OWNER'S MANUAL
RED LINE EZ100
electrostatic
powder coating gun

Packing List:

The **RED LINE** *EZ100* consists of the following:

- Powder spray gun with a round powder deflector fitted at the tip of the gun.
- Wall mounting adaptor (Input 100-260V AC 50-60 Hz; output 12 VDC 1.5 amp rating) with 3 meter (10') cable and a 3 Meter (10') earth (ground) cable with crocodile clip
- Two additional round powder flow deflectors of different sizes (12 mm, 19 mm & 25 mm – ½", ¾" and 1") and a flat (fan) spray pattern generator
- 1 cup with a black lid containing a 'J' shaped metal pipe and a screw with washer (ForceFeed Set)
- 2 spare cups with lids
- This Owner's Manual
- All securely packed

Infrastructural requirements:

Electrical power connection:	100 - 260 V AC, 50-60Hz, Single phase with earth (ground). In case of fluctuating voltage, please use a voltage stabilizer with surge and spike protection
Pneumatic connection:	Clean & dry compressed air at a pressure of about 1.5 – 2.0 kg/cm^2 (say 20 – 30 psi) – ***NOT EXCEEDING 3 kg/cm^2 (say 40 psi)***

Performance may vary if there is variation in the electrical power or pneumatic inputs.

Congratulations on your purchase of the **RED LINE** *EZ100* electrostatic powder coating gun. You could be a serious hobbyist or a first time powder coater or an industrial coater requiring portability or a powder coater who simply wants a low - cost powder gun. In any case, y ou will find its performance exceedingly satisfactory and closer to higher end professional models. You have purchased one of the finest and cost-effective electrostatic powder coating spray guns.

The **RED LINE** *EZ100* is designed and built to give you trouble-free performance.

Before using this equipment, please read this Owner's Manual completely. It will save you time, money and unnecessary effort in the future.

I know y ou will be thoroughly satisfied with your **RED LINE** *EZ100*. In case you require any assistance or information on this machine at any time, please do not hesitate to contact us directly or call your nearest **Authorized RED LINE Sales & Service Center.** It will be our pleasure to be of assistance to you.

Please do not attempt to break open the gun as there are no user-serviceable or field-serviceable parts inside the gun. This should be handled strictly by an authorized and trained RED LINE ServiceRepresentative only.

For further information on the full range of RED LINE powder coating equipments, systems and complete plants, please visit our website - **www.redlineltd.com** or write us or contact your nearest **Authorized RED LINE Sales & Service Center**.

We wish you all success.

With regards,

Himanshu Shah, Director
RED LINE INDUSTRIES LIMITED

CAUTION AND CARE

First and foremost, it is very important for you, as the user, to understand that although a great deal of attention has been given to various safety factors and considerations, the ultimate responsibility of using and treating this machine responsibly and with care lies with you. This machine generates around 100kV (100,000 electrostatic volts) for electrostatic use. Always treat this machine with the respect it deserves.

ALWAYS…

- ✓ Read this manual completely before starting and feel free to refer to it as often as you need.
- ✓ Wear leather footwear and non-insulating gloves (if at all).
- ✓ Ensure that the equipment, the coating booth/cabin and everything within a 3 Meter (10') radius of the machine is properly earthed (grounded).
- ✓ Ensure that the gun is triggered only when the tip of the gun (electrode) is not more than 6 - 8" (15 - 20cm) away from a earth (ground) point. Optimum distance between object and gun tip is 10 - 15cm.
- ✓ Use jigs and jig holders which are clean and bare at their contact points and which are properly earthed (grounded) to ensure proper dissipation of electrostatic charge build-up.
- ✓ Use only compressed air and a clean dry lint -free cloth, to clean the gun or its parts.
- ✓ In case of doubt, contact your local dealer or service centre or us directly
- ✓ Switch off the main switch and disconnect the plug when the machine is not in use.

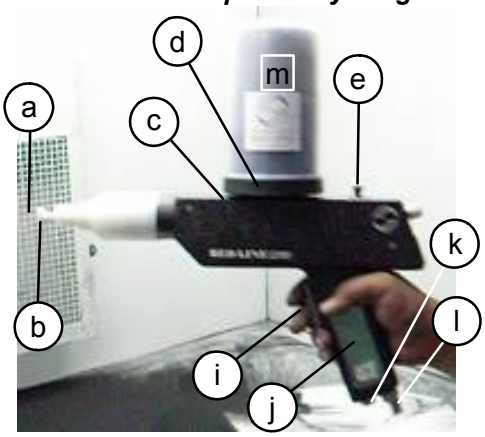
NEVER …

- ☒ **NEVER** touch the charging electrode at the tip of the gun with your bare hands when the machine is 'ON'. If required to handle the electrodes, always earth (ground) the electrode first to dissipate any electrostatic charge build-up that may have taken place.
- ☒ **NEVER** aim the gun away from an earthed object or point when you trigger it ON
- ☒ **NEVER** inhale the powder that is sprayed. If the powder recovery system is not efficient to suck away all oversprayed (excess sprayed) powder, either get that handled or at least ensure that an appropriate air-filter is made available for the coater to breath in clean air.
- ☒ **NEVER** use any kind of solvents to clean any gun or its parts.
- ☒ **NEVER** expose this machine to water or rain
- ☒ **NEVER** open the gun. There are no user-serviceable or field-serviceable parts inside the gun.

AVOID …

- ☒ **AVOID** extended triggering of the gun without compressed air. Compressed air flow assists in dissipation of charge from near the gun tip as well as keeps the electronics inside the gun at an optimum operating temperature. Continued triggering without compressed air may lead to an electronic failure of the gun
- ☒ **AVOID** using locally produced replacement parts – this may prove to be cheaper in the short term but may permanently damage the gun and force higher expenditure later
- ☒ **AVOID** using the equipment in damp or wet areas

Understand various parts of your gun:



a. Gun tip (electrode): This is where the electrostatic charge is available.
b. Powder flow pattern generators: You can use what suits you – round or flat (fan) type. These are interchangeable at will
c. Cup-lid Holder: You lock in here the ForceFeed system cup -lid provided (explained later).
d. ForceFeed system cup-lid (black)
e. Powder flow rate controller.
f. Electrostatic charge (kV) controller
g. Charging Indicator
h. Digital Meter showing the output charging voltage (nominal)
i. Trigger used to switch ON and OFF the coating operation
j. Earthing plates – to ensure that you and the entire system is eartheed (grounded)
k. Power input socket – the power supply unit connects here
l. Compressed Air inlet. The compressed air line connects here
m. Powder cup (500 gm – 1 lb capacity)

First start up:

The **RED LINE** *E2100* is supplied virtually ready to operate. All you need to do before you start work is to put together the ForceFeed system cup assembly before you connect up the compressed air line and power supply.

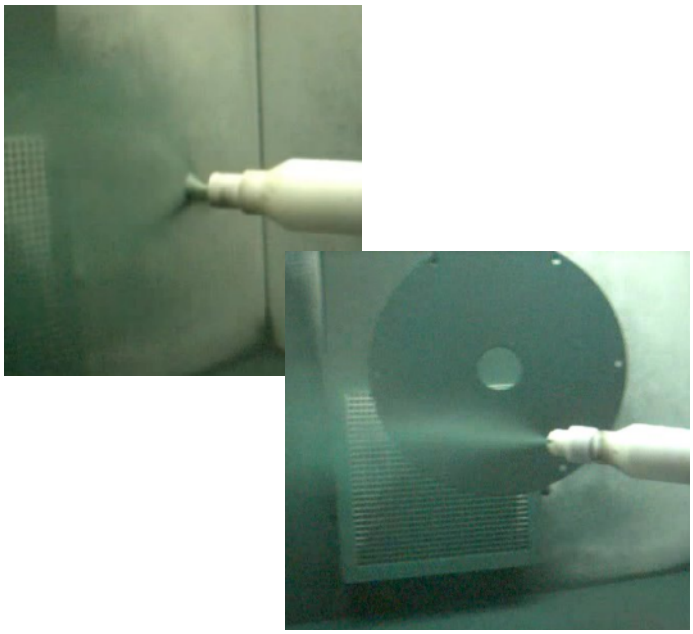
Infrastructure required:
[a] A power connection – 100 – 260V AC 50/60Hz with earth (ground) – with surge and spike protection
[b] Dry and clean compressed at air pressure of 1.5 – 2.0 kg/cm^2 (around 20 - 30 psi) pressure – ***NOT EXCEEDING 3 kg/cm^2 (42 psi).*** *Please note that higher pressure may permanently damage the pneumatic system inside the gun.*

1. Carefully remove the equipment from its original packing
2. Check everything that is supposed to be with the set has been supplied – see the Packing List on the facing page.
3. To assemble the cup with the ForceFeed components to the gun, first unscrew the 'black' lid off of the cup. This cup also contains one '**J**' shaped metal pipe and a screw (with washer). Press down the black lid on the cuplid-holder on top of the gun (the rubber 'O' rings will secure the position and ensure that the joint is air-tight) and align the 'screw' hole of the lid with that on the flat cup lid-holder on the gun. This will also align the 2nd hole (the larger one) of the lid to a similar hole in the lid-holder.
4. With the screw provided, tighten and lock down this black cup-lid into place.
5. Now press down the plastic stud of the '**J**' metal pipe into the 2nd hole – the rubber 'O' rings will hold this pipe in place. Turn the pipe so that the open end of the pipe is aligned over the small plastic stud of the lid.
6. Your gun is now assembled.
7. Fill in the desired amount of powder in the powder cup (the powder cup has a capacity of approx 500 gms) and screw it onto the black lid of the powder spray gun. You will have to hold the gun upside down for this. Avoid any spillage of powder. Use of gloves is recommended when handling powder coatings.
8. Set up your compressed air line to generate around 20-30 psi pressure and connect it to the base of the handle of the gun. In case a Quick Release Coupling (QRC) has been provided, then fix the coupler end of the QRC to the compressed air line hose and

plug it into the adaptor under the gun. Turn the flow-controller counter-clockwise completely so that it is closed. Please ensure you have adequate compressed air filters on-line so that clean and dry compressed air is fed to the powder gun.

9. Plug in the power cord to a 100-260 V AC outlet. Please ensure that this outlet (or an extension cord, if you are using one) has a good quality ground. Plug in the output connection (12 VDC) of the adaptor to the socket at the base of the gun. In case you believe that your supply voltage is not clean and steady, please install necessary surge and spike protectors.
10. Connect the crocodile clip of the earth (ground) cable to the ground of the premises in which you are doing the coating. Or, connect the ground clip to the metal object being coated. Good quality grounding is essential not only from a safety standpoint, but improves the quality of powder coating.

THE RED LINE *EZ100* IS NOW CONNECTED FOR POWDER COATING.



Operations:

1. Hang the article(s) to be coated in the spray booth or in a safe enclosure, ensuring that they are properly earthed (grounded).
2. Switch ON the mains power switch to the machine from the wall power outlet. The indicator (if provided) on the wall-mounting power adaptor should light up.
3. Switch on the compressed air supply to the machine and set the pressure at around 20 - 30 psi.
4. Point the gun into the booth towards the grounded articles to be coated and press the trigger on the spray gun. The indicator at the back of the gun (yellow) should light up. The Digital Meter will indicate the (nominal) charging voltage available at the tip of the gun. Turn the kV controller knob (at the back of the gun) clockwise to increase the charging voltage to the max – approx 100kV. The range available is approx from 20kV to 100kV. Turn the flow controller clockwise till you achieve powder flow at a rate and density of satisfaction to you.
5. Keeping the nozzle of the gun about 10 to 20 cms (4" to 8") from the articles being coated, spray powder in smooth horizontal arm sweeps. Ensure that the part to be coated is completely coated with powder. Excessive coating may lead to unwanted and unnecessary thicker coats.
6. Releasing the trigger of the gun switches OFF the powder flow as well as shuts down the electronics used to generate and control the high voltage. ***Please note that your powder spray gun may still hold electrostatic charge.*** *To prevent any accidents, please touch the charging tip to a ground point to discharge any residual electrostatic charge.*
7. Place the coated article in the oven which has been preheated to the required temperature (350 - 390°F / 180 - 200°C). Check the curing time with the powder manufacturer (this information may be available on the powder carton or from the powder supplier). Keep the article in the oven for the desired time. At the end of the curing period, switch off the oven, open the door of the oven, allow the parts to cool and remove them. Please note under-curing or over-curing (temperature or time) could give you unwanted results.
8. Your part is ready, duly powder-coated.

Routine maintenance:

Always keep your RED LINE *EZ100* system clean.

- When the powder coating work is over, ground the gun tip to the ground point.
- Switch off the mains switch at the wall outlet. Unplug the machine from the wall outlet.
- Unscrew the cu p and store the excess powder in the cup in a dry place as this powder can be used next time round.
- Clean the inside of the gun using compressed air.
- Avoid removing the ForceFeed set of 'J' metal pipe and the black cup-lid unless you intend to store the set away for a period o f time. Repeated screwing on and removing the black cup -lid may damage the internal threading of the cup lid-holder

Regular cleaning of the powder spray gun and the powder cups is normally all that is required to ensur e that your system always operates at peak performance levels.

DO NOT USE ANY PETROCHEMICAL SOLVENTS OR OTHER CLEANING AGENTS. TO CLEAN THE GUN OR ANY PART OF THE MACHNE AS THIS MIGHT DAMAGE THE GUN OR OTHER COMPONENTS.

If any parts need to be replaced, please call for only genuine parts from your nearest Authorized RED LINE Service Center. Using locally procured or unauthorized parts may not only affect the performance of the system, but may also damage the delicate parts and components of the machine l eading to possible unnecessary additional heavy expenditures ahead.

CAUTION:

The manufacturer and/or the distributor have provided the part list and part-diagram for information purposes only. Neither the manufacturer nor the distributor makes any kind of representation to the buyer in any way that he/she is qualified or authorized to make any repa irs to the equipment or change any parts in the equipment. The manufacturer and distributor expressly states herein that any repairs or parts replacement should not under any circumstances be carried out by the user, but only by the certified and licensed technician. The buyer alone assumes all risk, responsibility and liability arising out of his/her repairs to the original equipment or replacement of any

Suggestions for good results:

- To change spray pattern nozzles/deflectors: the *EZ100* comes fitted with the flat spray pattern nozzle (also known as the fan pattern nozzle). To replace this with the round deflector: [1] please pull out the flat pattern nozzle assembly along with the fan size control ring, [2] screw on the required round deflector onto the deflector adaptor. To replace the round deflector with the flat spray nozzle, reverse this process.

- Ensure that the surface being coated is clean of all dust, rust or grease. Remove these contaminants if present on the surface using sand paper, polish paper, wire brushes or other means.

- Moist, dirty or oily compressed air may lead to imperfect coatings – including lumps of powder in places o r splotches in some places after the part has gone through the oven. If this should happen, install or replace the compressed air filter s (moisture separator) on your compressor line.

- Follow the curing schedule recommended by the powder manufacturer. Improper curing schedule will lead to less than good quality finishing. The color may be different from what is expected (for example, if you over -cure a white, you may end up with a yellow finish). Or the mechanical properties may not be as expected – the coat may p eel off or scratch off easily. Or t he gloss level may be different from what the powder manufacturer might have promised. These are the results you may see with incorrect powder curing time or temperature setting.

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