

Instructions – Parts List



AIR OPERATED

Dispense Valve

308099 rev.E

For Use With DynaMite™ 190 Pumps

Recommended Fluid Viscosity Range: 10,000 to 600,000 cps

900 psi (6 MPa, 63 bar) Maximum Working Pressure

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

Part No. 224249, Series A

Dispense Valve

Part No. 224247, Series A

Dispense Valve with footswitch control, air supply tube, fluid supply hose, and fittings



Important Safety Instructions

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

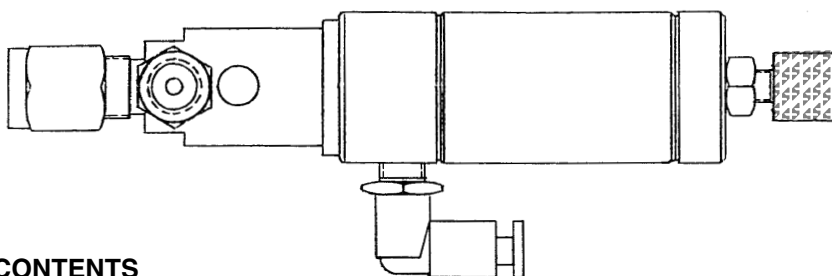


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WARNING



INSTRUCTIONS

EQUIPMENT MISUSE HAZARD

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

- This equipment is for professional use only.
- Read all instruction manuals, tags, and labels before operating the equipment.
- Use the equipment only for its intended purpose. If you are uncertain about usage, call your Graco distributor.
- Do not alter or modify this equipment. Use only genuine Graco parts and accessories.
- Check equipment daily. Repair or replace worn or damaged parts immediately.
- Do not exceed the maximum working pressure of the lowest rated system component. Refer to the **Technical Data** on page 9 for the maximum working pressure of this equipment.
- Use fluids and solvents which are compatible with the equipment wetted parts. Refer to the **Technical Data** section of all equipment manuals. Read the fluid and solvent manufacturer's warnings.
- Do not use hoses to pull equipment.
- Route hoses away from traffic areas, sharp edges, moving parts, and hot surfaces. Do not expose Graco hoses to temperatures above 82°C (180°F) or below -40°C (-40°F).
- Wear hearing protection when operating this equipment.
- Do not lift pressurized equipment.
- Comply with all applicable local, state, and national fire, electrical, and safety regulations.

WARNING



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. Fluid splashed 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.**
- Do not point the dispense valve at anyone or at any part of the body.
- Do not put your hand or fingers over the dispense needle tip.
- Do not stop or deflect leaks with your hand, body, glove or rag.
- Do not “blow back” fluid; this is not an air spray device.
- Be sure all equipment safety devices are operating properly before each use.
- Follow the **Pressure Relief Procedure** on page 6 whenever you: are instructed to relieve pressure; stop spraying; clean, check, or service the equipment; and install or clean the dispense needle. Never wipe off build-up around the dispense needle until pressure is fully relieved.
- To reduce the risk of a puncture wound inflicted by the dispense needle, keep your hands away from the needle tip when operating the dispense valve, and always handle the needle carefully when cleaning, removing, or replacing it.
- Tighten all 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.
- Use only Graco approved hoses.

Installation

NOTE: Read and understand this entire manual before operating the Dispense Valve.

NOTE: The dispense valve requires a minimum air inlet pressure of 40 psi (2.8 bar).

Installing Mounting Bracket Accessory

For fixed position or automatic operation, Mounting Bracket 111246 is available (see Accessories on page 9). Install the bracket as follows.

If the dispense valve has been used or pressurized, follow the **Pressure Relief Procedure** on page 6 before mounting it on the bracket.

1. Attach the mounting bracket to the wall or other support with two screws.
2. Using a wrench on the flats, unscrew the valve body (A) from the cylinder (B). Remove the spacer (8), spring washers (7), and small washer (6). Do not remove the u-cup packing (5) from the valve body (A). Remove and discard the large washer (C). See Fig. 1.
3. Place the cylinder (B) through the bracket, with the valve needle (9) protruding down through the hole in the bracket.
4. Place the spacer (8) and spring washers (7) over the valve needle (9), with the beveled side of the first and last washer facing forward, and the beveled side of the middle washer facing backward. See Fig. 1.
5. From the underside of the bracket, screw the valve body (A) securely onto the cylinder (B) with a wrench.

Installing Dispense Valve Kit 224247

NOTE: If you are not using the Dispense Valve Kit 224247 or are using another type of valve control, call your Graco distributor.

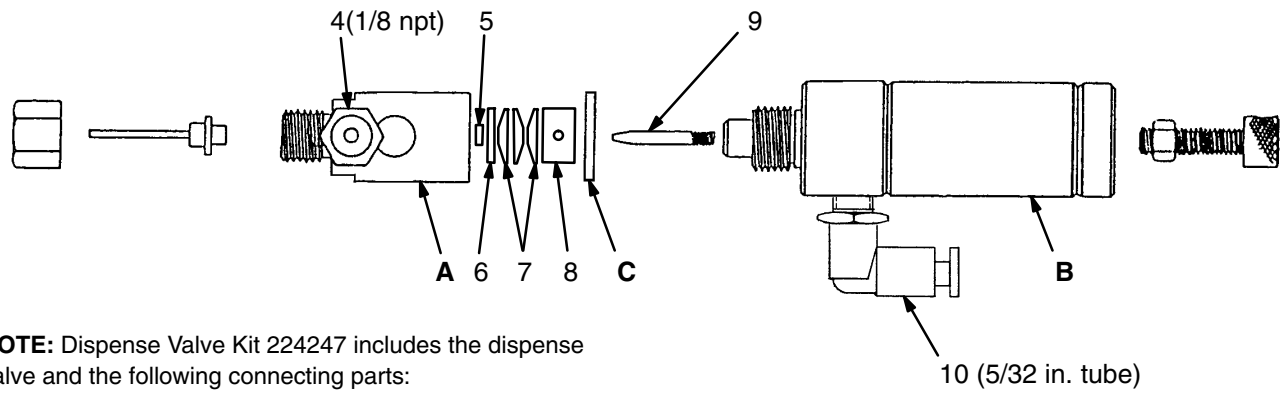
NOTE: Dispense Valve Kit 224247 includes Dispense Valve 224249 and hose, tubing, and fittings necessary to connect the valve to the DynaMite 190 Pump. Refer to Fig. 1 for a list of the connecting parts.

1. Connect the air supply tube (14) to the air inlet elbow (10) by pushing the tube straight into the elbow until it stops. To check that the tube is secure, pull back on it gently to ensure that it will not pull out.

NOTE: To shorten the tube (14), cut it at 90°, being careful not to damage the outer diameter of the tube. Use of a tube cutter is recommended. The fitting will leak if the tubing is not cut at 90°.

2. Connect the air tube (14) to the connector (12) at the outlet of the footswitch (11) in the same manner, and check that it is secure.
3. Apply thread sealant and screw the swivel union (17) into the elbow at the fluid outlet of the pump. Apply thread sealant and screw the street elbow (15) into the dispense valve's fluid inlet adapter (4).
4. Apply thread sealant to the end of the fluid hose (16) with the bend restrictor, and screw the hose into the street elbow (15). Bring the other end of the hose to the pump outlet and connect it to the swivel union (17).
5. Connect the air supply line to the inlet of the footswitch (11).

Installation



NOTE: Dispense Valve Kit 224247 includes the dispense valve and the following connecting parts:

REF NO.	PART NO.	DESCRIPTION	QTY
11	104631	FOOTSWITCH (not shown)	1
12	110933	CONNECTOR, footswitch outlet; 5/32 in. O.D. tube x 1/4-18 npt(m); not shown	1
13	111277	FILTER, vent; bronze element; 1/4-18 npt(m)	1
14	111240	TUBE, air; nylon; 5/32 in. O.D.; 9' (2.7 m) long; not shown	1
15	100839	ELBOW, street; 1/8 npt (m x f); not shown	1
16	111241	HOSE, fluid; polyethylene core; 1/4 in. (6 mm) I.D.; 1/8 npt (mbe); 3 ft (0.9 m) long; not shown	1
17	111242	UNION, adapter; 1/4 npt(m) x 1/8 npsm(f) swivel; not shown	1

KEY

A	Valve Body
B	Air Cylinder
C	Large Washer
4	Fluid Inlet Adapter
5	PTFE U-Cup
6	Small Washer
7	Spring Washers (3)
8	Spacer
9	Valve Needle
10	Air Inlet Elbow

Fig. 1

Operation

Pressure Relief Procedure

WARNING

To reduce the risk of serious bodily injury, such as fluid injection or splashing fluid in the eyes or on the skin, **ALWAYS** follow the **Pressure Relief Procedure** before cleaning the valve, changing needles, servicing any part of the system, or whenever you stop dispensing.

To reduce the risk of a puncture wound, keep your hands away from the needle during operation.

1. Shut off air to the dispense valve.
2. Shut off the air to the pump.
3. Close the bleed-type master air valve (required in your system).
4. Hold a metal part of the valve firmly to the side of a grounded metal pail, and trigger the valve to relieve pressure.
5. Open the drain valve (required in your system), having a grounded metal container ready to catch the drainage.
6. Leave the drain valve open until you are ready to dispense again.

If you suspect that the dispense needle or hose is completely clogged, or that pressure has not been fully relieved after following the steps above, VERY SLOWLY loosen the needle retaining nut or hose end coupling and relieve pressure gradually, then loosen completely. Now clear the needle or hose.

WARNING

To reduce the risk of overpressurization which can cause component rupture and serious bodily injury, **NEVER** exceed 900 psi (6 MPa, 63 bar) fluid pressure or 100 psi (0.7 MPa, 7 bar) air pressure to the dispense valve.

Starting And Adjusting The Flow

1. Turn on the air supply to the footswitch.
2. Flush the pump and valve before using. Place a can of fluid on the ram base and prepare the pump for operation, as explained in the separate pump instruction manual 308051. Start the pump.
3. Hold the footswitch down until fluid begins to flow from the dispense needle (3), then release the footswitch to close the valve and stop the flow. See Fig. 2.
4. To adjust the flow and bead size, make the following adjustments in the order given:
 - a. Adjust the fluid inlet pressure to the valve to get the desired results.
 - b. To change the bead width or shot size, or to adjust for heavier or lighter viscosity fluids, change to a different size dispense needle (see page 8 for available sizes).
 - c. For finer adjustments, use the adjusting screw (D). To maintain the desired setting, tighten the locknut (E).

NOTE: Pneumatic electrical timers are available if precise control is necessary. Call your Graco distributor.

Changing Dispense Needles

NOTE: This dispense valve is supplied with two dispense needle sizes (.047 in. and .063 in.). Other sizes are available (see page 8).

1. To change the dispense needle, follow the **Pressure Relief Procedure** at left.
2. Remove the retaining nut (2) from the valve housing (A). See Fig. 2.
3. Pull the needle (3) out of the valve housing (A).
4. Put the new needle into the retaining nut. Screw the nut onto the valve housing (A) and tighten securely.

Service

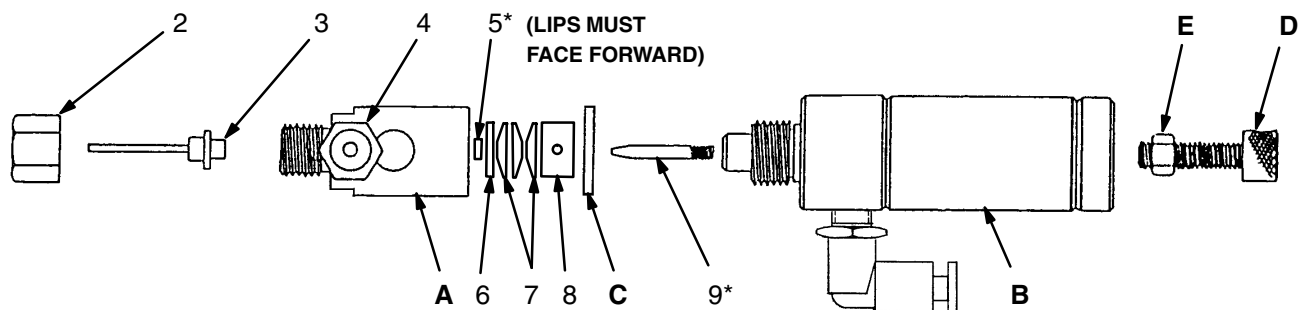
⚠ WARNING

To reduce the risk of serious bodily injury, such as fluid injection or splashing fluid in the eyes or on the skin, ALWAYS follow the **Pressure Relief Procedure** on page 6 before cleaning the valve, changing needles, or servicing any part of the system.

To reduce the risk of a puncture wound, keep your hands away from the needle during operation.

NOTE: Repair Kit 224248 is available to service the dispense valve. For the best results, use all the parts in the kit, even if the old parts look good. Parts included in the kit are marked with an asterisk, for example (5*).

1. Shut off the pump. Relieve the pressure.
2. Disconnect the air and fluid lines to the dispense valve.
3. Using a wrench on the flats, unscrew the valve body (A) from the cylinder (B). See Fig. 2.
4. Remove the large washer (C) if present, spacer (8), spring washers (7), small washer (6), and u-cup packing (5). Clean the parts in a compatible solvent.
5. Inspect the valve needle (9). If damaged, unscrew it from the cylinder (B).
6. Apply medium strength adhesive to the threads of the valve needle (9*) and screw it into the cylinder (B). The extended length of the valve needle must be 1.190–1.310 in. (30–33 mm).
7. Using a 1/4 in. (6 mm) diameter rod, gently work the Teflon® u-cup (5*) into the valve body (A), with the lips facing forward. Install the large washer (C) if used, and the spacer (8). Install the three spring washers (7) as shown in Fig. 2, with the beveled side of the first and last facing forward, and the beveled side of the middle washer facing backward. Next, install the small washer (6).
8. Guide the needle (9) through the u-cup (5) and screw the valve body (A) onto the cylinder (B), using a wrench on the flats to tighten.
9. Reconnect the air and fluid lines to the dispense valve.



KEY

A	Valve Body	4	Fluid Inlet Adapter
B	Air Cylinder	5*	Teflon® U-Cup
C	Large Washer	6	Small Washer
D	Adjusting Screw	7	Spring Washers (3)
E	Locknut	8	Spacer
2	Retaining Nut	9*	Valve Needle
3	Dispense Needle	10	Air Inlet Elbow

Fig. 2

Parts

Model 224249, Series A

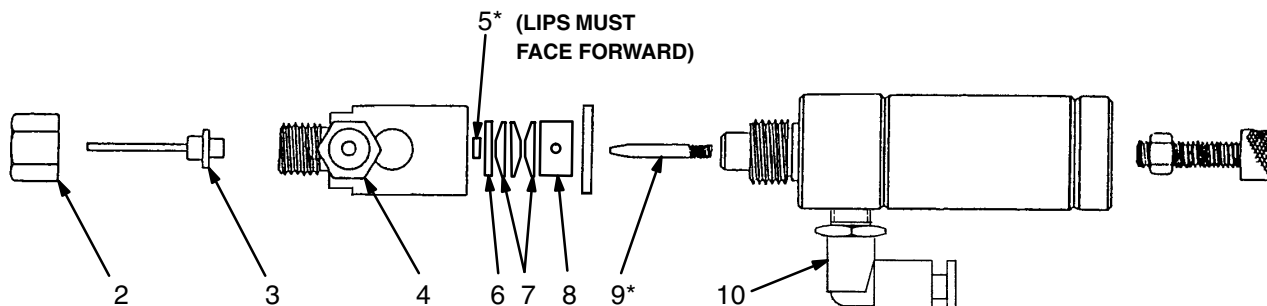
Bare Dispense Valve

Includes replacement items 2–10

Model 224247, Series A

Dispense Valve Kit

Includes items 1 and 11–17



REF NO.	PART NO.	DESCRIPTION	QTY
1	224249	DISPENSE VALVE includes replacement items 2–10	1
2	111247	. NUT, retaining; 1/2–20 unf	1
3	111252	. NEEDLE, dispense; .047 in. I.D.	1
	111254	. NEEDLE, dispense; .063 in. I.D. (see chart for alternate sizes)	1
4	111248	. ADAPTER, fluid inlet; 1/16 npt(m) x 1/8 npt(f)	1
5	111288*	. PACKING, u-cup; carbon/graphite-filled Teflon®, stainless steel spring	1
6	111289	. WASHER; aluminum	1
7	111287	. WASHER, spring; steel	3
8	186977	. SPACER; aluminum	1
9	111245*	. NEEDLE, valve	1
10	198171	. ELBOW, air inlet; 0.156 in. (4 mm) O.D. tube x 1/8–27 npt(m)	1
11	104631	FOOTSWITCH (not shown)	1
12	110933	CONNECTOR, footswitch outlet; 5/32 in. O.D. tube x 1/4–18 npt(m); not shown	1
13	111277	FILTER, vent; with bronze element; 1/4–18 npt(m); not shown	
14	111240	TUBE, air; nylon; 5/32 in. O.D.; 9 ft (2.7 m) long; not shown	1

REF NO.	PART NO.	DESCRIPTION	QTY
15	100839	ELBOW, street; 1/8 npt (m x f); not shown	1
16	111241	HOSE, fluid; polyethylene core; 1/4in. (6 mm) I.D.; 1/8 npt (mbe); 3 ft (0.9 m) long; not shown	1
17	111242	UNION, adapter; 1/4 npt(m) x 1/8 npsm(f) swivel; not shown	1

* Included in Repair Kit 224248.

AVAILABLE NEEDLES, FOR HEAVIER OR LIGHTER VISCOSITY FLUIDS (Ref. No. 3)

Part No.	Orifice Size (inches)
111249	.019
111250	.033
111251	.041
111252**	.047
111253	.054
111254**	.063
111255	.071
111256	.085
111257	.094
111258	0.118
111259	0.150

** Supplied with dispense valve.

Accessories

MOUNTING BRACKET 111246

Enables mounting dispense valve in a fixed location for automatic applications.

AIR REGULATOR 110318

300 psi (21 bar) MAXIMUM WORKING PRESSURE
0–180 psi (0–14 bar) Regulated Pressure Range;
1/4 npt(f) inlet and outlet

BLEED-TYPE MASTER AIR VALVE 110223

250 psi (18 bar) MAXIMUM WORKING PRESSURE
For use as a pressure relieving main air valve, and to isolate the dispense valve for servicing.
1/4 npt(f) inlet and outlet

AIR LINE QUICK DISCONNECT COUPLER 208536

Connect to air supply hose for quick disconnect at footswitch inlet. 1/4 npt(f).

AIR LINE QUICK DISCONNECT PIN FITTING

Connect to footswitch air inlet for quick disconnect of air supply line.

169967 1/4 npt(f)

169970 1/4 npt(m)

Technical Data

Category	Data
Maximum fluid inlet pressure	900 psi (6 MPa, 63 bar)
Maximum air inlet pressure	100 psi (0.7 MPa, 7 bar)
Maximum operating temperature	140°F (60°C)
Fluid inlet size	1/8 npt(f)
Air inlet size	5/32 in. diameter tube
Weight	10.2 oz (290 grams)
Wetted parts	<i>Valve:</i> Nylon, Teflon®, 304 Stainless Steel <i>Fluid inlet adapter, hoses, and fittings:</i> Polyethylene, Carbon Steel

Teflon® is a registered trademark of the DuPont Company.

Graco Standard Warranty

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

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

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

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

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

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

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

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Graco Phone Number

TO PLACE AN ORDER, contact your Graco distributor, or call this number to identify the distributor closest to you:
1-800-367-4023 Toll Free

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MM 308099

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