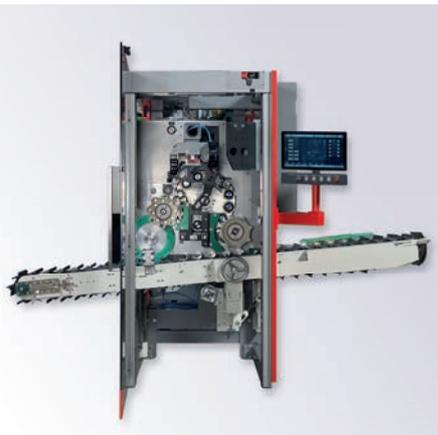


INTERNAL COATING | LATEXING INSPECTION | PACKAGING



CONTENTS



04 INTERNAL COATING

AEROSOL CANS, BEVERAGE BOTTLES AND TUBES

- 06 **HIL-94** Functionality meets design
- 08 **HIL-56** From the Sprimag ECOMPACT series
- 10 **DIT Internal drier for cans** Eco-friendly drying
- 12 **HIL-60 / 62** For high-speed in the collapsible tube production
- 14 **HIL-46** From the Sprimag ECOMPACT series
- 16 **TGO / TIT** For optimum tube stiffness and coating polymerization
- 18 **TGA-250** Solid technology – without size parts
- 19 **TGA-250 EVO** Precise latexing with integrated inspection units



20 INTERNAL COATING

BEVERAGE CANS

- 22 **HIL-34** High reliability for high capacity
- 24 **HIL-05** Combines speed and stroke movement



26 INSPECTION AND PACKAGING

AEROSOL CANS AND COLLAPSIBLE TUBES

- 28 **CIM-12** Camera-based end-of-line inspection for monobloc aerosol cans
- 30 **FPS** Flexible packaging systems

PRODUCT RANGE

	Type	Parts to be coated	Speed Parts per minute	Diameter mm	Length mm	Spray guns/ Spray process
HIL-94	Internal coating/ wet coatings	Aerosol cans/ bottles	up to 250	20-76	70-280	9/3 times
HIL-56	Internal coating/ wet coatings	Aerosol cans/ bottles	up to 180	20-66	70-270	6/3 times 4/2 times
HIL-60/62	Internal coating/ wet coatings	Tubes	up to 200	10-50	70-250	9/3 times
HIL-46	Internal coating/ wet coatings	Tubes	up to 180	10-50	70-220	6/3 times
TGA-250	Latexing	Tubes	up to 250	10-50	70-220	2
TGA-250 EVO	Latexing and Inspection	Tubes	up to 200	10-50	70-220	3 spray guns 24 testing heads
HIL-34	Internal coating/ wet coatings	Beverage cans	350	52-85	85-180	3/3 times 2/2 times
HIL-05	Internal coating/ wet coatings	Beverage cans and bottles	300 (up to 800 in short stroke operation)	52-66	120-260	9/1 time

	Type	Parts to be tested /packed	Speed Parts per minute	Diameter mm	Length mm
CIM-12	Inspection	Aerosol cans	up to 250	22-66	max. 300
FPS	Packaging	Aerosol cans	up to 250	22-66	max. 300

INNOVATIVE SOLUTIONS ARE FOCUSED

The name Sprimag enjoys a superb reputation in the international collapsible tubes and aerosol cans industry. For over 70 years, qualified engineers and technicians have concentrated on internal coating. Customer design requirements stand thereby always as a top priority. Permanently increasing demands for increased output require the continuous implementation of new ideas.







HIL-94 FUNCTIONALITY MEETS DESIGN

The impressive features of the new internal coating machine HIL-94 for aerosol cans and bottles include high machine performance and optimal maintenance friendliness in combination with a new design. The maximum line speed of the HIL-94 is trendsetting: up to 250 cans per minute can be precisely internally coated.



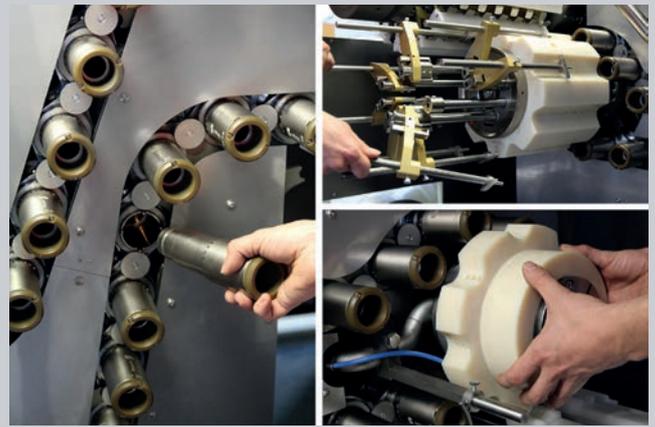
Type	Parts to be coated	Speed Parts per minute	Diameter mm	Length mm	Spray guns / Spray process
Internal coating wet coatings	Aerosol cans / bottles	up to 250	20-76	70-280	9 / 3 times

FEATURES

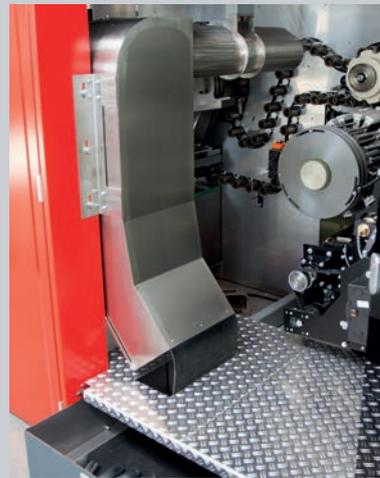
- Low vibration due to solid mechanical design
- Individual vacuum supply for machine infeed and outfeed
- Increased user comfort by direct electro-pneumatic control of the spray guns by HMI
- Shorter cleaning times by optimized exhaust performance
- Height adjustable and horizontally moveable control panel
- Combinations with different internal coating drier options (1, 2 or 3 rows)
- Manufactured in accordance with the ATEX guideline

OPTIONS

- Additional lacquer supply
- Cleaning device for spray gun extensions
- Accumulator 1 outfeed drum / accumulator 2 infeed drum
- Energy optimizing system and vacuum control
- Second spray arm with full spraying equipment assembly
- Can bottom suction device
- RFID-access verification system to organize access authorizations
- Division of spray gun groups into separately controlled circuits



Quick and easy size part changing



Automatic part ejection during production process (single or group pre-set)



Modern and intuitive HMI



Proven transfer concept by combined transfer drum to the internal drier

HIL-56 FROM THE SPRIMAG ECOMPACT SERIES



The HIL-56 aerosol can internal coating machine impresses with its cost-, space- and energy-optimized coating concept. The internal coating machine, which is based on standard assemblies, is enhanced by an energy-optimized internal coating drier.



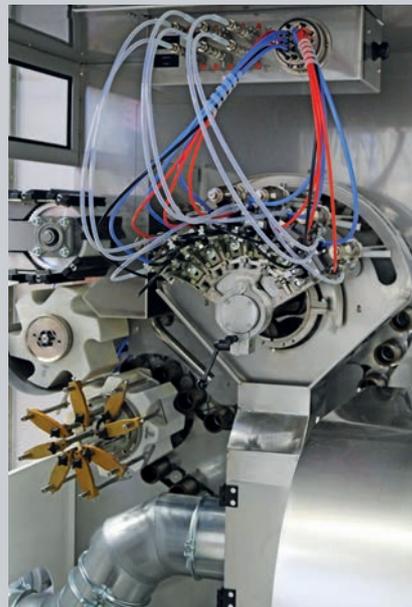
Type	Parts to be coated	Speed Parts per minute	Diameter mm	Length mm	Spray guns / Spray process
Internal coating wet coatings	Aerosol cans / bottles	up to 180	20-66	70-270	6/3 times 4/2 times

FEATURES

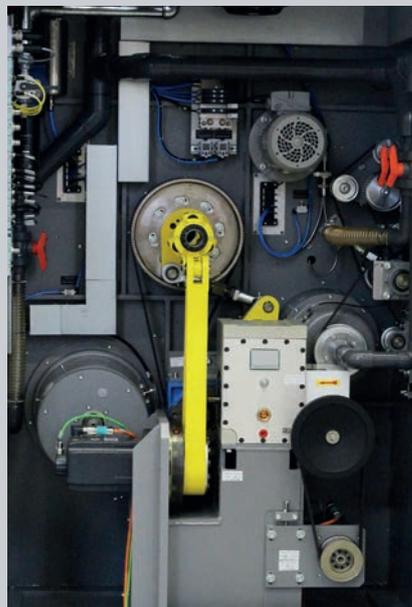
- Compact machine design
- Machinery speed up to 180 cans per minute
- Triple coating on 6 spray guns
- Separate servo drives for stroke and transport movement
- Proven quick-change system for size parts, compatible with HIL-64, HIL-70, HIL-94
- Automatic part ejection during production process
- Machine dimensions adjusted to integrate in older production lines
- Manufactured in accordance with the ATEX regulations

OPTIONS

- Additional lacquer supply
- Cleaning device for spray gun extensions
- Energy optimizing system and vacuum control
- Second spray arm with full spraying equipment assembly
- Can bottom suction device
- RFID-access verification system to organize access authorizations
- Division of spray gun groups into separately controlled circuits
- Flexible infeed concepts



6/4 spray gun holders with quick-change infeed system



Compact servo drive concept with separate servo drives for stroke and transport movement and good accessibility for maintenance



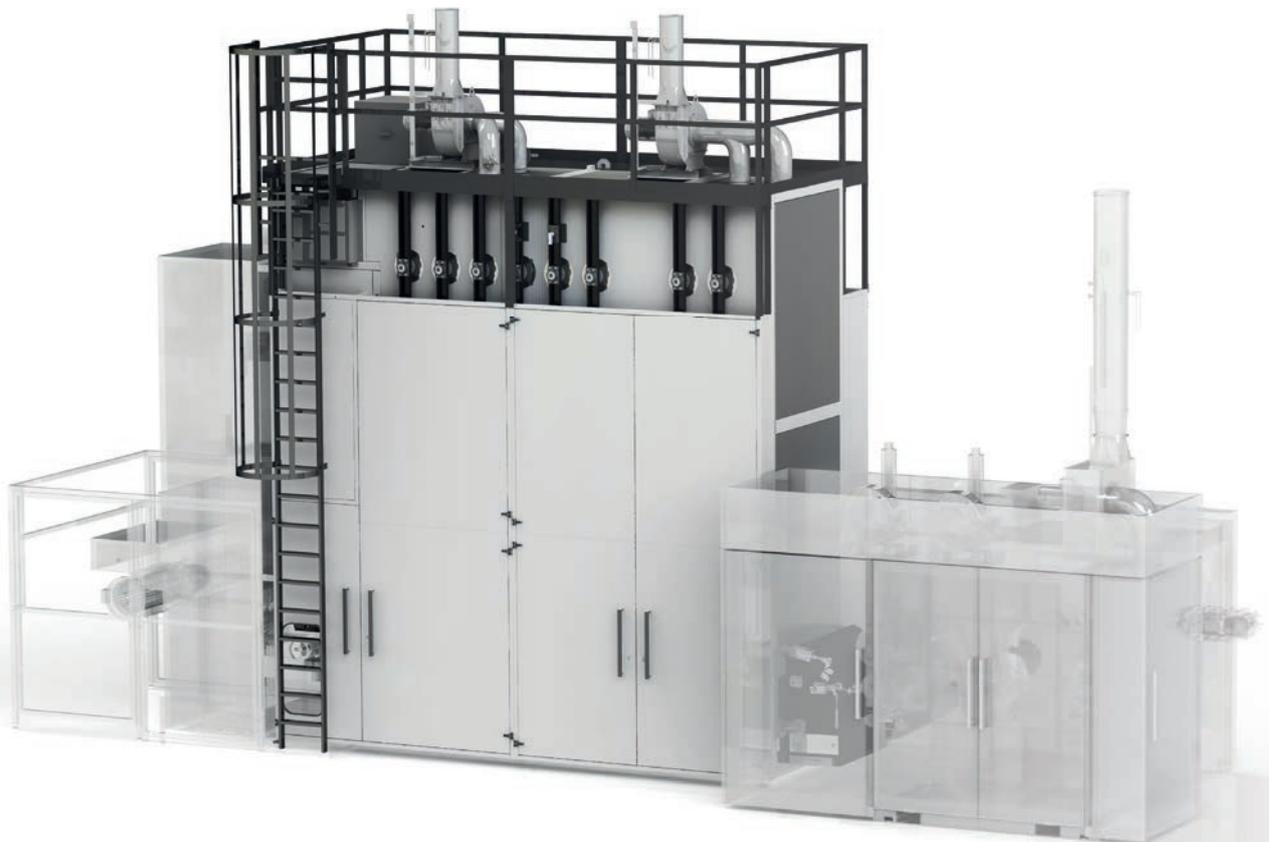
V2A cabinet for air extraction with user-friendly accessibility



DIT INTERNAL DRIER FOR CANS

ECO-FRIENDLY DRYING

The internal drier for cans DIT is suitable for all Sprimag internal coating machines in the field of aerosol cans and beverage bottles. The temperature profile is adapted to the optimal coating polymerization and thus provides with a high degree of cure for best coating results.



FEATURES

- New, space-optimized modular concept
- Maximum energy efficiency
- Safe production process due to monitoring and control systems
- New door design with new locking system and optimized thermal insulation
- New security and energy-related options:
 - Hand rail
 - SESS Sprimag Energy Saving System
 - Monitoring of the shaft tensioner by a position measuring system



Drier doors

- Outer and adjustable locking mechanism
- Large drier doors on both sides for easy access



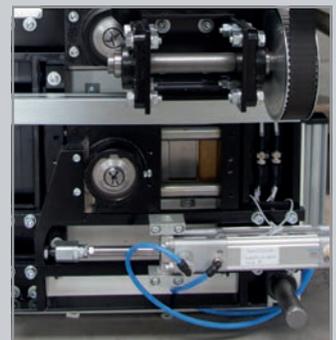
Safety hand rail

- One-sided with rail safety lock or optionally
- Safety railing on both sides



Chain tensioner

- Vertical weight chain tensioner with precise two guide pillars
- Horizontal chain tensioner with pneumatic cylinder



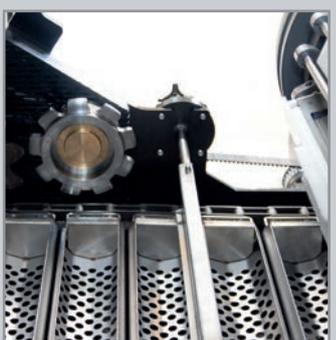
New basket transport system

- Lightweight basket transport system for an extended service life of the transport chain
- Basket perforation to avoid damages to the can in the transfer and production process



MATIC chain lubrication system

- Cost reduction through minimum lubricant quantity
- Lubrication during the production process





HIL-60 / 62 FOR HIGH-SPEED IN THE COLLAPSIBLE TUBE PRODUCTION

The HIL-60 / 62 is the proven coating machine from Sprimag for the internal coating of collapsible tubes at the highest level. Production speed of the HIL-60 / 62 is up to 200 tubes per minute with 1- and 2-row design of the annealing and drying ovens. The entire diameter range of aluminum tubes from 10 mm to 50 mm is covered. According to requirements, the machine may be supplied with or without an intermediate drier. The triple coating is carried out by 9 spray guns.



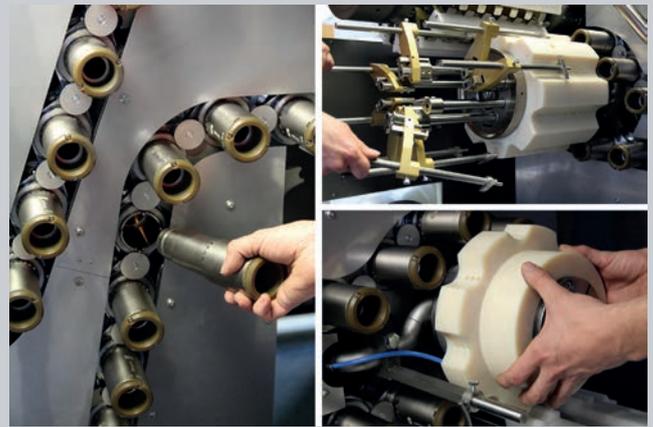
Type	Parts to be coated	Speed Parts per minute	Diameter mm	Length mm	Spray guns / Spray process
Internal coating wet coatings	Tubes	up to 200	10-50	70-250	9/3 times

FEATURES

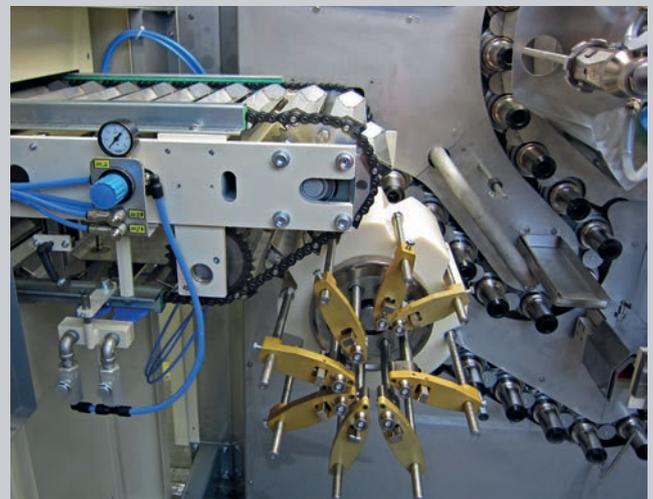
- Separate servo drives for stroke and transport movement
- Monitored electromagnetic control valves
- Proven quick-change system for size parts
- Automatic part ejection during production process
- Interior covers made out of stainless steel for easy cleaning
- Manufactured in accordance with the ATEX regulations

OPTIONS

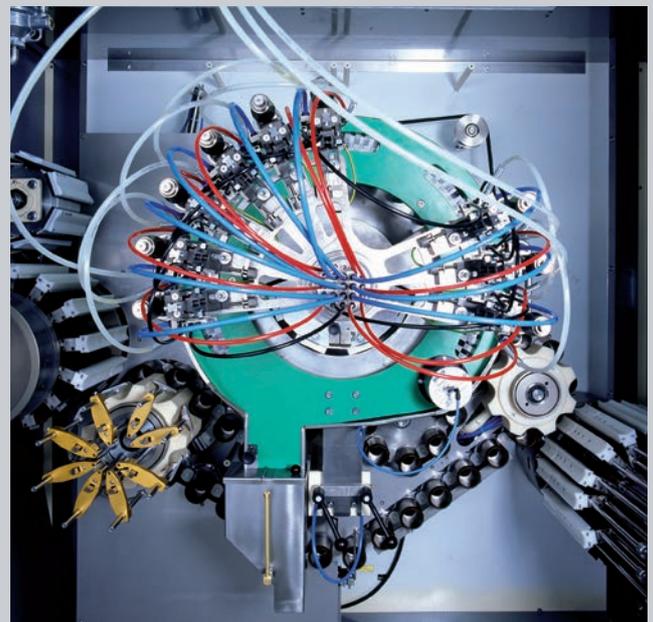
- Additional lacquer supply
- Cleaning device for spray gun extensions
- Energy optimizing system and vacuum control
- Second spray arm with full spraying equipment assembly
- Exhaust system for tubes without membrane
- RFID-access verification system to organize access authorizations
- Division of spray gun groups into separately controlled circuits
- Flexible infeed concepts



Quick-change system for size parts



Flexible infeed concepts



Spray booth with optional cleaning device



HIL-46 FROM THE SPRIMAG ECOMPACT SERIES

The HIL-46 internal coating machine for collapsible tubes impresses with its cost-, space- and energy-optimized coating concept. The internal coating machine, which is based on standard assemblies, is enhanced by energy-optimized system components, such as annealing furnaces and internal coating driers.



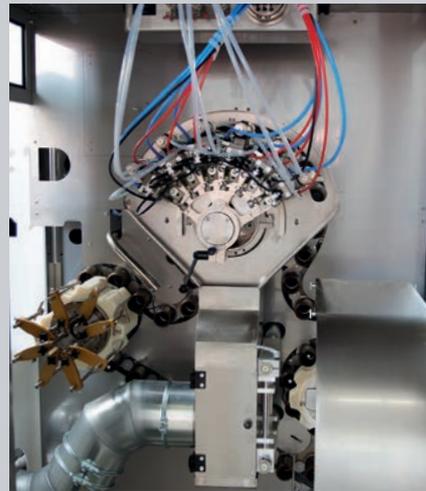
Type	Parts to be coated	Speed Parts per minute	Diameter mm	Length mm	Spray guns / Spray process
Internal coating wet coatings	Tubes	up to 180	10-50	70-220	6/3 times

FEATURES

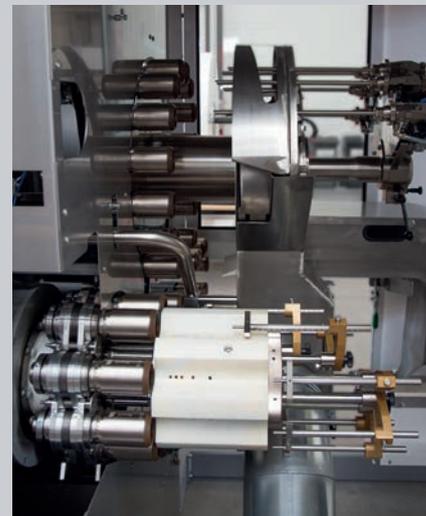
- Compact machine design
- Machinery speed up to 180 tubes per minute
- Triple coating on 6 spray guns
- Separate servo drives for stroke and transport movement
- Proven quick-change system for size parts
- Automatic part ejection during production process
- Installation dimensions adjusted to older production facilities
- Manufactured in accordance with the ATEX regulations

OPTIONS

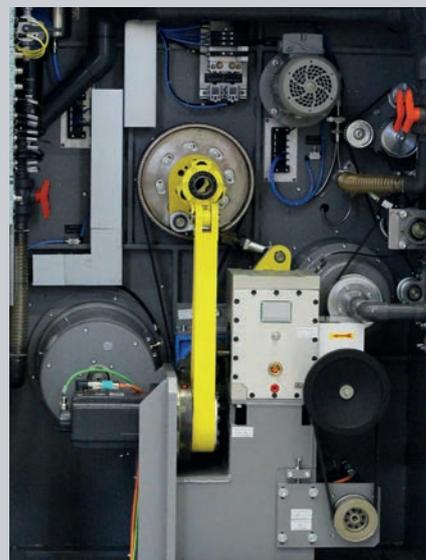
- Additional lacquer supply
- Cleaning device for spray gun extensions
- Energy optimizing system and vacuum control
- Second spray arm with full spraying equipment assembly
- Exhaust system for tubes without membrane
- RFID-access verification system to organize access authorizations
- Division of spray gun groups into separately controlled circuits
- Flexible infeed concepts



User-friendly concept of the spray booth interior despite of compact machine design



Optimal accessibility to the entire machine interior



Compact servo drive concept with separate servo drives for stroke and transport movement and good accessibility for maintenance



TGO/TIT FOR OPTIMUM TUBE STIFFNESS AND COATING POLYMERIZATION

Before the internal coating, the tubes are transported through the annealing oven TGO for softening. After the internal coating, the tubes are transferred into the 1- or 2-row drier TIT. The temperature profile is adapted to the optimal coating polymerization and provides a high curing level for best coating results.

FEATURES

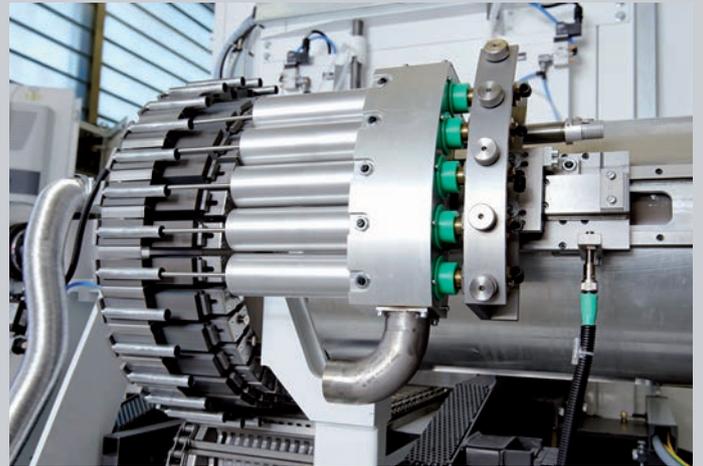
- 1- or 2-row transport chain with new basket geometry
- Reduced wearout of the transport chain and the chain wheels by cardan-based drive system
- Chain tensioner with weight, electronically monitored
- Easy accessibility to the drier interior due to large doors
- Quadruple door lock
- Isolated doors with special door hinges for synchronized door closing
- Large outer doors with smooth surface on the oven's front and rear sides
- Quick and easy removal and reassembly of the shafts and chain wheels in case of service



OPTION

Chip blow-off drum CBD

- 5 blow-off lances
- Precise suction of chips
- Cam-driven drum



OPTION

MATIC lubrication device

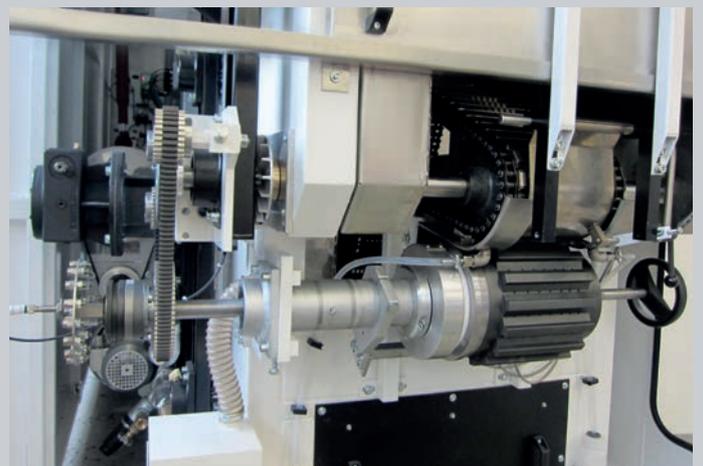
- Cost reduction through minimum lubricant quantity
- No uncontrolled spraying of the lubricant during relubrication
- Lubrication during the production process
- Required chain lubrication interval is ensured
- Precise lubricant supply by special lubrication sprockets with cycled lubricant output



OPTION

Vacuum transfer

- Smooth transfer to the downstream machine
- Tube detection sensor
- Synchronous adjustment
- Overload safety clutch (monitored)





TGA-250 SOLID TECHNOLOGY – WITHOUT SIZE PARTS

The proven TGA-250 combines solid technology with high machine availability by avoiding size part-dependent components. The TGA-250 applies a sealing ring on the end of the tube to ensure the density of the fold. All Sprimag latexing machines with direct latexing on the conveyor belt can be easily integrated into automatic tube production lines and cover the entire production speed range up to 250 tubes per minute.

FEATURES

- Production speed: up to 250 tubes per minute
- Self sustaining servo drive system
- Integrated test tube ejection for quality inspection
- Equipped with the high-end centrifugal gun S-540

OPTIONS

- Machine option with hot wax device



Latexing with 2 high-end centrifugal guns S-540 on format-independent conveyor belt

Type	Parts to be coated	Speed Parts per minute	Diameter mm	Length mm	Spray guns / Spray process
Latexing	Tubes	up to 250	10–50	70–220	2



TGA-250 EVO PRECISE LATEXING WITH INTEGRATED INSPECTION UNITS

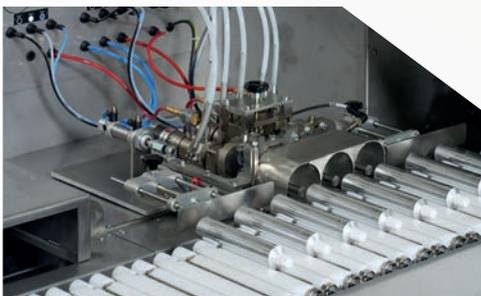
The new TGA-250 EVO tube latexing machine combines several production steps from different Sprimag machine solutions. The tubes will not only be latexed, but also be inspected pneumatically and visually and directly ejected in case of defects. Three S-540 centrifugal spray guns with adjustable stroke movement carry out the latexing function, so that even more precise results are achieved due to the longer latexing times.

FEATURES

- Line speed up to 200 tubes per minute
- Equipped with the high-end centrifugal gun S-540
- Additional parts ejection used for fine adjustment of the centrifugal guns downstream of the latexing unit

OPTIONS

- Pneumatic leak detection by 24 testing heads up to a leak / crack size of 0.05 mm
- Visual camera inspection system for internal coating and latex inspection as an „open platform“: different camera systems available depending on customer requirements



Assembled with 3 high-end centrifugal guns S-540 for high cycle times (up to 200 tpm)



Type	Parts to be coated	Speed Parts per minute	Diameter mm	Length mm	Spray guns / Spray process
Latexing and Inspection	Tubes	up to 200	10–50	70–220	3 spray guns 24 testing heads

SOLUTIONS FOR THE FUTURE

To be innovative means to come up continuously with solutions, which meet and exceed the continuously increasing market requirements, to recognize product and application trends at an early stage and to realize solutions with consideration of the market as well as meeting environmental standards.

Experiences of many decades in the design and manufacturing of internal coating machines confirms our awareness of the benefits of customized solutions. Our ultimate ambition is to supply reliable and future-proven solutions, guaranteeing a high availability under the most extreme conditions. To our customers a maximum process stability and reliability is granted by present new and further developments.







HIL-34 HIGH RELIABILITY FOR HIGH CAPACITY

The modular system of the new HIL-34 generation makes the machine a highly flexible solution for the internal coating of beverage and food cans. The main machine is available either as a „stand-alone“ version or as a „table-top“ version for integration into the line. Both beverage cans and food cans can be internally coated on an identical main machine. By combining individual machines, the cycle rate can be adapted to the line speed.



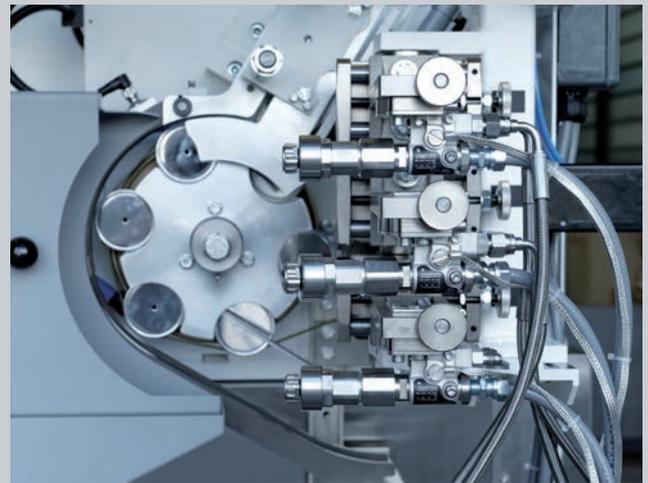
Type	Parts to be coated	Speed Parts per minute	Diameter mm	Length mm	Spray guns / Spray process
Internal coating wet coatings	Beverage cans	350	52-85	85-180	3/3 times 2/2 times

FEATURES

- 6 vacuum supports with or without centering flute
- Up to 3 airless spray guns which can be swiveled out and adjusted separately
- Table-top or stand-alone version
- Suitable for solvent- and water-based coatings
- Machines can be combined in any number
- Module capacity up to 350 cans per minute (depending on size)
- Manufactured in accordance with the ATEX guideline

OPTIONS

- Lacquer supply incl. temperature control
- HMI touch panel
- Servo drive
- Spray pressure control, timing control and spray monitoring
- Dome spray equipment
- Connection to the customer's existing exhaust system



Up to 3 spray guns



Modular system: „stand-alone“ or „table-top“ version



Optimized accessibility due to automatable cover panel lift



HIL-05 COMBINES SPEED AND STROKE MOVEMENT

The internal coating machine HIL-05 was designed for the internal coating of beverage cans and bottles with a large length-to-diameter ratio. This machine, which was specifically designed for the requirements of the beverage can industry, is extremely robust, provides high availability, and fulfills the highest standards of hygiene and ease of cleaning due to the machine housing that is mainly manufactured out of stainless steel.



Type	Parts to be coated	Speed Parts per minute	Diameter mm	Length mm	Spray guns / Spray process
Internal coating wet coatings	Beverage cans and bottles	300 (up to 800 in short stroke operation)	52-66	120-260	9 / 1 time

FEATURES

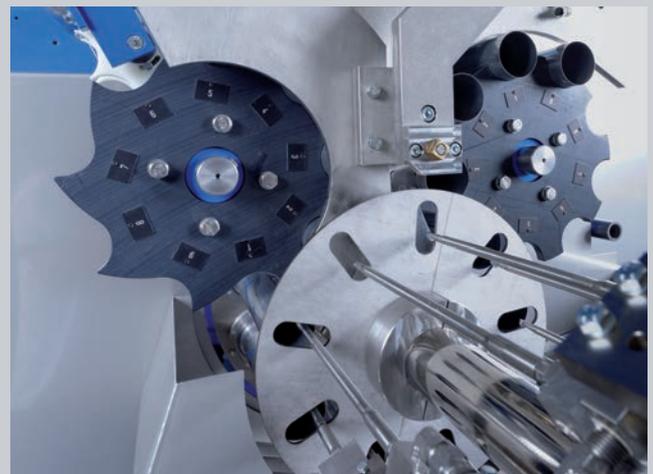
- Rotary drive with 9 spray guns
- Excellent coating quality
- Provides high availability of machinery equipment
- High machine output
- Meets the high requirements of the beverage industry in reference to robustness
- Fulfills the highest hygienic standards
- Perfectly designed for bottle cans and slim beverage cans

OPTIONS

- Optionally equipped with airless or air pressure fed spray guns



Rotary drive with central rotary feedthrough



Can transfer by infeed starwheel, central vacuum disc and outfeed starwheel



Optimum ease of operation due to generous machine accessibility

THE BEST COMES AT THE END

Sprimag end-of-line and inspection solutions are the perfect supplement to the coating system manufacturer's internal coating systems. Thanks to our decades of experience in process management and control and our ability to identify product and application trends, we are able to achieve even more precise test results with Sprimag testing machines. Finally, the fully automated packaging solutions will complete the aerosol can manufacturing process.

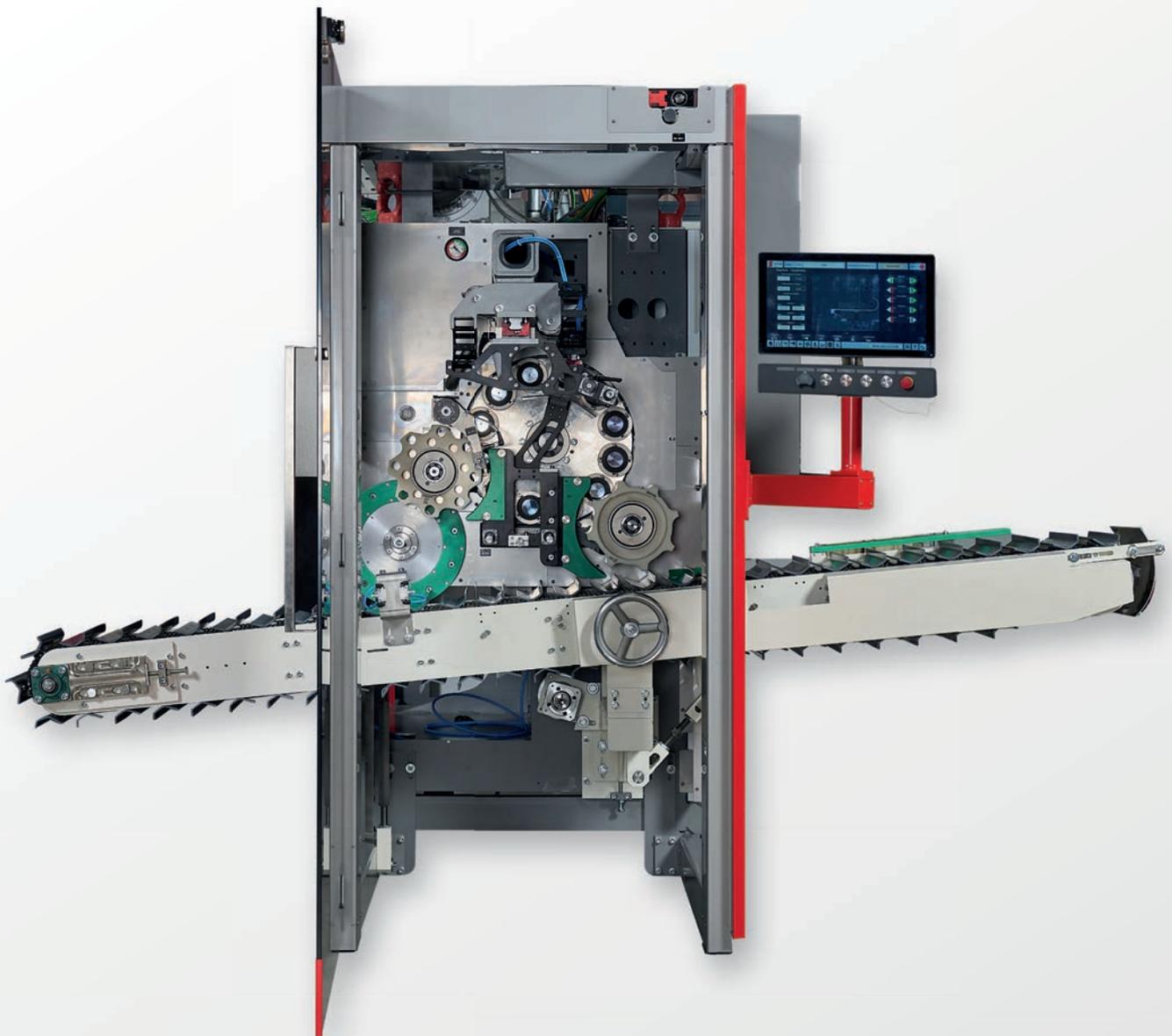






CIM-12 CAMERA-BASED END-OF-LINE INSPECTION FOR MONOBLOC AEROSOL CANS

Thanks to its high-end camera system the new camera inspection machine CIM-12 inspects both the entire can body as well as the neck area after the deformation process of the necking machine from above and transfers the cans to the packaging area after testing.



Type	Parts to be coated	Speed Parts per minute	Diameter mm	Length mm
Inspection	Aerosol cans	up to 250	22-66	max. 300

FEATURES

- Flexible machine concept for integration into the outfeed conveyor belt or as a stand-alone option between necking machine and packaging area
- Extremely compact footprint
- 3 + 1 inspection systems can be integrated
- Solid mechanical-based drive concept (central gearbox + main drive)

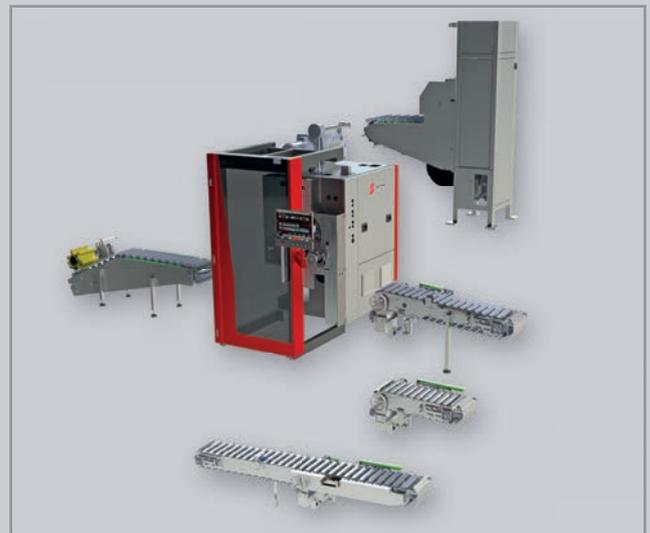
OPTIONS

- Various transfer options (infeed / outfeed / bypass belt or integration of the upstream / downstream machine)
- Inspection of large cans up to $\varnothing 80$ mm

The machine is designed as an open platform in terms of the integration of **inspection systems** and allows the use of different camera and inspection systems depending on individual requirements.

Following areas may be inspected:

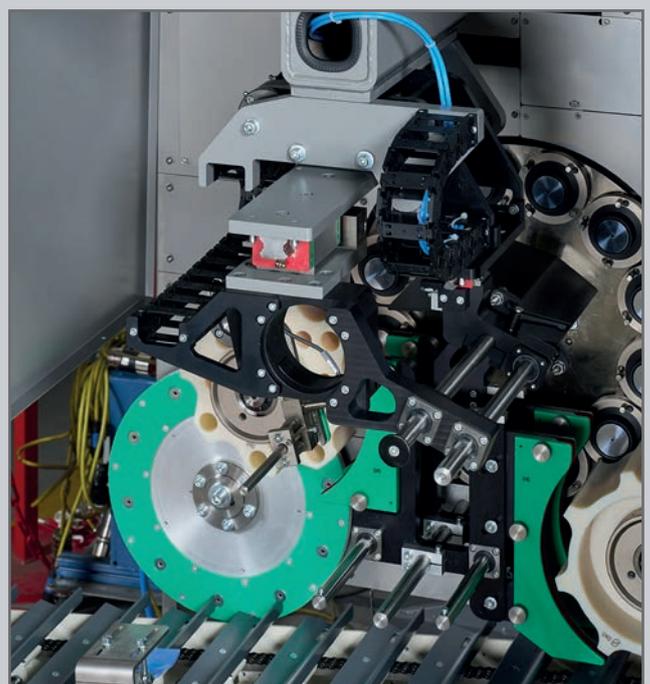
- Curl and shoulder incl. print
- Full-body inspection down to the can bottom
- Print on lateral surface
- Leak detection by means of light tester



Multiple conveyor belt options



New user-friendly HMI touch panel



Up to four inspection systems can be integrated



FPS FLEXIBLE PACKAGING SYSTEMS

With a new generation of machines and systems, Sprimag has dedicated itself to the fully automatic, robot-supported packaging of aerosol cans. Sprimag can rely on more than 20 years of experience in the use of various robot systems for complex painting and handling tasks.



Type	Parts to be coated	Speed Parts per minute	Diameter mm	Length mm
Packaging	Aerosol cans	up to 250	22-66	max. 300

FEATURES

- Can positioning and conveyor feeding unit
- FANUC grouping robot R-2000iC
- FANUC transfer robot M-20iB
- Schmalz gripper unit
- Grouping table
- MOSCA grouping and strapping unit with gantry guide



FANUC R-2000iC grouping robot

OPTIONS

- Automatic pallet dispenser
- Cardboard and covering board unit
- Pallet transfer conveyors and pallet turntables
- Vertical pallet strapping unit
- Robopac Helix stretch wrapping unit
- Robot labelling unit



MOSCA grouping and strapping unit with gantry guide



Cardboard unit

SPRIMAG COATING SYSTEMS

HIGH-END TECHNOLOGY MEETS TRADITION

Since 1925 Sprimag has enjoyed a leading position for automated coating solutions. Sprimag designs equipment for the functional and decorative coating of serial parts and for the internal coating of metal packaging such as tubes, cans and beverage bottles, as well as inspection and packaging systems. Sprimag systems are well proven and are often considered as benchmarks in terms of quality, precision and reliability. With highly qualified and experienced employees from the initial consultation through the engineering, application development, manufacturing, and assembly, installation and commissioning, to the after-sales service, Sprimag is able to meet customer needs flexibly, cost efficiently and ensuring the best quality.



Sprimag

Spritzmaschinenbau GmbH & Co. KG
Henriettenstrasse 90
73230 Kirchheim / Teck · Germany
Tel. +49 (0) 7021 / 579 0
Fax +49 (0) 7021 / 417 60
www.sprimag.com
info@sprimag.de

Sprimag, Inc.

9965 Cincinnati-Dayton Road
West Chester, OH 45069 · USA
Tel. +1 (0) 513 / 779 573 0
Fax +1 (0) 513 / 779 573 90
www.sprimag.com
info@sprimag.com

Sprimag, Inc.

Puebla, Mexico
International: +52 (1) 222 / 505 118 3
www.sprimag.com
info.mex@sprimag.com



brochure for download:
www.sprimag.com/en/infocenter/downloads

