

Manual Coating equipment Operating Instruction



660 Series



610 Series



668 Series

Hangzhou Color Powder coating Equipment co.,ltd

FUNCTIONS

.The fluidized powder in the powder hopper is sucked up in the injector by the conveying air. Through the powder hose the powder air mixture reached the gun

.The powder is electrostatically charged immediately it reaches the gun nozzle. An intense field also exists between the gun nozzle and the grounded workpiece. The electrostatically charged powder sprayed onto the workpiece adheres to the latter's surface.

.This line voltage is converted in the control module to high –frequency current

this currents stopped up by the high-voltage transformer and the HV-cascade in the gun to 100KV and applier to the electrodes.

.The conveying air and the dosing air is to be regulated on the control module , the fluidizing air on the pneumatic unit.

.The powder is fluidized by forcing air from below through a porous plastic plate.

.The fluidized powder gets liquid –like properties..

→ Technical Data

Electrical data

Power range	220/110V (please see your control unit sticker)and choose the correct power supply
Frequency	50/60Hz
Temperature range in use	-10 °C+50 °C
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

Dimensions for 668-L3

Width	540mm
Depth	690mm
Height	580mm
Weight	45kgs

668 series

Innovative powder coating System



Advanced coating features such as C-Pulse, a coating option that is said to penetrate tough Faraday cage areas, reducing time and material consumption

Enhanced coating quality of flat and complex parts

Reduced operator fatigue

Effective coating in corners and recesses

Improved recoating ability



Allows user manually adjust the voltage as needs



corner mode

adjusts voltage while maintaining current output for coating complicated corners and recesses



Recoat mode

Adjusts both the voltage and current automatically for efficient recoating



Pulse mode

Rapidly recharges the powder for higher transfer efficiencies



Flat Mode

Controls the voltage and current for maximum efficiency when coating flat workpieces.



PLEASE CONFIRM THE MACHINE BE CONNECTED WITH EARTH BEFORE WORKING

668 Series

Innovative powder coating System

Front panel



1. Coating
2. Re-coat
3. Corner
4. Pulse
5. Powder
6. Feeder
7. Dosage

Rear panel



1. Conveying
2. Dosing
3. Fluidizing
4. Cleaning air
5. Ground

660 Series

Innovative powder coating System



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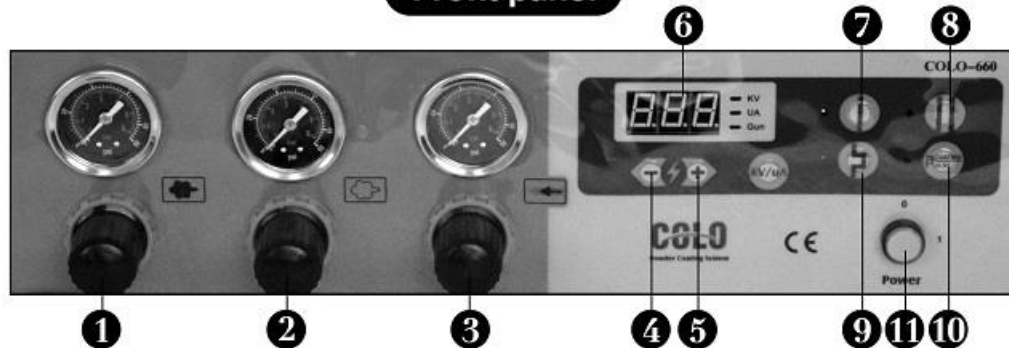


Allows user manually adjust the voltage as needs

660 Series

Innovative powder coating System

Front panel



1. CONVEYING AIR (output the powder)
2. DOSING AIR (make powder more uniform)
3. For cleaning the gun
4. Reduce KV
5. Increase KV
6. Show the KV(0-100KV adjustable)
7. For flat part
8. For recoating
9. For complicated part(deep corner)
10. Impulse
11. Switch

Rear panel



1. Rinsing Air
2. Supplementary Air
3. Conveying Air

610 Series

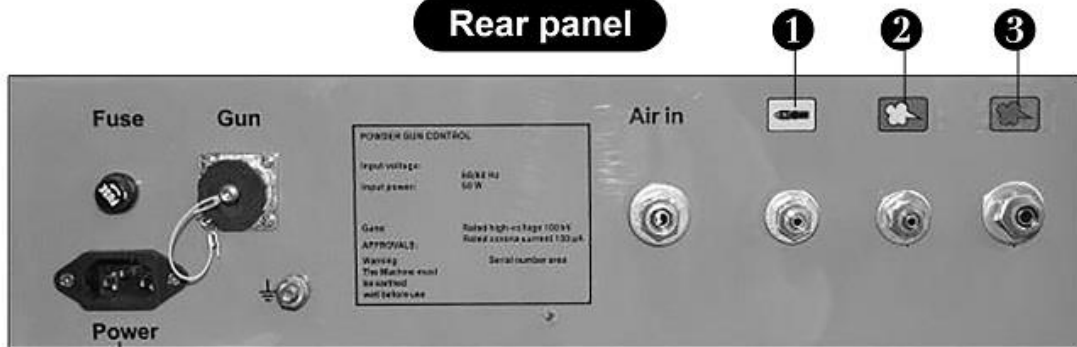
Innovative powder coating System

Front panel



1. **CONVEYING AIR** (output the powder)
2. **DOSING AIR** (make the powder more uniform)
3. **For cleaning the gun**
4. **For adjusting KV**
5. **Switch**
6. **Show the KV**(0-100KV adjustable)
7. **Impulse**

Rear panel



1. **Rinsing Air**
2. **Supplementary Air**
3. **Conveying Air**

Connecting guide

668 Series



668-L3

Basic powder coating machine

668V

Box feeder powder coating machine



668T-06C

Small powder coating machine



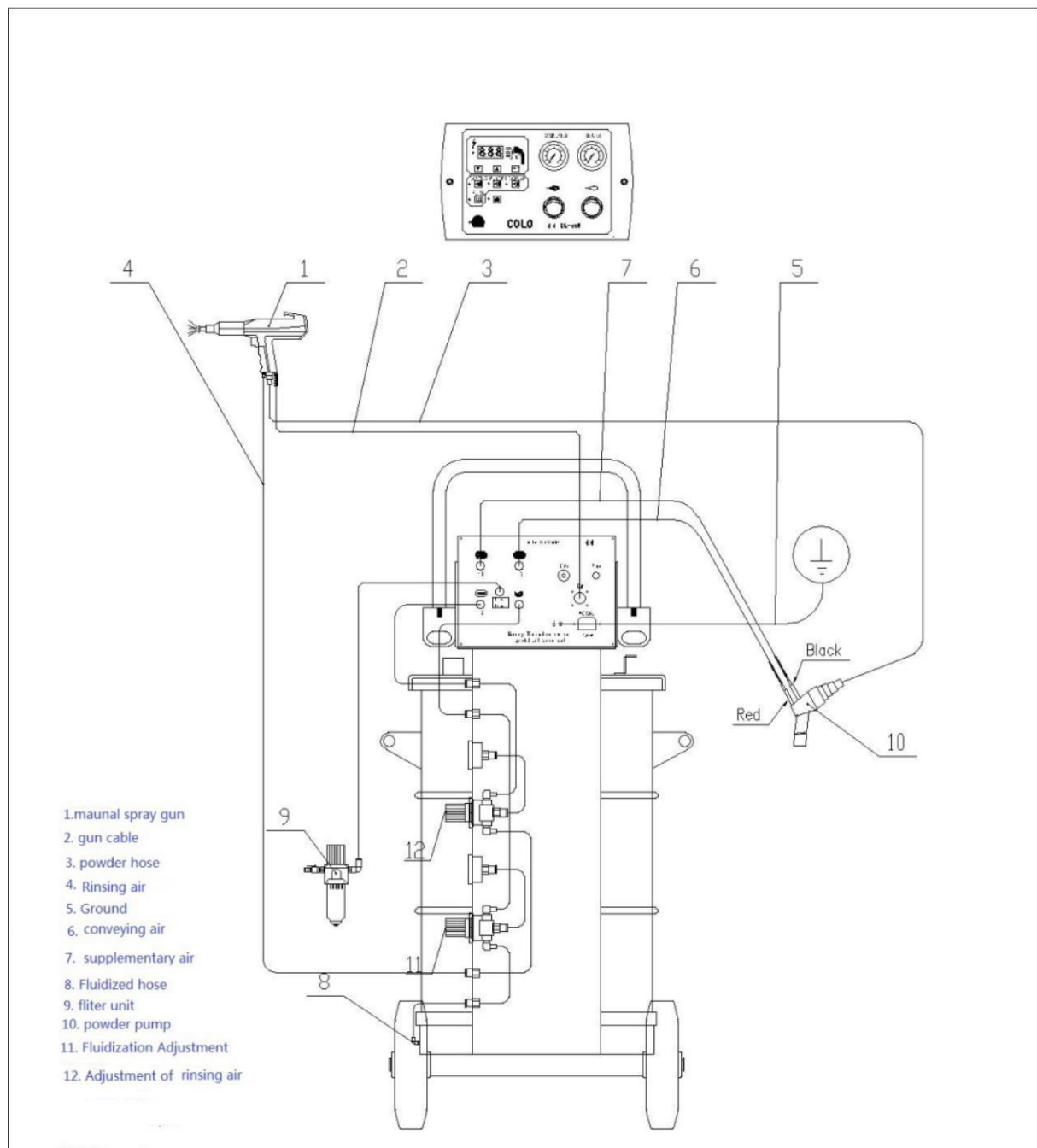
668T-H

Lab powder coating machine

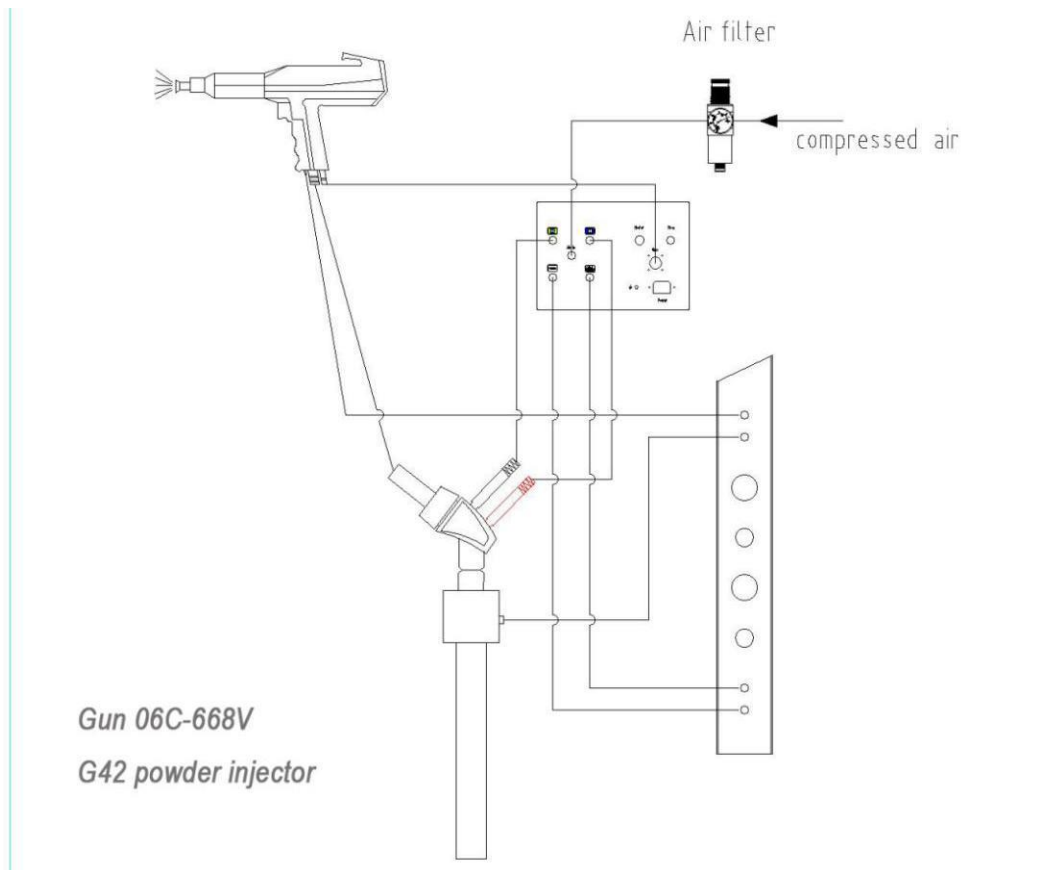


668A

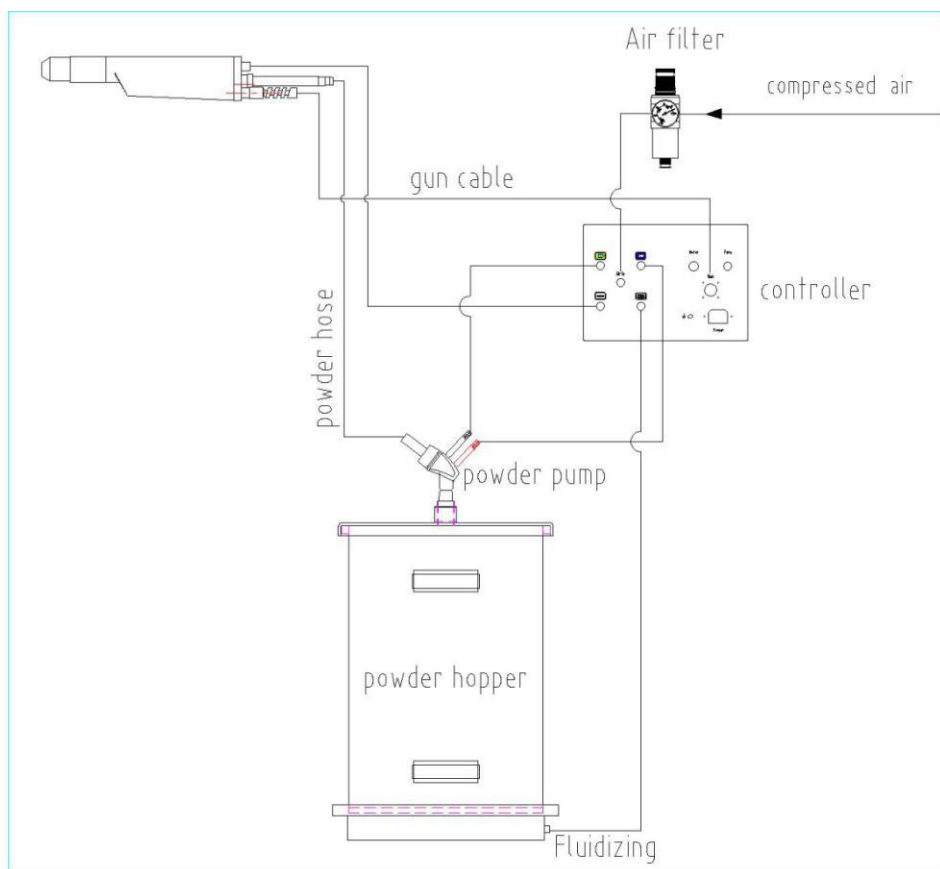
Automatic powder coating machine



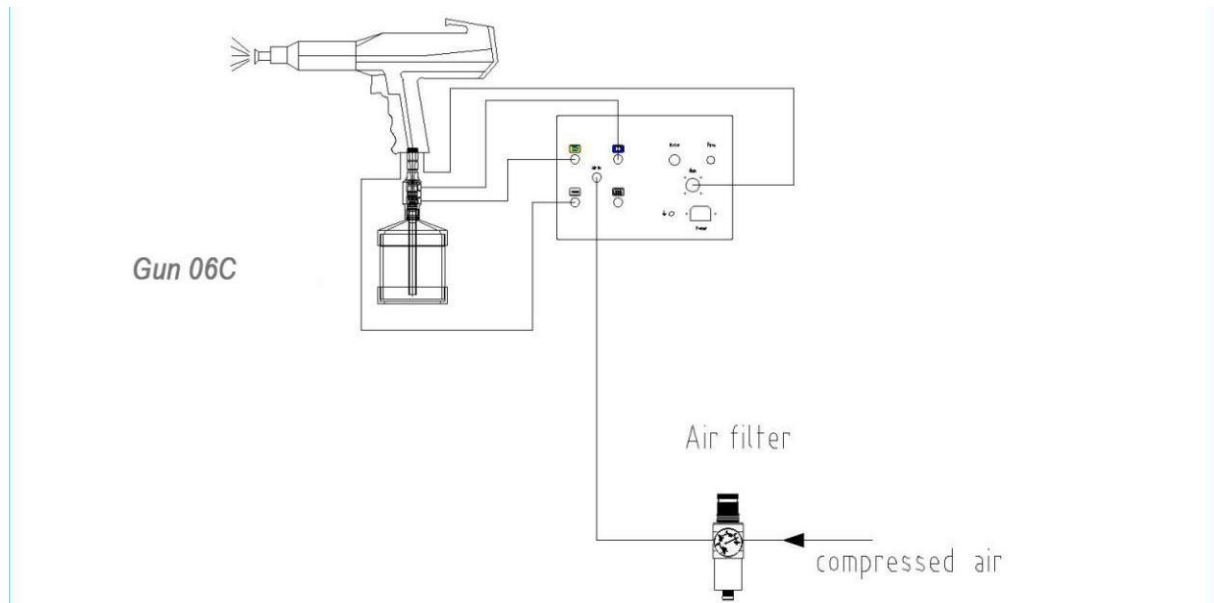
Suitable for models :668 -L3,668T-H,668T-B



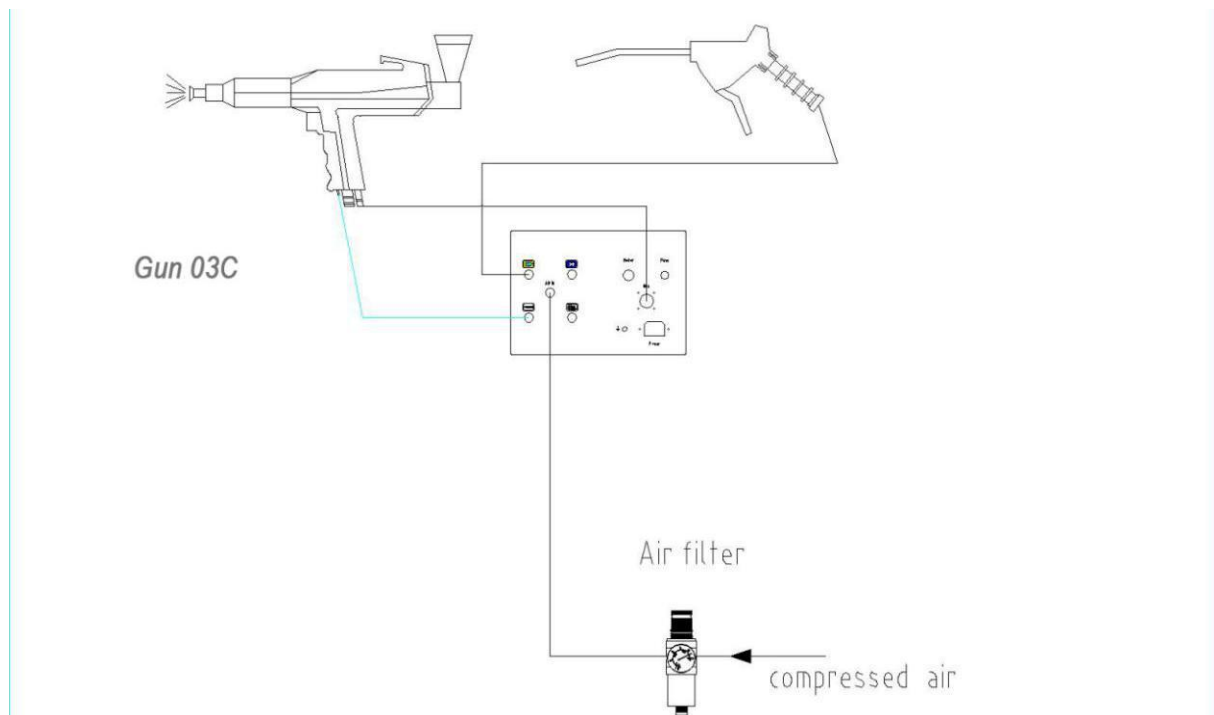
Suitable for models :668-L3-B



Suitable for model :668-A



Suitable for model :668-06C



Suitable for model :668-03C

610 Series

Basic powder coating machine



610

Box feeder powder coating machine



610V



Cup powder coating machine

610T-C



Portable powder coating machine

610T-B

Small powder coating machine



610T-H

Lab powder coating machine



610T-06C



610A

Automatic powder coating machine

660 Series



660
Basic powder coating machine

660V
Box feeder powder coating machine



660T-06C
Lab powder coating machine



660T-C
Cup powder coating machine



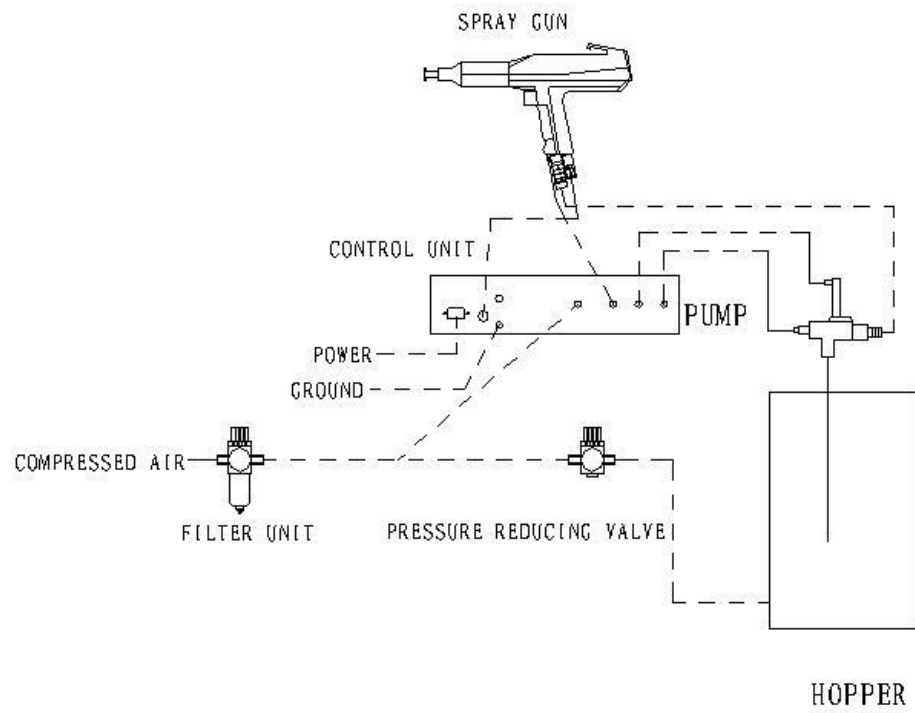
660T-B
Portable powder coating machine



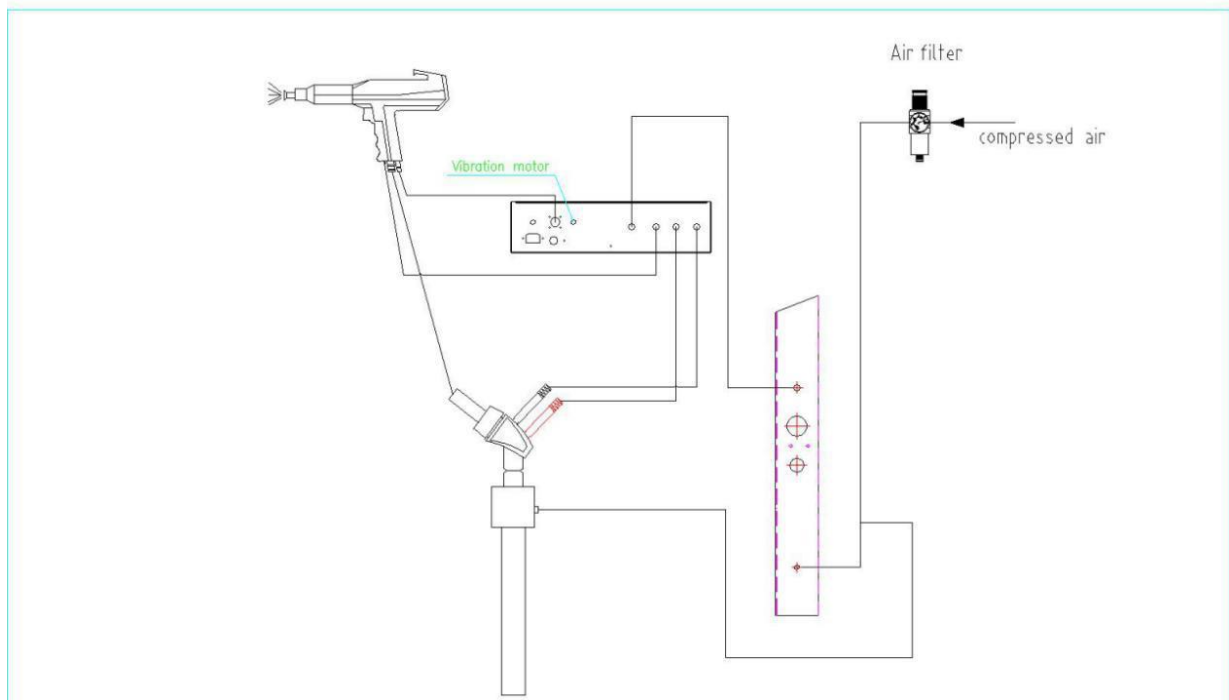
660T-H
Small powder coating machine



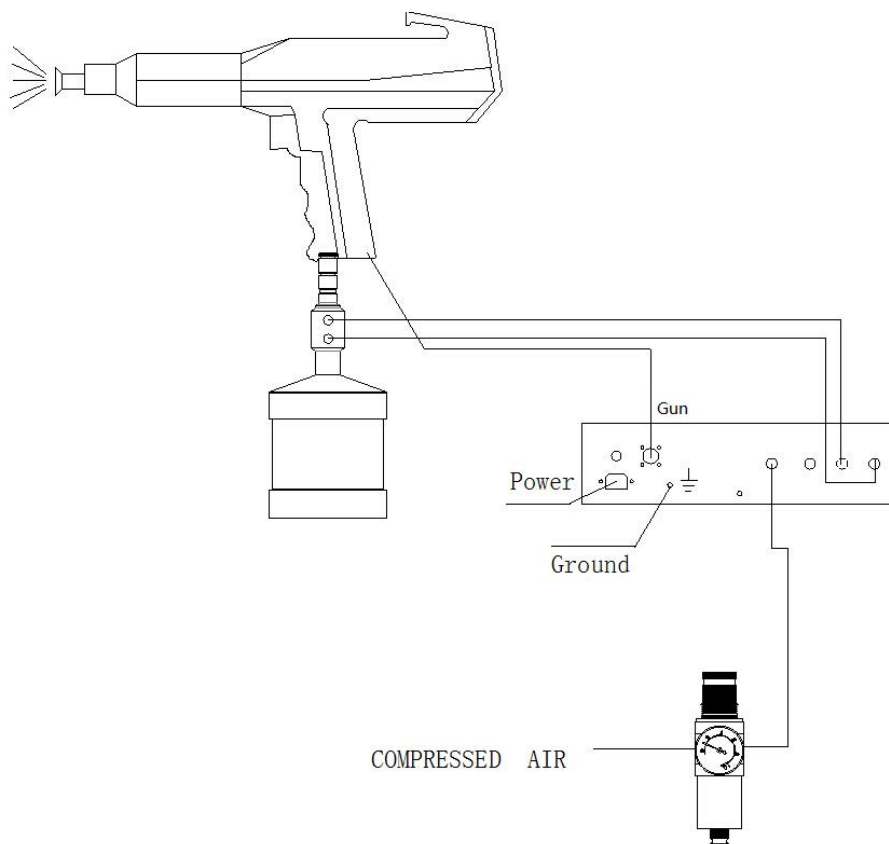
660A
Automatic powder coating machine



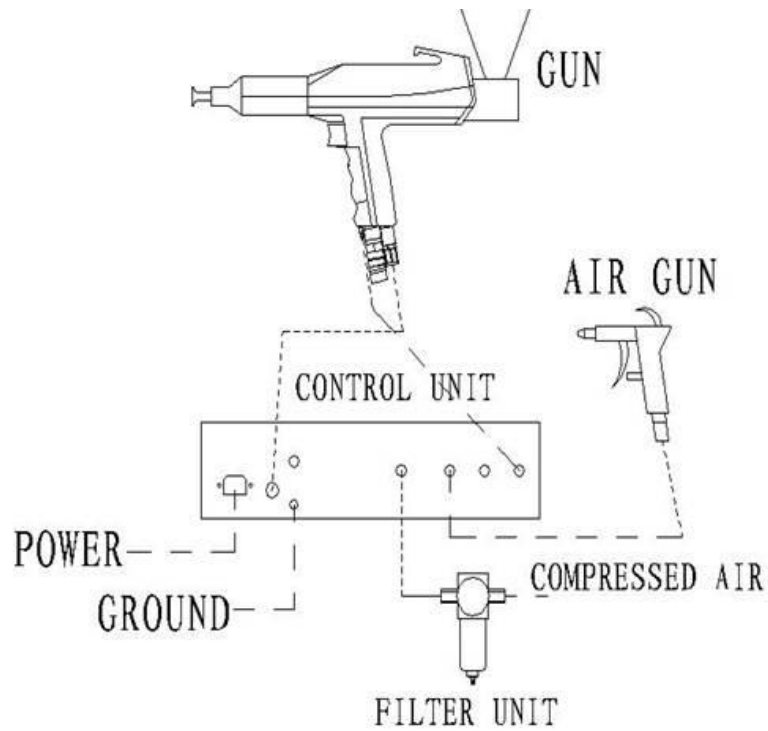
Suitable for models :660 (standard),660T-H,660T-B,610(Standard),610T-H,610T-B



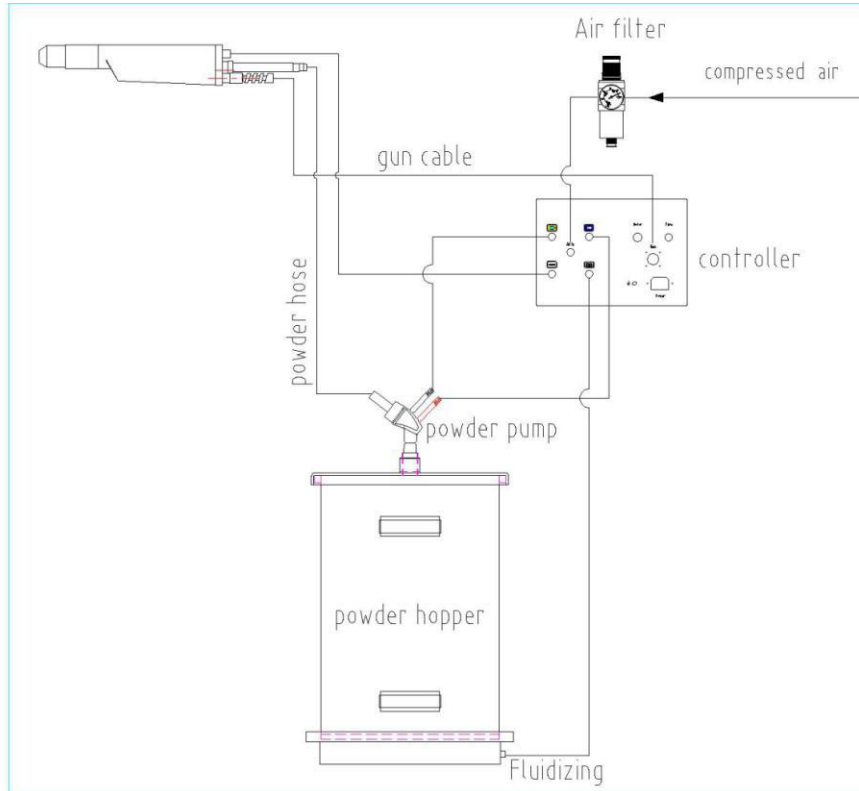
Suitable for model :660 -V, 610-V



Suitable for models:660 -06C, 610-06C



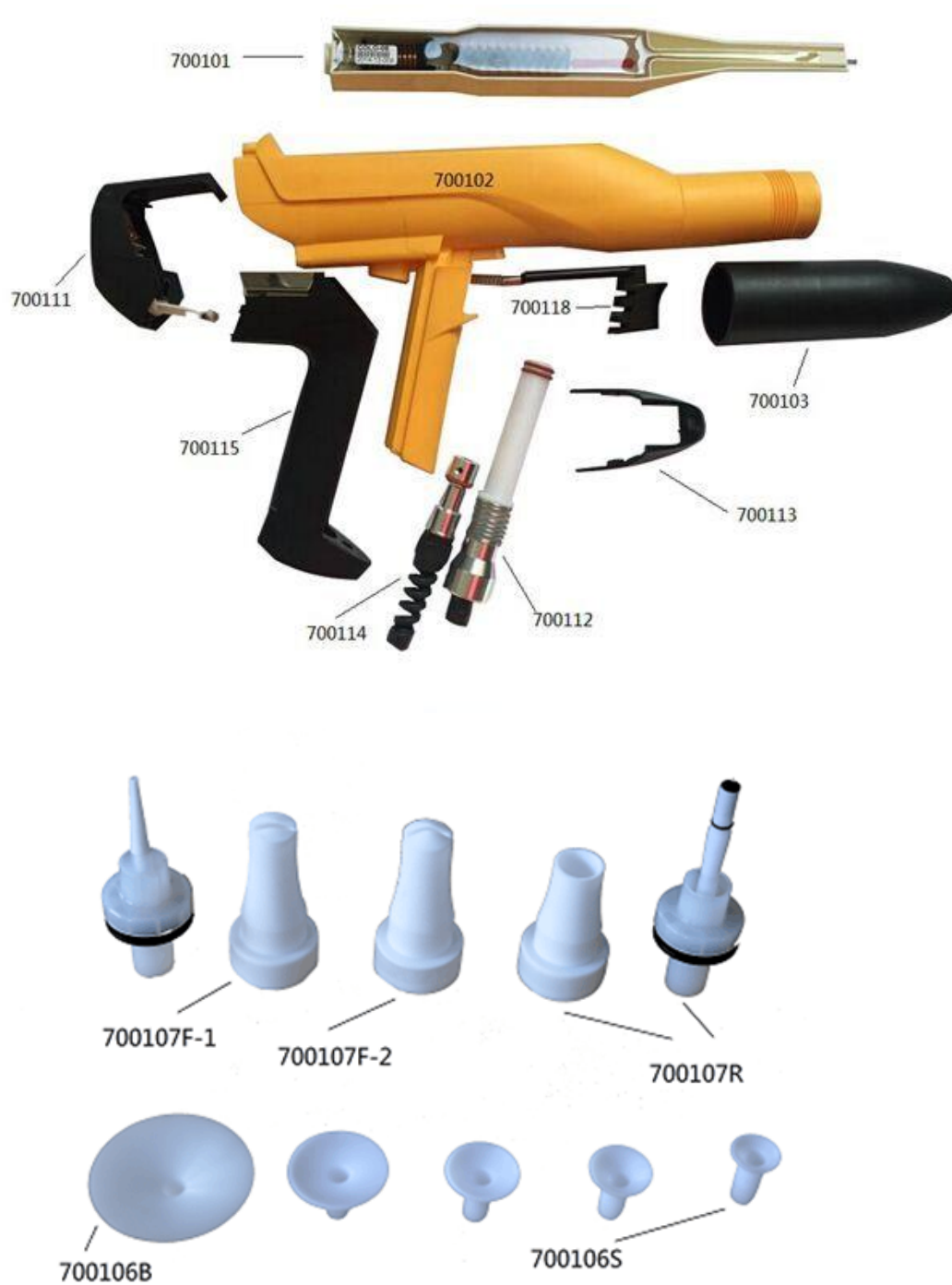
Suitable for models:660 -C, 610-C



Suitable for models:660 -A, 610-A

SPRAY GUN

Colo-07 manual powder gun - spare parts list



When you need the spare parts please give the item number !

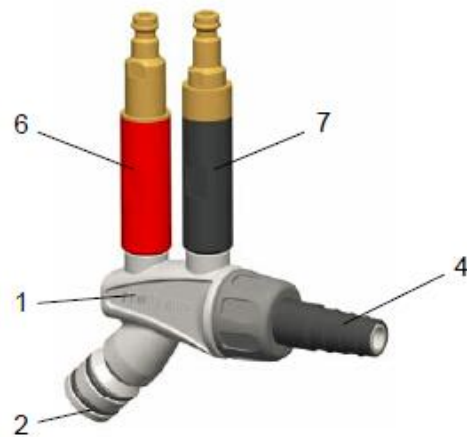
Colo-06 Automatic powder gun - spare parts list



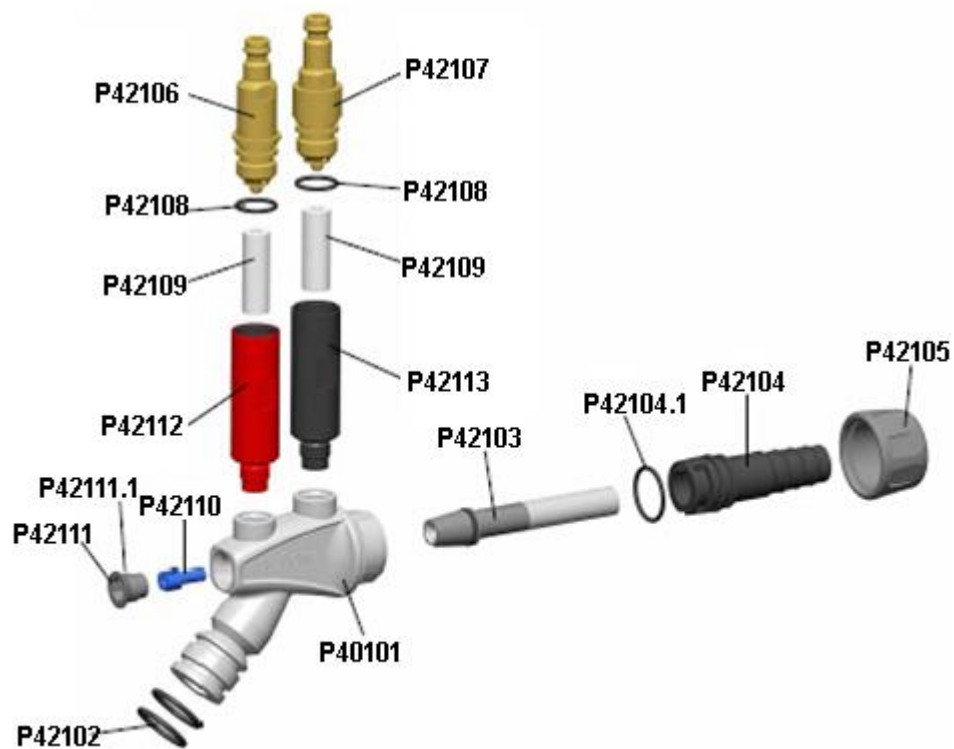
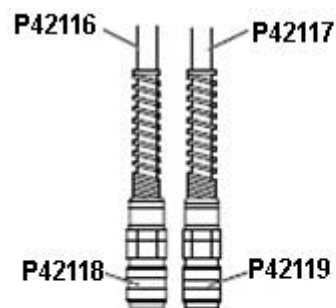
A600102	Shaft	A600101	cascade
A600105	Connector	A600108	Gasket
A600104	Hollow bolt	A600109	Intermediate piece
A600106	Deflector 16mm ,24mm,32mm,50mm	A600107R	round nozzle
A600107F	flat nozzle	A600103	Threaded sleeve
A600112	powder tube set		

When you need the spare parts please give the item number !

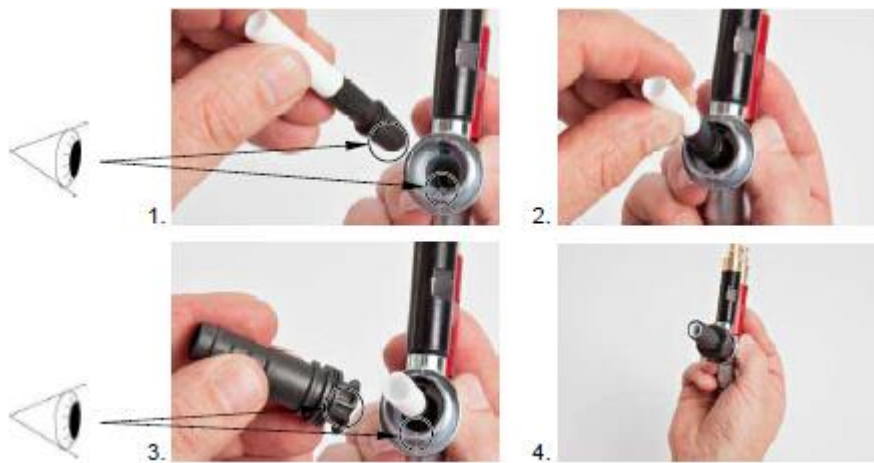
Powder injector G42 type



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



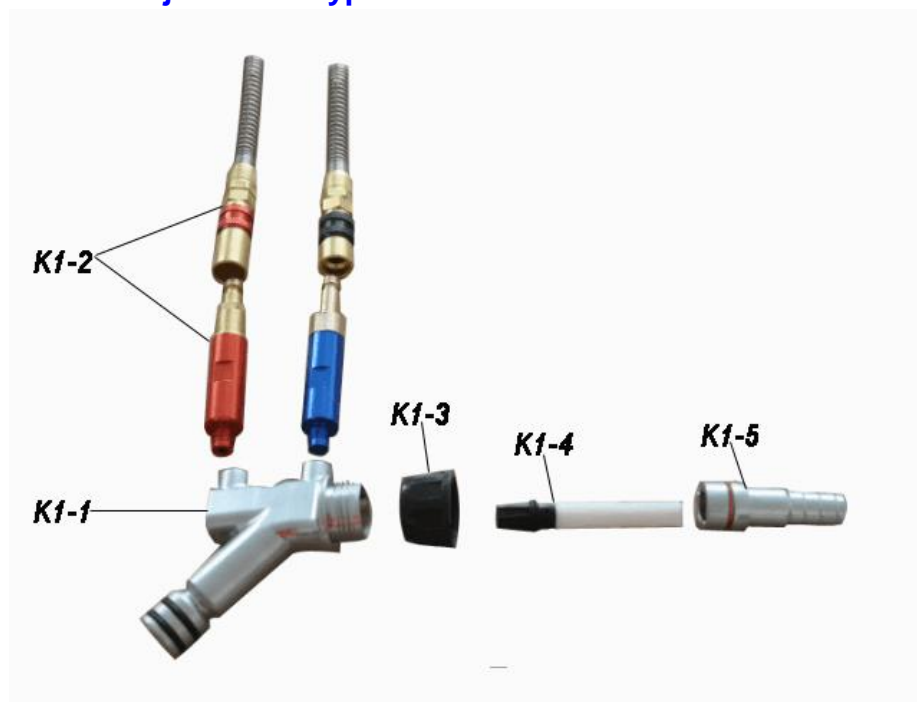
Replacing the insert sleeve



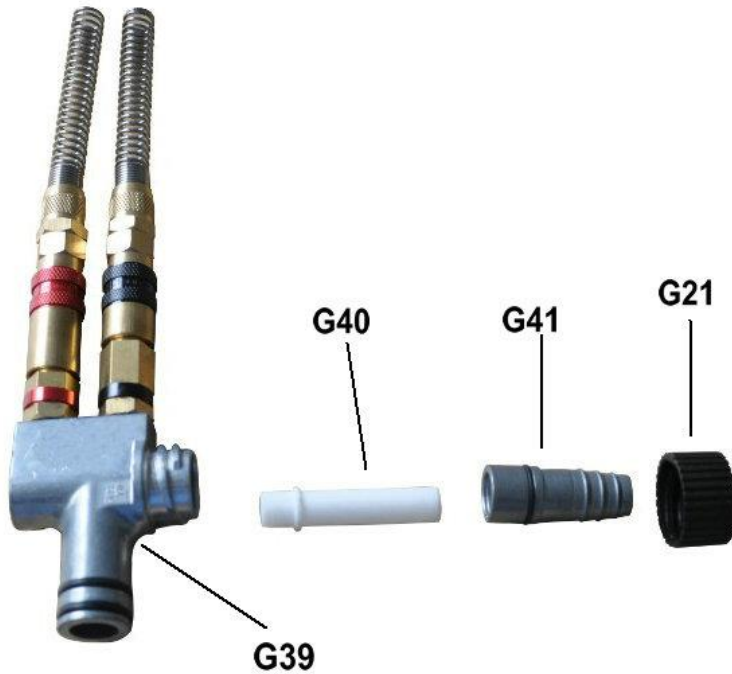
Powder injector K type



Powder injector K 1 type



Powder injector G38 type



Connection struction

Note:

Use clamp to connect grounding cable to the cabin or the suspension arrangement. Check ground connections with Ohm meter and ensure 1 Ohm or less!

The compressed air must be free of oil and water!

668-L3



**assemble
(hopper and spray gun)**



assemble(pump)



**assemble
(controller back)**



assemble(finish)

668T



668T-06C front



668T-06C back



668T-H front

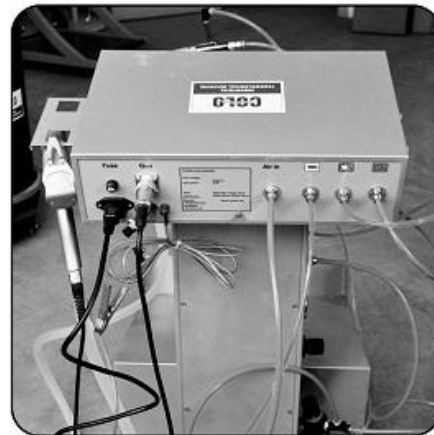


668T-H back

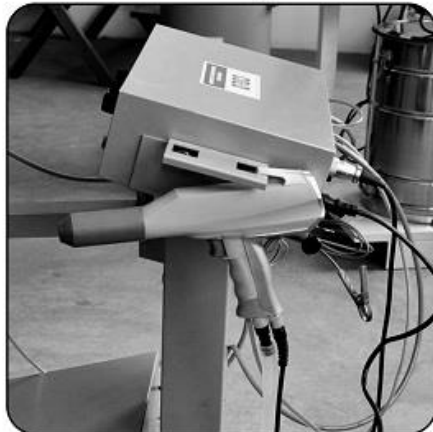
660V



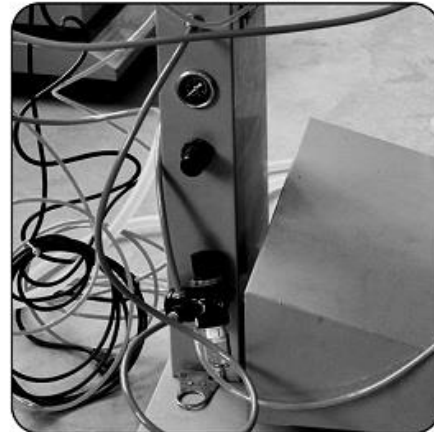
assembly(front)



assembly (back)

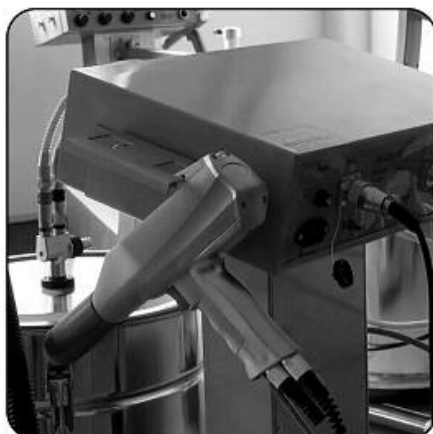


assembly(spray gun)



assembly (air regulator)

660



**assembly
(back and gun)**



**assembly
(hopper and pump)**

WARNING

--INSTALLATION

- Property 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 worn ,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 respirator anytime he is exposed to dusty conditions
- High pressure powder may 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 disorders.
- 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 -suitable for Hopper feed models

→PREPARATION FOR TEST OPERATION

1. Adjustment 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 fluidized air must be locked in until all connection are completed.

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 electrostatic 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 spraying 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 –left 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's 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 stand moves .

If all factors suggested above is all right , 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 lid and assemble hose

If everything checks alright, 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 fluidized
- 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-sprayed 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 unsure 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 outter temperature

The fluidizing proceeds independently of control functions

- 1 .Keep the hopper s lid open
- 2 Slowly increase the fluidzing AIR –the powder begins the boil mildly, 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 fluidized
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

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 begins

B. How to manage

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

1. Daily check -----INJECTOR cleaning and INSERT SLEEVE worn-down
 -POWDER HOSE cleaning
 -GUN cleaning
- 2.weekly checkcleans 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 filter , 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

Comprehensive regulation

Workpieces type	Output voltage	1 ST 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	20-30kv	2-3kg/cm2	0.5-1kg/cm2	15-20cm

CLEANING

A. Hopper

1. Remove fluidizing AIR LINE
2. Remove injector
3. take out 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.

TROUBLES

Problem	Cause	Measure
High –voltage display does not operated even after powder is on and trigger is pulled	<ul style="list-style-type: none"> . Electric faulty-The electric line coming into CONTROL UNIT is not property connected . Faulty fuse and bad equipment on the part of external power source . .Faulty lamp. .Faulty printed circuit board(PCB) .Faulty line in GUN .Faulty in high-voltage generation part .Faulty trigger switch 	<ul style="list-style-type: none"> . connect the power Replace Preplace Preplace Preplace Preplace Preplace Preplace
The powder would not be fluidized	<ul style="list-style-type: none"> .The fluidizing air hose is not connected or compressed air is not input . Faulty fluidizing plate . Faulty operation of pressure reduction valve 	<ul style="list-style-type: none"> .Connect after checking .Replace .Replace
The gauge hands of CONVEYING AIR and DOSING AIR do not move during operation	<ul style="list-style-type: none"> .operation mistake: The power switch is not pressed .The trigger is not pulled .Faulty SOLENOID valve .Faulty PCB 	<ul style="list-style-type: none"> . Turn on the power switch .Check while pulling the trigger . Replace

Problem	Cause	Measure
The powder would not be ejected even after power switch is on and trigger is pulled	.Blockage generated in injector , check valve sleeve in the injector paint hose or GUN . worn-down sleeve .Poor fluidizing operation .CONVEYING AIR is not supplied. . Faulty air –adjustment valve . Faulty solenoid valve . Faulty PCB . Oil and moisture contained In the compressed air	. Disassemble and clean . Replace .Replace .check above issues .Replace .Replace .Replace .Install an air dehydrator
Powder is ejected from GUN but with its electrostatic intensity low	.High-voltage assembly is low .Faulty GUN connector , wire and wire connector .Faulty PCB .Faulty high-voltage cascade .Faulty ROD holder	.increase the voltage level .Replace the faulty part .Replace .Replace
Powder ejection and electrostatic intensity is good , but its attach efficiency is poor	.Faulty earth of powder object .Too much paint on the conveyor hangar and powder object area .The high voltage pin caved in	.Check the earth state .Remove powder from hanger and powder-object area .Replace the rod holder

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

Thanks for your choose COLO!

More information please visit www.colourspray.com for support.