



MS Elite Cart Powder  
Spray System  
Model: 805700



**NOTE:** This manual has been changed from revision **PA-18-03-R5** to revision **PA-18-03-R6**. Reasons for this change are noted under “Manual Change Summary” inside the back cover of this manual.

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# SAFETY

## SAFETY PRECAUTIONS

Before operating, maintaining or servicing any electrostatic coating system, read and understand all of the technical and safety literature for your products. This manual contains information that is important for you to know and understand. This information relates to **USER SAFETY** and **PREVENTING EQUIPMENT PROBLEMS**. To help you recognize this information, we use the following symbols. Please pay particular attention to these sections.

### WARNING

A **WARNING!** states information to alert you to a situation that might cause serious injury if instructions are not followed.

### CAUTION

A **CAUTION!** states information that tells how to prevent damage to equipment or how to avoid a situation that might cause minor injury.

### NOTE

A **NOTE** is information relevant to the procedure in progress.

While this manual lists standard specifications and service procedures, some minor deviations may be found between this literature and your equipment. Differences in local codes and plant requirements, material delivery requirements, etc., make such variations inevitable. Compare this manual with your system installation drawings and associated equipment manuals to reconcile such differences.

Careful study and continued use of this manual will provide a better understanding of the equipment and process, resulting in more efficient operation, longer trouble-free service and faster, easier troubleshooting. If you do not have the manuals and safety literature for your equipment, contact your local Carlisle Fluid Technologies representative or Carlisle Fluid Technologies technical support.


### WARNING



- The user **MUST** read and be familiar with the Safety Section in this manual and the safety literature therein identified.
- This equipment is intended to be used by trained personnel **ONLY**.
- This manual **MUST** be read and thoroughly understood by **ALL** personnel who operate, clean or maintain this equipment! Special care should be taken to ensure that the **WARNINGS** and safety requirements for operating and servicing the equipment are followed. The user should be aware of and adhere to **ALL** local building and fire codes and ordinances as well as **NFPA 33 AND EN 16985 SAFETY STANDARDS, LATEST EDITION**, or applicable country safety standards, prior to installing, operating, and/or servicing this equipment.

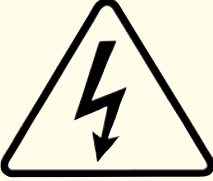
### WARNING




- The hazards shown on the following pages may occur during the normal use of this equipment.

Repairs may only be performed by personnel authorized by Carlisle Fluid Technologies.

<p><b>AREA</b> Tells where hazards may occur.</p>	<p><b>HAZARD</b> Tells what the hazard is.</p>	<p><b>SAFEGUARDS</b> Tells how to avoid the hazard.</p>
<p><b>Spray Area</b></p> 	<p><b>Fire Hazard</b></p> <p>Improper or inadequate operation and maintenance procedures will cause a fire hazard.</p> <p>Protection against inadvertent arcing that is capable of causing fire or explosion is lost if any safety interlocks are disabled during operation. Frequent Power Supply or Controller shutdown indicates a problem in the system requiring correction.</p>	<p>Fire extinguishing equipment must be present in the spray area and tested periodically.</p> <p>Spray areas must be kept clean to prevent the accumulation of combustible residues.</p> <p>Smoking must never be allowed in the spray area.</p> <p>The high voltage supplied to the atomizer must be turned off prior to cleaning, flushing, or maintenance.</p> <p>Spray booth ventilation must be kept at the rates required by NFPA 33, EN 16985, country, and local codes. In addition, ventilation must be maintained during cleaning operations using flammable or combustible solvents.</p> <p>Electrostatic arcing must be prevented. Safe sparking distance must be maintained between the parts being coated and the applicator. A distance of 1 inch for every 10KV of output voltage is required at all times.</p> <p>Test only in areas free of combustible material. Testing may require high voltage to be on, but only as instructed.</p> <p>Non-factory replacement parts or unauthorized equipment modifications may cause fire or injury. If used, the key switch bypass is intended for use only during setup operations. Production should never be done with safety interlocks disabled.</p> <p>The paint process and equipment should be set up and operated in accordance with NFPA 33, NEC, OSHA, local, country, and European Health and Safety Norms.</p>

<b>AREA</b> Tells where hazards may occur.	<b>HAZARD</b> Tells what the hazard is.	<b>SAFEGUARDS</b> Tells how to avoid the hazard.
<p style="text-align: center;"><b>Spray Area</b></p> 	<p><b>Explosion Hazard</b></p> <p>Improper or inadequate operation and maintenance procedures will cause a fire hazard.</p> <p>Protection against inadvertent arcing that is capable of causing fire or explosion is lost if any safety interlocks are disabled during operation.</p> <p>Frequent Power Supply or Controller shutdown indicates a problem in the system requiring correction.</p>	<p>Electrostatic arcing must be prevented. Safe sparking distance must be maintained between the parts being coated and the applicator. A distance of 1 inch for every 10KV of output voltage is required at all times.</p> <p>Unless specifically approved for use in hazardous locations, all electrical equipment must be located <b>outside</b> Class I or II, Division 1 or 2 hazardous areas, in accordance with NFPA 33.</p> <p>Test only in areas free of flammable or combustible materials.</p> <p>The current overload sensitivity (if equipped) <b>MUST</b> be set as described in the corresponding section of the equipment manual. Protection against inadvertent arcing that is capable of causing fire or explosion is lost if the current overload sensitivity is not properly set. Frequent power supply shutdown indicates a problem in the system which requires correction.</p> <p>Always turn the control panel power off prior to flushing, cleaning, or working on spray system equipment.</p> <p>Before turning high voltage on, make sure no objects are within the safe sparking distance.</p> <p>Ensure that the control panel is interlocked with the ventilation system and conveyor in accordance with NFPA-33, EN 16985.</p> <p>Have fire extinguishing equipment readily available and tested periodically.</p>
<p style="text-align: center;"><b>General Use and Maintenance</b></p> 	<p>Improper operation or maintenance may create a hazard.</p> <p>Personnel must be properly trained in the use of this equipment.</p>	<p>Personnel must be given training in accordance with the requirements of NFPA 33.</p> <p>Instructions and safety precautions must be read and understood prior to using this equipment.</p> <p>Comply with appropriate local, state, and national codes governing ventilation, fire protection, operation maintenance, and housekeeping. Reference OSHA, NFPA 33, EN Norms and your insurance company requirements.</p>

<p><b>AREA</b> Tells where hazards may occur.</p>	<p><b>HAZARD</b> Tells what the hazard is.</p>	<p><b>SAFEGUARDS</b> Tells how to avoid the hazard.</p>
<p><b>Spray Area / High Voltage Equipment</b></p> 	<p><b>Electrical Discharge</b></p> <p>There is a high voltage device that can induce an electrical charge on ungrounded objects which is capable of igniting coating materials.</p> <p>Inadequate grounding will cause a spark hazard. A spark can ignite many coating materials and cause a fire or explosion.</p>	<p>Parts being sprayed and operators in the spray area must be properly grounded.</p> <p>Parts being sprayed must be supported on conveyors or hangers that are properly grounded. The resistance between the part and earth ground must not exceed 1 Meg Ohm. (Refer to NFPA 33, EN 16985.)</p> <p>Operators must be grounded. Rubber soled insulating shoes should not be worn. Grounding straps on wrists or legs may be used to assure adequate ground contact.</p> <p>Operators must not be wearing or carrying any ungrounded metal objects.</p> <p>When using an electrostatic handgun, operators must assure contact with the handle of the applicator via conductive gloves or gloves with the palm section cut out.</p> <p><b>NOTE: REFER TO NFPA 33, EN 16985 OR SPECIFIC COUNTRY SAFETY CODES REGARDING PROPER OPERATOR GROUNDING.</b></p> <p>All electrically conductive objects in the spray area, with the exception of those objects required by the process to be at high voltage, must be grounded. Grounded conductive flooring must be provided in the spray area.</p> <p>Always turn off the power supply prior to flushing, cleaning, or working on spray system equipment.</p> <p>Unless specifically approved for use in hazardous locations, all electrical equipment must be located <b>outside</b> Class I or II, Division 1 or 2 hazardous areas, in accordance with NFPA 33.</p> <p>Avoid installing an applicator into a fluid system where the solvent supply is ungrounded.</p> <p>Do not touch the applicator electrode while it is energized.</p>

<b>AREA</b> Tells where hazards may occur.	<b>HAZARD</b> Tells what the hazard is.	<b>SAFEGUARDS</b> Tells how to avoid the hazard.
<p><b>Electrical Equipment</b></p> 	<p><b>Electrical Discharge</b></p> <p>High voltage equipment is utilized in the process. Arcing in the vicinity of flammable or combustible materials may occur. Personnel are exposed to high voltage during operation and maintenance.</p> <p>Protection against inadvertent arcing that may cause a fire or explosion is lost if safety circuits are disabled during operation.</p> <p>Frequent power supply shut-down indicates a problem in the system which requires correction.</p> <p>An electrical arc can ignite coating materials and cause a fire or explosion.</p>	<p>Unless specifically approved for use in hazardous locations, the power supply, control cabinet, and all other electrical equipment must be located outside Class I or II, Division 1 and 2 hazardous areas in accordance with NFPA 33 and EN 16985.</p> <p>Turn the power supply OFF before working on the equipment.</p> <p>Test only in areas free of flammable or combustible material.</p> <p>Testing may require high voltage to be on, but only as instructed.</p> <p>Production should never be done with the safety circuits disabled.</p> <p>Before turning the high voltage on, make sure no objects are within the sparking distance.</p>
<p><b>Toxic Substances</b></p> 	<p><b>Chemical Hazard</b></p> <p>Certain materials may be harmful if inhaled, or if there is contact with the skin.</p>	<p>Follow the requirements of the Safety Data Sheet supplied by coating material manufacturer.</p> <p>Adequate exhaust must be provided to keep the air free of accumulations of toxic materials. Reference EN 12215 or applicable code.</p> <p>Use a mask or respirator whenever there is a chance of inhaling sprayed materials. The mask must be compatible with the material being sprayed and its concentration. Equipment must be as prescribed by an industrial hygienist or safety expert, and be NIOSH approved.</p>
<p><b>Spray Area</b></p> 	<p><b>Explosion Hazard — Incompatible Materials</b></p> <p>Halogenated hydrocarbon solvents for example: methylene chloride and 1,1,1, - Trichloroethane are not chemically compatible with the aluminum that might be used in many system components. The chemical reaction caused by these solvents reacting with aluminum can become violent and lead to an equipment explosion.</p>	<p>Spray applicators require that aluminum inlet fittings be replaced with stainless steel.</p> <p>Aluminum is widely used in other spray application equipment - such as material pumps, regulators, triggering valves, etc. Halogenated hydrocarbon solvents must never be used with aluminum equipment during spraying, flushing, or cleaning. Read the label or data sheet for the material you intend to spray. If in doubt as to whether or not a coating or cleaning material is compatible, contact your coating supplier. Any other type of solvent may be used with aluminum equipment.</p>



# ATEX/FM/UKEX

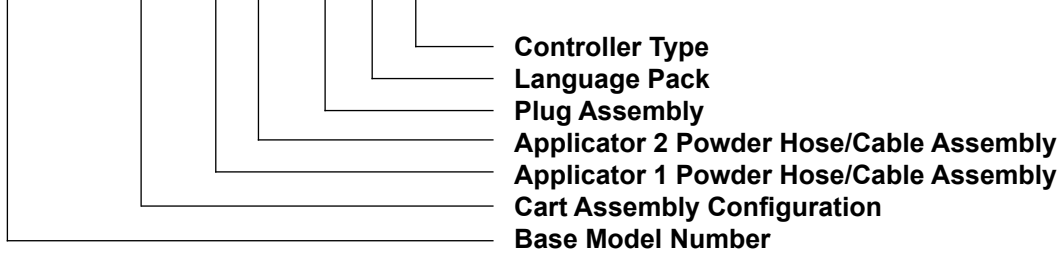
## EUROPEAN ATEX DIRECTIVE 2014/34/EU, ANNEX II, UKSI 2016: 1107 (AS AMENDED)

The following instructions apply to equipment covered by certificate number FM 19ATEX0004X, and FM21UKEX0140X

1. The equipment may be used with ignitable powders with apparatus groups II.
2. The equipment is only certified for use in ambient temperatures in the range +10°C to +40°C and should not be used outside this range.
3. Installation shall be carried out by suitably trained personnel in accordance with the applicable code of practice e.g. EN 60079-14:2014. Power cord must be plugged into power source outside all classified zones.
4. Inspection and maintenance of this equipment shall be carried out by suitably trained personnel in accordance with the applicable code of practice e.g. EN 60079-17, EN 50050-2, EN 50177.
5. Repair of this equipment shall be carried out by suitable trained personnel in accordance with the applicable code of practice e.g. EN 60079-19.
6. Putting into service, use, assembling, and adjustment of the equipment shall be fitted by suitably trained personnel in accordance with the manufacturer's documentation. The instructions must be followed in order to avoid possible electrostatic charging hazards.  
  
Refer to the "Table of Contents" of this service manual:
  - a. Installation
  - b. Operation
  - c. Maintenance
  - d. Parts Identification
7. Components to be incorporated into or used as replacement parts of the equipment shall be fitted by suitably trained personnel in accordance with the manufacturer's documentation.
8. The certification of this equipment relies upon the following materials used in its construction:  
  
If the equipment is likely to come into contact with aggressive substances, then it is the responsibility of the user to take suitable precautions that prevent it from being adversely affected, thus ensuring that the type of protection provided by the equipment is not compromised.  
  
Aggressive substances: e.g. acidic liquids or gases that may attack metals, or solvents that may affect polymeric materials.  
  
Suitable precautions: e.g. regular checks as part of routine inspections or establishing from the material's data sheets that it is resistant to specific chemicals.  
  
Refer to "Specifications" in the "Introduction" section:
  - a. High voltage cascade is encapsulated with a solvent resistant epoxy.
9. Refer to the instructions indicated below for specific conditions of use. They are the same for the cart systems and controller:
  - a. Applicator manual PA-17-08
  - b. Controller manual PA-19-08
  - c. Vibration Motor certificate numbers:
    1. ATEX: ITS17ATEX102020X
    2. IECEX: IECEX TUN 12.0023
10. The characteristics of the equipment shall be detailed e.g. electrical, pressure, and voltage parameters.  
  
**The manufacturer should note that, on being put into service, the equipment must be accompanied by a translation of the instructions in the language or languages of the country in which the equipment is to be used and by the instructions in the original language.**

# APPROVALS (FM/ATEX)

805700 - AAAA B C - ZZ Y W



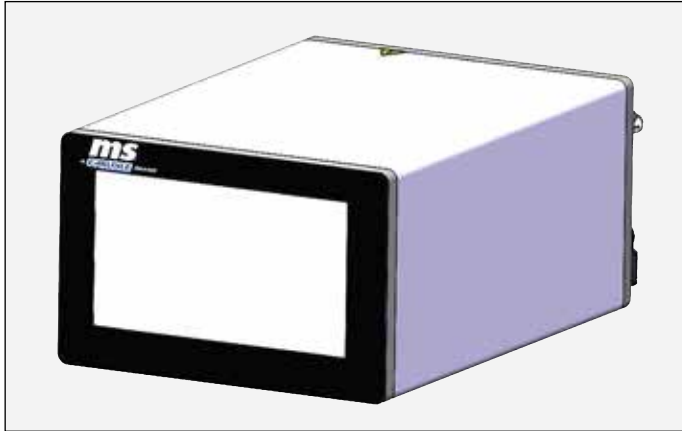
### ELITE CART - TABLE OF "AAAA" DASHES

"AAAA" Dash #	"AAAA" Description
1VB1	Single Controller/ Applicator, Vibratory Box Fed, 115V elite Cart
1VB2	Single Controller/ Applicator, Vibratory Box Fed, 230V elite Cart
2VB1	Dual Controller/ Applicator, Vibratory Box Fed, 115V elite Cart
2VB2	Dual Controller/ Applicator, Vibratory Box Fed, 230V elite Cart
1FH1	Single Controller/ Applicator, Fluidized Hopper Fed, 115V elite Cart
1FH2	Single Controller/ Applicator, Fluidized Hopper Fed, 230V elite Cart
2FH1	Dual Controller/ Applicator, Fluidized Hopper Fed, 115V elite Cart
2FH2	Dual Controller/ Applicator, Fluidized Hopper Fed, 230V elite Cart

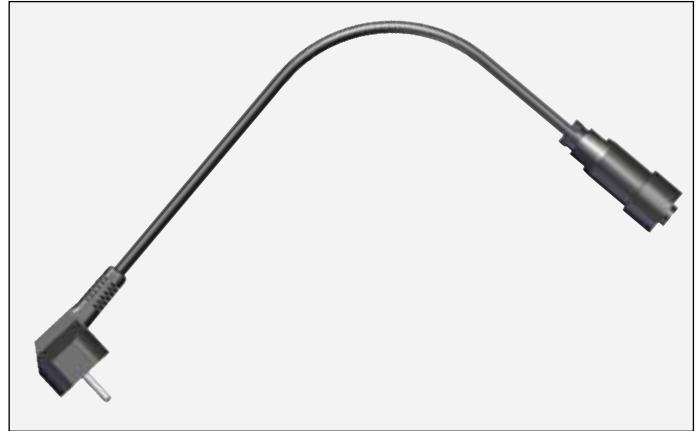


### POWDER HOSE SET - TABLE OF "B" AND "C" DASHES

"B" and "C" Dash #	"B" and "C" Description	Part #
0	No Powder Hose/Cable Set	---
1	Powder Hose Set 6m	610139-06
2	Powder Hose Set 10m	610139-10
3	Powder Hose Set 16m	610139-16
4	Powder Hose Set 20m	610139-20



“W” Controller



“ZZ” Plug

**TABLE OF “D” DASHES - CONTROLLER / PLUG PACKAGE**

“ZZ” Dash #	“ZZ” Description	Part No.
00	None	---
01	EU Plug Assembly	460147
02	North America/ Japan Plug Assembly	460149
03	China Plug Assembly	460150
04	Switzerland Plug Assembly	460148
05	UK Plug Assembly	461881
“Y” Dash #	“Y” Description	Part No.
1	General Language Pack	
2	Eastern European Language Pack	
“W” Dash #	“W” Description	Part No.
1	Basic	
2	Delux	

## SPECIFICATIONS - ELITE CART

### Controller Dimension

Depth:	332.0mm (13.07 inches)
Width:	200.6mm (7.89 inches)
Height:	128.6mm (5.06 inches)
Weight:	6.4 Kg (14.2 lbs)

### Applicator Dimensions

Weight:	458g (Without cable and hose assembly) (15 oz.)
Length:	350mm (Flat spray nozzle) (13.7 inches)

### Elite Cart Dimensions

Depth:	740 mm (29 inches)
Width:	640 mm (25 inches)
Height:	1160 mm (46 inches)
Weight 80570-1VBXX-XXXX:	49Kg (109 lbs)
Weight 80570-2VBXX-XXXX:	56.2Kg (124 lbs)
Weight 80570-1FHXX-XXXX:	49Kg (109 lbs)
Weight 80570-2FHXX-XXXX:	56.2Kg (124 lbs)

### Elite Cart Electrical Data

Main:	100-240 VAC
Frequency:	50 - 60 Hz
Input RMS Current:	.75 A Max.
Power AC Max Output:	1.5 VAC/1W
Power DC Max Output:	24 VDC/1W
External Frequency To Gun:	40 kHz.
Output To Vibrator:	100-240 VAC / max. 70 W
Fuse:	2.5A

### Certificates

US Certificate:	FM18US0005
Canadian Certificate:	FM18CA0001
ATEX Certificate:	FM19ATEX0004X
UKCA Certificate:	FM21UKEX0140X
Environmental Degree of Protection:	IP 64
Temperature Range:	+10° C - +40° C (50° F - +104° F)

### Pneumatic Data

Input Air Pressure:	6.0 bar max. (87 psig)
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### Compressed Air Quality According To ISO 8573.1

Residual Water Content In Compressed Air:	max. 1.3 g/m <sup>3</sup> with a dew point of 7° C
Residual Oil In The Compressed Air:	max. 0.1 mg/m <sup>3</sup>
Air Flow Rate:	5-20 Nm <sup>3</sup> /h
Regulated Output Air Pressure:	0 - 5bar

# INTRODUCTION



## PRODUCT DESCRIPTION

The MS elite is a small stand-alone coating unit. The unit consists of a MS elite M5 manual powder spray gun, a controller and an elite suction system or fluidized hopper with T9 pump. These items are all on a mobile cart.

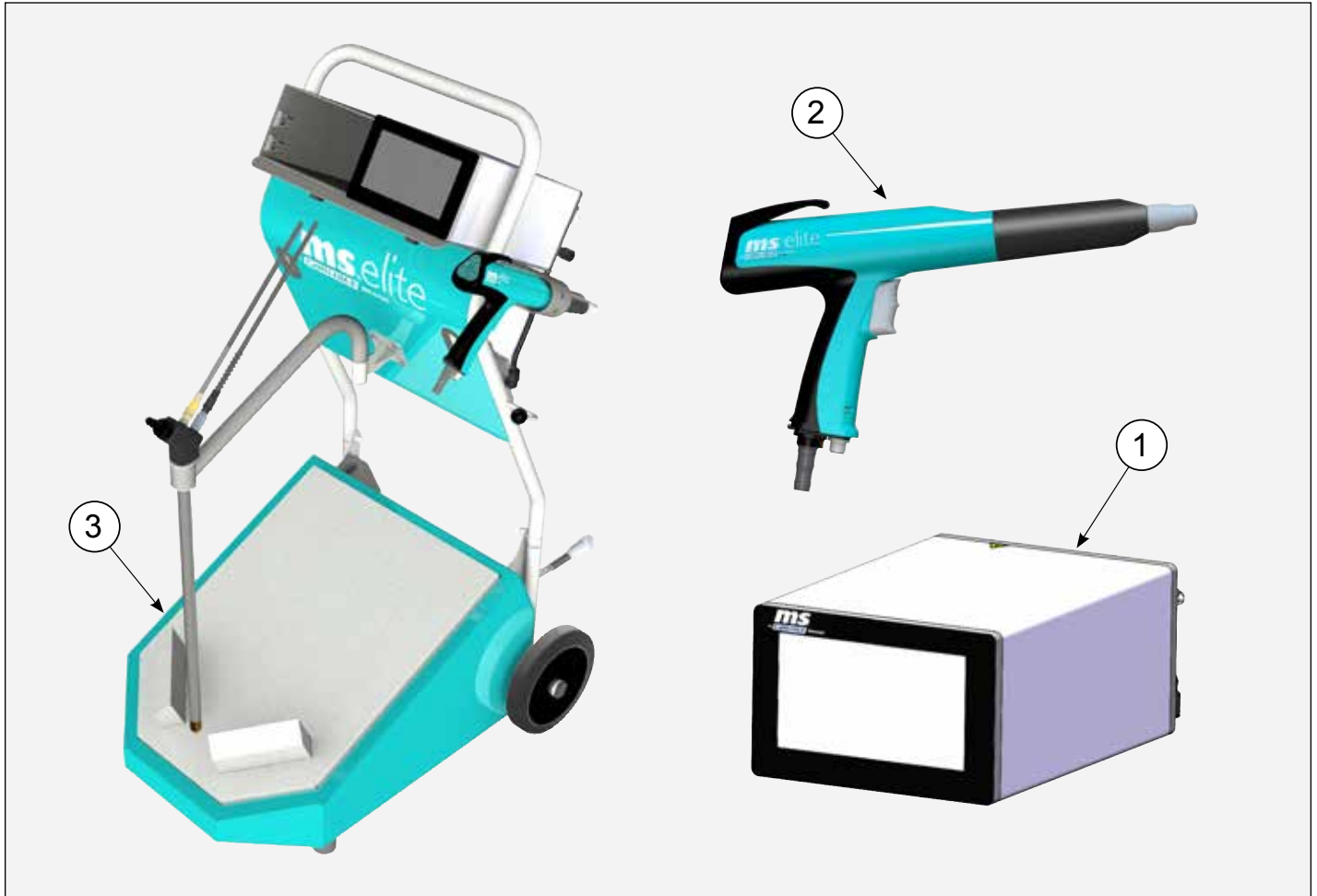
The base of the cart can be configured two ways. For the vibratory box fed version, there is a vibrator, which mobilizes the powder in suspension allowing easier transport to the applicator. For the fluidized hopper, pneumatic pressure is used to mobilize the powder to allow transport to the applicator.

For all technical data and operating instructions on the applicator (M5), refer to product manual PA-17-08. For all technical data and operating instructions on the MS elite controller unit, refer to the appropriate manual PA-19-06.

Included with the vibratory box fed version is a quick method of cleaning powder in the supply line to the applicator. Optionally, the cart can be equipped with a second controller, a second manual powder spray gun, which are supplied by a second dedicated pump.

This unit ships assembled with only the manual applicator connections to be finished and proper grounding. This cart assembly may at any time be integrated into an existing plant or used as a standalone pre-or post-coating touch-up unit.

For single vibratory box fed applicator units, when the controller is powered and applicator trigger is activated, the vibrator motor automatically starts. For the dual vibratory box fed applicator units, when powered, the vibrator motor will automatically start when either trigger is actuated. When the applicator's trigger is released, the vibrator motor will continue to run for approximately 5 seconds.



PARTS BREAKDOWN			
Item #	Part #	Description	Qty
1	461959-XXXMX	MS elite Controller	1
2	615210	MS elite M5 Manual Applicator	1
3	835015-01	Single Controller/ Applicator, Vibratory Box Fed, 230V elite Cart (shown)	1
	835015-02	Single Controller/ Applicator, Vibratory Box Fed, 115V elite Cart	1
	835019-01	Dual Controller/ Applicator, Vibratory Box Fed, 230V elite Cart	1
	835019-02	Dual Controller/ Applicator, Vibratory Box Fed, 115V elite Cart	1
	615501	Single Controller/ Applicator, Fluidized Hopper Fed, 115V elite Cart	1
		Single Controller/ Applicator, Fluidized Hopper Fed, 230V elite Cart	1
	615551	Dual Controller/ Applicator, Fluidized Hopper Fed, 115V elite Cart	1
		Dual Controller/ Applicator, Fluidized Hopper Fed, 230V elite Cart	1

**⚠ CAUTION**

➤ Only use Power Cable elite US (460149) with 110V vibrator motor. All other cables are for use with 230V.

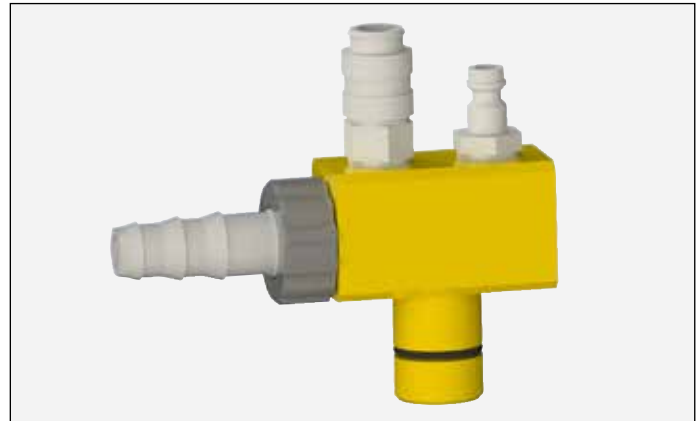


## DESCRIPTION

### T9 Injector

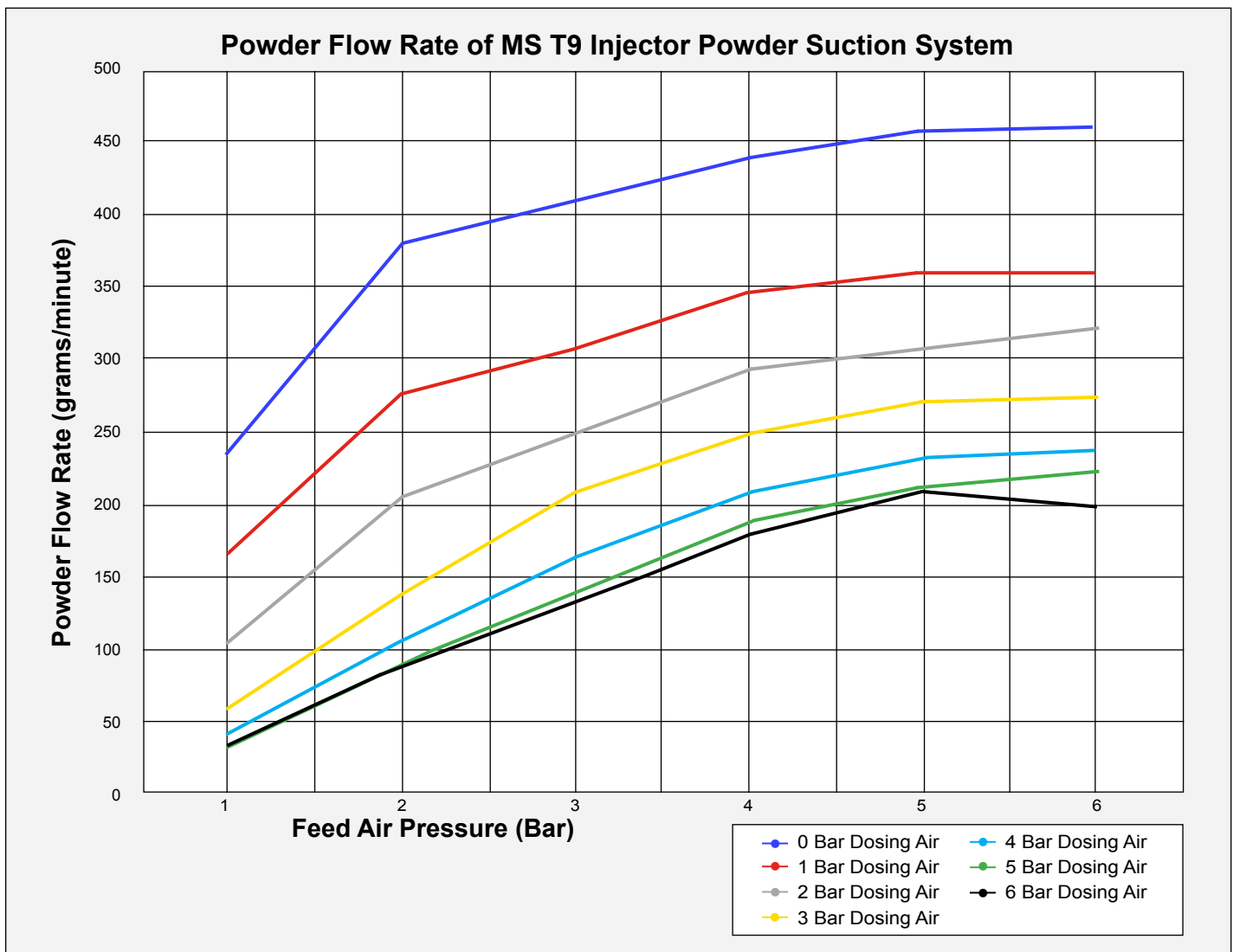
The T9 injector conveys powder to the applicator through the powder hose. It uses the fully adjustable feed and dosage air supplied from the MS elite controller to achieve a continuous adjustable powder feed rate.

### Technical Data



**WARNING**

- Safety regulations and the operating instructions must be observed while connecting and operating the Elite Injector.



This graph is included to demonstrate the relationship between the pneumatic settings and the powder flow rate. The powder flow rate is also dependent on the characteristics of the powder paint being sprayed. This graph should be used as a reference to be applied to specific powder performance.



## DESCRIPTION

### Elite Injector

The elite Injector fluidizes and conveys powder to the applicator through the powder hose. It uses the fully adjustable feed and dosage air supplied from the MS elite controller to achieve a continuous adjustable powder feed rate.

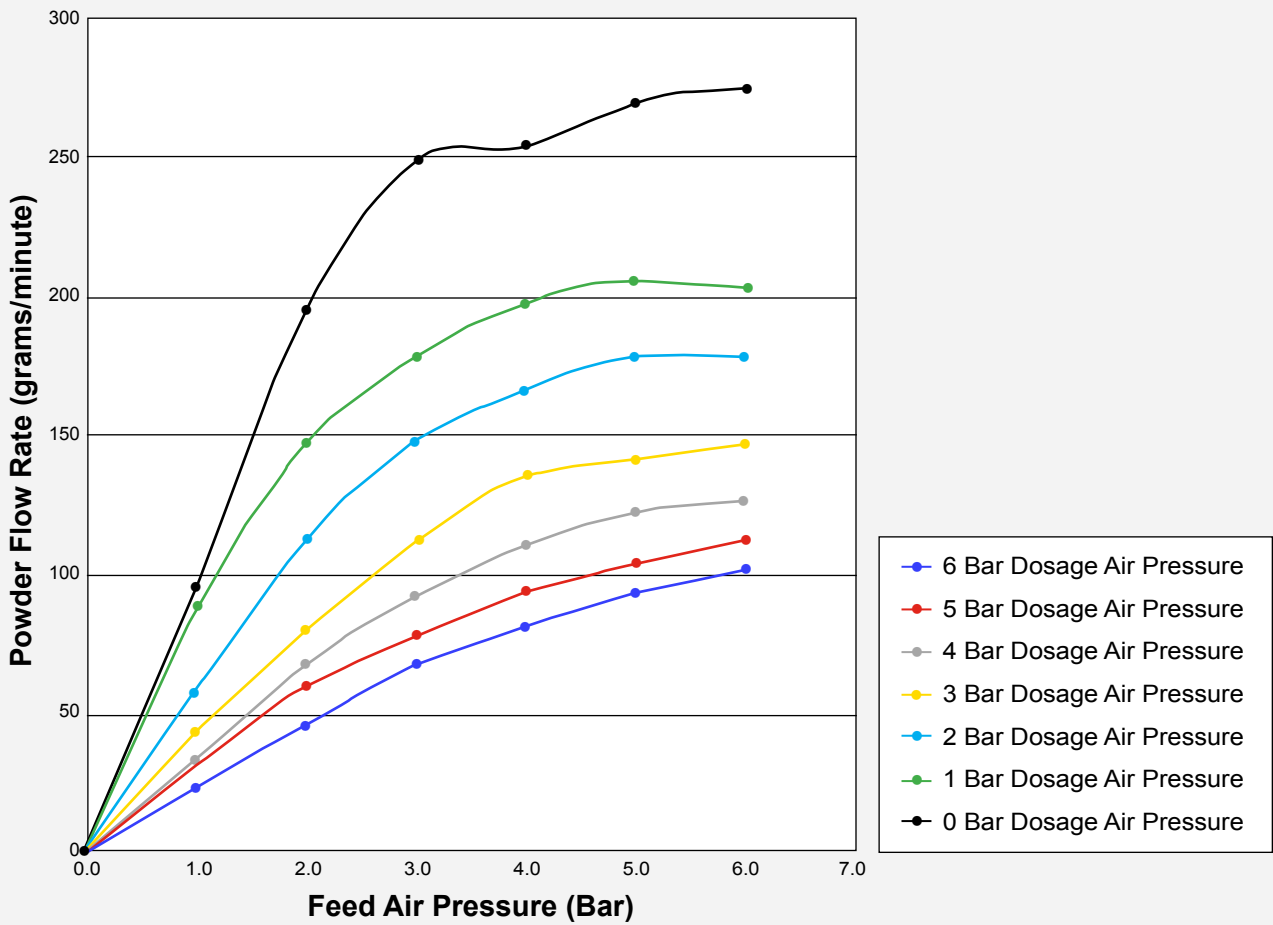
**WARNING**

► Safety regulations and the operating instructions must be observed while connecting and operating the Elite Injector.

### Technical Data



**Powder Flow Rate of MS elite Powder Suction System**



This graph is included to demonstrate the relationship between the pneumatic settings and the powder flow rate. The powder flow rate is also dependent on the characteristics of the powder paint being sprayed. This graph should be used as a reference to be applied to specific powder performance.

# INSTALLATION

## COMMISSIONING AND OPERATION OF ELITE CART SYSTEM

### WARNING

- Familiarize yourself with its operation by reading and understanding all product manuals prior to switching on the device.
- Do not stand in front of the spray gun!
- Never point the spray gun at a person.

### NOTE

- For the operation of the powder coating system filtered dry and clean compressed air is necessary. See specifications page for air requirements.

Power cord must be plugged into power source outside all classified zones.

### WARNING

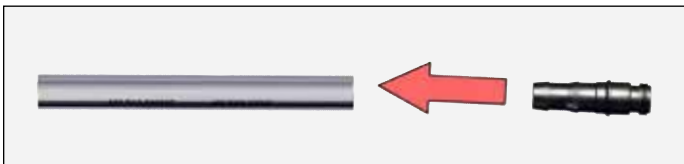
- The main power connection of MS powder coating device must be electrically interlocked with the exhaust system of the powder coating booth. The powder coating device must be switched on only when the booth exhaust air is circulating.
- When assembling the elite system, the power cord to the MS elite controller must be disconnected.
- The supplied ground cable (green / yellow) must be connected to the ground nut of the electrostatic manual powder coating equipment. The grounding cable must have good metallic connection with true earth ground.
- Unused connections must be protected by the supplied covers.
- **Observe safety regulations**

## CART MANUAL UNPACKING INSTRUCTIONS

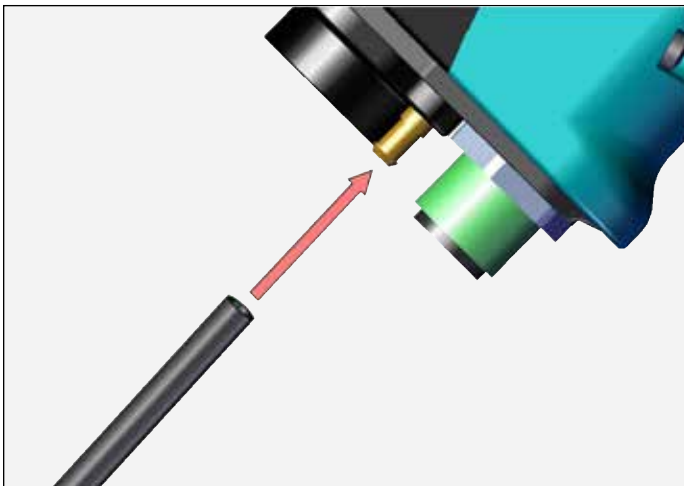
1. Unpack and remove assembly from protective foam.
2. Remove applicator from individual box.
3. Remove barb fitting from applicator by pressing the clip and pulling down on the fitting.



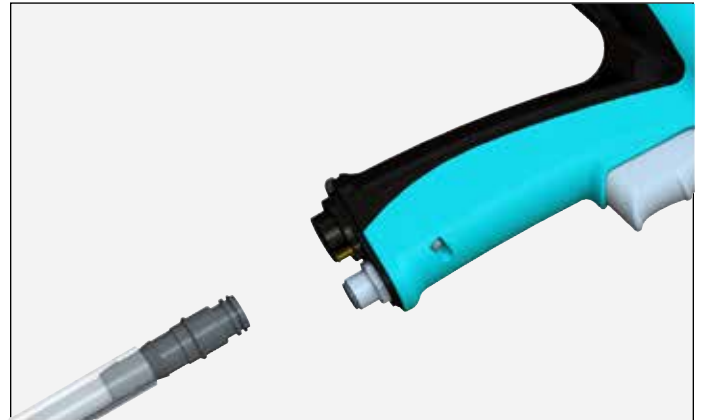
4. Install barb fitting in powder hose. Press to stop.



5. Connect gun air hose to gun air connector.



6. Reconnect barb fitting with powder hose attached to applicator.



7. Connect gun cable. Note alignment pin. Ensure connector is fully engaged and nut is securely fastened.



### NOTE

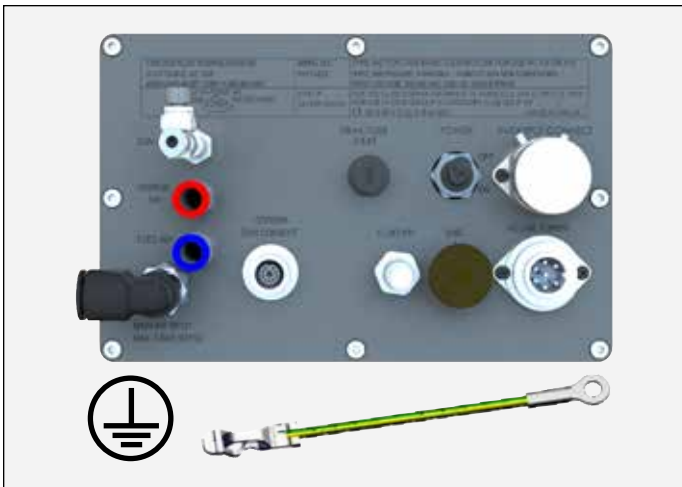
- Improper connection of the gun cable can cause intermittent voltage and poor coating.



8. All applicator connections are now made. Place the applicator in the provided holster.



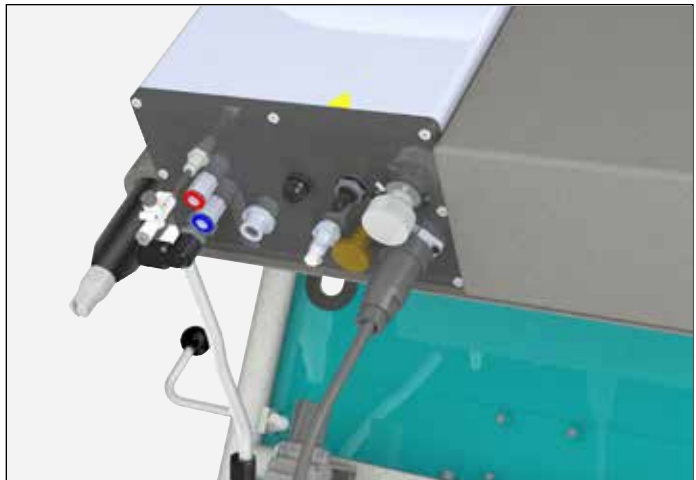
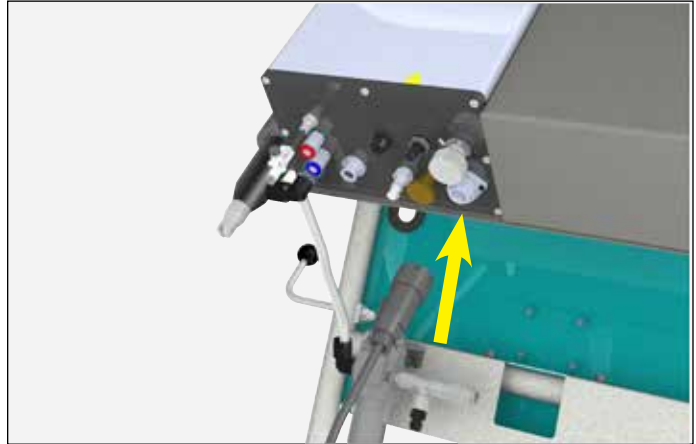
9. Remove ground cable from storage box and connect from back of controller with the thumb nut to true earth ground.



10. Ensure the Fluid Air fitting is plugged.



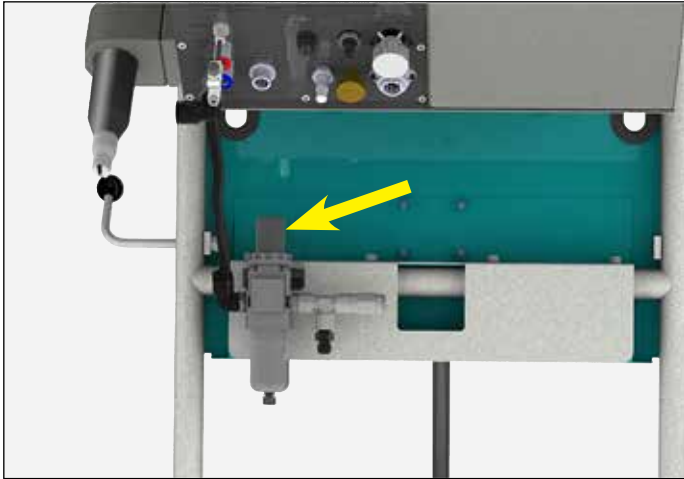
11. Plug in the power cord to the Line Power connector on the back of the controller. Take note of alignment pin. Tighten clockwise. Plug in the other end of the power cable to wall socket power supply outside all the classified zones.



12. Connect main air supply to the T fitting. Use 1/4" female universal thread fitting (not provided).



13. Adjust the gun air regulator to open to check flow.



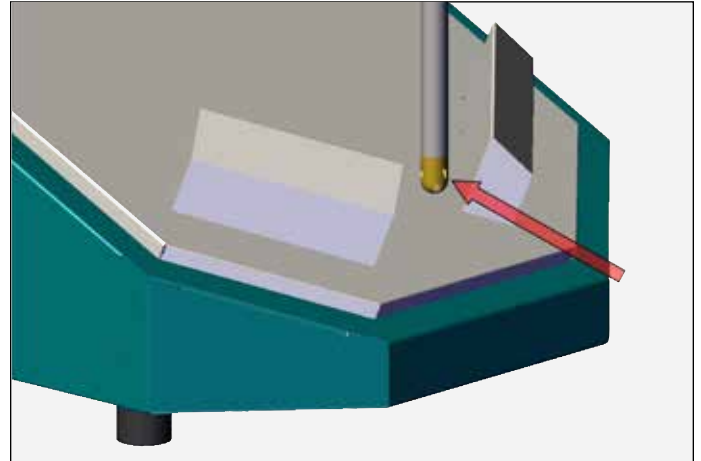
(Steps 14-17 for vibratory box fed carts only. For fluidized hopper carts proceed to step 18.)

14. Turn on main air supply and set gun air regulator as necessary.

15. Set voltage, feed air, dosage air and current to 0. Press applicator trigger and ensure the vibration table begins to vibrate. Ensure the gun air flows out of the applicator tip. If there is no gun air present at the applicator tip, adjust the gun air regulator to allow gun air to flow out of the tip of the applicator. Do not exceed 6 bar on the regulator.

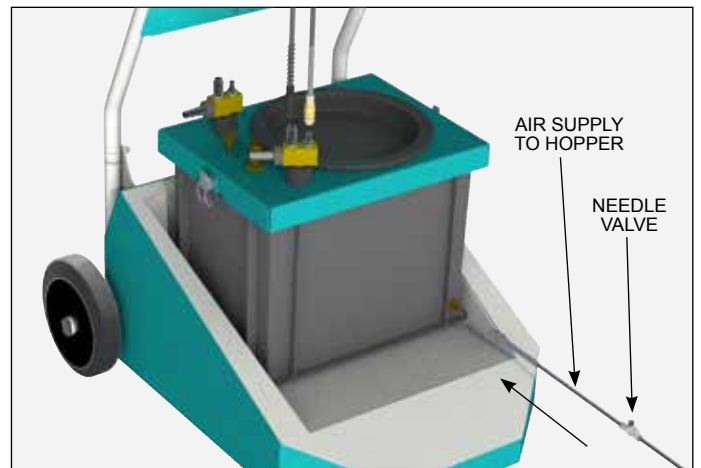


16. Set feed and dosage air to required levels for production. Check brass section of suction pipe for air flow.



17. Place powder box on vibration table and insert suction pipe into box.

18. Turn on main air supply and set gun air regulator as necessary.



19. Press the applicator trigger and ensure the gun air flows out of the applicator tip. If there is no gun air present at the applicator tip, adjust the gun air regulator to allow the gun air to flow out of the tip of the applicator. Do not exceed 6 bar on regulator.

Also check the fluidized hopper container to confirm air flow through the fluidized bed. If there is no fluidized bed air, adjust the needle valve on the hopper air hose to allow the fluidized bed air to flow through the fluidized bed.

20. Set feed and dosage air to required levels for production. Check end of suction pipe for air flow.

21. Place lid onto hopper.



# OPERATION

## COLOR CHANGE CLEANING PROCESS (VIBRATORY BOX FED CARTS ONLY)

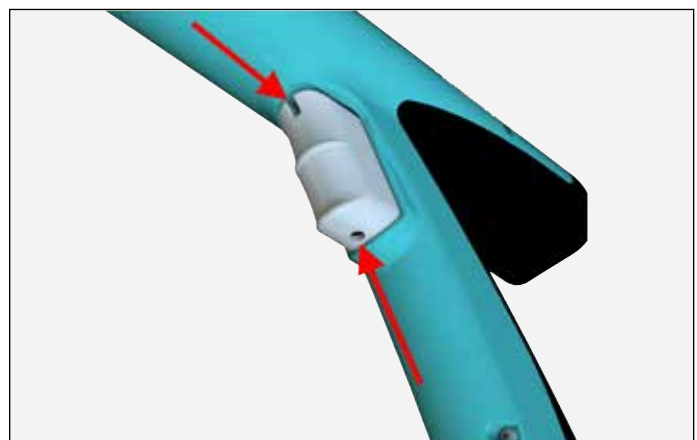
1. Lift the elite Injector out of the holder.



2. Insert the elite Injector into the cleaning valve block. Apply pressure to the top to hold it in place pointing applicator into booth.



3. Follow the cleaning cycle instructions from the controller manual. Point the applicator into the booth. The trigger should not be actuated. The program will start and end automatically.
4. After running the cleaning cycle, replace the elite Injector in the holder.
5. Clean trigger and switch components using compressed air directed into the top and bottom air pathways on the trigger. Air is introduced where the arrows are pointing.



# MAINTENANCE

## TROUBLESHOOTING GUIDE

General Problem	Possible Cause	Solution
<b><i>Inconsistent Powder Cloud</i></b>	Wear bar or flat spray nozzle are improperly oriented	See "Installing the Nozzle" section in PA-17-08.
<b><i>No Power or Air Delivery</i></b>	Improper power cord connection.	Check plug connections.
	Improper controller/gun cable connection.	Check cable connections.
	Insufficient air supply	Check main air supply.
	Defective fuse on controller.	Replace fuse.
<b><i>No Electrostatics/ Poor Coverage (e.g. no wrap around, little or no powder adhesion)</i></b>	Improper grounding.	Check proper part and hanger grounding.
	Check high voltage settings.	Adjust high voltage settings.
	Powder deliver rate too excessive.	Decrease powder feed air to reduce excess powder volume and velocity.
	Excessive humidity within powder booth air.	Check humidity level, powder particles dissipate charge in humid environments.
	Gun/controller cable.	Check continuity of cable and replace as needed.
	Defective fuse on controller.	Replace fuse.
<b><i>Poor wrap around Back spray</i></b>	Improper Grounding.	Check part and hanger grounding.
	Gun too far from applicator.	Ensure proper distance between gun and part. Too far from part will cause gun and operator to be coated (particles seek closest ground).
<b><i>Powder Flow Rate Insufficient</i></b>	Hoses kinked.	Check hoses.
	Air leaks in powder delivery system.	Check for leaks.
	Low powder level.	Check powder level.
	Insufficient main air supply.	Check main air supply.
	Improper powder feed and dosage air settings.	Check settings.
	Powder accumulation within powder injector.	Inspect and clean/replace.
<b><i>Spray Cloud No Longer Correct</i></b>	Insufficient main air supply.	Check main air supply.
	Improper powder feed and dosage air settings.	Check settings.
	Worn nozzle system.	Replace nozzle system.

# PARTS IDENTIFICATION

## VIBRATORY BOX FED ELITE CART



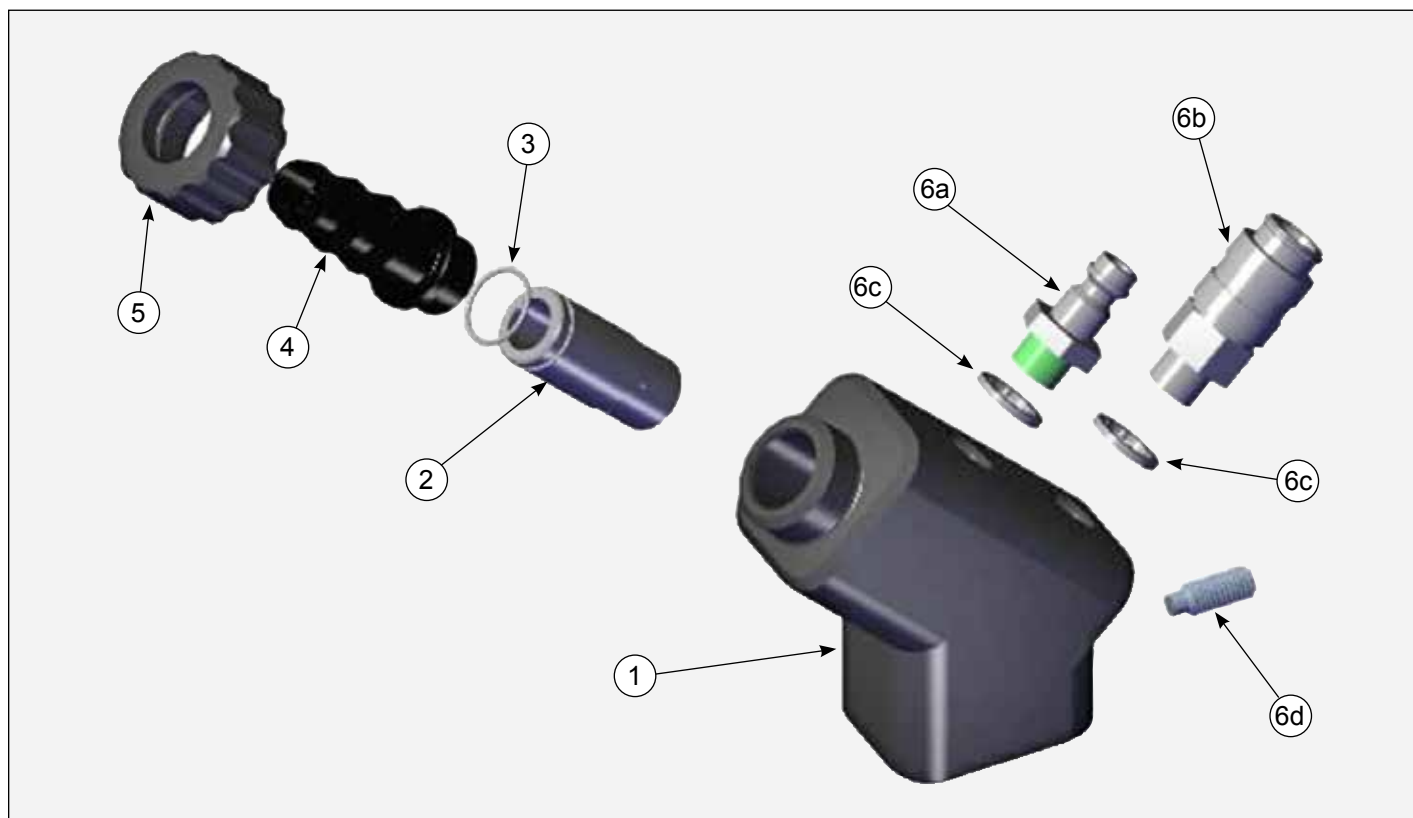
(Continued On Next Page)



### VIBRATORY BOX FED ELITE CART - PARTS LIST

Item #	Part #	Description	Qty
1	835015-XX	MS Elite Single Cart Only (Shown)	1*
	835019-XX	MS Elite Dual Cart Only	1*
2	620240	Vibration Motor 230V	1*
	620245	Vibration Motor 115V	1*
3	461959-XXXMX	Topcase Controller	1*/2*
4	615210	MS Elite M5 Applicator	1*/2*
5	806000	Elite Suction System	1*/2*
6	610015	Elite Injector	1*/2*
7	460375	Applicator Holder	1*/2*
8	443930	Solid Tire	2
9	417836	Rubber Bumper	2
10	461343	Hose Bracket	1*/2*
11	445352	Ball Button	1*/2*
12	460146	Earthcable (not shown)	1
13	444295	Extension Holder	2*/4*
14	461335	Cable Port Wrap	2
15	620101	Cleaning Valve Block	1

\* Quantities depend upon configuration.



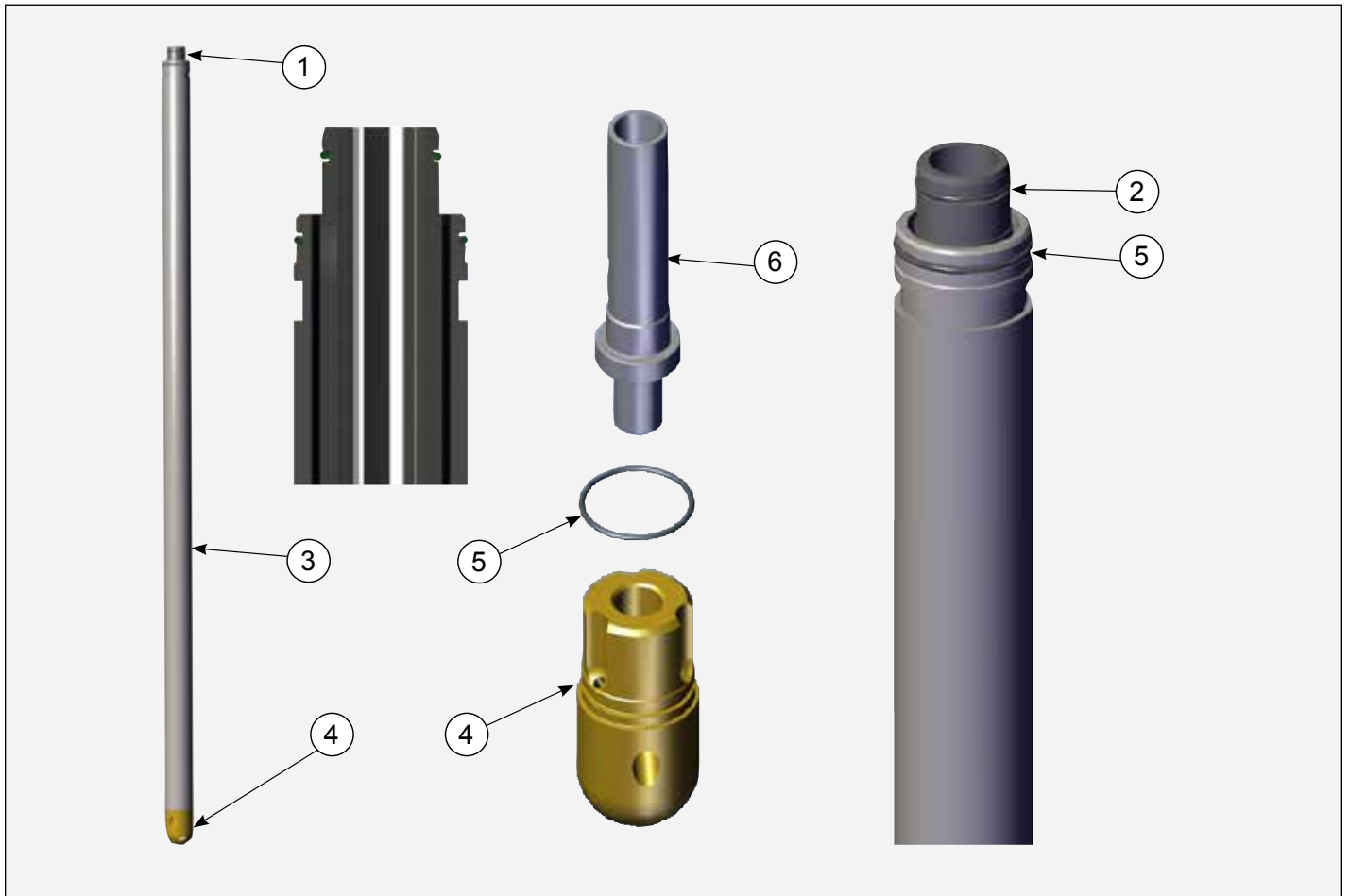
MS elite Injector (610015)

## MS ELITE INJECTOR (610015) - PARTS LIST

Item #	Part #	Description	Qty	Wear Part
1	-	Main Body Intake System elite	1	
2	620257	Dosing Nozzle with O-Ring	1	W
3	417223	O-Ring (Included in 620257)	1	W
3a	417233-K5	O-Ring Service Kit (5 pack)	-	
4	426638	Powder Plug	1	S
5	426639	Lock Nut Intake	1	S
6	610060	Full Hardware Kit	-	
6a	426080	Q.D. Male 1/8" BSPP	1	
6b	412332	Hose Nipple 1/8" BSPP	1	
6c	421430	Internal Tooth Locking Washer M9x14	2	
6d	413162	Set Screw M6x1	1	
7	610061	Male Coupler Kit: (Includes 426080 and 421430)	-	
8	610062	Female Coupler Kit: (Includes 412332 and 421430)	-	


**WARNING**

► The wear parts marked in the spare parts list with (W) must be checked regularly and replaced if necessary.

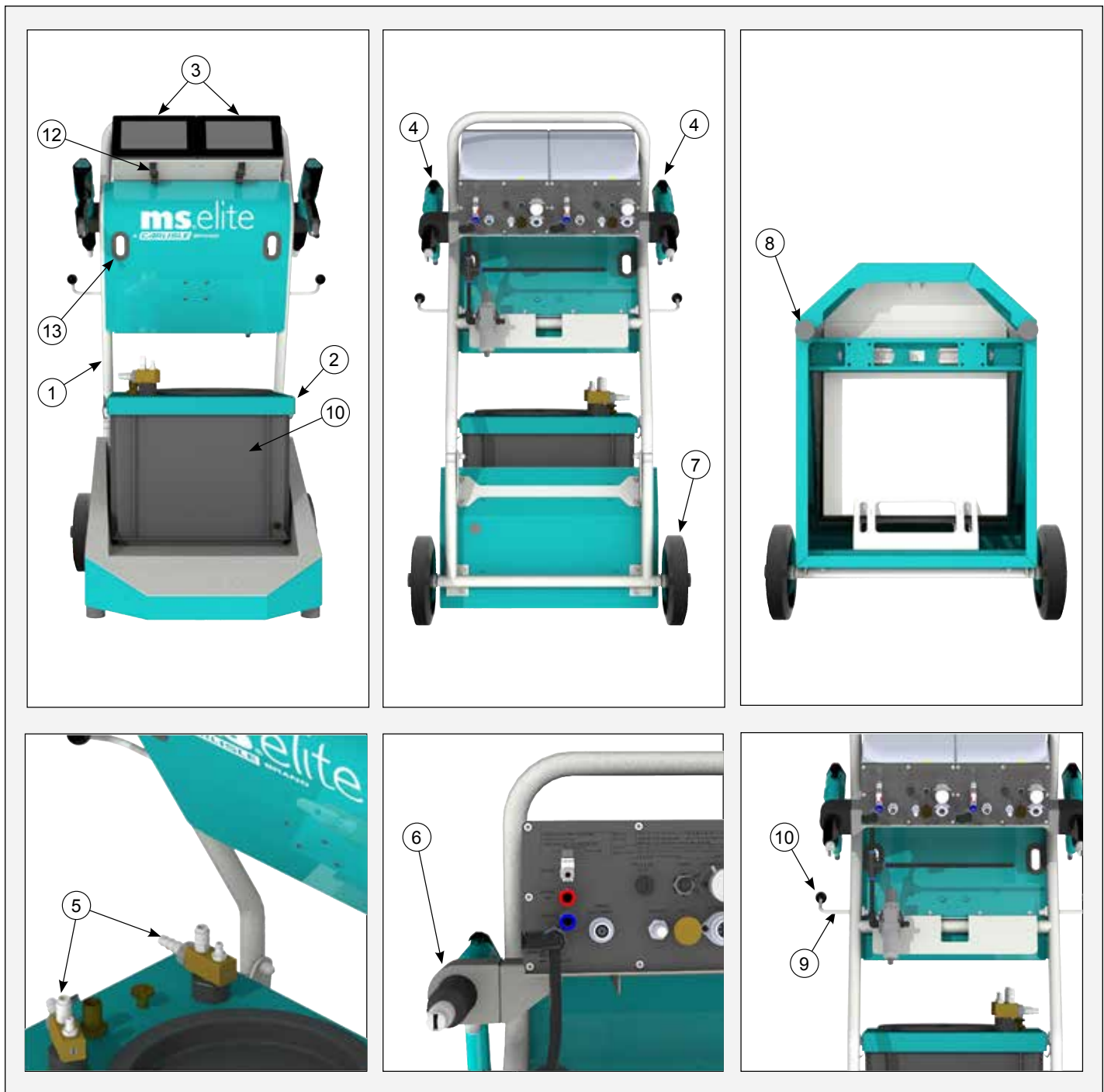


SUCTION PIPE COMPONENTS - PARTS LIST				
Item #	Part #	Description	Qty	Wear Part
1	615127	Inner Injector Pipe with O-Ring	1	S
2	427061	O Ring 11x1 Viton	1	W
2a	427061-K5	O Ring 11x1 Viton Kit (Kit of 5)	-	
3	615128	Outer Tube with O-Ring	1	
4	615126	Suction Intake with O-Ring	1	
5	417186	O Ring 17x1mm	2	W
5a	417186-K5	O Ring 17x1mm Kit (Kit of 5)	-	
6	426633	Venturi Nozzle	1	W
7	610063	Suction Pipe Service Kit (Includes 427061, 417186, and 426633)	-	

**⚠ WARNING**

➤ The wear parts marked in the spare parts list with (W) must be checked regularly and replaced if necessary.

# VIBRATORY BOX FED ELITE CART

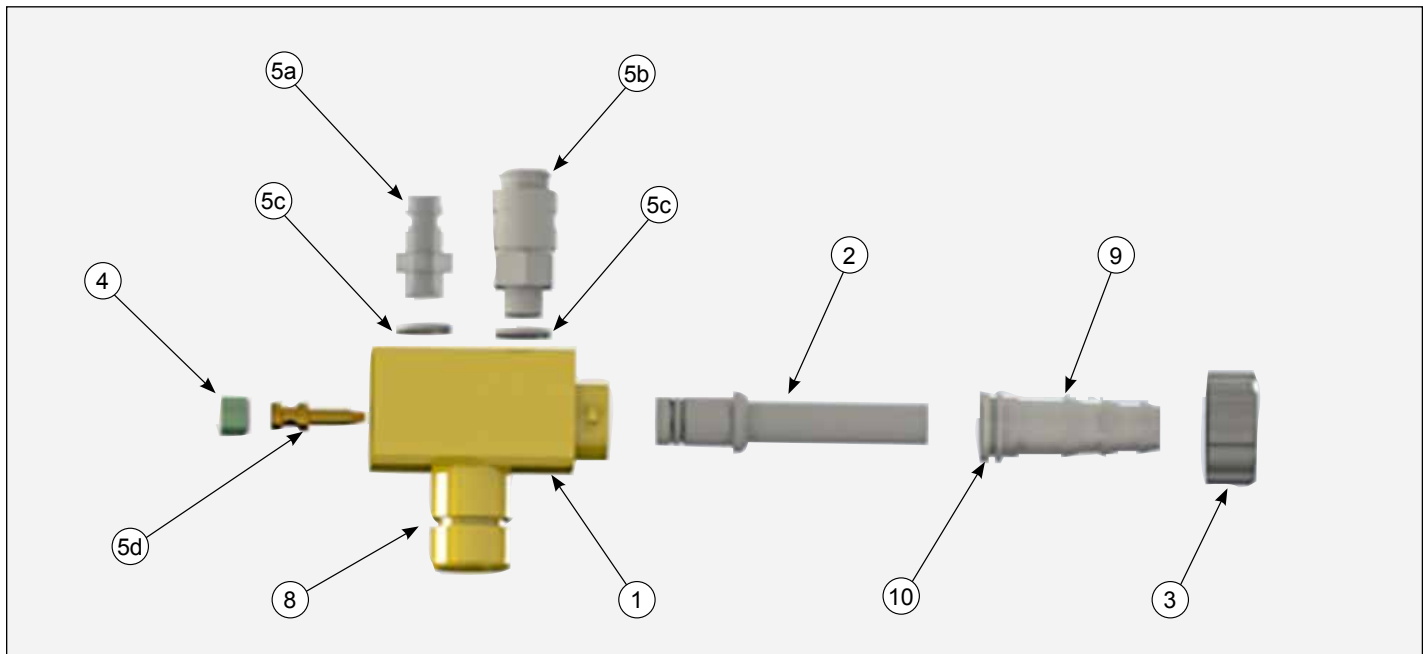


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### VIBRATORY BOX FED ELITE CART - PARTS LIST

Item #	Part #	Description	Qty
1	615501	MS Elite Single Cart Only (Shown)	1*
	615551	MS Elite Dual Cart Only	1*
2	805501	Single Pump Fluidized Hopper	1*
	805551	Dual Pump Fluidized Hopper	1*
3	461959-XXXMX	Topcase Controller	1*/2*
4	615210	MS Elite M5 Applicator	1*/2*
5	810263	T9 Pump	1*/2*
6	460375	Applicator Holder	1*/2*
7	443930	Solid Tire	2
8	417836	Rubber Bumper	2
9	461343	Hose Bracket	1*/2*
10	445352	Ball Button	1*/2*
11	460146	Earthcable (not shown)	1
12	444295	Extension Holder	2*/4*
13	461335	Cable Port Wrap	2

\* Quantities depend upon configuration.



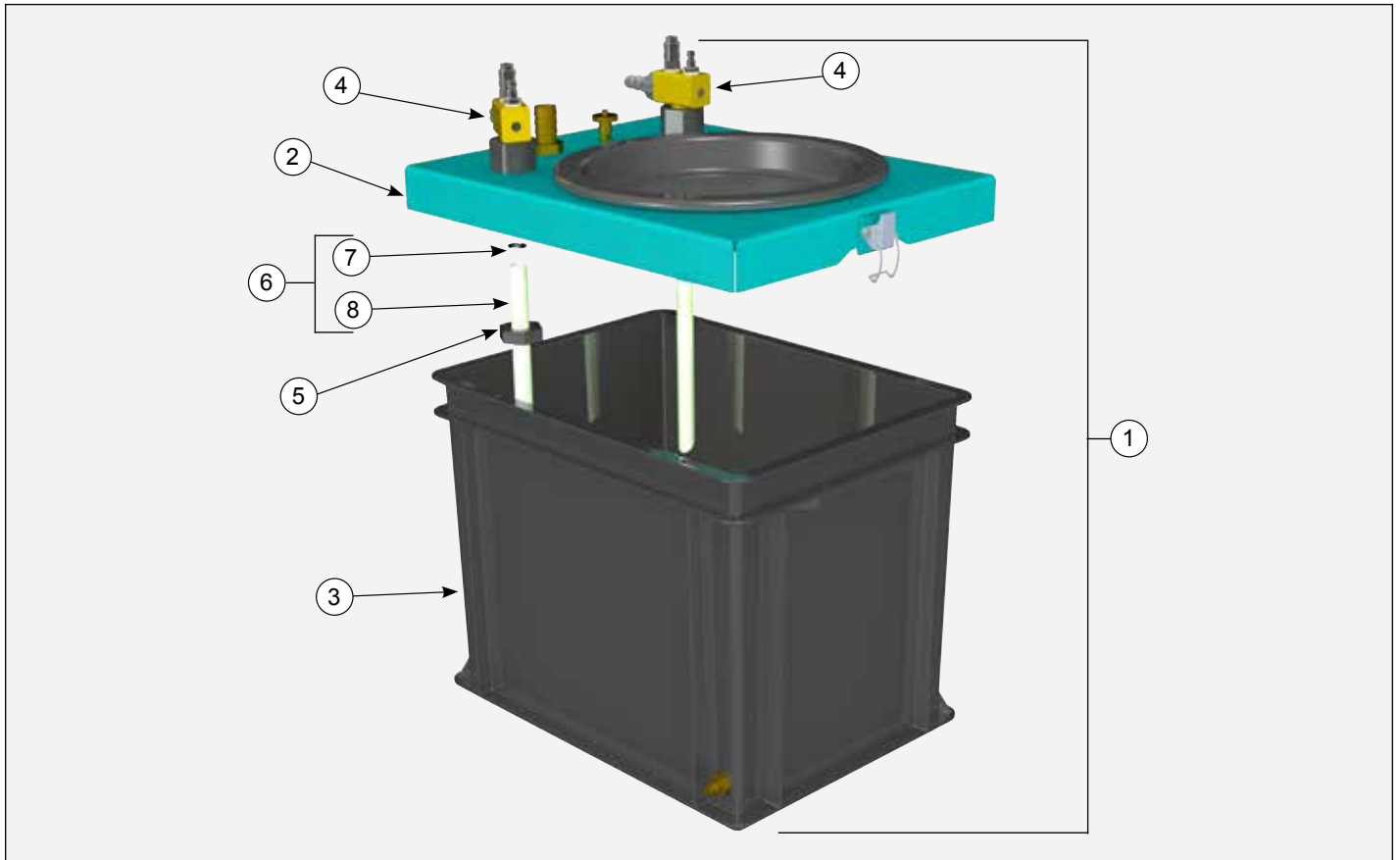
MS T9 Injector (810263)

## MS T9 INJECTOR (810263) - PARTS LIST

Item #	Part #	Description	Qty	Wear Part
1	-	T9 Injector Body	1	
2	445450	T9 Injector Collecting Nozzle	1	W
2a	445450-K5	T9 Injector Collecting Nozzle, Kit of 10	-	
3	445470	T9 Injector Locknut	1	
4	448060	M10 x 8 Pin	1	
5	610064	T9 Full Hardware Kit	-	
5a	426080	Q.D. Male 1/8" BSPP	1	
5b	412332	Hose Nipple 1/8" BSPP	1	
5c	421430	Internal Tooth Locking Washer M9x14	2	
5d	445429	T9 Injector Needle	1	W
6	610061	Male Coupler Kit: (Includes 426080 and 421430)	-	
7	610062	Female Coupler Kit: (Includes 612332 and 421430)	-	
8	426400	O Ring	1	W
8a	426400-K5	O Ring Kit (Kit of 5)	-	
9	613360	Grounding Sleeve Assembly	1	
10	445141	O Ring	1	W
10a	445141-K5	O Ring Kit (Kit of 5)	-	

 **WARNING**

► The wear parts marked in the spare parts list with (W) must be checked regularly and replaced if necessary.



**FLUIDIZED BOX (805501/805551) - PARTS LIST**

Item #	Part #	Description	Qty	Wear Part
1	805501	30L Fluidized Box Assembly (1 Injector)	1*	
	805551	30L Fluidized Box Assembly (2 Injectors) (Shown)	1*	
2	610053	Powder Box Lid w/ 1 Injector	1*	
	610054	Powder Box Lid w/ 2 Injectors (Shown)	1*	
3	810288	30L Fluid Box Assembly	1	
4	810263	T9 Injector	1* / 2*	
5	412891	Hex Nut	1* / 2*	
6	620255	Suction Pipe Assembly (includes O-ring)	1* / 2*	W
7	427060	Suction Pipe O-ring / 427060-K5 (Kit of 5pcs)	1	W
8	461375	Suction Pipe	1	W

\* Quantity depends on configuration.

**⚠ WARNING**

➤ The wear parts marked in the spare parts list with (W) must be checked regularly and replaced if necessary.



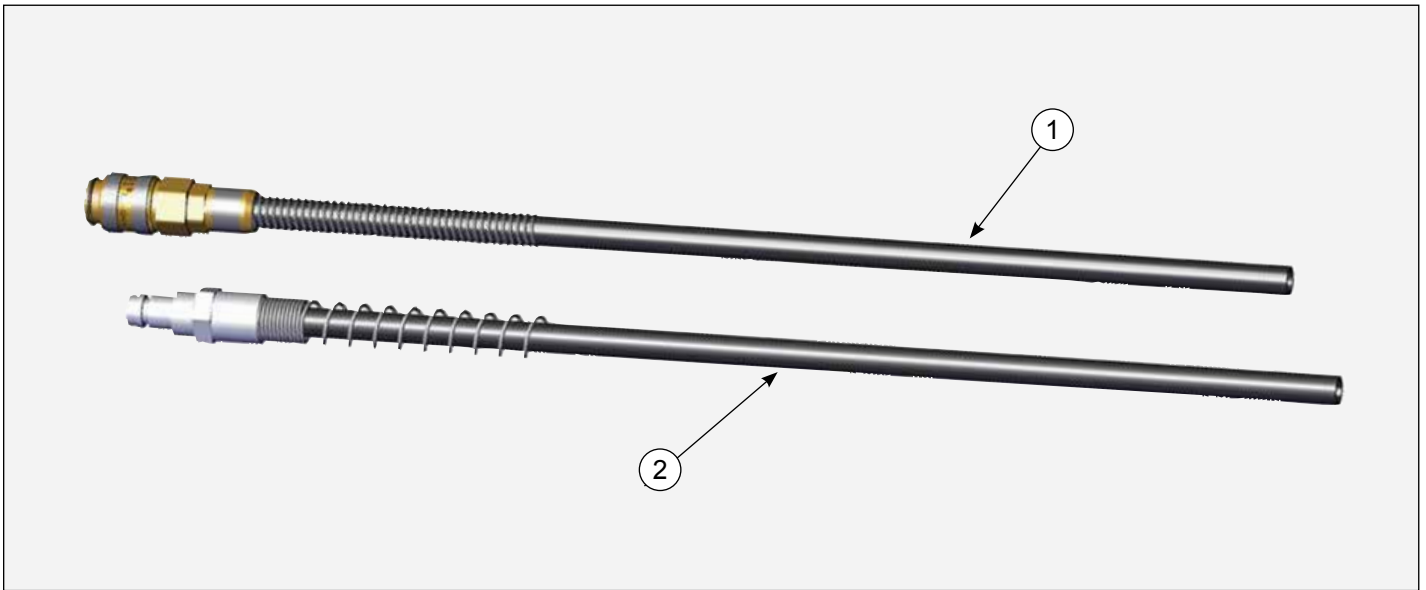
### POWDER HOSE SET (610139-XX) - PARTS LIST

Item #	Part #	Description	Wear Part
1	810195-XX	Powder Hose 10mm ID	W
	810190-XX	Powder Hose 11mm ID	W
2	461942-XX	Hand Gun Cable, M5	S
3	421370-XX	Gun Air Hose	S
4	620120	Velcro Band (Cut length 100mm x 30mm)*	S

\* Velcro band should not be placed within 1m of gun connection.

Available Gun Cable and Powder/Air Hose lengths and ordering information is available in manuals for the respective applicators (PA-17-08 and PA-18-01).

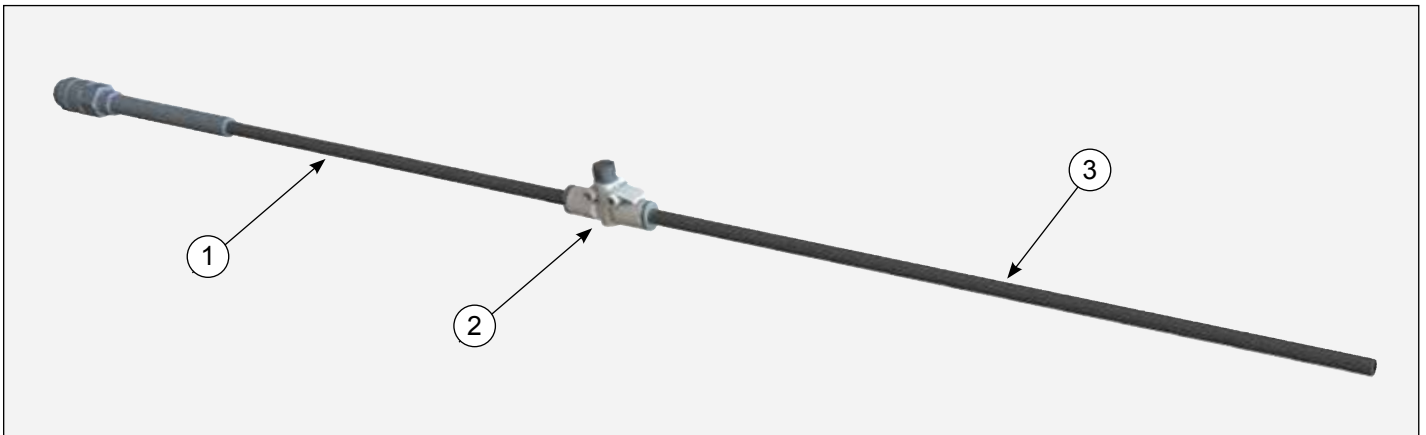




**AIR HOSE (610144) - PARTS LIST**

Item #	Part #	Description	Wear Part
1	615235	Antikink Hose Assembly	
2	615236	Antikink Hose Assembly	

When ordered as a complete assembly 610144, the hoses will be shrink wrapped together. Single applicator carts require one 610144, while dual applicator cart require two 610144.



**FLUIDIZED HOPPER AIR HOSE (615470) - PARTS LIST**

Item #	Part #	Description	Qty
1	615288	Antikink Hose Assembly	1
2	461876	One Way Flow Control Valve, 6mm	1
3	421590	Conductive Hose, 6mm	1

# MANUAL CHANGE SUMMARY

## PA-18-03-R6 - Replaces PA-18-03-R5 with the following changes:

No.	Change Description	Page(s)
1.	New cover image and model number	1
2.	Update SAFETY section	4-8
3.	Insert new page from PA-19-06-R3 page 11	9
4.	Update image and text	10
5.	Add table AAAADashes	11
6.	Update text, left image, and table	12
7.	Update SPECIFICATION	13
8.	Update images and first paragraph	14
9.	Update images and table	15
10.	Update to T9 Injector and add new image	16
11.	5 new images	19
12.	5 new images	20
13.	2 new images and add bullet points 18-21	21
14.	New images and text added to number 2	22
15.	Update to new image, update table text and move table to page 24	24-25
16.	Move part numbers column after item #	26-27
17.	Update images, spotters, table text and move table to page 28	28-29
18.	Add new image and spotters	30
19.	Update to new image and add text to table	31
20.	Add "FLUIDIZED HOPPER AIR HOSE" table	33

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## WARRANTY POLICY

This product is covered by Carlisle Fluid Technologies' materials and workmanship limited warranty. The use of any parts or accessories, from a source other than Carlisle Fluid Technologies, will void all warranties. Failure to reasonably follow any maintenance guidance provided, may invalidate any warranty.

For specific warranty information please contact Carlisle Fluid Technologies.

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