



*BATTERY PRODUCTION MACHINERY
AND SPECIAL MACHINERY*



Product catalogue



GOOD REASONS FOR ...



MACHINES FOR
BATTERY PRODUCTION AND SPECIALISED
MECHANICAL ENGINEERING



- + More than **30 years** of experience in the battery industry
- + **Fastest plug setting machine on the market** (12 batteries/min)
- + **Long-lasting, solid construction** for surrounding conditions containing sulphuric acid
- + Combination of **solid mechanical engineering** and the **latest control technology**
- + Individual solutions
- + **Service** and **remote maintenance**
- + **Synergy effects** (assembly, construction, software, start-up) through integration into the PÜTZ GROUP



- + Established in 1988, approximately 90 employees
- + Many years of industrial experience
- + Central capital base / local flexibility with the greatest degree of freedom and responsibility

PÜTZ GROUP

Accumation GmbH

Lindenstraße 3
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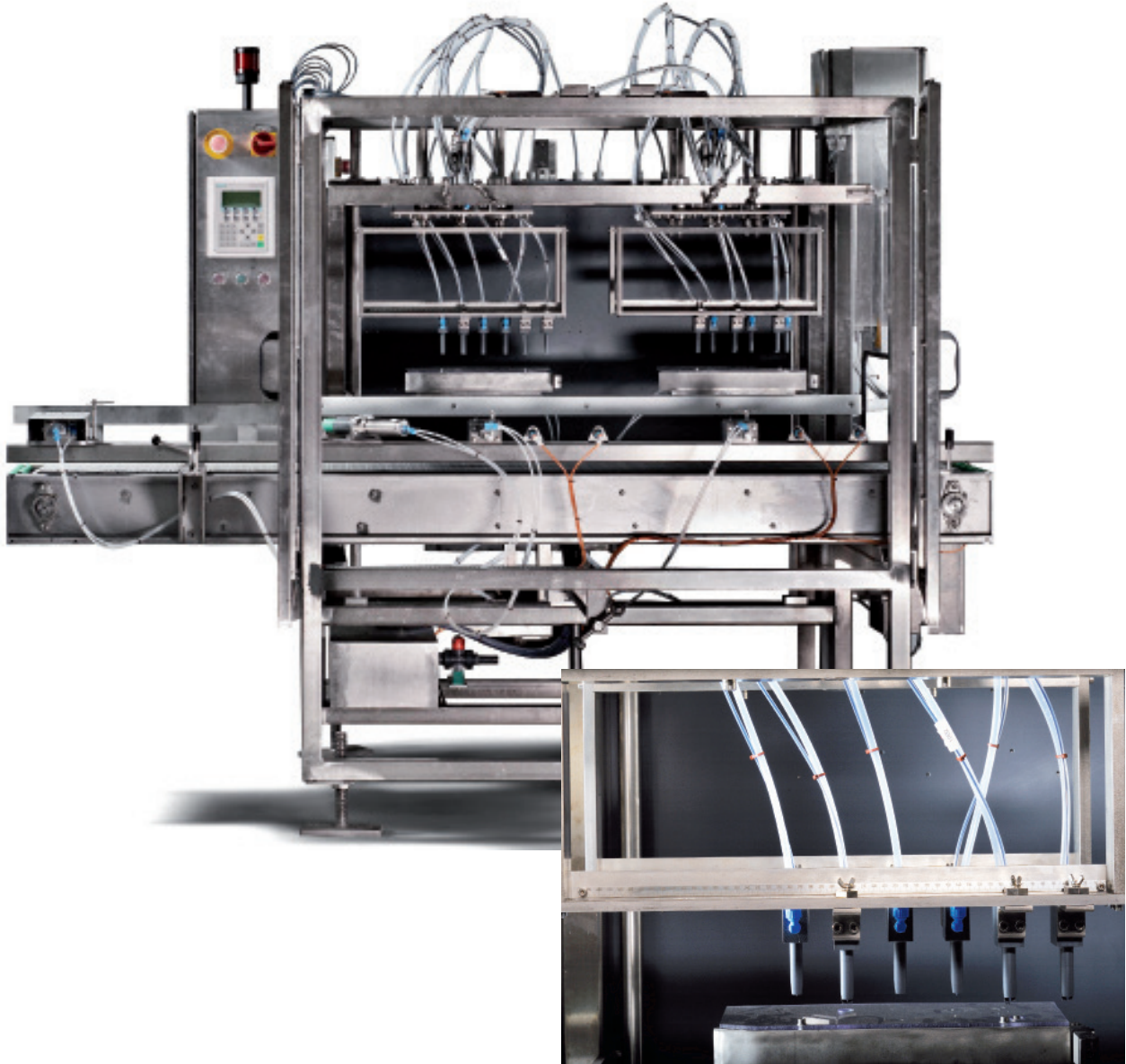
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1 ACID FILLING MACHINE

ACCUMATION

MACHINES FOR
BATTERY PRODUCTION AND SPECIALISED
MECHANICAL ENGINEERING



Function and characteristics

- ▶ Initial acid filling of batteries
- ▶ High precision volumetric metering system
- ▶ PLC controlled fully automatic filling process
- ▶ Single head and double head machine available
- ▶ Amount of acid is adjustable in the menu of the operator panel
- ▶ Quick change over
- ▶ 100% acid resistant
- ▶ Conveyor with adjustable battery guide- and stop system

1 ACID FILLING MACHINE



MACHINES FOR
BATTERY PRODUCTION AND SPECIALISED
MECHANICAL ENGINEERING

Technical data

Battery types	automotive batteries
Battery dimensions (L x W x H)	max.: 525 mm x 285 mm x 280 mm min.: 175 mm x 125 mm x 125 mm
Total dimensions (L x W x H)	2,500 mm x 1,530 mm x 2,100 mm
Weight	1,500 kg
Conveyor height	850 mm +/- 50 mm
Conveyor width	200 mm - 300 mm
Accuracy	+/- 1 mm
Capacity	up to 8 batteries/min
Control voltage	24 V
Power consumption	approx. 3 kW
Compressed air	6 bar
Material	completely acid-resistant, stainless steel acid resistant plastics
Control	Siemens / Allen Bradley

Our goods and services = Your benefit

- Worldwide technical and customer service
- Long experience in battery plant design
- Individual system solutions for your production
- Comprehensive advice and on-site analysis

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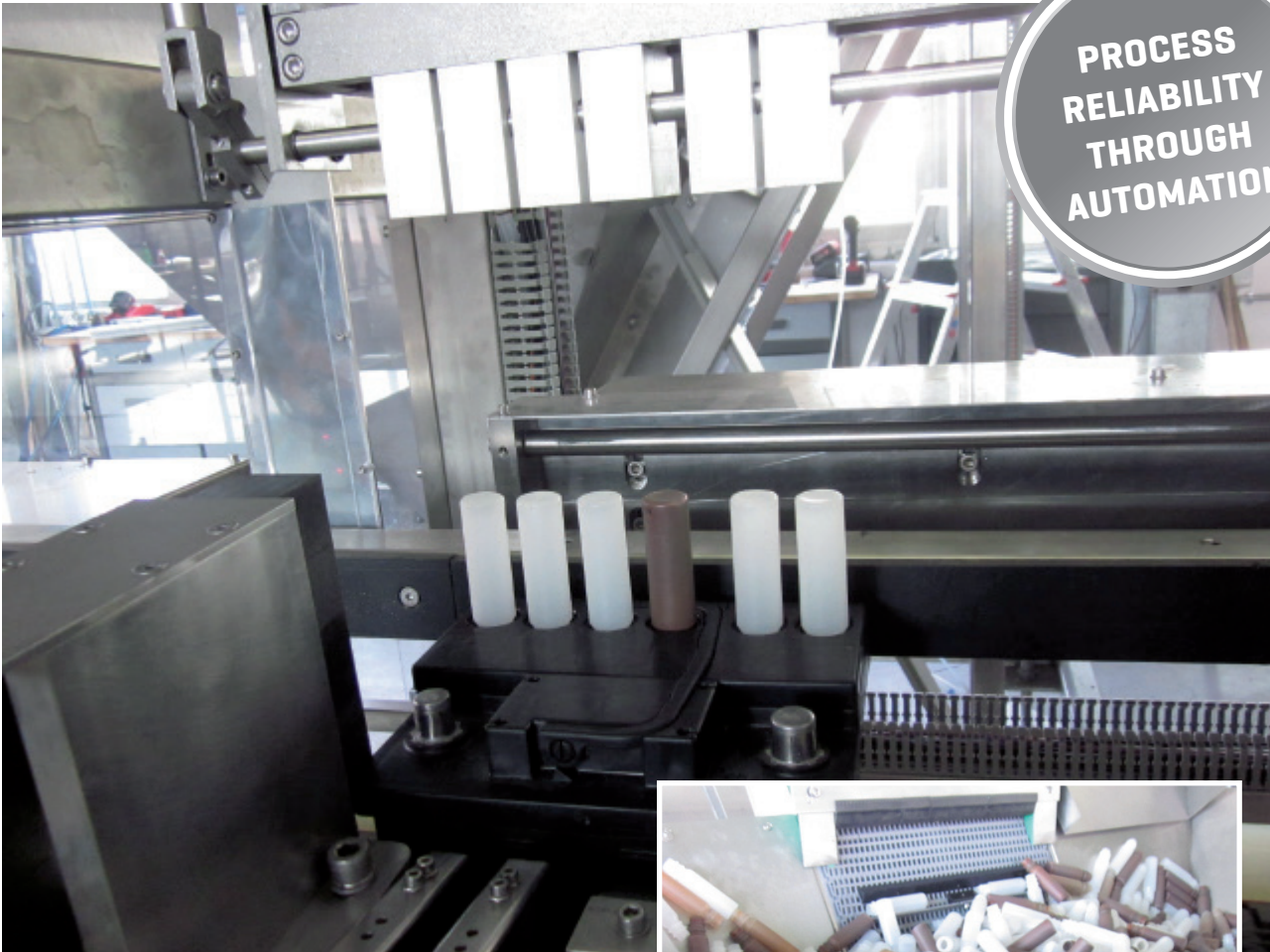
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2 FORMATION BOTTLES MOUNTING MACHINE

ACCUMATION

MACHINES FOR
BATTERY PRODUCTION AND SPECIALISED
MECHANICAL ENGINEERING

PROCESS
RELIABILITY
THROUGH
AUTOMATION



Inserting station

Function and characteristics

- Sensor controlled transport and separation by an adjustable battery guide and stop system
- Feeding in correct position and separation of formation bottles
- Exakt positioning by a linear servo unit
- Automation of the mounting
- Test station checks attendance and exact position of the formation bottles (Height)
- Rejection of batteries whose formation bottles are not duely mounted



Storage and sorting station

2 FORMATION BOTTLES MOUNTING MACHINE



MACHINES FOR
BATTERY PRODUCTION AND SPECIALISED
MECHANICAL ENGINEERING

Technical data

Maximum dimensions	4,000 mm x 2,800 mm x 2,400 mm [L x W x H]
Battery dimensions	max.: 400 mm x 125 mm x 283 mm min.: 175 mm x 200 mm x 165 mm
Battery weight	12 to 45 kg
Conveyor belt height	850 mm ± 50 mm
Conveyor belt width	200 mm [usable width]
Capacity	8 Batteries/min
Material	V4A steel, plastics
Electrical connection	400 V, 50 Hz
Control voltage	24 V
Compressed air	6 bar
Control	Siemens / Allen Bradley

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3 ACID LEVELLING MACHINE

ACCUMATION

MACHINES FOR
BATTERY PRODUCTION AND SPECIALISED
MECHANICAL ENGINEERING



Function and characteristics

- Final acid filling and levelling of batteries
- Exact levelling accuracy by optical level sensor
- PLC controlled fully automatic levelling process
- Single head and double head machines available
- Quick change over
- 100% acid resistant
- Conveyor with adjustable battery guide- and stop system

3 ACID LEVELLING MACHINE



MACHINES FOR
BATTERY PRODUCTION AND SPECIALISED
MECHANICAL ENGINEERING

Technical data

Battery types	automotive batteries
Battery dimensions (L x W x H)	max.: 525 mm x 285 mm x 280 mm min.: 175 mm x 125 mm x 125 mm
Total dimensions (L x W x H)	2,500 mm x 1,530 mm x 2,240 mm
Weight	1,500 kg
Conveyor height	850 mm +/- 50 mm
Conveyor width	200 mm - 300 mm
Accuracy	+/- 1 mm
Capacity	up to 8 batteries/min
Control voltage	24 V
Compressed Air	6 bar
Material	completely acid-resistant, stainless steel acid resistant plastics
Control	Siemens / Allen Bradley

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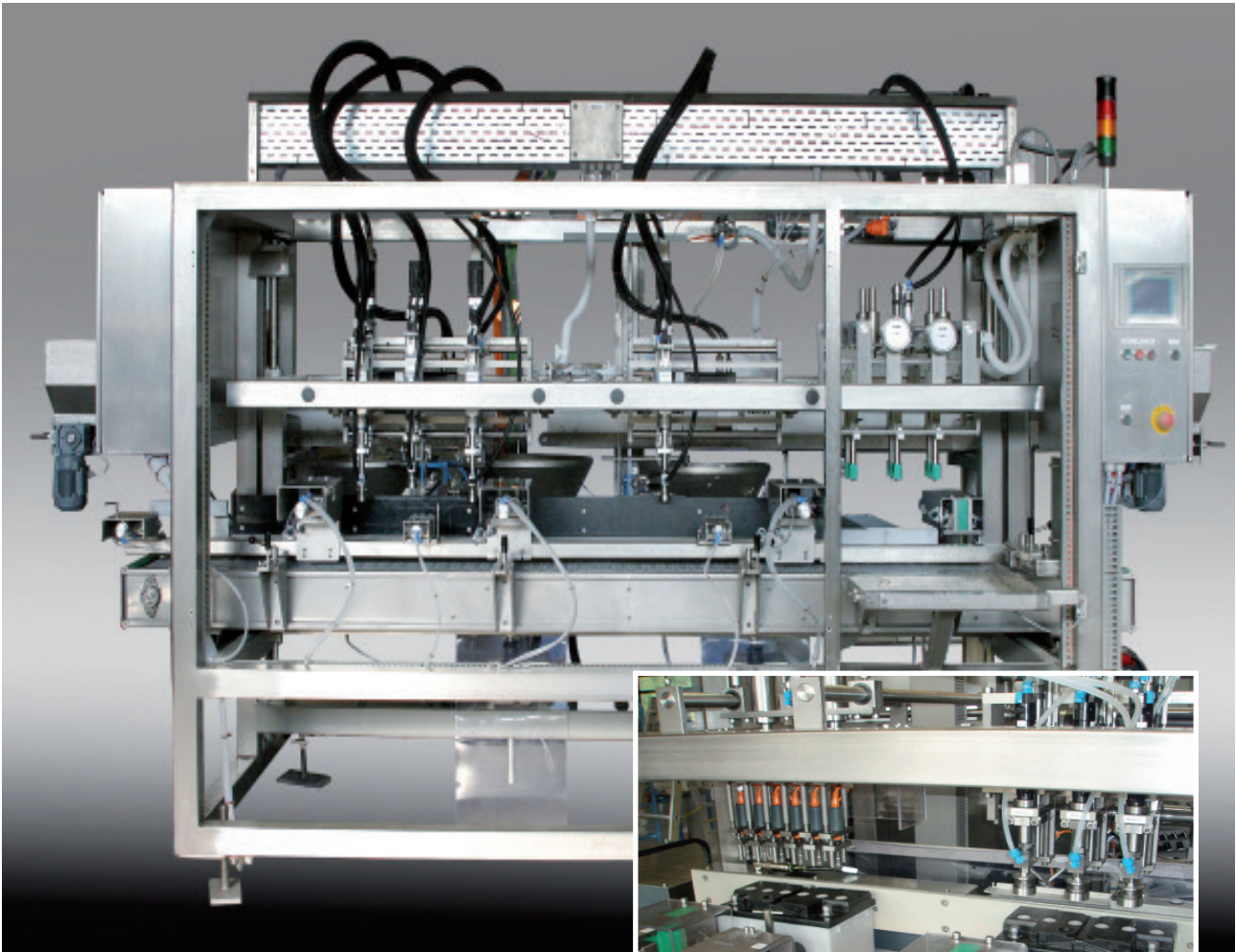
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4 PLUG SETTING MACHINE

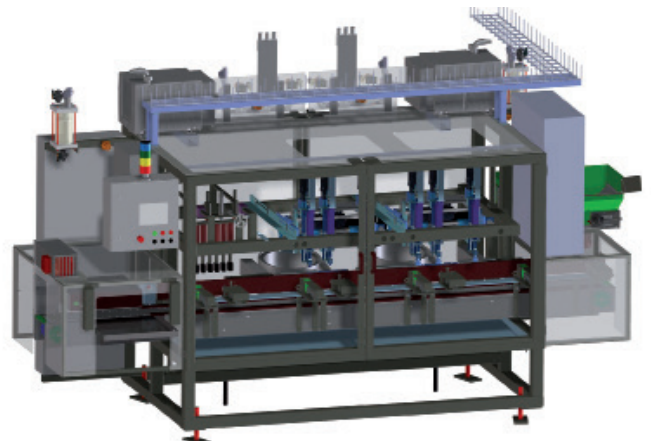
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BATTERY PRODUCTION AND SPECIALISED
MECHANICAL ENGINEERING



Function and characteristics

- Processing of various plugs in a machine feasible
- Automatic sealing of accumulators using screw plugs or pushplugs
- 100% control of screw closure via a separate checking station
- Exclusion station for reject batteries
- Servo electric positioning system
- Quick re-tooling
- Pneumatic or electric screw drivers available
- Use of acid-resistant materials



4 PLUG SETTING MACHINE



MACHINES FOR
BATTERY PRODUCTION AND SPECIALISED
MECHANICAL ENGINEERING

Technical data

Battery types	all vehicles
Plug types	all types possible
Capacity	up to 12 batteries/minute [2-head] up to 8 batteries/minute [1-head]
Dimensions (W x D x H)	3,000 x 2,000 x 2,400 mm
Conveyor belt height	850 mm +- 50 mm
Conveyor belt width	200 mm up to 300 mm
Electrical connection	400 V, 50 Hz
Compressed air	6 bar
Material	24 V
Compressed air	6 bar
Material	stainless steel, acid-resistant plastic
Control	Siemens / Allen Bradley

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5 HIGHSPEED PLUG SETTING MACHINE



MACHINES FOR
BATTERY PRODUCTION AND SPECIALISED
MECHANICAL ENGINEERING



HIGH SPEED -
HIGHEST
PRECISION!

Function and characteristics

- Up to 14 batteries/minute
- Electric screw drivers
- High precision torque adjustment
- Independent control station
- Very low air consumption
- Electric vacuum pump
- Low noise emission



Technical data

Battery types	all vehicle types
Capacity	max. 14 batteries/minute
Precision	70 to 300 Ncm
Battery length	175 to 520 mm
Battery width	125 to 280 mm
Battery height	125 to 300 mm
Battery weight	12 to 75 kg
Plugs	all types are possible
Machine dimensions	4,000 x 1,800 x 2,500 mm [L x W x H]
Construction	completely acid-resistant; high-grade steel 1.4571, 1.4539; plastic PP and PVC, special protection of not acid-resistant components
Control voltage	24 V DC
Connection power	35 kW
Operating pressure	6 bar
Control	Siemens / Allen Bradley

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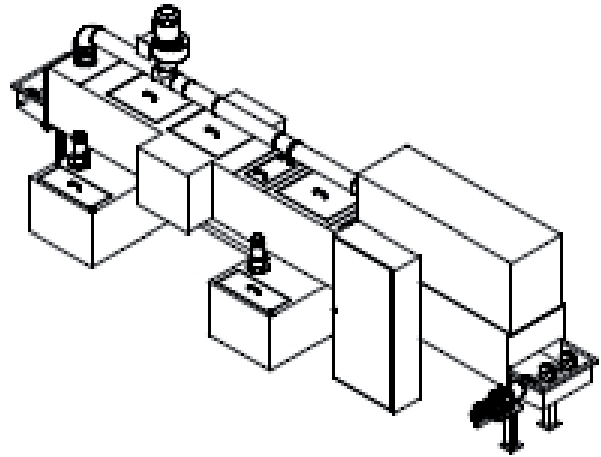
6 BATTERY WASHING AND DRYING MACHINE

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MACHINES FOR
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MECHANICAL ENGINEERING



Inlet of washing machine



Brushing unit [optional]

Function and characteristics

- On site the batteries are transferred in a longitudinal direction to the cleaning machine transport system.
- After transfer has taken place the batteries are transported continuously through the individual zones at the preset speed.
- In the cleaning sections the batteries are cleaned by hot water, detergents and high pressure. In the final rinse section they are cleaned by clear water. In the drying section big blowers dry the batteries by hot air.
- The machine is designed as container construction in 2 mm thick stainless steel sheet of quality 1.4571. The tanks are fitted with 30 mm insulation. In the area of the circulating air dryer the thickness of the insulation is 100 mm.
- The steam produced through the heating of the respective medium is captured by an extraction unit and transported through a pipeline made of stainless steel segments into the on-site exhaust air system.

6 BATTERY WASHING AND DRYING MACHINE



MACHINES FOR
BATTERY PRODUCTION AND SPECIALISED
MECHANICAL ENGINEERING

Technical data

Battery types	automotive batteries
Battery dimensions (L x W x H)	550 x 300 x 320 mm
Speed	2-4 m/minute adjustable
Process steps	1. Washing [spray process] / 2. Rinsing [spray process] 3. Drying [circulating air process]
Total dimensions (L x W x H)	8,500 x 2,500 x 3,000 mm
Temperature cleaning	55°C to 75°C depending on the parts to be cleaned and the chemistry used
Temperature drying	Adjustable up to 95°C dependent on parts
Heating output washing bath/sink unit /dryer	30/30/12 kW
Output exhaust air fan/circulating air fan	1,5 kW/2,2 kW
Capacity exhaust air fan/circulating air fan	38 m ³ p. minute/50 m ³ p. minute
Pump units cleaning and rinsing	20 m ³ p. hour/2 bar/3 kW
Tanks for cleaning and rinsing medium	approx. 1,000 l
Material	stainless steel [1.4571]
Control	Siemens / Allen Bradley

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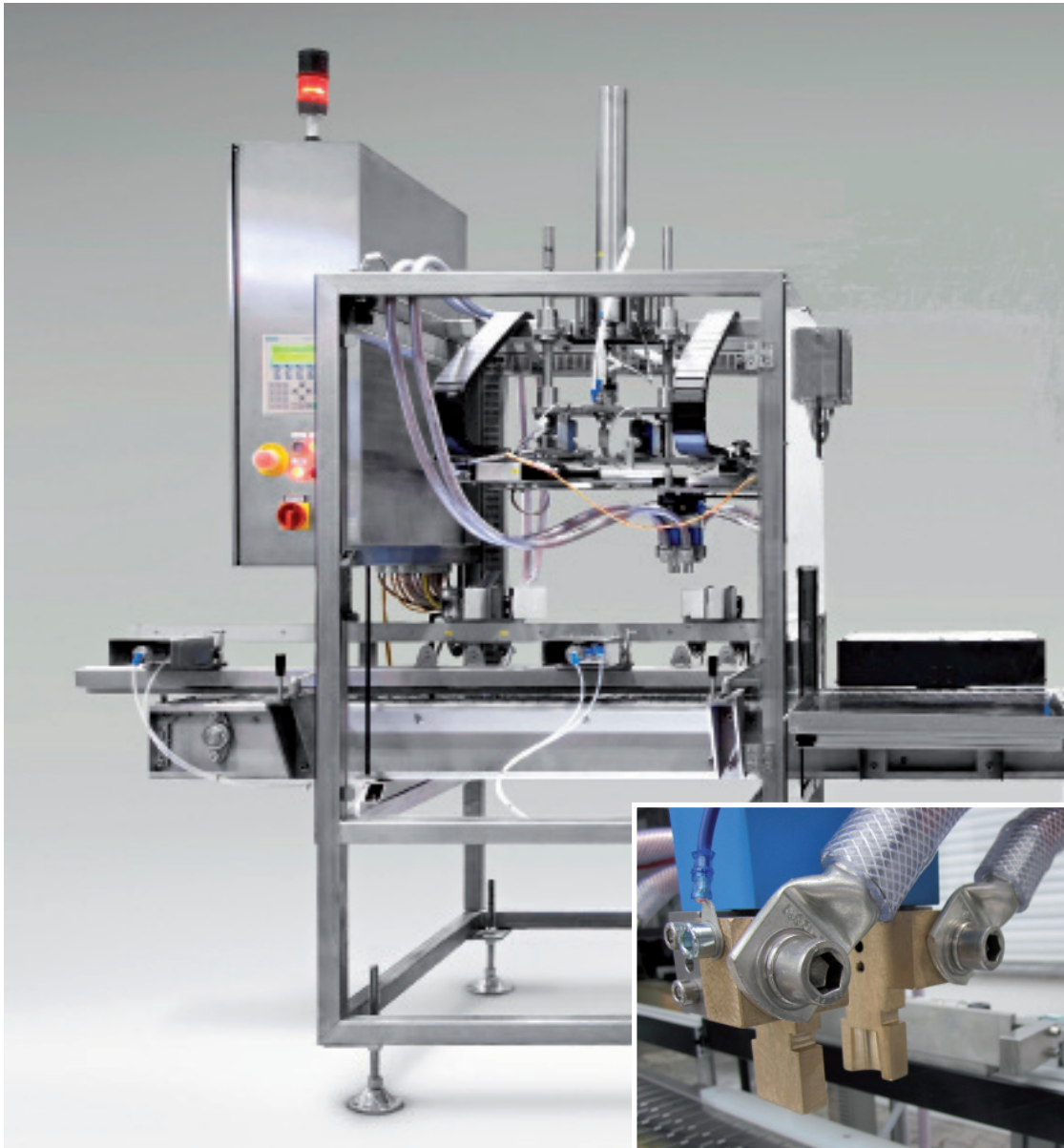
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7 HIGH RATE DISCHARGE TEST MACHINE (PLT)



MACHINES FOR
BATTERY PRODUCTION AND SPECIALISED
MECHANICAL ENGINEERING



Function and characteristics

- Automatic high rate discharge testing of automotive batteries
- Safe contact using tongs
- Various test devices available
- Exclusion station for reject batteries
- Various expansion stages up to fully automated available
- Automatic polarity switch available
- Use of acid-resistant materials

7 HIGH RATE DISCHARGE TEST MACHINE (PLT)



MACHINES FOR
BATTERY PRODUCTION AND SPECIALISED
MECHANICAL ENGINEERING

Technical data

Battery types	all vehicles
Capacity	8 batteries/minute
Maximum dimensions (W x D x H)	2,500 x 2,000 x 2,100 mm
Conveyor belt height	850 mm +- 50 mm
Conveyor belt width	300 mm
Maximum discharge current (PLT)	up to 3000 A
Voltage range (PLT)	7 to 14 V
Electrical connections	400 V, 50 Hz
Control voltage	24 V
Compressed air	6 bar
Material	stainless steel, acid-resistant plastic
Control	Siemens / Allen Bradley

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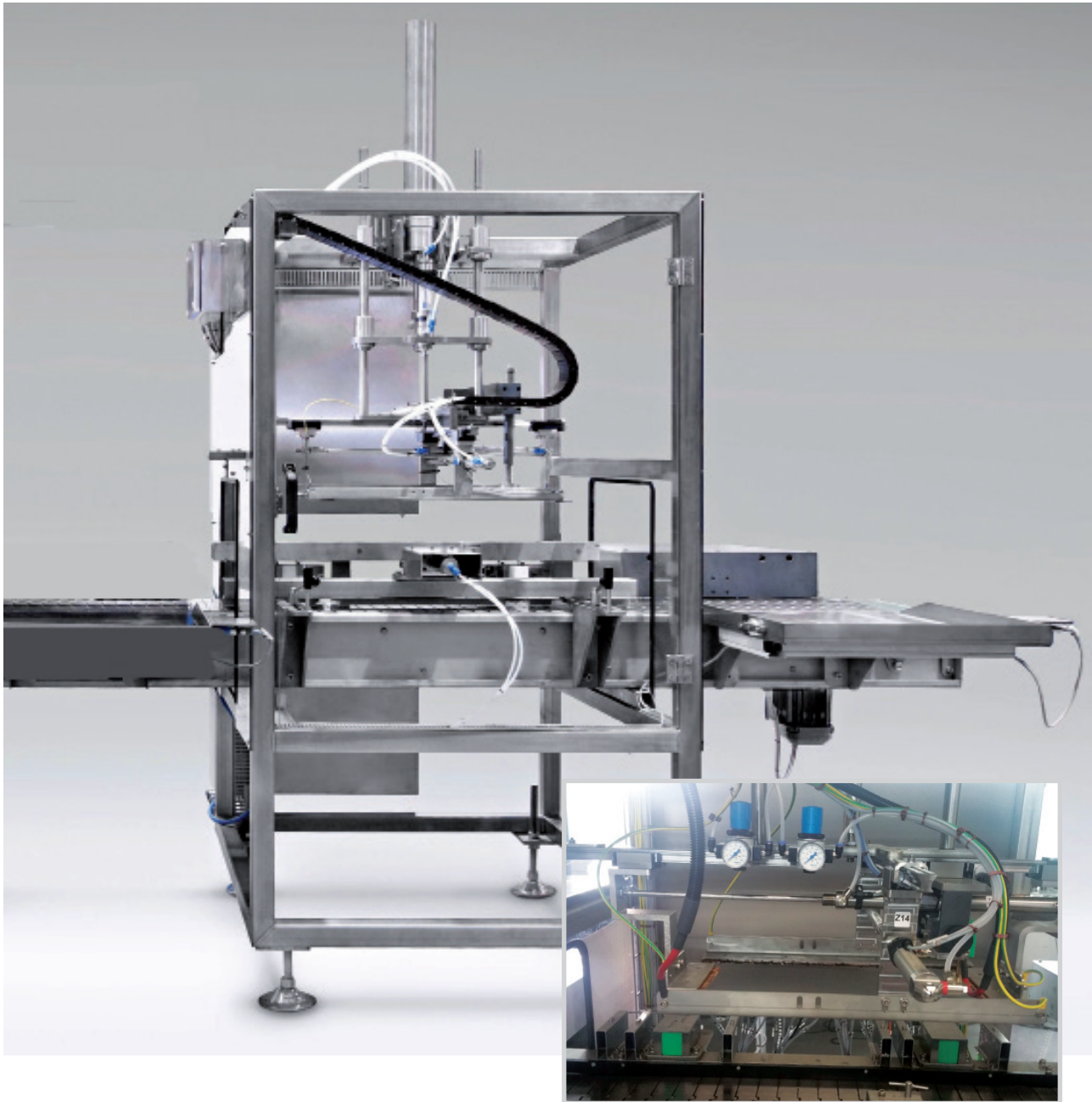
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Function and characteristics

- Automatic high-voltage leakage testing of vehicle batteries
- Reliable detection of leaks between cover and battery
- Reliable detection of leaks on battery base using special contact strips
- Microprocessor-controlled high-voltage electronics
- Exclusion station for reject batteries
- Various expansion stages up to fully automated available
- Use of acid-resistant materials

Technical data

Battery types	all vehicles
Capacity	8 batteries/minute
Maximum dimensions (W x D x H)	2,500 x 2,000 x 2,100 mm
Conveyor belt height	850 mm +- 50 mm
Conveyor belt width	200 - 300 mm
Testing voltage	0 - 18 kV AC
Measuring range	0,1 - 50 mA
Transformer capacity	500 VA
Short circuit current	> 200 mA
Test range	Weld between cover and base
Electrical connection	400V, 50 Hz
Control voltage	24 V
Compressed air	6 bar
Material	stainless steel, acid-resistant plastic
Control	Siemens / Allen Bradley

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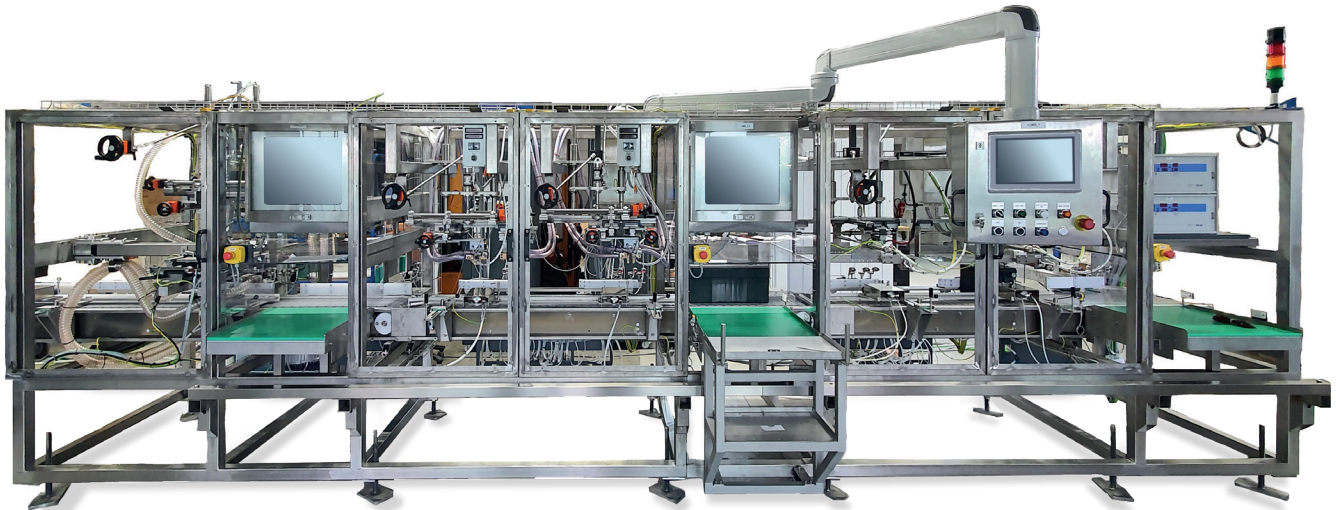
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9 MULTIFUNCTIONAL TEST MACHINE

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MECHANICAL ENGINEERING

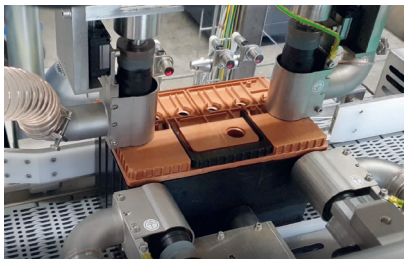


1 Brushing unit
for battery terminals

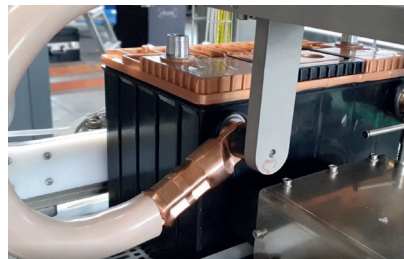
2 High current
load tests*

2 High voltage
leakage tests*

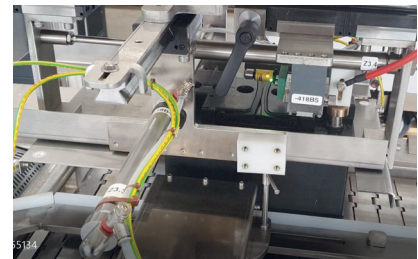
* individual station also possible



Brushing unit for battery terminals



High current load test (PLT)



High voltage leakage test (HVT)

Function and characteristics

- Modular structure
- Any combination of HRD, HVT, pole brushing and pole oiling available
- Sturdy design – Quality made in Germany
- Made with acid-proof materials
- Microprocessor-controlled high voltage electronics
- Different test devices available
- Reject station for NOK batteries
- No lead dust contamination thanks to a powerful extraction system
- Time-saving: Automatic polarity switching saves having to convert the test cables
- High throughput speed:
 - 10 car batteries/min.
 - 6 truck batteries/min.
- Available for different pole types

Technical data

Battery types	all vehicles
Capacity	10 batteries/minute
Maximum dimensions (W x D x H)	8,000 x 2,000 x 2,100 mm
Conveyor belt height	850 mm +/- 50 mm
Conveyor belt width	300 mm

Brushing unit:

strong exhaust
Standard DIN terminals / Side Terminals / Japanese style terminals

PLT:

Electrical connections	400 V, 50 Hz
Control voltage	24 V
Compressed air	6 bar
Material	Stainless steel, acid-resistant plastic
Control	Siemens / Allen Bradley
Max. electricity discharge (PLT)	3000 A
Voltage range (PLT)	7 - 14 V

HVT:

Testing voltage	0 - 18 kV AC
Measuring range	0.1 - 50 mA
Transformer capacity	500 VA
Short circuit current	> 200 mA
Test range	Weld between cover and base

Our goods and services = Your benefit

- Worldwide technical and customer service
- Long experience in battery plant design
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- Comprehensive advice and on-site analysis

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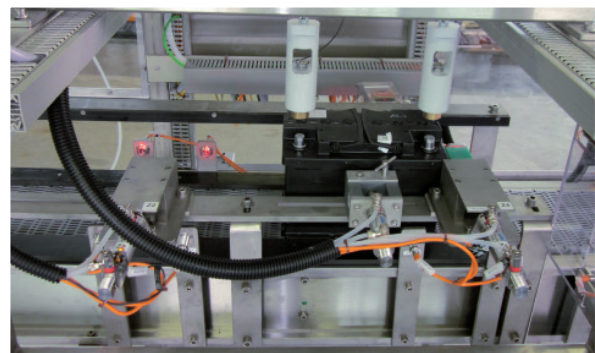
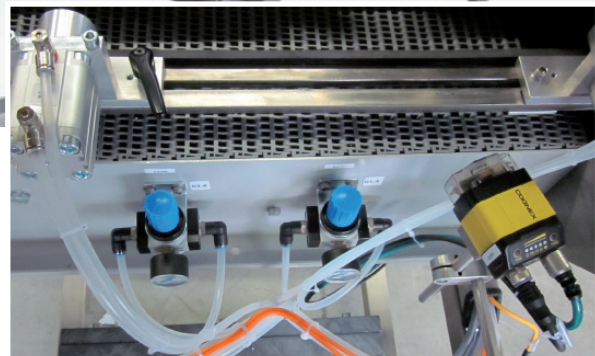
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10 OCV-TESTING MACHINE



Function and characteristics

- Automatic OCV-testing of vehicle batteries
- High-resolution metrology electronics
- Adjustable limiting values
- Automatic generation of a floating average and harmonisation with the actual metrology value
- Storage of reject metrology values
- Rejection system
- Data interfaces to control computer
- Use of acid resistant materials

10 OCV-TESTING MACHINE



MACHINES FOR
BATTERY PRODUCTION AND SPECIALISED
MECHANICAL ENGINEERING

Technical data

Battery types	all vehicles
Capacity	8 batteries/minute
Max. dimensions (W x D x H)	2,500 x 2,000 x 2,100 mm
Conveyor belt height	850 mm +- 50 mm
Conveyor belt width	200 - 300 mm
Measuring range	1 - 14 V
Electrical connections	400 V, 50 Hz
Control voltage	24 V
Compressed air	6 bar
Material	stainless steel, acid-resistant plastic
Control	Siemens / Allen Bradley

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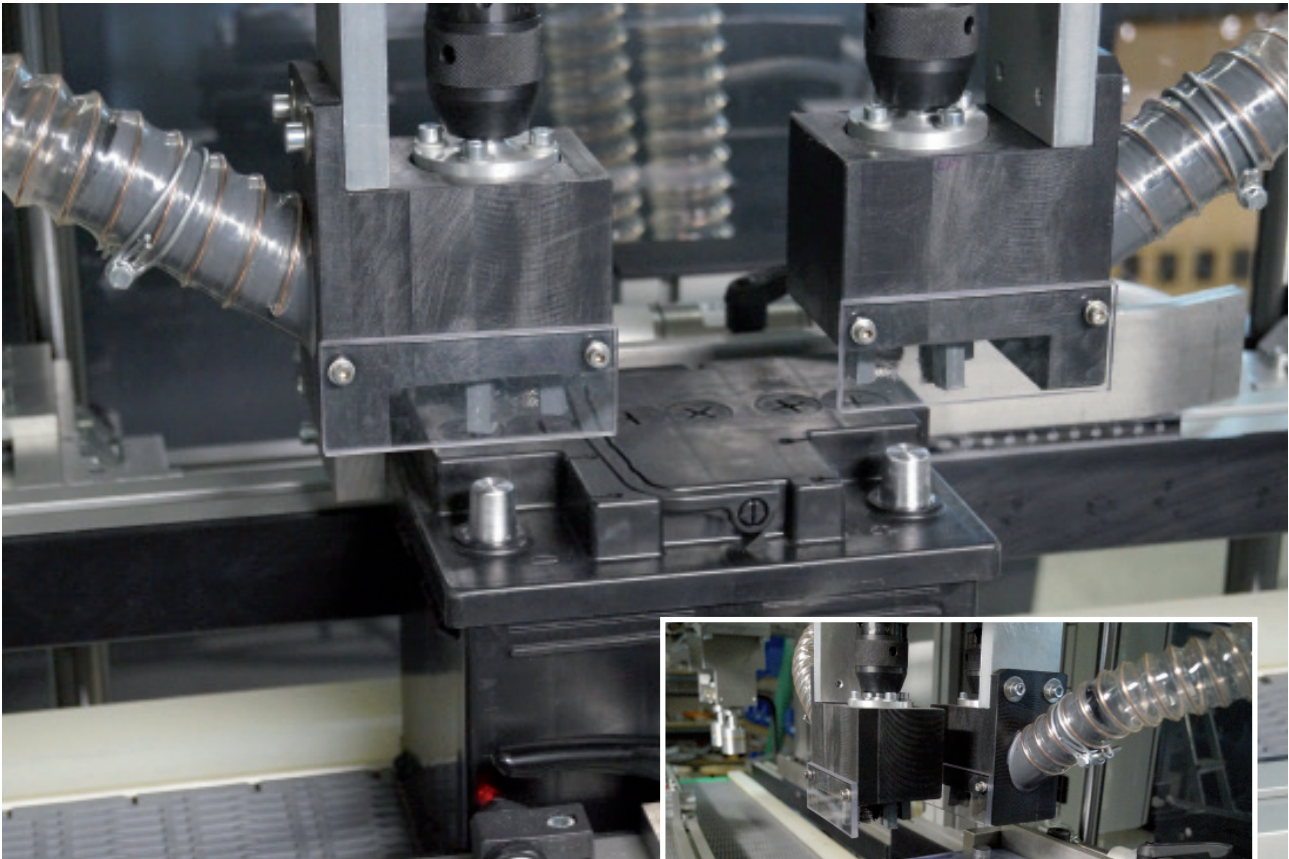
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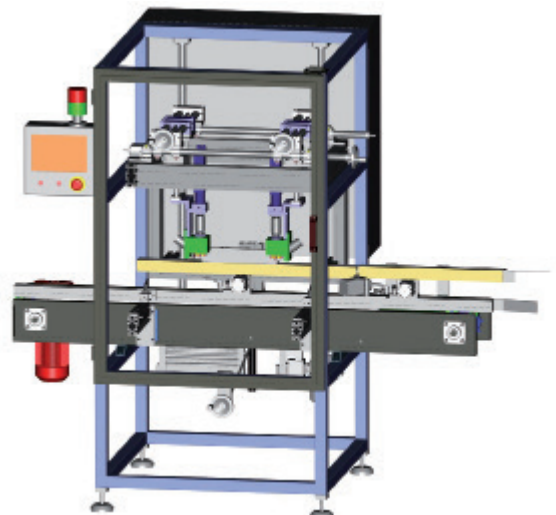
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Brushing battery poles

Function and characteristics

- Automatic brushing of battery terminals
- Electrically driven brush heads
- Adjustable RPM and stroke speed
- Special brushes for blank battery terminals
- Suitable for car and truck batteries
- No lead dust contamination thanks to an efficient vacuum system
- Manual and automatic adjustment available



Technical data

Battery types	all automotive
Capacity	8 up to 10 batteries/minute
Dimensions (W x D x H)	2,500 x 1,500 x 2,000 mm
Conveyor belt height	850 mm +- 50 mm
Electrical connections	400 V, 50 Hz
Control voltage	24 V
Compressed air	6 bar
Material	stainless steel frame and conveyor, acid-resistant plastic, aluminium profiles
Control	Siemens / Allen Bradley

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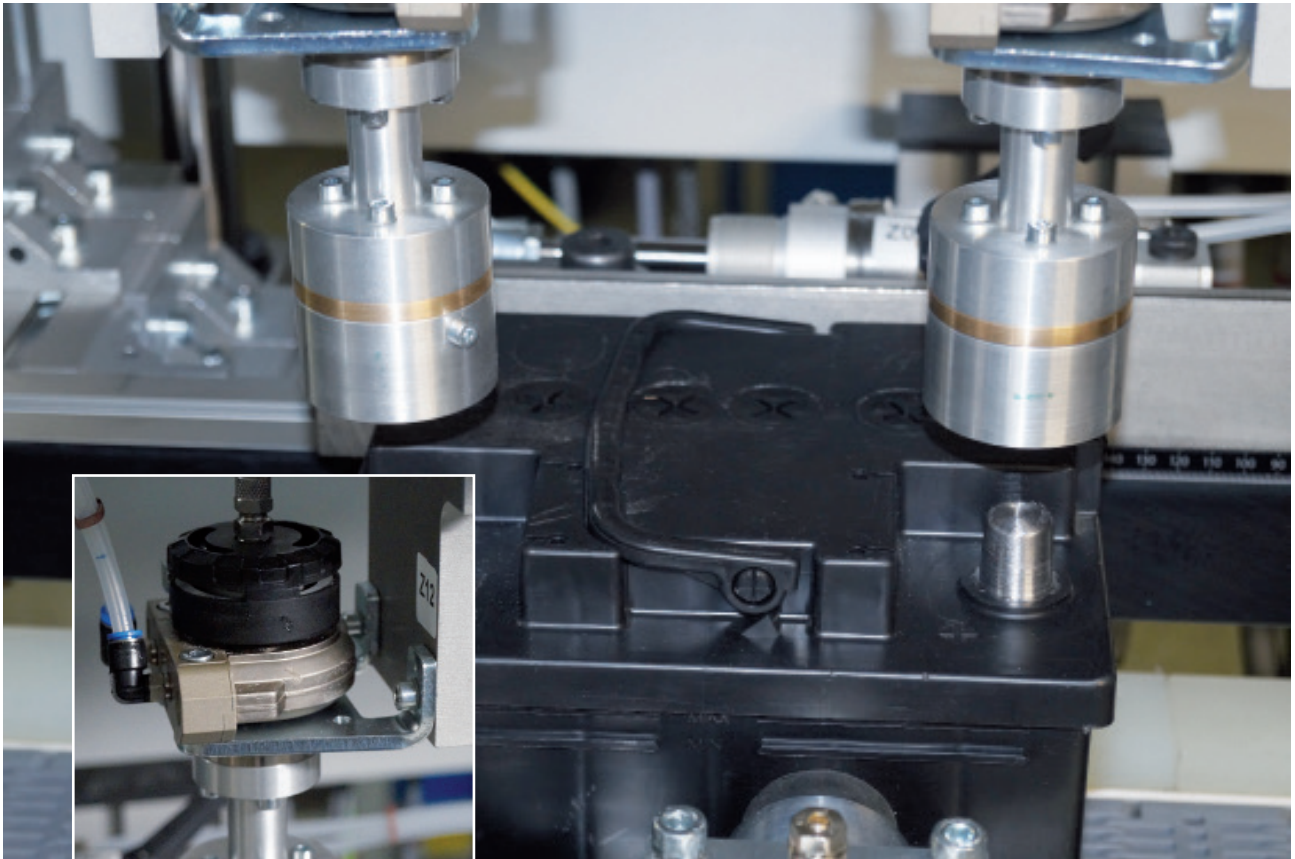
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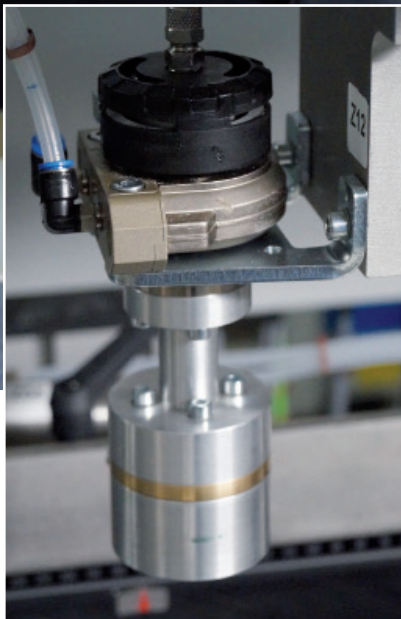
12 BATTERY TERMINAL LUBRICATION MACHINE



MACHINES FOR
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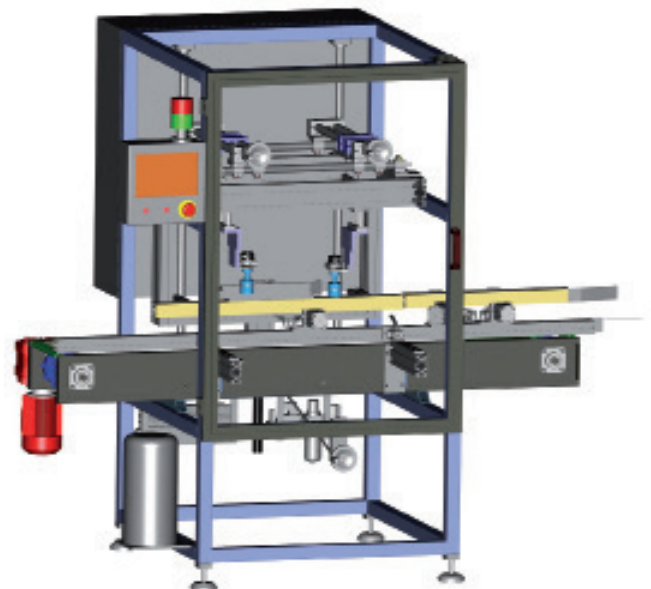


Lubricating system



Function and characteristics

- Automatic lubricating of battery terminals
- Precise dosing by a lubricant storage and dosing system
- Suitable for car and truck batteries
- Manual or automatic adjustment available



12 BATTERY TERMINAL LUBRICATION MACHINE



MACHINES FOR
BATTERY PRODUCTION AND SPECIALISED
MECHANICAL ENGINEERING

Technical data

Battery types	all vehicles
Battery dimensions	max. 515 mm x 285 mm x 250 mm (W x D x H)
Capacity	10 - 12 batteries/minute
Maximum dimensions (W x D x H)	2,000 x 1,200 x 2,000 mm
Conveyor belt height	850 mm +- 50 mm
Conveyor belt width	300 mm
Electrical connections	400 V, 50 Hz
Control voltage	24 V
Compressed air	6 bar
Material	stainless steel, acid-resistant plastic
Control	Siemens / Allen Bradley

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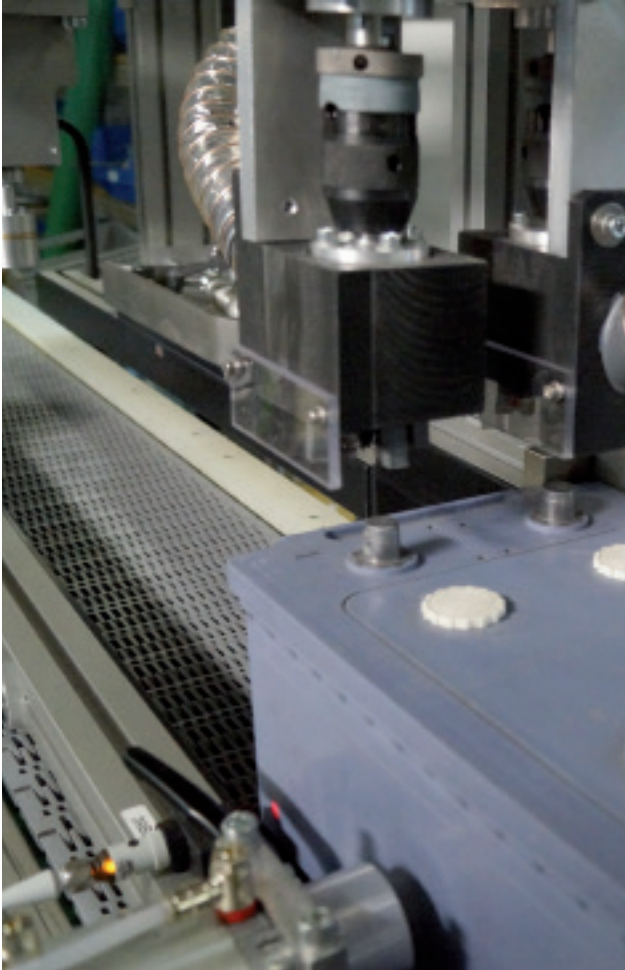
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13 BATTERY TERMINAL BRUSHING AND LUBRICATION MACHINE



MACHINES FOR
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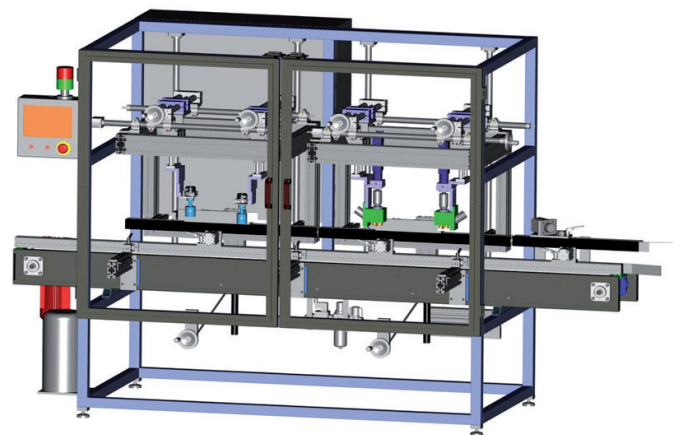
Brushing



Lubricating

Function and characteristics

- Automatic brushing and lubrication of battery terminals
- Electrically driven brush heads
- Adjustable RPM and stroke speed
- Special brushes for blank battery terminals
- No lead dust contamination thanks to an efficient vacuum system
- Precise dosing by a lubricant storage and dosing system
- Processed car and truck batteries system
- Manual or automatic adjustment available
- Suitable for car and truck batteries



13 BATTERY TERMINAL BRUSHING AND LUBRICATION MACHINE



MACHINES FOR
BATTERY PRODUCTION AND SPECIALISED
MECHANICAL ENGINEERING

Technical data

Battery types	all vehicles
Capacity	10 - 12 batteries/minute
Dimensions (W x D x H)	3,050 x 1,500 x 2,000 mm
Conveyor belt height	850 mm +- 50 mm
Electrical connections	400 V, 50 Hz
Control voltage	24 V
Compressed air	6 bar
Material	stainless steel frame and conveyor, acid-resistant plastic, aluminium profiles
Control	Siemens / Allen Bradley

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- Long experience in battery plant design
- Individual system solutions for your production
- Comprehensive advice and on-site analysis

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14 BATTERY AIR BLAST DEVICE

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**CLEVER
SOLUTION -
HIGHEST
QUALITY!**

Function and characteristics

Remaining water is blown out automatically out of the degassing well. The batteries are delivered to the work center by means of a conveyor belt and positioned and fixed in place by an adjustable guide- and stop system. Outlet nozzles are lowered. The degassing wells are blown free with compressed air. Intensity and duration are adjustable.

Technical data

Capacity	8 batteries/min
Battery length	175 to 400 mm
Battery width	125 to 200 mm
Battery height	165 to 283 mm
Battery weight	12 to 25 kg
Dimensions total (L x W x H)	2,000 x 1,100 x 2,400 mm
Weight	550 kg
Material	completely acid-resistant stainless steel 1.4571, 1.4539; plastics PP und PVC, special protection of all non-acid-resistant components
Control voltage	24 V DC
Consumption	2 kW
Compressed air	6 bar
Control	Siemens / Allen Bradley

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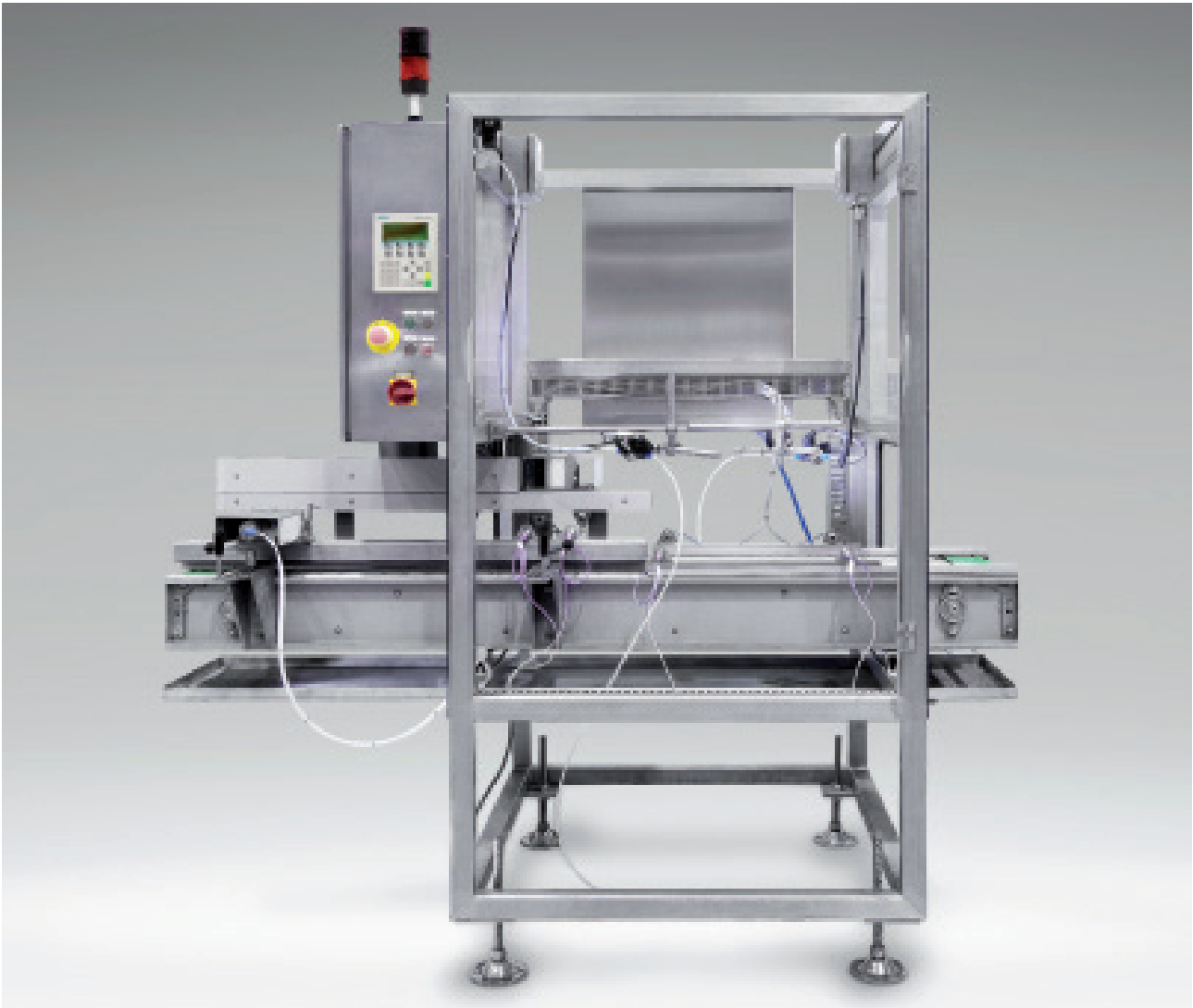
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15 ANTISTATIC SPRAY MACHINE

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Function and characteristics

- Automatic spraying of batteries with anti-static fluid
- Low consumption using sensor-controlled spray nozzles
- Even all-round anti-static coating of battery surfaces
- Encasing of spray space
- No re-tooling needed if a battery is changed
- Use of acid-resistant materials

Technical data

Battery types	all vehicles
Battery dimensions	max. 515 mm x 285 mm x 250 mm (W x D x H) min. 320 mm x 170 mm x 175 mm (W x D x H)
Capacity	10 - 12 batteries/minute
Maximum dimensions (W x D x H)	2,000 x 1,200 x 2,000 mm
Conveyor belt height	850 mm +/- 50 mm
Conveyor belt width	300 mm
Electrical connections	400 V, 50 Hz
Control voltage	24 V
Compressed air	6 bar
Material	stainless steel, acid-resistant plastic
Control	Siemens / Allen Bradley

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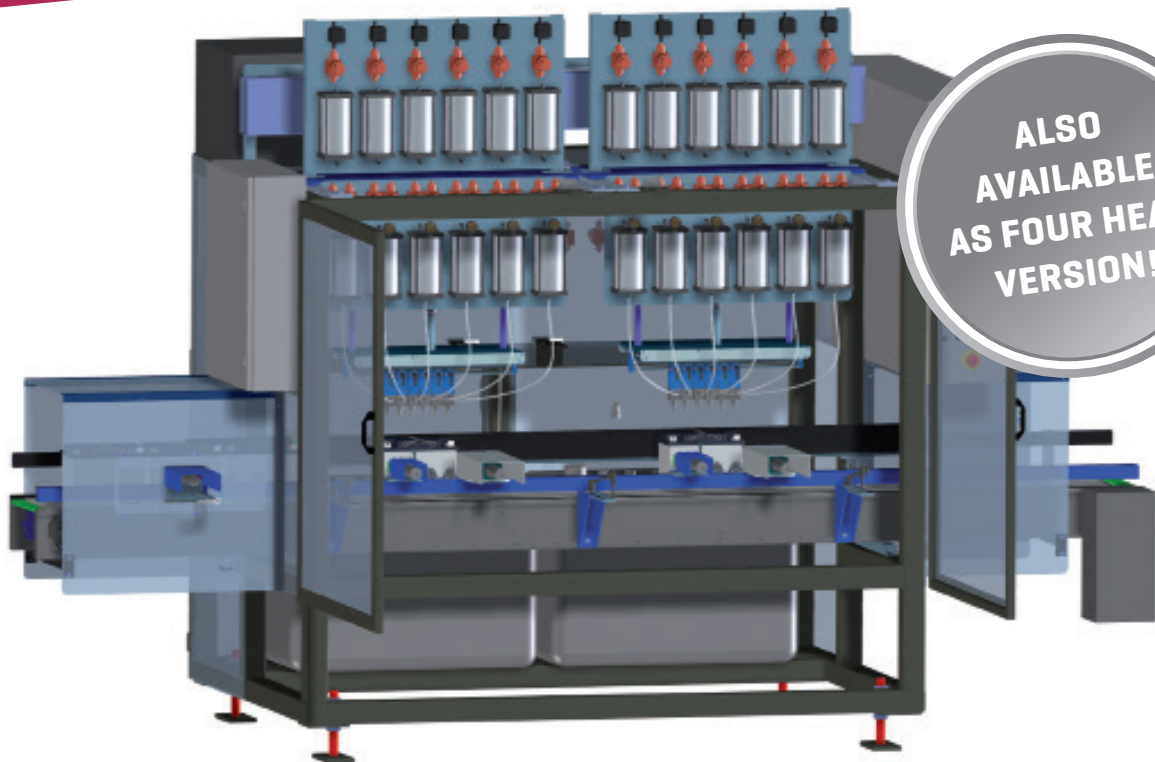
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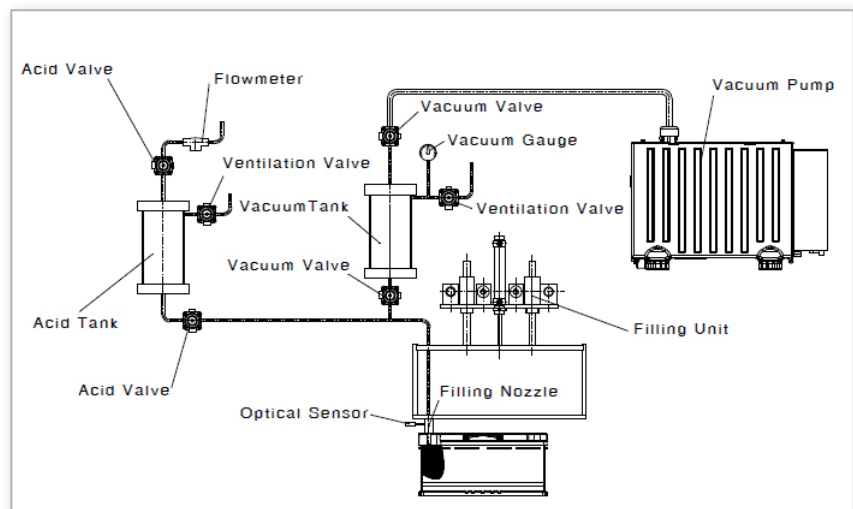
16 AGM ACID FILLING MACHINE



MACHINES FOR
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**ALSO
AVAILABLE
AS FOUR HEAD
VERSION!**



Function and characteristics

- Filling of AGM batteries
- Perfect absorption of the acid into the groups by special vacuum system [adjustable]
- Adjustable battery guide- and stop system
- Volume is controlled by flowmeters or volumetric dispensing pumps
- Accuracy $\pm 0,75$ or less
- Use of 100 % acid resistant materials
- Available for automotive and industrial batteries

16 AGM ACID FILLING MACHINE



MACHINES FOR
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Technical data

Battery types	all automotive and industrial batteries
Battery dimensions	max. 550 mm x 280 mm x 360 mm [L x W x H] min. 175 mm x 125 mm x 175 mm [L x W x H]
Capacity	up to 4 AGM batteries/min., depending on battery size and group compression
Accuracy	+/- 0,75 % or less
Dimensions [L x W x H]	approx. 3,000 x 1,850 x 2,200 mm
Conveyor belt height	850 mm +/- 50 mm
Conveyor belt width	200 mm or 300 mm
Weight	approx. 2,000 kg
Material	stainless steel, acid-resistant plastic
Control voltage	400 V, 60 Hz
Power consumption	approx. 6 kW
Compressed air	6 bar R ¼"
Visualization	Touch Panel
Control	Siemens / Allen Bradley

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17 ADAPTER SCREW MACHINE



MACHINES FOR
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MECHANICAL ENGINEERING

FOR ACID
CIRCULATION
FORMATION!



Function and characteristics

- Automatic setting of adapters for acid circulation formation
- Available for various adapter types
- Push and screw adapters possible
- Quick format changeover



17 ADAPTER SCREW MACHINE



MACHINES FOR
BATTERY PRODUCTION AND SPECIALISED
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Technical data

Battery types	all vehicles
Capacity	up to 6 batteries/minute
Precision	from 90 to 190 Ncm
Battery length	from 200 to 520 mm
Battery width	from 133 to 285 mm
Battery height	from 175 to 360 mm
Battery weight	5,5 to 70 kg
Number of adapters	2 different adapters, 3/6 adapters/battery
Machine dimensions	3,100 x 2,000 x 2,500 mm [L x W x H]
Construction	completely acid-resistant; high-grade steel 1.4571, 1.4539; plastic PP and PVC, special protection of not acid-resistant components
Control voltage	24 V DC
Connection power	15 kW
Operating pressure	6 bar
Control	Siemens / Allen Bradley

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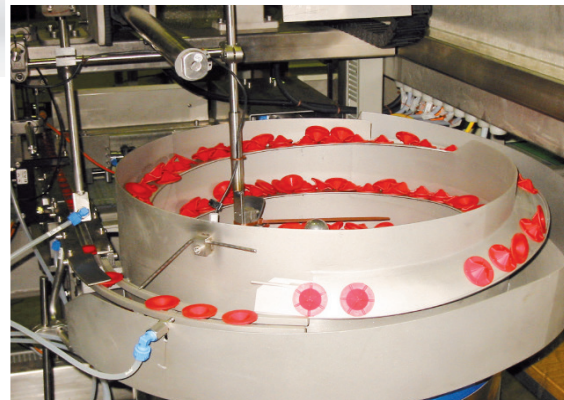
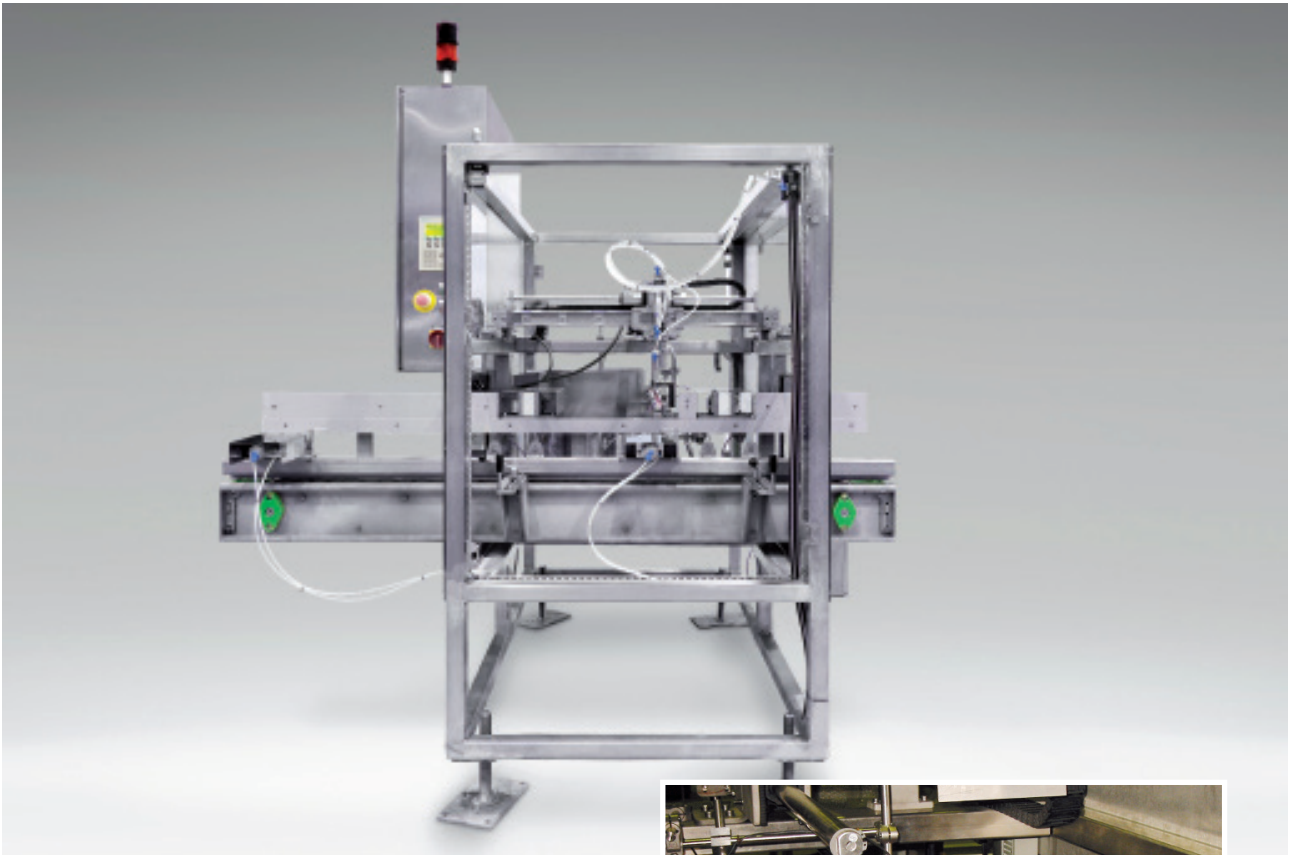
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18 VENTILATION CAP INSTALLATION MACHINE



MACHINES FOR
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MECHANICAL ENGINEERING



Function and characteristics

- Automatic installation of degassing caps on vehicle batteries
- Extremely short re-tooling times through installation head servo-positioning system
- For all standard battery types
- Use of acid-resistant materials

18 VENTILATION CAP INSTALLATION MACHINE



MACHINES FOR
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Technical data

Battery types	all vehicles
Battery dimensions (W x D x H)	max.: 515 mm x 285 mm x 250 mm min.: 320 mm x 170 mm x 175 mm
Capacity	6 batteries/minute
Maximum dimensions (W x D x H)	2,000 x 1,200 x 2,000 mm
Conveyor belt height	850 mm +- 50 mm
Conveyor belt width	300 mm
Electrical connections	400 V, 50 Hz
Control voltage	6 bar
Material	stainless steel, acid-resistant plastic
Control	Siemens / Allen Bradley

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19 ACID DUMPING MACHINE



Function and characteristics

- The purpose of the machine is to dump the formation acid out of the battery container
- Batteries get fixed on the inside conveyor
- Conveyor rotates $180^\circ \pm 20^\circ$
- Variable dumping time
- Possibility to shake the batteries while they are on top
- Controlled draining of the acid
- 100 % acid resistant materials
- Available for all automotive batteries

19 ACID DUMPING MACHINE



MACHINES FOR
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Technical data

Battery types	all automotive batteries, also industrial types
Capacity	variable, depends on battery type
Change-over time	less than 5 minutes
Dimensions (W x D x H)	approx. 2,535 x 1,500 x 2,200 mm
Conveyor belt height	850 mm
Conveyor belt width	300 mm
Weight	approx. 2,000 kg
Material	stainless steel, acid-resistant plastic
Power consumption	approx. 12 kW
Compressed air	6 bar
Visualization	Touch Panel
Control	Siemens / Allen Bradley

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20 GEL FILLING MACHINE

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Function and characteristics

- Filling of AGM- or gel batteries
- Volume is controlled by flowmeters or volumetric dispensing pumps
- Vacuum supported filling process
- Accuracy $\pm 0,5$ or less
- Use of 100 % acid resistant materials
- Available for all automotive and industrial batteries

Technical data

Battery types	all automotive batteries, also industrial types
Capacity	up to 8 batteries/minute
Change-over time	less than 5 minutes
Dimensions (W x D x H)	approx. 2,750 x 1,500 x 2,200 mm
Conveyor belt height	850 mm
Conveyor belt width	300 mm
Material	stainless steel, acid-resistant plastic
Control voltage	24 V DC
Power consumption	approx. 3 kW
Compressed air	6 bar
Visualization	Touch Panel
Control	Siemens / Allen Bradley

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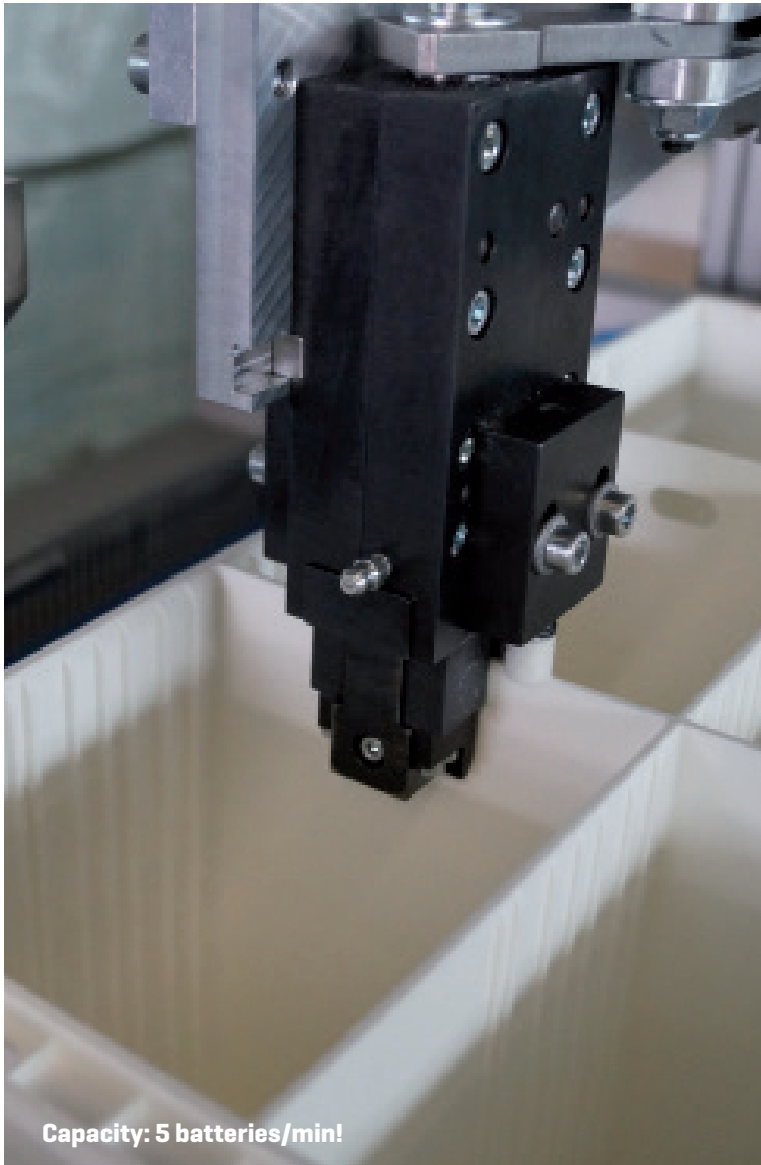
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21 HOLE PUNCH FOR BATTERIES

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Function and characteristics

The plant is used for automatic punching of battery cases. It is suitable as well for **car** battery cases [6 cells in series] as **truck** battery cases [2 x 3 cells in series with alternative perforation].

The battery cases are **singled on a conveyor belt** and **positioned exactly** under the punch unit. The pneumatically driven punch is connected via a rotation module [90 °] with a three-axes portal. All axes are driven by servo motors.

The punch positions are stored in **recipes for different battery types** [at least 30] which can be retrieved depending on type. The hole geometry can be varied by exchanging piercing punches and matrices.

Punching wastes are disposed via a **special discharge chute** into a collection container.

21 HOLE PUNCH FOR BATTERIES



MACHINES FOR
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Options

Hot air gun for removing [melting] any residues from the edges of the punched hole.

Technical data

Maximum dimensions	4,000 mm x 1,500 mm x 2,700 mm [L x W x H]
Weight	1,500 kg
Conveyor belt height	850 mm ± 50 mm
Conveyor belt width	500 mm [usable width]
Capacity	5 batteries/min
Repeatability	> 0,1 mm
Electrical connection	3 x 400 V, 50 Hz
Control voltage	24 V
Compressed air	6 bar
Control	Siemens / Allen Bradley

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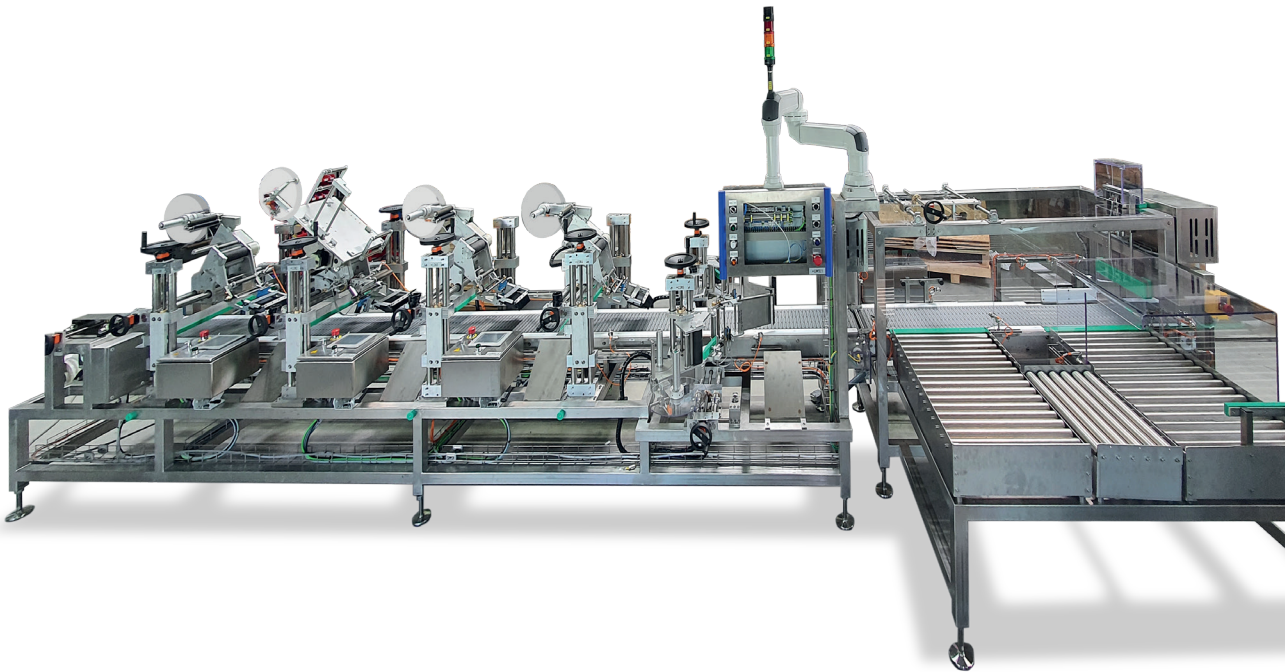
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22 BATTERY-LABELLING MACHINE

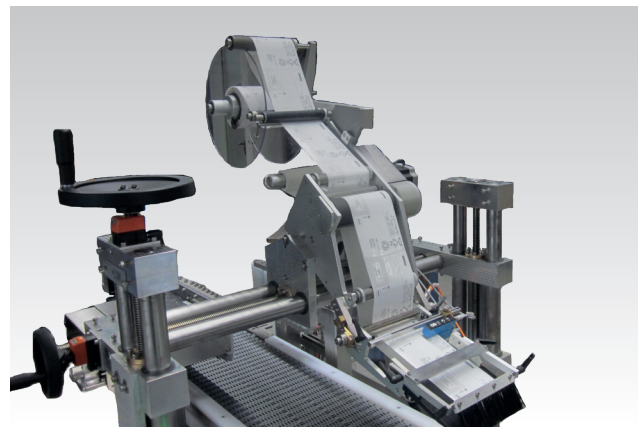
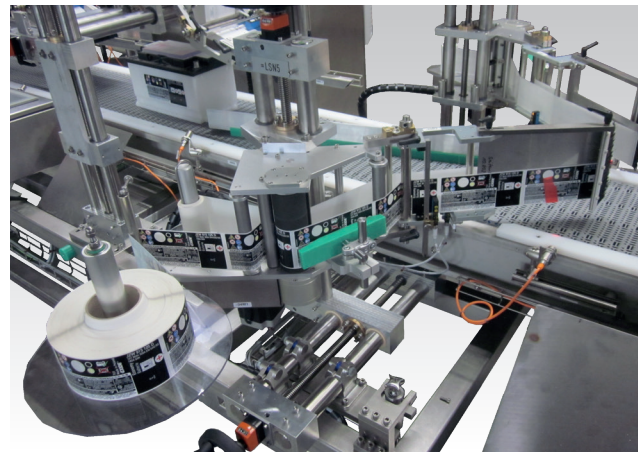


MACHINES FOR
BATTERY PRODUCTION AND SPECIALISED
MECHANICAL ENGINEERING



Function and characteristics

- **High performance**
Labelling takes place during the production run, on up to 20 batteries/minute
- **Flexible**
Labelling on the front, back and top, printing with barcodes or other data
- **A wide range of formats**
Roll sizes up to 400 mm, booklets up to 3 mm, widths up to 150 mm
- **Precision**
Exact label positioning [$\pm 1,5$ mm]
- **Automatic barcode verification**
during the production run
- **The latest technical standard**
for optimum quality, available with Siemens or Allen Bradley controllers



22 BATTERY-LABELLING MACHINE



MACHINES FOR
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Technical data

Machine type	Labelling machine
Usable battery types	for all common car and truck batteries
Throughput	max. 20 batteries per minute
Dimensions of batteries	
Length / Width / Height	175 mm – 562 mm / 125 mm – 280 mm / 150 mm – 280 mm
Mass	12 – 65 kg
Dimensions of the machine	
Length / Width / Height	8 000 mm / 2 225 mm / 2 150 mm [varies depending on equipment]
Electrical connection	3 x 400 V AC / N / PE, 50 Hz
Control voltage	24 V DC
Connection power	8 kW
Operating pressure	6 bar
Mass of the machine	approx. 1 500 kg

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