Accessory

Zinc Circulation Kit for King® and Contractor King™ Sprayers

3A9126A

EN

For circulation of zinc-containing materials using King, and Contractor King sprayers at 4500 psi maximum pressure. For professional use only.

Model: 238588

4500 psi (31.0 MPa, 310 bar) Maximum Working Pressure

Important Safety Instructions

Read all warnings and instructions in this manual and in related manuals before using the equipment. Save all instructions.

Related Manuals

Manuals in English	Description
3A9121	Contractor King Sprayers and Spray Packages
3A5422	King Sprayers and Pumps

Contents

Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual or on warning labels, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

⚠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.
- Keep work area free of debris, including solvent, rags and gasoline.
- Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.
- 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.

FIRE AND EXPLOSION HAZARD

Static charge may build up on plastic parts during cleaning and could discharge and ignite flammable vapors. To help prevent fire and explosion:

- Clean plastic parts only in well-ventilated area.
- Do not clean with a dry cloth.
- Do not operate electrostatic guns in equipment work area.

⚠WARNING

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.

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.

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.

⚠WARNING

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.

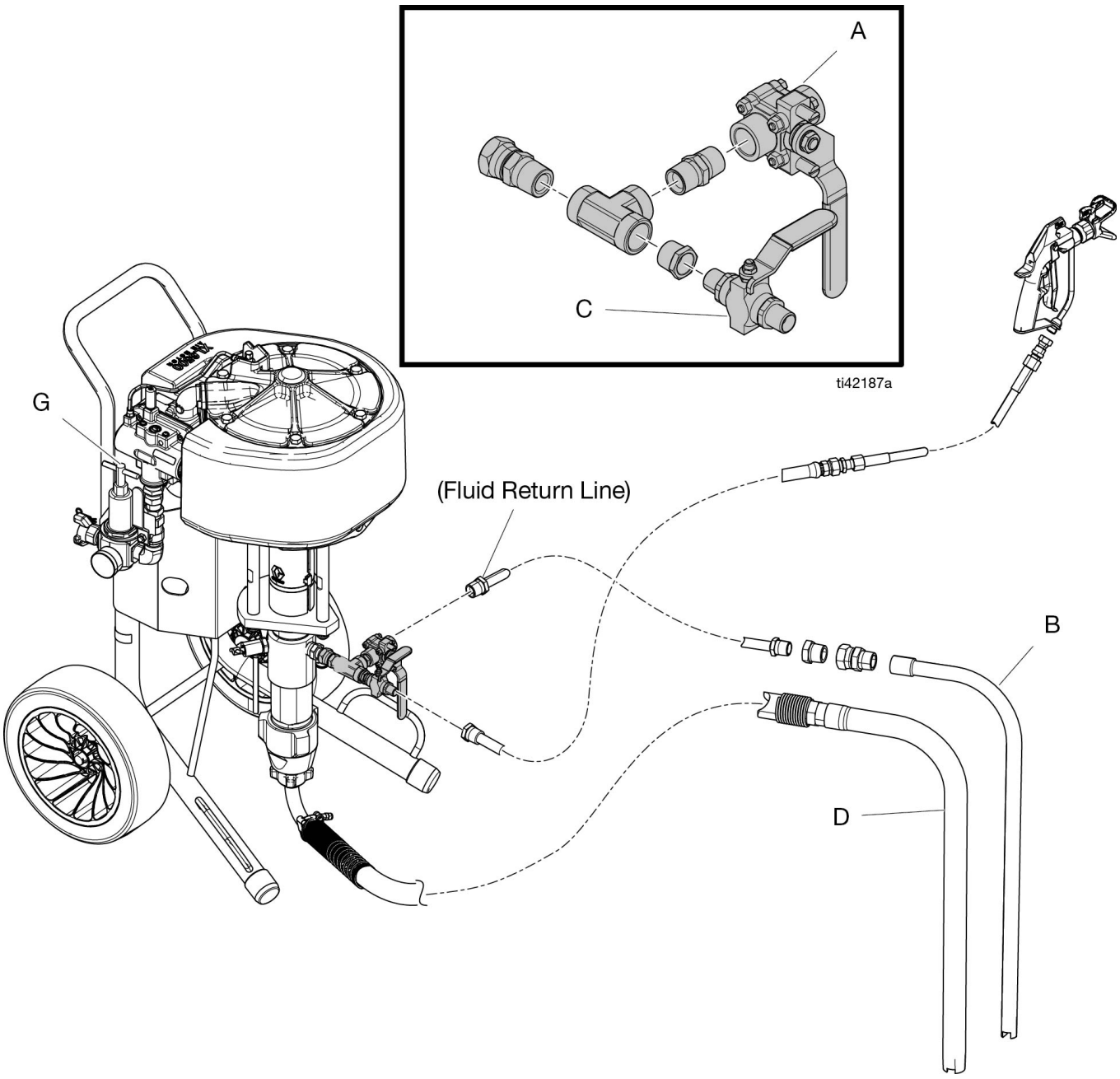
- Read Safety Data Sheets (SDSs) to know the specific hazards of the fluids you are using.
- Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.

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.

Component Identification



A	Return Line Valve
B	Return Tube
C	Spray Line Valve
D	Suction Hose with Swivel and Tube
G	Air Regulator Adjustment
NOTE: Contractor King sprayer shown. Zinc circulation kit is also compatible with King sprayers.	

Overview

To avoid injury from component rupture when using a sprayer equipped with a zinc circulation kit, do not operate sprayer at greater than 4,500 psi.

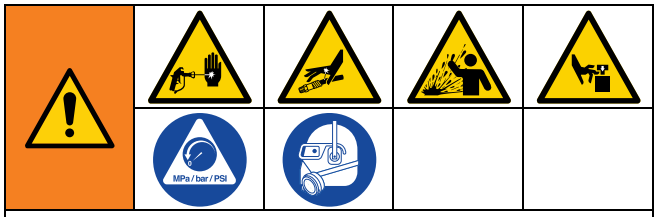
This manual modifies the procedures in a King or Contractor King sprayer manual. Follow all modified procedures listed here, but consult the primary sprayer manual for everything else.

The zinc circulation kit is designed to modify a King or Contractor King sprayer, allowing the sprayer to circulate viscous material containing zinc at a continual rate while the spray gun is not in operation. This helps prevent settlement of mixed material while lessening the chance of clogging and jamming within the sprayer and hoses.

A sprayer equipped with an installed zinc circulation kit should not be operated at greater than 4,500 psi, even if the sprayer is capable of exceeding this pressure.

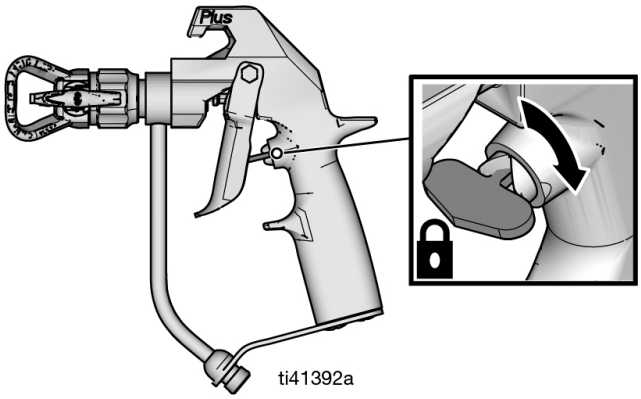
Pressure Relief Procedure

Follow the Pressure Relief Procedure whenever you see this symbol.

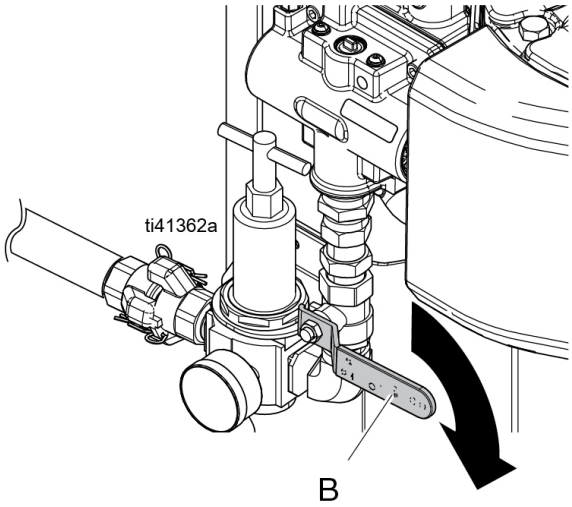


This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, splashing fluid and moving parts, follow the **Flush** when you stop spraying and before cleaning, checking, or servicing equipment.

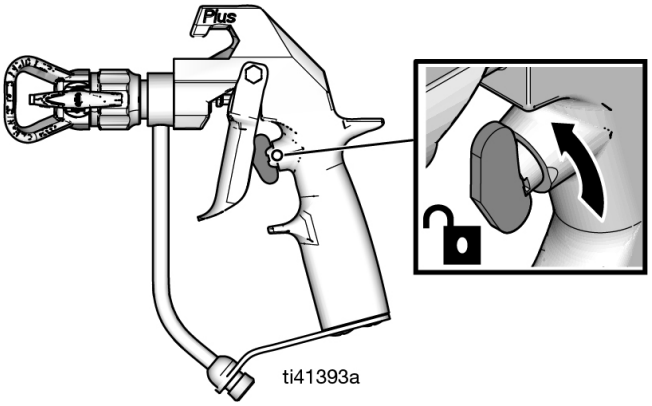
1. Engage gun trigger lock.



2. Close bleed type master air valve (B).

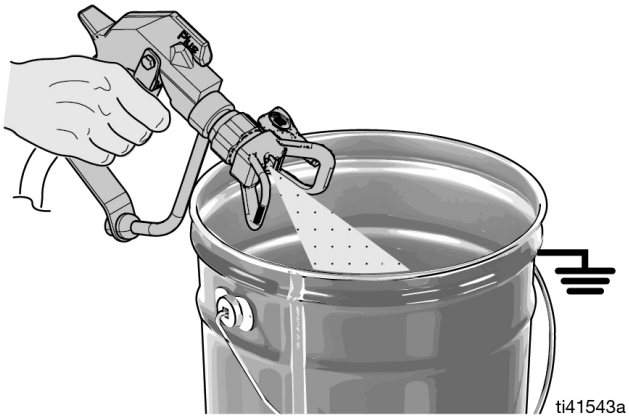


3. Disengage gun trigger lock.



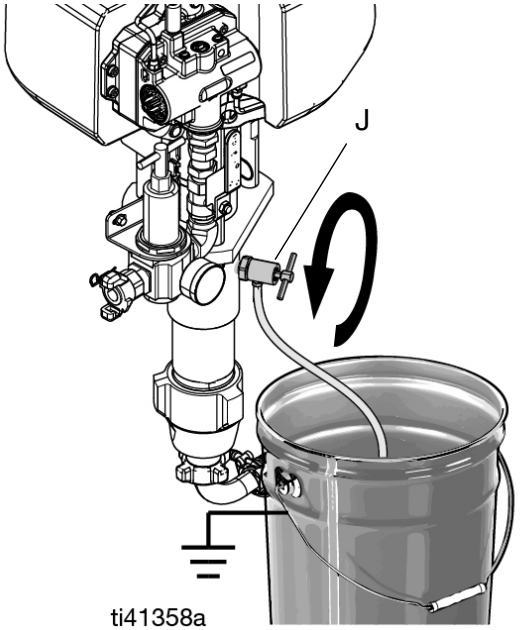
4. Hold a metal part of the gun firmly against a grounded metal pail. Trigger the gun until pressure is relieved.

NOTE: If fluid does not flow from gun, see **Flush**, page 11.



5. Engage trigger lock.

6. Drain fluid. To drain fluid, slowly open all fluid drain valves, including fluid drain/purge valve (J), in system into a waste pail. If there is a return tube, open return line ball valve. Close valve after fluid is drained.



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7. If you suspect the spray tip or hose is clogged or that pressure has not been fully relieved.
   a. VERY SLOWLY loosen tip guard retaining nut or hose end coupling to relieve pressure gradually.
   b. Loosen nut or coupling completely.
   c. Clear hose or tip obstruction.

Installation

Tools Required:

- Two adjustable wrenches

1. Perform **Pressure Relief Procedure**, page 8.
2. Turn off and relieve air pressure in the air supply hose.
3. Remove fluid spray hose from sprayer in preparation for installation of zinc circulation kit.
4. Apply sealant to all non-swiveling pipe threads.
5. Using wrenches, install Zinc Circulation kit to the pump outlet as shown in **Parts**, page 18. Fully tighten each component with wrenches.
6. Flush and prime before using. See **Flush**, page 11, and **Prime**, page 14.

Flush

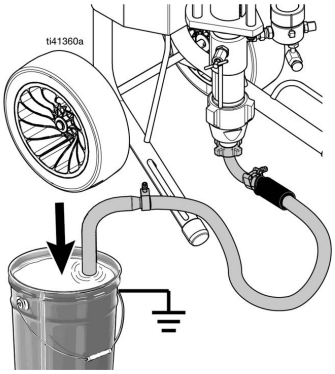
To avoid fire and explosion, always ground equipment and waste container. To avoid static sparking and injury from splashing, always flush at lower possible pressure.

Flush the Pump:

- Before first use
- When changing fluids
- Before repairing equipment
- Before fluid dries or settles out in a dormant pump (check the pot life of catalyzed fluids)
- At the end of the day
- Before storing the pump

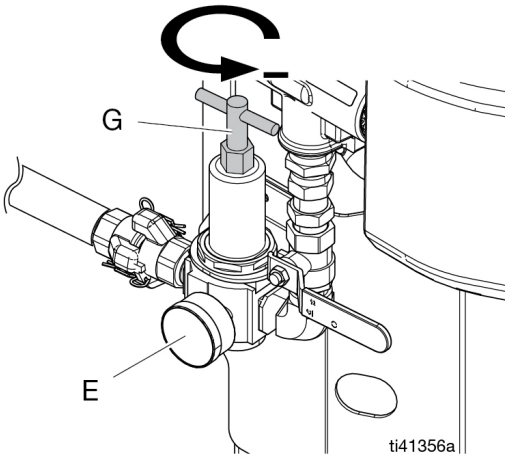
Flush at the lowest pressure possible. Flush with a fluid that is compatible with the fluid you are pumping and with the wetted parts in your system. Check with your fluid manufacturer or supplier for recommended flushing fluids and flushing frequency.

1. Perform **Pressure Relief Procedure**, page 8.
2. Remove tip and tip guard from gun.
3. If desired, remove fluid filter (sold separately). Reinstall filter cap after removing fluid filter.
4. Connect the ground wire (L) and clamp to a true earth ground.
5. Place suction tube in a compatible solvent.

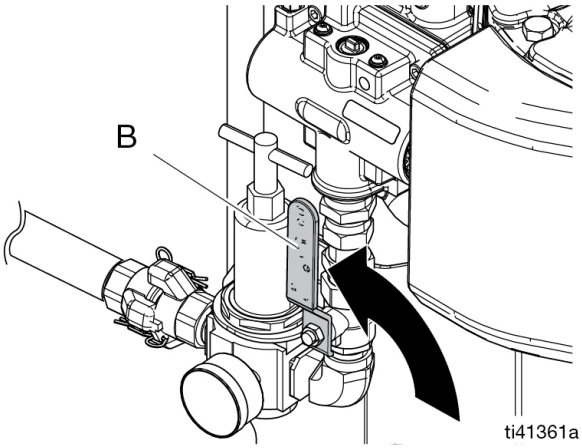


NOTE: Do not stretch hose tight. Let it hang to assist fluid flow into the pump.

6. Place return tube in a compatible solvent. Open return line valve.
7. Turn air regulator adjustment knob (G) counterclockwise until air pressure gauge (E) reads zero.

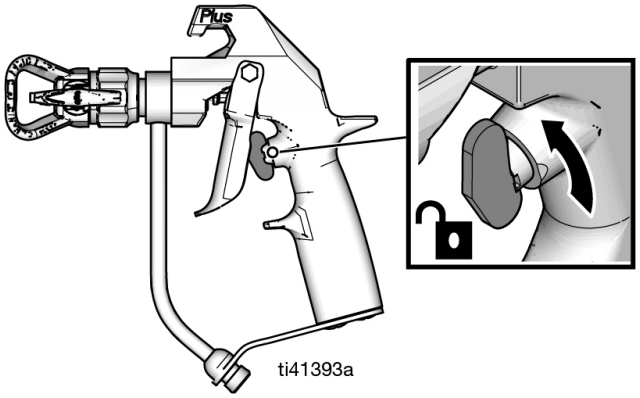


8. Open bleed type master air valve (B).



9. Slowly turn air regulator adjustable knob (G) clockwise until pump begins to cycle and a steady stream of fluid emerges from return tube.
10. When clean solvent fluid flows out of return tube, close return air valve. Pump will stall.

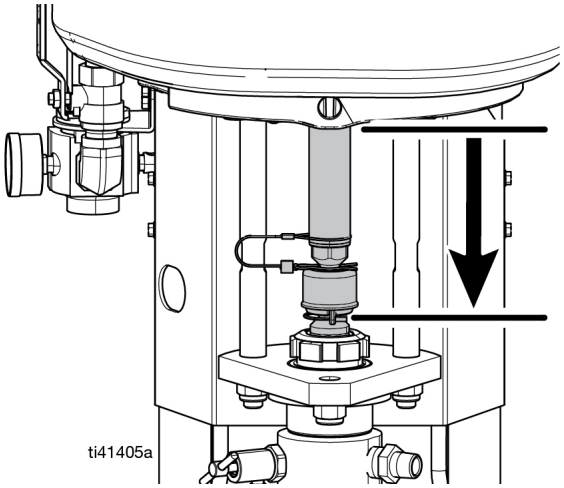
11. Flush hose and gun:
    a. Disengage gun trigger lock. Hold the gun against a grounded metal pail.



    b. Trigger gun, slowly turn air regulator adjustment knob (G) clockwise until pump beings to cycle and a steady stream comes from gun. Trigger gun for 10-15 seconds during initial setup. If flushing material, trigger gun until clean solvent flows from gun.

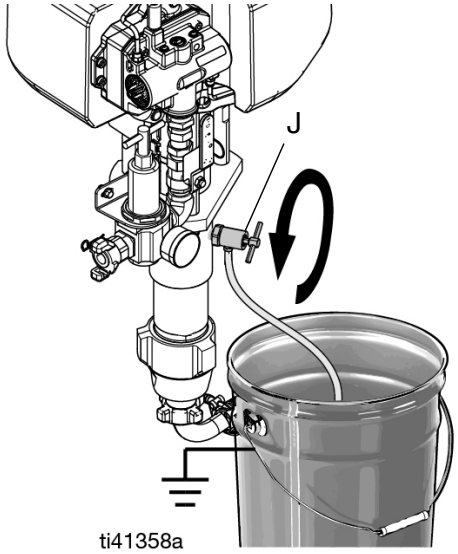
    c. After solvent is running clean, turn the air regulator adjustment knob (G) counter clockwise until it stops and the gauge reads zero. The pump will stop. Once the material stops flowing, release the trigger and engage the trigger lock.

NOTE: When shutting down the unit for the day, stop the pump with the rod buried in the pump.



    d. Close the bleed type master air valve.

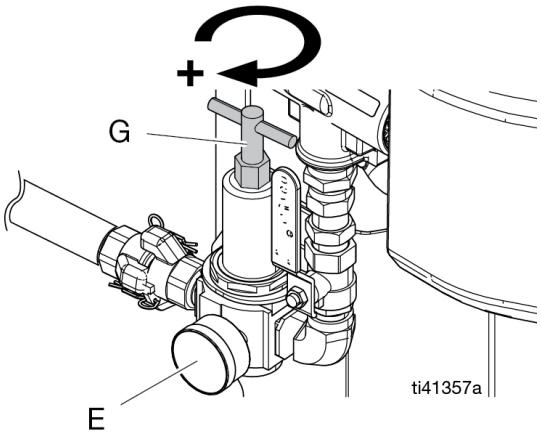
12. If flushing through drain/purge valve:
    a. Place drain tube in a grounded waste pail. Open fluid drain/purge valve (J) slightly by rotating counterclockwise.



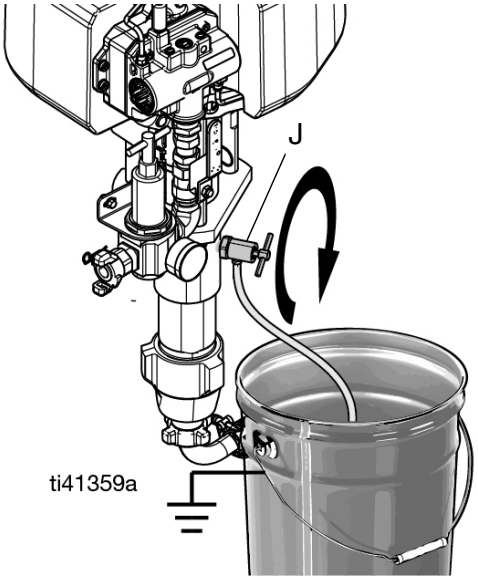
    b. Turn air regulator adjustment knob (G) counterclockwise until air pressure gauge (E) reads zero

    c. Open bleed type master air valve (B).

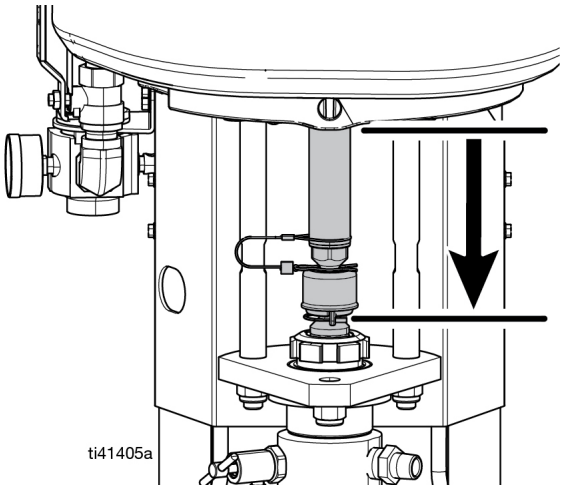
d. Start the pump by rotating the air regulator adjustment knob (G) clockwise until pump begins to move.



e. When clean solvent flows from drain tube close fluid drain/purge valve (J) by rotating clockwise. Pump will stall.



f. Stop the pump with the rod buried in the pump.



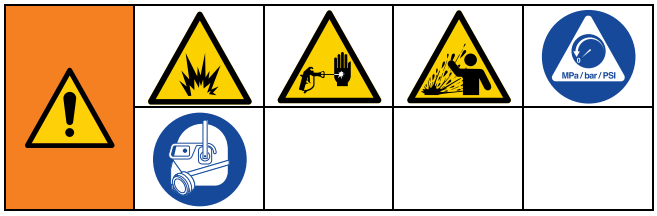
g. Turn the air regulator adjustment knob (G) counterclockwise until air pressure gauge (E) reads zero.

h. Close bleed type master air valve (B).

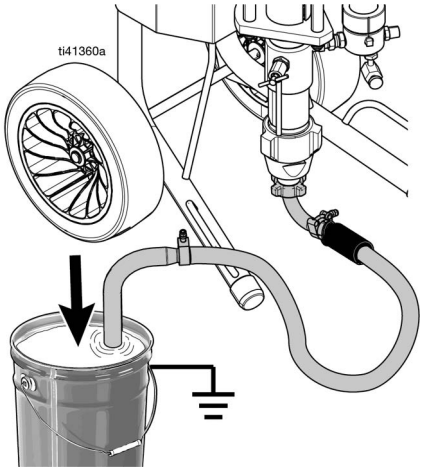
13. Perform **Pressure Relief Procedure**, page 8.

14. If equipped, remove fluid filter (sold separately) and soak in solvent. Replace filter cap.

Prime

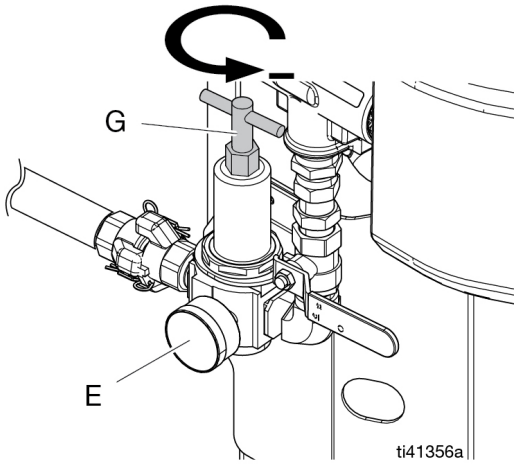


1. Perform the **Pressure Relief Procedure**, page 8.
2. Engage the gun trigger lock. Remove tip and tip guard from gun.
3. Place suction tube in the material that will be sprayed.

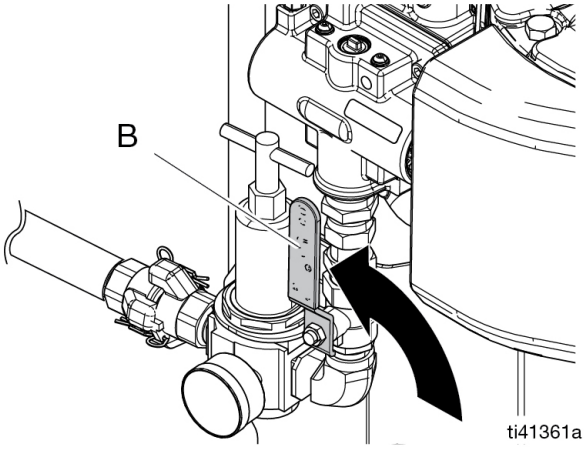


NOTE: Do not stretch hose tight. Let it hang to assist fluid flow into the pump.

4. Place return tube in to a waste bucket. Open return line valve.
5. Turn air regulator adjustment knob (G) counterclockwise until air pressure gauge (E) reads zero.



6. Slowly turn air regulator adjustment knob (G) clockwise until pump begins to cycle and a steady stream of fluid emerges from the return tube.
7. Close return line valve. Pump will stall.
8. Open bleed type master air valve (B).

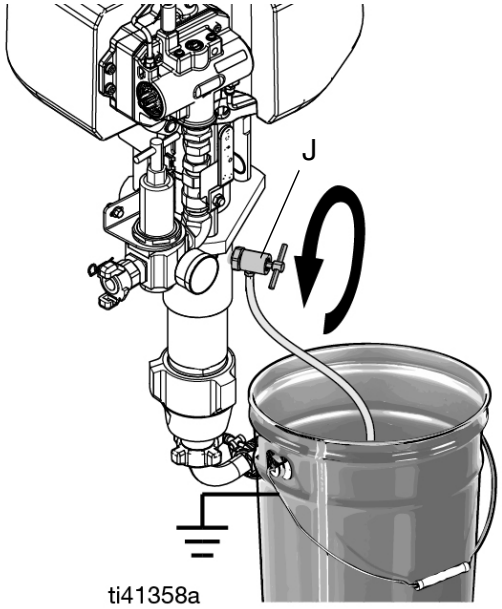


9. Prime through drain valve if necessary.

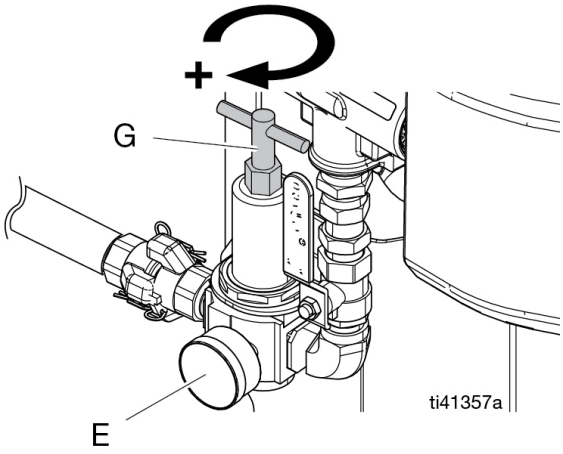
NOTE: Usually required for high viscosity materials.

NOTICE
Do not prime pump through drain/purge valve using two-component materials. Mixed two-component materials will harden in valve and result in clogging.

a. Place drain tube in a grounded waste pail. Open drain/purge valve (J) by slightly rotating counterclockwise.

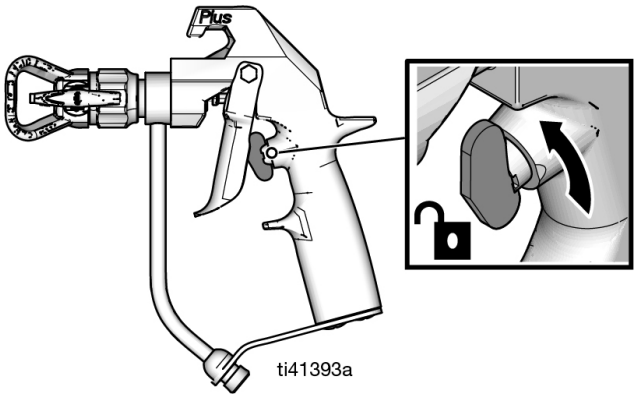


b. Start the pump by rotating the air regulator adjustment knob (G) clockwise until pump begins to move.



10. Prime hose and gun:

a. Disengage gun trigger lock. Hold the metal part of the gun against a grounded metal pail.



b. Trigger gun, slowly open air regulator adjustment knob (G) until pump beings to cycle and a steady stream comes from gun. Trigger gun for 10-15 seconds.

c. Engage trigger lock.

d. The equipment is now ready to spray; proceed to the **Spray**, page 16.

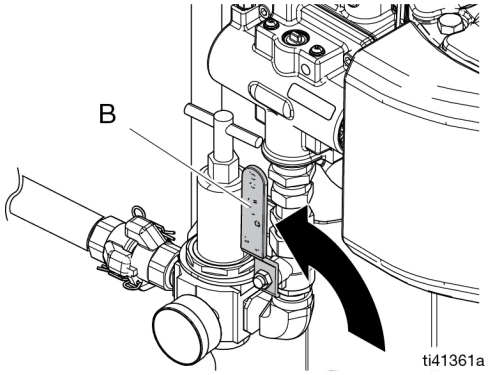
Spray

NOTICE

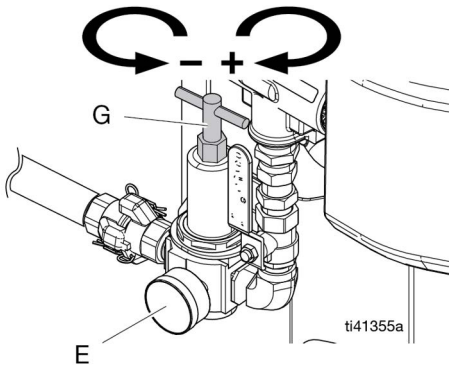
Running the pump while dry will cause the pump to quickly accelerate to a high speed and cause damage. To avoid damage, do not allow pump to run dry.

NOTE: When spraying in enclosed areas, such as storage tanks, locate the pump outside the area.

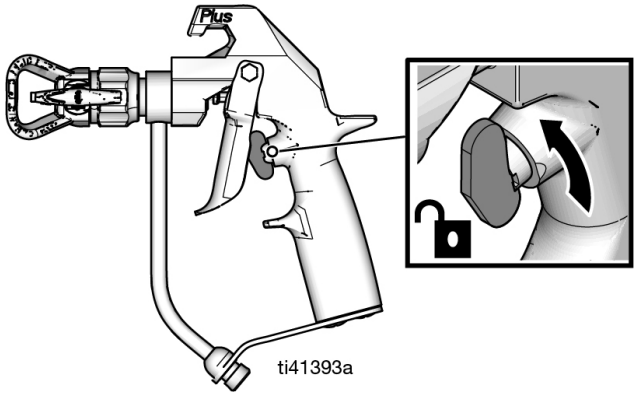
1. Perform **Prime**, page 14.
2. Perform **Pressure Relief Procedure**, page 8.
3. Install tip and tip guard on gun.
4. Turn air regulator adjustment knob (G) counterclockwise to decrease pressure to zero.
5. Open bleed type master air valve (B).



6. Turn air regulator adjustment knob (G) until air pressure gauge (E) reads desired pressure. Turn clockwise to increase pressure, counterclockwise to decrease pressure.



7. Disengage gun trigger lock.



8. Spray a test pattern. Read fluid manufacturer's recommendations. Adjust pressure as necessary.

9. When not spraying, turn air regulator adjustment knob (G) counterclockwise to decrease pressure to zero. Open return line valve slowly. Start the pump by rotating the air regulator adjustment knob (G) clockwise until pump begins to move and desired recirculation is achieved.

Circulating Zinc Fluids

NOTE: When spraying zinc fluids, close return line valve. Circulation is not required when spraying.

1. To circulate fluid back to supply container when not spraying, open return line valve and lock gun trigger safety as outlined in **Spray**, page 16. Pump will continue to run.
2. Always perform **Pressure Relief Procedure**, page 8, before overnight shutdown, when changing spray tips, or when checking or servicing any part of the system. During circulation, some fluid will be present in gun line and must be relieved.

Shutdown

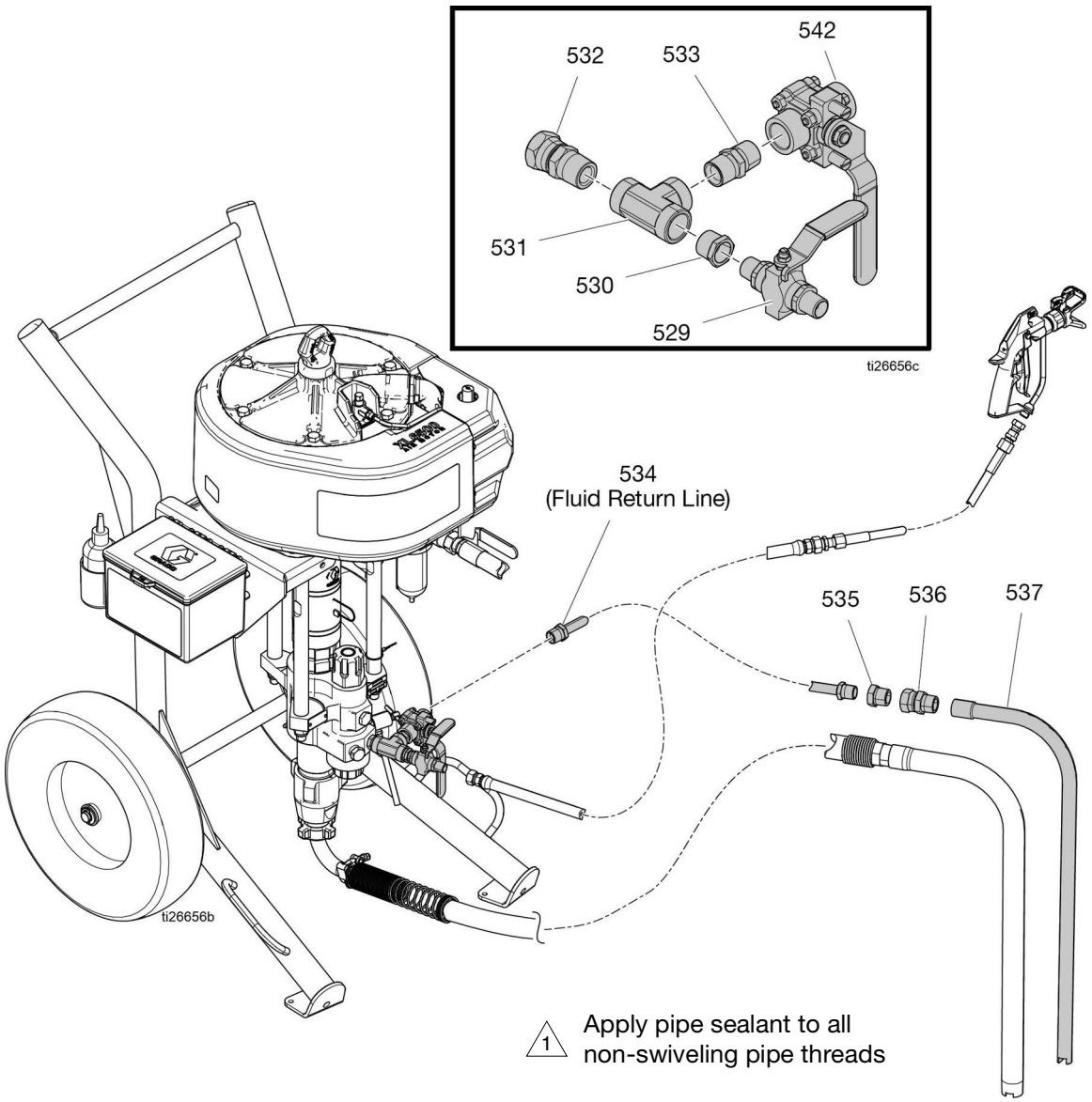
NOTICE

Leaving water or water-based fluid in the pump overnight can cause the equipment to rust or corrode. If you are pumping water-based fluid, flush with water first, then with a rust inhibitor such as mineral spirits. Relieve pressure, but leave rust inhibitor in pump to protect parts from corrosion.

1. Perform **Prime**, page 14.
2. Always flush the pump before the fluid dries on the displacement pump rod. Perform the **Flush** procedure on page 11.
3. Perform **Pressure Relief Procedure**, page 8.
4. Turn off and relieve air pressure in the air supply hose.

Parts

Zinc Circulation Kit for King Sprayers

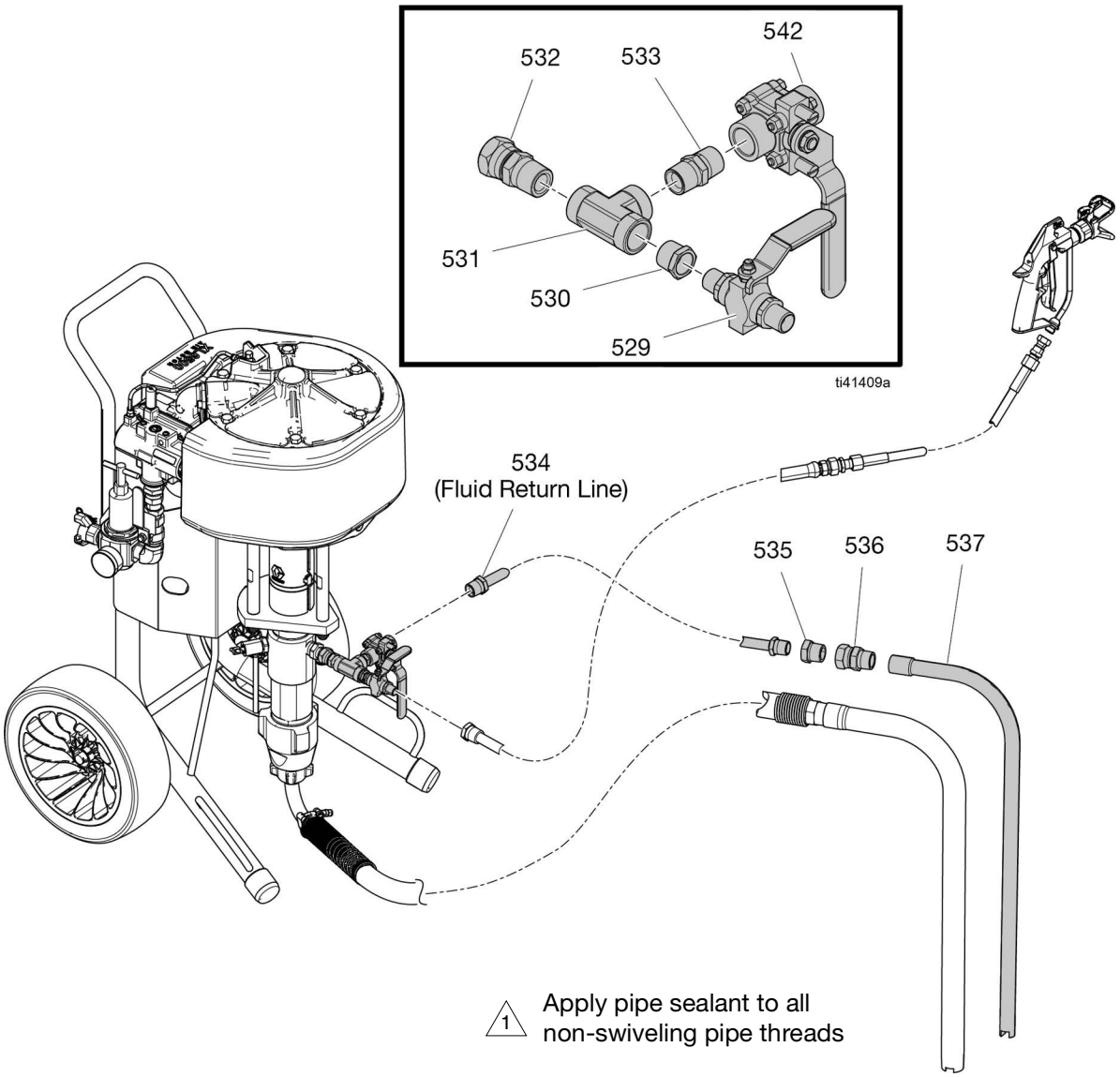


Parts List

Ref.	Part	Description	Qty.
501	P25DC1	PUMP, assy. 287971 and 287973	1
	P40DC1	PUMP, assy. 287972 and 287974	1
516✳	100101	SCREW, mounting, cap, hex hd	4
518✳	100133	WASHER, lock	4
529	238612	VALVE, ball	1
530	100081	BUSHING, pipe	1
531	502570	FITTING, tee, pipe	1
532	- - - - -	BUSHING, pipe	
	100380	Model 287973	1
	157191	Model 287974	1
533	158491	FITTING, nipple	
534	235148	HOSE, coupled, 6 ft	1
535	100896	FITTING, bushing, pipe	1
536	157785	FITTING, swivel	1
537	165767	TUBE, suction	1
542	24P719	VALVE, ball	1

✳ *Not shown.*

Zinc Circulation Kit for Contractor King Sprayers



Parts List

Ref.	Part	Description	Qty.
529	238612	VALVE, ball	1
530	100081	BUSHING, pipe	1
531	502570	FITTING, tee, pipe	1
532	156684	FITTING, union, adapter, 1/2	1
533	158491	FITTING, nipple	1
534	235148	HOSE, coupled. 6 ft.	1
535	100896	FITTING, bushing, pipe	1
536	157785	FITTING, swivel	1
537	165767	TUBE, suction	1
542	24P719	VALVE, ball	1

Original instructions. This manual contains English. MM 3A9126
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International Offices: Belgium, China, Japan, Korea

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