INTERNAL COATING MACHINES
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<thead>
<tr>
<th>Type</th>
<th>Parts to be coated</th>
<th>Speed Parts per minute</th>
<th>Diameter mm</th>
<th>Length mm</th>
<th>Spray guns / Spray process</th>
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<tbody>
<tr>
<td>HIL-94</td>
<td>Internal coating / wet coatings</td>
<td>up to 250</td>
<td>20–76</td>
<td>70–280</td>
<td>9 / 3 times</td>
</tr>
<tr>
<td>HIL-56</td>
<td>Internal coating / wet coatings</td>
<td>up to 180</td>
<td>20–66</td>
<td>70–270</td>
<td>6 / 3 times 4 / 2 times</td>
</tr>
<tr>
<td>HIL-60 / 62</td>
<td>Internal coating / wet coatings</td>
<td>up to 200</td>
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<tr>
<td>HIL-46</td>
<td>Internal coating / wet coatings</td>
<td>up to 180</td>
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<td>TGA-200</td>
<td>Tube latexing</td>
<td>up to 270</td>
<td>10–50</td>
<td>70–220</td>
<td>2 or 3</td>
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<tr>
<td>TGA-250</td>
<td>Tube latexing</td>
<td>up to 250</td>
<td>10–50</td>
<td>70–220</td>
<td>2</td>
</tr>
<tr>
<td>HIL-34</td>
<td>Internal coating / wet coatings</td>
<td>350</td>
<td>52–85</td>
<td>85–180</td>
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<tr>
<td>HIL-05</td>
<td>Internal coating / wet coatings</td>
<td>300 (up to 800 in short stroke operation)</td>
<td>52–66</td>
<td>120–260</td>
<td>9 / 1 time</td>
</tr>
</tbody>
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<th>Type</th>
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<tr>
<td>LRP-20</td>
<td>Leak detection</td>
<td>up to 200</td>
<td>10–50</td>
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<td>20</td>
</tr>
<tr>
<td>LRP-30</td>
<td>Leak detection</td>
<td>up to 250</td>
<td>22–66</td>
<td>65–280</td>
<td>30</td>
</tr>
<tr>
<td>CIM-12</td>
<td>End-of-line inspection</td>
<td>up to 250</td>
<td>22–66</td>
<td>max. 300</td>
<td></td>
</tr>
<tr>
<td>FPS</td>
<td>Packaging</td>
<td>up to 250</td>
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<td>max. 300</td>
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</table>
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.

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<td>70–280</td>
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</table>
FEATURES

■ Low vibration due to solid mechanical design
■ Individual vacuum circuit 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 regulations

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
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.

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<td>Aerosol cans / bottles</td>
<td>up to 180</td>
<td>20-66</td>
<td>70-270</td>
<td>6 / 3 times 4 / 2 times</td>
</tr>
</tbody>
</table>
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
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 clamping 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 COLLABSIBLE 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.

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<td>Internal coating / wet coatings</td>
<td>Tubes</td>
<td>up to 200</td>
<td>10-50</td>
<td>70-250</td>
<td>9 / 3 times</td>
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</table>
FEATURES

- Separate servo drives for stroke and transport movement
- Monitored electromagnetic spray 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
- Suction device for tubes without membrane
- RFID-access verification system to organize access authorizations
- Division of spray gun groups into separately controlled circuits
- Flexible infeed concepts
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.

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<td>Tubes</td>
<td>up to 180</td>
<td>10-50</td>
<td>70-220</td>
<td>6 / 3 times</td>
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</table>
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
■ Suction device for tubes without membrane
■ RFID-access verification system to organize access authorizations
■ Division of spray gun groups into separately controlled circuits
■ Flexible infeed concepts
COLLAPSIBLE TUBES | ANNEALING OVEN TGO + INTERNAL DRIER TIT

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 baskets
- 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)
In the new generation of the tube latexing machine TGA-200 the transfer and latexing concept is based on a drum. The aluminum tubes are accurately positioned by the infeed drum and transferred directly onto the latexing drum system. The tubes are optionally coated by either two or three centrifugal guns with a maximum speed of 270 tubes per minute.

**FEATURES**
- Line speed up to 270 tubes per minute
- Precise positioning of the aluminum tubes due to the drum design
- Easy accessibility to the machine interior
- Equipped with the high-end centrifugal gun S-540

**OPTIONS**
- Upgrade option to expand to a combimachine (latexing and testing) with full leak detection function (TGA-200L)

### Type of Parts to be Coated

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<tr>
<td>Tube latexing</td>
<td>Tubes</td>
<td>up to 270</td>
<td>10–50</td>
<td>70–220</td>
<td>2 or 3</td>
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</tbody>
</table>
COLLAPSIBLE TUBES | TUBE LATEXING

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

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<tr>
<td>Tube latexing</td>
<td>Tubes</td>
<td>up to 250</td>
<td>10–50</td>
<td>70–220</td>
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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

Sprimag not only supplies various coating machines for internal coating of beverage and food cans. The combination of individual machines allows also high cycle times. Coating machines of this type are available with different optional extensions to meet the specific needs of our customers.

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<tbody>
<tr>
<td>Internal coating/wet coatings</td>
<td>Beverage cans</td>
<td>350</td>
<td>52-85</td>
<td>85-180</td>
<td>3/3 times 2/2 times</td>
</tr>
</tbody>
</table>
**FEATURES**

- 6 vacuum supports with or without centering flute
- Up to 3 airless spray guns which can be swiveled out and adjusted separately
- Suitable for solvent- and water-based coatings
- Module capacity up to 375 cans per minute (depending on size)

**OPTIONS**

- Dome spray equipment
- Integrated solution on pedestal, completely with switch cabinet and lacquer supply, electrically connected – pipe work pre-installed
- Manufactured in accordance with the ATEX regulations
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.

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<td>Internal coating/wet coatings</td>
<td>Beverage cans and bottles</td>
<td>300 (up to 800 in short stroke operation)</td>
<td>52-66</td>
<td>120-260</td>
<td>9/1 time</td>
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</table>
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.
With the Sprimag leak detection machine LRP-20, aluminum tubes can be tested reliably for leaks and cracks. The concept of the machine is based on a modular system and can be used flexibly as LRP-20 in front or as a combimachine TGA-200L after the capping machine.

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</tr>
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<td>Leak detection</td>
<td>Aluminum tubes</td>
<td>up to 200</td>
<td>10-50</td>
<td>70-220</td>
<td>20</td>
</tr>
</tbody>
</table>
FEATURES

■ 20 testing heads guarantee a sufficiently long cycle time
■ Detects leaks reliably with a diameter starting from 0.04 mm
■ Drum concept for precise positioning of the aluminum tubes
■ Variable infeed and outfeed conveyor system can be adapted to any standard transfer concept
■ Automatic ejection of non-okay tubes into a separate container
■ Compact machine design: 2100 mm x 1700 mm x 1800 m / height x width x depth (incl. infeed and outfeed conveyor system)
■ Easy accessibility to the machine interior

OPTIONS

■ Stand-alone option: LRP-20

or

■ 2-in-1 solution as a combimachine with testing and latexing function: TGA-200L

Example for integration in the production line together with the capping machine
LRP-30 TESTING PRECISION AND OPTIMAL LINE INTEGRATION COMBINED

The new leak detection machine for monobloc aerosol cans can be easily integrated into any line system concept thanks to the line-oriented transfer in and out of the machine. In addition to optimized floor space requirements, the machine impresses with an easy machine handling and a quick size part changing. The number of testing heads results in significantly longer cycle times and therefore much more precise test results compared to the machine concepts previously used for monobloc aerosol cans.

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<td>Leak detection</td>
<td>Aerosol cans</td>
<td>up to 250</td>
<td>22-66</td>
<td>65-280</td>
<td>30</td>
</tr>
</tbody>
</table>
FEATURES

- Compact machine design
- Detects leaks reliably with a diameter starting from 0.04 mm
- 30 testing heads guarantee a sufficiently long cycle time and precision
- Machinery speed up to 300 cans per minute
- Motorized stroke adjustment for adaptation to other can lengths
- Quick-change system for size parts
- Automatic ejection of non-okay cans
- Variable infeed and outfeed conveyor system adaptable to any standard transfer concept
- Machine housing with high ease of use, based on the design concept of tool manufacturing machines

OPTIONS

- All-in-one option LRP-30C in combination with CIM-12 camera inspection machine
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.

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<tr>
<td>End-of-Line Inspection</td>
<td>Aerosol cans</td>
<td>up to 250</td>
<td>22-66</td>
<td>max. 300</td>
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</tbody>
</table>
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
- Solid mechanical-based drive concept (central gearbox + main drive)
- Combined solution LRP-30C: in combination with the LRP leak detection machine

Three quality aspects considered in one compact inspection unit (by TEMA Vision):

- Curl and shoulder incl. print
- Shape / lateral surface
- Print on lateral surface
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.

### FPS - FLEXIBLE PACKAGING SYSTEMS

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<td>Aerosol cans</td>
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<td>22-66</td>
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**2 x FPS-02 + Stretch Wrapper**
FEATURES
■ Can positioning and conveyor feeding unit
■ FANUC grouping robot
■ Schmalz gripper unit
■ Grouping table
■ MOSCA grouping and strapping unit with gantry guide

OPTIONS
■ Automatic pallet dispenser
■ Cardboard and covering board unit
■ Fully automatic tray forming unit
■ Pallet transfer rails and pallet turntables
■ Vertical pallet strapping unit
■ Stretch wrapping unit
■ Robot labelling unit
Since 1925 Sprimag has enjoyed a leading position for automated coating solutions. Sprimag developed units for functional and decorative coating of mass-produced parts as well as for internal coating of metal packagings such as tubes, cans and beverage bottles. Coating units from Sprimag 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. Through continuous improvements in all process steps and activities Sprimag is constantly improving its services to its customer.