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ELITE M5 MANUAL POWDER APPLICATOR



Follow local or municipal regulations for recycling and disposal of the equipment.

ABOUT THIS MANUAL

OBJECTIVE

This manual is designed to help you get the most out of your Ransburg system. It provides information on the installation, operation, maintenance, and repair of your equipment. It contains information and procedures for routine maintenance as well as diagnostic and repair procedures for use in the event of a malfunction.

CONTENT

This manual is divided into chapters, which are each divided into sequentially numbered sections.

Chapters may contain text, images, or tables.

Where there are figures, the text contains numbers that refer to the applicable images, steps, and components.

Procedures are generally described only once. References to other chapters or sections are indicated by the chapter and section number. References without the word “Chapter” refer to sections or paragraphs within the same chapter as the reference.

Chapter 02. Contents.

Chapter 03. Conformity – A mandatory document in which the manufacturer declares that the product complies with EU requirements.

Chapter 04. Safety – Safety, hazard, and warning information.

Chapter 05. Product overview – Overview of the equipment and main components.

Chapter 06. Installation – Information on connecting the equipment.

Chapter 07. Operation – Information on operating the equipment.

Chapter 08. Maintenance – Information on potential malfunctions and troubleshooting.

Chapter 09. Parts identification – Identification of spare parts.

Chapter 10. Revision history – Revision and change history of this manual.

Chapter 11. Warranty provisions – Warranty information for your equipment.

TARGET AUDIENCE

This manual is intended for users with varying levels of knowledge and experience with this system.

- Installation personnel: Personnel who set up and connect the equipment.
- Operators: Personnel who work with the equipment.
- Service/maintenance personnel: Personnel who maintain and service this equipment.

This manual is written with the assumption that all persons who install, use, operate, and maintain this equipment have a basic understanding of the system and the associated standard technical procedures.

LIMITATION OF LIABILITY

All current and applicable certifications listed in this manual confirm that Binks complies with strict standards to meet the necessary legal requirements.

This manual was created using the most current information available at the time of publication. Binks accepts no liability for errors or omissions in this manual.

For further support and information about service, please contact your dealer or Binks Customer Service.

RELATED INSTRUCTIONS AND DOCUMENTS

PART NUMBER	DESCRIPTION
805700-XXXX	Configuration Drawing ELITE CART: 805700-XXXX.pdf
835092-XXXX	Configuration Drawing ELITE MODULE KIT: 835092-XXXX.pdf
835091-XXXXXX-XXXX	Configuration Drawing ELITE KIT: 835091-XXXXXX-XXXX.pdf
CMS-10002-CD	Configuration Drawing ESM3 MANUAL: CMS-10002-CD.pdf
CMS-10004-CD	Configuration Drawing ACCESSORIES M5: CMS-10004-CD.pdf

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03 CONFORMITY

03.1 EUROPEAN ATEX DIRECTIVE 2014/34/EU, ANNEX II

The following information applies to equipment covered by certificate FM 19ATEX0004X:

1. The equipment may be used with combustible dust with equipment Group II and temperature class T6.
2. The equipment shall be used in an ambient temperature of +10°C to +40°C.
3. Installation shall be performed by suitably trained personnel in accordance with applicable industry standards, such as EN 60079-14:2014. The power cord must be plugged into a power source that is not inside a classified zone.
4. Maintenance shall be performed by suitably trained personnel in accordance with applicable industry standards, such as EN 60079-17, EN 50050-2, or EN 50177.
5. Repair of this equipment shall be performed by suitably trained personnel in accordance with applicable industry standards, such as EN 60079-19.
6. Startup, use, installation, and setup of the equipment shall be performed by trained personnel in accordance with the manufacturer's documentation. Follow instructions to avoid potential hazards from electrostatic charge. See the following sections in "Contents" in this manual:
 - Installation
 - Operation
 - Maintenance
 - Parts identification
7. Components that are integrated into the equipment or that will be used as replacement parts shall be installed by trained personnel and in accordance with the manufacturer's documentation.
8. Equipment certification is contingent upon the following requirements related to materials used in the equipment:

If the equipment could come in contact with aggressive media, the operator shall take suitable precautions to ensure that the equipment is not adversely affected and to maintain the equipment's degree of protection.

Examples of aggressive media include acidic fluids that can attack metals, and solvents that can attack polymers.

Suitable precautions include regular inspections and confirming chemical resistance based on specification sheets.

See "Specifications" in the "Product overview" chapter.

 - The voltage multiplier is encapsulated in a solvent-resistant epoxy.
9. A summary of the certification marking is detailed in the "Product marking" section on the next page.
10. The equipment's parameters shall be specified, including data regarding electrical parameters and pressure.

During commissioning, the manufacturer shall provide the operating manual in its original language and in the official language(s) where the equipment will be operated.

03.2 PRODUCT MARKING

Ex Zone certificate number: FM 19ATEX0004X

FM Notified body that performs the EU type-examination

19 Year of examination

ATEX Reference to ATEX Directive

0004 Document serial number

X Special conditions for safe use apply*

Product marking

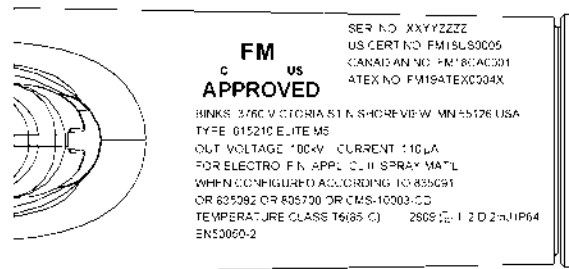
 **II 2D**

-  Explosion protection marking
- II** Characteristics of hazardous area of Equipment Group
- 2** Equipment Category
- D** Type of explosive atmosphere (dust)

EEx 2mJ = The elite M5 powder applicator is suitable for use in manual coating systems per EN 50050-2:2013, as it is a Class A device with a limited discharge energy of 2 mJ in accordance with EN 50177.

*SPECIAL CONDITIONS FOR SAFE USE

1. The equipment must be used for manual application in accordance with EN 50050-2.
2. The equipment must be configured in accordance with drawing 835091, 835092, or 805700 to be considered safe.
3. Comply with these instructions to avoid potential hazards from electrostatic charge.



FM CONFIGURATION

The equipment is FM and ATEX approved when the setup is in accordance with the corresponding Configuration Drawing (see → Chap. 10 [► 45]).

04 SAFETY

04.1 SAFETY PRECAUTIONS

Before the operation, maintenance, or servicing of this Binks system; fully read and understand all technical and safety literature for your product. This manual contains information that is important for you to know and understand.

This information relates to USER SAFETY and the PREVENTION OF EQUIPMENT PROBLEMS.

To help you understand this information, we use recognizable ANSI Z535 and ISO warning boxes and symbols throughout this manual. Please obey these safety sections.

DANGER

DANGER!: Indicates a hazardous situation that, if not avoided, will result in death or severe injury.

WARNING

WARNING!: Indicates a hazardous situation that, if not avoided, could result in death or severe injury.

CAUTION

Caution!: Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury, or equipment damage.

NOTICE

Notice: Indicates information considered important but not hazard related.

SAFETY

Safety: Indicates a type of safety instruction, or a separate panel on a placard, where specific safetyrelated instructions or procedures are described.

Careful study and continued use of this manual will provide a better understanding of the equipment functions and procedures.

This understanding will result in improved operation, efficiency, and longer, trouble-free service with faster and easier troubleshooting. If you need the necessary safety literature for your specific system, contact your local Binks representative or Binks directly.

NOTICE

This manual lists standard specifications and service procedures. Differences can occur between this literature and your equipment.

Differences in local or municipal codes, manufacturer or plant requirements, material delivery requirements, and more can make variations unpreventable. To find these differences, compare this manual to your system installation drawings and other applicable Binks equipment manuals.

WARNING

The user MUST read and be familiar with the Safety Section in this manual and the safety literature therein identified.

Only trained personnel can operate this equipment.

All personnel who operate, clean, or maintain this equipment MUST fully read and understand this manual! To operate and service the equipment, follow all WARNINGS and safety requirements. The user must 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, before the installation, operation, or servicing of this equipment.

WARNING

The hazards shown on the pages that follow can occur during the normal use of this Binks equipment, but not all listed hazards will be applicable to your product model or equipment.

Repairs may only be performed by personnel authorized by Binks.

04.2 GENERAL SAFETY INSTRUCTIONS FOR POWDER COATING

AREAS INDICATE POSSIBLE HAZARD OCCURENCES.	HAZARDS INDICATE POSSIBLE HAZARDS.	SAFEGUARDS PREVENTION OF POSSIBLE HAZARDS.
Spray Areas 	Fire Hazards Improper or unsatisfactory operation and maintenance procedures will cause a fire hazard. If the safety interlocks are disabled during operation, protection against accidental arcing is shut off and can cause a fire or explosion. Frequent Power Supply or Controller shutdown identifies a problem in the system. For this occurrence, a correction will be necessary	Fire extinguishing equipment must be present in the spray area. Periodically run a test to make sure the equipment stays usable. Keep spray areas clean to prevent the build-up of combustible residues. Do not smoke in the spray area. The high voltage supplied to the atomizer must be turned off before the equipment is cleaned, flushed or maintained. Spray booth ventilation must be kept at the rates as set by NFPA-33, OSHA, country, local, and municipal codes. If flammable or combustible solvents are used to clean the equipment, ventilate the area. Prevent electrostatic arcing. Maintain spark-safe work distance between the parts that get coated and the applicator. A span of one inch for every 10KV of the output voltage is necessary. Do an equipment test only in areas free of combustible material. The test may necessitate the high voltage to be on, but only as instructed. Non-factory replacement parts or unauthorized equipment modifications can cause a fire or injury. The key switch bypass is used only during setup operation. Do no production work with disabled safety interlocks. Set up and operate the paint procedure and equipment under NFPA-33, NEC, OSHA, local, municipal, country, and European Health and Safety Norms.

AREAS INDICATE POSSIBLE HAZARD OCCURENCES.	HAZARDS INDICATE POSSIBLE HAZARDS.	SAFEGUARDS PREVENTION OF POSSIBLE HAZARDS.
Spray Areas 	Explosion Hazard Improper or unsatisfactory operation and maintenance procedures will cause a fire or explosion hazard. If the safety interlocks are disabled during operation, protection against accidental arcing is shut off and can cause a fire or explosion. Frequent Power Supply or Controller shutdown identifies a problem in the system. For this occurrence, a correction will be necessary.	Prevent electrostatic arcing. Maintain spark-safe work distance between the parts that get coated and the applicator. A span of one inch for every 10KV of output voltage is necessary. Unless specifically approved for use in hazardous locations, put all electrical equipment outside of Class I or II, Division 1 or 2 hazardous areas in accordance with NFPA-33, or outside of Zone 2 or Zone 22 in accordance with EN standards. If equipped, set the current overload sensitivity as described in the related section of the equipment manual. If incorrectly set, the current overload sensitivity for protection against accidental arcing is turned off and can cause a fire or explosion. Frequent power supply shutdown indicates a problem in the system, which requires correction. Always turn off the control panel power before the system is flushed, cleaned, or servicing the spray system equipment. Make sure no objects are within the spark-safe work distance before the high voltage is turned on. The control panel must interlock with the ventilation system and conveyor in accordance with NFPA-33, EN 50177. Fire extinguishing equipment must be present in the spray area. Periodically run a test to make sure the equipment stays usable. Do an equipment test only in areas free of combustible material.
General Use and Maintenance 	Improper or unsatisfactory operation and maintenance procedures will cause a fire hazard. Personnel must be correctly trained in the operation and maintenance of this equipment.	Train all personnel in accordance with the requirements of NFPA-33, EN 60079-0. Before equipment operation, personnel must read and understand these instructions and safety precautions. Obey appropriate local, municipal, state, and national codes governing ventilation, fire protection, operation maintenance, and housekeeping. Reference OSHA, NFPA-33, EN Norms, and your insurance company requirements.

AREAS INDICATE POSSIBLE HAZARD OCCURENCES.	HAZARDS INDICATE POSSIBLE HAZARDS.	SAFEGUARDS PREVENTION OF POSSIBLE HAZARDS.
Spray Area High Voltage Equipment 	Electrical Discharge This equipment contains a high-voltage device that can cause an electrostatic induction on ungrounded objects. This electrical charge is capable of igniting coating materials. Insufficient ground will cause a spark hazard. A spark can ignite many coating materials and cause a fire or explosion.	Operators in the spray area and the parts to be sprayed must be sufficiently grounded. All conductive objects inside the spray area must be grounded. Hold the parts that get sprayed on conveyors or hangers that are correctly grounded. The resistance between the parts and the earth-ground must not be more than 1 MΩ. Refer to: NFPA-33, EN 50177. Before the equipment is operated, ground all operators. They cannot wear rubber-soled insulated shoes. Wear ground straps on wrists or legs for sufficient ground contact. Operators must not wear or carry ungrounded metal objects. When used, operators must make complete contact with the handle of the electrostatic applicator. Use conductive gloves or gloves with the palm section cut out. Operators must wear grounded footwear. NOTE: REFER TO NFPA-33 OR SPECIFIC COUNTRY SAFETY CODES FOR GUIDANCE TO CORRECTLY GROUND THE OPERATOR. Except for objects needed for the high-voltage process, all electrically conductive objects in the spray area are to be grounded. Supply a grounded conductive floor in the spray area. Always turn off the applicator voltage before the system is flushed, cleaned, or when servicing the spray system equipment. Unless specifically approved for use in hazardous locations, put all electrical equipment outside of Class I or II, Division 1 or 2 hazardous areas in accordance with NFPA-33, or outside of Zone 2 or Zone 22 in accordance with EN standards. Do not install an applicator into a fluid system if the solvent supply is ungrounded. Do not touch an energized applicator electrode.

AREAS INDICATE POSSIBLE HAZARD OCCURENCES.	HAZARDS INDICATE POSSIBLE HAZARDS.	SAFEGUARDS PREVENTION OF POSSIBLE HAZARDS.
Spray Areas 	Toxic Fluid or Fumes Toxic fluids or fumes can cause severe injury or death if splashed in the eyes or on the skin, or if inhaled or swallowed.	Read the Safety Data Sheet (SDS) for instructions to know and understand how to handle the specific hazards of the fluids used, and the effects of longterm exposure. During the spray, clean, or servicing of equipment, or when in the work area, keep the work area fully ventilated. Always wear personal protective equipment (PPE) when in the work area or during equipment operation. Refer to the Personal Protective Equipment warnings in this manual. Store hazardous fluid in approved containers and refer to local, municipal, state, and national codes governing the disposal of hazardous fluids.
Spray Area and Equipment Use 	High-pressure fluid sprayed from the applicator, hose fittings, or ruptured/damaged components can pierce the skin. While this injury can appear as cut skin, this is a severe injury that can result in the amputation of the affected area.	Do not point or operate the spray applicator at the body part of a person. Do not put your hand or fingers over the applicator fluid nozzle or fittings in the hose or Proportioner. Do not try to stop or deflect leaks with your hand, glove, body, or shop rag. Do not “blowback” fluid, as the equipment is not an air spray system. Relieve pressure in the supply hoses, Proportioner, and QuickHeat™ hose before the equipment is inspected, cleaned, or serviced. Use the lowest possible pressure to recirculate, purge, or troubleshoot the equipment. Examine the hoses, couplings, and fittings every day. Service or immediately replace parts that leak, are worn, or are damaged. Replace high-pressure hose sections. They cannot be recoupled or serviced.

AREAS INDICATE POSSIBLE HAZARD OCCURENCES.	HAZARDS INDICATE POSSIBLE HAZARDS.	SAFEGUARDS PREVENTION OF POSSIBLE HAZARDS.
Equipment and Fluids 	Skin and Clothing Burns Equipment surfaces and fluids can become very hot during operation.	Do not touch hot fluid or equipment during operation. Do not let clothing touch the equipment during operation or immediately after the equipment is stopped. Let the equipment fully cool before the examination or servicing of the component.
Pressurized Aluminum Parts    	The use of certain solvents and chemicals can cause equipment damage and severe personal injury.	Do not use 1,1,1-trichloroethane, methylene chloride or other halogenated hydrocarbon solvents or fluids that contain such solvents. These solvents can cause a severe chemical reaction and equipment rupture that results in equipment and property damage, serious bodily injury, or death.
Spray Areas 	Do Not Touch The effect of paint flow rates and formulations on the quality of atomization can cause the turbines to rotate at high speeds.	Do not use a rag or gloved hand against the bell edge to stop or slow down a bell during rotation. Do not try to clean the bell edge during rotation.

04.3 ADDITIONAL SAFETY INFORMATION

⚠CAUTION

Do not start up the equipment until you have read this section.

Observe all local or municipal safety measures and wear approved protective equipment when servicing this equipment. Clean up spilled chemicals and materials and perform work in a clean and orderly environment to prevent injury and property damage.

⚠DANGER

To avoid injury or electric shock while the system is energized, do not touch, disconnect, or tamper with electrical connections or equipment. The main switch on the right side of the control module can be locked.

Follow lockout/tagout procedures (LOTO) before working inside the system controller.

If diagnosis and troubleshooting cannot be performed under standard operating conditions, these tasks may only be performed by qualified electricians.

⚠WARNING

To prevent chemicals from leaking when personnel are not on site, the air and fluid supplies to the equipment must be shut off when the equipment is shut down for an extended period, such as at the end of the day.

NOTICE

As part of initial commissioning and at regular intervals throughout the service life of the equipment, visually inspect all fluid connections for leaks.

All parts of this equipment must be visually inspected at regular intervals for signs of noticeable deterioration due to chemicals or other conditions in the equipment's environment.

SAFETY

Comply with local or municipal regulations that require an installed fire suppression system for the operation of the equipment.

If the equipment, sensors, switches, or other devices are used in the presence of flammable gases and vapors, connect them via intrinsically safe barriers or Zener barriers. Classify them as "simple equipment" or have them approved for use in these areas.

04.4 INTENDED USE

1. The elite M5 manual powder applicator is exclusively for use in powder coating. It was developed for use in potentially explosive atmospheres per directive 2014/34/EU in accordance with recognized safety regulations.
2. Any other use is considered unintended use. The manufacturer is not liable for any resulting damage. The user alone assumes the risk. Written consent from Binks must be obtained before altering the elite M5 manual powder applicator, if the operating conditions change, or before using materials differing from the manufacturer's specifications.
3. Intended use also includes compliance with the manufacturer's operating, maintenance, and service instructions. The elite M5 manual powder applicator may be used, maintained, and repaired only by persons who are trained on the equipment and its dangers.
4. Commissioning (i.e., proper initial startup of the equipment) is prohibited until it is determined that the mechanical and electrical systems of the elite M5 manual powder applicator comply with the Machinery Directive (2006/42/EC). EN 60204-1 (Safety of machinery) applies as well.
5. Unauthorized modifications to the elite M5 manual powder applicator exclude the manufacturer from any liability.
6. Observe the applicable regulations related to building structures as well as occupational safety and health.
7. Observe all country-specific safety regulations.

EXPLOSION PROTECTION	PROTECTION CLASS	MAX. SURFACE TEMPERATURE
EN 50050-2 FM 7260	IP64	T6 (Zone 21) T4 (Zone 22)
CE 2813 Ex II 2D 2mJ		

SAFETY REGULATIONS FOR ELECTROSTATIC POWDER COATING

⚠ WARNING

This equipment is dangerous if it is not operated in accordance with the information in this manual. Observe country-specific fire protection regulations.

⚠ WARNING

Persons with pacemakers shall not be in the electrostatic powder coating area. High voltage and strong electromagnetic fields can be present in this area.

⚠ CAUTION

The operator must ensure that the manual powder coating equipment and accessories are properly tested. Testing must be performed at least once a year by a professional in occupational safety.

1. Conductive objects in the spray area must have a maximum resistance to ground of 1 megohm, measured at a minimum of 500 V.
2. The floor of the coating area must be electrostatically conductive (normal cement is generally conductive). The resistance measurement shall comply with EN 1081.
3. The operator shall wear anti-static footwear per EN 344-1 (e.g., shoes with leather soles).
4. The operator must grip the handle of the manual powder applicator tightly. Protective gloves must be electrostatically conductive, or the material must have a cutout for direct contact with the black conductive part of the handle. The next page shows examples of suitable cutouts (EN 1149-1, EN 1149-2).



5. The supplied grounding cable (green/yellow) must be connected to the grounding screw of the electrostatic manual powder coating equipment. The grounding cable must have a good metal-to-metal connection to the coating enclosure, recovery unit, and conveyor chain. Suspended objects must be connected to true earth ground. The provided powder hose must be used, as it grounds the applicator.
6. The electrical power supply lines to the powder applicators must be protected against mechanical, thermal, and chemical damage.
7. The main power connection of the powder applicator must be electrically interlocked with the exhaust system of the powder coating booth. The powder applicator may only be switched on if the exhaust air is on.
8. Booth ventilation must be connected to the system controller. If booth ventilation is switched off, the powder applicator switches off.
9. The powder applicator may only be operated in a powder coating booth with industrial ventilation. During operation, there is a hazardous area around the powder applicator (see EN 16985:2018 and NFPA 33).
10. The operator must ensure that the average concentration of powder in the air does not exceed 50% of the lower explosive limit (LEL = maximum permissible powder/air concentration). If the LEL is not definitively known, the average LEL must not exceed 10 g/m³ and must meet the requirements of EN 12981.
11. The operator must inspect powder coating equipment annually for parameters related to explosion protection.
12. The grounding of all conductive parts (hooks, chain conveyors, etc.) must be checked at least weekly. The resistance to ground must be less than 1 MΩ (megohm).
13. When cleaning the powder applicator and when replacing the nozzles, the control module must be switched off.
14. Observe the manufacturer's instructions when working with cleaning agents that can generate hazardous fumes. Flammable cleaning agents should not be used. Before using flammable cleaning agents, the powder applicator must be turned off, disconnected from the power supply, secured against restart, and discharged to ground.
15. The powder used must correspond to the manufacturer's specifications.
16. Observe the manufacturer's instructions and applicable environmental protection regulations when disposing of powder and cleaning agents.
17. If damage is found (e.g., broken or cracked parts), remove the affected parts and take the powder applicator out of service.
18. Never perform repairs in a potentially explosive atmosphere. Repairs must be performed by service centers authorized by Binks. Only original Binks spare parts and wear parts may be used. Failure to comply voids the warranty.

04.5 NOTE REGARDING HARMLESS DISCHARGE



When the high voltage is switched on, a glow discharge, or corona discharge, occurs at the tip of the electrode. This is only visible in the dark and can be seen when the electrode is near the grounded workpiece. This glowing discharge is not ignitable and does not limit the functionality of the system. When the electrode approaches the workpiece, the control module automatically reduces the high voltage to a safe value or, depending on the setting, switches the high voltage off.

Touching the plastic parts of the manual powder applicator with your finger can cause a harmless discharge called a brush discharge. These discharges to plastic are caused by the high-voltage field of the applicator. They do not have enough energy to cause ignition.

04.6 SAFETY CONSIDERATIONS

Personnel responsible for the installation, commissioning, operation, maintenance, or repair of powder applicators must have read and understood the operating instructions, and particularly the “Safety” chapter. The operating company must ensure that the user has the necessary professional knowledge to work with the powder applicator and its hazards. The elite control module of the powder applicators can be installed and operated in Zone 22. The powder applicators are approved for Zones 21 and 22. Only trained and authorized personnel may operate the powder applicator. This applies especially to work on the electrical equipment, which may only be performed by appropriate specialists. Before performing work related to installation, commissioning, setup, operation, changing operating conditions or modes of operation, maintenance, inspection, or repair, the necessary shutdown procedures specified in the operating instructions must be performed. The powder coating system is turned off via the main switch or, if present, the emergency stop. The individual components can be switched on and off during operation via their respective switches.

Specific safety instructions for the operating company and/or operating personnel:

1. The user shall not perform work that compromises the technical safety of the powder applicator.
2. The operator shall help ensure that no unauthorized persons work with the powder applicator (e.g., by installing devices to protect against unauthorized use).
3. The employer shall create operating instructions for handling hazardous substances. These instructions must detail what to know about handling hazardous materials, what the hazards to personnel and the environment are, and the necessary protective measures and actions. These operating instructions must be written in the language of the operators in an understandable form and placed in an appropriate location known to the employees.
4. The operator shall inspect the entire powder coating system at least once per shift for damage and immediately report changes (including in performance) affecting safety.
5. The company shall ensure that the powder coating unit is only operated in perfect condition.
6. Where necessary, the company shall provide the operator with personal protective equipment (e.g., face mask).
7. The user shall ensure that the work area around the powder applicator is clean and free of obstruction.
8. No safety equipment may be disconnected or rendered inoperable. If safety devices must be removed or switched off for installation, repair, or maintenance of the system, the safety devices must be installed or switched on immediately following the task. Maintenance may only be performed on a disconnected powder coating system.
9. Activities such as inspecting powder fluidization, adjusting high voltage, or similar may not be performed on an energized powder applicator.

04.7 SAFETY HAZARDS

CURRENT/VOLTAGE

Failure to follow shutdown procedures presents a direct risk to health and safety where high voltage is present.

Do not work on energized current-carrying equipment. Disconnect the power supply before servicing equipment.

POWDER

Unfavorable powder concentrations in air may ignite in the presence of sparks. It is the user's responsibility to ensure suitable air conditions in the coating enclosure. Powder on the floor of the powder coating system presents a slip hazard.

STATIC CHARGE

Potential consequences of static charge include charging of personnel, electric shock, and sparks. Prevent objects and personnel from becoming electrically charged.

GROUNDING

Workpieces and electrically conductive parts in the spray area must be grounded. The resistance to ground of each workpiece must not exceed 1 megohm. This resistance must be checked regularly. Holders or hangers for workpieces must keep workpieces grounded. Hangers for suspended workpieces must be kept clean to maintain the necessary conductivity. The work area must contain suitable equipment for checking grounds.

COMPRESSED AIR

Depressurize the powder coating system before downtime or long interruptions to work. Damage to the pneumatic hose from uncontrolled leakage and improper use of compressed air may result in injury.

CRUSHING AND SHEARING HAZARD

During operation, moving parts may travel to the work area automatically. Only trained and authorized personnel may be near this equipment. Areas must be cordoned off in accordance with local safety regulations.

ACCESS FOR SPECIFIC PURPOSES

The user shall ensure that local requirements are met during repairs on electrical components. Additional measures, such as barriers, shall be taken to prevent unauthorized access.

NO UNAUTHORIZED CONVERSIONS OR MODIFICATIONS TO THE MACHINE

For safety reasons, unauthorized modifications to the powder coating system are prohibited. Do not use damaged powder applicators. Immediately replace or repair defective parts. Use only original Binks spare parts. Damage due to the use of other parts voids the warranty. Repairs may only be carried out by a specialist or authorized repair center. Unauthorized modifications can lead to injury and property damage. The warranty provided by Binks and the regulatory approvals are void.

05 PRODUCT OVERVIEW

05.1 IDENTIFICATION



AVAILABLE ACCESSORIES

PART NO.	DESCRIPTION
615215	Flat spray nozzle extension F150
615216	Flat spray nozzle extension F300
615218	Round spray nozzle set R1
615225	Round spray nozzle extension set R150
615226	Round spray nozzle extension set R300
615258	Flat spray nozzle assembly 3 mm (included)
615130-X	Flat spray nozzle assembly 3, 4, 5 (parallel sides)
615050-1X	Flat spray nozzle extension (150 mm)
615050-3X	Flat spray nozzle extension (300 mm)

For a complete list of application configurations, see Configuration Drawings 835091, 835092, and 805700.

05.2 SPECIFICATIONS

DIMENSIONS

Weight	458 g (15.1 oz.) (without cable and hose assembly)
Length	350 mm (13.7 in) (flat spray nozzle)

ELECTRICAL SPECIFICATIONS

Frequency	40 kHz
Output voltage	100 kV DC maximum
Output current	110 μ A maximum
Polarity	Negative

PNEUMATIC SYSTEM SPECIFICATIONS

Supply air pressure	6 bar (87 psig) maximum
Powder flow rate	Variable up to 450 g/min

COMPRESSED AIR QUALITY PER ISO 8573.1

Residual water content in compressed air	1.3 g/m ³ maximum, dew point 7°C
Residual oil in compressed air	0.1 mg/m ³ maximum
Air flow rate	5 – 20 m ³ /h (176 – 706 cuft/hr)

AMBIENT CONDITIONS

Temperature	10°C to 40°C (50°F to 104°F) When using low-temperature coating powders, an ambient temperature below 30°C (86°F) may be required.
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PERMISSIBLE POWDER

	Plastic powder, metallic powder
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APPROVALS

Ingress protection 610190-10, 610190-11	IP 64
Temperature range	10°C – 85°C (50°F – 185°F)
Certificates	FM 18US0005, FM 18CA0001, FM 19ATEX0004X

IGNITION PROTECTION

	2 mJ per EN 50050-2013
--	------------------------

05.3 PRODUCT DESCRIPTION

APPLICATION

The elite M5 manual powder applicator is designed exclusively for electrostatic powder coating with organic powders. Any other use is considered unintended use. The manufacturer is not liable for any resulting damage. The user alone assumes the risk.

The elite M5 manual applicator is suitable for electrostatic coating of objects of all shapes and geometries that can be grounded.



FORESEEABLE MISUSE

- Coating of ungrounded objects
- Use of enamel powder
- Improper powder feed air settings
- Improper electrode rinsing air (electrode air) settings
- Use of moist powder

SCOPE OF DELIVERY

PART NUMBER	DESCRIPTION
615210	elite M5 manual powder applicator
	Flat spray nozzle set (615214 included in 615210)
PA-17-08	This Service Manual in electronic form on a USB drive

The elite M5 manual powder applicator receives power from a control module. This control module powers a voltage multiplier that generates a high-voltage DC charge at the electrode, creating an electrostatic field between the nozzle and the item being coated.

One of the many features of the elite M5 manual powder applicator is that the maximum amount of power from the resistive charging electrode is an optimal balance between safety and efficiency. During normal operation, the system does not release sufficient electrical or thermal energy to ignite hazardous materials at an easily ignitable concentration in air.

As the applicator electrode approaches ground, the applicator's circuit causes voltage to approach zero while the current approaches its maximum value.

05.4 OVERVIEW



COMPONENTS OF THE ELITE M5 MANUAL POWDER APPLICATOR

NO.	DESCRIPTION
1	Applicator body
2	Control panel
3	Nozzle nut
4	Flat spray nozzle
5	Trigger
6	Plug for applicator cable
7	Plug for powder hose
8	Air intake port of applicator

05.5 FUNCTIONS



When the trigger (1) is actuated (with the system controller on), the voltage multiplier in the powder applicator energizes. Simultaneously, the powder supply (2) and the air supply (3) are activated and are sent to the powder applicator. The powder travels through the applicator and comes into contact with the high voltage.

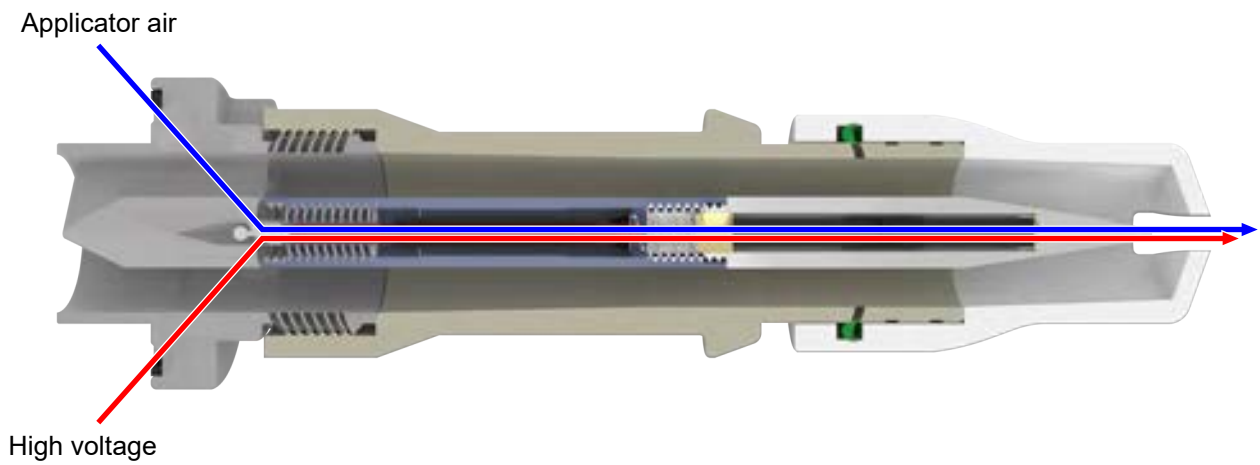
The high difference in potential between the grounded workpiece and the electrode of the powder applicator generates an electric field, inducing a negative charge in the individual powder particles.

Since these particles have the same charge as the powder applicator, they are repelled, distributed in a fine cloud, and deposited evenly on the grounded workpiece. Powder that does not initially make contact with the workpiece is entrained in the electric field and wraps around to the rear of the workpiece. This powder coating technology provides more effective material utilization, time savings, exceptional coating quality, minimal cleaning effort, and a work environment with reduced risk to health.

05.6 NOZZLE FUNCTIONS

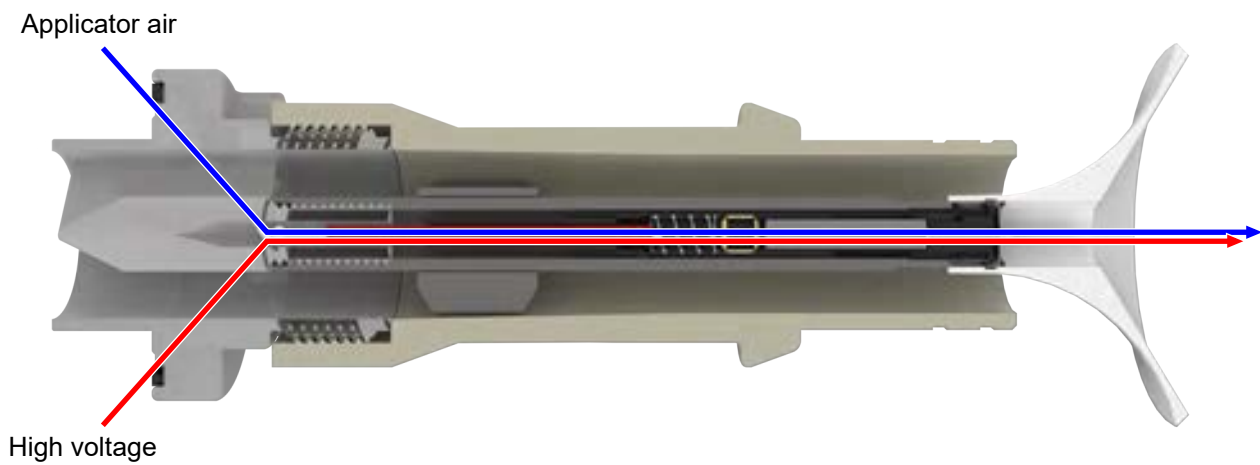
FLAT SPRAY NOZZLE

The applicator air cools the electrode during operation to inhibit impact fusion.



ROUND SPRAY NOZZLE

The applicator air cools the electrode during operation to inhibit impact fusion.



06 INSTALLATION

06.1 SAFETY INFORMATION FOR INSTALLATION AND COMMISSIONING

⚠ CAUTION

Before connecting the powder applicator, control module, or accessories, switch off the system controller at the main switch.

⚠ CAUTION

- ▶ You must be familiar with the operation of this device before switching it on.
- ▶ Never touch the applicator nozzle when high voltage is switched on.
- ▶ Do not stand in front of the powder applicator.

NOTICE

- ▶ Before installation and commissioning, familiarize yourself with the appropriate manuals.
- ▶ Check that you have all components needed for installation.
- ▶ A high quality of compressed air is necessary for operation of the powder coating system.

06.2 SAFE HANDLING OF THE ELITE POWDER APPLICATOR

1. Never point the powder applicator at a person.
2. Persons with pacemakers may never be between the spray applicator and the coated workpiece. A high voltage field is present here during operation.
3. See the “Troubleshooting guidelines” section if there is a malfunction.
4. Always comply with local regulations for occupational safety and accident prevention.
5. Observe the information in this manual, particularly the general safety information and warnings.

06.3 CABLE AND HOSE CONNECTIONS

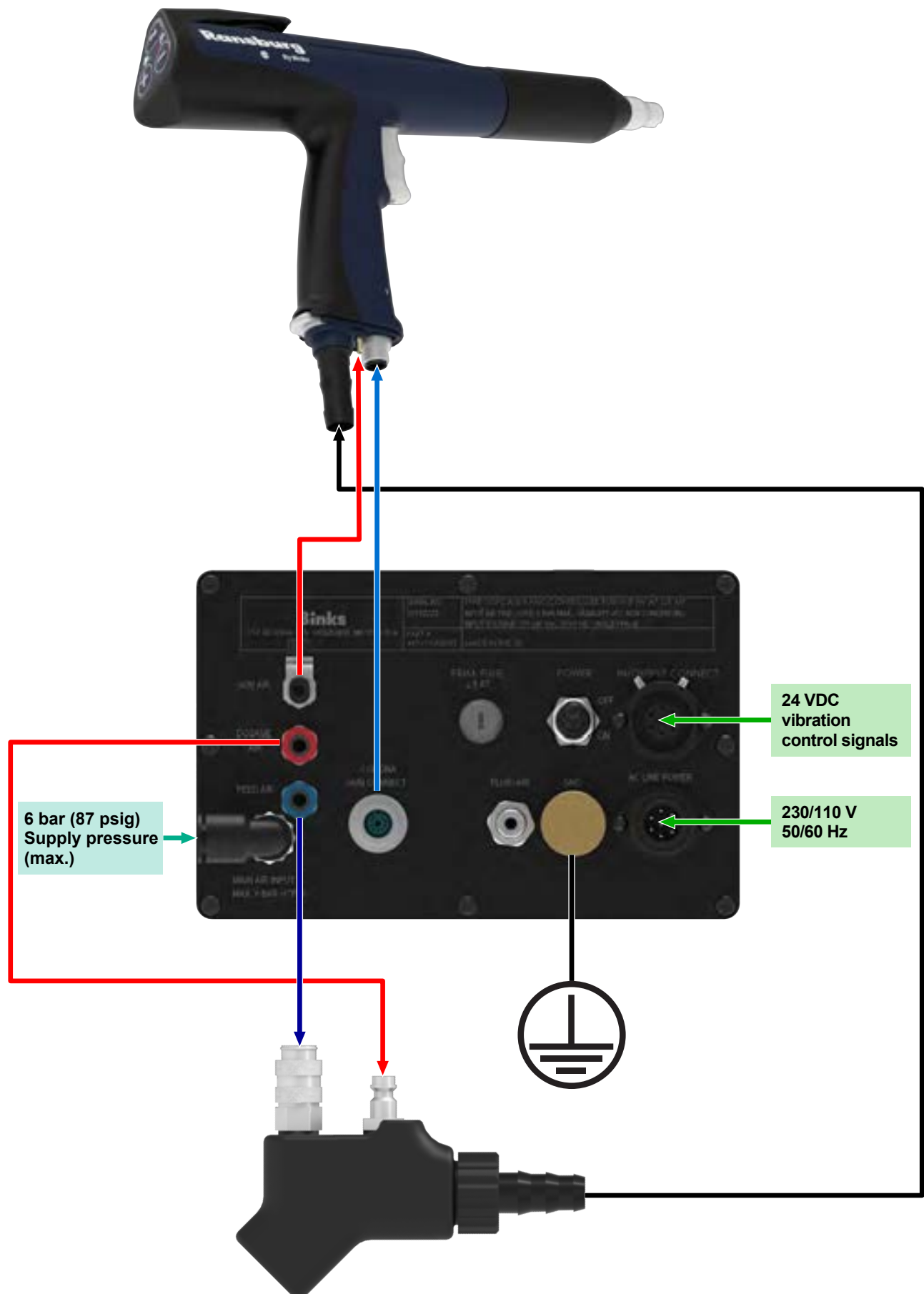
CONNECTION OF THE CONTROL MODULE			
CABLE/HOSE	CONNECTION	FROM →	TO
Automatic powder applicator cable	Applicator connection	Powder applicator	Control module
Dosing air hose	Dosing air (red)	Control module	Injector for dosing air
Feed air hose	Feed air (blue)	Control module	Injector for feed air
Applicator air hose	Rinse air (green)	Control module	Applicator rinse air
Fluidizing air hose	Deluxe control module only	Control module	Fluidized box

CONNECTION OF THE POWDER INJECTOR			
HOSE	CONNECTION	FROM →	TO
Feed air hose	Feed air (blue)	Control module	Feed air connection to injector
Dosing air hose	Dosing air (red)	Control module	Dosing air connection to injector
Powder hose		Powder injector outlet	Powder applicator

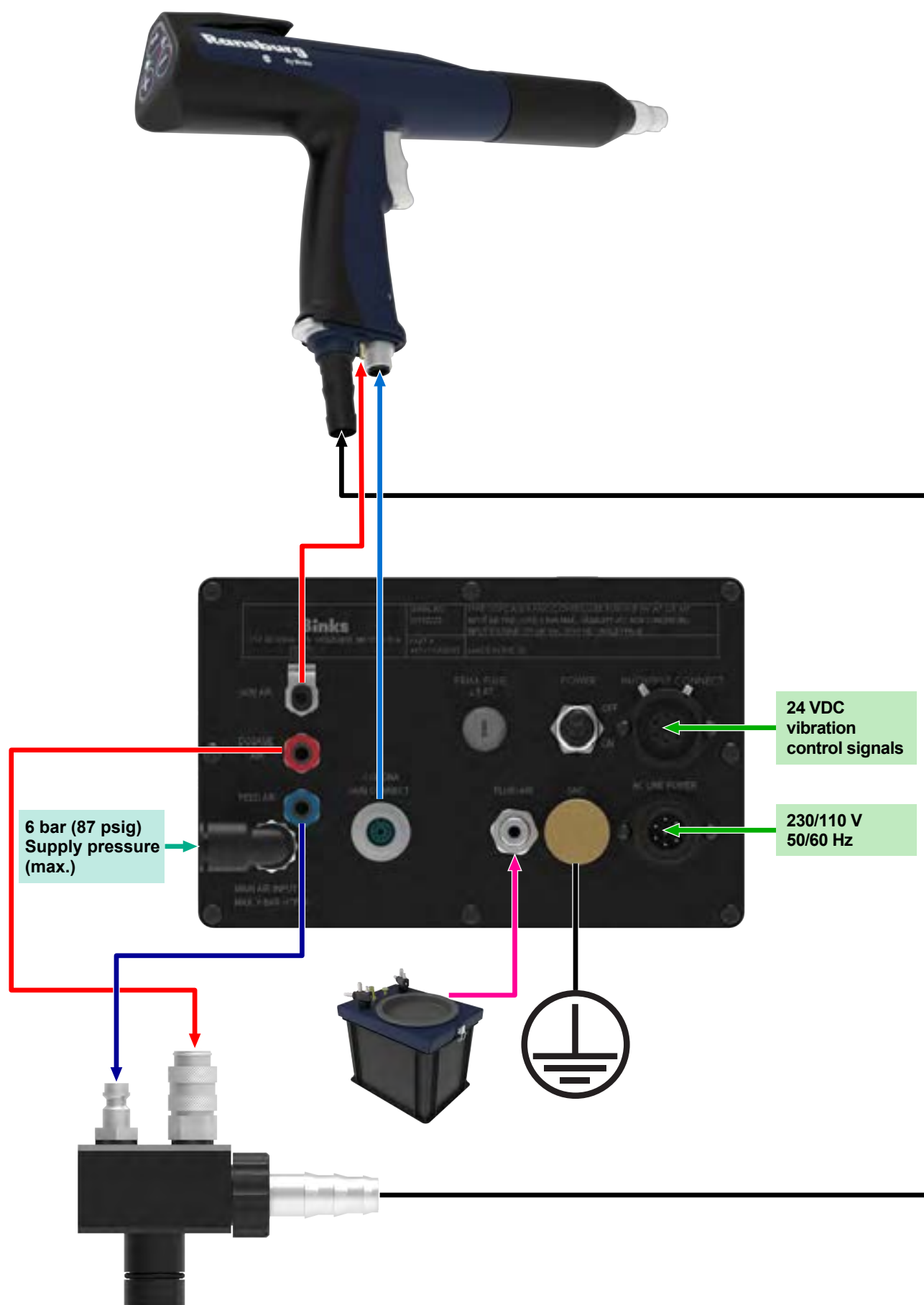


The applicator cable connector is keyed to ensure proper connection of the applicator cable to the applicator. Tighten the connector to 0.6 Nm.

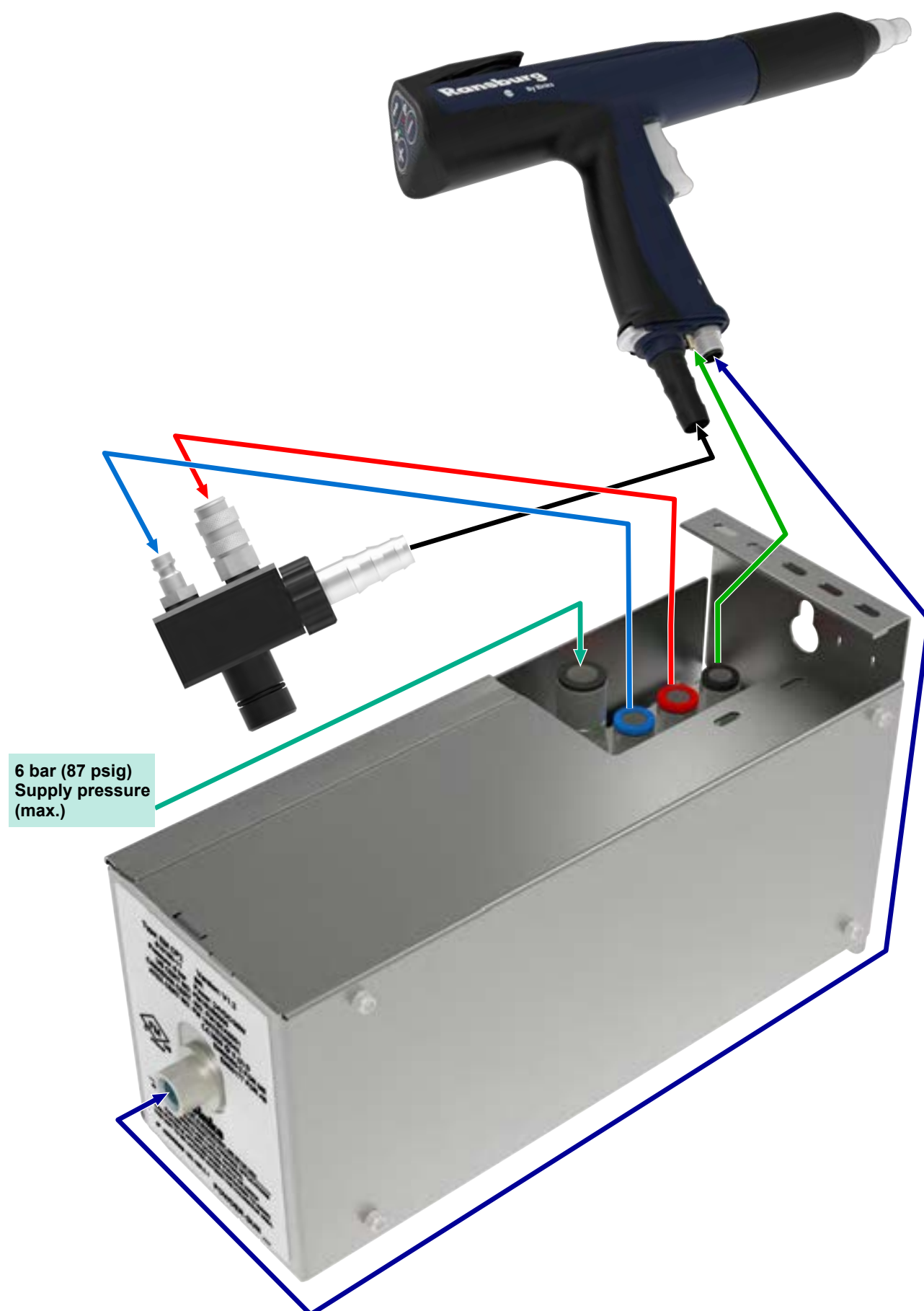
06.4 CONNECTION DIAGRAM OF THE CONTROL MODULE FOR THE VIBRATORY BOX



06.5 CONNECTION DIAGRAM OF THE CONTROL MODULE FOR THE FLUIDIZED BOX



06.6 CONNECTION DIAGRAM FOR USE WITH 610190-11



06.7 CONNECTING THE ELITE M5 MANUAL POWDER APPLICATOR

The powder hose is connected via a quick-connect. This makes it possible to quickly connect and disconnect the powder hose. The powder hose is latched into the applicator. The powder hose can be connected by pushing (1) to unlock the latch. After the hose is fully inserted, release (1) to lock the hose in position.

⚠ WARNING

Do not unplug or plug in the applicator cable while the applicator is on. The power must be turned off at the system controller before performing this task.



NO.	DESCRIPTION
1	Quick-connect
2	Connection for powder hose
3	Connection for electrode air
4	Plug for system controller cable

06.8 CONTROL MODULES FOR THE ELITE M5 MANUAL POWDER APPLICATOR

The elite M5 manual powder applicator can only be operated with one of the following system controllers:

- elite Deluxe 461959-XXXXD
- elite Basic 461959-XXXXB
- elite Cart 805700-XXXX
- CP2 610190-11
- ESM3 CMS-10003

⚠ WARNING

This equipment may be used only for the application described above.

INSTALLATION INSTRUCTIONS

1. Ensure there is a true earth ground connection available. Connect the powder supply and air hose ground to this connection.
2. Connect the air hose to the manual powder applicator.
3. Connect the system controller cable to the bottom of the powder applicator and the control module. Make sure the system controller is switched off.
4. Use the system controller to turn on and actuate the air. Check for air leaks at the connections.
5. Turn off the power to the powder applicator using the system controller.
6. Attach the powder hose to the rear of the powder applicator.

⚠ WARNING

The resistance of the powder hose must be less than 1 megohm for the entire length.

7. Turn on the powder applicator using the system controller and check for leaks in the connections for the powder supply.

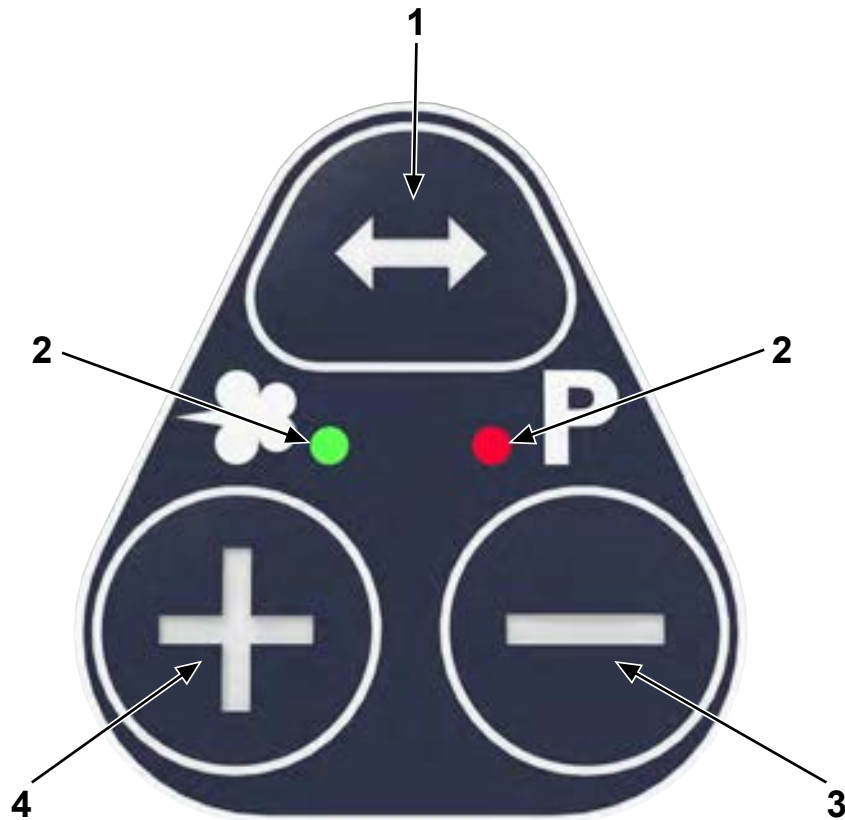


For detailed information on connecting the powder system, see manual PA-18-03, Elite Cart Powder Coating System.

07 OPERATION

07.1 CONTROLS

The rear of the manual powder applicator has a control panel. The control panel can be used to change programs and the amount of powder. Press the arrow keys to switch between programs and adjust the amount of powder.



NO.	DESCRIPTION
1	Switch between Powder mode and Program mode
2	Lights up red when ready to switch program
3	Reduce amount of powder or change program
4	Increase amount of powder or change program
5	Lights up green when ready to adjust amount of powder

07.2 GROUNDING

For efficient powder coating and for safety (see safety regulations), the powder coating system must be properly grounded.

The workpiece must be grounded for optimal powder coating. Improper workpiece grounding results in:

- Poor wrap-around
- Uneven coating thickness
- Back spray onto powder applicator and user
- A hazardous electrical charge being induced in the workpiece

The requirements for a proper ground are as follows:

- Hangers for suspending workpieces must be electrically conductive and grounded. The grounding of these hangers should be checked at least weekly. If the resistance is regularly above 1 megohm, clean the hangers more frequently than weekly.
- The powder hose must have a resistance of less than 1 megohm and must be checked regularly.

IMPORTANT:

- Regularly clean powder residue off hangers.
- The grounding cable must be connected to the control module.

WARNING

- ▶ The grounding of all conductive parts (hooks, chain conveyors, etc.) must be checked at least weekly.
- ▶ The resistance to ground must be $< 1 \text{ M}\Omega$ (megohm).

WARNING

- ▶ All power supply lines must have a ground conductor, which must be connected. Power cords must have a ground conductor.

The ground connection must be established with an 11 mm^2 copper conductor connected to the system ground. The grounding cable must have a good metal-to-metal connection to the coating enclosure, recovery unit, and conveyor chain. Suspended objects must be connected to true earth ground.



For further operating instructions, see manuals PA-19-08, PA-19-07, and PA-25-01.

07.3 CHANGING THE PROGRAM ON THE MANUAL POWDER APPLICATOR



07.4 CHANGING THE AMOUNT OF POWDER ON THE MANUAL POWDER APPLICATOR



⚠ WARNING

See the manuals of the corresponding control modules for operation: PA-19-08, PA-19-07, and PA-25-01.

NOTICE

When changing the program or amount of powder, perform the entire operation using only one method (rear of applicator or elite control module). See the elite manual for more information.

08 MAINTENANCE

08.1 SAFETY INFORMATION FOR MAINTENANCE

⚠ WARNING

Wear parts in the powder applicator, marked with a W in the spare parts list, must be inspected regularly and replaced if necessary.

⚠ CAUTION

Maintenance, repair, or replacement of parts may only be performed by personnel trained by Binks.

08.2 INTERRUPTION OF WORK

⚠ CAUTION

Switch off the system controller at the main switch before maintenance or cleaning.

If work is interrupted, blow out the powder applicator and clean it of residual powder.

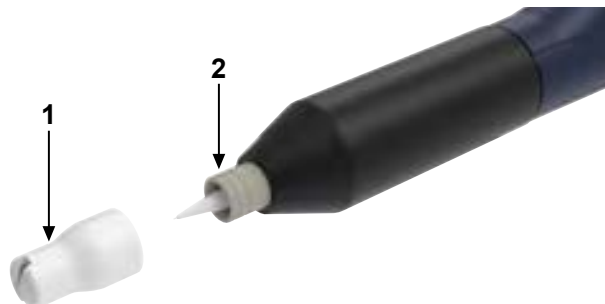
1. Switch off the system controller.
2. Unplug the powder injector so no more powder can be conveyed.
3. Hold the powder applicator in the spray enclosure and clean residual powder from the powder applicator with compressed air.
4. Clean the trigger and switch components with compressed air. To do this, direct the compressed air into the upper and lower air channels on the trigger. Blow air in the holes the arrows are pointing to.



08.3 REPLACING THE NOZZLE

REMOVING THE NOZZLE

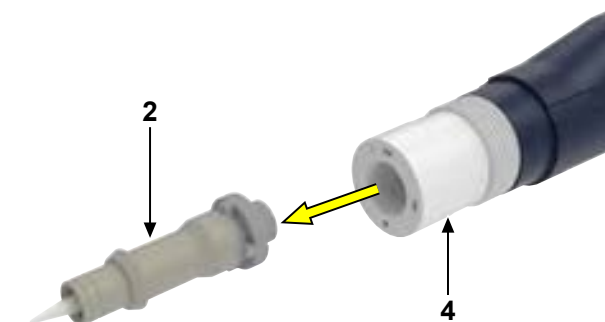
1. Clean the powder applicator as described in the previous section.
2. Remove the nozzle (1) from the nozzle tube (2).



3. Unscrew the nozzle nut (3) from the applicator body (4).



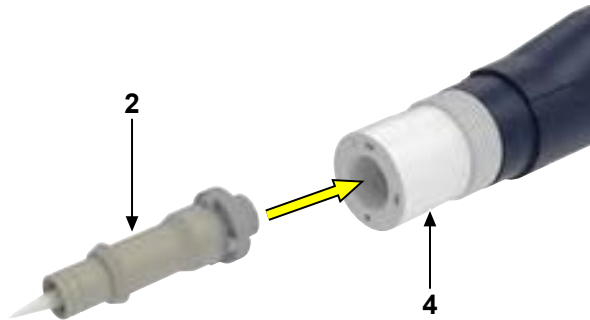
4. Carefully pull out the nozzle tube (2) without twisting the applicator body (4).



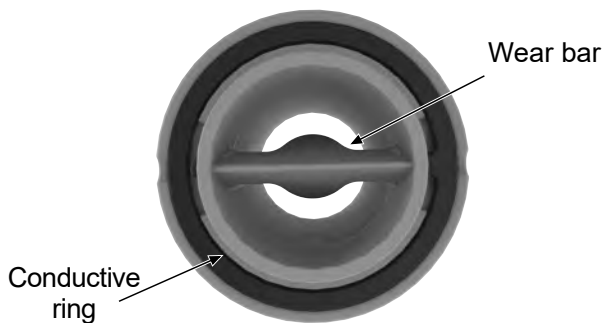
5. Clean the removed nozzle and powder applicator with compressed air.

REPLACING THE NOZZLE

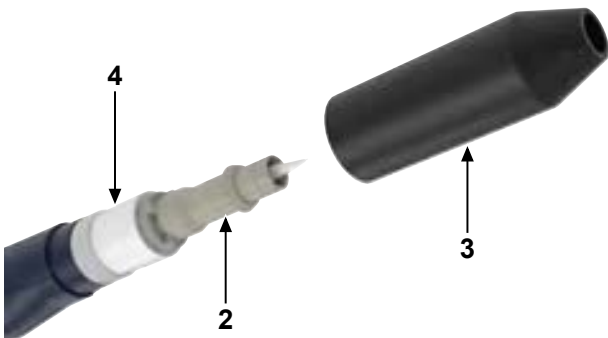
1. Insert the nozzle tube (2) into the applicator body (4). Ensure the mating area is clean and clear.



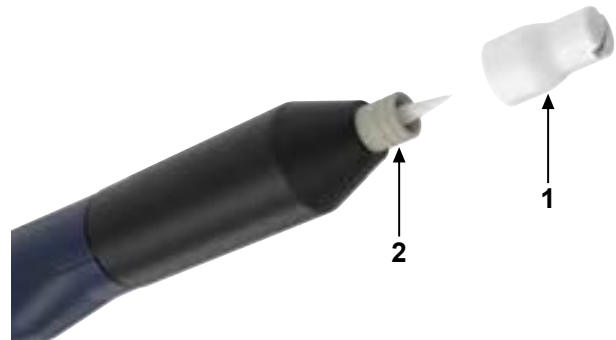
2. Ensure the contacts are lined up correctly. Ensure the wear bar and the opening of the flat spray nozzle are parallel to the floor during insertion.



3. Ensure that the conductive ring 461706 is intact.
4. Place the nozzle nut (3) on the nozzle tube (2). Carefully screw the nozzle nut (3) to the applicator body (4) until it is seated.



5. Place the nozzle (1) on the nozzle tube (2). Push it as far as it goes.



⚠ WARNING

- When removing and inserting the nozzle holder, ensure that the mating surfaces are clean and free of damage.
- Do not clean the nozzle with solvent.

NOTICE

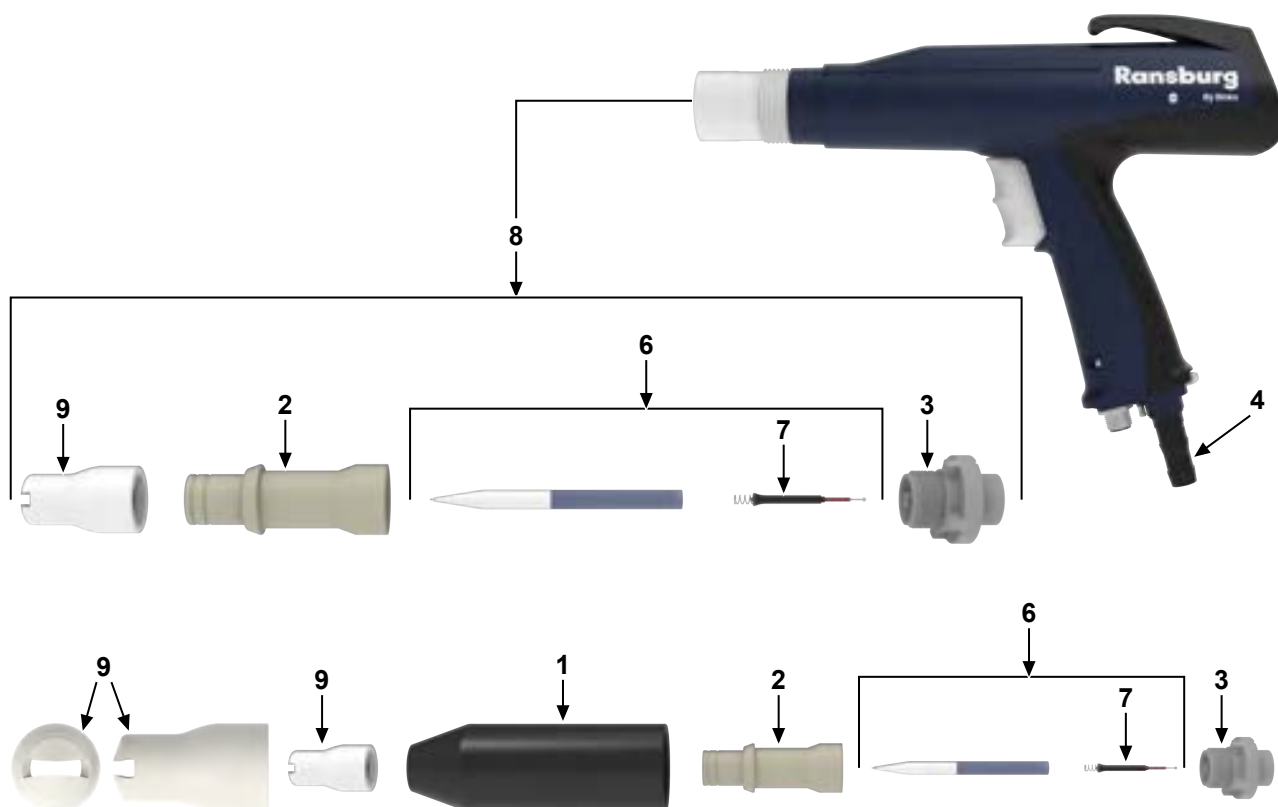
Disassemble manual powder applicators before cleaning (e.g., remove connection cable).

08.4 TROUBLESHOOTING GUIDE

GENERAL PROBLEM	POSSIBLE CAUSE	SOLUTION
Uneven powder cloud	Wear bar or flat spray nozzle misaligned.	See “Installing the nozzle” in PA-17-08.
No power or air supply	Improper power cord connection.	Check plug connections.
	Improper system controller/applicator cable connection.	Check cable connections.
	Insufficient air supply	Check main air supply.
	Defective fuse in the control module.	Replace fuse.
No electrostatics, poor coverage (e.g., no wrap-around, poor or no powder adhesion)	Improper grounding.	Check workpiece and hanger grounding.
	Check high voltage settings.	Adjust high voltage settings.
	Powder feed rate too high.	Decrease powder feed air to reduce powder volume and velocity.
	Spray booth humidity too high.	Check humidity – powder particles lose charge in humid environments.
	Applicator/system controller cable.	Check continuity of cable and replace if needed.
	Defective fuse in the control module.	Replace fuse.
Poor wrap-around, back spray	Improper grounding.	Check workpiece and hanger grounding.
	Applicator too far from workpiece.	Ensure proper distance between applicator and workpiece. Excessive distance will cause applicator and operator to be coated (particles seek closest ground).
Powder flow rate insufficient	Hoses kinked.	Check hoses.
	Air leak 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 dosing air settings.	Check settings.
	Powder accumulation in powder injector.	Inspect and clean/replace.
Improper spray cloud	Insufficient main air supply.	Check main air supply.
	Improper powder feed and dosing air settings.	Check settings.
	Worn nozzle system.	Replace nozzle system.

09 PARTS IDENTIFICATION

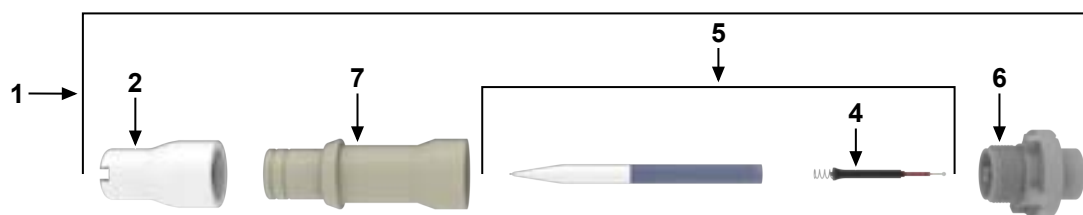
09.1 ELITE M5 MANUAL POWDER APPLICATOR



ELITE M5 MANUAL POWDER APPLICATOR – PARTS LIST

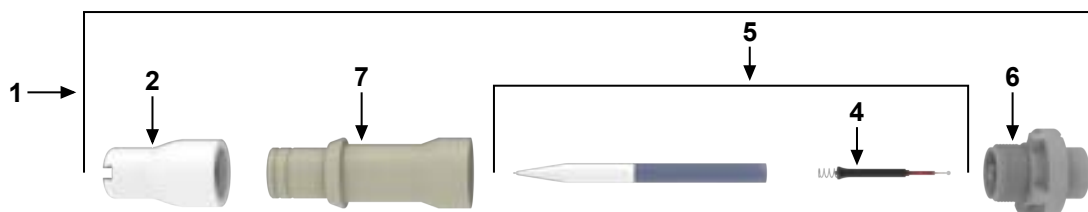
ITEM	PART #	DESCRIPTION	WEAR PART
1	460230	Nozzle nut, elite	
2	461775	Nozzle tube	
3	615213	Nozzle holder	W
4	615032	Powder connector assembly (includes O-ring 460110)	W
5	460110-K5 460110-K25	O-ring, powder connector (set of 5 or 25)	W
6	615277 615277-K5	Replacement electrode (single or set of 5)	W
7	615260-00 615260-K5	Cable assembly set	W
8	615214	Assembly, flat spray nozzle and electrode	W
9	615258	Flat spray nozzle C3 elite (includes O-ring 460105)	W
10	460105-K5 460105-K25 460105-K50	O-ring, nozzle set (set of 5, 25, or 50)	W

09.2 ACCESSORIES



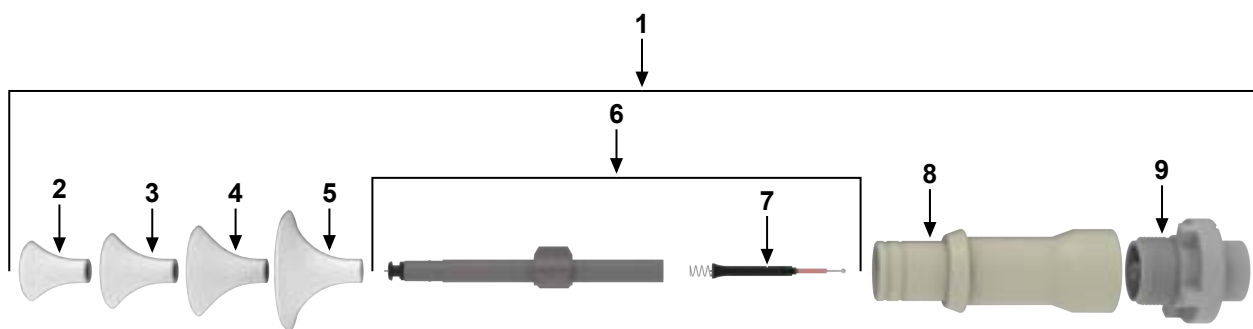
FLAT SPRAY NOZZLE C3 – PARTS LIST

ITEM	PART #	DESCRIPTION
1	615214	Assembly, flat spray nozzle and electrode
2	615258	Assembly, flat spray nozzle (includes O-ring 460105)
3	460105-K5 460105-K25 460105-K50	O-ring, nozzle set (set of 5, 25, or 50)
4	615260-00 615260-K5	Wire assembly, set (single or set of 5)
5	615277 615277-K5	Replacement electrode, set (single or set of 5)
6	615213	Nozzle holder
7	461775	Nozzle tube



FLAT SPRAY NOZZLE G – PARTS LIST

ITEM	PART #	DESCRIPTION
1	615285-3 615285-4 615285-5	Assembly (3 mm/4 mm/5 mm wide flat spray nozzle and electrode)
2	615130-3 615130-4 615130-5	Assembly (nozzle and O-ring only, included in 615285-3) (3 mm/4 mm/5 mm wide flat spray nozzle)
3	460105-K5 460105-K25 460105-K50	O-ring, nozzle set (set of 5, 25, or 50)
4	615260-00 615260-K5	Wire assembly (single or set of 5)
5	615277 615277-K5	Replacement electrode (single or set of 5)
6	615213	Nozzle holder
7	461775	Nozzle tube



ROUND SPRAY NOZZLE – PARTS LIST

ITEM	PART #	DESCRIPTION
1	615218	Round spray nozzle set R1
2	460430	Round spray nozzle D16 (included in 615218)
3	460440	Round spray nozzle D20 (included in 615218)
4	460450	Round spray nozzle D24 (included in 615218)
5	460460	Round spray nozzle D30 (included in 615218)
6	615260-00 615260-K5	Wire assembly (single or set of 5)
7	615219-01	Deflector plate rod
8	461775	Needle tube
9	615213	Nozzle holder



MANUAL APPLICATOR CABLE, ELITE, 9-PIN – PARTS LIST

ITEM	PART #	DESCRIPTION
1	461942-06	Manual applicator cable, 6 m, elite
2	461942-10	Manual applicator cable, 10 m, elite
3	461942-16	Manual applicator cable, 16 m, elite
4	461942-20	Manual applicator cable, 20 m, elite



New cable 461942-XX has replaced legacy cable 461742-XX. For more information, please contact your customer service representative.

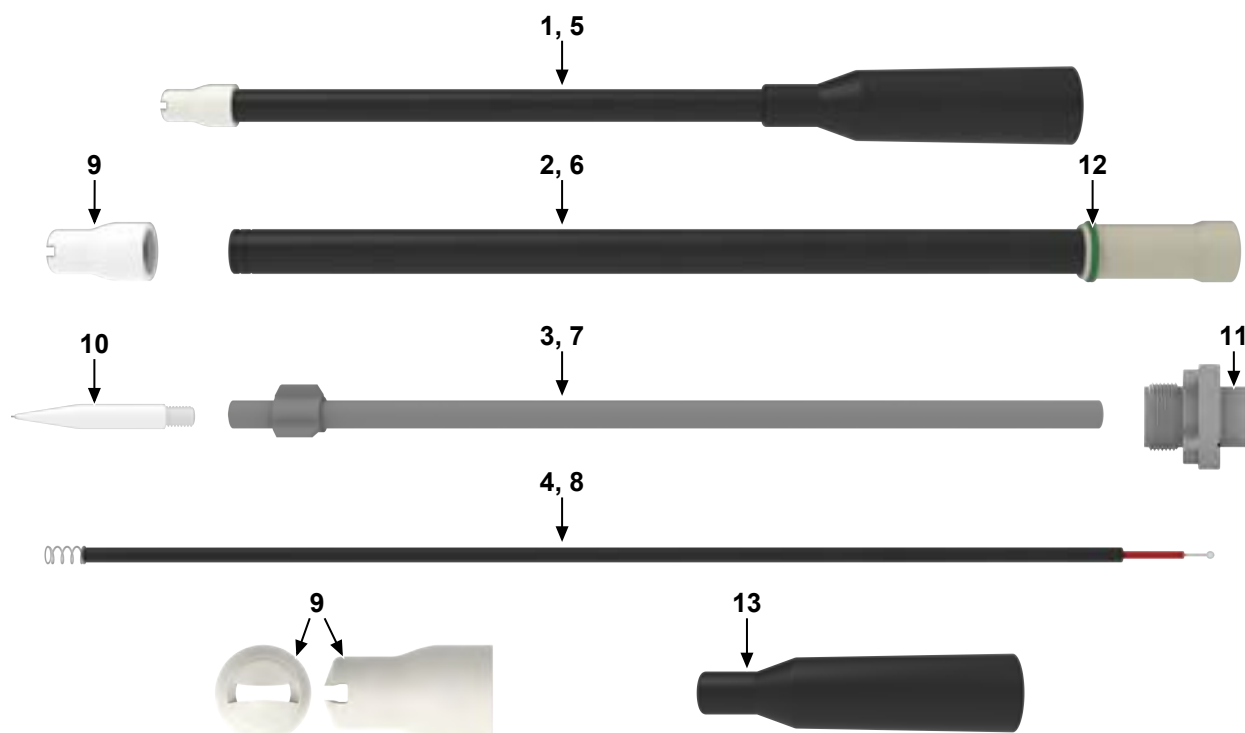
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POWDER HOSE – PARTS LIST

ITEM	PART #	DESCRIPTION
1	810195-06	Powder hose, 6 m (10 mm ID), length = 4.8 m
2	810195-08	Powder hose, 8 m (10 mm ID), length = 6.8 m
3	810195-10	Powder hose, 10 m (10 mm ID), length = 8.8 m
4	810195-16	Powder hose, 16 m (10 mm ID), length = 14.8 m
5	810195-100	Powder hose, 100 m, bulk (10 mm ID), length = 100 m
6	810190-100	Powder hose, 100 m, bulk (11 mm ID), length = 100 m

APPLICATOR AIR TUBE – PARTS LIST

ITEM	PART #	DESCRIPTION
1	421370-06	Tube, 6 m, (4 mm OD, 2.5 mm ID), length = 6.05 m
2	421370-08	Tube, 8 m, (4 mm OD, 2.5 mm ID), length = 8.05 m
3	421370-10	Tube, 10 m, (4 mm OD, 2.5 mm ID), length = 10.05 m
4	421370-16	Tube, 16 m, (4 mm OD, 2.5 mm ID), length = 16.05 m
5	421370-20	Tube, 20 m, (4 mm OD, 2.5 mm ID), length = 20.05 m
6	421370-100	Tube, 100 m, bulk (4 mm OD, 2.5 mm ID), length = 100 m

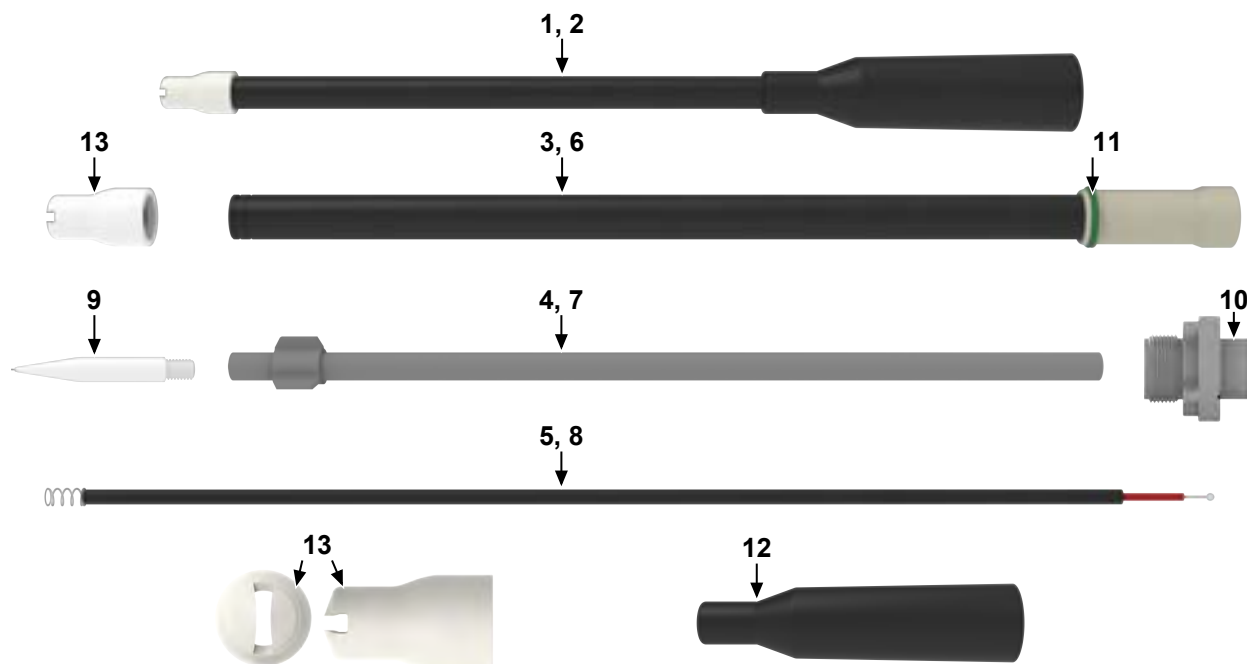


EXTENSION, FLAT SPRAY NOZZLE C3 – PARTS LIST

ITEM	PART #	DESCRIPTION
1	615215	Assembly, extension set, flat spray nozzle, 150 mm
2	615239	Assembly, extension tube, 150 mm
3	615000-150	Electrode sleeve, 150 mm
4	615330-03 615330-K5	Assembly, cable, 15 mm, flat spray nozzle (single or set of 5)
5	615216	Assembly, extension set, flat spray nozzle, 300 mm
6	615240	Assembly, extension tube, 300 mm
7	615000-300	Electrode sleeve, 300 mm
8	615330-01 615330-K5	Assembly, cable, 300 mm, flat spray nozzle (single or set of 5)
9	615258	Assembly, flat spray nozzle, 3 mm (included with all lengths)
10	615212	Assembly, electrode (included with all lengths)
11	615213	Assembly, nozzle holder (included with all lengths)
12	461866-K5	O-ring, PTFE, 18 mm x 2 mm (included with all lengths, set of 5)
13	461888	Nozzle nut, extension (included with all lengths)



Nozzle nut 461888 must be used with all extensions. The standard nozzle nut 460230 will not fit and is not approved for this use.

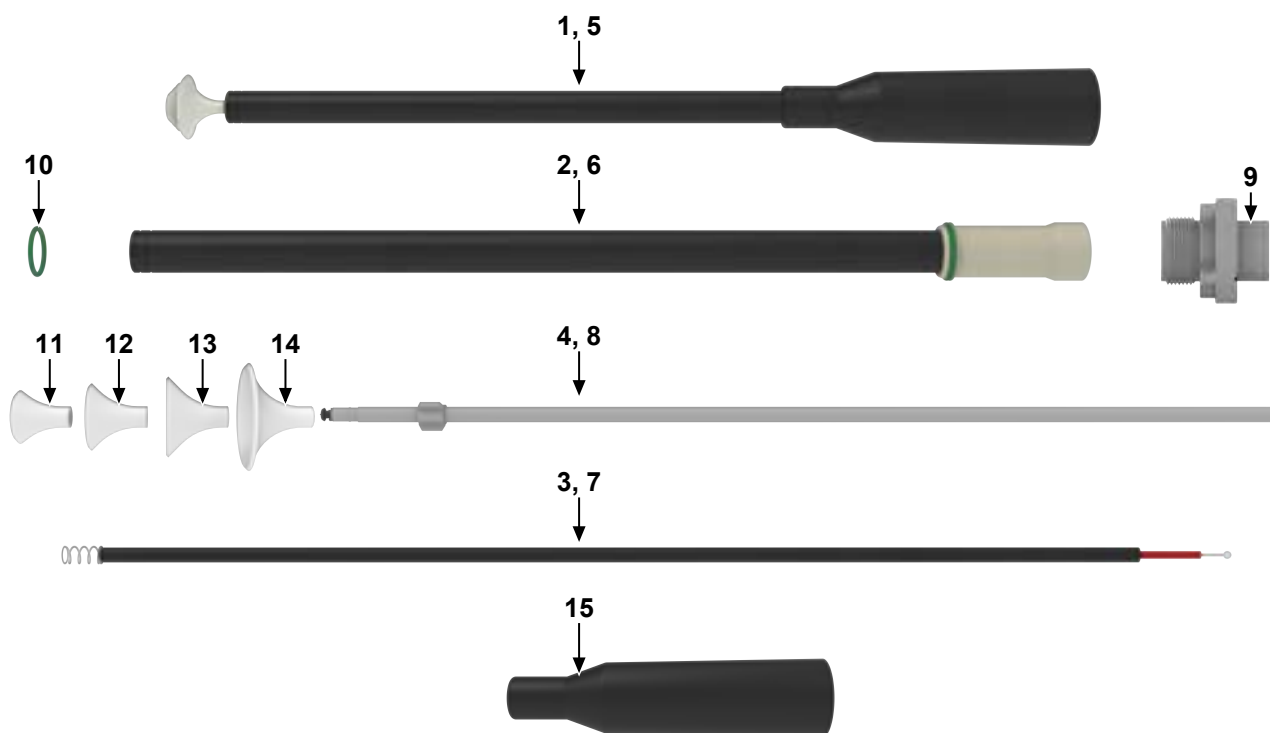


EXTENSION, FLAT SPRAY NOZZLE G – PARTS LIST

ITEM	PART #	DESCRIPTION
1	615050-13 615050-14 615050-15	Assembly, extension set, flat spray nozzle, 150 mm (3 mm/4 mm/5 mm wide flat spray nozzle)
2	615050-33 615050-34 615050-35	Assembly, extension set, flat spray nozzle, 300 mm (3 mm/4 mm/5 mm wide flat spray nozzle)
3	615239	Assembly, extension tube, 150 mm
4	615000-150	Electrode sleeve, 150 mm
5	615330-03 615330-K5	Assembly, cable, 150 mm, flat spray nozzle (single or set of 5)
6	615240	Assembly, extension tube, 300 mm
7	615000-300	Electrode sleeve, 300 mm
8	615330-01 615330-K5	Assembly, cable, 300 mm, flat spray nozzle (single or set of 5)
9	615212	Assembly, electrode (included with all lengths)
10	615213	Assembly, nozzle holder (included with all lengths)
11	461866-K5	O-ring, PTFE, 18 mm x 2 mm set (included with all lengths)
12	461888	Nozzle nut, extension (included with all lengths)
13	615130-3 615130-4 615130-5	Assembly, flat spray nozzle (parallel and with O-ring) (3 mm/4 mm/5 mm wide flat spray nozzle)



Nozzle nut 461888 must be used with all extensions. The standard nozzle nut 460230 will not fit and is not approved for this use.



EXTENSION, ROUND SPRAY NOZZLE – PARTS LIST

ITEM	PART #	DESCRIPTION
1	615225	Assembly, extension set, round spray nozzle, 150 mm
2	615239	Assembly, extension tube, 150 mm
3	615330-04 615330-K5	Assembly, cable, 150 mm, round spray nozzle (single or set of 5)
4	615219-02	Pressure bar, 150 mm
5	615226	Assembly, extension set, round spray nozzle, 300 mm
6	615240	Assembly, extension tube, 300 mm
7	615330-02 615330-K5	Assembly, cable, 300 mm, round spray nozzle (single or set of 5)
8	615219-03	Pressure bar, 300 mm
9	615213	Assembly, nozzle holder (included with all lengths)
10	461866-K5	O-ring, PTFE, 18 mm x 2 mm set (included with all lengths)
11	460430	Round spray nozzle D16 (included with all lengths)
12	460440	Round spray nozzle D20 (included with all lengths)
13	460450	Round spray nozzle D24 (included with all lengths)
14	460460	Round spray nozzle D30 (included with all lengths)
15	461888	Nozzle nut, extension (included with all lengths)



Nozzle nut 461888 must be used with all extensions. The standard nozzle nut 460230 will not fit and is not approved for this use.

10.1 ELITE CART

EXAMPLE: 805700 - AAAA B C - ZZ Y W

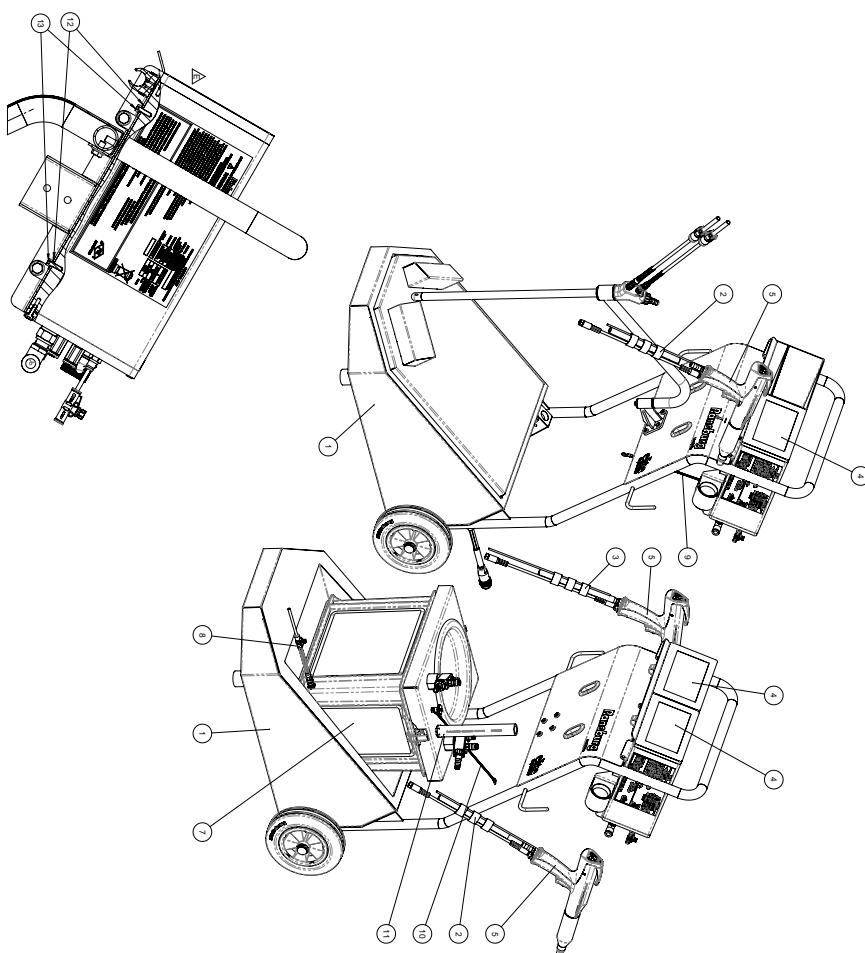


CONTROL/EMERGENCY CART ASSEMBLY (TABLE 1)
POWER HOSE/ELECTRIC ASSEMBLY (TABLE 2)
POWER HOSE/ELECTRIC ASSEMBLY 2 (TABLE 2)
CONTROL/EMERGENCY ASSEMBLY (TABLE 3)

TABLE 1. CONTROL ERR/APPLICATOR/CART ASSEMBLY

NOTES:

1. THIS IS AN **ILLUSTRATIVE** APPROVED ASSEMBLY FOR COMPONENT AND CANNOT BE CHANGED WITHOUT REFERRING TO THE APPROVED DRAWINGS OR SPECIFICATION.
2. THIS CONFIGURATION IS ONLY FOR CONNECTION TO MAINLINE, FOR CATERPILLAR 8150A, APPROVED ACCESSORIES OF THIS MODEL (SEE CHAS 800A-02) MUST BE USED AND ACCEPTED WITH THIS CONFIGURATION. 
3. USE 2 SET SCREW NUTS TO SECURE THE WIRE LINE POWER CONNECTION AND 2 SET SCREW NUTS TO SECURE THE 10 CONNECTION CABLE CONNECTION.
4. ITEMS ARE INCLUDED BUT NOT SHOWN.
5. CONNECT GROUND CABLES 8001A AND 8001 B WHEN USED FROM TOPSIDE OR HOPPER. GOULDING DIRECTLY TO THE CHAIR RISE.
6. FOR SINGLE UNIT CHAIRS, ONLY POWER HOSE IS AVAILABLE. ASSEMBLY 1 IS USED AND IS LISTED BY CONFIGURATION OR CONFIGURATIONS THAT SHALL BE USED.
7. FOR PUMP UNIT CHAIRS, THE SHORTER POWER HOSE IS AVAILABLE ASSEMBLY IS LISTED BY "B" IN THE CONFIGURATION. THE LONGER ASSEMBLY IS LISTED BY ITEM "C".



A	28123	RELEASED TO PRODUCTION	15 JUL 21	PER
B	28066	UPDATED BOARD DESCRIPTIONS AND CONFIGURATION NAME DISCREPANCY FOR REVIEW. REDESIGNED BOARD LAYOUT	15 OCT 21	PER
C	37368	ADAPT TO NEW ASSEMBLY STRUCTURE	03 JUL 21	PER
D	28064	REFERENCE TO SEPARATE ACCESS CODES DRAWING ADDED	07 MAY 21	PER
E	38190	CF NUMBER CORRECTED TO 28065	04 MAY 20	PER

10.2 ELITE MODULE KIT

- NOTES:
- 1. FOR AUTOMATIC APPLICATORS, SEE SHEET 2
 - 2. FOR MANUAL APPLICATORS, SEE SHEET 3



CONFIGURED ITEMS
835092 - A BBB

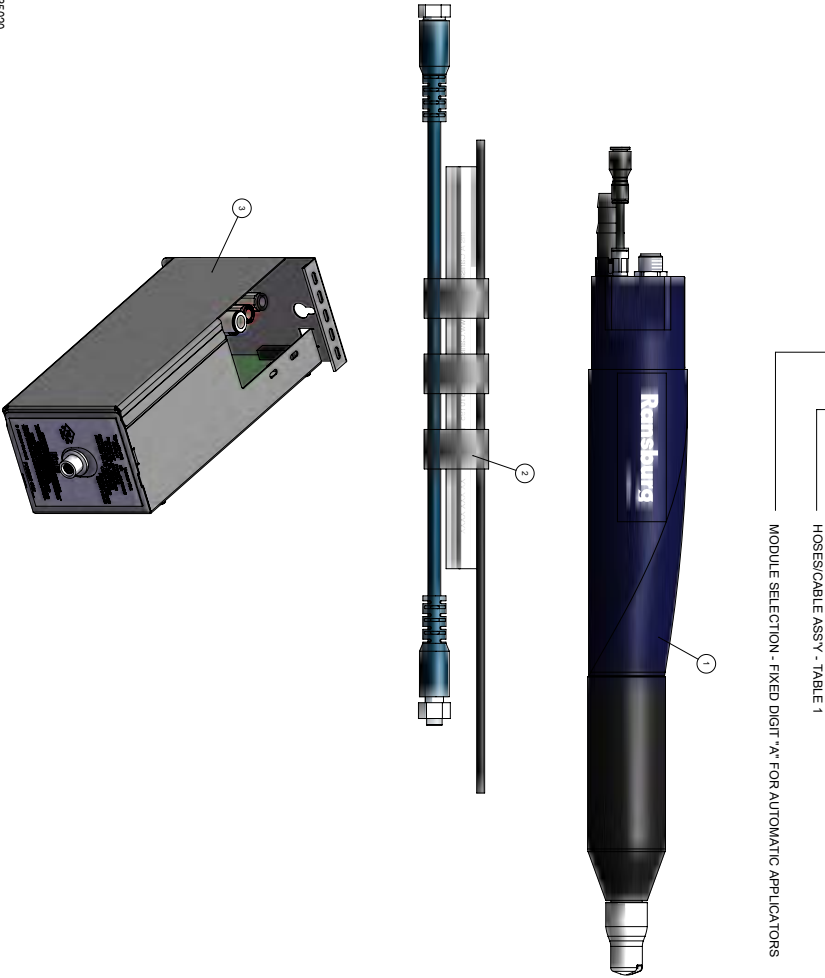
HOSE/CABLE ASSY - FOR AUTOMATIC APPLICATORS SEE TABLE 1, SHEET 2
MODULE SELECTION - FOR AUTOMATIC APPLICATORS SEE SHEET 2
FOR MANUAL APPLICATORS SEE SHEET 3

REV	FOR	OWNER	DATE	BY
01	3866	RELINQ TO MFG	26 JAN 02	PAK
02	3864	REFERENCE TO SEPARATE ACCESSORIES DRAWING (ADD)	03 JUL 05	PHO
03	3978	CE NUMBER CONNECTED TO 288 (RANSBURG 1000 AND FACTORIES (PAINTED)	31 JUL 05	PHO

ITEM	PART NUMBER	DESCRIPTION	AUTOMATIC QUANTITY
1	835020	AUTOMATIC APPLICATOR	1
2	SEE TABLE 1	AUTOMATIC POWDER HOSE/CABLE ASSY	1
3	610198-10	MS MODULE ASSEMBLY, AUTOMATIC MODULE, FM APPROVED	1

TABLE 1 - POWDER HOSE/CABLE ASSY			
HOSE/CABLE DIGIT "BBB"	ITEM #2 PART NUMBER	DESCRIPTION	QUANTITY
A01	46107312	12in. CABLE ONLY	1
A02	46107316	16in. CABLE ONLY	1
A03	46107320	20in. CABLE ONLY	1
A04	46107325	25in. CABLE ONLY	1
A01	TB0	10in. CABLE/POWDER HOSE ONLY	-
A02	61013417	10in. CABLE/POWDER HOSE ONLY	1
A03	TB0	20in. CABLE/POWDER HOSE ONLY	-
A04	TB0	25in. CABLE/POWDER HOSE ONLY	-
A01	61013412	12in. CABLE/POWDER HOSE/POWDER AIR BLUOE	1
A02	61013416	16in. CABLE/POWDER HOSE/POWDER AIR BLUOE	1
A03	61013420	20in. CABLE/POWDER HOSE/POWDER AIR BLUOE	1
A04	61013425	25in. CABLE/POWDER HOSE/POWDER AIR BLUOE	1

CONFIGURED ITEMS
835092- A BBB



NOTES:

1. THIS CONFIGURATION DRAWING IS FOR CONNECTION TO AUTOMATIC APPLICATOR 835020. ALL APPROVED ACCESSORIES OF THAT MODEL (SEE CMS-10005-CD) MAY BE USED AND ACCEPTED WITH THIS CONFIGURATION.

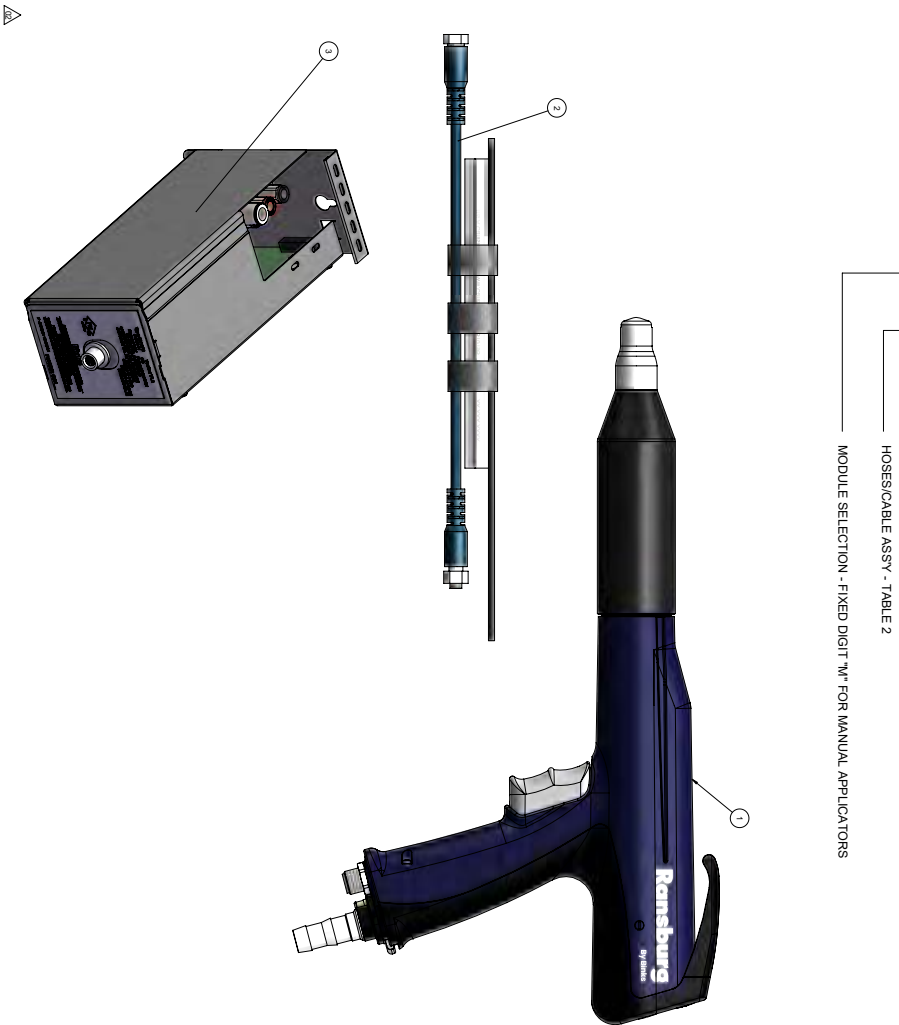


ITEM	PART NO.	DESCRIPTION	MIN. QTY.
1	615210	MANUAL APPLICATOR	1
2	SEE TABLE 2	MANUAL POWDER HOSE/CABLE ASSY	1
3	61019-11	MS MODULE ASSEMBLY, MANUAL MODULE, FM APPROVED	1

TABLE 2 - POWDER HOSE/CABLE ASSY			
HOSE/CABLE DIGIT	ITEM NUMBER	DESCRIPTION	QUANTITY
1	46342-06	6m CABLE ONLY	1
2	46342-10	16m CABLE ONLY	1
3	46342-16	26m CABLE ONLY	1
4	46342-20	30m CABLE ONLY	1
5	1180	6m CABLE/POWDER HOSE ONLY	-
6	1180	16m CABLE/POWDER HOSE ONLY	-
7	1180	26m CABLE/POWDER HOSE ONLY	-
8	1180	30m CABLE/POWDER HOSE ONLY	-
9	61019-06	6m CABLE/POWDER HOSE/PINSE AIR BUNDLE	1
10	61019-10	16m CABLE/POWDER HOSE/PINSE AIR BUNDLE	1
11	61019-16	26m CABLE/POWDER HOSE/PINSE AIR BUNDLE	1
12	61019-20	30m CABLE/POWDER HOSE/PINSE AIR BUNDLE	1

CONFIGURED ITEMS

835092-M BBB



- NOTES:
1. THIS CONFIGURATION DRAWING IS FOR CONNECTION TO MANUAL APPLICATOR 615210. ALL APPROVED ACCESSORIES OF THAT MODEL (SEE CHS-10004-CD) MAY BE USED AND ACCEPTED WITH THIS CONFIGURATION.

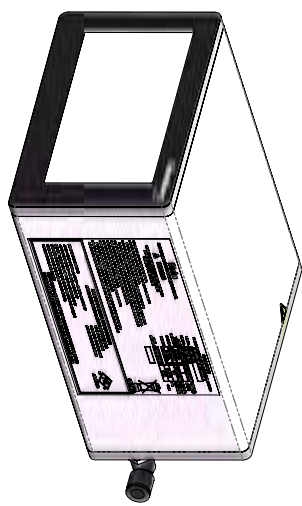


10.3 ELITE KIT

- NOTES:
- 1. FOR AUTOMATIC APPLICATIONS, SEE SHEET 2
 - 2. FOR MANUAL APPLICATIONS, SEE SHEET 3



OR
+ KIT
+ SELECTION +



&



CONFIGURED ITEMS
835091 - AAA BBB - ZZ Y X W

- CONTROLLER/PLUG PACKAGE - FOR AUTOMATIC APPLICATIONS SEE TABLE 3, SHEET 2
FOR MANUAL APPLICATIONS SEE TABLE 6, SHEET 3
- HOSE/CABLE ASSY - FOR AUTOMATIC APPLICATIONS SEE TABLE 2, SHEET 2
FOR MANUAL APPLICATIONS SEE TABLE 5, SHEET 3
- KIT SELECTION - FOR AUTOMATIC APPLICATIONS SEE TABLE 1, SHEET 2
FOR MANUAL APPLICATIONS SEE TABLE 4, SHEET 3

REV.	EDN.	CHANGES	DATE	BY
01	5998	RELIEVE TO JMG	26 JAN 21	PJK
02	5998	REFERENCE TO SEPARATE ACCESSORIES DRAWING ADDED	03 JAN 21	REHO
03	3078	ICE NUMBER CORRECTED TO 2898, RANSBURG LOGO AND PICTURES UPDATED	31 JUL 21	CHAD

ITEM	PART NO.	DESCRIPTION	AUTOMATIC QUANTITY
1	835020	AUTOMATIC APPLICATOR	1
2	SEE TABLE 1	KIT PURPOSE AND DESCRIPTION	1
3	SEE TABLE 2	AUTOMATIC POWER HOSE/CABLE ASSY	1
4	SEE TABLE 3	CONTROLLER/PLUG PACKAGE	1

TABLE 1 - KIT PURPOSE AND DESCRIPTION		
KIT DIGITS "AAA"	ITEM # PART NUMBER	KIT DESCRIPTION
AA1	-	BASE REPAIR AGENT PACKAGE (APPLICATION/CONTROLLER ONLY)
AA2	869800	M8 ELITE AUTOMATIC GUN MOUNTING KIT
AA3	869800	M8 ELITE AUTOMATIC BODY RETROFIT KIT

TABLE 2 - POWER HOSE/CABLE ASSY			
HOSE CABLE ITEM 3 PART DIGIT "BBB"	DESCRIPTION	QUANTITY	
AA1	461973-12	12M CABLE ONLY	1
AA2	461973-16	16M CABLE ONLY	1
AA3	461973-20	20M CABLE ONLY	1
AA4	461973-25	25M CABLE ONLY	1
AA1	TBD	25M CABLE POWER HOSE	-
AA2	610194-17	16M CABLE POWER HOSE	1
AA3	TBD	20M CABLE POWER HOSE	-
AA4	TBD	25M CABLE POWER HOSE	-
AA1	610194-12	12M CABLE POWER HOSE	1
AA2	610194-16	16M CABLE POWER HOSE	1
AA3	610194-20	20M CABLE POWER HOSE	1
AA4	610194-25	25M CABLE POWER HOSE	1

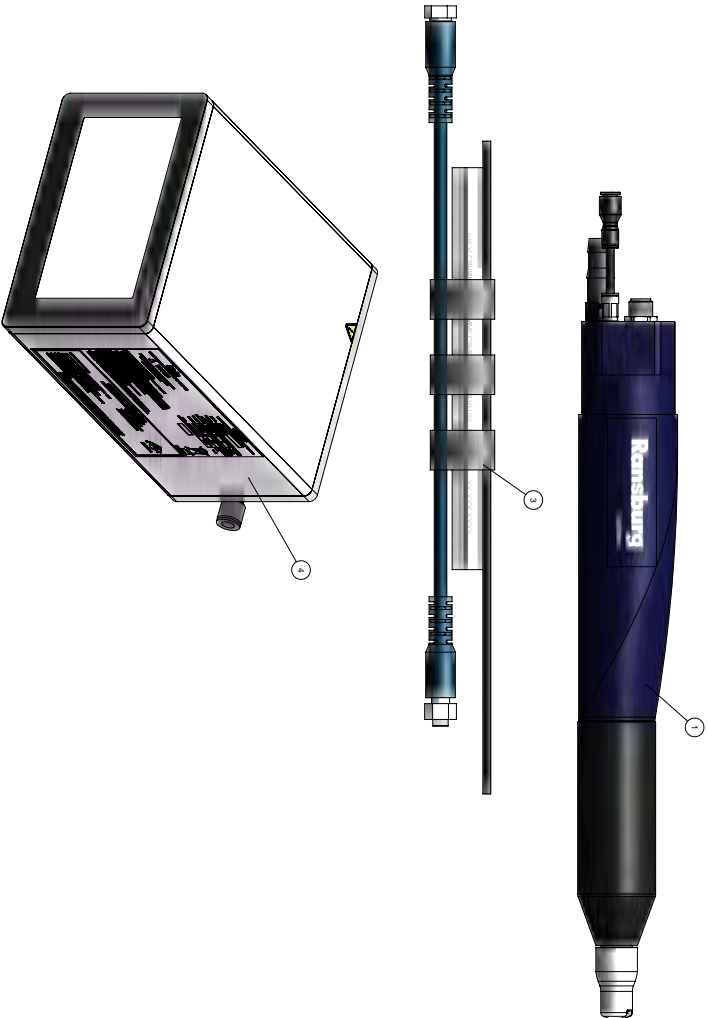
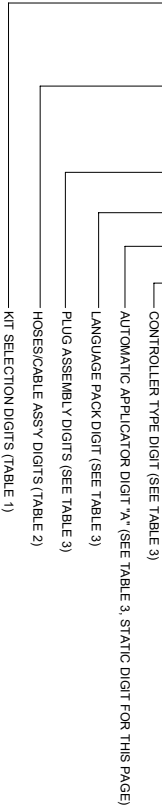
TABLE 3 - CONTROLLER/PLUG PACKAGE	
ITEM 4 PART NUMBER 461999-ZZ 1 A W	
PLUG ASSEMBLY DIGIT "ZZ"	DESCRIPTION
00	PLUG ASSEMBLY EUROPEAN ELITE GANT (230V)
02	PLUG ASSEMBLY EUROPEAN ELITE GANT (115V)
03	PLUG ASSEMBLY CANADIAN ELITE GANT (115V)
04	PLUG ASSEMBLY CHINA ELITE GANT (230V)
05	PLUG ASSEMBLY CHINA ELITE GANT (115V)
LANGUAGE PACK DIGIT "Y"	DESCRIPTION
1	GENERAL LANGUAGE PACK
2	EASTERN EUROPEAN LANGUAGE PACK
APPLICATOR TYPE DIGIT	DESCRIPTION
A	USED WITH AUTOMATIC GUN
CONTROLLER DIGIT "W"	DESCRIPTION
1	BASIC
2	DELUX

NOTES

1. LISTED BUT NOT SHOWN

2. THIS CONVERSION DRAWING IS FOR CONNECTION TO AUTOMATIC APPLICATOR 869820. ALL APPROVED ACCESSORIES OF THAT MODEL. (SEE CDS 10005-CD) MAY BE USED AND ACCEPTED WITH THIS CONFIGURATION.

AUTOMATIC APPLICATOR CONVERSION KIT 835091- AAA BBB - ZZ Y A W



ITEM	PART NO.	DESCRIPTION	MANUAL QUANTITY
1	610210	MANUAL APPLICATOR	1
2	SEE TABLE 4	KIT PURPOSE AND DESCRIPTION	1
3	SEE TABLE 5	MANUAL POWDER HOSE - CABLE LENGTH	1
4	SEE TABLE 6	CONTROLLER PACKAGE	1

TABLE 4 - KIT PURPOSE AND DESCRIPTION		
KIT DIGITS	ITEM 2 PART NUMBER	KIT DESCRIPTION
AAA	-	BARE REPAACEMENT PACKAGE (APPLICATOR/CONTROLLER ONLY)
M01	806750	M8 ELITE MANUAL WALL MOUNT KIT
M02	806755	M8 ELITE SINGLE TO DUAL CONVERSION KIT
M03	806900	M8 ELITE MANUAL KIT WITH 19 GPC PUMP
M04	810302	PUSH TO CONNECT INJECTOR

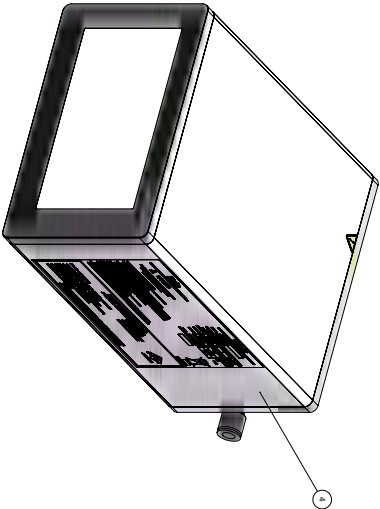
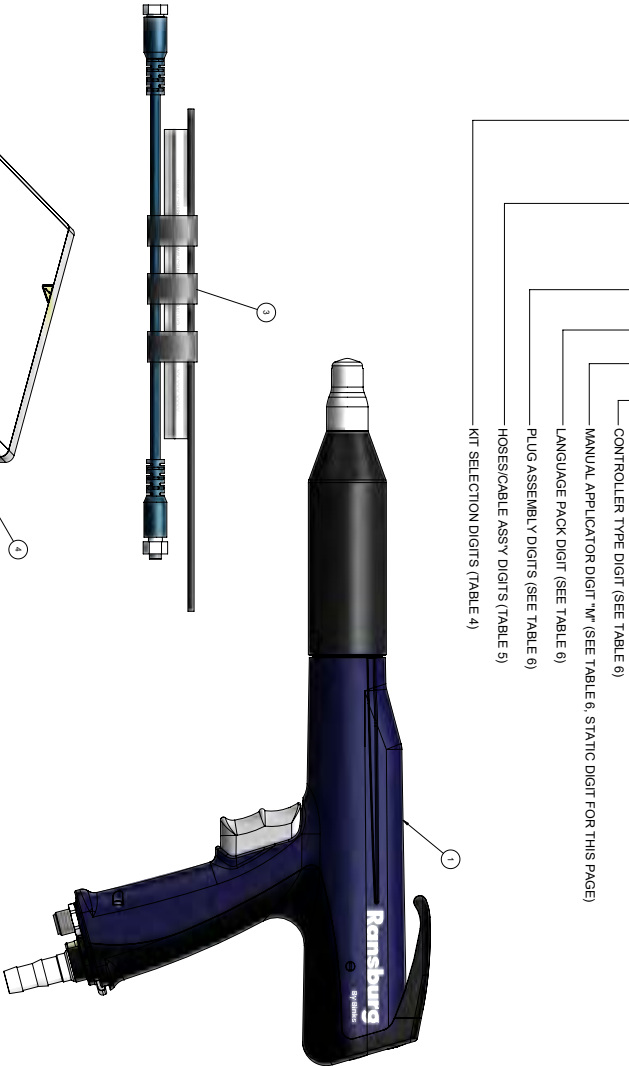
TABLE 5 - POWDER HOSE/CABLE ASSY.			
HOSE/CABLE DIGIT NUMBER	ITEM PART NUMBER	DESCRIPTION	QUANTITY
M01	461942-06	6M CABLE ONLY	1
M02	461942-10	10M CABLE ONLY	1
M03	461942-16	16M CABLE ONLY	1
M04	461942-20	20M CABLE ONLY	1
M01	TBD	6M CABLE/POWDER HOSE ONLY	-
M02	TBD	10M CABLE/POWDER HOSE ONLY	-
M03	TBD	16M CABLE/POWDER HOSE ONLY	-
M04	TBD	20M CABLE/POWDER HOSE ONLY	-
M01	610139-06	6m CABLE/POWDER HOSE/INSECT AIR BLINDE	1
M02	610139-10	10m CABLE/POWDER HOSE/INSECT AIR BLINDE	1
M03	610139-16	16m CABLE/POWDER HOSE/INSECT AIR BLINDE	1
M04	610139-20	20m CABLE/POWDER HOSE/INSECT AIR BLINDE	1

TABLE 6 - CONTROLLER/PLUG PACKAGE		
ITEM 4 PART NUMBER 581893-02 L.M.M.		
PLUG ASSEMBLY DIGIT ZZ	DESCRIPTION	
01	NONE	
02	PLUG ASSY. ELIMO ELITE CART (200V)	
03	PLUG ASSY. MAXIMUM ELITE CART (120V)	
04	PLUG ASSY. CAL ELITE CART (200V)	
05	PLUG ASSY. JMK ELITE CART (200V)	
LANGUAGE PACK DIGIT YY	DESCRIPTION	
1	ENGLISH LANGUAGE PACK	
2	SPANISH LANGUAGE PACK	
3	FRENCH LANGUAGE PACK	
APPLICATOR TYPE DIGIT	DESCRIPTION	
M	USED WITH MANUAL GUN	
CONTROLLER DIGIT WW	DESCRIPTION	
1	BASIC	
2	DELUXE	

- NOTES:
- 1 LISTED BUT NOT SHOWN
- 2 THIS CONFIGURATION TRAINING IS FOR CONNECTION TO MANUAL APPLICATORS 65710. ALL APPROVED ACCESSORIES OF THAT MODEL (SEE C045-1000-CD) MAY BE USED AND ACCEPTED WITH THIS CONFIGURATION.

MANUAL APPLICATOR CONVERSION KIT

835091- AAA BBB - ZZ Y M W



10.4 ESM3 MANUAL

ITEM	TABLE	DESCRIPTION
1	A	APPLICATOR
2	B	CABLE
3	C	CONTROL MODULE

REV	ECN	CHANGES	DATE	BY
01	38562	RELEASE TO MFG	03 FEB 25	PEHO

PART NUMBER	DESCRIPTION
615210	MANUAL APPLICATOR

SCALE 1:5



PART NUMBER	DESCRIPTION
461942-06	MANUAL GUN CABLE 6m
461942-10	MANUAL GUN CABLE 10m
461942-16	MANUAL GUN CABLE 16m
461942-20	MANUAL GUN CABLE 20m

SCALE 1:5



PART NUMBER	DESCRIPTION
CMS-60107	ESM3 MANUAL

SCALE 1:5

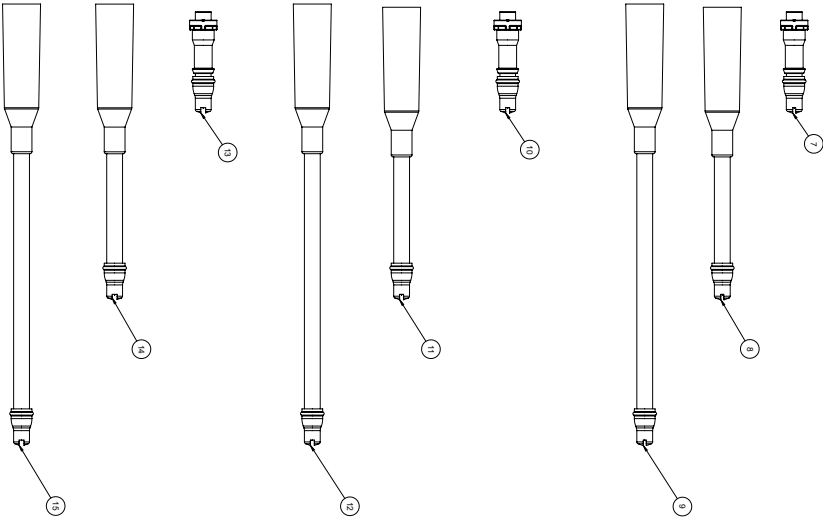
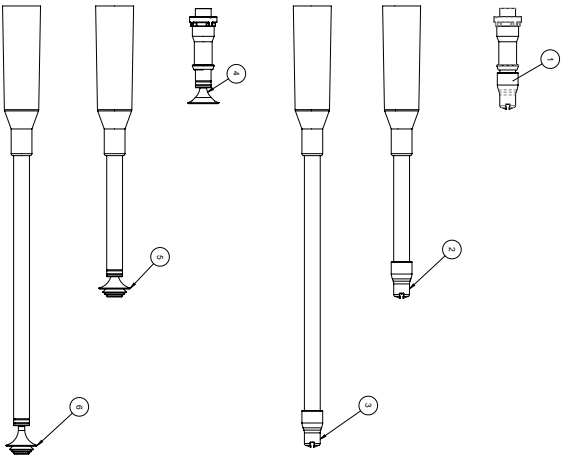


- NOTES:
1. THIS CONFIGURATION DRAWING IS FOR CONNECTION TO MANUAL APPLICATOR 615210. ALL APPROVED CONFIGURATIONS OF THAT MODEL MAY BE USED AND ACCEPTED WITH THIS CONFIGURATION.

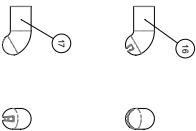
10.5 M5 ACCESSORIES

ITEM NUMBER	DESCRIPTION	PART NUMBER
1	FLAT SPRAY NOZZLE SET F1	61514
2	EXTENSION FLAT 150mm	61515
3	EXTENSION FLAT 300mm	61516
4	ROUND SPRAY NOZZLE SET R150	61518
5	ROUND SPRAY NOZZLE SET R300	61525
6	3mm FLAT ET NOZZLE SET T	61526
7	3mm FLAT ET NOZZLE SET T	61526.3
8	3mm FLAT ET EXTENSION 150mm	61526.13
9	3mm FLAT ET EXTENSION 300mm	61526.33
10	4mm FLAT ET NOZZLE SET T	61526.4
11	4mm FLAT ET EXTENSION 150mm	61526.14
12	5mm FLAT ET NOZZLE SET T	61526.5
13	5mm FLAT ET EXTENSION 150mm	61526.15
14	ROUNDER NOZZLE SET R	61526.25
15	ROUNDER NOZZLE SET R	61526.25
16	ROUNDER NOZZLE SET R	61526.25
17	ROUNDER NOZZLE SET R	61526.25

APPROVED ACCESSORIES, SOLD SEPERATELY



REV.	DATE	CHANGES	DATE	BY
01	2016	RELEASE TO MFG	12 JAN 16	PAW
02	2016	REVISION NAME CORRECTED	27 JUL 16	DAW



11 REVISION HISTORY

OVERVIEW OF CHANGES TO THE DOCUMENT		
DATE	DESCRIPTION	VERSION
12.09.2025	Acquisition of manufacturer MS by Binks Changed MS-specific designations Updated all images Layout update	R7

12 WARRANTY POLICY

This product is covered by Binks' materials and workmanship limited warranty.

The use of parts or accessories from sources other than Binks will void all warranties. Failure to follow reasonable maintenance guidance provided can invalidate the warranty.

For specific warranty information, please contact Binks.

For technical assistance or to locate an authorized distributor, contact one of our international sales and customer support locations listed below.

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Americas	Tel: 1-800-992-4657
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Australia	Tel: +61085257555

WARRANTY PAGE



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