

# 2K Ultra-Lite™ Dispense Kits

311230D

EN

**For use with Reactor E-10 Proportioners. For professional use only.**

## **Part No. 249634 Cold Spray Kit**

For spraying 1:1 mix ratio materials, including epoxies, polyurethane foam, and polyurea coatings.

## **Part No. 249635 Joint Fill Kit**

For dispensing 1:1 mix ratio materials, including self-leveling joint fillers.

## **Part No. 249834 Combination Kit**

Includes parts for cold spray and joint fill.

## **Part No. 249835 Restrictor Manifold Kit**

Converts 2K Ultra-Lite Valves to the restrictor outlet manifold.

*3000 psi (20.7 MPa, 207 bar) Maximum Fluid Working Pressure*

*120 psi (0.84 MPa, 8.4 bar) Maximum Air Input Pressure*



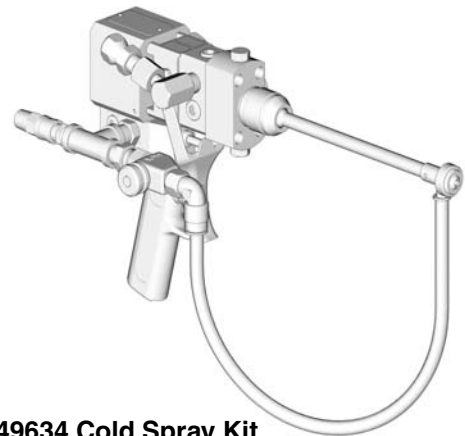
### **Important Safety Instructions**

Read all warnings and instructions in this manual.  
Save these instructions.



**249635 Joint Fill Kit**

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**249634 Cold Spray Kit**






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## Warnings

The following general warnings are for the setup, use, grounding, maintenance, and repair of this equipment. Additional, more specific warnings may be found throughout the body of this manual where applicable. *Symbols appearing in the body of the manual refer to these general warnings. When these symbols appear throughout the manual, refer back to these pages for a description of the specific hazard.*

 <b>WARNING</b>	
	<b>TOXIC FLUID OR FUMES HAZARD</b> Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed. <ul style="list-style-type: none"> <li>• Read MSDS's to know the specific hazards of the fluids you are using.</li> <li>• Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.</li> </ul>
	<b>PERSONAL PROTECTIVE EQUIPMENT</b> You must wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect you from serious injury, including eye injury, inhalation of toxic fumes, burns, and hearing loss. This equipment includes but is not limited to: <ul style="list-style-type: none"> <li>• Protective eyewear</li> <li>• Clothing and respirator as recommended by the fluid and solvent manufacturer</li> <li>• Gloves</li> <li>• Hearing protection</li> </ul>
 	<b>SKIN INJECTION HAZARD</b> 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. <b>Get immediate surgical treatment.</b> <ul style="list-style-type: none"> <li>• Do not point gun at anyone or at any part of the body.</li> <li>• Do not put your hand over the spray tip.</li> <li>• Do not stop or deflect leaks with your hand, body, glove, or rag.</li> <li>• Do not spray without tip guard and trigger guard installed.</li> <li>• Engage trigger lock when not spraying.</li> <li>• Follow <b>Pressure Relief Procedure</b> in this manual, when you stop spraying and before cleaning, checking, or servicing equipment.</li> </ul>

 **WARNING**
**FIRE AND EXPLOSION HAZARD**

Flammable fumes, such as solvent and paint fumes, in **work area** can ignite or explode. 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 arc).
- 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.
- Ground all equipment in the work area. See **Grounding** instructions.
- Use only grounded hoses.
- Hold gun firmly to side of grounded pail when triggering into pail.
- If there is static sparking or you feel a shock, **stop operation immediately**. Do not use equipment until you identify and correct the problem.
- Keep a fire extinguisher in the work area.

**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 Data** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See **Technical Data** in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request MSDS forms from distributor or retailer.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine Graco (ASM) replacement parts only.
- Do not alter or modify equipment.
- Use equipment only for its intended purpose. Call your Graco 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.

**PRESSURIZED ALUMINUM PARTS HAZARD**

Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents in pressurized aluminum equipment. Such use can cause serious chemical reaction and equipment rupture, and result in death, serious injury, and property damage.

## Related Manuals

Refer to the following manuals for additional information.

Reactor E-10 Proportioner	
Part No.	Description
311075	Instruction-Parts Manual (English)

2K Ultra-Lite Disposable Mixer Valve	
Part No.	Description
309000	Instruction-Parts Manual (English)

# 2K Ultra-Lite Dispense Valve

Part No. 249591 2K Ultra-Lite Dispense Valve is included with the kits. See the separate manual 309000, supplied, for dispense valve operation, maintenance, repair, and parts information.



Manuals are also available at [www.graco.com](http://www.graco.com).

## Trigger Lock

See FIG. 1. Always engage the trigger lock when you stop spraying to prevent the gun from being triggered accidentally by hand or if dropped or bumped.



Engaged



Disengaged

FIG. 1. Trigger Lock

## Kit Installation



### 1. Relieve pressure

Relieve all system pressure before installing the kit. See 2K Ultra-Lite dispense valve manual 309000, included.

### 2. Assemble kit

Assemble the kit as shown in the parts drawings. See page 9 for 249634 Cold Spray Kit, and page 10 for 249635 Joint Fill Kit and 249834 Combination Kit.



### 3. Ground system

The equipment must be grounded. Grounding reduces the risk of static and electric shock by providing an escape wire for the electrical current due to static build up or in the event of a short circuit.

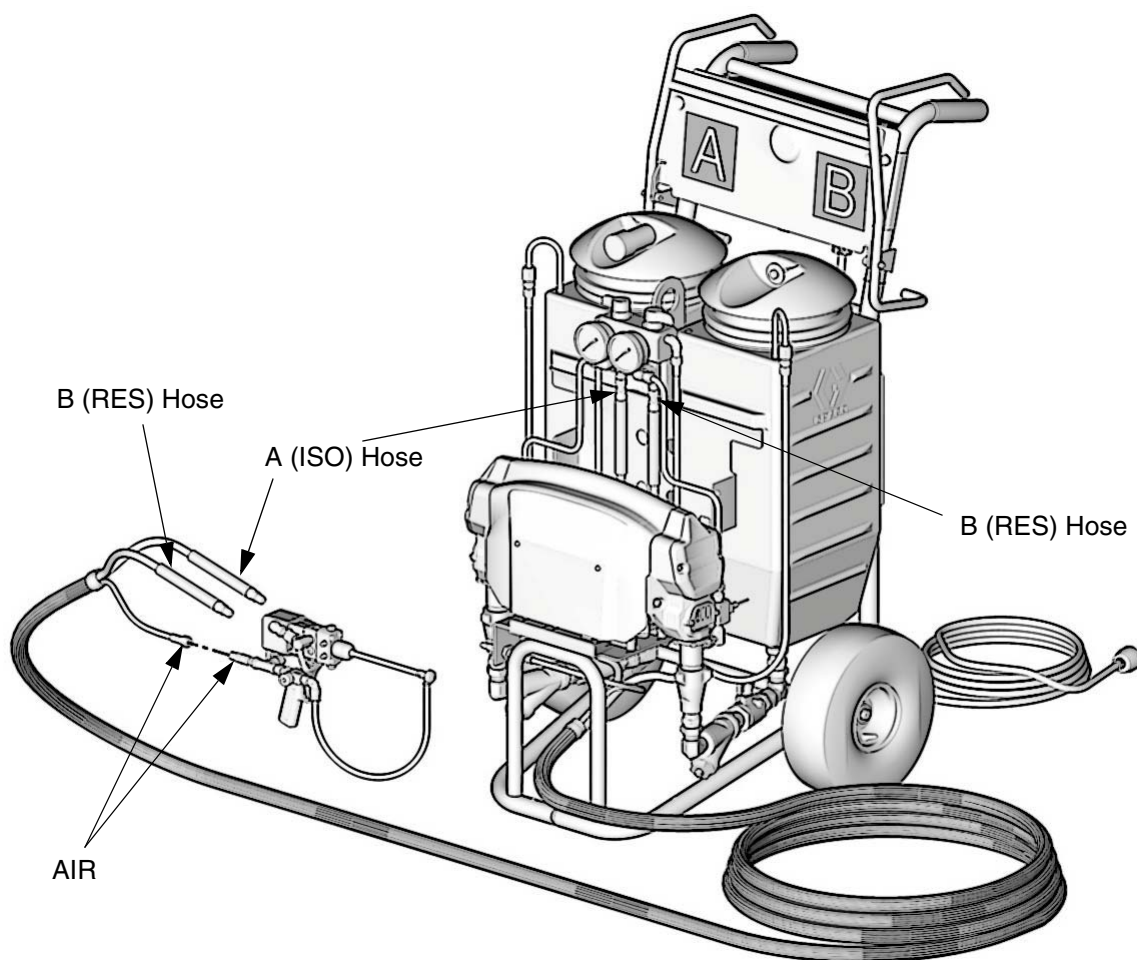
Ground the gun through connection to a properly grounded fluid hose and pump. See your system manual and 2K Ultra-Lite dispense valve manual 309000 for further information.

## 4. Connect fluid hoses

See FIG. 2 and Reactor E-10 manual 311075. Connect the gun fluid supply hoses to the A and B inputs of gun. Hoses are color coded: red for component A (ISO), blue for component B (RES). Red (ISO) usually is connected to the left side of the valve (as viewed from the operator's position at the back of the gun).

## 5. Connect gun air hose

Connect the gun air hose to the gun air input.



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**FIG. 2. 249634 Cold Spray Kit, shown installed on a Graco Reactor E-10 Plural Component Proportioner**

## 6. Install restrictors

Four restrictors (5) are supplied with the gun, in three sizes: one .024 in. (0.61 mm), two .032 in. (0.81 mm), and one .040 in. (1.02 mm). Other sizes are available, see page 11.

Restrictors create back pressure and make up for viscosity differences between A and B.

- a.** Assemble o-rings (6) and screens (7) on restrictors (5). See detail in FIG. 3.
- b.** Screw selected restrictors (5) into manifold (2).

 Restrictors can be damaged if they are overtightened. Torque to 40-50 in-lb (4.5-5.6 N•m).

## 7. Pressure balance the gun

Balancing the back pressure:

- controls ratio lead-lag when the gun opens
- holds pressure in the hose, providing a very smooth flow
- minimizes oozing from mixer.

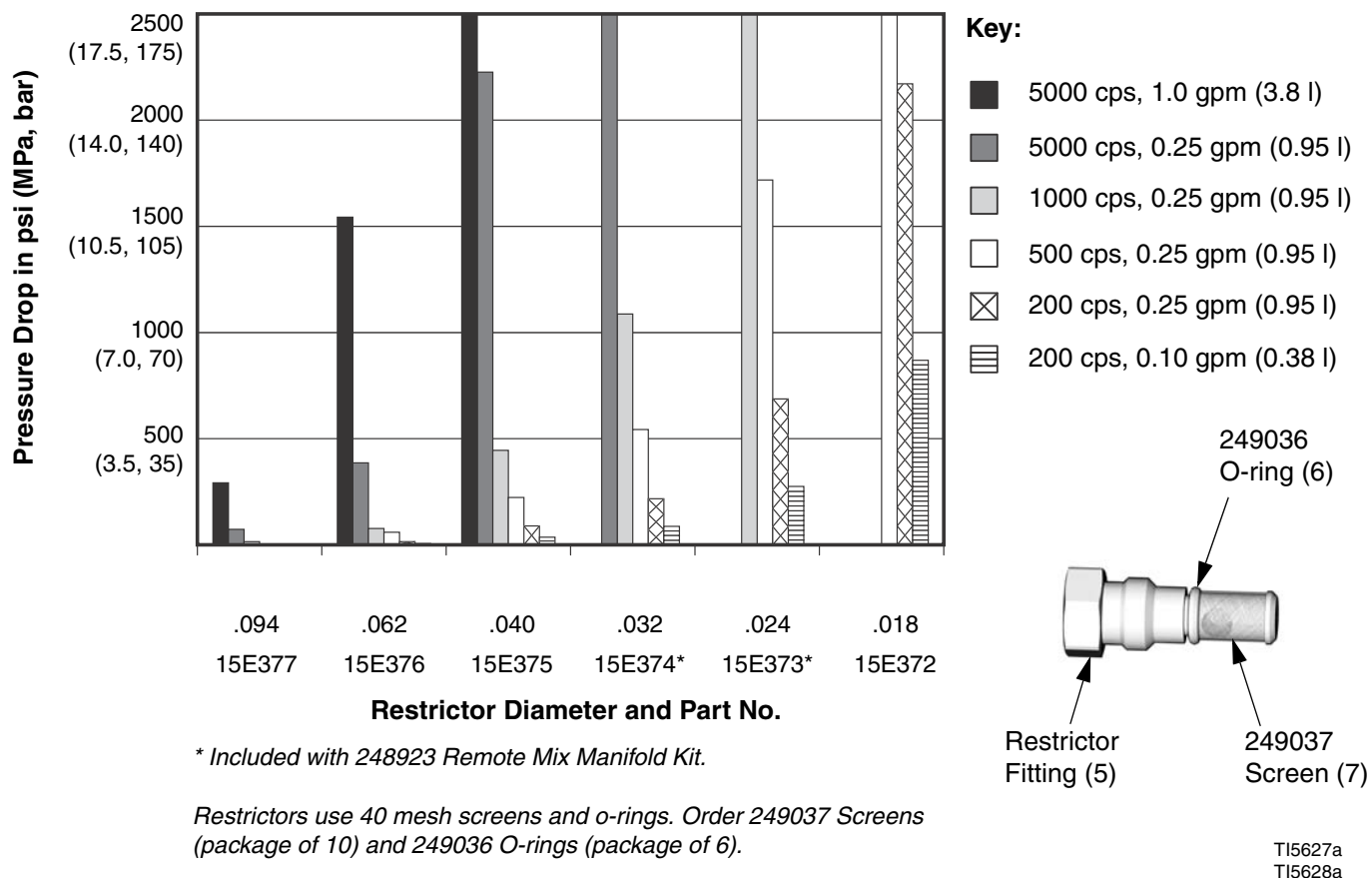
- a.** Dispense into a waste container without a mixer installed. Note pressure gauge readings.
- b.** See FIG. 3. Change restrictors as necessary to achieve desired back pressure and balance. You should be able to achieve your desired flow rate between 200-2000 psi (1.4-14 MPa, 14-140 bar). A and B pressures should balance within 25%.

## 8. Install disposable mixer (30)

Coat manifold threads with grease to prevent material curing on threads. Install mixer (30) and secure with nut (13). Gun is ready to dispense. See page 9 for 249634 Cold Spray Kit, and page 10 for 249635 Joint Fill Kit and 249834 Combination Kit.

## 9. Spraying (249634 Kit only)


- a.** Install clean spray adapter (31) and cap (32) on end of mixer (30). See page 9.
- b.** Open air adjustment valve (17) part way.
- c.** Test spray on cardboard. Adjust spray pattern with valve (17). Increase air to make smaller spray droplets; too much air causes overspray and misting. Typical pattern width is 4-6 in. (100-150 mm) at 18 in. (457 mm) from tip.
- d.** Control flow rate by adjusting fluid pressure or changing restrictor size.
- e.** To apply a stipple texture as the final coat, turn air low and broadcast spray over surface.



**FIG. 3. Typical Restrictor Pressure Drops**

# Maintenance

## Daily Shutdown

 For brief shutdowns, leave the cured mixer in place until it is time to use a fresh mixer.



When you finish using the 2K Ultra-Lite valve, clean the the outlet manifold (2) and protect it from drying or crystallization, as follows:


1. Remove and properly dispose of the mixer (30).
2. Dispense one shot of material into a waste container to clear any crossover in the manifold (2).
3. Partially fill a plastic disposable night cap with ISO pump oil or ISO pump grease (see **Accessories**, page 11).
4. Push the cap over the manifold outlet to protect it from air and moisture.

## Preventive Maintenance

There is a grease-filled secondary seal/bearing area on each valve shaft. Every 10,000 cycles, or once each month, flush new grease across this area. Each valve has two grease fittings. A grease gun is provided with each valve.

1. Remove the grease fitting from one side of the valve.

2. Pump Part No. 115982 Grease across the valve from the remaining fitting, until fresh grease comes out the other side.
3. Reinstall the grease fitting.
4. Repeat for the other shaft fittings.

 The two fittings that hold the trigger on are flush type grease fittings. Use the flush grease coupler provided, or substitute using one of the standard grease fittings.


## Routine Cleaning

Replace the restrictor screens (7) regularly.

Clean the outlet manifold (2) regularly, using drill bits (see the following list).

### Drill Bit Sizes for Cleaning

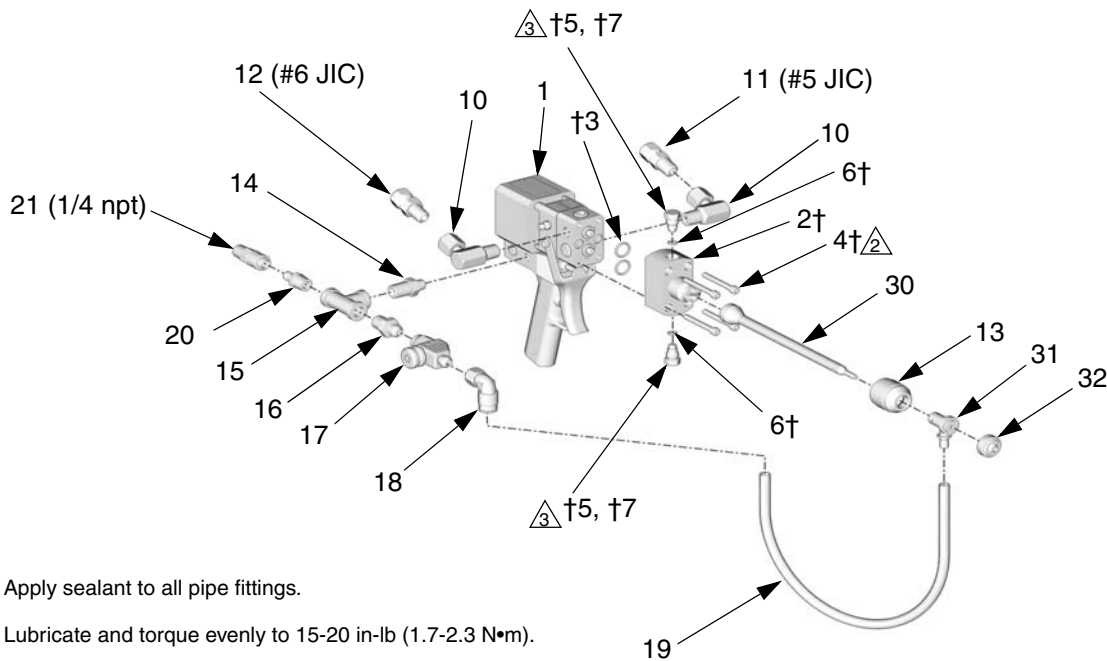
<b>Manifold fluid outlet:</b>	1/4 in. (6 mm) diameter
<b>Manifold inner passage:</b>	1/8 in. (3 mm) diameter
<b>Restrictor Sizes:</b>	
.018 in.	#77 (0.45 mm)
.024 in.	#73 (0.61 mm)
.032 in.	#67 (0.81 mm)
.040 in.	#60 (1.01 mm)
.062 in.	1/16 in. (1.59 mm)
.094 in.	3/32 in. (2.38 mm)

 Use Accessory Part No. 117661 Drill Bit Vise with dual reversible chucks to hold small drill bits.

# Parts

## Part No. 249634 Cold Spray Kit

## Part No. 249835 Restrictor Manifold Conversion Kit

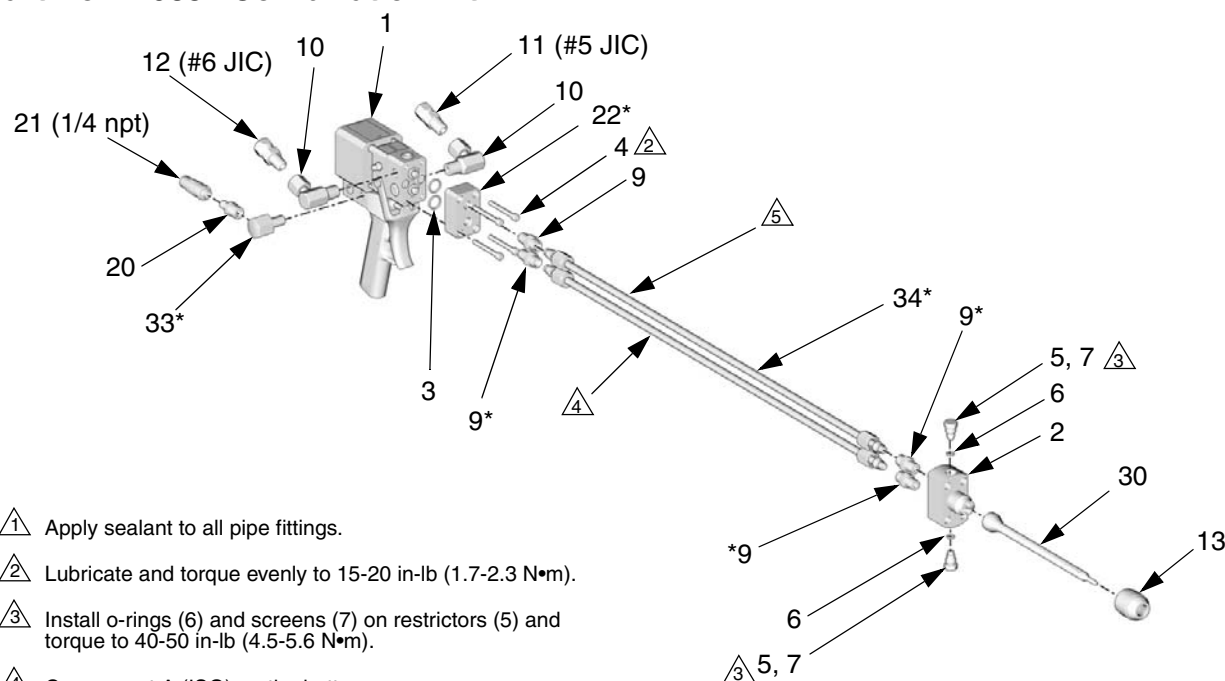


- △ Apply sealant to all pipe fittings.
- △ Lubricate and torque evenly to 15-20 in-lb (1.7-2.3 N•m).
- △ Install o-rings (6) and screens (7) on restrictors (5) and torque to 40-50 in-lb (4.5-5.6 N•m).

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Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	249591	VALVE, 2K Ultra-Lite; see 309000	1	16	156823	UNION, swivel; 1/4 npt (m x f)	1
2†	24K994	TIP, nosepiece, manifold	1	17	234388	VALVE, spray air control	1
3†	104319	O-RING; PTFE	2	18	120389	FITTING, tube; 1/4 npt(m) x 3/8 in. (10 mm) OD tube	1
4†	104459	SCREW, cap, socket-hd; 10-32 x 1-3/4 in. (44 mm)	4	19	buy locally	TUBE, polyurethane; 1/4 in. (6 mm) ID x 3/8 in. (10 mm) OD x 12 in. (305 mm)	1
5†	15E374	RESTRICTOR, manifold; .032 (standard size)	2	20	117509	FITTING, quick disconnect; air line; 1/4 npt(m)	1
†	15E373	RESTRICTOR, manifold; .024	1	21	117510	COUPLER, quick disconnect; air line; 1/4 npt(m)	1
†	15E375	RESTRICTOR, manifold; .040	1	27	117773	GREASE; not shown	1
6†	249036	KIT, o-ring, restrictor; package of 6	1	28	118665	TUBE, grease; not shown	1
7†	249037	KIT, filter screen, 40 mesh; package of 10	1	29	117792	GUN, grease; not shown	1
10	155541	ELBOW, swivel, 90°; 1/4 npt(m) x 1/4 npsm(f)	2	30	120042	MIXER, disposable; 1/4 in. (6 mm) ID x 3/8 in. (10 mm) x 24 element; package of 50	1
11	117595	UNION, inlet, swivel, A side; 1/4 npt(m) x #5 JIC	1	31	120043	ADAPTER, spray, package of 5	1
12	117506	UNION, inlet, swivel, B side; 1/4 npt(m) x #6 JIC	1	32	120044	CAP, air spray, package of 5	1
13	512291	NUT, mixer (1 spare)	2				
14	151519	NIPPLE, reducing; 1/4 npt x 1/8 npt	1				
15	104984	TEE, pipe; 1/4 npt(f)	1				

† These parts are included in 249835 Restrictor Manifold Conversion Kit

**Part No. 249635 Joint Fill Kit****Part No. 249834 Combination Kit**

△1 Apply sealant to all pipe fittings.

△2 Lubricate and torque evenly to 15-20 in-lb (1.7-2.3 N•m).

△3 Install o-rings (6) and screens (7) on restrictors (5) and torque to 40-50 in-lb (4.5-5.6 N•m).

△4 Component A (ISO) on the bottom.

△5 Component B (RES) on the top.

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Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	249591	VALVE, 2K Ultra-Lite; see 309000	1	13	512291	NUT, mixer	2
2	24K994	MANIFOLD, outlet	1	20	117509	FITTING, quick disconnect; air line; 1/4 npt(m)	1
3	104319	O-RING; PTFE	2	21	117510	COUPLER, quick disconnect; air line; 1/4 npt(m)	1
4	104459	SCREW, cap, socket-hd; 10-32 x 1-3/4 in. (44 mm)	4	22*	15G100	EXTENSION, manifold, outlet	1
5	15E374	RESTRICTOR, manifold; .032 (standard size)	2	27	117773	GREASE; not shown	1
	15E373	RESTRICTOR, manifold; .024	1	28	118665	TUBE, grease; not shown	1
	15E375	RESTRICTOR, manifold; .040	1	29	117792	GUN, grease; not shown	1
6	249036	KIT, o-ring/restrictor; package of 6	1	30	120042	MIXER, disposable; 1/4 in. (6 mm) ID x 3/8 in. (10 mm) x 24 element; package of 50	1
7	249037	KIT, filter screen, 40 mesh; package of 10	1	33*	158962	ELBOW, reducing; 1/4 npt(f) x 1/8 npt(m)	1
9*	119984	FITTING, compression; without nut or ferrule; 1/8 npt(m) x 5/16 in. (8 mm) OD tube	4	34*	15G421	TUBE, extension; includes nuts and ferrules; 5/16 in. (8 mm) OD x 48 in. (1219 mm)	2
10	155541	ELBOW, swivel, 90°; 1/4 npt(m) x 1/4 npsm(f)	2	* These parts are included in 249834 Combination Kit (includes 249634 Cold Spray Kit, page 9).			
11	117595	UNION, inlet, swivel, A side; 1/4 npt(m) x #5 JIC	1				
12	117506	UNION, inlet, swivel, B side; 1/4 npt(m) x #6 JIC	1				

# Accessories

## 210500 Gun Inlet Fluid Filter

1/4 npsm(m) x 1/4 npsm(f). Comes with 100 mesh element.

## Filter Elements for 210500 Filter

**238561** 100 mesh. Package of 3.

**238563** 60 mesh. Package of 3.

## 249765 Restrictor Kit

Includes one each of restrictor sizes .018, .024, .032, .040, .062, and .094, one plug with no restriction, package of 10 screens, and package of 6 o-rings.

## 15E370 Plug

Fits restrictor port, but with no restriction. Uses 249036 O-ring Kit.

## 249036 Restrictor O-ring Kit

Package of 6.

## 249037 Restrictor Screen Kit

40 mesh. Package of 10.

## 119386 Drill Bit Kit

For cleaning restrictors. Includes size #61 to #80 drill bits.

## 551327 Plastic Disposable Night Cap

Partially fill with ISO pump oil or ISO pump grease to protect outlet manifold from air and moisture.

## 217374 ISO Pump Oil

1 pint (0.5 liter) container.

## 106565 ISO Pump Grease

14.6 oz (0.4 kg) cartridge

## Standard Disposable Mixer (for use with or without spray adapter)

**120042** 1/4 in. (6 mm) ID x 3/8 in. (10 mm) OD x 24 element; package of 50.

## Alternate Disposable Mixers (plain outlet; not for spray adapter)

**512014** 1/4 in. (6 mm) ID x 3/8 in. (10 mm) OD x 32 element.

**512016** 3/8 in. (10 mm) ID x 1/2 in. (13 mm) OD x 24 element.

**512017** 3/8 in. (10 mm) ID x 1/2 in. (13 mm) OD x 30 element.

**512289** 1/2 in. (13 mm) ID x 5/8 in. (16 mm) OD x 30 element.

**551979** 1/2 in. (13 mm) ID x 5/8 in. (16 mm) OD x 36 element.

**512291** Retainer Nut for 1/2 in. (13 mm) OD and smaller mixers.

**512292** Retainer Nut for 5/8 in. (16 mm) OD mixers.

## 949634 Repair Kit

For 2K Ultra-Lite Valve.

## 949633 Fluid Section Seal Kit

For 2K Ultra-Lite Valve.

## 249633 Hose Kit

35 ft (10.7 m) hose bundle with static dissipation. Includes two fluid hoses, color-coded red and blue, and one air hose. All hoses are 1/4 in. (6 mm) ID. Red hose is moisture-proof construction.

# Technical Data

Maximum Fluid Working Pressure	3000 psi (20.7 MPa, 207 bar)
Maximum Air Input Pressure	120 psi (0.84 MPa, 8.4 bar)
Wetted Parts	Carbon steel, stainless steel, aluminum, acetal, polypropylene, chemically resistant o-rings, PTFE

# Graco Standard Warranty

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.

**THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.**

Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

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**TO PLACE AN ORDER**, contact your Graco distributor or call to identify the nearest distributor.

**Phone:** 612-623-6921 **or Toll Free:** 1-800-328-0211 **Fax:** 612-378-3505

*All written and visual data contained in this document reflects the latest product information available at the time of publication.  
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Original instructions. This manual contains English. MM 311230

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