

# Instructions



## PLURAL COMPONENT Mixer Manifold

307400P

*3000 psi (21.0 MPa, 210 bar) Maximum Working Pressure*

### **Model 215625 Series C**

Low Volume Mixer: 1/4 npt fluid outlet; for use in low volume applications, such as air spray urethanes.

### **Model 215626 Series C**

High Volume Mixer: 1/2 npt fluid outlet; for use in high volume applications, such as airless spray or high solids epoxy.

### **Model 241692 Series A**

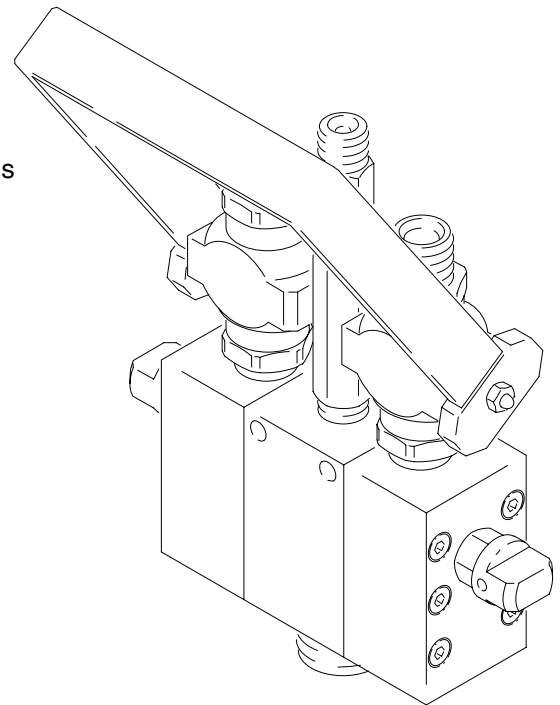
Includes Model 215626 and a static pipe mixer.

### **Ball Valve Kit 218413**

Updates the handle and ball valve of Series A, Model 215625, Low Volume Mixer. See page 10.

### **Ball Valve Kit 218414**

Updates the handle and ball valve of Series A, Model 215626, High Volume Mixer. See page 10.



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**Read warnings and instructions.**  
See page 2 for **Table of Contents**.

**PROVEN QUALITY. LEADING TECHNOLOGY.**

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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.

## ! WARNING



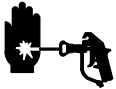
INSTRUCTIONS

### 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.
- Check equipment daily. Repair or replace worn or damaged parts immediately.
- Do not exceed the maximum working pressure of the lowest rated system component. Refer to the **Technical Data** on page 13 for the maximum working pressure of this equipment.
- Use fluids and solvents which are compatible with the equipment wetted parts. Refer to the **Technical Data** section of all equipment manuals. Read the fluid and solvent manufacturer's warnings.
- Handle hoses carefully. Do not pull on hoses to move equipment.
- Route hoses away from traffic areas, sharp edges, moving parts, and hot surfaces. Do not expose Graco hoses to temperatures above 66°C (150°F) or below -40°C (-40°F).
- Wear hearing protection when operating this equipment.
- Do not move or lift pressurized equipment.
- Comply with all applicable local, state, and national fire, electrical, and safety regulations.

# WARNING



## INJECTION HAZARD

Spray from the gun, leaks or ruptured components can inject fluid into your body and cause extremely serious injury, including the need for amputation. Fluid splashed in the eyes or on the skin can also cause serious injury.

- Fluid injected into the skin is a serious injury. The injury may look like just a cut, but it is a serious injury. **Get immediate medical attention.**
- Do not stop or deflect leaks with your hand, body, glove or rag.
- Always have the tip guard and the trigger guard on the gun when spraying.
- Do not “blow back” fluid; this is not an air spray system.
- Check the gun diffuser operation weekly. Refer to the gun manual.
- Be sure the gun trigger safety operates before spraying.
- Lock the gun trigger safety when you stop spraying.
- Follow the **Pressure Relief Procedure** on page 8 if the spray tip clogs and before cleaning, checking or servicing the equipment.
- Tighten all fluid connections before operating the equipment.
- Check the hoses, tubes, and couplings daily. Replace worn or damaged parts immediately. Do not repair high pressure couplings; you must replace the entire hose.



## MOVING PARTS HAZARD

Moving parts can pinch or amputate your fingers.

- Keep clear of all moving parts when starting or operating the pump.
- Before checking or servicing the equipment, follow the **Pressure Relief Procedure** on page 8 to prevent the equipment from starting unexpectedly.

# WARNING



## FIRE AND EXPLOSION HAZARD

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



- Ground the equipment and the object being sprayed. Follow the grounding instructions on page 5.
- If there is any static sparking or you feel an electric shock while using this equipment, **stop spraying immediately**. Do not use the equipment until you identify and correct the problem.
- Provide fresh air ventilation to avoid the buildup of flammable fumes from solvents or the fluid being sprayed.
- Keep the spray area free of debris, including solvent, rags, and gasoline.
- Before operating this equipment, electrically disconnect all equipment in the spray area.
- Before operating this equipment, extinguish all open flames or pilot lights in the spray area.
- Do not smoke in the spray area.
- Do not turn on or off any light switch in the spray area while spraying or while operating if fumes are present.
- Do not operate a gasoline engine in the spray area.



## 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.



## REACTIVE CHEMICALS HAZARD

Graco Inc. does not manufacture or supply any of the reactive chemical components that are used in this equipment, and is not responsible for their effects. Because of the vast number of chemicals that could be used, and their varying chemical reactions, the buyer and user of this equipment should determine all facts relating to the materials used, including any of the potential hazards involved. Particular inquiry and investigation should be made into potential dangers relating to toxic fumes, fires, explosions, reaction times, and exposure of human beings to the individual components or their resultant mixtures. Graco assumes no responsibility for loss, damage, expense, or claims for bodily injury or property damage, direct or consequential, arising from use of such chemical components.

# Installation

## Grounding

Proper grounding is an essential part of maintaining a safe system.

To reduce the risk of static sparking, ground the pump. Check your local electrical code for detailed grounding instructions for your area and type of equipment. Be sure to ground all of this equipment:

1. *Pump*: use a ground wire and clamp as instructed in your pump instruction manual.
2. *Fluid hoses*: Use only grounded hoses with a maximum of 500 feet (150 m) combined hose length to ensure grounding continuity.
3. *Spray gun, manifold, or dispensing valve*: obtain grounding through connection to a properly grounded connection to a properly grounded fluid hose and sprayer.
4. *Object being sprayed*: according to local code.
5. *Supply Containers*: according to local code.

6. *All solvent pails* used when flushing, according to local code. Use only *metal pails*, which are conductive. Do not place the pail on a nonconductive surface, such as paper or cardboard, which interrupts the grounding continuity.
7. *To maintain grounding continuity when flushing or relieving pressure*, always hold a metal part of the gun firmly to the side of a *grounded metal pail*, then trigger the gun.

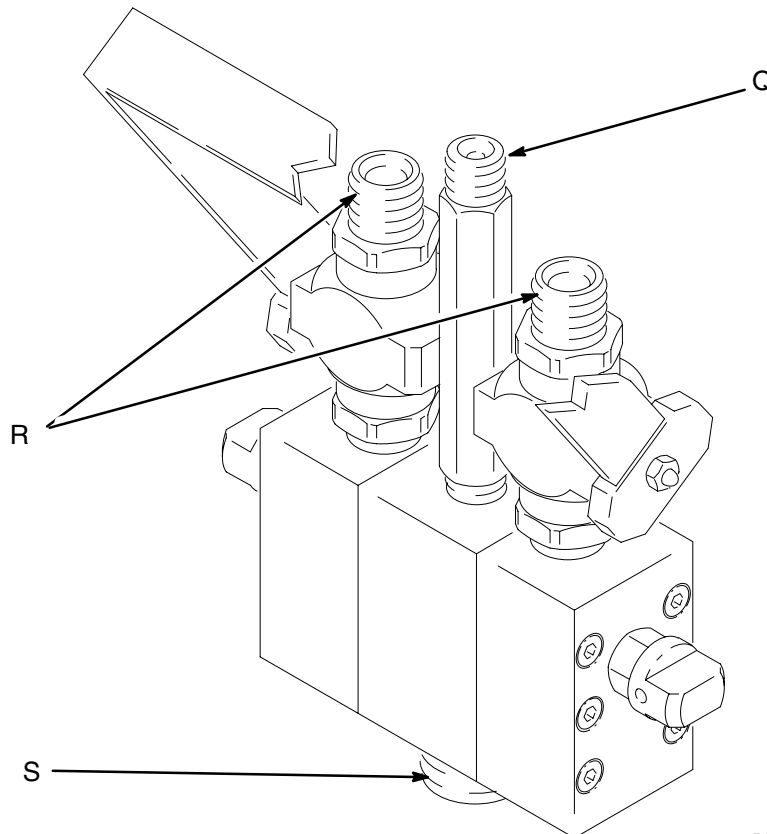
## Installation (See Fig. 1)

For assistance in setting up a plural component system, contact your Graco distributor. This will help assure that you select the proper type and size equipment for your job.

Use the spacer (40), screws (37), nuts (38) and lock-washers (39) provided to mount the manifold.

Connect the supply lines from your pump to the manifold inlets (R & Q).

Connect your static mixer or hose to the material outlet (S). Model 215626 has a 1/2 npt(m) outlet, and model 215625 has a 1/4 npt(m) outlet. Model 241692 includes a static mixer with a 3/8 npt(m) outlet.



Model 215626 Shown

Fig. 1

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# Operation

## Start-up

The mixer manifold was tested in oil, which was left in to protect the manifold. Before operating, thoroughly flush the manifold to prevent contamination of the fluids.

## Flushing Procedure

### **⚠ CAUTION**

Be sure to label all fluid path parts "component A" or "component B" when disassembling them. Doing so prevents interchanging A and B parts during reassembly, which will contaminate the materials and the fluid path through the equipment.

Color-coded chemically resistant tape may be used to label the parts. Use blue for component A, green for component B, white for solvent, and red for mixed material.

Place the handle in the UP, or closed, position. Turn on the solvent supply pump. Open one of the solvent valves. Release the spray gun safety latch. Hold the gun firmly to the side of a grounded metal pail, then trigger the gun to flush. Flush until all contaminants and oil are removed. Release the trigger, engage the safety latch, and close the solvent valve. Repeat for the other solvent valve.

Any ratio check valves on the manifold output side must be flushed. Place a container under both valves to catch the waste solvent. Flush the valves after triggering the gun, one side at a time.

Solvent may channel through viscous fluids and leave a coating of mixed fluid on the inner tube of your hose.

Fig 2 shows the handle in the UP, or closed, position and the right solvent valve open with solvent flowing through the right fluid chamber and out through the mixing chamber.

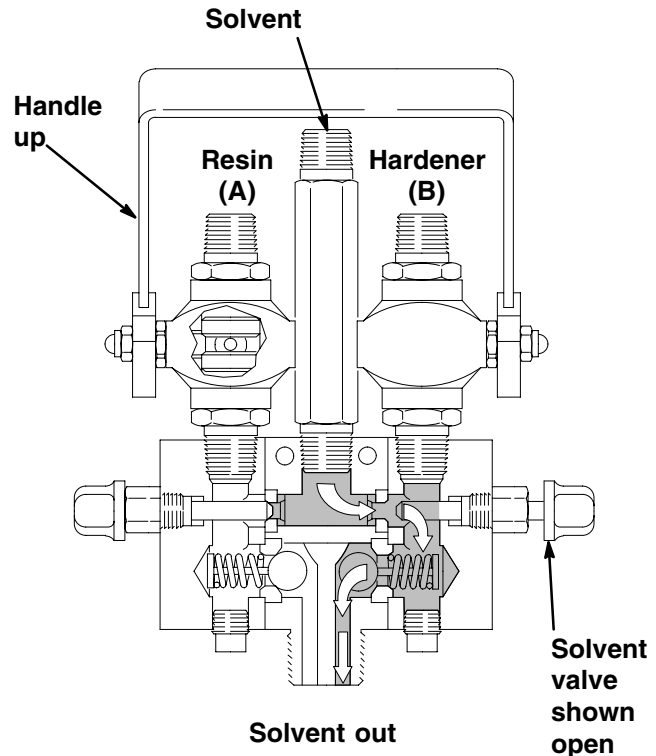


Fig. 2

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# Operation

Be sure all fluid is thoroughly flushed from the hose after each use.

Disassemble all other dispensing equipment, as necessary, and clean thoroughly.

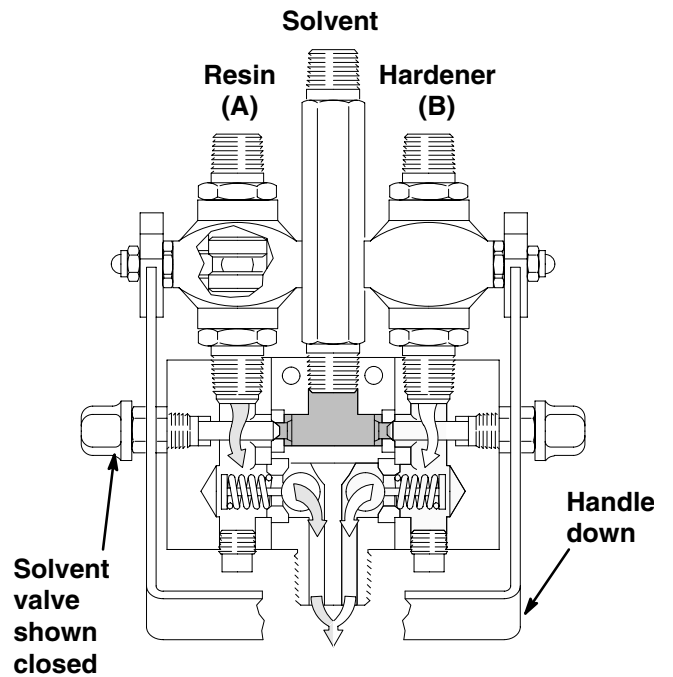
## CAUTION

To prevent fluid from setting up in the dispensing equipment, flush the system frequently. Be sure there is adequate solvent in the solvent supply before starting to spray.

## Dispensing

To dispense the resin and hardener, turn on the supply pumps. Then push the handle forward (DOWN) to the open position. To stop the flow, move the handle to the UP or closed position.

**Fig 3** shows the handle in the DOWN, or open, position, solvent valve closed, and resin and hardener flowing through the manifold.



**Fig. 3**

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# Operation

## Pressure Relief Procedure

### WARNING



#### INJECTION HAZARD

The system pressure must be manually relieved to prevent the system from starting or spraying accidentally. Fluid under high pressure can be injected through the skin and cause serious injury. To reduce the risk of an injury from injection, splashing fluid, or moving parts, follow the **Pressure Relief Procedure** whenever you:

- are instructed to relieve the pressure,
- stop spraying,
- check or service any of the system equipment,
- or install or clean the spray tip.

1. Close the mixer fluid valves.
2. Flush the dispensing equipment as described in the **Flushing Procedure** on page 6.
3. Shut off the fluid and solvent pumps.
4. Hold a metal part of the spray gun firmly to a grounded metal pail, and trigger the gun to relieve pressure.
5. Engage the gun safety latch
6. Open any drain valves, and leave them open until you are ready to spray again.
7. If fluid has hardened in the hose or mixer, close the fluid valve, shut off the fluid and solvent pumps, and *slowly* loosen the fluid inlet hose(s) to relieve pressure, then remove the dispensing hose.

## Troubleshooting

### WARNING

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** above.

1. **Relieve the pressure** before you check or service any system equipment.
2. Check all possible causes and solutions in the **Troubleshooting Chart** before disassembling the manifold.

Problem	Cause	Solution
Little or no resin (A) output	The fluid inlet is plugged.	Clean the inlet, remove the obstruction.
	The fluid supply container is empty.	Refill the fluid supply.
Little or no hardener (B) output	The fluid inlet is plugged.	Clean the inlet, remove the obstruction.
	The fluid supply container is empty.	Refill the fluid supply.
The mixed fluid will not flush out	There is hardened fluid in the mixing chamber.	Clean the chamber with a compatible solvent; service it as necessary.
	The solvent supply container is empty.	Refill the solvent supply.
	The solvent is not compatible with the fluid.	Change to a compatible solvent.



# Service

## Manifold Repair (See Page 10. )

### WARNING

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 8.

**Note:** Repair kits are available for the manifold. Parts included in the kits are indicated with a †, for example (9†) See page 11.

1. **Relieve the Pressure.**
2. Remove the twelve socket-head screws (2) to separate the two valve housings (8) from the manifold housing (7). Remove all parts from the housings.
3. Clean all parts thoroughly in a compatible solvent. Use a soft bristle brush to clean the manifold passageways.
4. Install the two check valve assemblies (9†) and valve seats (6†) in the manifold housing (7).
5. Install the needle valve (12), back-up ring (4\*\*), and seal (3†) in each of the valve housings (8).
6. Install six socket-head screws (2) through one valve housing (8) and into the manifold housing (7), so the distance between the housings is 0.060 in. (1.5 mm).

7. Tighten the needle valve slightly, so that the tapered end centers in the seat (6) and holds its position.
8. Turn the six socket screws (2) oppositely and evenly to 60–70 in-lbs (6.7–7.9 N•m). Back off the needle valve (12) slightly.
9. Repeat step 8 as the torque will relax.

### CAUTION

Be sure to tighten the six socket screws (2) evenly. The upper four screws, which surround the needle valve assembly (12), are critical in ensuring that the needle seats properly. If the bottom two screws are over-tightened, they will throw off the alignment.

10. Repeat the procedure from step 9 on the other valve housing (8).

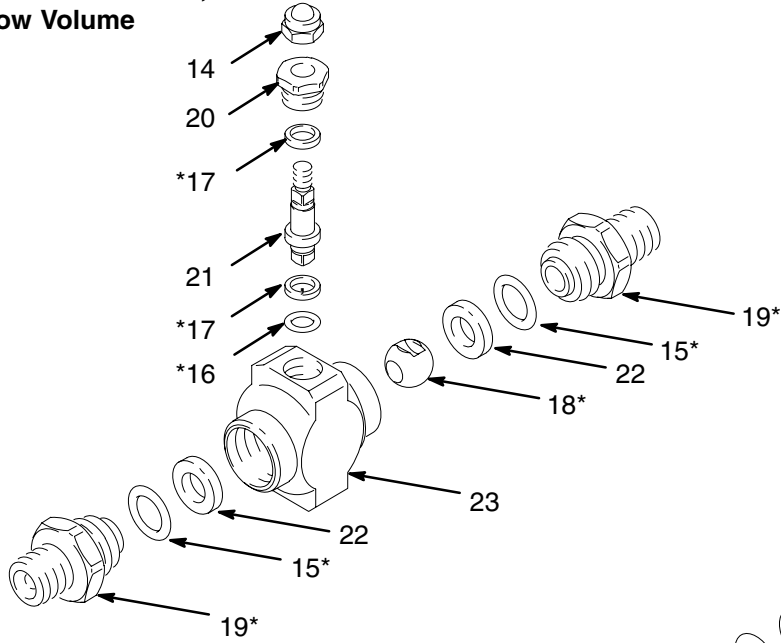
## Ball Valve Repair (See Page 10.)

**Note:** Repair Kit 217560 is available for the ball valves. Parts included in the kit are indicated with an asterisk, for example (18\*). See page 11.

When reassembling a ball valve (13 or 24), install the ball (18\* or 29\*) so that the round hole aligns with the main passageway of the valve body and the square hole aligns with the stem (21 or 32) passageway.

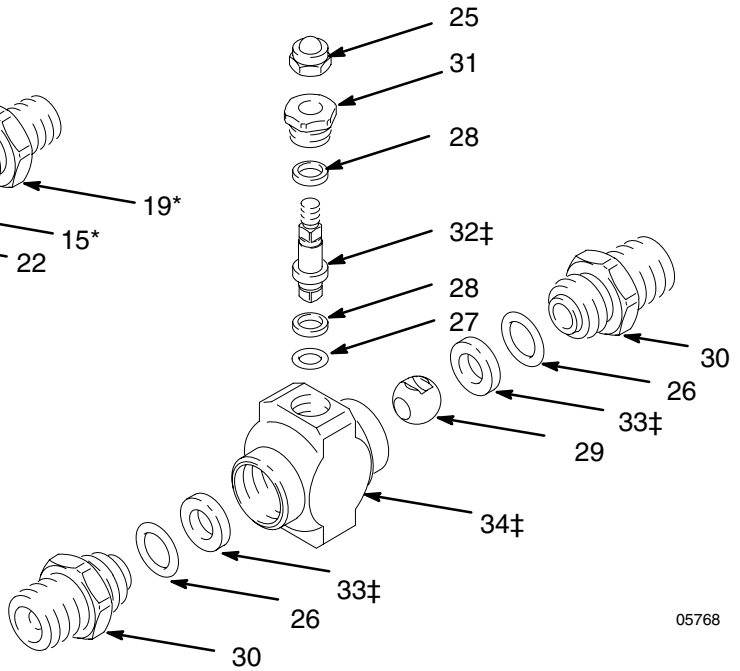
# Parts

**Ref No.13**  
**Ball Valve 215622, Series B**  
**Low Volume**

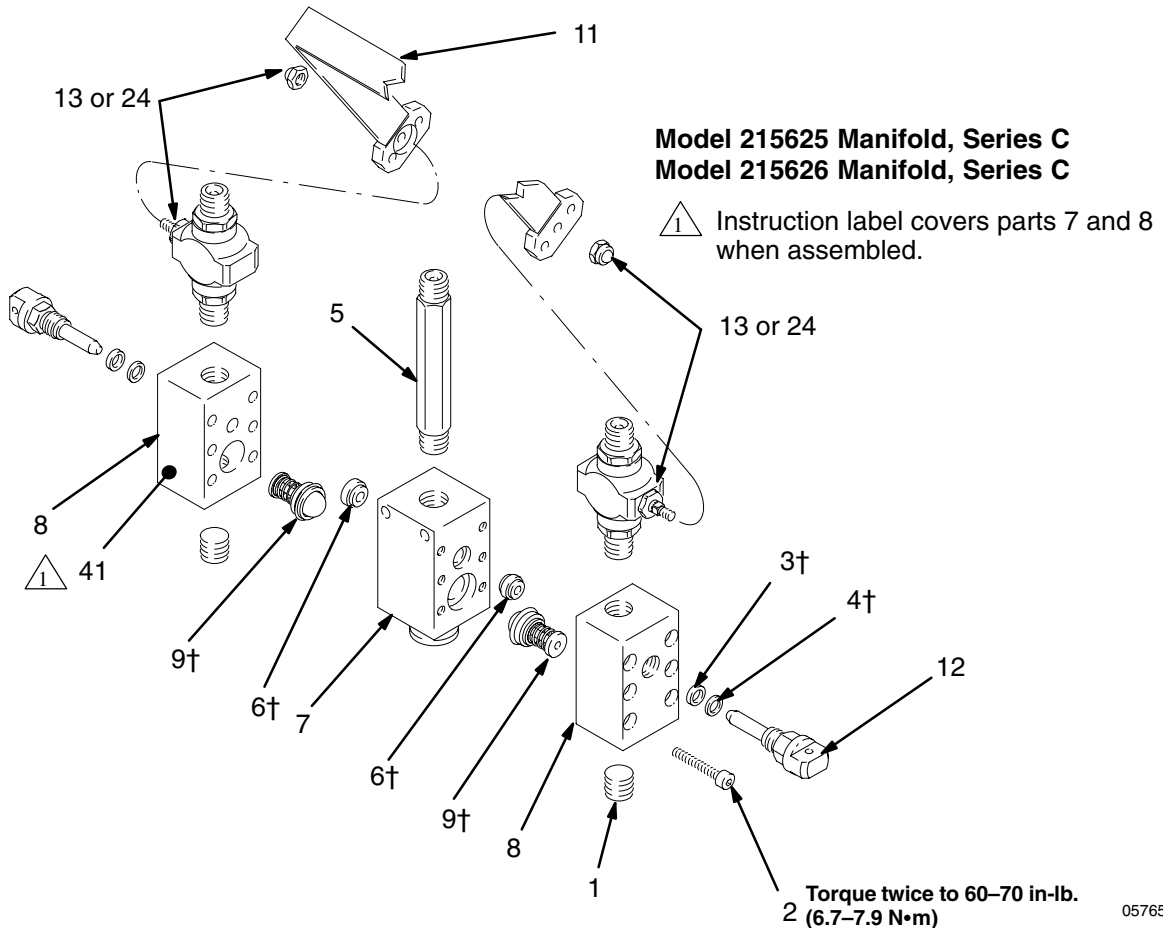


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**Ref No.24**  
**Ball Valve 215623, Series B**  
**High Volume**



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# Parts

## Models 215625 and 215626, Series C

Ref No.	Part No.	Description	Qty.	Ref No.	Part No.	Description	Qty.
1	100721	PLUG, internal hex; 1/4; 1/4 npt	2	20	165964	. NUT, packing	1
2	104472	CAPSCREW, hex hd; 10-32 x 1-1/2	12	21	178745	. STEM	1
3†	105694	SEAL, shaft; SST and PTFE	2	22*	172094	. SEAT, ball; Nylatron®	2
4†	177019	RING, back-up; Delrin®	2	23	178743	. HOUSING	1
5	177021	NIPPLE, pipe, hex; 1/4 npt	1	24	215623	VALVE, ball; used in model 215626 Series B includes items 25-34	2
6†	177022	SEAT, valve; Delrin®	2	25	102310	. NUT	1
7		HOUSING, manifold; 181116 used in model 215625 181115 used in model 215626	1	26*	104892	. O-RING; PTFE	2
8		HOUSING, valve; 177029 used in model 215625 177030 used in model 215626	2	27*	104893	. O-RING; PTFE	1
9†		CHECK VALVE Assy 215619 used in model 215625 215618 used in model 215626	2	28*	164900	. WASHER, back-up; Delrin®	2
11	217562	HANDLE	2	29*	178746	. BALL	1
12	215621	NEEDLE VALVE Assy	2	30	165599	. STUD; 3/8 npt	2
13	215622	VALVE, ball; used in model 215625 Series B Includes items 14-23	2	31	165964	. NUT, packing	1
14	102310	. NUT	1	32	178745	. STEM	1
15*	104892	. O-RING; PTFE	2	33*	172094	. SEAT, ball; Nylatron®	2
16*	104893	. O-RING; PTFE	1	34	178743	. HOUSING, valve	1
17*	164900	. WASHER, back-up; Delrin®	2	37‡	104429	CAPSCREW, hex hd; 1/4 x 2.25" (not shown)	2
18*	178746	. BALL	1	38‡	100015	NUT, hex, mscr; 1/4 (not shown)	2
19	165274	. STUD; 1/4 npt	2	39‡	100016	LOCKWASHER; 1/4" (not shown)	2
				40‡	178928	SPACER (not shown)	1
				41	188732	LABEL, instruction	1

\* Supplied in Repair Kit 217560.

† Supplied in Repair Kit 215913 or 215914. Order Repair Kit 215913 for Model 215626, and Repair Kit 215914 for Model 215625.

‡ One spacer (40), two screws (37), nuts (38) and lock-washers (39) are included for mounting the manifold.

## Kits for Series A Manifolds

### Ball Valve Kit 218413

Updates the handle (11) and ball valve (13) of Series A 215625 Low Volume Mixer. Includes:

Ref No.	Part No.	Description	Qty.
11	217562	HANDLE	1
13	215622	VALVE, ball; used in model 215625 Series B Includes items 14-23	2

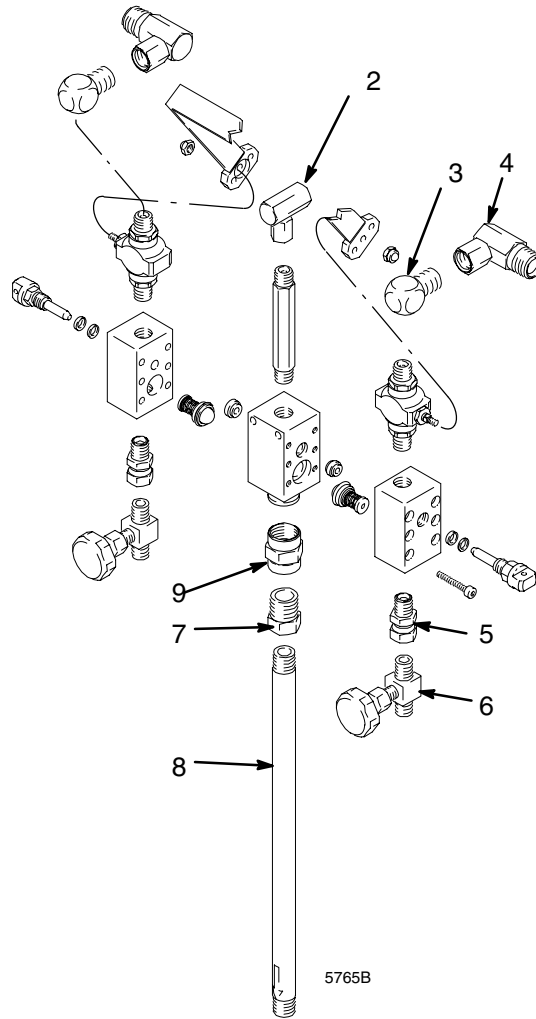
### Ball Valve Kit 218414

Updates the handle (11) and ball valve (24) of Series A 215626 High Volume Mixer. Includes:

Ref No.	Part No.	Description	Qty.
11	217562	HANDLE	1
24	215623	VALVE, ball; used in model 215626 Series B includes items 25-34	2

# Parts

## Model 241692 Series A



Ref No.	Part No.	Description	Qty.	Ref No.	Part No.	Description	Qty.
1	215626	MANIFOLD, mixer; see full parts and listing on pages 10 and 11	1	5	156823	UNION, swivel	2
2	157676	UNION, swivel, 90°	1	6	108233	VALVE, needle	2
3	155699	ELBOW, street	2	7	502265	BUSHING, reducer, pipe	1
4	161037	FITTING, union, adapter	2	8	512506	MIXER, static, pipe	1
				9	158581	COUPLING, hex	1

# Technical Data

Maximum working pressure .....	3000 psi (21.0 MPa, 210 bar)
Fluid port size	
Model 215625 .....	1/4 npt(m)
Model 241692 .....	1/2 npt(f)
Model 215626 .....	3/8 npt(m)
Solvent port size	
Model 215625 .....	1/4 npt(m)
Model 215626 and 241692 .....	1/4 npt(m)
Fluid outlet size	
Model 215625 .....	1/4 npt(m)
Model 241692 .....	3/8 npt(m)
Model 215626 .....	1/2 npt(m)
Mix chamber volume	
Model 215625 .....	0.10 fluid oz. (3.1 ml)
Model 215626 and 241692 .....	0.32 fluid oz. (10 ml)
Wetted parts .....	Chrome Alloy, High Carbon, Nickel Plated and Zinc Plated Steels; 303, 316*, and 416 stainless steels; Delrin <sup>®</sup> , Nylon, PTFE, Plastics and Nylatron <sup>®</sup>

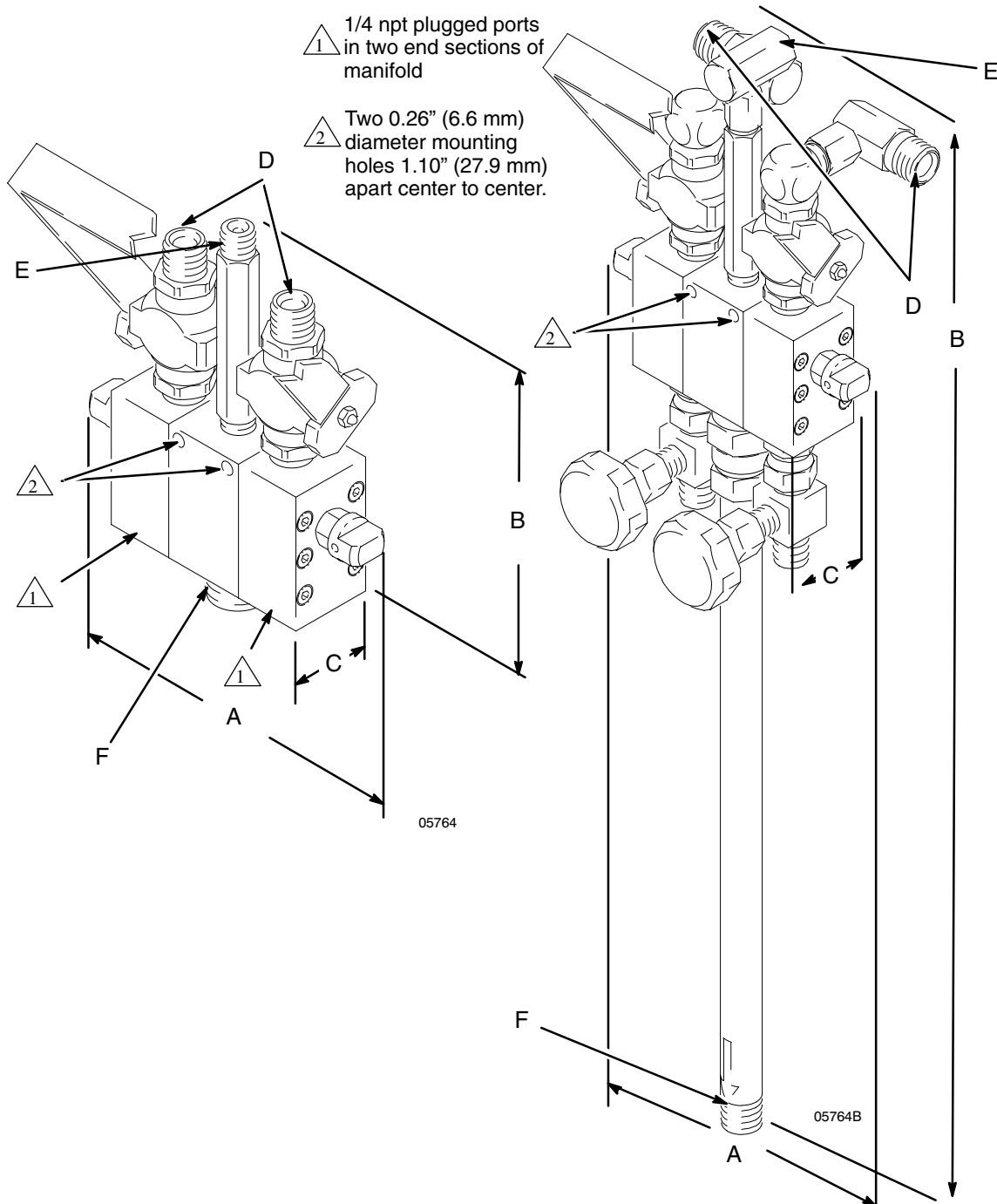
*\*316 Stainless Steel only used in 216626.*

*Delrin<sup>®</sup> is a registered trademarks of the DuPont Company.*

*Nylatron<sup>®</sup> is a registered trademark of the Polymer Corporation.*

# Dimensions

	Model 215625	Model 215626	Model 241692
<b>A Overall Length</b>	5.0 in (127 mm)	5.5 in (140 mm)	5.5 in (140 mm)
<b>B Overall Height</b>	5.375 in. (136 mm)	6.25 in (159 mm)	19.85 in (504 mm)
<b>C Overall Width</b>	1.375 in (35 mm)	1.25 in (32 mm)	1.25 in (32 mm)
<b>D Fluid Inlets</b>	1/4 npt(m)	3/8 npt(m)	3/8 npt(m)
<b>E Solvent Inlet</b>	1/4 npt(m)	1/4 npt(m)	1/4 npt(m)
<b>F Material Outlet</b>	1/4 npt(m)	1/2 npt(m)	3/8 npt(m)





# 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**

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# Graco Information

**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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**Sales Offices:** Minneapolis, Detroit

**International Offices:** Belgium, Korea, Hong Kong, Japan

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**www.graco.com**

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