

MANUAL NUMBER X021279 | REVISION B | ENGLISH (US)

# **King® E-Max XT™ Electric Airless Sprayers**

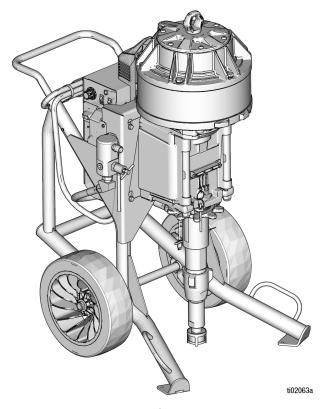
High pressure spray packages for applying high performance coatings. For professional use only.

Not approved for use in explosive atmospheres or hazardous (classified) locations.



## **Important Safety Instructions**

Read all warnings and instructions in this manual, in related manuals, and on the unit before using the equipment. Be familiar with the proper control and usage of the equipment. Save these instructions.



Images are for illustrative purposes only



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# MODELS

The part numbers reflect the distinct features and characteristics of the King® E-Max XT™ Sprayers.

# KING® E-MAX XT™ SPRAYER MODELS (4000 PSI)

Maximum Working Pressure: 4000 psi (27.6 MPa, 276 bar)

VAC: 200-240 Vac Pressure Ratio: 40:1 Pump Size: 220 cc

MODEL	DESCRIPTION	PLUG	SUCTION SET	GUN	HOSE (WHIP HOSE)
2009100		NEMA L6-30	NI / A		
2009101		IEC 60309	N/A		
2010983	Carovar anly	NEMA L6-30	5 gal.	N/A	
2010984	Sprayer only	NEMA L6-30	55 gal.	N/A	N/A
2010985		IEC 60309	5 gal.		
2010986		IEC 60309	55 gal.		
2009106		NEMA L6-30	F	XTR 5+	3/8 in. x 50 ft (1/4 in. x 6 ft)
2009107	_	IEC 60309	5 gal.		
2009112	O a maralanta	NEMA L6-30	55 gal.	Silver Plus	3/8 in. x 50 ft (1/4 in. x 3 ft) 1/2 in. x 50 ft (3/8 in. x 10 ft)
2009113	Complete	IEC 60309			
2009116		NEMA L6-30	5 gal.		
2009117		IEC 60309			
2009118		NEMA L6-30		VTD C.	3/8 in. x 150 ft (1/4 in. x 6 ft)
2009119	D:= 150	IEC 60309	F a.a.l	XTR 5+	
2009128	Big 150	NEMA L6-30	5 gal.	Inline Texture	1/2 in. x 150 ft
2009129		IEC 60309	IEC 60309		(3/8 in. x 10 ft)
2009124	D:= 050	NEMA L6-30	ΓΓ l	Tautuma	1/2 in. x 250 ft
2009125	Big 250	IEC 60309	55 gal.	Texture	(3/8 in. x 10 ft

# $\textbf{KING} \circledast \quad \textbf{E-MAX} \quad \textbf{X} \quad \textbf{T} \quad \textbf{SPRAYER} \quad \textbf{MODELS} \quad (\ \textbf{6000} \quad \textbf{PSI})$

Maximum Working Pressure: 6000 psi (41.4 MPa, 414 bar)

VAC: 200-240 Vac Pressure Ratio: 60:1 Pump Size: 180 cc

MODEL	DESCRIPTION	PLUG	SUCTION SET	GUN	HOSE (WHIP HOSE)
2009102		NEMA L6-30	NI/A		N/A
2009103	Sprayer only	IEC 60309	N/A	N1/A	
2010987		NEMA L6-30	F and	N/A	
2010988		IEC 60309	5 gal.		
2009108	Complete	NEMA L6-30	F and		3/8 in. x 50 ft
2009109	Complete	IEC 60309 5 gal.	o gai.	VTD 7.	(1/4 in. x 6 ft)
2009120	Dia 150	NEMA L6-30	E gol	XTR 7+	3/8 in. x 150 ft
2009121	Big 150	IEC 60309	5 gal.		(1/4 in. x 6 ft)

# KING $\circledR$ E-MAX XT $^{\intercal}$ SPRAYER MODELS (7250 PSI)

Maximum Working Pressure: 7250 psi (50 MPa, 500 bar)

VAC: 200-240 Vac Pressure Ratio: 70:1 Pump Size: 145 cc

MODEL	DESCRIPTION	PLUG	SUCTION SET	GUN	HOSE (WHIP HOSE)
2009104		NEMA L6-30	NI/A		
2009105	Carover enly	IEC 60309	N/A	NI / A	N/A
2010989	Sprayer only	NEMA L6-30	E mal	N/A	
2010990		IEC 60309	5 gal.		
2009110		NEMA L6-30		VTD 7.	3/8 in. x 50 ft (1/4 in. x 6 ft)
2009111	O a maralata	IEC 60309	r and	XTR 7+	
2009114	Complete	NEMA L6-30	5 gal.	VIIE	1/2 in. x 50 ft
2009115		IEC 60309		XHF	(3/8 in. x 10 ft)
2009122	D:- 150	NEMA L6-30	[]	VTD 7.	3/8 in. x 150 ft
2009123	Big 150	IEC 60309	5 gal.	XTR 7+	(1/4 in. x 6 ft)
2009126	Big 250	NEMA L6-30		VIIIE	3/4 in. x 200 ft,
2009127		IEC 60309	5 gal.	XHF	1/2 in x 50 ft (3/8 in x 10 ft)

## APPROVALS

The King® E-Max XT™ Sprayers agency approvals are listed in the table.

2009101	
2009103	CE
2009105	

## MODELS

# GUN AND HOSE BUNDLES

Table 1-1: King® E-Max XT™ Gun and Hose Bundles

KIT	GUN (MODEL NUMBER)	HOSE (WHIP HOSE)	MAXIMUM WORKING PRESSURE
King E-Max	XT 40:1		
2002446	XTR5+ (XTR524)	3/8 in. x 50 ft (1/4 in. x 6 ft)	4500 psi (31 MPa, 310 bar)
287850	Silver (246240)	3/8 in. x 50 ft (1/4 in. x 3 ft)	4000 psi (27.6 MPa, 276 bar)
2010130	Inline Texture (245820)	1/2 in. x 50 ft (3/8 in. x 10 ft)	4000 psi (27.6 MPa, 276 bar)
2001852	XTR5+ (XTR524)	3/8 in. x 150 ft (1/4 in. x 6 ft)	4500 psi (31 MPa, 310 bar)
2010131	Inline Texture (245820)	1/2 in. x 150 ft (3/8 in. x 10 ft)	4000 psi (27.6 MPa, 276 bar)
16U757	Texture (241705)	1/2 in. x 250 ft (3/8 in. x 10 ft)	4500 psi (31 MPa, 310 bar)
King E-Max	XT 60:1 and 70:1		
2002447	XTR7+ (XTR724)	3/8 in. x 50 ft (1/4 in. x 6 ft)	7250 (50 MPa, 500 bar)
17B824	XHF (262854	1/2 in. x 50 ft (3/8 in. x 10 ft)	7250 (50 MPa, 500 bar)
2001850	XTR7+ (XTR724)	3/8 in. x 150 ft (1/4 in. x 6 ft)	7250 (50 MPa, 500 bar)
17B825	XHF (262854)	3/4 in. x 200 ft, 1/2 in. x 50 ft (3/8 in. x 10 ft)	7250 (50 MPa, 500 bar)

# RELATED MANUALS

Additional documents are available to support the operation, repair, and maintenance of the King\$ E-Max XT $^{\texttt{m}}$  Sprayers. Find English manuals and any available translations at www.graco.com.

Table 2-1: Related Manuals for King E-Max XT Operation Manual X021279

ENGLISH MANUAL	DESCRIPTION
X020224EN	King® E-Max XT™ Displacement Pumps, Repair
333507	Hopper Installation Kit, Instructions
311534	25 Gallon Texture Hopper, Instructions
311254	Silver Plus, Silver Plus HP, and Flex Plus™ Airless Spray Guns, Instructions
3A7469	XTR5+™ and XTR7+™ Airless Spray Gun, Instructions
3A2799	XHF™ Spray Gun, Instructions
308491	Texture Airless Spray Gun, Instructions, Parts
3A2954	VISCON® HF High Flow, HIgh Pressure Fluid Heater, Instructions
309524	VISCON® HP High Pressure Fluid Heater, Instructions, Parts

# TRANSLATED MANUALS

Additional language documents are available to support all regions where the King $^{\mathbb{R}}$  E-Max XT $^{\mathbb{M}}$  Sprayers are sold. Find any available translations at www.graco.com.

Table 2-2: Translations for King E-Max XT Operation Manual X021279

LANGUAGE	MANUAL NUMBER
Chinese	X021279ZH
Dutch	X021279NL
English	X021279EN
French	X021279FR
German	X021279DE
Italian	X021279IT
Japanese	X021279JA
Korean	Х021279КО
Polish	X021279PL
Spanish	X021279ES
Turkish	X021279TR

# SAFETY SYMBOLS

The following safety symbols appear throughout this manual and on warning labels. Read the table below to understand what each symbol means.

SYMBOL	MEANING	SYMBOL	MEANING
	Burn Hazard		Do Not Place Hands or Other Body Parts Near Fluid Outlet
4	Electric Shock Hazard		Do Not Stop Leaks with Hand, Body, Glove or Rag
	Equipment Misuse Hazard		Eliminate Ignition Sources
	Fire and Explosion Hazard	MPa/bar/Psi	Follow Pressure Relief Procedure
<b>▶</b>	Moving Parts Hazard		Ground Equipment
21-	Skin Injection Hazard		Read Manual
	Skin Injection Hazard		read Walladi
	Splash Hazard		Ventilate Work Area
	Toxic Fluid or Fumes Hazard		Wear Personal Protective Equipment



# **Safety Alert Symbol**

This symbol indicates: Attention! Become Alert! Look for this symbol throughout the manual to indicate important safety messages.

**The following warnings apply throughout this manual.** Read, understand, and follow the warnings before using this equipment. Failure to follow these warnings can result in serious injury.

# **WARNING**



#### FIRE AND EXPLOSION HAZARD

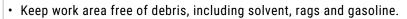
Flammable fumes, such as solvent and paint fumes, **in work area** can ignite or explode. Paint or solvent flowing through the equipment can cause static sparking. To help prevent fire and explosion:

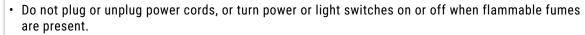


- Use equipment only in well-ventilated area.
- Eliminate all ignition sources, such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static sparking).



- Ground all equipment in the work area. See **Grounding** instructions.
- · Never spray or flush solvent at high pressure.





- Use only grounded hoses.
- Hold gun firmly to side of grounded pail when triggering into pail. Do not use pail liners unless they
  are anti-static or conductive.
- Stop operation immediately if static sparking occurs or you feel a shock. Do not use equipment until you identify and correct the problem.
- · Keep a working fire extinguisher in the work area.



#### SKIN INJECTION HAZARD

High-pressure fluid from gun, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. **Get immediate surgical treatment.** 



- Do not spray without tip guard and trigger guard installed.
- · Engage trigger lock when not spraying.



- Do not point gun at anyone or at any part of the body.
- · Do not put your hand over the spray tip.
- Do not stop or deflect leaks with your hand, body, glove, or rag.



• Follow the **Pressure Relief Procedure** when you stop spraying and before cleaning, checking, or servicing equipment.



- · Tighten all fluid connections before operating the equipment.
- · Check hoses and couplings daily. Replace worn or damaged parts immediately.

# **MARNING**



#### **EQUIPMENT MISUSE HAZARD**

Misuse can cause death or serious injury.



- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical Specifications** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See Technical
  Specifications in all equipment manuals. Read fluid and solvent manufacturer's warnings. For
  complete information about your material, request Safety Data Sheets (SDSs) from distributor or
  retailer.
- Do not leave the work area while equipment is energized or under pressure.
- Turn off all equipment and follow the Pressure Relief Procedure when equipment is not in use.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.
- · Make sure all equipment is rated and approved for the environment in which you are using it.
- Use equipment only for its intended purpose. Call your distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or over bend hoses or use hoses to pull equipment.
- · Keep children and animals away from work area.
- · Comply with all applicable safety regulations.



#### **ELECTRIC SHOCK HAZARD**

This equipment must be grounded. Improper grounding, setup, or usage of the system can cause electric shock.



- Turn off and disconnect power cord before servicing equipment.
- · Connect only to grounded electrical outlets.
- · Use only 3-wire extension cords.
- Ensure ground prongs are intact on power and extension cords.
- · Do not expose to rain. Store indoors.
- · Wait five minutes after disconnecting power cord before servicing.
- Only use an authorized service center to replace a damaged power cord.

# **WARNING**



#### **MOVING PARTS HAZARD**

Moving parts can pinch, cut or amputate fingers and other body parts.



- · Keep clear of moving parts.
- · Do not operate equipment with protective guards or covers removed.
- Equipment can start without warning. Before checking, moving, or servicing equipment, follow the **Pressure Relief Procedure** and disconnect all power sources.



#### **BURN HAZARD**

Equipment surfaces and fluid that is heated can become very hot during operation. To avoid severe burns:

· Do not touch hot fluid or equipment.



#### **TOXIC FLUID OR FUMES HAZARD**

Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.

- Read Safety Data Sheets (SDSs) to know the specific hazards of the fluids you are using.
- Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.



#### PERSONAL PROTECTIVE EQUIPMENT

Wear appropriate protective equipment when in the work area to help prevent serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. Protective equipment includes but is not limited to:

- · Protective eyewear, and hearing protection.
- Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.

# TECHNICAL SPECIFICATIONS

The table provides important information related to the King® E-Max  $XT^{\text{\tiny{M}}}$  Sprayers, including product attributes, measurements, and performance characteristics that support the use of the equipment.

Table 5-1: Technical specifications for King E-Max XT Sprayers

	US	METRIC		
Maximum fluid working pressure				
70:1 Sprayer	7250 psi (145cc)	500 bar, 50.0 MPa		
60:1 Sprayer	6000 psi (180cc)	414 bar, 41.4 MPa		
40:1 Sprayer	4000 psi (220cc)	276 bar, 27.6 MPa		
Fluid outlet npt (number of outlets)	1/2 in. (2)	12.7 mm		
Generator minimum	10	kW		
Power requirements	200-240 VAC, 50/6	50 Hz, 30 A, 1 phase		
Dimensions				
Height	45.6 in.	115.8 cm		
Length	35.8 in.	90.9 cm		
Width	24.2 in.	61.5 cm		
Weight	340 lb	155 kg		
Noise (dBa)				
Maximum sound pressure (ISO 3744)	72.	72.6 dBa		
Maximum sound power (ISO 3744)	83.	83.6 dBa		
Sound pressure measured 3.3 feet (1.0 meter)	from equipment.			
Materials of Construction				
Wetted materials on all models	PTFE, acetal, leather, UHMWI	zinc- and nickel-plated carbon steel, nylon, stainless steel, PTFE, acetal, leather, UHMWPE, aluminum, tungsten carbide, polyethylene, fluoroelastomer, urethane		
Notes				
All trademarks or registered trademarks are t	ne property of their respective owners	·		

The diagram highlights the controls and features of the King® E-Max XT™ Sprayers that are used during typical operation.

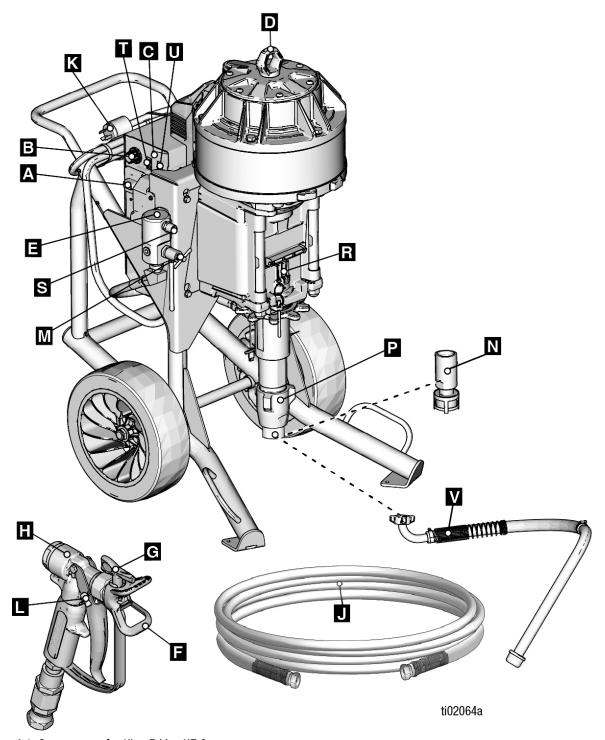


Figure 6-1: Components for King E-Max XT Sprayers

## COMPONENT IDENTIFICATION

### KEY Α ON/OFF Switch В **Pressure Control** С **LED Indicator** D Lift Ring Ε Filter/Manifold F Tip Guard Spray Tip G Н Gun J Airless Hose Κ **Power Cord** L Trigger Lock Fluid Drain/Purge Valve М Ν Direct Immersion Fluid Intake Ρ Pump Finger Guard/TSL Fill Point R S Fluid Outlet Т WatchDog™ Switch U Power Mode Switch

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Suction Tube

Properly ground the King® E-Max XT™ Sprayer.



The equipment must be grounded to reduce the risk of static sparking and electric shock. An electric or static spark can cause fumes to ignite or explode. An improper ground can cause electric shock. A good ground provides an escape wire for the electric current.

This sprayer is equipped with a Power Cord that has a ground wire and an appropriate grounding plug.

The plug must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and regulations.

Do not modify the plug provided; if it does not fit the outlet, have the proper outlet installed by a qualified electrician.

#### POWER REQUIREMENTS

200-240 VAC, 50/60 Hz, 30 A, 1 phase.

Connect to a maximum of 30 A breaker.

#### EXTENSION CORDS

Use an extension cord with an undamaged ground contact. If an extension cord is necessary, use a 3-wire, 10 AWG (5.26 mm²) minimum.

### NOTE:

Smaller gauge or longer extension cords may reduce sprayer performance.

Fluid hoses: use only electrically conductive hoses with a maximum of 500 ft. (150 m) combined hose length to ensure grounding continuity. Check electrical resistance of hoses. If total resistance to ground exceeds 29 megohms, replace hose immediately.

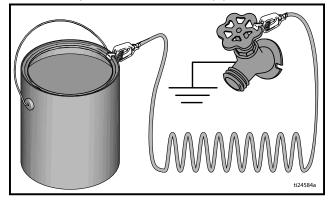
#### PAILS

**Solvent and oil-based fluids:** follow local code. Use only conductive metal pails, placed on a grounded surface such as concrete.

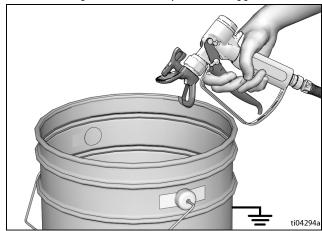
Do not place pail on a non-conductive surface such as paper or cardboard which interrupts grounding continuity.



Always ground a metal pail: connect a ground wire to the pail. Clamp one end to the pail and the other end to a true earth ground such as a water pipe.



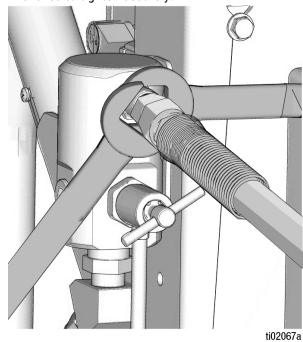
To maintain ground continuity when sprayer is flushed or pressure is relieved: hold metal part of Gun firmly to the side of a grounded metal pail then trigger the Gun.



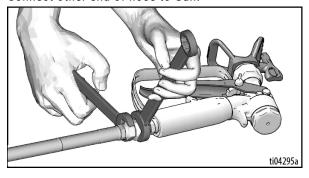
When using the equipment for the first time or after long term storage, follow the steps to prepare the King® E-Max  $XT^{\mathbb{T}}$  Sprayer for operation.



1. Connect Graco Airless Hose to Fluid Outlet. Use two wrenches to tighten securely.



2. Connect other end of hose to Gun.

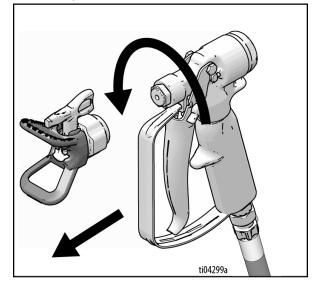


3. Use two wrenches to tighten securely.

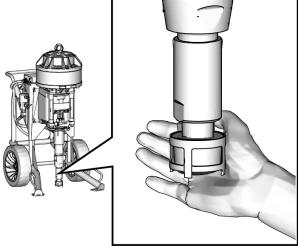




5. Remove Tip Guard.

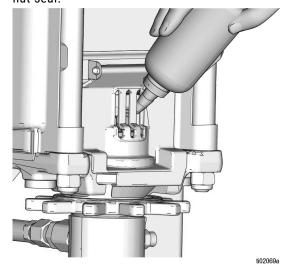


6. After long term storage, check inlet strainer for clogs and debris.

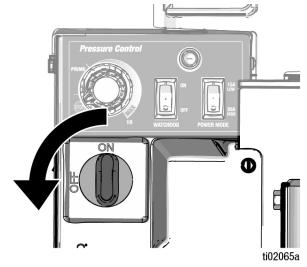


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- Fill throat packing nut with Graco Throat Seal Liquid (TSL™) to prevent premature packing wear. Do this daily or each time you spray.
  - a. Place the TSL bottle nozzle into the opening in the grill at the front of the sprayer.
  - Squeeze bottle to dispense enough TSL to fill the space between the Pump rod and packing nut seal.



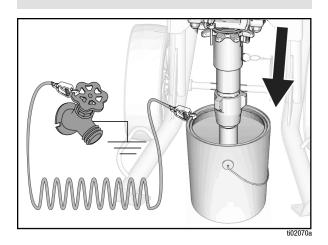
8. Make certain ON/OFF Switch is OFF.



- 9. Plug power supply cord into a properly grounded electrical outlet.
- 10. Place Direct Immersion Fluid Intake in grounded metal pail partially filled with flushing fluid. See the **Grounding** section in this manual.

#### NOTE:

New sprayers are shipped with storage fluid that must be flushed out with compatible solvent prior to using the sprayer. Check flushing fluid for compatibility with material that is to be sprayed. A secondary flush with a compatible fluid may be necessary.



- 11. Turn Pressure Control STOP.
- 12. Turn ON/OFF Switch to **ON** position.
- 13. Disengage Trigger Lock.

- 14. Hold a metal part of the Gun firmly to a grounded metal pail. Trigger Gun and turn Pressure control up until the Pump runs steady and flushing fluid appears. Trigger Gun for 10-15 seconds.
- 15. Turn ON/OFF Switch to OFF position.
- 16. Engage Trigger Lock.

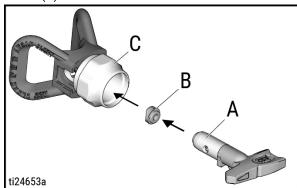
## SPRAY TIP INSTALLATION

Properly install and remove the spray tip onto the King® E-Max  $XT^{\mathsf{IM}}$  Sprayer.

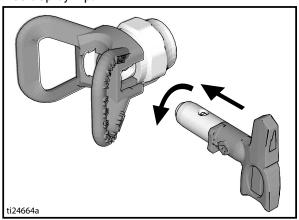


To avoid serious injury from skin injection, do not put your hand in front of the Spray Tip when installing or removing the Spray Tip and Tip Guard.

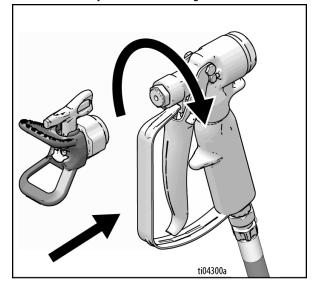
- 1. Perform Pressure Relief Procedure.
- 2. Use Spray Tip (A) to insert OneSeal™ (B) into Tip Guard (C).



3. Insert Spray Tip.



4. Screw assembly onto Gun and tighten.



Sprayer is now ready for startup and spray!

Follow the steps to power on the equipment and prepare the King® E-Max  $XT^{\text{\tiny M}}$  Sprayer for operation.



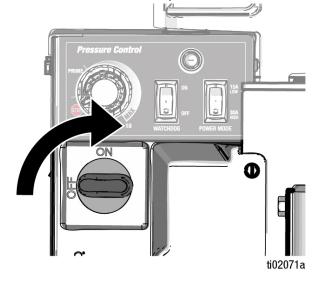
High-pressure spray is able to inject toxins into the body and cause serious bodily injury. Do not stop leaks with hand or rag.

- 1. Perform Perform Pressure Relief Procedure.
- 2. Turn Pressure Control STOP.



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3. Turn ON/OFF Switch to ON position.



4. Prime through Fluid Drain/Purge Valve only if necessary.

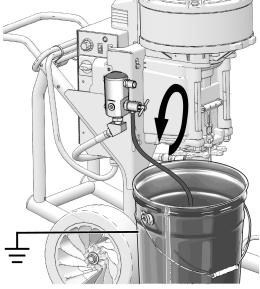
#### NOTE:

Usually required for high viscosity materials.

#### NOTICE

Do not prime Pump through Fluid Drain/Purge Valve using two-component materials. Mixed two-component materials will harden in valve and result in clogging.

 Place drain tube in a grounded waste pail. Open Fluid Drain/Purge Valve by slightly rotating counterclockwise.



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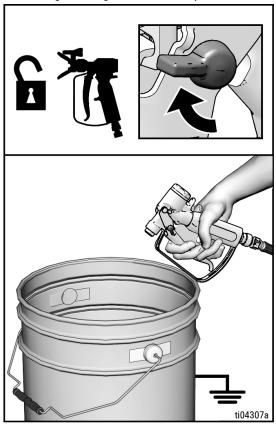
b. Turn Pressure Control up until the Pump runs steady.



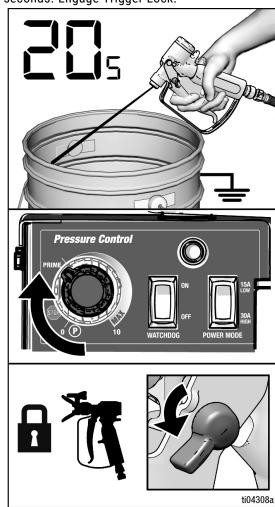
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c. Close Fluid Drain/Purge Valve by rotating clockwise.

- 5. Prime hose and Gun.
  - a. Disengage Trigger Lock. Hold the metal part of the Gun against a grounded metal pail.

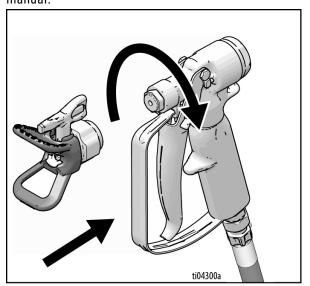


b. Trigger Gun. Slowly turn Pressure Control up until the Pump begins to cycle and a steady stream comes from the Gun. Trigger for 20 seconds. Engage Trigger Lock.



 Inspect Airless Hose connections for leaks. If leaks occur, perform Pressure Relief Procedure, then tighten all fittings and repeat startup procedure. If there are still leaks, replace the hose. If there are no leaks, continue with the next steps.

7. With the Trigger Lock engaged, screw tip assembly onto Gun and tighten. See **Spray Tip Installation**. For gun assembly instructions, see separate Gun manual.



The instructions provide guidance on how to operate the King® E-Max XT™ Sprayer.

### PRESSURE RELIEF PROCEDURE

Relieve pressure on the King® E-Max XT™ Sprayer when operation is stopped, and before cleaning, checking, or servicing the equipment.



Follow the Pressure Relief Procedure whenever you see this symbol.

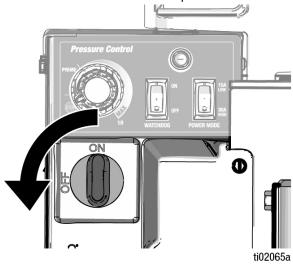


This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, splashed fluid and moving parts, follow the Pressure Relief Procedure whenver sprayer is stopped and before sprayer is cleaned or checked, and before equipment is serviced.

1. Engage the Trigger Lock.



2. Turn ON/OFF Switch to the OFF position.

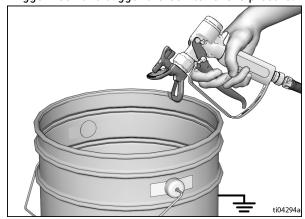


3. Turn Pressure Control to STOP.



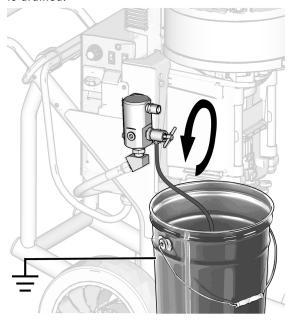
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4. Hold a metal part of the Gun firmly to a grounded metal pail. Point Gun into pail. Disengage the Trigger Lock and trigger the Gun to relieve presure.



5. Engage the Trigger Lock.

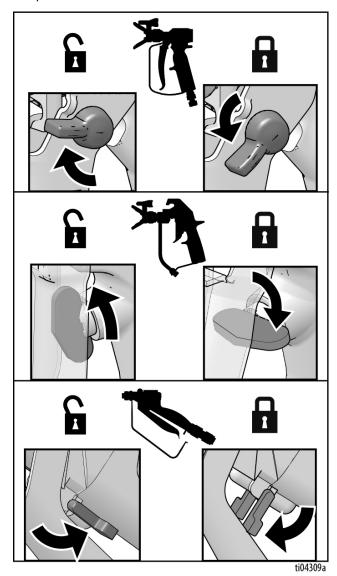
 Drain fluid. To drain fluid, slowly open Fluid Drain/ Purge Valve into a waste pail. Close valve after fluid is drained.



- 7. If you suspect the Spray Tip or hose is clogged or that pressure has not been fully relieved:
  - Using a wrench, VERY SLOWLY loosen the Tip Guard retaining nut or the hose end coupling to relieve pressure gradually.
  - b. Using a wrench, loosen the nut or coupling completely.
  - c. Clear hose or tip obstruction.

## TRIGGER LOCK

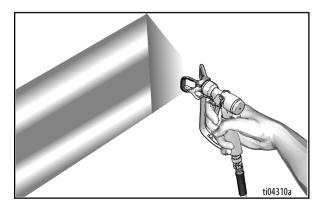
Always engage the Trigger Lock on the King® E-Max  $XT^{\mathsf{TM}}$  Sprayer when spraying is stopped to prevent the Gun from being triggered accidentally by hand or if dropped or bumped.



#### SPRAY

Follow the instructions to achieve the best spray pattern when using the King® E-Max XT™ Sprayer.

1. Spray test pattern. Adjust pressure to eliminate heavy edges.



2. Use smaller tip size if pressure adjustment cannot eliminate heavy edges.

## CLEAR SPRAY TIP CLOG

Follow the instructions to clear clogged debris from the King® E-Max  $XT^{\mathsf{TM}}$  Sprayer spray tip.

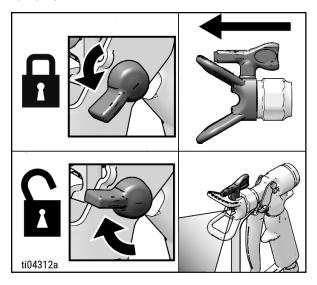


To avoid injury from skin injection, never point Gun at your hand or into a rag!

 Release trigger. Engage Trigger Lock. Rotate Spray Tip. Disengage Trigger Lock. Trigger Gun at waste area to clear clog.



2. Engage Trigger Lock. Return Spray Tip to original position. Disengage Trigger Lock and continue spraying.



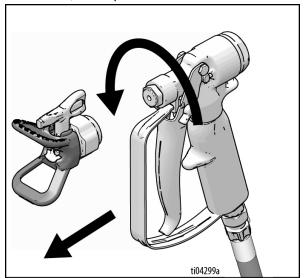
## CLEANUP

Flush the King® E-Max  $XT^{\mathbb{M}}$  Sprayer before shutting down to prevent material from curing and causing damage to the equipment.

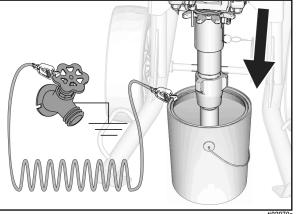


1. Perform Pressure Relief Procedure.

2. Remove Tip Guard and Spray Tip. For additional information, see separate Gun manual.

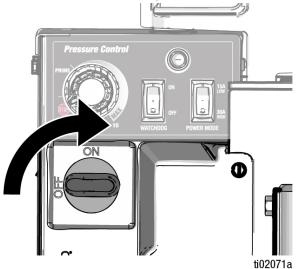


3. Place Direct Immersion Fluid Intake in a compatible solvent.



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4. Turn ON/OFF Switch to ON position.

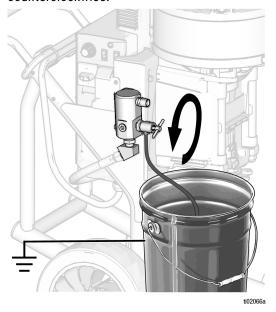


5. Hold Gun against waste pail. Disengage Trigger Lock. Trigger Gun and turn Pressure Control up until the Pump runs steady and flushing fluid appears.

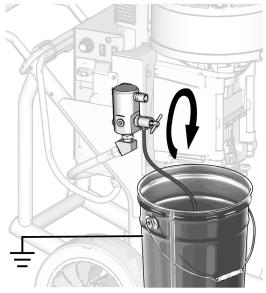


6. Stop triggering Gun.

- 7. If the sprayer was primed using the Fluid Drain/ Purge Valve, or the Fluid Drain/Purge Valve was used to relieve pressure at any time during operation:
  - a. Place drain tube in a grounded waste pail. Open Fluid Drain/Purge Valve slightly by rotating counterclockwise.



- b. Turn Pressure Control up until the Pump runs steady and flushing fluid appears in the waste pail.
- When clean solvent flows from drain tube, close Fluid Drain/Purge Valve by rotating clockwise.
   Pump will stall.



8. Turn Pressure Control to PARK mode. In PARK, Pump will cycle until reaching the bottom of the stroke.



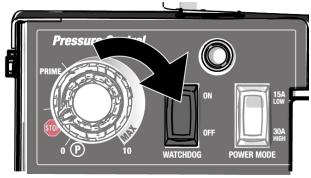
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9. Perform Pressure Relief Procedure.

#### WATCHDOG

The Watchdog™ Pump Protection System automatically shuts down the Pump when material runs out or if the Suction Tube is damaged.

To enable Watchdog, turn Watchdog Switch to  ${\bf ON}$  position.



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## LED STATUS DESCRIPTIONS

LED	CONDITIONS	DESCRIPTIONS
On Startup	1 Green flash	145cc pump detected
	2 Green flashes	180cc pump detected
	3 Green flashes	220cc pump detected
Operation	Green solid	Spray mode
	Green flashing	Prime mode
	Amber solid	Stop
	Green and Amber alternating	Park
	Green, Red, Amber alternating	Low voltage detected

Follow the service schedule to keep the King® E-Max XT™ Sprayer in good condition for optimal use.

WARNING

WARNING

WARNING

Perform **Perform Pressure Relief** before performing maintenance.

Table 11-1: Maintenance Schedule for King E-Max XT Sprayers

ACTIVITY	INTERVAL
Flush Procedure.	Daily or each time you spray.
Fill Throat Seal Liquid (TSL™) by adding through TSL fill point.	Daily or each time you spray.
Throat packing adjustment. When Pump packing begins to leak after extended use, tighten packing nut until leakage stops or lessens.	As necessary.
Clean Suction Tube using a compatible solvent.	Daily or each time you spray.

## KNOB CALIBRATION

#### NOTE:

Knob calibration should be performed whenever a new Pressure Control is installed or the control board is replaced.

- 1. With the sprayer powered on, turn the Pressure Control to the **STOP** position.
- Rapidly cycle the Watchdog™ switch from **OFF** to **ON** five times.



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- 3. When the sequence is complete, the knob calibration will start.
- 4. If the Pressure Control was not in the **STOP** position or the sequence was performed incorrectly, repeat the steps above to attempt a new knob calibration.

## RECYCLING AND DISPOSAL

Properly recycle and dispose of the King® E-Max XT™ Sprayer at the end of its useful life to minimize environmental impact.

### END OF PRODUCT LIFE

At the end of the product's useful life, dismantle and recycle it in a responsible manner.

- Perform the Pressure Relief Procedure.
- Drain and dispose of fluids according to applicable regulations. Refer to the material manufacturer's Safety Data Sheet.
- Remove motors, batteries, circuit boards, LCDs (liquid crystal displays), and other electronic components. Recycle according to applicable regulations.
- Do not dispose of batteries or electronic components
   with household or commercial waste.
- · Deliver remaining product to a recycling facility.

When problems occur, use the table to identify potential causes and solutions to repair the King® E-Max XT™ Spayer.

#### MECHANICAL/FLUID FLOW



To help prevent serious injury from pressurized fluid, such as skin injection, splashing fluid, and moving parts, follow the **Pressure Relief Procedure** when you stop spraying and before cleaning, checking, or servicing the equipment.

Keep clear of moving parts during troubleshooting procedures.

- 1. Follow **Pressure Relief Procedure** before checking or repairing.
- 2. Check all possible problems and causes before disassembling the unit.

Table 13-1: King® E-Max XT™ Troubleshooting

PROBLEM	CAUSE	SOLUTION
Pump output is low.	Spray Tip is worn.	Replace Spray Tip. See separate Gun or Spray Tip manual.
	Spray Tip is clogged.	Clear Spray Tip. See Clear Spray Tip CLog.
	Material supply low.	Refill and reprime Pump.
	Intake strainer clogged.	Remove and clean, then reinstall. If problem persists, strain the material.
	Intake valve ball and piston ball are not seating properly.	Remove intake valve and clean. Check balls and seats for nicks; replace if necessary. See Pump manual. Strain material before using to remove particles that could clog Pump.
	Verify Pump does not continue to stroke when Gun trigger is released (prime valve not leaking).	Service Pump. See Pump manual.
	Leaking around throat packing nut which may indicate worn or damaged packings.	Tighten packing nut/wet-cup. Replace packings. See Pump manual. Also check piston valve seat for hardened material or nicks and replace is necessary.
	Pump rod damage.	Repair Pump. See Pump manual.

#### TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
	Piston packings are worn or damaged.	Replace packings. See Pump manual.
	O-ring in Pump is worn or damaged.	Replace o-ring. See Pump manual.
	Large pressure drop in hose with high viscosity materials.	Reduce overall length of hose. Use larger diameter hose.
	Power Mode Switch is on low setting.	Switch to high power mode.
	Leak in Suction Tube.	Replace Suction Tube.
Pump loses prime.	Debris stuck in inlet ball.	Remove foot valve and clean with appropriate cleaning solution.

#### ERROR CODE TROUBLESHOOTING

#### NOTE:

The blink code is displayed using the LED Indicator on the control box. The blink code given below indicates the sequence. For example, blink code 2 indicates two red blinks, a pause, and then repeats.

#### NOTE:

To clear an error code, first try turning the Pressure Control counterclockwise to **STOP**. If the LED Indicator does not stop blinking red shortly after turning the Pressure Control to zero, cycle the power by turning the ON/OFF Switch to the **OFF** position for at least 30 seconds before turning back **ON**.

# TROUBLESHOOTING

Table 13-2: King® E-Max XT™ Error Code Troubleshooting

CODE	MESSAGE	ACTION	
02	Code 02-High pressure detected	Relieve pressure. Check for clogs in filters and hoses. Use minimum of 50 ft (15 m) of Graco hose. Check transducer.	
03	Code 03-Pressure transducer not detected	Turn sprayer <b>OFF</b> and unplug sprayer. Check transducer cable and connection to control board (J5). Check transducer.	
04	Code 04-Mulitple incoming voltage surges detected.	Turn sprayer <b>OFF</b> and unplug the sprayer. Locate good voltage supply to prevent damage to electronics.	
05	Code 05-Motor not spinning due to high mechanical load	Turn sprayer <b>OFF</b> and unplug the sprayer. Attempt to spin motor. Motor should spin freely. If motor doesn't spin freely, remove Pump and re-check by spinning motor again. If motor spins easily, check control board.	
06	Code 06-Motor thermal protection enabled	Keep sprayer plugged in and allow time to cool. Check vents for blockage. Check fan connector and wiring, fan should be running. Unplug sprayer and check to make sure the motor spins freely.	
07	Code 07-Invalid Motor Temperature	Turn sprayer <b>OFF</b> and unplug the sprayer. Verify the motor temperature sensor is connected to the control board (J26). If the temperature sensor is plugged in and the error still occurs, switch to the C-phase coil temperature sensor.	
08	Code 08-Incoming voltage too low for sprayer operation	Turn sprayer <b>OFF</b> and unplug the sprayer. Locate good voltage supply to prevent damage to electronics.	
09	Code 09-Communication to encoder failed	Turn sprayer <b>OFF</b> , unplug sprayer and wait five minutes. Remove shroud. Check cables and connections. Check motor.	
10	Code 10-Control board thermal protection enabled	Keep sprayer plugged in and allow time to cool. This may take up to an hour. Check vents in bottom and top of sprayer for blockage. If applicable, check fan connector and wiring, fan should be running. Unplug sprayer and check to make sure the motor spins freely.	
12	Code 12-Excessive current protection enabled	Cycle power <b>ON</b> and <b>OFF</b> . If problem persists, check motor.	
14	Code 14-Stroke position sensor failure	Turn sprayer <b>OFF</b> and unplug the sprayer. Check stroke position. Verify the stroke position is connected to the control board (J20).	
15	Code 15-Motor not spinning, no motor current detected	Turn sprayer <b>OFF</b> , unplug sprayer and wait five minutes. Remove shroud. Check cables and connections. Check control board. Check motor.	
99	Code 99-WatchDog	Triggers when the Watchdog switch is enabled and the measured pressure is below 1000 psi (69 bar, 6.9 MPa). Check if material bucket is empty. Turn Watchdog™ switch to <b>OFF</b> .	

#### MOTOR TROUBLESHOOTING



To avoid injury from electrical shock when covers are removed, wait five minutes after disconnecting power cord for stored electricity to dissipate.

**Symptoms:** The equipment does not run, it runs rough, or is noisy.

- 1. Perform Pressure Relief Procedure.
- 2. Turn sprayer **OFF** and unplug the power cord.
- 3. Follow the Pump Removal procedure.
- 4. Follow the Ball Screw Removal procedure.
- 5. Motor should spin freely with no binding or excessive cogging.
- 6. Follow the Ball Screw Installation procedure.
- 7. Follow **Pump Installation** procedure.

When replacing parts, follow the instructions to restore the components on the King $\otimes$  E-Max  $XT^{\mathsf{T}}$  Sprayer.

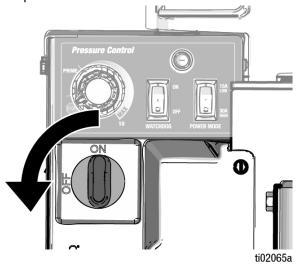
## PUMP REMOVAL

- 1. Perform Cleanup procedure.
- 2. Turn ON/OFF Switch to ON position.
- 3. Turn Pressure Control to PARK mode. In PARK mode, Pump will cycle until reaching the bottom of the stroke.

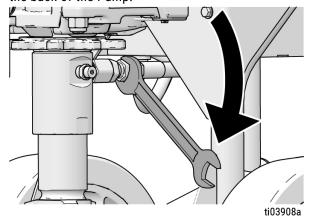


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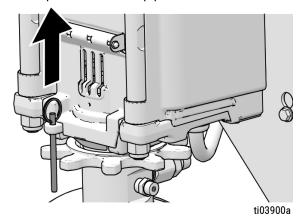
 Turn ON/OFF Switch to OFF position and disconnect the power cord.



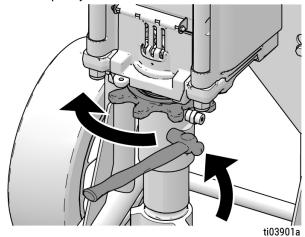
5. Using a 1-1/4" wrench, disconnect inlet hose from the back of the Pump.



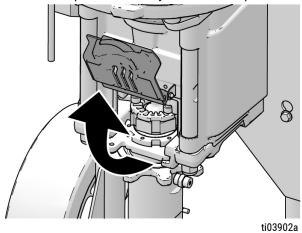
6. Remove pin from the Pump plate.



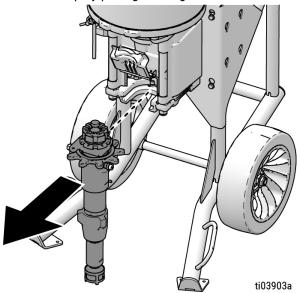
7. Using a mallet, knock the star nut loose backing it off competely.



8. Lift the Pump rod door away from the Pump.



9. Remove Pump by pulling it straight out.



# NOTE:

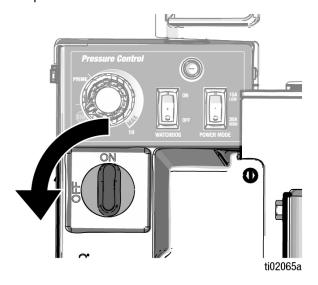
Refer to the King® E-Max XT™ Pump manual for service and repair of the Pump. See **Related Manuals**.

## PUMP INSTALLATION

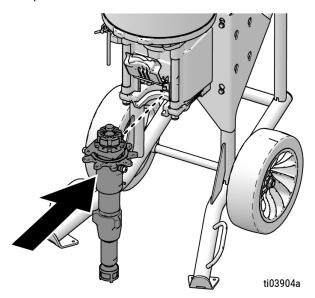
1. Turn Pressure Control to PARK mode.



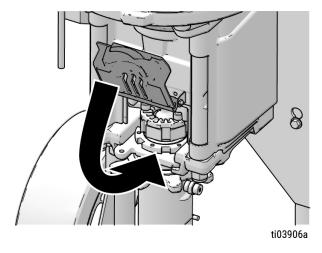
2. Turn ON/OFF Switch to **OFF** position and disconnect the power cord.



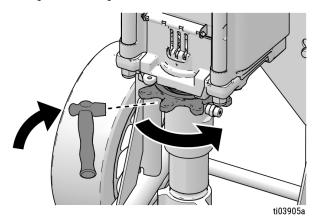
3. Ensure Pump rod door is open and reinstall the Pump.



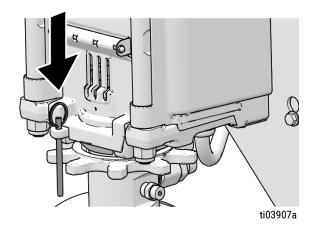
4. Close Pump rod door.



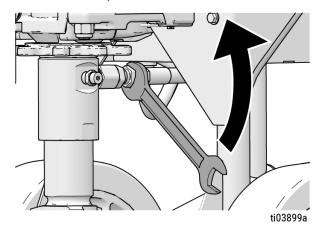
5. Using a mallet, tighten the star nut.



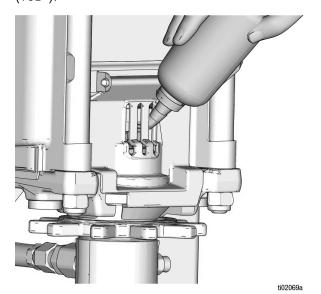
6. Reinstall pin into the Pump plate.



7. Using a 1-1/4" wrench, connect inlet hose to the back of the Pump.

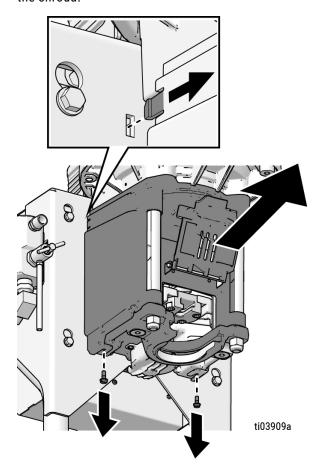


8. Refill packing nut with Graco Throat Seal Liquid ( $TSL^{\text{TM}}$ ).

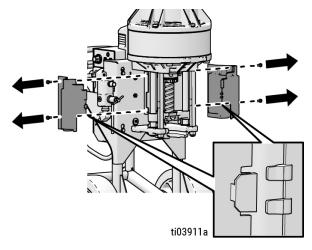


## BALL SCREW REMOVAL

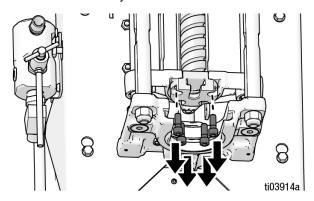
- Follow the **Pump Removal** procedure to remove the Pump.
- 2. Using a 5/16" socket, loosen two screws from the bottom of the outer ball screw shroud. Release the plastic tabs at the top of the shroud then remove the shroud.



3. Using a 5/16" socket, remove four screws from the inner ball screw shroud. Unclip tab and remove shroud.



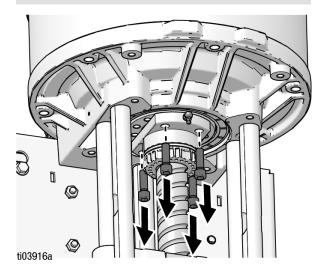
4. Using a 5/16" hex drive, remove four bolts from the anti-rotate assembly.



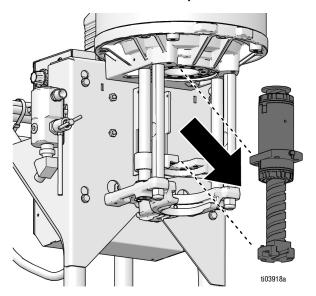
5. Using a 5/16" hex drive, remove four bolts from the ball screw nut.

#### NOTE:

Motor can be manually rotated to allow access to the screws.

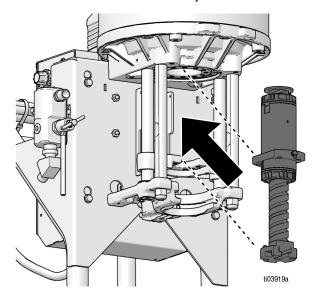


6. Remove the ball screw assembly.



# BALL SCREW INSTALLATION

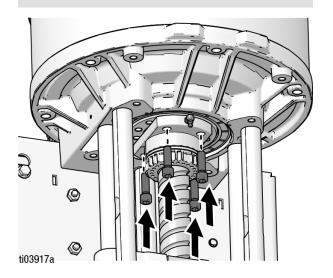
1. Reinstall the ball screw assembly.



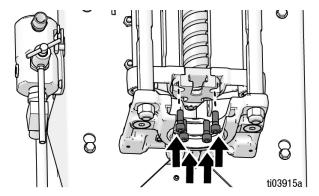
2. Using a 5/16" hex drive, tighten four bolts on the ball screw nut. Torque to 18-22 ft-lb (24-30 N·m).

## NOTE:

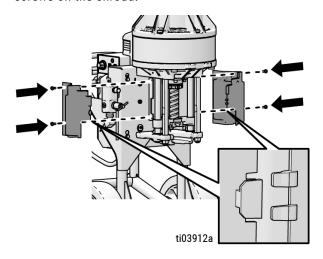
Motor can be manually rotated to allow access to the screws.



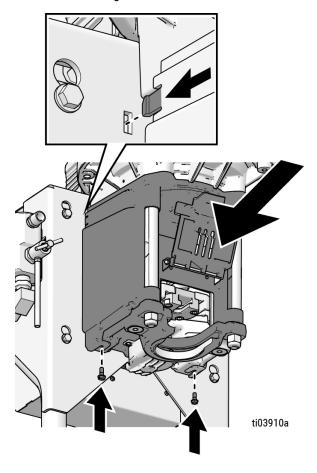
3. Using a 5/16" hex drive, install four bolts on the anti-rotate assembly. Torque to 18-22 ft-lb (24-30 N·m).



4. Reinstall the inner ball screw shroud. Ensure clip is locked then use a 5/16" socket to tighten four screws on the shroud.



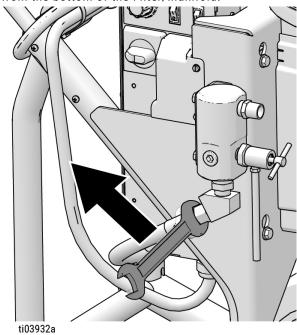
5. Reinstall the outer ball screw shroud. Insert the plastic tabs at the top of the shroud then use a 5/16" socket to tighten two screws on the shroud.



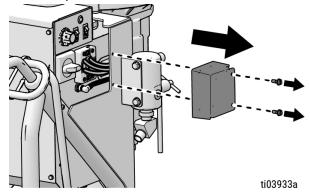
6. Follow the **Pump Installation** procedure to reinstall the Pump.

## TRANSDUCER REPLACEMENT

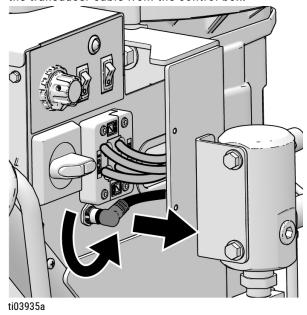
- 1. Perform Cleanup procedure.
- 2. Using a 1-1/4" wrench, disconnect the inlet hose from the bottom of the Filter/Manifold.



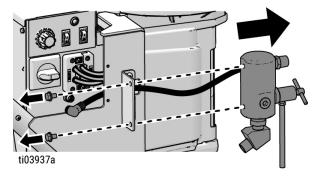
3. Using a 5/16" socket, remove two screws from the cable entry shroud. Remove the shroud.



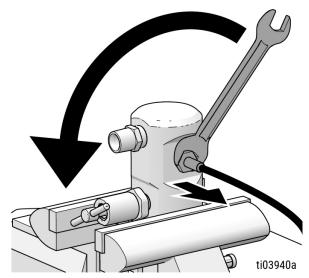
4. Loosen the M12 connector by hand to disconnect the transducer cable from the control box.



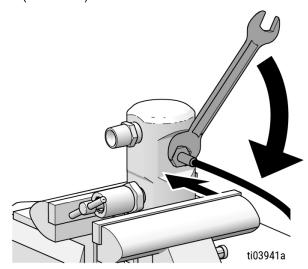
5. Using a 1/2" wrench, remove two bolts from the Filter/Manifold bracket. Remove the Filter/Manifold.



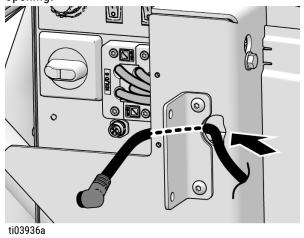
6. In a vise, use a 3/4" wrench to remove the pressure transducer from the Filter/Manifold.



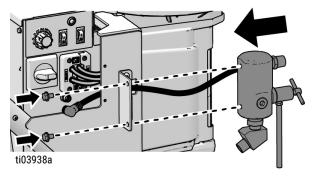
7. Install new pressure transducer. Torque to 35-45 ft-lb (47-61 N·m).



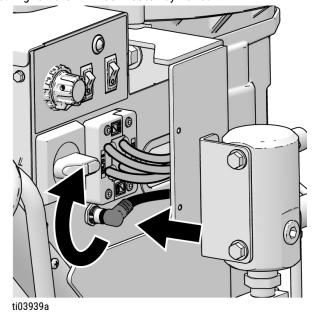
8. Route the transducer cable through the frame opening.



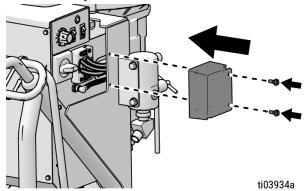
9. Using a 1/2" wrench, tighten two bolts to reinstall the Filter/Manifold.



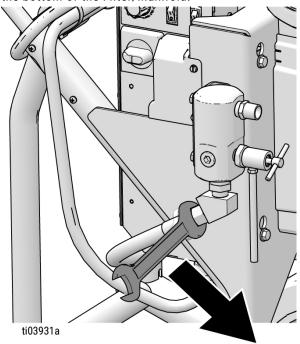
10. Tighen the M12 connector by hand.



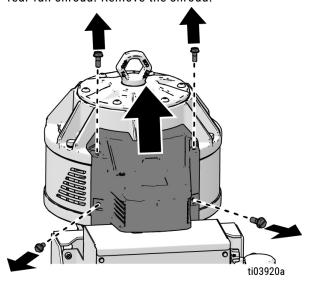
the cable entry shroud.



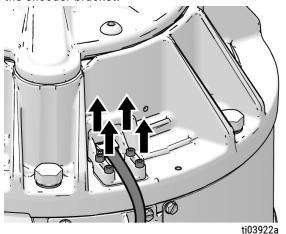
12. Using a 1-1/4" wrench, reconnect the inlet hose to the bottom of the Filter/Manifold.



11. Using a 5/16" socket, tighten two screws to reinstall 2. Using a 5/16" socket, remove four screws from the rear fan shroud. Remove the shroud.



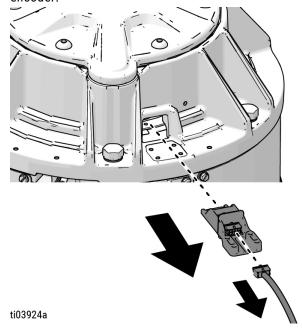
3. Using a 9/64" hex drive, remove four screws from the encoder bracket.



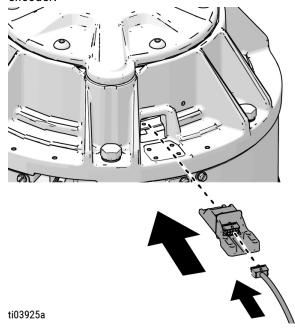
ENCODER REPLACEMENT

1. Turn ON/OFF Switch to **OFF** position.

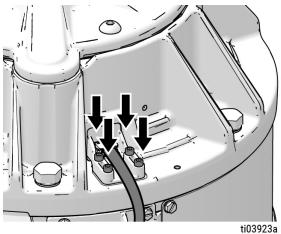
4. Unplug the cable from the encoder. Remove encoder.



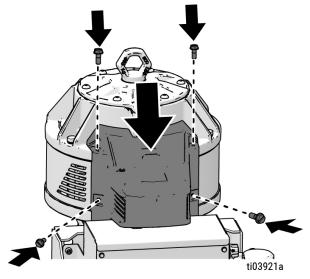
5. Install new encoder. Plug the cable into the encoder.



6. Using a 9/64" hex drive, tighten four screws to reinstall the encoder bracket.

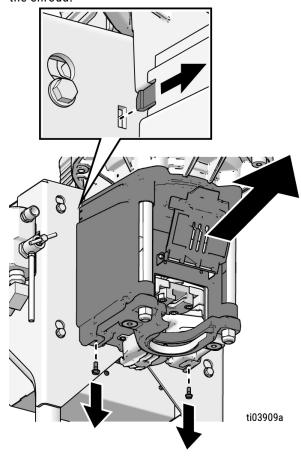


7. Using a 5/16" socket, tighten four screws to reinstall the rear fan shroud.

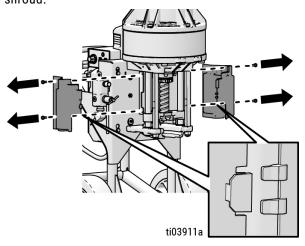


# ANTI-ROTATE ASSEMBLY REPLACEMENT

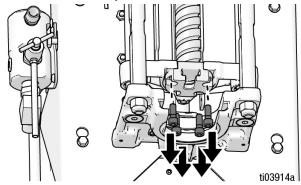
- Follow the **Pump Removal** procedure to remove the pump.
- 2. Using a 5/16" socket, loosen two screws from the bottom of the outer ball screw shroud. Release the plastic tabs at the top of the shroud then remove the shroud.



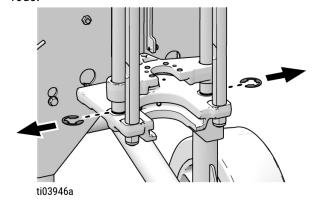
3. Using a 5/16" socket, remove four screws from the inner ball screw shroud. Unclip tab and remove shroud.



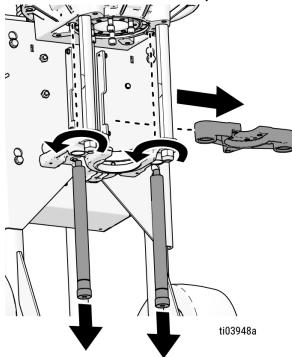
4. Using a 5/16" hex drive, remove four bolts from the anti-rotate assembly.



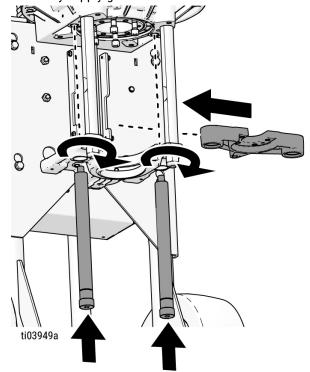
5. Remove two retaining clips from the anti-rotate rods.

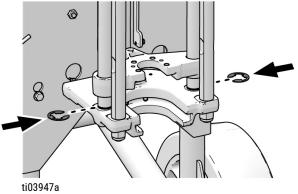


6. Using a 5/16" hex drive, remove the anti-rotate rods, 8. Reinstall two retaining clips on the anti-rotate rods. and remove the anti-rotate assembly.

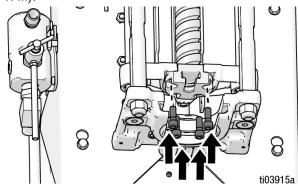


7. Position the new anti-rotate assembly. Use a 5/16" hex drive to reinstall the rods to secure the new assembly. Apply grease to anti-rotate rods.

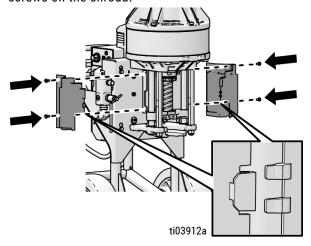




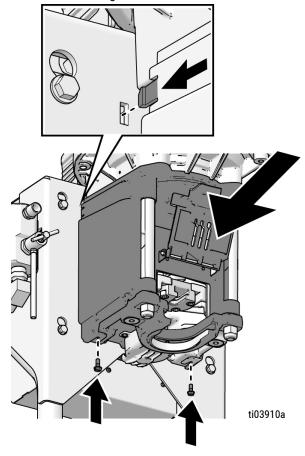
9. Using a 5/16" hex drive, install four bolts on the anti-rotate assembly. Torque to 18-22 ft-lb (24-30 N·m).



10. Reinstall the inner ball screw shroud. Ensure clip is locked then use a 5/16" socket to tighten four screws on the shroud.



11. Reinstall the outer ball screw shroud. Insert the plastic tabs at the top of the shroud then use a 5/16" socket to tighten two screws on the shroud.



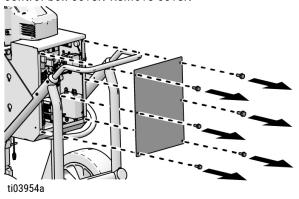
### POTENTIOMETER REPLACEMENT



Keep clear of electrical and moving parts during repair procedure. To avoid electrical shock hazards, wait five minutes after disconnecting power cord for stored electricity to dissipate before starting repair procedure.

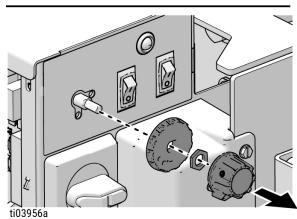
1. Turn ON/OFF Switch to **OFF** position and disconnect the power cord.

2. Using a 5/16" socket, remove six screws from the control box cover. Remove cover.

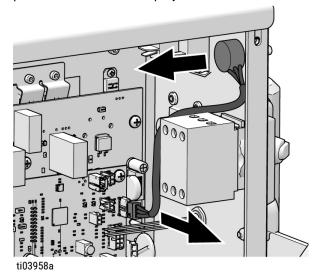


3. Using a 5/64" hex key, back out two set screws on the potentiometer knob. Remove knob, retaining nut, and plastic disc.

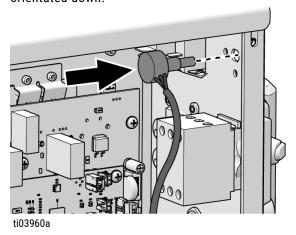




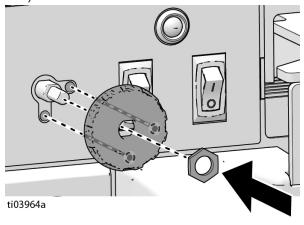
4. Disconnect potentiometer wire from the control board, refer to the wiring diagram. Remove potentiometer from the sprayer.



5. Intall new potentiometer. Ensure the wires are orientated down.

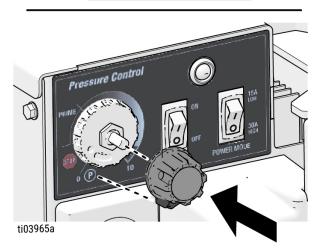


6. Reinstall the plastic disc by lining up the two holes with the two holes on the frame. Reinstall the retaining nut and torque to 8-10 in-lbs ( 0.9-1.1 N·m).



 Rotate potentiomater shaft counterclockwise until it stops, then reinstall the knob with the indicator pointing toward PARK mode.





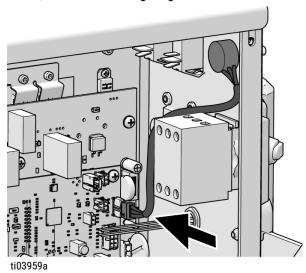
procedure.

11. Calibrate the knob. See the Calibrate Knob

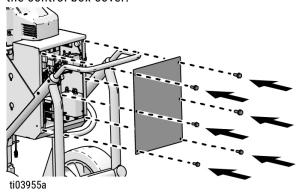
- While pushing the knob in, use a 5/64" hex key to tighten the two set screws to create a light drag on the spacer. Torque set screws to 10-15 in-lbs (1.1-1.7 N·m).

ti03966a

9. Connect the potentiometer wire to the control board, refer to the wiring diagram.



10. Using a 5/16" socket, tighten six screws to reinstall the control box cover.



## PARTS DIAGRAM AND LIST

The parts illustration and list show the components of the King® E-Max XT™ Sprayers and their connections that are required for assembly, repair, and maintenance.

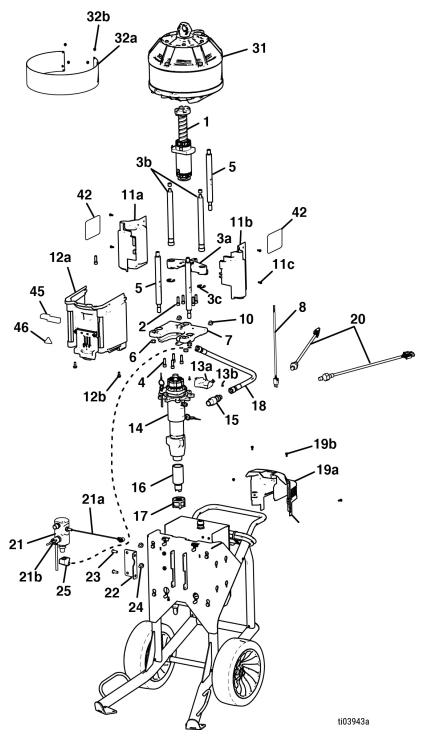


Figure 15-1: King E-Max XT Parts Diagram

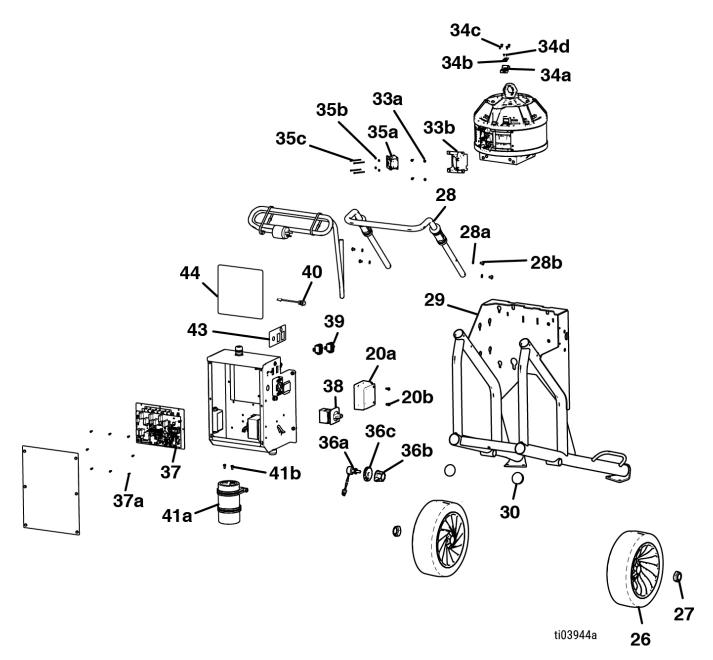


Figure 15-2: King E-Max XT Parts Diagram

# PARTS LIST

REF.	PART	DESCRIPTION	QTY.
1	2010823	Screw, ball, complete	1
2		Screw, cap, socket hd, 3/8"-16 x 1.25"	4
3	2010829	Kit, anti-rotate	1
3a		Adapter, pump, sub- assembly	1
3b		Rod, anti-rotate	2
3c		Ring, snap	2
4		Screw, cap, socket hd, 3/8"-16 x 1"	4
5		Rod, tie	3
6		Nut, lock, hex, 5/8"-11	3
7		Plate, mount	1
8	2010830	Sensor, stroke position	1
9	2010831	Sensor, pump detection	2
10		Screw, cap, socket hd, 1/2"-13 x 0.75"	4
11	2010833	Shroud, ball screw, inner	1
11a		Cover, ball screw, inner, left	1
11b		Cover, ball screw, inner, right	1
11c		Screw, mach, hwhd 10-24 x 0.5"	4
12	2010832	Shroud, ball screw, outer	1
12a		Cover, ball screw	1
12b		Screw, mach, hex wash hd 10-24 x 0.5"	2
13	2010840	Shroud, cover, wire	1
13a		Cover, sensor	1
13b		Screw, mach, hex wash hd 10-24 x 0.5"	2

REF.	PART	DESCRIPTION	QTY.
14	2009332	Lower, Xtreme, ProConnect, 145	1
	2009333	Lower, Xtreme, ProConnect, 180	1
	2009334	Lower, Xtreme, ProConnec, 220	1
15	2010828	Kit, valve, check	1
16	2010839	Tube, direct immersion	1
17	15V573	Strainer, crush proof	1
18	H75002	Hose, coupled, 1/2-14 npsm, 2 ft	1
19	2010835	Shroud, rear, fan	1
19a		Cover, fan	1
19b		Screw, mach, hex wash hd 10-24 x 0.5"	2
20	2010834	Shroud, cable, entry	1
20a		Cover, cable, entry	1
20b		Screw, mach, hex wash hd 10-24 x 0.5"	2
0.1	2010824	Kit, manifold	1
21	2010825	Kit, manifold, filter	1
21a	2010826	Transducer, pressure	1
21b	245143	Valve, presure, bleed	1
22		Bracket, mount, manifold	1
23		Screw, cap, btn hd, 5/16-18 x 0.75"	2
24		Screw, cap, hex hd, 5/16-18 x 0.5"	2
25		Fitting elbow, 60 degrees	1
26	17E687	Tire, polyurethane, black	2
27		Nut, lock, hex, 3/4"-16	2
28	2010837	Handle, complete	1

# KING® E-MAX XT™ PARTS

REF.	PART	DESCRIPTION	QTY.
28a		Washer, lock	4
28b		Screw, mach, pnh, 10-24 x 0.25"	4
29		Frame, weldment	1
30	113361	Cap, tube, round	2
31		Motor	1
32	2010838	Kit, shroud, motor	1
32a		Shield, motor	1
32b		Screw, mach, hex wash hd, 10-24 x 0.5"	4
33	2010954	Kit, fan, bracket	1
33a		Screw, mach, hex wash hd, 10-24 x 0.5"	4
33b		Bracket, mount, fan	1
34	2010849	Kit, encoder	1
34a		Bracket, mount, encoder	1
34b		Board, circuit, encoder	1
34c		Screw, cap, sh, 8-32 x 0.75"	4
34d		Screw, mach, torx, pan hd, 5-20 x 0.25"	2
35	2010836	Kit, fan	2
35a		Fan, 60mm	1
35b		Nut, locking, 6-32	4
35c		Screw, cap, sh, 6-32 x 2"	4
36	2010827	Kit, potentiometer	1
36a		Potentiometer, encoder	1
36b		Knob, potentiometer	1
36c		Spacer, potentiometer	1
37	2010841	Kit, control board	1
37a		Screw, cap, socket hd, 8-32 x 0.375"	8

REF.	PART	DESCRIPTION	QTY.
38	123971	Knob, disconnect, operator	1
39	116255	Switch, rocker	2
40	17U555	Harness, 3 color LED	1
41	2010842	Kit, capacitor	1
41a		Capacitor, 500 VDC	1
41b		Screw, cap, hex hd M5 x 10mm	2
42	2010843	Kit, accessory, label, branding, 40	1
	2010844	Kit, accessory, label, branding, 60	1
	2010845	Kit, accessory, label, branding, 70	1
43	2010133	Label, instructions, control	4
44 ▲	2010799	Label, warning, safety	1
45	15F584	Brand, ProConnect, label	1
46 ▲	15H108	Label, safety, warning, pinch	1

▲ Replacement safety labels, tags, and cards are available at no cost.

# ELECTRICAL SCHEMATIC

The wiring diagram illustrates the electronic connections that are used for troubleshooting and repairing the electrical components of the King\$ E-Max XT $^{\texttt{m}}$  Sprayers.

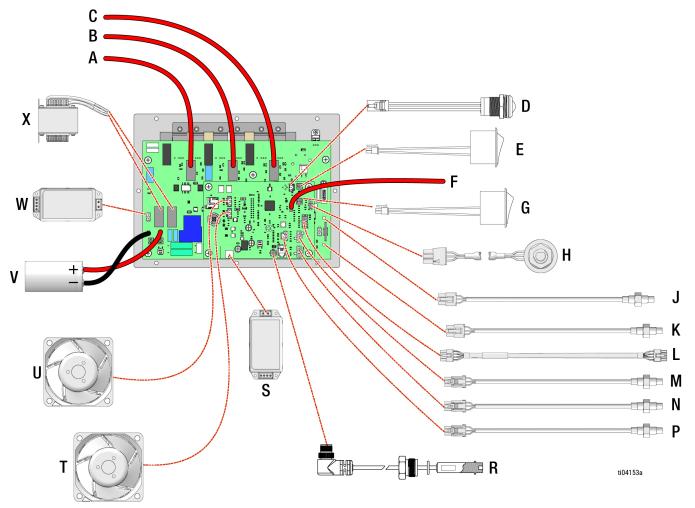


Figure 16-1: Wiring Diagram for King E-Max XT Sprayers

## **ELECTRICAL SCHEMATIC**

### KEY Α Motor Phase A В Motor Phase B С Motor Phase C D Status LED Ε **Power Mode Control** F Motor Temperature Watchdog™ Control G Н Potentiometer J Input Power L2 Κ Input Power L1 L Encoder Pump Detection Sensor 1 М Pump Detection Sensor 2 N Ρ Pump Stroke Sensor R Pressure Transducer S Power Supply Low Voltage Т Motor Fan U Heat Sink Fan ٧ Capacitor W Power Supply High Voltage

Χ

Inductor

# CALIFORNIA PROPOSITION 65

# CALIFORNIA RESIDENTS

**WARNING** Cancer and reproductive harm — www.P65warnings.ca.gov.

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Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

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