

Dispense Valves

3A1326B

EN

For use with Spartan systems. For professional use only.

Parts 21668-00, 21668-01, and 21668-02

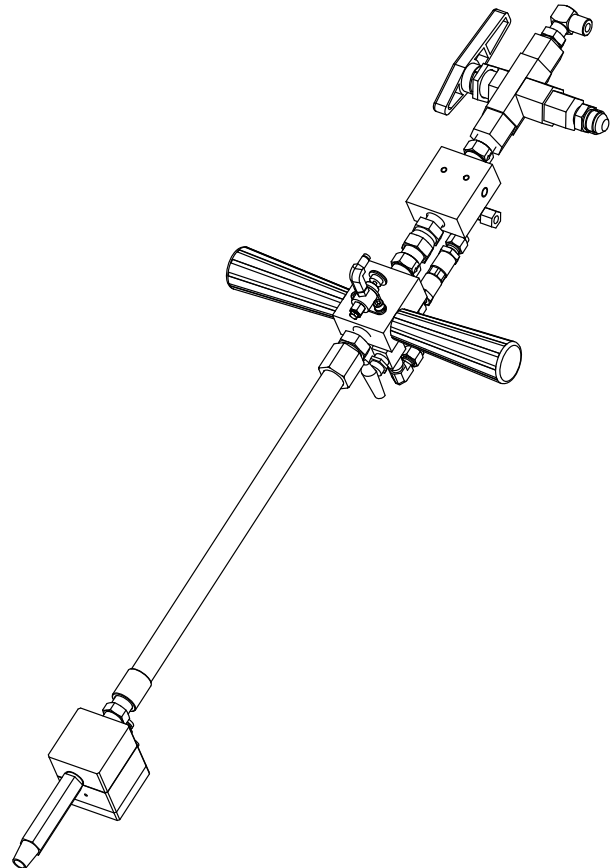
1300 psi (9 MPa, 90 bar) Maximum Fluid Working Pressure

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



Important Safety Instructions

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



Contents

Related Manuals	2
Warnings	3
Important Methyl Ethyl Ketone Peroxide (MEKP) Information	5
Grounding	6
Installation	7
Startup	7
Solvent	7
Resin	8
Catalyst	8
Recirculation Mode	8
Injection Instructions	9
Shutdown	11
Pressure Relief Procedure	11
Parts	12
21668-00 Spartan Gun	12
21668-01 Spartan 2 Gun	14
21668-02 Spartan 3 Gun	16
23547-01 Check Valve	17
Technical Data	19
Graco Standard Warranty	20
Graco Information	20




Related Manuals

Component manuals in English. Manuals are available at www.graco.com.

Part	Description
GC-1202	Spartan Operation
GC-1355	Spartan 2 Operation
GC-1368	Spartan 3 Operation

Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual or on warning labels, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

 <h2 style="margin: 0;">WARNING</h2>	
	<p>SKIN INJECTION HAZARD</p> <p>High-pressure fluid from dispensing device, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. Get immediate surgical treatment.</p> <ul style="list-style-type: none"> • Engage trigger lock when not dispensing. • Do not point dispensing device at anyone or at any part of the body. • Do not put your hand over the fluid outlet. • Do not stop or deflect leaks with your hand, body, glove, or rag. • Follow the Pressure Relief Procedure when you stop dispensing and before cleaning, checking, or servicing equipment. • Tighten all fluid connections before operating the equipment. • Check hoses and couplings daily. Replace worn or damaged parts immediately.
	<p>FIRE AND EXPLOSION HAZARD</p> <p>Flammable fumes, such as solvent and paint fumes, in work area can ignite or explode. Paint or solvent flowing through the equipment can cause static sparking. To help prevent fire and explosion:</p> <ul style="list-style-type: none"> • Use equipment only in well ventilated area. • Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static sparking). • Ground all equipment in the work area. See Grounding instructions. • Never spray or flush solvent at high pressure. • Keep work area free of debris, including solvent, rags and gasoline. • Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present. • Use only grounded hoses. • Hold gun firmly to side of grounded pail when triggering into pail. Do not use pail liners unless they are anti-static or conductive. • Stop operation immediately if static sparking occurs or you feel a shock. Do not use equipment until you identify and correct the problem. • Keep a working fire extinguisher in the work area.



WARNING



PERSONAL PROTECTIVE EQUIPMENT

Wear appropriate protective equipment when in the work area to help prevent serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. Protective equipment includes but is not limited to:

- Protective eyewear, and hearing protection.
- Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.



TOXIC FLUID OR FUMES HAZARD

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

- Read Safety Data Sheet (SDS) to know the specific hazards of the fluids you are using.
- Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.



EQUIPMENT MISUSE HAZARD






Misuse can cause death or serious injury.

- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical Data** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See **Technical Data** in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request Safety Data Sheet (SDS) from distributor or retailer.
- Do not leave the work area while equipment is energized or under pressure.
- Turn off all equipment and follow the **Pressure Relief Procedure** when equipment is not in use.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.
- Make sure all equipment is rated and approved for the environment in which you are using it.
- Use equipment only for its intended purpose. Call your distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or over bend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.









Important Methyl Ethyl Ketone Peroxide (MEKP) Information







MEKP is among the more hazardous materials used in the plastics industry. MEKP contains highly reactive (unstable) chemicals that produce the curing reaction of polyester resins and gel-coats in a laminating operation. The highly reactive property of MEKP also produces hazards that require great care and caution in the handling, processing, storage, transportation and disposal of MEKP.

									
<p>MEKP is flammable and potentially explosive when reacting to contamination by other materials or when exposed to heat or heat build-up from contamination reactions. A contamination reaction can cause MEKP to reach its Self-Accelerating Decomposition Temperature (SADT). Reaction may start slowly, taking from seconds to days, gradually building up heat. This can produce a violent explosion. To help prevent fire and explosion:</p> <ul style="list-style-type: none"> • Read and understand the MEKP manufacturer's warnings and Safety Data Sheet (SDS) to know specific hazards and precautions related to MEKP. • Prevent contamination of MEKP with other materials (even small amounts), including but not limited to diluents, polyester overspray, sanding dust, polymerization accelerators and promoters, and non-stainless metals. Keep work area clean and free of waste. • Never return MEKP to the original container. • Remove spills promptly so no residues remain. Spillage can heat up to the point of self-ignition. • Keep MEKP away from heat, sparks and open flames. Do not smoke in the work area. • Never dilute MEKP with acetone or any solvent. This can produce an extremely shock-sensitive compound that can explode. • Use only genuine manufacturer's parts in the catalyst system (hoses, fittings, etc.). A reaction may result between substituted parts and MEKP. • Store MEKP in the original containers in a cool, dry and well-ventilated area away from direct sunlight and away from other chemicals in accordance with MEKP manufacturer's recommendations. • Do not store MEKP for an extended period of time. Extended storage will increase the potential for explosive decomposition. Rotate stock using the oldest material first. Refer to NFPA 432 and MEKP manufacturer's recommendations. • To prevent contact with MEKP, wear appropriate personal protective equipment, including chemically impermeable gloves, boots, aprons and goggles. 									

Polyester Resins and Gel-Coats

									
<p>Spraying materials containing polyester resin and gel-coats creates potentially harmful mist, vapors and atomized particulates.</p> <ul style="list-style-type: none">• Prevent inhalation by providing sufficient ventilation and using respirators in the work area.• Read and understand the material manufacturer's warnings and Safety Data Sheet (SDS) to know specific hazards and precautions related to polyester resins and gel-coats.• If cleaning solvents are used in the spraying and lamination operation, read and understand solvent manufacturer's warnings and SDS to know specific hazards and precautions related to the solvent. (Graco recommends that clean-up solvents be nonflammable.)• To prevent contact with polyester resins and gel-coats, wear appropriate personal protective equipment, including chemically impermeable gloves, boots, aprons and goggles.									

Spraying and Lamination Operations

									
<p>Remove all accumulations of overspray, FRP sandings, etc. from the building as they occur. If this waste is allowed to build up, spillage of catalyst is more likely to start a fire.</p> <p>If cleaning solvents are required, read material manufactureer's warnings and material MSDS to know specific hazards and precautions. (Graco recommends that clean-up solvents be nonflammable.)</p>									

NOTE: Graco recommends that you consult OSHA 29 CFR Sections 1910.94, 1910.106, 1910.107 and NFPA No. 33, and NFPA No. 91 for further guidance.

Grounding

				
<p>The equipment must be grounded to reduce the risk of static sparking. Static sparking can cause fumes to ignite or explode. Grounding provides an escape wire for the electric current.</p>				

Ground the dispense gun through connection to a Glas-Craft approved grounded fluid supply hose.

Check your local electrical code and related manuals for detailed grounding instructions of all equipment in the work area.

Installation

For dispense valve installation instructions, see the applicable Spartan system manual.

Startup

The injection head is fully connected to the machine and is tested prior to shipment.

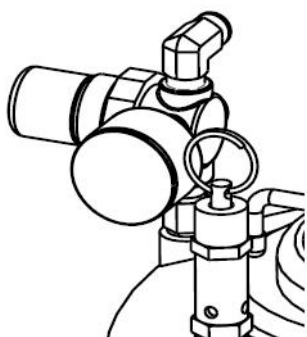
The following instructions are to be used as a guide for consistent and continual operation. Any deviation from the “standard operation”, usually requires more maintenance to the equipment and material formulation to assure consistent results. For example: the use of fillers in resins.

Refer to specific user manuals (if available) for detailed component start-up and shut-down instructions.

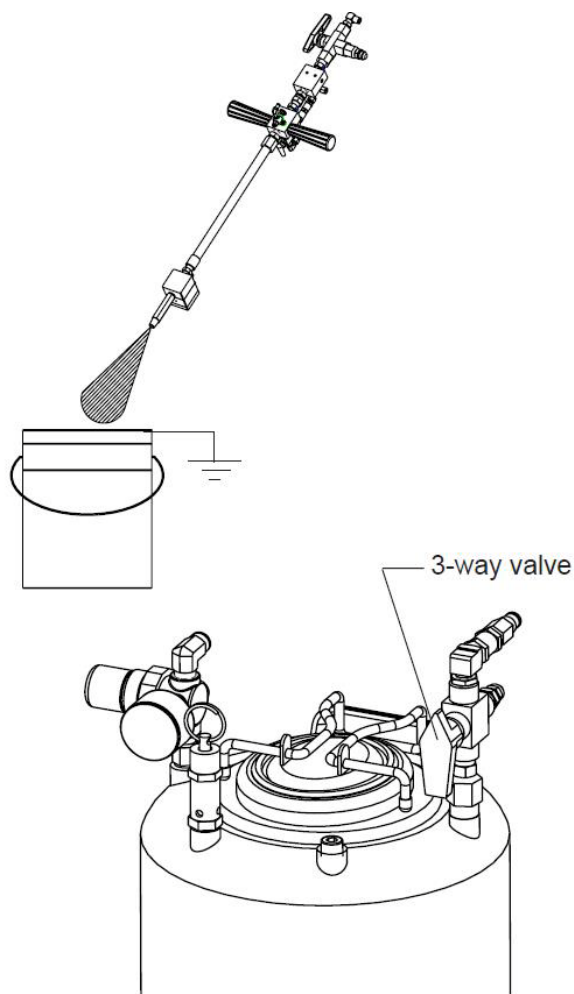
Solvent

Before initial operation of any internal mix system, make certain the solvent flush set-up is fully operational.

1. Turn solvent regulator clockwise to approximately 65 psi.



2. Place injection nozzle over a proper waste container. Turn 3-way valve on top of the solvent tank so the arrow is pointing up for air purge, for solvent turn the valve so the arrow is pointing down. Repeat air purge to blow solvent through the gun head.

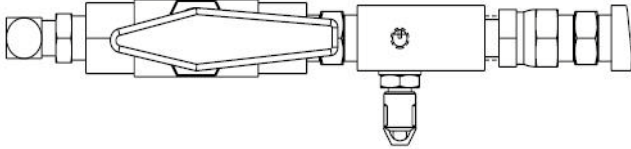


3. Exhaust air through the gun head until traces of solvent have been dissipated.

NOTE: Since the system is an internal mix system, the mixer requires flushing with air-solvent-air after each dispense or before the mixed material starts to gel.

Resin

1. Turn the main valve on the gun head to the recirculation position.

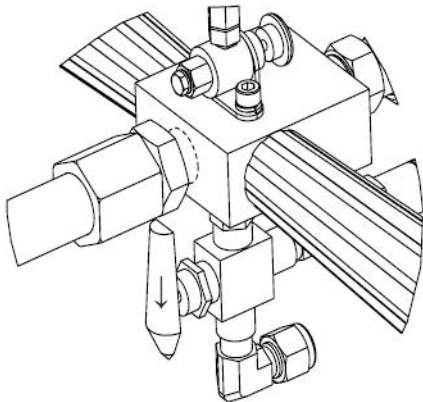


2. Your pump should cycle clean solvent through the system and out the recirculation hose.
3. End recirculation when solvent appears reasonably clean.
4. Let material pump cycle slowly until a steady stream of clean material is seen exiting the recirculation hose.
5. Secure recirculation hose in the material supply container.

NOTE: Dispose of resin in the waste container in a proper manner.

Catalyst

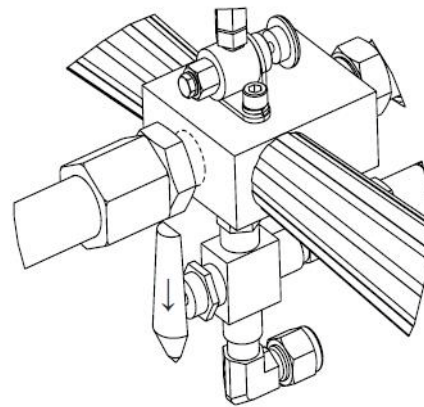
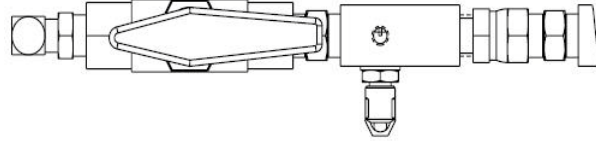
1. Turn the Catalyst Valve on the dispense gun to the recirculation position (the arrow on the valve should point away from the gun block).



NOTE: Make sure all the air is purged out of the catalyst pump on new start up.

Recirculation Mode

1. Both the Catalyst Valve and Material Valve on the Dispense Gun should be in the Recirculation position.

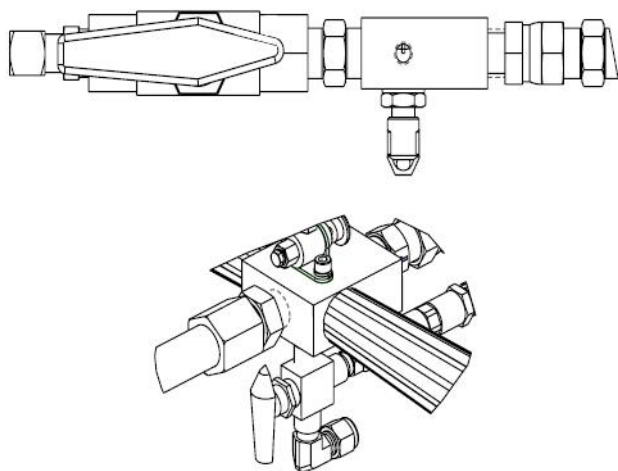


2. Switch the machine recirculation to "ON."

NOTE: The Recirculation Mode should be used in initial start-up or when air bubbles are observed coming through the ends of the Recirculation Hoses.

Injection Instructions

1. Set your machine to injection.
2. Turn valve on the gun head to injection.

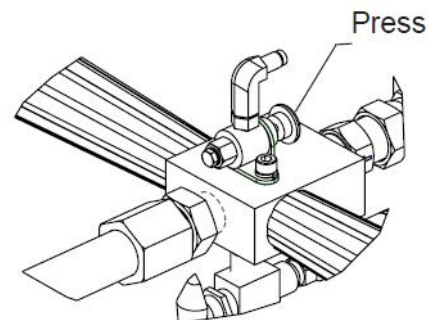


<p>To prevent serious injury from toxic fluid or fumes when dispensing or flushing, make certain that dispensed material and/or solvent is contained in a suitable container and that this material and/or solvent is disposed of properly.</p>				

NOTE: Do not leave ball valves in injection position when not injecting. If ball valves are in injection position and recirculation is started, material will be dispensed instead of recirculated.

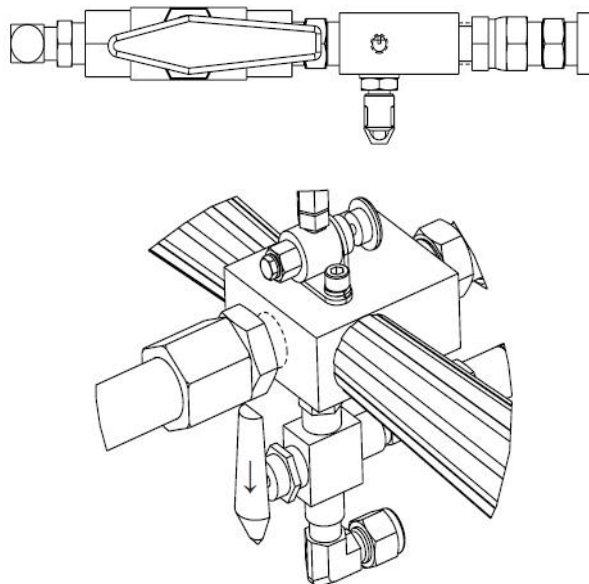
3. Select the desired percentage of catalyst and position the catalyst slave pump to that setting.

4. Depress air switch button trigger on the gun head to dispense mixed material.



NOTE: When starting the machine, it is recommended to dispense a couple of strokes of resin into a suitable container to ensure a proper flow of materials. Also, test for proper gel and cure times.

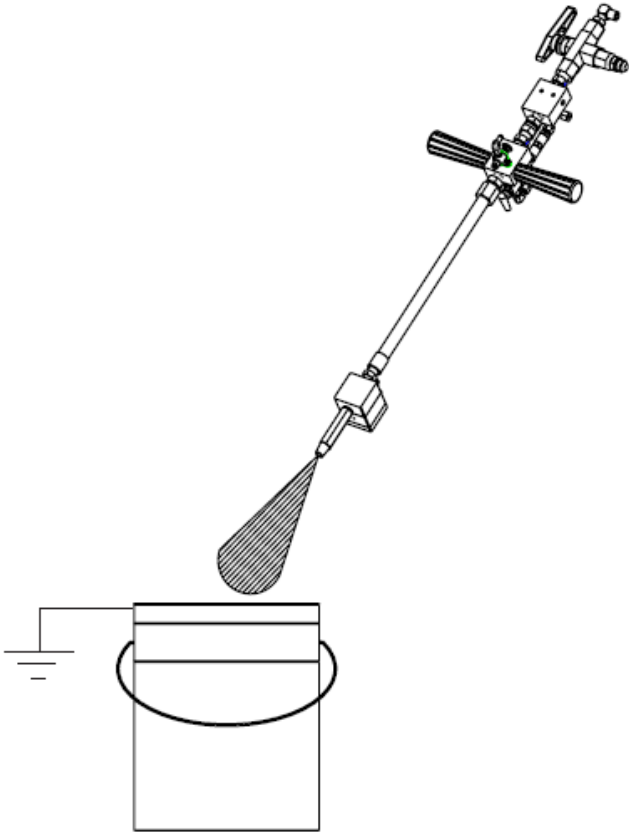
5. Release the air switch button trigger to stop material flow.
6. When finished, turn the valves on the gun head to the recirculation position.



<p>To prevent serious injury from toxic fluid or fumes when dispensing or flushing, make certain that dispensed material and/or solvent is contained in a suitable container and that this material and/or solvent is disposed of properly.</p>				

Installation

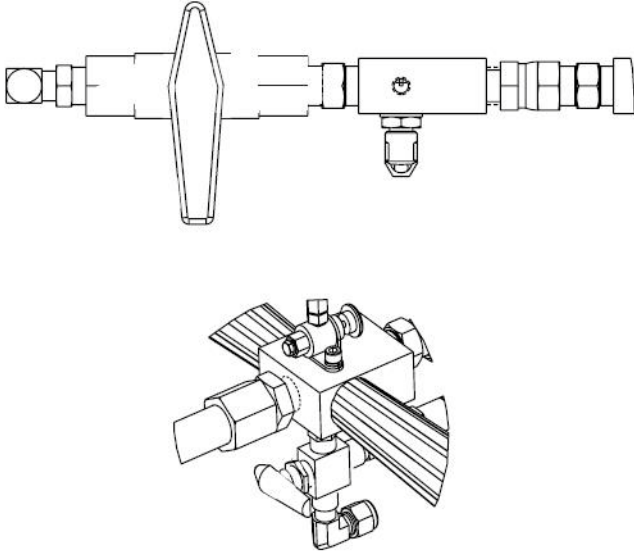
7. Flush the gun head thoroughly. Turn the 3-way valve on top of the solvent tank so the arrow is pointing up for air purge, and for solvent turn the valve so the arrow is pointing down.



Shutdown

The purpose of the shut down procedure is to verify that all critical parts of the system, i.e., the mixing area, have been checked and cleaned to assure trouble-free start-up the next time the system is to be operated.

1. Turn both ball valves on the gun head to “OFF”. (90°)



NOTE: If using a filled resin it is suggested that the material pump and hoses be flushed with a “neat” resin and that the neat resin is flowing through the system and exiting the material recirculation hose thoroughly before shutdown procedures are completed.

2. Flush the gun head with solvent and air purge thoroughly.

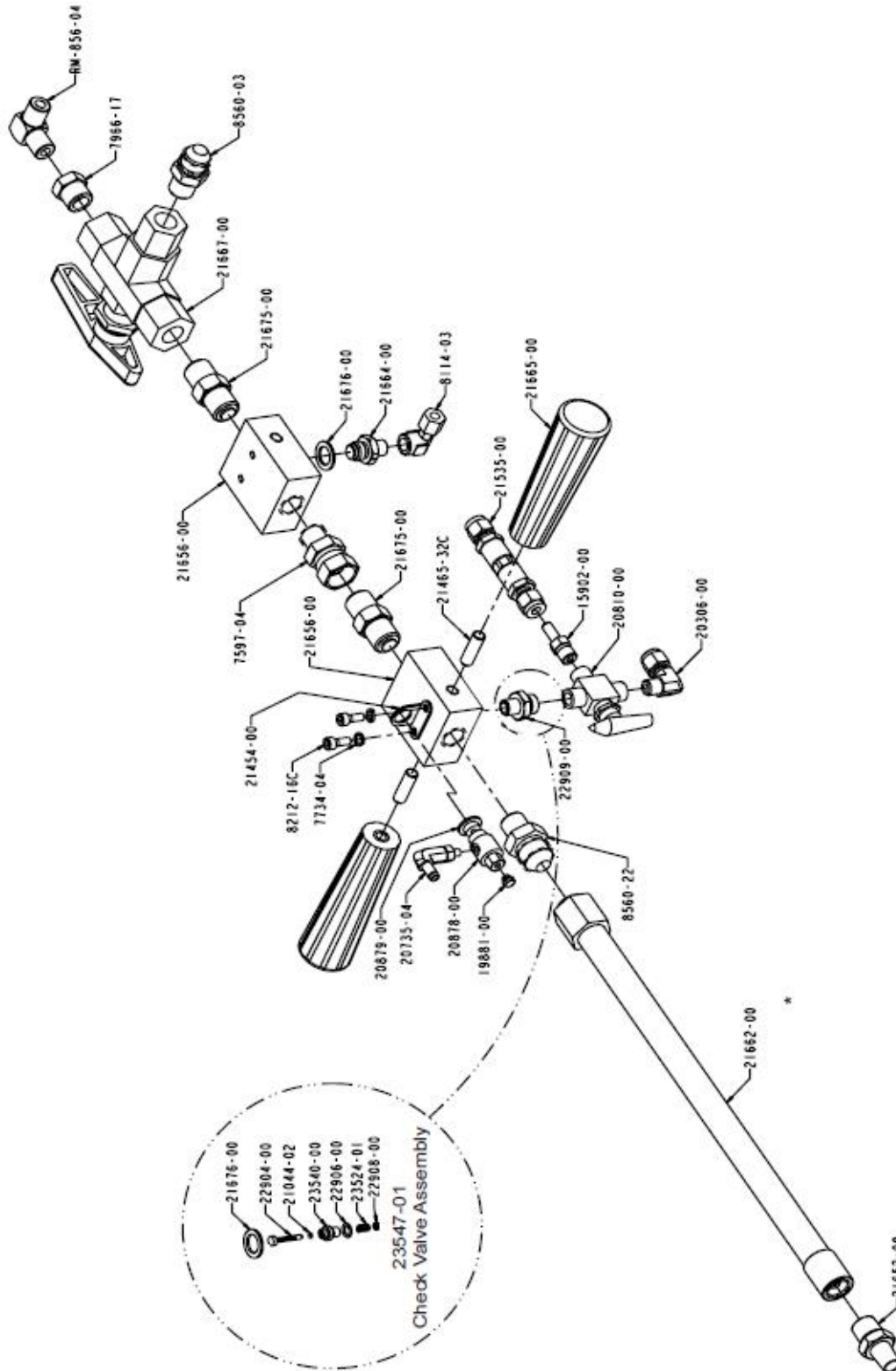
Pressure Relief Procedure

Relieve pressure before disassembling the dispense valve.

1. Perform **Shutdown** and **Pressure Relief Procedure** described in the applicable Spartan system manual. See **Related Manuals** section on page 2.
2. Perform dispense valve **Shutdown** procedure.

Parts

21668-00 Spartan Gun



* Mixing nozzle part number 20625-00 is included with 21662-00

** 22909-00 is not included with 23547-01

REVISION E

21668-00 Spartan Gun

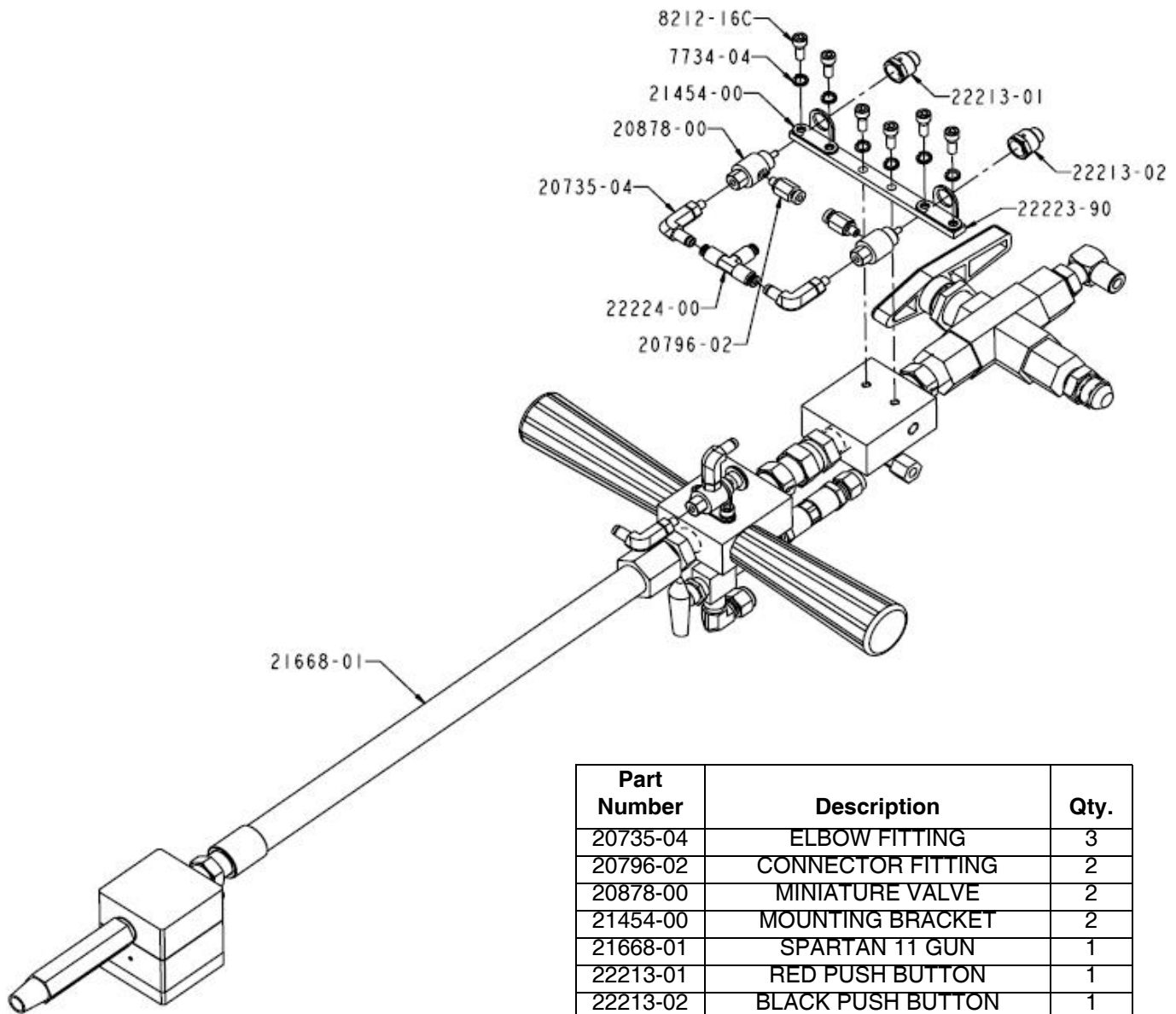
Part Number	Description	Qty.
15902-00	FITTING	1
19881-00	PLUG	1
20306-00	FITTING	1
20735-04	FITTING	1
20810-00	BALL VALVE	1
20878-00	VALVE	1
20879-00	PUSH BUTTON	1
21044-02	O-RING	1
21454-00	BRACKET	1
21465-32C	STUD	2
21535-00	CHECK VALVE	1
21652-00	NOZZLE	1
21656-00	BLOCK	2
21662-00	INJECTION WAND	1
21664-00	CHECK VALVE	1
21665-00	HANDLE	2
21667-00	BALL VALVE	1
21675-00	CHECK VALVE	2
21676-00	WASHER	2
22904-00	VALVE STEM	1
22906-00	WASHER	1
22908-00	NUT	1
22909-00	VALVE BODY	1
23524-01	SPRING	1
23540-00	VALVE BODY	1
7597-04	FITTING	1
7734-04	WASHER	2
7966-17	FITTING	1
8114-03	FITTING	1
8212-16C	SCREW	2
8560-03	FITTING	1
8560-22	FITTING	1
RM-856-04	FITTING	1

21668-01 Spartan 2 Gun

Part Number	Description	Qty.
RM-856-04	ELBOW FITTING	1
13076-32	O-RING	1
13867-61	O-RING	1
13867-62	O-RING	1
13867-63	O-RING	1
15902-00	FITTING	1
19881-00	FITTING	1
20306-00	ELBOW FITTING	1
20735-04	ELBOW FITTING	1
20796-02	FITTING	1
20796-03	FITTING	1
20810-00	BALL VALVE	1
20878-00	VALVE	1
20879-00	PUSH BUTTON	1
21044-02	O-RING	1
21454-00	MOUNTING BRACKET	1
21465-32C	STUD	2
21535-00	CHECK VALVE	1
21656-00	GUN BLOCK	2
21662-00	INJECTION WAND	1
21664-00	CHECK VALVE	1
21665-00	GUN HANDLE	2
21667-00	BALL VALVE	1

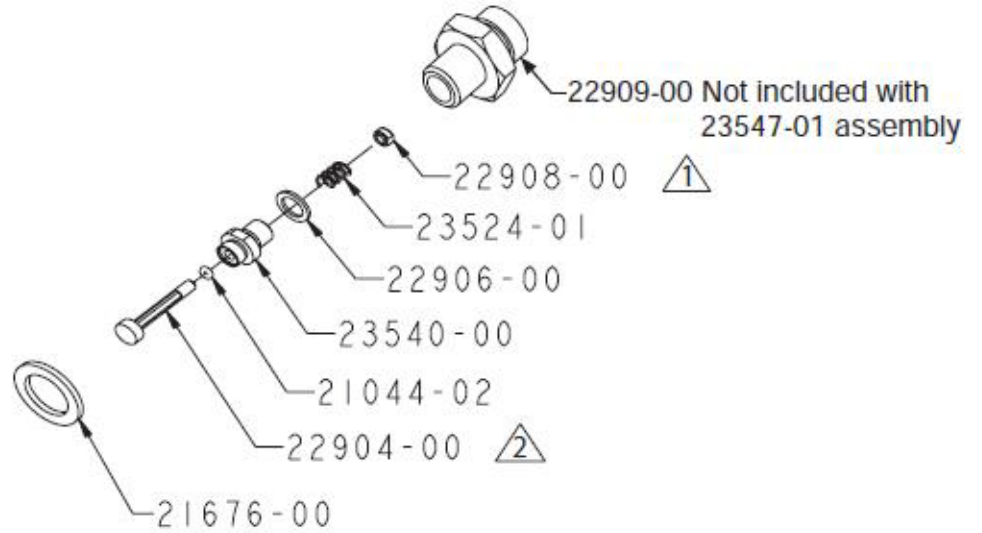
Part Number	Description	Qty.
21675-00	CHECK VALVE	2
21676-00	CRUSH WASHER	2
22904-00	CHECK VALVE STEM	1
22906-00	CRUSH WASHER	1
22908-00	NUT	1
22909-00	CHECK VALVE BODY	1
23216-00	MPS BLOCK	1
23217-00	PRESSURE SENSOR PISTON	1
23218-00	BOTTOM PLATE	1
23219-00	TOP PLATE	1
23221-00	GASKET	1
23223-00	INJECTION PORT	1
23524-01	SPRING	1
23540-00	CHECK VALVE BODY	1
7597-04	SWIVEL FITTING	1
7734-04	LOCK WASHER	2
7966-17	FITTING	1
8114-03	ELBOW FITTING	1
8212-16C	SCREW	2
8462-17	FITTING	1
8560-03	FITTING	1
8560-22	FITTING	1
9944-48C	SCREW	4

21668-02 Spartan 3 Gun



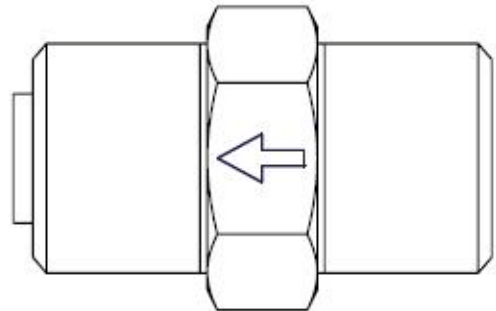
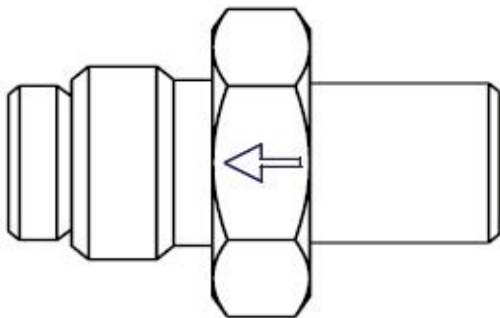
Part Number	Description	Qty.
20735-04	ELBOW FITTING	3
20796-02	CONNECTOR FITTING	2
20878-00	MINIATURE VALVE	2
21454-00	MOUNTING BRACKET	2
21668-01	SPARTAN 11 GUN	1
22213-01	RED PUSH BUTTON	1
22213-02	BLACK PUSH BUTTON	1
22223-90	PUSH BUTTON BRACKET	1
22224-00	TEE FITTING	1
7734-04	LOCK WASHER	6
8212-16C	SCREW	6

23547-01 Check Valve



- ⚠ TIGHTEN NUT TO SHOW 1/2 TO 1 THREAD.
- ⚠ USE LOW STRENGTH THREAD LOCKER ON THREADS.

21664-00 Solvent/Air Purge Check Valve Assembly	21675-00 Resin Check Valve Assembly
--	--



Technical Data

Maximum Working Pressure	1300 psi (9 MPa, 90 bar)
Maximum Air Inlet Pressure.....	100 psi (0.7 MPa, 7 bar)
Maximum Temperature	100° F (38° C)
Wetted Parts	Zinc-plated steel, stainless steel, electroless nickel-plated 1018 steel, nickel-plated brass, brass, silicone-free rubber, PTFE, EPR, polypropylene

Graco Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

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

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

GRACO MAKES NO WARRANTY, AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IN CONNECTION WITH ACCESSORIES, EQUIPMENT, MATERIALS OR COMPONENTS SOLD BUT NOT MANUFACTURED BY GRACO. These items sold, but not manufactured by Graco (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

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

FOR GRACO CANADA CUSTOMERS

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

Graco Information

Sealant and Adhesive Dispensing Equipment

For the latest information about Graco products, visit www.graco.com.

For patent information, see www.graco.com/patents.

TO PLACE AN ORDER, contact your Graco distributor, go to www.graco.com and select "Where to Buy" in the top blue bar, or call to find the nearest distributor.

If calling from the US: 800-746-1334

If calling from outside the US: 0-1-330-966-3000

All written and visual data contained in this document reflects the latest product information available at the time of publication. Graco reserves the right to make changes at any time without notice.

Original instructions. This manual contains English. MM 3A1326

Graco Headquarters: Minneapolis

International Offices: Belgium, China, Japan, Korea

GRACO INC. AND SUBSIDIARIES • P.O. BOX 1441 • MINNEAPOLIS MN 55440-1441 • USA
Copyright 2011, Graco Inc. All Graco manufacturing locations are registered to ISO 9001.

www.graco.com
Revision B, February 2017