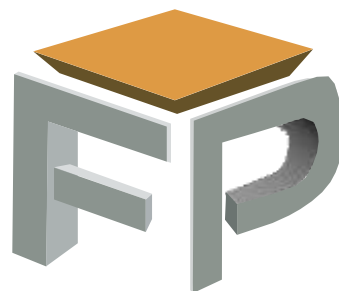




Powder Coating Equipment Kits User's Manual



2020





FIRST

Electrostatic Powder Coating

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İTOB Menderes

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Safety Regulations

This section sets out the fundamental safety regulations that must be followed by the user and third parties using the E-COAT Basic. These safety regulations must be read and understood before the E-COAT Basic is used.

1. Safety Symbols

The following warnings with their meanings can be found in the Sistem Teknik Makina operating instructions. The general safety precautions must also be followed as well as the regulations in the operating instructions.



DANGER!

Live electricity or moving parts are dangerous.
Possible Consequences: Death or serious injury.



WARNING!

Improper use of the equipment could damage the machine or cause it to malfunction.
Possible consequences: Minor injuries or damage to equipment

2. Conformity Of Use

1. E-COAT Basic Manual Coating Equipment is built to the latest specification and conforms to the recognized technical safety regulations. It is designed for the normal application of powder coating.
2. Any other use is considered as non-conform. The manufacturer is not responsible for damage resulting from improper use of this equipment; the end-user alone is responsible. If the E-COAT Basic is to be used for other purposes or other substances outside of our guidelines then Sistem Teknik Makina A.Ş. should be consulted.
3. Observance of the operating, service and maintenance instructions specified by the manufacturer is also part of conformity of use. The E-COAT Basic should only be used, maintained and started up by trained personnel, who are informed about and are familiar with the possible hazards involved.
4. Start-up is forbidden until it has been established that E-COAT Basic has been set up and wired according to the guidelines for machinery EN 60204-1 (machine safety) must also be observed.
5. Unauthorized modifications to E-COAT Basic exempt the manufacturer from any liability from resulting damage.
6. Relevant accident prevention regulations, as well as other generally recognized safety regulations, occupational health and structural regulations are to be observed.
7. In addition to above, country-specific safety regulations must be observed.

3. Technical Safety Regulations for Stationary Electrostatic Powder Spraying Equipment

1.General Information

The powder spraying equipment of Sistem Teknik Makina (FIRST) is designed for safe use and to the latest technological specs. Electrostatic powder coating equipment could create dangerous situations unless it's used properly. In addition to that, there might be a danger to life and limb of the user or third party, a danger of damage to the equipment and other machinery that belongs to the user and hazards to the proper operation of equipment.

1. The powder spraying equipment should only be started up and used once the operating instructions have been carefully read. Apart from any usage from the user manual, there lies a danger of damaging the equipment and loss of control of the equipment.
2. Operational safety has to be observed before every start-up. Regular Servicing is the essence of working safely.
3. Local legislation should be considered for the safety.
4. The plug has to be disconnected before the machine is opened for repair.
5. The plug and socket connections between spraying equipment should only be taken out when the power is off.
6. The connection cables have to be installed in a manner that they wouldn't interfere or damage the normal machine operation. Also the local legislation should be observed for the installation.
7. Only original Electron spare parts should be used, because only the original products will guarantee the equipment's explosion protection. Any damage caused by other used parts is not covered by the guarantee.
8. If Electron powder spraying equipment is going to be used with other devices/machinery from other manufacturers, their safety regulations should be also considered.

9. Be cautious while working in a powder/air mixture area. In the right concentration the mixture would be flammable, thus smoking is forbidden in the entire plant area.
10. Rule of thumb says that any person who uses a pacemaker should NEVER enter a high voltage area or places with electromagnetic fields. Note that people with pacemakers ALSO SHOULDN'T work in powder spraying installations.



WARNING!

Only the customer itself is responsible for the safe usage of the equipment
System Technic is not responsible for any damage resulted from the usage.

2. Consciously Working Safe

Every other individual who will be working for the assembly, start-up, operation, service and repair of powder spraying equipment must have read and understood the operating instructions and the "Safety Regulations". Operators have to be appropriately trained via System Technic assembly personnel and made aware of the possible danger of powder spraying equipment and the environment.

The control units for guns must only be set up and used in zone 22. The spray guns are permitted in the zone 21 which is created by them but only them.

Powder spraying equipment must only be used by trained and authorized personnel. This also applies for any kind of modification to the electrical equipment, which only should be carried out by a specialist.

It is essential that the operating instructions are understood before any kind of work is done with the equipment. All the procedures have to be done according to the instructions.

Powder spraying equipment can be turned off via the main power switch or the emergency shut down procedure.

3. Individual Safety Regulations for the Operating Firm and/or Personnel

1. First of all, anything which would influence the equipment negatively should be avoided for the technical safety.
2. The machine user should be well informed about no other people than trained personnel would use the machine.
3. The employer has to provide an operating instruction manual for specifying the dangers for humans and the environment by handling dangerous materials, as well as all preventive measures and workplace behaviors. This "document" must be well written in an understandable form in the language that the person employed for the equipment.
4. The operator is obliged to check the equipment for external damage once every shift changed at the very least. The operation characteristic changes should also be reported.
5. Users should conform the satisfactory working conditions else the equipment should not be used.
6. The operating firm must ensure that the users wear protective clothing like facemasks and working suits.
7. The firm also guarantees the cleanliness of the workplace and proper checks for the powder spraying equipment.
8. Safety devices should be always on the equipment at all costs unless the equipment is going to be maintained or cleaned. After the maintenance all the devices should be put on the equipment. The users must be trained well for this purpose.
9. Powder fluidization or high voltage spray gun checks have to be done when the equipment is switched on.

4. Special Types of Hazard

1. **Power:** All the high voltage equipment should be unplugged before opened. This is a huge life risk thus it has to be taken under great care.
2. **Powder:** Powder/air mixtures could be ignited by sparks. Sufficient ventilation is a must while using powder spraying equipment. Powder, which is not swept from the floor creates risky environment.
3. **Static Charges:** These could result in the following: Charges to people, electric shocks, sparks. Charging of objects has to be avoided.
4. **Grounding:** All electricity conducting parts and machinery in the workplace must be earthed 1.5 mt on either side and 2.5 mt around each booth opening. The grounding resistance must amount to a maximum of 1 MOhm resistance has to be tested regularly. The appropriate devices must be kept in the workplace for regular grounding checks.
5. **Compressed Air:** Compressed air could be created after long pauses of the equipment and this creates risk of pneumatic hose damage or uncontrolled release and improper use of compressed air. Compressed air should be drained properly.
6. **Crushing and Cutting:** There might be moving parts while operation (e.g. Conveyor Belt, Reciprocator). The operator must be trained to maintain the area safety and local security regulations.
7. **Exceptional Circumstances:** Local conditions must be met at all costs. Additional measures such as barriers can be used to prevent unauthorized access.
8. **Conversions and Modifications to the Equipment:** All conversions and modifications must be asked to Sistem Teknik prior to the process and no process should be done without Sistem Teknik's permission. This is essential for the equipment safety and conformity. Powder coating equipment should never be used if damaged; these parts should be changed immediately with the original Sistem Teknik replacement. Other replacements than Sistem Teknik original equipment does not conform the guarantee, thus the guarantee will no longer be valid. Equipment repairs must be done only by specialist or at Sistem Teknik verified shops.

5. Safety Requirements for Electrostatic Powder Coating

1. All the equipment used for powder coating is dangerous unless the instructions are not conformed.
2. Every electrostatic conductive part must be earthed within the 5 meter radius from the equipment.
3. The floor of the coating area should conduct electricity (Concrete is generally a conductive surface, check with your building project for more info)
4. The users should wear electricity conducting footwear.
5. The guns are earthed thus you must use them with your bare hands. If gloves are going to be used, make sure that they conduct electricity.
6. Grounding cable must be connected to the grounding screw of the electrostatic powder spraying hand appliance. It should have a good connection with the booth, hopper and conveyor chain (if used).
7. E-COAT Basic Device must be switched off while the hand gun is being cleaned.
8. The grounding must be checked every week. Remember that the grounding resistance must be 1 MOhm at a maximum.
9. The E-COAT Basic equipment should only be switched once the booth is working in proper conditions. If the booth malfunctions, E-COAT should be turned off.
10. At nozzle changes, the E-COAT Basic device should be shut down.
11. Only use spare parts / attachments and accessories from Sistem Teknik's original parts page. This ensures the safety of the equipment and conformity of use.
12. Cleaning agents creates the risk of hazardous fumes. Please check the manufacturer's manual about more information about the cleaning agents if they are used in the site.
13. If there is any damage on the powder coating equipment or the spray gun, operators should stop using it.
14. Especially make sure that the environmental regulations and the manufacturer's instructions are being conformed while disposing the powder lacquer and cleaning agents.
15. Repairs have to be carried out via specialists of Sistem Teknik trained personnel and never to be done in the operating area under any circumstance.
16. Dangerous dust concentration levels should be avoided in powder spraying areas. There must be sufficient technical ventilation available (e.g. booth ventilation) to prevent a dust concentration of more than %50 of the lower explosion limit (UEG = max. permissible powder/air concentration). If the UEG is not known then a value of 10g/m³ should be used.



FIRST

Electrostatic Powder Coating

Product Specific Security

If there is an installation work that will be done by the customer, the local regulations have to be considered.

The plant must be checked for any type of foreign objects inside the booth or in ducting, input and exhaust air before start up.

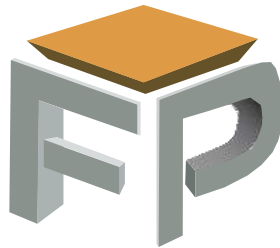
All equipment must be grounded according to the local regulations before start up as well.

Function Description

Field of Usage

E-COAT Basic is designed to use FIRST. Any other usage apart from mentioned above is non-conforming. Sistem Teknik is not responsible for any damage resulting from non-conforming usage, thus the customer takes the risk by him/herself.

Understanding the relationship between devices in powder coating is really important so the customer is advised to read all the operating manuals.



Scope of Delivery

1. E-COAT Basic Bare Kit

FP AUTOMATIC AND MANUAL POWDER COATING MACHINE

Control Panel	: FP 2018 Electro Pneumatic Control Panel
Input Voltage	: 110 - 250 V AC
Input Frequency	: 50 / 60 Hz
Power Consumption	: 25 W
Output Voltage	: 21 V pp
Output Frequency	: 19-27KHz(AFC) Valve Control
Voltage	: 24 V DC
Corona Current Range	: 0 – 120 μ A Corona Voltage
Range	: 0-100 kV Protection Class
	: IP 54 Operating Temperature
	: 50°C max. Paint Flow : 0- 30

kg/hour	
European Standard	: EN 500-50
Air Inlet Hose Diameter	: 8 mm (Inside Dia.) Air Consumption
	: 0 – 7 m ³ /h (max.)
Air Input Pressure	: max 6-7 bar / 43,5 Psi

Gun Type	: Corona System
Weight	: 540 gr (Except Cable)
Length	: 30 cm (Include Nozzle Group) Powder Coat
Hose Length	: 5 m
Voltage Cable Length	: 5 m
Input Voltage	: max 13.3 Vpp
Input Current	: max 0,9 A
Output Voltage	: 0 - 100 KV DC
Output Current	: 0 - 120 μ ADC Electrical
Protection Class	: IP 54 Charging Type (Polarization):
Negative	
Powder Coat Output	: 350 gr/min. (max.)
	:
	:



The adjustments set the upper limits of both the High Voltage and Current Values. The values can change while gun operation, according to the coating application, and the type of workpiece. These values will also change according to the length between the workpiece and the tip of the gun. Once the gun is triggered the values can be read on the same segment.

a. Air and Powder Adjustments:

EC OAT Basic Powder Coating Device includes two manually adjustable pneumatic regulators for Powder Air and Supplementary Air and manometers for indication. Additionally the Nozzle Air flow-rate can be adjusted through the adjustable hose connector located on the back side of the device.

From top left to bottom right the regulator adjustable air connections are:

1. Supplementary Air
2. Powder Air

Powder Transfer Air  , Supplementary Air  flow can be adjusted independently by the user.





Cleaning and Maintenance

1-1. Cleaning

1-1-1. Gun Body Cleaning

Daily:

1. Clean the body of the gun with pressurized air and a clean towel.
2. Remove the nozzle torque nut.
3. Remove the gun nozzle and the electrode and clean the gun with pressurized air.

Weekly:

4. Remove the powder paint hose.
5. Clean the powder paint input of the gun with pressurized air.
6. Clean the powder paint hose starting from the injector.

1-1-2. Nozzle Cleaning

Every other shift or at the end of a working day:

1. Remove the nozzle torque nut.
2. Remove the gun nozzle and clean both the electrode and the nozzle.
3. Clean all the powder thoroughly. Never try to scratch the paint with a strong material.

Weekly:

4. Check the nozzle group for scratches. Change the nozzle group using the spare parts list if needed.

2-. Maintenance

E-GUN C2 type manual powder coating gun is designed to be maintained with minimum effort.

1. Clean the powder gun body with a clean towel.
2. Make an eye check on the gun cable and input hoses.
3. Change the powder and pneumatic hoses if needed.

Part Change

The user can only change the consumables of the gun and some of the E-GUN coating gun parts.

The failures which are mentioned above can be observed from the “kV “titled segment in the front panel of the device. The fault should be fixed before starting the device and the device should be shut down and start up from the MAIN SWITCH.



FIRST

Electrostatic Powder Coating

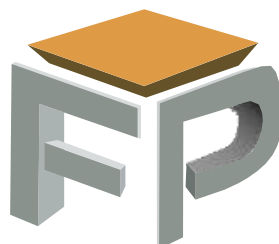
Part #	Part Name	Order Code	Wearing Parts
1	GUN CABLE EXTENSION KIT (5 m)	B07 EXT005	N/A
2	GUN CABLE EXTENSION KIT (10 m)	B07 EXT006	N/A

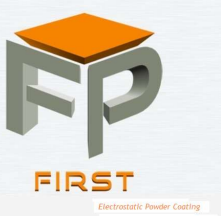


Part #	Part Name	Order Code	Wearing Parts
1	11X16 POWDER HOSE w/ DOUBLE CARBON DISCHARGE LINES (ORDER IN METERS)	H08 EH1116	N/A



Product #	Part Name	Order Code	CONSUMABLE
1	E-COAT EARTHING CABLE (3 m)	B07 ECK506	N/A





Product Life and Warranty

1. Product Life

- The economic life of the gun is approximately 10 years.
- This product life is highly dependent on the periodic maintenances and spare part changes in a timely manner. Improper maintenance will lead to lower product life.
- SİSTEM TEKNİK A.Ş. warrants supplying the needed service and the spare parts for the entire product life.

2. Warranty and Warranty Conditions

- The gun is warranted for production and parts failure for 1 (one) year
- Spare parts that are changed from the warranty are free-of-charge.
- The parts that are supplied in the system which are not produced by System technic İSTEM TEKNİK A.Ş. are warranted with their own manufacturers and their own conditions.
- SİSTEM TEKNİK A.Ş. will not be held responsible for the improper usage of the machine or any unauthorized usage. These are not in the warranty.

3. Operating Conditions

- Read the user manual before using the gun.
- Only legally allowed people can operate the gun.
- Only trained and authorized people can operate the gun.
- SİSTEM TEKNİK A.Ş.'s suggested spare parts should be used at all times.
- Proper maintenance has to be done and the spare parts has to be changed in a timely manner
- The operational safety has to be assured by the customer; the operators who are not capable of working under safety rules shouldn't be operating the Control Unit
- All the suggestions and warnings in this manual have to be carefully considered and applied.



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