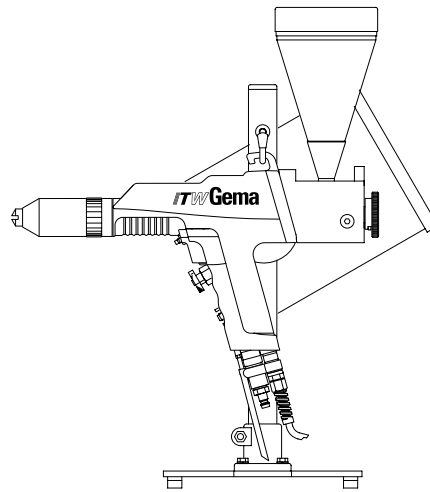


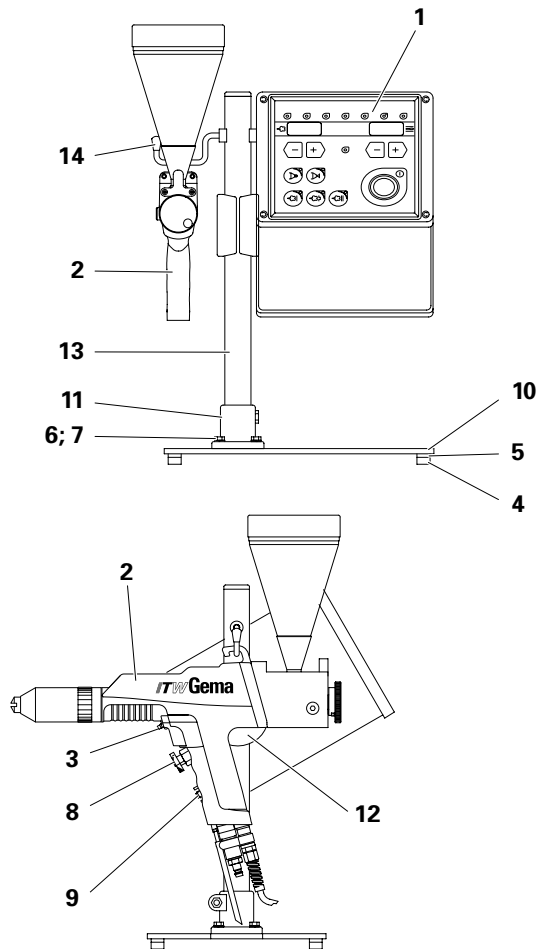
Operating Instructions and Spare parts list

EASY 1-C

Powder Coating Equipment

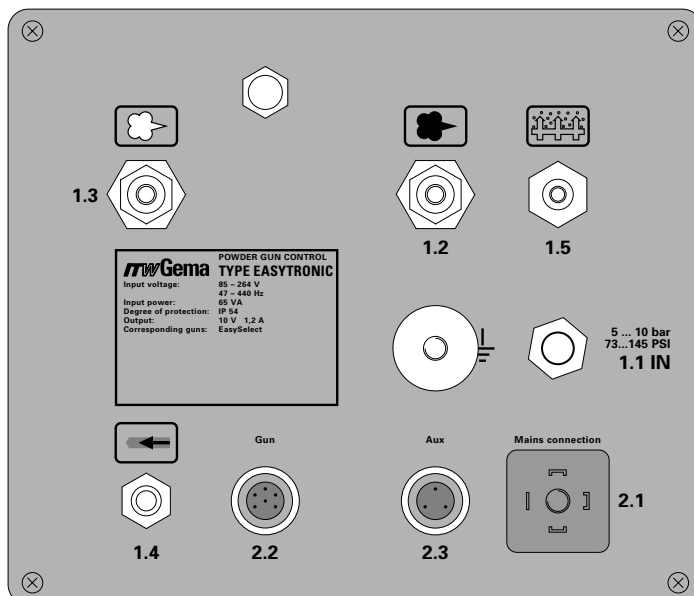


EASY 1-C ELECTROSTATIC MANUAL POWDER COATING UNIT



- 1 EasyTronic control unit
- 2 EasySelect-Cup Manual powder gun
- 3 Pneumatic hose with quick-release connector
- 4 Rubber pad
- 8 Grounding cable connection
- 9 Mains cable
- 10 Base
- 11 Column support clamp
- 12 Clamping element
- 13 Column
- 14 Gun holder

CONNECTIONS ON THE REAR OF THE EASYTRONIC CONTROL UNIT



- 1.1 IN Compressed air input
- 1.2 Conveying air connection
- 1.3 Supplementary air connection (not a function of EASY-C)
- 1.4 Rinsing air connection
- 1.5 Fluidizing air connection (not a function of EASY-C)
- 2.1 Power supply (85-264 V)
- 2.2 Gun connection for the EasySelect Manual gun. PG 1 Manual powder gun **cannot** be connected!
- 2.3 Output for Vibrator (EASY 1-B only) and Stirrer control (EASY 1-S only)
- ⊥ Grounding connection

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DIRECTIONS FOR USE

ELECTROSTATIC MANUAL SPRAYING EQUIPMENT FOR POWDER COATING

consists of: - EasySelect-Cup Electrostatic Manual Spray Gun
 - EasyTronic Control unit

This equipment is matched and should only be operated in this configuration.



SAFETY RULES FOR ELECTROSTATIC POWDER COATING

1. This equipment can be dangerous when not operated according to the following standards:
EN 50 050 (or VDE 0745 Part 100),
EN 50 053 Part 2 (or VDE 0745 Part 102),
and specification sheet, ZH 1/443 Electrostatic Powder Coating.
2. All electrically conductive parts, within 5 m of the coating area, especially the workpieces, must be grounded.
3. The floor in the coating area must be electrically conductive (normal concrete is generally conductive).
4. The operating personnel must wear electrically conductive footwear (i.e. leather soles).
5. The operating personnel should hold the powder gun in the bare hand. If gloves are worn they must be electrically conductive.
6. Connect the grounding cable (green/yellow) supplied to the grounding screw of the electrostatic manual powder coating equipment. The grounding cable must have a good metal to metal connection with the powder coating booth, the powder recovery equipment and the chain conveyor or the hangers of the objects.
7. The electrical cables and powder hose to the guns must be laid out so that they are protected from possible mechanical damage.
8. The powder coating equipment must switch on only after the powder booth is in operation. If the booth breaks down, then the powder coating equipment must switch off.
9. The grounding of all conductive parts is to be checked at least once a week.
10. When cleaning the powder gun and when replacing nozzles the control unit must be switched off.

TECHNICAL DATA OF THE EASY 1-C MANUAL POWDER COATING EQUIPMENT

Type	EASY 1-C
Electrical data	
Input voltage:	85-264 VAC
Frequency:	47-440 Hz
Connected load:	65 VA
Rated output voltage (to powder gun):	max. 12 V _s
Rated output current (to powder gun):	max. 1 A
Type of protection:	IP 54
Temperature range:	0° C to +40° C (+32° F to +104° F)
Approval:	
Pneumatic data	
Main compressed air input:	G 1/4" (Female)
Max. Input pressure:	10 bar
Min. Input pressure:	6 bar
Max. Water vapour content of the compressed air:	1.3 g/m ³
Max. Oil vapour content of the compressed air:	0.1 mg/kg (Oil/Water)
Max. Compressed air consumption	
Powder hose - ø 11 mm:	8 m ³ /h
Dimensions	
Width:	324 mm
Depth:	285 mm
Height:	428 mm
Weight:	14 kg
Powder capacity:	2 l (approx. 2 kg)

**IMPORTANT**

The EASY 1-C Manual Powder Coating equipment can only be used with the EasySelect-Cup Manual powder gun.

ABOUT THESE OPERATING INSTRUCTIONS

These operating instructions contain all the important information which is required to operate the EASY powder coating equipment. It will guide you safely through the installation stage, and also give notes and tips for the optimum use of your new powder coating system. The information about the functioning of the individual system components - EasyTronic powder gun control or EasySelect-Cup manual powder gun will be found in the respective accompanying documentation.

EASY 1-C ELECTROSTATIC POWDER MANUAL EQUIPMENT**1. FIELD OF APPLICATION**

The EASY 1-C Electrostatic Manual Powder Coating equipment with the EasySelect-Cup Manual powder gun is ideally suited for manual coating of objects in paint laboratories and for coating trials, and also especially for powder quality checks.

2. SCOPE OF DELIVERY FOR EASY 1-C

An EasyTronic control unit **(1)** in a metal housing with a Mains connection cable.

A base **(10)** with a column **(13)** and a gun holder **(14)**.

An EasySelect-Cup Manual powder gun **(2)** with electric cable, rinsing hose and standard nozzle set (see EasySelect-Cup Manual powder gun operating instructions).

Pneumatic hoses **(3)** for conveying air (red), connection (transparent).

INSTALLATION OF THE POWDER COATING EQUIPMENT

The Manual Powder equipment is preassembled in the factory. Only certain cables and hoses must be connected by the customer (See also separate assembly instructions).

1. Connect the hose for the compressed air supply from compressed air circuit directly to the main air connection - **1.1 IN** on the rear of the control unit (female thread: 1/4" B.S.P.).

NOTICE

The compressed air must be free from oil and water.

2. Connect the hose nuts supplied to the supplementary air connection - **1.3** or to the corresponding fluidizing air output - **1.5**.
3. Fit the grounding connection cable on the control unit \perp with the grounding screw, and the 5 m long grounding cable with the clamping clip on the booth or on the hanger device.
4. Connect the gun cable with the 7 pole plug on the rear of the control unit on the socket - **2.2** (Gun).

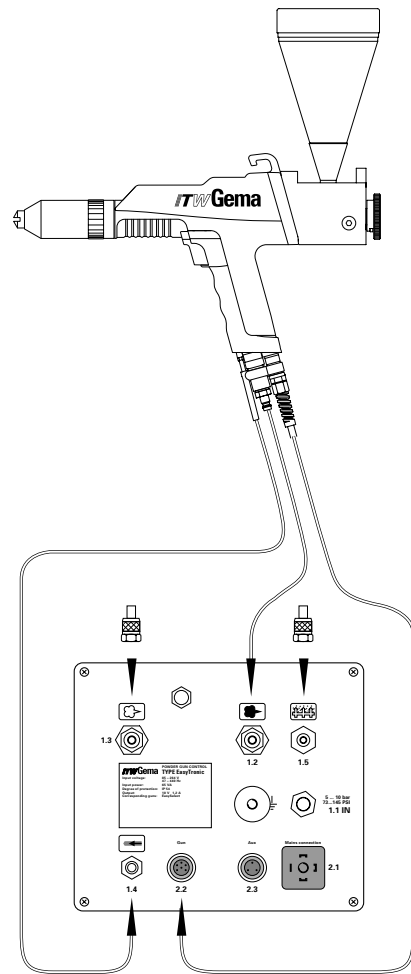


Figure 1

NOTICE

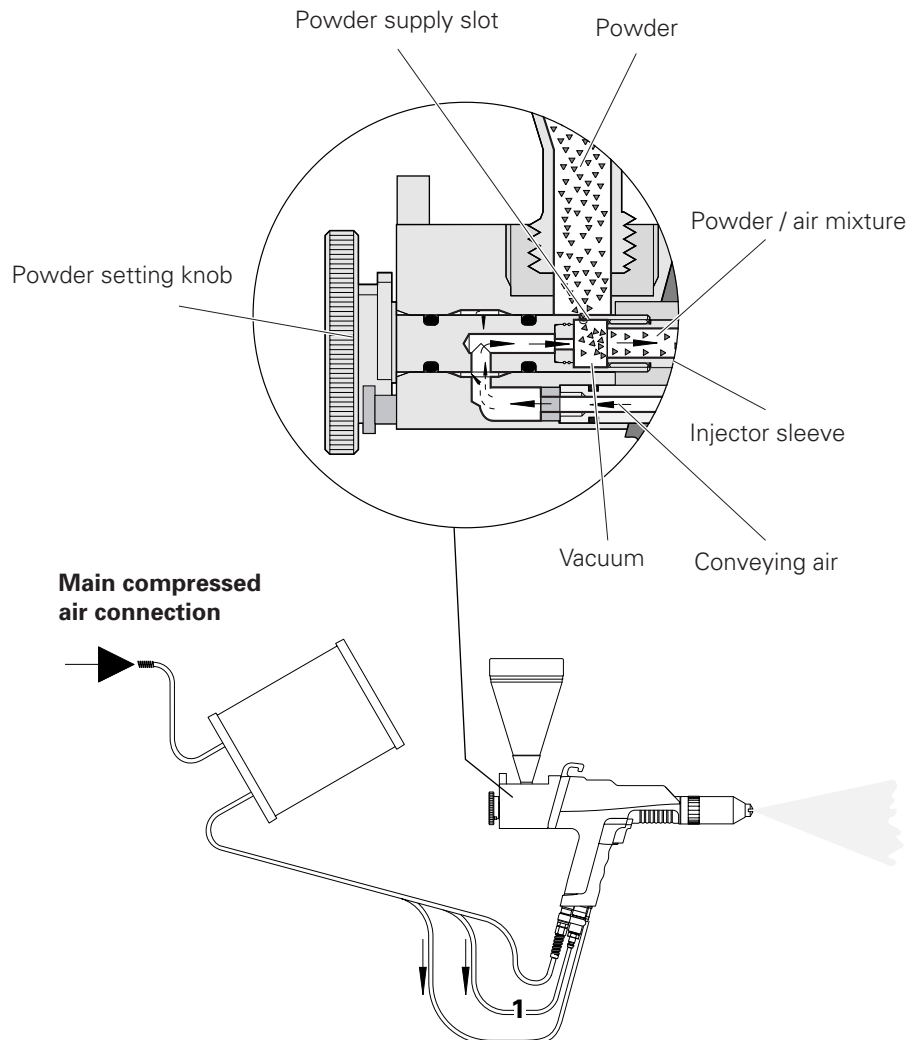
The PG 1 Manual powder gun cannot be connected!

5. Connect the hose for rinsing air on the rinsing air output - **1.4** and on the powder gun.
6. Connect the red hose for conveying air to the corresponding output - **1.2** on the rear of the control unit and to the powder gun.
7. Connect the Mains cable to the socket - **2.1**.

DESCRIPTION OF FUNCTION

A vacuum is created by the inflow of conveying air into the space between the injector nozzle and the injector sleeve. The low pressure created sucks the powder from the powder funnel through the powder supply slot into the gun. The powder is electrostatically charged as it leaves the gun nozzle. In addition, an electrostatic field is created between the gun nozzle and the grounded object. Powder charged and sprayed in this way remains adhered to the surface of the object.

The conveying air (1) and the rinsing air are set on the control unit, and the powder volume is set with the powder setting knob on the gun. To decrease the output of powder the powder setting knob is turned in the counter-clockwise direction.




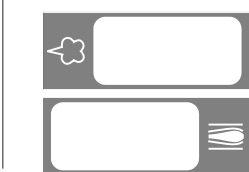
The arrows always show the direction of flow

Figure 2


EASYTRONIC CONTROL UNIT


The operating panel of the EasyTronic control unit consists of 4 main areas: Diagnostic LEDs, Displays, "+/-" Keys, and Function keys.

- 

1. The **Diagnostic-LEDs** 1-8 serve to show the status of the equipment, and equipment faults. Detailed information is found in Chapter "Troubleshooting".
- 

2. There are two **Displays** with whose help the following values are displayed:

 - **Powder output** (Setting range 0-100 %) Powder output in % always refers to the max. possible output volume to the total air volume setting.
 - **Total air volume** (Setting range 1.6-6.0 Nm³/h)
- 

3. The **Keys "+" and "-"** are for setting the powder output, and the total air volume used.
If the Key is pressed once, the value is increased or decreases, respectively, by one step. If the Key is pressed continuously, the setting change rapidly.
- 

4. The **Function keys** have the following functions:

 - **Electrode rinsing air for flat jet nozzles**
 - **Electrode rinsing air for round jet nozzles**

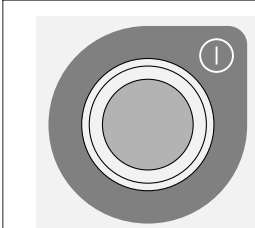
When a Key is pressed once, the corresponding function is activated, and the corresponding LED illuminates.
If a Key with an illuminated LED is pressed for longer than 1 second, the function is deactivated.
ITW Gema recommends leaving the electrode rinsing air switched on, but can, however, remain switched off with application with very small amounts of powder.

 - **Application keys:** With these keys the electrostatic (High-voltage, and current) are automatically set so that the setting for the selected application is the optimum.
 - Settings for flat parts
 - Settings for complicated parts with depressions
 - Settings for coating parts already coated

High-voltage and current can be deactivated when the corresponding key with an illuminated LED is pressed for longer than 1 second



The EasyTronic control unit is switched on and off with a **Push button**.
If the equipment is switched on, the control lamp is illuminated.



When the equipment is first switched on the preselected factory settings displayed:

60%	4.0 Nm³/h
Flat jet rinsing	Complicated parts

After switching the equipment off (also when the equipment is disconnected from the Mains) the actual settings are retained.

Figure 3

PREPARATION FOR START UP

A) FILLING THE POWDER FUNNEL

1. Remove the powder funnel cover.
2. Fill with powder: Type ø 100 = approximately 0.4 dm³.
Type ø 125 = approximately 0.75 dm³,
Fluidized cup = approximately 0.375 dm³
Do not fill the fluidized cup too much, otherwise the fluidized powder can escape from the cover.
3. Carefully replace the cover of the powder funnel again.

B) SWITCH THE BOOTH ON

Switch the powder coating booth on according to the operating instructions.

C) FUNCTION CHECK

1. Press the main switch on the control unit. The control lamp in the switch illuminates.
The equipment carries out the calibration automatically. An increase in sound can be heard inside the control unit. Both displays show 888. The equipment is ready for operation after not more than 20 seconds and switches to the factory settings.
2. Take the powder gun in the hand and point at a **grounded** object in the booth, distance approx. 20 cm.
3. Press the gun trigger.
The LED No. 8 illuminates. The High-voltage is switched on and powder is conveyed.

If all tests are positive, the control unit, and the powder gun are ready for operation. If one of the functions is not operating as expected, check this in the "Troubleshooting Guide", on pages 11 and 12.

DAILY START UP**A) POWDER FLUIDIZING (FLUIDIZED CUP)**

The fluidizing of the powder is dependent on the type of powder, the humidity of the air, and the ambient temperature. The fluidizing operates when control unit is switched on.

Proceed as follows:

1. Slowly increase the fluidizing air with the regulating screw on the fluidized funnel.

The powder should only "boil" lightly, but continuously.

B) REGULATE THE POWDER OUTPUT, AND POWDER CLOUD

The powder output is dependent on the powder, and the total air volume setting.

SET TOTAL AIR VOLUME

1. Switch on the control unit
2. Set the total air volume max. 4 m³/h.

The selection takes place with the aid of the + and - keys on the control unit.

3. Select the powder output volume 100%

The selection takes place with the aid of the + and - keys on the control unit

The total air volume is maintained constant automatically.


- (4.) Check the fluidizing of the powder (in the Fluidized cup)
5. Point the powder gun into the booth and press the powder gun trigger
6. Turn the powder setting knob in the clockwise direction to the end stop on the gun = Maximum output.

To decrease the powder output turn the powder setting knob in the counter-clockwise direction.


SELECT POWDER OUTPUT VOLUME

7. Select the correct electrode rinsing.

When using flat jet nozzles:

- Press the key with the corresponding symbol . The LED of the corresponding key illuminates.

When using round jet nozzles with air rinsed deflector plates:

- Press the Key with the corresponding symbol . The LED of the corresponding Key illuminates.

SELECT ELECTRODE RINSING

(continued)

8. Adjust the powder cloud to a test object

When using flat jet nozzles:

- Unscrew the threaded sleeve approximately 45°, so that the flat jet nozzle (or extension) can be turned slightly
- Turn the flat jet nozzle to the desired axial position
- Tighten the threaded sleeve again

When using round jet nozzles with air rinsed deflector plates


- Exchange the deflector plate (ø 16, 24, and 32 mm supplied with the powder gun)

C) POWDER COATING



Make sure that all electrostatically conductive parts within 5 m of the coating booth are grounded!

1. Take the powder gun in hand and point it into the coating booth, however, do not point it at the object to be coated yet
2. Select the application settings

Press the corresponding application key  on the control unit. The LED of the corresponding Key illuminates.

3. Press the powder gun trigger
4. Coat the object(s)

D) REMOTE CONTROL THROUGH THE POWDER GUN

Different applications can be selected with the aid of the remote control keys the rear of the powder gun:

- Press the remote control key.

Check by observing the LED display on the injector block:

Red = Flat parts

Green = Complicated parts

Red/Green (alternating) = Spray over)

E) SWITCHING OFF

1. Release the powder gun trigger
2. Switch off the control unit

The settings for high-voltage, rinsing air, and powder output are retained.

COLOUR CHANGE

1. Empty the powder funnel and clean
2. Clean the injector block with compressed air.
3. Blow out the powder tube with compressed air and with the spiral brush supplied (see EasySelect-Cup Manual powder gun operating instructions).
4. Prepare the coating equipment for start-up with new powder (see "Filling the powder funnel" page 6)

MAINTENANCE SCHEDULE

Regular and conscientious maintenance increases the operating life of the unit and ensures a longer constant coating quality!

A) DAILY MAINTENANCE:

- 1a Clean the gun, see EasySelect-Cup Manual powder gun operating instructions

B) WEEKLY MAINTENANCE:

- 1b Clean the powder gun, only fill the powder funnel shortly before restarting operation.
- 2b Check the grounding connections between the control unit and the coating booth, the object hanger device or the chain conveyor

C) WHEN THE POWDER COATING EQUIPMENT IS NOT USED FOR A NUMBER OF DAYS:

- 1c Remove the Mains plug
- 2c Clean the coating equipment, see Point 1b
- 3c Turn off the main compressed air supply

CLEANING

CLEANING THE EASYSELECT-CUP MANUAL POWDER GUN

Frequent cleaning of the powder gun ensures the quality of the coating.



Switched off the control unit before cleaning the powder gun. The compressed air used for cleaning must be free from oil and water.

Daily:

1. Blow off the exterior of the powder gun, and wipe clean etc.

Weekly:

2. Remove the powder funnel from the powder gun and clean.
3. Remove the nozzle from the powder gun and clean.
4. Blow the gun through from the injector block with compressed air in the direction of flow.
5. Clean the powder gun tube with the spiral brush supplied.
6. Blow the powder gun through with compressed air again.
7. Assemble the powder gun and reconnect.

TROUBLESHOOTING GUIDE

The Diagnostic LEDs 1-7 on the control unit illuminate green when switching on, and LED 8 remains dark. They illuminate red, only when the powder gun trigger is pulled.

Fault	Causes	Remedies
LEDs 1-3 dark	– Power supply unit defect	Replace power supply unit
LED 4 illuminates red	– Solenoid valve defect	Replace solenoid valve spool
LED 5 illuminates red	– The gun is not connected – Gun plug, gun cable or gun cable connection defect – Remote control on the gun defect	Connect the gun Replace the corresponding part or send in for repair Replace the remote control
LED 6 illuminates red	Solenoid valve for rinsing air of the Flat jet nozzle defect	Replace the solenoid valve spool
LED 7 illuminates red	Solenoid valve for rinsing air of the Round jet nozzle defect	Replace the solenoid valve spool
LED 8 remains dark, in spite of the gun trigger being pulled and the LED 5 illuminates green.	Gun plug, gun cable or gun cable connection defect	Replace the corresponding part or send in for repair
The gun LED remains dark, in spite of the gun trigger being pulled and the LED 8 illuminates red.	– Gun plug, gun cable or gun cable connection defect – Remote control on the gun defect	Replace the corresponding part or send in for repair Replace the remote control (Gun cover)
Powder does not adhere to the workpiece, in spite of the gun trigger being pulled and the gun sprays powder, the gun LED, and the LED 8 illuminate.	– High-voltage and current deactivated – High-voltage cascade defect – the workpieces are poorly grounded	Press the selection key (Application key) Send the powder gun in for repair Check the grounding, see also "Safety rules"
Control lamp in push-button does not illuminate in spite of the control unit being switched	No power: – Control unit is not connected to the Mains In the equipment: – Bulb burned out – Power supply unit defect	Connect the unit to the Mains with the Mains cable Replace Replace
		(cont.)

TROUBLESHOOTING GUIDE (CONT.)

Fault	Causes	Remedies
<p>The gun does not spray powder, in spite of the control unit being switched on, and the trigger is pressed.</p>	<p>No compressed air present</p> <ul style="list-style-type: none"> - Injector sleeve or gun clogged - Fluidizing does not function in the Fluidizing cup <p>No conveying air:</p> <ul style="list-style-type: none"> - Reduction valve defect - Solenoid valve defect - Electronic board defect 	<p>Connect the equipment to the compressed air</p> <p>Clean the corresponding part</p> <p>Set the fluidizing air with the corresponding setting screw</p> <p>Replace</p> <p>Replace</p> <p>Send in for possible repair</p>

BLOCK DIAGRAM

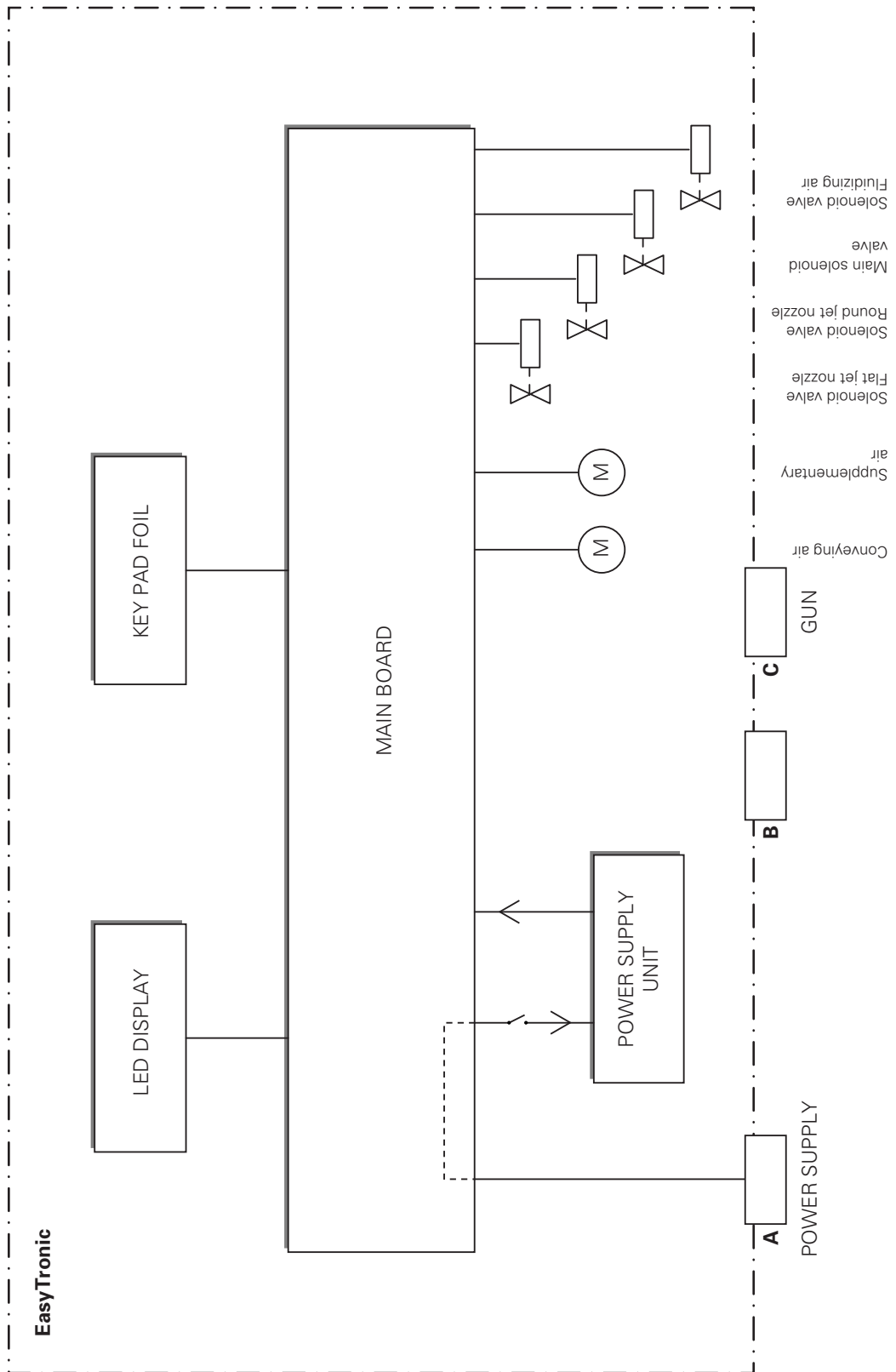


Figure 5

SPARE PARTS LIST**ORDERING SPARE PARTS**

When ordering Spare parts for powder coating equipment, please indicate the following specifications:

1. Type and serial number of your powder coating equipment
2. Order number, quantity, and description of each spare part

Example:

1. **Type** EASY 1-C, **Serial No.:** XXX XXX
2. **Order No.:** 201 073, 5 pieces, Fine wire fuse

When ordering cable and hose material the length required must be given.

The spare part numbers of yard/meter ware always begins with 1..... and are always marked with an * in the spare parts list.

Wear parts are always marked with a #.

All dimensions for plastic powder hoses are given as external diameter (o/d) and internal diameter (i/d):

e. g. \varnothing 8 / 6 mm, 8 mm outside diameter / 6 mm inside diameter (i/d).

EASY 1-C POWDER COATING EQUIPMENT

	Quick reference sheet	262 714
1	EasyTronic Control unit - complete	375 900
2	EasySelect-Cup Manual powder gun – see separate Spare Parts List	
3	Pneumatic connection (Conveying air) 6 m - red incl. Screw connection and Quick-coupling	381 217
	Pneumatic connection (Conveying air) 12 m - red incl. Screw connection and Quick-coupling	381 225
4	Rubber pad	234 915
5	Spacer	382 191
6	Hex. Screw - M6 x 1 mm	213 829
7	Spring washer - M6	205 117
8	Grounding cable - complete	301 140
9	EasyTronic Mains cable	378 771
10	Base	382 205
11	Column support - FS30	242 667
12	Clamping element - ø 30 mm - complete	376 183
13	Column - complete	382 302
14	Powder gun holder - complete	382108
	Double adapter - 1/4"-1/4" (for Main compressed air connection - 1.1 IN)	262 510

EASY 1-C POWDER COATING EQUIPMENT

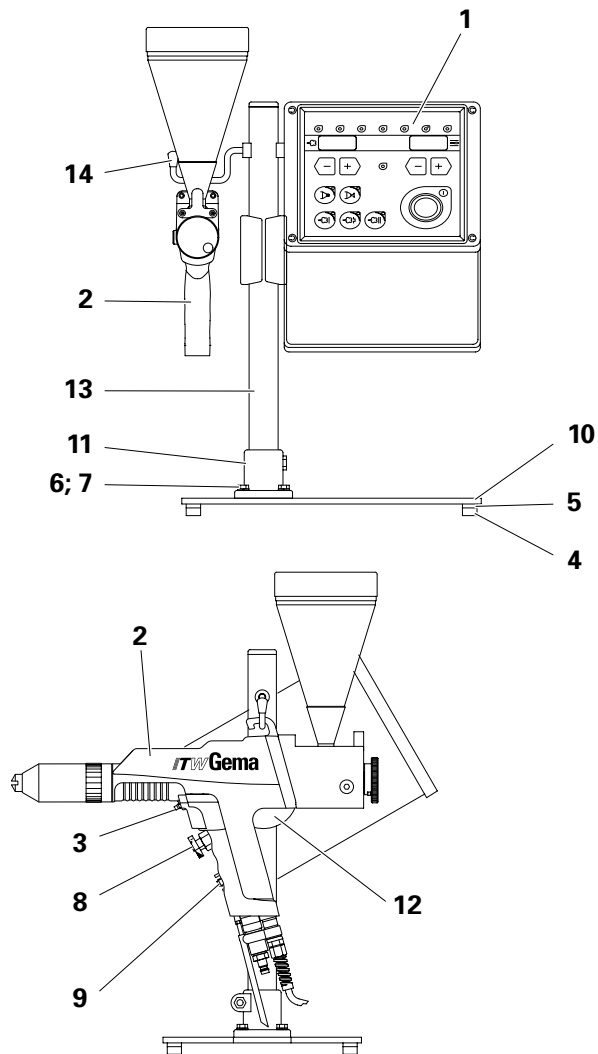


Figure 6

Documentation EASY 1-C

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