

# INTERNAL COATING MACHINES



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# 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-200	Tube latexing	Tubes	up to 270	10-50	70-220	2 or 3
TGA-250	Tube latexing	Tubes	up to 250	10-50	70-220	2
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 coated	Speed Parts per minute	Diameter mm	Length mm	Testing heads
LRP-20	Leak detection	Aluminum tubes	up to 200	10-50	70-220	20
LRP-30	Leak detection	Aerosol cans	up to 250	22-66	65-280	30
CIM-12	End-of-line 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 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



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



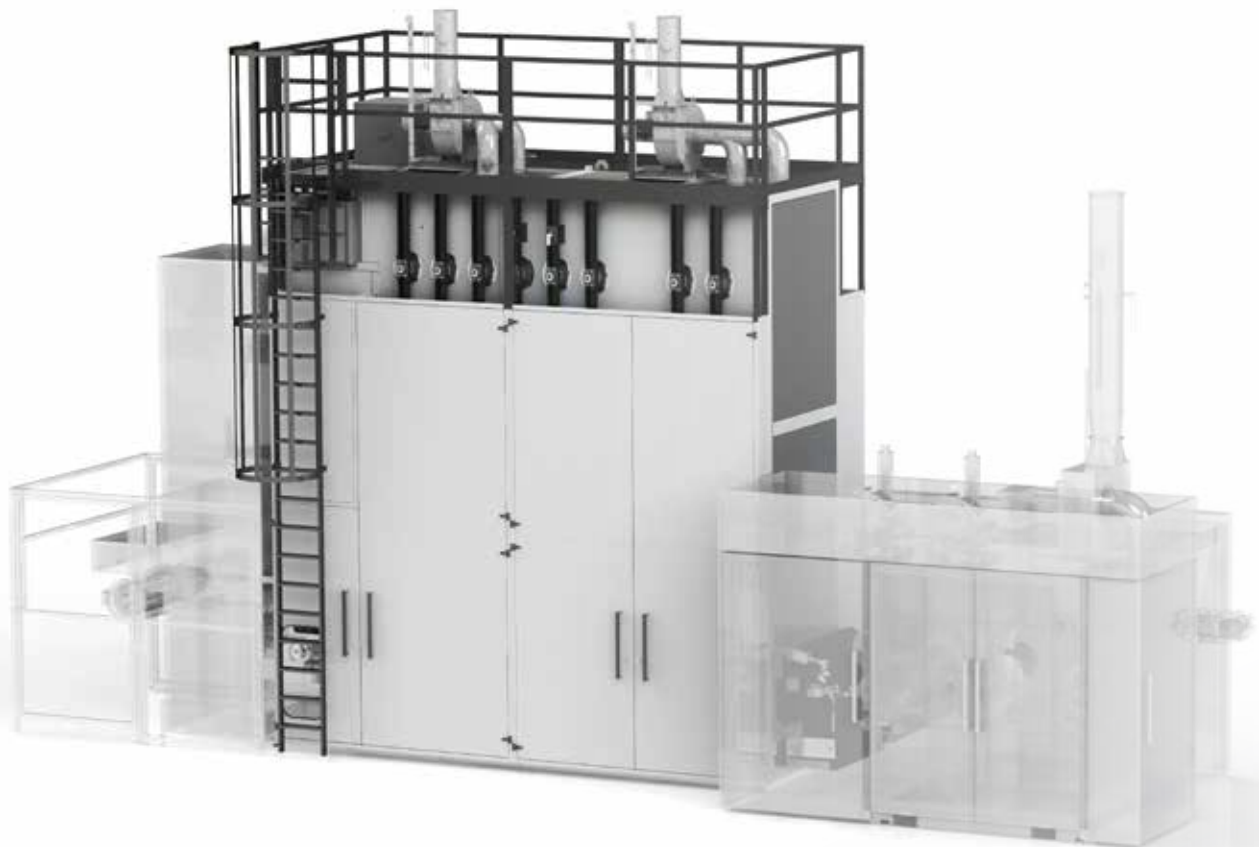
V2A cabinet for air extraction with user-friendly accessibility



# 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



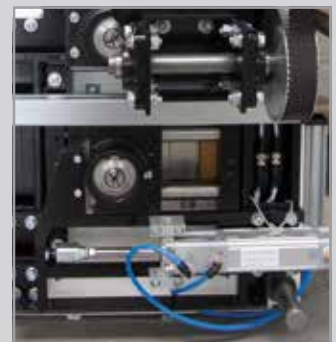
### Safety hand rail

- 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 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 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

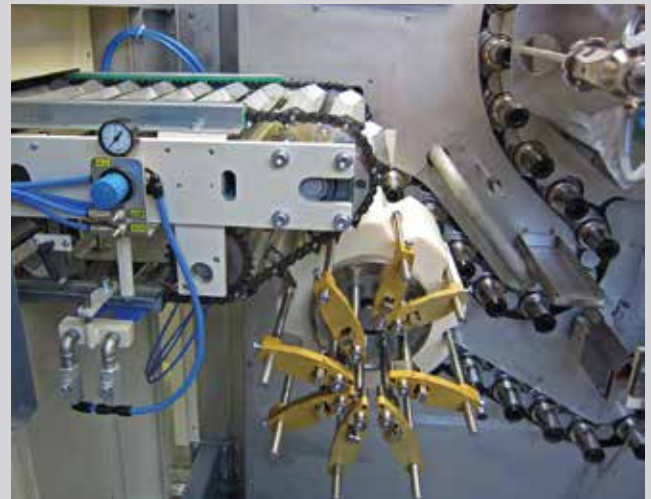
- Separate servo drives for stroke and transport movement
- Monitored electromagnetic spray valves
- Proven quick-change system for size parts
- Automatic part ejection during production process
- Interior covers made out of stainless steel for easy cleaning
- Manufactured in accordance with the ATEX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

## OPTIONS

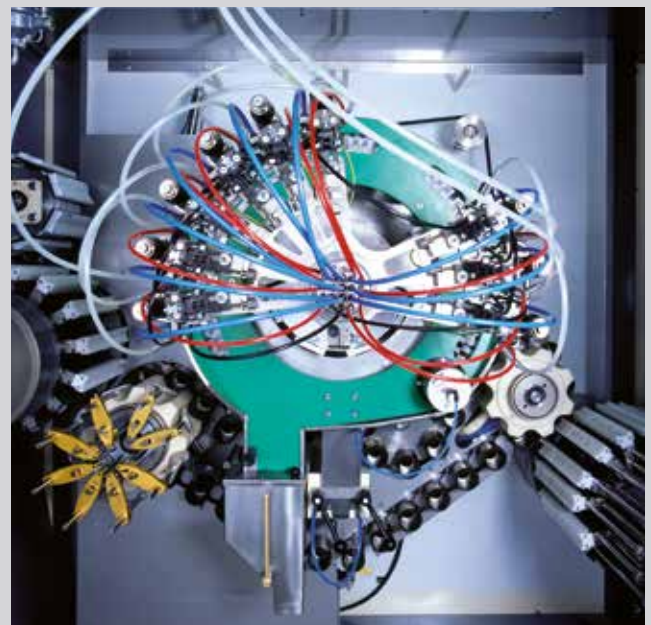
- Additional lacquer supply
- Cleaning device for spray gun extensions
- Energy optimizing system and vacuum control
- Second spray arm with full spraying equipment assembly
- Suction device for tubes without membrane
- RFID-access verification system to organize access authorizations
- Division of spray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



Quick-change system for size parts



Flexible infeed concepts



Spray cabin 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
- 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



User-friendly concept of the spray cabin 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 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



TIT

TGO

## 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-200 PRECISE LATEXING IN AN EXPENDABLE MACHINERY CONCEPT

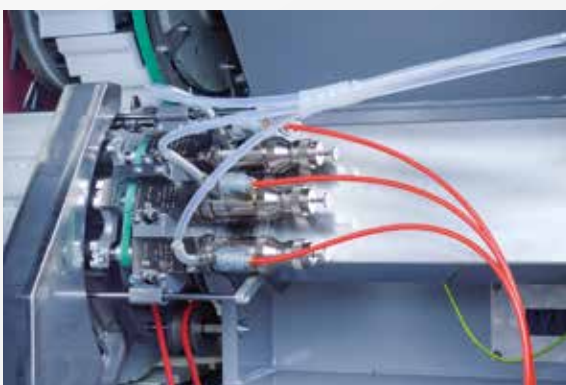
In the new generation of the tube latexing machine TGA-200 the transfer and latexing concept is based on a drum. The aluminum tubes are accurately positioned by the infeed drum and transferred directly onto the latexing drum system. The tubes are optionally coated by either two or three centrifugal guns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



Assembled with 3 high-end centrifugal guns S-540 for high cycle times (up to 270 tpm)

Type	Parts to be coated	Speed Parts per minute	Diameter mm	Length mm	Spray guns / Spray process
Tube latexing	Tubes	up to 270	10-50	70-220	2 or 3





## 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
Tube latexing	Tubes	up to 250	10–50	70–220	2

# 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

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.



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
- Suitable for solvent- and water-based coatings
- Module capacity up to 375 cans per minute (depending on size)



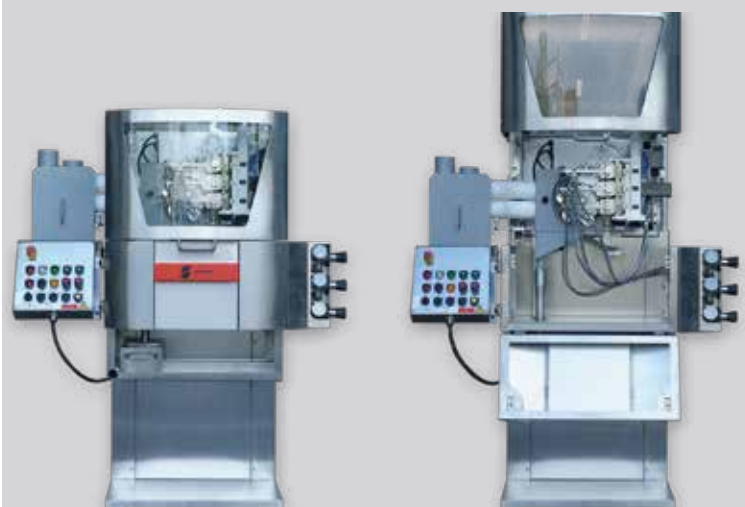
Up to 3 spray guns

## 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



Module combination for high capacity – pre-mounted on pedestal



Optimized accessibility due to automatable cover panel lift





## HIL-05 COMBINES SPEED AND STROKE MOVEMENT

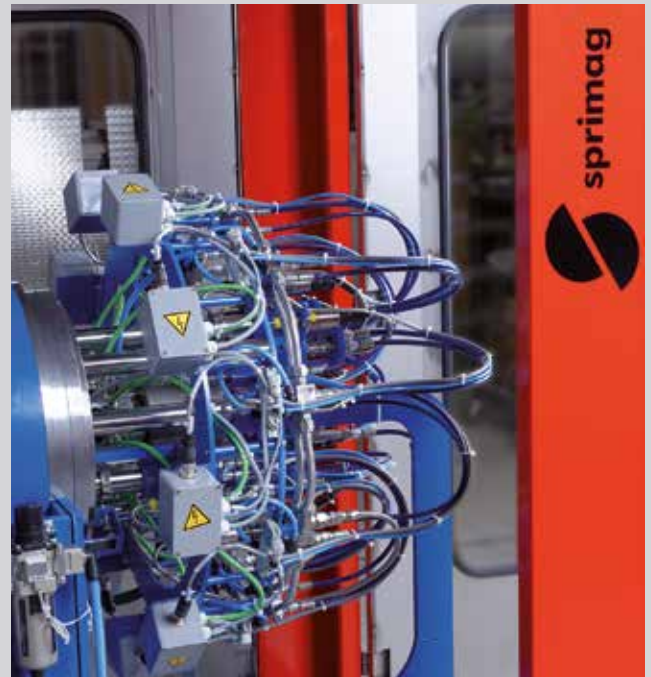
The internal coating machine HIL-05 was designed for the internal coating of beverage cans and bottles with a large length-to-diameter ratio. This machine, which was specifically designed for the requirements of the beverage can industry, is extremely robust, provides high availability, and fulfills 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



Rotary drive with central rotary feedthrough

## OPTIONS

- Optionally equipped with airless or air pressure fed spray guns



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.







## LRP-20 20 STATIONS FOR LONG CYCLE TIMES

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.



Type	Parts to be coated	Speed Parts per minute	Diameter mm	Length mm	Testing heads
Leak detection	Aluminum tubes	up to 200	10-50	70-220	20



## 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 mm / 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



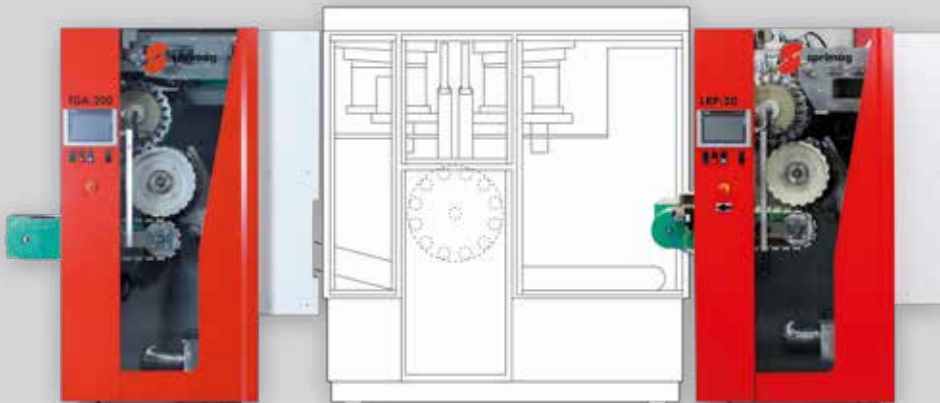
20 testing heads test up to 200 aluminum tubes per minute for leaks with diameters starting from 0.04 mm



Drum concept for precise positioning of the aluminum tubes

TGA-200L

LRP-20



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.



Type	Parts to be coated	Speed Parts per minute	Diameter mm	Length mm	Testing heads
Leak detection	Aerosol cans	up to 250	22-66	65-280	30

## 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



30 testing heads with proven sealing system guarantee a sufficiently long cycle time and precision



Compact machine design for space-saving line integration



## 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.

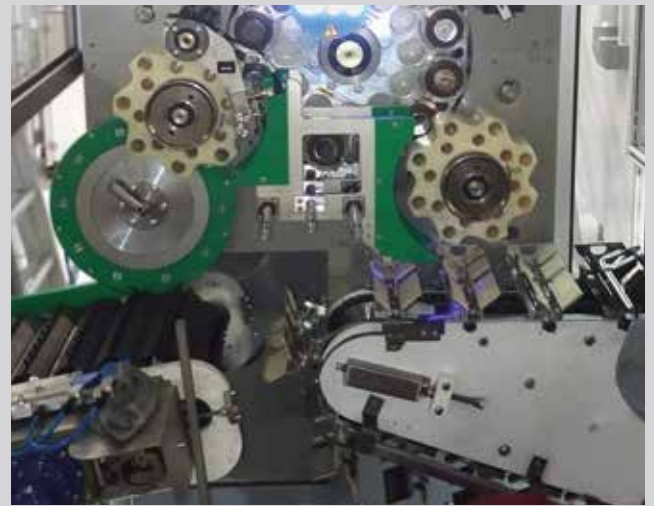


Type	Parts to be coated	Speed Parts per minute	Diameter mm	Length mm
End-of-Line Inspection	Aerosol cans	up to 250	22-66	max. 300



## 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
- Solid mechanical-based drive concept (central gearbox + main drive)
- Combined solution LRP-30C: in combination with the LRP leak detection machine



Machine integration into an existing system concept

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

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



Inspection units

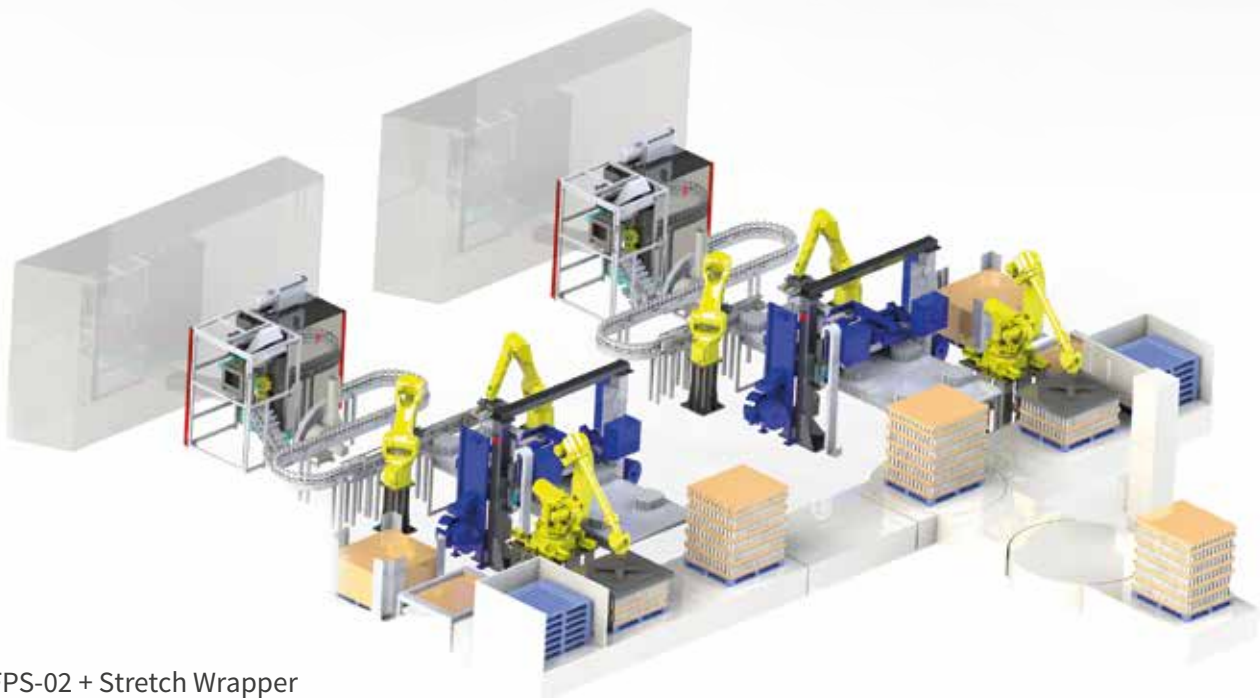


CIM-12 with machine housing



## 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
- 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



FANUC M-20 grouping robot



MOSCA grouping and strapping unit with gantry guide



FPS-01/170

# SPRIMAG COATING SYSTEMS

## HIGH-END TECHNOLOGY MEETS TRADITION

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.



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