

E-BOOTH *ColorX*

User's Manual

Plastic Powder Coating Booth User's Manual



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Her Hakkı saklıdır

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İTOB Menderes

İzmir TÜRKİYE

Bu dokümanın bir kısmı veya tamamı, hiç bir şart altında, elektronik ya da mekanik olarak Sistem Teknik Makina A.Ş.' den izinsiz kullanılamaz, kopyalanamaz ve çoğaltılamaz. Bu kurallar Türkçe dışındaki diller içinde geçerlidir.

Partiler arasında, Sistem Teknik Makina A.Ş., Tüm ekipmanda kullanılan yazılımın asıl sahibidir ve tüm haklarını saklar. Yazılım, Sistem Teknik Makina A.Ş.' den izin alınmadan çoğaltılamaz.

Sistem Teknik Makina A.Ş. kullanım kılavuzunun basımıyla ilgili hatalardan sorumlu tutulamaz. Kılavuzun içerdiği bilgiler haber verilmeden değiştirilebilir.

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1. General Safety Regulations

This section contains the basic safety rules for the E-BOOTH ColorX user. These rules must be read and understood before running E-BOOTH.

1.1 Safety Symbols



ATTENTION!
Electrical and moving parts are dangerous.
Possible consequences: Death or serious injury.



WARNING!
Improper use will damage the device or cause a malfunction.
Possible consequences: Minor injuries or damage to the equipment.

1.2. Conformity of use

1. E-BOOTH ColorX is built to the latest specifications and technically the latest safety rules. The design is based on normal powder coating application.
2. The product cannot be used for any other function. The manufacturer is not responsible for malfunctions resulting from improper use. The end user is responsible for these situations.
3. Operating, service and maintenance instructions are specified by the manufacturer. Use, maintenance and commissioning of the E-BOOTH ColorX must be carried out by trained personnel.
4. E-BOOTH ColorX commissioning must be carried out in accordance with the instruction manual.
5. Commissioning of E-BOOTH ColorX must be carried out in accordance with EN 60204-1 (Machine Safety).
6. All local health and safety rules concerning use should be observed and followed.

Protection Class of E-BOOTH ColorX Plastic Powder Coating Booth

Explosion Protection	Protection Type	Temperature Class
II 3 D	IP54	T6/85°C

Note: EN 60204-1 this standard includes the non-mobile machines electronic machines and programmable electronic hardware and systems.

1.3. Technical Safety Regulations for Stationary Electrostatic Powder Spraying Equipment

1.3.1. General Information

The powder spraying equipment of Sistem Teknik Makina (Electron) is designed for safe use and to the latest technological specs. Electrostatic powder 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.

- 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.
- Operational safety has to be observed before every start-up. Regular Servicing is the essence of working safely.
- Local legislation should be considered for the safety.
- The plug has to be disconnected before the machine is opened for repair.
- The plug and socket connections between spraying equipment should only be taken out when the power is off.
- 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.
- 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.
- If Electron powder spraying equipment is going to be used with other devices/machinery from other manufacturers, their safety regulations should be also considered.
- 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.
- 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
Sistem Teknik is not responsible for any damage resulted from the usage.

1.3.2. 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 Sistem Teknik assembly personnel and made aware of the possible danger of powder spraying equipment and the environment.

The E-Booth ColorX 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.

1.3.3. Safety Regulations for the Operating Firm and/or Personnel

- First of all, anything which would influence the equipment negatively should be avoided for the technical safety.
- The machine user should be well informed about no other people than trained personnel would use the machine.
- 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.
- 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.
- Users should conform the satisfactory working conditions else the equipment should not be used.
- The operating firm must ensure that the users wear protective clothing like facemasks and working suits.
- The firm also guarantees the cleanliness of the workplace and proper checks for the powder spraying equipment.
- 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.
- Powder fluidization or high voltage spray gun checks have to be done when the equipment is switched on.

1.3.4. Special Types of Hazard

- **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.
- **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.
- **Static Charges:** These could result in the following: Charges to people, electric shocks, sparks. Charging of objects has to be avoided.
- **Grounding:** All electricity conducting parts and machinery in the workplace must be grounded 1.5 m on either side and 2.5 m 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.
- **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.
- **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.
- **Exceptional Circumstances:** Local conditions must be met at all costs. Additional measures such as barriers can be used to prevent unauthorized access.
- **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.

1.3.5. Safety Requirements for Electrostatic Powder Coating

- All the equipment used for powder coating is dangerous unless the instructions are not conformed.
- Every electrostatic conductive part must be grounded within the 5 meter radius from the equipment.
- The floor of the coating area should conduct electricity (Concrete is generally a conductive surface, check with your building project for more info)
- The users should wear electricity conducting footwear.
- Grounding cable must be connected to the grounding screw of the electrostatic powder powder pump. It should have a good connection with the powder center, hopper and conveyor chain (if used).
- E-Booth ColorX must be switched off while the it is being cleaned.
- The grounding must be checked every week. Remember that the grounding resistance must be 1 MOhm at a maximum.
- 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.
- 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.
- Especially make sure that the environmental regulations and the manufacturer's instructions are being conformed while disposing the powder lacquer and cleaning agents.
- 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.
- 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 10 g/m³ should be used.

EN European Standards

2014/34/EU	The approximation of the laws of the Member States relating to apparatus and safety systems for their intended use in potentially explosive atmospheres
EN 12100-1 EN 12100-2	Machine safety
EN IEC 60079-0	Electrical equipment for locations where there is danger of explosion
EN 50 050-2	Electrical apparatus for potentially explosive atmospheres - electrostatic hand-held spraying equipment
EN 50 177	Stationary electrostatic spraying equipment for flammable coating powder
EN 16985:2018	Coating plants - spray booths for application of organic powder coating material - safety requirements
EN 60 529	IP-Type protection: contact, foreign bodies and water protection for electrical equipment
EN 60 204	VDE regulations for the setting up of high voltage electrical machine tools and processing machines with mains voltages up to 1000 V

1.4. Product Specific Safety

1.4.1 Setup

If all or part of the installation is to be carried out by the customer, the local rules must be strictly examined and the installation must be carried out in consideration.

The production area and the factory should be inspected for any foreign matter, and care must be taken to ensure that there are no foreign substances in the vicinity of the product, on the interior surfaces of the booth where the product is used, and in the ventilation.

Each equipment must be earthed in accordance with local regulations.

1.4.2 Equipment Operating Safety

Before operating the E-BOOTH ColorX, read the operating instructions for all equipment used in the booths.

These can be E-GUN, E-FEED, E-ROBOT products. All equipment manuals must be stored close to the booths and potential problem solutions and spare parts should be examined from these manuals. Electron After Sales Services will assist the customer in any problem.

1.4.3 Every Operating Safety

- If there is any foreign material in and around the cabin, it should be removed.
- The pneumatic connections of the cabinet and all products connected to the cabinet shall be observed.

1.4.4 Entry to the booth



WARNING!

If not required, the booth must not be entered. It is dangerous to remove foreign parts from the booth and get inside, except cleaning the booth. The place has a slippery structure.

1.4.5 Repairs



WARNING!

Repairs should only be carried out by trained personnel.

2. Transport and Packaging

2.1 Safety Rules

Correct bearing elements must be used for transport. These elements should be chosen to take into account the weight and structure of the booth. They must be trained on the personnel to carry out the transportation. The detachable parts of the booth must be properly separated and transported.

2.2 Transport

The truck must be used for short-range equipment transports or relocations in the same environment. When transporting plastic cabins, it is necessary to consider the stress on the material. The force applied directly on the plastic material should be kept to a minimum. The cabinet should not be transported at -15°C . In addition, the cabinet must not be transported above 60°C . The plastic cabinet must be away from sunlight. The dimensions of the cabinet must be taken into consideration before transporting.

3. Design and Functions

3.1 Area of Use

E-BOOTH ColorX powder coating booths are specially designed for mass production areas. Our booths are designed to change color easily and can be monitored in PLC.

Some important features are listed below:

- Low bottom.
- Homogeneous paint absorption
- Fast color change
- Powder guns that can be aligned vertically

3.2 Function Description

The elements determining the working principle of the powder coating booth arise with the requirements for powder coating application.

- Keeping the powdered area clean and protecting the powdered environment from external factors / foreign matter

- Air / dust mixture in and around the booth does not reach dangerous levels

With an effective air transport system, powder paint is absorbed for the booth and air ducts and the possibility of explosive atmosphere is reduced.

With the help of the fan on the filter unit, the dust passing through the air ducts through the E-BOOTH ColorX powder paint booth is kept in the filters after passing through the cyclone separator and the exhaust air is kept clean. Furthermore, the suction fan speed keeps the possible air / dust mixture concentration away from the explosion potential range.

The cyclone separator unit separates the powder / paint mixture sucked from the air duct. Thus, a small amount of paint and a large amount of dust are transferred to the filter unit as a percentage.

It is used with the control panel on the powder coating booth or with the help of PLC screen according to the system. The use and shutdown of the E-GUN powder spray guns are carried out from the main control cabinet with the control units.

When the booth is started, the suction fan is activated first and the air suction inside the booth is started.

When all equipment connected to the cabinet is switched on, the cabinet is prepared for painting. This equipment can consist of more than one equipment, from E-GUN powder spray guns to E-COAT controllers, E-ROBOTS and Powder Management Center.

After these steps, you can start to paint in the powder coating booth. If there is a problem with the powder suction fan, stop working and check the problem solving methods or contact Electron After-Sales service.

3.3 Powder Paint Flow

Powder coating is fluidized by means of air in the powder management center and conveyed to the guns by means of injectors. Coating process is performed with guns.

When enough paint is sprayed on the parts to be coated, powder paint falls into the cabin and suction is provided towards the paint air duct. The paint passing through this channel is separated by a cyclone separator.

The cyclone separator is separated from the powder by the speed of centrifugal force principle and collected under the cyclone. The dust is removed from the cyclone and passes to the filter unit. Powder coating can be carried to the powder management center by 3 different methods.

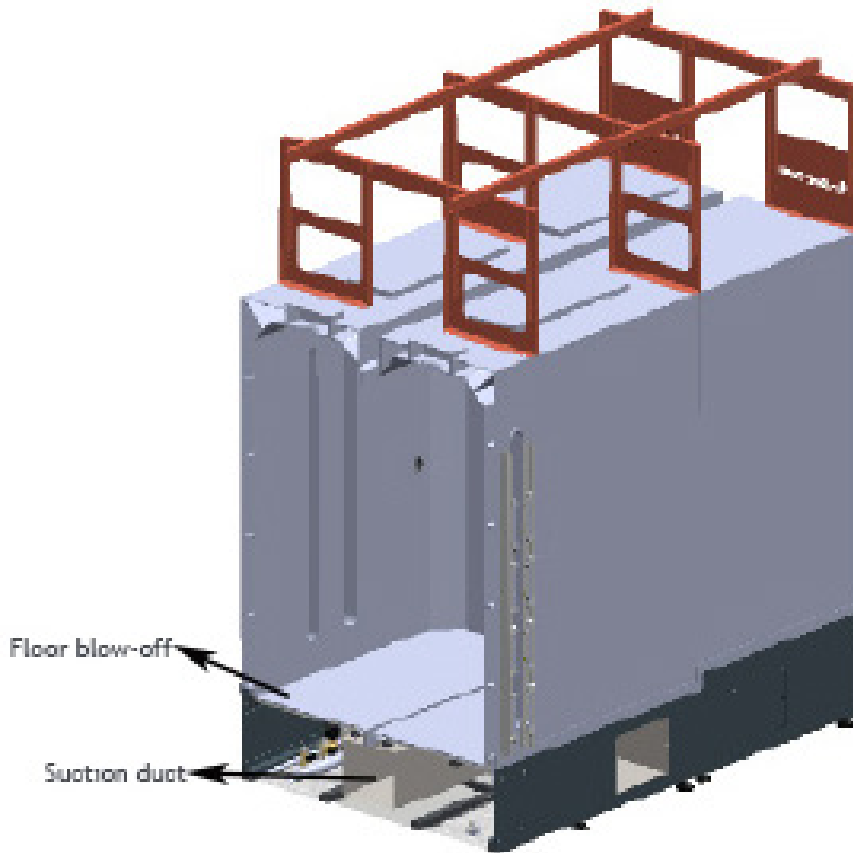
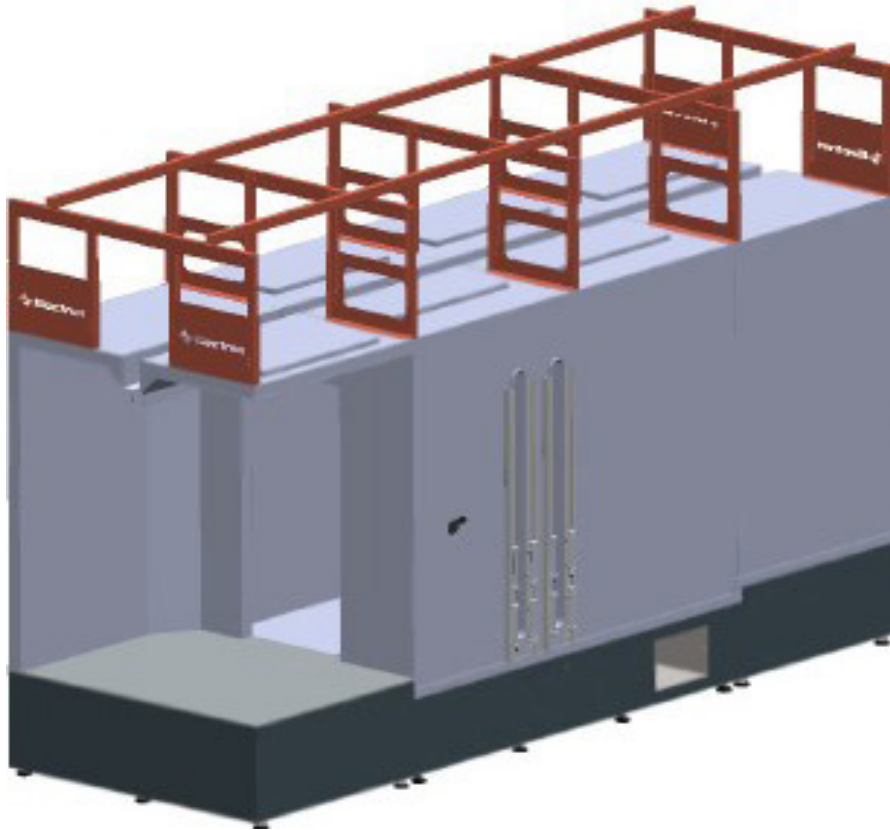
The remaining dust / paint mixture passes through the cyclone to the filter unit and is retained in the filters there in. Fresh air comes out of the filter. The retained dust / paint mixture is deposited in the waste storage.

3.4 Body of the booth

ColorX booths are designed with double-walled plastic for optimal powder coating.

All parts in the booth are well grounded. In this way, powder coating can be applied in the best quality.

It is illuminated by luminaires to provide sufficient lighting for the booth.



a. Zemin üflemesi

Bottom of the ColorX powder coating booth there are blow-through gaps. These gaps prevent the accumulation of powder paint on the cabin floor and facilitate the suction of the paint into the air duct. The floor cleaning air is determined at the factory and operates at specified time intervals. The valves are under the cab floor.

b. Powder suction

The blowing pressure is determined by the booth dimensions and the powder coating used. The air blown through the holes on the side of the booth pushes the powder paint into the slot in the middle of the booth and suction is performed. Suction homogeneity is provided by these holes.

The booth air duct is connected to the cyclone separator and the outlet part is designed to be opened and controlled. The pipes can be cleaned to work with compressed air. Dust and paint mixture is transferred to the cyclone separator through this channel.

An important consideration here is the powder coating that adheres to the cabin walls. To extend the cabinet life, this adherent paint needs to be cleaned manually.

3.5 Air Outlet Through Filter Unit

The filter unit ensures that the air around the booth remains clean and prevents potential explosion. Thanks to the suction fan on the filter, the dust and paint mixture is drawn from the booth air duct towards the filter unit. Detailed information is available in the Filter Unit manual.

3.6 Fire Protection

A fire extinguisher is recommended which will be triggered in case of any fire recommended by the Explosion Protection Directive. This system shuts down all cabin functions when a fire is detected.

3.7 Temzilik

At the time of cleaning, the booth air intake openings should be closed as far as possible, so the entrance door will remain closed. This will increase air speeds for the booth and facilitate cleaning.

3.8 Powder Paint Recovery

A secure powder coating booth system is installed with the following equipment.

- Cyclone Separator
- Sieve
- Subcyclone Pump Circuit
- Powder Management Center

The powder paint which cannot be glued on the part to be painted enters into the cyclone separator by mixing with the powder in the suction channel. By using the centrifugal force created by the air velocity in the cyclone, paint and dust are separated from each other to a great extent. The paint sieved through the sieve at the bottom of the cyclone is conveyed to the paint center by the Subcyclone Pump Circuit.

3.9 Robot Unit E-GUN Automatic Guns

The E-GUN C3 automatic powder coating guns are optimized for our ColorX and ProX booths. These guns are easy to clean.



All powder coating hoses, cleaning air connections and high voltage are outside the booth because a design must be made to protect against explosion in areas with a powder / air mixture. Pistols and hoses are automatically cleaned from the control boxes using replaceable air.

The apparatus that clamps the powder coating hose ensures that the hoses are fixed so that automatic powder coating guns can be cleaned.

All hoses and guns are cleaned with the air supplied from the E-COAT control units in the main control panel. Biaxial robots perform fully automatic cleaning while working in the cleaning center in the paint center. Single-axis robots must be brought to the manual cleaning system.

4-Technical Data

Electrical Data

E-BOOTH ColorX Powder Coating Booth	
Input Voltage	100-240 VAC / 50Hz / 60Hz

Pneumactical Data

E-BOOTH ColorX Powder Coating Booth	
Input Pressure	Min. 6 bar / Maks. 10 bar
Air Inlet Velocity	0.7 m/sn
Cleaning Air	Max 18 Nm ³ /h
Max. Water Rate	1,4 g/m ³
Max. Oil Rate	0,12 mg/m ³

Dimensions

E-BOOTH ColorX Powder Coating Booth	
Booth interior length	2,75 - 3,50 m
Outside booth width	2,0/2,3m
Booth platform height	0,6 m

Information

E-BOOTH ColorX Powder Coating Booth	
Sound	Max. 80 db when working

The sound measurements were measured at a distance of 1.7m from the floor on the platform where the employee was stopped when the booth was used most intensively. When this measurement is made, it is assumed that no machine is running around the cabin except the cabin and its apparatus. The dimensions of the cabinet can change the volume.

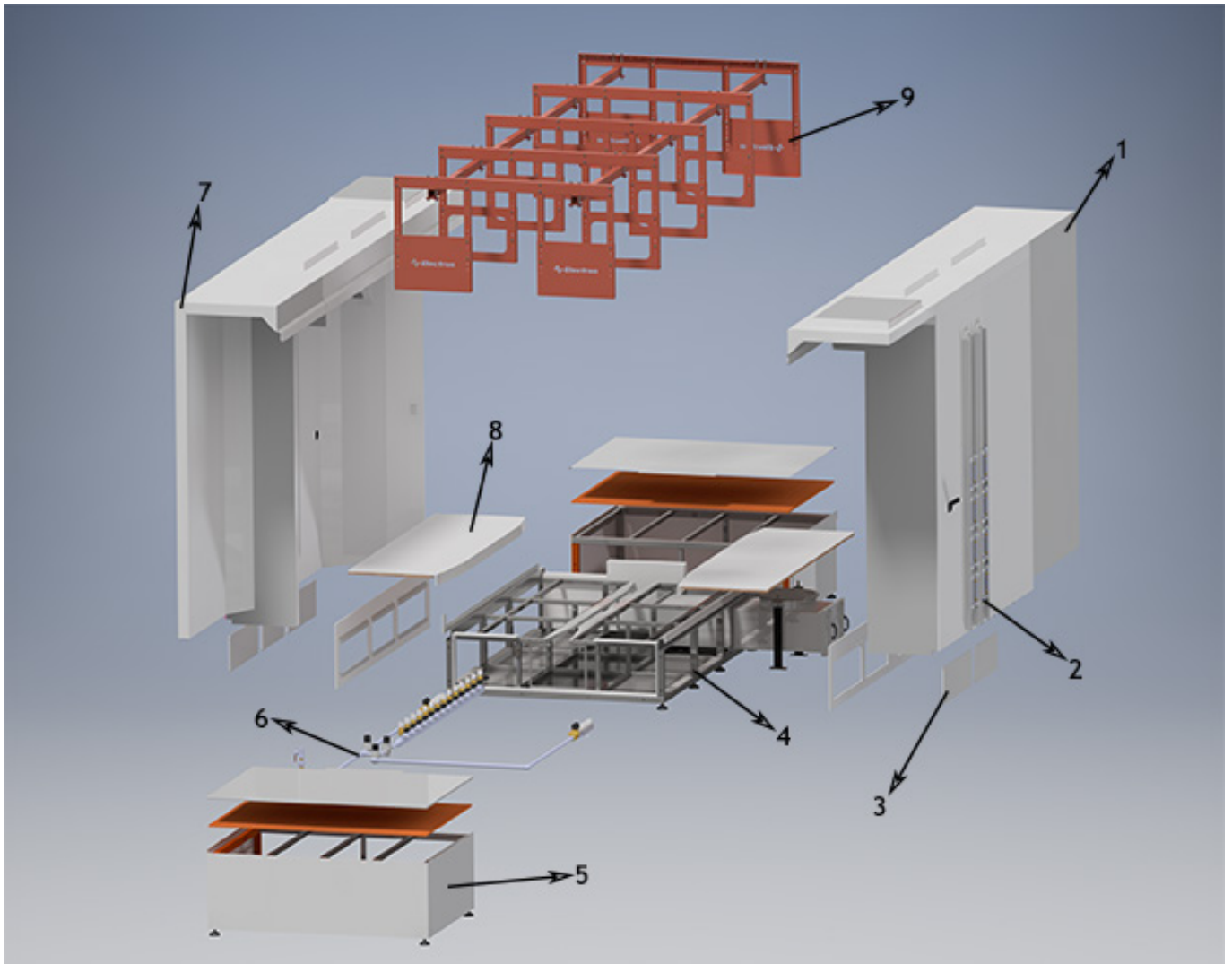
5-Initial Setup and Preparation for Operation

5.1 Assembly

If an installation is to be performed by the customer, the local safety regulations of the country must be observed and followed.

5.2 Cable Connections

All cables used in the booth must be connected so that they are not damaged during operation. Grounding is one of the most important elements in powder coating systems. It must be ensured that the earthing connections are made very well. See Electron Grounding Directive.



E-BOOTH ColorX Powder Coating Booth	
1	Booth Right Panel
2	Robot Entry Slot
3	Booth Maintenance Covers
4	Booth Base
5	Manuel Base Area
6	Booth Pneumatic Installation
7	Booth Left Panel
8	Auto Zone Floor
9	Booth Carrying Scarves

6- Application

6.1 Before Each Working

- Read the booth and all accompanying product manuals.
- Check the grounding of the booth.
- Test the booth functions if you see fit.

6.2 Long Term Stops

- Make sure there is paint in the hopper.
- Check that the filters inside the Filter Unit are properly installed.
- Check that the filter unit is in place of the waste tank. Evacuate if necessary.

6.3 In Operation

- Switch on your compressor and adjust to the required inlet pressure (usually 6 bar)
- Switch on the main switch
- Examine the operation of the system. Check the guns data from the main control panel.

6.4 Stopping Work

- If the booth is managed by operation automatic, stop automatic mode.
- Switch off the E-COAT controllers.
- Close the booth.
- Close the powder management center.
- Switch off the main switch.

6.5 Filter Cleaning

The filters in the filter unit are cleaned by compressed air at factory set time intervals. (Factory setting every 20 seconds). Filters need to be replaced over time. We need to understand this from the differential pressure manometer.










The differential pressure gauge is located on the filter unit. It is recommended to replace your filters when the pressure drops below 1300 Pa. In normal operation, this value is around 1500 Pa. Preliminary values in this process can be performed by Electron personnel or by personnel trained by Electron personnel. Any changes must be made by these personnel again.


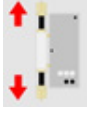




6.6 Color Change and System Cleaning

Once all parts inside the booth have been painted and removed from the booth, color change and cleaning can be initiated. In automatic systems, dyeing stops automatically.


The following describes the most difficult (dark to light - light to dark) color change procedure. These substances need to be carried out when changing colors.

a. Color Change Cleaning Scenario











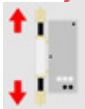



- It is spaced out between the conveyor hangers to provide sufficient time for cleaning.
- AUTO /MANUEL action is stopped with the  button in main page.
- The suction clack is completely opened.
- It is switched to cleaning page with the  "CLEANING PAGE" button.
- It is pressed the  "CLEANING BEGIN" button.
- Injector group is removed up with the  "INJECTOR GROUP UP" button.
- The remaining paints on injector hoses are peeled off and provided to be poured into the chamber.
- The recovery hose is dismantled from the paint chamber. The chamber is ousted. (The recovery hose will stay connected to the chamber)
- The group is lowered on cleaning nozzle with the  "INJECTOR GROUP DOWN" button.
- By pressing the  button, the cleaning of powder coating paths is provided. If necessary the action is repeated with the help of same button.
- If necessary, "GUN ARMS" is cleaned again with the  button.
- Injector group is removed up with the  "INJECTOR GROUP UP" button.
- Powder coat hose and injector exit unit are extracted; inside hose, injector and injector suction hose are cleaned. Injector wearing parts are changed by visual checking and is weared instead. This action is respectively done to all injector.
- The gun arms are checked cleaning, gun head groups are extracted and cleaned, The wearing parts are changed by visual checking.
- Fresh paint feeding unit(Multicolor) is cleaned.
- The recovery hose is dismantled from the paint chamber , it is weared to suction entry on the back wall of paint center.
- The paint chamber is removed from paint center for cleaning by decanting.
- Manuel paint section on the side of booth exit is cleaned from the outside towards the booth by pumping air and the booth door is closed.
- The "CLEANING CELLS" are stopped by pressing the  button.
- By starting from manual paint part of booth entry, the booth, (b) personnel cleans suction channel and suction channel of between booth to cyclone from the top to bottom.

- The recovery is canceled by pressing the  button.
- The cyclone bottom is opened and sieve is extracted. The cyclone bottom is closed.
- The pump is cleaned by pressing the  button. It is waited during cleaning. (10-20 seconds)
- Meanwhile, Recovery hose is weared to reverse air union in top pannel of the paint center by extracting from suction.
- Reverse air is sent to the cyclone by pressing the  button, It is waited during action (5-10 sec.)
- The cyclone bottom is opened and checked. It is cleaned with air gun.
- The cyclone bottom is implemented , It is given reverse air by pressing the  button while the cyclone bottom is in open position.
- The bottom and top parts of the cyclone is completely cleaned with air gun.
- After cleaning, he sieve is seated in place and the cyclone is closed.
- The recovery hose is extracted from the "REVERSE AIR" union.
- The paint center is cleaned.
- Another paint chamber is seated in place, it is made connection with the " relief air " hose.
- "REFRESH PAINT SUPPLY" unit (multicolor) is loading fresh paint.
- "REFRESH PAINT SUPPLY" and "RECOVERY" hoses are made connection to the paint chamber.
- The INJECTOR GROUP is positioned into middle with the  button.
- The cleaning is ended by pressing the  button that is in the cleaning page.

AT THE BEGINNING OF ACTION;

- The booth door is opened.
- It is provided to the robots are gone to the paint start state by pressing the  button from home screen.
- By the switch on the device cabinet is being set MAN. It is provided to the paint is shooten from gun for 30 seconds.
- The switch is being set AUTO again.
- Materials is loaded into the line.

b. Daily Cleaning Scenario

- It is spaced out between the conveyor hangers to provide sufficient time for cleaning.
- AUTO /MANUEL action is stopped with the  button in main page.
- The suction clack is completely opened.
- It is switched to cleaning page with the  "CLEANING PAGE" button.
- It is pressed the  "CLEANING BEGIN" button.
- Injector group is removed up with the  "INJECTOR GROUP UP" button.
- The remaining paints on injector hoses are peeled off and provided to be poured into the chamber.
- The recovery hose is dismantled from the paint chamber , it is weared to suction entry on the back wall of paint center.
- The group is lowered on cleaning nozzle with the  "INJECTOR GROUP DOWN" button.
- By pressing the  button, the cleaning of powder coating paths is provided. If necessary the action is repeated with the help of same button.
- If necessary, "GUN ARMS" is cleaned again with the  button.
- Injector group is removed up with the  "INJECTOR GROUP UP" button.
- Fresh paint feeding unit(Multicolor) is cleaned.
- Manuel paint section on the side of booth exit is cleaned from the outside towards the booth by pumping air and the booth door is closed.
- The "CLEANING CELLS" are stopped by pressing the  button.
- By starting from manual paint part of booth entry, the booth, (b) personnel cleans suction channel and suction channel of between booth to cyclone from the top to bottom.
- The recovery is canceled by pressing the  button.
- The pump is cleaned by pressing the  button.It is waited during cleaning.(10-20 seconds)
- The cyclone bottom is opened and sieve is extracted. The cyclone bottom is closed.
- The paint center is cleaned.
- Another paint chamber is seated in place, it is made connection with the " relief air " hose.
- The cleaning is ended by pressing the  button that is in the cleaning page.
- AT THE BEGINNING OF ACTION;**
- The INJECTOR GROUP is positioned into middle with the  button.
- The booth door is opened.
- It is provided to the robots are gone to the paint start state by pressing the  button from in home screen.
- By the switch on the device cabinet is being set to MAN. It is provided to the paint is shooten from gun for 5 seconds.
- The switch is being set AUTO again.
- Materials is loaded into the line.

7- Maintenance

7.1 General Maintenance

7.1.1 Daily Maintenance

- Clean all powder coating hoses with air.
- Clean the gun exterior surfaces with a soft cloth and visually inspect them.
- Open the cyclone separator and check and clean the sieve.

7.1.2 Weekly Maintenance

- Check that the filter unit performs sufficient suction by inspect the differential pressure on the pressure gauges on the filter unit.

7.1.3 Maintenance Every Six Months

- Verify and clean the High / Low parts on the manometers.

7.2 Maintenance of Cyclone Separator

7.2.1 Weekly Maintenance

- Open and clean the bottom of the cyclone separator.
- Check all locking equipment and ensure that the bottom of the cyclone can be locked properly.

7.3 Maintenance of Filter Unit

- Observe the differences in pressure values on the pressure gauge from the initial installation and check the filter unit accordingly.

7.4 Spare Parts

- Replacement parts may only be carried out by Electron-trained personnel. The spare parts list can be found at the end of the manuals. When original Electron spare parts are not used, our product is under warranty.

8- Working Test

After long stops, the following operation test procedure must be performed.

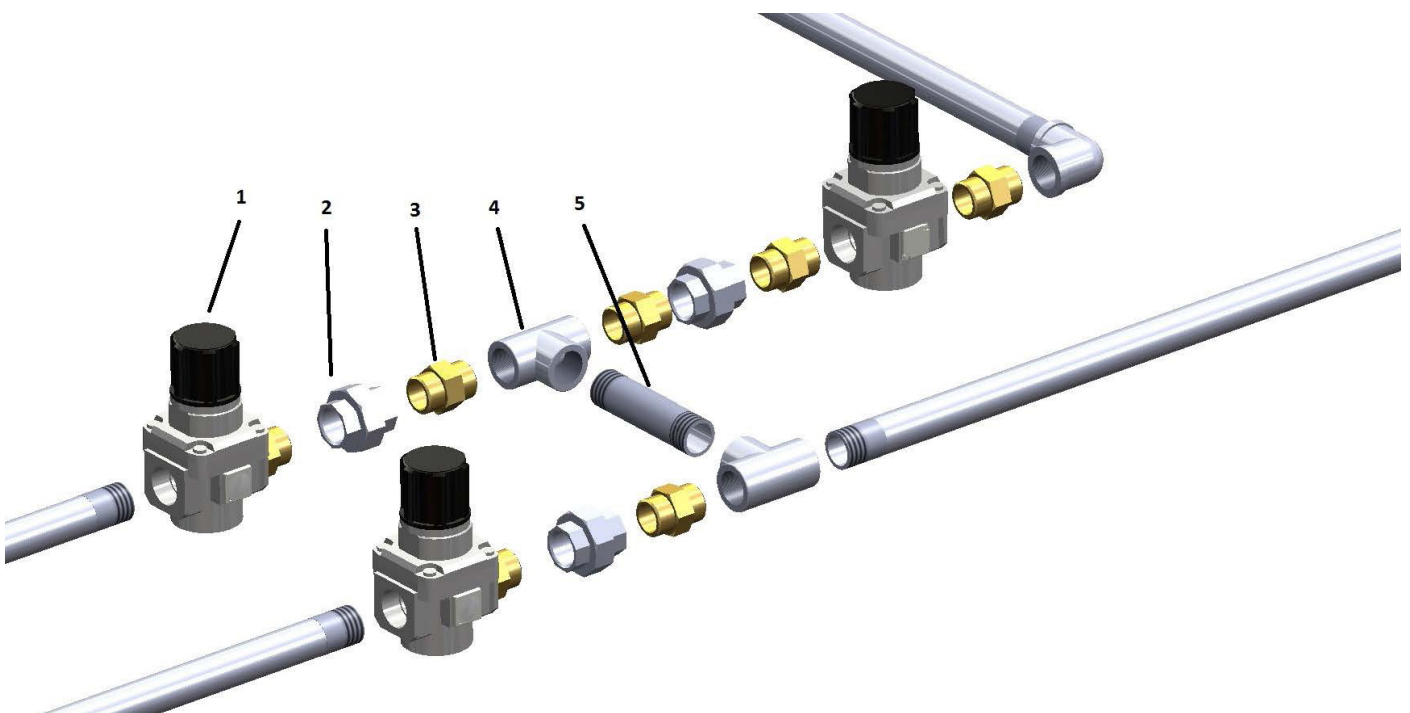
Procedure

- a. Switch on all equipment on the booth.
- b. Switch on the fans.
- c. Switch on Powder Management Center.
- d. Check the correct operation of the air in the paint hopper at the powder management center, ensuring the fluidity of the powder.
- e. Start to powder coating procedure.
- f. Check the paint from the E-GUN guns.

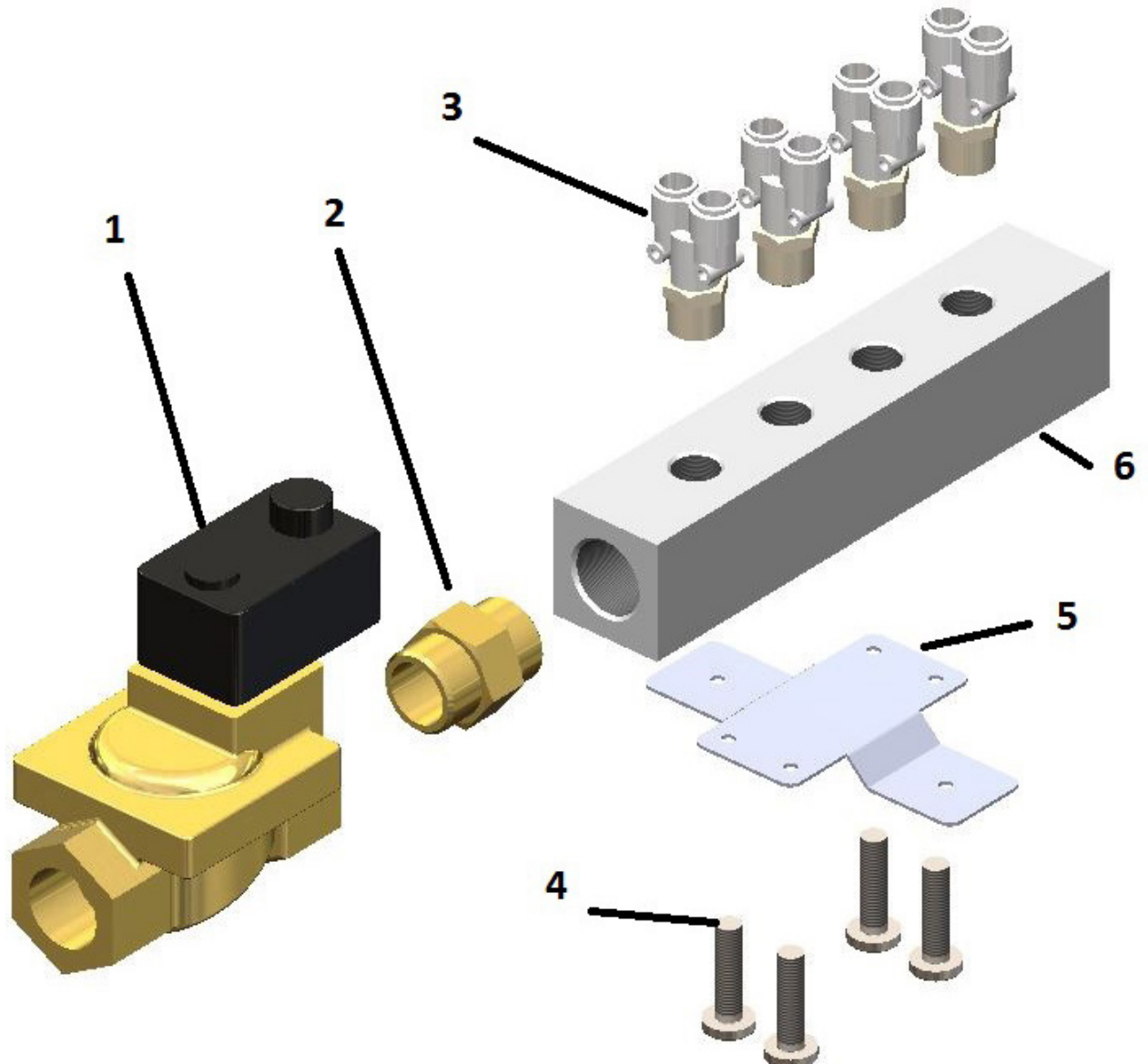
9- Possible Problems and Solutions

Problems	Possible Causes	Solution Suggestions
Suction excess, the paint is drawn without sticking to the part.	<ol style="list-style-type: none"> 1. The filters have air leakage, torn or not fully tightened. 2. The waste tank under the outlet filters is not installed. 3. The hopper on bottom of the cyclone is not installed. 4. The air clack is closed. 	<ol style="list-style-type: none"> 1. Check the filters. 2. Replace the waste paint tank, secure it. 3. Install the subcyclone tank, secure it in place. 4. Open the air clack fully or partially.
Suction is weak, too much paint is leaking out of the booth openings.	<ol style="list-style-type: none"> 1. Filters are worn, damp, or clogged. 2. Output filters are worn. 3. Pulse valves do not work or run infrequently. 4. Output filters are clogged. 5. Air adjustment clack too open. 	<ol style="list-style-type: none"> 1. Change filters. 2. Change output filters. 3. Check pulse valves, increase operating frequency. 4. Clean the output filters. 5. Close the air adjustment clack fully or partially.
The paint on the filter does not spill.	<ol style="list-style-type: none"> 1. Low air pressure to blow valve. 2. Pulse valves operate infrequently. 	<ol style="list-style-type: none"> 1. Ensure that the air pressure is 6 bar. 2. Increase the frequency of operation of burst valves from the electronic board.
There are dust etc. stains on the painted part.	<ol style="list-style-type: none"> 1. The environment is not clean. 2. Door, window etc. are open. 3. There are air currents adversely affecting suction, cannot be prevented. 	<ol style="list-style-type: none"> 1. Clean the environment, prevent dust from getting on the floor. 3. Block airflow by closing doors, windows, etc. 4. Create positive pressure by introducing filtered fresh air into the booth environment by enclosing the booth in a separate cell.
There are different colored spots and stains on the painted part.	<ol style="list-style-type: none"> 1. The booth and coating equipment are not cleaned well when changing color. 2. Different colors of paint or dirt are mixed into the paint. 	<ol style="list-style-type: none"> 1. Clean the booth and coating equipment. 2. Check paint, use paint from new packaging if necessary.

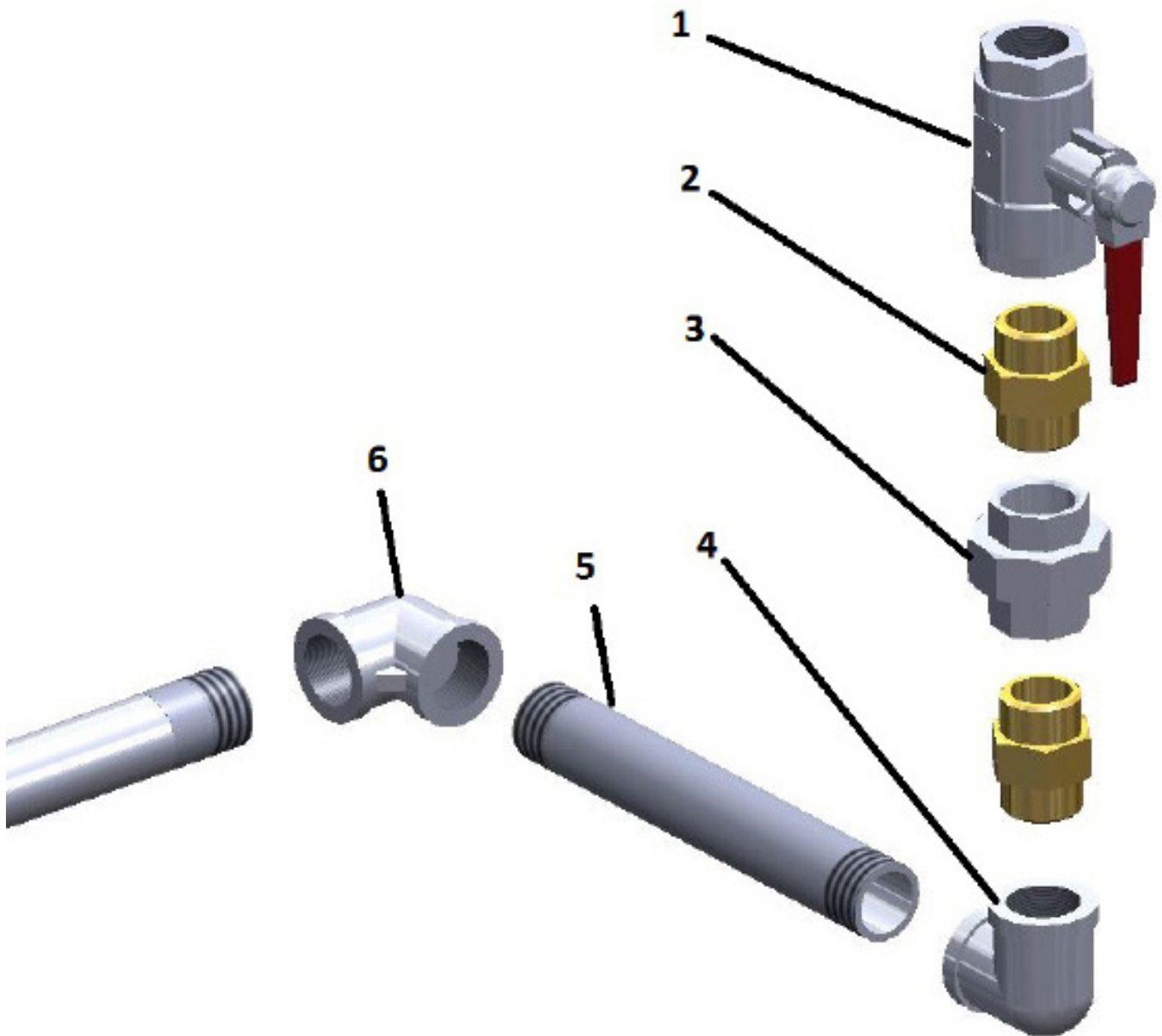
10- Spare Parts List



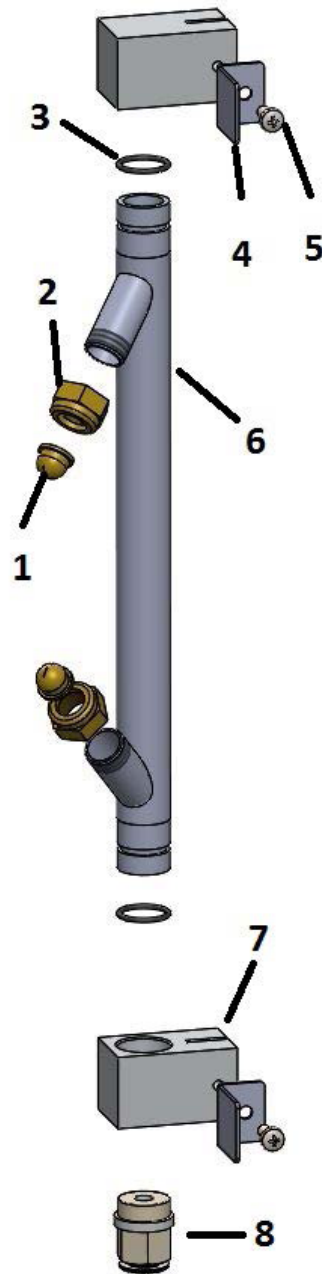
Part No	Product Name	Stock Code
1	Square Regulator with Manometer	PNPE01010
2	3 Piece Fitting	HDHT01010
3	Hex Nipel	SMFT01001
4	Galvaniz Te Threaded	SMFT01038
5	Welded Pipe L:6MT - Ø32X3,25MM	SCBR01008



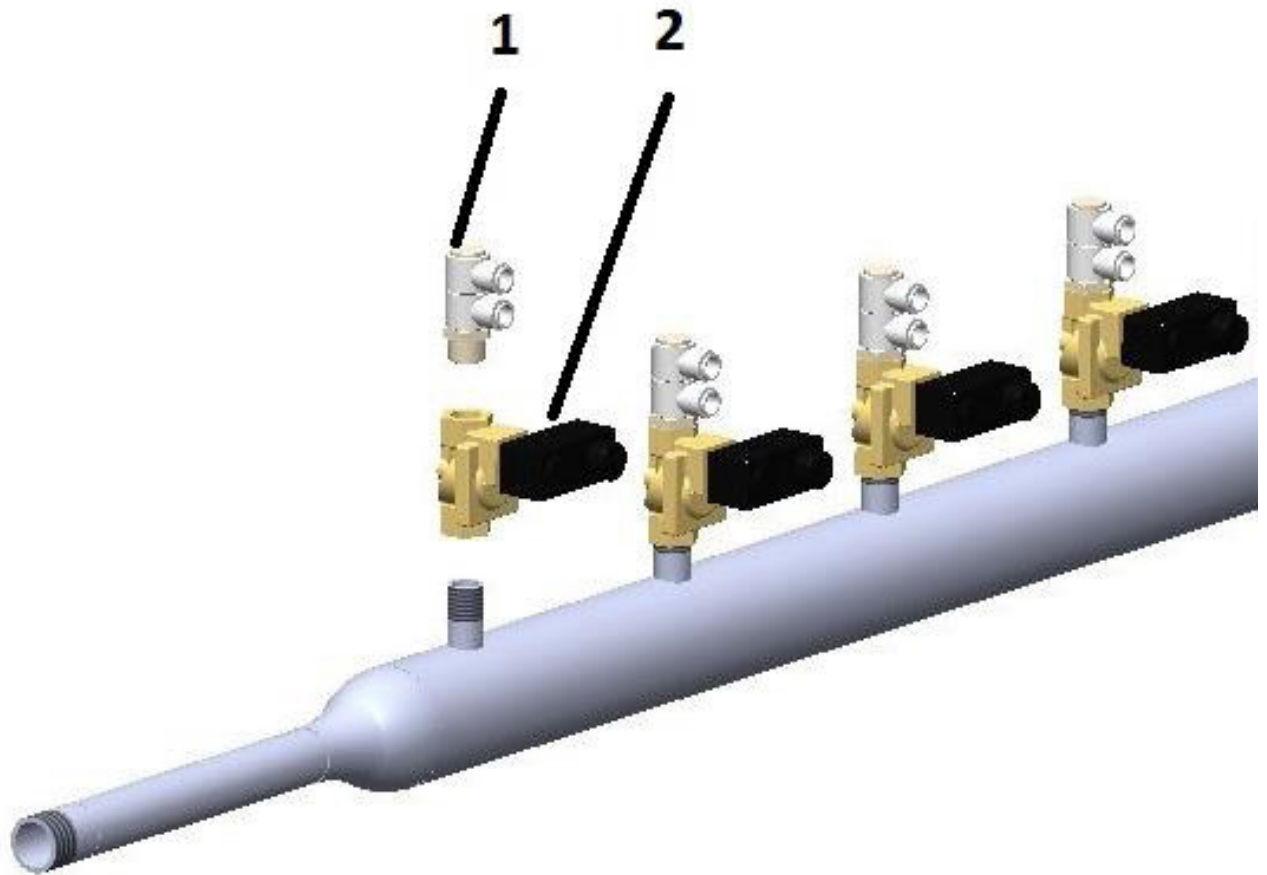
Part No	Product Name	Stock Code
1	Solenoid Valve	PNPE04003
2	Hex Nipel	SMFT01001
3	Rotary Fitting Yee 1/2"- Ø12	HDHT01012
4	Screw M5X10 YSB	BECV01011
5	Galvaniz Plate	PKB6152_109_102_102
6	Square aluminium 30X30	TRTH05001



Part No	Product Name	Stock Code
1	Ball Valve	HDHE01004
2	Hex Nipel	SMFT01001
3	3-Piece Sealed Flat Fitting	HDHT01010
4	Elbow Gear Galvanized 1"	SMFT01002
5	Pipe	PKB6152_109_102_104
6	Galvaniz Elbow	SMFT01002



Part No	Product Name	Stock Code
1	Nozzle BLOW-OFF	SMFT04001
2	Hex Nipel	SMFT01003
3	NBR Oring	IZOR01031
4	Galvaniz Plate	PKB6152_108_108
5	Setskur	BEDH08006
6	Pipe	PKB6152_108_102
7	Square Aluminium	PKB6152_108_104
8	Flat fitting 1/2 X Ø 12 Male	HDHT01015



Part No	Product Name	Stock Code
1	Rotary Elbow Double	HDHT01011
2	Solenoid Valve	PNPE04005

11- Service and Maintenance Chart

DATE	MAINTENANCE TYPE -Weekly maintenance -Yearly maintenance -Service	MAINTENANCE OR SERVICE PERSONNEL	PROCEDURE REPLACEMENT PARTS NOTES	AUTHORIZED CONTROLLER

12. Product Life and Warranty

12.1. Product Life

- The economic life of Coating equipment 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.

12.2. Warranty and Warranty Conditions

- The coating equipment is warranted for production and parts failure for 2 (two) years.
- 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 SİSTEM 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.

12.3. Operating Conditions

- Read the user manual before using E-Booth ColorX Powder Coating Booth.
- Only legally allowed people can operate the robot.
- Only trained and authorized people can operate the robot.
- 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.

12.4. Notes

- Coating device SYSTEM TEKNİK A.Ş. designed by; is produced in accordance with the required safety and quality standards.
- Installation of coating Device SYSTEM TEKNİK A.Ş. personnel, necessary tests and controls have been made operational.
- Sistem Teknik A.Ş. if deemed necessary; make changes to achieve better results.
- Instructions for Use has been prepared by; The information and projects contained therein may not be reproduced, in whole or in part, and may not be given to third parties or companies other than the authority of the company where the facility is established. Otherwise, SİSTEM TEKNİK AS reserves the right to take legal action.



MERKEZ OFİS / Head Office

✉ info@electron.com.tr
☎ +90 (212) 222 2 345
☎ +90 (212) 210 6 761
📍 PERPA Tic. Mer. B.Blok Kat:2 No: 65
34385 Okmeydanı İSTANBUL / TÜRKİYE

FABRİKA / Factory

✉ izmir@electron.com.tr
☎ +90 (232) 799 0 232
☎ +90 (232) 799 0 242
📍 İTOB Org. San. Bölgesi 10010 Sk. No: 10
35470 Menderes İZMİR / TÜRKİYE



www.electron.com.tr

