



INSTRUCTIONS

This manual contains important warnings and information.  
**READ AND KEEP FOR REFERENCE.**

*First choice when quality counts.™*

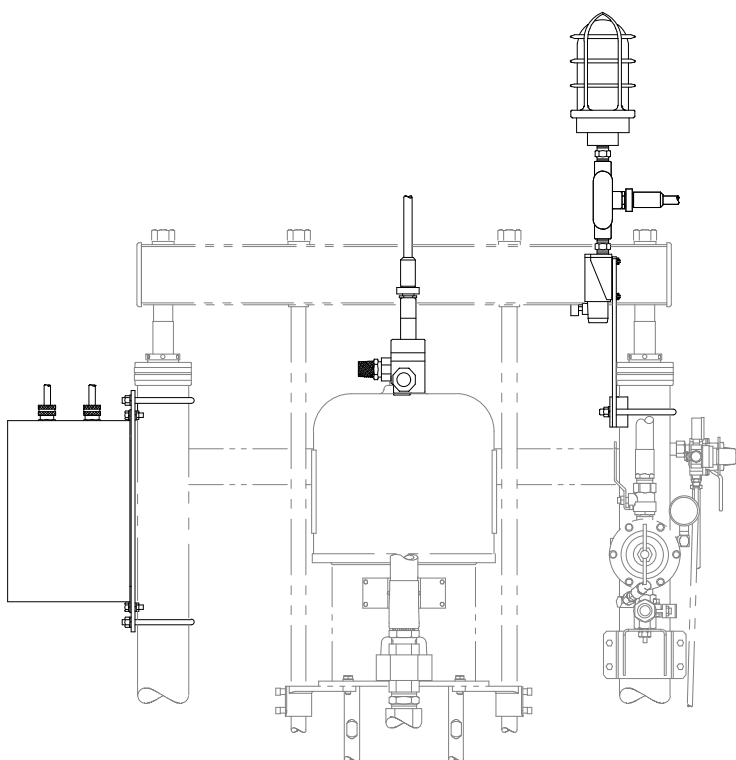
**3" AND 6.5" RAM**

## Electric Crossover Kit

*250 psi (1.7 MPa, 17.2 bar) Maximum Air Inlet Pressure*

**Part No. C59519, Series A**  
**Electric Crossover Kit**

**Part No. C59520, Series A**  
**Electric Crossover Kit**



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# Symbols

## Warning Symbol



This symbol alerts you to the possibility of serious injury or death if you do not follow the instructions.

## Caution Symbol



This symbol alerts you to the possibility of damage to or destruction of equipment if you do not follow the instructions.

## WARNINGS



INSTRUCTIONS

### EQUIPMENT MISUSE HAZARD

Equipment misuse can cause the equipment to rupture or malfunction and result in serious injury.

- This equipment is for professional use only.
- Read all instruction manuals, tags, and labels before operating the equipment.
- Use the equipment only for its intended purpose. If you are not sure, call your Graco distributor.
- Do not alter or modify this equipment. Use only genuine Graco parts and accessories.
- Check equipment daily. Repair or replace worn or damaged parts immediately.
- Do not exceed the maximum working pressure stated on the equipment or in the **Technical Data** for your equipment. Do not exceed the maximum working pressure of the lowest rated component in your system.
- Use fluids and solvents which are compatible with the equipment wetted parts. Refer to **Technical Data** section of all equipment manuals. Read the fluid and solvent manufacturer's warnings.
- Wear hearing protection when operating this equipment.
- Comply with all applicable local, state, and national fire, electrical, and safety regulations.

# ⚠ WARNINGS



## MOVING PARTS HAZARD

Moving parts, such as the ram plate/pump inlet can pinch fingers.

- Do not operate the equipment with the guard removed.
- Keep clear of all moving parts when starting or operating the equipment.
- Keep hands and fingers away from the priming piston during operation and whenever the pump is charged with air.
- Keep clear of the ram plate, pump fluid inlet, and lip of the fluid container when raising or lowering the ram.
- Before checking or servicing the ram or pump, follow the **Pressure Relief Procedure** in the ram or pump manual.



## TOXIC FLUID HAZARD

Hazardous fluid or toxic fumes can cause serious injury or death if splashed in the eyes or on the skin, inhaled, or swallowed.

- Know the specific hazards of the fluid you are using.
- Store hazardous fluid in an approved container. Dispose of hazardous fluid according to all local, state and national guidelines.
- Always wear protective eyewear, gloves, clothing and respirator as recommended by the fluid and solvent manufacturer.
- Avoid exposure to heated material fumes.
- Provide adequate ventilation.



## FIRE, EXPLOSION AND ELECTRIC SHOCK HAZARD

Improper grounding, poor air ventilation, open flames, or sparks can cause a hazardous condition and result in fire, explosion, or electric shock and other serious injury.

- Ground the equipment, the object being dispensed, and all other electrically conductive objects in the dispense area. Proper grounding dissipates static electricity generated in the equipment. See **Ground the System** in your system manual.
- Do not use this equipment with flammable liquids.
- Keep the dispense area free of debris, including solvent, rags, and gasoline.
- If there is any static sparking while using the equipment, **stop dispensing immediately**. Identify and correct the problem.
- Make sure all electrical work is performed by a qualified electrician only.
- Make sure all electrical equipment is installed and operated in compliance with applicable codes.
- Make sure power is disconnected when servicing and repairing equipment.
- Have any checks, installation, or service to electrical equipment performed by a qualified electrician only.

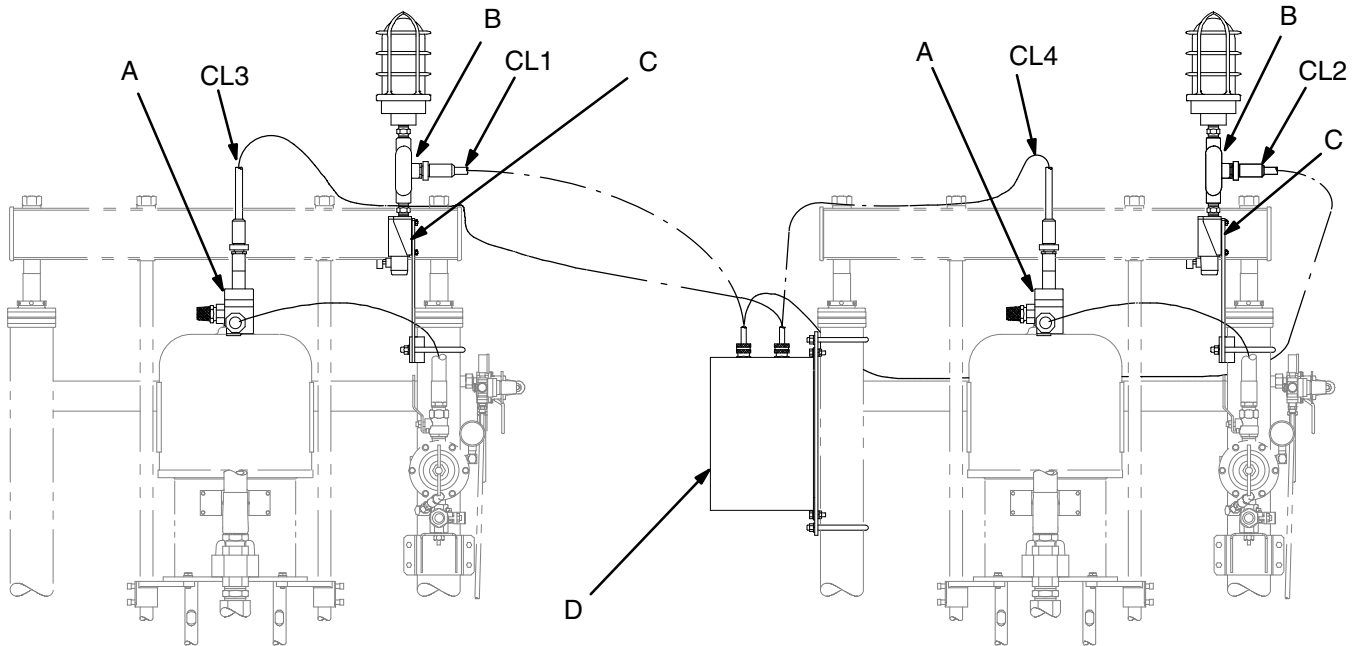
# Component Identification and Function

## KEY

- A** 3-Way Solenoid Valve (2)  
**B** Empty Level Kit (2)

- C** Limit Switch (2)  
**D** Unloader Cross-over Panel

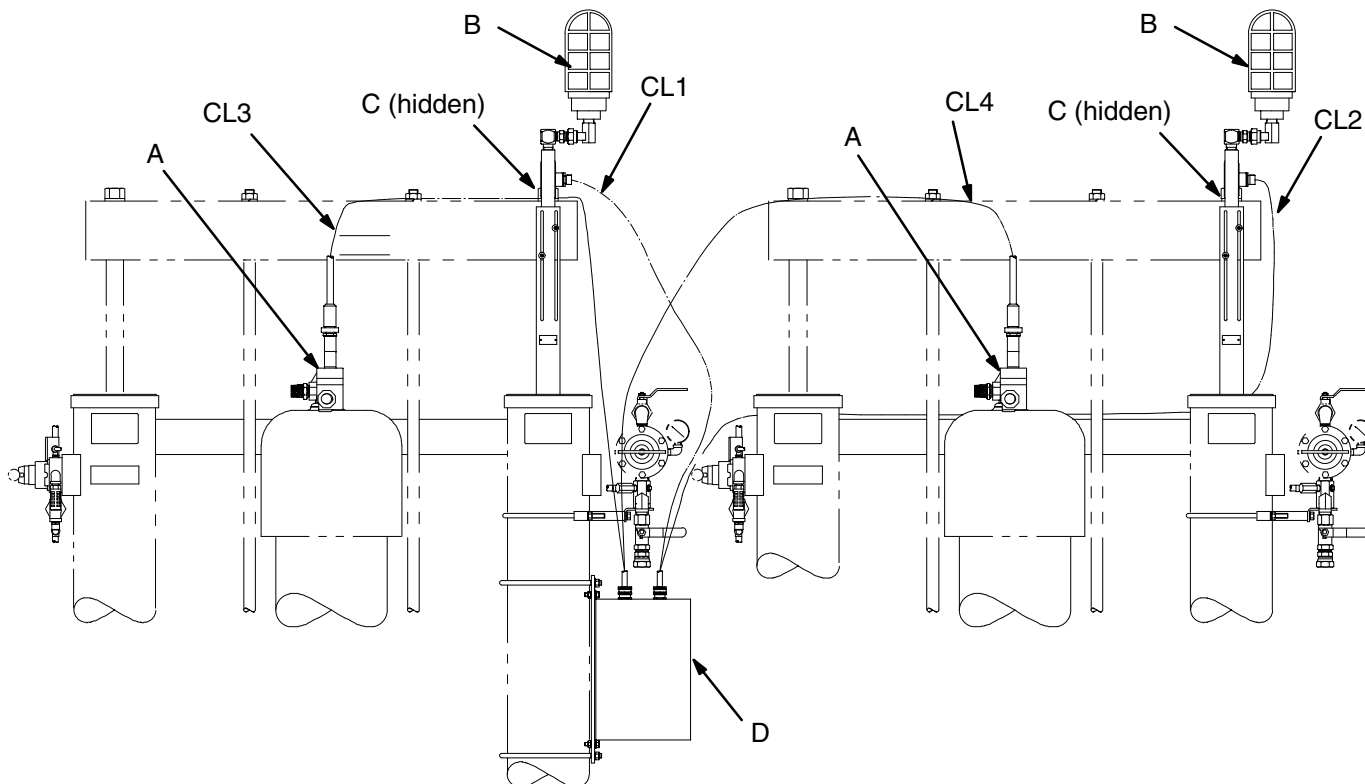
**NOTE:** Viewed from the loading direction.



**Supply Unit A**

**Model C59519**

**Supply Unit B**



**Supply Unit A**

**Model C59520**

**Supply Unit B**

8891A

**Fig. 1**

# Installation

## Prepare the Site

**NOTE:** Always use Genuine Graco Parts and Accessories, available from your Graco distributor. If you supply your own accessories, be sure they are adequately sized and pressure rated for your system.

**NOTE:** Letters and numbers in parenthesis refer to the callouts and the parts list on page 10.


Bring a compressed air supply line from the air compressor to the pump location. Be sure all air hoses are properly sized and pressure-rated for your system. Use only electrically conductive hoses. The air hose should have a 3/4 npsm(m) thread.




Before installing any air line components, blow out the air lines to remove scale and other debris. Use pipe compound or tape sparingly and only on male threads.

Install a bleed-type shutoff valve in the air line upstream from all other air line components, to isolate them for servicing.

## Electrical Service

Electrical power to the crossover is supplied by a power cord.

**WARNING**



**FIRE, EXPLOSION, AND ELECTRIC SHOCK HAZARD**

The electrical wiring shall be performed only by trained and qualified personnel to reduce the risk of serious injury and electric shock.

Observe all local codes and regulations regarding electrical wiring.

When installing in a flammable atmosphere (hazardous location) refer to Article 500 of the US National Electric Code or other applicable agency standards to plan the work.

The operating voltage is 120VAC. This equipment requires a 50/60 Hz, single-phase, 15 Ampere grounded power supply.


## Application

The electric crossover kit is designed to allow two drum ram systems to be converted into a continuous-flow system. It shifts pumping from an online ram when the drum becomes empty.

## Typical Electric Crossover Installation

**WARNING**

Never leave fingers between the ram plate and the drum when the ram plate is being operated.

**WARNING**

Never enter the operating area of the ram , when the ram is in the top position. When the air pressure is lost or in the case of leaks in the air pressure system, the ram plate may drop.

The typical installation, shown on page 4, Fig. 1 of this manual, is only a guide. See the system manual for your application or contact your Graco distributor for assistance in designing a system to meet your needs.

See your ram manual if installing a new ram or relocating an existing ram.

# Installation


## Electric Crossover Setup

**NOTE:** During system operation, as the ram approaches the drum bottom, the top of the ram contacts the empty level indicator kit's limit valve switch. The switch shuts off air to the ram air motor via a solenoid valve. As the valve stops air to one air motor, it starts air to the other air motor. This allows constant material flow and changing out of material drums.

The position of the empty level indicator kit (B) on the ram determines when the ram air motor is turned on and off. During operation, this position can be adjusted as desired.

1. Install crossover unloader (1) on ram assembly, using U-bolt (3), washer (4) and nut (5) as shown in Parts. Connect air supply.

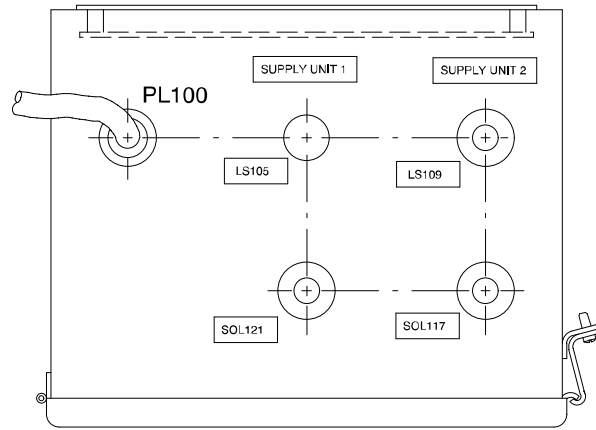
**⚠ WARNING**



**ELECTRIC SHOCK HAZARD**  
Do not open the electrical control panel, unless you are a trained professional.

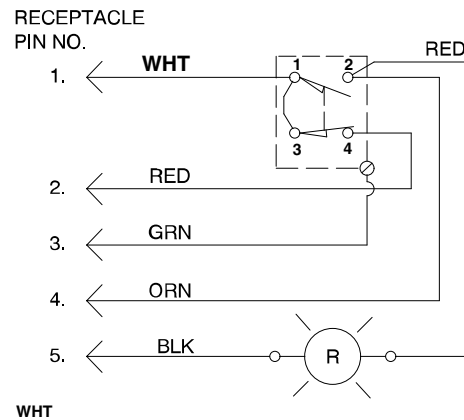
Before opening the control panel, make sure that all power has been removed from the control panel.

2. Connect electrical connectors to cross-over unloader (see Fig. 2). Refer to Schematic, Fig. 3.



**Fig. 2**

3. Install solenoid valve (7) and connect electrical connector as shown in Parts.
4. Install 2 empty level kit assemblies (9) on each ram assembly, using attaching parts, as shown in Parts drawing.
5. Connect electrical connector to each empty level kit assembly (9). Refer to Schematic, Fig. 3.



**Fig. 3**

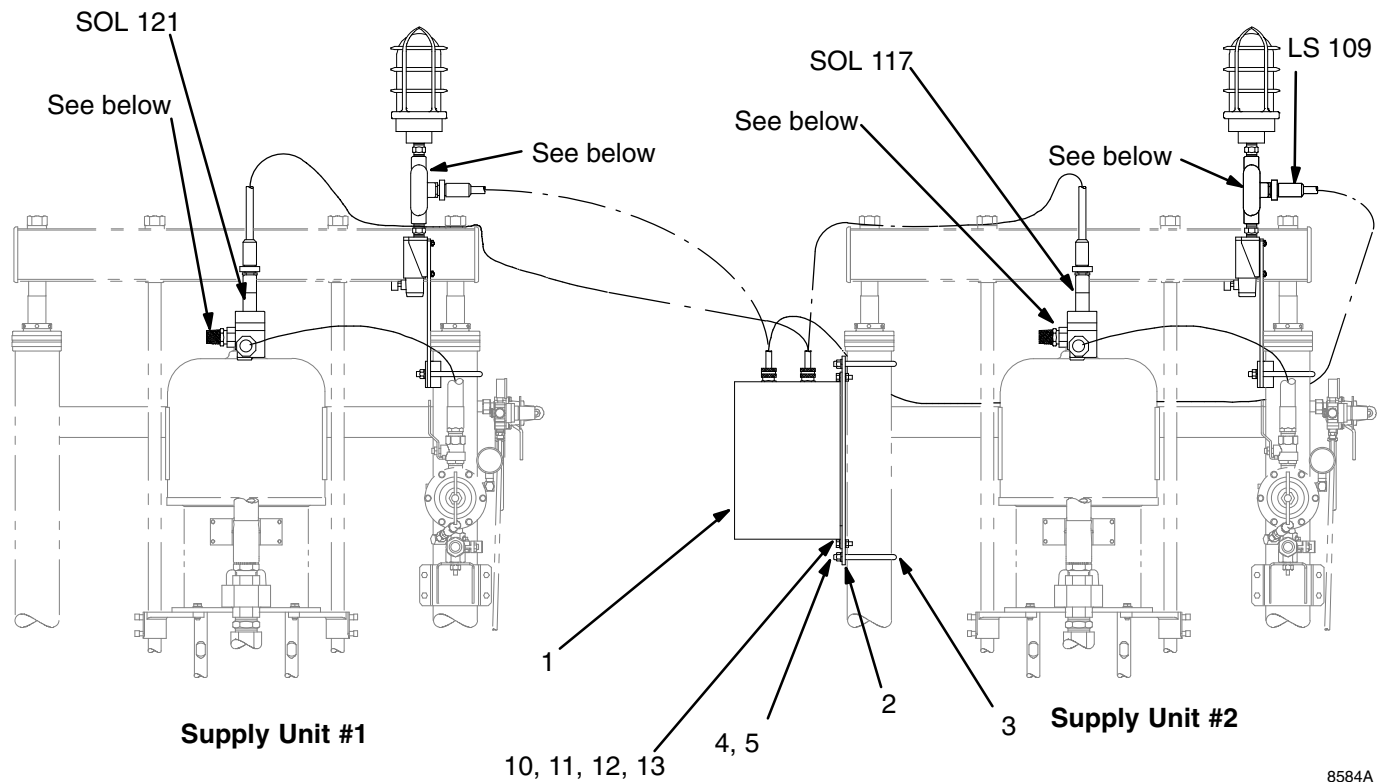
6. Adjust limit switch (9c) to trip with the ram plate 1" from base plate (see Parts).

# Parts

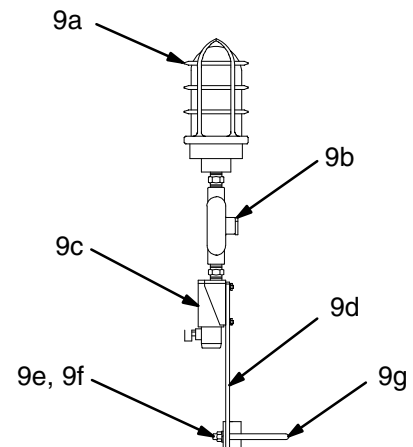
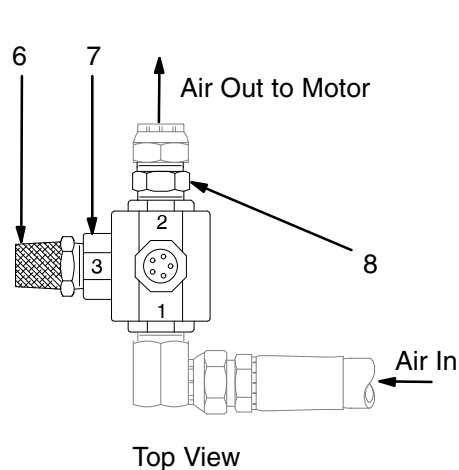
## Model C59519 Electric Crossover

Includes items 1–13

Ref No.	Part No.	Description	Qty	Ref No.	Part No.	Description	Qty
1	C59528	CROSSOVER, unloader	2	9b	C07451	• CONNECTOR, receptacle	1
2	617837	PLATE, mounting, J-box	4	9c	C07368	• LIMIT SWITCH w/lever	1
3	C24332	U-BOLT, 3/8–16	2	9d	C55409	• BRACKET, limit switch	1
4	107176	WASHER, lock, 3/8	4	9e	C19192	• NUT, hex, 3/8–16	2
5	100307	NUT, hex, 5/8–16	4	9f	C19213	• WASHER, lock	2
6	C06311	MUFFLER, 3/4 NPT	2	9g	C24332	• U-BOLT	1
7	C06325	VALVE, solenoid, 3/4 NPT	2	10	C19736	SCREW, drive	8
8	175013	NIPPLE, hex, 3/4 NPT	2	11	C19107	SCREW, hex hd, 5/16–18	4
9	C55333	KIT ASSEMBLY, empty level (includes items 9a through 9g)	2	12	C19211	WASHER, lock, 5/16	8
9a	C32111	• LIGHT FIXTURE	1	13	C19191	NUT, hex, 5/16–18	4



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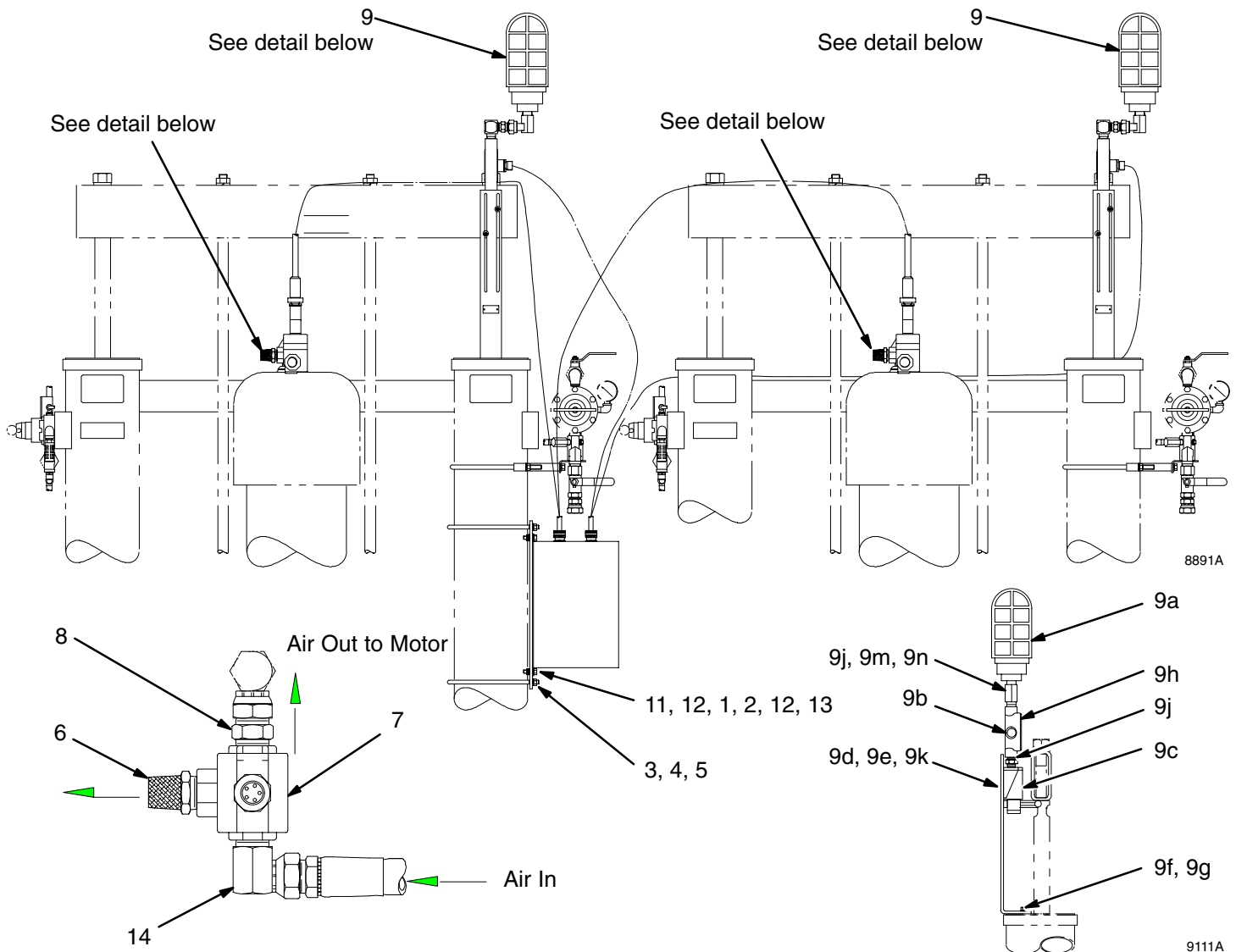


# Parts

## Model C59520 Electric Crossover

Includes items 1–14

Ref No.	Part No.	Description	Qty	Ref No.	Part No.	Description	Qty
1	C59528	CROSSOVER, unloader	2	9e	102598	• SCREW, cap	2
2	617837	PLATE, mounting, J-box	1	9f	100016	• WASHER, lock	2
3	C32424	U-BOLT, 3/8–16	2	9g	100643	• SCREW	2
4	107176	WASHER, lock, 3/8	2	9h	C20819	• FITTING	1
5	100307	NUT, hex, 5/8–16	4	9j	158491	• NIPPLE	2
6	C06311	MUFFLER, 3/4 NPT	2	9k	112776	• WASHER	2
7	C06325	VALVE, solenoid, 3/4 NPT	2	9m	158683	• ELBOW	1
8	175013	NIPPLE, hex, 3/4 NPT	2	9n	155470	• UNION, swivel	1
9	C59650	KIT ASSEMBLY, empty level (includes items 9a through 9n)	2	10	C19736	SCREW, drive	8
9a	C32111	• LIGHT FIXTURE	1	11	100450	SCREW, hex hd	4
9b	C07451	• CONNECTOR, receptacle	1	12	100214	WASHER, lock	8
9c	C07368	• LIMIT SWITCH w/lever	1	13	100188	NUT, hex	4
9d	617352	• BRACKET, limit switch	1	14	C50359	FITTING, union	2



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[illegible]

# Graco Standard Warranty

Graco warrants all equipment manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale by an authorized Graco distributor 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.

Graco makes no warranty, and disclaims all implied warranties of merchantability and fitness for a particular purpose in connection with accessories, equipment, materials or components sold but not manufactured by Graco. These items sold, but not manufactured by Graco (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

In no event will Graco be liable for indirect, incidental, special or consequential damages resulting from Graco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Graco, or otherwise.

## **FOR GRACO CANADA CUSTOMERS**

The parties acknowledge that they have required that the present document, as well as all documents, notices and legal proceedings entered into, given or instituted pursuant hereto or relating directly or indirectly hereto, be drawn up in English. Les parties reconnaissent avoir convenu que la rédaction du présente document sera en Anglais, ainsi que tous documents, avis et procédures judiciaires exécutés, donnés ou intentés à la suite de ou en rapport, directement ou indirectement, avec les procédures concernées.

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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.

Graco makes no warranty, and disclaims all implied warranties of merchantability and fitness for a particular purpose in connection with accessories, equipment, materials or components sold but not manufactured by Graco. These items sold, but not manufactured by Graco (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

In no event will Graco be liable for indirect, incidental, special or consequential damages resulting from Graco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Graco, or otherwise.

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## **Phone Numbers**

**TO PLACE AN ORDER**, contact your Graco distributor, or call one of the following numbers to identify the distributor closest to you:

**1-800-367-4023 Toll Free**

**612-623-6921**

**612-378-3505 Fax**

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