

Instructions – Parts List



Plural Component Mix Manifold

308288 rev.S

For Proportional Mixing of Plural Component Coatings.

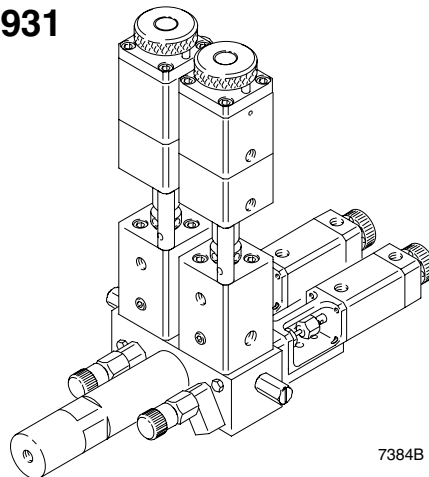


Important Safety Instructions

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

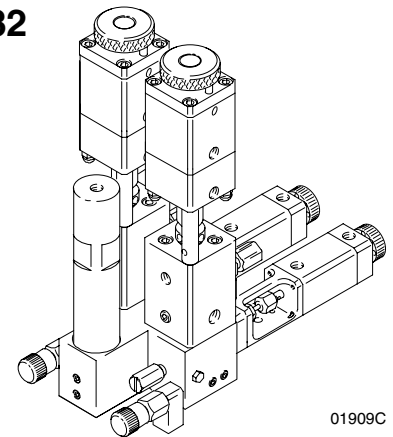
See page 2 for model numbers and maximum working pressures.

Model 236931



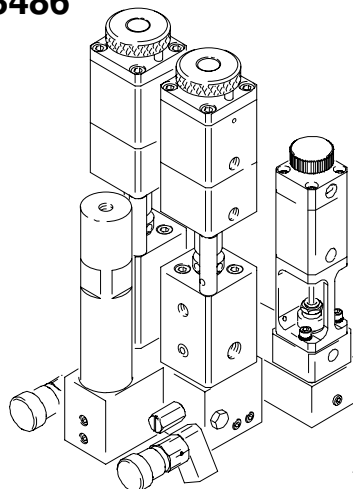
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Model 239732



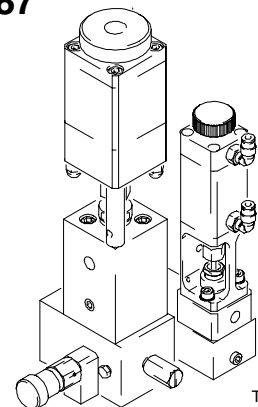
01909C

Model 243486



TI0173

Model 243487



TI0224

PROVEN QUALITY. LEADING TECHNOLOGY.



Model Description

Model No.	Description	Working Pressures
236931	Mix Manifold	3000 psi (21 MPa, 207 bar) Maximum Working Pressure 100 psi (0.7 MPa, 7 bar) Maximum Air Input Pressure
239732	Mix Manifold	3000 psi (21 MPa, 207 bar) Maximum Fluid Working Pressure 4000 psi (28 MPa, 276 bar) Maximum Fluid Working Pressure with Part No. 239954 High Pressure Spring Kit 100 psi (0.7 MPa, 7 bar) Maximum Air Input Pressure
243486	Mix Manifold for First Stage of 3K system	3000 psi (21 MPa, 207 bar) Maximum Fluid Working Pressure 100 psi (0.7 MPa, 7 bar) Maximum Air Input Pressure
243487	Mix Manifold for Second Stage of 3K system	3000 psi (21 MPa, 207 bar) Maximum Fluid Working Pressure 100 psi (0.7 MPa, 7 bar) Maximum Air Input Pressure

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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



FIRE, EXPLOSION, AND ELECTRIC SHOCK HAZARD

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

- Ground the equipment and the object being sprayed. See **Ground the System** on page 13.
- Provide fresh air ventilation to avoid the buildup of flammable vapors from solvent or the fluid being sprayed.
- Extinguish all the open flames or pilot lights in the spray area.
- Keep the spray area free of debris, including solvent, rags, and gasoline.
- Do not turn on or off any light switch in the spray area while operating or if fumes are present.
- Do not smoke in the spray area.
- 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.
- Disconnect electrical power at the main switch before servicing the equipment.
- Comply with all applicable local, state, and national fire, electrical, and other safety regulations.



SKIN INJECTION HAZARD

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

- Fluid injected into the skin might look like just a cut, but it is a serious injury. **Get immediate surgical treatment.**
- Always wear protective eyewear.
- Do not point the spray gun at anyone or at any part of the body.
- Do not put hand or fingers over the spray tip.
- Do not stop or deflect fluid leaks with your hand, body, glove, or rag.
- Follow the **Pressure Relief Procedure** on page 17 whenever you: are instructed to relieve pressure; stop spraying; clean, check, or service the equipment; or install or clean the spray tip.
- 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. See the instruction manuals of the individual system components for their maximum working pressures. The manifold's maximum fluid working pressure is shown on the manual's front cover and in the **Technical Data** section.
- 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. Do not remove hose spring guards, which help protect the hose from rupture caused by kinks or bends near the couplings.
- Do not use the hoses to pull the equipment.
- Do not move pressurized equipment.
- 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.



MOVING PARTS HAZARD

Moving parts, such as the fluid needle, can pinch fingers. Keep clear of any moving parts when starting or operating the equipment.



Some manifold parts are under compression. To avoid an eye injury, wear protective eyewear when servicing the equipment.



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.

How the 2K Mix Manifold Works

Usage

The standard Graco 2K mix manifold can blend most two-component epoxy or polyurethane paints. The mix manifold is not for use with “quick-setting” paints (those with a pot life of less than 15 minutes). For information on handling quick-setting paints or abrasive fluids, contact your Graco distributor.

Fluid Supply

The system can be set up to mix components supplied from pressure tanks or feed pumps. The materials can be transferred from their original containers or from a central paint recirculating line.

Operating Cycle

After the desired ratio and other parameters are entered for the system, the operator energizes the electronic controller’s MIX input. From that point on, normal operation of the mix manifold is controlled by the operation of the spray gun.

When the gun is triggered, the controller sends signals to the solenoids to activate the solenoid valves. The solenoid valves activate the manifold’s catalyst and resin valves.

The two components (catalyst and resin) are introduced into the integrator chamber one at a time, through separate fluid lines, check valves, and flow meters. Their entry into the chamber is controlled by a dispense valve for each component. The flow meters monitor the exact fluid volumes being dispensed and send electrical pulses to the controller. The controller monitors these pulses and signals the solenoids to turn the dispense valves on or off accordingly (based on the target volumes calculated by the controller).

The components are pre-mixed in the integrator, then given a homogeneous blending as they pass through a static mixer tube. Output from the mixer tube to the spray gun may be controlled by a fluid pressure regulator.

The two components continue to be alternately fed into the mixing block as long as the gun is triggered. After the trigger is released, if the gun is not triggered again within four minutes, the system will go to an idle mode, which closes off the mix manifold. When the gun is triggered again, the system will continue the process where it left off. Operation can be stopped at any time by energizing the STANDBY input or shutting off the main power switch.

The following is a typical ratio cycle:

- First, the Component A (resin) dispense valve opens, and the fluid begins to flow into the integrator chamber. When the correct quantity has been dispensed (based on the calculated target value), the component A dispense valve closes. See Fig. 1.
- Next, the Component B (catalyst) dispense valve opens. The fluid begins to flow into the integrator chamber and is lined up proportionately with the previously-dispensed Component A sample. The B dispense valve closes when the target volume for Component B has been reached. See Fig. 2.
- The process repeats itself as the spray gun is triggered.

How the 2K Mix Manifold Works

Functional Diagram – Component A (Resin) Dispense

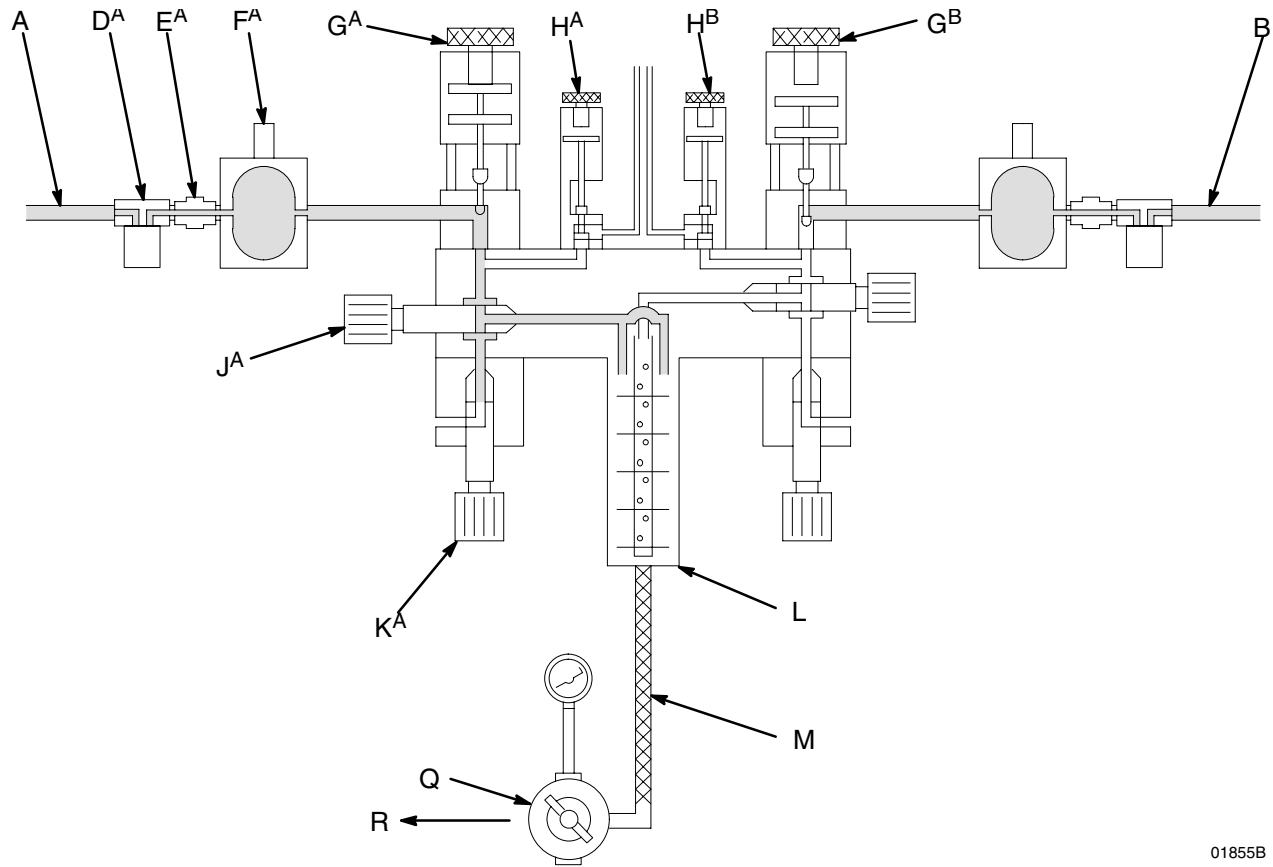


Fig. 1

01855B

KEY for Fig. 1

Component A

- A Supply Line, Component A
- D^A Fluid Filter, Component A ,
100 mesh minimum
- E^A Check Valve, Component A
- F^A Flow Meter, Component A
- G^A Dispense Valve, Component A
- H^A Purge Valve (usually air), Component A
- J^A Fluid Shut-off Valve, Component A
- K^A Ratio Check Valve, Component A

Component B

- B Supply Line, Component B
- G^B Dispense Valve, Component B
- H^B Purge Valve (usually solvent),
Component B

Other

- L Integrator
- M Static Mixer
- Q Fluid Meter
- R Fluid Supply to Gun

How the 2K Mix Manifold Works

Functional Diagram – Component B (Catalyst) Dispense

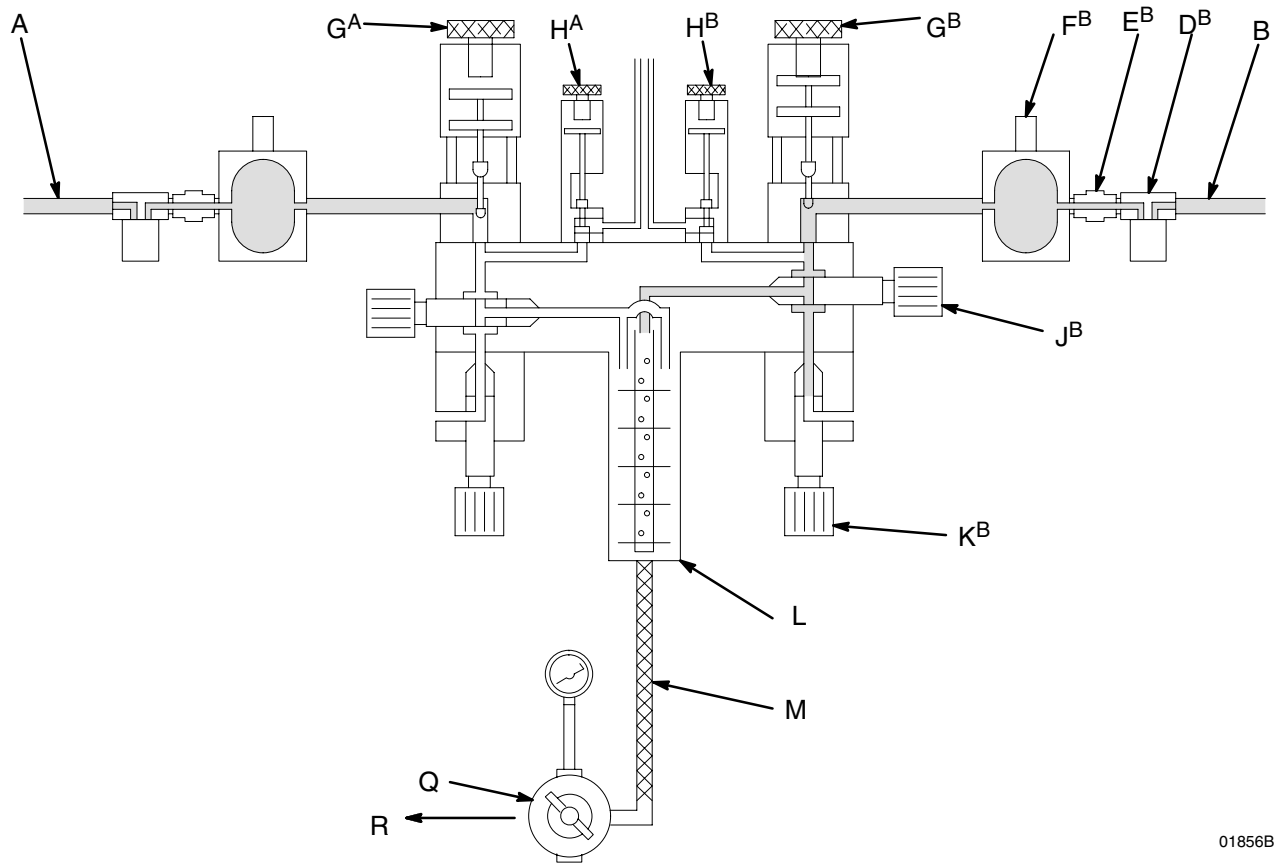


Fig. 2

01856B

KEY for Fig. 2

Component A

- A Supply Line, Component A
- G^A Dispense Valve, Component A
- H^A Purge Valve (usually air), Component A

Component B

- B Supply Line, Component B
- D^B Fluid Filter, Component B, 100 mesh minimum
- E^B Check Valve, Component B
- F^B Flow Meter, Component B
- G^B Dispense Valve, Component B
- H^B Purge Valve (usually solvent), Component B
- J^B Fluid Shut-off Valve, Component B
- K^B Ratio Check Valve, Component B

Other

- L Integrator
- M Static Mixer
- Q Fluid Meter
- R Fluid Supply to Gun

How the 3K Mix Manifold Works

Usage

The standard Graco 3K mix manifold can blend most two and three component epoxy or polyurethane paints. The mix manifold is not for use with “quick-setting” paints (those with a pot life of less than 15 minutes). For information on handling quick-setting paints or abrasive fluids, contact your Graco distributor.

Fluid Supply

The system can be set up to mix components supplied from pressure tanks or feed pumps. The materials can be transferred from their original containers or from a central paint recirculating line.

Operating Cycle

After the desired ratios and other parameters are entered for the system, the operator energizes the electronic controller’s MIX input. From that point on, normal operation of the mix manifold is controlled by the operation of the spray gun.

When the gun is triggered, the controller sends signals to the solenoids to activate the solenoid valves. The solenoid valves activate the manifold’s resin, catalyst, and reducer valves.

The three components (resin, catalyst, and reducer) are introduced into the integrator chambers one at a time, through separate fluid lines, check valves, and flow meters. Their entry into the chambers is controlled by a dispense valve for each component. The flow meters monitor the exact fluid volumes being dispensed and send electrical pulses to the controller. The controller monitors these pulses and signals the solenoids to turn the dispense valves on or off accordingly (based on the target volumes calculated by the controller).

Components A and C are pre-mixed in the first integrator chamber, then given a homogeneous blending as they pass through a static mixer tube to the second integrator chamber.

Component B is added in the second integrator chamber, and the three components are then homogeneously blended as they pass through a second static mixer tube. Output from the second mixer tube to the spray gun may be controlled by a fluid pressure regulator.

The three components continue to be alternately fed into the mixing blocks as long as the gun is triggered. After the trigger is released, if the gun is not triggered again within four minutes, the system will go to an idle mode, which closes off the mix manifold. When the gun is triggered again, the system will continue the process where it left off. Operation can be stopped at any time by energizing the STANDBY input or shutting off the main power switch.

The following is a typical ratio cycle:

- First, the Component A (resin) dispense valve opens, and the fluid begins to flow into the first integrator chamber. When the correct quantity has been dispensed (based on the calculated target value), the component A dispense valve closes. See Fig. 3.
- Next, the Component B (catalyst) dispense valve opens. The fluid begins to flow into the second integrator chamber and is lined up proportionately with the previously-dispensed Component A and C dose. The Component B dispense valve closes when the target volume for Component B is reached. See Fig. 2.
- The Component C (reducer) dispense valve (G^C) opens and Component C flows into the first integrator chamber. The fluid is lined up proportionately with Components A and B. The Component C dispense valve closes when the target volume for Component C is reached. See Fig. 5.
- The process repeats itself as the spray gun is triggered.

How the 3K Mix Manifold Works

Functional Diagram – Component A Dispense

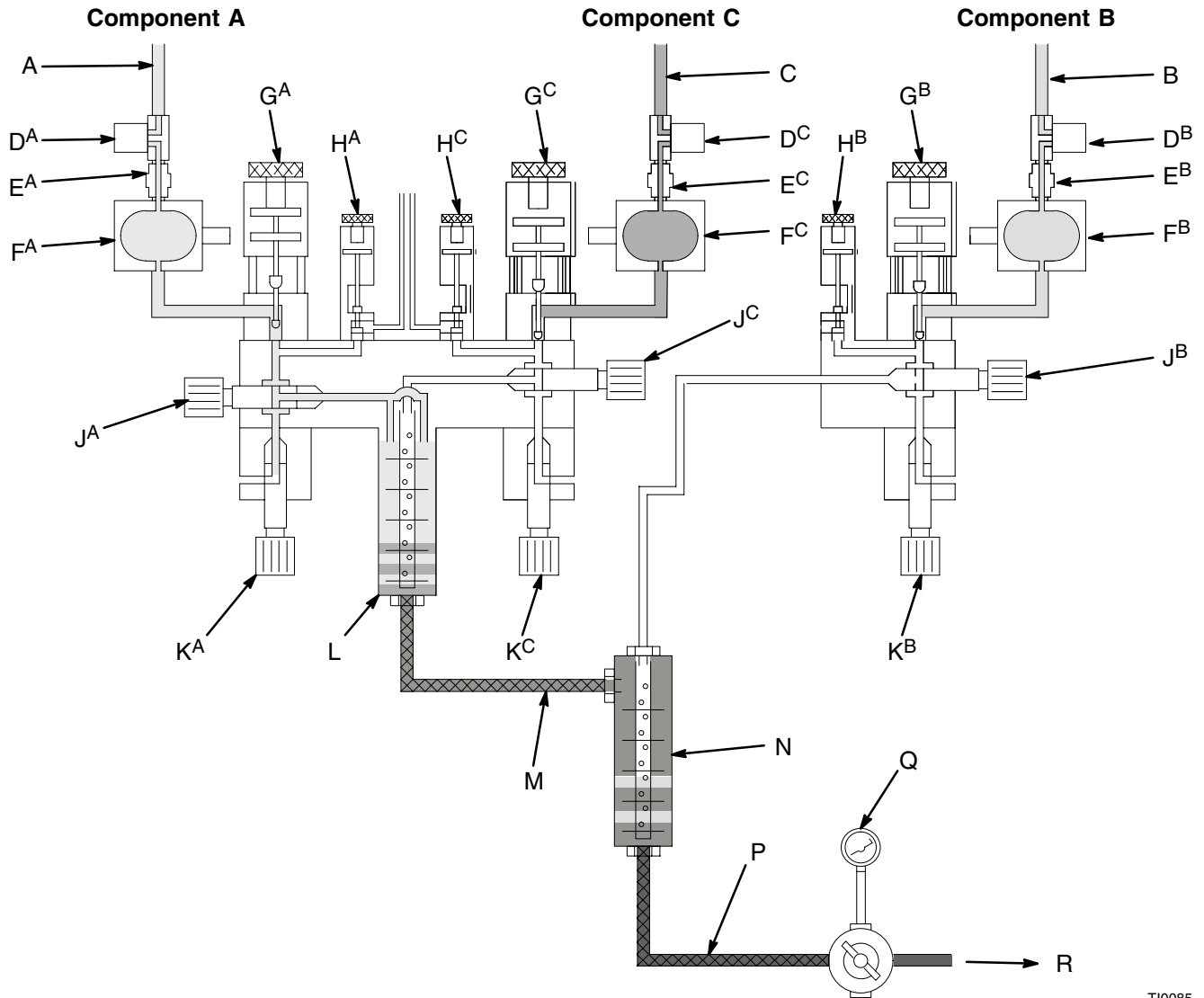


Fig. 3

T10085

KEY for Fig. 3

Component A

- A Supply Line, Component A
- DA Fluid Filter, Component A , 100 mesh minimum
- EA Check Valve, Component A
- FA Flow Meter, Component A
- GA Dispense Valve, Component A
- HA Purge Valve (usually air), Component A
- JA Fluid Shut-off Valve, Component A
- KA Ratio Check Valve, Component A

Component C

- C Supply Line, Component C
- DC Fluid Filter, Component C, 100 mesh minimum
- EC Check Valve, Component C
- FC Flow Meter, Component C
- GC Dispense Valve, Component C
- HC Purge Valve (usually solvent), Component C
- JC Fluid Shut-off Valve, Component C
- KC Ratio Check Valve, Component C

Component B

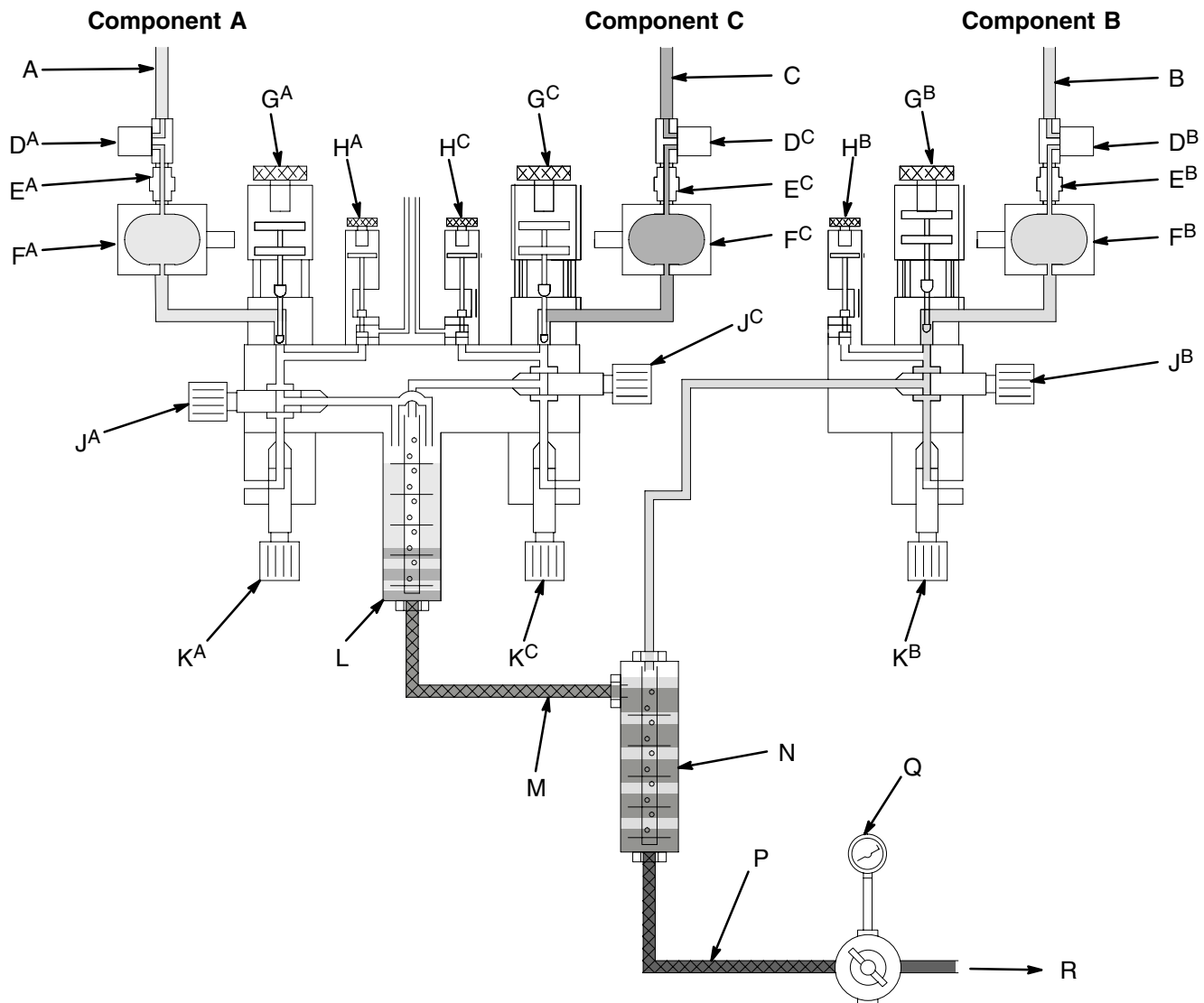
- B Supply Line, Component B
- DB Fluid Filter, Component B, 100 mesh minimum
- EB Check Valve, Component B
- FB Flow Meter, Component B
- GB Dispense Valve, Component B
- HB Purge Valve (usually solvent), Component B
- JB Fluid Shut-off Valve, Component B
- KB Ratio Check Valve, Component B

Other

- L First Integrator
- M First Static Mixer
- N Second Integrator
- P Second Static Mixer
- Q Fluid Meter
- R Fluid Supply to Gun

How the 3K Mix Manifold Works

Functional Diagram – Component B Dispense



TI0087

Fig. 4

KEY for Fig. 4

Component A

- A Supply Line, Component A
- DA Fluid Filter, Component A ,
100 mesh minimum
- EA Check Valve, Component A
- FA Flow Meter, Component A
- GA Dispense Valve, Component A
- HA Purge Valve (usually air), Component A
- JA Fluid Shut-off Valve, Component A
- KA Ratio Check Valve, Component A

Component C

- C Supply Line, Component C
- DC Fluid Filter, Component C,
100 mesh minimum
- EC Check Valve, Component C
- FC Flow Meter, Component C
- GC Dispense Valve, Component C
- HC Purge Valve (usually solvent),
Component C
- JC Fluid Shut-off Valve, Component C
- KC Ratio Check Valve, Component C

Component B

- B Supply Line, Component B
- DB Fluid Filter, Component B,
100 mesh minimum
- EB Check Valve, Component B
- FB Flow Meter, Component B
- GB Dispense Valve, Component B
- HB Purge Valve (usually solvent),
Component B
- JB Fluid Shut-off Valve, Component B
- KB Ratio Check Valve, Component B

Other

- L First Integrator
- M First Static Mixer
- N Second Integrator
- P Second Static Mixer
- Q Fluid Meter
- R Fluid Supply to Gun

How the 3K Mix Manifold Works

Functional Diagram – Component C Dispense

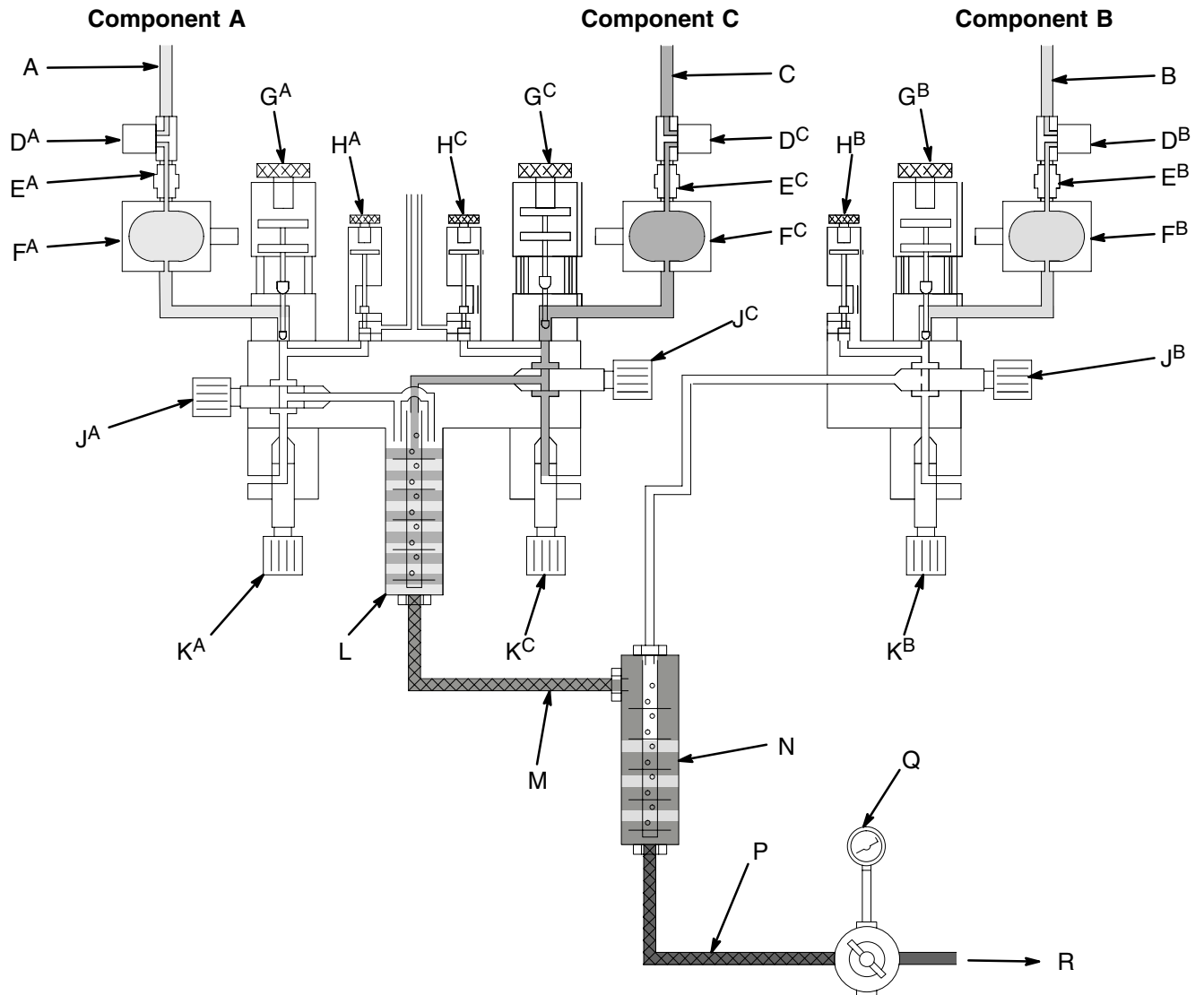


Fig. 5

TI0086

KEY for Fig. 5

Component A

- A Supply Line, Component A
- D^A Fluid Filter, Component A , 100 mesh minimum
- E^A Check Valve, Component A
- F^A Flow Meter, Component A
- G^A Dispense Valve, Component A
- H^A Purge Valve (usually air), Component A
- J^A Fluid Shut-off Valve, Component A
- K^A Ratio Check Valve, Component A

Component C

- C Supply Line, Component C
- D^C Fluid Filter, Component C, 100 mesh minimum
- E^C Check Valve, Component C
- F^C Flow Meter, Component C
- G^C Dispense Valve, Component C
- H^C Purge Valve (usually solvent), Component C
- J^C Fluid Shut-off Valve, Component C
- K^C Ratio Check Valve, Component C

Component B

- B Supply Line, Component B
- D^B Fluid Filter, Component B, 100 mesh minimum
- E^B Check Valve, Component B
- F^B Flow Meter, Component B
- G^B Dispense Valve, Component B
- H^B Purge Valve (usually solvent), Component B
- J^B Fluid Shut-off Valve, Component B
- K^B Ratio Check Valve, Component B

Other

- L First Integrator
- M First Static Mixer
- N Second Integrator
- P Second Static Mixer
- Q Fluid Meter
- R Fluid Supply to Gun

Installation

WARNING



FLAMMABLE OR TOXIC VAPOR HAZARD

Provide fresh air ventilation to avoid the buildup of flammable or toxic vapors. Do not operate the spray gun unless ventilation fans are operating. Follow all national, state, and local codes regarding air exhaust velocity requirements.

NOTE:

- Have the system binder (a collection of manuals and diagrams in a three-ring binder, supplied with the system by Graco) available during installation.
- Reference numbers and letters in parentheses in this manual's text refer to the numbers and letters in the illustrations.
- Be sure all accessories are adequately sized and pressure-rated to meet the system's requirements.
- Connect the fluid and air supply lines as instructed in this manual and the system binder.

The following instructions generally presume a standard system using pressure tanks to supply the paint components and solvent. See also **Optional Fluid Supplies**, below, for possible variations and their effect on the instructions.

Fluid Supply

The following installation and operation instructions generally presume a standard system, using pressure tanks to supply the paint components and solvent. The **Optional Fluid Supplies** listed below are two possible variations and their effects on the instructions.

Optional Fluid Supplies

NOTE: The fluid supply must be free of pressure spikes, which are commonly caused by a pump stroke changeover. If necessary, install pressure regulators or a surge tank on the fluid inlets to the mix manifold, to reduce the fluid supply pressure. Contact Graco for information on fluid pressure regulators.

Supplying Fluid Through Circulating Lines

If there is a central paint recirculating line in your shop, the mix manifold can be connected to it instead of to pressure tanks. Other than references to the pressure tanks, operation is the same as described in this manual.


For maintenance and safety, you must install a ball valve between each supply line and the mix manifold.


Supplying Fluid Through Pail or Drum Pumps

Instead of pressure tanks, the mix manifold can be supplied by pail or drum pumps. Operation is the same, other than references to the pressure tanks.

Installation

Ground the Mix Manifold

**WARNING**



FIRE, EXPLOSION, AND ELECTRIC SHOCK HAZARD

To reduce the risk of fire, explosion, or electric shock:


- The mix manifold must be electrically connected to a true earth ground; the ground in the electrical system is not sufficient.
- All wires used for grounding must be 10 gauge minimum.
- Refer to your local code for the requirements for a “true earth ground” in your area.
- Also read and follow the warnings on page 2 and the grounding instructions in your separate component and system manuals.


Connect the ground wire to the mix manifold or to the mix manifold mounting surface if there is electrical continuity between the mounting surface and the mix manifold.

Be sure to follow the specific grounding instructions for the system. The system you install the mix manifold into may have special grounding requirements for the mix manifold.

NOTE: A ground wire and clamp, part no. 222011, is available from Graco.

Check the Resistance

**WARNING**

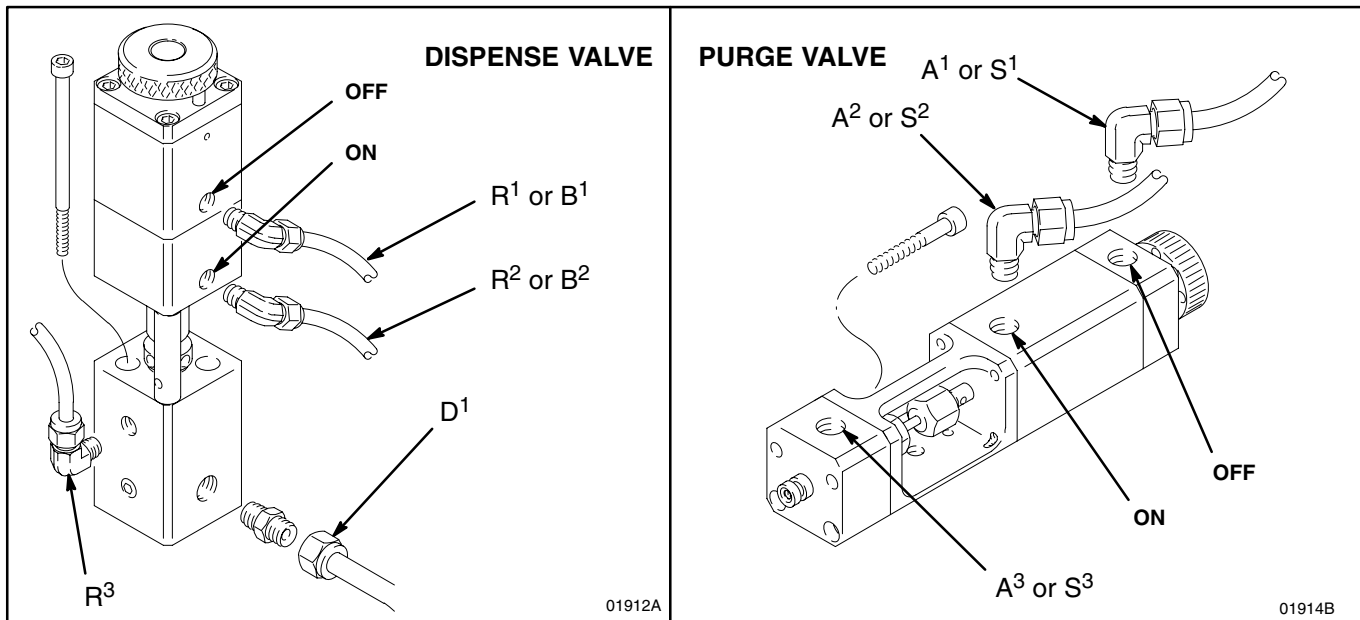


FIRE, EXPLOSION, AND ELECTRIC SHOCK HAZARD

To reduce the risk of fire, explosion, or electric shock the resistance between the system components and true earth ground must be less than 25 ohms.

Have a qualified electrician check the resistance between each system component and the true earth ground. The resistance must be less than 25 ohms. If the resistance is greater than 25 ohms, a different ground site may be required. Do not operate the system until the problem is corrected.

Installation



KEY

- | | | |
|---|---|--|
| A Component A (Resin) Supply Line | D Flow Meter (<i>Model G3000 shown</i>) | R ³ "Weep Hole" or lubricator inlet (<i>optional</i>) |
| A ¹ Air Purge OFF Air Pilot Line | D ¹ Fluid Line from Flow Meter | R ⁴ Dump Valve Outlet (<i>optional</i>) |
| A ² Air Purge ON Air Pilot Line | H ¹ Ratio Check Fluid Line | S ¹ Solvent Purge OFF Air Pilot Line |
| A ³ Air Purge Inlet | P Fluid Line to Spray Device | S ² Solvent Purge ON Air Pilot Line |
| B Component B (Catalyst) Supply Line | R ¹ Resin OFF Air Pilot Line | S ³ Solvent Purge Inlet |
| B ¹ Catalyst OFF Air Pilot Line | R ² Resin ON Air Pilot Line | Y Grounding Clamp and Wire |
| B ² Catalyst ON Air Pilot Line | | |

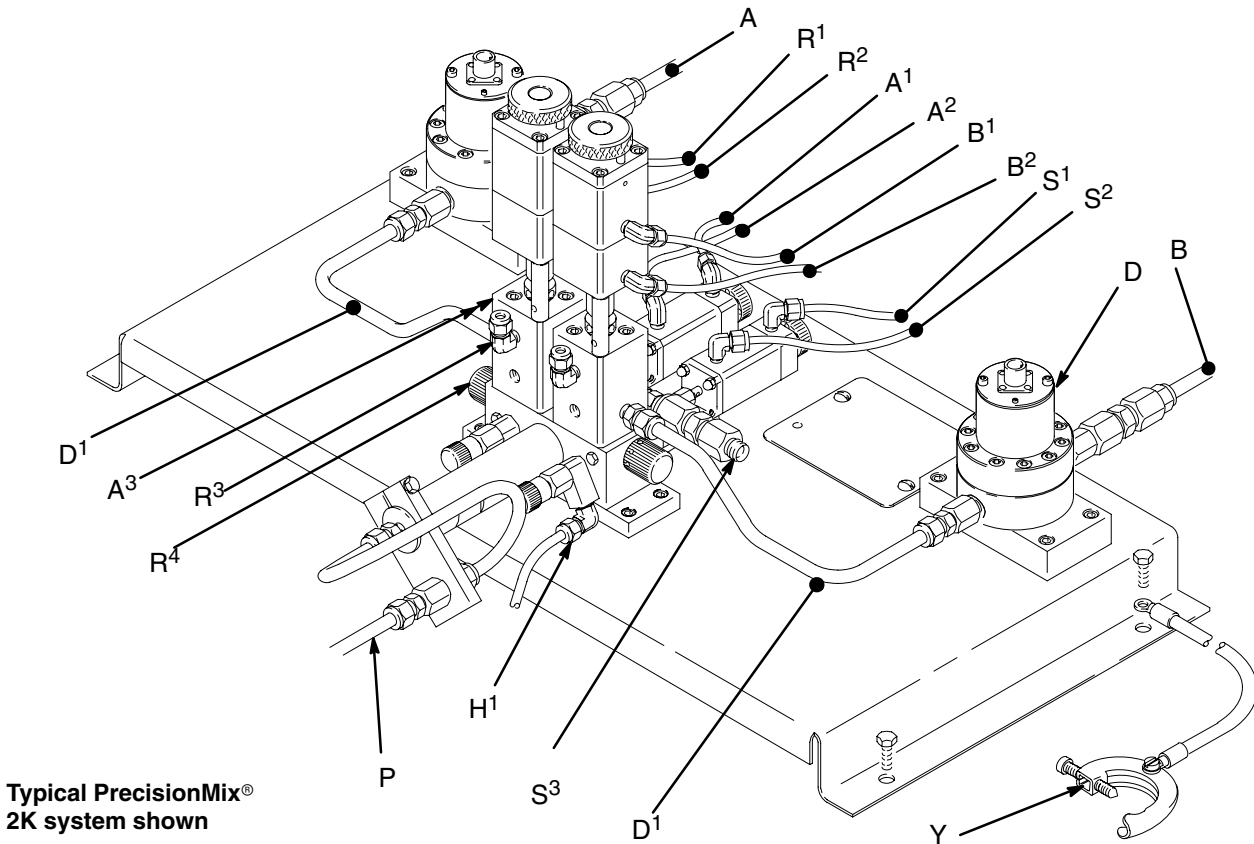


Fig. 6

01910c

Installation

Connect the Fluid Supply Lines

NOTES:

- Filter the paint and solvent with a 100 mesh or better fluid filter.
 - Be sure all fluid hoses are properly sized for your system. Use only grounded hoses.
 - Some systems may require an optional fluid pressure regulator and gauge on the manifold static mixer outlet to control fluid pressure to the gun. Refer to the system binder.
 - To connect the fluid lines, refer to Fig. 6 for 2K systems and Fig. 7 for 3K systems. Also refer to the system binder.
1. Connect the Component A (resin) supply line (A).
 2. Connect the Component B (catalyst) supply line (B).
 3. On 3K systems only, connect the Component C (reducer) supply line (C).
 4. Connect the solvent supply line to the solvent purge valve inlet (S³).
 5. To automatically lubricate the dispense valves packings, connect a lubricator to the top inlet (R³) of the dispense valve's fluid housings.

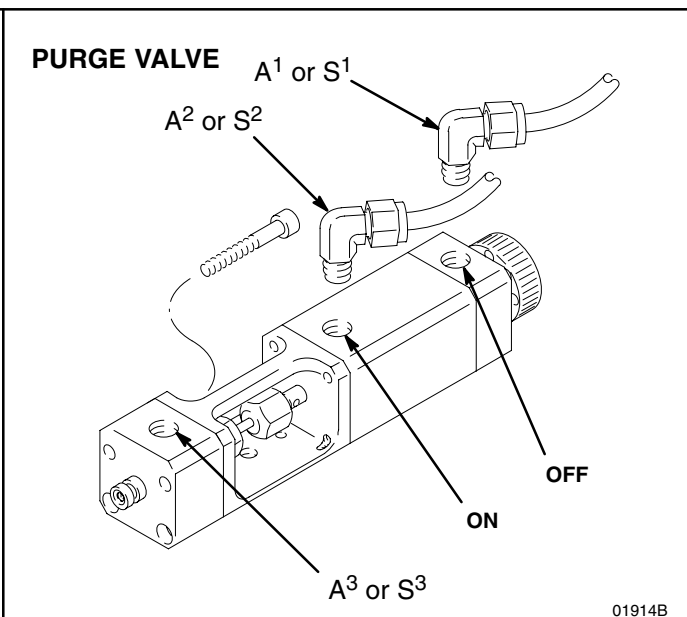
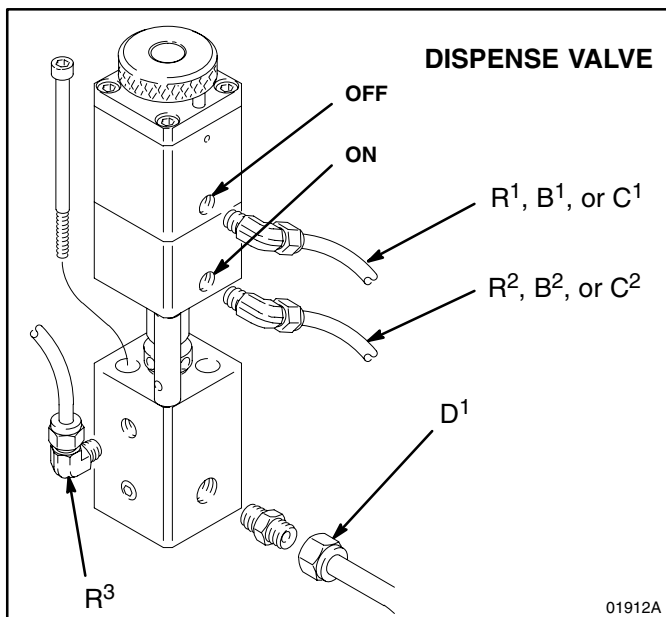
Connect the Air Supply Hoses and Air Pilot Lines

NOTES:

- The air supply must be filtered to 10 micron or better or the air solenoids will clog frequently.
 - To avoid contaminating your paint products, be sure the air supply is free of oil and water.
 - The mix manifold requires a compressed air supply pressure of 60–100 psi (410–700 kPa, 4.1–7 bar), with most applications using around 80 psi (550 kPa, 5.5 bar).
 - Be sure all air supply hoses are properly sized for your system. Use only grounded air hoses.
 - To connect the air pilot lines, refer to Fig. 6 for 2K systems and Fig. 7 for 3K systems. Also refer to the system binder.
1. Connect the air supply hoses to the air inlet of the resin, catalyst, and solvent supply tanks if pressure tanks are used. Include a regulator and shut-off valve in each line.
 2. Connect the air pilot lines between the air solenoids and the mix manifold. The air pilot lines must be less than 6 feet (1.83 meters) long.
 3. Pressurize the system with air, and check for leaks at all connections. Relieve the air pressure after the test.

Purge the Mixing System Before Using It

The mix manifold was tested with lightweight oil. Before operating for the first time, thoroughly purge the system with solvent to prevent contamination of your fluids.

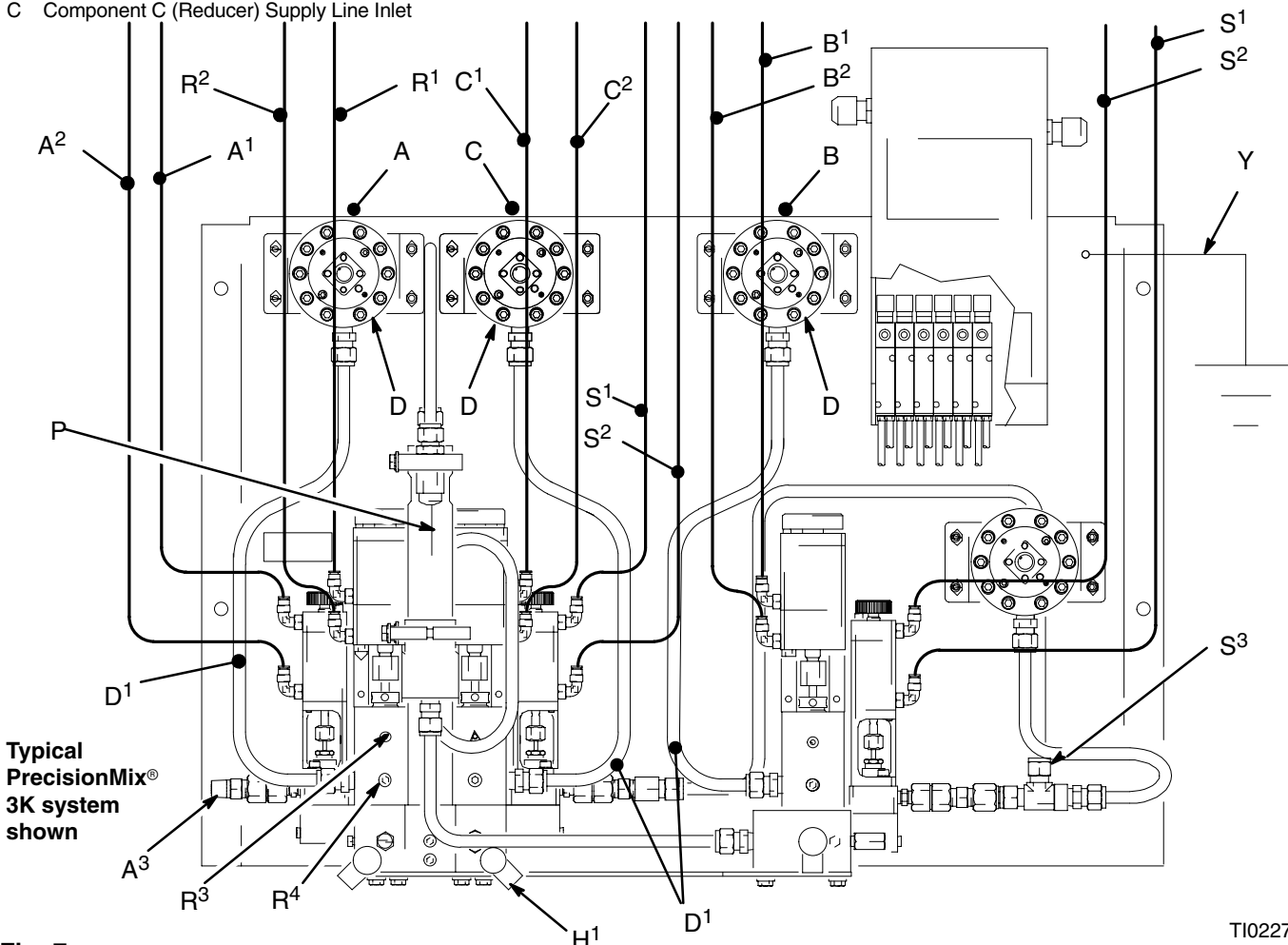


KEY

A Component A (Resin) Supply Line Inlet
 A¹ Air Purge OFF Air Pilot Line
 A² Air Purge ON Air Pilot Line
 A³ Air Purge Inlet
 B Component B (Catalyst) Supply Line Inlet
 B¹ Catalyst OFF Air Pilot Line
 B² Catalyst ON Air Pilot Line
 C Component C (Reducer) Supply Line Inlet

B¹ Reducer OFF Air Pilot Line
 B² Reducer ON Air Pilot Line
 D Flow Meter (G3000 shown)
 D¹ Fluid Line from Flow Meter
 H¹ Ratio Check Valve
 P Fluid Line to Spray Device
 R¹ Resin OFF Air Pilot Line

R² Resin ON Air Pilot Line
 R³ "Weep Hole" or lubricator inlet (*optional*)
 R⁴ Dump Valve Outlet (*optional*)
 S¹ Solvent Purge OFF Air Pilot Line
 S² Solvent Purge ON Air Pilot Line
 S³ Solvent Purge Inlet
 Y Grounding Clamp and Wire



Operation

NOTE: The following instructions presume a standard system, with pressure supply tanks for the paint and solvent. Also see **Optional Fluid Supplies** on page 12 for possible variations and their effect on the instructions.

Pressure Relief Procedure

WARNING



SKIN 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,
- install or clean the spray tip.

1. Set the operator switch to **STANDBY**.
2. Relieve fluid and air pressure at the component and solvent feed pumps or pressure pots, as explained in their separate instruction manuals.
3. Set the operator switch to **MIX**.
4. Hold a metal part of the spray gun firmly to the side of a grounded metal pail, and trigger the gun to relieve fluid pressure.
5. Set the operator switch to **STANDBY**.

NOTE: Always disconnect all power and air pressure to the mix manifold before cleaning or servicing it.

Plural Component Mix Manifold Controls (See Fig. 8)

CAUTION

To avoid damaging the mix manifold valves, do not use a wrench to tighten or loosen the adjustment knobs.

NOTE:

- In the following instructions, to “open” the valves, turn their knobs *out*. To “close” the valves, turn their knobs *in*. Fully close the valves (turn the knobs all the way in) before beginning to adjust them.
- You may want to put a piece of tape on the knobs after they are properly set to discourage anyone from changing the setting.

Dispense Valve Knobs (A)

Use to adjust the dispense valve openings, limiting the maximum fluid flow rate into the mixing block and minimizing valve response time.

NOTE: This setting is of minimal importance when the spray gun controls the process, except that the valves must be open enough to allow adequate fluid flow. For most applications, set the knobs 2/3 of a turn open.

Purge Valve Knobs (B)

Use to adjust the air and solvent purge valve openings, limiting the flow rate into the mixing block. For most applications, set the knobs 1 turn open.

Fluid Shut-Off Knobs (C)

Use to close the fluid ports from the volume counters to the integrator during a ratio check or meter calibration. The knobs should be fully open (turned all the way out) during normal RUN/MIX mode of operation.

Ratio Check Valve Knobs (D)

Use to measure the amount of resin, catalyst, and reducer flowing to the mixing block (volume ratio). These knobs should not be opened unless the fluid shut-off knobs are closed.

NOTE: The ratio check valves should be purged with solvent immediately after being used.

Operation

Purging the Mixing System

⚠ WARNING



SKIN INJECTION HAZARD

To reduce the risk of a serious injury from injection or splashing fluid:

- Follow the **Pressure Relief Procedure** on page 17 whenever you are instructed to relieve the pressure.
- If you are using a high pressure gun*, remove the spray tip before purging. Relieve pressure before removing the spray tip.
- Wear protective eyewear.
- Use the lowest possible fluid pressure when purging.

⚠ WARNING



FIRE AND EXPLOSION HAZARD

To reduce the risk of fire, explosion and serious injury when purging the mix manifold, be sure the entire system and flushing pails are properly grounded. Follow the instructions in your gun manual to ground your gun while purging.

Follow the purging procedure in the controller or system manual. Purge the system at the following times:

- During initial startup
- At the end of each workday
- Before any break longer than the pot life of the fluid
- Before servicing the system if possible or after servicing if production will not resume right away

On 2K Mix Manifolds, solvent purges the right-hand (Component B/catalyst) side of the mixing block and the inner tube of the integrator. Air purges the left-hand (Component A/resin) side of the mixing block and the outer tube of the integrator.

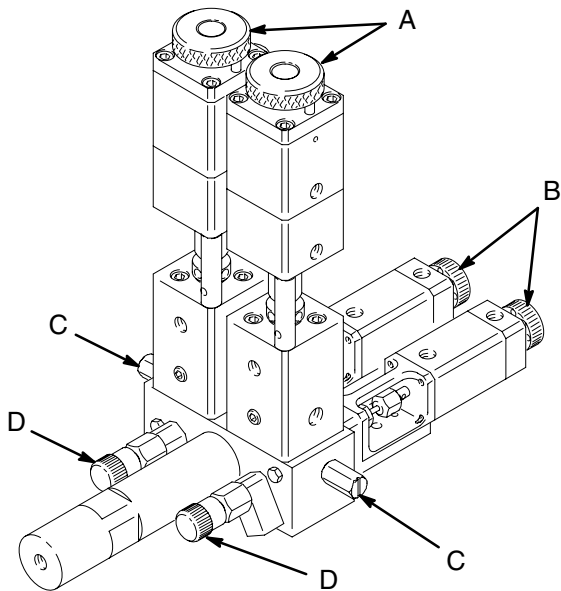
On 3K Mix Manifolds, solvent purges the right-hand (Component C/reducer) side of the first-stage mixing block, the inner tube of the first integrator, the second-stage (Component B/catalyst) mixing block, and the second integrator. Air purges the left-hand (Component A/resin) side of the mixing block and the outer tube of the first integrator.

Note for PrecisionMix System: Solvent may be used to purge both sides of the mixing block, but this will result in longer purge sequences and high solvent usage. Call your Graco distributor before choosing this option.

KEY

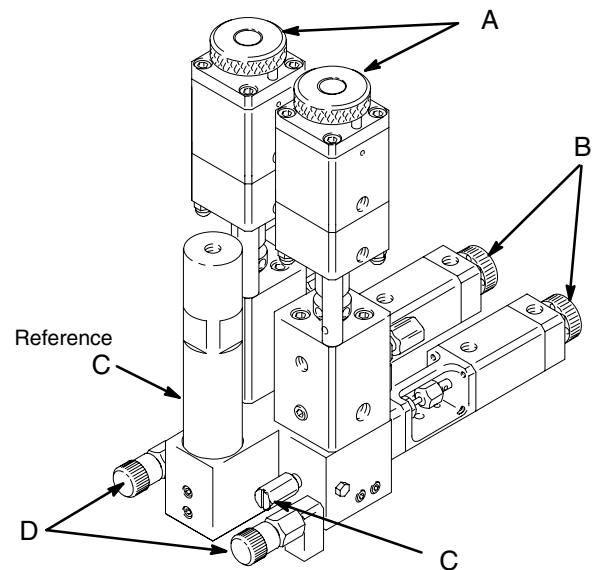
A Dispense Valve Knobs
B Purge Valve Knobs

C Fluid Shut-off Knobs
D Ratio Check Valve Knobs



01909C

Model 236931



7384C

Model 239732

Fig. 8

* A gun is considered *high pressure* when its maximum working pressure is 900 psi [66.2 MPa, 62 bar] or greater.

Operation

Setting the Fluid Supply Pressure

Turn on the air supply and recharge the paint and solvent tanks with air. Adjust the air pressure to:

Solvent: 70 psi (480 kPa, 4.8 bar).

Resin, Catalyst, and Reducer: 30–70 psi (210–480 kPa, 2.1–4.8 bar).

Fluid pressures should be equal unless one component is more viscous, in which case the more viscous component could require a higher pressure setting. Adjust the pressures until the fluid flow rate at the gun is the same for the Component A, B and C (*3K only*) dispense.

Starting Production

WARNING



SKIN INJECTION HAZARD

To reduce the risk of a serious injury from accidental spray from the gun, splashing fluid, or moving parts, follow

the **Pressure Relief Procedure** on page 17 whenever you:

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

NOTE:

- The operation of the manifold is dependent on the operation of the controller and the controller settings. See the controller or system manual for complete startup, ratio check, purging, and production procedures.
- When you first start up the system after it has been shut down for a period of time, the relays, solenoids, and valves for Components A, B and C (*3K only*) will cycle rapidly until system pressure is built back up. This is normal.

1. Check that the fluid supplies for the Components A, B and C (*3K only*), and solvent are filled.
2. Check that fluid valves are turned on and the fluid pressure to the mix manifold is properly set.
3. Check that the air pressure to the solenoids is properly set.
4. Check that the mix manifold fluid shut-off knobs, dispense valve knobs, and purge valve knobs are set properly. Start with the settings recommended in **Plural Component Mix Manifold Controls** on page 17, then adjust the valves as needed.
5. Follow the operating instructions for your controller or system.

During Production:

- Make sure that all air is removed from the fluid lines of the system.
- If the fluid output is too low or too high, adjust the fluid pressure with the fluid supply pressure regulators.

CAUTION

Do not use the first 4 to 5 oz. (120 to 150 ml) of material from the system, as it may not be thoroughly mixed due to alarms while loading material into the system.

- Check the fluid supply pressure regulators. The fluid flow rate at the spray gun should be the same regardless of whether the Component A, B and C (*3K only*) dispense valves are open. The pressure adjustments of each component will vary with each components viscosity. In general, start with the same feed pressures for Component A, B and C (*3K only*).
- Check or reset the air regulator in the atomizing air line.

Maintenance

Daily Maintenance

- Purge the mixing system at the end of production.
- Check the fluid supplies for the Component A, Component B, Component C (*3K only*), and solvent and refill them as necessary.
- Inspect the manifold and other fluid line components for fluid leaks.
- Make sure the meter cables and air pilot lines are securely connected.

Weekly Maintenance

- Disconnect the integrator assembly. Clean and inspect it, and ensure that the small distributor holes in the integrator tube (6) are all open. See Fig. 9. The integrator may need cleaning more or less frequently, depending on the fluid being mixed.
- Clean and inspect the fluid and air filters.
- Adjust packing nuts on the dispense valves and purge valves.

Preventive Maintenance

At least once a year, take apart the mix manifold, which includes the mixing block, dispense valves, purge valves, and ratio check valves. Clean and inspect them, and replace all o-rings and v-packings. Repair kits are available from Graco. See the **Service** section.

KEY

- 6 Integrator Tube
- 7 Integrator Housing

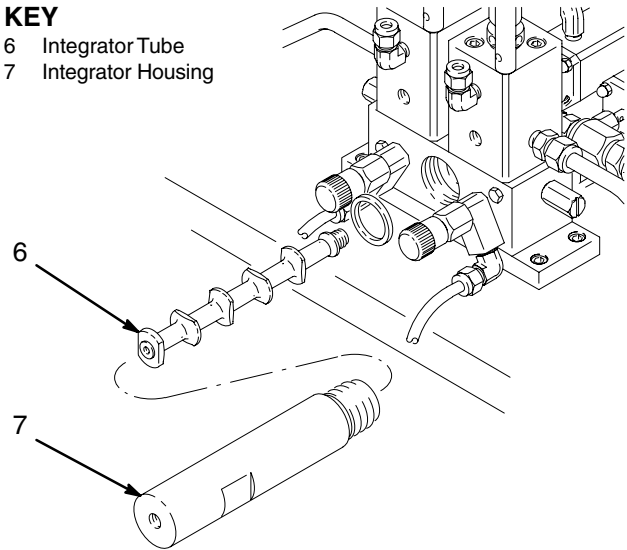


Fig. 9

Model 236931 shown

01911C

Troubleshooting

WARNING



SKIN INJECTION HAZARD

To reduce the risk of a serious injury from accidental spray from the gun, splashing fluid, or moving parts, follow the **Pressure Relief Procedure** on page 17 before checking or servicing the system and whenever you are instructed to relieve the pressure.

WARNING



ELECTRIC SHOCK HAZARD

To reduce the risk of serious injury, including electric shock, the equipment must only be serviced by trained, qualified personnel.

CAUTION

To avoid damaging the mix manifold valves, do not use a wrench to tighten or loosen the adjustment knobs.

NOTE: Have the system binder (collection of manuals and diagrams in a three-ring binder, supplied with the system by Graco) available before you begin troubleshooting.

An operational problem can be caused by a problem with the meters, controller, solenoid valves, as well as the manifold.

1. Check the system for any visible faults or errors to help isolate the problem:
 - a. Check that all of the air and fluid tubes, hoses, and electrical cables are properly connected.
 - b. Check that the system valves and controls are properly set for operation.
 - c. Check that the fluid supply, solenoids, and spray gun have sufficient air pressure.

- d. Check the fluid supplies for the Component A, Component B, Component C (*3K only*), and solvent and refill them as necessary.

2. If there is a fluid flow problem, refer to the **Functional Diagrams** on page 6 to see how the fluid should flow through the manifold.
3. If there is a process control problem, refer to the controller manual.

Common Causes for Mixing Problems

- The flow rate is too high
- Highly unbalanced pressures from the fluid supply system
- Slow actuation of the resin, catalyst, or reducer valves
- System Leaks

Checking for Unbalanced Pressures

1. Check the resin, catalyst, and reducer pressures.
2. *If the pressures are not about equal*, adjust both fluid supply pressures with the fluid regulators, until the pressures are about the same.
3. *If the pressures are already about equal*, verify that the resin, catalyst, and reducer valves are operating properly.

Checking the Actuation of the Valves

Manually operate the valves by actuating the solenoids. The valves should snap open and shut quickly. If the valves move slowly, it could be caused by:

- air pressure to the valve actuators is too low,
- an interruption in the valve actuating air caused by dirt or water in the air,
- something restricting the solenoid or tubing,
- the packings on the dispense valves are too tight or they need lubrication (see **Service** section),
- air piston o-rings and packings are not lubricated (see **Service** section),
- a dispense valve knob is turned out too far. See **Plural Component Mix Manifold Controls** on page 17, for recommended settings.

Service

⚠ CAUTION

Purge the mix manifold with solvent after servicing to remove any excess grease that is used for lubricating parts.

Tools Needed

- Set of metric open-end wrenches
- Set of metric hex key wrenches
- Various retaining ring pliers
- Flat-blade screwdrivers
- Dielectric grease (Graco part no. 217115)

Disassembling the Dispense Valves

⚠ WARNING



SKIN INJECTION HAZARD

To reduce the risk of a serious injury from accidental spray from the gun, splashing fluid, or moving parts, follow the **Pressure Relief Procedure** on page 17 before checking or servicing the system and whenever you are instructed to relieve the pressure.

To remove the complete dispense valve from the mixing block:

(See Fig. 10)

1. Disconnect the fluid line (B) from the fluid housing (128).
2. Disconnect the two air lines (A).
3. Loosen the two cap screws (127) until the dispense valve is free from the mix manifold.

4. Carefully remove the dispense valve. The valve seat (132) and bottom o-ring (131) may fall away. See Fig. 11.

To remove just the air cylinders (111, 114):

(See Fig. 10 and Fig. 11)

1. Disconnect the two air lines (A).
2. Unscrew the dispense valve knob (103) far enough for the screws (101, 102) to clear it.
3. Remove the two screws (101) that go into the connecting rods (126). Do not remove the two screws (102) that are secured by cap nuts (115).
4. With a hex wrench or similar tool, unscrew the packing nut (120).
5. Pull off the air cylinders (111, 114); this is a snug fit.

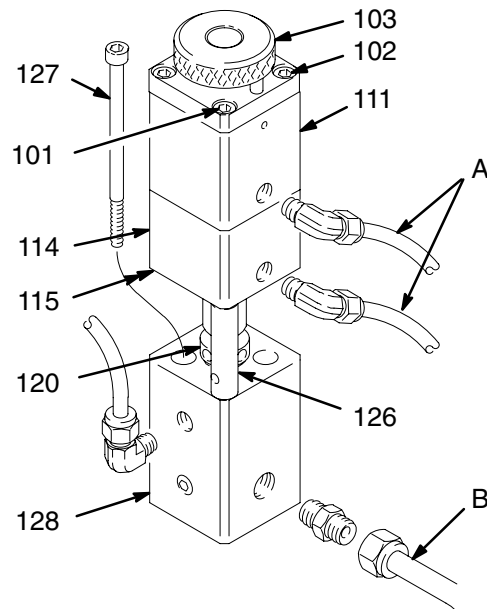




Fig. 10

01912A

Service

To disassemble the top air cylinder (111):

**WARNING**

**MOVING PARTS HAZARD**

The air cylinders (111, 114) of the valve are spring-loaded, and parts may fly out or spring apart when the valve is disassembled. To reduce the risk of an eye injury, wear protective eyewear and follow the procedure below.

(See Fig. 10 and Fig. 11)

NOTE: Repair Kit 15E013 is available to repair the dispense valves. Order one kit for each valve. The repair parts in the kit are marked with an asterisk (*) in Fig. 11.

If the retaining rings (108*) do not fit on the shaft, order kit 15E010 for a current replacement shaft (118).

1. Remove the top air cylinder (111); see previous procedure.
2. Unscrew the dispense valve knob (103).
3. Slowly remove the two screws (102) secured by cap nuts (115), while holding the cylinder cap (104) down.

Be careful, the air cylinders (111, 114) are under compression and will spring apart and the detent pin (105) will spring out from the cylinder cap (104). Slowly let up on the cap to release the spring compression.

4. Remove the top retaining ring (108*) from the valve shaft (118).

5. Pull the valve shaft (118) down and hook it under the top piston (109) with a hex wrench or similar tool.
6. Remove the remaining retaining rings (108*) to complete the disassembly of the air cylinders.
7. Clean and inspect all parts. Inspect the o-rings (110, 112, 113, 116) on the pistons (109) and valve shaft (118). Replace parts as necessary. Lightly lubricate the o-rings with dielectric grease. Assemble parts in reverse order of disassembly.

When reassembling, be sure the two air connection ports will be facing the outside of the machine. Set the knob (103) 2/3 of a turn open from fully closed.

To disassemble the fluid housing (128):

(See Fig. 10 and Fig. 11)

1. Remove the top air cylinder (111); see previous page.
2. Remove the glands (122, 123, 124) and v-packings (121) from the fluid housing (128).
3. Clean and inspect all parts. Inspect the fluid needle (125), seat (132), and o-rings (131) for wear. If only one side of the seat is worn, the seat can be reversed and reused.
4. Replace parts as necessary. Lightly lubricate the packings with dielectric grease. Assemble parts in reverse order of disassembly.
5. Adjust the packing nut (120).

Service

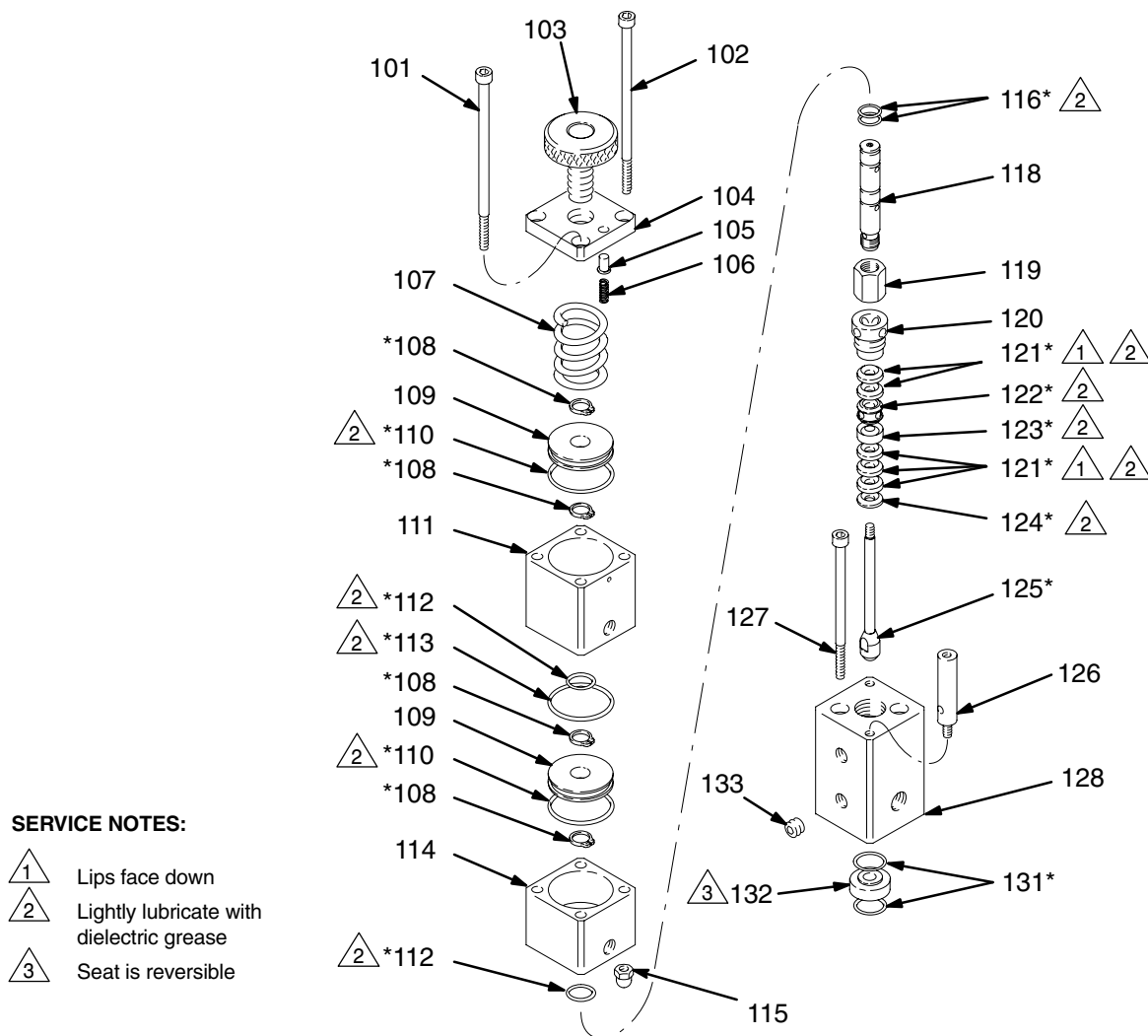


Fig. 11

01913B

Service

Disassembling the Purge Valves

WARNING



SKIN INJECTION HAZARD

To reduce the risk of a serious injury from accidental spray from the gun, splashing fluid, or moving parts, follow the **Pressure Relief Procedure** on page 17 before checking or servicing the system and whenever you are instructed to relieve the pressure.

To remove the complete purge valve from the mixing block and mounting plate:

(See Fig. 12)

1. Disconnect the air line connections (A).
2. Remove the two screws (20).

To disassemble the purge valve:

(See Fig. 12 and the **Parts Drawing** on page 27)

WARNING



MOVING PARTS HAZARD

The air cylinders (63, 70) of the valve are spring-loaded, and parts may fly out or spring apart when the valve is disassembled. To reduce the risk of an eye injury, wear protective eyewear and follow the procedure below.

NOTE: Repair Kit 237948 is available to repair the purge valves. Order one kit for each valve. See the parts list on page 27.

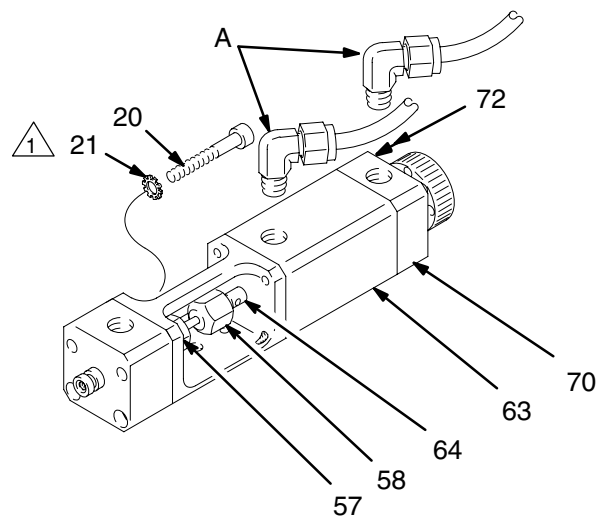
1. Hold the piston rod (64) with a hex wrench or similar tool, and unscrew the coupling (58).
2. Slowly remove the four screws (72), while holding the top air cylinder (70) down.

Be careful, the air cylinders (63, 70) are under compression and will spring apart.

Slowly let up on the top air cylinder (70) to release the spring compression.

3. Inspect the o-rings (62, 66, 69, 71) on the piston (65) and piston rod (64). See the **Parts Drawing**, page 27.
4. Remove the packing (56) from the fluid housing (54).
5. Clean and inspect all parts. Inspect the fluid needle (59) and seat (79) for wear. If only one side of the seat is worn, the seat can be reversed and reused.
6. Replace parts as necessary. Lightly lubricate the packings with dielectric grease. Assemble parts in reverse order of disassembly.
7. Adjust the packing nut (57).

When reassembling, be sure the two air connection openings are on the side of the valve, facing the outside of the machine. When connecting the purge valve to the mix block, it may be helpful to open the valve pneumatically.



Part of Model 239732 only

Fig. 12

01914B

Service

Cleaning the Mixing Blocks (5)

(See Fig. 13a and 13b)

1. Remove the pressure plugs (5a).
2. Clean the block (5).
3. Before reassembling, apply part no. 070268 lubricant, to the plug threads.
4. The reassembled plugs should be flush with the block surface.

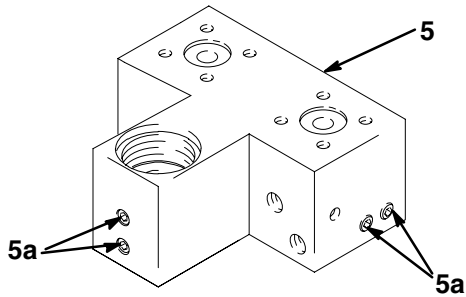


Fig. 13a Part no. 192432

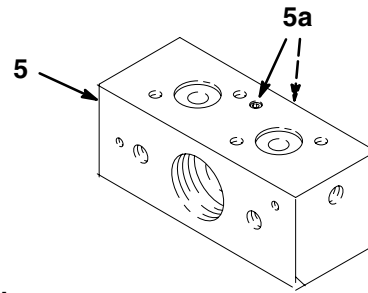
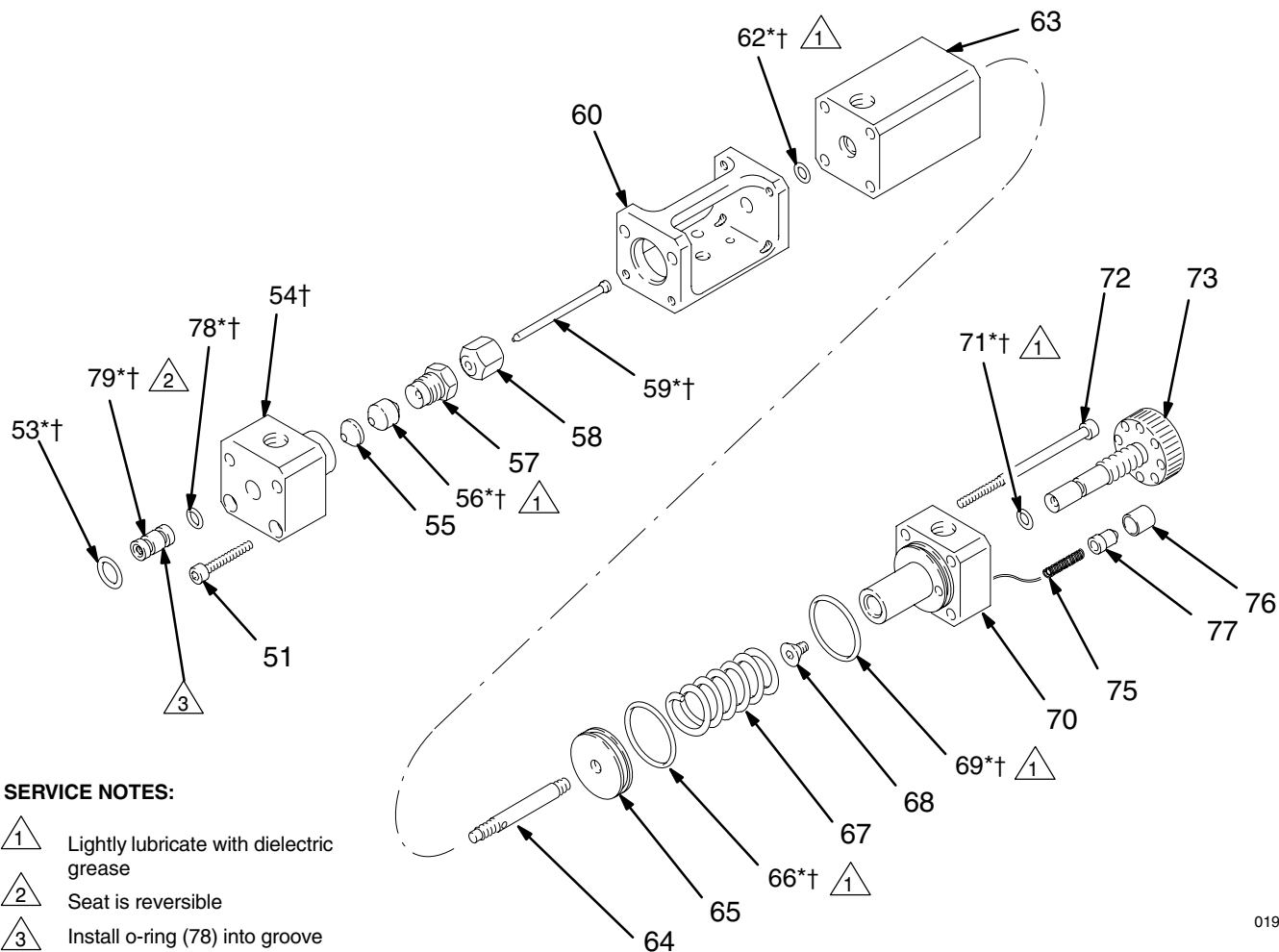


Fig. 13b Part no. 111051

Purge Valve Parts

Part No. 236929, Purge Valve

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
51	111119	SCREW, socket head; M4 x 0.7 x 25 mm	2	71*†	111139	O-RING, Buna-N	1
53*†	111457	O-RING, PTFE	1	72	111140	SCREW, socket head; M4 x 0.7 x 70 mm	4
54†	190442	HOUSING, fluid (see NOTE, below)	1	73	111141	KNOB, adjustment	1
55	111123	GLAND, female	1	75	112676	SPRING, compression	1
56*†	111124	PACKING, fluid	1	76	190046	BUSHING, detent pin	1
57	189904	NUT, packing	1	77	112658	PIN, detent	1
58	190054	COUPLING, valve	1	78*†	111516	O-RING, CV75	1
59*†	190441	NEEDLE, fluid (see NOTE, below)	1	79*†	190609	SEAT, needle	1
60	190037	HOUSING, valve	1	* These parts are included in Repair Kit 237948, which may be purchased separately.			
62*†	156454	O-RING, Buna-N	1				
63	190036	VALVE CYLINDER	1	† These parts are included in Conversion Kit 238242, which may be purchased separately.			
64	111132	ROD, piston	1				
65	111133	PISTON, valve	1	NOTE: Conversion Kit 238242 is needed when converting the purge valve to the replaceable seating configuration. The needle (item 59) and housing (item 54) from the previous purge valve assembly, part no. 224064, are not compatible with the new configuration.			
66*†	104093	O-RING, Buna-N	1				
67	111135	SPRING	1				
68	112850	SCREW; M5 x .8 x 8.0 mm	1				
69*†	111137	O-RING, Buna-N	1				
70	190038	AIR CYLINDER	1				

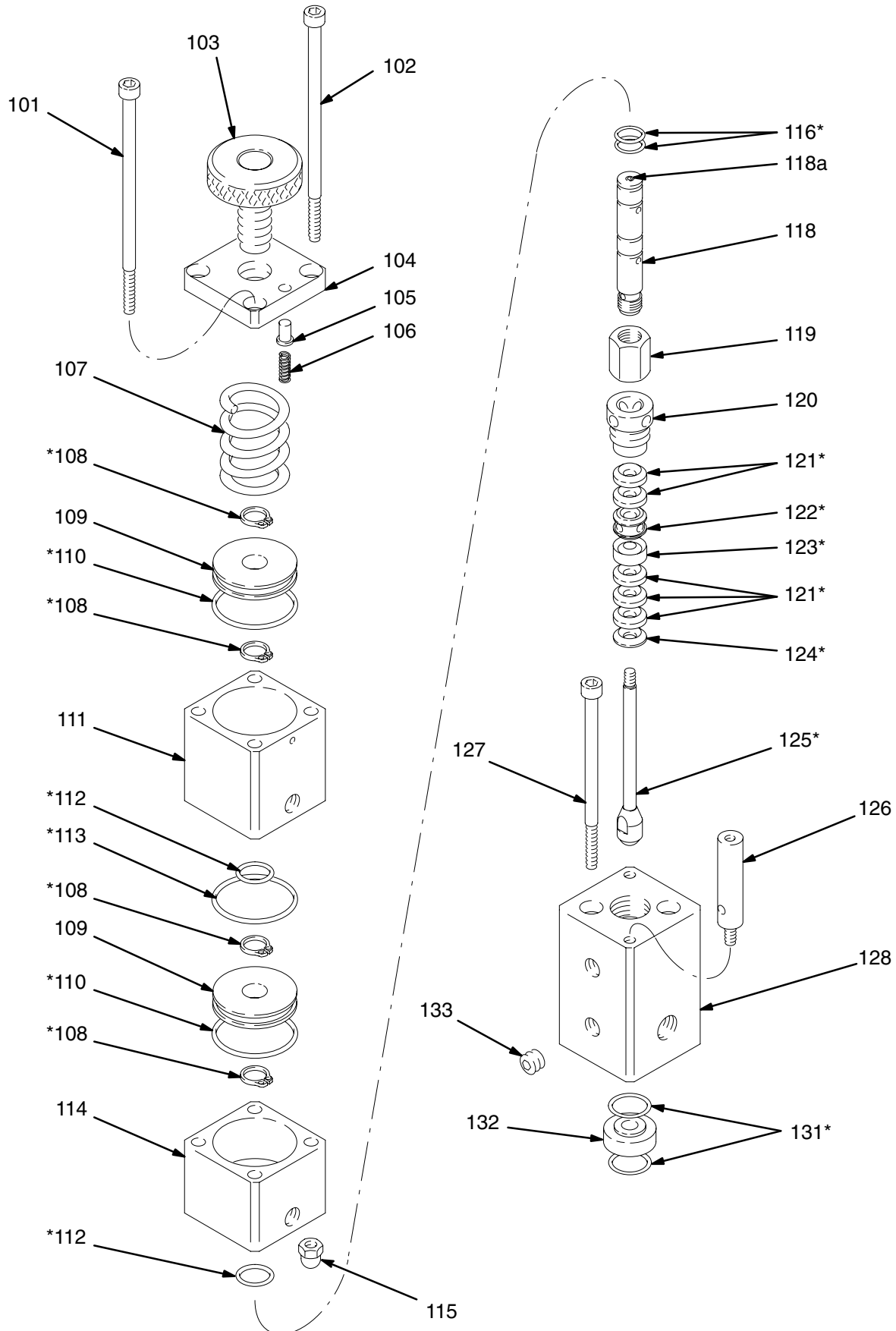


SERVICE NOTES:

- 1 Lightly lubricate with dielectric grease
- 2 Seat is reversible
- 3 Install o-ring (78) into groove

01915B

Dispense Valve Parts



01913B

Dispense Valve Parts

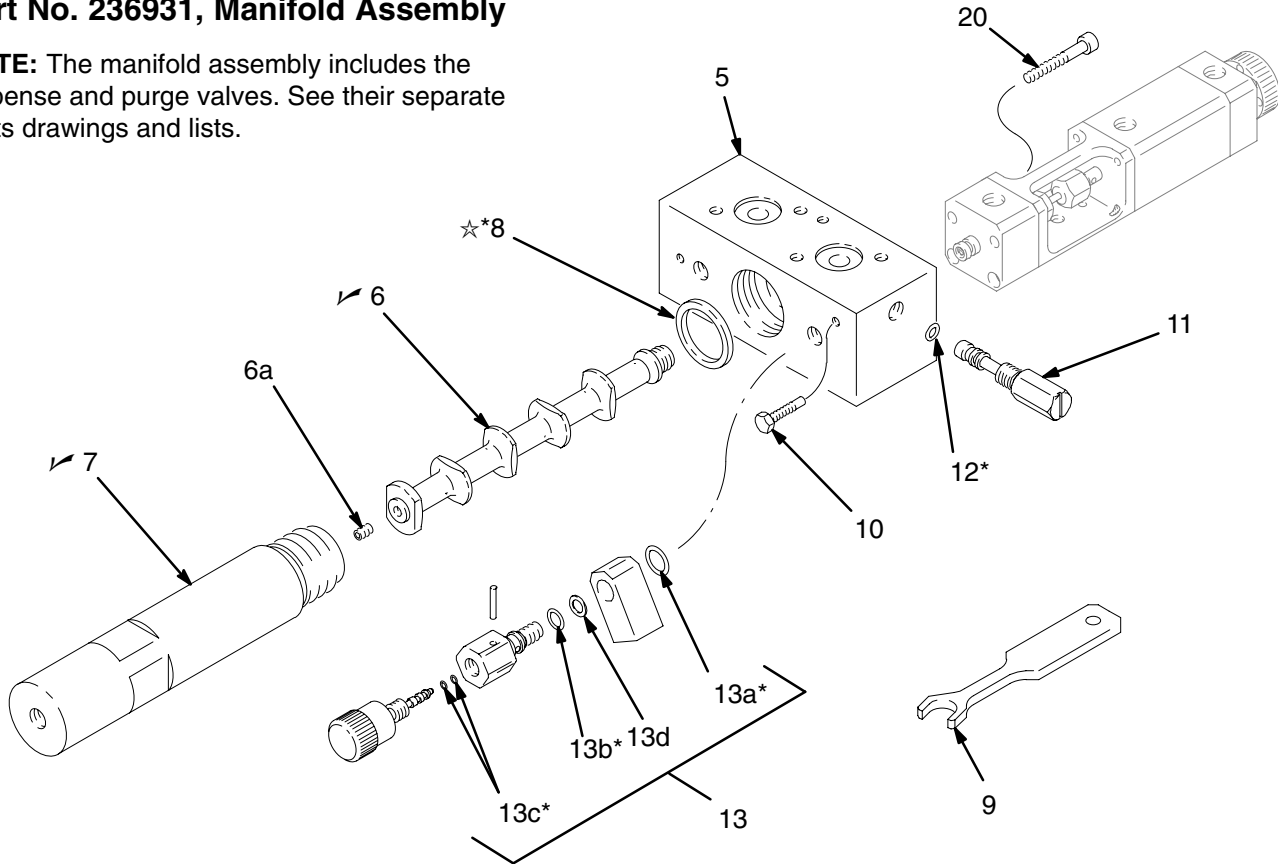
Part No. 236930, Dispense Valve

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
101	111086	SCREW, socket head; M6 x 1.0 x 100 mm	2	119	111104	COUPLING, valve	1
102	111087	SCREW socket head; M6 x 1.0 x 90 mm	2	120	190045	NUT, packing	1
103	238240	KNOB, adjustment	1	121*	111106	PACKING, valve	5
104	190042	CAP, air cylinder	1	122*	189902	GLAND, male	1
105	111090	PIN, detent	1	123*	111108	GLAND, female	1
106	112293	SPRING	1	124*	189901	GLAND, male	1
107†	111092	SPRING, shutoff	1	125*	236928	FLUID NEEDLE ASSY., 10 mm	1
108*	15E017	RING, retaining	4	126	189905	ROD, spacer	2
109	111094	PISTON, valve	2	127	111112	SCREW, socket head; M6 x 1.0 x 80 mm	2
110*	111095	O-RING, Buna-N	2	128	189907	HOUSING, fluid	1
111	190040	AIR CYLINDER	1	131*	111116	O-RING, PTFE	2
112*	801050	O-RING, Buna-N	2	132	189903	SEAT, fluid valve	1
113*	111098	O-RING, Buna-N	1	133	110208	PLUG, pipe	2
114	190041	VALVE CYLINDER	1	* These parts are included in Repair Kit 15E013, which may be purchased separately.			
115	111100	NUT, hex cap; M6 x 1.0	2	† When operating at fluid pressures above 3000 psi (21 MPa, 207 bar), replace 111092 standard shutoff spring with the high pressure spring in Kit 239954. See page 35 to order kit.			
116*	155685	O-RING, Buna-N	2				
118	15E010	SHAFT, valve kit; Includes item 118a	1				
118a	111102	•SCREW, M4 x 0.7 x 4.0 mm	1				

Manifold Parts

Part No. 236931, Manifold Assembly

NOTE: The manifold assembly includes the dispense and purge valves. See their separate parts drawings and lists.



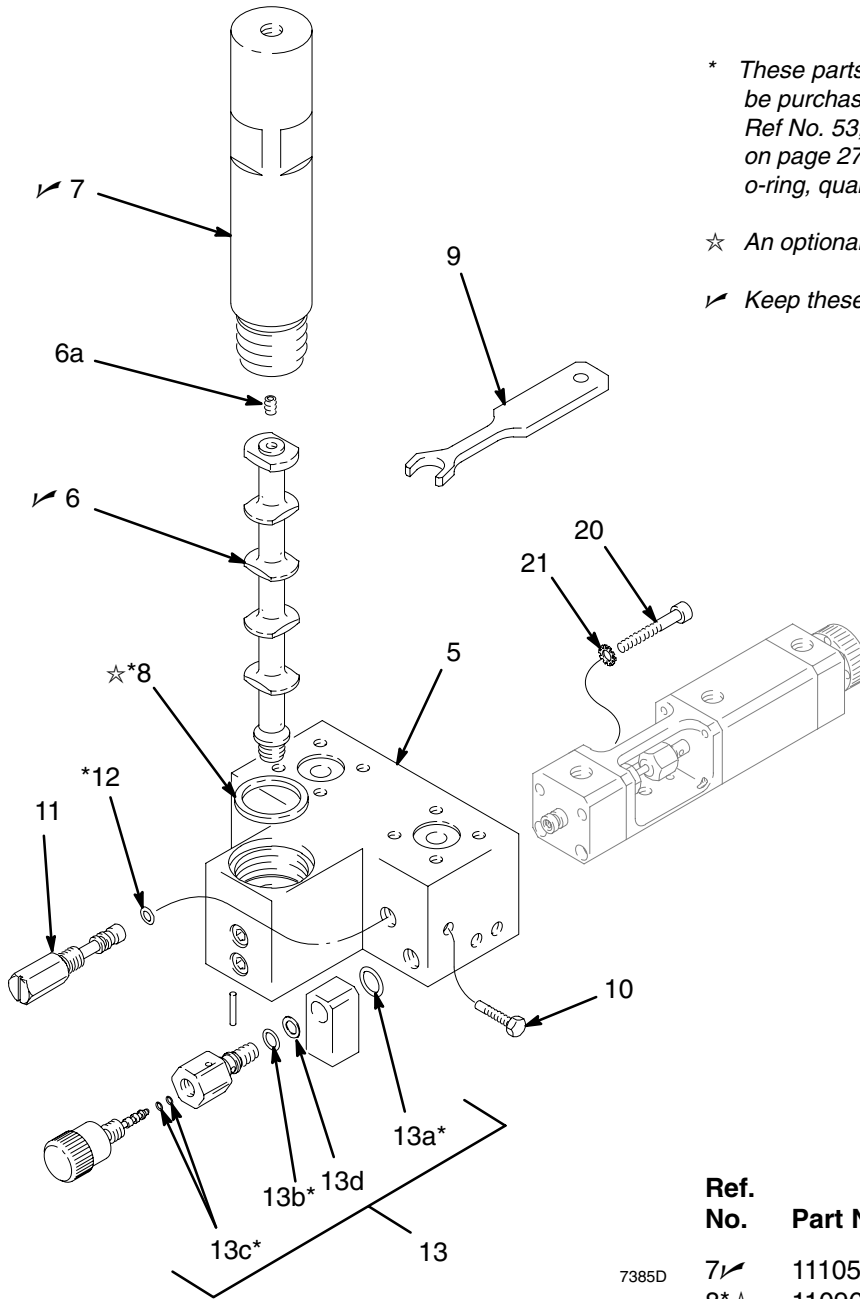
01916F

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	236930	DISPENSE VALVE ASSEMBLY (see page 28)	2	13a*	107505	•O-RING, PTFE	2
2	236929	PURGE VALVE ASSEMBLY (see page 27)	2	13b*	111450	•O-RING, CV75	2
5	111051	BLOCK, mixing	1	13c*	111504	•O-RING, CV75	4
5a	116134	PLUG, pipe	2	13d	116416	•WASHER, PTFE	1
6✓	238243	TUBE, integrator; Includes item 6a	1	20	111120	SCREW, socket head; M5 x 0.8 x 35 mm	4
6a	111260	•SCREW, M5 x 0.8 x 8.0 mm	1	* These parts are included in Repair Kit 948588, which may be purchased separately. The repair kit also includes: Ref No. 53, part no. 111457 PTFE o-ring, quantity of 2, on page 27; and Ref No. 131, part no. 111116 PTFE o-ring, quantity of 4, on page 29.			
7✓	111053	HOUSING, integrator	1				
8*☆	110966	O-RING, PTFE	1				
9	190047	WRENCH	1				
10	111058	SCREW, retaining	2				
11	236923	KNOB, fluid shut-off	2				
12*	512063	O-RING, Chemraz	2				
13	240830	VALVE, ratio check; Includes replaceable items 13a–13d	2	☆ An optional CV75 o-ring is available. See Accessories .			
				✓ Keep these spare parts on hand to reduce down time.			

Manifold Parts

Part No. 239732, Manifold Assembly

NOTE: The manifold assembly includes the dispense and purge valves. See their separate parts drawings and lists.



* These parts are included in Repair Kit 948588, which may be purchased separately. The repair kit also includes: Ref No. 53, part no. 111457 PTFE o-ring, quantity of 2, on page 27; and Ref No. 131, part no. 111116 PTFE o-ring, quantity of 4, on page 29.

☆ An optional CV75 o-ring is available. See **Accessories**.

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

Ref. No.	Part No.	Description	Qty.
1	236930	DISPENSE VALVE ASSEMBLY (see page 28)	2
2	236929	PURGE VALVE ASSEMBLY (see page 27)	2
5	192432	BLOCK, mixing	1
5a	116134	PLUG, pipe	9
6✓	238243	TUBE, integrator; Includes item 6a	1

Ref. No.	Part No.	Description	Qty.
7✓	111053	HOUSING, integrator	1
8*☆	110966	O-RING, PTFE	1
9	190047	WRENCH	1
10	111058	SCREW, retaining	2
11	236923	KNOB, fluid shut-off	2
12*	512063	O-RING, Chemraz	2
13	240830	VALVE, ratio check; Includes replaceable items 13a–13d	2
13a*	107505	•O-RING, PTFE	2
13b*	111450	•O-RING, CV75	2
13c*	111504	•O-RING, CV75	4
13d	116416	•WASHER, PTFE	1
20	114196	SCREW, socket head; M5 x 0.8 x 40 mm	4
308288			31

Manifold Parts

Part No. 243486, PrecisionMix II 3K First Stage Manifold Assembly

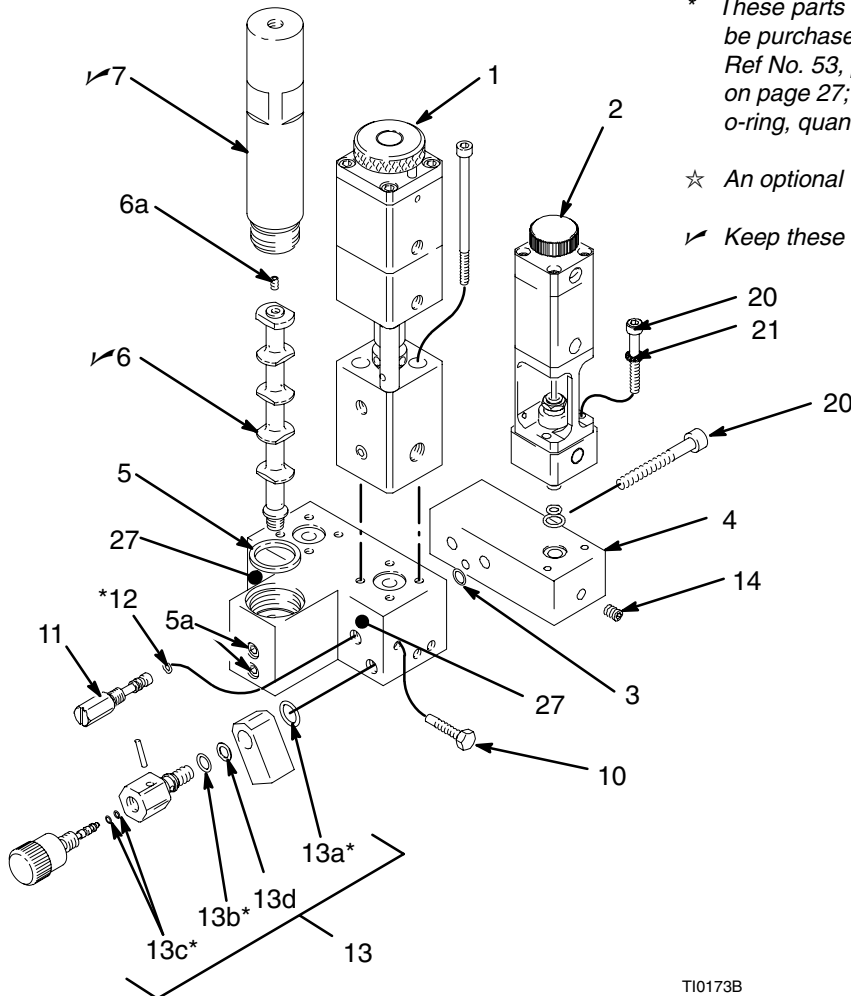
NOTE: The manifold assembly includes the dispense and purge valves.
See their separate parts drawings and lists.

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	236930	DISPENSE VALVE ASSEMBLY (see page 28)	2	13	240830	VALVE, ratio check; Includes replaceable items 13a–13c	2
2	236929	PURGE VALVE ASSEMBLY (see page 27)	2	13a*	107505	•O-RING, PTFE	2
3	111457	O-RING	2	13b*	111450	•O-RING, CV75	2
4	196016	BLOCK, purge	2	13c*	111504	•O-RING, CV75	4
5	192432	BLOCK, mixing	1	13d	116416	•WASHER, PTFE	1
5a	116134	PLUG, pipe	9	14	104071	PLUG, pipe	4
6✓	238243	TUBE, integrator; Includes item 6a	1	16	240828	SPINDLE ASSY	2
6a	111260	•SCREW, M5 x 0.8 x 8.0 mm	1	18	240829	SEAT, valve	2
7✓	111053	HOUSING, integrator	1	19	112687	PIN, spring	2
8*☆	110966	O-RING, PTFE	1	20	114196	SCREW, socket head; M5 x 0.8 x 40 mm	8
10	111058	SCREW, retaining	2	21	111307	WASHER, lock, external; M5	4
11	236923	KNOB, fluid shut-off	2	22	189891	HOLDER, valve body	2
12*	512063	O-RING, Chemraz	2	27	196303	LABELS (component A, B, C)	1

* These parts are included in Repair Kit 948588, which may be purchased separately. The repair kit also includes:
Ref No. 53, part no. 111457 PTFE o-ring, quantity of 2, on page 27; and Ref No. 131, part no. 111116 PTFE o-ring, quantity of 4, on page 29.

☆ An optional CV75 o-ring is available. See **Accessories**.

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



TI0173B

Manifold Parts

Part No. 243487, PrecisionMix II 3K Second Stage Manifold Assembly

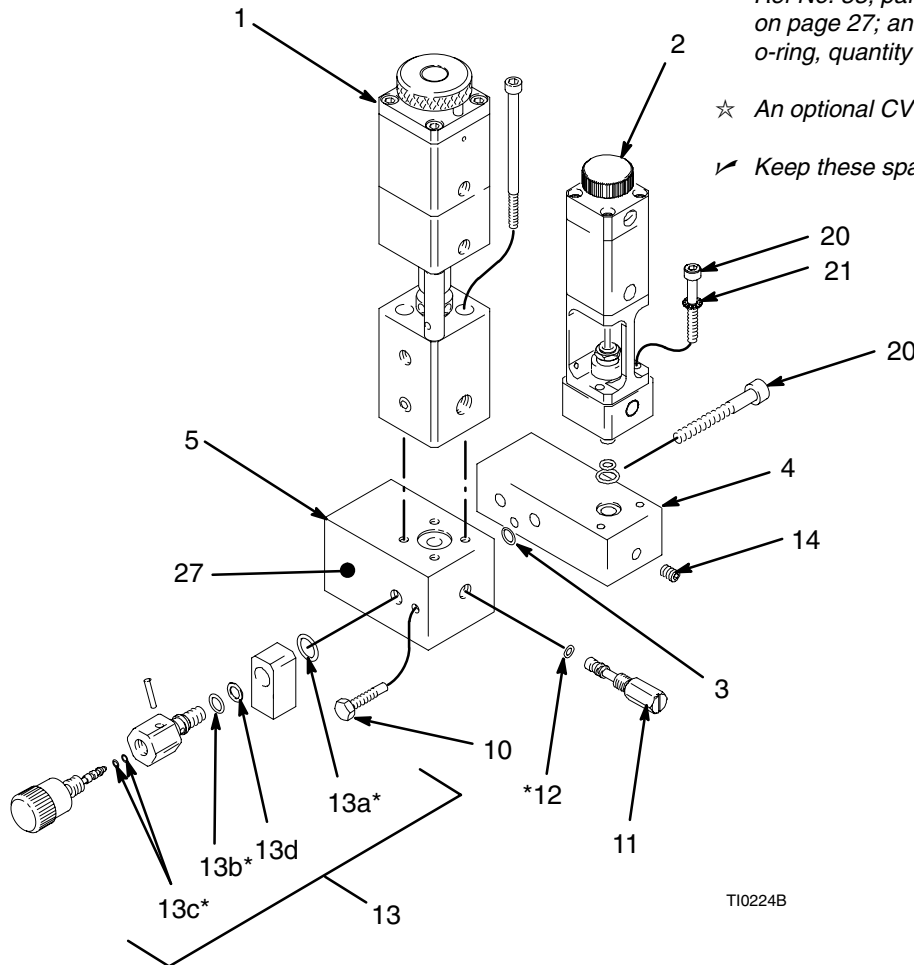
NOTE: The manifold assembly includes the dispense and purge valves.
See their separate parts drawings and lists.

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	236930	DISPENSE VALVE ASSEMBLY (see page 28)	1	13a*	107505	•O-RING, PTFE	1
2	236929	PURGE VALVE ASSEMBLY (see page 27)	1	13b*	111450	•O-RING, CV75	1
3	111457	O-RING	1	13c*	111504	•O-RING, CV75	2
4	196016	BLOCK, purge	1	13d	116416	•WASHER, PTFE	1
5	196015	BLOCK, mixing	1	14	104071	PLUG, pipe	2
10	111058	SCREW, retaining	1	20	114196	SCREW, socket head; M5 x 0.8 x 40 mm	4
11	236923	KNOB, fluid shut-off	1	21	111307	WASHER, lock, external; M5	2
12*	512063	O-RING, Chemraz	1	27	196303	LABELS (component A, B, C)	1
13	240830	VALVE, ratio check; Includes replaceable items 13a–13c	1				

* These parts are included in Repair Kit 948588, which may be purchased separately. The repair kit also includes: Ref No. 53, part no. 111457 PTFE o-ring, quantity of 2, on page 27; and Ref No. 131, part no. 111116 PTFE o-ring, quantity of 4, on page 29.

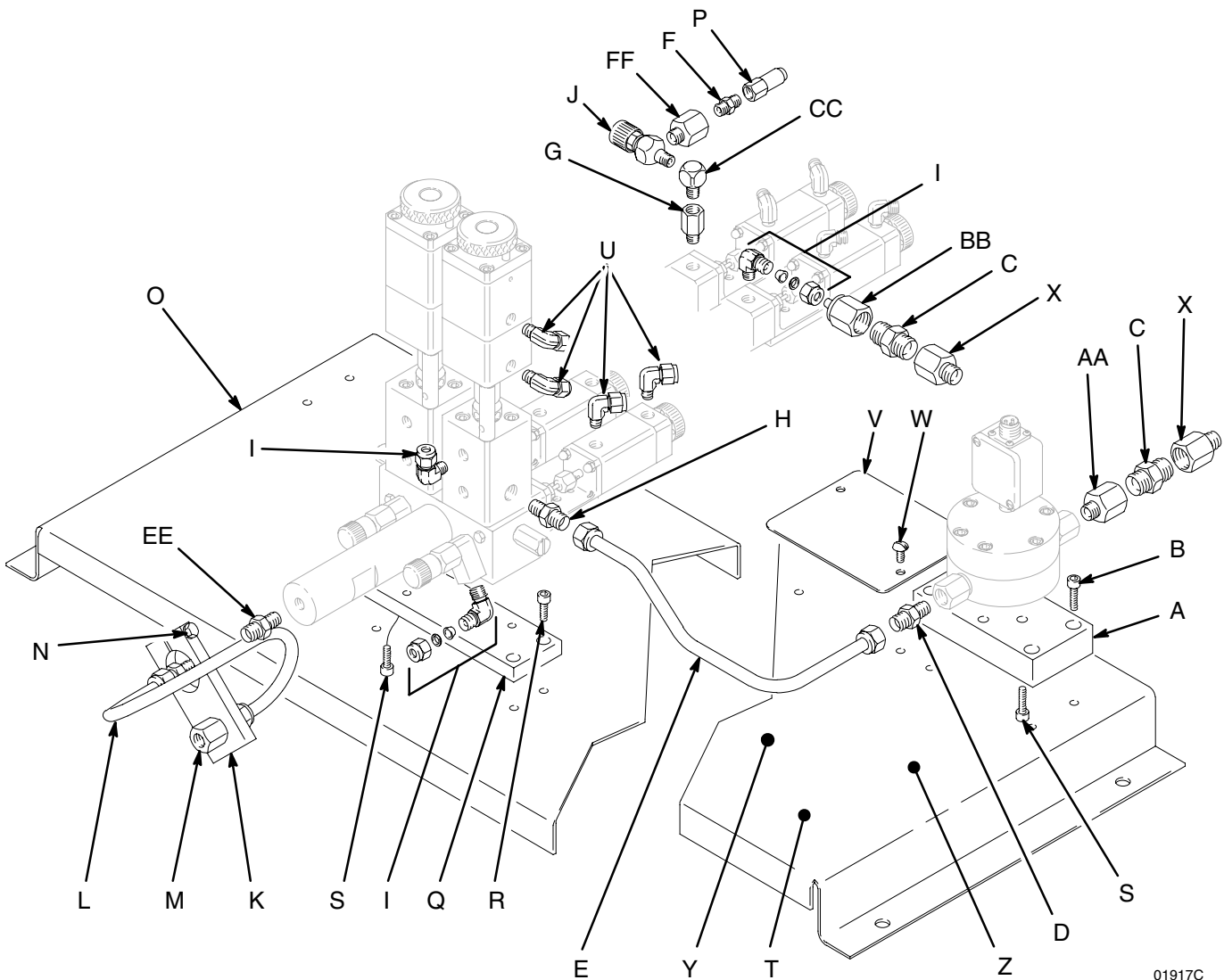
☆ An optional CV75 o-ring is available. See **Accessories**.

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



Accessories

Use Only Genuine Graco Parts and Accessories



01917C

The following parts are available as accessories for the fluid mixing portion of the PrecisionMix system.

Ref.	Part No.	Description
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A	625207	MOUNTING PLATE, flow meter
B	100643	SCREW, cap; 1/4 X 1 in. (25.4 mm)
C	501684	CHECK VALVE; 3/8 in.
D	513308	CONNECTOR, male
E	546001	SST TUBE; 3/8 in. (9.5 mm) O.D.; order length needed
F	501867	CHECK VALVE; 1/4 in.
G	513174	ADAPTER, male

Ref.	Part No.	Description
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H	513697	ADAPTER, male
I	513816	ELBOW; Includes items I-1 to I-3
I-1	513971	•NUT
I-2	513979	•FERRULE, back
I-3	513987	•FERRULE, front
J	205528	NEEDLE VALVE
K	625129	BRACKET, static mixer
L	625128	STATIC MIXER; Includes item M
M	513817	•BULKHEAD
N	100058	SCREW, cap; 1/4 x 1.5 in. (38.1 mm)
O	625187	WALL PLATE, PrecisionMix

Continued on the next page.

Accessories

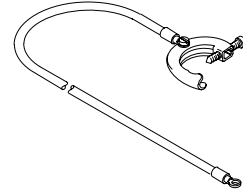
Use Only Genuine Graco Parts and Accessories

NOTE: See the drawing on the previous page.

Ref. No.	Part No.	Description
P	504235	ADAPTER, inlet
Q	624709	MOUNTING PLATE, PrecisionMix
R	100644	SCREW; 1/4 x 3/4 in. (19.1 mm)
S	513035	SCREW; M6 x 1 x 20 mm
T	186531	WARNING LABEL
U	114151	ELBOW; 1/8 npt (m) x 5/32 in. OD tube
V	625186	COVER PLATE
W	500063	SCREW; 1/4 x 1/2 in. (12.7 mm)
X	513843	CONNECTOR, male x female
Y	513310	INSTRUCTION LABEL
Z	513312	DANGER LABEL
AA	512351	ADAPTER, male x female
BB	513899	ADAPTER, female x tube
CC	100839	ELBOW ADAPTER, male x female
DD	513063	TUBING, 1/8 in.; not shown; order length needed
FF	159840	ADAPTER, outlet (not shown)

Grounding Clamp and Wire 222011

12 ga., 25 ft. (7.6 m) wire



0189

CV75 O-Ring for Integrator Tube 514238

To replace PTFE o-ring, part no. 110966 (item 8, page 31) in applications that require a CV75 o-ring for greater solvent resistance.

High Pressure Spring Kit 239954

For use when operating at fluid pressures above 3000 psi (21 MPa, 207 bar). Install high pressure spring in place of standard 111092 shutoff spring in mix manifold. Kit includes two springs.

Flexible Mixer 949122

For low pressure [225 psi (1.6 MPa, 15.7 bar) or less] applications. It has removable plastic elements.



Technical Data

Part No. 236931, Manifold Assembly

Air Specifications

Maximum Air Input Pressure	100 psi (0.7 MPa, 7 bar)
Air supply	60–80 psi (410–550 kPa, 4.1–5.5 bar). 10 micron (minimum) filtration required.
Air consumption	Depends on spray air

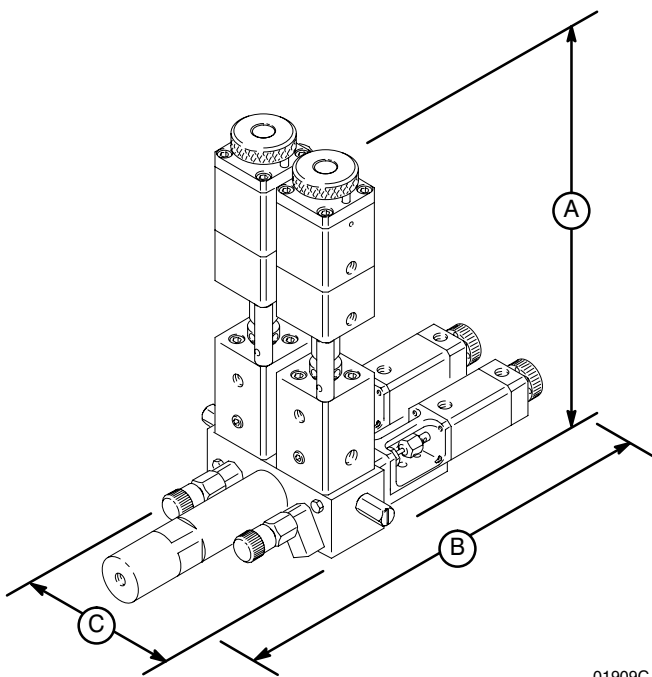
Fluid Specifications

Maximum Fluid Working Pressure	3000 psi (21 MPa, 207 bar)
Fluid wetted parts	303, 304 SST, 17–4 SST, Tungsten carbide (with nickel binder), Chemraz®; PTFE; CV75
Fluids handled	Two-component epoxy or polyurethane paints
Viscosity range of fluid	10 to 5000 cps*
Fluid filtration	100 mesh minimum
Fluid flow rate (maximum)	2000 cc/min.*
Mixing ratio range	1:1 to 20:1*
Weight	21 lbs. (9.6 kg)

* Dependent on application. For more detailed information on viscosities, flow rates, or mixing ratios, consult your Graco distributor.

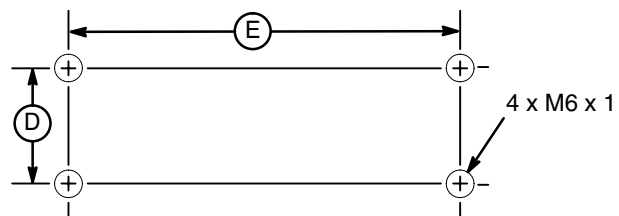
Chemraz® is a registered trademark of the Green, Tweed, & Company.

Dimensions



01909C

Mounting Diagram



05566

Dimensions, inches (mm)				
A*	B*	C	D	E
11.43 (290)	14.58 (370)	7.88 (200)	1.02 (26)	3.39 (86)

*Dimension is dependent on knob adjustment.

Technical Data

Part No. 239732, Manifold Assembly

Air Specifications

Maximum Air Input Pressure	100 psi (0.7 MPa, 7 bar)
Air supply	80–100 psi (0.5–0.7 MPa, 5.5–7 bar). 10 micron (minimum) filtration required.
Air consumption	Depends on spray air

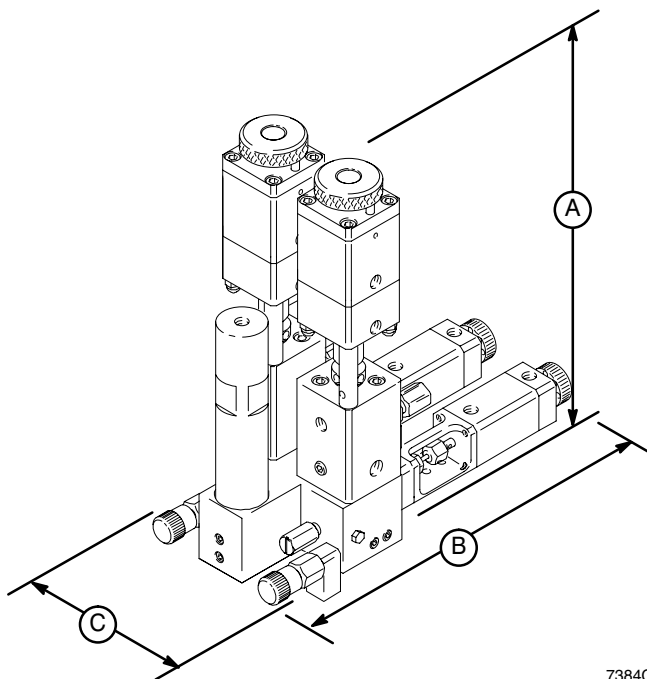
Fluid Specifications

Maximum Fluid Working Pressure	3000 psi (21 MPa, 207 bar)
<i>With Part No. 239954 High Pressure Spring Kit</i>	<i>4000 psi (28 MPa, 276 bar)</i>
Fluid wetted parts	303, 304 SST, 17–4 SST, Tungsten carbide (with nickel binder), Chemraz®; PTFE; CV75
Fluids handled	Two-component epoxy or polyurethane paints
Viscosity range of fluid	10 to 5000 cps*
Fluid filtration	100 mesh minimum
Fluid flow rate (maximum)	2000 cc/min.*
Mixing ratio range	0.6:1 to 20:1*
Weight	24 lbs. (10.9 kg)

* dependent on application. For more detailed information on viscosities, flow rates, or mixing ratios, consult your Graco distributor.

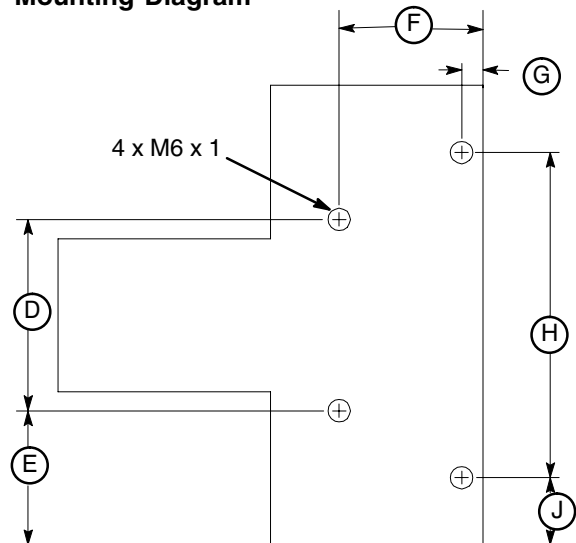
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Dimensions



7384C

Mounting Diagram



7386A

Dimensions, inches (mm)

A*	B*	C	D	E	F	G	H	J
11.43 (290)	11.22 (285)	4.80 in. (122)	1.97 (50)	1.38 (35)	1.53 in. (39 mm)	0.22 in. (6 mm)	3.35 in. (85 mm)	0.69 in. (18 mm)

*Dimension is dependent on knob adjustment.

Technical Data

Part No. 243486, Manifold Assembly

Air Specifications

Maximum Air Input Pressure	100 psi (0.7 MPa, 7 bar)
Air supply	60–80 psi (410–550 kPa, 4.1–5.5 bar). 10 micron (minimum) filtration required.
Air consumption	Depends on spray air

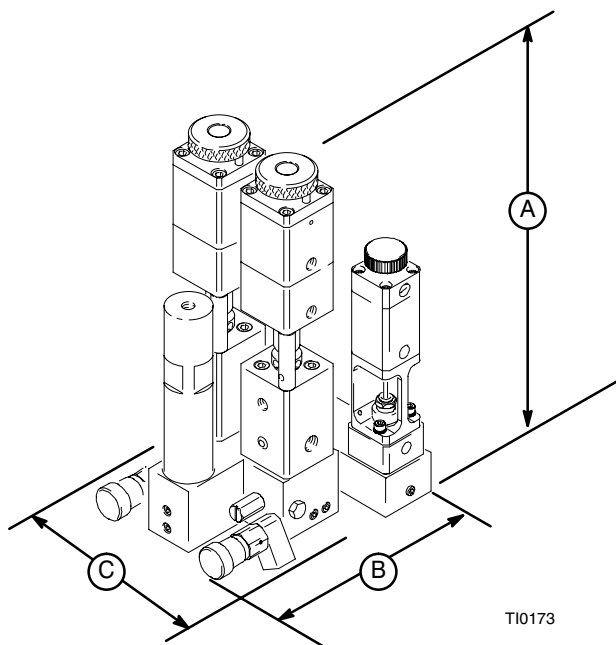
Fluid Specifications

Maximum Fluid Working Pressure	3000 psi (21 MPa, 207 bar)
Fluid wetted parts	303, 304 SST, 17–4 SST, Tungsten carbide (with nickel binder), Chemraz®; PTFE; CV75
Fluids handled	Two-component epoxy or polyurethane paints
Viscosity range of fluid	10 to 5000 cps*
Fluid filtration	100 mesh minimum
Fluid flow rate (maximum)	2000 cc/min.*
Mixing ratio range	1:1 to 20:1*
Weight	35 lbs. (15.8 kg)

* dependent on application. For more detailed information on viscosities, flow rates, or mixing ratios, consult your Graco distributor.

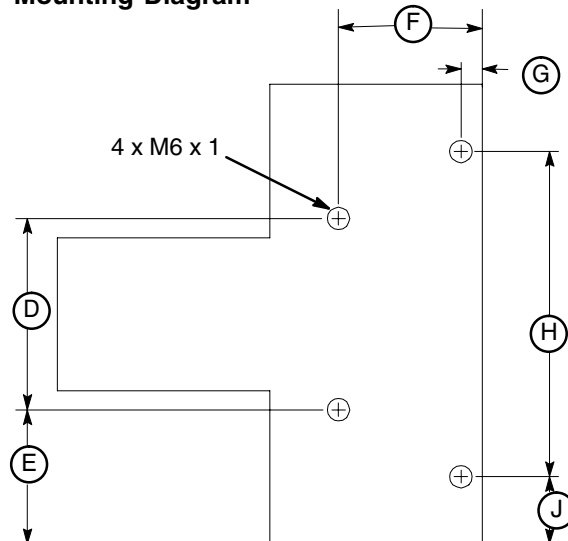
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Dimensions



TI0173

Mounting Diagram



7386A

Dimensions, inches (mm)								
A*	B*	C	D	E	F	G	H	J
11.43 (290)	6.00 (152)	7.88 in. (200)	1.97 (50)	1.38 (35)	1.53 in. (39 mm)	0.22 in. (6 mm)	3.35 in. (85 mm)	0.69 in. (18 mm)

*Dimension is dependent on knob adjustment.

Technical Data

Part No. 243487, Manifold Assembly

Air Specifications

Maximum Air Input Pressure	100 psi (0.7 MPa, 7 bar)
Air supply	60–80 psi (410–550 kPa, 4.1–5.5 bar). 10 micron (minimum) filtration required.
Air consumption	Depends on spray air

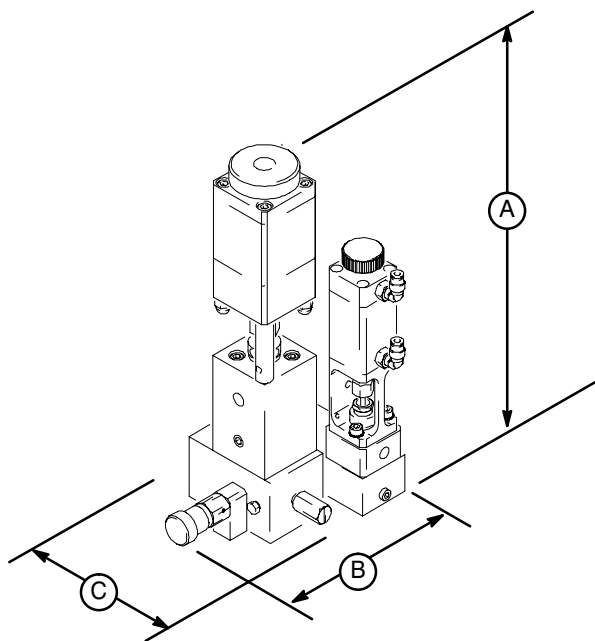
Fluid Specifications

Maximum Fluid Working Pressure	3000 psi (21 MPa, 207 bar)
Fluid wetted parts	303, 304 SST, 17–4 SST, Tungsten carbide (with nickel binder), Chemraz®; PTFE; CV75
Fluids handled	Two-component epoxy or polyurethane paints
Viscosity range of fluid	10 to 5000 cps*
Fluid filtration	100 mesh minimum
Fluid flow rate (maximum)	2000 cc/min.*
Mixing ratio range	1:1 to 20:1*
Weight	17 lbs. (7.7 kg)

* dependent on application. For more detailed information on viscosities, flow rates, or mixing ratios, consult your Graco distributor.

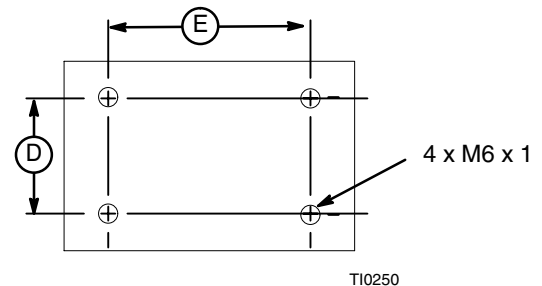
Chemraz® is a registered trademark of the Green, Tweed, & Company.

Dimensions



01909C

Mounting Diagram



Dimensions, inches (mm)

A*	B*	C	D	E
11.43 (290)	6.00 (152)	4.80 (122)	1.20 (30)	2.25 (57)

*Dimension is dependent on knob adjustment.

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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.

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612-623-6921

612-378-3505 Fax

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