



SACMI

ENDLESS INNOVATION SINCE 1919

 **PETplanet**

 **PETinar**

Technical highlights @ Drinktec 2022

September 1st 2022

How to translate digitalization of closure manufacturing into a real economic advantage

The generation of data

The elaboration of data

The profitability of data



SACMI@drinktec

SEPTEMBER 12-16, MESSE MÜNCHEN

HALL B5 | BOOTH 304/302/101

**We don't just
sell machines,
we generate
trust**



We are where you are.
Our network speaks our customers' language.



The  **SACMI**
brand and logo
are recognised
and registered in over

Economic sustainability 2021

SALES &
SERVICE
REVENUES
€ 1.54 bln

NET EQUITY
€ 733 mln

EXPORT
86%

EBITDA
€ 145 mln

EMPLOYEES
WORLDWIDE
4,720

Environmental performance

6 CLEAN WATER AND SANITATION



-36%

waste water delivered to and treated by internal purifier since 2019

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



- 5%

tons of (non-recyclable) waste sent for disposal since 2019

7 AFFORDABLE AND CLEAN ENERGY



44%

of electricity requirements self-produced (trigeneration + photovoltaic system)

Innovation & research

University and
Research

100

active partnerships in
2021 on strategic
projects

Investment in R&D

€ 150 mln

in the last three years

4,960

patents filed since the
Group's founding

300

highly qualified
technicians employed
at the
Imola Research Center



● **RIGID
PACKAGING
TECHNOLOGIES**

SACMI develops multi-material packaging solutions for the most diverse platforms, to meet the needs of beverages and food producers all over the globe.





● **REDUCE -
REUSE -
RECYCLE**

SACMI is at the forefront of the global transition to a circular economy in the packaging field.

The 3Rs approach:

- Lightweighting (reduce)
- New PCR resins (recycle)
- Returnable packages (reuse)

Use of

**recycled
plastics** (rPET)

Development of

**tethered
caps** to limit dispersion of
plastic into the
environment

Weight reduction
on plastic cap-bottle
systems of over

50%



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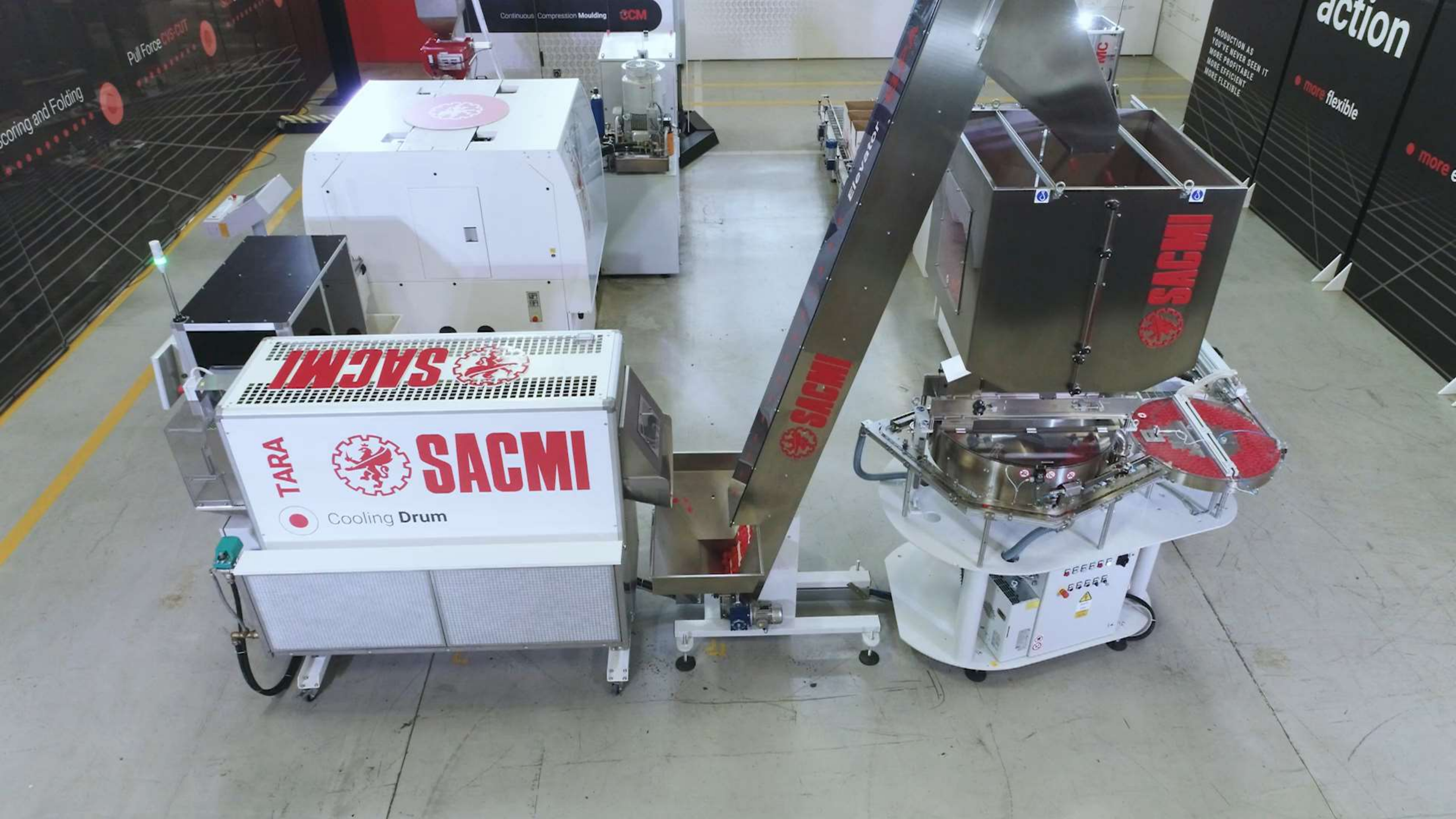
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scoring and Folding
Pull Force **DIS-CUT**

Continuous Compression Moulding **CCM**

SACMI
TARA
SACMI

Cooling Drum

SACMI

SACMI

PRODUCTION AS YOU'VE NEVER SEEN IT
MORE PROFITABLE
MORE EFFICIENT
MORE FLEXIBLE

action

more flexible

more



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**SMART
PACK**

FEATURES

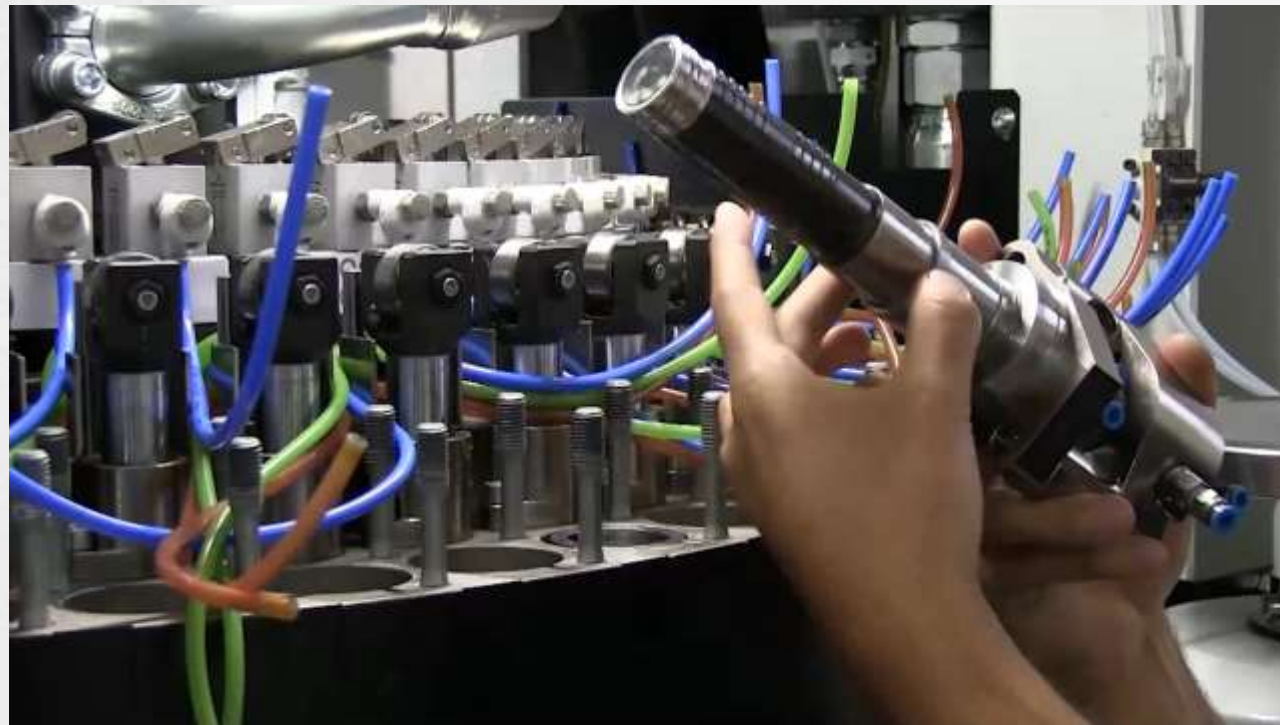
PELLET
INSERTION



MATERIALS
CONTROL



THERMIC
CONTROLS



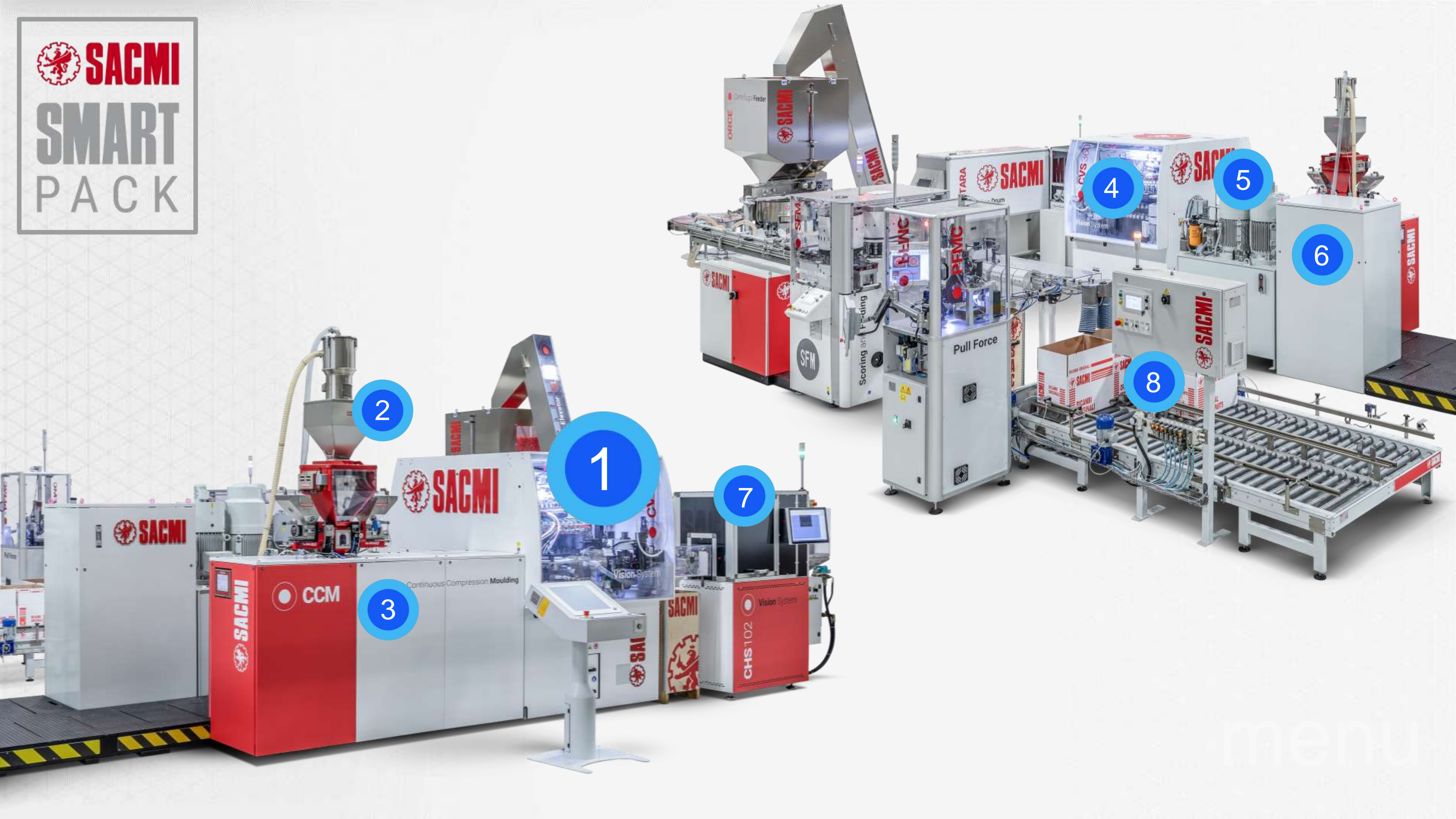
HYDRAULIC
SYSTEM



SACMI SMART PACK



SACMI SMART PACK



2

1

3

7

4

5

6

8

SACMI
CCM
Continuous-Compression Moulding

SACMI
Vision System

SACMI
CHS102
Vision System

SACMI
ORCE
SACMI
SFM
Scoring and Feeding

SACMI
PEMC
Pull Force

SACMI
TARA

SACMI
CVS 300
Vision System

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www.sacmi.com



DIGITALIZING PELLET INSERTION

QUALITY

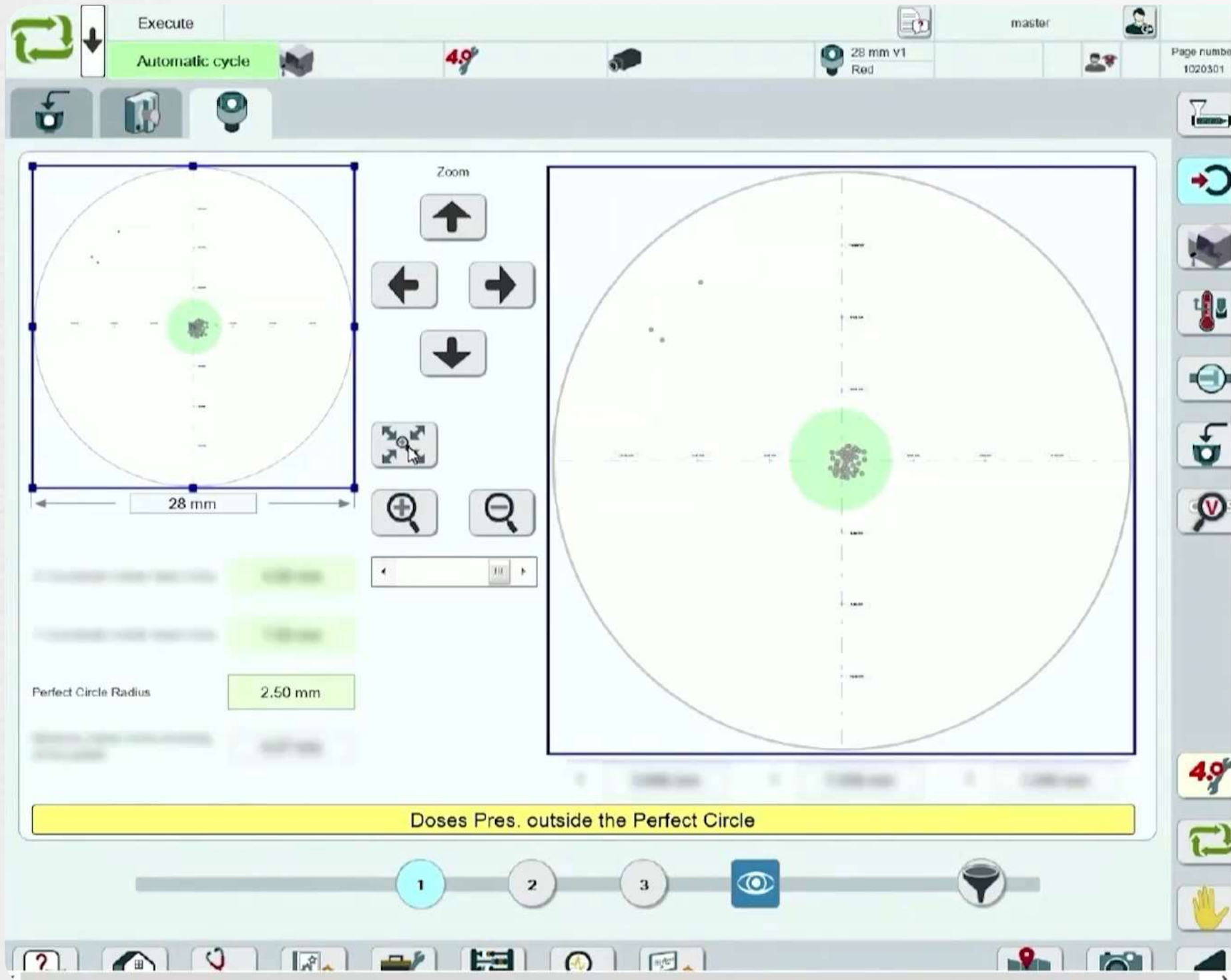


Process consistency

DIGITAL



Digitalized dimensions





ACCURATE PELLET INSERTION CONTROL

QUALITY



Process consistency

DIGITAL



Digitalized dimensions

The screenshot displays the 'Automatic cycle' control interface. At the top, it shows 'Execute' and 'Automatic cycle' buttons, along with a '4.9' indicator. The main area is titled 'Insertion' and features a 'Pellet insertion' slider with a scale from -0.6 to 0.6. The current value is set to 0.49. Below the slider, there are buttons for 'Steps' and 'Duration', both set to '0.75s'. To the right, a camera view shows a red pellet being inserted into a cap. Below the camera view, there are buttons for 'Min', 'Med', 'Max', and 'Devst'. At the bottom, there is a table of parameters:

Pellet insertion	BP33P	0.75s	0.75s	
Cap ejection	BP54P	0.75s	0.75s	
Cap ejection	BP54F	0.75s		
Pump vacuum	BP5	0.75s		
Piston return	BP5P	0.75s		
Cap retaining	BP5C	0.75s		

The time for pellet cut and insertion adjustment is reduced by more than 50%.



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PACK**

EASY CONTROL OF PELLET INSERTION

QUALITY



Process consistency

DIGITAL



Digitalized
dimensions





SMART
PACK

WEAR IS EASY TO SPOT

DIGITAL

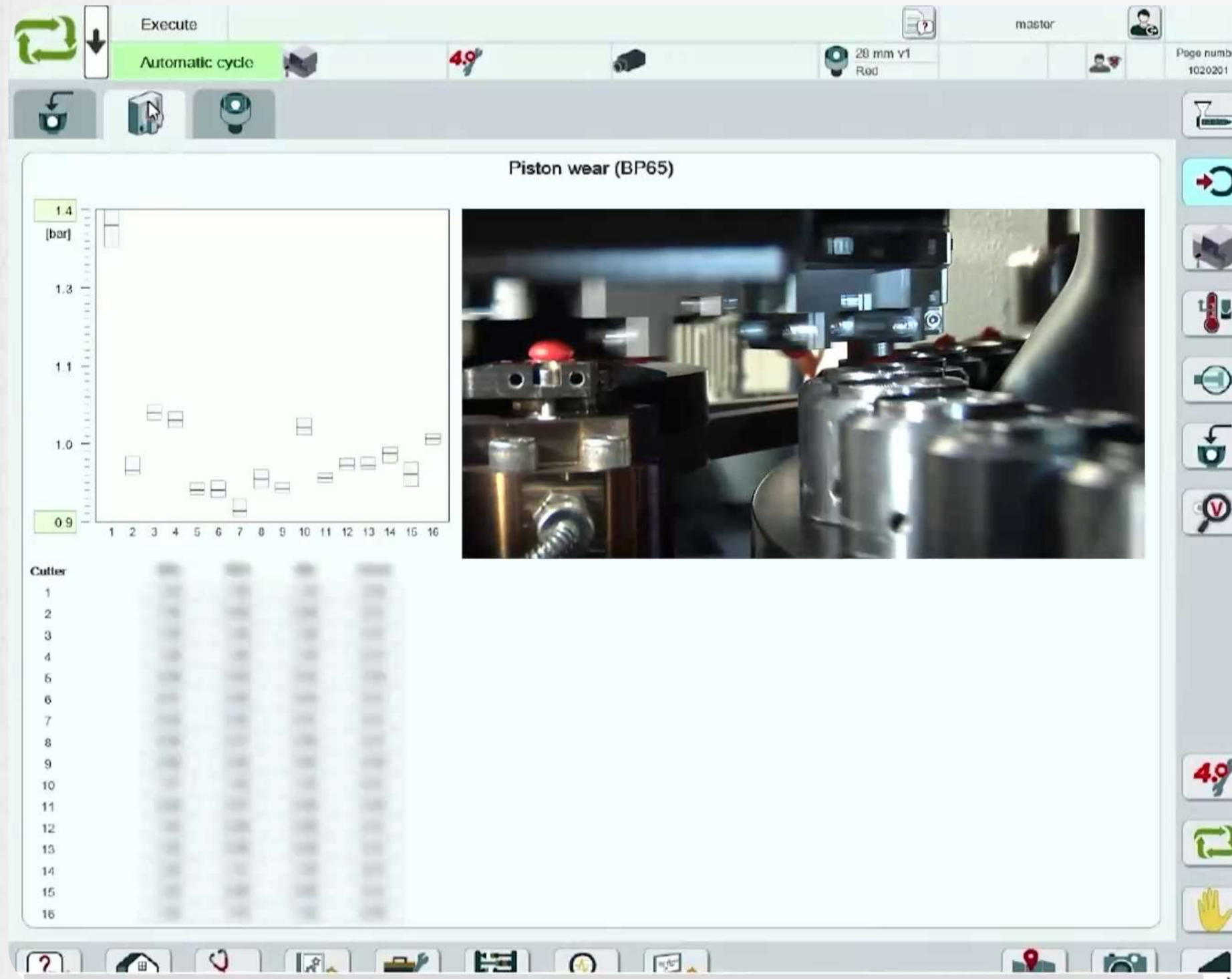
4.0

Easiness
Real time info

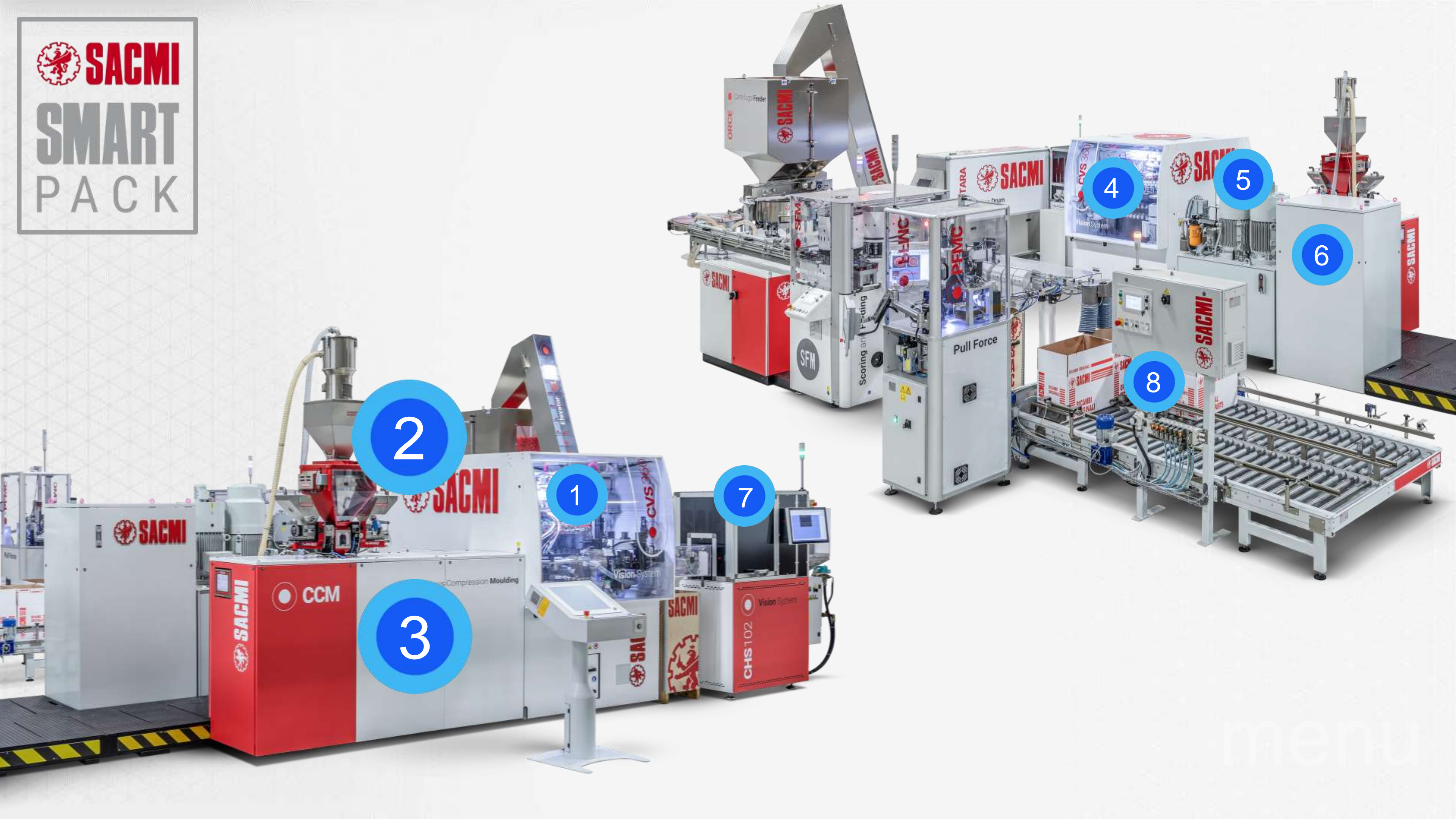
EFFICIENCY

Ef

Reduced Downtime



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INCORRECT RESIN DETECTION

DIGITAL

4.0

Digitalized
dimensions

DIGITAL

4.0

Easiness
Real time info





ASSISTED COLOR CHANGE

DIGITAL



Digitalized dimensions

DIGITAL



Easiness
Real time info

ASSISTED COLOR CHANGE



SACMI SMART PACK





SACMI

**SMART
PACK**

POWERFUL AND LONG LASTING

PRODUCTIVITY

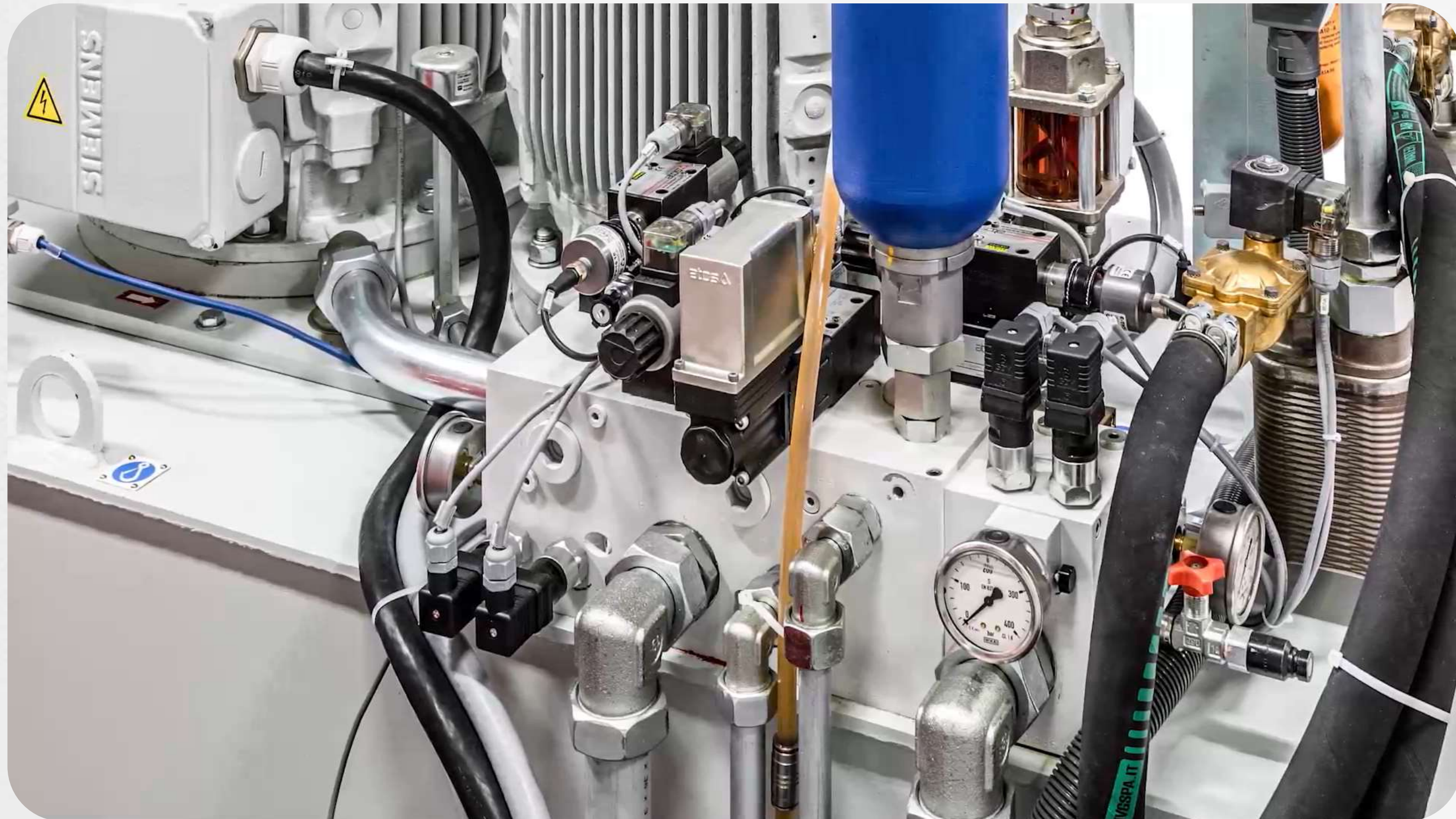


Enhanced output

COST SAVINGS



Optimized resources
management





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**SMART
PACK**

POWERFUL AND LONG LASTING

PRODUCTIVITY

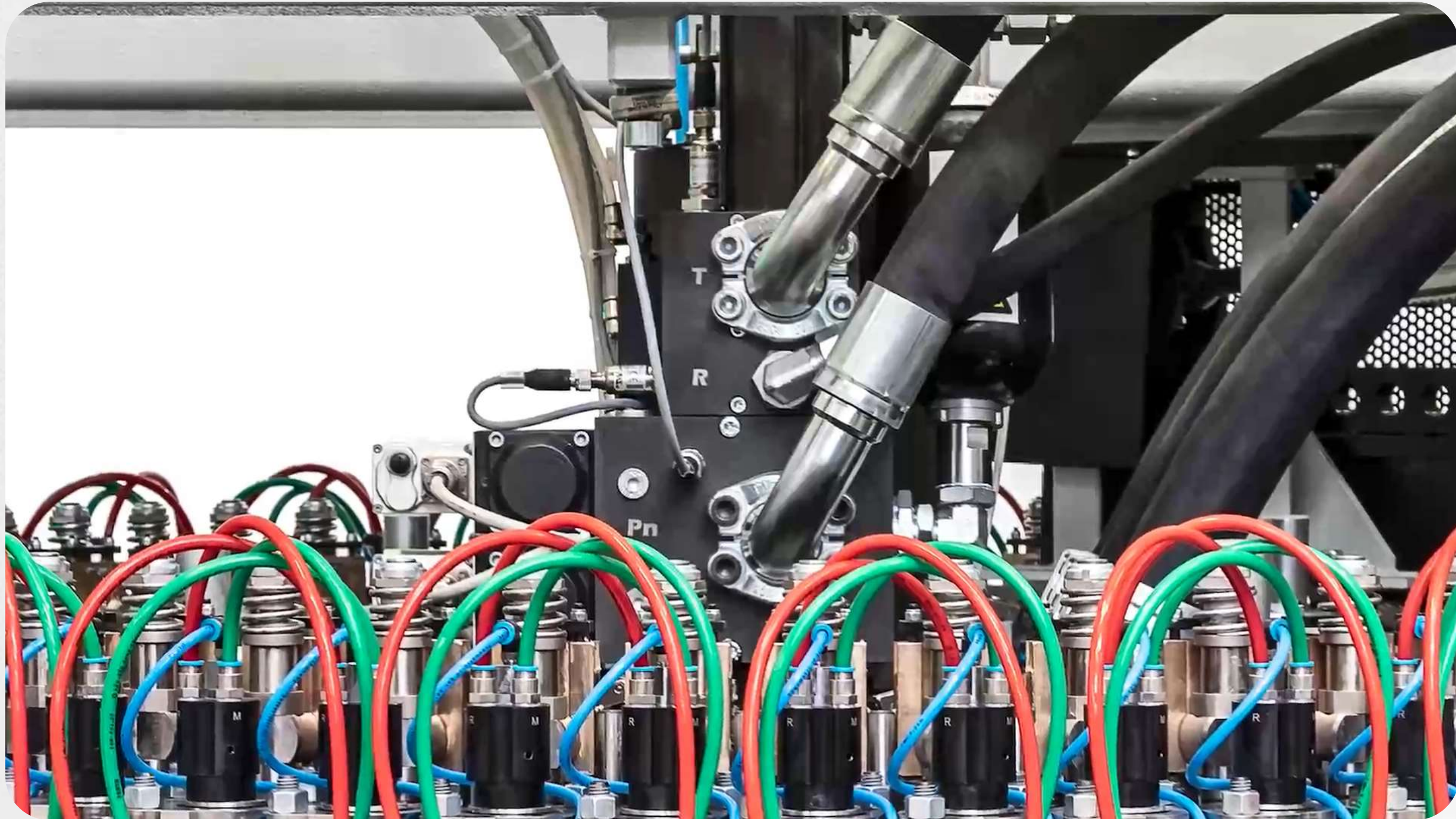


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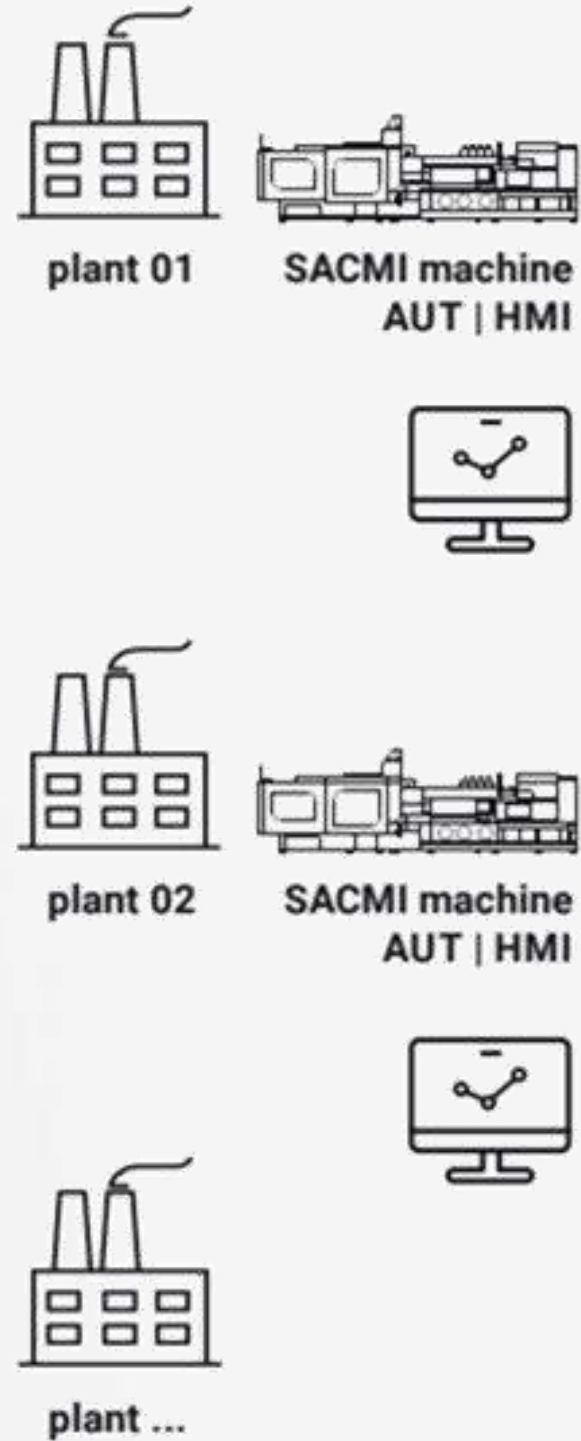
The elaboration of data

The profitability of data

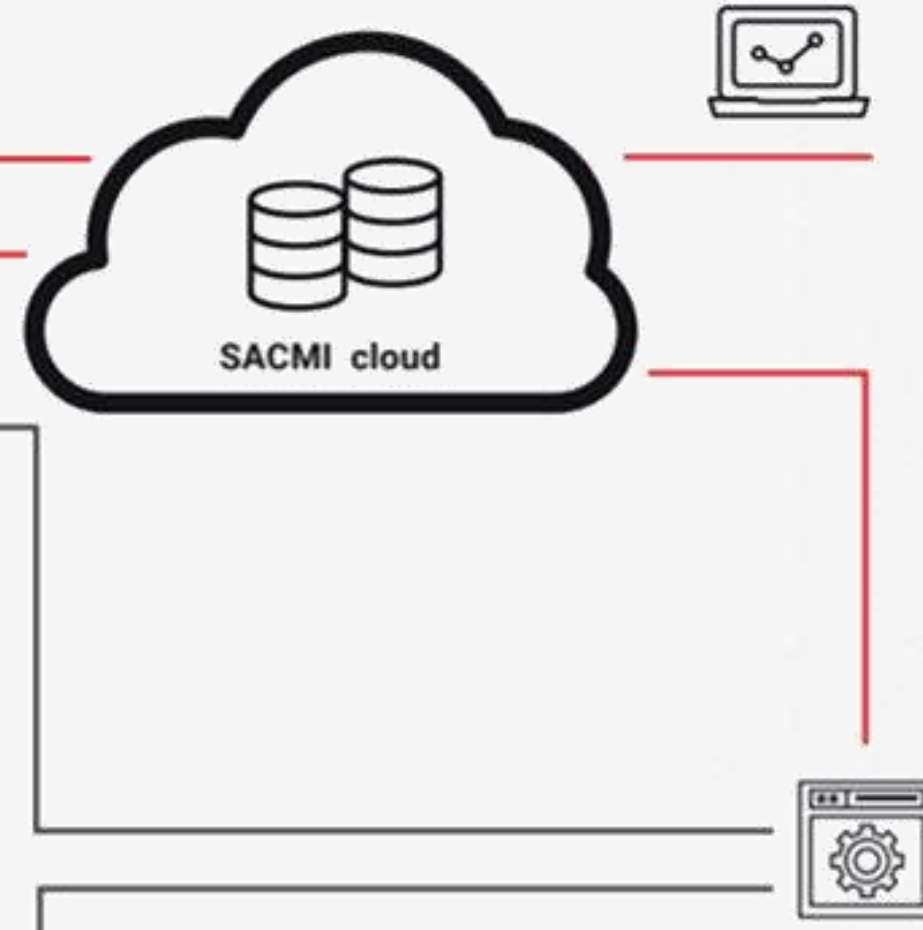
THE ELABORATION OF DATA



CUSTOMER MANUFACTURING PLANTS



SACMI MONITORING ROOM



Adding proactive services:

- Maintenance engineering
- Customer service
- Mechanical engineering R&D

THE ELABORATION OF DATA



- 4.0 machine interface generation
- On-line PRODUCT quality control
- On-line PROCESS quality control
- Self-adjustment of fast phenomena aimed at maintaining production STABILITY



- **Collection of production and process data (from sensors)**
- **Trend monitoring over long term**
- **Data processing with algorithms/analytics to maximize performance over time**
- **Generation of PREDICTIVE maintenance alerts**
- **Main production KPIs**

THE ELABORATION OF DATA

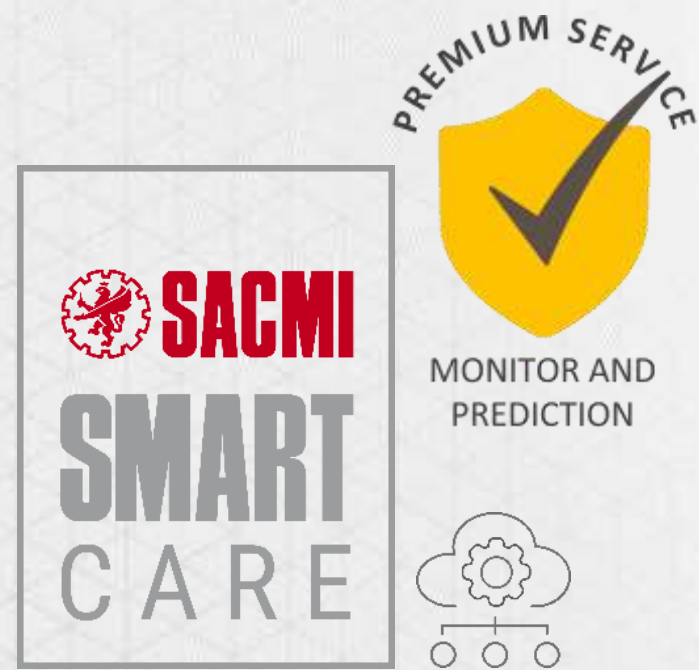


SACMI

SMART CARE



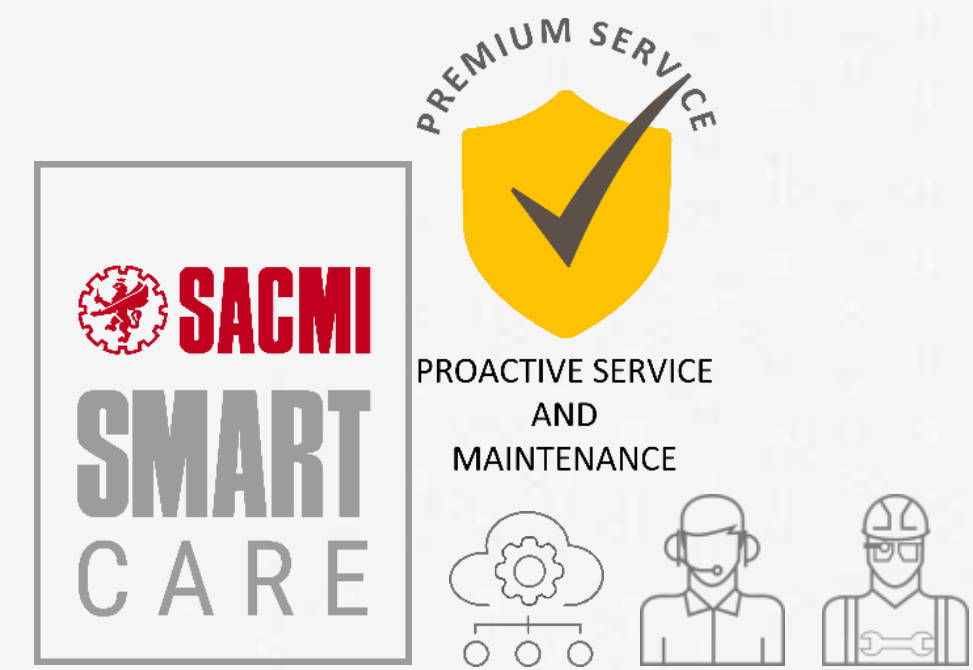
THE ELABORATION OF DATA



- KPI monitoring system, machine health status
- Prediction system for PREDICTIVE maintenance activities
- CLOUD Architecture
- The customer can access the platform, consult the dashboards, and take action independently



PREMIUM
for REMOTE
engagement with the
SACMI team



PREMIUM plus
MAINTENANCE contract to
combine

- REMOTE monitoring from SACMI, with
- periodical ON-SITE visits to perform maintenance tasks



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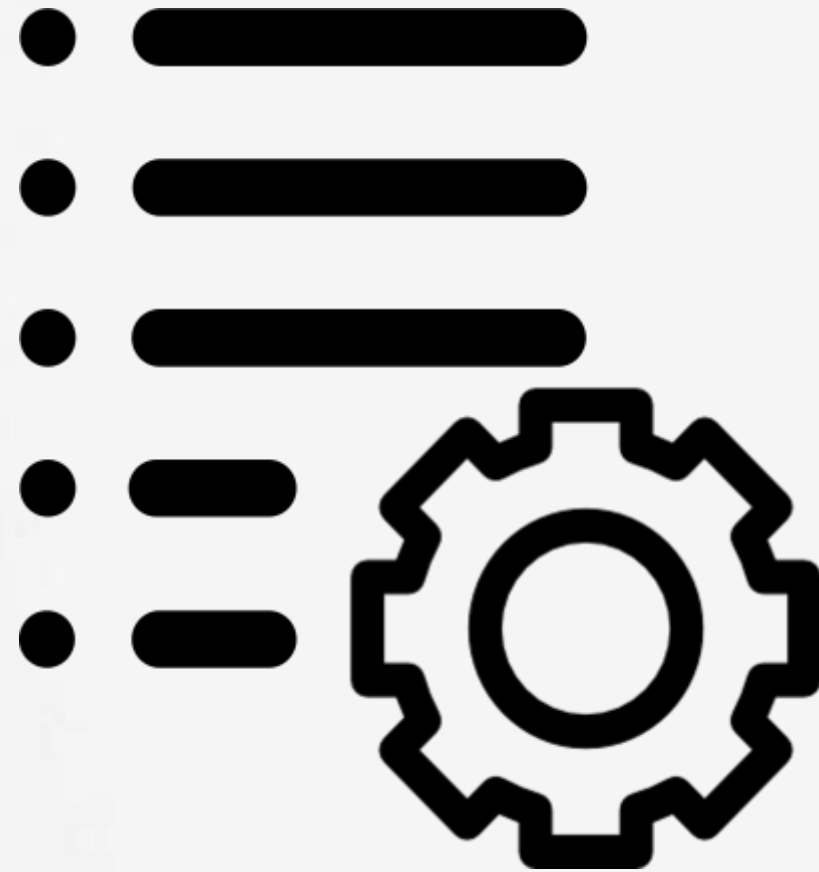
USE CASE FROM THE FIELD



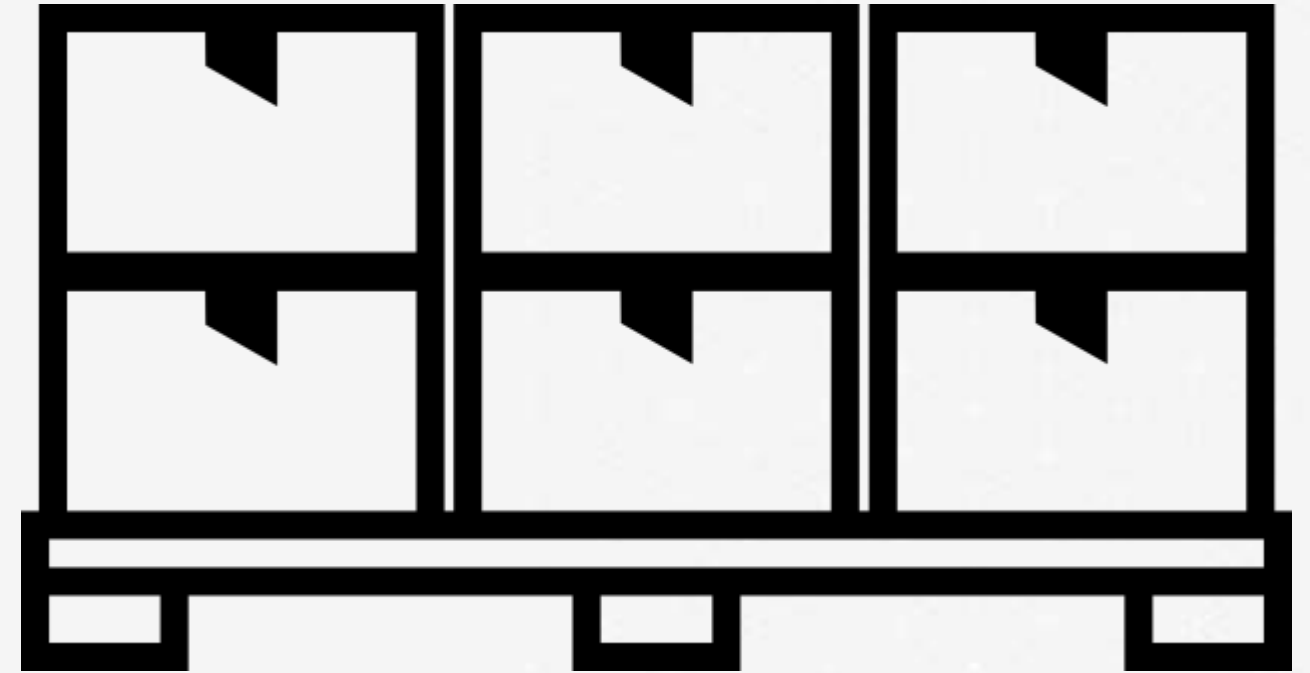
SAVINGS ON 15.000 HOURS MAINTENANCE



22%



20%



58%



RAW MATERIALS SAVINGS

@sacmigroup.com



Value

> Tethered Closures Line

Period 2022-01-01 - 2022-03-31

POWER

MANPOWER & REPAIRS

MAINTENANCE & AMORTIZATION

MATERIALS COMPARISON

PLASTIC USAGE

Comparison

Recipe N1 Pink

Rating : ★★★★★

Quality

Overall Rejection Rate	0.06 ‰	Reject Alarms	
Rejection		Geometric Cause	0
		Colouring Cause	0
		Total Hours	237

Energy

Electrical	Es	Heating	Es
Extruder Instant Power Total	24.25 kW	Upper Mould Set point	20°
Extruder Screw Motor Instant Power	16.87 kW	Lower Mould Set point	30°

Recipe N5 Blue

Rating : ★★☆☆☆

Quality

Overall Rejection Rate	2.51 ‰	Reject Alerts	
Rejection		Geometric Cause	29
		Colouring Cause	0
		Total Hours	141

Energy

Electrical	Es	Heating	Es
Extruder Instant Power Total	23.93 kW	Upper Mould Set point	20°
Extruder Screw Motor Instant Power	15.32 kW	Lower Mould Set point	30°



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Thank you for your kind attention