Operating instruction

Manual Coating equipment

CL-181S-B

→FUNCTIONS

the powder gun through the powder hose . The powder is electrostatically
charged at the nozzle of the gun. In addition, an electrostatic field is created between the gun nozzle and the grounded object. The charged
powder spray remains adhered to the surface of the object.
The powder is fluidized by air forced through a porous plastic plate from
below. The powder acquires, thereby, fluid-like characteristics.
The conveying air, supplementary air, and rinsing air are set on the control Unit
The process of the coating is like this: The powder is fluidized in the powder hopper. The injectors transport the powder through the hoses to the guns. The guns spray a powder/air mixture onto the workpieces

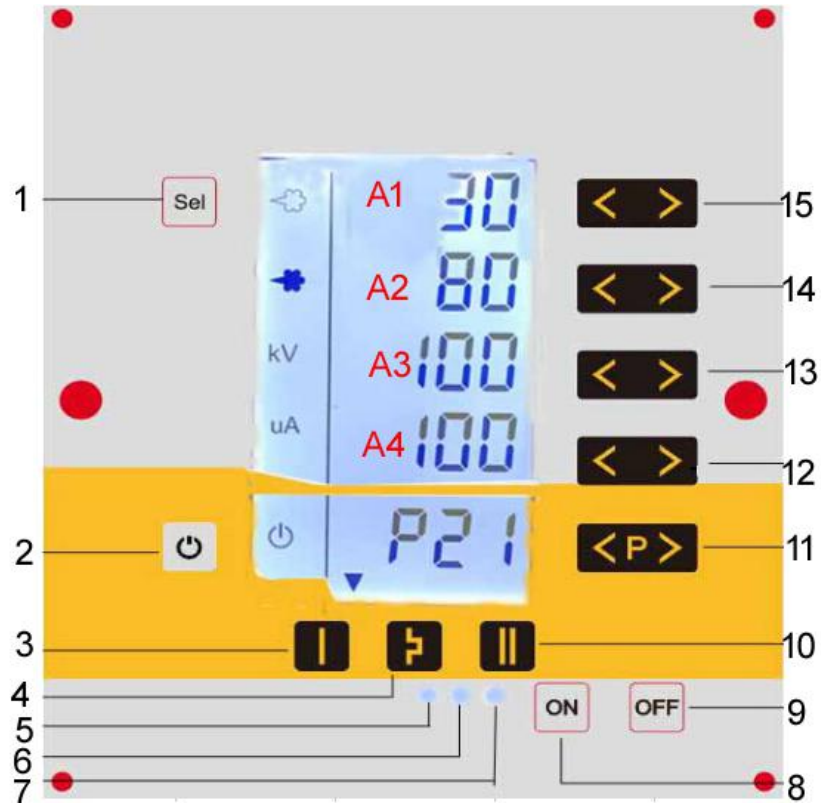
→Technical Data

Electrical data	
Power range	220V/110V
Frequency	50HZ /60HZ
Temperature range in use	-10 ℃+50 ℃
Powder Gun	
Gun weight:	500g
Rated output voltage	24VDC
Maximum output current	180Ua(max)
Maximum output voltage	0-100KV (adjustable)
Maximum powder injection	600g/min
Polarity	negative (-)
Pneumatic data	
Maximum input-air pressure	10kg/cm
Optimum input-air pressure	6kg/cm
Minimum input-air pressure	4kg/cm
Maximum water vapor content or compressed air	1.4g/N m3
Maximum oil vapor content of compressed air	0.1ppm
Maximum compressed-air consumption	13.2 m3/h

Control unit

1，CL-181S offers 3 pre-set standard application programs for flat parts, profiles and re-coating .It is very easy to operate for a beginners .
2，Allows you to create and store your own application programs, optimized for your parts and powder. Each part can be coated always with its ideal settings for experience operator.
3，A clear and easy to use interface makes it easy for every
user to take advantage of these powerful technologies

Display elements of CL-181S



Designation	Function
1	Secondary menu shift(Set up clean air and fluidization air.)
2	Fluidization on/off
3	Flat parts
4	Complicated parts
5	Work display
6	Controller Switch display
7	Power display
8	Powder On
9	Power off
10	Overcoat
11	Program change
12	Current/Fluidization air Plus Minus
13	Voltage/Clean air Plus Minus
14	Conveying air Plus Minus
15	Supplementary air Plus Minus
A1-A4	Display of actual / preset values and system parameters

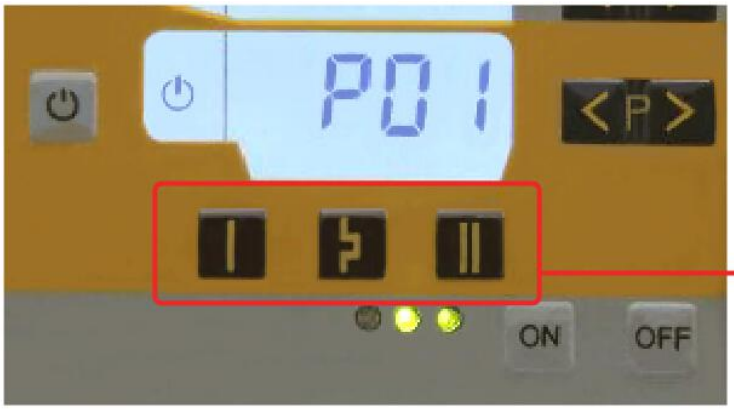
After turn on the controller,if A1-A4 show the setted data,after 3 seconds,system will save all the data and display the actual data.

*Press P key (No11) ,then press fluidization key (No 2) keep 3 seconds,KV will display year of produce PCB ,UA will display month of PCB produce .

*Press fluidization key (No 2) keep 15 seconds,system will restore factory data,and powder off automatically .

(Factory data: supplementary air30,Conveying air 80,UA 80,Fluidization 2.8)

* Press Sel key (No 1) keep 5 seconds,system will be off and change to automatic mode automatically . Do it again ,then back to manual mode. Under automatic mode,the fluidization key (No 2) use for gun on or off.



Pre - set
Application Programs

I The flat parts program is ideal for the coating of panels and flat parts.

The complex parts program is designed for the coating of three dimensional parts with complex shapes such as profiles.

II The recoat program parts is optimized for the re-coating of parts which have already been coated.

Application Programs
Library

Structure

1 CL-181S Gun control unit

2 COLO-07 manual powder gun

3 Powder Injector

4 Mobile frame with hand rail

5 Fluidizing/suction unit

6 Vibrating table

7 Shelf

8 Filter unit

9 Rubber wheel

10 Swivel wheel

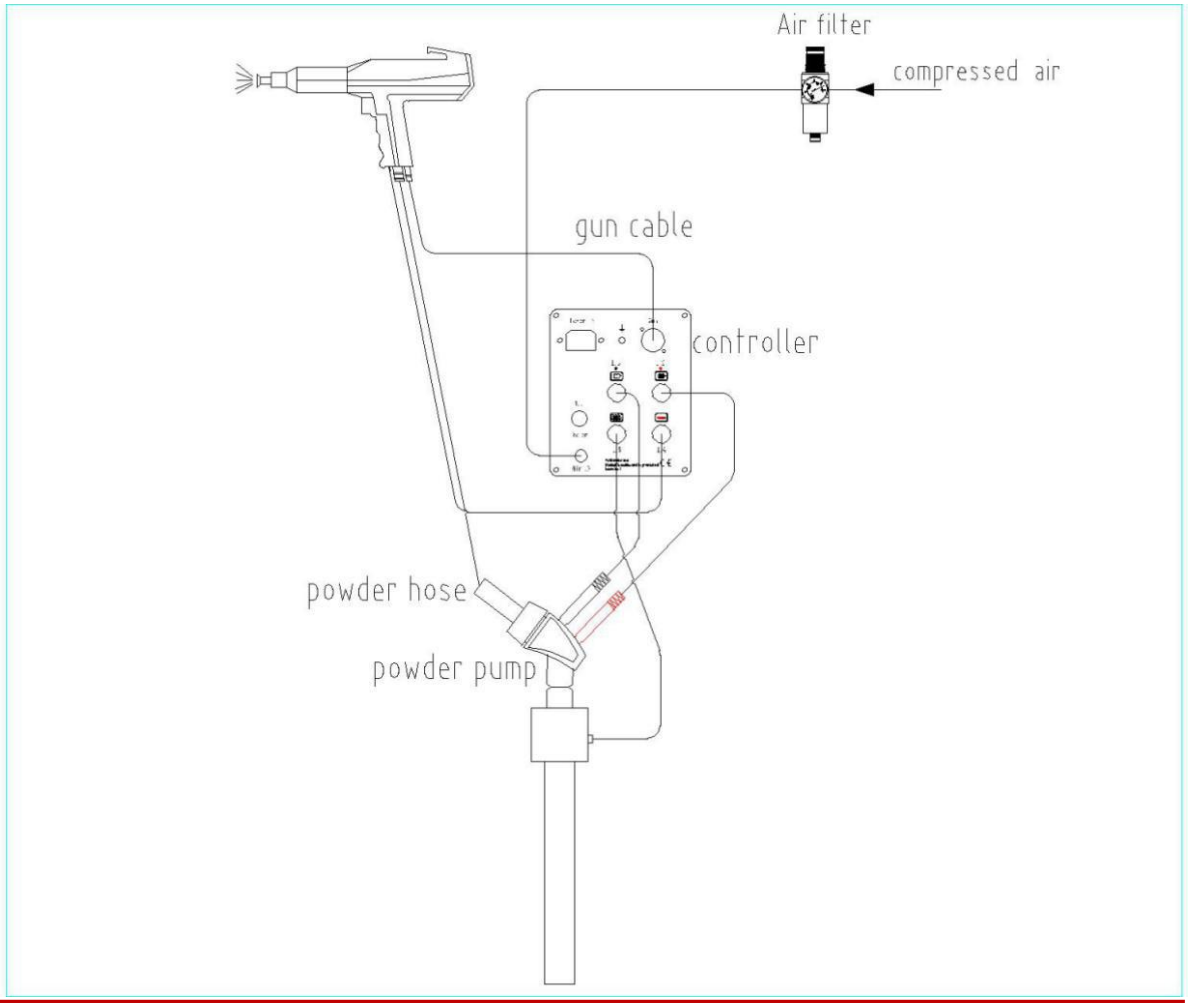
11 Hose holder

12 Gun holder

13 Swivel arm with guide sleeve

Connecting guide

Drawing of Connection of 171S-B



NOTE:

1,The compressed air must be free of oil and water!

2,Air in must be use small filter unit

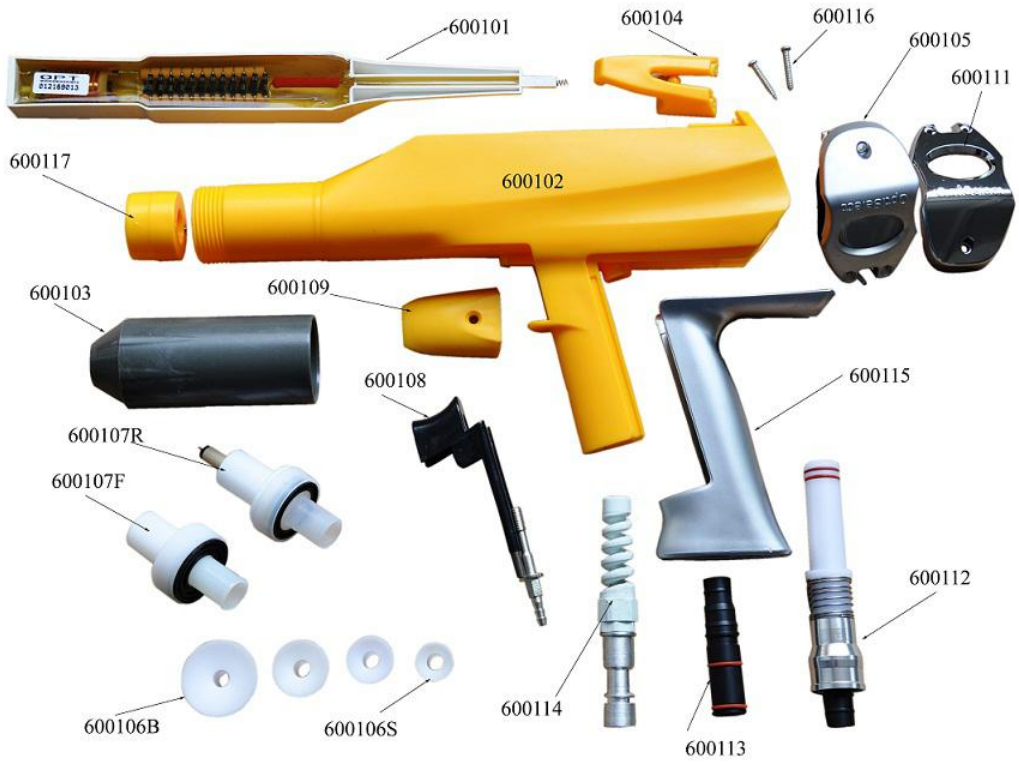
3,Powder injector must be with Check valve in the hose connector (must be use G42 or K1 powder injector),In case of the digital valve will be blocked.

4,Make sure ground all equipment before turn on the controller.

5,First time ,if use 110V powder ,after connecting the powder ,wait 10 seconds to press turn on,if use 220V powder,wait 5 seconds.

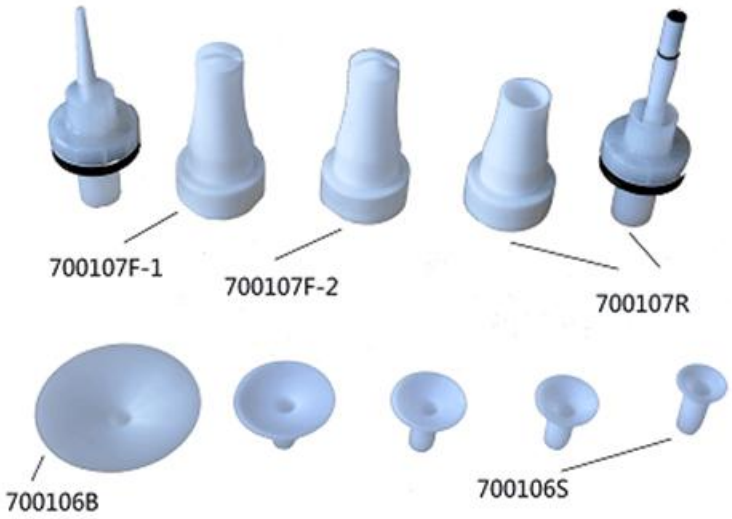
Spare parts list

COLO-06 manual powder gun

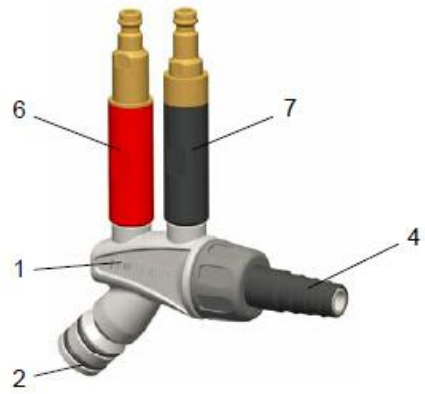


When you need order the spare parts please tell us the item number !

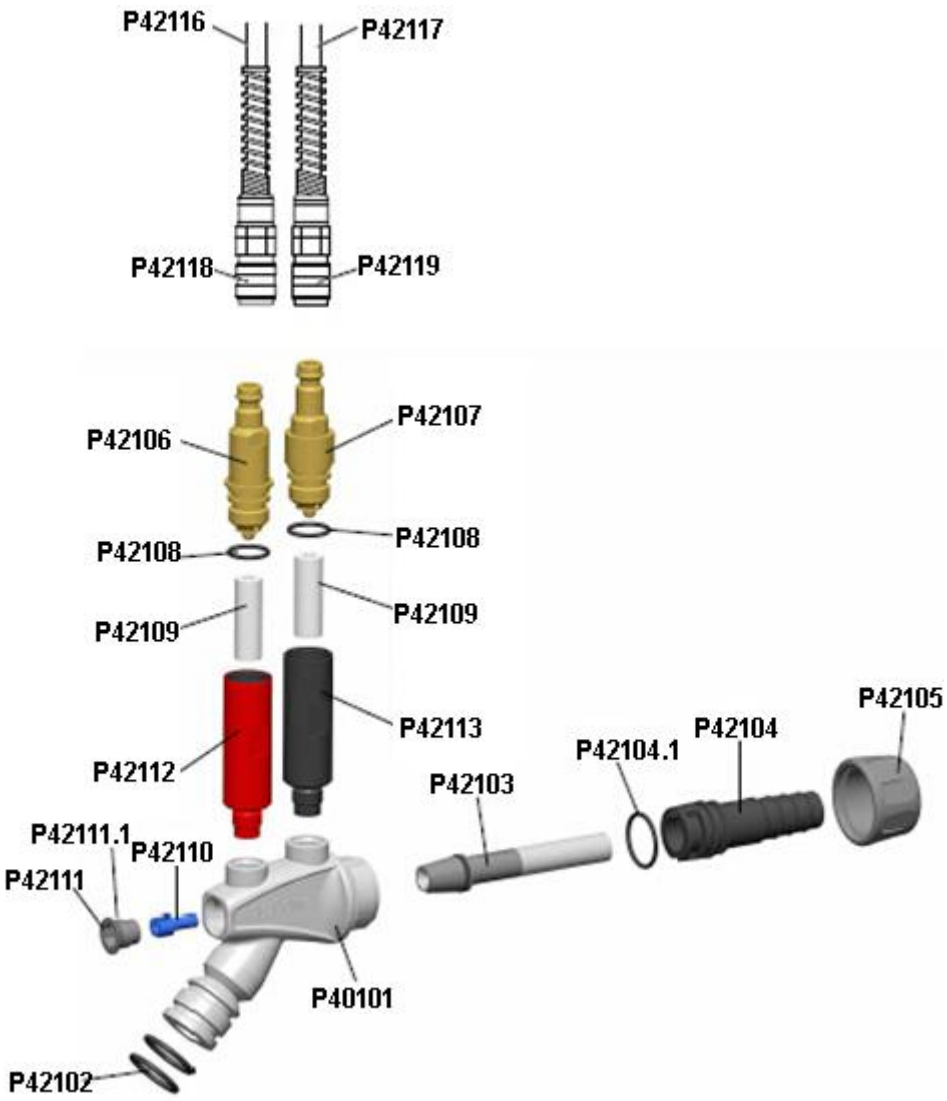
colo-07 manual powder gun



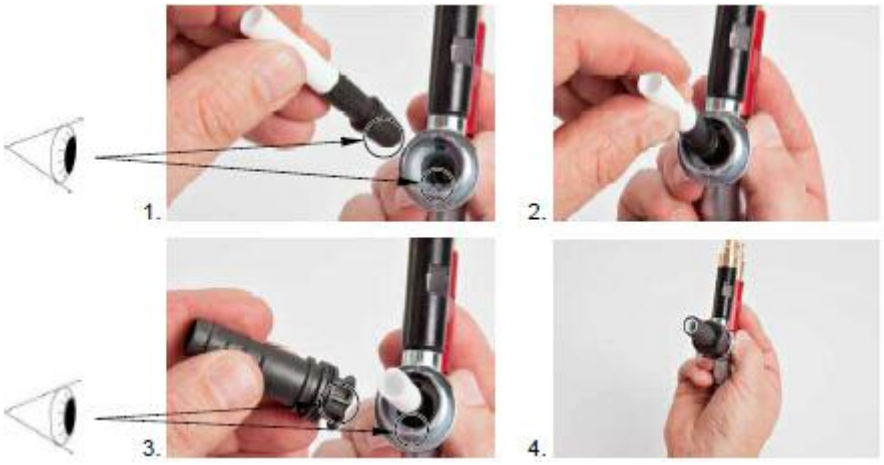
Powder injector G42 type



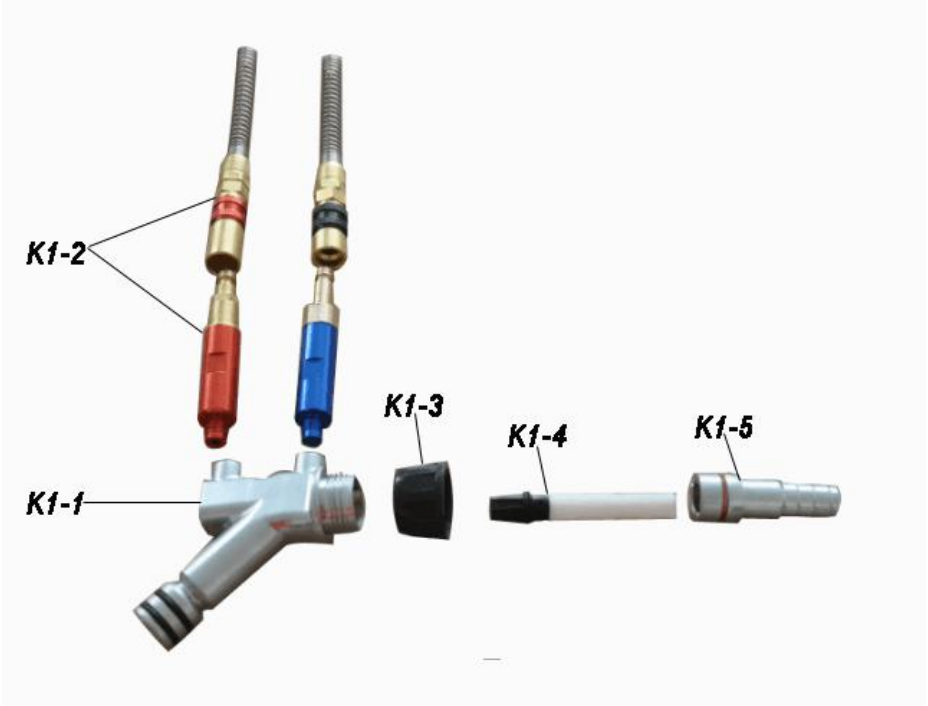
1	Injector housing	6	Check valve unit (conveying air)
2	Powder hopper connection	7	Check valve unit (supplementary air)
4	Powder hose connection		



Replacing the insert sleeve



Powder injector K 1 type



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＞WARNING

--INSTALLATION

→Properly ground all equipment in the spray area to an earth ground and maintain this ground
→Remove all containers of volatiles from the spray area
→Establish and maintain a grounded area for the spray operator
→The gun of x series must be connect to x control unit

→OPERATION

→The operator should hold the gun in his bare hand
→If gloves are worm ,the palm should be out to assure skin to metal contact
→The operator should wear shoes with conductive shoes e.g leather
Rubber shoes are not conductive .
→Ground the tip of the gun before cleaning or changing nozzles.
→When the gun is not in use , it should be hung so that the nozzle is within four inches of a grounded conductor
→The operator should wear a filter-type respiator anytime he is exposed to dusty conditions
→High pressure powder many cause injury ,Keep the rear switch "off" position in no –use condition

→MAINTENANCE

→Make a periodic confirmation of grounding to earth of all equipment in the spray area .
→Exercise good housekeeping practices , do not allow dirt or powder to accumulate on the feeder /powder unit , cable or gun.
→Keep the cabinet door

PERSONNEL

→Use soap and water to remove powder from the skin washing with solvents can cause reactions resulting in allergies and disourders.
→Wash hands before eating and smoking.
→Do not use compressed air to blow powder off the hands and clothing.
This practice may result in damage to the ear drums or eyes.

2. INSTALLATION

→Connects the control units MAIN AIR to MAIN AIR(REGULATOR) output unit with air hose
→Connects the control unit DOSING AIR to INJECTOR with air hose
→Connects the FLUIDIZING AIR (REGULATOR)output unit to HOPPER with air hose
→Connects the control unit AUXILIARY AIR to GUN with air hose
→Connects the POWDER HOSE to INJECTOR
→Connects the GUN CABLE to CONTROL UNIT with air hose
→Connects ground connection cable from ground nut to the booth and trolley
→Connect main powder cable

3. OPERATION

→PREPARATION FOR TEST OPERATION

1. Adjustment for for voltage selection

All the shipped equipment are fixed at REQUEST

2. Connection of air supply

.Compressed air must not contain any oil or moisture

.It should be noticed that the oil and moisture container in the compressed air must be filtered out.

.The fluidization air must be locked in until all connections are complected.

3. Connection outlet hose

.Connect the hose by pressing it into the hoppers outlet –hose coupling hole.

.Place the opposite end of the hose within booth.

Caution:Atmospheric pressure should be present in the hopper during operation of the equipment

4. Connect ground line

The ground line should be connected to booth or conveyor with a clip

5. Safety regulations:

1) Operator should always take precaution to get grounded to the powder electroatic machine s GUN handle by marking hole in his gloves , He should also make it a rule to put on a pair of grounded shoes.
2) The floor of workplace should be conducted
3) All conduction material with 5 meters around powder booth are completely grounded
4) Fact the GUN to direction of BOOTH and not to the human body
5) In case of powder such as spaying paint ,dust density of 10g/ m3

Or more could cause explosion ,and the internal booth should be maintained in good and clean condition .

CHECK FUNCTION OPERATION

1. Functions

1) cuts off the powder supply from pressure-decrease valve.
2) Lowers the control box high –voltage adjustment handle down to bottom –lef position .
3) See what happens when the high-voltage adjustment handle is turned from to right to slowly increase the voltage level.
4) Approach the ground up to the distance of 20cm holding GUN and see the high-voltage display drop.
5) Pull the GUN′trigger.

The high-voltage indicator begins to operate

Check if the voltage level changes when the high-voltage adjustment handle is turned .

6) open MAIN AIR and supply air
7) pull the GUN′ trigger and open the CONVEYING AIR

The pressure gauge hand moves

Pull the gun s trigger close the CONVEYING AIR and open the DOSING AIR

The gauge shand moves .

If all factors suggested above is alright , every is O K

Remove powder from the nozzle of gun by AUXILIARY AIR

Power supply and fluidizing air supply.

2. LOADING

open the lid

fill powder up to the hopper s handle level

close the old and assemble hose

If everything checks all right, the equipment is ready

Slightest abnormality requires preferring to the emergency –measure guide.

→TEST OPERATION

1. PAINTING

＊ CAUTION: Check if all the conducting material within 5 meters around powder booth are completely grounded

1) Check if the powder is fluidified
2) Turn on the powder switch
3) Face the gun to direction of BOOTH
4) Pull the trigger
5) Adjust the high voltage to the required level-the level can be monitored by a meter
6) Wait until the first-spayed powder comes out completely dried.
7) Proceed with spraying object to be powder coated ..

2 Taking stop spraying measure

1) release the GUN S trigger
2) turn off the power switch

as the powder is still fluid , you should not adjust the amount of high voltage . Cleaning air and powder output.

3) Be sure to turn off the power switch and cut off air valve during lunch time or after finishing work

3 Cleaning the powder hose

CAUTION: In case of prolonged unuse of equipment , the powder remaining in hose should be eliminate as follows:

1) take our injector s hose coupling part from the hopper
2) Turn the GUN to the direction of BOOTH
3) Attach the AIR GUN tightly to the hose entrance and blow into it
4) Reassemble it

FLUIDIZING POWDER

A .Fluidizing powder
The fluid state of powder is closely related to powder type , water content of compressed air and outler temperature
The fluidizing proceds independently of control functions
1 .Keep the hopper s lid open
2 Slowly increase the fluidzing AIR –the powder begins the boil mildy, AIR in the hopper and adjust to the minimum amount of AIR for uniform boiling
3 close the lid

B . The amount of powder output and control
The amount powder output is determined by powder type , the length and diameter of hose , and the amount of CONVERYING AIR and DOSING AIR.

1. check the powder is normally fluidizied
2. turn on the power switch
3. pull the trigger with the GUN facing to the direction to BOOTH
4. Open the CONVERYING AIR
5. Adjust the DOSING AIR

Turn slowly regulator of dosing air to clock wise from maximum counter clock wise pulling trigger until powder puffing is getting to normal injection

Comprehensive regulation

Workpieces type	Output voltage	1ST air	2sec air	Painting distance
Big size new	80-100kv	4-6kg/cm2	2-3kg/cm2	15-20cm
Corner,sides	40-60kv	2-3kg/cm2	0.5-1 kg/cm2	10-15cm
repaint	30-40kv	2-3kg/cm2	0.5-1kg/cm2	15-20cm

COLOR CHANGE

A. Changing powder color

1)Clean the outlet hose hopper completely

2)blow into the powder hose with compressed air

3)clean the GUN

4)put the powder to be used into hopper and finish all the preparation jobs

5)turn and spray the GUN toward BOOTH momentarily before the work begains

B.How to manage

Routine maintenance of equipment prologn product life and keeps its performance uniform

1. Daily check -----INJECTOR cleaning and INSERT SLEEVE worn-down

…….POWDER HOSE cleaning

……GUN cleaning

2.weekly check ….cleans the hopper , injector and GUN

..powder should not be put in the hopper just before work

…..check the ground line between CONTROL UNIT , BOOTH and CONVERYOR

…….After checking air dehydrator , any water in it should be removed , the air ,but for checking the presence of moisture in it

C. Checking for shutdown lasting 2-3 days

1)Turn off the power switch

2)Clean the CONTROL UNIT

3)Remove the input air and put it away

4)check above -1 .Daily check

5)Remove powder from HOPPER

CLEANING

A. Hopper

1. Remove fluidizing AIR LINE
2. Remove injector
3. take our suction pipe
4. wipe the electric line , AIR HOSE .and powder hose cleanly with cloth
5. wipe the suction pipe clean
6. empty the remaining powder from hopper
7. clean the hopper s inner wall ,especially the bottom part , with vacuum cleaner
8. wipe the hoppers inner surface with clean cloth
9. replace the hopper to the original position

CAUTION: the hopper must not be filled with powder unit work begins , Above all , the hopper s inner surface must not be cleaned with thinner or water

B. Manual powder Electrostatic GUN

Routine cleaning of GUN ensures trouble –free operation and normal function at all times.

Daily cleaning

1. **Remove the powder hose from gun**
2. remove nozzle from GUN and clean it
3. Clean the gun s powder outlet with AIR along the direction of its flow
4. clean the gun s body with AIR
5. Assemble it

C. Spray Nozzle

Daily cleaning

----clean the outer surface of nozzle with compressed air (Do not use thinner or other liquid for cleaning)

…Clean the nozzle s inside with compressed air after removing it . The powder accumulated in the GUN must be removed.

….check if the nozzle is worn down

Check if the compressed air s oil and moisture are completely removed

D .Injector

1. Disconnecting powder hose
2. Remove sleeve holder
3. Clean sleeve and inside of injector body.

Troubleshooting guide

Code	Description	Criteria	Remedy
H08	Supplementary air flow too high (Setting of supplementary air on the display)	The preset value for supplementary air is too high compared to the conveying air setting	Lower supplementary air value or increase value for conveying air to equalize air volumes to the injector, delete error code
H10	Sparking during operation	Part or hanger grounding problem	Grounding the part or hanger again
H11	Gun error (this code is analysis when KV setted more than 8 and gun work within 2 seconds)	Cascade is defective , cable break, or gun is defective	Change cascade or contact COLO service
H12	Gun error (this code is analysis when KV setted more than 79,UA setted more than 49 and gun work within 2 seconds)	Cascade and cable has not connected	contact COLO service

	Work display is off		Check gun switch or switch cable
	Controller Switch display is off		Check the switch of power inside the controller
	Power display is off		Check Power

Press  could make the code disappear.

It is possible that an error is only displayed for a short time, but after the acknowledgement it will disappear. In this case, it's recommended to switch off the control unit and switch it on again (reset by restarting).

Ordering spare parts

When ordering spare parts for powder coating equipment, please indicate the following specifications:
- Type and serial number of your powder coating equipment
- Order number, quantity and description of each spare Part