



**Translation of the original
Operating manual**

Hardware

ProfiTech-Sprint

Version 02 / 2010



P_01211



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1 ABOUT THESE INSTRUCTIONS

This operating manual contains information on the operation, repair and maintenance of the unit.

→ Always observe these instructions when operating the unit.

This equipment can be dangerous if it is not operated in accordance with this manual.

Compliance with these instructions constitutes an integral component of the warranty agreement.

This manual describes the installation of a ProfiTech-Sprint system (control cabinet, electrical connections and preparation for initial start up).

This operating manual is to be used alongside the operating manual ProfiTech-Sprint "Software", which describes the procedure for the initial start up of an entire ProfiTech-Sprint system.

1.1 LANGUAGES

The operating manual is available in the following languages:



Language:	Order No.	Language:	Order No.
German	2309196	English	2309197
French	2309198	Dutch	2319060
Italian	2309199	Spanish	2309200
Danish	---	Swedish	---
Hungarian	---	Polish	2311806

1.2 WARNINGS, NOTES AND SYMBOLS IN THESE INSTRUCTIONS



Warning instructions in this manual point out particular dangers to users and equipment and state measures for avoiding the hazard.

These warning instructions fall into the following categories:



Danger - imminent danger. Non-observance will result in death, serious injury and serious material damage.

 SIHI_0100_GB	 DANGER
	<p>This line warns of the hazard! Possible consequences of failing to observe the warning instructions. The signal word points out the hazard level.</p> <p>→ The measures for preventing the hazard and its consequences.</p>

Warning - possible danger. Non-observance can result in death, serious injury and serious material damage.

 SIHI_0103_GB	 WARNING
	<p>This line warns of the hazard! Possible consequences of failing to observe the warning instructions. The signal word points out the hazard level.</p> <p>→ The measures for preventing the hazard and its consequences.</p>

Caution - a possibly hazardous situation. Non-observance can result in minor injury.

 SIHI_0101_GB	 CAUTION
	<p>This line warns of the hazard! Possible consequences of failing to observe the warning instructions. The signal word points out the hazard level.</p> <p>→ The measures for preventing the hazard and its consequences.</p>

Caution - a possibly hazardous situation. Non-observance can cause material damage.

SIHI_0102_GB	CAUTION
<p>This line warns of the hazard! Possible consequences of failing to observe the warning instructions. The signal word points out the hazard level.</p> <p>→ The measures for preventing the hazard and its consequences.</p>	

Note - provide information on particular characteristics and how to proceed.

2 GENERAL SAFETY INSTRUCTIONS

2.1 SAFETY INSTRUCTIONS FOR THE OPERATOR

- Keep these operating instructions to hand near the unit at all times.
- Always follow local regulations concerning occupational safety and accident prevention.



2.1.1 ELECTRICAL PLANT AND UNITS

- To be provided in accordance with the local safety requirements with regard to the operating mode and ambient influences.
- May only be maintained by skilled electricians.
- Must be operated in accordance with the safety regulations and electrotechnical regulations.
- Must be repaired immediately in the event of problems.
- Must be put out of operation if they pose a hazard.
- Must be de-energized before work is commenced on active parts.
- Secure the control unit against being switched back on without authorisation. Inform staff about planned work.
- Observe electrical safety regulations.

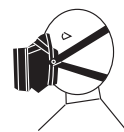


2.1.2 PERSONNEL QUALIFICATIONS

- Ensure that the unit is operated and repaired only by trained persons.

2.1.3 A SAFE WORK ENVIRONMENT

- Ensure that the floor of the working area is anti-static (measurement in accordance with EN 1081).
- Ensure that all persons within the working area wear anti-static shoes.
- Ensure that gloves that are being worn, are made of conductive material.
- The powder release must be electronically interlocked with the powder spray system exhaust equipment.
- Excess coating material (overspray) must be collected up safely.
- Ensure that there are no ignition sources such as naked flame, glowing wires or hot surfaces in the vicinity. Do not smoke.
- Maintain sufficient quantities of suitable fire extinguishers and ensure that they are serviceable.
- The operating company must ensure that an average concentration of powder paint in the air does not exceed 50% of the lower explosion limit (LEL = max. permitted concentration of powder to air). If no reliable LEL value is available, the average concentration may not exceed 10 g/m³.



2.2 SAFETY INSTRUCTIONS FOR STAFF

- Always follow the information in these instructions, particularly the general safety instructions and the warning instructions.
- Always follow local regulations concerning occupational safety and accident prevention.
- Under no circumstances should persons with pacemakers be in the area where the high-voltage field between the spray gun and the work piece to be coated builds up!



2.2.1 SAFE HANDLING OF WAGNER POWDER SPRAY UNITS

- Never point the powder spray gun at people.
- Before all work on the unit, in the event of work interruptions and functional faults:
 - Switch off the energy/compressed air supply.
 - Secure the powder spray gun against actuation.
 - Relieve the pressure from the powder spray gun and unit.
 - By functional faults: Identify and correct the problem, proceed as described in chap. "Trouble shooting".



2.2.2 EARTH THE UNIT

The electrostatic charge may, in certain cases, give rise to electrostatic charges on the device. These can involve with unloading transmitting or flame formation.

- Ensure that the device is grounded before each coating process.
- Earth the work pieces being painted.
- Ensure that all persons inside the working area are earthed, e.g. that they are wearing antistatic shoes.
- Grounding cables must be checked regularly to ensure that they are serviceable (see EN 60204).



2.2.3 MATERIAL HOSES

- Only use original Wagner powder hose.



2.2.4 CLEANING

- De-energize the unit electrically.
- Disconnect the pneumatic supply line.
- Relieve the pressure from the unit.
- Secure the control unit against being switched back on without authorisation.
- Only mobile industrial vacuum cleaners of design 1 (see EN 60335-2) may be used for getting rid of dust build-ups.

2.2.5 HANDLING POWDER PAINTS

- Take note of the processing regulations laid down by the manufacturer of the powder paint being used, when preparing or processing the powder.
- Take note of the manufacturer's advice and the relevant environmental protection regulations when disposing of powder paints.
- Implement the prescribed safety measures, in particular the wearing of safety glasses and safety clothing as well as the use of protective hand cream.
- Use dust masks or breathing apparatus.
- To ensure sufficient protection of health and the environment, only operate the device in a powder booth or at a spray wall with activated ventilation (exhaust air).



2.3 USING IN ACCORDANCE WITH THE INSTRUCTIONS

WAGNER accepts no liability for any damage arising from incorrect use.

- Use the unit only to work with the materials recommended by WAGNER.
- Operate the unit only as an entire unit.
- Do not deactivate safety equipment.
- Use only WAGNER original spare parts and accessories.



2.4 SAFETY FEATURES

Plates bearing information for the user have been attached to the work openings of the powder coating booth.
 The plate size corresponds to the standard category Ø 100 mm; 3.94 inches.
 The label plates, which must be attached, are shown below.



High-voltage!
 In the control cabinet:
 (25 mm; 0.98 inches)
 Voltage before main switch



Danger of crushing!



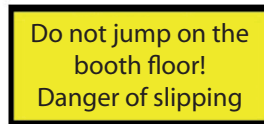
Explosive atmosphere!



Risk of tripping!



Forbidden for persons with a cardiac pacemaker!



Fire, open light and smoking prohibited!



Forbidden for unauthorized persons!



Wear electrostatically conductive footwear!



Follow the instructions in the operating manual!

3 WARRANTY AND CONFORMITY DECLARATIONS

3.1 IMPORTANT NOTES ON PRODUCT LIABILITY

As a result of an EC regulation, effective as from January 1, 1990, the manufacturer shall only be liable for his product if all parts come from him or are approved by him, and if the devices are properly fitted, operated and maintained.

If other makes of accessory and spare parts are used, the manufacturer's liability could be fully or partially null and void.

The usage of original WAGNER accessories and spare parts guarantees that all safety regulations are observed.

3.2 WARRANTY CLAIM

This equipment is covered by the following manufacturing warranty.

We will at our discretion repair or replace free of charge all parts which within 24 months in single-shift, 12 months in 2-shift or 6 months in 3-shift operation from date of receipt by the Purchaser are found to be wholly or substantially unusable due to causes prior to the sale, in particular faulty design, defective materials or poor workmanship.

The terms of the warranty are met at our discretion by the repair or replacement of the unit or parts thereof. The resulting costs, in particular shipping charges, road tolls, labour and material costs will be borne by us except where these costs are increased due to the subsequent shipment of the unit to a location other than the address of the purchaser.

This warranty does not cover damage caused by:

Unsuitable or improper use, faulty installation or commissioning by the purchaser or a third party, normal wear, negligent handling, defective maintenance, unsuitable coating products, substitute materials and the action of chemical, electrochemical or electrical agents, except when the damage is attributable to us.

Components not manufactured by Wagner are subject to the warranty terms of the original maker.

The replacement of a part does not extend the warranty period of the unit.

The unit should be inspected immediately upon receipt.

To avoid loss warranty, any apparent defect should be notified to us or the dealer in writing within 14 days from date of sale of the unit.

The right to commission warranty services to a third party is reserved.

Warranty claims are subject to proof of purchase by submitting an invoice or delivery note. If an inspection finds damage not covered by the present warranty, the repair will be carried out at the expense of the purchaser.

Note that this warranty does not in any way restrict legally entitled claims or those contractually agreed to in our general terms and conditions.

J.Wagner AG

3.3 CE-CONFORMITY

Herewith we declare that the supplied version of

- ProfiTech-Sprint

complies with the following provisions applying to it:

2006/95/EG (Low tension guideline)

2004/108/EG (Electro-magnetic compatibility (EMC) guideline)

Applied standards, in particular:

DIN EN 60204-1 Machine Safety

DIN EN 60439-1:2005-01

Marking:



CE Certificate of Conformity

The certificate is enclosed with this product. The certificate of conformity can be reordered from your WAGNER representative, quoting the product and serial number.

Part number:

ProfiTech-Sprint

4 DISCLAIMER

4.1 HARDWARE

Any amendments by the user or any third party to the structure of the control cabinet delivered by J. WAGNER GmbH, in particular in respect of the electric control, require the written permission of J. WAGNER GmbH.

Any amendments, which were not permitted, immediately lead to the exclusion of all warranty, liability and guarantee claims by the manufacturer.

4.2 SOFTWARE

The production of copies of the software for the purpose of selling it or installing it in proprietary systems or controls of the end user for the purpose of selling these or for own use requires the written permission of J. WAGNER GmbH.

Any amendments by the user or third parties of the software delivered by J. WAGNER GmbH, requires the written permission of J. WAGNER GmbH.

Any amendments, which were not permitted, immediately lead to the exclusion of all warranty, liability and guarantee claims by the manufacturer.

5 DESCRIPTION

5.1 FIELDS OF APPLICATION, USING IN ACCORDANCE WITH THE INSTRUCTIONS

The ProfiTech-Sprint controller is used in automatic coating systems. The control unit controls:

- Powder output quantity
- Powder atomization
- High-voltage
- Current limitation
- Reciprocator settings
- Gap control

5.2 SCOPE OF DELIVERY

Quantity	Order No.	Designation
1		ProfiTech-Sprint controller
The standard equipment includes:		
1		Declaration of conformity
1	2309196	Operating manual German
1	see Chapter 1.1	Operating manual in the local language

5.3 TECHNICAL DATA

5.3.1 CONTROL CABINET

Type:	ProfiTech-Sprint
Serial number:	see type plate
Year of construct:	see type plate
Voltage:	400 / 230 V
Frequency:	50 Hz
Power:	max. 7.5 kW
Back-up fuse:	35 A
Supply line:	max. 5 x 10.0 mm ² or 4 x 10.0 mm ²
Protection class:	IP 54
Dimensions:	
Width:	800 mm; 31.5 inches
Height:	2200 mm; 86.62 inches
Depth:	500 mm; 19.7 inches
Weight:	approx. 160 kg; 352.73 lb on max. upgrade
Ambient conditions:	
Operating temperature range	5-45 °C; 41-113 °F

5.3.2 INPUT SIGNALS EXTERNAL INTERFACE

Depending on the order, the input signals can be handled differently. For this reason, please compare with the circuit diagram!

Signal	Function	Clamp strip	Clamps	Contact /Signal type
Emergency stop	Emergency stop	= E1-X9	34/35/36/37	Potential-free NCC
Booth OK	Booth OK	= E1-X9	48/49/50/51/65/PE	Potential-free NOC
Conveyor operating	Conveyor operating	= E1-X9	19/20	Potential-free NOC
Fire detection alarm	Fire detection alarm	= E1-X9	70/71/72/73/74/PE	Potential-free NOC
Fire detection OK	Fire detection OK	= E1-X9	66/67	Potential-free changer
Grounding check OK	Grounding check OK	= E1-X9	68/69	Potential-free changer
Powder center OK	Powder center OK	= C5-X9	10/11	Potential-free changer

5.3.3 OUTPUT SIGNALS EXTERNAL INTERFACE

Depending on the order, the output signals can be handled differently. For this reason, please compare with the circuit diagram!

Signal	Function	Clamp strip	Clamps	Contact /Signal type
EMERGENCY STOP external	Prov. by customer	= E1-X9	2/5/4/7/11/PE 6/9/8/10/11/PE 12/13/14/15/16/PE	Potential-free NCC
Fire detection alarm Emergency stop	Emergency stop	= E1-X9	30/31/32/33	Potential-free NCC
Application (Esta) OK	Release to conveyor technology	= E1-X9	21/22/23/29/PE	Potential-free NOC
Mains air On	Enabling to mains air valve	= E1-X9	27/28/29/PE	Booth OK
Door inlet Open	Release to conveyor technology	= E1-X9	24/25	Potential-free NOC



5.3.4 RACK (16 EPG-SPRINT)

Dimensions:	
Width:	630 mm; 24.8 inches
Height:	2200 mm; 86.62 inches
Depth:	660 mm; 26 inches
Weight:	approx. 150 kg; 330.68 lb e.g. if equipped with 12 EPG-Sprint

5.3.5 EPG-SPRINT

Dimensions:	
Width:	136 mm; 5.35 inches
Height:	270 mm; 10.63 inches
Depth (without operating elements):	200 mm; 7.87 inches
Weight:	3.3 kg; 7.28 lb
Electrical:	
Mains (AC)	85 VAC-250 VAC
Frequency	47 Hz-440 Hz
Input power	max. 40 W
Output voltage	max. 22 Vpp
Output current	max. 0.9 A
High-voltage	10-100 kV (adjustable in 1 kV steps)
Corona current limitation	5 μ A-120 μ A (adjustable in 1 μ A steps)
Tribo current measurement	0 μ A-5 μ A (resolution 0.5 μ A)
Tribo current low level warning	0 μ A-5 μ A (adjustable in 0.1 μ A steps)
Tribo current cut off	higher than 12 μ A (ATEX: switch the unit off)
Protection class	IP 64
Explosion zone	II 3D 80 °C; 176 °F

Pneumatic:	
Compressed air input pressure	0.6-0.8 MPa; 6-8 bar; 87-116 psi
Air quantity	max. 15 m ³ /h
Summation of the dosage and feed air	2-6 m ³ /h
Gun air	0.05-4.0 m ³ /h
Required compressed air quality as per ISO 8573.1	3.5.2
Connection hose diameter	8 mm; 0.315 inches
Ambient conditions:	
Operating temperature range	5-45 °C; 41-113 °F

	 WARNING
	<p>Outgoing air containing oil! Risk of poisoning if inhaled.</p> <p>→ Provide water-free and oil-free compressed air (quality standard 3.5.2 as per ISO 8573.1) 3.5.2 = 5 µm / +7 °C; 44.6 °F / 0.1 mg/m³.</p>

SIHI_05034_ENG

<h2>CAUTION</h2>
<p>Compressed air quality, accessories Danger of equipment damage.</p> <p>→ Operate the control unit only with the prescribed compressed air quality. → Only use the control unit with original Wagner accessories. → Disregard of these conditions leads to expiring the warranty.</p>

SIHI_05054_ENG

Ambient conditions:

If low temperature powders are used, the ambient temperature may have to be lower than 30 °C; 86 °F.

Volume measures:

For volumes, specified in Nm³ (standard cubic meters). One cubic meter of a gas at 0 °C; 32 °F and 1.013 bar is called norm cubic meter. 1 Nm³/h = 35.3ft³/h; 1 bar = 14.504 psi.

6 ASSEMBLY OF THE PROFITECH-SPRINT SYSTEM



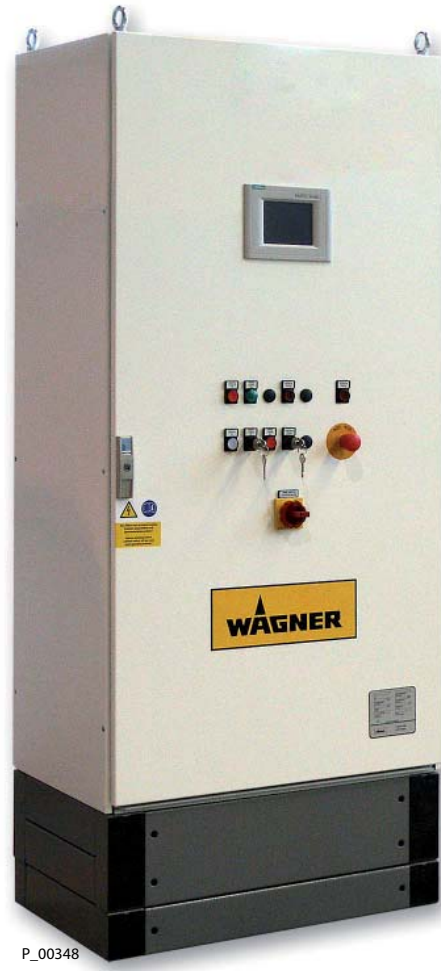
P_01212

ProfiTech Rack

with 10 EPG-Sprint

The rack is ready assembled and must only be electrically and pneumatically connected.

See chapter 6.1 "Connect ProfiTech Rack".



P_00348

Control cabinet

See chapter 6.2 "Connections between the control cabinet and rack".

Prior to assembly and before beginning with the electrical connections, a check should be performed as to whether all necessary components are available.

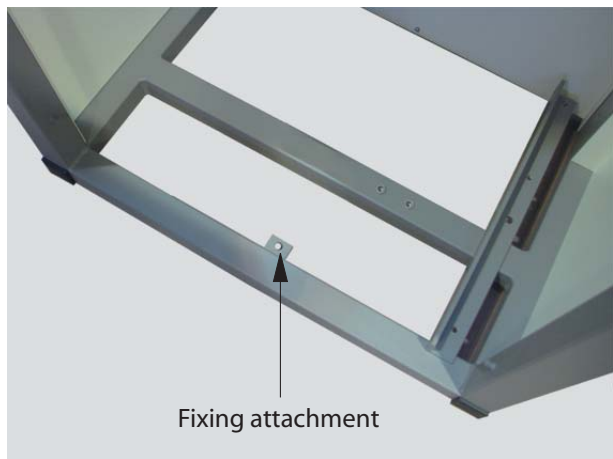
The parts list of the electric circuit diagram lists all control cabinet components. The parts list is project-related and should be kept in a safe place.

6.1 CONNECT THE RACK

6.1.1 ASSEMBLY INSTRUCTIONS

	! WARNING
	<p>Danger of tipping! Risk of injury and damage to the equipment.</p> <ul style="list-style-type: none">→ Secure the rack against tipping while it is being transported.→ Screw rack to base on the fixing attachment at the installation site.

SIHI_05049_ENG



P_00349

6.1.2 RACK COMPONENTS

 <p>P_00346</p>	<p>Rack: Order No. 360093</p> <p>The rack includes: Distributor block, complete Order No. 360252 Consisting of: Fitting straight, pluggable Order No. 9992106 Stopper Order No. 9998201 Grounding cable, complete Order No. 264332</p> <p>Base rack with eight storage spaces for a maximum of sixteen EPG-Sprint control units.</p>
 <p>P_01216</p>	<p>EPG-Sprint: Order No. 2305109</p> <p>Universal control unit for Corona or Tribo powder spray guns. One EPG-Sprint is required per gun.</p>
 <p>P_00105</p>	<p>Metal sheet: Order No. 360238</p> <p>To close free spaces when the rack is not fully fitted.</p> <p>The metal sheet consists of: Star washer Order No. 9922101 Fillister head screw Order No. 9903328 Hexagon nut Order No. 9910108</p>
 <p>P_00107 P_00106</p>	<p>Connection EPG-Sprint / Connection box Order No. 263092</p> <p>Consisting of: Interconnect cable 1.2 m; 3.39 ft Order No. 263214 Mains cable 0.55 m; 1.80 ft Order No. 241269</p>

 <p>P_00108</p>	<p>Grounding cable 0.75 m; 2.46 ft Order No. 264332</p> <p>Grounding cable between the control units.</p>
 <p>P_00109</p>	<p>Hose Ø 6 / 8 mm; 0.32 inches, black Order No. 9982078</p> <p>Hose connection between the air diffuser of the rack and the control units.</p>
 <p>P_00252</p>	<p>Control connection to EPG-Sprint Order No. 263080</p> <p>ProfiTech interface for EPG-Sprint.</p>
 <p>P_00111</p>	<p>Power supply cable 10 m; 32.8 ft Order No. 360263</p> <p>Electrical supply cable to the first EPG-Sprint (with plug to the EPG).</p>
 <p>P_00150</p>	<p>Control cable to the ProfiTech interface Order No. 3127495</p> <p>Shielded cable by the meter 12 x 0.5 mm²-CY.</p>

6.2 CONNECTIONS BETWEEN THE CONTROL CABINET AND RACK

Illustration with maximum equipment, with ten EPG-Sprint.



P_01213

Connect spray guns:
see operating manual of the EPG-Sprint control unit.
Connection cable:
see "Hoses for the connection of the rack with the gun and injector".

Connect grounding cable (order no. 264332) to first EPG-Sprint and system ground.

Connect supply voltage cable (order no. 360263) to the clamp strip = E2-X2 in the control cabinet.

Connect assembly kit 1 (order no. 3120195) to distributor block (1/2") using the hose clamp.



P_00113

Connect compressed air (0.6-0.8 MPa; 6-8 bar; 87-116 psi) to assembly kit 1 (1").

Connect control voltage cable to the clamp strip = E2-X3 in the control cabinet.

6.3 GROUNDING

For security reasons the ProfiTech system must be properly grounded.

Wagner recommends the use of a copper cable of at least 16 mm² with sufficient mechanical resistance for connection to the System Ground.

It is important for systems safety and to achieve an optimum coating, that all system components such as work pieces, conveyors, color supply, control unit and booth are perfectly grounded.

A poorly grounded work piece causes:

- Dangerous electric charging of the work piece.
- Very bad wrap around.
- Uneven coating.
- Backspraying to the spray gun, i.e. contamination.

Prerequisites for perfect grounding and coating are:

- Conducting suspension for the work piece that is to be coated.
- Grounding of the powder coating booth, transport and suspension equipment to be provided on site, in accordance with the corresponding Operating manuals or the definitions laid down by the manufacturer.
- Regular cleaning of hangers from powder residues.
- Grounding resistance for the work piece of a maximum of 1 MΩ (mega ohm).
- Grounding cable connected to the controller module or control cabinet.

Sparks between work piece and conveyor hooks (hangers) can occur if hooks or other hanger parts are not completely cleaned! These sparks can cause heavy radio frequency interference.

6.4 HOSES FOR THE CONNECTION OF THE RACK WITH THE GUN AND INJECTOR

 <p>P_00109</p>	<p>Hose Ø4/6 mm Order No. 9982079</p> <p>Hose connection between EPG-Sprint and spray gun.</p>						
 <p>P_00114</p>	<p>Hose Ø6/8 mm, red Order No. 9982063</p> <p>Feed air hose from EPG-Sprint to powder injector.</p>						
 <p>P_00115</p>	<p>Hose Ø6/8 mm, blue Order No. 9982062</p> <p>Dosing air hose from EPG-Sprint to powder injector.</p>						
 <p>P_00116</p>	<p>Powder hose</p> <p>Powder hose from the powder injector to the spray gun.</p> <p>Inner diameter</p> <table data-bbox="651 1384 1394 1485"> <tbody> <tr> <td>10 mm</td> <td>Order No. 9987080</td> </tr> <tr> <td>11 mm</td> <td>Order No. 2307502</td> </tr> <tr> <td>12 mm</td> <td>Order No. 9987082</td> </tr> </tbody> </table>	10 mm	Order No. 9987080	11 mm	Order No. 2307502	12 mm	Order No. 9987082
10 mm	Order No. 9987080						
11 mm	Order No. 2307502						
12 mm	Order No. 9987082						
 <p>P_00117</p>	<p>Assembly kit 1 Order No. 3120195</p> <p>Adapter for the compressed air connection at the distributor block in the rack.</p> <p>Connection of a max. of 12 EPG-Sprint.</p>						

**Assembly kit 2**

Order No.3120196

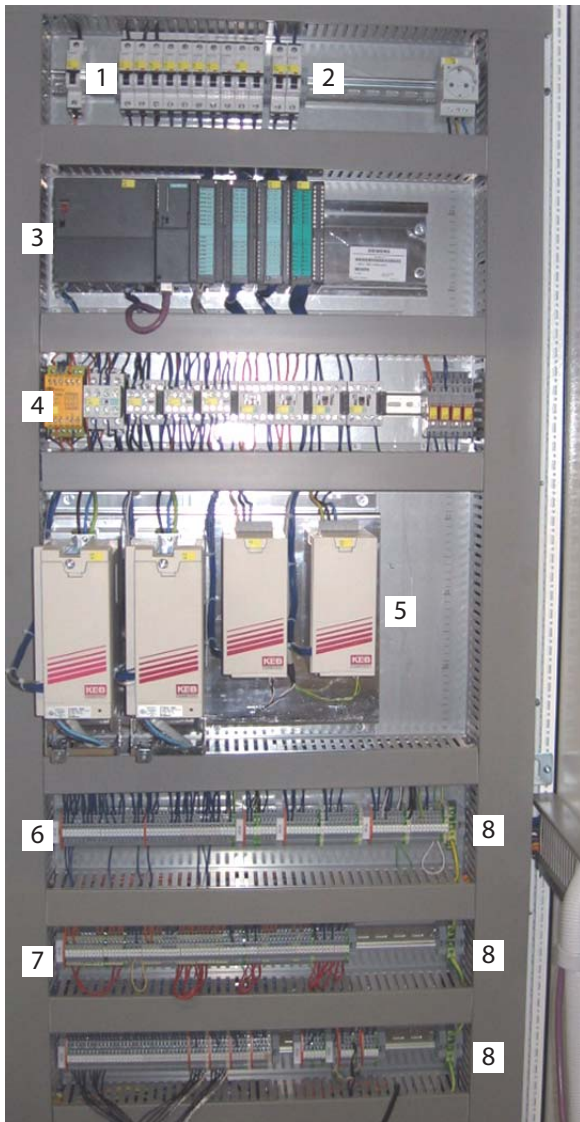
Connection to the second or third rack.
 Assembly kit 2 is connected to assembly kit 1 of the first rack and assembly kit 1 of the second rack.

Connection of a max. of 36 EPG-Sprint.

6.5 ELECTRICAL CONNECTIONS IN THE CONTROL CABINET**6.5.1 OVERVIEW****Abbreviations in the ProfiTech circuit diagram**

Abbreviation	Term (German)	Term (English)
EO	Aufbaupläne	Assembly
E1	Lastspannung	Power
SP	SPS-Steuerung	PLC-Control
S8	Bedienpanel	Touch-Panel
E1	Gleichspannung	DC-Distribution
E1	Not-Aus-Schaltgerät	Emergency-Stop device
E7	Encoder/Taktgeber	Encoder
E7	Lichtvorhang Kontur	Kontur Light Curtain
E7	Lichtschanke Scan	SCAN Light Barrier
E1	Signalaustausch	Interlock-Signals
E1	Steuerung	Control
E2	Pistolen Steuergerät	Electrostatic Power Generator
E4	Hubgeräte	Reciprocator
E5	Zustellwagen	Sliding Tables
KO	Klemmenplan	Terminal Connection Diagram
K1	Kabel-Übersichtplan	Diagram of Cable Strip
SL	Stückliste	Part List

Illustration with maximum equipment (see circuit diagram)



- 1. Fuses
- 2. Fuses
- 3. PLC
- 4. Control components
- 5. Frequency converter for movement technique
EBA reciprocator / KHG oscillator
ZW sliding table (if available)
- 6. Clamp strips
- 7. Clamp strips
- 8. Ground wire clamps

P_01206

6.5.2 CONTROL COMPONENTS/PLC

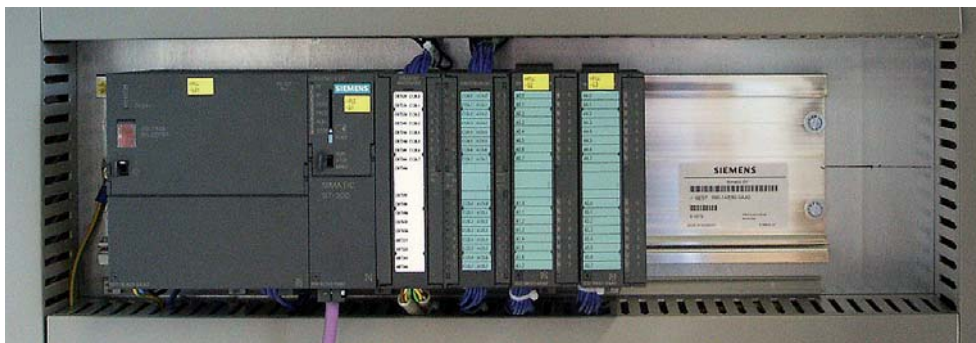
4 Control components
see circuit diagram



P_01207

3 PLC
see circuit diagram:

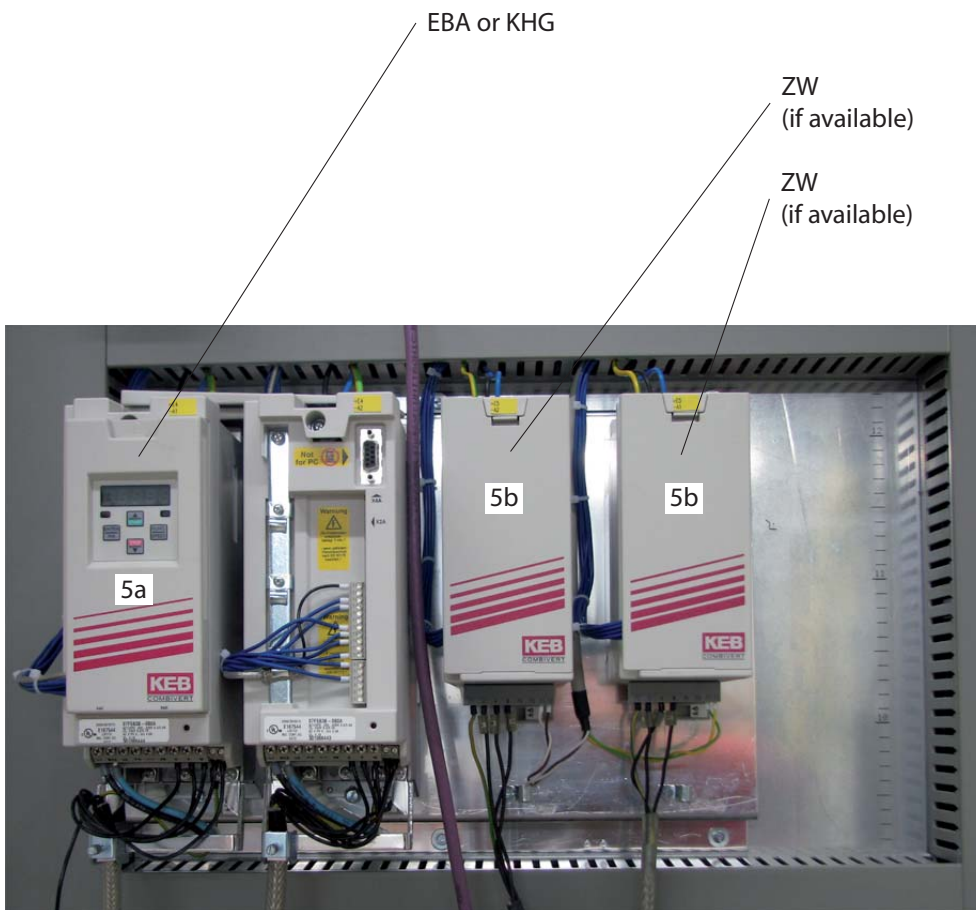
= SP sheets 1-6



P_01208

6.5.3 FREQUENCY CONVERTER

- 5 Frequency converter for movement technique
 - a EBA reciprocators / KHG oscillator
 - b ZW sliding table (if available)



P_01209

6.5.4 CLAMP STRIPS

6 Clamp strips

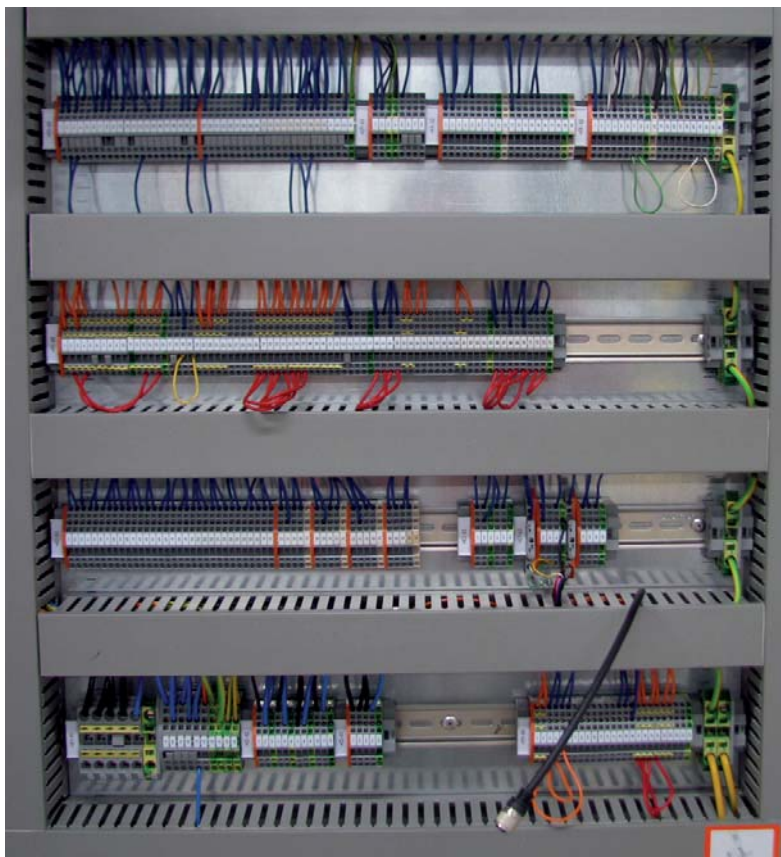
a	= E1-X3	General distributio	= KO sheets 3/3a
b	= E2-X3	Spray guns	= KO sheets 6/6a/6b
c	= E4-X3	EBA reciprocator/ KHG oscillator	= KO sheets 11
d	= E5-X3	ZW sliding table (not installed if no ZW available)	= KO sheets 12

7 Clamp strips

a	= E1-X1	230/400 VAC	= KO sheets 2
b	= E2-X2	230 VAC EPG (spray guns)	= KO sheets 5
c	= E7-X3	24 VDC pulse generator	= KO sheets 13
d	= E7-X3	24 VDC SCAN light curtain	= KO sheets 13
e	= E1-X9	external interlocking	= KO sheets 4/4a/4b/4c

8 Ground wire clamp strips see circuit diagram

= EO sheets 6



P_01210

6.6 CONNECTIONS PULSE GENERATOR AND LIGHT CURTAINS

6.6.1 CONNECTIONS BETWEEN THE CONTROL CABINET AND PULSE GENERATOR



P_00121

Pulse generator

Order No.3125588

28I/U incremental encoder



P_00122

Bracket set for pulse generator

Order No.3104680



P_00123

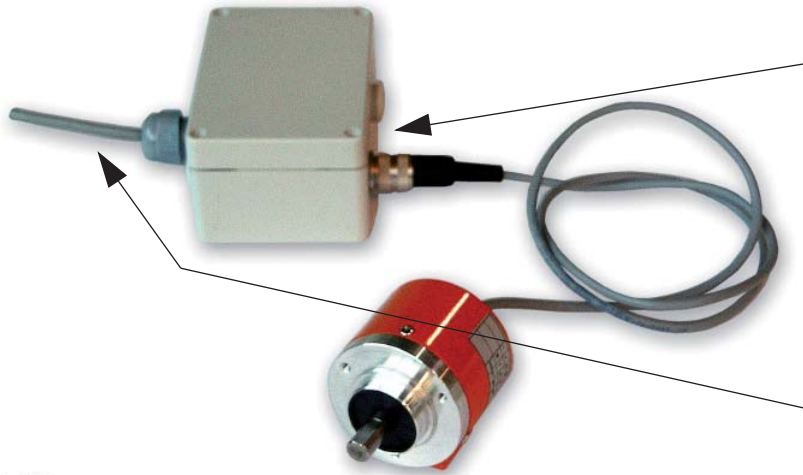
Connection box for pulse generator

Order No.3113695

Cable to the connection box for incremental encoder

by the meter 5 x 1.5 mm²

Order No.3087381



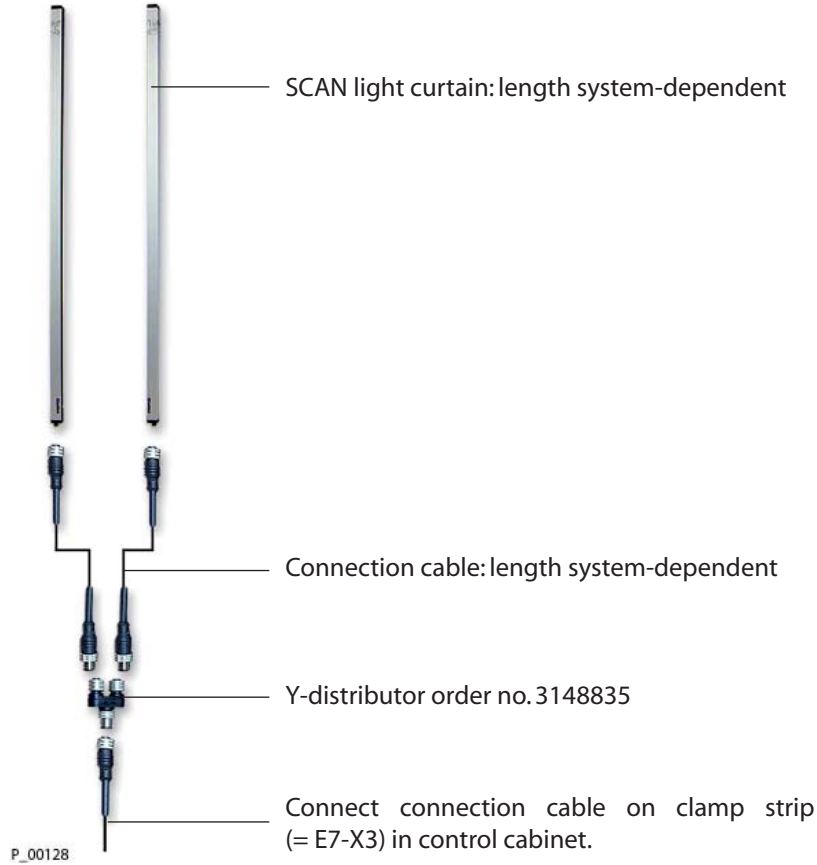
Connect pulse generator (order no. 3125588) with connection box (order no. 3113695).

Connect cable on clamp strip (= E7-X3) in control cabinet.

P_00124

6.6.2 CONNECTIONS BETWEEN CONTROL CABINET AND SCAN LIGHT CURTAINS

 <p>P_00125</p>	<p>Light curtain</p> <p>Length:</p> <ul style="list-style-type: none"> 450 mm; 17.71 inches 1200 mm; 47.24 inches 1650 mm; 64.96 inches 2025 mm; 79.72 inches 2400 mm; 94.49 inches <ul style="list-style-type: none"> Order No. 3148826 Order No. 3148827 Order No. 3148828 Order No. 3148829 Order No. 3148830
 <p>P_00126</p>	<p>Y-distributor for connection cables SCAN light curtain</p> <p>Order No. 3148835</p>
 <p>P_00127</p>	<p>Connection cable for SCAN light curtain via Y-distributor to the control cabinet.</p> <p>Length</p> <ul style="list-style-type: none"> 0.5 m; 1.64 ft 2.0 m; 6.56 ft 5.0 m; 16.4 ft 10.0 m; 32.8 ft <ul style="list-style-type: none"> Order No. 3148831 Order No. 3148832 Order No. 3148833 Order No. 3148834



6.6.3 CONNECTIONS BETWEEN CONTROL CABINET AND “KONTUR 2” LIGHT CURTAINS



“Kontur 2” light curtain (resolution 10 / 40 mm)

Length (mm; inches):	Order No. Resolution 10 mm	Order No. Resolution 40 mm
320; 12.6	3158584	3127544
480; 18.9	3158585	3127327
640; 25.2	3158586	3127549
960; 37.8	3158587	3127552
1280; 50.4	3158588	3127555
1600; 63.0	3158589	3127024
1920; 75.6	3158590	3127328
2240; 88.2	3158591	3127689
2560; 100.8	3158592	3127564
2880; 113.4	3158593	3127567
3200; 126.0	3158594	3127598



P_00130

Connection cable for "Kontur 2" light curtain to Quattro-DP control section

Length
2.5 m; 8.20 ft
5.0 m; 16.4 ft

Order No. 3158597
Order No. 3158598



P_00131

Kontur-Quattro-DP control section for light curtain

Order No. 3158596



P_00132

Power supply cable to "Kontur 2" light curtain

by the meter 3 x 1.0 mm²

Order No. 3052605



P_00133

Connection cable for Quattro-DP Kontur 2 control section to PLC

by the meter 2 x 0.34 mm²
Plug to PLC

Order No. 3132707
Order No. 3114748

6.7 INSTALLATION OF THE "KONTUR 2" LIGHT CURTAIN

HINT

To avoid malfunctions of the light curtains through electrostatic influences, the following points should be taken into account for every system!

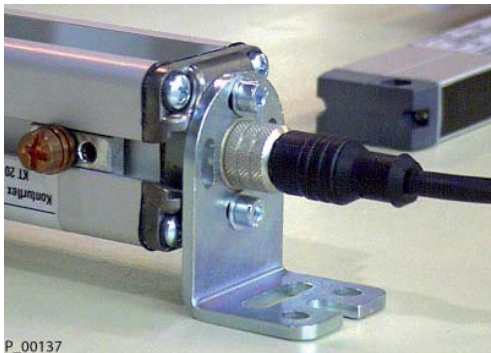


1. Never plug in or pull live light curtain connection cables at the light curtains or the Quattro control section.

First switch off 24 VDC supply or remove connection box at Quattro control section.



2. A brass ring can be found at the connection thread of every light curtain. This ring finishes level with the fastening bracket. Ensure that the brass ring exists.

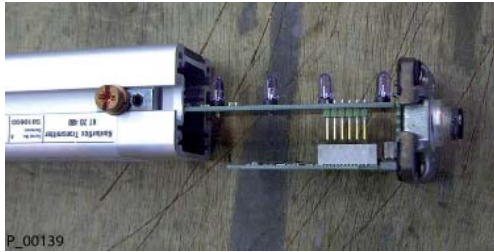


3. The metal ring of the connector must be fully screwed onto the thread.

It is important that the metal ring of the plug contacts the brass ring of the light curtain.



4. If the thread of the light curtain is damaged, so that the metal ring cannot be fully screwed on, the end piece of the light curtain must be replaced.



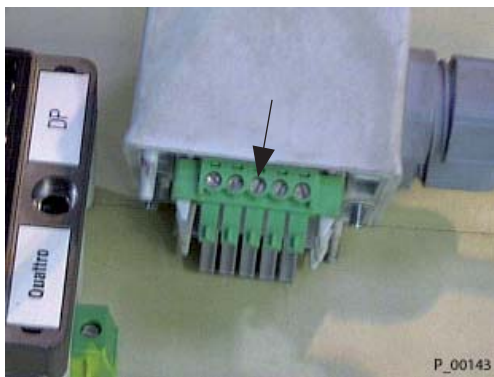
5. All light curtains must be connected directly with an equipotent busbar from the grounding screw via a grounding cable. The bar is ideally fastened to the light grid portal. A grounding cable is laid from the equipotent busbar to the ground of the control cabinet.



6. Routed the grounding cable from the ground terminal at the Quattro control section on the equipotential bonding strip.



7. As the portal profiles are made of anodized aluminum, grounding via sliding blocks is insufficient. Connect all profiles with each other via short grounding cables and then with the equipotent busbar



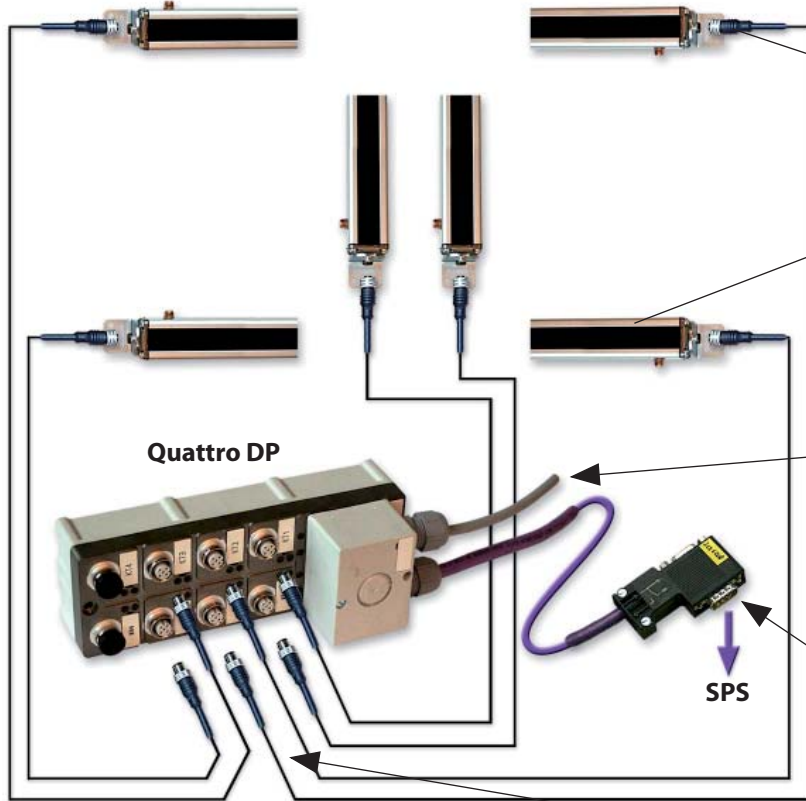
8. Connect the shield of the Profibus cable with pin 3 of the green plug of Quattro control section.



9. Additional information:

To keep the gap in the sensing field at the feed slot as small as possible turn the fastening brackets of the upper light curtains inwards.

6.8 CONNECTION DIAGRAM OF THE "KONTUR 2" LIGHT CURTAIN



"Kontur 2" connection cables:
length system-dependent

"Kontur 2" light curtain : length
system-dependent

- Connect supply voltage cable (order no. 3052605) on the clamp strip = E1-X3 in the control cabinet.

- Connect plug at PLC in control cabinet.

- Connect connection cables at Quattro-DP control section.

P_00145

1

2

3



P_00146







P_00147



P_00148

6.9 CONNECTION OF THE MOVEMENT TECHNIQUE

6.9.1 OVERVIEW

 <p>P_00149</p>	<p>Connection cable combination for movement technique</p> <p>One cable combination is required per movement element (EBA, ZW).</p> <table border="0"> <tr> <td>Length 15 m; 49.21 ft</td> <td>Order No.3113675</td> </tr> <tr> <td>Length 25 m; 82.02 ft</td> <td>Order No.3113676</td> </tr> <tr> <td>Length 35 m; 114.82 ft</td> <td>Order No.3114411</td> </tr> </table>	Length 15 m; 49.21 ft	Order No.3113675	Length 25 m; 82.02 ft	Order No.3113676	Length 35 m; 114.82 ft	Order No.3114411
Length 15 m; 49.21 ft	Order No.3113675						
Length 25 m; 82.02 ft	Order No.3113676						
Length 35 m; 114.82 ft	Order No.3114411						
 <p>P_00150</p>	<p>Control or motor cable to KHG 350-F oscillator</p> <p>One cable is required per movement element (KHG).</p> <p>Shielded cable</p> <table border="0"> <tr> <td>by the meter 7 x 1.5 mm²-CY</td> <td>Motor cable order no.3124426</td> </tr> <tr> <td>by the meter 5 x 1.5 mm²</td> <td>Control cable order no.3087381</td> </tr> </table>	by the meter 7 x 1.5 mm ² -CY	Motor cable order no.3124426	by the meter 5 x 1.5 mm ²	Control cable order no.3087381		
by the meter 7 x 1.5 mm ² -CY	Motor cable order no.3124426						
by the meter 5 x 1.5 mm ²	Control cable order no.3087381						
 <p>P_00151</p>	<p>EBA 1 long stroke reciprocator</p> <p>EBA 1 is the base reciprocator model. It is designed for simple automatic coatings with a maximum of 4 guns per movement system.</p>						
 <p>P_00152</p>	<p>EBA 6 B long stroke reciprocator</p> <p>The EBA 6 B reciprocator is designed for more sophisticated automatic coatings with a maximum of 12 guns.</p>						



P_00153

KHG 350-F oscillator

The oscillator with its vertical gun arrangement is the ideal supplement for short booths.

Reciprocator and lower speed of the KHG 350-F can be smoothly adjusted via a PLC control.



P_00154

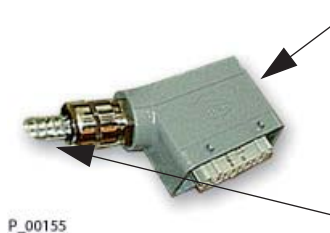
ZW sliding table ... -1:

The sliding table is responsible for the horizontal positioning of the reciprocator. It regulates the space between the spray guns and the object to be coated.

Features:

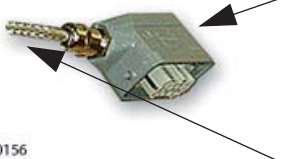
- Movement travel 600 / 900 / 1200 mm.
- Set/Actual position can be read at the control cabinet.

6.9.2 CONNECTIONS BETWEEN THE CONTROL CABINET AND MOVEMENT TECHNIQUE



P_00155

- Connect 16-pin plug (control) to the movement technique connector (see operating manual for movement technique).



P_00156

- Connect cable (control) to the corresponding clamp strip = E4-X3 and/or = E5-X3 in the control cabinet.

- Connect 6-pin plug (supply voltage) to the movement technique connector (see operating manual for movement technique).

- Connect cable (supply voltage) to corresponding frequency converter in control cabinet, see chapter "Fuses / Frequency converters" EBA / KHG point 4a and/or ZW point 4b.

6.10 ELECTRICAL ASSEMBLY MATERIAL

Ensure that the following small components depicted are not lost.



P_00157

Small components:

For the assembly of the mechanical components and to connect electric cables and similar.

System-dependent, consisting of:

screws, nuts, connections, end sleeves etc.



P_00158

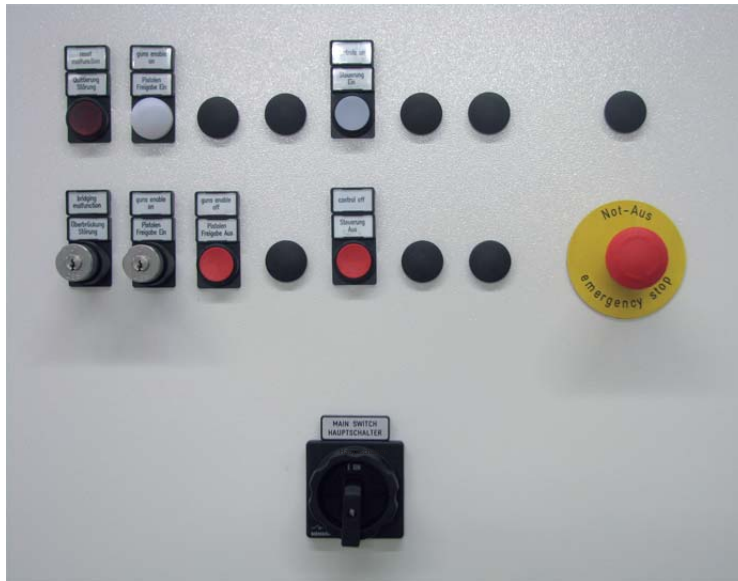
Grounding cable for potential equalization:

by the meter 16 mm²

Order No.3058460

7. OPERATING ELEMENTS

7.1 CONTROL ELEMENTS IN THE CONTROL CABINET DOOR



P_01214

7.2 DIALOG UNIT 6" TOUCH SCREEN



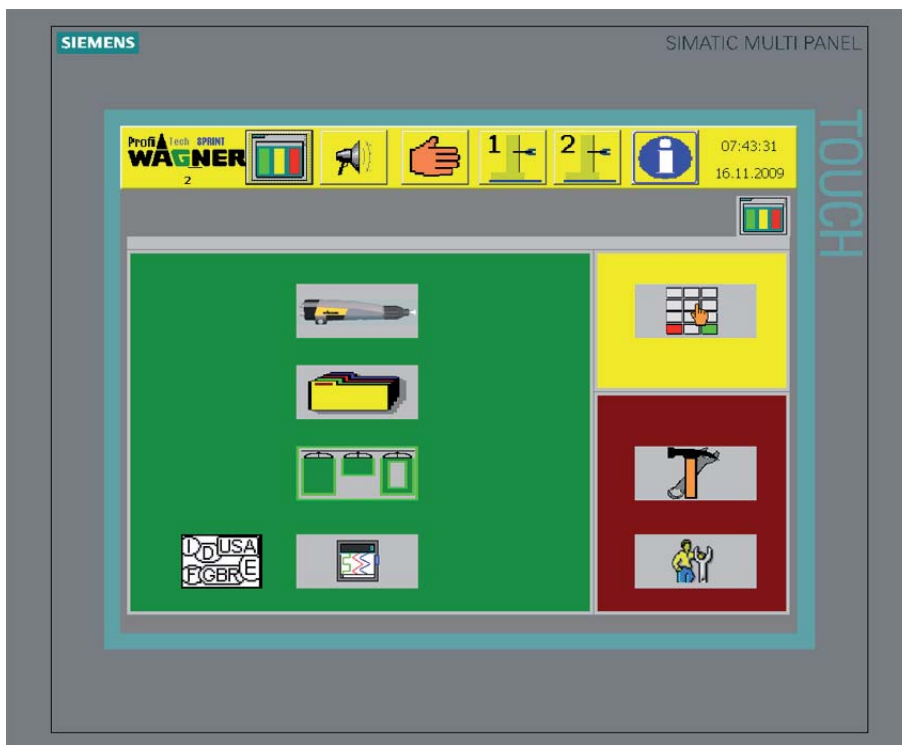
P_00160

The dialog unit consists of a display with 320 x 420 pixels and a resistive touch screen. The display is of one color (optionally colored). The brightness or contrast can be set so that the display can easily be read in all environments.

Special, interchangeable protective film (order no. 3120160) is available for rough industrial use in dirty environments.

The separate software-operating manual provides an accurate overview of the operating and observation functions of the dialog unit.

7.3 DIALOG UNIT 12" TOUCH SCREEN (OPTIONAL)







The dialog unit consists of a display with 800 x 600 pixels and a resistive touch screen. The display is colored. The brightness or contrast can be set so that the display can easily be read in all environments.




Special, interchangeable protective film (order no. 3120595) is available for rough industrial use in dirty environments.

The separate software-operating manual provides an accurate overview of the operating and observation functions of the dialog unit.


7.4 THE OPERATING AND REPORTING ELEMENTS

Element	Description
 <p>P_00162 Main switch</p>	<p>“Main switch”</p> <p>Switching of the mains supply.</p> <p>Main switch, black Clamp cover</p> <p>Order No. 3157626 Order No. 3126367</p>
 <p>P_00163 Emergency stop</p>	<p>“EMERGENCY STOP”</p> <p>The control voltage is disrupted and all PLC outputs are reset.</p> <p>Mushroom-head emergency push button, red Switching element 1 NCC</p> <p>Order No. 3143502 Order No. 3143503</p>
 <p>P_00164 red push button</p>	<p>“Control OFF”</p> <p>The control for the outputs is switched off.</p> <p>Plate holder, complete (blank) ¹⁾ Push button, red Switching element 1 NCC</p> <p>Order No. 3114977 Order No. 3143496 Order No. 3143503</p>
 <p>P_00165 white illumination push button</p>	<p>“Control ON”</p> <p>The control voltage for the inputs is switched on. After Emergency stop, the system must be switched on again.</p> <p>Plate holder, complete (blank) ¹⁾ Illumination push button, white Switching element 1 NOC Lamp fitting with integrated LED, white</p> <p>Order No. 3114977 Order No. 3143494 Order No. 3143504 Order No. 3126387</p>

1) Please always supply text when ordering replacements.

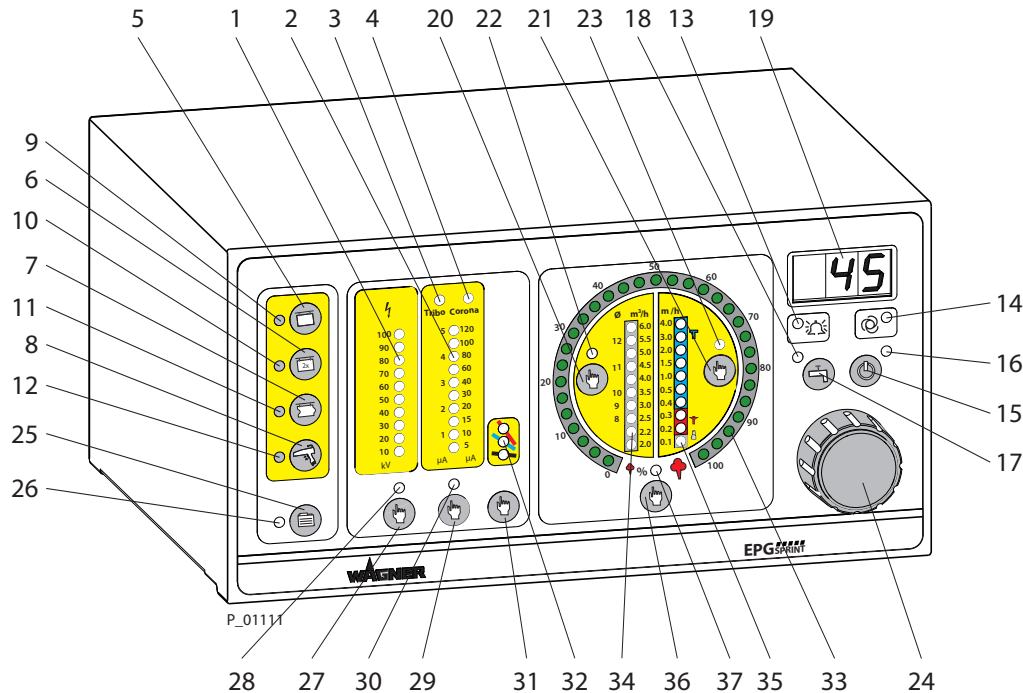
Element	Description
 <p>P_00165</p> <p>white indicator lamp</p>	<p>“Enable Guns On”</p> <p>Indicates the complete release of high-voltage and pneumatics.</p> <p>Plate holder, complete (blank) ¹⁾ Order No. 3114977</p> <p>Indicator lamp, white Order No. 3143498</p> <p>Lamp fitting with integrated LED, white Order No. 3126387</p>
 <p>P_00167</p> <p>Key switch</p>	<p>“Enable Guns On”</p> <p>General switch for the entire release of high-voltage and pneumatics.</p> <p>Plate holder, complete (blank) ¹⁾ Order No. 3114977</p> <p>Key switch 0-1 key switching Order No. 3148363</p> <p>Switching element 1 NOC Order No. 3143504</p>
 <p>P_00164</p> <p>red push button</p>	<p>“Enable Guns Off”</p> <p>General switch for the entire release of high-voltage and pneumatics.</p> <p>Plate holder, complete (blank) ¹⁾ Order No. 3114977</p> <p>Push button, red Order No. 3143496</p> <p>Switching element 1 NCC Order No. 3143503</p>
 <p>P_00164</p> <p>red illumination push button</p>	<p>“Reset malfunction”</p> <p>After rectification of the fault, the error message can be reset by operating this button.</p> <p>Plate holder, complete (blank) ¹⁾ Order No. 3114977</p> <p>Illumination push button, red Order No. 3143495</p> <p>Switching element 1 NOC (2x) Order No. 3143504</p> <p>Lamp fitting with integrated LED, red Order No. 3126379</p>

1) Please always supply text when ordering replacements.

Element	Description
 <p data-bbox="320 797 376 815">P_00167</p> <p data-bbox="320 835 437 864">Key switch</p>	<p data-bbox="579 456 858 486">“Bridging malfunction”</p> <p data-bbox="579 521 1378 582">This switch can be used to bridge the contact for the output of the error message.</p> <p data-bbox="579 618 1342 678">Plate holder, complete (blank) ¹⁾ Order No. 3114977</p> <p data-bbox="579 683 1342 712">Key switch 0-1 locking Order No. 3143500</p> <p data-bbox="579 714 1342 743">Switching element 1 NOC (2x) Order No. 3143504</p>

1) Please always supply text when ordering replacements.

7.5 OPERATING ELEMENTS AT THE EPG-SPRINT



1 Illuminated display: High-voltage

- Lights up green.
- Display range: 0-100 kV.
Resolution 10 kV.
- Single LED display: Preset value of high-voltage.
- Bar graph LED: Set voltage.

2 Illuminated display: Corona or Tribo current

- Lights up green.

Tribo scale:

- When a Tribo gun is connected and selected.
- Bar graph LED: when powder feed is activated.
- Display range: 0-5 μA .
Resolution 0.5 μA .

Corona scale:

- Lights up when a Corona gun is connected and selected.
- Display and adjusting range: 0 [5]-120 μA ,
0 [5]-20 μA resolution 5 μA ,
20-40 μA resolution 10 μA ,
40-120 μA resolution 20 μA .
- Single LED display: Application point of current limiting.
- Bar graph LED: Corona current.

- 3 Display: Tribo gun**
 - Lights up when a Tribo gun is connected and selected.
- 4 Display: Corona gun**
 - Lights up when a Corona gun is connected and selected.
- 5 Push button: Program for surface parts**
- 6 Push button: Program for second-coating**
- 7 Push button: Program for profiles**
- 8 Push button: Program for double click**
 - To access the program, press the trigger lever on the spray gun twice in quick succession and hold down.
- 9 Display LED: Program for surface parts**
 - Lights up green when the surface part program is selected.
- 10 Display LED: Program for second-coating**
 - Lights up green when the second-coating program is selected.
- 11 Display LED: Program for profiles**
 - Lights up green when the profile program is selected.
- 12 Display LED: Program for double click**
 - Lights up green when the double click program is selected.
- 13 Display LED: Fault**
 - Lights up, when a malfunction at the unit occurs.
- 14 Display LED: Automatic gun**
 - Lights up, when an automatic gun is connected.
- 15 Push button: Standby**
 - To switch into standby mode.
 - High-voltage and powder feed cannot be activated in standby mode.
 - To reactivate normal mode, press the button again.
- 16 Display LED: Standby**
 - Lights up when the unit is in standby mode.
- 17 Push button: Rinse**
 - To activate the injector and the hose rinsing.
- 18 Display LED: Rinse**
 - Lights up blue, when the rinse function is activated.

19 Display LED: 7 segments, three-digit number

- Indicates the exact value depending on the activated function:
"Overall air quantity; atomizing, ionising and Tribo air; additional programs; high-voltage; current limiting; powder quantity".
- Displaying error number about malfunctions and warnings.

20 Push button: Overall air quantity

- To activate the function, the value is precisely adjusted with the rotary controller 24 and is indicated in the LED display 19.
- Range of adjustment: 2-6 m³/h.
- Resolution: 0.05 m³/h.

21 Push button: Atomizing, ionising and Tribo air

- To activate the function, the value is precisely adjusted with the rotary controller 24 and is indicated in the LED display 19.
- Range of adjustment: 0.1-4 m³/h.
- Resolution: 0.05 m³/h.

22 Display LED: Overall air

- Lights up yellow, when the setting "Overall air" is selected.

23 Display LED: Atomizing, ionising and Tribo air

- Lights up yellow, when the setting "Atomizing, ionising and Tribo air" is selected.

24 Universal rotary controller

- Dynamic digital rotary controller with 32 positions per revolution.
- Adjustment speed is proportional to rotational speed.
- Used to set: "Overall air quantity; atomizer, ionizer, Tribo air; additional programs; high-voltage; current limiting; powder quantity".
- For setting parameter values in configuration mode.

25 Push button: Additional programs

- To activate the function, the additional program is set with rotary controller 24 and is indicated in LED display 19.
- Selection of programs 5 to 50.

26 Display LED: Additional programs

- Lights up yellow when an additional program is selected.

27 Push button: High-voltage

- To activate the function, the high-voltage is set with the rotary controller 24 and is indicated in the LED display 19.
- Range of adjustment: 10-100 kV.
- Resolution: 1 kV.

28 Display LED: High-voltage

- Lights up yellow. The high-voltage is selected and can be adjusted using rotary controller 24.

29 Push button: Current limiting

- To activate the function, the current limiting is set with the rotary controller 24 and is indicated in the LED display 19.
- Range of adjustment: 5-120 μ A.
- Resolution: 1 μ A.

30 Display LED: Current limiting

- Lights up yellow. The current limiting is selected and can be adjusted using rotary controller 24.

31 Push button: Characteristic slope

- To switch the characteristic slope.
- Display with LED 32.

32 Display LED: Characteristic slope

- Lights up green.
- Lower LED characteristic curve, flat.
- Middle LED characteristic curve, medium.
- Upper LED characteristic curve, steep.

33 Illuminated display: Powder quantity

- Lights up green.
- Display range: 0-100%.
- Resolution: 3.33%.
- Single LED display: Set point (high-voltage and powder are deactivated).
- Bar graph LED: Actual value (high-voltage and powder are activated).

34 Illuminated display: Overall air quantity

- Lights up green.
- Display range: 2-6 m^3/h .
- Resolution: 0.2-0.5 m^3/h .
- Single LED display: Set point (high-voltage and powder are deactivated).
- Bar graph LED: Actual value (high-voltage and powder are activated).

35 Illuminated display: Atomizing, ionising and Tribo air quantity

- Lights up green.
- Display range: 0.1-4 m^3/h .
- Resolution: 0.1-1.0 m^3/h .
- Single LED display: Set point (high-voltage and powder are deactivated).
- Bar graph LED: Actual value (high-voltage and powder are activated).



36 Push button: Powder quantity

- To activate the function, the powder quantity is set with the rotary controller 24 and is indicated in the LED display 19.
- Range of adjustment: 1-100%.
- Resolution: 1%.

37 Display LED: Powder quantity

- Lights up yellow, when the powder quantity is selected.

8 INITIAL START UP

	 WARNING
	<p>Incorrect start-up! Risk of injury and damage to equipment.</p> <p>→ Starting-up may only be performed by trained and authorized persons. We recommend that commissioning is carried out by WAGNER personnel.</p>

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<h3>CAUTION</h3>
<p>Initial start up! Danger of equipment damage.</p> <p>→ Prior to the initial start up of the system, the main switch and all fuses must be switched off.</p> <p>→ Please proceed in the sequence described below.</p>

Procedure:

1. Add supply voltage "externally".
2. Check supply voltage.



<h3>CAUTION</h3>
<p>Neutral wire missing! Equipment damage will result from a missing neutral wire.</p> <p>→ Make sure that the neutral wire is present.</p>

3. Switch main switch on.
 - Main switch ON.
4. Switch on fuses one after the other.
5. Switch ventilator on and wait for booth OK.
 - Booth OK is affected after 60 seconds for Wagner booth controls.

6. Check EPG-Sprint control units.
 - Check gun air for correct allocation.
Is the feed air, dosage air and atomizing air received by the correct injector and corresponding gun?
 - Check high-voltage for correct allocation.
When selecting a gun, is the high-voltage received by the correct gun?
7. Check input signals.
 - Fire monitoring (if available).
If the message "Fire OK" is missing, then the system cannot be operated.
 - If the message "Booth OK" is missing, then no gun may commence operation.
 - "Conveyor is operating":
In automatic mode, the guns are stopped if this signal is not given.
8. Check output signals.
 - If the signal "Applications OK" is missing, the conveyor must be stopped.

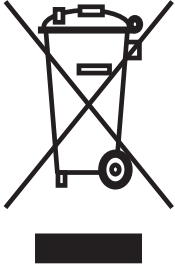
9 MAINTENANCE AND DISPOSAL

9.1 SERVICE REFERENCES

	 WARNING
	<p>Incorrect maintenance/ repair! Danger to life and equipment damage.</p> <ul style="list-style-type: none"> → Only a WAGNER service center or a suitably trained person may carry out repairs and replace parts. → Only repair and replace parts that are listed in the chapter "Spare parts catalog" and that are assigned to the unit. → Before all work on the unit and in the event of work interruptions: <ul style="list-style-type: none"> - Disconnect the control unit from the mains. - Relieve the pressure from the spray gun and unit. - Secure the spray gun against actuation. → Observe the operating and service instructions when carrying out all work.

- Regular check of the grounding and the mounting points of the work pieces to be coated.
- Prior to the commencement of work in the spraying area or of cleaning work:
 1. Switch high-voltage supply off and secure against switching on.
 2. Technical ventilation must be switched on and effective.
 3. Ensure that the discharge energy does not exceed 0.24 mJ when using flammable solvents in cleaning (additional measures when cleaning plastics should be determined separately).
 4. Use only electrically conducting and grounded containers for cleaning liquids.
 5. Observe manufacturer's information on cleaning (e.g. intervals for the exchange of filters or cleaning of exhaust air pipes).
- Maintenance and repairs are always to be executed in line with the information provided by the manufacturer or a special work schedule.
- Store any machine equipment, tools, resources and working equipment (e.g. cleaning rag) at the appropriate places.
- Collect paint and solvent rests, any working equipment impregnated with these as well as any empty containers in appropriate receptacles (hazardous waste).

9.2 DISPOSAL

HINT	
	<p>Do not dispose of waste electrical equipment with the household refuse!</p> <p>In accordance with European Directive 2002/96/EC on the disposal of waste electrical equipment and its implementation in national law, this product may not be disposed of with the household refuse, but must rather be recycled in an environmentally correct manner. Wagner or one of our dealers will take back your used Wagner waste electrical or electronic equipment and will dispose of it for you in an environmentally friendly way. Please contact one of our service points or one of our representatives or us directly to this purpose.</p>

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10 SPARE PARTS

10.1 HOW TO ORDER SPARE PARTS?

Always supply the following information to ensure delivery of the right spare part:

Order No., description and quantity

The quantity does not have to be identically to the numbers in the columns “Quantity” of the lists. This number merely indicates how many of the respective parts are used in each module.



The following information is also required to ensure smooth processing of your order:

- Address for the invoice
- Address for delivery
- Name of the person to be contacted in the event of any queries
- Type of delivery required (air freight or mail, sea route or overland route, etc.)

Marks in spare parts lists

Note to column “K” in the following spare parts lists.

- ◆ = Wearing parts
Hint: No liability is assumed for wearing parts.
- = Not part of standard equipment, available, however, as additional extra.

	 WARNING
	<p>Incorrect maintenance/ repair! Risk of injury and damage to the equipment.</p> <ul style="list-style-type: none"> → Repairs and part replacement may only be carried out by specially trained staff or a WAGNER service center. → Before all work on the unit and in the event of work interruptions: <ul style="list-style-type: none"> - Switch off the energy/compressed air supply. - Ensure that all system components are grounded. - Secure the control unit against being switched back on without authorisation. → Observe the operating and service instructions when carrying out all work.

10.2 SPARE PARTS RECOMMENDATION FOR THE CONTROL CABINET

The parts list of the electric circuit diagram lists all control cabinet components. Light curtains or frequency converters are order-related.

- **Priority 1:**
Components that must be on the spare parts list.
- **Priority 2:**
Components that are recommended for the spare parts list.
- **Priority 3:**
All other components that are not necessarily recommended for the spare parts list.

Art. No.	Quantity	Designation	Priority
3125588	1	28 I/U incremental encoder	3
2303174	1	TP 177 B 6" control panel	2
2301323	1	MP 377 12" control panel	2
3120285	1	CPU S7 - 314C-2DP	3
3127269	1	SIEMENS S 7 230V / 24VDC 10 A power supply	2
3120743	1	* F5 0.75 kW frequency converter with EMC filter	2
3158778	1	*** F5 1.50 kW frequency converter with EMC filter	2
3158596	1	Kontur-Quattro-DP control section	2
3145128	1	S0 11 kW power contactor	2
3125549	1	S0 diode combination	2
3120430	1	Relay socket with relay compl. 24 VDC 2	1

* for EBA 1, KHG 350-F and ZW

** for EBA 6B

*** for ZW

11 EXTENDED OPERATING MANUAL

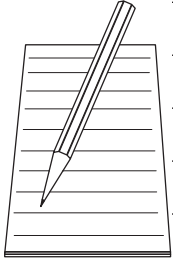
Depending on the equipment of the system, the following operating manuals are required to operate the entire system.

This extended Operating manual includes:

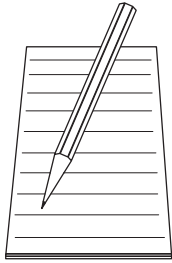
- Give important information required for the connection and start up of the respective component.
- Give important information required for the use (e.g. change of color) of the respective component.
- Contain the very important section on "Maintenance and cleaning" of the respective component.
- Describe troubleshooting for the respective component.
- List spare parts, wearing parts and accessories.

Description	Operating manual	Languages
EPG-Sprint control unit	2305220	German
	2305222	English
	2305224	French
	2305225	Italian
	2305226	Spanish
PI - P1/PI-F1 powder injector	241890	German
	241891	English
	241892	French
	241893	Italian
	241897	Spanish
Hicoat ED-Pump powder injector	241885	German
	241886	English
	241887	French
	241888	Italian
	241889	Spanish
PEA-C4-HiCoat automatic spray gun	390822	German
	390829	English
	390836	French
	390840	Italian
	390851	Spanish

Description	Operating manual	Languages
PEA-C4XL-HiCoat automatic spray gun	390823 390830 390837 390841 390855	German English French Italian Spanish
PEA-T3 Tribo automatic spray gun	351873 351874 351875 351876 351877	German English French Italian Spanish
PEA-T3XL Tribo automatic spray gun	351700 351701 351702 351703 351721	German English French Italian Spanish
EBA 1 reciprocator	238810 338811 238813 238812 238816	German English French Italian Spanish
EBA 6B reciprocator	2303106 2303107 2303109 2303110 2303111	German English French Italian Spanish
KHG 350-F oscillator	365800 365801 365802 365803 365804	German English French Italian Spanish
ZW sliding table	224820 224821 224822 224823 224833	German English French Italian Spanish



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