



**Translation of the original  
Operating manual**

**2K-FlexControl**

Edition 09/ 2009

**Electronic mixing ratio  
controller for 2C paints**



B\_00455



## Contents

<b>1</b>	<b>ABOUT THIS MANUAL</b>	<b>6</b>
1.1	Languages	6
1.2	Warnings, notes and symbols in this manual	6
<b>2</b>	<b>GENERAL SAFETY REGULATIONS</b>	<b>7</b>
2.1	Safety instructions for the operator	7
2.1.1	Electrical equipment	7
2.1.2	Personnel qualifications	7
2.1.3	A safe work environment	7
2.2	Safety instructions for personnel	8
2.2.1	Safe handling of WAGNER spray units	8
2.2.2	Earth the unit	8
2.2.3	Material hoses	9
2.2.4	Cleaning	9
2.2.5	Handling hazardous liquids, varnishes and paints	9
2.2.6	Touching hot surfaces	10
2.3	Using in accordance with the instructions	10
2.4	Field of application	10
2.4.1	Explosion protection identification	11
2.4.2	Maximum surface temperature	11
2.4.3	Safety instructions	11
<b>3</b>	<b>PRODUCT LIABILITY AND WARRANTY</b>	<b>12</b>
3.1	Important notes on product liability	12
3.2	Warranty	12
3.3	<b>CE-Conformity</b>	<b>13</b>
<b>4</b>	<b>DESCRIPTION</b>	<b>14</b>
4.1	System presentation	14
4.2	Processing materials	15
4.3	Data	15
4.3.1	Technical data	15
4.3.2	Work area	17
4.4	Functioning	18
4.4.1	Measurement system	18
4.4.2	Dialogue Human / Machine	19
<b>5</b>	<b>TRANSPORT / INSTALLATION</b>	<b>20</b>
5.1	Transport	20
5.2	Storage	20
5.3	Installation	20
5.4	Electrical connections	22
5.5	Pneumatic connections	22
5.6	Fluid connections	22
5.7	Flow meter control	23
5.8	Lack of product	23
5.9	Ground the system	24
5.10	Modem connection	25
5.11	Printer connection	25

## Contents

<b>6</b>	<b>CONTROL UNIT</b>	<b>26</b>
6.1	Control elements	26
6.2	Operating panel	26
6.2.1	Operating level F1	26
6.2.2	Calibration level F2	29
6.2.3	Parameter-Level f3	30
6.3	Password	33
6.4	Hand activating of the fluid valves	33
6.5	Trouble shooting	34
<b>7</b>	<b>START UP</b>	<b>35</b>
7.1	Preliminary washing and pressure tightness test	36
7.2	Pressure relief procedure	37
7.3	Filling the unit and calibration	38
7.4	Start of painting	38
7.5	Flush, colour change	39
7.6	General informations	40
<b>8</b>	<b>MAINTENANCE</b>	<b>41</b>
8.1	Unit cleaning	41
8.2	Filter cleaning	41
8.3	Condensate drainage from the filter-reducer	41
8.4	Flow gear meter	42
8.5	Material valves	43
8.6	High pressure hose	43
8.7	Control unit	43
8.8	Dismantling	44
<b>9</b>	<b>TROUBLE SHOOTING</b>	<b>45</b>
9.1	Faults and appropriate solutions	45
<b>10</b>	<b>INSTALLATION OF ACCESSORIES</b>	<b>46</b>
10.1	Colour extension	46
10.2	Gun control	46
10.3	Conversion of different mixing proportion specification	47
<b>11</b>	<b>SPARE PARTS</b>	<b>49</b>
11.1	How to order spare parts?	49
11.2	Overview spare parts	51
11.3	Basic unit 1 (1A, 1B) not to placed in a Ex-area	53
11.4	Basic unit 2 (1A, 1B) Fluid part Ex proofed, Control part not Ex proofed	54
11.5	Control cabinet, assy.	55
11.6	Fluid cabinet, assy. - not Ex proofed	57
11.7	Fluid cabinet, assy. - Ex proofed	59
11.8	Atomizing air AirCoat dia 6 mm; 0.24 inch, in 2K unit	61
11.9	Atomizing air, air gun dia 8 mm; 0.31 inch, in 2K unit	62
11.10	Atomizing air, AirCoat dia 6 mm; 0.24 inch, in spray booth	63
11.11	Atomizing air air gun dia 8 mm; 0.31 inch, in spray booth	64
11.12	Gun control for Airless gun, not Ex proofed 384244/ 384270	65

## Contents

11.13	Flow meters	65
11.14	Robot communication 384254/ 384271 USA	65
11.15	Stand, assy.	66
11.16	Foot set	66
11.17	Wheel set, assy. - 377120	67
11.18	Colour extension 2A	68
11.19	Colour change valve assy. - 384103	69
11.20	Hardener extension 1B	70
11.21	Hardener valve assy. - 384105	71
11.22	2 different solvent for hardener	73
11.23	Material filter assy. - compact - 384110	74
11.24	Material filter assy. - with swivel joint - 139045	74
11.25	Air/ Solvent flush set for A, - maxi. 1 MPa; 10 bar; 145 psi, in 2K unit	75
11.26	Mat. pressure regulator Set, pneum. 0.5 MPa; 0-5 bar; 72.5 psi, in spray booth	76
11.27	Pressure regulator RV/ 1 stainless steel, with pneumatic remote control	77
11.27.1	Technical data	78
11.28	Material pressure regulator set 0-0.6 MPa; 0-87.02 psi in 2K unit	79
11.29	Remote control Ex proofed, with 10 m; 32.8 ft cable	80
11.30	Remote control pneumatic, without recipe, assy. - 377082	81
11.31	Manifold cabinet without recipe, assy.	82
11.32	Remote control pneumatic without recipe, assy.	84
11.33	Connection set without recipe, 10 m; 32.8 ft - 377963	85
11.34	Alarm horn - 384234	85
11.35	Alarm horn in spray booth - 384253	86
11.36	Release of automatic cabin - 384238	87
11.37	Teleservice with analog modem - 384215	87
11.38	Printer connection without printer	88
11.39	Extension static mixer	89
11.40	Atomizing air automatic dia 6 mm; 0.24 inch - 384219	90
11.41	Atomizing air automatic dia 8 mm; 0.31 inch - 384220	90
11.42	Electrostatic automatic - 384243	91
11.43	Set communication for gun flush box - 384235	91
11.44	Bulkhead holder (by more than 3 colours/ filters)	92
11.45	Distribution set for 2 guns (2K / 3K operation) - 384249	93
11.46	Extension set 3K operation - not Ex proofed - 384223	94
11.47	Extension set 3K fluid part - Ex proofed	96
11.48	Same detergent with A and B - 2302778	98
11.49	Adapter	98
<b>12</b>	<b>TABLES / PARAMETERS</b>	<b>99</b>
12.1	Table hose volume	99
12.2	System parameter 2K-FlexControl	100
<b>13</b>	<b>CONNECTION DIAGRAMS - NOT EX PROOFED</b>	<b>102</b>
<b>14</b>	<b>CONNECTION DIAGRAMS - EX PROOFED</b>	<b>116</b>

## 1 ABOUT THIS MANUAL

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

→ Always follow these instructions when operating the unit.

### 1.1 LANGUAGES



This operating manual is available in the following languages:

Language:	Part No.	Language:	Part No.	Language:	Part No.
German	384860	English	384861	French	384862
Dutch	384863	Italian	384864	Spanish	384865
Danish	384867	Swedish	384866	Finnish	384868
Norwegian	384869	Polish	384871		



### 1.2 WARNINGS, NOTES AND SYMBOLS IN THIS MANUAL

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	 <b>DANGER</b>
	<p><b>This line warns of the hazard!</b> 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>

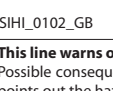
**Warning** - possible danger. Non-observance can result in death, serious injury and serious material damage.

 SIHI_0103_GB	 <b>WARNING</b>
	<p><b>This line warns of the hazard!</b> 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	 <b>CAUTION</b>
	<p><b>This line warns of the hazard!</b> 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	<b>CAUTION</b>
	<p><b>This line warns of the hazard!</b> 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 REGULATIONS

### 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 EQUIPMENT

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 or under their supervision.
- 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. Inform staff about planned work, observe electrical safety regulations.
- To protect the electrical components, lay all of the various elements to a collective earthing point.  
It is thus absolutely necessary to attach the device correctly to a grounded voltage supply.
- With open housings, there is a danger from line voltage. Repairs and maintenance may only be carried out by skilled personnel.

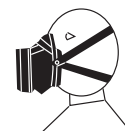


#### 2.1.2 PERSONNEL QUALIFICATIONS

- 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 in accordance with EN 50053 Part 1, §7-2, measurement in accordance with DIN 51953.
- Ensure that all persons within the working area wear anti-static shoes, e.g. shoes with leather soles.
- Ensure that during spraying, persons wear anti-static gloves so that they are earthed via the handle of the spray gun.
- Customer to provide paint mist extraction units conforming to local regulations.
- Ensure that the following components of a safe working environment are available:
  - Material/air hoses adapted to the working pressure.
  - Personal safety equipment (breathing and skin protection).
- Ensure that there are no ignition sources such as naked flame, glowing wires or hot surfaces in the vicinity. Do not smoke.
- The place of assembly is in accordance with the explosion prevention to select (national rules and regulations consider!).
- Ensured by the operator the tightness examination before start-up (daily), after repairs and in regular intervals.
  - The pipe joints, item of equipment and connections are durably technically close.



## 2.2 SAFETY INSTRUCTIONS FOR PERSONNEL

- 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.



### 2.2.1 SAFE HANDLING OF WAGNER SPRAY UNITS

The spray jet is under pressure and can cause dangerous injuries.

Avoid injection of paint or cleaning agents:

- Never point the spray gun at people.
- Never reach into the spray jet.
- Before all work on the unit and in the event of work interruptions:
  - Secure the spray gun against actuation.
  - Relieve the pressure from the spray gun and unit.
- Ensured, that (in accordance with the guideline for liquid emitter (ZH 1/406 and BGR 500 Part 2 chap. 2.36) the liquid emitters are every 12 months to examine by experts (e.g. Wagner service technician).
  - With shut down devices the examination can be by the next start.
- Follow the «Pressure Relief Procedure» whenever you:
  - Are instructed to relieve pressure.
  - If the spraying work to be adjusted.
  - Stop spraying, clean check, or service the equipment.
  - Install or clean the spray nozzle.



In the event of skin injuries caused by paint or cleaning agents:

- Note down the paint or cleaning agent that you have been using.
- Consult a doctor immediately.

Avoid danger of injury through recoil forces:

- Ensure that you have a firm footing when operating the spray gun.
- Only hold the spray gun briefly in a position.

### 2.2.2 EARTH THE UNIT

Electrostatic charges can occur on the unit due to the electrostatic charge and the flow speed involved in spraying. These can cause sparks and flames upon discharge.

- Ensure that the unit is always earthed.
- Earth the work pieces to be coated.
- Ensure that all persons inside the working area are earthed, e.g. that they are wearing antistatic shoes.
- When spraying, wear antistatic gloves to earth yourself via the spray gun handle.





### 2.2.3 MATERIAL HOSES

- Ensure that the hose material is chemically resistant to the sprayed materials.
- Ensure that the material hose is suitable for the pressure generated in the unit.
- Ensure that the following information can be seen on the high-pressure hose:
  - Manufacturer
  - Permissible operating overpressure
  - Date of manufacture.
- Route the hoses away from:
  - The traffic areas
  - Sharp edges
  - Moving parts
  - Hot surfaces
- Do not use the hoses to pull the equipment.



The electrical resistance of the complete high-pressure hose must be less than 1 MOhm.

### 2.2.4 CLEANING

- Before maintenance work:
  - De-energize the system electrically,
  - the equipment is to separate from the net,
  - disconnect the pneumatic supply line and
  - relieve the pressure from the unit.
- Ensure that the flash point of the cleaning agent is at least 5 K above the ambient temperature.
- To clean, use only solvent-free cloths and brushes. Never use hard objects or spray on cleaning agents a gun.
- In the case of start-up or emptying of the equipment can be present:
  - Depending upon used coating material,
  - or cleaning/solvents,
  - explosive mixture inside the lines and items of equipment.

An explosive gas/air mixture forms in closed containers.

- When cleaning units with solvents, never spray into a closed container.
- Earth the container.



### 2.2.5 HANDLING HAZARDOUS LIQUIDS, VARNISHES AND PAINTS

- When preparing or working with paint and when cleaning the unit, follow the working instructions of the manufacturer of the paints, solvents and cleaning agents being used.
- Take the specified protective measures, in particular wear safety goggles, protective clothing and gloves, as well as hand protection cream if necessary.
- Use a mask or breathing apparatus if necessary.
- For sufficient health and environmental safety: Operate the unit in a spray booth or on a spraying wall with the ventilation (extraction) switched on.
- Wear suitable protective clothing when working with hot materials.



## 2.2.6 TOUCHING HOT SURFACES

- Touch hot surfaces only if you are wearing protective gloves.
- When operating the unit with a coating material with a temperature of >43°C; 109.4°F:
  - Identify the unit with a warning label that says „Warning - hot surface“.



### Order No.

9998910 Information label

9998911 Safety label

## 2.3 USING IN ACCORDANCE WITH THE INSTRUCTIONS

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

- The fluid cabinet is suitable for mixing of fluid 2-components materials. (Coating or auxiliary materials of the surface technique, as well as equivalent materials).
- Operate only the entire unit.
- Do not deactivate safety fixtures.
- Use only WAGNER original spare parts and accessories.



## 2.4 FIELD OF APPLICATION

Those Not-Ex variant have to be set up outside of the hazardous area.  
It is the same with the Ex variant for the el. control cabinet.

- The fluid cabinet of the Ex proofed version is equipped with intrinsically safe flow gear meters:
  - Acc. guide line 94/9/EG (Atex, II 2 G)
  - In ignite protection class EEx ib IIB T4
  - With housing protection class IP65
  - And Ex-pneumatics valves (acc. guide line 94/5EG (Atex, II 2 G)
  - In ignite protection class EEx m II T4 and EEx e II T6
  - With housing protection class IP65



and thus suitable for use in hazardous locations (zone 1).

### 2.4.1 EXPLOSION PROTECTION IDENTIFICATION

As defined in the Directive 94/9/CE (ATEX 95), the unit is suitable for use in areas where there is an explosion hazard.

CE Ex II 2G IIB X

CE: Communautés Européennes  
 Ex: Symbol for explosion protection  
 II: Unit class II  
 2: Category 2 (Zone 1)  
 G: Ex-atmosphere gas  
 IIB: Explosion class  
 X: Special identification.



### 2.4.2 MAXIMUM SURFACE TEMPERATURE

X: The maximum surface temperature corresponds to the permissible material temperature. This and the permissible ambient temperature can be found in the Technical Data.

### 2.4.3 SAFETY INSTRUCTIONS

#### Safe handling of WAGNER spray units

The maximum surface temperature of the piston pump can be reached if it runs dry.  
 → Ensure that the piston pump is filled with sufficient working or cleaning medium.  
 → Ensure that the separating agent container is filled with sufficient separating agent.

Mechanical sparks can form if the unit comes into contact with metal.

In an explosive atmosphere:

- Do not knock or push the unit against steel or rusty iron.
- Do not drop the unit.
- Use only tools that are made of a permitted material.

#### Ignition temperature of the coating material

→ Ensure that the ignition temperature of the coating material is above the maximum surface temperature.

#### Medium supporting atomizing

→ To atomize the material, use only weakly oxidizing gases, e.g. air.

#### Surface spraying, electrostatic

→ Do not spray unit parts with electrostatic (e.g. electrostatic spray gun).



#### Cleaning

If there are deposits on the surfaces, the unit may form electrostatic charges. Flames or sparks can form if there is a discharge.

- Remove deposits from the surfaces to maintain conductivity.
- Use only a damp cloth to clean the unit.



## **3 PRODUCT LIABILITY AND WARRANTY**

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### **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**

This unit is covered by our warranty on the following terms:

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.

Abrasive coating products such as redlead, emulsions, glazes, liquid abrasives, zinc dust paints and similar reduce the service life of valves, packings, spray guns, nozzles, cylinders, pistons etc. Any wear resulting from the aforementioned causes is not covered by this warranty.

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.

### 3.3 CE-CONFORMITY

Herewith we declare that the supplied version of

FlexControl basic equipment 1A 1B Ex 384002

Complies with the following guidelines:

98/37/EG  
94/9/EG  
73/23/EWG  
89/336/EWG

Applied standards, in particular:

DIN EN ISO 12100-1 (EN 292-1)  
DIN EN ISO 12100-2 (EN 292-2)  
DIN EN 563  
DIN EN 1127  
prEN 1953  
DIN EN ISO 13463  
EN 50014  
EN 50020  
EN 50081-2  
EN 50082-2  
EN 60204-1

Applied national technical standards and specifications, in particular:

BGV D 25 (VBG 23)  
BRG 104  
BGR 132 (ZH 1/200)

Marking:

  II (2) G;   II 2G IIB X

#### 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:

FlexControl 384920

## 4 DESCRIPTION

### 4.1 SYSTEM PRESENTATION

- Wagner has developed mixing units in various fields for 2-component paints applications.
- The 2K-FlexControl was developed to meet the growing demand for low until middle high pressure 27 MPa; 270 bar; 3916 psi 2-component dosing units.

This increasing demand is not only for quantity but also particularly, for an increase in quality.

Naturally, because these products are used in various branches of industry, processing equipment is required which can guaranty consistent quality.

- Conceived in this mind, the 2K-FlexControl offers, among other things, to its user:
  - Processing also of water-based 2K materials, since all material-touching are manufactured in stainless steel materials.
  - The fluid cabinet of the Ex proofed version is equipped with intrinsically safe
    - flow gear meters (acc. guide line 94/9/EC (Atex, II 2 G)
    - in ignite protection class EEx ib IIB T4 with housing protection class IP65
    - and Ex-pneumatics valves (acc. guide line 94/9/EC (Atex, II 2 G)
    - in ignite protection class EEx m II T4 and EEx e II T6 with housing protection class IP65
- and thus suitable for use in hazardous locations (zone 1).
- The announcements of the functions are language independently represented with simple symbols.
- Siemens SPS S7-CPU.
- The consumption synthesis of the product and the solvent.
- Clear plant attitude in the flow chart on the fluid cabinet.
- The possibility of operating control from the inside of a closed spray booth by a remote control.
- The electronic precision in dosing..
- Security by permanently checking the system parameters which, on the slightest trouble, inform the user and automatically suspends the production.
- The protection of parameters by security code and the system backup on eeprom memory.
- The possibility of integration in a supervision system (RS232 or MPI-Bus).
- The electronic adjustment of the mixing ratio between 1:1 and 20:1.
- The possibility to use up to 5 compatible A products, 2 B products and 1 C product.
- An automatic flushing system of the products circuits which permit to save up to 60% of solvent compared with the previous systems.
- The compatibility with solvent based products and water based products, with selective water and/ or solvent automatic cleaning.
- The using of hand or automatic spray guns.
- Possibility of remote diagnostics and an elimination of errors with software problems by means of modem
- Printer connection, signal from spray booth, automatic gun flush unit etc. are available.

Contact Wagner for further informations.

## 4.2 PROCESSING MATERIALS

- Material in contact with products:
- Stainless steel
  - Hard metal
  - Teflon
  - Viton
  - POM

2K material on solvent base or water base. However do not processed solvent basic and aqueous basic 2K materials with the same system.

### CAUTION

**Abrasive materials and pigments!**

Greater wear of the parts carrying the material

- Do not use any grainy and abrasive materials with large, sharp-edged pigments.
- Use suitable combinations of devices (packages, valves etc.).


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So caused wear is not covered by the warranty.

## 4.3 DATA

### 4.3.1 TECHNICAL DATA

<b>Pressure:</b>	
0.5-0.8 MPa 5-8 bar 73-116 psi	Inlet air pressure

	<b>! WARNING</b>
	<p><b>Outgoing air containing oil!</b> Risk of poisoning if inhaled</p> <p>→ Provide water-free and oil-free compressed air (quality standard 5.5.4 as per ISO 8573.1) 5.5.4 = 40 µm / +7 / 5 mg/m<sup>3</sup>.</p>

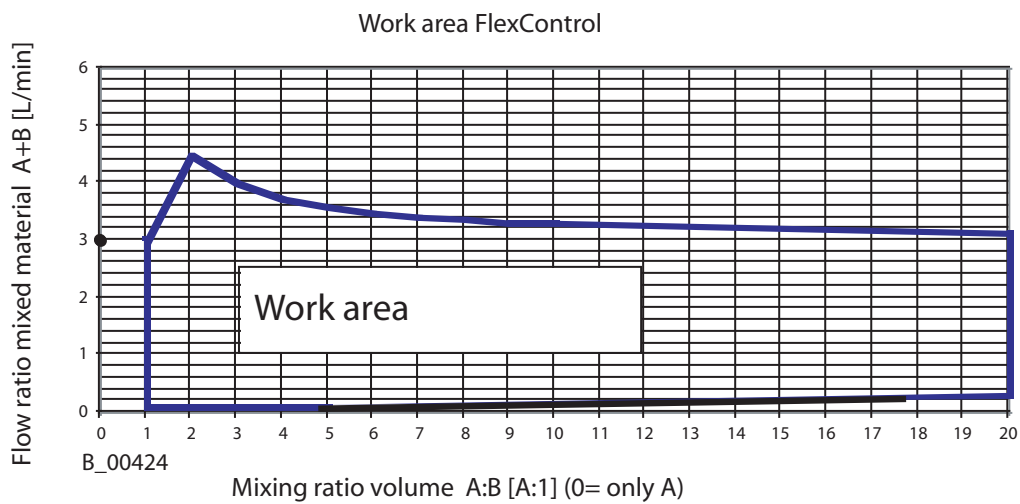
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<b>High pressure version:</b>	
27 MPa 270 bar 3915 psi	Inlet solvent (maxi.)
	A-B products (maxi.)
	Outlet mixed products (maxi.)
<b>Low pressure version</b>	
0.8 MPa; 8 bar 116 psi	Inlet Solvent (maxi.)
0.5 MPa; 5 bar 73 psi	Inlet Air pressure flushing (maxi.)
2.5 MPa; 25 bar 362 psi	Inlet A-B products (maxi.)
0.05-0.5 MPa 0.5-5 bar 7-73 psi	Outlet Mixed product 0.5 MPa; 5 bar; 73 psi due to material pressure regulator
M16x1.5	Material inlet (out)
M16x1.5	Material outlet (out)
100-3000 cc/min	Mixed product outlet
<b>Mixed product</b>	
20-2000 mPas	Product viscosity A-B
120 Micron	Fluid filtration required, min. 100 mesh
3.5 to 9	Material pH value
+5 °C - +40 °C +41 °F - +104 °F	Material temperature
+5 °C - +40 °C +41 °F - +104 °F	Environment temperature
0.1:1 to 20:1	A/B mixing ratio vol. (1K too) for 3K (A+B) / C mixing ratio vol.
± 1%	Ratio precision
5	Maxi. number of A product
2	Maxi. number of B product
2	Maxi. number of solvent for B
approx. 60 kg; 132.3 lbs	Weight
<b>Dimension:</b>	
h 1730 mm; 68.1 inch w 450 mm; 17.7 inch d 510 mm; 20 inch	Control and fluid cabinet on stand



h 1000 mm; 39.37 inch w 450 mm; 17.7 inch d 270 mm; 10.63 inch	Control and fluid cabinet wall mount
110 dBA *	Sound level by alarm
* A rated sound pressure level measured at 1m distance according to DIN EN ISO 3746-1995.	
<b>Electrical supply:</b>	
Chap. 14.2	see electrical circuit diagram 16A – 115 / 230VAC (50 / 60 Hz) + PE

### 4.3.2 WORK AREA



## 4.4 FUNCTIONING

### 4.4.1 MEASUREMENT SYSTEM

The system is composed of two or three circuits ; a master circuit (A product) and a slave circuit (B product).

- The control unit controls and adjusts the given mixing proportion, as over a pneumatic valve in short intervals the necessary hardener quantity is added to the continuous flow of the master lacquer.
- The flow rate of master lacquer and hardeners are measured by gear flow meter. The materials (components and solvents) are made available by supplying pumps or receivers (not supplied with the system).

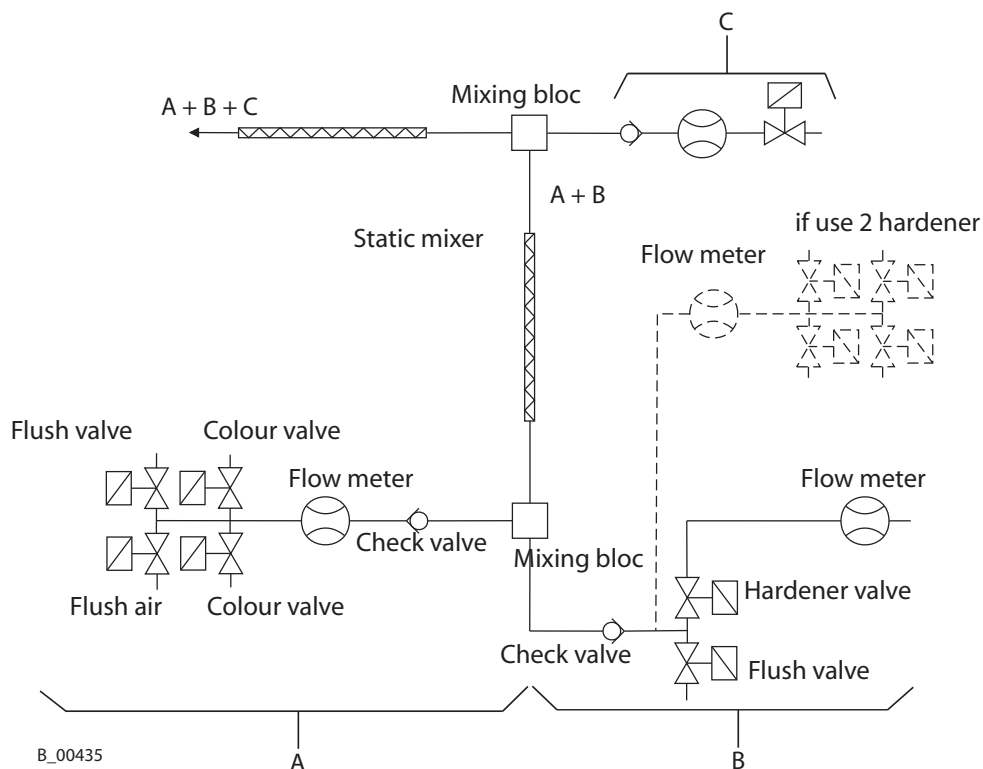
## CAUTION

### Constant supply pressures!

Poor coating results

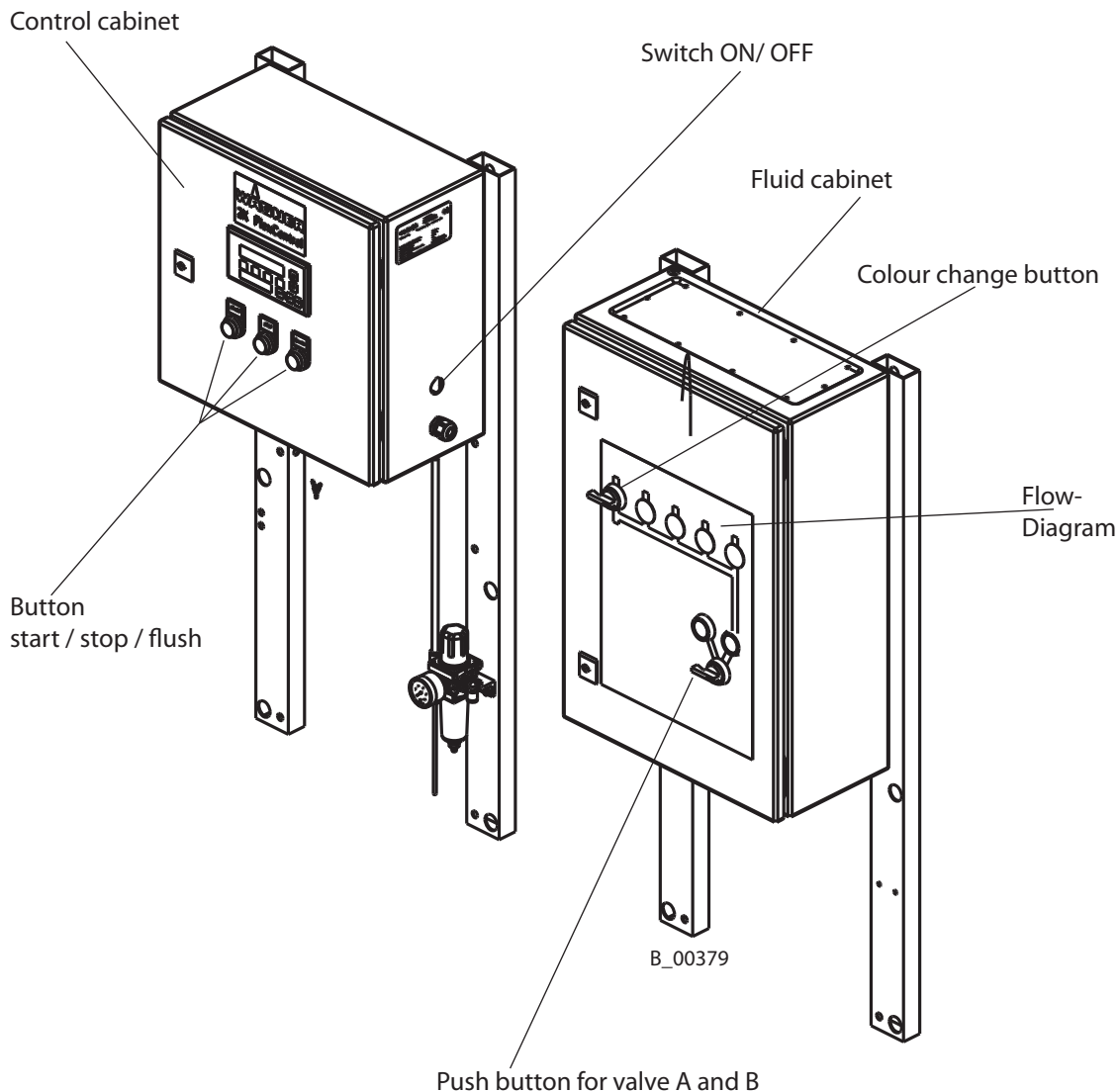
- The supply pressure of the component B must be adjust to a higher value (appr. 10%) than that the component A.
- The supplying pressure should be constant.

SIHI\_0056\_GB



**4.4.2 DIALOGUE HUMAN / MACHINE**

A substantial characteristic of the 2K-FlexControl is the simple and clear operation. With few clearly inserted operating elements the unit can be controlled.

**Control cabinet**

In the control cabinet all electrical components are installed. The unit can be controlled by the push buttons and the operating panel. Information from an into the unit are possible by the operating panel.

**Fluid panel**


In the fluid cabinet are all parts installed, which are in contact with the fluid. On the door there is a flow diagrams with pneumatic switches for colour changes and manual open of the valves.

## 5 TRANSPORT / INSTALLATION

### 5.1 TRANSPORT

The system is transportable by a euro-pallet.

h 600 mm; 23.62 inch  
 l 1200 mm; 47.24 inch  
 d 800 mm; 31.49 inch  
 Weight: approx. 60 kg; 132 lbs

	<b>! WARNING</b>
	<p><b>Inclined surface!</b> Risk of accidents if the unit rolls away/falls</p> <ul style="list-style-type: none"> <li>→ Place the unit on horizontal soil.</li> <li>→ The wheels must be fixed or by placing feet to be replaced and secured.</li> <li>→ When shifting/transport do not tilt the unit.</li> </ul>

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### 5.2 STORAGE

Place the unit in a closed and dry environment (+5 °C to +40 °C; +41 °F to +104 °F).



- If the equipment is not going to be used for a long time, lubricate it by sucking emulsified oil (or plain oil) from the feeding pumps.
- When resuming work operation, proceed as described in Chap. „preliminary operations“.

### 5.3 INSTALLATION



Mixing units are installed by WAGNER technicians directly or by their agents. If this is not the case, verify that the material has not been damaged.

	<b>! WARNING</b>
	<p><b>Electric shock hazard inside the controller!</b> Danger to life from electric shock</p> <ul style="list-style-type: none"> <li>→ May only be installed/maintained by skilled electricians or under their supervision.</li> <li>→ Are operated in accordance with the safety regulations, fire and electro-technical rules.</li> <li>→ The voltage is switched off before work is begun on active components.</li> </ul>



SIHI\_0045\_GB

	 <b>WARNING</b>
	<p><b>Toxic and/or flammable vapor mixtures!</b> Risk of poisoning and burns</p> <ul style="list-style-type: none"> <li>→ Operate the unit in a spraying booth approved for the working materials.</li> <li>-or-</li> <li>→ Operate the unit on an appropriate spraying wall with the ventilation (extraction) switched on.</li> <li>→ Observe national and local regulations for the outgoing air speed.</li> </ul>

SIHI\_0028\_GB

	 <b>DANGER</b>
	<p><b>Incorrect installation of the unit!</b> Risk of explosion and equipment damage</p> <ul style="list-style-type: none"> <li>→ Place the control unit inclusive fluid cabinet outside the spray booth /spray zone and the explosion zone.</li> <li>→ Protect the control unit from extreme temperature, moisture changes and dirt.</li> <li>→ Lay and fix the connecting cable correctly and protect against fall down and passage traffic.</li> </ul>

SIHI\_0053\_GB

	 <b>WARNING</b>
	<p><b>Inclined surface!</b> Risk of accidents if the unit rolls away/falls</p> <ul style="list-style-type: none"> <li>→ Place the unit on horizontal soil.</li> <li>→ The wheels must be fixed or by placing feet to be replaced and secured.</li> <li>→ When shifting/transport do not tilt the unit.</li> </ul>

SIHI\_0052\_GB

- Use only feed pumps etc, which are suitable for 2C materials.
- Use hardener pump with PE-Teflon package.
- No product contact with copper alloy.
- Pumps etc by water based paint in stainless steel.
- Use material filters at the feed pumps

## 5.4 ELECTRICAL CONNECTIONS



An electrical lead with plug is according to standard intended.

With exchange that of lead must be considered the following:

- Carry out the electrical connection and the grounding inside the control unit using a 3 wire cable of AWG16; please refer to the enclosed electric diagram Chap. 12.



## 5.5 PNEUMATIC CONNECTIONS

- Make sure the pressure distribution line is suitable, considering that the normal working pressure is 0.5-0.8 MPa; 5-8 bar; 73 to 116 psi.

	 <b>WARNING</b>
	<p><b>Overpressure!</b> Risk of injury bursting components</p> <p>→ The operating pressure must never exceed the value shown on the plate.</p>

SIHI\_0054\_GB

- Make sure efficient filters and condensate separators have been installed on the air line.
- Every day, discharge all impurities and the condensate (if any) accumulated in the equipment at filter.

	 <b>WARNING</b>
	<p><b>Brittle filter pressure regulator!</b> The container on the filter pressure regulator becomes brittle through contact with solvents and can burst Flying parts can cause injury</p> <p>→ Do not clean the container on the pressure regulator with solvent.</p>

SIHI\_0014\_GB

## 5.6 FLUID CONNECTIONS

Make sure to connect what follows:



- Material hose from the line mixer to the user's device.
- The material hoses from the feeding pumps to the unit must not be connected until the preliminary flushing has been done!

## 5.7 FLOW METER CONTROL

For save operation it is necessary that the 2K-FlexControl get the information, whether the gun is open and there is a material flow. If not, in case of blocking of the A- flow meter B-material is not proportioned, although A material can flow through the leakage in the flow meter (eve. not visible)!

The external signal can be different according to the application:

- In case of an automatic gun, there is a pressure meter to connect the pneumatic signal of device opening.
- A contact can also be connected to the terminals available in the control unit.
- In case of an AirCoat manual gun, a flow meter kit shall be installed on the atomizing air circuit
- In case of Airless- or HVLP manual guns, a flow monitor shall be installed on the air pressure supply of the fading pumps.

	 <b>WARNING</b>
	<p><b>Incorrect installation of the unit!</b> Risk of explosion and equipment damage</p> <ul style="list-style-type: none"> <li>→ The flow monitor is not Ex-proved and must be installed outside the Ex-area.</li> <li>→ Lay and fix the connecting cable correctly and protect against fall down and passage traffic.</li> </ul>

SIHI\_0055\_GB

- It is not allowed to install other air consumption equipment (p.e. pumps for ring pipes or stirrer) as the feeding pumps for one 2K unit after the flow monitor.

## 5.8 LACK OF PRODUCT

It is to be guaranteed that product without bubbles is supplied to the mixing and proportioning plant 2K-FlexControl.



- The A-gear flow meter does not detect whether material or air is delivered.
- The control will therefore the „a-amount of air“ the necessary B-hardener to it-proportions.

A lack of material protection can be managed, as in the A-product container is attached a level sensor or that the painter always made sure that sufficient product is in the containers, otherwise it can come it to false coating.



E.g. if the level sensor of the A-container displays the minimum, a signal can stop the 2K-FlexControl (STOP).

The lack of material protection is not contained in the 2K-FlexControl and is build-laterally manages to become.

**5.9 GROUND THE SYSTEM**

	 <b>WARNING</b>
	<p><b>Fire, explosion and electric shock hazard!</b> Danger to life from electric shock and explosion</p> <ul style="list-style-type: none"> <li>→ The unit must be electrically connected to a true earth ground; the ground in the electrical system is not sufficient.</li> <li>→ A qualified electrician must complete all grounding and wiring connections and check the resistance.</li> <li>→ Must be operated in accordance with the safety regulations, fire and electrotechnical regulations.</li> <li>→ Must be de-energized before work is commenced on active parts.</li> </ul>

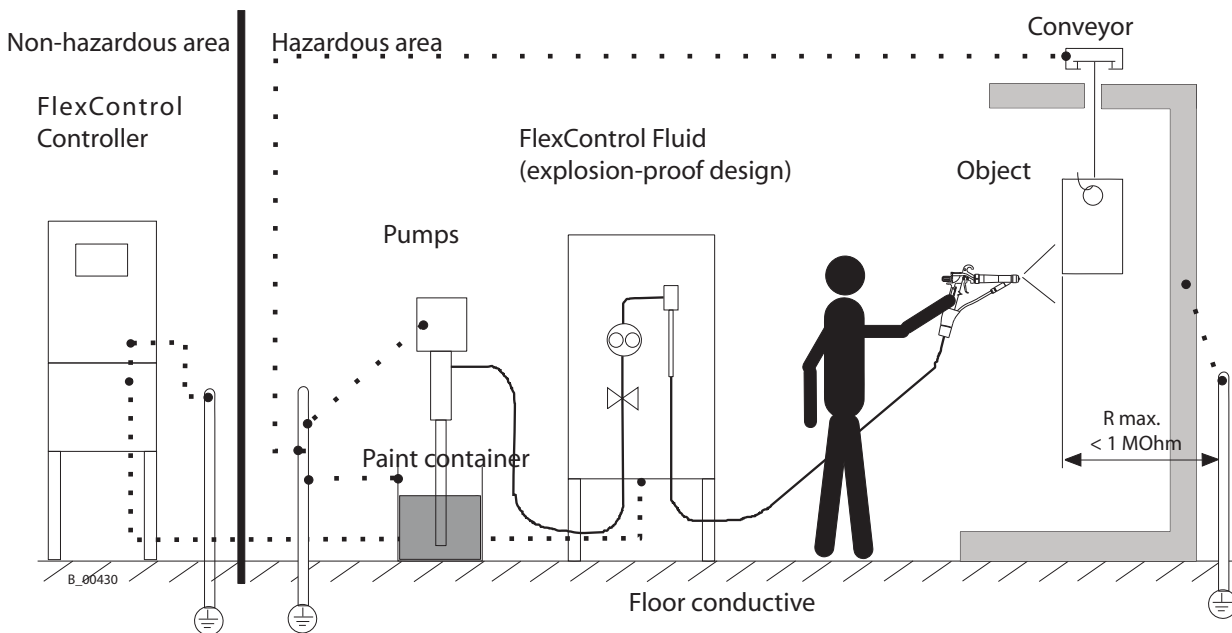
SIHI\_0057\_GB

	 <b>WARNING</b>
	<p><b>Heavy paint mist if earthing is insufficient!</b> Risk of poisoning Insufficient paint application quality</p> <ul style="list-style-type: none"> <li>→ Earth all unit components.</li> <li>→ Earth the workpieces being painted.</li> </ul>

SIHI\_0003\_GB

The 2C-equipment, the pumps and all parts involved in the spray process have to be earthed according to the scheme below.

**Earthing schema (example)**



B\_80430



**Cable cross sections**

2C equipment, pumps	4 mm <sup>2</sup> ; AWG 11
Paint container	6 mm <sup>2</sup> ; AWG 10
Conveyor	16 mm <sup>2</sup> ; AWG 5
Spray booth	16 mm <sup>2</sup> ; AWG 5
Spraying stand	16 mm <sup>2</sup> ; AWG 5

**5.10 MODEM CONNECTION**

The modem is attached over a two-wire line (a, b) to an analog telephone connection.

The two-wire line will install over the cable coupling into the electric cabinet;

→ acc. electrical connection diagram.

In order to prevent an unintentional selecting into the control cabinet, the telephone connection should be plugged off with the modem after each use

**5.11 PRINTER CONNECTION**

- The printer (parallel) is attached over the printer cable, consisting of a PC/PPI cable, a Gender Changer and a converter cable to the control cabinet.
- The PC/PPI cable is connected by the D-Sub coupling with the electric cabinet with the control. The converter cable is attached to the printer.

In order to have a right communication between control and printer, the DIP\_switches must be correctly adjusted with the PC/PPI cable and with the converter cable.

Switch-number	PC/PPI cable - position	Converter cable - position
1	0	on
2	1	off
3	0	on
4	1	off
5	1	off
6	0	on
7	-	off
8	-	off

**Expression:**

One prints out during an error message or when zeroing the sums on level 1. During an error message the date and the time as well as the kind of the error message are printed.

If the sums zero are set, these are first still printed out. Also the date and the time, the mixing proportion as well as the C-factors are printed out with.

## 6 CONTROL UNIT

### 6.1 CONTROL ELEMENTS

#### Turn / off:

- Turn the start switch to position on and the control unit will start
  - Turn it to off and
  - the control unit is switched of.

#### Push button start / stop / flush:

- Push the start button and the automatic mix control has started,
    - the stop light flashes during filling the hose with mixed 2K material.
    - After filling the green start light is on
  - Stop the automatic mix control with the stop button.
  - Button flush starts the automatic flush program.
- The stop light flashes during flushing, after that the light it off.

### 6.2 OPERATING PANEL

The 2C unit can be controlled by the operating panel.

There are four levels:

- Operating level
- Calibration level
- Parameter level
- Configuration level.

#### Data input:

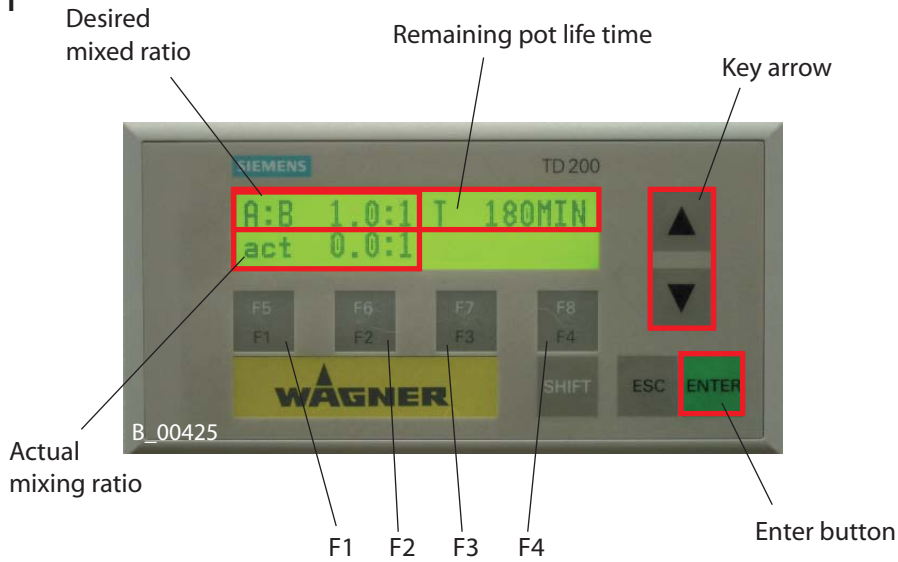
- Press ENTER and the cursor goes to the first input field of the current page.
  - Press ENTER again and the cursor jumps to the next input field.
  - With the key arrow values can be changed.
- Push again ENTER to save the new value.

#### 6.2.1 OPERATING LEVEL F1

- After the software start up the operating level is on the display.
- With the key arrow you switch to four different pages.

Push F1 in any other level and you always come to the operating level.

**Page 1**



**In the first page of the operating level**

- The mixing ratio can be chosen by volume A:B = xx,x :1.  
(to change the mixing ratio a password is required - level 3).
- You see the actual mixing ratio (act) as well as the remaining pot life time (T) in minutes.

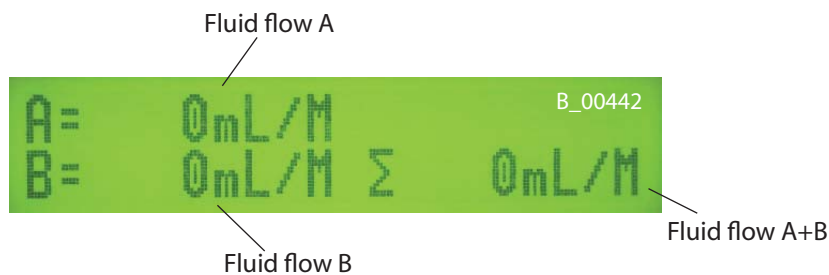
**Page 2**



**In the 2. page of the operating level**

- You see the fluid quantity used since the last reset.
- Push the stop button 3 seconds and this quantities are reseted.

**Page 3**

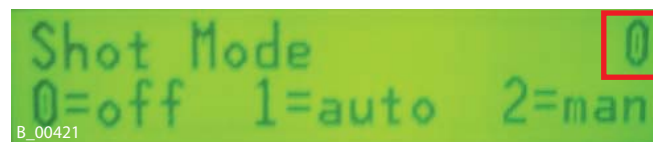


**In the 3. page of the operating level**

- You see the actual fluid flow of the components in milli litre per minute.

**Page 4****In the 4. page of the operating level**

- You see the flush quantity used during flushing.
- Push the stop button 3 seconds and this quantity are reseted.

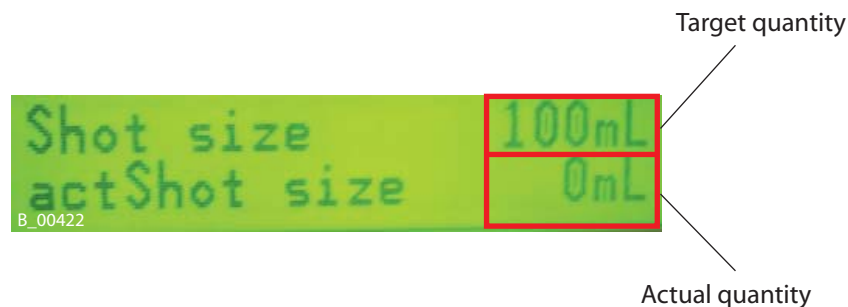
**Page 5****In the 5. page (Option)**

The following mode are possible:

- 0 (off) = Shot automatic is not active
- 1 (auto) = Shot automatic is active
- 2 (man) = Manual shot mode, manual shots are possible

**Automatic mode**

If mode 1 is selected, press arrow button until the following page appears.



Enter the target quantity at „shot size“. The 2C unit only brings material as long as the shot signal is on. As soon as the target quantity is activated, all valves close and material flow stops.

The next shot cycle starts only, if the shot signal is interrupted and again on.

The shot signal must be on until the target material is spent, if it is interrupted during the shot cycle, also the material flow is stopped. The shot cycle will continue when the shot signal is again on.

## Manual mode

If mode 2 is selected, press arrow button until the following page appears.

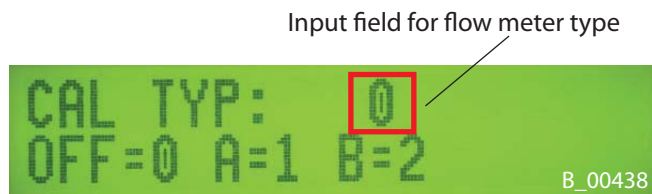


The target size „shot size“ is in this mode relevant. The 2C unit will feed material as long as the shot signal is on. The delivered quantity is displayed at “act Shot size”.

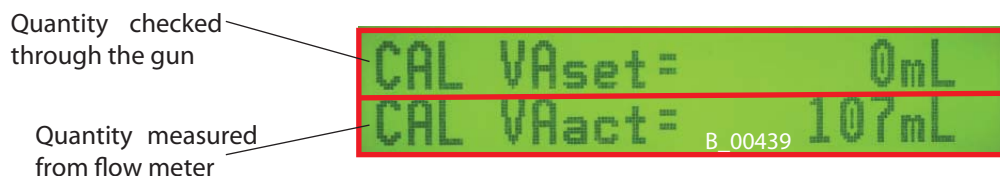
## 6.2.2 CALIBRATION LEVEL F2

It is not possible to do the calibration while the unit is in operation mode. Stop the unit before you can go in calibration level.

- With F2 you come into the calibration level, password is required.
- After that you are asked, which flow meter you want to calibrate.
- Enter 1 at **CAL TYP** to calibrate flow meter A
  - Enter 2 for flow meter B.



### Calibrate procedure



The flow meter must be calibrated with the actual used fluid for a precise volume measurement.

(The control unit calculates the calibration factor of the flow meter then automatically).

### Therefore proceed as follows:

- The unit is filled with 2C paint and the fluid is under pressure and the chosen fluid is already on the gun.
  - In the display appears the actual volume (Vact) and the set volume (Vset) of the chosen flow meter, both set to zero at the begin of calibration.
- Now a certain amount of fluid shall be filled in a measuring cup trough the gun. (e.g. 200 mL)
  - Now you see the quantity measured from flow meter in the display at „Vact“.

- Quantify now the fluid amount in the measuring cup and enter in mL at „Vset“ and confirm with enter.
  - If you want to leave the calibration mode without calibration, press F2, and do not press Enter !
- The control unit has now calculated the new calibration value and set the display to zero.
- Repeat now the calibration.
- When calibration is finished, push F2 to come again to the calibration start page, where you are asked, which flow meter you want to calibrate.
- Make sure the other fluid is on the gun before you start the calibration with the other fluid
- Frequent calibration of flow meter is required for a perfect quality of mixed fluid.
- New calibration must be done at relevant viscosity change or generally every 1 to 2 month.

Press F1 to come to operating level.

### 6.2.3 PARAMETER-LEVEL F3

Push F3 to come to the parameter level. Enter the password and you come to the first page.

Push arrow button to change pages.

#### Page 1

Btol= 1.0% Bqc= 150mL  
Bact= 0.0% act= 0mL  
B\_00448

#### In the first page of the parameter level 3

- you find the values for the control cycle.
- In the second line the real value is shown during production.  
The standard setting is:
  - Btol= 1.0% Bqc= 150 ml
- Increase value Bqc at high flow rate.

#### Page 2

#### Pot life control

Pot life set value  
Pot life alarm delay  
Quantity of mixed fluid in hose

MIXset 180M Ta 5M  
VOL MIX= 150mL  
B\_00449

### In the 2. page of the parameter level 3

- Enter the pot life time in minutes at „TMIXset“.
- Enter the quantity of mixed fluid in milli liter in the hose at „VOL MIX“.
- When the unit is started, first of all the quantity „VOL MIX“ must flow through the hose (filling) until mixed material is in the gun and ready to spray.
  - The red stop lamp is flashing during this process.
- The pot life control starts to count backwards after the unit has been started with the button „Start“.
  - The pot life time will be set to the set value, every time the flow quantity (VOL MIX) is over.
  - The stop lamp will be on and the display shows „flush!“, as soon as the pot life time has come to zero.
- The pot life time will be set to the set value, if you continue to spray or flush the unit.
- The pot life alarm can be delayed for the time (Ta). The pot life alarm comes again after this time, if nothing happens.

C-factor of flow meter A



C-factor of flow meter B

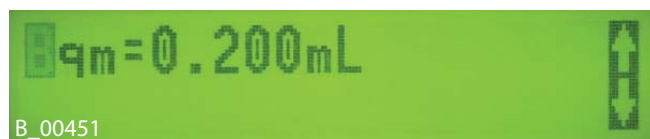
Gun delay

### Page 3

#### In the 3. page of the parameter level 3

- You see the calibration value KA and KB which were calculated at the calibration procedure.
  - You may also change these values here. (Pulse/Liter)
- The gun delay (Tgun) in seconds is used to super wise the A flow meter.
- The unit stops if the A flow meter is blocked and the gun is open more then time Tgun, the unit will stop.

### Page 4



#### In the 4. page of the parameter level 3

- Bqm is a value for the control cycle, set point:0.2.

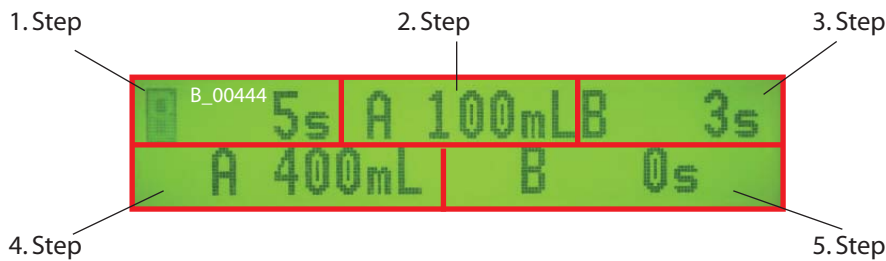
Page 5



**In the 5. page of the parameter level 3**

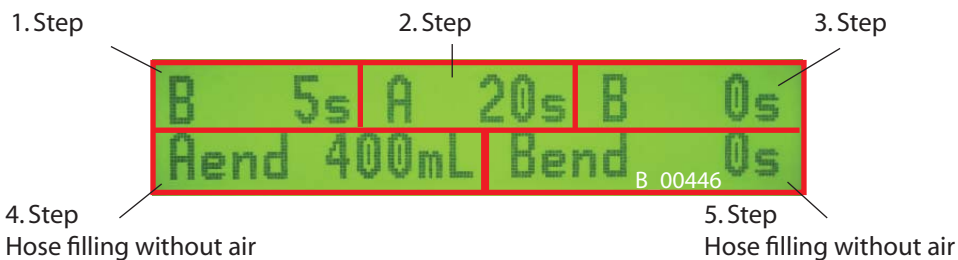
- Here the operation mode is asked.
  - HP means high pressure up to 27 MPa; 270 bar; 3916 psi
  - LP (air) means low pressure up to 0.6 MPa; 6 bar; 87 psi

**High pressure HP**



- Define your flush program in this mask.
  - Enter zero, if you want to skip a step.
- Start the flush program with the button „Flush“
  - The Stop lamp is flashing until it is finished.

**Low pressure LP**



- **With the mode of operation low pressure**
  - In 2. step will flush alternately with solvent and air.
- On the last mask the cycle time for solvent and air is to be entered.



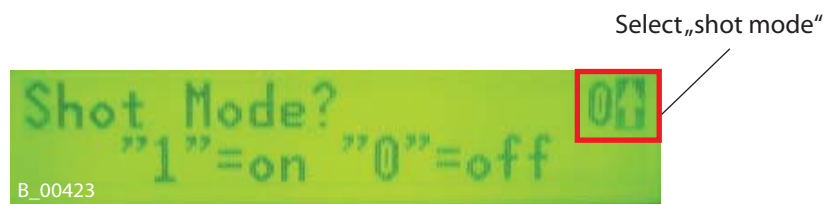
Time interval for solvent A

Time interval for air



**Page 6 Activate the Shot automatic**

The shot is used for a constant batch volume. The desired volume must be entered into the controller. The operator or a robot starts the short cycle. The material flow stops automatically, when the desired volume is delivered. The electronic control guarantees for a precision volume. The shot process can be interrupted and resumed. Manual mode is possible too.



- Activate or deactivate the shot automatic with the function „shot mode“.
- 1 (on) = the Shot automatic is activated
- 0 (off) = the Shot automatic is deactivated

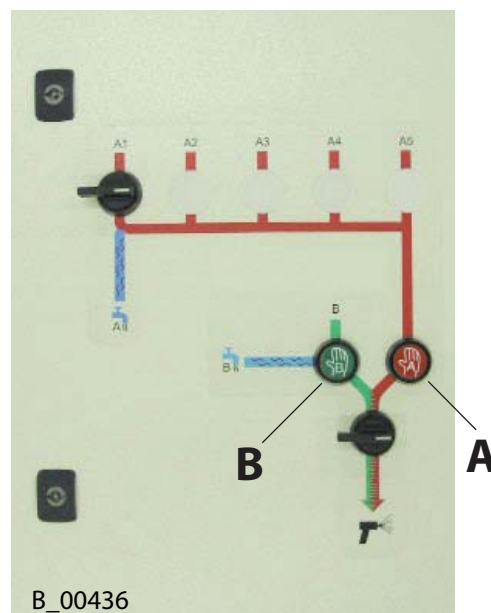
**6.3 PASSWORD**

The calibration level 2 and the parameter level 3 are protected by passwords.

- These passwords can be changed in the program level 4 from a Wagner engineer.
  - The basic setting is for level 2 = 22 and for level 3 = 33.

**6.4 HAND ACTIVATING OF THE FLUID VALVES**

Press the push button on the fluid part to open the fluid valve A or B.



- The flush valve can be activated by the control unit.
  - If a valve is open, the stop lamp is flashing.
- Push the stop button to close it again.
  - Shift F1 = open flush valve A
  - Shift F2 = open flush valve B
  - Shift F3 = open air flush valve

**Note**

The ESC- key will not be used.

If it is erroneously pressed, appears „password enter - password \*\*\*\*“

Press in this case simply again the ESC- key.

**6.5 TROUBLE SHOOTING**

- If there is a disturbance, the fault appears on the display:
  - The stop lamp is on and the unit stops.
  - The fault can be reseted with the stop button.

See trouble shooting to find the reason for it. See Chap.8

## 7 START UP

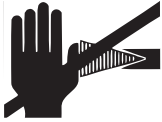
### CAUTION

**Constant supply pressures!**

Poor coating results

- The supply pressure of the component B must be adjust to a higher value (appr. 10%) than that the component A.
- The supplying pressure should be constant.

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### ! WARNING

**High-pressure spray jet!**

Danger to life from injecting paint or solvent

- Never reach into the spray jet.
- Never point the spray gun at people.
- Consult a doctor immediately in the event of skin injuries caused by paint or solvent. Inform the doctor about the paint or solvent used.
- Never seal defective high-pressure parts, instead relieve the pressure from them and replace.
- Wear the appropriate protective clothing, gloves, eyewear, and respirator.

SIHI\_0059\_GB



### ! WARNING

**Gas mixtures can explode if there is an incompletely filled unit!**

Danger to life from flying parts



- Ensure that the unit is always completely filled with cleaning agent or working medium.
- Do not spray the unit empty after cleaning.

SIHI\_0058\_GB

## 7.1 PRELIMINARY WASHING AND PRESSURE TIGHTNESS TEST

The equipment is tested at the factory using emulsified oil, plain oil or solvent, according to the kind of fluid being pumped.

- Before starting up the pump with the product, it is recommended to wash both circuits and feeding pumps with a proper solvent.

	 <b>WARNING</b>
	<p><b>Incompatibility of cleaning agent and working medium!</b> Risk of explosion and danger of poisoning by toxic gasses</p> <p>→ Check the compatibility of cleaning agent and working medium in accordance with safety data sheets.</p>

SIHI\_0060\_GB

### 1. Preliminary flushing

The material hoses must not be connected to the 2K-FlexControl until they are with the suitable solvent flushed together with the pumps

- Otherwise flowmeter can be plugged all ready with the first solvent flow due to contamination in the material hose or pump!
- For pumps preliminary washing, carefully follow there corresponding instruction.
- After all pumps and material hoses to the 2K-FlexControl has been flushed, the material hose can be connected to the 2K-FlexControl.
- The solvent still remains in the pumps.





### 2. Bleeding the system

First bleed every circuit through the gun with little pump until clean solvent flows out the gun

- A and B components can be opened by pushing the button on fluid cabinet.
- The flush valve A is activated with the command „Shift F1“ on digital display of the control cabinet and closed again by pushing the stop-button.
  - As indication that the valve is open the stop light will flash.
- The flush valve B is activated with the command „Shift F2“ on digital display of the control cabinet and closed again by pushing
  - As indication that the valve is open the stop light will flash.

### 3. Pressure tightness test

- For pressure tightness control of the total installation gradually increase solvent pressure circuit by circuit until you reach the maximum pressure of the pumps.

	 <b>WARNING</b>
	<p><b>Overpressure!</b> Risk of injury bursting components</p> <p>→ The operating pressure must never exceed the value shown on the plate.</p>

SIHI\_0054\_GB

- Carefully examine the total installation for leakage
  - Hold the maximum pressure 2 minutes.
  - If there is a leakage, fix it.

After inspection turn off air supply of all pumps, open the gun and circulation valve of all pumps to discharge the whole solvent pressure.

**Note**



The solvent used for the first washing can not be used again since it could contain oil residues.

**7.2 PRESSURE RELIEF PROCEDURE**

The system pressure must be manually relieved to prevent the system from starting or spraying accidentally.

To reduce the risk of an injury from injection, splashing fluid, or moving parts, follow the Pressure Relief Procedure whenever you:

- Are instructed to relieve the pressure
- Stop spraying
- Check or service any of the system equipment
- Install or clean the spray tip

	 <b>WARNING</b>
	<p><b>High-pressure spray jet!</b> Danger to life from injecting paint or solvent</p> <p>→ Never reach into the spray jet.</p> <p>→ Never point the spray gun at people.</p> <p>→ Consult a doctor immediately in the event of skin injuries caused by paint or solvent. Inform the doctor about the paint or solvent used.</p> <p>→ Never seal defective high-pressure parts, instead relieve the pressure from them and replace.</p> <p>→ Wear the appropriate protective clothing, gloves, eyewear, and respirator.</p>



SIHI\_0059\_GB

Pressure Relief Procedure for the hole system:

1. Set the operator switch to [STOP]
2. Relieve fluid and air pressure at the component and solvent feed pumps or pressure pots, as explained in their separate instruction manuals.
3. If using an electrostatic gun, make sure the electrostatic power is turned off.
4. Set the operator switch to [START]
5. Hold a metal part of the spray gun firmly to the side of a grounded metal pail, and trigger the gun to relieve fluid pressure.
6. Set the operator switch to [STOP]



### 7.3 FILLING THE UNIT AND CALIBRATION

	 <b>WARNING</b>
	<p><b>Do not exchange the two components A and B!</b> Equipment damage by hardened paint</p> <p>→ Mark unit parts and paint container, so that the components A and B are not exchanged.</p>

SIHI\_0061\_GB

1. Prepare the hardener container, carry the solvent out the pump and fill it with hardener.
2. Set the hardener pump a little on pressure. Open the hardener valve with push button on fluid door, open the gun and hold it over a container suitable for washing solvent.
3. After the first filling with hardener the B flow meter has to be calibrated. See chap. 6.2
4. After that do it the same way with the A component.



### 7.4 START OF PAINTING

- Adjust the main component pressure according to the required flow rate, keeping in mind that B-component pressure must be higher (5 until 10%) than spraying pressure.
- Start the automatic cycle by pushing the [Start] button.
- Keep the spray gun open over a container suitable for washing solvent (waste container).
  - 2C fluid starts to flow and B-component is proportioned to the A component.
- Wait until the hose is filled with mixed 2C material.
  - This procedure is indicated by the flashing stop lamp.
  - As soon as this procedure is finished, flashing stops.
  - The green start lamp is on.
  - Only after filling correctly mixed fluid leaves the gun.

- Now you can start with the painting.
- The fluid flow rate depends:
  - On fluid pressure
  - Cross section
  - Hose length
  - Nozzle and
  - The fluid viscosity.
- During production the B-valve shall operate every 1-3 seconds depending on the flow rate.
- The frequency can be optimized by the pressure adjustment of the hardener pump or by the stroke length of the hardener valve.



With the push button [Stop] the automatic cycle can be stopped. All fluid valves are closed.

## 7.5 FLUSH, COLOUR CHANGE



	 <b>DANGER</b>
	<p><b>Exploding gas/ air mixture!</b>          Danger to life from flying parts and burns</p> <ul style="list-style-type: none"> <li>→ Never spray into a closed container.</li> <li>→ Earth the container.</li> </ul>

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- Follow the «Pressure Relief Procedure» on Chap. 7.2 whenever you are instructed to relieve the pressure.
- If you are using a high pressure gun, remove the spray tip before purging.
  - Relieve pressure before removing the spray tip.
- Wear protective eye wear.
- Use the lowest possible fluid pressure when purging.

	 <b>WARNING</b>
	<p><b>High-pressure spray jet!</b>          Danger to life from injecting paint or solvent</p> <ul style="list-style-type: none"> <li>→ Never reach into the spray jet.</li> <li>→ Never point the spray gun at people.</li> <li>→ Consult a doctor immediately in the event of skin injuries caused by paint or solvent. Inform the doctor about the paint or solvent used.</li> <li>→ Never seal defective high-pressure parts, instead relieve the pressure from them and replace.</li> <li>→ Wear the appropriate protective clothing, gloves, eyewear, and respirator.</li> </ul>

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	 <b>WARNING</b>
	<p><b>Discharge of the elektrostatic in atmospheres containing solvents!</b> Fire and explosion hazard</p> <p>→ Turn off the electrostatics on an electrostatic gun before purging or before placing the gun in the Gun Flush Box.</p>

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**1. Flush**



The unit is flushed at colour changes, longer interruptions or at work end. For that reason the unit must be stopped by the push button Stop, then start the flush program with the push button Flush.

- Keep the open gun in a suitable container until the flush program is completed. The stop light flashes during the flush program is running, after that all valves close.
- If the flushing is insufficient, flush a second time and adjust the flush program. (see chap.6.3)

**2. Colour change**

If the 2C unit has got more A components, choose the requested colour by the pneumatic switch on the fluid panel door.

- It must to be paid attention that only one A-component is preselected.

	 <b>WARNING</b>
	<p><b>Wrong mixing ratio!</b> Poor surface quality</p> <p>→ Before change the color, check the mixing ratio on the display and, if necessarily change, if individual components have different mixing ratio.</p>

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**3. Hardener change**



If the option 2 hardeners is installed, the correct hardener must be selected in each case to the A-component with the hardener selector switch.

**7.6 GENERAL INFORMATIONS**

- The pressure for solvent A and B must be on while the FlexControl is in use.
- If the unit is connected to a circular paint system, suitable valves must be placed in
  - Between to avoid mixing in case of leakage in the FlexControl.
  - These valves must be closed after work.



## 8 MAINTENANCE

	 <b>WARNING</b>
	<p><b>Incorrect maintenance/repair!</b> Risk of injury and damage to the equipment</p> <ul style="list-style-type: none"> <li>→ Repairs and part replacement may only be carried out by specially trained staff or a WAGNER service center.</li> <li>→ Before all work on the unit and in the event of work interruptions:             <ul style="list-style-type: none"> <li>- Switch off the energy/compressed air supply.</li> <li>- Relieve the pressure from the spray gun and unit.</li> <li>- Secure the spray gun against actuation.</li> </ul> </li> <li>→ Observe the operating and service instructions when carrying out all work.</li> </ul>

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- In accordance with the guideline for liquid emitter (ZH 1/406 and BGV D 15):
  - The liquid emitters are with need, at least however every 12 months to examine by experts (e.g. Wagner service technician) for their work-safe condition.
  - With shut down devices the examination can be suspended up to next start-up.

### 8.1 UNIT CLEANING

- A cleaned unit makes an easy localization of any leakage and quick repair.

### 8.2 FILTER CLEANING

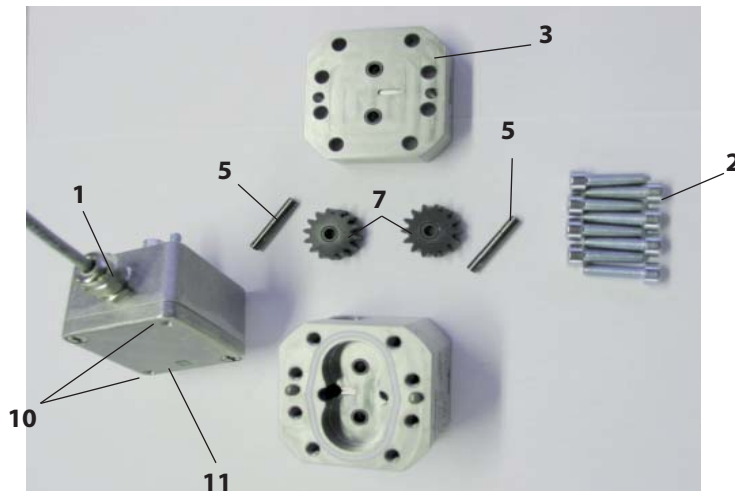
- Refer to the corresponding manual to clean the filters on the supplying pumps and in the spray gun.

### 8.3 CONDENSATE DRAINAGE FROM THE FILTER-REDUCER

- Frequently drain the condensate that may accumulate in the air filter.
  - Make sure the water level in the filter cup never reaches the maxi. level marked on the cup itself.

**8.4 FLOW GEAR METER**

- The washing of the A flow meter will be made through the automatic flushing procedure [Flushing].
- If the single parts have to be cleaned, the equipment should be disassembled.



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1. Remove the electronic sensor (1) from the flow meter.
    - The sensor can be removed by loosening the screws from the holes (10) without removing the cover (11).
  2. Unscrew the screws (2) - two opposite screws should be left in by two turns.
  3. Take the cover (3) off the flow meter carefully parallel.
    - If necessary, knock softly on the cover with a plastic hammer, so that it separates.
    - The separation of the cover must be done parallel, so that the internal parts are not stressed.
    - For this reason do not use screwdrivers as levers.
  4. Remove the screws which have been left screwed at the previous point.
  5. Remove the cover, the gear wheels (7) and the shafts (5).
    - Mostly it is a dirt particle in the flow meter, which caused the problem.
    - If the parts cannot be easily removed, put the flow meter into suitable solvent.
    - Remove the parts afterwards without any force!
    - It is not important that the gear wheels turn on the shaft, if this is not the case, it is not a suitable flowmeter for the used fluid.
- Call Wagner-Service for further information.

**Re assembly**

After the flowmeter has been cleaned shafts and gears have been assembled, check that the gears turn easily, even if you easily press with your finger against the shafts.

1. Assemble the cover again parallel in the correct position according to the reference pins.
  - These pins must never be removed from the flow meter body.

2. Tighten the screws with 15 Nm; 11.06 lbft.
3. Using a short jet of compressed air, maximum 0.1 MPa; 1 bar; 14.5 psi and listen if the gears turn.
4. Assemble the electronic sensor again, and do not interchange A and B sensor.

## 8.5 MATERIAL VALVES

Control the leakage (air or fluid discharge) out of the leakage hole of the Colour change valve in regular time intervals (one time per week).

- By air leakage: change rod sealing
- By fluid leakage: tighten or change the sealing
- Check the leakage of valve seats in regular time intervals, do a pressure test in accordance with chap. 7.1)

## 8.6 HIGH PRESSURE HOSE



The lifetime of the fluid hoses is even with appropriate handling reduced due to environmental influences.

- The lifetime of the fluid hoses is even with appropriate handling reduced due to environmental influences.
- As precaution fluid hose should be replaced after a specified period by the plant operator.

## 8.7 CONTROL UNIT

If with the main switch is turned off, the process dates remain in the internal eeprom.

- Existing parameters must be teached in after a software update don by a flash (see parameter list 6.3).
- This is not necessary if the update is don by a modem.

	 <b>DANGER</b>
	<p><b>Bursting hose, bursting threaded joints!</b> Danger to life from injection of material</p> <ul style="list-style-type: none"> <li>→ Ensure that the hose material is chemically resistant.</li> <li>→ Ensure that the spray gun, threaded joints and material hose between the unit and the spray gun is suitable for the pressure generated in the unit.</li> <li>→ Ensure that the following information can be seen on the high-pressure hose: <ul style="list-style-type: none"> <li>- Manufacturer</li> <li>- Permissible operating pressure</li> <li>- Date of manufacture.</li> </ul> </li> </ul>

## **8.8 DISMANTLING**

When the equipment must be scraped, please make a different disposal of the materials.

The following materials have been used:

- Steel
- Aluminium
- Rubber
- Plastic
- Tungsten carbide

Fluids (paints, adhesives, sealers, solvents) shall be disposed according to the valid specific standards.

## 9 TROUBLE SHOOTING

In case of a fault, the reason is shown on the display,

- the stop lamp is on,
- the horn sounds (optional) and the unit stops.
- Confirm the fault with the push button Stop.

In case of a alarm it is also important, from which work routine an fault was generated.

### 9.1 FAULTS AND APPROPRIATE SOLUTIONS

#### Flush!

The pot life is over, continue to spray or flush.

#### A -

There is more than 15 seconds (e.g. Gun delay Tgn in Chap. 6.3) atomizing air flow without fluid flow.

- Or the flow meter is blocked due to contamination.
- If there is a fluid flow, the LED must be on, otherwise it is blocked (open and clean it see point 8.)
- Or the A-component is smaller than the minimum limit

#### B -

The quantity of B is too few.

- It is too less B pumped for the selected mixing ratio is needed,
- Increase the hardener pressure.
- The stroke on the B valve is too short, untwist the adjustment screw a few.
- It could also be that the B container is empty or the flow meter is blocked. (LED is not on although there is a fluid flow.)

#### A +

The flow rate of A fluid is more than the maximum limit of the flow meter (0.8 gpm).

- Reduce flow rate.

#### B +

The flow rate of B fluid is more than the maximum limit of the flow meter (0.8 gpm).



- Reduce flow rate.

#### gun control

Even though there is a fluid flow on the A side there is no open gun signal within 50 seconds.

- The gun control sensor may be defect resp. there is no signal.
- Repair or replace it.

## 10 INSTALLATION OF ACCESSORIES

	 <b>WARNING</b>
	<p><b>Electric shock hazard inside the controller!</b> Danger to life from electric shock</p> <ul style="list-style-type: none"> <li>→ May only be installed/maintained by skilled electricians or under their supervision.</li> <li>→ Are operated in accordance with the safety regulations, fire and electro-technical rules.</li> <li>→ The voltage is switched off before work is begun on active components.</li> </ul>

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### 10.1 COLOUR EXTENSION

Each unit must be ordered including all desired accessories, which are then installed.

→ It is possible to install later a colour extension from a Wagner serviceman. Follow the corresponding instruction.

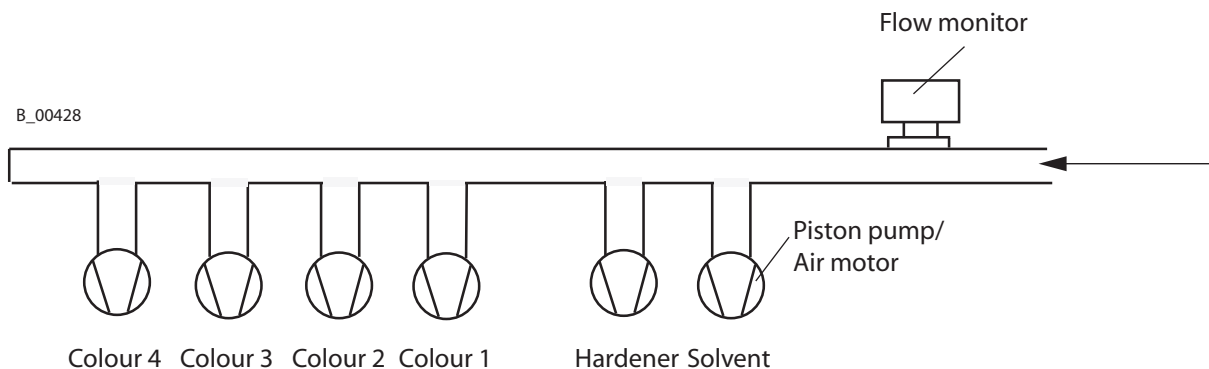
**Order-no. 384125** Colour extension 2A

### 10.2 GUN CONTROL

#### Statements for the Airless spray gun control system

- For the manually Airless- or HVLP gun is the following gun control system used.
  - In order to detect the blocking of the flow meter, the flow of material can be checked indirectly over the air consumption of the feed pumps
  - A flow sensor is suitable for it where the switch point can be adjust.

It must not be connected any other air consumers (e.g. pumps for ring circuit system, agitator, etc.) than the feed pumps for the 2K-FlexControl (colour, hardener and solvent).



**Adjustment in the control of the 2K-FlexControl:**

- Adjust the T gun (alarm delay approx. 20 seconds) so that there is no alarm if the gun will be closed. See Chap. 6.3

**Adjustment of the flow switch not Ex proofed**

- The flow sensor must be adjusted locally in accordance with enclosed operating instruction by IFM.
- Adjust with normal operation of the feed pumps
  - The maximum (page 9) flow and
  - The minimum flow when feed pumps are turned off (page 10).
- Afterwards the switching point can be adjusted (suggestion: 3) (page 11).

**Electric connection:**

- See electrical schematic
- Installation of the flow switch:
  - In accordance with enclosed operating instruction of IFM (page 5-6).



	<b>WARNING</b>
	<p><b>Incorrect installation of the unit!</b> Risk of explosion and equipment damage</p> <ul style="list-style-type: none"> <li>→ The flow monitor is not Ex-proved and must be installed outside the Ex-area.</li> <li>→ Lay and fix the connecting cable correctly and protect against fall down and passage traffic.</li> </ul>

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**10.3 CONVERSION OF DIFFERENT MIXING PROPORTION SPECIFICATION**

It is very important that the data sheets of the paint supplier are available, so that the correct mixing ratio can be entered.

- Some paint supplier indicate the mixing ratio by weight, others by volume.
- Since the flow meter measure volumetric, we need the specification in volume.

**Conversion of mixing proportion of gravimetrically in volumetric:****For example:**

- 10 parts by weight Comp. A and
- 1 parts by weight Comp. B
- or 10 g Comp. A
- 1 g Comp B
- or parts by weight 10:1
- or 10 : 1 by weight (A grav : B grav)

- The density or spec. volume must of the components A and B admits to be or be beforehand determined.

**Density:**

$$P_A = \frac{\text{Weight}_A}{\text{Volume}_A} = \frac{0.15 \text{ gr}}{0.1 \text{ cm}^3} = 1.5 \frac{\text{gr}}{\text{cm}^3} = 1.5 \frac{\text{Kg}}{\text{L}}$$

$$P_B = \frac{\text{Weight}_B}{\text{Volume}_B} = \frac{0.1 \text{ gr}}{0.1 \text{ cm}^3} = 1 \frac{\text{gr}}{\text{cm}^3} = 1 \frac{\text{Kg}}{\text{L}}$$

**Mixing ratio:**

$$Mvol = Avol \div Bvol = \frac{\text{Agrav.}}{P_A} \div \frac{\text{Bgrav.}}{P_B}$$

$$Mvol = \frac{10\text{gr}}{1.5 \frac{\text{gr}}{\text{cm}^3}} \div \frac{1 \text{ gr}}{1 \frac{\text{gr}}{\text{cm}^3}} = 6.67 \div 1$$

other vol. mixing proportion specifications:

6.67 parts by volume Comp. A

1 parts by volume Comp. B



## 11 SPARE PARTS

### 11.1 HOW TO ORDER SPARE PARTS?

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

#### Part Number, description and quantity

The quantity need not be the same as the number given in the „Quantity“ column. This number merely indicates how many of the respective parts are used in each subassembly.



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.)

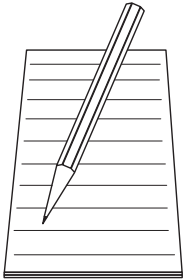
#### Marks in spare parts lists

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

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

	 <b>WARNING</b>
	<p><b>Incorrect maintenance/repair!</b> Risk of injury and damage to the equipment</p> <ul style="list-style-type: none"> <li>→ Repairs and part replacement may only be carried out by specially trained staff or a WAGNER service center.</li> <li>→ Before all work on the unit and in the event of work interruptions: <ul style="list-style-type: none"> <li>- Switch off the energy/compressed air supply.</li> <li>- Relieve the pressure from the spray gun and unit.</li> <li>- Secure the spray gun against actuation.</li> </ul> </li> <li>→ Observe the operating and service instructions when carrying out all work.</li> </ul>

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**11.2 OVERVIEW SPARE PARTS**

Point	Part No.	Description
11.3	384001 ◆	Basic unit 1 (1A, 1B) not to be placed in a Ex-area
11.3	384003 ◆	Basic unit 1 (1A, 1B) not to be placed in a Ex-area AMERICA
11.4	384002 ◆	Basic Unit 2 (1A, 1B) fluid part Ex proofed, control part not Ex proofed
11.5	◆	Control cabinet assy.
11.6	◆	Fluid cabinet assy. - not Ex proofed
11.7	◆	Fluid cabinet assy. - Ex proofed
11.8	384209 ◆	Atomizing air supply AirCoat dia 6 mm; 0.24 inch in 2K unit
11.9	384218 ◆	Atomizing air supply air gun dia 8 mm; 0.31 inch in 2K unit
11.10	384228 ◆	Atomizing air supply dia 6 mm; 0.24 inch on spray booth
11.11	384229 ◆	Atomizing air supply air gun dia 8 mm; 0.31 inch on spray booth
11.12	384244 ◆	Gun control for Airless gun, not Ex proofed
11.12	384270 ◆	Gun control for Airless gun, not Ex proofed AMERICA
11.13	◆	Flow meter
11.14	384284 ◆	Robot communication (24VDC)
11.14	384271 ◆	Robot communication (24VDC) AMERICA
11.15	384206	Stand assy.
11.16	9998888	Foot set ( 4 piece needed for each stand)
11.17	377120	Wheel set (incl. 4 wheels for stand) assy.
11.18	384125	Colour extension 2A
11.19	384103	Colour change valve assy.
11.20	384226 ◆	Hardener extension 1B
11.21	384105	Hardener dosing valve assy.
11.22	384246 ◆	2 different solvent for hardener
11.23	384110	Material filter, assy., compact
11.24	139045	Material filter, assy., rotary
11.25	384208 ◆	Air/solvent flush set for A, maxi. 1 MPa; 10 bar; 145 psi in 2K unit
11.26	384127	Material pressure regulator set, pneum. 0-0.6 MPa; 0-6 bar; 0-87.02 psi in spray booth
11.27	3823733	RV/ 1 Stainless steel pressure regulator with pneumatic remote control
11.28	384214 ◆	Material pressure regulator set 0.05-0.5 MPa; 0.5-5 bar; 7.25-72.5 psi in 2K unit
11.29	384217 ◆	Remote control Ex proofed with cable 10 m; 32.80 ft
11.30	377082 ◆	Remote control, pneumatic, without recipe, assy.
11.31	◆	Manifold cabinet without recipe, assy.
11.32	◆	Remote control, pneumatic, without recipe, assy.
11.33	377963 ◆	Connection set without recipe, 10 m; 32.80 ft
11.34	384234 ◆	Alarm horn
11.35	384253 ◆	Alarm horn in spray booth

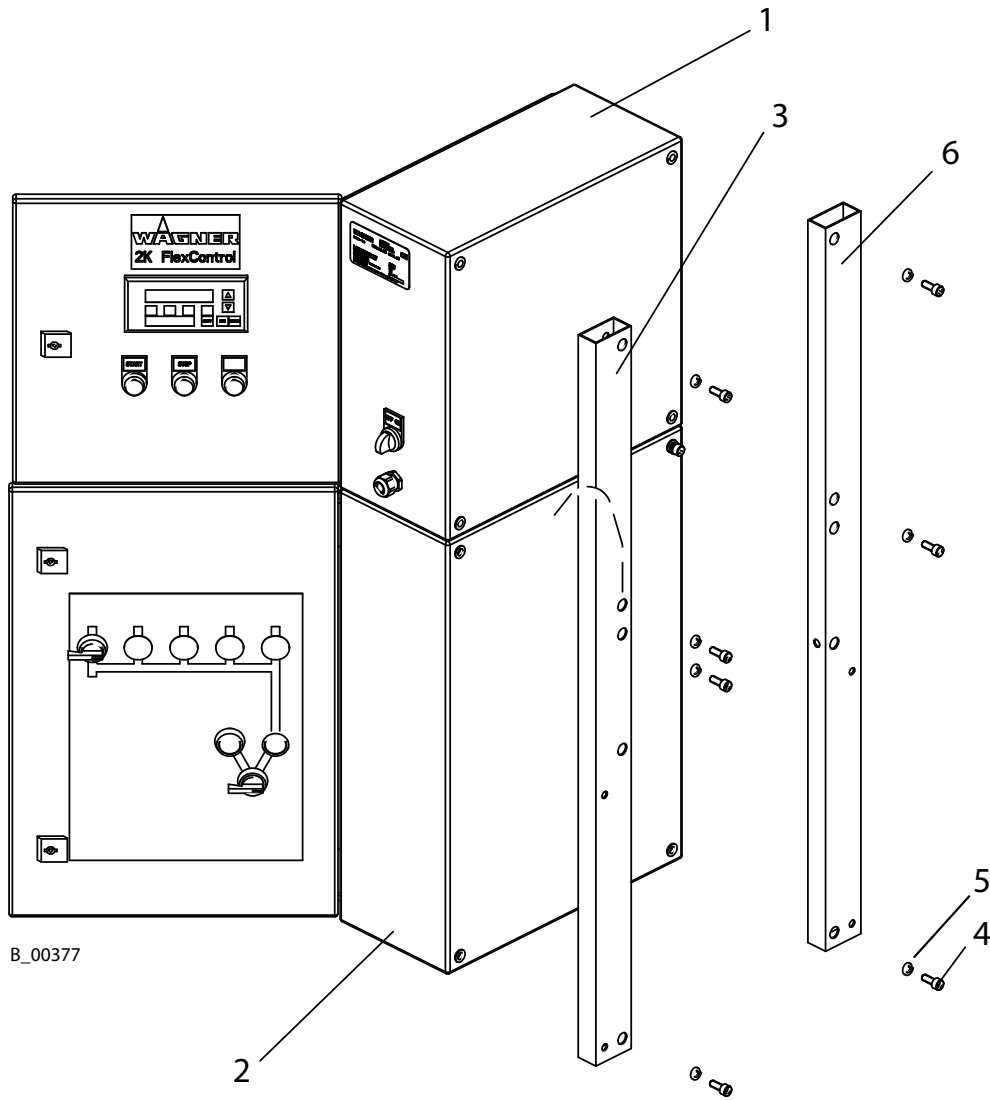
◆ Can be ordered only with new equipment and not individually

<b>Point</b>	<b>Part No.</b>	<b>Description</b>
11.36	384238 ♦	Release of automatic cabin
11.36	384272 ♦	Release of automatic cabin AMERICA
11.37	384215 ♦	Teleservice with analog modem
11.38	384216 ♦	Printer connection without printer
11.39	384237	Extension static mixer
11.40	384219 ♦	Atomizing air automatic dia 6 mm;0.24 inch (no air during filling and flushing)
11.41	384220 ♦	Atomizing air automatic dia 8 mm;0.31 inch (no air during filling and flushing)
11.42	384243 ♦	Electrostatic Automatic
11.42	384273	Electrostatic Automatic AMERICA
11.43	384235 ♦	Set communication for gun flush box
11.44	384358 ♦	Bulkhead holder (a must if the FlexControl is has more than 3 colours and filters)
11.45	384249 ♦	Double valve for 2 guns (2K/ 3K operation)
11.46	384223 ♦	Extension set 3K operation - not Ex proofed
11.46	384277 ♦	Extension set 3K operation - not Ex proofed AMERICA
11.47	384224 ♦	Extension set 3K - fluid part Ex proofed
11.48	2302778	Same solvent A and B
11.49		Adapter

♦ Can be ordered only with new equipment and not individually

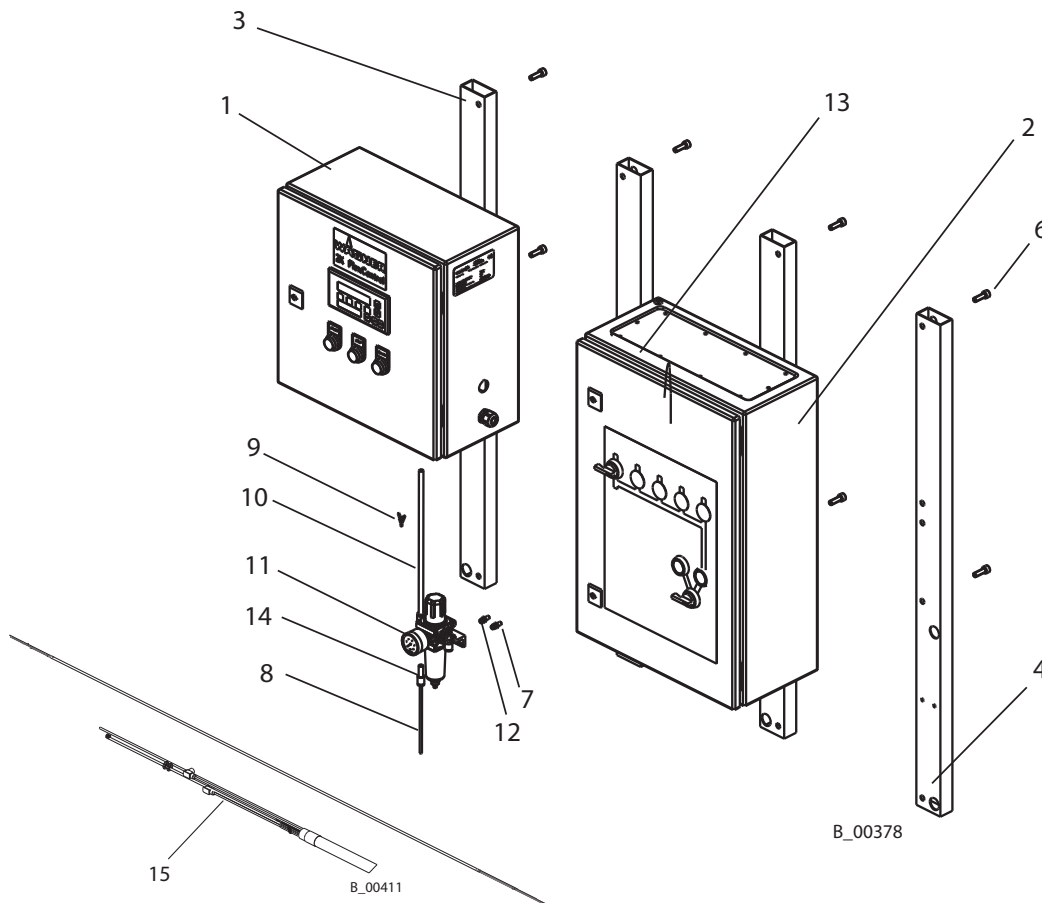
**11.3 BASIC UNIT 1 (1A, 1B) NOT TO PLACED IN A EX-AREA**

Pos	K	Qty	Part No.	Description	in chapter
1		1		Control cabinet assy.	11.5
2		1		Fluid cabinet 1A 1B, assy.	11.6
3		1	384334	Profile 2 electric / pneumatic	
4		8	9900318	Cheese head screw	
5		8	9921501	Spring ring	
6		1	384344	Profile 2 electric / pneumatic	



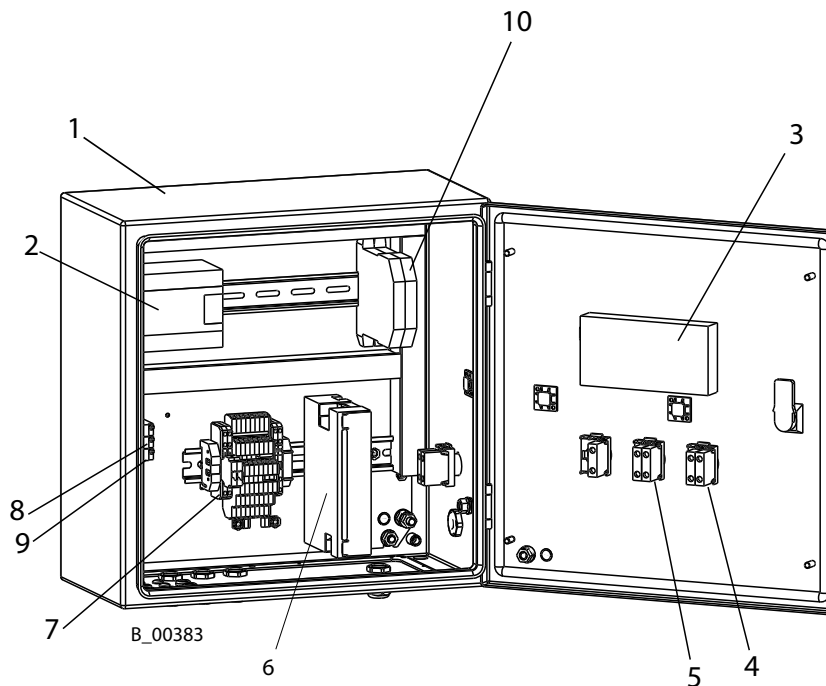
**11.4 BASIC UNIT 2 (1A, 1B) FLUID PART EX PROOFED, CONTROL PART NOT EX PROOFED**

Pos	K	Qty	Part No.	Description	in chapter
1		1		Control cabinet assy.	11.5
2		1		Fluid cabinet 1A 1B, assy.	11.7
3		2	384344	Profile 2 electric/ pneumatic	
4		2	384334	Profile 2 electric/ pneumatic	
5		8	9921501	Spring ring	
6		8	9900318	Cheese head screw	
7		2	9935057	Blind rivet nut	
8		1	9982072	Hose 1 m; 3.28 ft	
9		1	9992290	Fitting Y, plug-in	
10		1	9982062	Hose, blue 1 m; 3.28 ft	
11		1	384111	Filter pressure reducing valve 1/4 assy.	
12		2	9920104	Washer A4.3	
13		2	9906004	Cheese head screw	
14		1	3151777	Reducing, straight	
15		1	384239	Connecting set assy., 10 m; 32.80 ft	



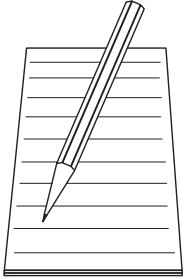
**11.5 CONTROL CABINET, ASSY.**

Pos	K	Qty	Part No.	Description
1		1	384331	Electro cabinet
2		1	384930	Spare part Simatic
3		1	3125139	Text Display
4		1	3155322	LED-element green
5		1	3155321	LED-element red
6		1	9955176	Power pack
7		1	9951115	Fuse, slow-acting
8		4	9956021	3/2 way valve Matrix
9		8	9971183	O-ring
10		2	9956095	Zener barriers (only in Ex version)

**WARNING****Electric shock hazard inside the controller!**

Danger to life from electric shock

- May only be installed/maintained by skilled electricians or under their supervision.
- Are operated in accordance with the safety regulations, fire and electro-technical rules.
- The voltage is switched off before work is begun on active components.



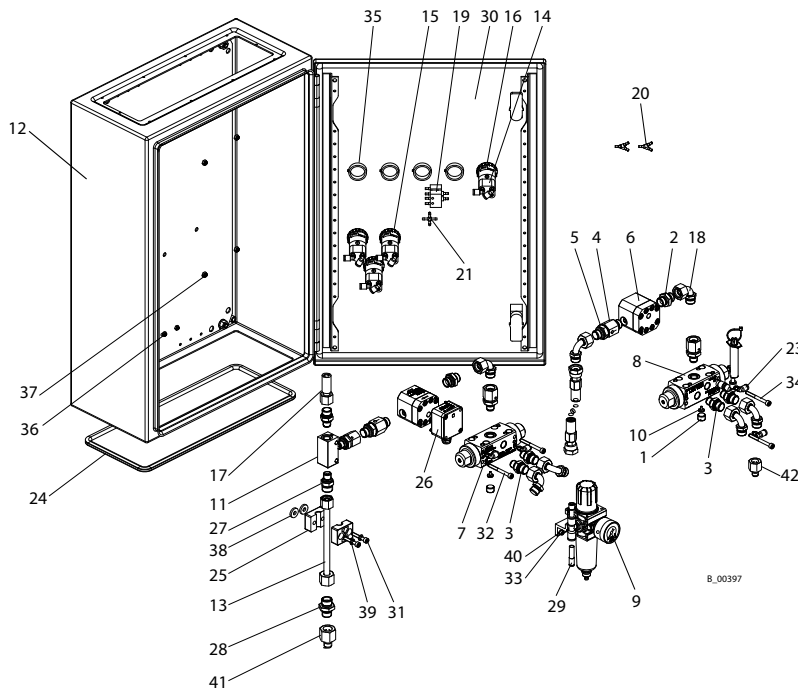
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**11.6 FLUID CABINET, ASSY. - NOT EX PROOFED**

Pos	K	Qty	Part No.	Description
1		2	104376	Lock screw
2		2	123446	Double connector
3		5	350499	Screw-in socket
4		2	384115	Return valve, assy.
5		3	384116	Swivel assy.
6		2		Flowmeter assy. (see chap. 11.13)
7		1	384103	Colour change valve, assy.
8		1	384105	Hardener dosing valve assy.
9		1	384111	Filter pressure reducing valve 1/4
10		2	384323	Plug
11		1	384326	Mixing block
12		1	384340	Fluid cabinet
13		1	384911	Mixing pipe assy.
14		4	9943062	Base valve
15		2	9943071	Actuating piece
16		2	9943072	Actuating piece
17		1	9987084	Hose line
18		7	9990157	Pipe elbow union 90 degrees
19		2	9991785	Or-valve
20		2	9992290	Fitting Y plug-in
21		1	9992298	Cross piece
22		2	9992723	Fitting, straight
23		10	9992724	Screw in angle
24		1	9998066	Clamping profile edge protector 1.2 m; 3.93 ft
25		1	9998420	Pipe clamp
26		1	2302977	Pick-up assy.
26a		1	384401	Cable with plug for Pick-up
27		1	9998788	Screw-in screw connection, straight
28		1	104618	Double connector
29		1	3151777	Reducing straight
30			384805	Sticker
31		2	9900329	Cheese head screw with hexagon
32		2	9900335	Cheese head screw with hexagon M5x50
33		2	9900353	Cheese head screw with hexagon M4x12
34		2	9907218	Cheese head screw with hexagon
35		4	9999161	Plug

Pos	K	Qty	Part No.	Description
36		2	9913053	Hexagon setting nut
37		6	9913054	Hexagon setting nut
38		2	9920806	Washer
39		2	9920101	Washer
40		2	9920104	Washer
41		1	384555	Nipple M16 NPS 1/4"
42		4	384556	Nipple M16 NPS 3/8"



## **! WARNING**

### **Incorrect maintenance/repair!**

Risk of injury and damage to the equipment

- 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:
  - Switch off the energy/compressed air supply.
  - 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.

**11.7 FLUID CABINET, ASSY. - EX PROOFED**

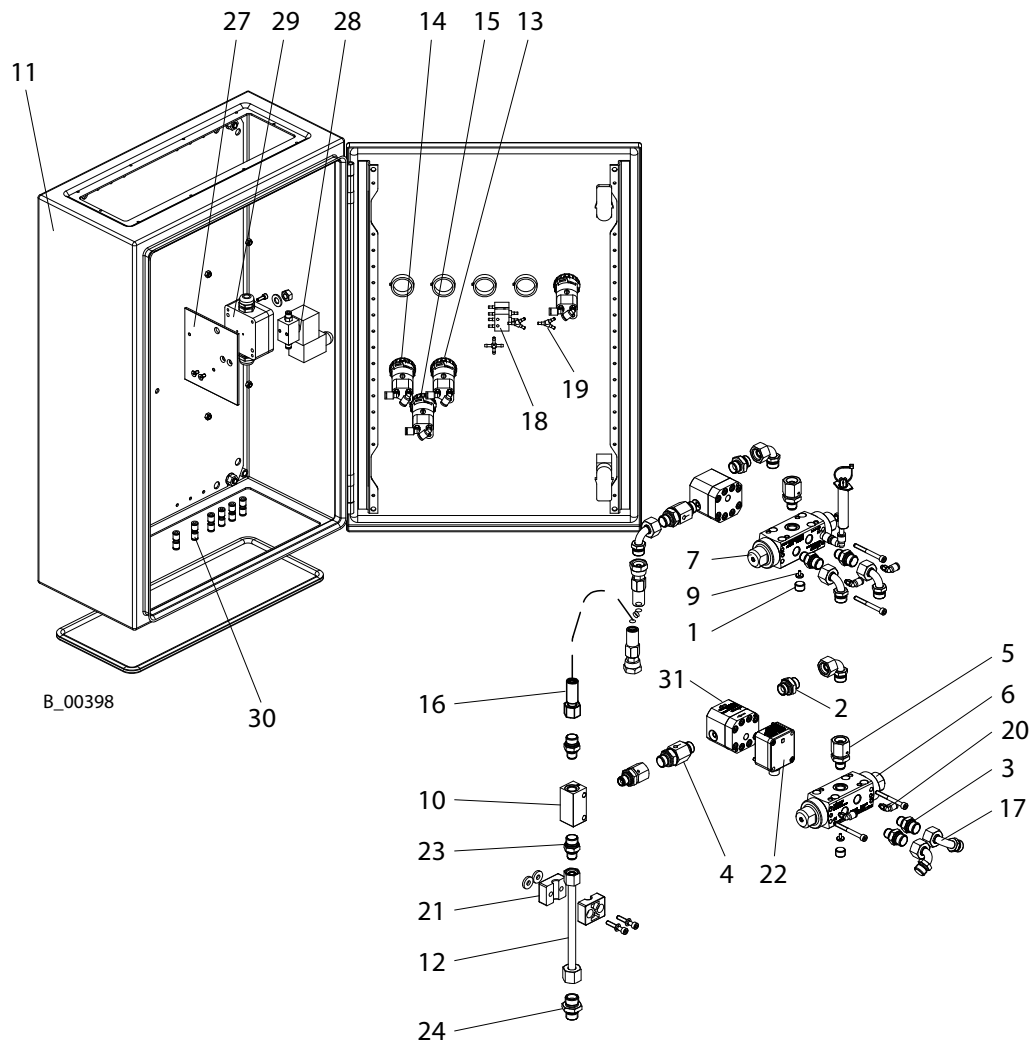
Pos	K	Qty	Part No.	Description
1		2	104376	Lock screw
2		2	123446	Double socket
3		5	350499	Screw-in socket
4		2	384115	Return check valve assy.
5		3	384116	Swivel part, assy.
6		1	384103	Colour change valve, assy.
7		1	384105	Hardener dosing valve, assy.
9		2	384323	Plug
10		1	384326	Mixing block
11		1	384340	Fluid cabinet 5A
12		1	384911	Mixing pipe, assy.
13		4	9943062	Basic valve 3/2
14		2	9943071	Actuating piece
15		2	9943072	Actuating piece
16		1	9987084	High pressure hose
17		7	9990157	Pipe elbow union 90 degrees
18		2	9991785	Or-valve
19		2	9992290	Y connection, plug-in
20		2	9992724	Angle screwing in connection
21		1	9998420	Pipe clamp
22		2	2302977	Pick-up assy.
23		1	9998788	Screw-in screw connection, straight
24		1	104618	Double connection

**! WARNING****Incorrect maintenance/repair!**

Risk of injury and damage to the equipment

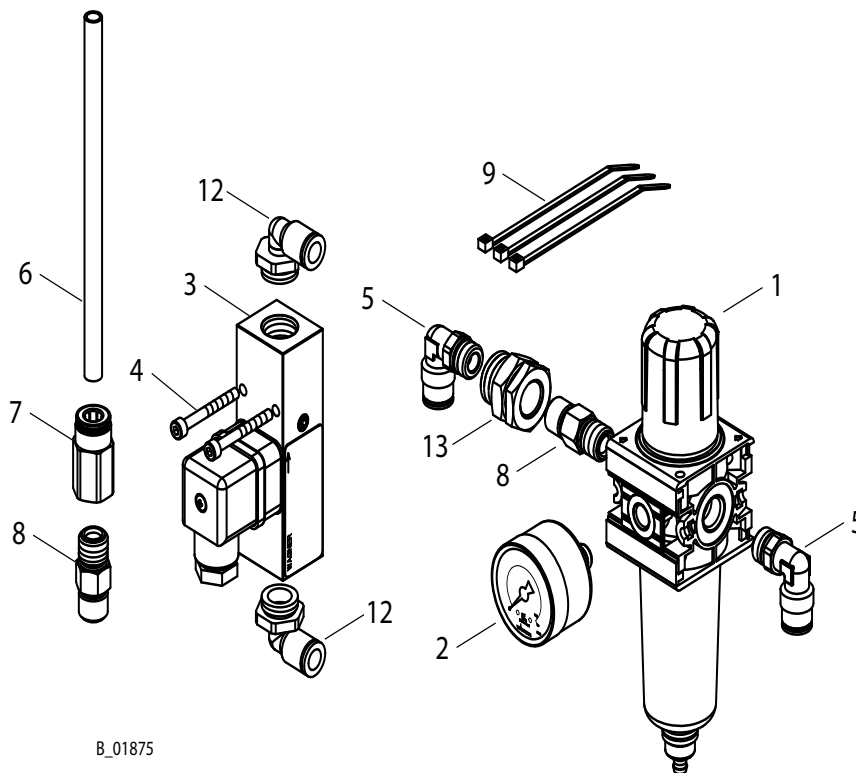
- Repairs and part replacement may only be carried out by specially trained staff or a WAGNER service center.
- Before all work on the unit and in the event of work interruptions:
  - Switch off the energy/compressed air supply.
  - Relieve the pressure from the spray gun and unit.
  - Secure the spray gun against actuation.
- Observe the operating and service instructions when carrying out all work.

Pos	K	Qty	Part No.	Description
		5	9982072	Hose
27		1	384353	Plate to valve Ex proofed
28		1	9956064	3/2 way valve with spoil Atex
29		1	9956065	Clamp socket
30		5	9999231	Connection plug
31		2		Flow meter (see chap. 11.13)



**11.8 ATOMIZING AIR AIRCOAT DIA 6 MM; 0.24 INCH, IN 2K UNIT**

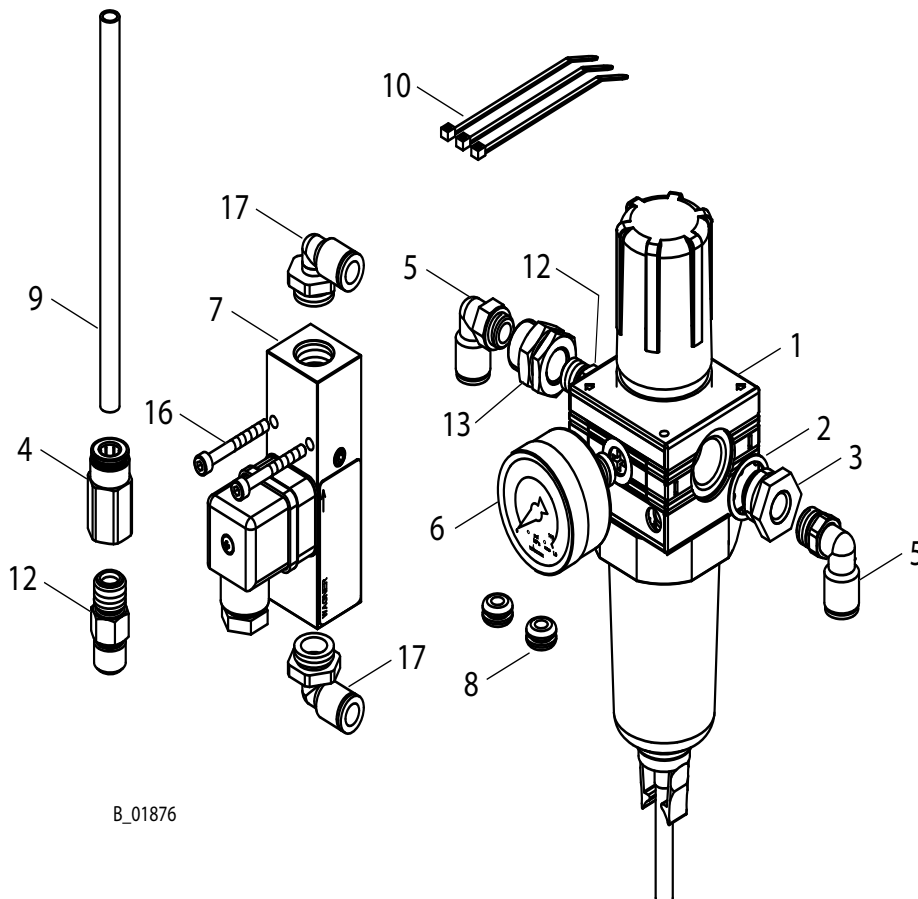
Pos	K	Qty	Part No.	Description
			384209	Atomizing air supply NW6 mm; 0.24 inch in unit with monitoring
1		1	115313	Filter reducing valve
2		1	9998677	Pressure gauge 0-1 MPa; 0-10 bar; 0-145 psi
3		1	377088	Flow monitor assembly
4		2	9906005	Cheese head screw with hexagon M4x35
5		2	9992199	Angle screwing in connection swivelling
6		1	9981938	Hose 2.8 m; 9.19 ft
7		1	9992166	Fitting, straight
8		2	9994627	Double nipple
9		3	9950615	Cable tie
12		2	9998354	Angle screwing in connection
13		1	3102587	Bulkhead connection SCM-1/4 Festo



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**11.9 ATOMIZING AIR, AIR GUN DIA 8 MM; 0.31 INCH, IN 2K UNIT**

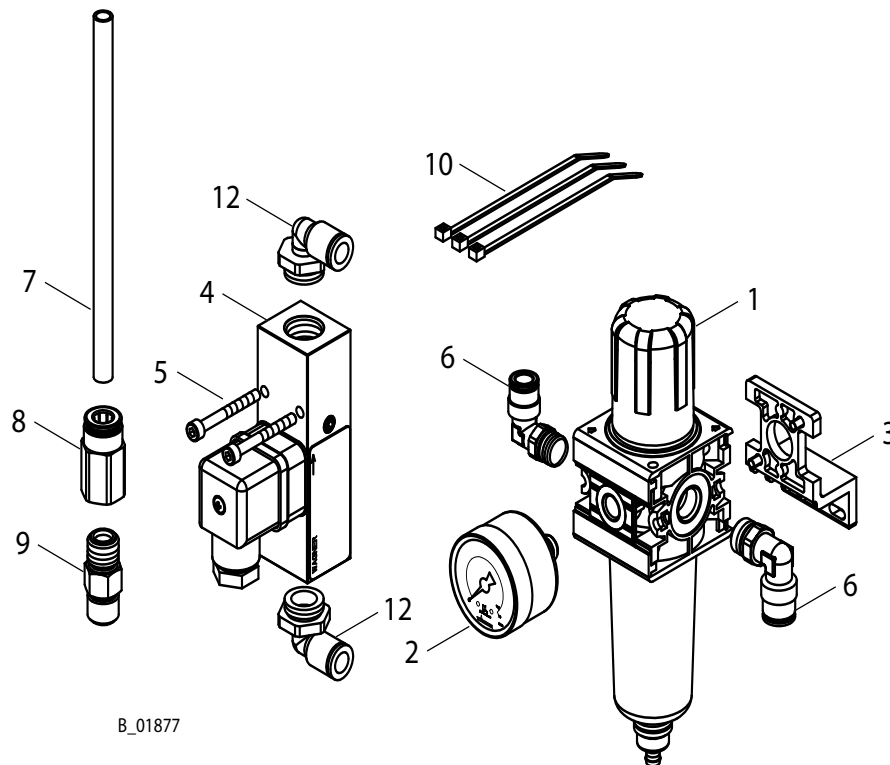
Pos	K	Qty	Part No.	Description
			384218	Atomizing air NW 8 mm; 0.31 inch in 2K unit with monitoring
1		1	115096	Pressure control valve
2		2	9970148	Sealing ring
3		2	9985685	Reducing piece
4		1	3304972	Screw connection, straight
5		2	9999208	Angle screwing in connection
6		1	9998725	Pressure gauge 0-1 MPa; 0-10 bar; 0-145 psi
7		1	377288	Flow monitor assembly
8		2	9956046	Grommet
9		1	9987076	Air hose, black 10 m; 32.80 ft
10		3	9950615	Cable tie short
12		2	9994627	Double connector
13		1	3102587	Bulkhead connection
16		2	9906005	Cheese head screw with hexagon
17		2	9999359	Screw in angle



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**11.10 ATOMIZING AIR, AIRCOAT DIA 6 MM; 0.24 INCH, IN SPRAY BOOTH**

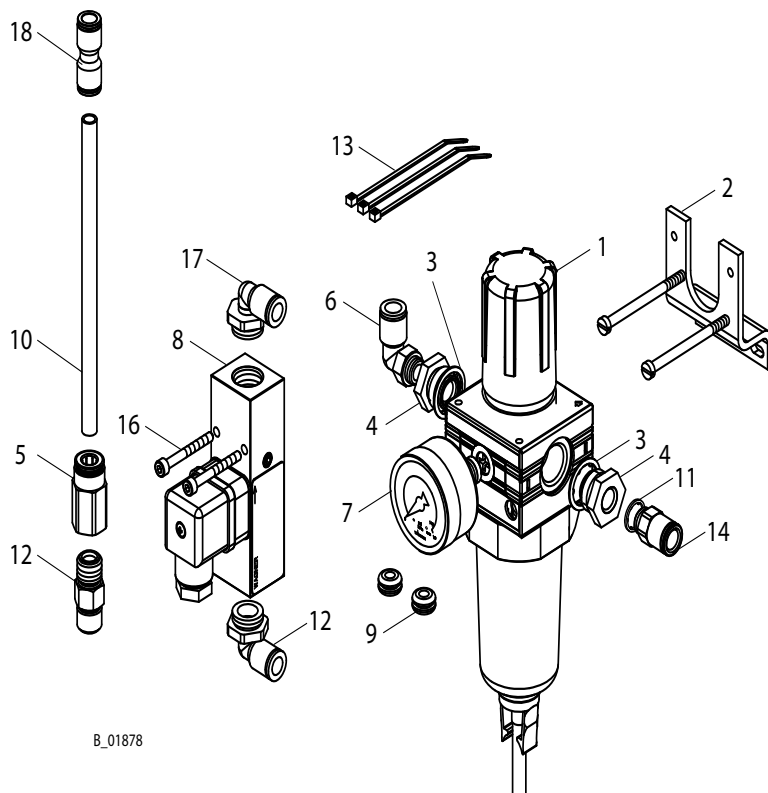
Pos	K	Qty	Part No.	Description
			384228	Atomizing air NW 6 mm; 0.24 inch in spray booth with monitoring
1		1	115313	Filter reducing valve
2		1	9998677	Pressure gauge 0-1 MPa; 0-10 bar; 0-145 psi
3		1	9998781	Mounting set
4		1	377088	Flow monitor assembly
5		2	9906005	Cheese head screw with hexagon
6		2	9992199	Angle screw-in connection, straight
7		1	9981938	Hose 10 m; 32.80 ft
8		1	9992166	Screw connection, straight
9		1	9994627	Double nipple
10		3	9950615	Cable tie
12		2	9998354	Angle screwing in connection



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**11.11 ATOMIZING AIR AIR GUN DIA 8 MM; 0.31 INCH, IN SPRAY BOOTH**

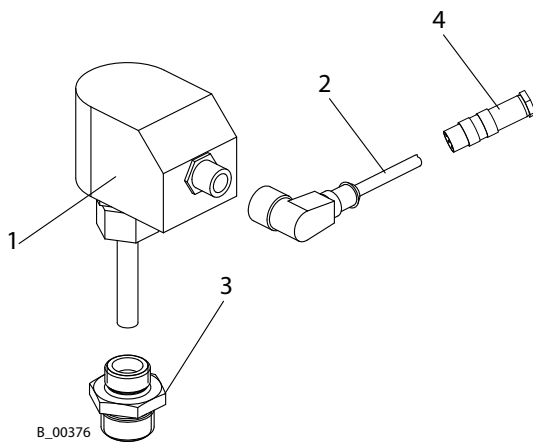
Pos	K	Qty	Part No.	Description
			384229	Atomizing air NW 8 mm; 0.31 inch in spray booth with monitoring
1		1	115096	Pressure regulator valve
2		1	115999	Fastening set
3		2	9970148	Sealing ring
4		2	9985685	Reducing nipple
5		1	3304972	Screw connection, straight
6		1	9999208	Angle screwing in connection
7		1	9998725	Pressure gauge D50 mm; 1.97 inch, 1 MPa; 10 bar; 145 psi
8		1	377088	Flow monitor assembly
9		2	9956046	Grommet
10		1	9987076	Air hose, black 10 m; 32.80 ft
11		1	9970149	Sealing ring
12		1	9994627	Double nipple
13		3	9950615	Cable tie
14		1	9998987	Screw-in screw connection, straight
16		2	9906005	Cheese head screw with hexagon
17		2	9999359	Angle screwing in connection
18		1	9999357	Connection straight



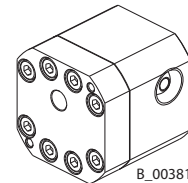


**11.12 GUN CONTROL FOR AIRLESS GUN, NOT EX PROOFED 384244/ 384270**

Pos	K	Qty	Part No.	Description
1		1	9955834	Flow monitor
2		1	9955835	Cable 10 m; 32.80 ft
3		1	9955836	Adapter G1/2"
4		1	9955242	Plug (only for 384270) AMERICA

**11.13 FLOW METERS**

Pos	K	Qty	Part No.	Description
1			2302978	Flow meter with plain bearing 0.02-3 l/min
2			2302976	Flow meter with ball bearing 0.02-3 l/min
3			2302980	Flow meter with plain bearing 0.05-2 l/min
4			2308798	O-ring for item 1 and 2

**11.14 ROBOT COMMUNICATION 384254/ 384271 USA**

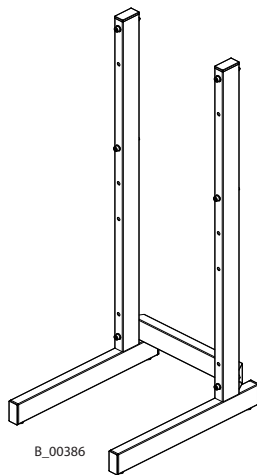
This operation must be selected, if a robot control or any other control unit activates the spray gun.

The following signals are possible (relay for potential separation are in the FlexControl cabinet):

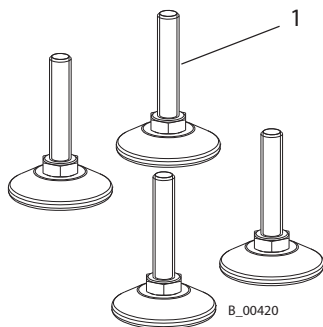
- From the robot to the FlexControl (always 24VDV):
  - Gun open (this signal is necessary to run the FlexControl)
  - Stop (will bring the FlexControl in stop mode)
  - Start (will start the FlexControl)
  - Flush (will start the flush program)
- From the FlexControl to the robot (all potential free contacts):
  - Ready (FlexControl is ready to spray)
  - Error (FlexControl is not ready, one of all error has stopped the FlexControl)
  - Flushing (FlexControl is in the flushing procedure)

**11.15 STAND, ASSY.**

Pos	K	Qty	Part No.	Description
			389094	Stand, assy.
		4	9998888	Foot
		4	9910105	Hexagon nut

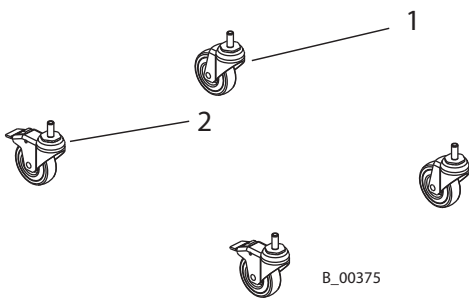
**11.16 FOOT SET**

Pos	K	Qty	Part No.	Description
1		4	9998888	Foot set



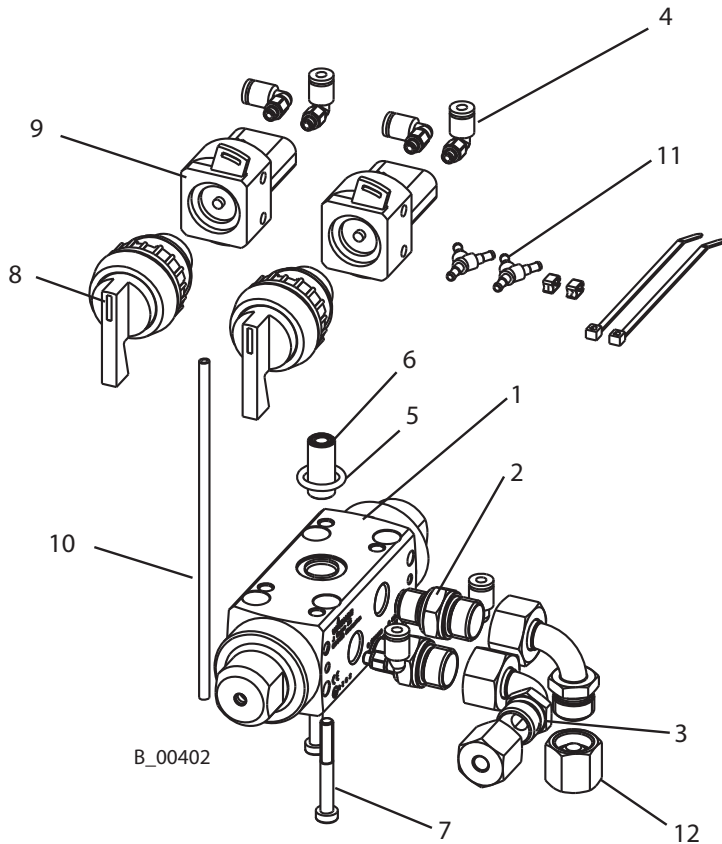
**11.17 WHEEL SET, ASSY. - 377120**

Pos	K	Qty	Part No.	Description
1		2	9994946	Castor single
2		2	9994947	Castor with double stop



**11.18 COLOUR EXTENSION 2A**

Pos	K	Qty	Part No.	Description
1		1	384103	Colour change valve assy.
2		2	350499	Screwed connector
3		2	9990157	Pipe elbow union 90 degrees
4		6	9992724	Screw in angle
5		1	9974164	O-ring
6		1	384329	Filling part
7		4	9900336	Cheese head screw
8		2	9943072	Control knob
9		2	9943062	Base valve 3/2
10		1	9982072	Hose 1 m; 3.28 ft
11		2	9992290	Fitting Y plug-in
12		2	34077	Lock nut assy.



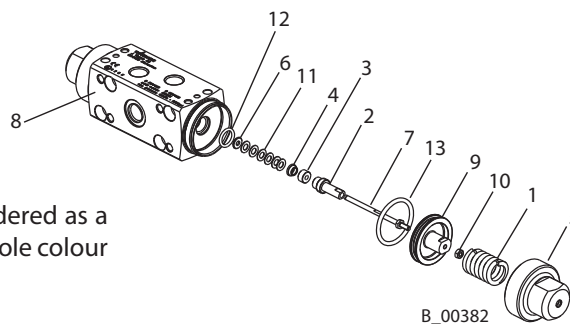
**11.19 COLOUR CHANGE VALVE ASSY. - 384103**

Pos	K	Qty	Part No.	Description
1		2	350482	Compression spring
2	★	2	350485	Sealing screw
3	★	2	350486	Sealing collar
4	★	2	350487	Pressure piece
5		2	350490	Clamping nut AL
6	★	2	350491	Pressure ring
7	★	2	384120	Valve rod assy., mounted
8		1	**	Valve housing, premounted
9		2	384345	Piston
10		2	9913014	Hexagon nut
11	★	12	9923513	Spring plate
12	★	2	9974065	O-ring
13	★	2	9974187	O-ring
			384912	Service-set

★ Included in service set

\*\*

The valve box can't be ordered as a spare part, but only the whole colour change valve.

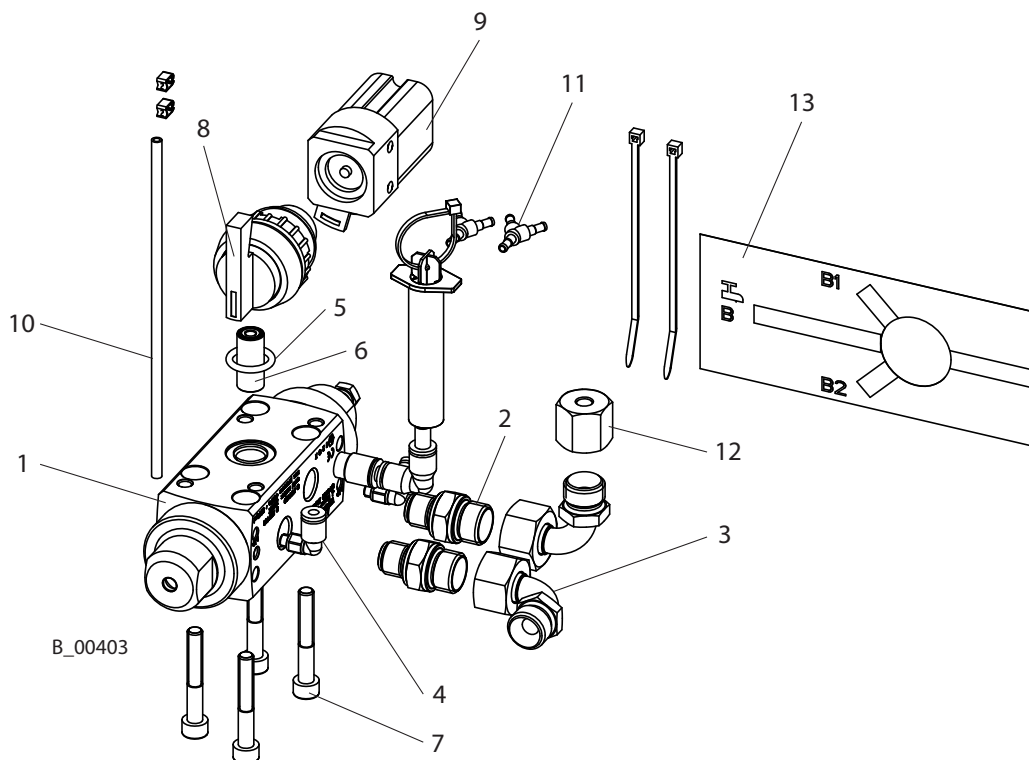
**! WARNING****Incorrect maintenance/repair!**

Risk of injury and damage to the equipment

- 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:
  - Switch off the energy/compressed air supply.
  - 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.

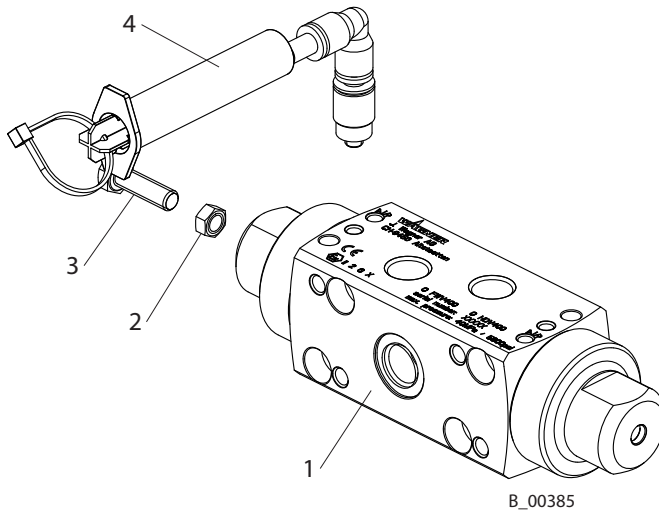
**11.20 HARDENER EXTENSION 1B**

Pos	K	Qty	Part No.	Description
1		1	384105	Hardener dosing valve Assy.
2		2	350499	Screwed connector
3		2	9990157	Pipe elbow union 90 degrees
4		2	9992724	Screw in angle
5		1	9974164	O-ring
6		1	384329	Filling part
7		4	9900336	Cheese head screw
8		1	9943072	Control knob
9		1	9943130	Base valve 5/2
10		1	9982072	Hose 1 m; 3.28 ft
11		2	9992290	Fitting Y plug-in
12		1	34077	Lock nut Assy.
13		1	384810	Sticker 2B



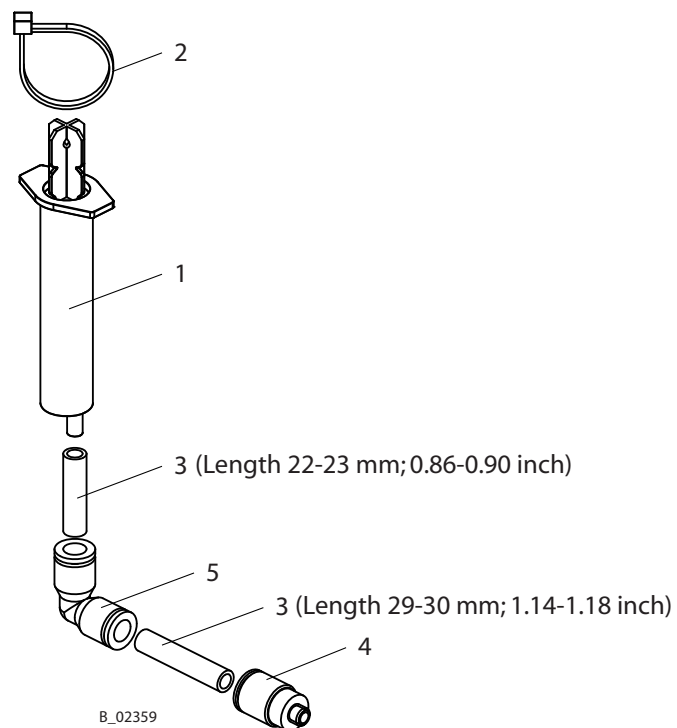
**11.21 HARDENER VALVE ASSY. - 384105**

Pos	K	Qty	Part No.	Description
1		1	384103	Colour change valve, assy.
2		1	9913058	Hexagon nut
3		1	9907250	Hexagon head screw
4		1	389064	Separating fluid supply



**Separating fluid supply**

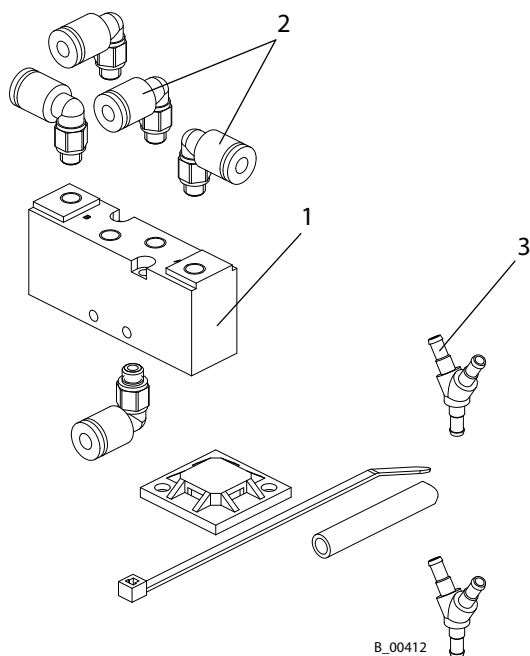
Pos	K	Qty	Part No.	Description
		1	389064	Separating fluid supply
1		1	389444	One-way syringe
2		1	9950615	Cable tie
3		1	9982079	Hose D6
4		1	9999057	Plug-in connection, straight
5		1	9999125	Elbow hose connection





**11.22 2 DIFFERENT SOLVENT FOR HARDENER**

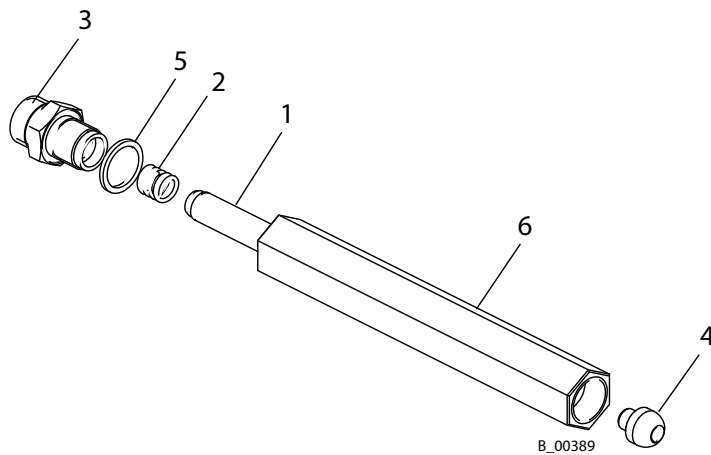
Pos	K	Qty	Part No.	Description
1		1	9999265	Pneumatic valve 5/2
2		5	9992724	Screw in angle
3		2	9992290	Connection Y pluggable

**Note**

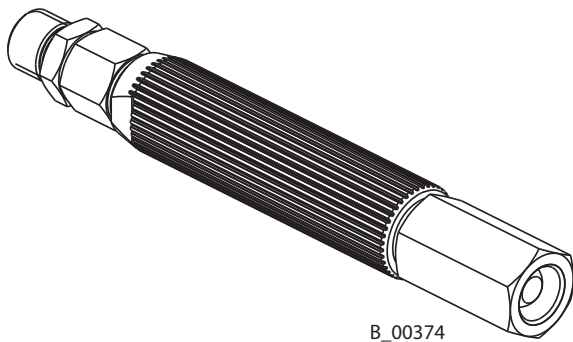
- If the option hardener extension is selected and there are two different solvent to flush hardener side, this option must be selected.
- The solvent will be at the same time changed as the hardener is switched to the other.

**11.23 MATERIAL FILTER ASSY. - COMPACT - 384110**

Pos	K	Qty	Part No.	Description
1		1	34383	Filter insert red 200 mesh
2		1	43590	Compression spring
3		1	71319	Fitting piece
4		1	179456	Nipple
5		1	9970123	Sealing ring
6		1	384313	Housing

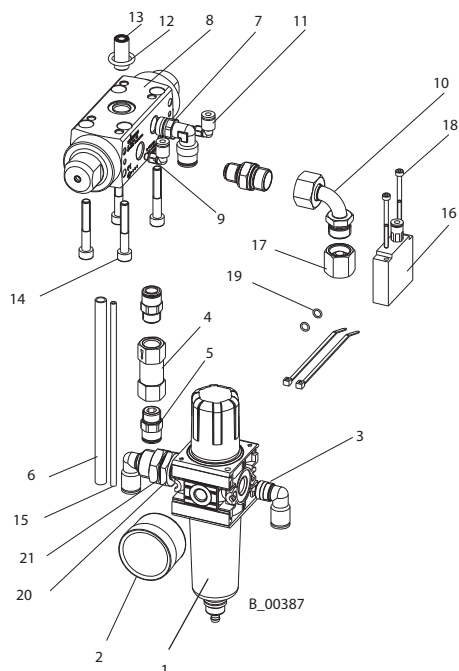
**11.24 MATERIAL FILTER ASSY. - WITH SWIVEL JOINT - 139045**

Pos	K	Qty	Part No.	Description
		1	34383	Filter insert red (200 mesh)
		1	43235	Filter insert yellow (100 mesh)
		1	34377	Filter insert white (50 mesh)
		1	89323	Filter insert green (30 mesh)



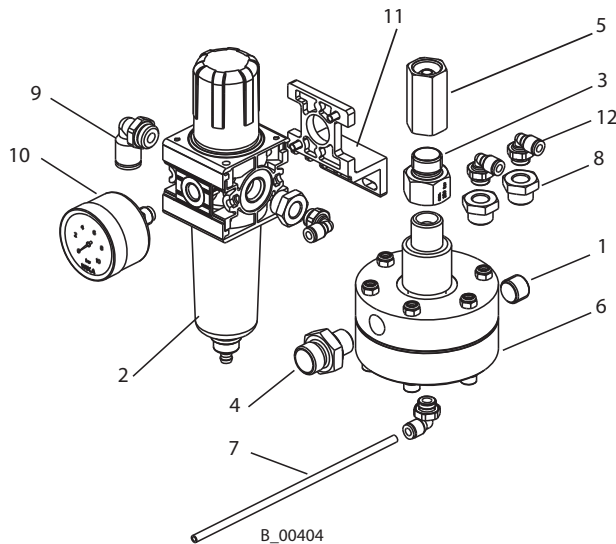
**11.25 AIR/ SOLVENT FLUSH SET FOR A, - MAXI. 1 MPA; 10 BAR; 145 PSI, IN 2K UNIT**

Pos	K	Qty	Part No.	Description
1		1	115313	Filter reducing valve
2		1	9998677	Pressure gauge 0-1 MPa; 0-10 bar; 0-145 psi
3		2	9992103	Fitting L, plug-in
4		1	9998694	Return check valve
5		2	9992106	Fitting, straight plug-in
6		1	9981938	Hose 0.3 m; 0.98 ft
7		1	9992199	Fitting L, plug-in
8		1	384103	Colour change valve assy.
9		1	350499	Screwed connector
10		1	9990157	Pipe elbow union 90 degrees
11		2	9992724	Screw in angle
12		1	9974164	O-ring
13		1	384329	Filling part
14		4	9900336	Cheese head screw
15		1	9982072	Hose 1 m; 3.28 ft
16		1	9956021	3/2 way valve Matrix
17		1	34077	Lock nut assy.
18		2	9907229	Cheese head screw
19		2	9971183	O-ring
20		1	9994627	Double connector
21		1	3102587	Bulkhead connection



**11.26 MAT. PRESSURE REGULATOR SET, PNEUM. 0.5 MPA; 0-5 BAR; 72.5 PSI, IN SPRAY BOOTH**

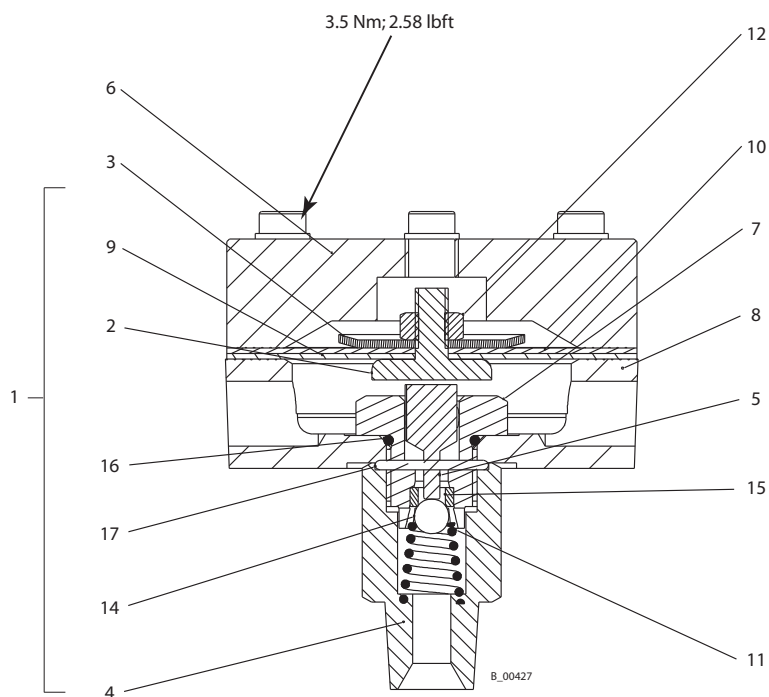
Pos	K	Qty	Part No.	Description
1		1	104376	Lock screw
2		1	115313	Filter reducing valve
3		1	115378	Connector R3/8
4		1	118482	Reducing nipple
5		1	350271	Double nipple
6		1	T0170.00BI	Pressure regulator 0-0.5 MPa; 0-5 bar; 0-72.5 psi
7		1	9982072	Hose 1 m; 3.28 ft
8		3	9985559	Reducing nipple
9		1	9998253	Screw in angle 8-1/4
10		1	9998677	Pressure gauge 0-1 MPa; 0-10 bar; 0-145 psi
11		1	9998781	Mounting set
12		4	9999066	Angle screwing in connection



**11.27 PRESSURE REGULATOR RV/ 1 STAINLESS STEEL, WITH PNEUMATIC REMOTE CONTROL**

Pos K	Qty	Part No.	Description
1		T0170.00BI	Pressure regulator RV/ 1 stainless steel, with pneumatic remote control
2		A588.03	Diaphragm disk Product
3		A590.03	Diaphragm disk Air
4			Body Guide Ball
5	◆ ★	B391.03	Shoving rod
6		B563.01	Upper reducer valve body
7	◆ ★	T6007.00A	Complete ball seat body
8		B620.03B	Lower reducer valve body
9	◆ ★	G725.05	PTFE paint pressure reducer diaphragm
10		G726.06	Paint pressure reducer diaphragm
11	◆ ★	H285.03	Spring
12		K316.62	Nut
14	◆ ★	K811.03	Ball
15			Ball seat
16	◆ ★	L118.06A	O-ring
17	◆ ★	L148.06	O-ring
		<b>3826024</b>	Spare parts kit comprising at pos. 5,7,9,11,14,16 and 17

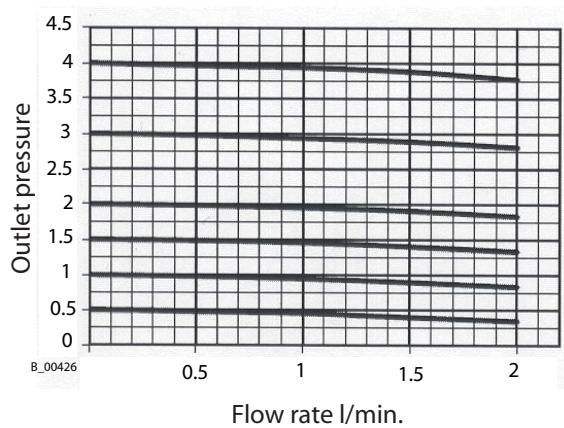
◆ = Wearing part   ★ = Included in service set 3826024



## 11.27.1 TECHNICAL DATA

### Material used:

Regulation part	Stainless steel
<b>Area that comes in contact with the product</b>	
Product diaphragm	PTFE
Lock ball	Stainless steel
Lock seat	Tungsten carbide
<b>Capacity</b>	
With fluids having a viscosity of 45 mPa.s	Corresponding to about 20 s. Ford 4
Inlet pressure	0.5 MPa; 5 bar; 72.5 psi

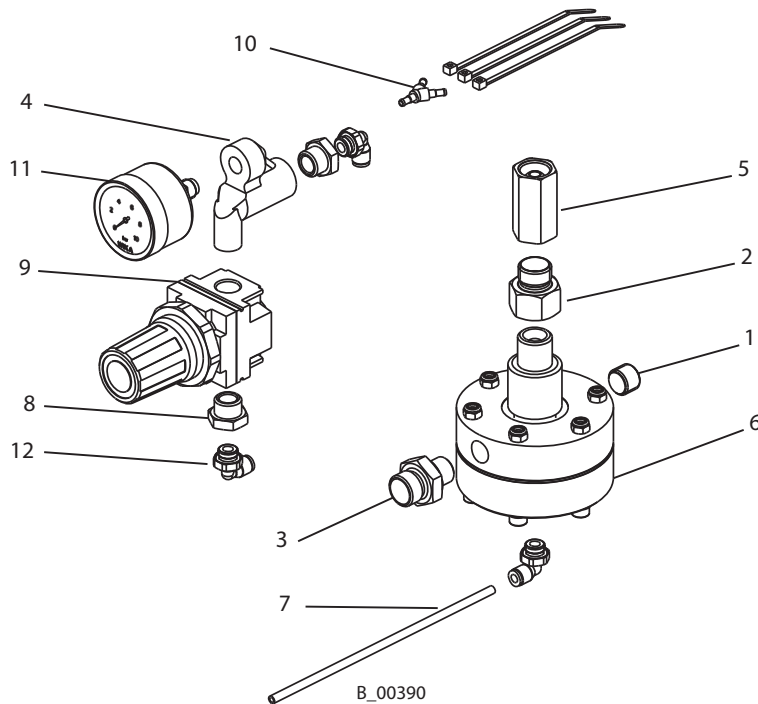


Maximal air connection	2.5 MPa; 25 bar; 362.59 psi
Maximal inlet pressure control air	0.5 MPa; 5 bar; 72.5 psi
Maximal outlet pressure	0.5 MPa; 5 bar; 72.5 psi
Regulation field	0-0.5 MPa; 0-5 bar; 0-72.5 psi
Product inlet connection (gas)	3/8" Spring
Product outlet connection (gas)	1/4" Slot
Pressure gauge connection (gas)	1/4" Slot
Air inlet connection (gas)	1/8" Slot
<b>Dimensions (*)</b>	
Diameter	75 mm; 2.95 inch
Height	83 mm; 3.26 inch
<b>Note</b>	
Pneumatic remote control	

(\*) Dimensions are not binding

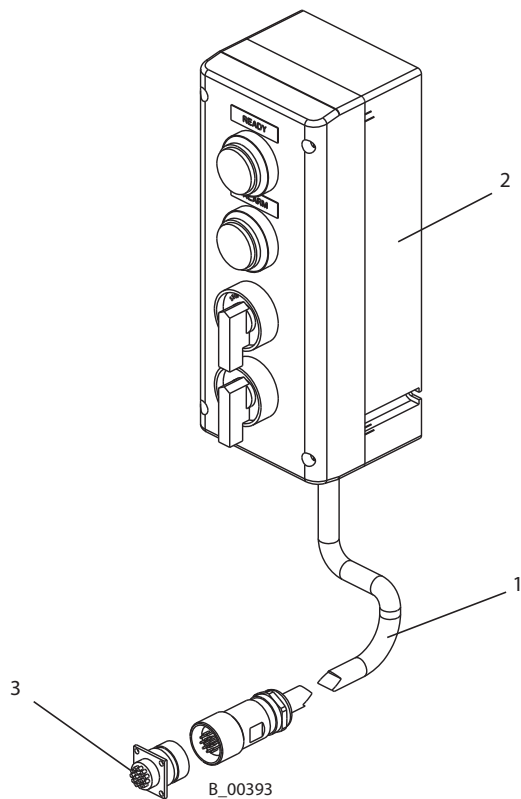
**11.28 MATERIAL PRESSURE REGULATOR SET 0-0.6 MPA; 0-87.02 PSI IN 2K UNIT**

Pos	K	Qty	Part No.	Description
1		1	104376	Lock screw
2		1	115378	Connector R3/8
3		1	118482	Reducing nipple
4		1	123459	Pressure gauge socket
5		1	350271	Double nipple
6		1	T0170.00BI	Material pressure regulator
7		1	9982072	Hose 1 m; 3.28 ft
8		2	9985559	Reducing nipple
9		1	9991920	Pressure regulator 0-1 MPa; 10 bar; 145 psi
10		1	9992290	Fitting Y, plug-in
11		1	9998677	Pressure gauge 0-1 MPa; 10 bar; 145 psi
12		3	9999066	Angle screwing in connection



**11.29 REMOTE CONTROL EX PROOFED, WITH 10 M; 32.8 FT CABLE**

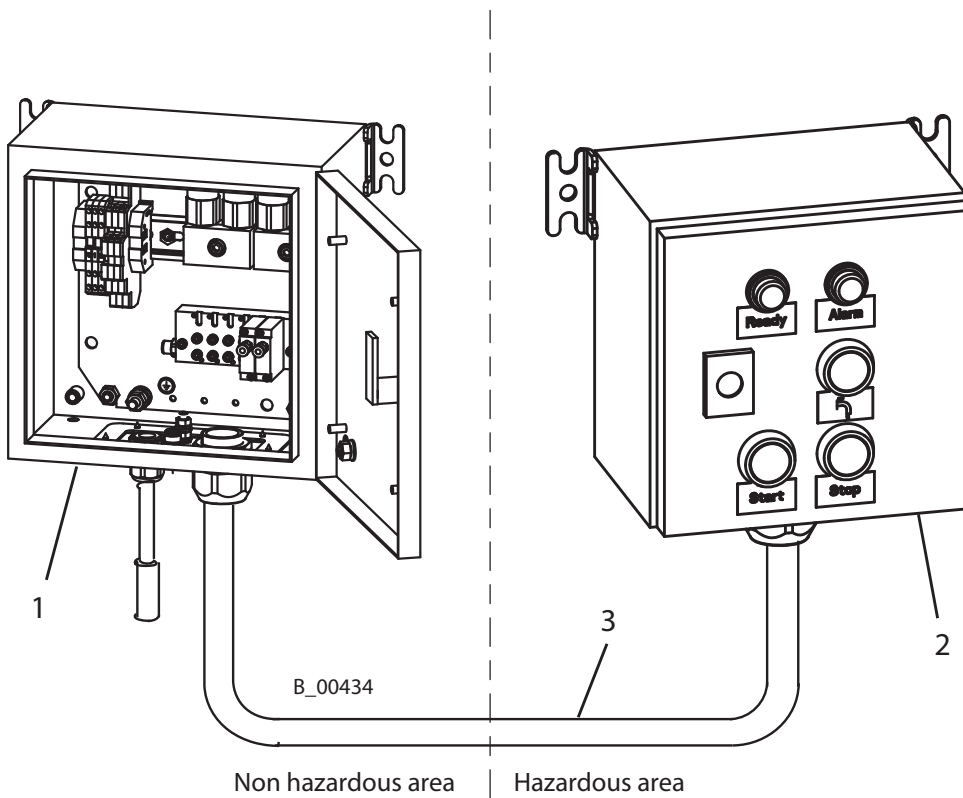
Pos	K	Qty	Part No.	Description
1		1	384375	Cable kit Remote control
2		1	377077	Remote control
3		1	9955978	Chassis-socket 16-pol





**11.30 REMOTE CONTROL PNEUMATIC, WITHOUT RECIPE, ASSY. - 377082**

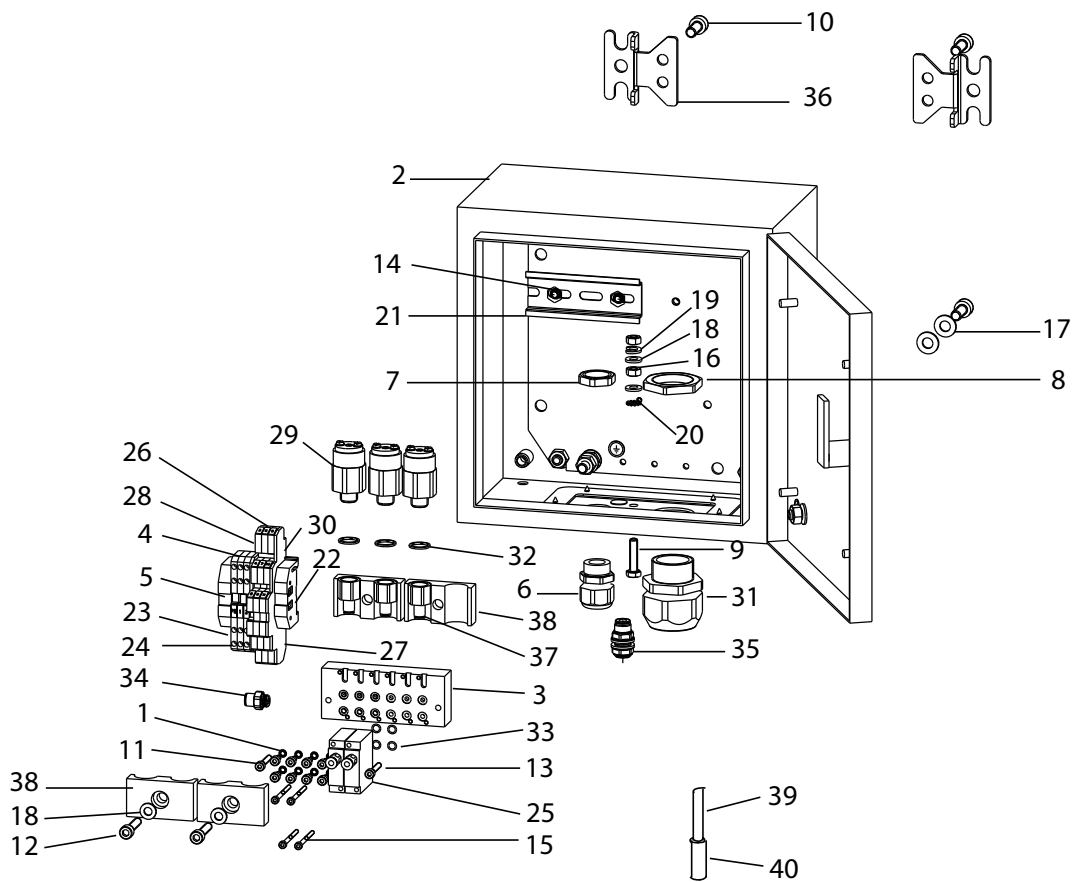
Pos	K	Qty	Part No.	Description
1		1	Chap. 11.31	Manifold cabinet without recipe assy.
2		1	Chap. 11.32	Remote control pneumatic without recipe
3		1	377963	Connection set without recipe



**11.31 MANIFOLD CABINET WITHOUT RECIPE, ASSY.**

Pos	K	Qty	Part No.	Description
1		8	364331	Seal
2		1	377478	Cabinet manifold assy.
3		1	384314	Housing
4		1	3108160	End plate 2.5 mm <sup>2</sup>
5		1	3110841	Cross link 2.5 mm <sup>2</sup>
6		1	3156825	Cable coupling ST-M20x1.5
7		1	3156833	Jam nut GMP-GL-M 20x1.5
8		1	3156835	Jam nut GMP-GL-M 32x1.5
9		1	9900224	Hexagon screw M6x25
10		4	9900318	Cheese head screw M8x20
11		8	9900334	Cheese head screw M4x8
12		2	9900338	Cheese head screw M6x30
13		2	9900365	Cheese head screw M4x25
14		2	9907220	Hexagon head drill screw St3.5x13
15		4	9907229	Cheese head screw M3x40
16		2	9910102	Hexagon nut M6
17		4	9920102	Washer A8.4
18		4	9920103	Washer A6.4
19		1	9921502	Spring ring A6
20		1	9922 017	Serrated lock washer A6.4
21		1	9950344	Mounting rail 90 mm; 3.54 inch
22		2	9955327	Holder End piece
23		1	9955959	4-Lead earthed lead term
24		2	9955974	4-Wire-basic-terminal
25		2	9956021	3/2 way valve MATRIX
26		2	9956029	Triple deck diode terminal block
27		1	9956034	End plate
28		1	9956038	Triple deck terminal block
29		3	9956080	Pressure switch
30		1	9956083	2 way comb jumper
31		1	9956084	Cable coupling M32x1.5
32		3	9970149	Sealing ring
33		4	9971183	O-ring 5x1
34		1	9998090	Screw-in screw connection, straight
35		1	9998614	Schott-plug in straight D6 mm; 0.24 inch
36		2	9998868	Wall holder

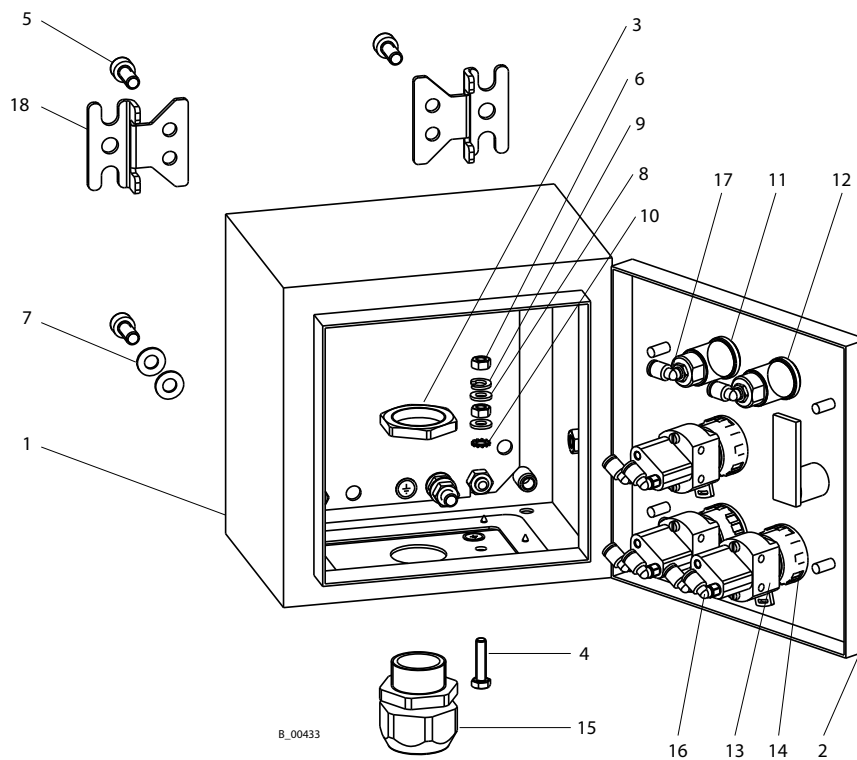
Pos	K	Qty	Part No.	Description
37		3	9999266	Screw connection
38		2	9999267	Pipe clamp
39		1	377503	Cable 11 m; 36.08 ft
40		1	9955979	Cable switch



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## 11.32 REMOTE CONTROL PNEUMATIC WITHOUT RECIPE, ASSY.

Pos	K	Qty	Part No.	Description
1		1	377479	Cabinet pneumatic without recipe, assy.
2		1	377884	Sticker for remote control
3		1	3156835	Jam nut M32x1.5
4		1	9900224	Hexagon screw M6x25
5		4	9900318	Cheese head screw M8x20
6		2	9910102	Hexagon nut M6
7		4	9920102	Washer A8.4
8		2	9920103	Washer A6.4
9		1	9921502	Spring ring A6
10		1	9922017	Serrated lock washer A6.4
11		1	9943031	Optical display red
12		1	9943032	Optical display green
13		3	9943062	Basic valve 3/2
14		3	9943071	Control knob
15		1	9956084	Cable coupling M32x1.5
16		6	9992724	Screw in angle D4-M5
17		2	9992725	Screw in angle D4-G1/8"
18		2	9998868	Wall holder

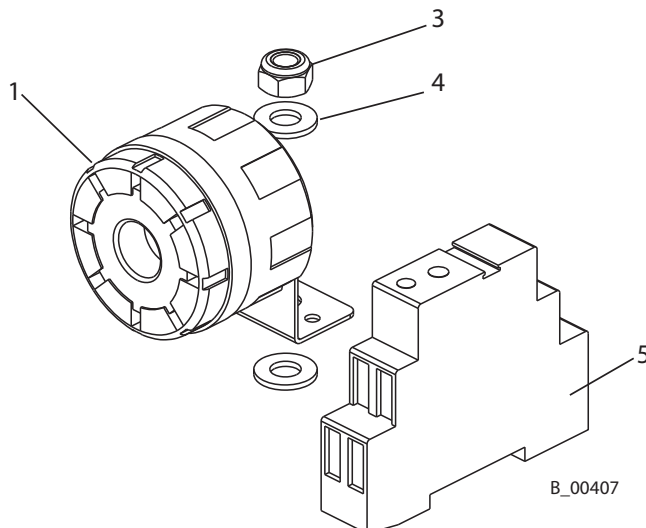


**11.33 CONNECTION SET WITHOUT RECIPE, 10 M; 32.8 FT - 377963**

Pos	K	Qty	Part No.	Description
1		2	9956042	Cable lug with isolation
2		2	9955709	Lettering No. 1
3		2	9955711	Lettering No. 3
4		2	9955712	Lettering No. 4
5		2	9955713	Lettering No. 5
6		2	9955714	Lettering No. 6
7		2	9955715	Lettering No. 7
8		3	9950615	Cable tie
9		6	9982072	Hose DA 4 / DI 2.5, 11 m; 36.09 ft ;
10		1	9953412	Strand spool 1.5 mm <sup>2</sup> , 11 m; 36.09 ft
11		1	9982016	Protective hose d40x1.4, 10.5 m; 34.45 ft
12		1	9998461	Textile tape 50 mm; 1.97 inch, 0.01 m; 0.39 inch

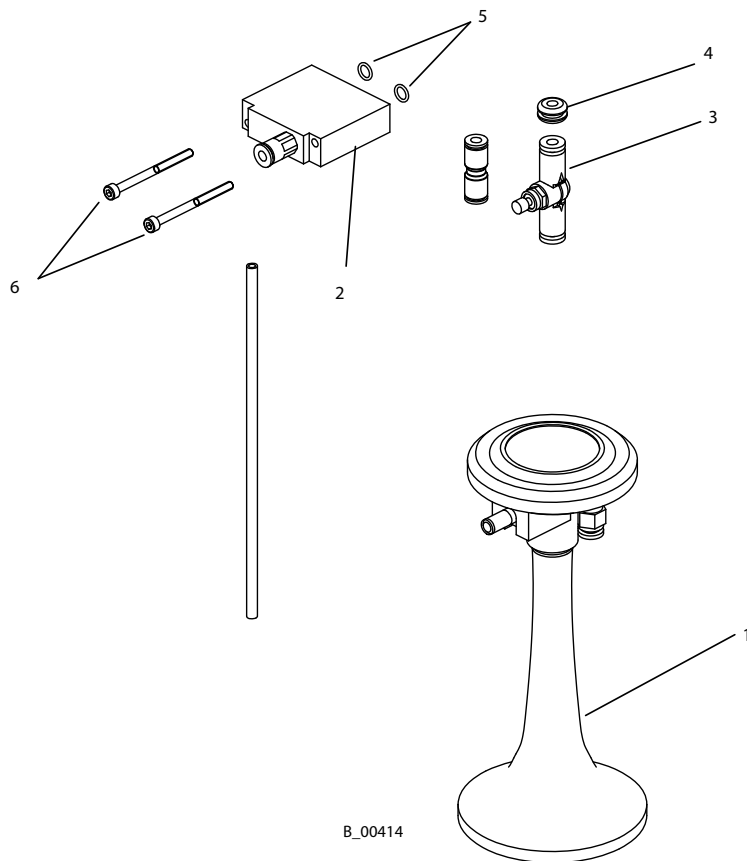
**11.34 ALARM HORN - 384234**

Pos	K	Qty	Part No.	Description
1		1	9956051	Alarm horn
2		1	384376	Cable kit
3		1	9910208	Hexagon nut with clamp
4		2	9920102	Washer
5		1	9956068	Time relay



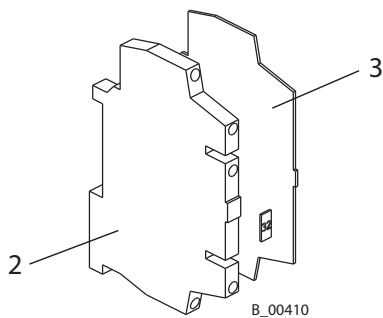
**11.35 ALARM HORN IN SPRAY BOOTH - 384253**

Pos	K	Qty	Part No.	Description
1		1	R037.00	Pneumatic horn
2		1	9943023	One way restrictor
3		1	9956021	3/2 way valve MATRIX
4		1	9956026	Grommet
5		2	9971183	O-ring
6		2	9907229	Cheese head screw

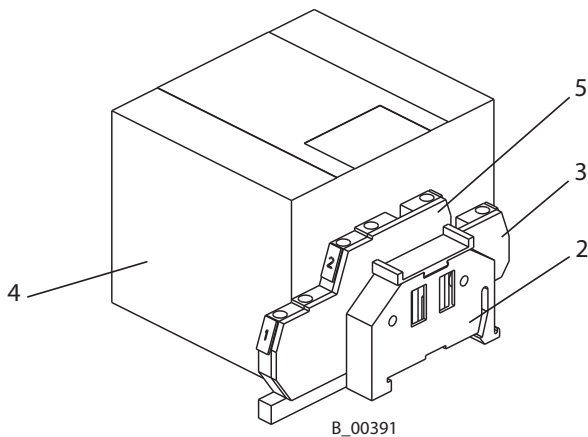


**11.36 RELEASE OF AUTOMATIC CABIN - 384238**

Pos	K	Qty	Part No.	Description
2		1	9955956	Contactor clamp
3		1	9955957	End plate

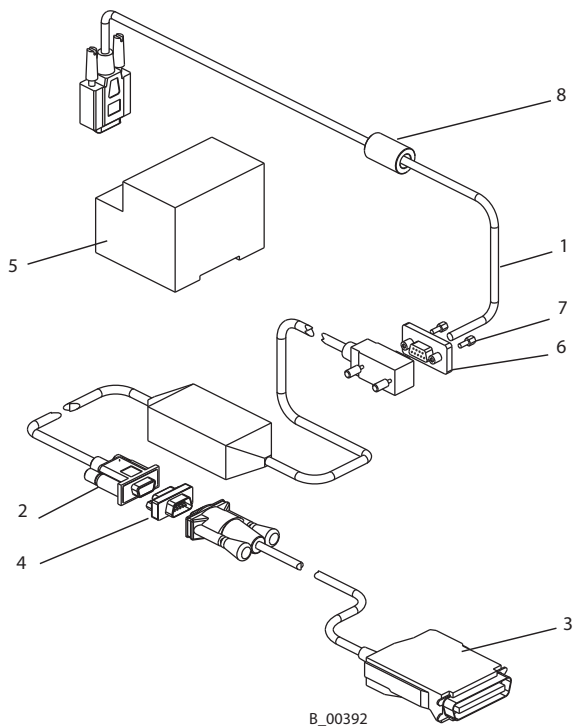
**11.37 TELESERVICE WITH ANALOG MODEM - 384215**

Pos	K	Qty	Part No.	Description
		1	384373	Cable kit for teleservice
2		1	9955327	Holder End piece
3		1	9955960	3 conductor double level clamp
4		1	9955947	Modem
5		1	9955961	End plate



**11.38 PRINTER CONNECTION WITHOUT PRINTER**

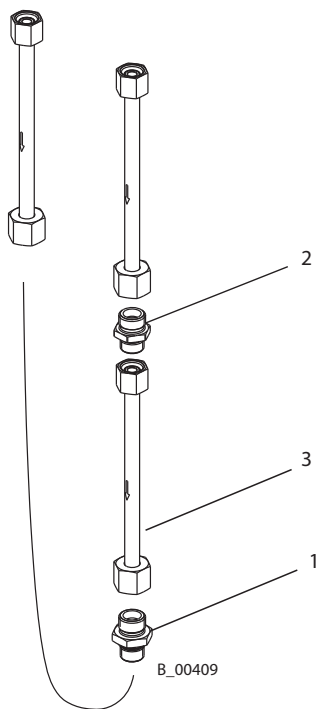
Pos	K	Qty	Part No.	Description
1		1	9955941	D-Sub cable
2		1	3125137	PC/ PPI cable
3		1	9956015	Interface-converter cable
4		1	9956016	Mini Gender-Changer
5		1	9955995	Profibus Module
6		1	9955977	D-Sub socket
7		2	9907223	Fastening screw
8		1	9952405	Ferrite core ring





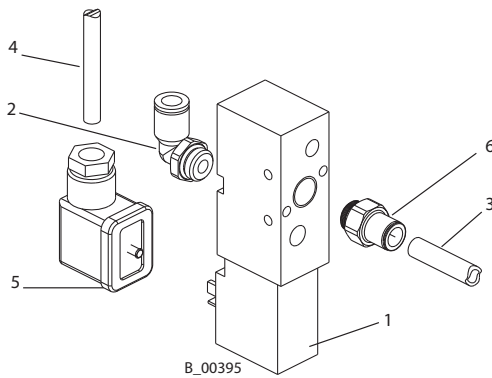
**11.39 EXTENSION STATIC MIXER**

Pos	K	Qty	Part No.	Description
1		1	104618	Double connector
2		1	384352	Connection connector
3		1	384911	Mixing pipe, assy.

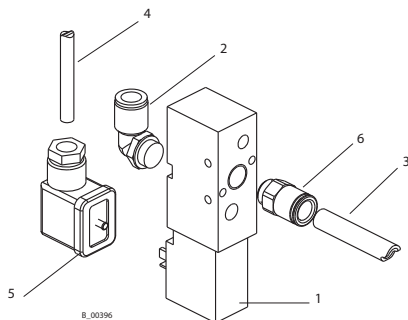


**11.40 ATOMIZING AIR AUTOMATIC DIA 6 MM; 0.24 INCH - 384219**

Pos	K	Qty	Part No.	Description
1		1	9950967	Solenoid valve 5/2
2		1	9998253	Screw in angle 8-1/4
3		1	9981938	Hose 0.05 m; 1.97 inch
4		1	377507	Cable
5		1	9955818	Mains socket
6		1	9998254	Screw-in screw connection, straight

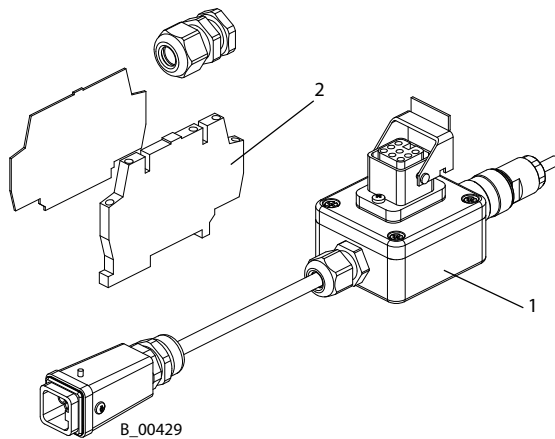
**11.41 ATOMIZING AIR AUTOMATIC DIA 8 MM; 0.31 INCH - 384220**

Pos	K	Qty	Part No.	Description
1		1	9950967	Solenoid valve 5/2
2		1	9999208	Screw in angle 8-1/4
3		1	9981985	Hose 0.05 m; 1.97 inch
4		1	377507	Cable
5		1	9955818	Mains socket
6		1	9998987	Screw-in screw connection, straight

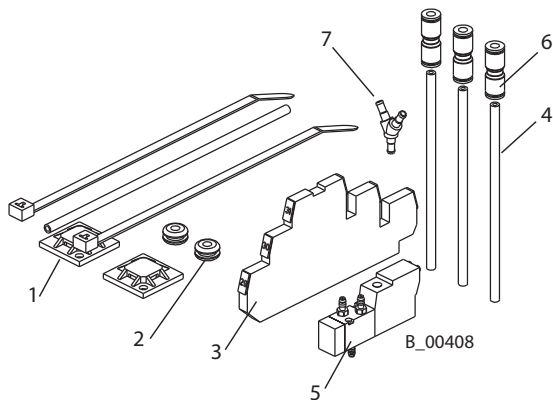


**11.42 ELECTROSTATIC AUTOMATIC - 384243**

Pos	K	Qty	Part No.	Description
1		1	350025	Adapter box assy.
2		2	9955956	Relay

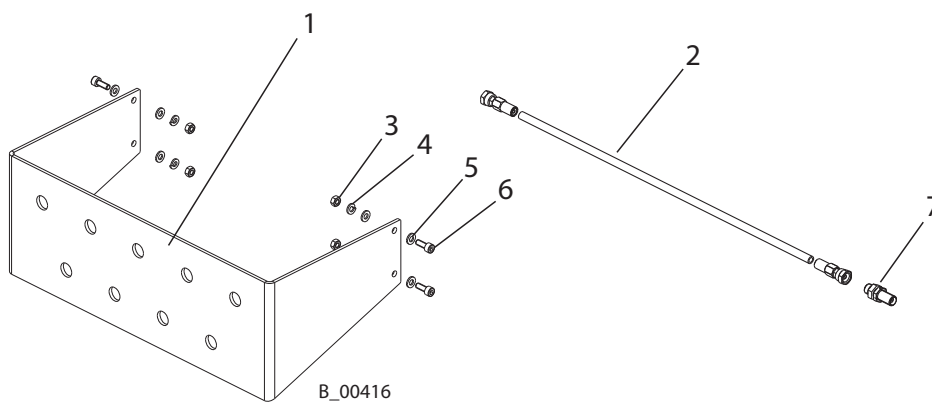
**11.43 SET COMMUNICATION FOR GUN FLUSH BOX - 384235**

Pos	K	Qty	Part No.	Description
1		2	9950385	Fastening elements
2		2	9956026	Grommet
3		1	9956029	Triple deck diode terminal block
4		1	9982018	Hose 0.04 m; 1.57 inch
5		1	9999227	Solenoid valve
6		3	9999231	Connection
7		1	9992290	Y-Connection



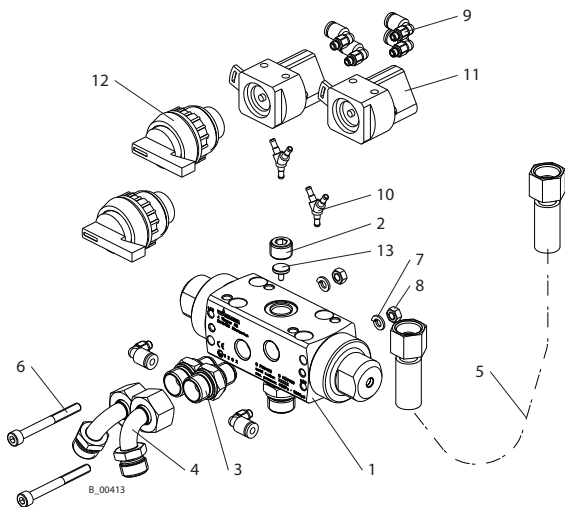
**11.44 BULKHEAD HOLDER (BY MORE THAN 3 COLOURS/ FILTERS)**

Pos	K	Qty	Part No.	Description
1		1	384349	Bulkhead holder
2		x	9987084	Material hose Teflon L=500
2		x	9987115	Hardener hose Teflon L=650
3		4	9910102	Hexagon nut
4		4	9925048	Spring ring
5		8	9920103	Washer
6		4	9900325	Cheese head screw with hexagon
7		1	384350	Bulkhead fastener



**11.45 DISTRIBUTION SET FOR 2 GUNS (2K / 3K OPERATION) - 384249**

Pos	K	Qty	Part No.	Description
1		1	384103	Colour change valve assy.
2		1	104376	Lock screw
3		3	350499	Screwed connector
4		2	9990157	Pipe elbow union 90 degrees
5		1	9987084	High pressure hose
6		2	9900335	Cheese head screw
7		2	9921517	Spring ring
8		2	9910106	Hexagon nut
9		6	9992724	Screw in angle
10		2	9992290	Fitting Y, plug-in
11		2	9943062	Base valve 3/2
12		2	9943072	Control knob
13		1	384323	Plug

**! WARNING****Incorrect maintenance/repair!**

Risk of injury and damage to the equipment

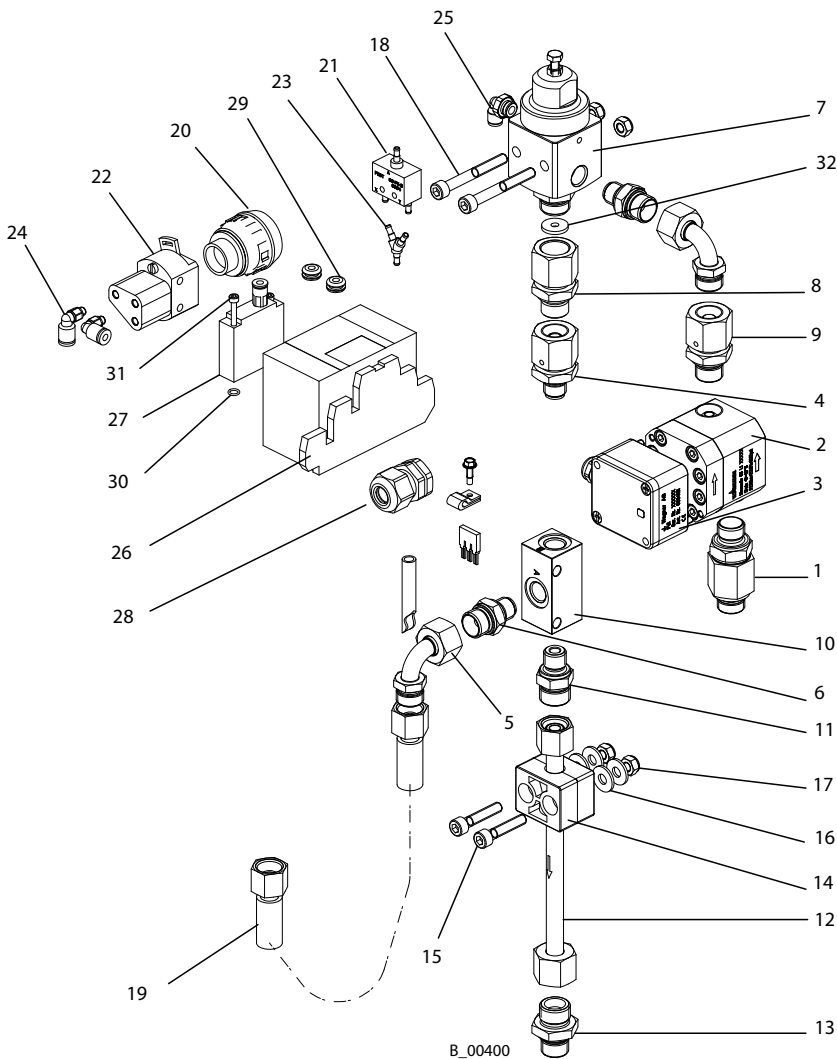
- Repairs and part replacement may only be carried out by specially trained staff or a WAGNER service center.
- Before all work on the unit and in the event of work interruptions:
  - Switch off the energy/compressed air supply.
  - Relieve the pressure from the spray gun and unit.
  - Secure the spray gun against actuation.
- Observe the operating and service instructions when carrying out all work.

**11.46 EXTENSION SET 3K OPERATION - NOT EX PROOFED - 384223**

Pos	K	Qty	Part No.	Description
1		1	384115	Return check valve assy.
2		1		Flow meter, assy. (see chap. 11.13)
3		1	2302977	Pick-up assy.
3a		1	384401	Cable with plug for Pick-up
4		1	384116	Swivel part, assy.
5		2	9990157	Pipe elbow union 90 degrees
6		2	350499	Screwed connector
7		1	350062	GA 400AL-D
8		1	357470	Swivel part, assy.
9		1	117206	Swivel part, assy.
10		1	384326	Mixing block
11		1	9998788	Screw-in screw connection, straight
12		1	384911	Mixing pipe assy.
13		1	104618	Double connection
14		1	9998420	Pipe clamp
15		2	9900338	Cheese head screw
16		4	9925031	Washer
17		4	9910204	Hexagon nut with clamp
18		2	9900316	Cheese head screw
19		1	9987115	High pressure hose
20		1	9943071	Control knob
21		1	9991785	Or-valve
22		1	9943062	Base valve 3/2
23		1	9992290	Connection Y, plug-in
24		2	9992724	Screw in angle
25		1	9999066	Angle screwing in connection
26		1	9956029	Triple deck diode terminal block
27		1	9956021	3/2 way valve MATRIX
28		2	9955718	Cable screwing
29		2	9956026	Grommet
30		2	9971183	O-ring
31		2	9907229	Cheese head screw
32		1	350489	Seal

	<h3>! WARNING</h3>
	<p><b>Incorrect maintenance/repair!</b> Risk of injury and damage to the equipment</p> <ul style="list-style-type: none"> <li>→ Repairs and part replacement may only be carried out by specially trained staff or a WAGNER service center.</li> <li>→ Before all work on the unit and in the event of work interruptions:                     <ul style="list-style-type: none"> <li>- Switch off the energy/compressed air supply.</li> <li>- Relieve the pressure from the spray gun and unit.</li> <li>- Secure the spray gun against actuation.</li> </ul> </li> <li>→ Observe the operating and service instructions when carrying out all work.</li> </ul>


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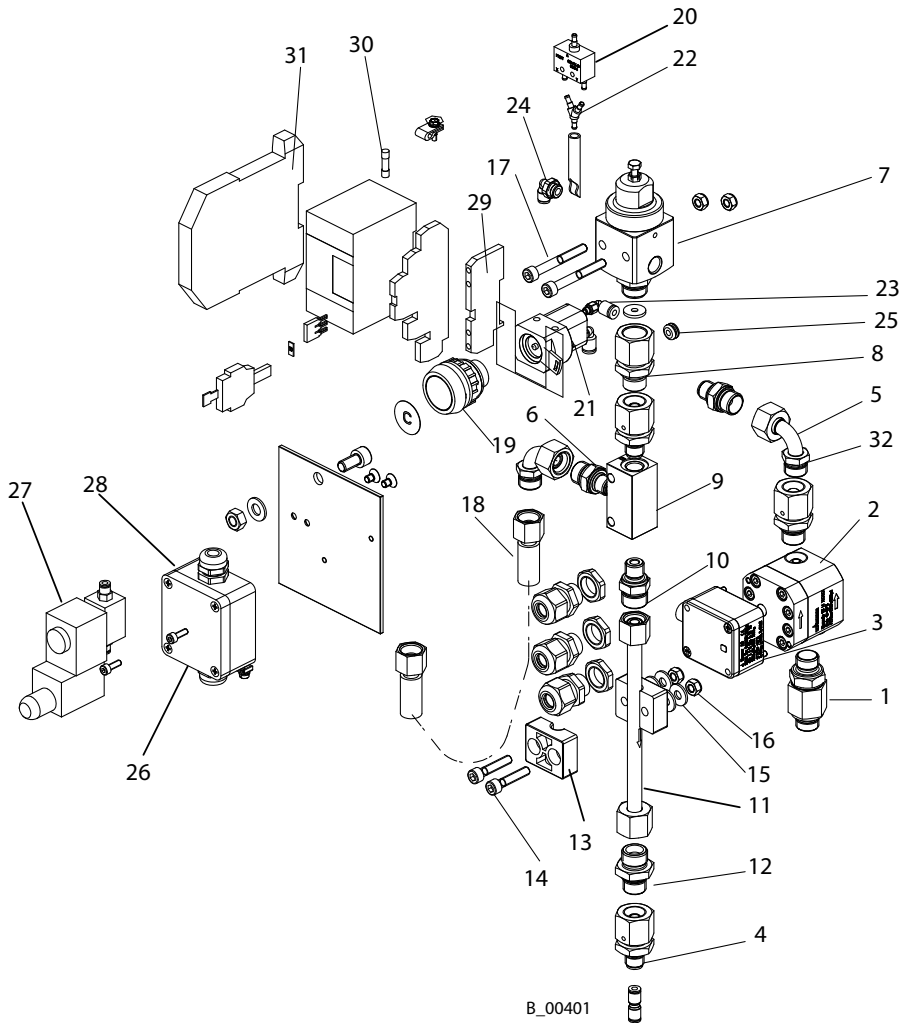
**11.47 EXTENSION SET 3K FLUID PART - EX PROOFED**

Pos	K	Qty	Part No.	Description
1		1	384115	Return check valve assy.
2		1		Flow meter, assy. (see chap. 11.13)
3		1	2302977	Pick-up assy.
4		2	384116	Swivel part, assy.
5		2	9990157	Pipe elbow union 90 degrees
6		2	350499	Screwed connector
7		1	350062	GA 400AL-D
8		1	357470	Swivel part, assy.
9		1	384326	Mixing block
10		1	9998788	Screw-in screw connection, straight
11		1	384911	Mixing pipe, assy.
12		1	104618	Double connection
13		1	9998420	Pipe clamp
14		2	9900338	Cheese head screw
15		4	9925031	Washer
16		4	9910204	Hexagon nut with clamp
17		2	9900316	Cheese head screw
18		1	9987115	High pressure hose
19		1	9943071	Control knob
20		1	9991785	Or-valve
21		1	9943062	Base valve
22		1	9992290	Connection Y, plug-in
23		2	9992724	Screw in angle
24		1	9999066	Angle screwing in connection
25		1	9956026	Grommet
26		1	384353	Plate to valve Ex proofed
27		1	9956064	3/2 way valve with winding Atex
28		1	9956065	Terminal box
29		1	9956029	Triple deck diode terminal block
30		1	9951115	Fuse, slow-acting
31		1	9956095	Zener barriers
32		1	117206	Swivel part, assy.



	<h2>! WARNING</h2>
	<p><b>Incorrect maintenance/repair!</b> Risk of injury and damage to the equipment</p> <ul style="list-style-type: none"> <li>→ Repairs and part replacement may only be carried out by specially trained staff or a WAGNER service center.</li> <li>→ Before all work on the unit and in the event of work interruptions:                     <ul style="list-style-type: none"> <li>- Switch off the energy/compressed air supply.</li> <li>- Relieve the pressure from the spray gun and unit.</li> <li>- Secure the spray gun against actuation.</li> </ul> </li> <li>→ Observe the operating and service instructions when carrying out all work.</li> </ul>

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**11.48 SAME DETERGENT WITH A AND B - 2302778**

Pos	K	Qty	Part No.	Description
1		1	9987084	Material hose Teflon L=500 mm; 19.69 inch
2		1	377093	Circulation connector

**11.49 ADAPTER**

Pos	K	Qty	Part No.	Description
			384555	Adapter M16 inside to NPS 1/4" outside
			384556	Adapter M16 inside to NPS 3/8" outside
			384559	Adapter M16 inside to G1/4" outside
			377342	Adapter M16 inside to G3/8" outside

## 12 TABLES / PARAMETERS

### 12.1 TABLE HOSE VOLUME

Di = Inside diameter hose					
L = Hose length					
Vol = Material volume in the hose					
Di	L	Vol	Di	L	Vol
[mm]	[m]	[L]	[mm]	[m]	[L]
4	5	0.06	10	5	0.39
4	7.5	0.09	10	7.5	0.59
4	10	0.13	10	10	0.79
4	12.5	0.16	10	12.5	0.98
4	15	0.19	10	15	1.18
4	20	0.25	10	20	1.57
4	25	0.31	10	25	1.96
4	30	0.38	10	30	2.36
4	40	0.5	10	40	3.14
4	50	0.63	10	50	3.93
5	5	0.1	12	5	0.57
5	7.5	0.15	12	7.5	0.85
5	10	0.2	12	10	1.13
5	12.5	0.25	12	12.5	1.41
5	15	0.29	12	15	1.7
5	20	0.39	12	20	2.26
5	25	0.49	12	25	2.83
5	30	0.59	12	30	3.39
5	40	0.79	12	40	4.52
5	50	0.98	12	50	5.65
6	5	0.14	16	5	1.01
6	7.5	0.21	16	7.5	1.51
6	10	0.28	16	10	2.01
6	12.5	0.35	16	12.5	2.51
6	15	0.42	16	15	3.02
6	20	0.57	16	20	4.02
6	25	0.71	16	25	5.03
6	30	0.85	16	30	6.03
6	40	1.13	16	40	8.04
6	50	1.41	16	50	10.05
8	5	0.25	20	5	1.57
8	7.5	0.38	20	7.5	2.36
8	10	0.5	20	10	3.14
8	12.5	0.63	20	12.5	3.93
8	15	0.75	20	15	4.71
8	20	1.01	20	20	6.28
8	25	1.26	20	25	7.85
8	30	1.51	20	30	9.42
8	40	2.01	20	40	12.57
8	50	2.51	20	50	15.71

**12.2 SYSTEM PARAMETER 2K-FLEXCONTROL**

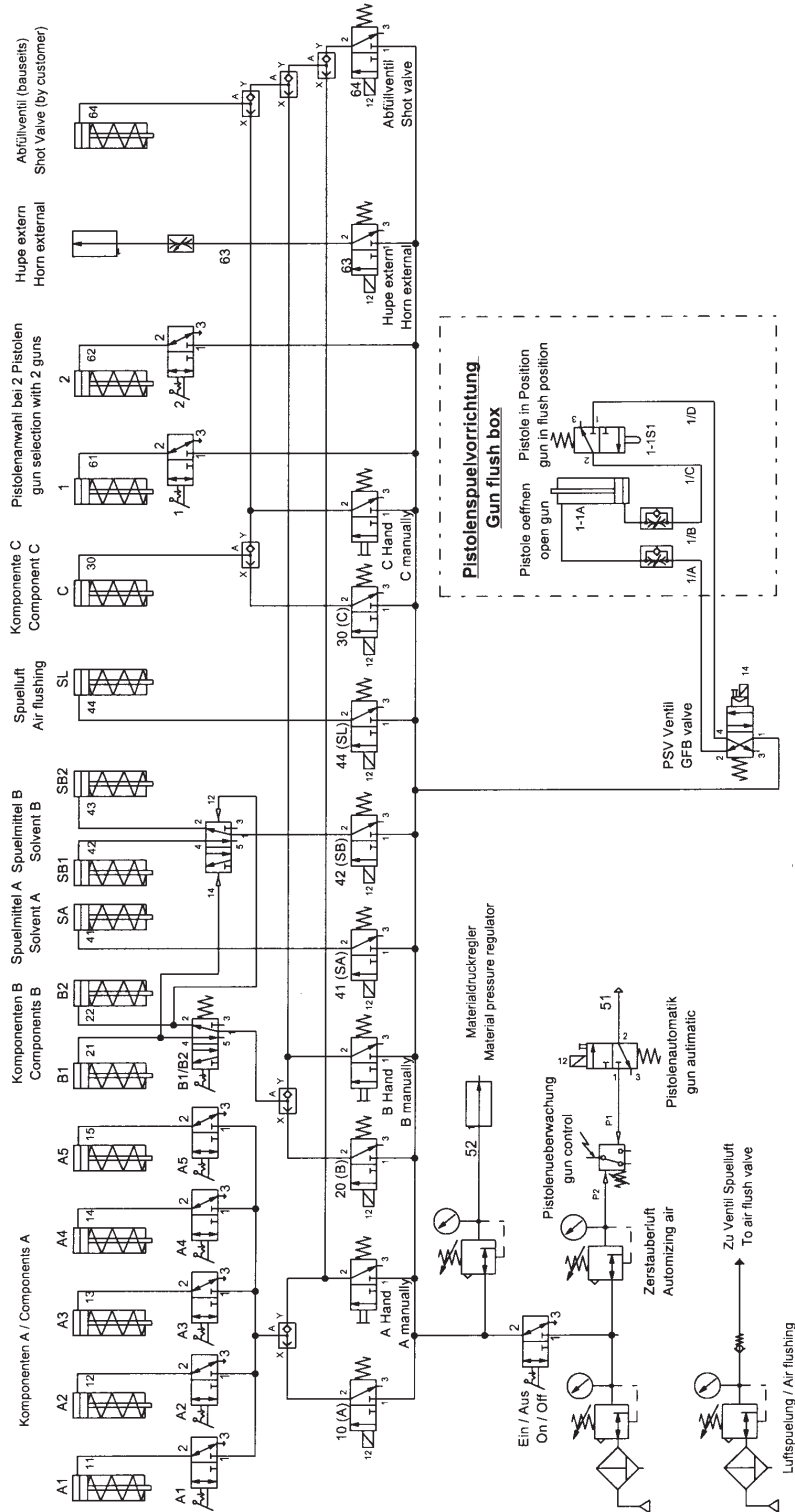
Level	Parameter	Basic setting	Customer setting	Remarks
F1	A:B	1,0:1		
F3	Btol=	1.0 %		
	Bqc=	150 mL		
	TMIXset	180 min		
	Ta	5 min		
	VOL MIX=	150 mL		
	KA	11000 P/L		
	KB	11000 P/L		
	Tgn	5 s		
	Bqm=	0,200 mL		
	FLUSHING	1		
	1=HP,2=LP	High pressure (HP)		
	B	5 s		
	A	100 mL		
	B	3 s		
	A	400 mL		
	B	0 s		
		Low pressure (LP)		
	B	5 s		
	A	20 s		
	B	0 s		
	A end	400 mL		
	B end	0 s		
	Shot Mode	0 (off)		
	Solvent/air Tkt			
	solv=	2,0 s		
	air=	2,0 s		
F4	A -	5 mL		
	B -	5 mL		
	C -	5 mL		
	A +	3000 m L		
	B +	3000 m L		
	C +	3000 m L		
	Code Level 2	22		
	Code Level 3	33		
	number of B valves	1		

Level	Parameter	Basic setting	Customer setting	Remarks
F4	Komp C?	0 (off)		
	Printer?	0 (off)		
	Gun flush box?	0 (off)		
	Save?	0		Save after Start-up!

**13 CONNECTION DIAGRAMS - NOT EX PROOFED**

**Pneumatikschema nicht Ex / Pneumatic diagramm not Ex FlexControl 5A, 2B, 1C**

Bemerkung: Je nach Lieferumfang sind nicht alle Komponenten eingebaut / Note: Depending to the configuration not all components are installed



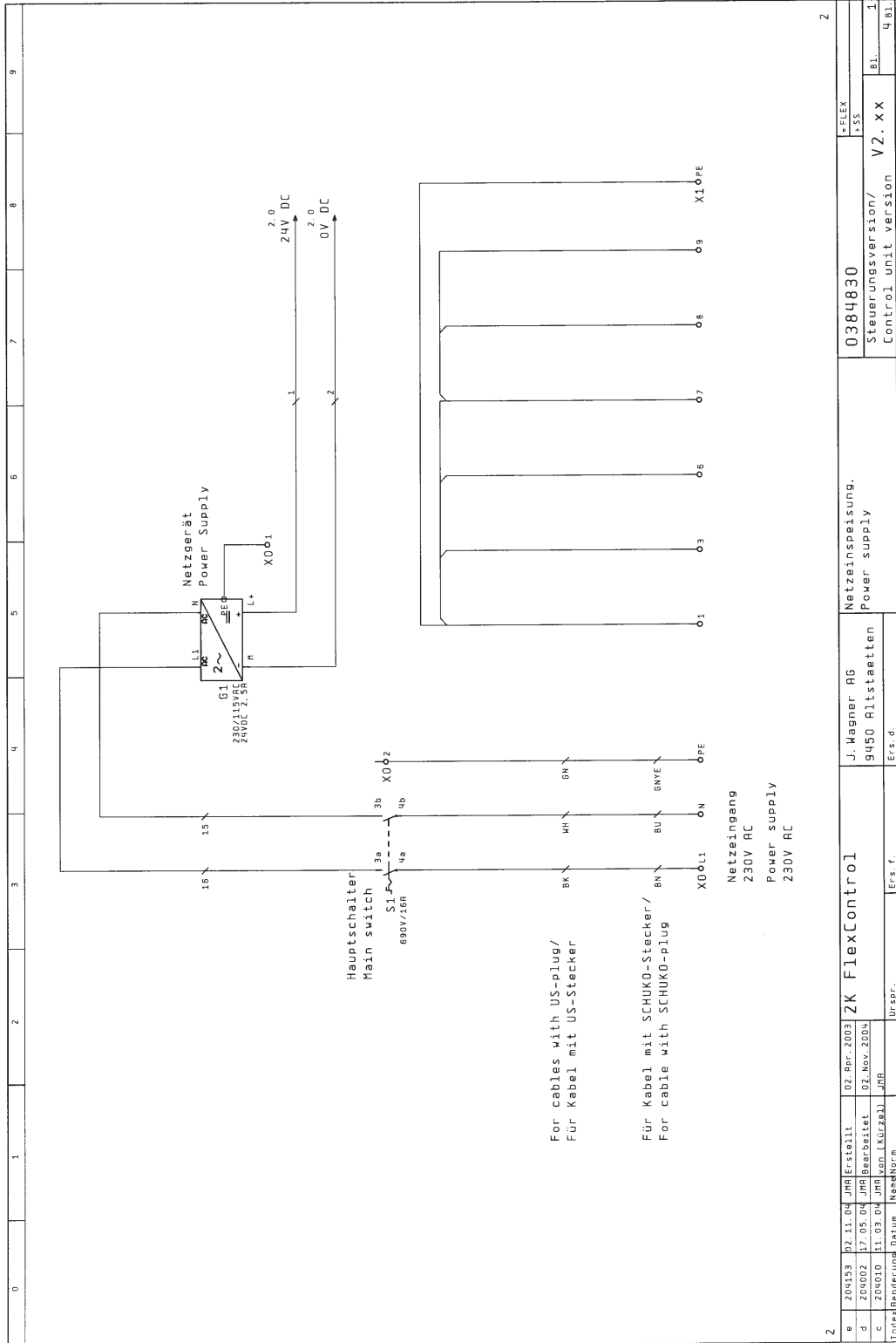
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0	1	2	3	4	5	6	7	8	9																											
<b>Oberflaechenbeschichtungssysteme</b>																																				
<p>Industriestrasse 22 9450 Altstaetten Tel. 071/757 22 11 Fax 071/757 22 22</p>																																				
<p><b>Kunde/Customer :</b></p> <p><b>Anlagebezeichnung/ Plant designation :</b> ZK FlexControl</p> <p><b>Zeichnungsnummer/ Drawing number :</b> 0384830</p> <p><b>Kommission/Commission :</b> "EPLAN COMPACT"</p> <p><b>Hersteller/Manufacturer :</b> J. Wagner AG</p> <p><b>Pfad (ohne \EPLAN\): Path (without \EPLAN\):</b> C:\...\WAG\2K_FLEXCONTROL\0384830E</p> <p><b>Steuerungsversion/ Control unit version :</b> V2.xx</p> <p><b>Projektname/Project name :</b></p> <p><b>Installationsort/ Installation Place :</b></p> <p><b>Projektverantwortlicher/ Project manager :</b></p> <p><b>Bemerkungen/Remarks :</b></p> <p><b>Erstellt/Create :</b> 02. Apr. 2003 <b>von/by:</b> JMA</p> <p><b>Bearbeitet/Reprocess :</b> 02. Nov. 2004 <b>von/by:</b> JMA</p> <p><b>Anzahl der Seiten/ Number of the page :</b> 13</p>																																				
<p><b>LEGENDE / LEGEND</b></p> <p>Vorschrift / Regulation : 230/115 VAC Einspeisung / Supply : max. 16A Vorsicherung / Fuse : 24V DC Steuerungsleistung / Control voltage : 0.04 kW Leistung / Power :</p>																																				
<p><b>Verdrahtungsfarben/ Wiring colors</b></p> <p>GELB-GRUEN/ ERDUNG/ GNYE YELLOW_GREEN Grounding BLAU/ STEUERUNG DC/ BU BLUE Control voltage DC ROT/ NETZUNG DC/ RO RED Mains voltage SCHWARZ / BLACK BK BRAUN / BROWN BN ORANGE / ORANGE OG GELB / YELLOW YE GRUEN / GREEN GN GRAU / GREY GY WEISS / WHITE WH TUERKIS / TURQUOISE TQ</p>																																				
<p><b>Aderquerschnitte</b></p> <p>Steuerungsleistung DC / 0.75mm<sup>2</sup> Control voltage DC Netzspannung AC / 1.5mm<sup>2</sup> Supply AC</p>																																				
<p><b>Index/Rendering</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>e</td> <td>204153</td> <td>02.11.04</td> <td>JMA</td> <td>Erstellt</td> <td>02. Apr. 2003</td> <td>JMA</td> <td>2K FlexControl</td> <td>Deckblatt, Cover</td> </tr> <tr> <td>d</td> <td>204002</td> <td>17.05.04</td> <td>JMA</td> <td>Bearbeitet</td> <td>02. Nov. 2004</td> <td>JMA</td> <td>J. Wagner AG 9450 Altstaetten</td> <td></td> </tr> <tr> <td>c</td> <td>204010</td> <td>11.09.04</td> <td>JMA</td> <td>von (Kürzel)</td> <td></td> <td></td> <td>Urspr.</td> <td>Ers. d.</td> </tr> </table>										e	204153	02.11.04	JMA	Erstellt	02. Apr. 2003	JMA	2K FlexControl	Deckblatt, Cover	d	204002	17.05.04	JMA	Bearbeitet	02. Nov. 2004	JMA	J. Wagner AG 9450 Altstaetten		c	204010	11.09.04	JMA	von (Kürzel)			Urspr.	Ers. d.
e	204153	02.11.04	JMA	Erstellt	02. Apr. 2003	JMA	2K FlexControl	Deckblatt, Cover																												
d	204002	17.05.04	JMA	Bearbeitet	02. Nov. 2004	JMA	J. Wagner AG 9450 Altstaetten																													
c	204010	11.09.04	JMA	von (Kürzel)			Urspr.	Ers. d.																												
								0384830	+ FLEX																											
								Steuerungsversion/	V2. XX																											
								Control unit version	Bl. 1																											
								Control unit version	2 Bl.																											

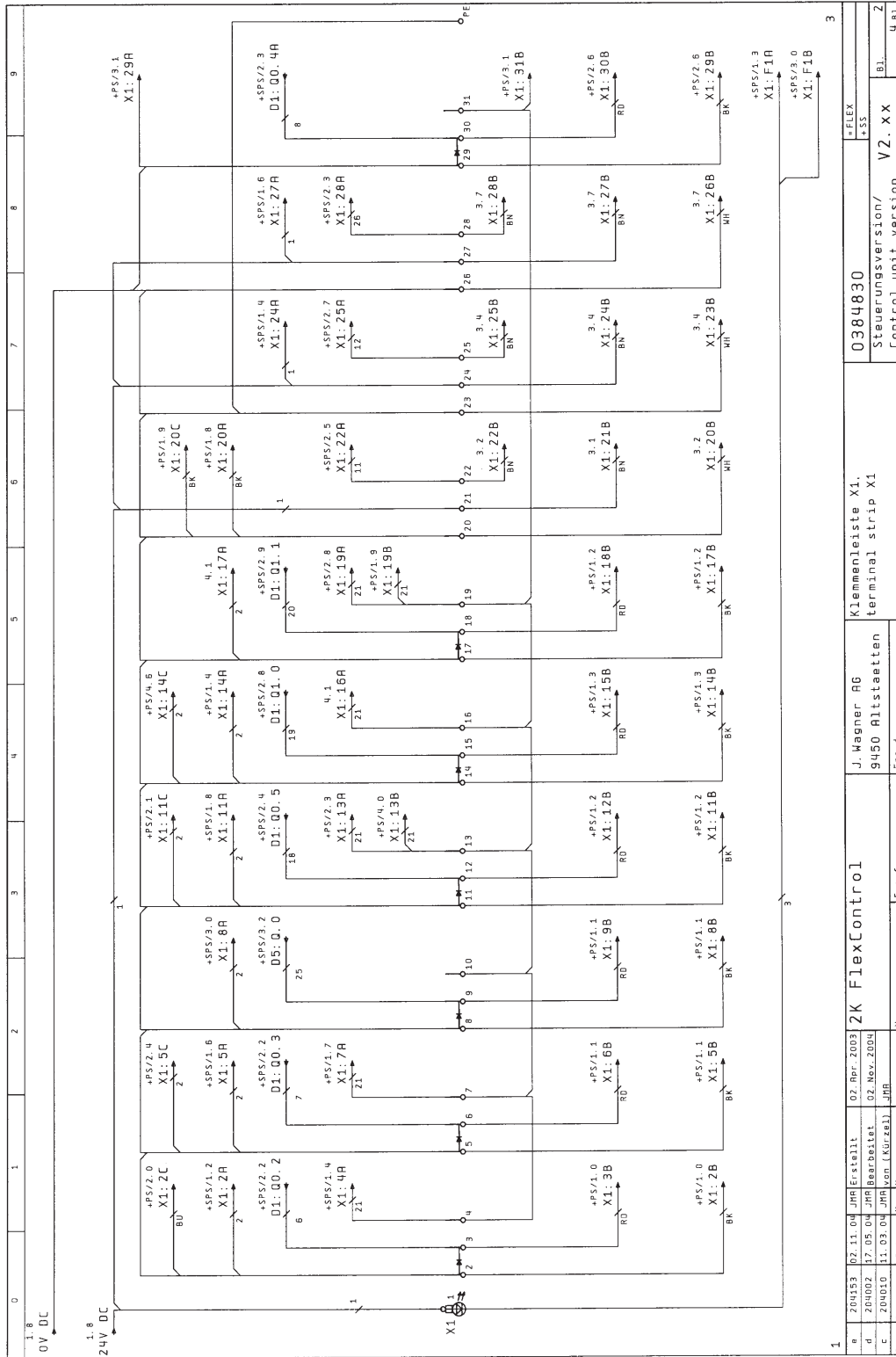






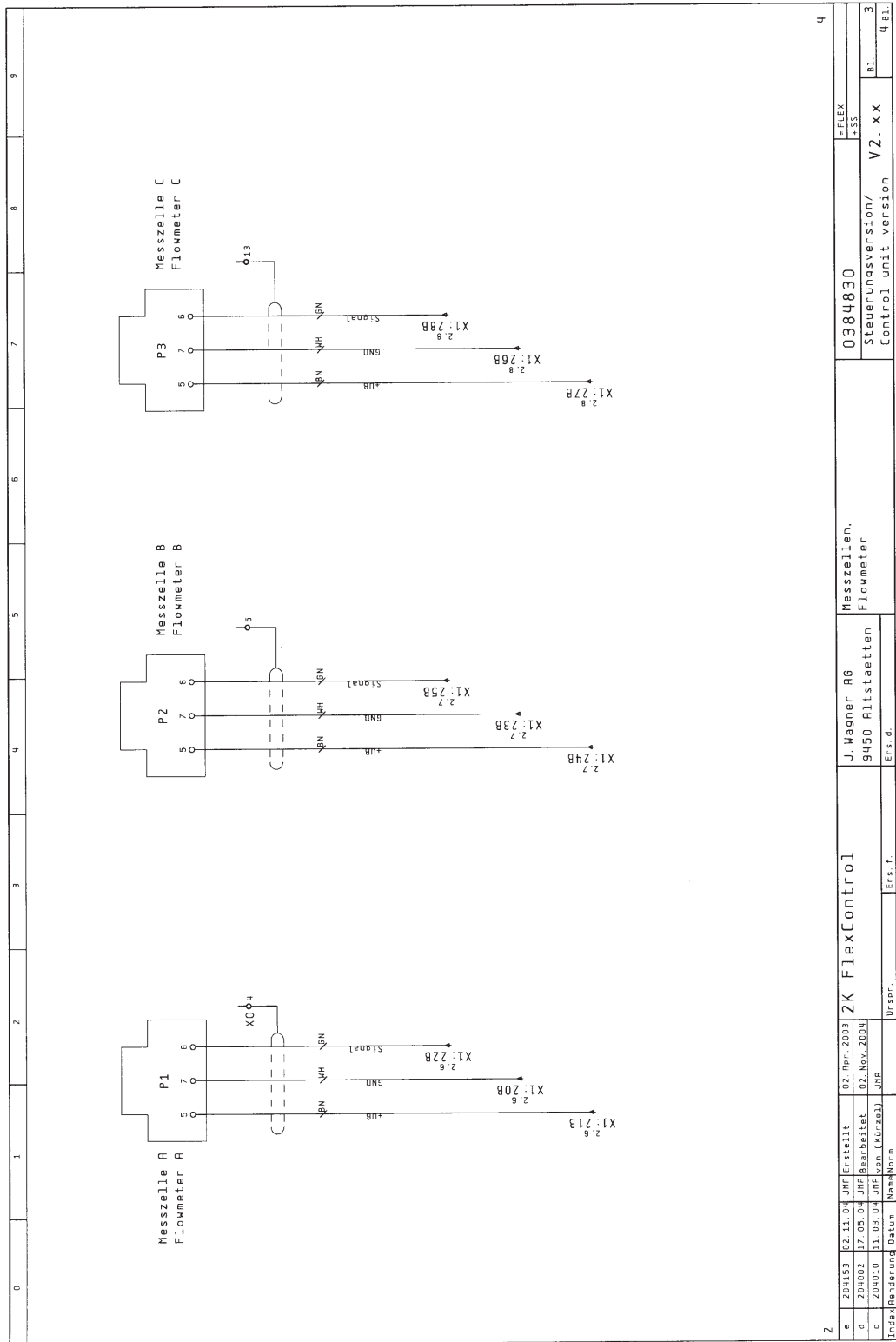
B\_00906

OPERATING MANUAL

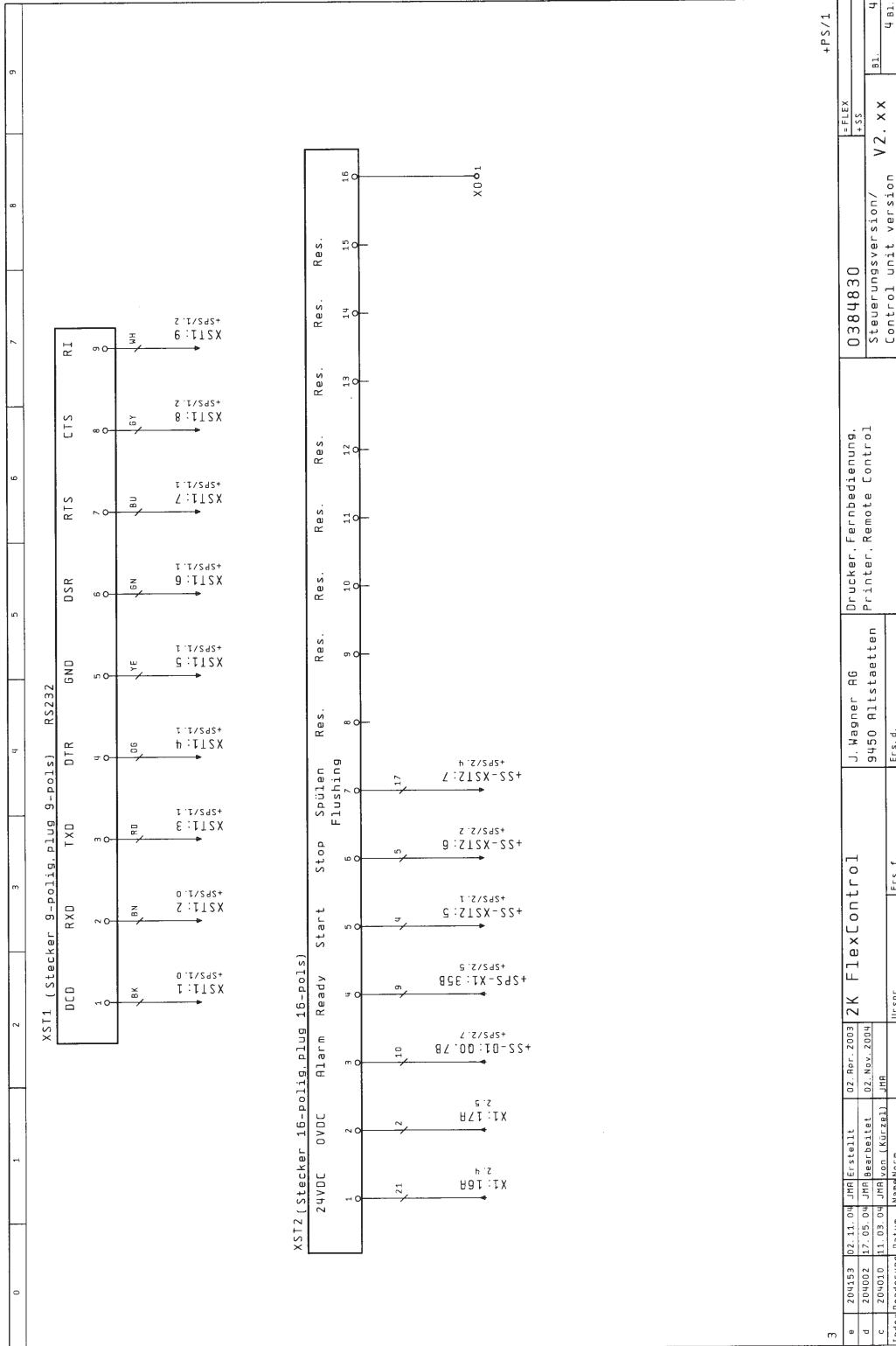


1		2		3		4		5		6		7		8		9	
0V DC																	
24V DC																	
X1																	
PE																	
3																	
+SPS/3.1 X1: 29A																	
+SPS/2.3 DI: 00.4A																	
+SPS/1.6 X1: 27A																	
+SPS/2.3 X1: 28A																	
+SPS/3.1 X1: 31B																	
+PS/2.6 X1: 30B																	
+PS/2.5 X1: 29B																	
+SPS/1.3 X1: F1A																	
+SPS/3.0 X1: F1B																	
+PS/1.8 X1: 20C																	
+PS/1.8 X1: 20A																	
+SPS/1.4 X1: 24A																	
+SPS/2.7 X1: 25A																	
+PS/1.4 X1: 24B																	
+PS/2.6 X1: 26B																	
+PS/1.4 X1: 17A																	
+SPS/2.9 DI: 01.1																	
+PS/2.8 X1: 19A																	
+PS/1.9 X1: 19B																	
+PS/1.2 X1: 18B																	
+PS/1.2 X1: 17B																	
+PS/4.1B X1: 14C																	
+PS/1.4 X1: 14A																	
+SPS/2.8 DI: 01.0																	
+PS/1.3 X1: 15B																	
+PS/1.3 X1: 14B																	
+PS/2.1 X1: 11C																	
+SPS/1.8 X1: 11A																	
+SPS/2.4 DI: 00.5																	
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+PS/1.2 X1: 12B																	
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+SPS/1.6 X1: 6A																	
+SPS/2.2 DI: 00.3																	
+PS/1.1 X1: 5B																	
+PS/1.1 X1: 5A																	
+PS/2.2 DI: 00.2																	
+SPS/1.4 X1: 4A																	
+PS/1.7 X1: 7A																	
+PS/2.0 X1: 2C																	
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+SPS/1.6 X1: 5A																	
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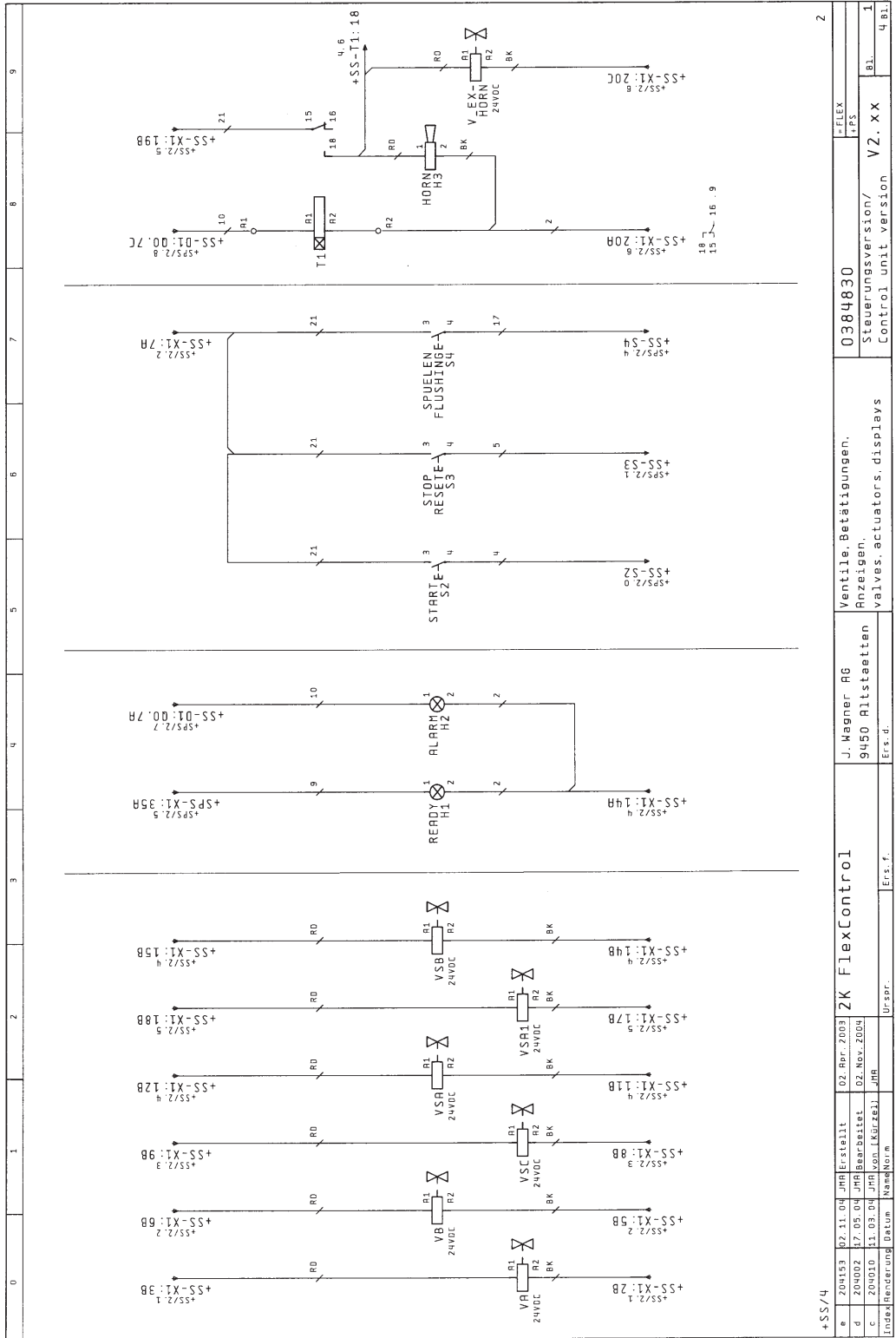
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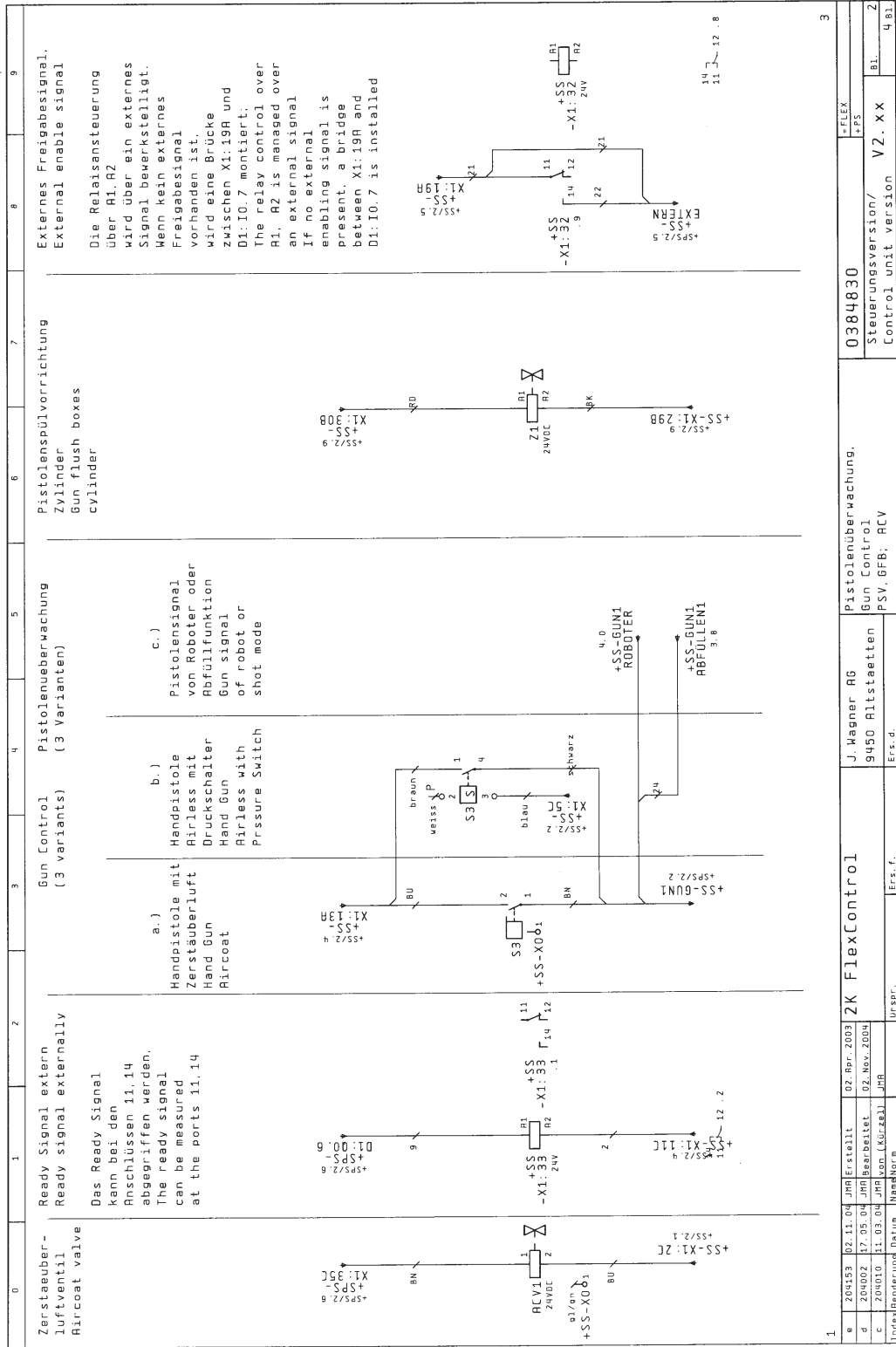


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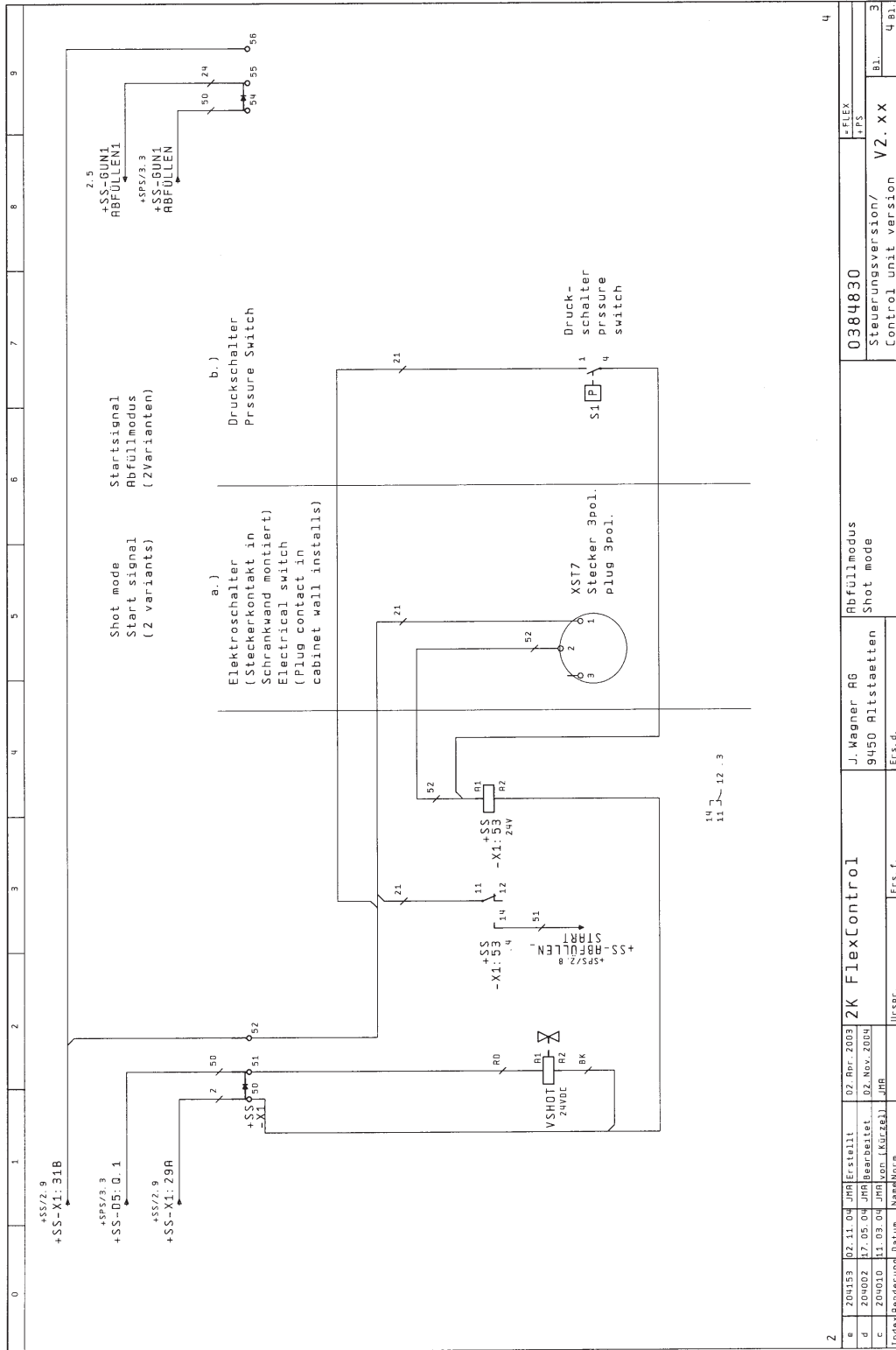


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e 204153 02.11.04 JMA Erstellteilt		02. Apr. 2003		9450 Altstaetten		Steuerungsversion/		APS	
d 204002 17.05.04 JMA Bearbeitet		02. Nov. 2004		Ers. d.		Control unit version		V2. XX	
c 204010 11.03.04 JMA Kon. /Mürzell		JMA		Ers. f.		Bl.		1	
Index/Änderung		Datum		Name/Norm		Ur.spr.		4 Bl.	

B\_00910

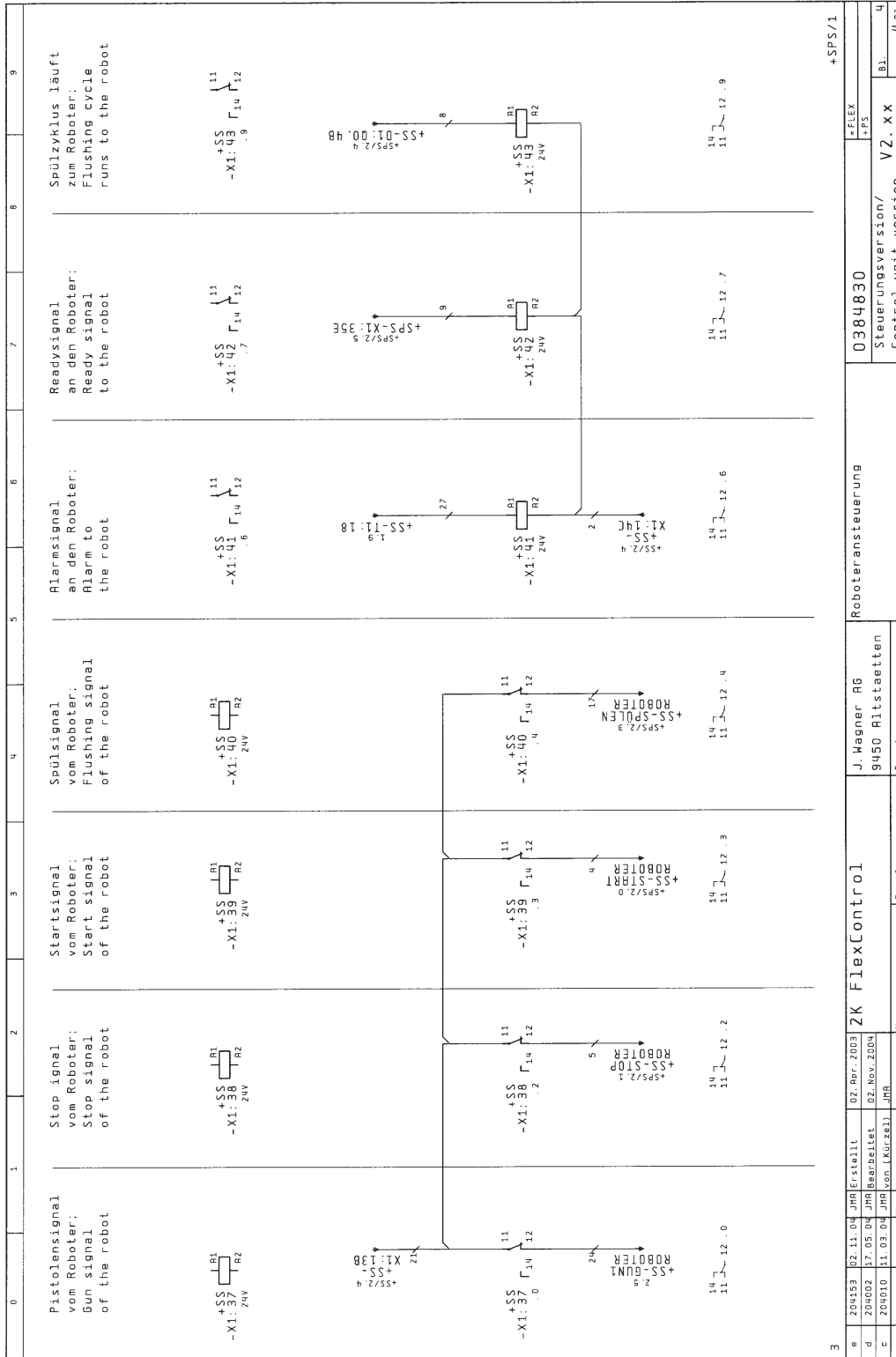


B\_00911



2	J. Wagner AG 9450 Altstaetten Ers. d.		Abfüllmodus Shot mode		0384830	FLEX FPS
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d	204002	17.05.04	JMR	Bearbeitet	02. Nov. 2004	
c	204010	11.03.04	JMR	von (Kürzel)	JMR	
Urbe	Reviderung	Datum	Name	Urspr.	Ers. f.	Ers. d.
						Steuerungsversion/ Control unit version
						V2.XX
						Bl. 3
						4 Bl. 4 Bl.

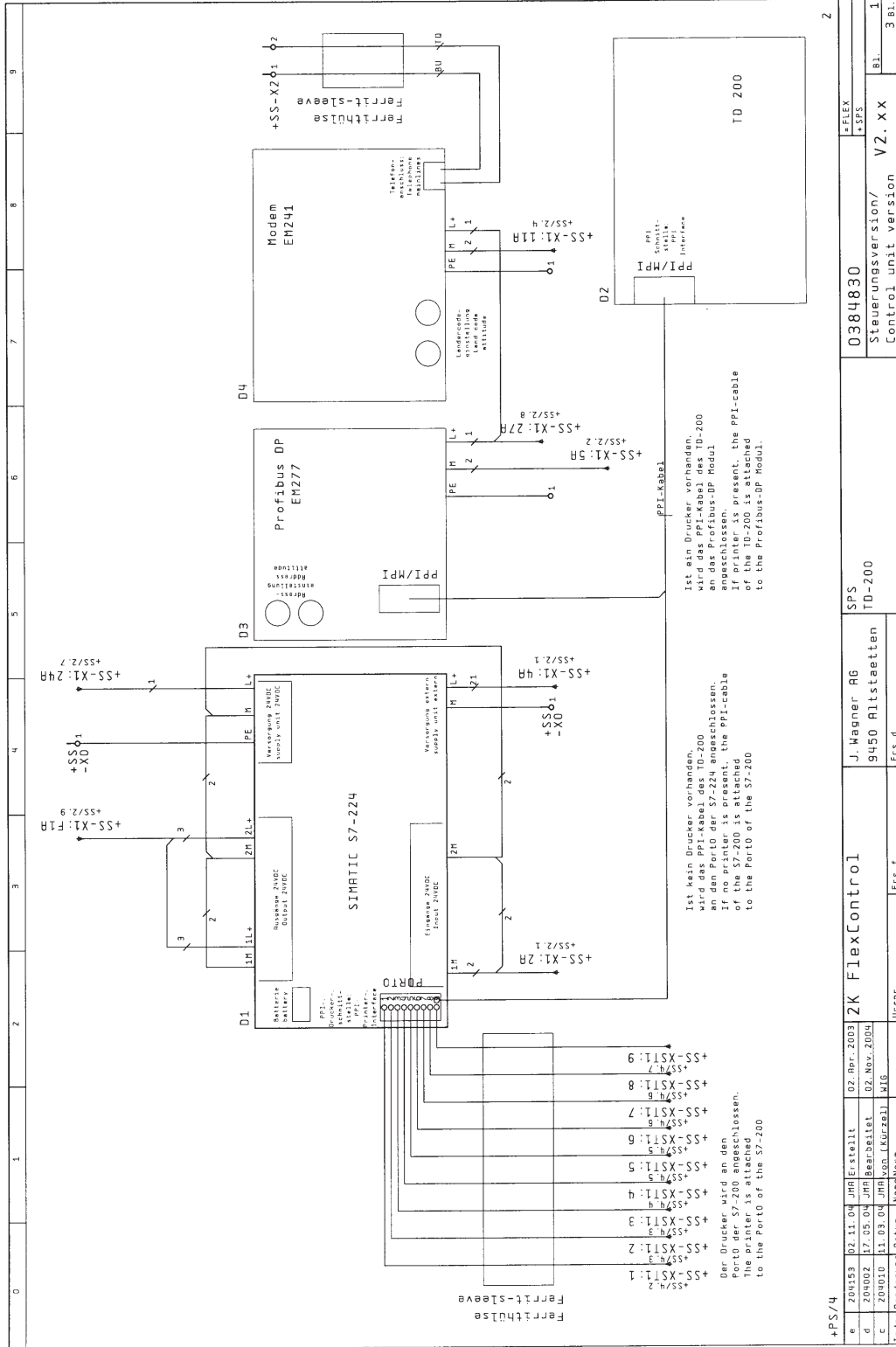
B\_00912



3		+SPS/1	
e 20453 02.11.04 JWA Erstellt 02.Apr.2003		=FLEX	
d 20402 17.05.04 JWA Bearb. 02.Nov.2004		+PS	
c 20410 11.03.04 JWA Kon. (Kürzel) JWA		0384830	
Index/Änderung Datum Name Norm		Roboteransteuerung	
J. Wagner AG		Steuerungsversion/	
9450 Altstaetten		Control unit version	
Erspr.		VZ. XX	
Ers.f.		B1	
Ers.d.		q.81	

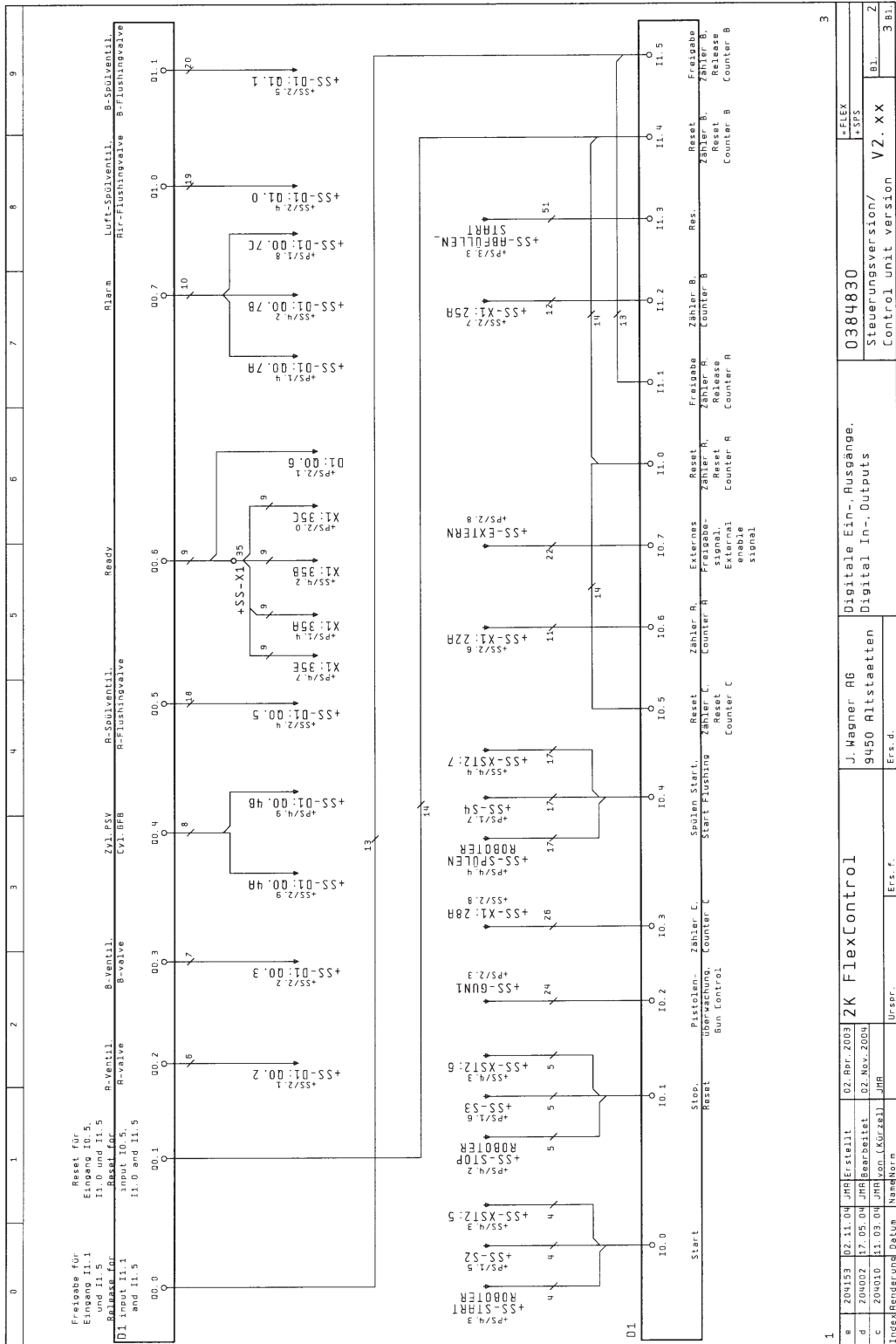
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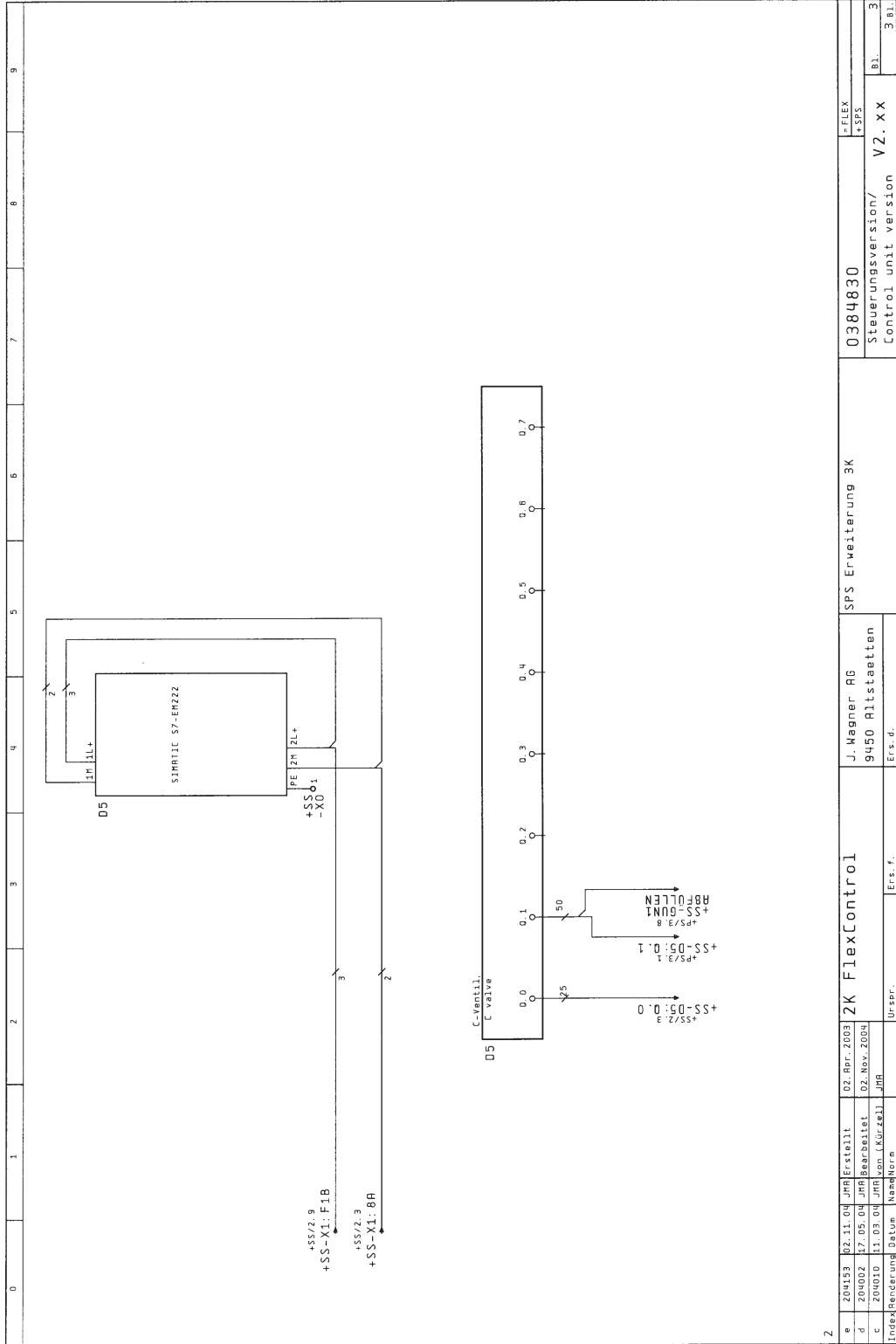
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e	20H153	02.11.04	JWA	Erstellt	02. Apr. 2003	
d	20H002	17.05.04	JWA	Beibehalten	02. Nov. 2004	
c	20H010	11.03.04	JWA	von [Kurzzeil]	4/0	
Index/Referenzliste		04/01	Wagner	Urspr.		
				Ers. f.		
				Ers. d.		
				9450 Altstaetten	TD-200	
				J. Wagner AG	SPS	
				0384830	Steuerungsversion/ Control unit version	V2.XX
						B1: 3 Bl.

B\_00914



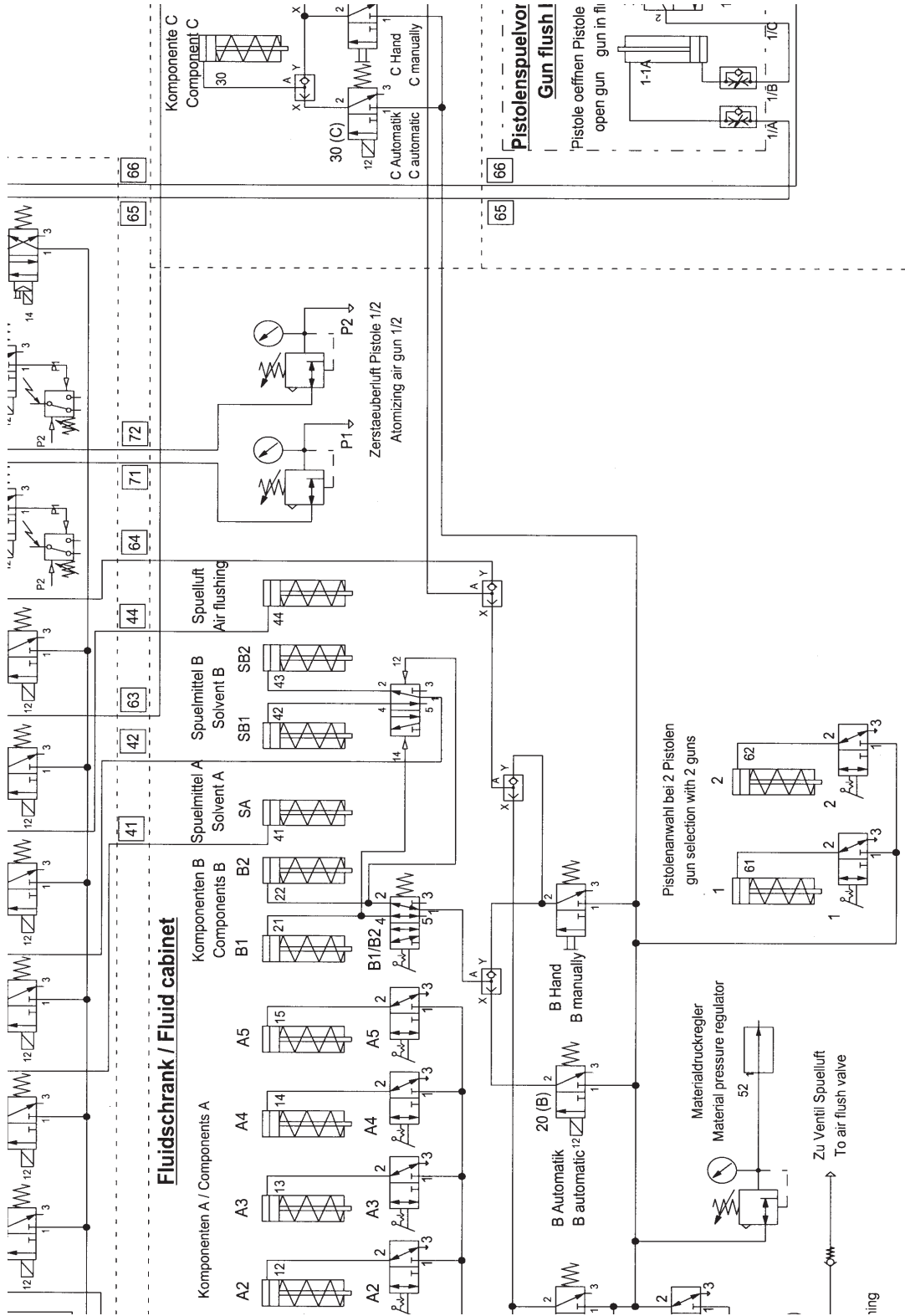
1	204153	02.11.04	JMR	Erstellt	02. Apr. 2003	J. Wagner AG	Digitale Ein-/Ausgänge.	0384830	=FLEX
d	204002	17.05.04	JMR	Bearbeitet	02. Nov. 2004	9450 Altsteetten	Digitale In-/Outputs	Steuerungsversion/	+SIS
c	200010	11.03.04	JMR	kon. (Kürzell.)	JMR	Ers. d.	Control unit version	VZ. XX	3 Bl.
Index/Renderung Datum Name/Norm Ers. f. Ers. d.									

B\_00915



B\_00916

**14 CONNECTION DIAGRAMS - EX PROOFED**





0	1	2	3	4	5	6	7	8	9																																								
<p><b>Oberflaechenbeschichtungssysteme</b></p>																																																	
<p>Industriestrasse 22 9450 Altstaetten Tel. 071/757 22 11 Fax 071/757 22 22</p>																																																	
<p><b>Kunde/Costumer :</b>  <b>Anlagebezeichnung/ Plant designation :</b> 2K FlexControl_EX  <b>Zeichnungsnummer/ Drawing number :</b> 0384831  <b>Kommission/Commission :</b> "EPLAN COMPACT"  <b>Hersteller/Manufacturer :</b> J. Wagner AG  <b>Pfad (ohne \EPLAN4\P) Path (without \EPLAN4\P) :</b> C:\...\WAG\2K_FLEXCONTROL\0381831E  <b>Steuerungsversion/ Control unit version :</b> V2.xx  <b>Projektname/Project name :</b>  <b>Installationsort/ Installation place :</b>  <b>Projektverantwortlicher/ Project manager :</b></p>																																																	
<p><b>Bemerkungen/Remarks :</b>  <b>Erstellt/Create :</b> 02. Apr. 2003 <b>von/by:</b> JMA  <b>Bearbeitet/Reprocess :</b> 02. Nov. 2004 <b>von/by:</b> JMA  <b>Anzahl der Seiten/ Number of the page :</b> 13</p>																																																	
<p><b>LEGENDE / LEGEND</b></p> <table border="0" style="width:100%;"> <tr> <td style="width:50%;">Vorschrift / Regulation</td> <td>:</td> <td>230/115 VAC</td> </tr> <tr> <td>Einspeisung / Supply</td> <td>:</td> <td>max. 16A</td> </tr> <tr> <td>Vorsicherung / Fuse</td> <td>:</td> <td>24V DC</td> </tr> <tr> <td>Steuerungsleistung / Control voltage</td> <td>:</td> <td>0, 04 kW</td> </tr> </table>										Vorschrift / Regulation	:	230/115 VAC	Einspeisung / Supply	:	max. 16A	Vorsicherung / Fuse	:	24V DC	Steuerungsleistung / Control voltage	:	0, 04 kW																												
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Vorsicherung / Fuse	:	24V DC																																															
Steuerungsleistung / Control voltage	:	0, 04 kW																																															
<p><b>Verdrahtungsfarben/ Wiring colors</b></p> <table border="0" style="width:100%;"> <tr> <td style="width:50%;">GELB_GRUEN/ YELLOW_GREEN</td> <td>:</td> <td>GNYE</td> </tr> <tr> <td>BLAU/ BLUE</td> <td>:</td> <td>BU</td> </tr> <tr> <td>ROT/ RED</td> <td>:</td> <td>RD</td> </tr> <tr> <td>SCHWARZ / BLACK</td> <td>:</td> <td>BK</td> </tr> <tr> <td>BRAUN / BROWN</td> <td>:</td> <td>BN</td> </tr> <tr> <td>ORANGE / ORANGE</td> <td>:</td> <td>OG</td> </tr> <tr> <td>GELB / YELLOW</td> <td>:</td> <td>YE</td> </tr> <tr> <td>GRUEN / GREEN</td> <td>:</td> <td>GN</td> </tr> <tr> <td>GRAU / GREY</td> <td>:</td> <td>GY</td> </tr> <tr> <td>WEISS / WHITE</td> <td>:</td> <td>WH</td> </tr> <tr> <td>TUERKIS / TURQUOISE</td> <td>:</td> <td>TQ</td> </tr> </table>										GELB_GRUEN/ YELLOW_GREEN	:	GNYE	BLAU/ BLUE	:	BU	ROT/ RED	:	RD	SCHWARZ / BLACK	:	BK	BRAUN / BROWN	:	BN	ORANGE / ORANGE	:	OG	GELB / YELLOW	:	YE	GRUEN / GREEN	:	GN	GRAU / GREY	:	GY	WEISS / WHITE	:	WH	TUERKIS / TURQUOISE	:	TQ							
GELB_GRUEN/ YELLOW_GREEN	:	GNYE																																															
BLAU/ BLUE	:	BU																																															
ROT/ RED	:	RD																																															
SCHWARZ / BLACK	:	BK																																															
BRAUN / BROWN	:	BN																																															
ORANGE / ORANGE	:	OG																																															
GELB / YELLOW	:	YE																																															
GRUEN / GREEN	:	GN																																															
GRAU / GREY	:	GY																																															
WEISS / WHITE	:	WH																																															
TUERKIS / TURQUOISE	:	TQ																																															
<p><b>Aderquerschnitte</b></p> <table border="0" style="width:100%;"> <tr> <td style="width:50%;">Steuerungsleistung DC / Control voltage DC</td> <td>:</td> <td>0, 75mm<sup>2</sup></td> </tr> <tr> <td>Netzspannung AC / Supply AC</td> <td>:</td> <td>1, 5mm<sup>2</sup></td> </tr> </table>										Steuerungsleistung DC / Control voltage DC	:	0, 75mm <sup>2</sup>	Netzspannung AC / Supply AC	:	1, 5mm <sup>2</sup>																																		
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Netzspannung AC / Supply AC	:	1, 5mm <sup>2</sup>																																															
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;"><b>0384831</b></td> <td style="width:50%;"><b>FLEX</b></td> </tr> <tr> <td>Steuerungsversion/ Control unit version</td> <td>V2.xx</td> </tr> <tr> <td colspan="2" style="text-align: right;">Bl. 1</td> </tr> <tr> <td colspan="2" style="text-align: right;">Z Bl. 2</td> </tr> </table>										<b>0384831</b>	<b>FLEX</b>	Steuerungsversion/ Control unit version	V2.xx	Bl. 1		Z Bl. 2																																	
<b>0384831</b>	<b>FLEX</b>																																																
Steuerungsversion/ Control unit version	V2.xx																																																
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Z Bl. 2																																																	
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:10%;">b</td> <td style="width:10%;">20153</td> <td style="width:10%;">02.11.04</td> <td style="width:10%;">JMA</td> <td style="width:10%;">Erstellt</td> <td style="width:10%;">02. Apr. 2003</td> <td style="width:10%;">2K FlexControl_EX</td> <td style="width:10%;">J. Wagner AG</td> <td style="width:10%;">Deckblatt.</td> <td style="width:10%;">2</td> </tr> <tr> <td>d</td> <td>20402</td> <td>17.05.04</td> <td>JMA</td> <td>Bearbeitet</td> <td>02. Nov. 2004</td> <td></td> <td>9450 Altstaetten</td> <td>Cover</td> <td></td> </tr> <tr> <td>e</td> <td>20410</td> <td>11.03.04</td> <td>JMA</td> <td>von (kurz)</td> <td>JMA</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="2">Index/Referenz</td> <td>Datum</td> <td>Name</td> <td>Norm</td> <td>Urspr.</td> <td>Ers. f.</td> <td>Ers. d.</td> <td></td> <td></td> </tr> </table>										b	20153	02.11.04	JMA	Erstellt	02. Apr. 2003	2K FlexControl_EX	J. Wagner AG	Deckblatt.	2	d	20402	17.05.04	JMA	Bearbeitet	02. Nov. 2004		9450 Altstaetten	Cover		e	20410	11.03.04	JMA	von (kurz)	JMA					Index/Referenz		Datum	Name	Norm	Urspr.	Ers. f.	Ers. d.		
b	20153	02.11.04	JMA	Erstellt	02. Apr. 2003	2K FlexControl_EX	J. Wagner AG	Deckblatt.	2																																								
d	20402	17.05.04	JMA	Bearbeitet	02. Nov. 2004		9450 Altstaetten	Cover																																									
e	20410	11.03.04	JMA	von (kurz)	JMA																																												
Index/Referenz		Datum	Name	Norm	Urspr.	Ers. f.	Ers. d.																																										

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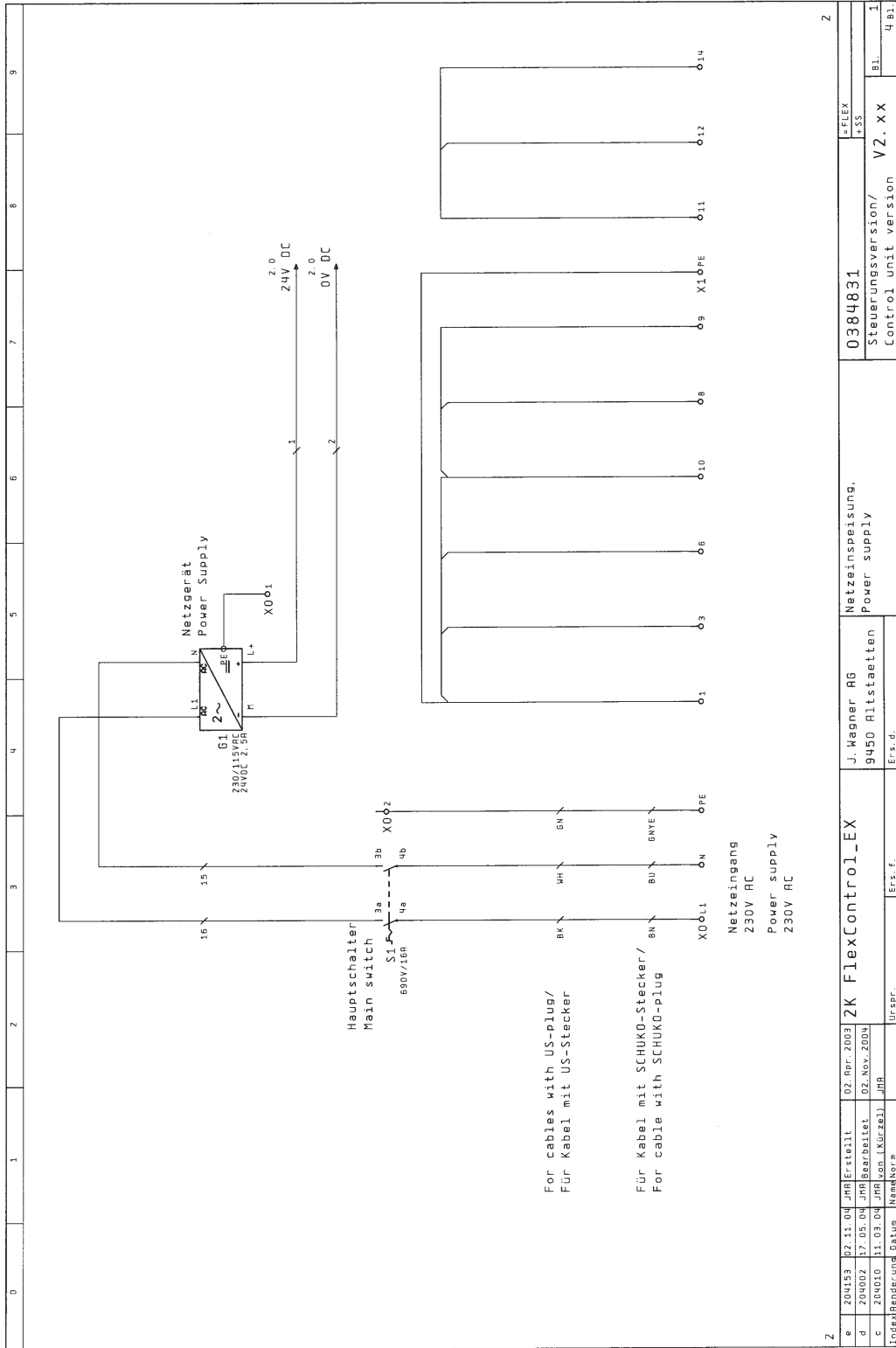


OPERATING MANUAL



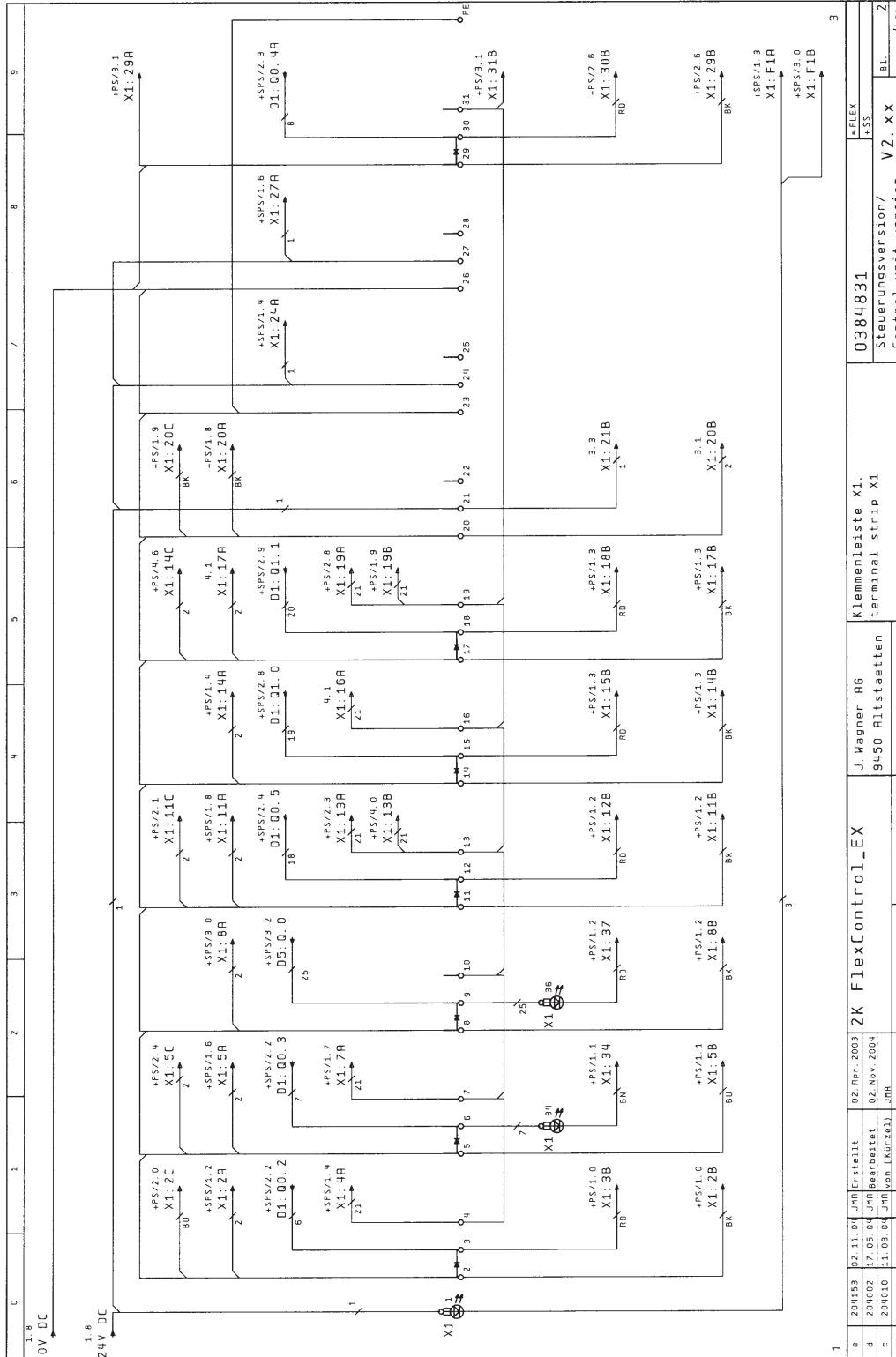
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D. - / U. -Ort	Anlage	Ort	Seite	Seitenbenennung	Seitenzusatzfeld	Datum	Bearb.	X	
	FLEX		1	Deckblatt, Cover		17. Mai. 2004	JMA		
	FLEX		2	Inhaltsverzeichnis, Contents		02. Nov. 2004	JMA		
	FLEX	SS	1	Netzspeisung, Power supply		02. Nov. 2004	JMA		
	FLEX	SS	2	Klemmenleiste X1, terminal strip X1		02. Nov. 2004	JMA		
	FLEX	SS	3	Messzellen, Flowmeter		16. Mär. 2004	JMA		
	FLEX	SS	4	Drucker, Fernbedienung, Printer, Remote Control		16. Mär. 2004	JMA		
	FLEX	PS	1	Ventile, Betätigungen, Anzeigen, valves, actuators, displays		23. Apr. 2004	JMA		
	FLEX	PS	2	Pistolenüberwachung, Gun Control PSV, GFB: ACV		02. Nov. 2004	JMA		
	FLEX	PS	3	Abfüllmodus Shot mode		02. Nov. 2004	JMA		
	FLEX	PS	4	Roboteransteuerung		02. Nov. 2004	JMA		
	FLEX	SPS	1	SPS TD-200		16. Mär. 2004	WIG		
	FLEX	SPS	2	Digitale Ein-, Ausgänge, Digital In-, Outputs		02. Nov. 2004	JMA		
	FLEX	SPS	3	SPS Erweiterung 3K		02. Nov. 2004	JMA		
+SS/1									
				Inhaltsverzeichnis, Contents		0384831			
				J. Wagner AG 9450 Altstetten Ers. d.		Steuerungsversion/ Control unit version		VZ. XX Bl. 2	
				ZK FlexControl_EX					
				JahrErstellt 02. Apr. 2003					
				JahrBearbeitet 02. Nov. 2004					
				Jahr von LKUZ2011 JMB					
				NameNorm					
				Ursprf.					
				Ers. f.					

B\_00920



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d	204002	17.05.04	JMR	Bearbeitet	02. Nov. 2004	9450 Mitstaetten	Power supply	Steuerungsversion/	V2.XX
c	204010	11.03.04	JMR	von (Kürzel)	JMR	Ers. d.	Control unit version	Bl.	1
	Index/Bearbeitung	Datum	Name/Nr.	Urspr.				Bl.	4 Bl.

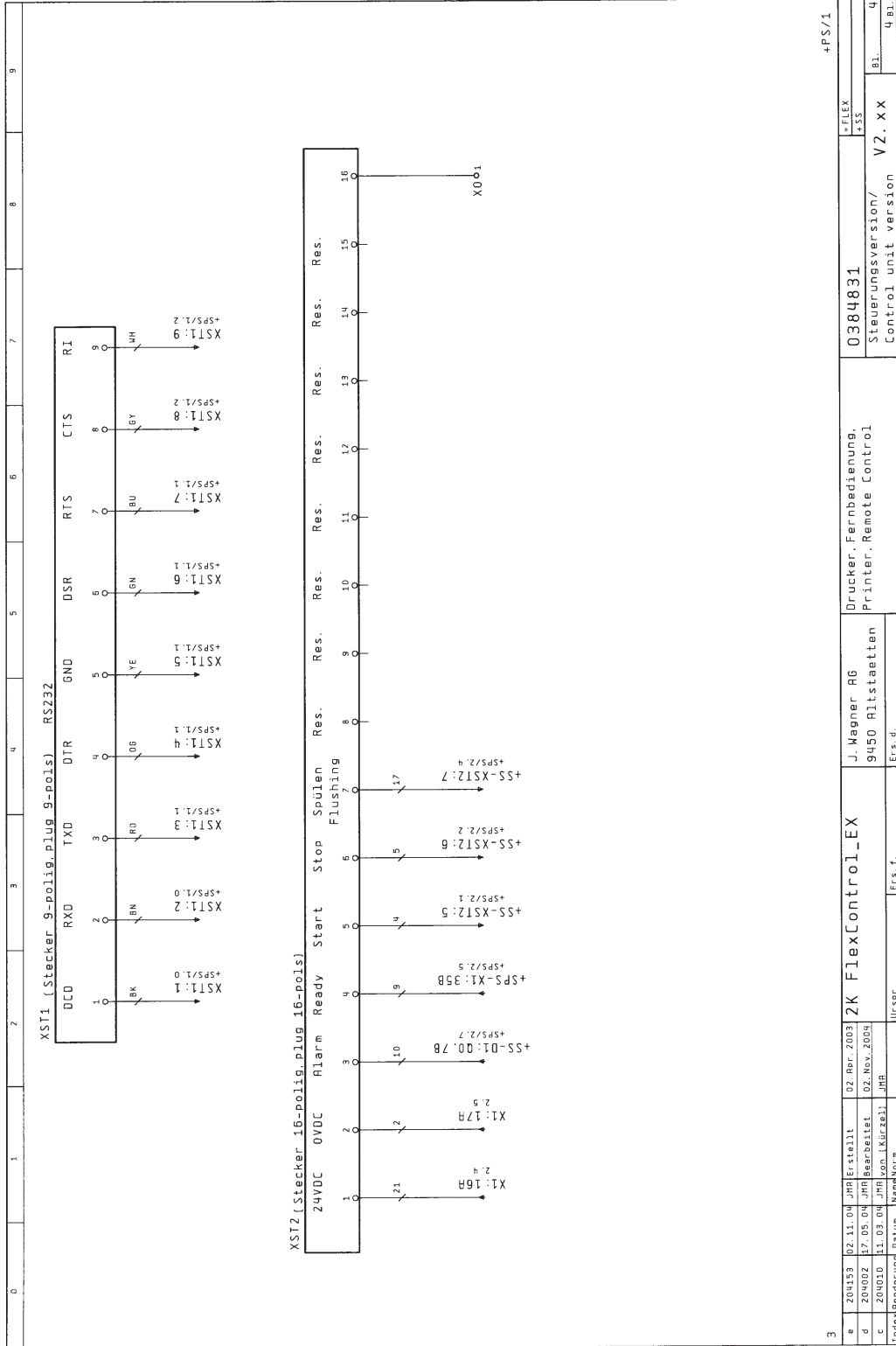
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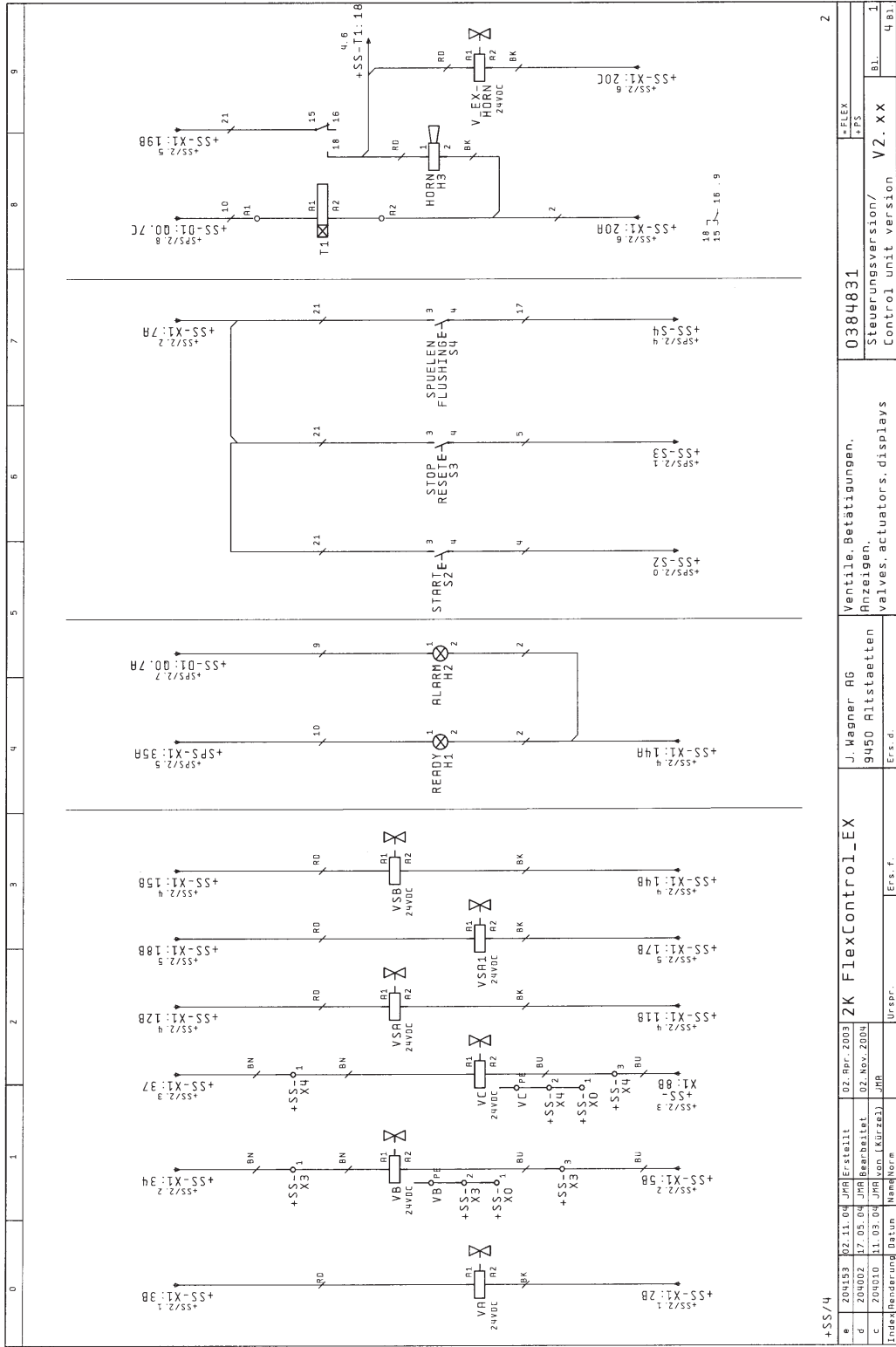






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d	20/00/02	17. 05. 04. JPH
c	20/00/10	11. 03. 04. JPH
Index/Renderung	Datum	Name/Num
Ursprr.	Ers.f.	Ers.d.
ZK FlexControl_EX		J. Wagner AG 9450 Altstaetten
Drucker, Fernbedienung, Printer, Remote Control		0384831
Steuerungsversion/ Control unit version		V2.XX
		B1. 4 Bl.

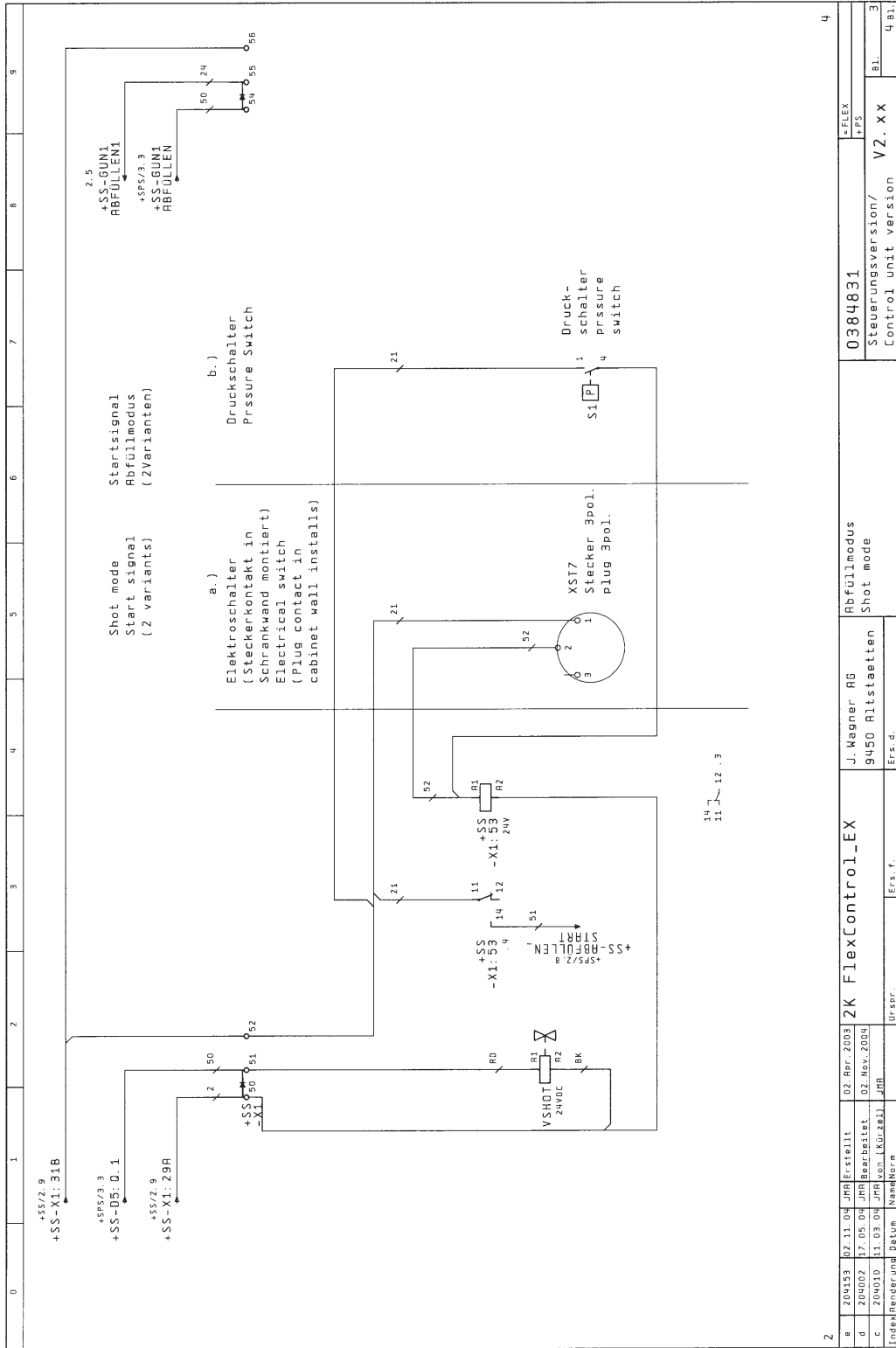
B\_00923



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# 204153		02.11.04 JWA/Erstellt		02. Apr. 2003		Ventile, Betätigungen, Anzeigen.		Steuerungsversion/ Control unit version	
d 204002		17.05.04 JWA/Bearbeitet		02. Nov. 2004		valves, actuators, displays		V2. XX	
c 204010		11.03.04 JWA/von (Kürzel)		JWA		Ers.d.		Bl. 1	
Index/änderung		Datum		Name/Norm		Ers.f.		4 Bl.	

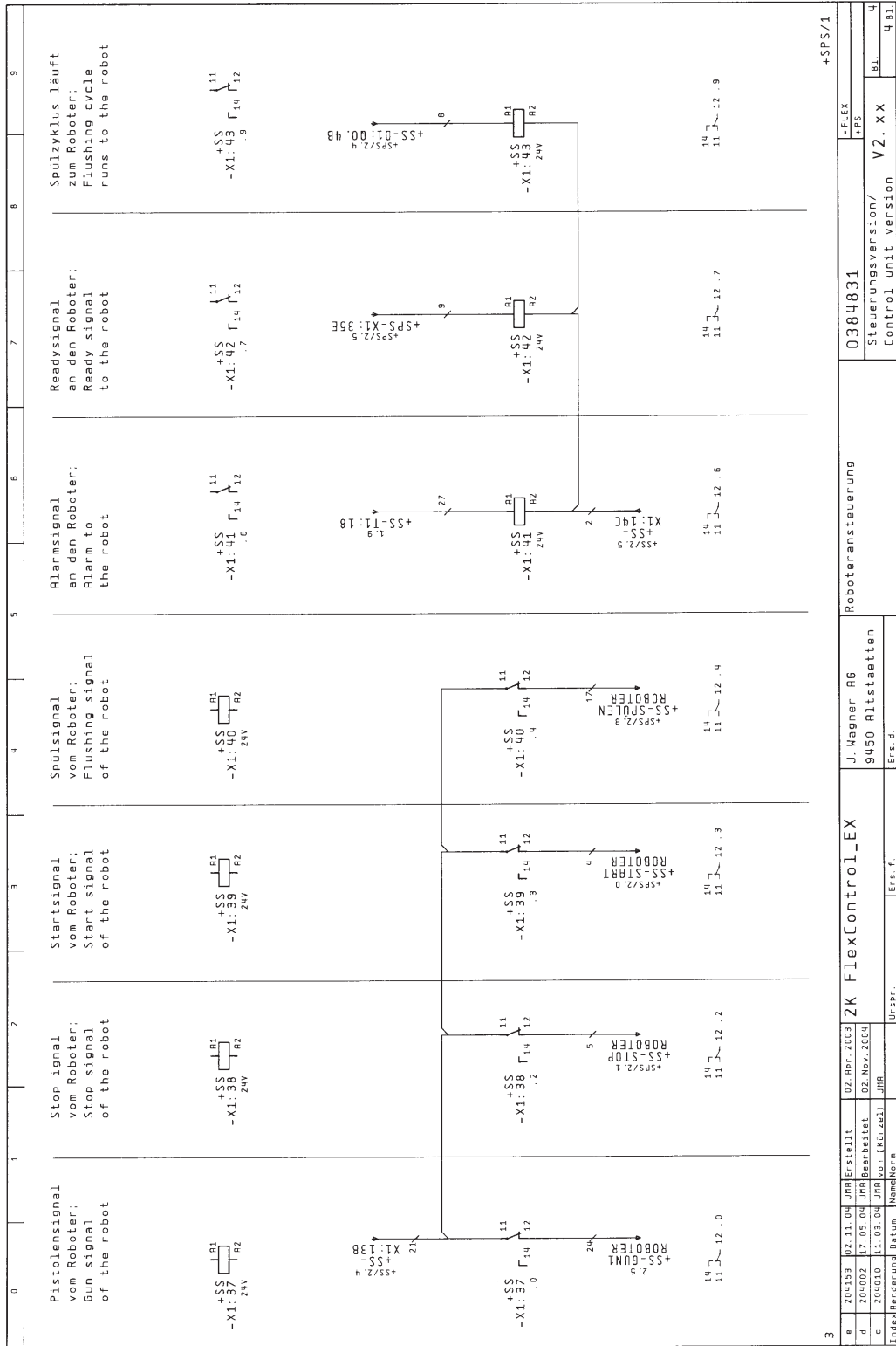
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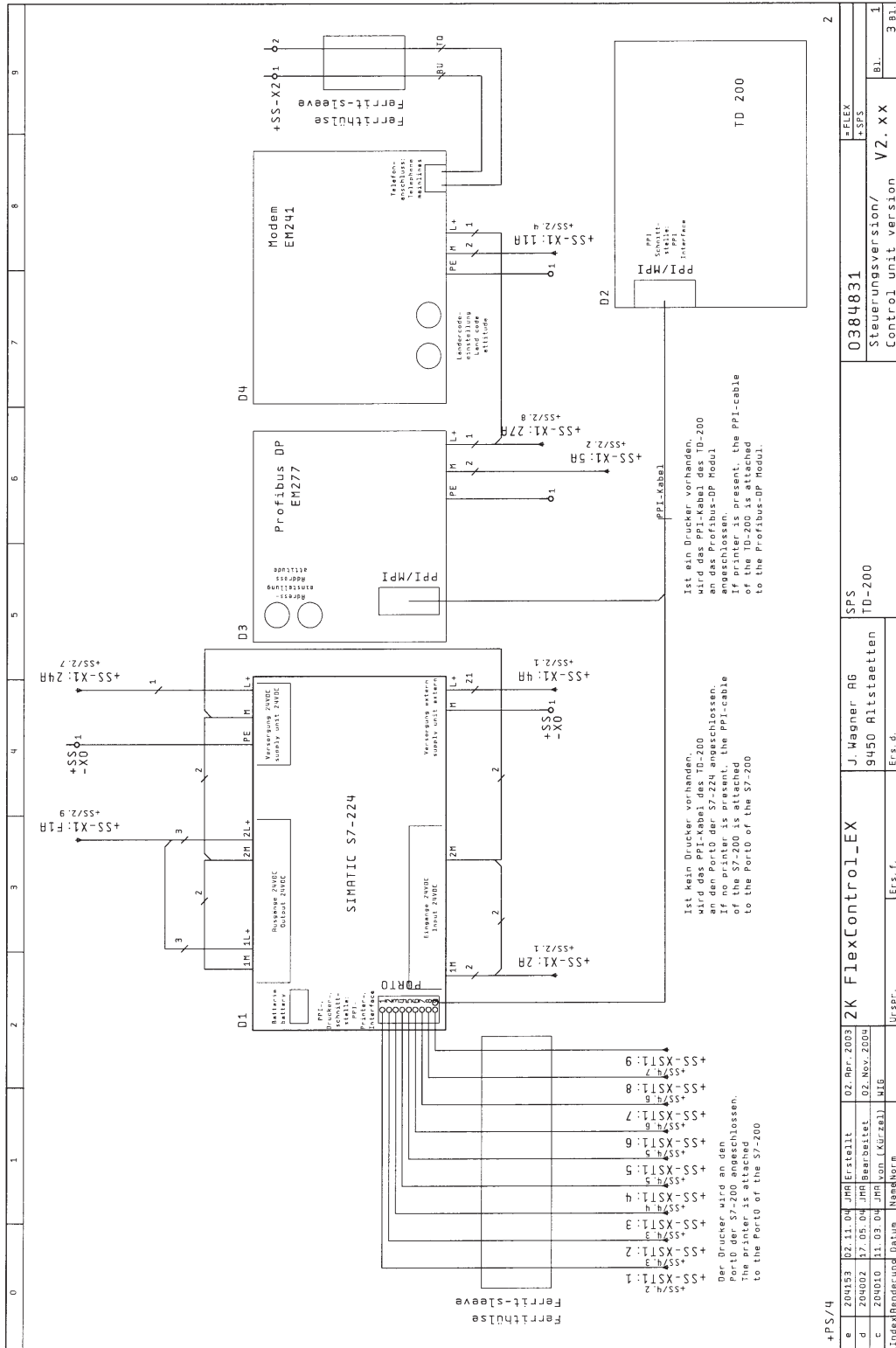


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a	Z04153	02.11.04	JHR	Erstellt	02. Apr. 2003	
d	Z04002	17.05.04	JHR	Bearbeitet	02. Nov. 2004	
c	Z04010	11.03.04	JHR	Kon. (Kürzell)	JHR	
Index/Renderung		Datum	Name/Norm	Urspr.	Erstf.	Erstf.

B\_00926

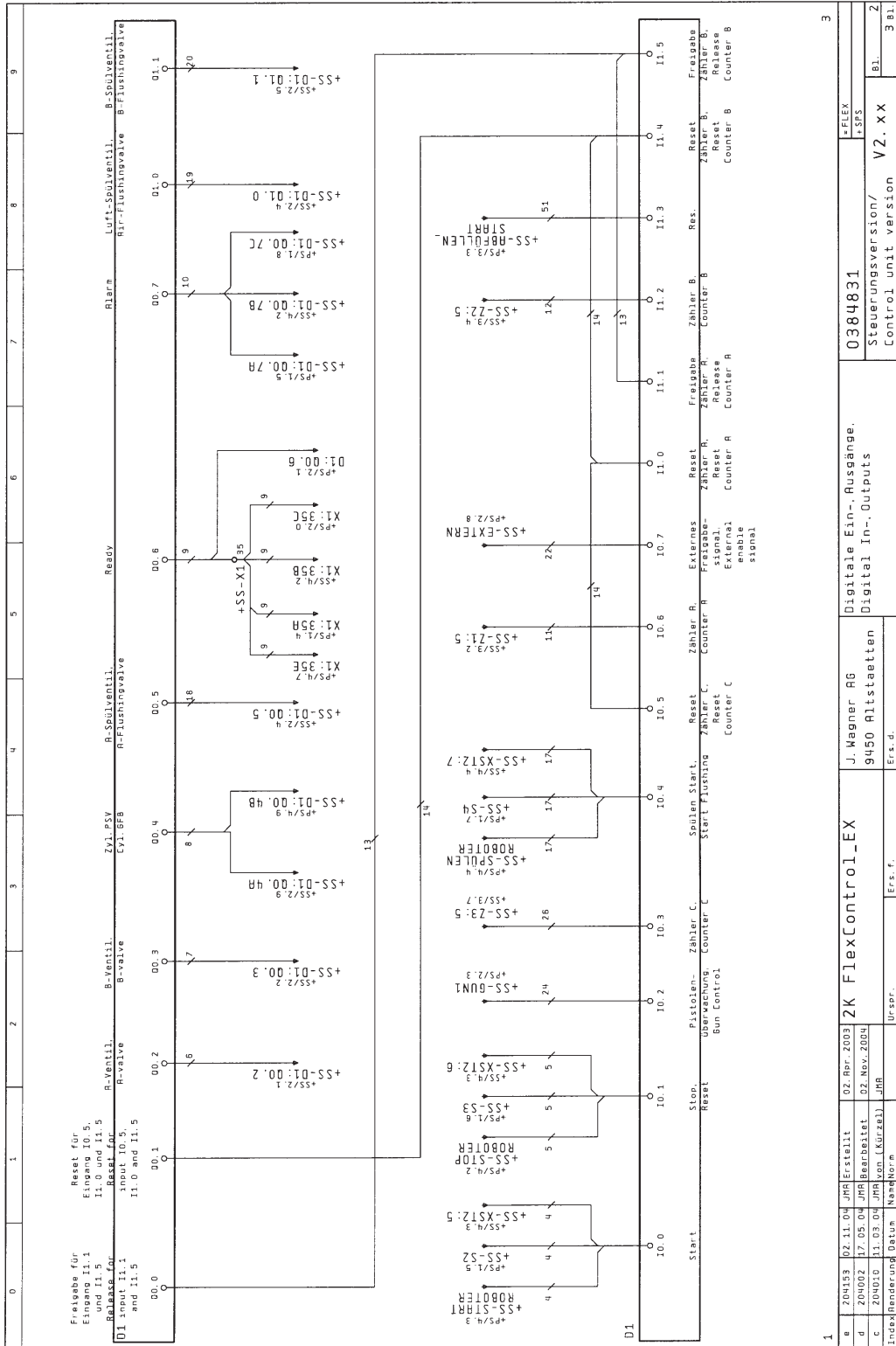


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e 204153 02.11.04 JWA Erstellt 02. Apr. 2003		9450 Altstaetten		TD-200		Steuerungsversion/		V2. XX		+SPS	
d 204002 07.05.04 JWA Bearbietet 02. Nov. 2004		Ers. d.		Ers. f.		Control unit version		3 Bl.		1	
c 204010 11.03.04 JWA Kon. (Kürzell) MIE		Ursprr.		Ers. d.		Control unit version		V2. XX		Bl. 1	

B\_00928



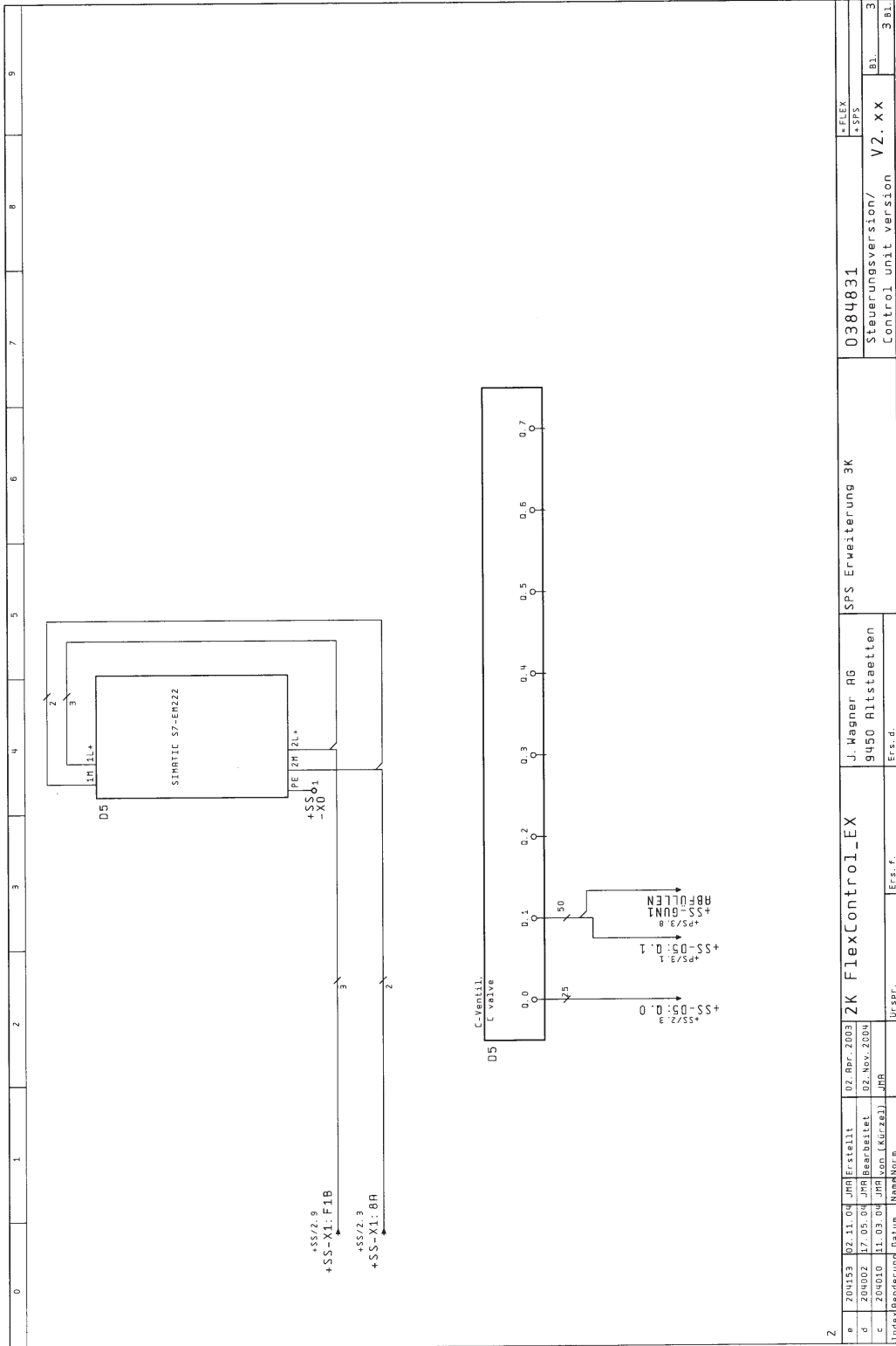
1	204153	02.11.04	JMA	Erstellt	02. Apr. 2003	J. Wagner AG	0384831	FLEX
d	204002	17.05.04	JMA	Bearbeitet	02. Nov. 2004	9450 Altstaetten	Steuerungsversion/ Control unit version	VZ. XX
c	204010	11.03.04	JMA	Von (Kürzel)	JMA	Erst-d.		B1.
				Name/Norm				3 Bl.

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OPERATING MANUAL



2	e	Z0H153	02.11.04	JHA	Erstellt	02. Apr. 2003	ZK FlexControl_EX	J. Wagner AG	SPS Erweiterung 3K	0384831	- FLEX + SPS	
	d	Z0H002	17.05.04	JHA	Bearbeitet	02. Nov. 2004		9450 Alttaetien				
	c	Z0H010	11.03.04	JHA	kon. (Kürzel)	JHA						VZ. XX
	Index/Bearbeitung		Datum	Name/Norm				Ers. f.	Ers. d.			Bl.
												3 Bl.

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<p><b>Germany</b> J. WAGNER GmbH Otto-Lilienthal-Str. 18 Postfach 1120 D- 88677 Markdorf Telephone: +49 7544 5050 Telefax: +49 7544 505200 E-Mail: service.standard@wagner-group.com</p>	<p><b>Switzerland</b> J. WAGNER AG Industriestrasse 22 Postfach 663 CH- 9450 Altstätten Telephone: +41 (0)71 757 2211 Telefax: +41 (0)71 757 2222 E-Mail: rep-ch@wagner-group.ch</p>
<p><b>Belgium</b> WAGNER Spraytech Benelux BV Veilinglaan 58 B- 1861 Wolvertem Telephone: +32 (0)2 269 4675 Telefax: +32 (0)2 269 7845 E-Mail: info@wsb-wagner.be</p>	<p><b>Denmark</b> WAGNER Industrial Solution Scandinavia AB Viborgvej 100, Skoerger DK- 8600 Silkeborg Telephone: +45 702 00245 Telefax: +45 868 56027 E-Mail info@wagner-industri.com</p>
<p><b>United Kingdom</b> WAGNER Spraytech (UK) Ltd. Haslemere Way Tramway Industrial Estate GB- Banbury, OXON OX16 8TY Telephone: +44 (0)1295 265 353 Telefax: +44 (0)1295 269861 E-Mail: enquiries@wagnerspraytech.co.uk</p>	<p><b>France</b> J. WAGNER France S.A.R.L. Parc de Gutenberg - Bâtiment F8 8, Voie la Cardon F- 91127 Palaiseau-Cedex Telephone: +33 1 825 011 111 Telefax: +33 1691 946 55 E-Mail: division.solutionsindustrielles@wagner-france.fr</p>
<p><b>Netherlands</b> WAGNER SPRAYTECH Benelux BV Zonnebaan 10 NL- 3542 EC Utrecht  Telephone: +31 (0) 30 241 4155 Telefax: +31 (0) 30 241 1787 E-Mail: info@wsb-wagner.nl</p>	<p><b>Italy</b> WAGNER COLORA S.r.l Via Fermi, 3 I- 20040 Burago di Molgora (MI)  Telephone: +39 039 625021 Telefax: +39 039 6851800 E-Mail: info@wagnercolora.com</p>
<p><b>Japan</b> WAGNER Spraytech Ltd. 2-35, Shinden Nishimachi J- Daito Shi, Osaka, 574-0057  Telephone: +81 (0) 720 874 3561 Telefax: +81/ (0) 720 874 3426 E-Mail: marketing@wagner-japan.co.jp</p>	<p><b>Austria</b> J. WAGNER GmbH Otto-Lilienthal-Str. 18 Postfach 1120 D- 88677 Markdorf Telephone: +49 (0) 7544 5050 Telefax: +49 (0) 7544 505200 E-Mail: service.standard@wagner-group.com</p>
<p><b>Sweden</b> WAGNER Industrial Solutions Scandinavia AB Skolgaten 61 SE- 56831 Skillingaryd Telephone: +46 (0) 421 500 20 Telefax: +46 (0) 370 798 48 E-Mail: info@wagner-industri.com</p>	<p><b>Spain</b> WAGNER Spraytech Iberica S.A. Ctra. N- 340, Km. 1245,4 E- 08750 Molins de Rei (Barcelona) Telephone: +34 (0) 93 680 0028 Telefax: +34 (0) 93 668 0156 E-Mail: info@wagnerspain.com</p>
<p><b>Czechoslovakia</b> WAGNER s.r.o. Nedasovská Str. 345 15521 Praha 5 - Zlicin Telephone: +42 (0) 2 579 50 412 Telefax: +42 (0)2 579 51 052 E-Mail: info@wagner.cz</p>	<p><b>USA</b> WAGNER Systems Inc. 300 Airport Road, unit 1 Elgin, IL 60123 USA Telephone: +1 630 503 2400 Telefax: +1 630 503 2377 E-Mail: info@wagnersystemsinc.com</p>



# WAGNER



Order number 384861

**Germany**

J.WAGNER GmbH  
Otto-Lilienthal-Str. 18  
Postfach 1120  
D- 88677 **Markdorf**  
Telephone ++49/ (0)7544 / 5050  
Telefax ++49/ (0)7544 / 505200  
E-Mail: service.standard@wagner-group.com

**Switzerland**

J.WAGNER AG  
Industriestrasse 22  
Postfach 663  
CH- 9450 **Altstätten**  
Telephone ++41/ (0)71 / 757 2211  
Telefax ++41/ (0)71 / 757 2222  
E-Mail: rep-ch@wagner-group.ch

[www.wagner-group.com](http://www.wagner-group.com)