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HVX™ AIR SPRAY APPLICATOR



Obey local or municipal regulations for product recycling and disposal.

ABOUT THIS MANUAL

ITS PURPOSE

The purpose of this manual is to help you get the most value from your RansFlex HVX applicator. It can help you to determine how to install, operate, maintain, and repair your equipment. It provides information and procedures for routine maintenance and servicing and offers diagnostic and repair procedures to follow when trouble occurs.

ITS CONTENTS

This manual is divided into chapters, each of which is divided into consecutively numbered sections.

Chapters will contain text, images, tables, or a combination of them.

Pages with images will have paragraphs and sentences with callout numbers that refer to their respective images, steps, and parts.

Procedures, once described in the text, are not normally repeated. When it is necessary to refer to another chapter or section, the reference will be given as chapter and section number. Cross references given without the use of the word "chapter" apply to sections or paragraphs in the current chapter.

Chapter 02 Table of Contents.

Chapter 03 ATEX/FM: Instructions and equipment information in compliance with ATEX certification.

Chapter 04 Safety: Safety, hazard, and warning rules.

Chapter 05 Introduction: An overview of the applicator and product specifications.

Chapter 06 Installation: Instructions for setting up your applicator.

Chapter 07 Operation: Guide to using your applicator, including spraying, flushing, and color change procedures and nozzle designs.

Chapter 08 Maintenance: How to maintain your applicator, including removal procedures for each component and troubleshooting procedures.

Chapter 09 Parts Identification: Lists applicator parts.

Chapter 10 Manual Change Summary: The revisions and changes made to this manual.

Chapter 11 Warranty: Your equipment's warranty.

WHO SHOULD USE THIS GUIDE

This guide is intended for users with different levels of knowledge and experience with this system:

Installers: The person(s) who will locate and install this equipment.

Users: The person(s) who will learn how to operate this equipment.

Servicers: The person(s) who will service and maintain this equipment.

This guide assumes all persons who will install, use, operate, and service this equipment have some knowledge of the product and its operating system.

MANUAL DISCLAIMER

All current and applicable certifications shown in this manual confirm Binks' adherence to the strict standards met to obtain the required regulatory compliances.

This manual was prepared with the most accurate information current at the time of publishing. Binks does not accept responsibility for errors in, or omissions from, the information contained herein.

Please get in touch with your distributor or Binks Customer Service for additional service information and assistance.

RANSFLEX HVX RELATED MANUALS AND PUBLICATIONS

Part Number	Description
CP-26-01	RansFlex HVX Low-Voltage Controller
TL-00-02	Solvent Selection and Cleaning Guide for Electrostatic Equipment

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03 ATEX/FM

03.1 EUROPEAN ATEX DIRECTIVE 2014/34/EU, ATEX

The following instructions apply to equipment covered by certificate number FM26ATEX0002:

1. The equipment may be used with flammable gases and vapors with apparatus groups II and with temperature class T6.
2. The equipment is only certified for use in ambient temperatures in the range 5°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.
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.
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.

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:
 - a. All fluid passages contain stainless steel or nylon fittings.
 - b. High voltage cascade is encapsulated with a solvent resistant epoxy.

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 include acidic liquids or gases that may attack metals, or solvents that may affect polymeric materials.

Suitable precautions include regular checks as part of routine inspections or establishing from the material's data sheets that it is resistant to specific chemicals.

Refer to the specifications listed in sections 05.3 and 05.4 to learn more about the material used in this equipment.

9. A recapitulation of the certification marking is detailed in the "ATEX" section, on the next page, drawing numbers: 81078-01, -02, -04, -06, -10, -12, -14. Controller labels include 80108-XX, 81086-45, 81086-65, 81086-85, and 80081-00.
10. The characteristics of the equipment shall be detailed e.g. electrical, pressure, and voltage parameters.

NOTICE

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.

03.2 RANSFLEX 82345/82365/82385 ATEX PRODUCT MARKING DEFINITIONS

Ex Certificate Number: FM26ATEX0002

FM = Notified Body performing EC-type examination

26 = Year of certification

ATEX = Reference to ATEX Directive

0002 = Document serial number

Product Marking



II 2 G

Ex = Specific marking of explosive protection

II = Equipment Group hazardous area characteristics

2 = Equipment Category

G = Type of explosive atmosphere (gases, vapors, or mists)

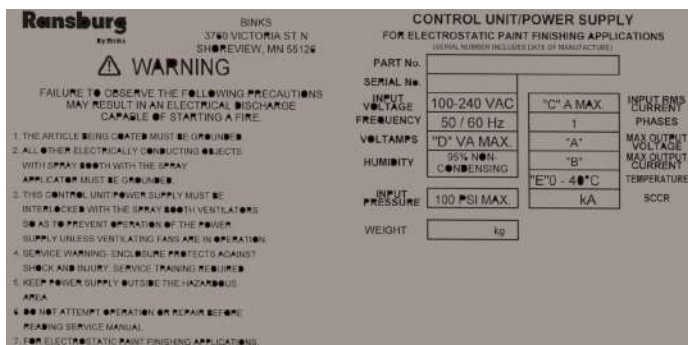
EEx 0.24mJ = The RansFlex 82345/82365/82385 and 83345/83365/83385 Applicators are suitable for use in manual spraying installations complying with EN 50050-1 as they are a Type A class with a discharge energy limit of 0.24mJ.

FM Configuration

These applicators are approved when configured to drawings 82386, 81144, and 81164. Excerpts from the drawings are shown in sections 03.3, 03.4, 03.5, 03.6, 03.7, and 03.8.

EN 50050 COMPLIANT

Label 80081-00



Label 80108



Label 81078-01



Label 81078-02



Label 81078-04



Label 81078-06



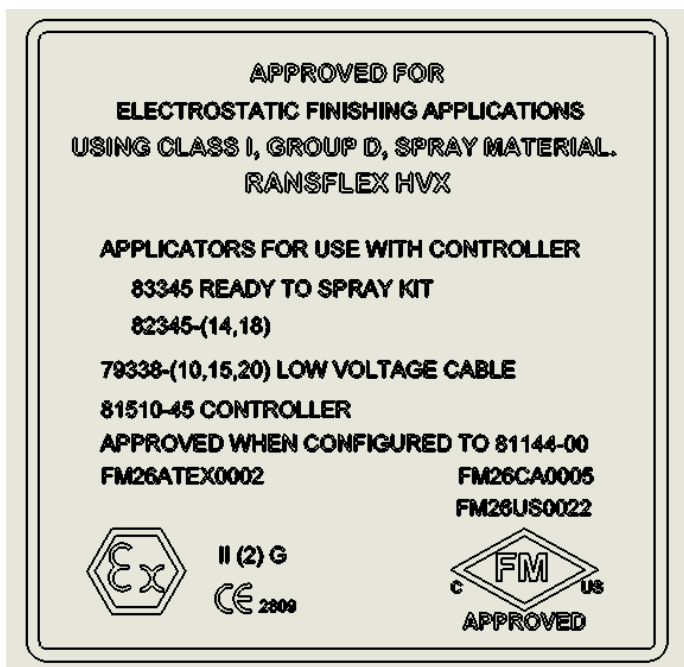
Label 81078-10



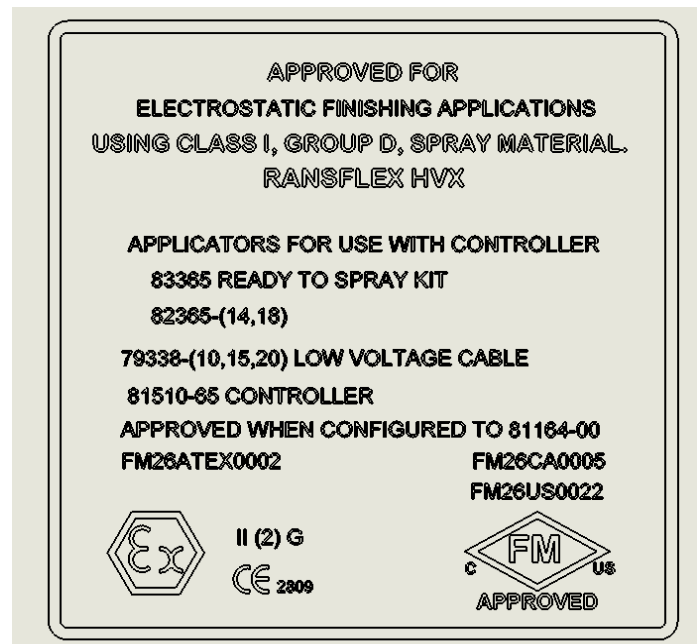
Label 81078-12



Label 81078-14



Label 81086-45



Label 81086-65



Label 81086-85

03.3 SPRAY READY RANSFLEX HVX KIT - 45KV SOLVENT BASE**83345**

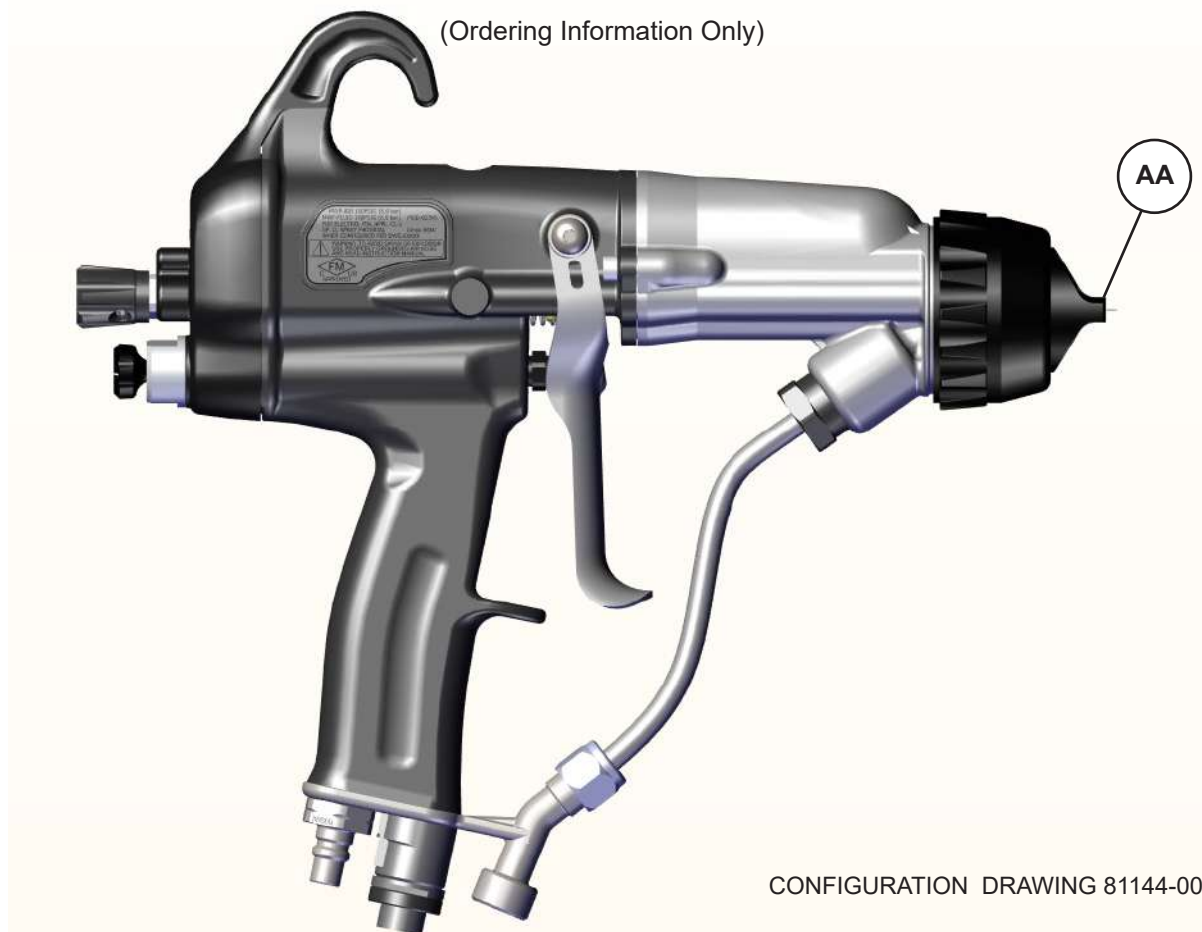
This kit includes the items in the following table as well as the associated accessories.

SPRAY READY RANSFLEX HVX KIT (83345)	
Part Number	Description
80558-11	10M AIR HOSE, QUICK DISCONNECT
71338-10	10M LOW VOLTAGE CABLE
80303-10	10M FLUID HOSE
81510-45	45 KV CONTROLLER
83600-141	V SERIES ATOMIZATION KIT

03.4 RANSFLEX HVX - 45KV SOLVENT BASE**82345 - AA**

Base
Model Number Optional
Designations

(Ordering Information Only)



CONFIGURATION DRAWING 81144-00

82345-AA

Part Number	Description
82345-14	CONTAINS 83600-141 ATOMIZATION KIT, APPLICATOR ONLY
82345-18	CONTAINS 83600-181 ATOMIZATION KIT, APPLICATOR ONLY

03.5 SPRAY READY RANSFLEX HVX KIT - 65KV SOLVENT BASE

83365

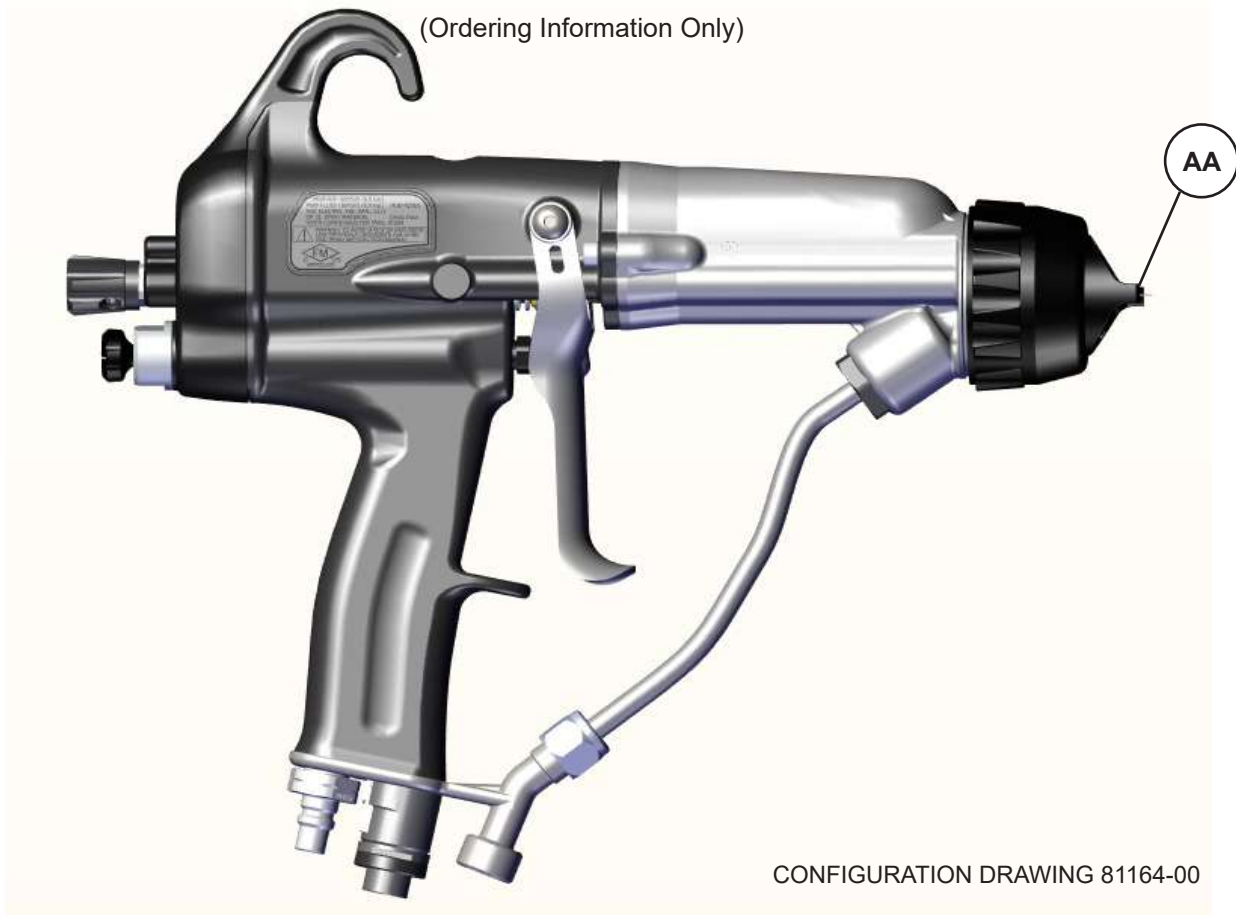
This kit includes the items in the following table as well as the associated accessories.

SPRAY READY RANSFLEX HVX KIT (83365)	
Part Number	Description
80558-11	10M AIR HOSE, QUICK DISCONNECT
71338-10	10M LOW VOLTAGE CABLE
80303-10	10M FLUID HOSE
81510-65	65 KV CONTROLLER
83600-141	V SERIES ATOMIZATION KIT

03.6 RANSFLEX HVX - 65KV SOLVENT BASE

82365 - AA

Base Optional
Model Number Designations
(Ordering Information Only)



82365-AA	
Part Number	Description
82365-14	CONTAINS 83600-141 ATOMIZATION KIT, APPLICATOR ONLY
82365-18	CONTAINS 83600-181 ATOMIZATION KIT, APPLICATOR ONLY

03.7 SPRAY READY RANSFLEX HVX KIT - 85KV SOLVENT BASE

83385

This kit includes the items in the following table as well as the associated accessories.

SPRAY READY RANSFLEX HVX KIT (83385)	
Part Number	Description
80558-11	10M AIR HOSE, QUICK DISCONNECT
71338-10	10M LOW VOLTAGE CABLE
80303-10	10M FLUID HOSE
81510-85	85 KV CONTROLLER
83600-141	V SERIES ATOMIZATION KIT

03.8 RANSFLEX HVX - 85KV SOLVENT BASE

82385 - AA

Base Optional
Model Number Designations
(Ordering Information Only)



CONFIGURATION DRAWING 81184

82385-AA	
Part Number	Description
82385-14	CONTAINS 83600-141 ATOMIZATION KIT, APPLICATOR ONLY
82385-18	CONTAINS 83600-181 ATOMIZATION KIT, APPLICATOR ONLY

03.9 COMPATIBLE ACCESSORIES FOR ALL UNITS



Air Cap



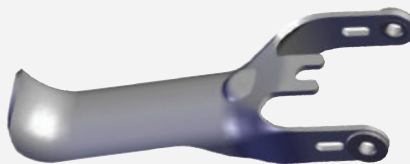
Atomization Nozzle



Pressure Reducer

03.9.1 ATOMIZATION KITS

Kit Number	Atomization Nozzle	Description	Material	Color	Use with Aircap	Use with Reducer
83600-071	80264-07	V SERIES 0.7 MM	ACETAL	BLACK	80265-00	79809-00
83600-101	80264-10	V SERIES 1.0 MM	ACETAL	BLACK	80265-00	79809-00
83600-121	80264-12	V SERIES 1.2 MM	ACETAL	RED	80265-00	79809-00
83600-141	80264-14	V SERIES 1.4 MM	ACETAL	GRAY	80265-00	79809-00
83600-181	80264-18	V SERIES 1.8 MM	ACETAL	GREEN	80265-00	79809-00
83600-241	80464-14	V SERIES 1.4 MM	PEEK	TAN	80265-00	79809-00
83600-281	80464-18	V SERIES 1.8 MM	PEEK	TAN	80265-00	79809-00
83600-072	80264-07	V SERIES 0.7 MM	ACETAL	BLACK	80998-00	79809-00
83600-102	80264-10	V SERIES 1.0 MM	ACETAL	BLACK	80998-00	79809-00
83600-122	80264-12	V SERIES 1.2 MM	ACETAL	RED	80998-00	79809-00
83600-142	80264-14	V SERIES 1.4 MM	ACETAL	GRAY	80998-00	79809-00
83600-182	80264-18	V SERIES 1.8 MM	ACETAL	GREEN	80998-00	79809-00
83600-242	80464-14	V SERIES 1.4 MM	PEEK	TAN	80998-00	79809-00
83600-282	80464-18	V SERIES 1.8 MM	PEEK	TAN	80998-00	79809-00
83575-07	80239-07	T SERIES 0.7 MM	ACETAL	BLACK	80240-00	74963-05
83575-10	80239-10	T SERIES 1.0 MM	ACETAL	BLACK	80240-00	74963-05
83575-12	80239-12	T SERIES 1.2 MM	ACETAL	RED	80240-00	74963-05
83575-14	80239-14	T SERIES 1.4 MM	ACETAL	GRAY	80240-00	74963-05
83575-18	80239-18	T SERIES 1.8 MM	ACETAL	GREEN	80240-00	74963-05
83576-00	80400-00	ROUND SPRAY	ACETAL	BLACK	79962-00	74963-05



80211-00

03.9.2 AVAILABLE TRIGGERS

Part Number	Description
80211-00	2 FINGER TRIGGER**
80386-00	4 FINGER TRIGGER
80566-00	2 FINGER SMALL PROFILE

**Included on all units.



03.9.3 AVAILABLE AIR HOSE ASSEMBLIES

Part Number	Length	Connection
80558-01	1.5 M	LEFT-HANDED THREAD*
80558-02	1.5 M	QUICK DISCONNECT
80558-05	5 M	LEFT-HANDED THREAD*
80558-06	5 M	QUICK DISCONNECT
80558-10	10 M	LEFT-HANDED THREAD*
80558-11	10 M	QUICK DISCONNECT**
80558-15	15 M	LEFT-HANDED THREAD*
80558-16	15 M	QUICK DISCONNECT
80558-20	20 M	LEFT-HANDED THREAD*
80558-21	20 M	QUICK DISCONNECT
80558-25	25 M	LEFT-HANDED THREAD*
80558-26	25 M	QUICK DISCONNECT
80558-30	30 M	LEFT-HANDED THREAD*
80558-31	30 M	QUICK DISCONNECT

**Includes 80868-00 left-handed fitting.

**Standard in Spray Ready Kits 83385, 83365, and 83345.



03.9.4 AVAILABLE CABLE ASSEMBLIES

Part Number	Length
79338-01	1 M
79338-10	10 M**
79338-15	15 M
79338-20	20 M

**Standard in Spray Ready Kits 83385, 83365, and 83345.



03.9.5 AVAILABLE FLUID HOSES

Part Number	Hose Length
8303-05	5 M
8303-10	10 M**
8303-15	15 M
8303-20	20 M

**Standard in Spray Ready Kits 83385, 83365, and 83345.

NOTICE

If the end user uses fluid hoses from a different source, ensure the hose meets the proper pressure requirements for the application.

03.9.6 AVAILABLE ACCESSORIES

Part Number	Description
70430-01	ELECTRODE ASSEMBLY
79890-00	COILED FLUID TUBE, COVER
79879-03	COILED FLUID TUBE

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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 safety placard, where specific safety-related 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.

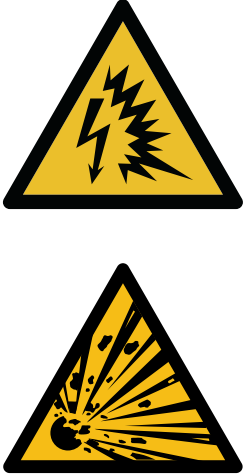
The user must be aware of and adhere to **ALL** local building and fire codes and ordinances, as well as **NFPA 33 AND EN 16985 SAFETY STANDARDS, LATEST EDITION**, or applicable country safety standards, before the installation, operation, or servicing of this equipment.

⚠ 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.

AREAS Indicate possible hazard occurrences	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 occurrences	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 50176. 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 occurrences	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. 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 applicator handle and electrostatic spray 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 occurrences	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 long-term 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 occurrences	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.

AREAS Indicate possible hazard occurrences	HAZARDS Indicate possible hazards	SAFEGUARDS Prevention of possible hazards
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.

⚠ CAUTION

Only operate the equipment after you have read this section.

04.2 ADDITIONAL SAFETY INFORMATION

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

⚠ DANGER

To prevent injury or electrocution while the system is under power, do not contact, disconnect, or manipulate electrical connections or devices. The main disconnect on the right side of the controller can be locked out. Follow the proper Lockout–Tagout (LOTO) procedures for internal controller electrical work.

Only qualified electrical personnel can perform the work if diagnosis and troubleshooting are not possible during working conditions.

⚠ WARNING

To prevent possible chemical spillage when personnel are not on site, air and fluid supplies for the equipment must be disabled when the equipment idles for an extended period, such as an end-of-day shutdown.

NOTICE

During the initial commission of the equipment and at periodic times throughout equipment life, visually examine all fluid fittings for leaks.

Periodically, it is necessary to visually examine all pieces of this equipment for signs of noticeable degradation due to chemicals or other conditions in the equipment's environment.

SAFETY

Obey local or municipal regulations that require installed fire suppression for equipment operation.

05 INTRODUCTION



05.1 GENERAL DESCRIPTION

The **RansFlex HVX** is an air atomizing applicator powered by a controller. It generates a high voltage DC charge to the electrode creating an electrostatic field between the atomizer and the target.

One of the many features of the RansFlex applicator system is that the electrical energy, which is available from the resistive charging electrode, is limited to the optimum level of safety and efficiency. The system is incapable of releasing sufficient electrical or thermal energy during normal operating conditions to cause ignition of specific hazardous materials in their most easily ignited concentrations in air.

As the applicator electrode approaches ground, applicator circuitry causes the high voltage to approach zero while the current approaches its maximum value. This performance is validated by independent test agencies that give FM US&C and ATEX approvals.

05.2 RANSFLEX FEATURES

- Light weight and easy to maneuver.
- Ergonomic handle design to reduce operator fatigue.
- DeVilbiss spray technology integration into atomization.
- Simultaneous fan/atom pressure adjustment with compensation valve.
- Cabled version using common components with RansFlex turbine applicators.
- 45 kV, 65 kV, and 85 kV spray applicators available
- Complete air cap selection
- 45 kV, 65 kV, and 85 kV Spray Ready Kits available, taking the guesswork out of ordering.

05.3 SPECIFICATIONS: 82345/83345 RANSFLEX SOLVENTBORNE (45KV) HVX SERIES APPLICATOR

ENVIRONMENTAL/PHYSICAL	
Applicator Length	254mm (10 inches)
Weight (Without Hoses and Cable)	600 grams (21.3 ounces)
Hose 80558-XX Lengths (Standard)	5m, 10m, 15m, and 20m
Cable Lengths	10m, 15m, and 20m

ELECTRICAL	
Operating Voltage	45kV DC (-) maximum
Current Output	170 microamperes maximum
Paint Resistance*	0.1 MΩ to ∞
Part Sprayability	Determine sprayability of part to be coated using 76652, Test Equipment

(See current "Paint, HV & SCI Test Equipment" service manual TE-98-01)

* Use Model No. 76652, Test Equipment

MECHANICAL	
Fluid Flow Capacity	1000 ml/minute**
Wetted Parts	Stainless, polyethylene, nylon, acetal polymer
Fluid Operating Pressure (Air Spray)	(0-6.9 bar) 0-100 psi
Air Operating Pressure (Air Spray)	(0-6.9 bar) 0-100 psi
Ambient Temperature	40°C to 5°C (104°F to 41°F)
Consumption	438 SLPM (15.4 SCFM) @ 2.8 bar (40 psig)
Sound Level	92dB (A) @ 2.8 bar (40 psig) Inlet, 1m from applicator

** This reflects the maximum fluid volume the applicator can deliver. The maximum spray volume that can be effectively atomized depends on fluid rheology, spray technology, and finish quality required.

05.4 SPECIFICATIONS: 82365/83365 RANSFLEX SOLVENTBORNE (65KV) HVX SERIES APPLICATOR

ENVIRONMENTAL/PHYSICAL	
Applicator Length	273mm (10.75 inches)
Weight (Without Hoses and Cable)	620 grams (22 ounces)
Hose 80558-XX Lengths (Standard)	5m, 10m, 15m, and 20m
Cable Lengths	10m, 15m, and 20m

ELECTRICAL	
Operating Voltage	65kV DC (-) maximum
Current Output	130 microamperes maximum
Paint Resistance*	0.1 MΩ to ∞
Part Sprayability	Determine sprayability of part to be coated using 76652, Test Equipment

(See current "Paint, HV & SCI Test Equipment" service manual TE-98-01)

* Use Model No. 76652, Test Equipment

MECHANICAL	
Fluid Flow Capacity	1000 ml/minute**
Wetted Parts	Stainless, polyethylene, nylon, acetal polymer
Fluid Operating Pressure (Air Spray)	(0-6.9 bar) 0-100 psi
Air Operating Pressure (Air Spray)	(0-6.9 bar) 0-100 psi
Ambient Temperature	40°C to 5°C (104°F to 41°F)
Consumption	438 SLPM (15.4 SCFM) @ 2.8 bar (40 psig)
Sound Level	92dB (A) @ 2.8 bar (40 psig) Inlet, 1m from applicator

** This reflects the maximum fluid volume the applicator can deliver. The maximum spray volume that can be effectively atomized depends on fluid rheology, spray technology, and finish quality required.

05.5 SPECIFICATIONS: 82385/83385 RANSFLEX SOLVENTBORNE (85KV) HVX SERIES APPLICATOR

ENVIRONMENTAL/PHYSICAL	
Applicator Length	293mm (11.50 inches)
Weight (Without Hoses and Cable)	680 grams (24 ounces)
Hose 80558-XX Lengths (Standard)	5m, 10m, 15m, and 20m
Cable Lengths	10m, 15m, and 20m

ELECTRICAL	
Operating Voltage	85kV DC (-) maximum
Current Output	110 microamperes maximum
Paint Resistance*	0.1 MΩ to ∞
Part Sprayability	Determine sprayability of part to be coated using 76652, Test Equipment

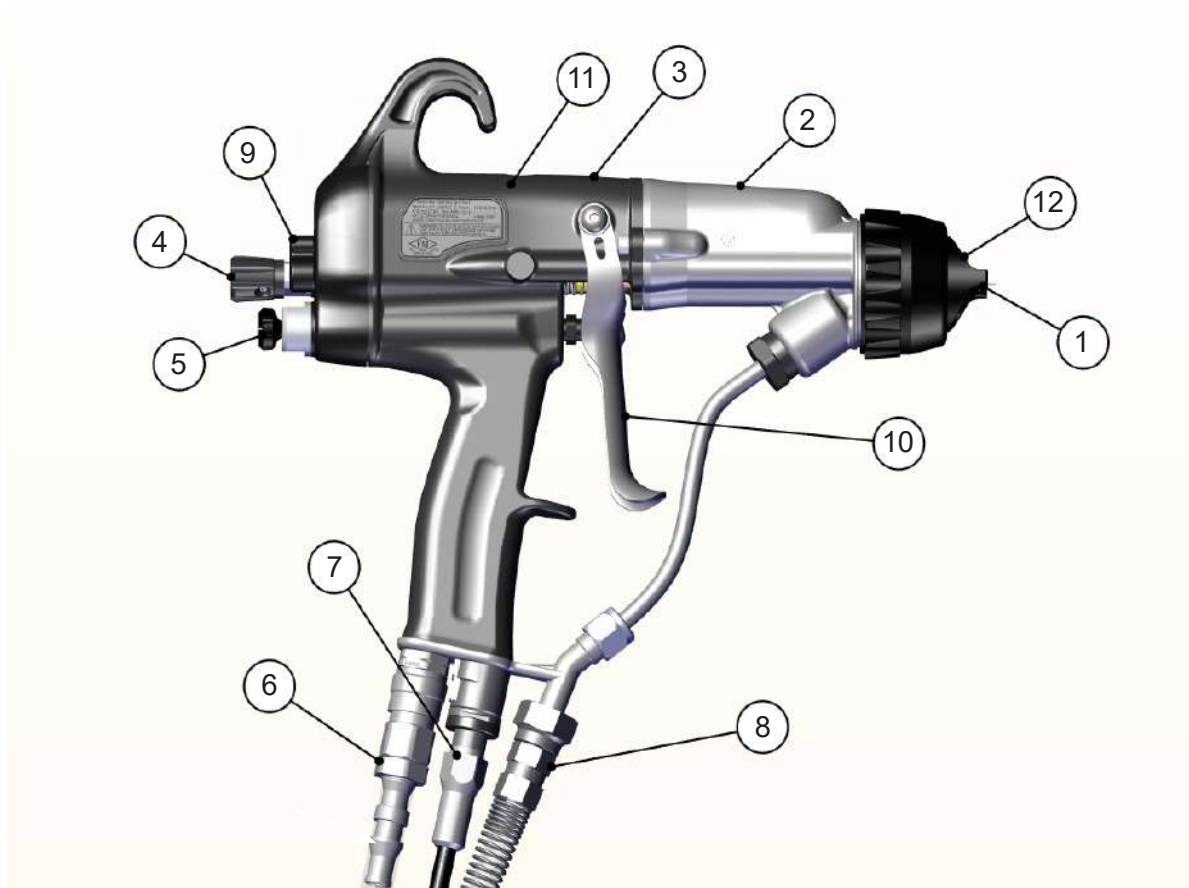
(See current "Paint, HV & SCI Test Equipment" service manual TE-98-01)

* Use Model No. 76652, Test Equipment

MECHANICAL	
Fluid Flow Capacity	1000 ml/minute**
Wetted Parts	Stainless, polyethylene, nylon, acetal polymer
Fluid Operating Pressure (Air Spray)	(0-6.9 bar) 0-100 psi
Air Operating Pressure (Air Spray)	(0-6.9 bar) 0-100 psi
Ambient Temperature	40°C to 5°C (104°F to 41°F)
Consumption	438 SLPM (15.4 SCFM) @ 2.8 bar (40 psig)
Sound Level	92dB (A) @ 2.8 bar (40 psig) Inlet, 1m from applicator

** This reflects the maximum fluid volume the applicator can deliver. The maximum spray volume that can be effectively atomized depends on fluid rheology, spray technology, and finish quality required.

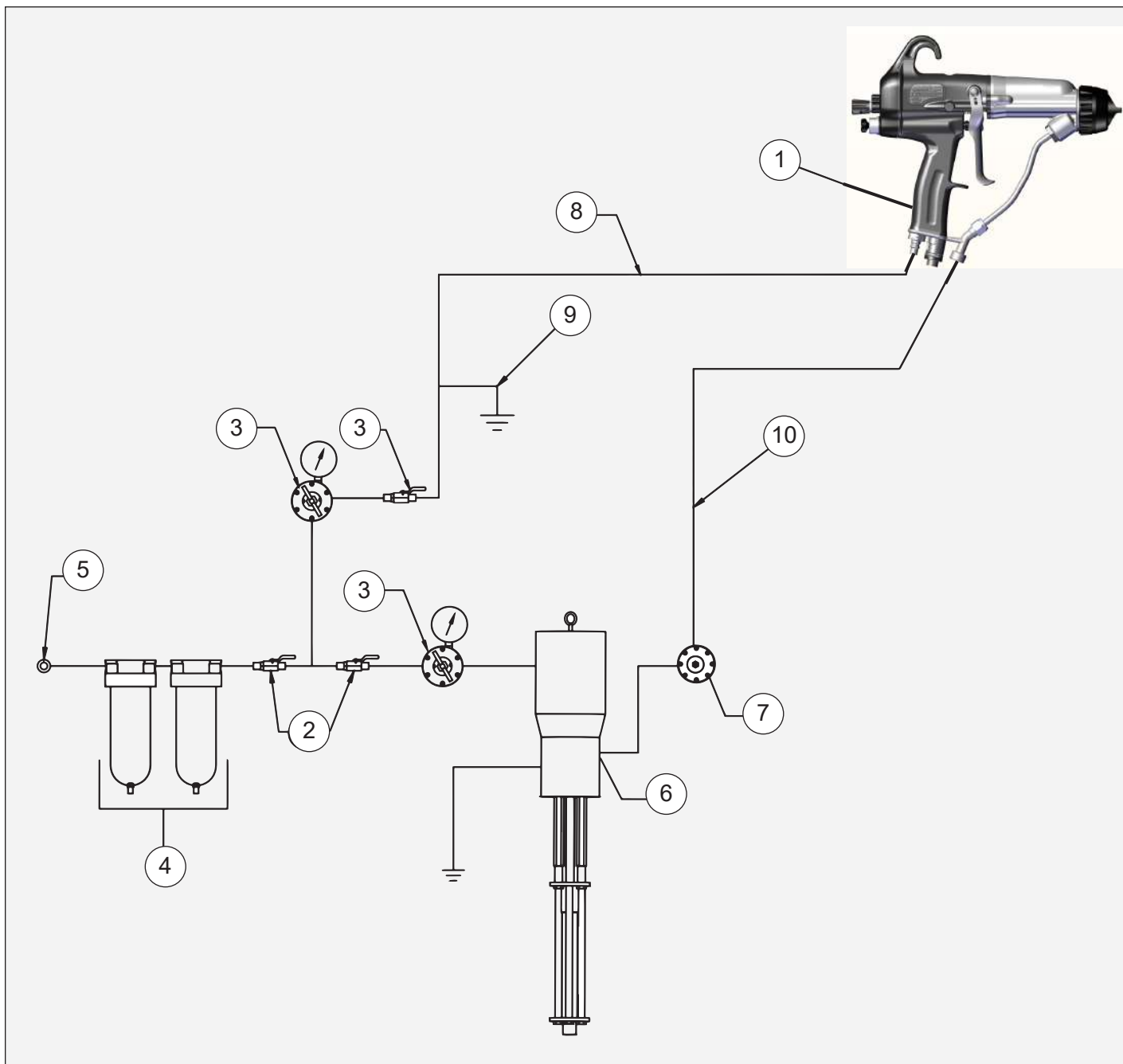
05.6 RANSFLEX SOLVENTBORNE ELECTROSTATIC SPRAY APPLICATOR 82345/82365/82385



**RANSFLEX SOLVENTBORNE ELECTROSTATIC
SPRAY APPLICATOR 82345/82365/82385**

Number	Description	Number	Description
1	Needle/Electrode	7	Low Voltage Cable
2	Barrel	8	Fluid Hose
3	Handle	9	Voltage On/Off Switch
4	Fan Adjustment	10	Trigger
5	Fluid Adjustment	11	Compensation Valve
6	Air Hose	12	Air Cap / Fluid Nozzle

05.7 RANSFLEX SOLVENTBORNE TYPICAL INSTALLATION DIAGRAM



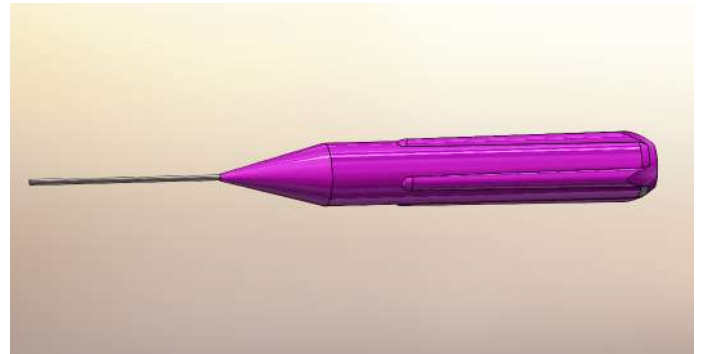
RANSFLEX SOLVENTBORNE TYPICAL INSTALLATION DIAGRAM

Number	Description	Number	Description
1	RansFlex 82345 / 82365 / 82385	6	Fluid Supply (Grounded)
2	Ball Valve	7	Fluid Regulator
3	Air Regulator with Pressure Gauge	8	Air Hose (80558-XX)
4	Air / Water Separator	9	Air Hose Ground Wire
5	Main Air Supply Line	10	Fluid Line

05.8 ELECTRODE OVERVIEW

The RansFlex HVX applicators use a 70430-02 electrode, which is new compared with previous models. It was developed to increase the wear life of this component.

The color of this electrode is purple, which differentiates it from other 70430 electrodes. The working range of this electrode is 12.5-16.0 MΩ.



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06 INSTALLATION

06.1 AIR HOSE INSTALLATION

Fluid Hose Recommendation

Binks recommends using an 80558-XX Air Hose Assembly.

This hose is available from your authorized Binks distributor. Available hose lengths are listed in "Accessories" in the "Parts Identification" section of this manual.

⚠ CAUTION

Any user installed fluid hose used must be rated for (100 psig) 6.9 bar working pressure minimum.

06.2 FILTER INSTALLATION

1. Install an air filter assembly on the outlet of the main air regulator. The filter should be 5 microns with a maximum working pressure of at least 100 psig (6.9 bar). For Class 3 air quality, which is a 5 micron size and has a dew point of -4°F (-20°C), the relative humidity (RH) of the air should be 5%.
2. Binks recommends that a fluid filter be installed at the output of the fluid supply (pressure pot, pump, circulating system, etc.). It is the end user's responsibility to install the proper filter that meets their system's requirements.

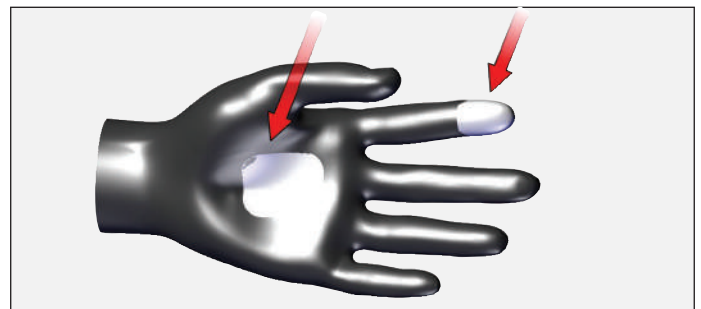
06.3 82345/82365/82385 RANSFLEX SOLVENTBORNE INSTALLATION

⚠ WARNING

- The user **MUST** read and be familiar with the "Safety" section of this manual.
- This hand held device 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 requirements for operating and servicing safely are followed. The user should be aware of and adhere to **ALL** local building and fire codes and ordinances as well as NFPA, OSHA, and all related country safety codes prior to installing, operating, and/or servicing this equipment.
- Personnel **MUST** be **GROUNDING** to prevent a shock or spark during electrostatic operation.
- Install and route the hoses so they are **NOT** exposed to temperatures in excess of 120°F (49°C) and so that all hose bends are **NO LESS** than a 6-inch (15cm) radius. Failure to comply with these parameters could cause equipment malfunction that might create **HAZARDOUS CONDITIONS!**

06.3.1 GENERAL INSTALLATION REQUIREMENTS

1. Operator must make skin contact with handle of applicator. If gloves are required use either gloves with palm and finger cut out or conductive gloves. See spare parts kits at back of manual for conductive gloves.



2. All objects inside spray area must be grounded - reference EN 50176 and/or NFPA-33. Resistance to earth ground must be less than 1 meg Ohm.
3. Flammable liquids must be contained in approved metallic grounded containers.
4. Interlocks are required.

⚠ WARNING

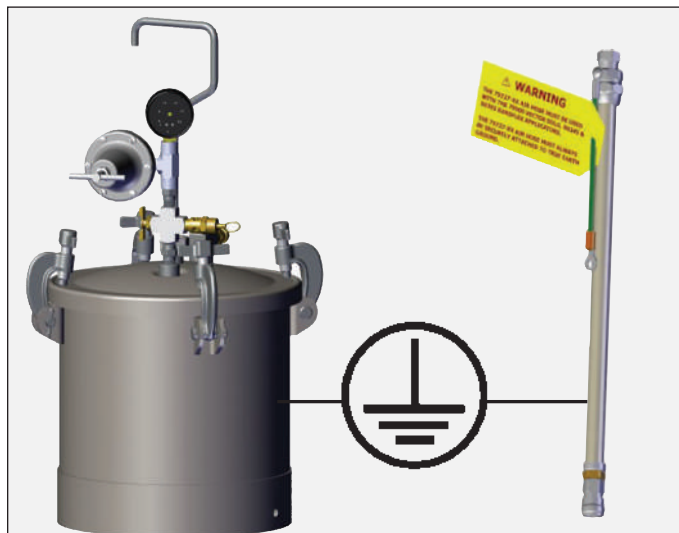
The solvent supply must be interlocked with applicator supply air. Interlocks ensure that when solvent is on to flush the applicator, there is no kV at the applicator.

06.3.2 INSTALLATION

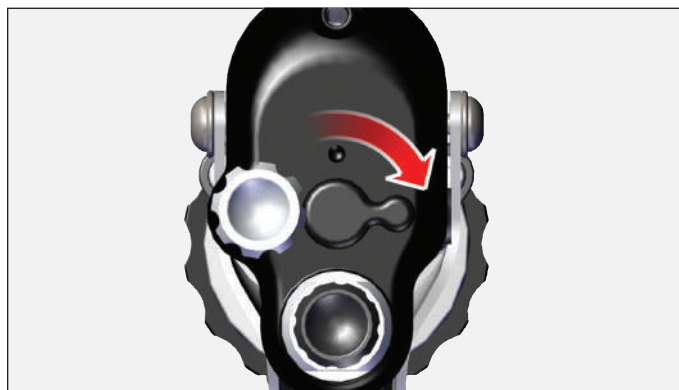
1. Ensure there is a true earth ground connection available. Connect the fluid source and air hose ground to this connection.

⚠ WARNING

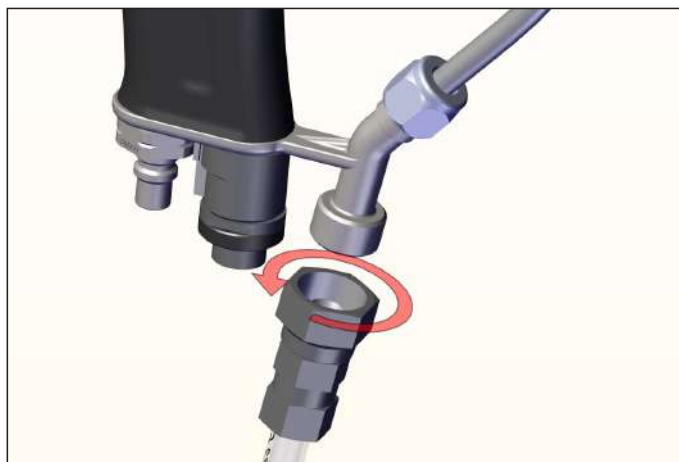
Both the fluid source and the air hose ground must be connected to true earth ground.



2. Turn off power to applicator and controller.



3. Connect fluid hose.



4. Connect applicator to controller.

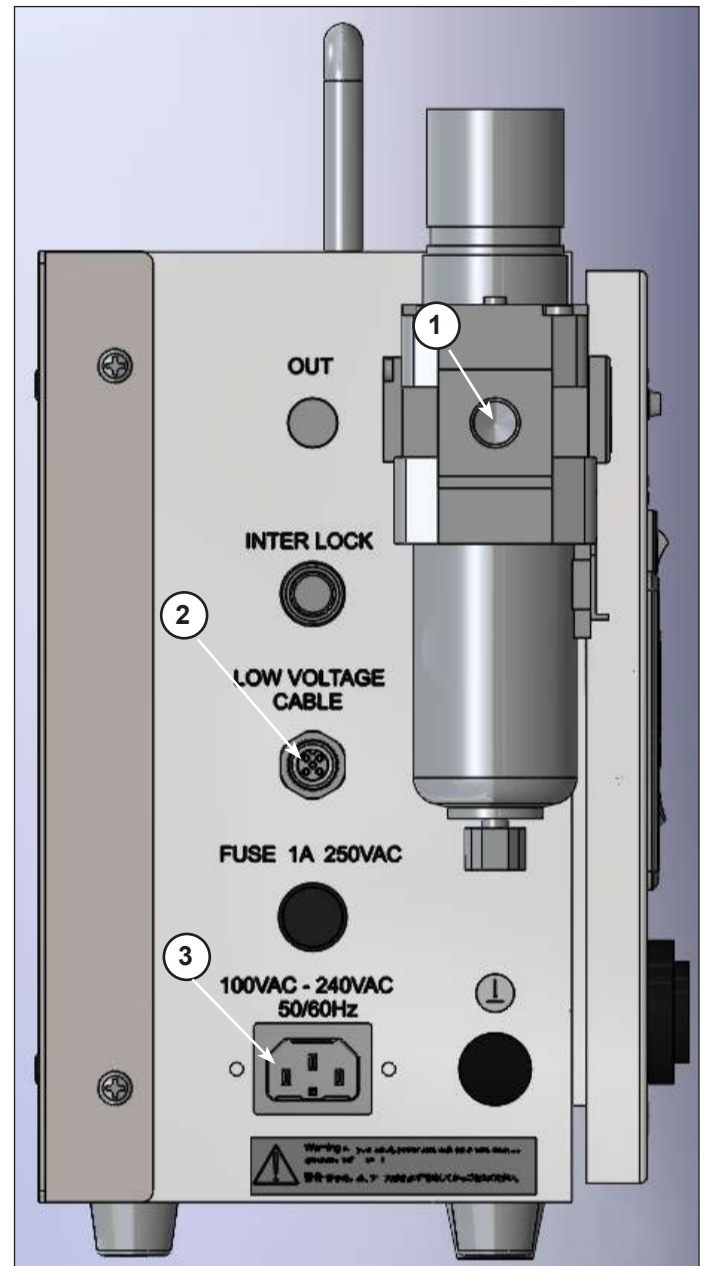
! WARNING

The controller must be located a minimum of 1.6 meters (5.25 feet) outside of the hazardous area.

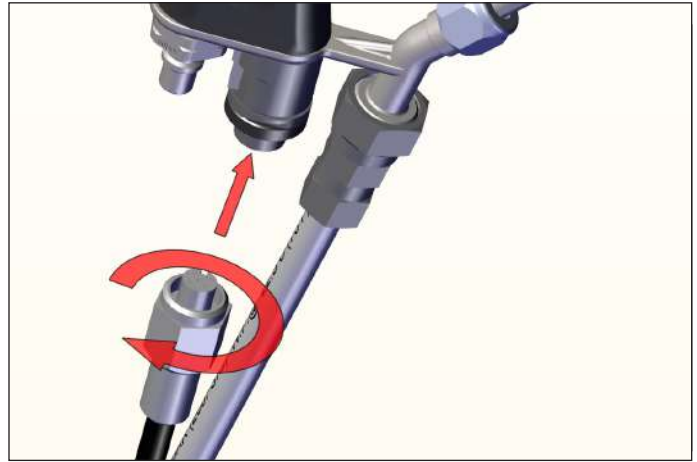
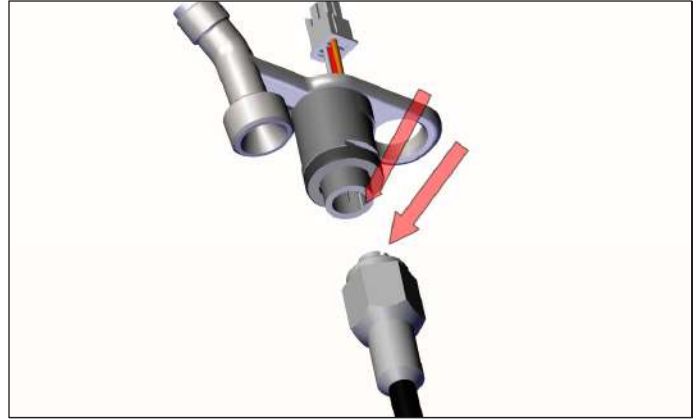
- a. Connect the air hose that moves air into the filtration and regulation system (1).
- b. Connect the low voltage cable (2).
- c. Connect the power plug (3). Line cords are sold separately. See table below for part numbers.

LINE CORD OPTIONS

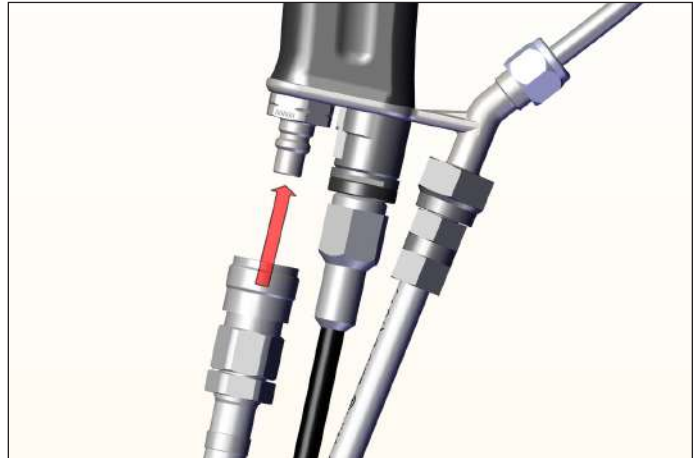
Part Number	Description
76449-00	LINE CORD, NORTH AMERICA
76449-02	LINE CORD, CONTINENTAL EUROPE
76449-03	LINE CORD, CHINA



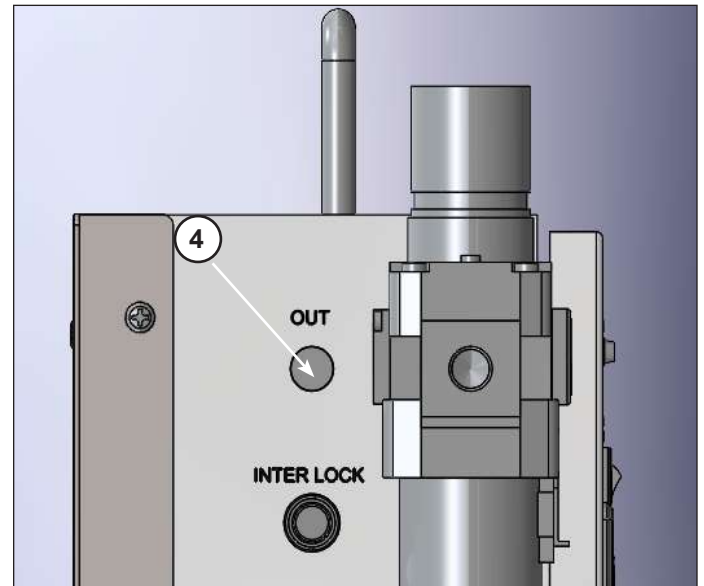
5. Connect cable matching slot to key in the applicator connector.



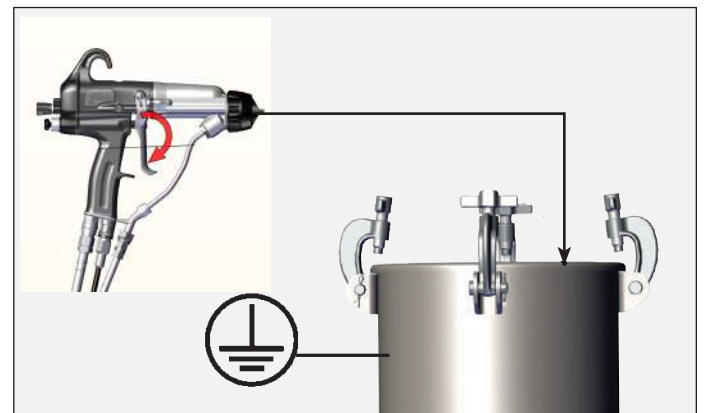
6. Connect air.



7. Connect air hose from applicator to controller (4).
8. Trigger applicator with fluid and voltage off. Inspect air connections for leaks.



9. Activate fluid.
10. Turn controller power off. Then check for leaks with solvent flush by triggering applicator into a grounded container.

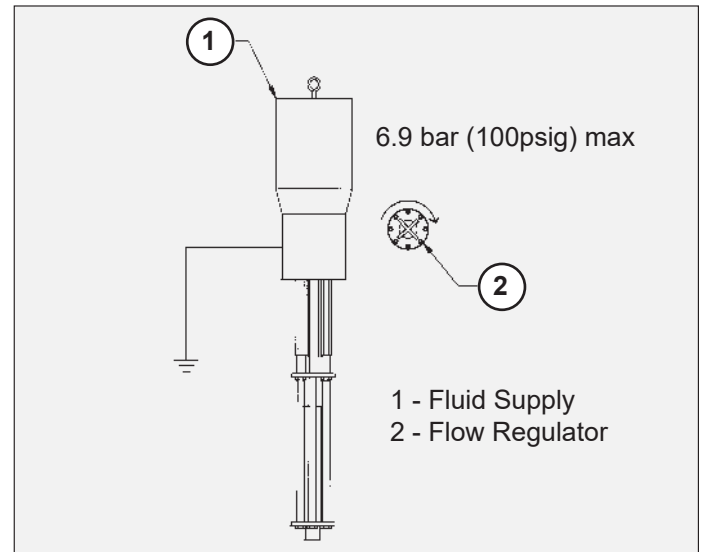


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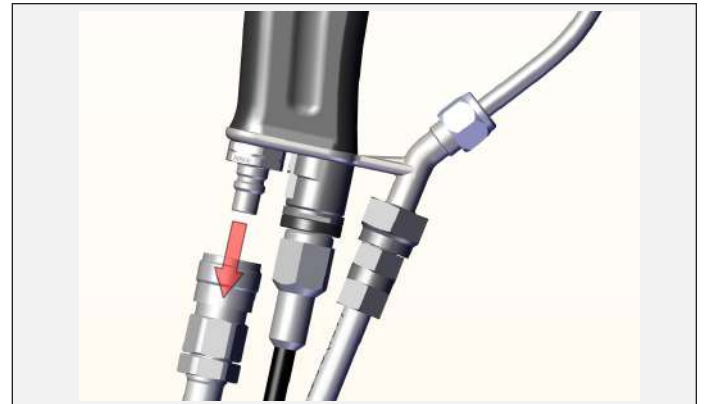
07 OPERATION

07.1 APPLICATOR OPERATION

1. Set fluid pressure to 0 using flow regulator (2).

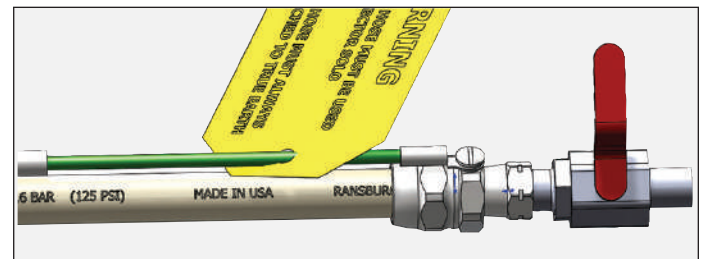


2. Disconnect the air to the applicator by:
 - a. Disconnecting the air hose directly from the applicator.



OR...

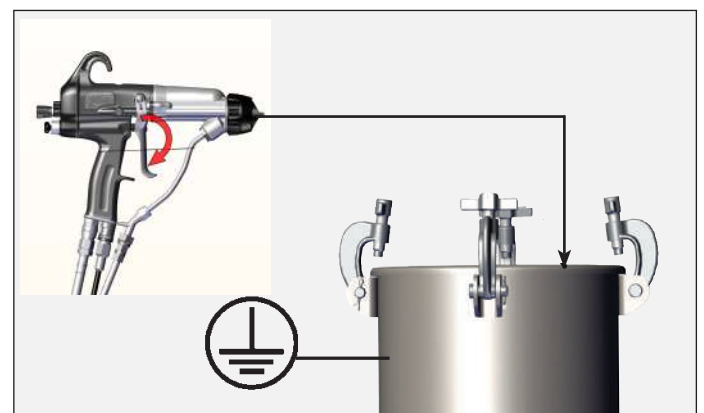
- b. Or turning off the air supply to the machine.



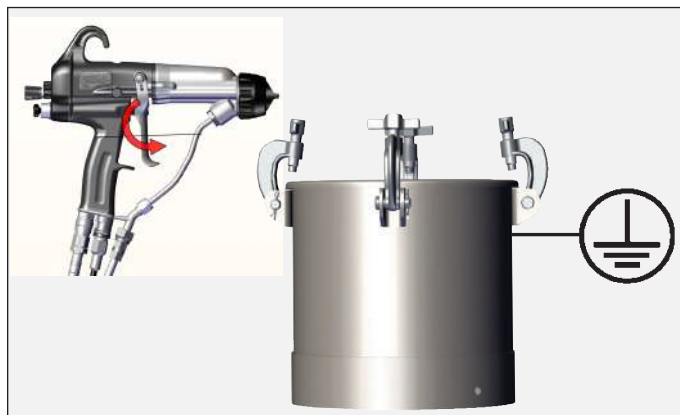
3. Activate trigger to start material stream into **grounded metal bucket or suitable area.**

⚠ WARNING

The bucket or area sprayed into must be grounded to true earth ground.

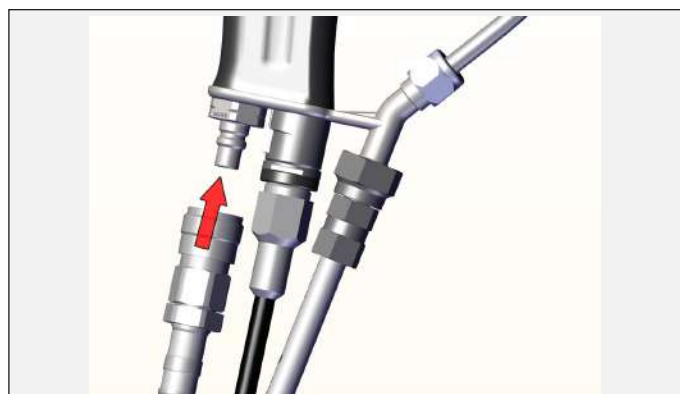


4. Release trigger to stop material flow.

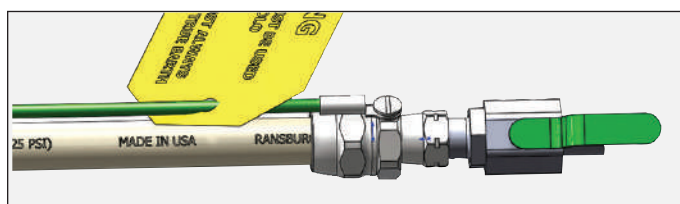


5. Re-connect air supply by:

- a. Reconnecting the air hose directly to the applicator.



OR...



- b. Or turning on the air supply to the machine.

6. Adjust air pressure.
7. Position air cap to achieve pattern direction.
8. Actuate applicator (with voltage off) to spray test pattern.
9. As a guide, the tables below show a pressure at the wall to give 2.7 bar (40 psig) dynamic at the handle of the applicator with different hose lengths.

T-40 AIR CAP 80240-00

80558-XX Length	Static Pressure at Wall		Dynamic Pressure at Wall	
	bar	psig	bar	psig
20 m	4.3	62	3.9	57
15 m	4.1	60	3.8	55
10 m	4.0	58	3.7	53

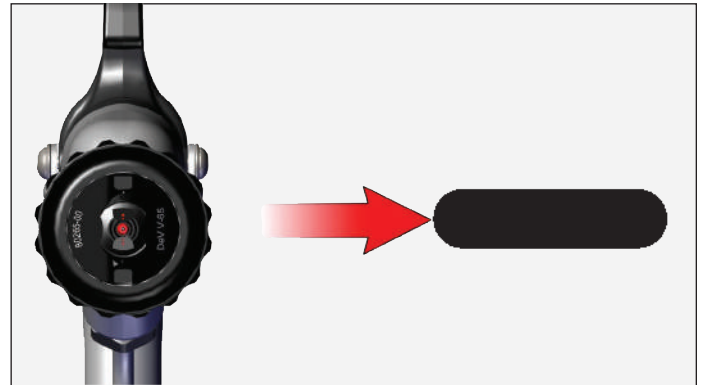
V-65 AIR CAP 80265-00 / S-98 AIR CAP 80998-00

80558-XX Length	Static Pressure at Wall		Dynamic Pressure at Wall	
	bar	psig	bar	psig
20 m	4.1	60	3.9	56
15 m	4.0	59	3.7	54
10 m	3.8	55	3.6	52

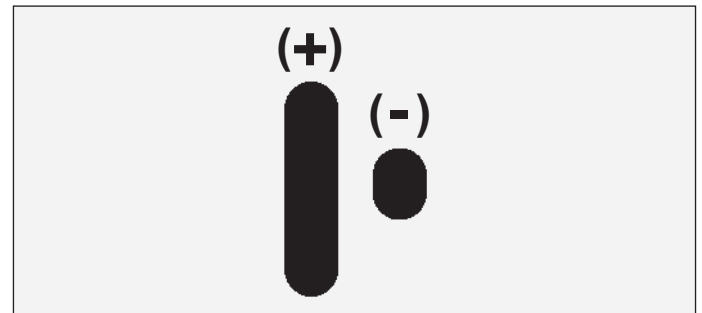
10. Adjust fluid pressure and air pressure as required to achieve finish.
11. Adjust air cap position as required.
 - a. Aligning the horns horizontally creates a vertical line.

**Horns Horizontal**

- b. Aligning the horns vertically creates a horizontal line.

**Horns Vertical**

12. Adjust fan pattern as required.
 - a. Move the fan pattern valve clockwise to shorten the pattern.
 - b. Move the fan pattern valve counterclockwise to lengthen the pattern.

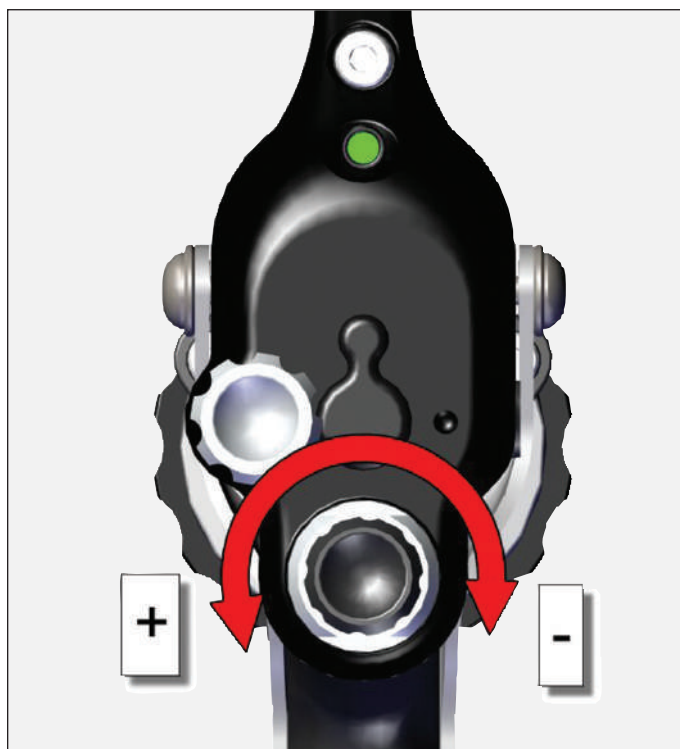


13. Adjust fluid flow.

- Turn the fluid flow valve clockwise to reduce the flow.
- Turn the fluid flow valve counterclockwise to increase the flow.

NOTICE

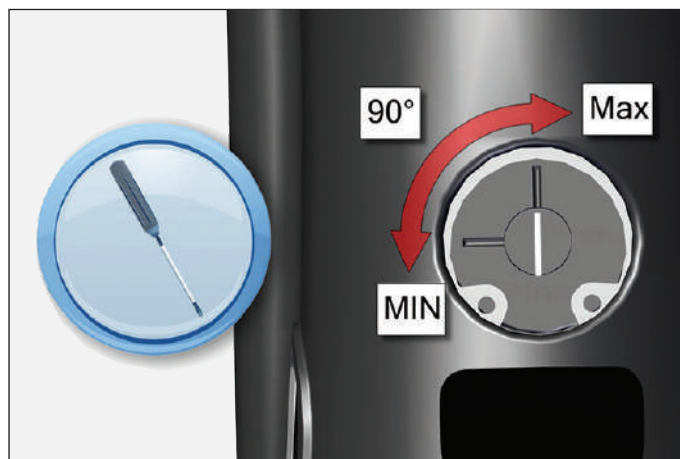
It is recommended fluid flow be controlled by the supply regulator. This adjustment should only be used for fine adjustments.



14. Adjust compensation valve with small flat blade screwdriver.

NOTICE

The compensation valve adjustment is used to adjust fan and atomization pressure at the same time when the pressure to spray parts is lower than the pressure to actuate the flow switch.

**07.2 FLUSHING / COLOR CHANGE PROCEDURE**

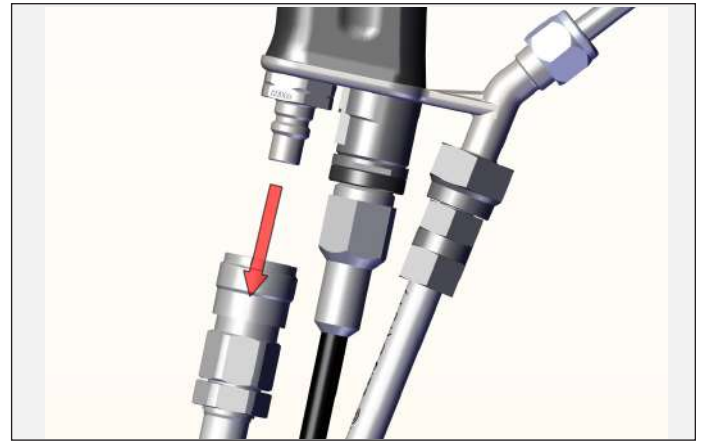
1. Turn off electrostatics.

! WARNING

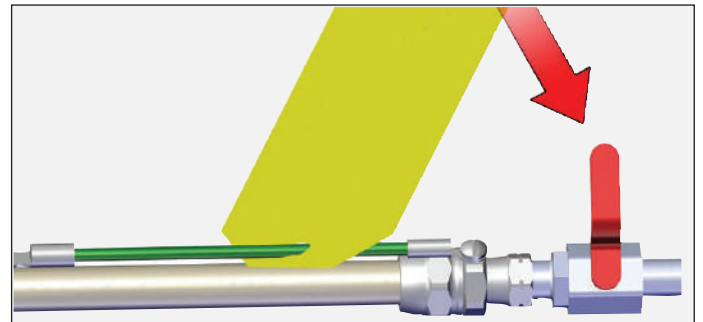
The solvent supply must be interlocked with the applicator supply air.



2. Disconnect air to applicator by:
 - a. Disconnecting the air hose directly from the applicator.



OR...



- b. Or turning off the air supply to the machine.
3. Turn power off to the controller.

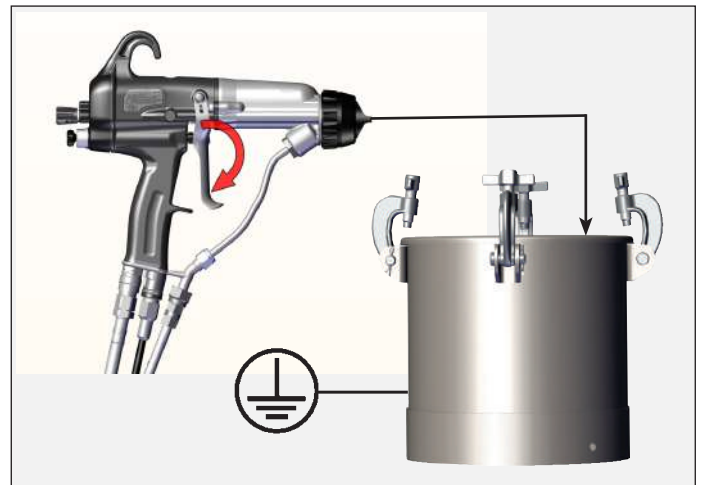
⚠ WARNING

Turn power off to the controller before discharging fluid.

4. Discharge fluid into appropriate earth grounded metal container.
5. Load next color, solvent flush and/or remove applicator from installation as required.

07.3 FLUID NOZZLE / AIR CAP

The fluid nozzle and air cap must be selected according to the application. The following charts show the nozzles and air caps available for the RansFlex.



⚠ CAUTION

Nozzles from previous designs are not compatible with the RansFlex design. Use of these nozzles could cause equipment malfunction and possible damage.

07.3.1 NOZZLE DESIGN

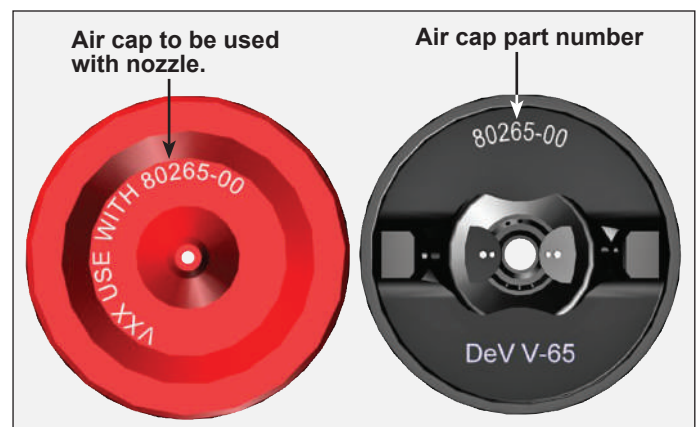
The RansFlex HVX applicator uses nozzles shared with the turbine-powered RansFlex.

Red nozzles - 1.2 mm I.D.

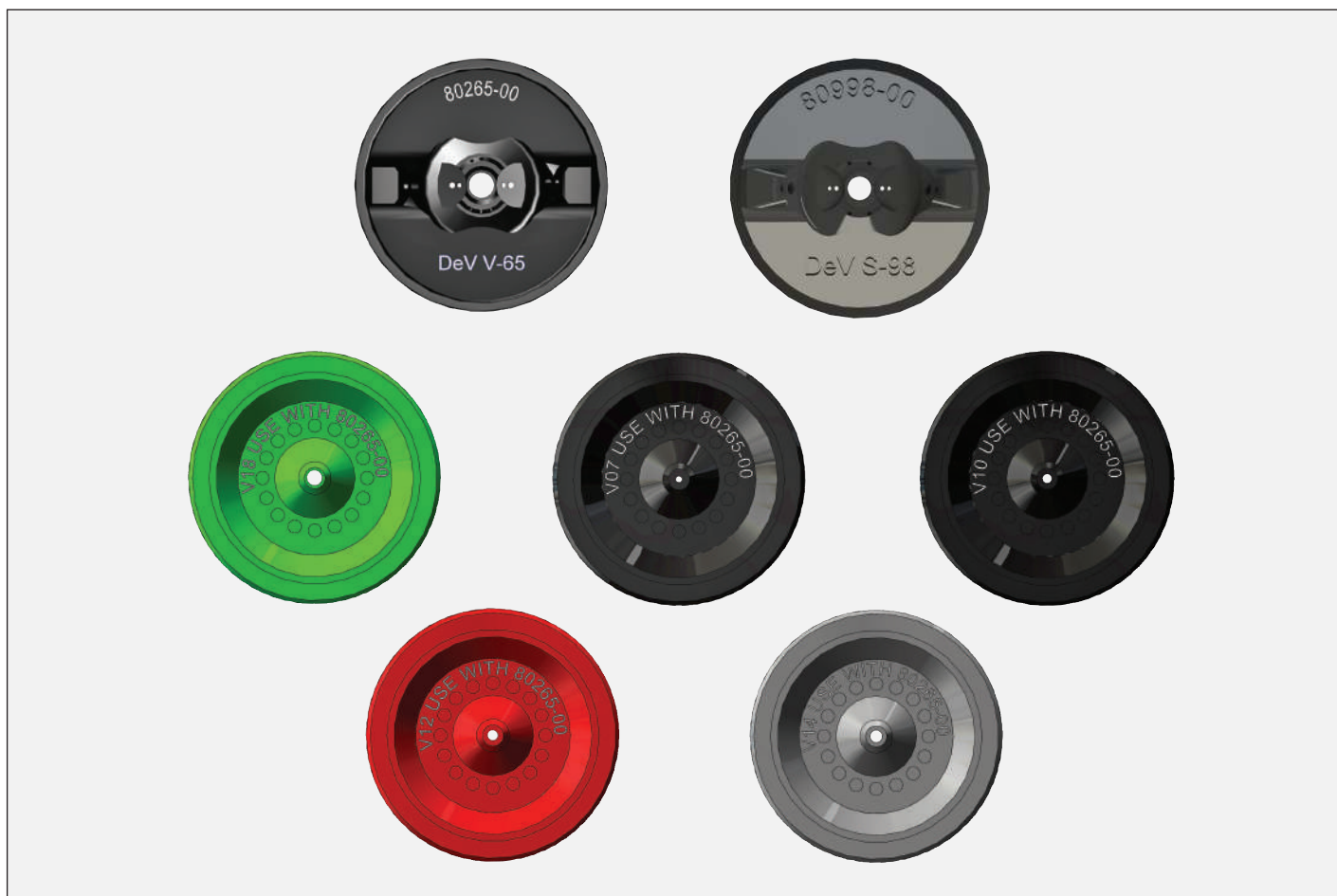
Grey nozzles - 1.4 mm I.D.

Green nozzles - 1.8 mm I.D.

All other accessory sizes are black.



To identify the nozzle, each is engraved with the air cap it must be paired up with.



07.3.2 NOZZLE SELECTION 80265-00 / 80998-00 / 80264-XX

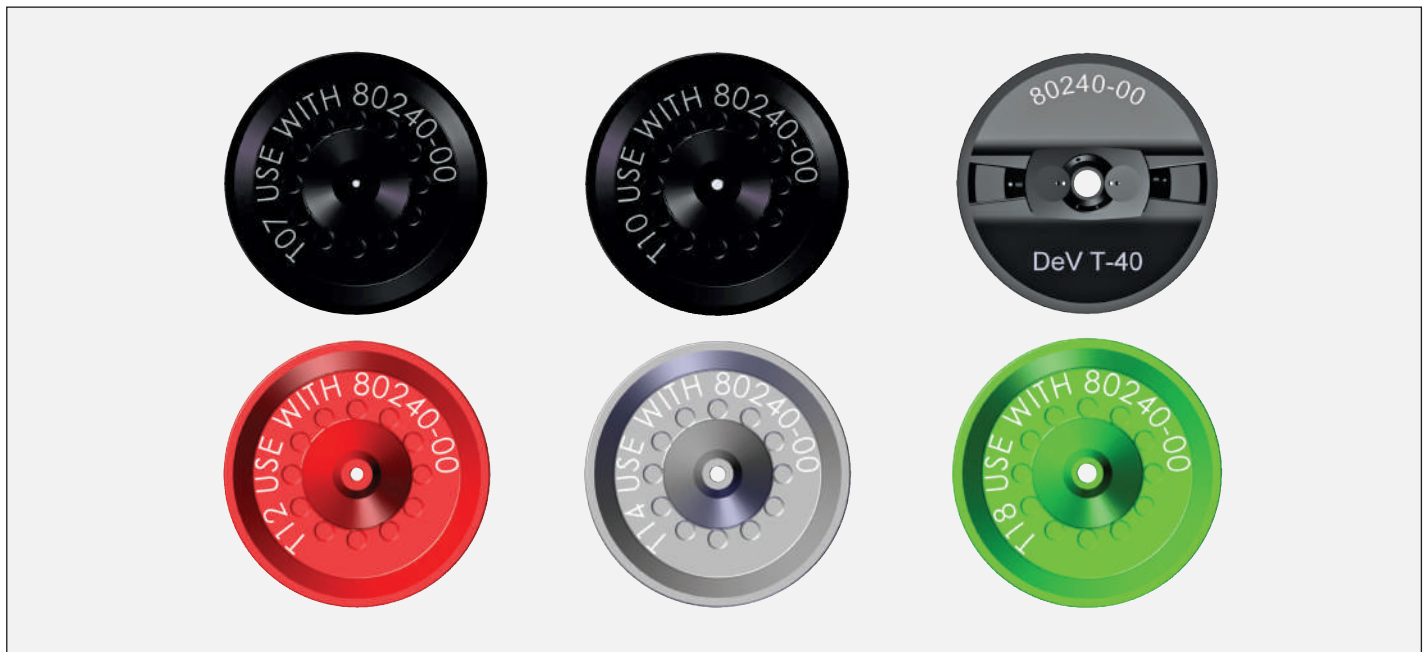
Atomization Kit Part Number	For Use with Air Cap and Part Number	Color	Nozzle Opening
83600-07	80265-00/80998-00	Black	0.7 mm
83600-10	80265-00/80998-00	Black	1.0 mm
83600-12	80265-00/80998-00	Red	1.2 mm
83600-14	80265-00/80998-00	Grey	1.4 mm***
83600-18	80265-00/80998-00	Green	1.8 mm***

**Included in 82385/82365/82345 units, all others must be ordered separately.

*Included in 83385/83365/83345 Spray Ready Kits.

07.3.3 HIGH WEAR NOZZLE SELECTION 80265-00 / 80998-00 / 80264-XX

Atomization Kit	For Use with Air Cap and Part Number	Color	Nozzle Opening
83600-242	80265-00/80998-00	Tan	1.4 mm
83600-282	80265-00/80998-00	Tan	1.8 mm



07.3.4 80240-00 / 80239-XX T SERIES

Nozzle Part Number	For Use with Air Cap Part Number	Color	Nozzle Opening
83575-07	80240-00	Black	0.7 mm
83575-10	80240-00	Black	1.0 mm
83575-12	80240-00	Red	1.2 mm
83575-14	80240-00	Grey	1.4 mm
83575-18	80240-00	Green	1.8 mm

NOTICE

All T series atomization kits must be ordered separately.

07.4 AIR CAP / NOZZLE PERFORMANCE

V-65 - 80265-00

Nozzle	Orifice ID (mm/in)	*Fluid Delivery (ml/min)	Spray Type	**Pattern Length (mm/in)	**Pattern Width (mm/in)	Pressure Reducer
80264-12	1.2/.047	250	Air Spray	355/14.0	76/3.0	79809-00 (Yellow)
80264-14	1.4/.055	250	Air Spray	343/13.5	76/3.0	79809-00 (Yellow)
80264-18	1.8/.070	250	Air Spray	267/10.5	76/3.0	79809-00 (Yellow)

T-40 - 80240-00

Nozzle	Orifice ID (mm/in)	*Fluid Delivery (ml/min)	Spray Type	**Pattern Length (mm/in)	**Pattern Width (mm/in)	Pressure Reducer
80239-12	1.2/.047	250	LVMP	330/13.0	76/3.0	74963-05 (Black)
80239-14	1.4/.055	250	LVMP	310/12.2	76/3.0	74963-05 (Black)
80239-18	1.8/.070	250	LVMP	292/11.5	76/3.0	74963-05 (Black)

S-98 - 80998-00

Nozzle	Orifice ID (mm/in)	*Fluid Delivery (ml/min)	Spray Type	**Pattern Length (mm/in)	**Pattern Width (mm/in)	Pressure Reducer
80264-12	1.2/.047	250	Air Spray	406/16.0	76/3.0	79809-00 (Yellow)
80264-14	1.4/.055	250	Air Spray	394/15.5	76/3.0	79809-00 (Yellow)
80264-18	1.8/.070	250	Air Spray	318/12.5	76/3.0	79809-00 (Yellow)

* Material: Enamel 24 second, Number 4 Ford Cup @ 23°C (72°F). Results are material dependent.

** Patterns are at 200mm (8") target distance.

07.5 APPLICATOR STORAGE

NOTICE

Always store the applicator with front of applicator down.



08 MAINTENANCE

08.1 SUITABLE SOLVENTS FOR CLEANING RANSFLEX APPLICATORS

When cleaning the applicator, a suitable solvent for cleaning depends on the part(s) of the applicator to be cleaned and the material that needs to be removed.

Binks recommends that all exterior cleaning be done with non-polar solvents to prevent a conductive residue on critical components. We also understand that some of these solvents do not always meet the cleaning needs of some materials.

NOTICE

If conductive polar solvents are used to clean the applicator components, all residue must be removed using a non-conductive non-polar solvent (i.e. high flash Naphtha).

If there are any questions as to what solvents are best for cleaning, contact your local Binks distributor and/or your paint supplier.

The RansFlex applicator, air hoses and fluid hose, should not be submerged or soaked in solvent. However, the outer surfaces of these items can be wiped with a suitable cleaning solvent.

⚠ CAUTION

All electrical components **cannot** be cleaned or soaked in any solvents.

⚠ CAUTION

Cleaning of the exterior surface of the applicator should be done with non-polar solvents. If cleaning requires the use of polar solvents, the applicator should be wiped down with non-polar solvent prior to going back into use. Using polar solvents will leave a semi-conductive film on the surface of the applicator that will effect efficiency of the applicator and cause damage to the components.

Please reference TL-00-02 Solvent Selection and Cleaning Guide for detailed information on solvent polarity.

⚠ WARNING

The user **MUST** read and be familiar with the safety instructions in this manual.

If compressed air is used in cleaning, **REMEMBER** that high pressure air can be dangerous and should **NEVER** be used against the body. It can blind, deafen, and may even penetrate the skin. If used for cleaning equipment, the user should wear safety glasses.

Be **SURE** the applicator power is **OFF** and the system is grounded before using solvent to clean **ANY** equipment.

DO NOT operate a faulty applicator!

When using cleaning solvent, standard health and safety precautions should apply.

Any solvent used to clean the fluid passages must be discharged into a grounded container. Use of ungrounded or plastic containers may cause fire or explosion.

⚠ CAUTION

Do not perform repairs to damaged components. Damaged components must be replaced according to available service parts in this manual.

⚠ CAUTION

Nozzles from previous Binks designs are not compatible with the RansFlex design. Use of these nozzles could cause equipment malfunction and possible damage.

⚠ WARNING

The flash point of the cleaning solvent must be at least 15° C (27° F) above the ambient temperature. Otherwise, the cleaning process must be carried out in an area with forced air ventilation. It is the end users' responsibility to ensure this condition is met.

All repairs should be made on a clean, flat surface. If a vise is used to hold parts during service or repair, **DO NOT** clamp onto plastic parts and always pad the vise jaws!

The following parts should be thoroughly packed with dielectric grease (LSCH0009-00) leaving **NO** air space or voids when assembling:

- All O-Rings (polytetrafluoroethylene [PTFE] O-rings do not need lubrication)
- Needle Shaft Assembly
- Packing Tube
- Cascade and Barrel

08.2 EQUIPMENT REQUIRED

- Special Multi-Purpose Wrench (80353-00)*
- Hex Driver (79862-02)*
- Dielectric Grease (LSCH0009-00)*
- 10 mm Wrench
- 15 mm Wrench
- Spanner

* Supplied with applicator

08.3 ROUTINE SCHEDULE

Follow these maintenance steps to extend the life of the applicator and ensure efficient operation:

08.3.1 SEVERAL TIMES DAILY

Inspect the air cap for paint accumulation. Clean as frequently as necessary with a soft bristled brush and a suitable solvent.

⚠ CAUTION

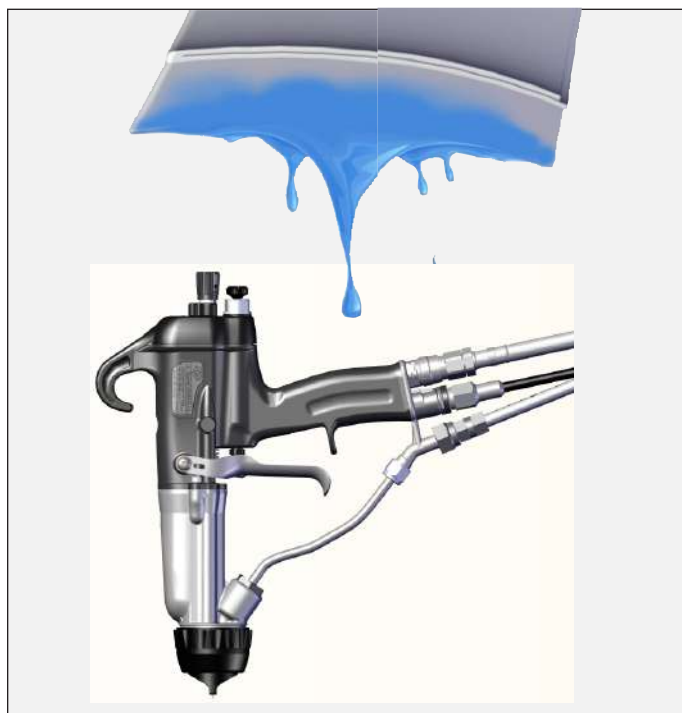
NEVER remove the fluid nozzle assembly while paint is in the applicator or paint may enter into the air passages. Clogged or restricted air passages will cause poor atomization and/or electrical shorting. Air passages that are clogged with conductive material can lead to excessive current output levels and consequent low operating voltage or long-term electrical damage.

The applicator barrel **MUST** be tilted front down to remove the fluid nozzle. Failure to do so may allow paint to enter the air passages, thereby reducing airflow and damaging the applicator barrel/cascade. Applicators may be flushed in lieu of tilting. However, they must be either flushed or tilted down during nozzle removal!

08.3.2 CLEANING AND FLUSHING

1. Reference 07.2 Flushing/Color Change Procedure for flushing procedure. Flushing should be performed at the end of daily use or prior to any maintenance.
2. Clean the exterior of the applicator at the end of each shift.

Wipe the outside of the applicator with a solvent soaked rag pointing the applicator nose down.



DO NOT clean the applicator with the nose pointing up or by placing the applicator in a container of cleaning fluid.



08.3.3 DAILY (OR AT START OF EACH SHIFT)

- Verify that ALL solvent safety containers are grounded!
- Check within six meters (20 feet) of the point of operation (of the applicator) and remove or ground ALL loose or ungrounded objects.
- Inspect work holders for accumulated coating materials (and remove such accumulations).
- Check that atomizer assembly is clean and undamaged.
- Clean the fluid filter, if used.
- Straighten the applicator electrode if necessary.

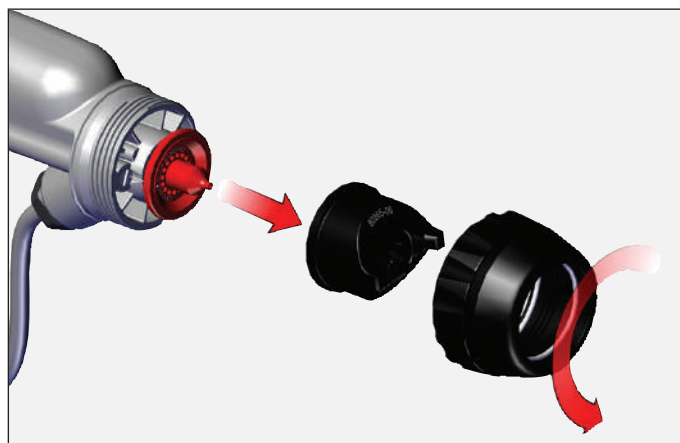
NOTICE

Standard electrode is "snap back" spray wire electrode.

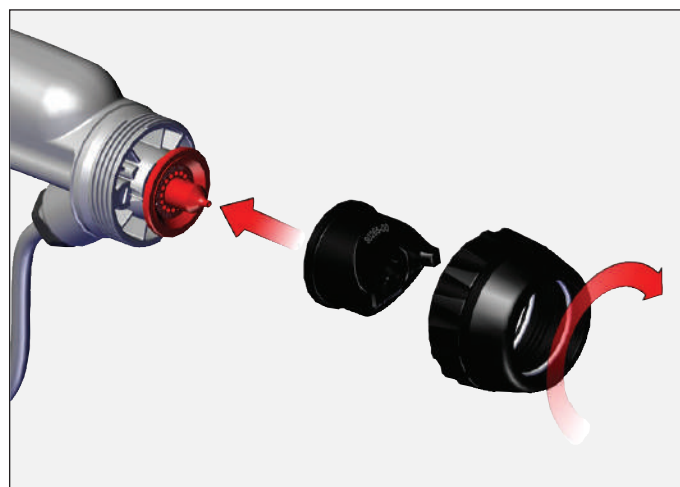
08.4 REMOVAL AND REPLACEMENT INSTRUCTIONS

08.4.1 AIR CAP REMOVAL

1. Remove retaining ring and air cap.
2. Clean and replace as necessary.



3. Install in reverse order.



08.4.2 FLUID NOZZLE REMOVAL

! WARNING

Prior to removing the fluid nozzle, all pressure from the system must be relieved.

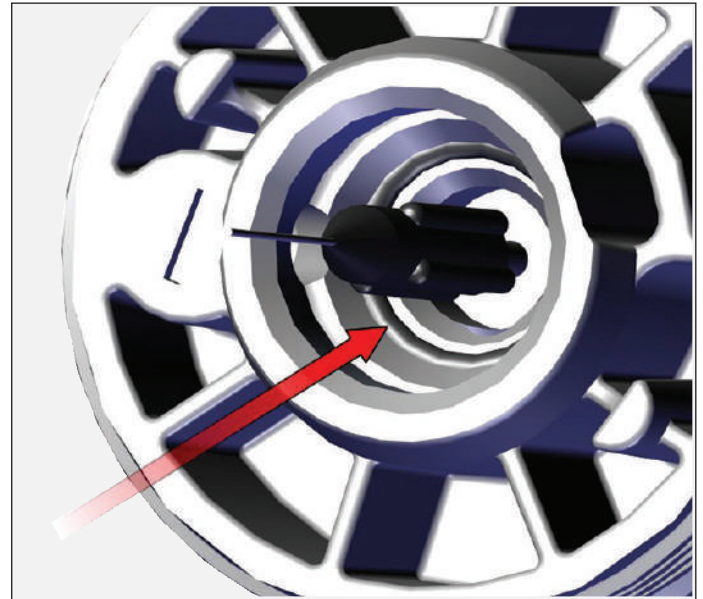
1. Insert 80353-00 wrench onto nozzle flats. Turn wrench counterclockwise to loosen the nozzle.

NOTICE

While removing nozzle be sure to pull trigger to prevent electrode from loosening.



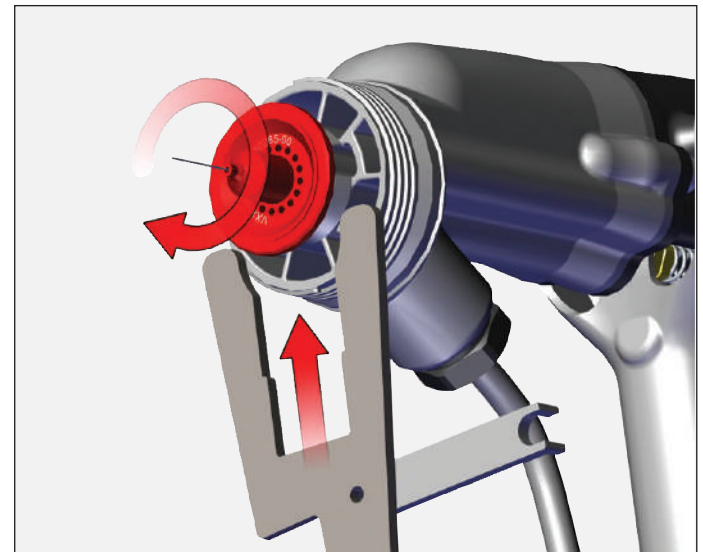
2. Insert O-ring, replace as required.
3. Ensure electrode is tight.



4. Install fluid nozzle using 80353-00 wrench. Tighten till nozzle seats on O-ring and then 1/8 additional turn.

NOTICE

Do not over tighten. Fan pattern reduction will be effected. Ensure electrode is tight before installing fluid nozzle.

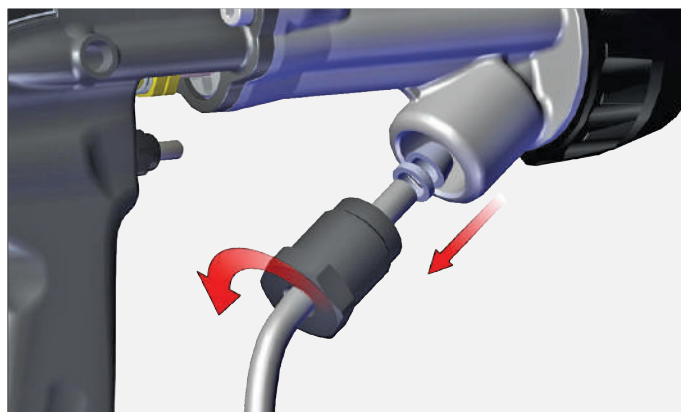


08.4.3 BARREL REMOVAL

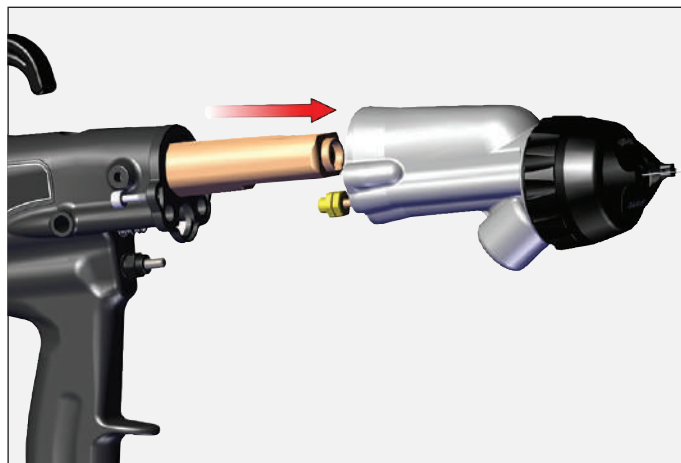
1. Remove trigger.



2. Remove fluid tube.



3. Pull barrel straight forward without bending.



08.4.4 REMOVE/REPLACE CASCADE

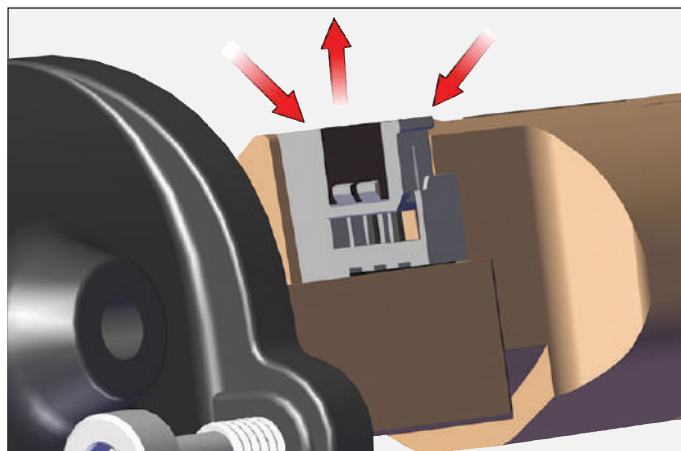
1. Pull cascade straight out.

⚠ CAUTION

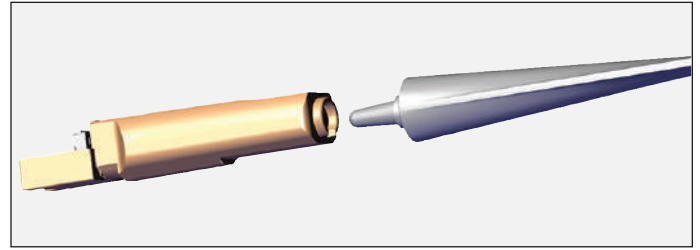
Do not pull with excessive force or twist wires. This could damage cascade connector or wire harness.



2. Carefully disconnect harness by pulling connector on both sides by hand and rocking it side to side to remove.
3. Replace cascade as necessary.

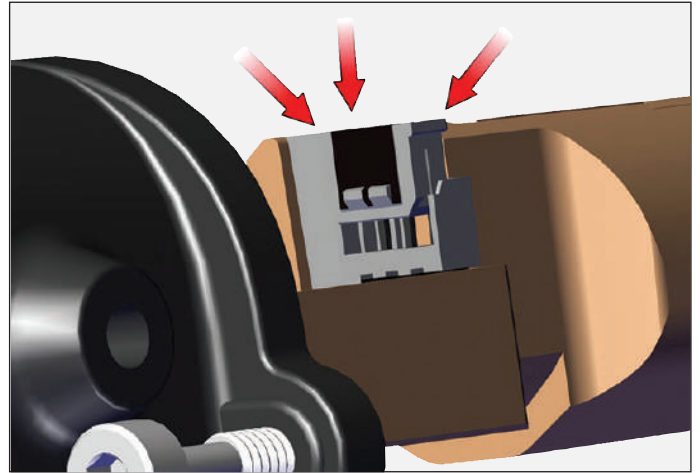


4. Apply LSCH0009-00 grease to end of cascade.



5. Re-connect harness by pushing down to snap.

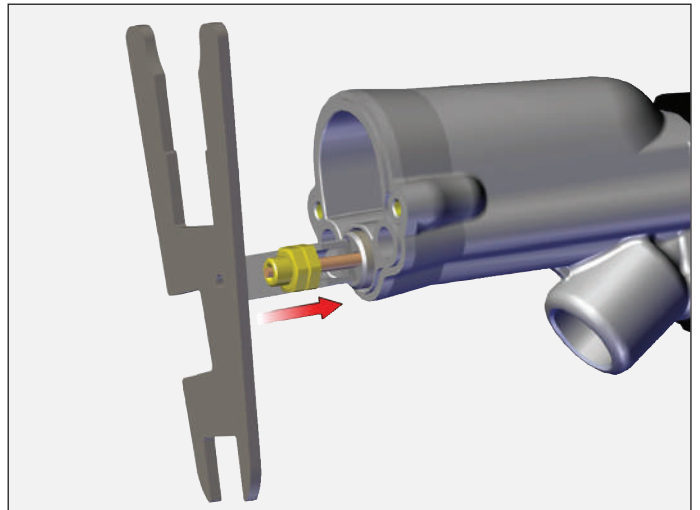
6. Re-install cascade into handle.



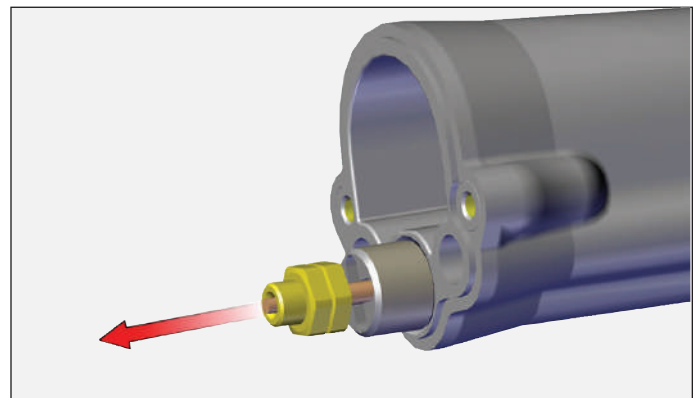
08.4.5 PACKING REMOVAL/REPLACE

1. Remove barrel from handle.

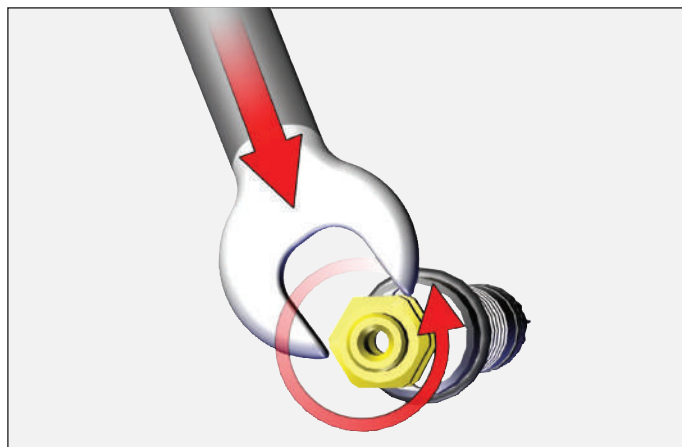
2. Use 80353-00 wrench to remove nut.



3. Pull straight out of barrel.

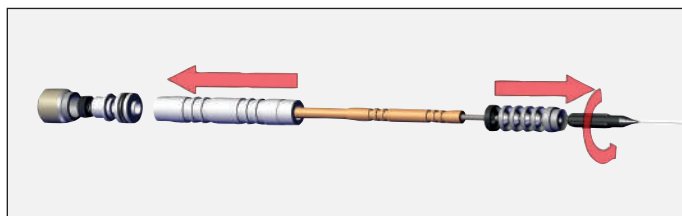


4. Remove jam nuts using 10mm wrench.



5. Remove all parts.

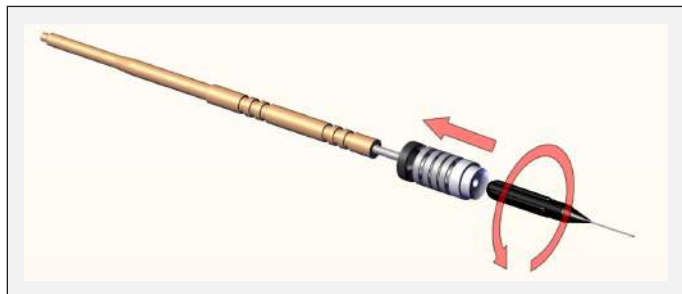
1. Clean with non-polar solvent.
2. Inspect for any discolored areas.
3. Replace parts as required.



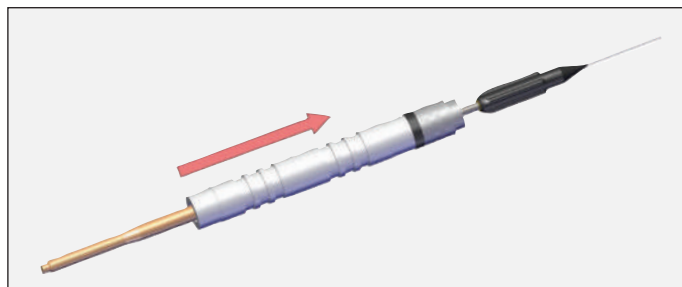
6. Prior to installation apply dielectric grease inside packing tube, completely full.



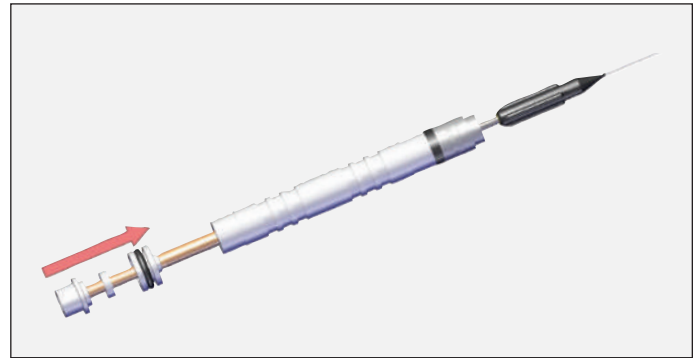
7. Insert 4 parts on front of shaft. Tighten electrode tightly on shaft.



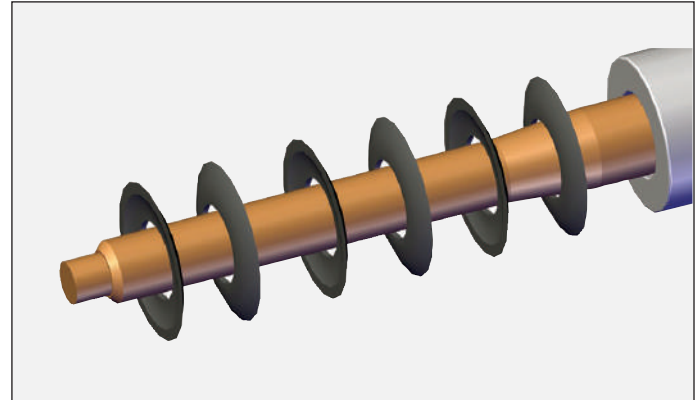
8. Insert packing tube onto shaft. Wipe excess grease over front parts and outside of packing tube.



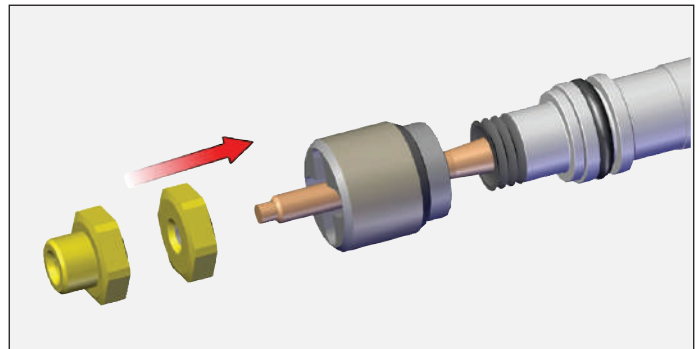
9. Install rear parts.



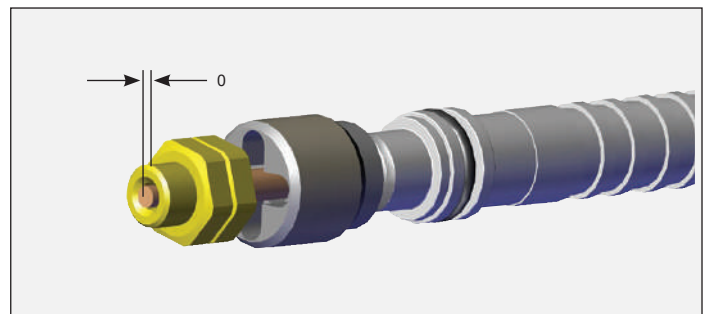
10. Install Bellville washers in sequence shown.



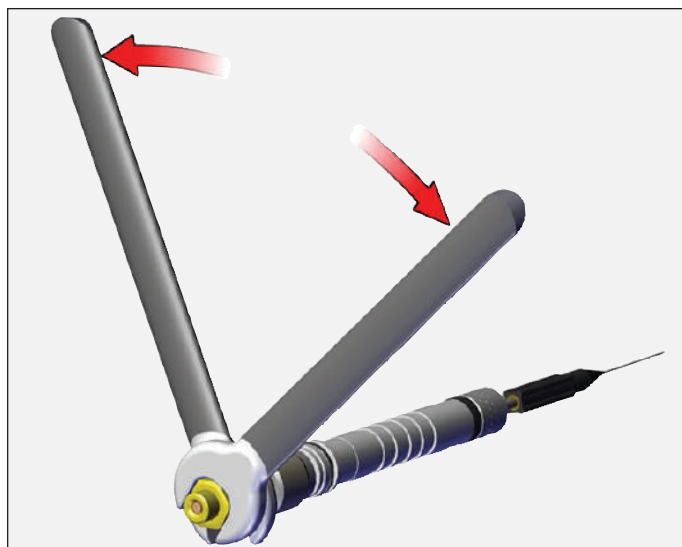
11. Install rear nut. Install jam nuts finger tight.



12. Set air before fluid adjustment.

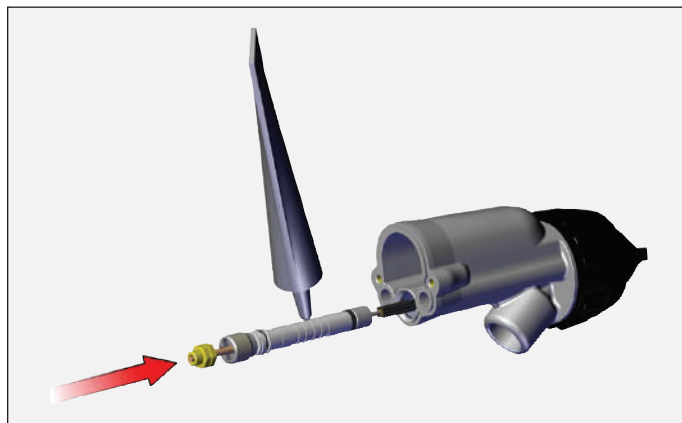


13. Tighten jam nuts.

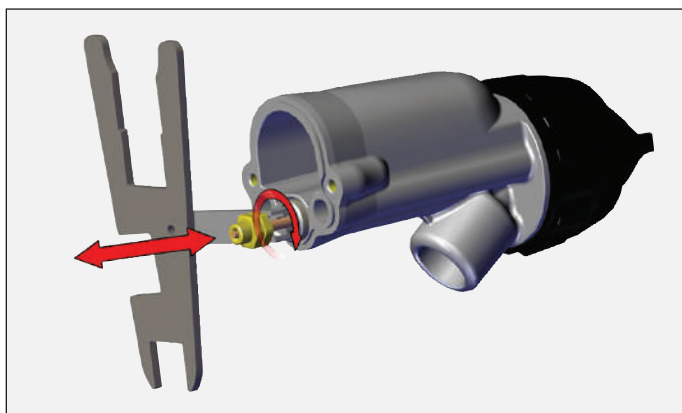


08.4.5.1 RE-INSTALL NEEDLE SHAFT INTO BARREL

1. Install needle shaft into barrel with dielectric grease.



2. Tighten packing using wrench. Pull back and forth on the needle shaft till a slight amount of drag is felt.

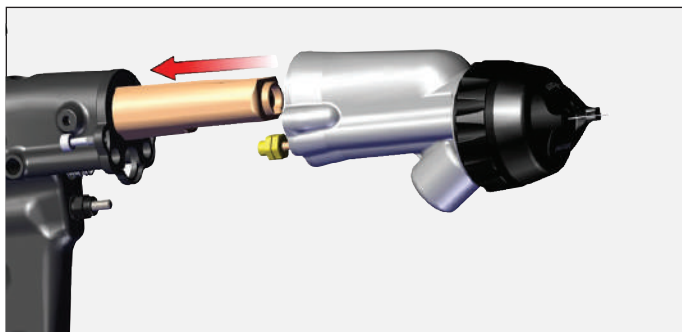


08.4.5.2 RE-INSTALL BARREL

1. Install barrel over cascade.

NOTICE

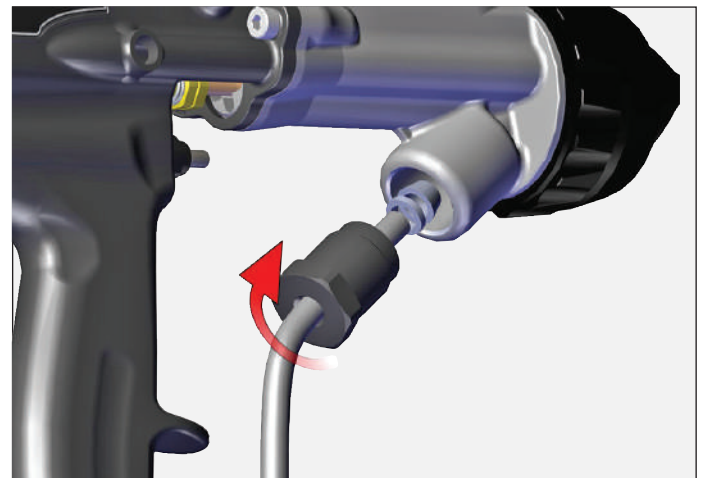
The gasket between the handle and barrel is reusable. It should not be replaced unless torn or damaged.



2. Tighten barrel screws to hand tight. Then tighten an additional 1/8 to 1/4 turn.



3. Re-install fluid tube.



4. Re-install trigger.

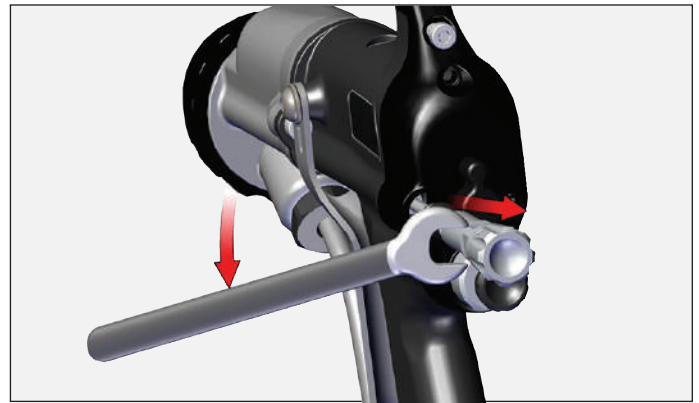


08.4.6 REAR COVER REMOVAL

1. Loosen cover screw with 3mm driver.



2. Remove fan air cartridge with 10mm wrench.



3. Remove rear cover and cartridge with 15mm wrench.



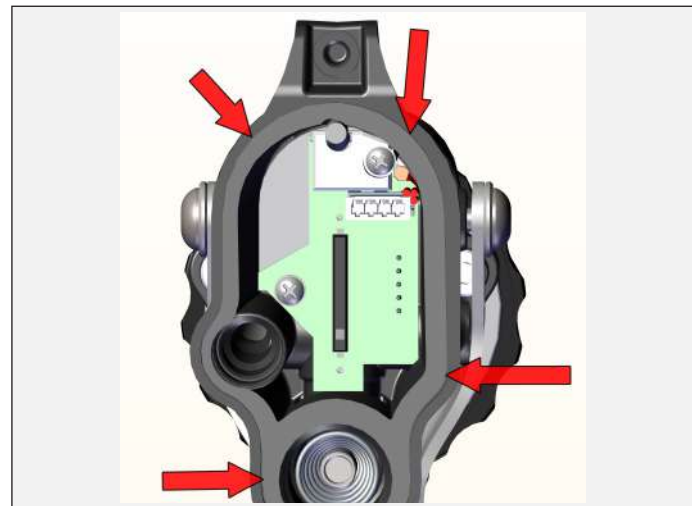
4. Install fluid valve cartridge.



5. Reseat the gasket by pressing in the positions shown.

NOTICE

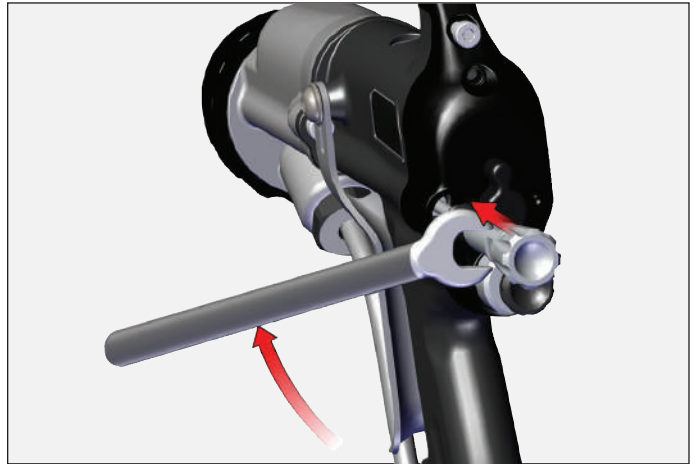
The gasket between the handle and barrel is reusable. It should not be replaced unless torn or damaged.



6. Push rear cover assembly into handle and tighten cartridge until rear cover is seated against the gasket.



7. Install fan air valve cartridge. Tighten until snug against rear cover.



8. Tighten cover screw to hand tight. Then tighten an additional 1/8 to 1/4 turn.
9. Repeat steps 7 and 8 to ensure the rear cover is properly seated.

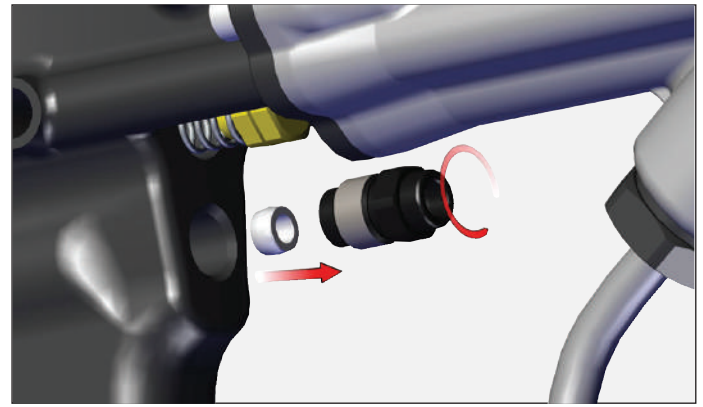


08.4.7 AIR VALVE REMOVE/REPLACE

1. Remove trigger.
2. Remove air valve and spring.



3. Remove air valve packing nut and packing.

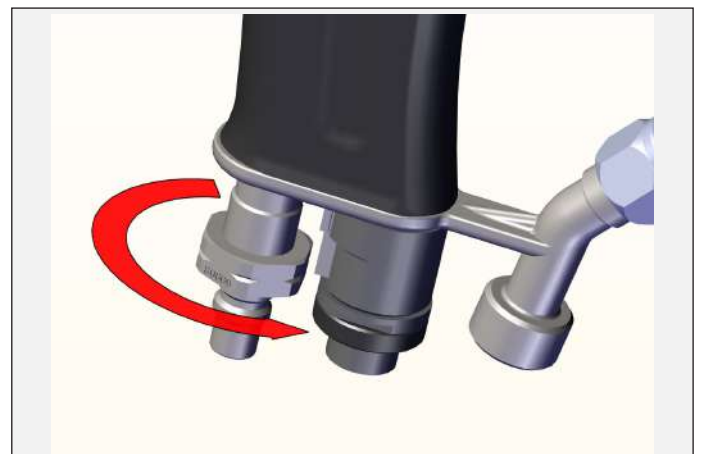


4. Insert air valve and spring.
5. Tighten packing nut till light drag is felt on the shaft while moving it back and forth.
6. Install trigger.

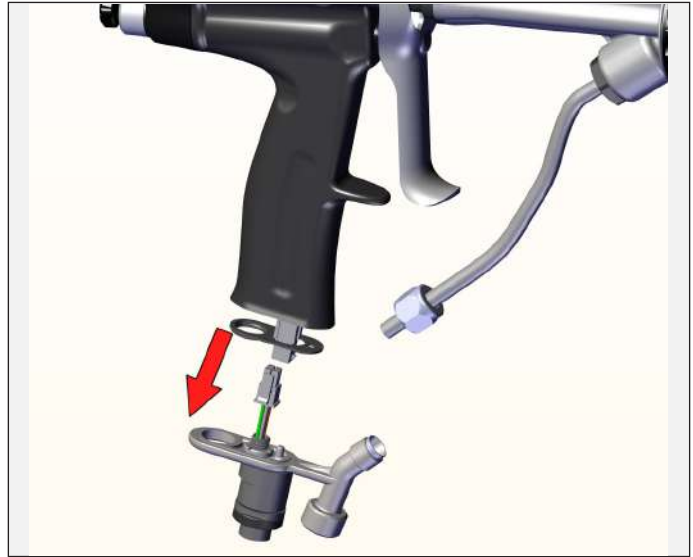


08.4.8 FLUID BRACKET REMOVAL

1. Loosen fluid nut.
2. Remove air fitting. Turn the component clockwise to loosen.



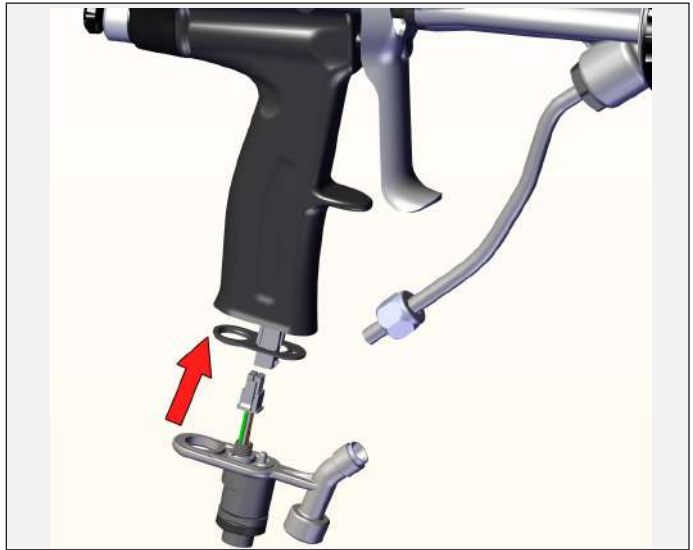
3. Remove bracket, disconnect connector, and remove gasket.



4. Install gasket and bracket, and reconnect the connector.

NOTICE

The gasket between the handle and barrel is reusable. It should not be replaced unless torn or damaged.



5. Install air fitting.

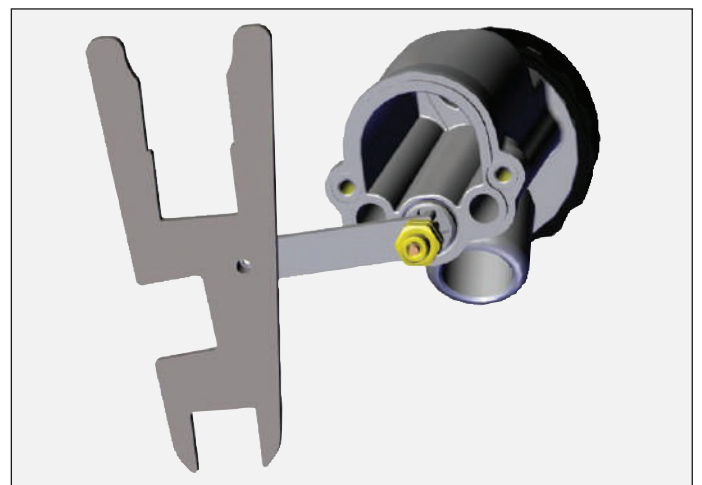


6. Tighten fluid nut.

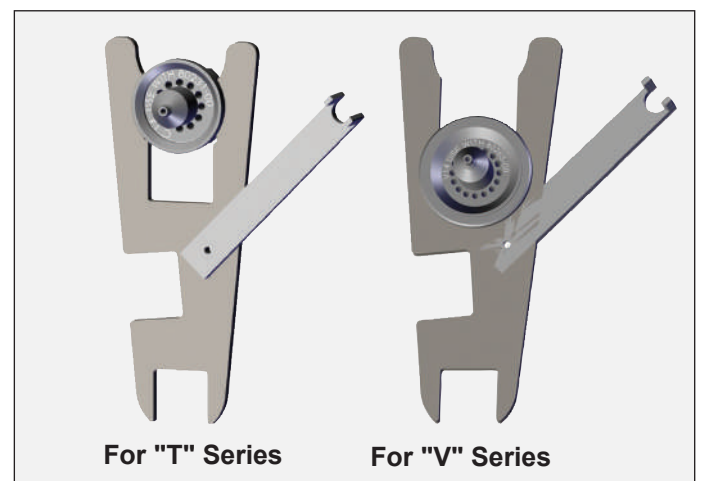


08.4.9 GUN WRENCH FUNCTIONS 80353-00

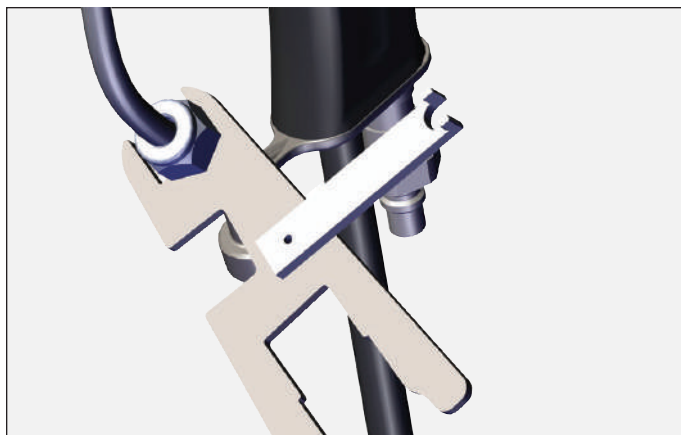
1. Adjust packings.



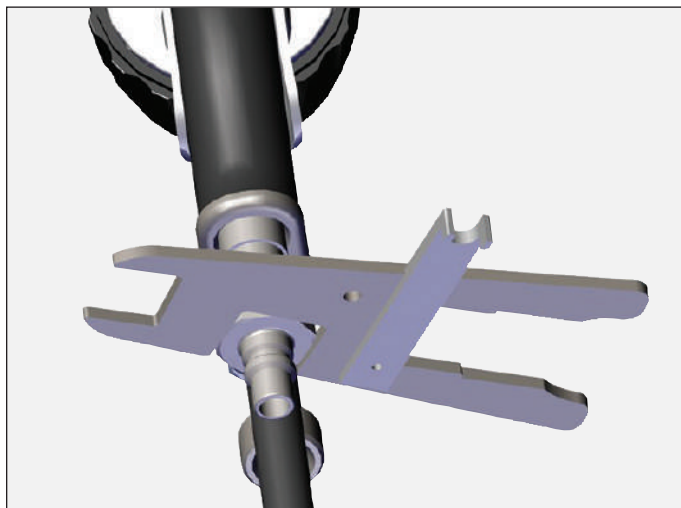
2. Remove nozzles.



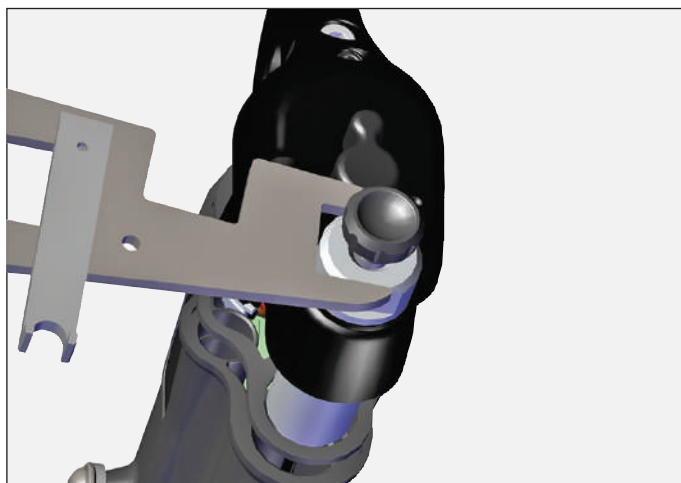
3. Remove lower fluid nut.



4. Remove air fitting.



5. Remove rear cartridge.



08.5 TROUBLESHOOTING GUIDE

GENERAL PROBLEM	POSSIBLE CAUSE	SOLUTION
Electrical		
No kV	On/Off lever in wrong position	Ensure the On/Off lever is in the On position.
	Controller is off.	Ensure the controller is on.
	No ground connection.	Ensure the air hose is properly grounded to the earth ground.
	Cascade not functioning.	Ensure cascade is functioning properly, swap parts as required.
	Too conductive paint.	Ensure paint resistance > 0.1 Meg Ohm.
Low kV	Fluid remnants in the air passage.	1. Clean air passage with non-polar solvent. 2. Ensure fluid nozzle is properly tightened.
	Wrong solvent used for final cleaning process.	Use non-polar solvent for the final cleaning process.
Inadequate Delivery		
No Fluid Flow	No pressure.	Ensure pressure at the fluid line at the applicator.
	Fluid tube may be plugged.	Replace or clean.
	Fluid nozzle may be plugged.	Replace or clean.
	Electrode not properly assembled.	Reassemble tightened to stop.
	Material too viscous.	Thin the material to a viscosity that is sprayable.
Spray Performance	No adjustment of fan pattern.	1. Restrictor missing. Ensure restrictor is in place. 2. Fluid nozzle tightened too tight. Tighten nozzle till it seats on the barrel O-ring then an additional 1/8 turn.
	Poor atomization.	Ensure atomization air passages are clear of all foreign particles.
	Fluid in air passages.	Ensure fluid nozzle is properly tightened.
	Spits.	Ensure air before fluid is properly adjusted.

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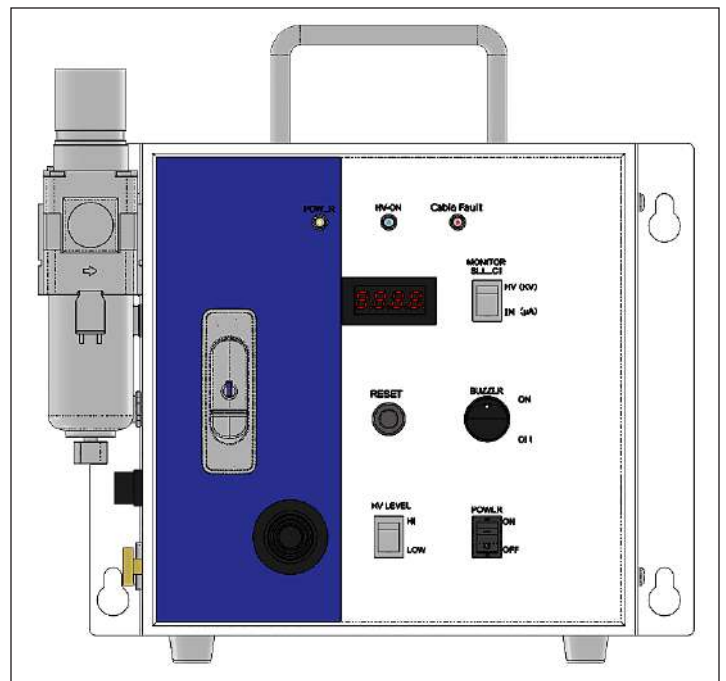
09 PARTS IDENTIFICATION

09.1 RANSFLEX HVX - SOLVENT BASE (45KV) 83345 SPRAY READY KIT

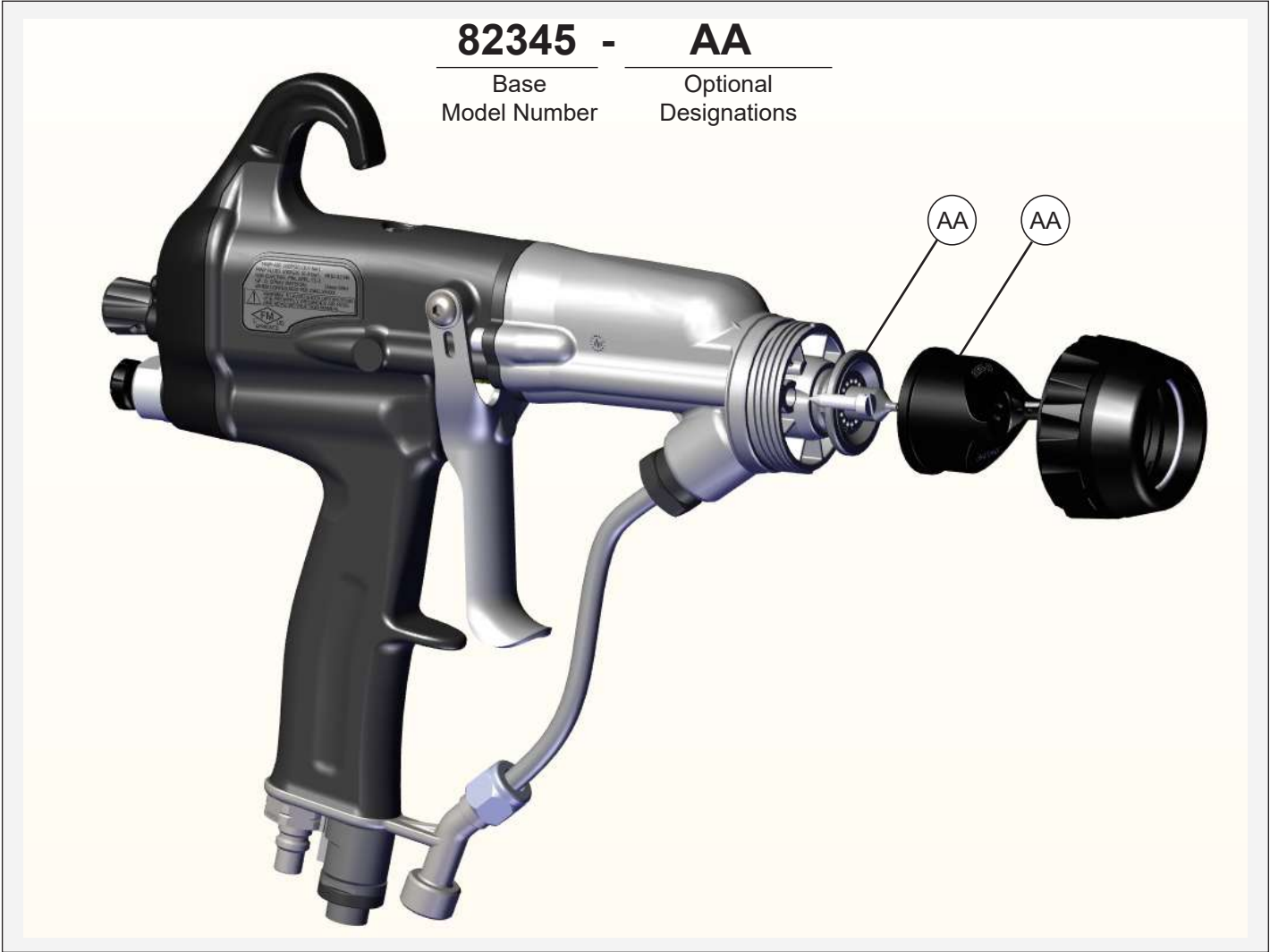
The RansFlex HVX solvent base (45kV) applicator kit consists of:

- Spray applicator (base model number 83345)
- Air hose (80558-11)
- Fluid hose (80303-10)
- Cable (79338-10)
- Atomization kit (83600-14)

- RansFlex HVX HV Controller (81510-45)
- All other associated accessories

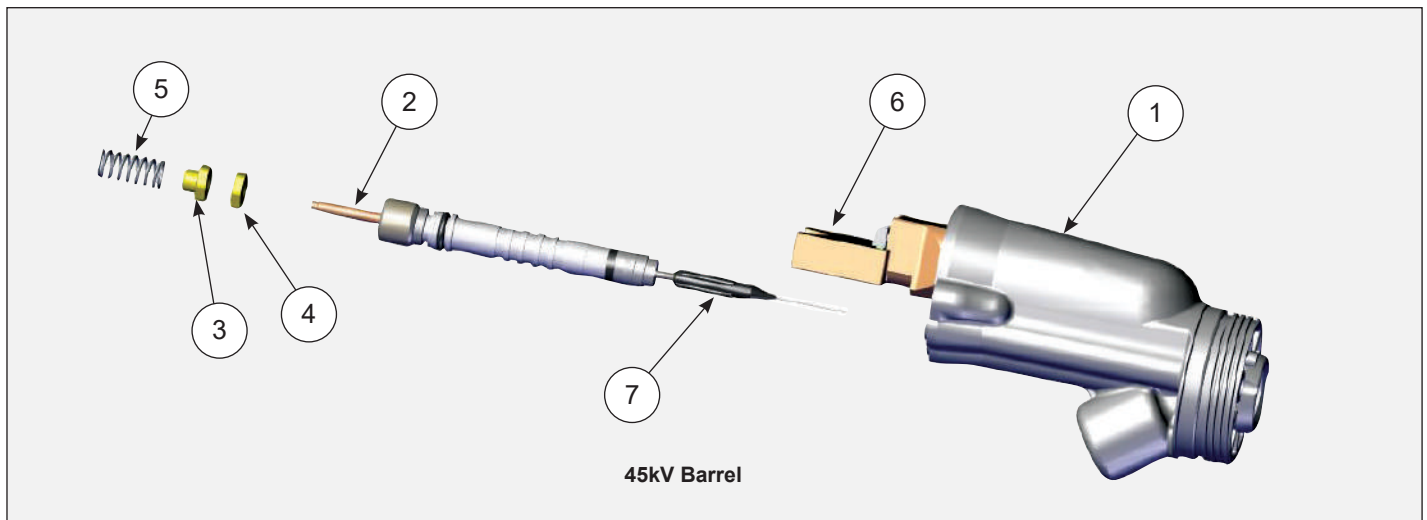


09.2 RANSFLEX HVX - SOLVENT BASE (45KV)



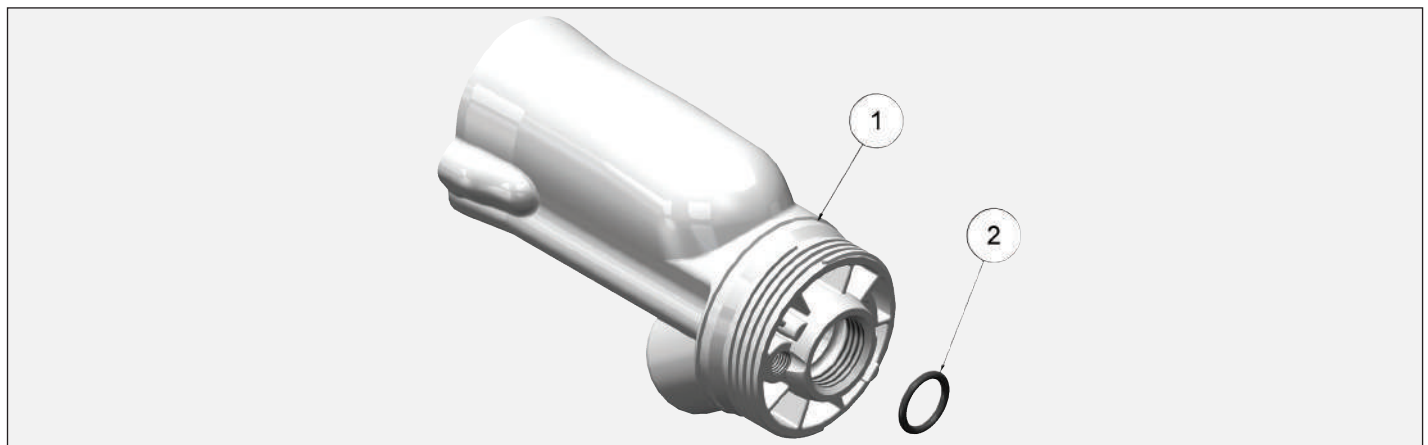
09.2.1 ATOMIZATION - TABLE OF "AA" DASHES				
"A" Dash Number	"A" Description	"A1"	"A2"	"A3" / Color
82345-14	V SERIES 1.4mm	80265-00	80264-14	79809-00 / YELLOW
82345-18	V SERIES 1.8mm	80265-00	80264-18	79809-00 / YELLOW

09.2.2 UNIQUE PARTS FOR 82345/83345



09.2.2.1 45KV BARREL

Item Number	Part Number	Description	Quantity
1	80376-00	ASSEMBLY, BARREL & O-RING	1
2	81280-45	ASSEMBLY, NEEDLE SHAFT	1
3	80242-00	NUT, REAR JAM	1
4	80243-00	NUT, FRONT JAM	1
5	80258-00	SPRING, FLUID RETURN	1
6	80590-45	ASSEMBLY, CASCADE (45 kV) (4 PIN)	1
7	70430-02	ELECTRODE, HIGH WEAR (INCLUDED IN 81280-45)	1



09.2.2.2 HVX 45KV BARREL AND O-RING (PART NUMBER 80376-00)

Item Number	Part Number	Description	Quantity
1	80376-00	BARREL 45KV (INCLUDES O-RING)	1
2	79001-07-K3	O-RING, SOLVENT PROOF (INCLUDED AS PART OF 81391-00 GASKET KIT)	1

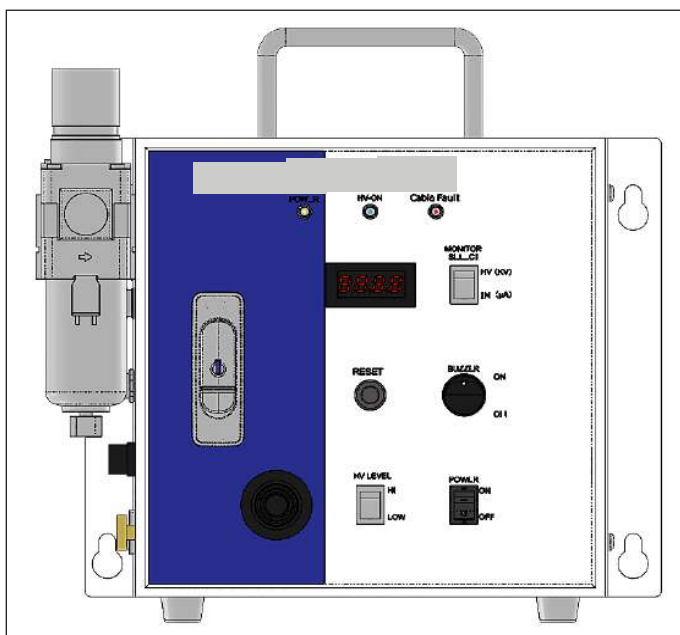
09.3 RANSFLEX HVX - SOLVENT BASE (65KV) 83365 SPRAY READY KIT

The RansFlex HVX solvent base (65kV) applicator kit consists of:

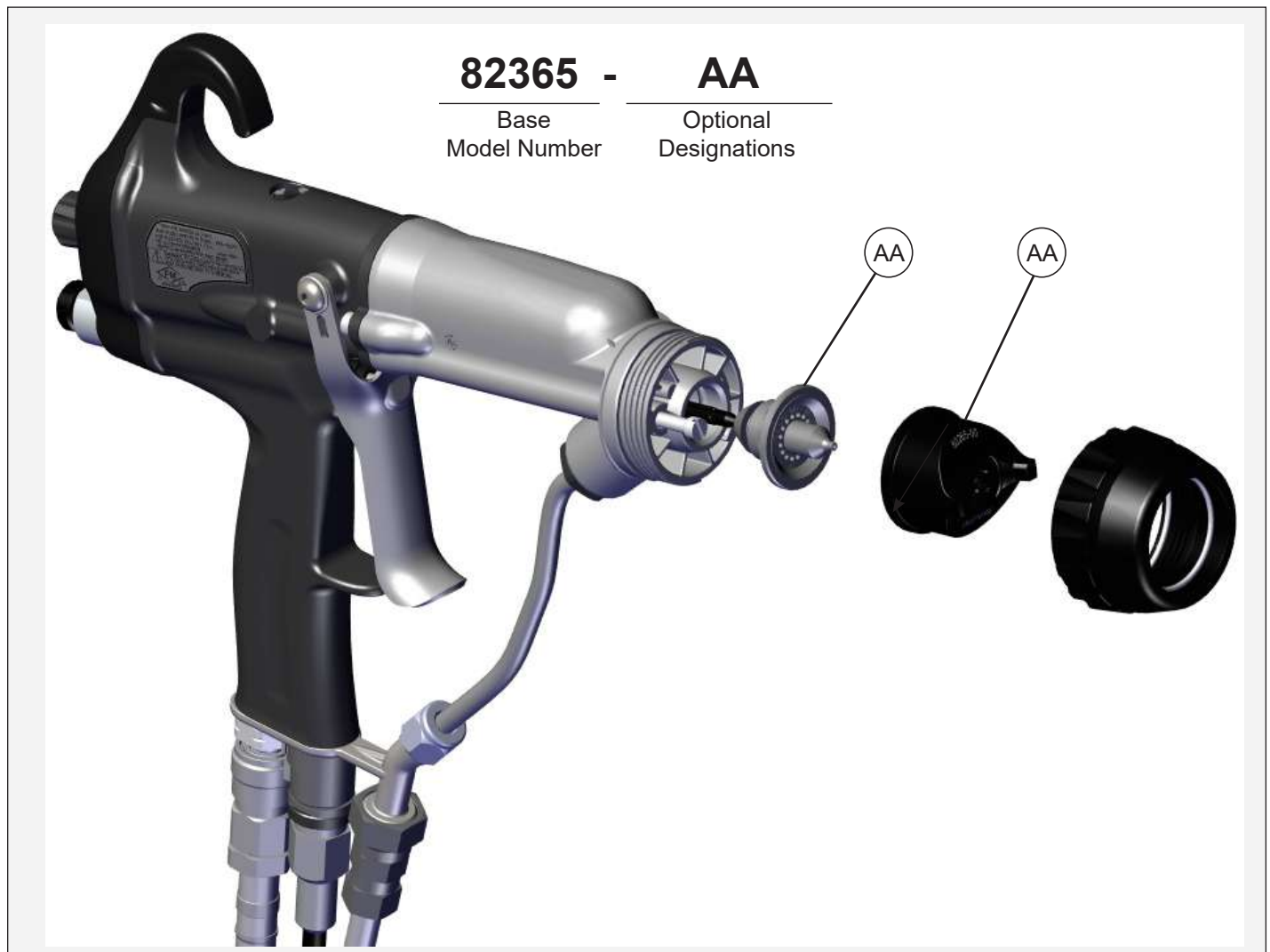
- Spray applicator (base model number 83365)
- Air hose (80558-11)
- Fluid hose (80303-10)
- Cable (79338-10)
- Atomization kit (83600-14)



- RansFlex HVX HV Controller (81510-65)
- All other associated accessories



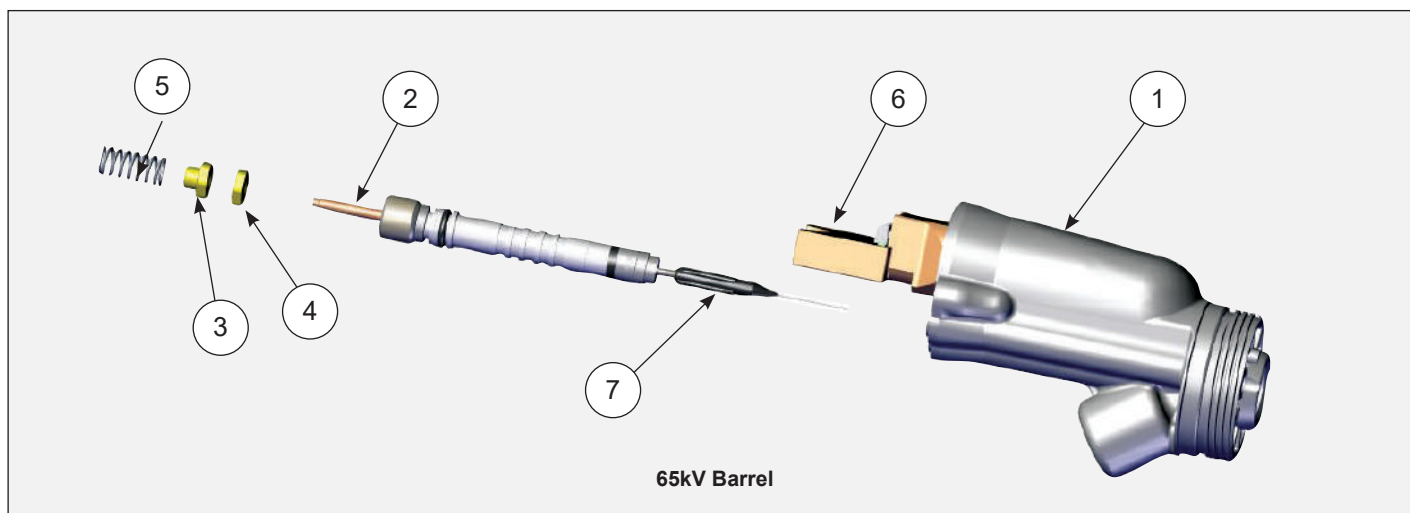
09.4 RANSFLEX HVX - SOLVENT BASE (65KV)



09.4.1 ATOMIZATION - TABLE OF "AA" DASHES

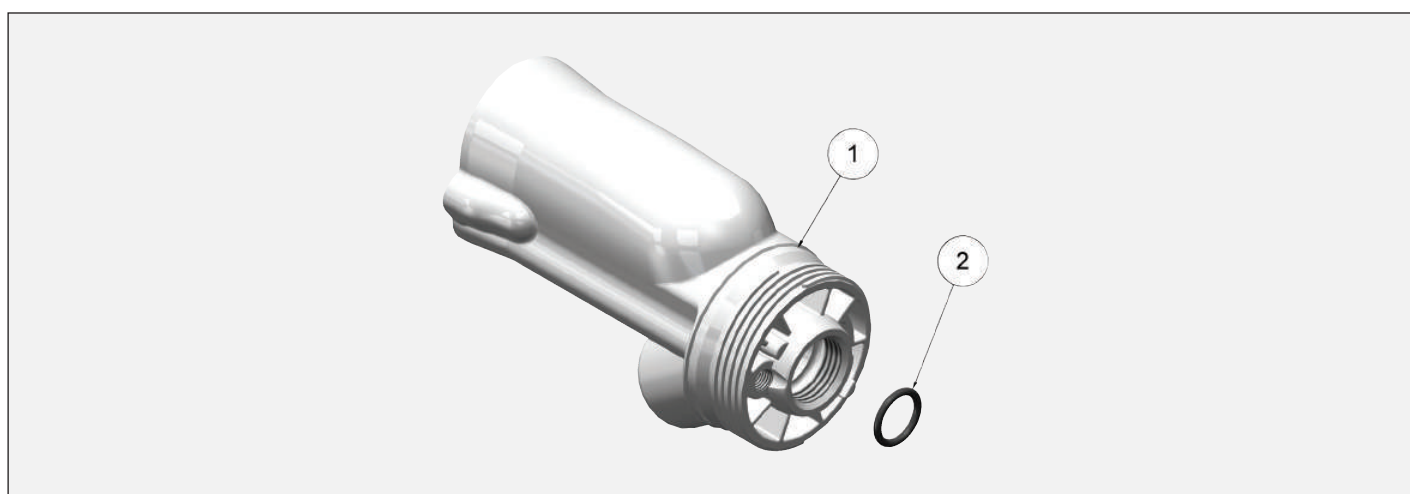
"A" Dash Number	"A" Description	"A1"	"A2"	"A3" / Color
82365-14	V SERIES 1.4mm	80265-00	80264-14	79809-00 / YELLOW
82365-18	V SERIES 1.8mm	80265-00	80264-18	79809-00 / YELLOW

09.4.2 UNIQUE PARTS FOR 82365/83365



09.4.2.1 65KV BARREL

Item Number	Part Number	Description	Quantity
1	80379-00	ASSEMBLY, BARREL & O-RING	1
2	81280-65	ASSEMBLY, NEEDLE SHAFT	1
3	80242-00	NUT, REAR JAM	1
4	80243-00	NUT, FRONT JAM	1
5	80258-00	SPRING, FLUID RETURN	1
6	80590-65	ASSEMBLY, CASCADE (65 kV) (4 PIN)	1
7	70430-02	ELECTRODE, HIGH WEAR (INCLUDED IN 81280-65)	1



09.4.2.2 BARREL AND O-RING (PART NUMBER 80379-00)

Item Number	Part Number	Description	Quantity
1	80379-00	BARREL 65Kv (INCLUDES O-RING)	1
2	79001-07-K3	O-RING, SOLVENT PROOF (INCLUDED AS PART OF 81391-00 GASKET KIT)	1

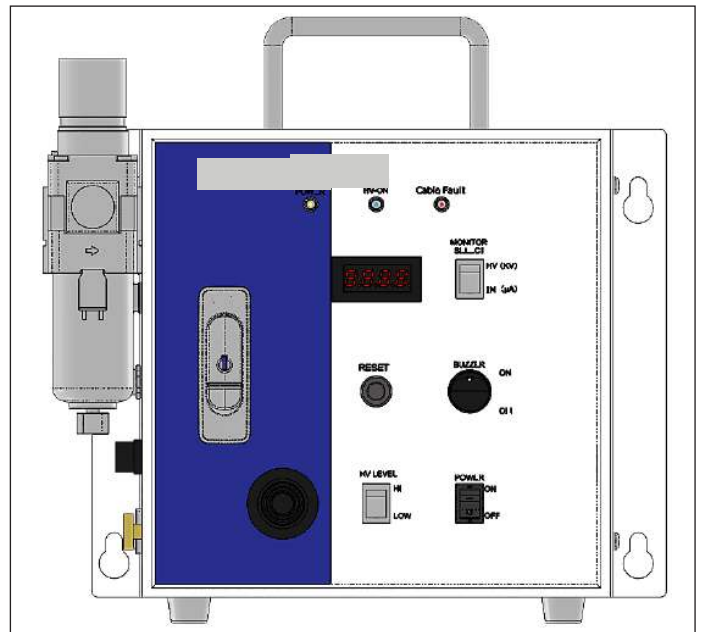
09.5 RANSFLEX HVX - SOLVENT BASE (85KV) 83385 SPRAY READY KIT

The RansFlex HVX solvent base (85kV) applicator kit consists of:

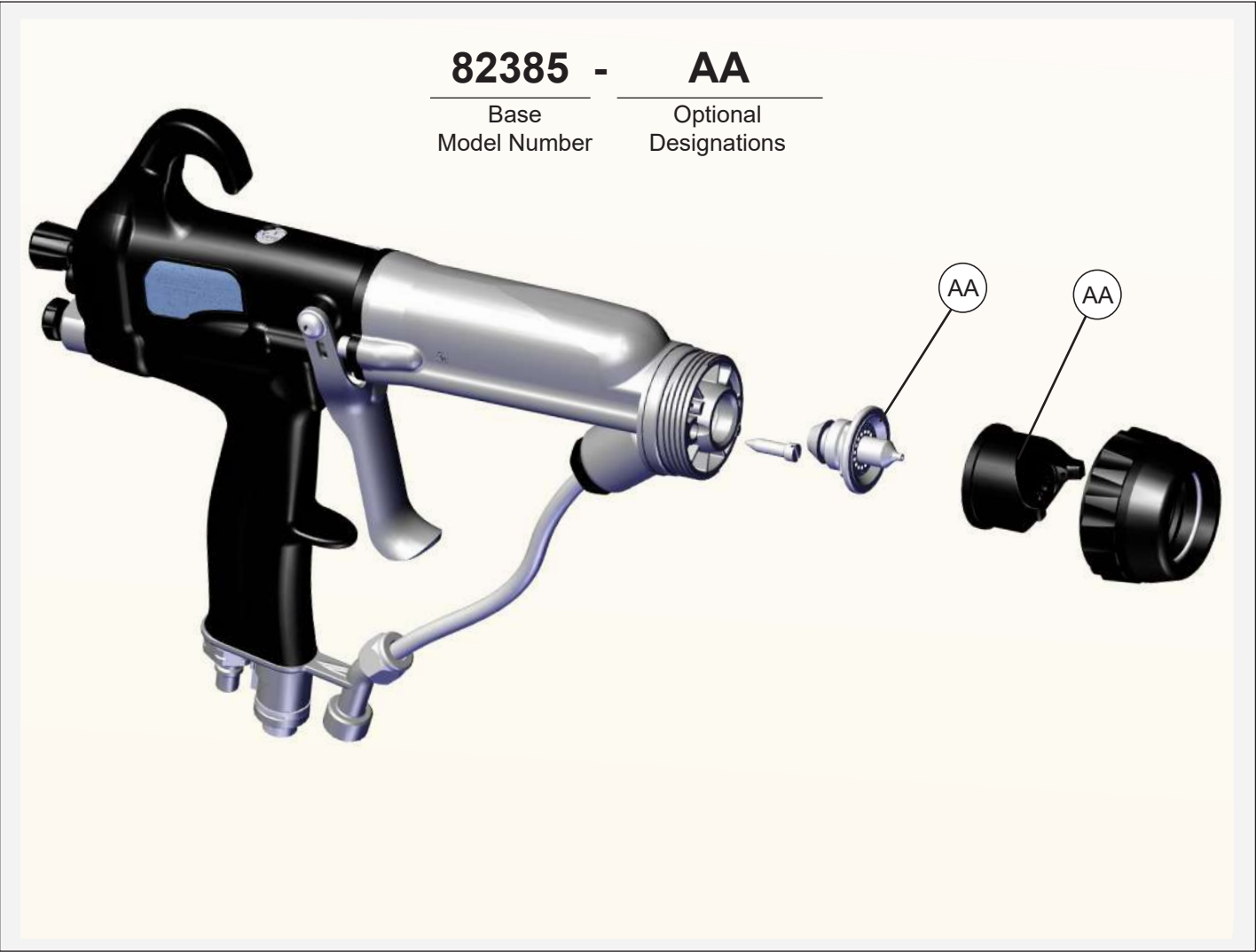
- Spray applicator (base model number 83385)
- Air hose (80558-11)
- Fluid hose (80303-10)
- Cable (79338-10)
- Atomization kit (83600-14)



- RansFlex HVX HV Controller (81510-85)
- All other associated accessories

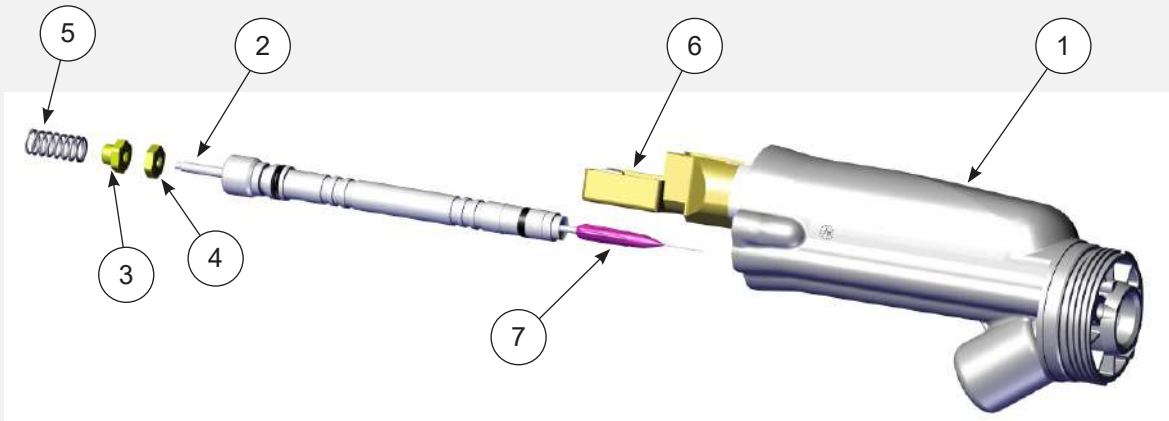


09.6 RANSFLEX HVX - SOLVENT BASE (85KV)



09.6.1 ATOMIZATION - TABLE OF "AA" DASHES				
"A" Dash Number	"A" Description	"A1"	"A2"	"A3" / Color
82385-14	V SERIES 1.4mm	80265-00	80264-14	79809-00 / YELLOW
82385-18	V SERIES 1.8mm	80265-00	80264-18	79809-00 / YELLOW

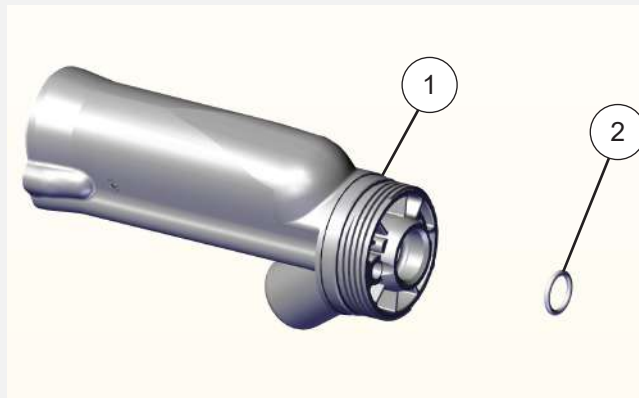
09.6.2 UNIQUE PARTS FOR 82385/83385



85kV Barrel

09.6.2.1 85KV BARREL

Item Number	Part Number	Description	Quantity
1	80379-00	ASSEMBLY, BARREL & O-RING	1
2	81280-85	ASSEMBLY, NEEDLE SHAFT	1
3	80242-00	NUT, REAR JAM	1
4	80243-00	NUT, FRONT JAM	1
5	80258-00	SPRING, FLUID RETURN	1
6	80590-85	ASSEMBLY, CASCADE (85 kV) (4 PIN)	1
7	70430-02	ELECTRODE, HIGH WEAR (INCLUDED IN 81280-85)	1



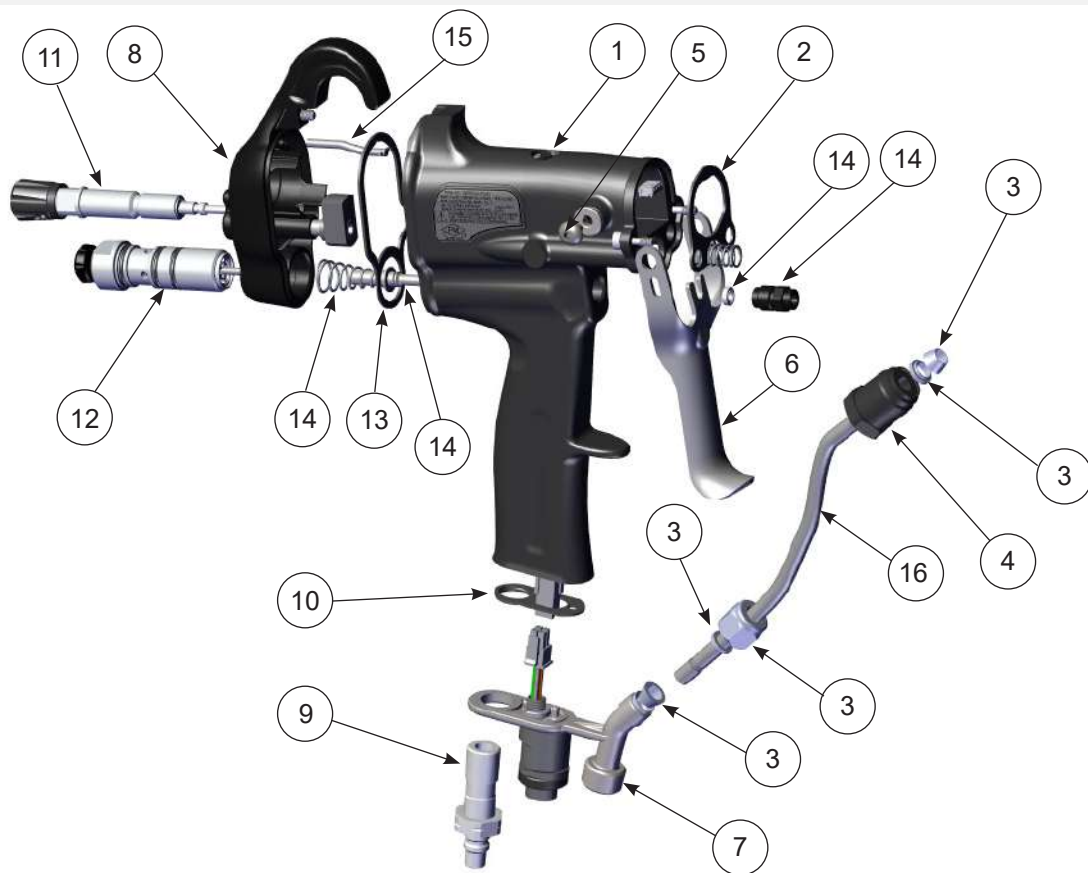
09.6.2.2 BARREL AND O-RING (PART NUMBER 81481-00)

Item Number	Part Number	Description	Quantity
1	81481-00	BARREL 85Kv (INCLUDES O-RING)	1
2	79001-07-K3	O-RING, SOLVENT PROOF (INCLUDED AS PART OF 81391-00 GASKET KIT)	1

09.7 COMPONENTS FOR ALL MODELS

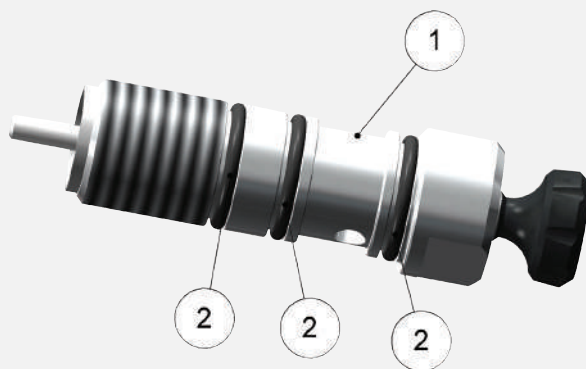


09.7.1 RETAINING RING 80377-00			
Item Number	Part Number	Description	Quantity
1	80377-00	NUT, RETAINING & O-RING ASSEMBLY (CONTAINS ALL PARTS)	1



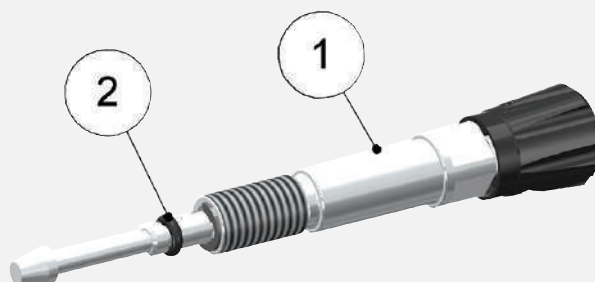
09.7.2 HANDLE COMPONENTS

Item Number	Part Number	Description	Quantity
1	80144-00	INCLUDES HANDLE WITH COMPENSATION VALVE (80870-00)	1
2	80745-00	GASKET, BARREL (INCLUDED AS PART OF 81391-00 GASKET KIT)	1
3	83348-00	KIT, FLUID INLET (2 OF EACH PART)	1
4	80346-00	NUT, CONNECTOR, HOSE	1
5	83351-00	SCREW, TRIGGER, KIT OF 4	1
6	80211-00	ASSEMBLY, TRIGGER	1
7	81023-00	ASSEMBLY, BRACKET FLUID	1
8	81022-00	ASSEMBLY, REAR COVER	1
9	80869-00	FITTING, AIR INLET: QUICK DISCONNECT	1
10	80684-00	GASKET, EXHAUST, COMBINED (INCLUDED AS PART OF 81391-00 GASKET KIT)	1
11	80273-00	ASSEMBLY, VALVE FAN AIR	1
12	80262-00	ASSEMBLY, ADJUSTABLE FLUID	1
13	80732-00	GASKET, REAR (INCLUDED AS PART OF 81391-00 GASKET SET)	1
14	83350-00	KIT, AIR VALVE (CONTAINS SPRING, AIR VALVE, CUP SEAL, RETAINING NUT)	1
15	81290-00	LIGHT PIPE	1
16	80269-45	FLUID TUBE, 45 KV	1
	80269-65	FLUID TUBE, 65 KV	
	80269-85	FLUID TUBE, 85 KV	



09.7.3 REAR CARTRIDGE ASSEMBLY 80262-00 (ADJUSTABLE FLUID CONTROL)

Item Number	Part Number	Description	Quantity
1	80262-00	ASSEMBLY, FLUID CARTRIDGE (INCLUDES ALL PARTS BELOW)	1
2	79001-08-K3	O-RING, SOLVENT PROOF (INCLUDED AS PART OF 81391-00 GASKET KIT)	3



09.7.4 80273-00 FAN AIR CARTRIDGE

Item Number	Part Number	Description	Quantity
1	80273-00	ASSEMBLY, FAN VALVE (INCLUDES ALL PARTS BELOW)	1
2	79001-16-K3	O-RING, SOLVENT PROOF (INCLUDED AS PART OF 81391-00 GASKET KIT)	1



09.7.5 AVAILABLE AIR HOSE ASSEMBLIES

Part Number	Length	Connection
80558-01	1.5 M	LEFT-HANDED THREAD*
80558-02	1.5 M	QUICK DISCONNECT
80558-05	5 M	LEFT-HANDED THREAD*
80558-06	5 M	QUICK DISCONNECT
80558-10	10 M	LEFT-HANDED THREAD*
80558-11	10 M	QUICK DISCONNECT**
80558-15	15 M	LEFT-HANDED THREAD*
80558-16	15 M	QUICK DISCONNECT
80558-20	20 M	LEFT-HANDED THREAD*
80558-21	20 M	QUICK DISCONNECT
80558-25	25 M	LEFT-HANDED THREAD*
80558-26	25 M	QUICK DISCONNECT
80558-30	30 M	LEFT-HANDED THREAD*
80558-31	30 M	QUICK DISCONNECT

**Includes 80868-00 left-handed fitting.

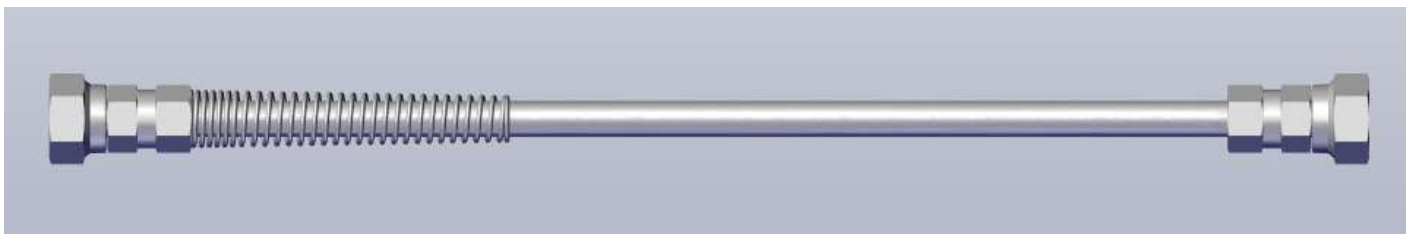
**Standard in Spray Ready Kits 83385, 83365, and 83345.



09.7.6 AVAILABLE CABLE ASSEMBLIES

Part Number	Length
79338-01	1 M
79338-10	10 M**
79338-15	15 M
79338-20	20 M

**Standard in Spray Ready Kits 83385, 83365, and 83345.



09.7.7 AVAILABLE FLUID HOSES

Part Number	Hose Length
8303-05	5 M
8303-10	10 M**
8303-15	15 M
8303-20	20 M

**Standard in Spray Ready Kits 83385, 83365, and 83345.

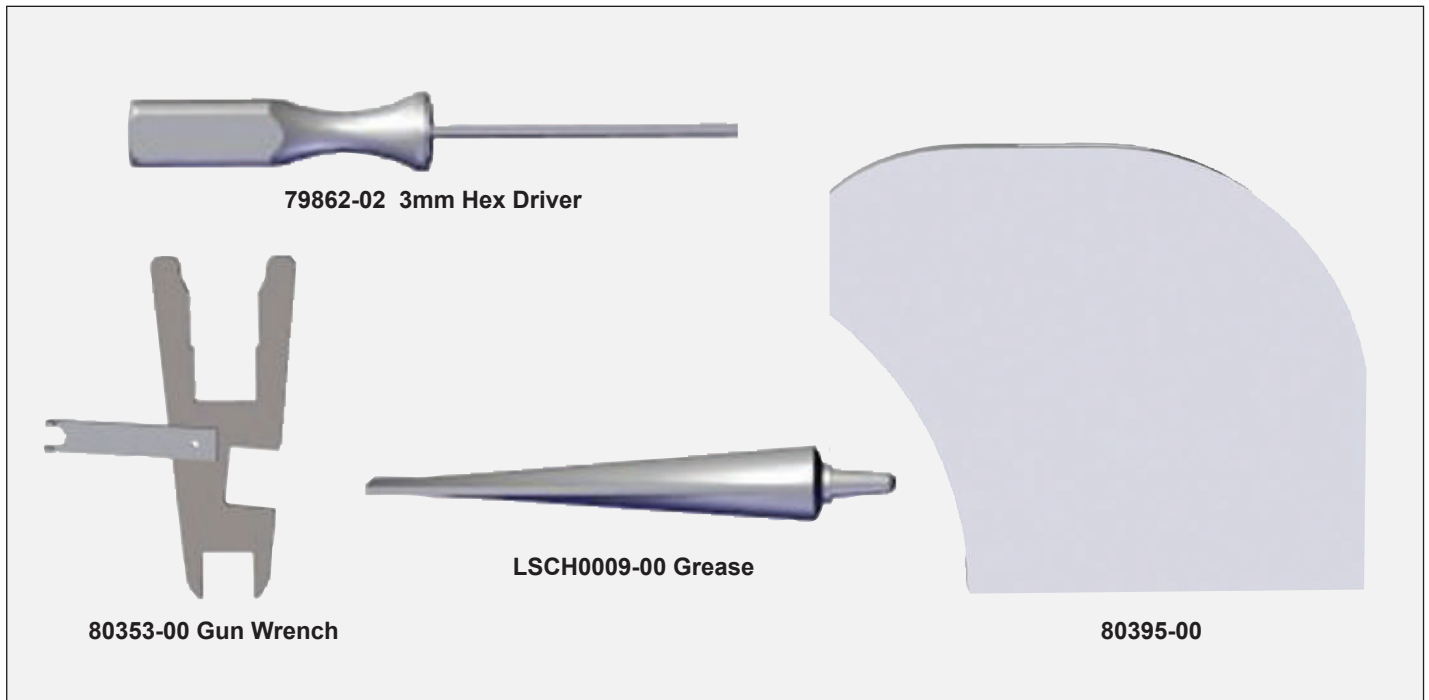
NOTICE

If the end user uses fluid hoses from a different source, ensure the hose meets the proper pressure requirements for the application.

09.7.8 AVAILABLE ACCESSORIES

Part Number	Description
70430-01	ELECTRODE ASSEMBLY
79890-00	COILED FLUID TUBE, COVER
79879-03	COILED FLUID TUBE

09.8 ACCESSORIES INCLUDED WITH HVX



09.8.1 ACCESSORIES AVAILABLE SEPARATELY

Part Number	Description
27141-081	WRAP, SPIRAL
59972-00	PACK OF 4 LSCH0009 GREASE
76102-00	APPLICATOR MOUNTING BRACKET
76652-01	HV PROBE
76652-02	SPRAYABILITY AND SCI PAINT TEST METER
76652-03	PAINT RESISTIVITY, SPRAYABILITY
76652-04	DELUXE KIT
80519-45	4.3MM (.170") ID FLUID TUBE FOR 45 KV
80519-65	4.3MM (.170") ID FLUID TUBE FOR 65 KV
80519-85	4.3MM (.170") ID FLUID TUBE FOR 85 KV
76449-02	LINE CORD (CONTINENTAL EUROPE)
76449-03	LINE CORD (CHINA)
76449-00	LINE CORD (UNITED STATES)

09.8.2 SPARE PARTS KITS

Part Number	Description
79001-07-K3	FLUID INLET O-RING OF BARRELS
70430-02-K3	RESISTIVE ELECTRODE IN KITS OF 3
80696-00	GASKET KIT CONTAINS: 80732-00 REAR COVER, 80745-00 HANDLE/BARREL, AND 80684-00 HANDLE BOTTOM
81391-00	GASKET/O-RING KIT
80395-K10	GUN COVER - KIT OF 10
80395-K100	GUN COVER - KIT OF 100
76633-K5	CONDUCTIVE GLOVES - KIT OF 5
76633-K10	CONDUCTIVE GLOVES - KIT OF 10
80507-00	COILED FLUID TUBE KIT

09.8.3 81391-00 RANSFLEX GASKET/O-RING KIT

Part Number	Description	Quantity
80732-00	GASKET, REAR	1
80745-00	GASKET, BARREL	1
80684-00	GASKET, EXHAUST	1
79001-16	O-RING, SOLVENT PROOF	1
79001-08	O-RING, SOLVENT PROOF	3
79001-07	O-RING, SOLVENT PROOF	1
7554-61	O-RING, SOLVENT RESISTANT	1
LSOR0005-17	O-RING, ENCAPSULATED	1
10051-05	CUP SEAL	1
IL-429	LITERATURE	1
79001-06	O-RING FOR THE NEEDLE SHAFT ASSEMBLY	1

09.8.4 RANSFLEX RECOMMENDED SPARE PARTS (QUANTITIES PER APPLICATOR)

Part Number	Description	Quantity
80264-XX	NOZZLE, FLUID V SERIES	1
80264-XX-K3	NOZZLE, FLUID V SERIES (KIT OF 3)	1
80230-XX	NOZZLE, FLUID C SERIES	1
80230-XX-K3	NOZZLE, FLUID C SERIES (KIT OF 3)	1
80239-XX	NOZZLE, FLUID T SERIES	1
80239-XX-K3	NOZZLE, FLUID T SERIES (KIT OF 3)	1
80376-00	ASSEMBLY, BARREL (WITH FRONT SEAL)	1
80379-65	ASSEMBLY, BARREL (WITH FRONT SEAL)	1
81487-00	ASSEMBLY, BARREL (WITH FRONT SEAL)	1
80590-45	CASCADE ASSEMBLY, 65KV	1
80590-65	CASCADE ASSEMBLY, 45KV	1
80590-85	CASCADE ASSEMBLY, 85KV	1
80745-00	GASKET, BARREL	1
80377-00	NUT, RETAINING, AIR NOZZLE	1
83348-00	KIT, FLUID INLET	1
83351-00	KIT, SCREW, TRIGGER RETENTION	1
80242-00	NUT, REAR, JAM	1
80243-00	NUT, FLUID JAM, FRONT	1
80258-00	SPRING, FLUID RETURN	1
70430-02	ELECTRODE	2
70430-02-K3	KIT OF 3 ELECTRODES	1
80732-00	GASKET, REAR	1
81280-45	SHAFT ASSEMBLY, 2-PIECE NEEDLE	1
81280-65	SHAFT ASSEMBLY, 2-PIECE NEEDLE	1
81280-85	SHAFT ASSEMBLY, 2-PIECE NEEDLE	1
80269-45	FLUID INLET TUBE	1
80269-65	FLUID INLET TUBE	1
80269-85	FLUID INLET TUBE	1
80684-00	GASKET, EXHAUST, COMBINED	1
LSCH0009-00	DIELECTRIC GREASE	2
83350-00	KIT, AIR VALVE	1

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MANUAL CHANGE SUMMARY		
Date	Description	Version
03/2026	Initial release.	R1
05/2026	Incorporated 85 kV applicator information.	R2

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WARRANTY POLICY

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

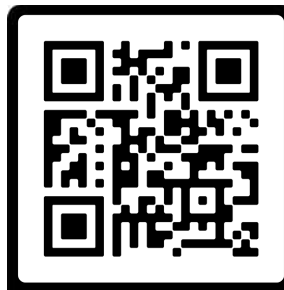
The use of parts or accessories from sources other than Binks will void all warranties. Failure to follow reasonable maintenance guidance provided can invalidate the warranty.

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.

REGION	BINKS CONTACT
Americas	Tel: 1-800-992-4657
Europe, Africa, Middle East	Tel: +4401202571111
India	marketingroa@binks.com
China	Tel: +862133730108
Korea	Tel: +82313663303
Japan	Tel: +81457856421
Australia	Tel: +61085257555

WARRANTY PAGE





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