

Instructions – Parts List

Gun Flush Box™ Module 309227 Rev.D

100 psi (0.7 MPa, 7 bar) Maximum Air Inlet Pressure

Part No. 244105

U.S. PATENT NO. 6,554,204



Read warnings and instructions.
Keep for reference.



PROVEN QUALITY. LEADING TECHNOLOGY.

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⚠ WARNING



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, which can result in serious injury.

- Ground the equipment and the object being sprayed. See **Grounding** on page 7.
- Provide fresh air ventilation to avoid the buildup of flammable fumes from solvent or the fluid being sprayed. Never operate the Gun Flush Box unless ventilation fans are operating.
- Eliminate all ignition sources such as pilot lights, cigarettes and plastic drop cloths (static arc hazard). Do not plug or unplug power cords or turn lights on or off in the spray area.
- Keep the spray area free of debris, including solvent, rags, and gasoline.
- Do not operate a gasoline engine in the spray area.
- If there is any static sparking while using the equipment, **stop spraying immediately**. Identify and correct the problem.

Electrostatic Gun Safety

- Do not flush the system with the gun electrostatics turned on.
- Interlock the gun turbine air supply to prevent operation of the power supply during flushing.
- Do not turn on the gun electrostatics until all solvent is removed from the system.
- When cleaning, flushing, or purging electrostatic equipment, use solvents that comply with your local regulations. *For countries following the U.S. National Fire Protection Association (NFPA) 33 requirements*, use solvents with a flash point higher than 100° F (38° C) or a solvent normally used in spray operations. *For European Countries complying with EN 50053*, use solvents with a flash point as high as possible and higher than the ambient temperatures.



PRESSURIZED EQUIPMENT HAZARD

Spray from the gun, hose leaks, or ruptured components can splash fluid in the eyes or on the skin and cause serious injury.

- Do not bypass the Gun Flush Box interlock sensors. They prevent the Gun Flush Box from operating unless the gun is in position and the door of the box is locked.
- Connect an interlock to prevent atomizing air from turning on during flushing.
- Do not stop or deflect fluid leaks with your hand, body, glove, or rag.
- Tighten all the fluid connections before operating the equipment.
- Check the hoses, tubes, and couplings daily. Replace worn, damaged, or loose parts immediately. Permanently coupled hoses cannot be repaired; replace the entire hose.

WARNING



INSTRUCTIONS

EQUIPMENT MISUSE HAZARD

Equipment misuse can cause the equipment to rupture, malfunction, or start unexpectedly 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 uncertain about usage, call your Graco distributor.
- Do not alter or modify this equipment. Use only genuine Graco parts and accessories.
- Check the equipment daily. Repair or replace worn or damaged parts immediately.
- Do not exceed the maximum working pressure of the lowest rated system component. This equipment has a **100 psi (0.7 MPa, 7 bar) maximum air inlet pressure**.
- Route the hoses away from the traffic areas, sharp edges, moving parts, and hot surfaces. Do not expose Graco hoses to temperatures above 180°F (82°C) or below -40°F (-40°C).
- Use only Graco approved hoses.
- Use fluids or solvents that are compatible with the equipment wetted parts. See the **Technical Data** section of all the 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 other safety regulations.




TOXIC FLUID HAZARD




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

- Know the specific hazards of the fluid you are using. Read the fluid manufacturer's warnings.
- Store hazardous fluid in an approved container. Dispose of hazardous fluid according to all local, state and national guidelines.
- Wear the appropriate protective clothing, gloves, eyewear and respirator.

Introduction


How the Gun Flush Box Works



**WARNING**



FIRE, EXPLOSION, AND ELECTRIC SHOCK HAZARD
For Electrostatic Guns: To reduce the risk of fire, explosion, or electric shock:

- In addition to following the warnings on page 3, read your electrostatic gun manual for additional warnings and instructions on the safe use of an electrostatic gun. If you do not have a copy of this manual, please contact your local Graco distributor.
- Always turn off the electrostatics before placing the gun in the Gun Flush Box and whenever you stop spraying.

**WARNING**



FIRE AND EXPLOSION HAZARD
In multiple gun systems: For your safety, each gun must be used only with its corresponding Gun Flush Box for the interlocks to work. **For example:** With a two gun system, placing gun #1 into Gun Flush Box #2 will shut off the atomization air for gun #2 and leave the atomization air on for gun #1 during purging.

Features

When used with a PrecisionMix or a PrecisionMix II system, the Gun Flush Box operates with a controller to automatically flush manual guns into an enclosed waste container. The advantages of using the Gun Flush Box instead of conventional flushing methods include:

- Reduced solvent use
- Reduced VOC (volatile organic compounds) emissions
- Improved operator safety during flushing

The Gun Flush Box controller flushes the exact amount of solvent required to clean the system. It reduces VOCs by preventing solvent from being atomized during the flush cycle.

Traditional flushing procedures expose the operator to atomized solvent and accidental gun discharge. The Gun Flush Box contains the solvent and prevents accidental gun triggering with safety interlocks.

The interlocks will only allow atomizing air to the gun when the gun is out of the Gun Flush Box and the door of the box is closed. If a switch fails or if system air is shut off, the atomizing air will be shut off to the gun.

Operation

NOTE: If using an electrostatic gun, the operator must turn off the electrostatics before placing the gun in the box.


The operator places the gun in the Gun Flush Box and closes the door. The Gun Flush Box interlocks turn off the atomizing air to the gun to prevent the solvent from being atomized and to ensure a PRO™ gun electrostatic turbine will be off when the operator starts flushing.

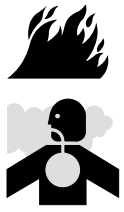
Installation

Typical Installation

Refer to the typical installation drawing in Fig. 4, page 8, as a guide for installing the Gun Flush Box. Contact your Graco distributor for an actual system design.

Ventilation

**WARNING**

**TOXIC OR FLAMMABLE FUMES HAZARD**

To avoid hazardous concentrations of flammable or toxic fumes, install the Gun Flush Box in a properly ventilated spray booth. Never operate the Gun Flush Box unless ventilation fans are operating.

Electrically interlock the Gun Flush Box air supply with the ventilators to prevent the box from operating when ventilating fans are not operating. Check and follow all National, State, and Local codes regarding air exhaust velocity requirements.

Location

Locate the Gun Flush Box in an area easily accessible to the operator and away from the spray or application point, to help avoid getting over-spray on it.

Mounting

The Gun Flush Box can be wall, stand, or drum mounted in the spray booth. Install the gun flush box(es), using the mounting holes as a template. See Fig. 1 for dimensions. Make sure the mounting surface will withstand the weight of the Gun Flush Box, hoses, and the stress of operation.

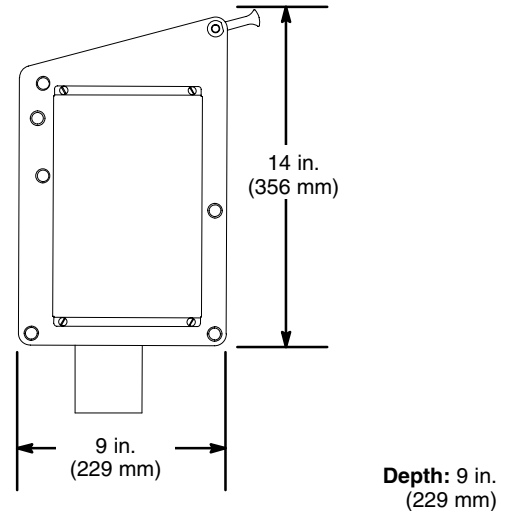


Fig. 1

Installation

Enclosed Waste Container

WARNING

TOXIC FLUID HAZARD

To reduce the risk of splashing, a minimum of two feet (0.6 m) of straight plastic or grounded metal pipe or tubing must be connected between the Gun Flush Box and an enclosed waste container for the solvent.

Connect two feet (0.6 m) of straight plastic or grounded metal pipe or tubing (T) between the Gun Flush Box fluid outlet (O) and an enclosed waste container (W). See Fig. 2.

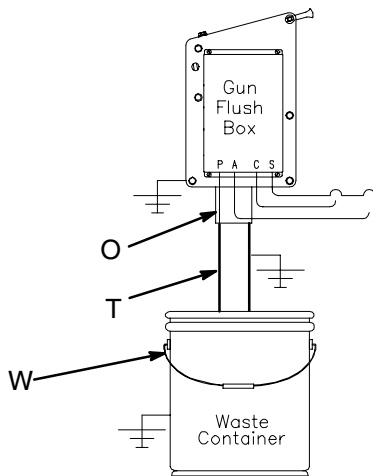


Fig. 2

Grounding

WARNING



FIRE, EXPLOSION, AND ELECTRIC SHOCK HAZARD



To reduce the risk of fire, explosion, or electric shock, the system must be properly grounded. Follow the warnings on page 3. Ground the Gun Flush Box and waste container as instructed below. Ground your system as instructed in the manuals included with your equipment.

Gun Flush Box: Connect a ground wire to the grounding lug (A) on the box. Connect the ground clamp to a true earth ground. Refer to Fig. 3.

Waste Container: Connect a ground wire and clamp between the waste container and a true earth ground. Refer to Fig. 4.

Spray Gun: See your gun instruction manual.

Flammable Liquids in the spray area must be kept in approved, grounded containers. Do not store more than the quantity needed for one shift.

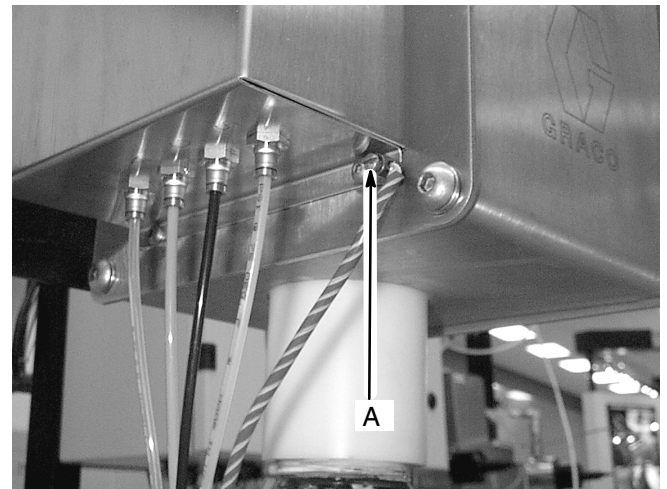


Fig. 3

Installation

Typical Installation of Gun Flush Box in PrecisionMix System

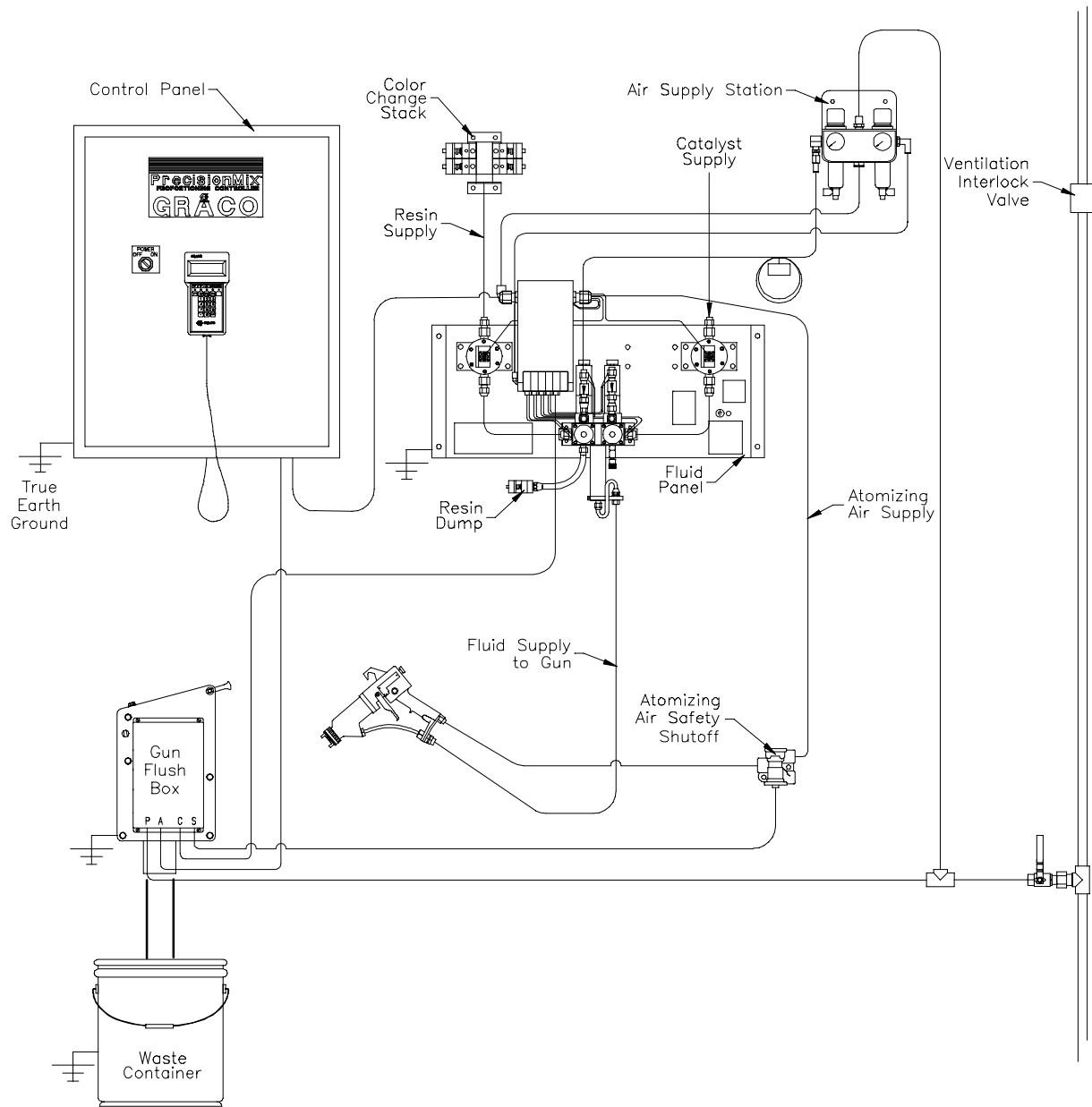


Fig. 4

Installation

Connect Tubing to the Pneumatic Controls

Fig. 5 shows the bottom of the Gun Flush Box. The four bulkhead fittings are labeled:

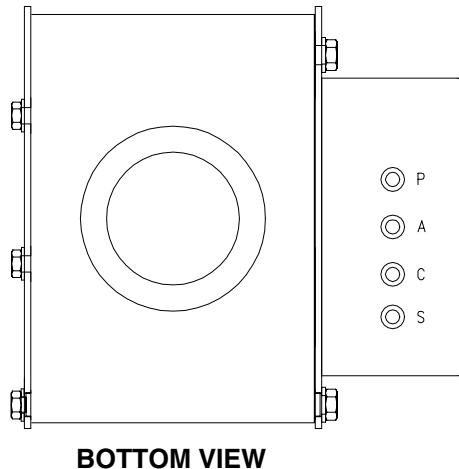
P = Supply air in

A = Return air (for the gun in the box)

C = Gun trigger cylinders air (activates the gun trigger)

S = Safety interlock (locks out the atomizing air)

See Fig. 6 for detailed information on the Gun Flush Box internal pneumatics.



BOTTOM VIEW

Fig. 5

1. Connect a 5/32" (4 mm) OD tube between the air supply and the **P** bulkhead. Use a clean, dry air supply; filtered to 10 microns.

! WARNING

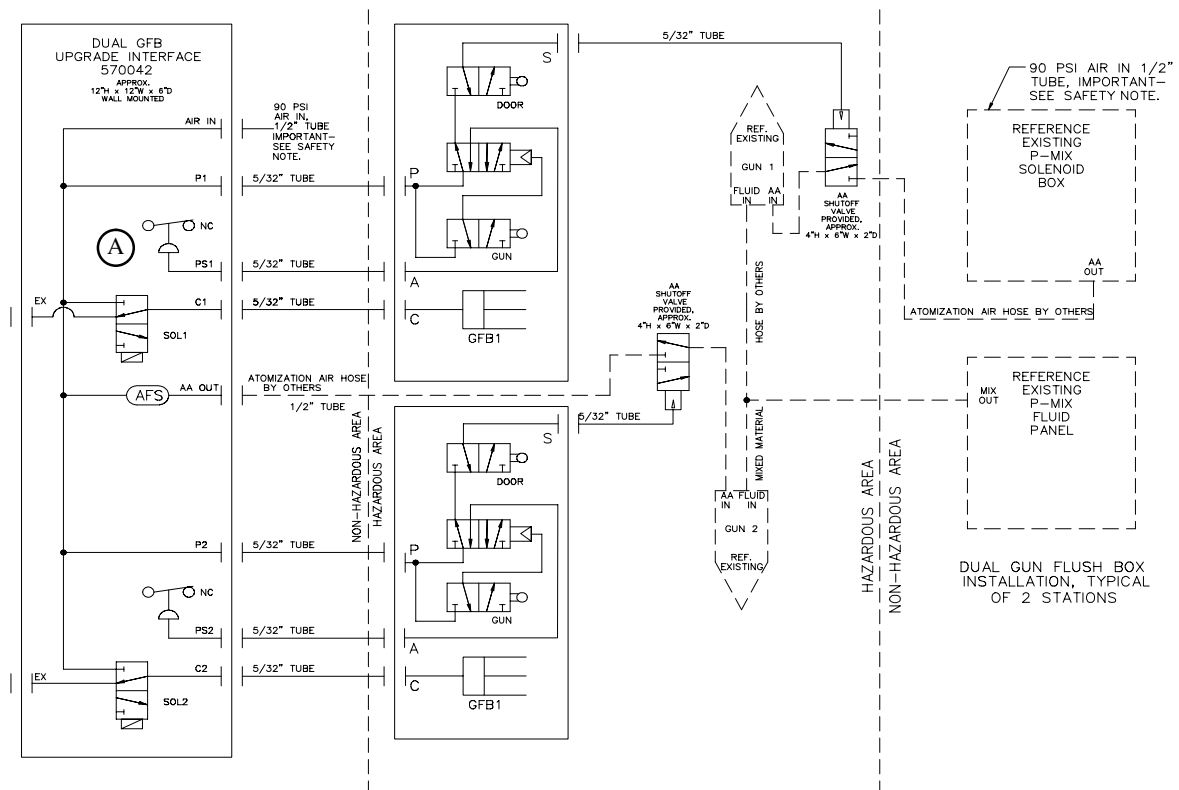


INSTRUCTIONS

EQUIPMENT MISUSE HAZARD

Do not exceed 100 psi (0.7 MPa, 7 bar) maximum air pressure.

2. Connect a 5/32" (4 mm) OD tube between the **A** bulkhead and the return air input on the controller. See Fig. 6.
3. Connect a 5/32" (4 mm) OD tube between **C** bulkhead and the gun trigger solenoid output on the solenoid box or the Gun Flush Box control box. See Fig. 6.



TYPICAL TWO-GUN PNEUMATIC SCHEMATIC

Fig. 6

Trigger Height Adjustment

Follow this procedure to ensure the gun triggers properly during a purge.

1. Insert the gun into the Gun Flush Box.
2. Remove the four screws that hold the cover (K) to the Gun Flush Box. See Fig. 7.
3. Force the cylinder triggers on by connecting air to port C (J). See Fig. 7. Turn on the air to extend both cylinders.
4. Loosen both screws (L) on the side of the box that hold the cylinder block (M). See Fig. 8.
5. Raise the cylinder (M) until the pin (N) opens the trigger fully. See Fig. 8.
6. Tighten both screws (L) at the desired location for the cylinder block (M).

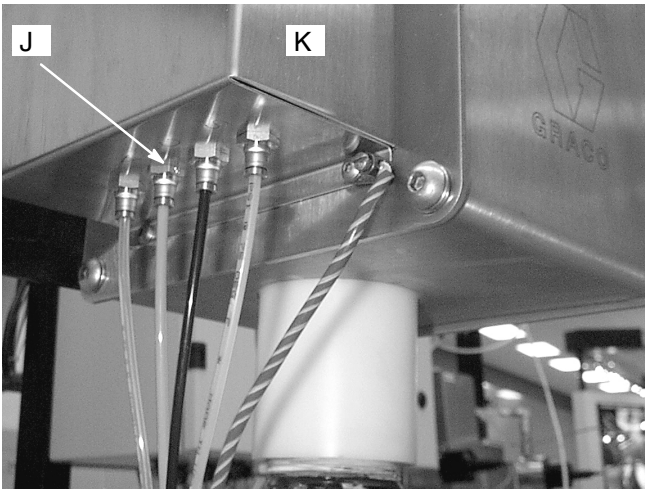


Fig. 7

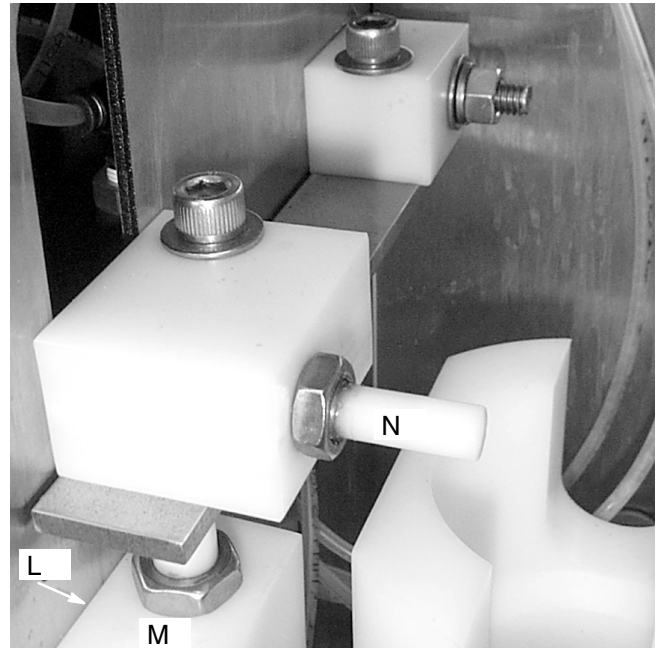


Fig. 8

Operation

PrecisionMix™ II Controller Operation

See your PrecisionMix II system manual 308916 for operation instructions.

Operating Checklist

Check the following list daily, before starting to operate the system, to help ensure safe, efficient operation.

- ____ 1. All operators are properly trained to safely operate the system.
- ____ 2. If using electrostatics, all operators are properly trained to safely operate an electrostatic spray system. Operators must always turn off the electrostatics (P) before placing the spray gun in the Gun Flush Box. See Fig. 9.
- ____ 3. The system is thoroughly grounded and the operator and all persons entering the spray area are properly grounded. See **Grounding**, page 7.
- ____ 4. The ventilation fans are operating properly.
- ____ 5. All the debris, including flammable liquids, rags, and non-essential equipment, is removed from the spray area.
- ____ 6. All flammable liquids in the spray booth are in approved, grounded containers.
- ____ 7. All electrically conductive objects in the spray area, including paint containers; Gun Flush Boxes; and wash cans, are electrically grounded and the floor of the spray area is electrically conductive and grounded.

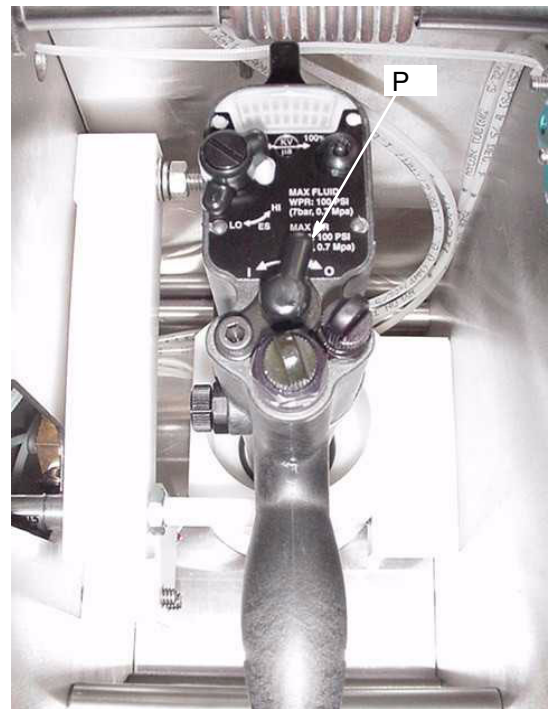


Fig. 9

Troubleshooting

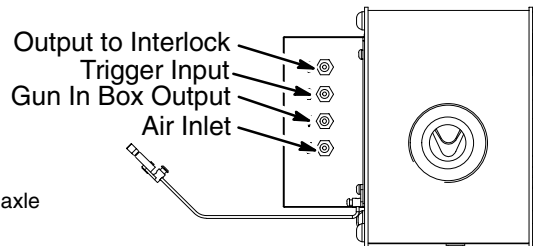
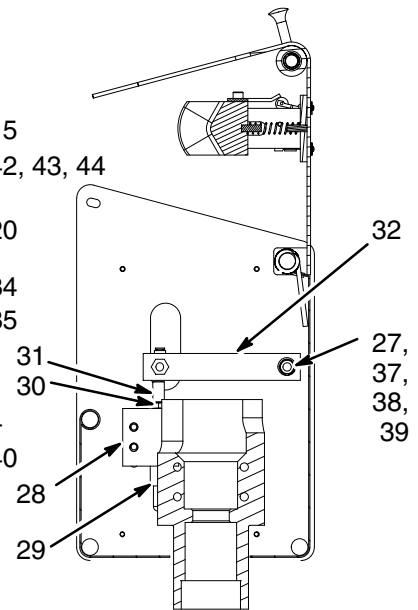
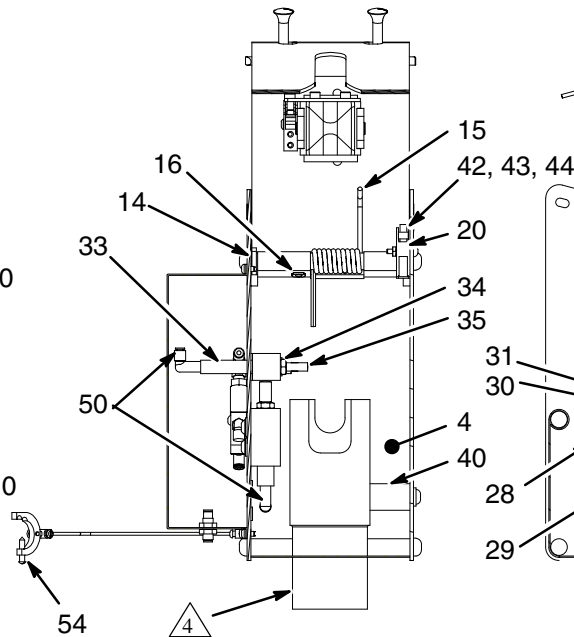
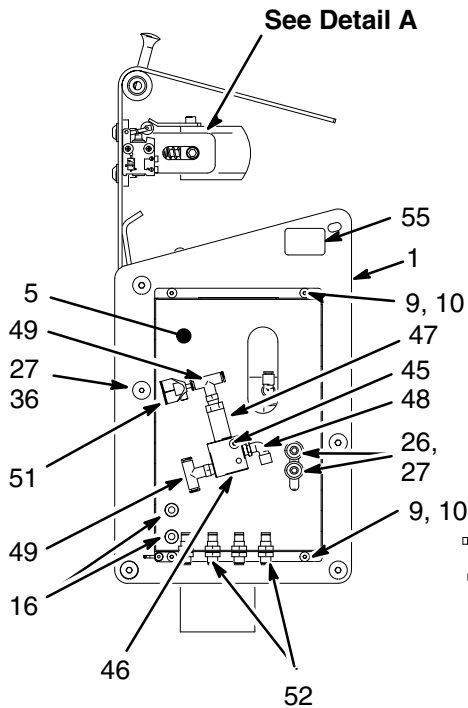
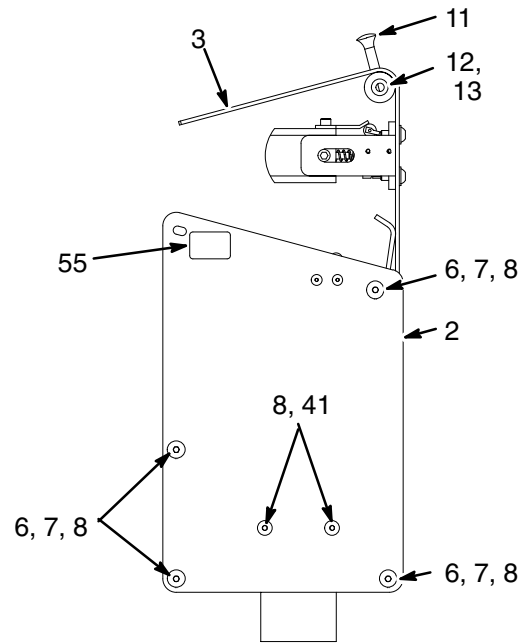
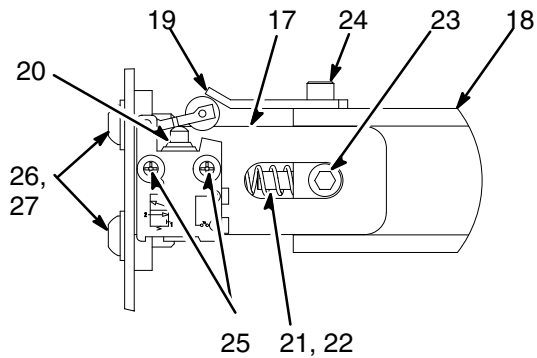
Problem	Cause	Solution
Gun is in the Gun Flush Box, but the system will not purge or mix.	<p>Air is shut off.</p> <p>Gun switch is not activating.</p> <p>Operator switch is not wired properly.</p> <p>Tubing is not installed correctly.</p>	<p>Turn on the air to the system.</p> <p>Test the switch. Replace it if it is damaged.</p> <p>Check the I/O to see if the proper input is activating. Rewire the switch if necessary.</p> <p>Check tubing against schematic on page 9.</p>
Gun Flush Box fails to purge after the pot life time ends.	<p>Gun is not in Gun Flush Box.</p> <p>Gun switch is not activating.</p>	<p>Place the gun in the Gun Flush Box when it is not in use.</p> <p>Test the switch. Replace it if it is damaged.</p>
Gun trigger is not open when the Gun Flush Box controller activates it.	<p>Tubing is not installed correctly.</p> <p>Cylinder is damaged.</p> <p>Gun is not properly set in the gun holder.</p> <p>Lower cylinder is out of adjustment.</p>	<p>Check tubing against schematic on page 9.</p> <p>Clean cylinder rod or replace.</p> <p>Check to make sure the gun holder is not obstructed by buildup.</p> <p>Adjust the block as instructed in Trigger Height Adjustment procedure on page 10.</p>
Gun is out of the Gun Flush Box with the door closed but the atomizing air is off.	<p>Lid switch or gun switch failure.</p> <p>No air flow to the Gun Flush Box.</p>	<p>Check the switches and replace if necessary.</p> <p>Check the air supply and tubing.</p>

Maintenance

	Daily	Weekly	Every two weeks, minimum
Gun Flush Box Enclosure	Keep the inside as clean as possible. Clean with a compatible solvent.	Clean the inside and outside of the enclosure with a compatible solvent.	
Door	Keep hinge holes as clean as possible.		Grease hinges.
Cylinders			Pull the cylinder rod forward and coat with grease or petroleum jelly.
Switches			Clean and lubricate.
Fluid Outlet tube		Check for buildup of mix material and replace if restricted.	

Parts

Detail A



NOTE: Grease all cylinders and sensors with grease.

- 1 Insert washer before greasing axle
- 2 Grease
- 3 Loctite
- 4 Optional Gun Holder shown; not included with assembly.
Selection of correct gun holder required for proper operation.

TI0576
TI0577b

Parts

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	196709	PANEL, cabinet, left	1	32	196708	ARM, lever	1
2	196710	PANEL, cabinet, right	1	33✓	551793	CYLINDER, air, 0.438 dia.	1
3	196711	COVER, cabinet	1	34	551890	NUT, jam, hex, 3/8–24	1
4	196712	WRAPPER, cabinet	1	35✓	626523	BUTTON, cylinder	1
5	626489	COVER, cylinder	1	36	551786	SCREW, cap, 5/16 x 2	1
6	626488	ROD, connecting	4	37	107542	WASHER, lock, split, no. 8	1
7	551789	SCREW, cap, 3/8 x 1	8	38	108946	NUT, hex, 5/16–18	1
8	103975	WASHER, lock, 3/8	10	39	626517	AXLE, support	1
9	551787	SCREW, cap, 10–32 x 0.38"	4	40	196766	BRACKET, mounting	1
10	551788	WASHER, lock, split, #10	4	41	116194	SCREW, cap, button hd, 3/8–16 x 2.5"	2
11	626495	KNOB, latch	2	42	116195	SCREW, cap, button hd, 8–32 x 1"	2
12	626496	PIN, latch	2	43	157021	WASHER, lock, internal tooth, no. 8	2
13	116174	SPRING, compression, 3.5"	1	44	102931	NUT, machine, hex, 8–32	2
14	551891	WASHER, 21/32 ID x 7/8 OD	2	45	C19964	SCREW, cap, 6–32 x 1"	1
15	196844	SPRING, torsion	1	46	502473	VALVE, air, 4-way, spring return	1
16	551849	GROMMET, 5/16 ID x 1/2 OD	3	47	501014	ACTUATOR, air, 1/8 npt(f)	1
17	196703	SUPPORT, yoke, upper	1	48	598140	ELBOW, 5/32 tube 1-1/8 npt(m)	3
18	196700	YOKE, gun, upper	1	49	598141	TEE, 5/32 tube x 1/8 npt	1
19	196704	SWITCH, flag	1	50	514581	CONNECTOR, 5/32" tube x 10–32	2
20	116172	SWITCH, limit, pneumatic	2	51	514896	TEE, 3-way, 5/32 OD (m x f)	1
21	116173	SPRING, compression, 2.25"	1	52	113284	FITTING, bulkhead, M10 x 1 x 5/32" tube	4
22	116193	PIN, dowel	2	53	551731	TUBE, 5/32 OD, polyethylene, white	☆
23	108751	SCREW, cap, socket hd, 5/16 x 0.625"	2	54	222011	CLAMP, grounding	1
24	C19800	SCREW, cap, socket hd, 1/4–20 x 0.5"	2	55	180233	LABEL, warning, pinch point	2
25	112598	SCREW, machine, truss hd, 8–32 x 0.75"	2	57	C78216	CLAMP, Ty–Rap	1
26	112944	SCREW, cap, button hd, 5/16 x 0.75"	4	58	103473	STRAP, tie; wire	1
27	104034	WASHER, plain, 5/16	6				
28	626502	SUPPORT, cover	1				
29	551794	CYLINDER, air, 0.568 dia.	1				
30	551795	NUT, hex head, 7/16–20	1				
31	626504	BUTTON, cylinder	1				

☆ Order length needed.

✓ Keep these spare parts on hand to reduce down time.

Accessories

Gun Holder

Part No.	For Gun
198405	Graco PRO™ Xs3, PRO™ Xs4
198787	Graco PRO™ Xs2
196768	Graco PRO™ 3500, 3500hc, 4500
196769	Graco Delta Spray™ Gun
196770	Graco Alpha Gun
196771	Graco Alpha Plus, Alpha Plus with RAC Tip
196767	Devilbiss JGA/MSA*

* Brand names or marks are used for identification purposes and are trademarks of their respective owners.

244169 Gun Holder Conversion Kit

Allows mounting of new gun holder in older style gun flush box (Part No. 570046). Requires purchase of appropriate gun holder (see chart above).

244373 Gun Switch/Yoke Conversion Kit

Converts older style gun flush box (Part No. 570046) to new style upper gun switch/yoke assembly.

570123 Wall Mount Kit

For mounting the Gun Flush Box to the spray booth wall.

Gun Flush Box Retrofit Kits for PrecisionMix II

Part No. 241389 One Gun

Part No. 241394 Two Guns

Technical Data

Weight	22 lbs. (9.6 kg)
Height	14" (356 mm)
With door open	21" (533 mm)
Width	7" (178 mm)
Length	11" (279 mm)
Outlet	2" npt(f)
Maximum Air Inlet Pressure	100 psi (0.7 MPa, 7 bar)
Wetted Parts	Stainless steel, nylon, ultra high molecular weight polyethylene

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.

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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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