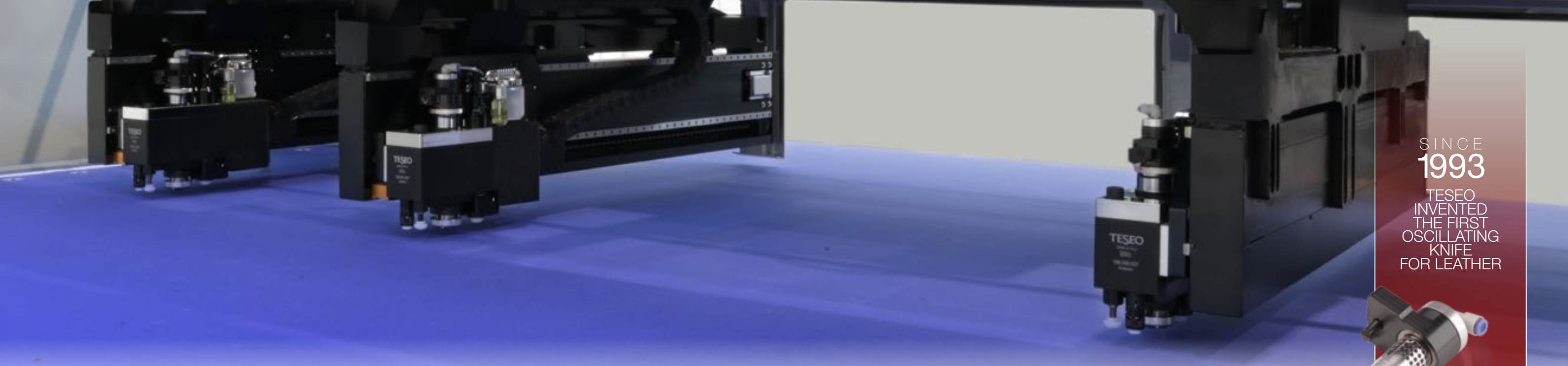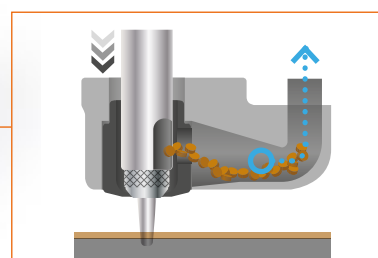
The TESEO cutting heads are equipped with **single spindles (TESEO patent)** dedicated to punches and punchings. Manufactured with extremely fixed and light materials (only **148 gr)**, they are easy to handle as well as reliable. The reduced weight allows a **faster punching and a lower energy consumption.**

PUNCHING WITH SUCTION

Active suction in every cutting head: the shavings are canalized in the specific tank **to keep clean the cutting area every time, also from very thick materials.**

FAST AND ACCURATE CUTTING ON ALL MATERIALS

- Exclusive pneumatic oscillating knife with high oscillation frequency (up to **50.000 RPM**).
- Low consumption of compressed air of only **95 l/min** *(other systems have 270 l/min).*
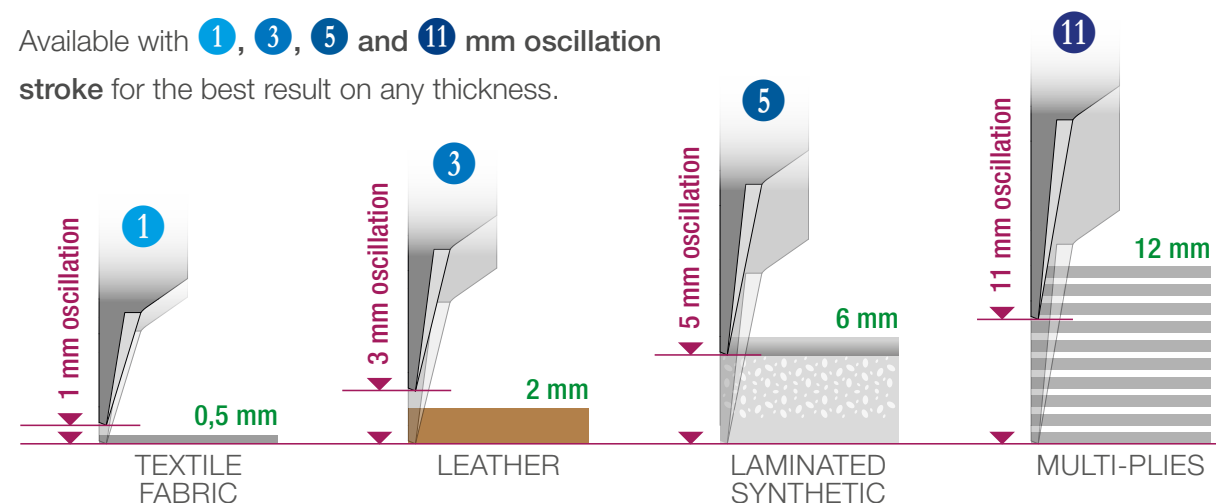- Time saving

LOW CONSUMPTION AIR

Changing blade or oscillating knife in less than **45 seconds**.

- Available with ❶, ❸, ❺ and ⑪ mm oscillation **stroke** for the best result on any thickness.

1 mm oscillation — ❶ — TEXTILE FABRIC — 0,5 mm

3 mm oscillation — ❸ — LEATHER — 2 mm

5 mm oscillation — ❺ — LAMINATED SYNTHETIC — 6 mm

11 mm oscillation — ⑪ — MULTI-PLIES — 12 mm

LESS NOISE
MORE COMFORT

Automatic soundproof door for
optimal work comfort (77.8 dB)

SAFE

SIGMA 300 is equipped with a
**special cover protection that
reduces the dB emission** of the
machines. It guarantees a friendly
and healthy working environment
for the operators.

Rear cover protection to
ensure maximum comfort
for the operator.

INDUSTRY 4.0

SIGMA 300 MEETS THE **INDUSTRY 4.0** REQUIREMENTS

Every company that operates today faces a
common challenge:
the need for connectedness and access
to real-time insights across processes,
partners, products, and people.

Industry 4.0 represents a unique opportunity
for an efficient and agile reorganization
of production activities focusing on
interconnectivity, automation, machine
learning and real-time data.

It's about revolutionizing the way your entire
business operates and grows. It's about
choosing the best technology to **Upgrade
your business**.

That's where TESEO comes into play.

**SIGMA 300 meets the Industry 4.0
requirements for a SMART factory**

SMART PRODUCTION:
SIGMA 300 is designed for integration
with ERP, planning, design and product
development systems. Process data
collection, real-time reporting and statistical
analysis.

SMART SERVICE:
Remote interaction via NESSO® software
to collect operational data and to provide
remote support and maintenance through
augmented reality technologies (i.e.
NESSO®Visual).

SMART ENERGY:
Energy consumption 40% lower than other
solutions on the market.
High performance as well as security and
improved energy saving.

SIGMA 300
TECHNICAL FEATURES

Movement on grinded precision guides and grinded re-circulating
balls lead screws (ISO 3, max. error ±0.005mm).
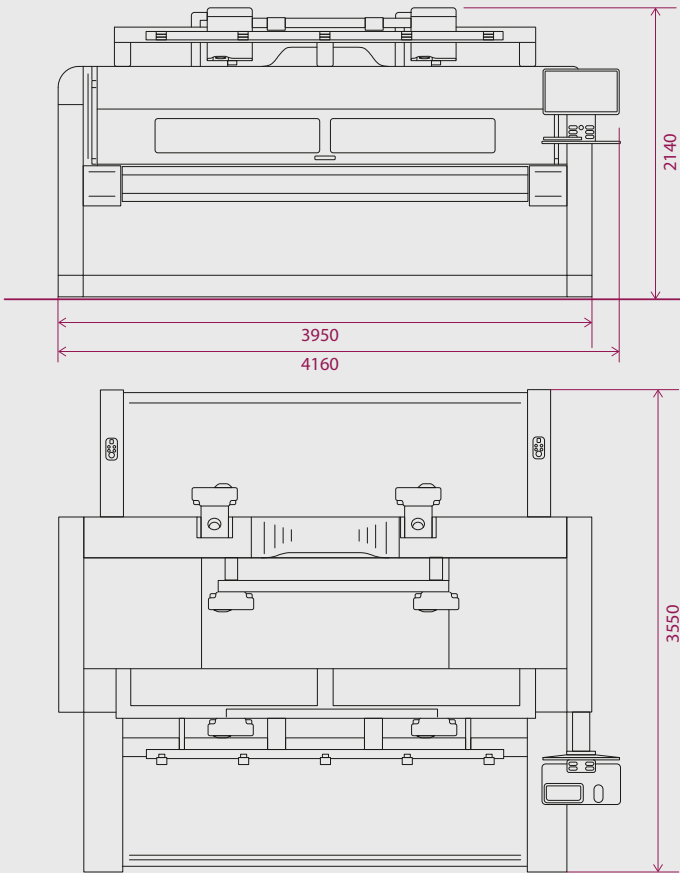Brushless motors with digital closed–loop position control.

METI software procedures for a parallel management
of real-time perforation, loading and optimization of
perforation files from SQL/MDX archives, work time
statistics, cutting order management.

METI INSIDE

Working area sectorized singularly activated by dynamically
controlled valves (DVC, patent) for the optimal hold of the
leather on the area.

MODEL	SIGMA 300
HEADS	3
CUTTING AREA	3000 x 1400 mm
SCANNING AREA	3000 x 1100 mm
HIGH RESOLUTION CAMERAS	5
PROJECTORS	2+2+2
DIMENSIONS	4160 x 3550 x 2140 mm
WEIGHT	3500 Kg

*The technical data shown are indicative. TESEO reserves the right to modify
them, without notice, at any time.*

2140

3950

4160

3550

TESEO

ISO

FIRST AND ONLY
MANUFACTURER
OF AUTOCUTTING
SYSTEMS
CERTIFIED

RINA IQNet

ISO **9001**:2015
Certifies the Quality of the company in each of its process, in order to increase the efficacy and efficiency, to ensure a Quality product and obtain the highest level of Customer satisfaction.

ISO **14001**:2015
Obtaining Environmental certification means the commitment to limit environmental impact and reduce emissions, encouraging recycling and all the good environmental practices for a sustainable development.

ISO **45001**:2018
A company certified according to this international standard adopts an organizational model that ensure Safety and Health at work, allowing employees to operate in the best conditions.
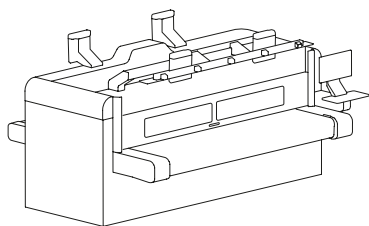
GUARANTEED
AND CERTIFIED
QUALITY

2YEARS
WARRANTY

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OPTIMIZEYOURBUSINESS

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