



INSTRUCTIONS

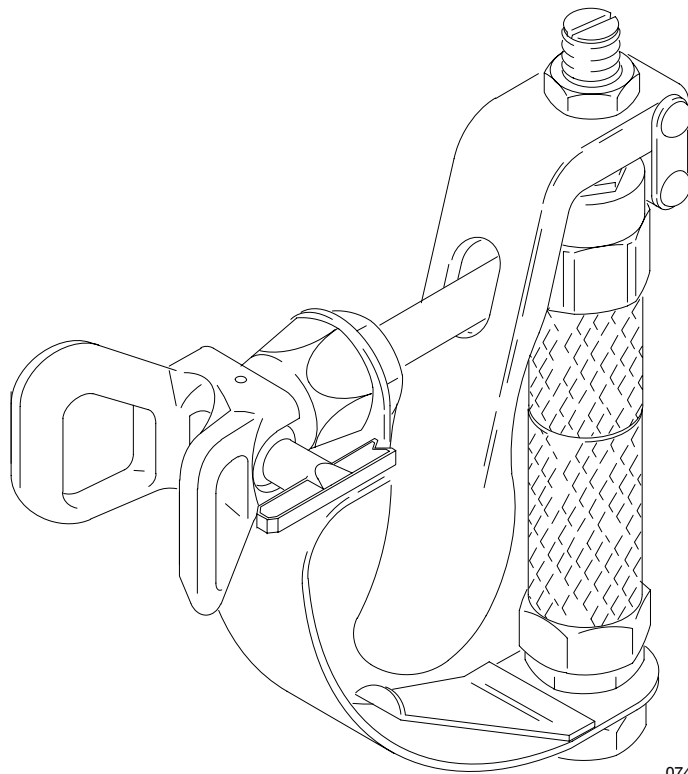
This manual contains important warnings and information.
READ AND KEEP FOR REFERENCE.

First choice when quality counts.™

Airless Spray Gun

4500 psi (31 MPa, 310 bar) Maximum Working Pressure

Model 210890, Series E



07413A

Table of Contents

Warnings	2	Parts	12
Installation	4	Technical Data	13
Operation	6	Warranty	16
Service	10	Graco Phone Number	16

Symbols

Warning Symbol



This symbol alerts you to the possibility of serious injury or death if you do not follow the instructions.

Caution Symbol



This symbol alerts you to the possibility of damage to or destruction of equipment if you do not follow the instructions.

WARNING



INSTRUCTIONS

EQUIPMENT MISUSE HAZARD

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

- This equipment is for professional use only.
- Read all instruction manuals, tags, and labels before operating the equipment.
- Use the equipment only for its intended purpose. If you are uncertain about usage, call your Graco distributor.
- Do not alter or modify this equipment. Use only genuine Graco parts and accessories.
- Check the equipment daily. Repair or replace worn or damaged parts immediately.
- Do not exceed the maximum working pressure of the lowest rated system component. This equipment has a **4500 psi (31.0 MPa, 310 bar) maximum working pressure**.
- Do not lift pressurized equipment.
- 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).
- Do not use the hoses to pull the equipment.
- 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.
- Use fluids or solvents that are compatible with the equipment wetted parts. See the **Technical Data** section of all the equipment manuals. Read the fluid and solvent manufacturer's warnings.
- Wear hearing protection when operating this equipment.
- Comply with all applicable local, state and national fire, electrical and other safety regulations.
- Do not touch the heater during operation; it is very hot.

WARNING



FIRE AND EXPLOSION 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 4.
- Provide fresh air ventilation to avoid the buildup of flammable fumes from solvent or the fluid being sprayed.
- Extinguish all the open flames or pilot lights in the spray area.
- Electrically disconnect all the equipment 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.



TOXIC FLUID HAZARD

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

- Know the specific hazards of the fluid you are using.
- Store hazardous fluid in an approved container. Dispose of hazardous fluid according to all local, state and national guidelines.
- Always wear protective eyewear, gloves, clothing and respirator as recommended by the fluid and solvent manufacturer.

Installation

Ground the System

 **WARNING**



FIRE EXPLOSION HAZARD
Before operating, ground the system as explained below. Also read the section **FIRE AND EXPLOSION HAZARD** on page 3.

To reduce the risk of static sparking, ground all the spray equipment used or located in the spray area. Check your local electrical code and your equipment's individual instruction manuals for detailed grounding instructions for your area and type of equipment and be sure to ground all of this spray equipment:

- *Pump or sprayer:* As instructed in your separate pump or sprayer manual.
- *Air compressor or hydraulic power supply:* Follow your local code.

- *Fluid hoses:* Use only grounded hoses with a maximum of 500 feet (150 m) combined hose length to ensure grounding continuity.
- *Spray gun:* Obtain grounding through connection to a properly grounded fluid hose and sprayer or pump.
- *Fluid supply container:* Follow your local code.
- *Object being sprayed:* according to local code.
- *All solvent pails used when flushing:* Follow your local code. Use only metal pails, which are conductive. Do not place the pail on a non-conductive surface, such as paper or cardboard, which interrupts the grounding continuity.
- *To maintain grounding continuity when flushing or relieving pressure,* always hold a metal part of the gun firmly to the side of a metal pail, then trigger the gun.

Installation

NOTE: Numbers and letters in parenthesis in the text correspond to the reference numbers and letters in the text and drawings.

WARNING

Be sure your system has a bleed-type master air valve (pneumatic pumps only) and a fluid drain valve. These two accessories help reduce the risk of serious injury, including fluid injection, splashing in the eyes or on the skin, or injury from moving parts, if you are adjusting or repairing the pump or gun.

- The bleed-type master air valve relieves air trapped between this valve and the pump after the air regulator is shut off. Trapped air can cause the pump to cycle unexpectedly.
- The fluid drain valve assists in relieving fluid pressure in the displacement pump, hose, and gun; triggering the gun to relieve pressure may not be sufficient.

1. Connect a grounded fluid hose to the gun inlet.
2. With no tip installed, start the pump/sprayer. Flush it according to the instructions supplied with it. Prime the system with the fluid you are using.
3. **Relieve the pressure.**

WARNING

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 6.

4. With the gun safety latch engaged, unscrew the retaining nut (B) of the tip/guard assembly (18, 28), and install the gasket (28a) in the retaining nut. Screw the tip/guard assembly firmly onto the gun. Tighten with a wrench. See Fig. 1.

NOTE: Failure to install the tip gasket (28a) will result in leaking.

5. Strain the fluid you are spraying if it contains particles that could clog the spray tip.

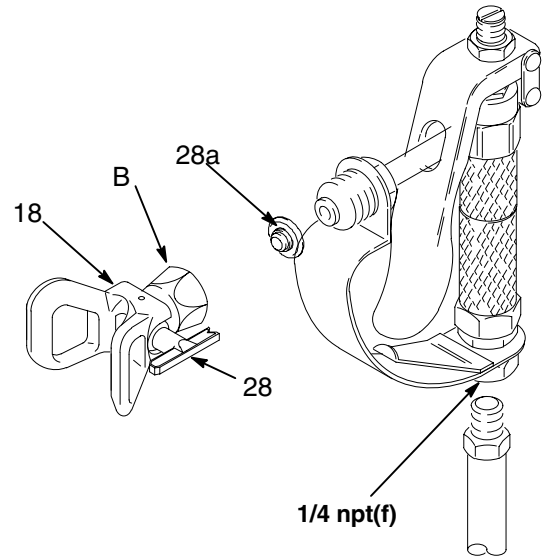


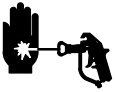
Fig. 1

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Operation

Pressure Relief Procedure

WARNING



INJECTION HAZARD

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 tips

1. Engage the gun safety latch.
2. Shut off the power supply to the pump and close any bleed-type master air valves in the air supply.
3. Disengage the gun safety latch.
4. Hold a metal part of the gun firmly to the side of a grounded metal pail, and trigger the gun into the pail to relieve pressure.
5. Engage the gun safety latch.
6. Open the pump fluid drain valve (required in your system), having a container ready to catch the drainage.
7. Leave the drain valve open until you are ready to spray again.

If you suspect that the spray hose is completely clogged, or that pressure has not been fully relieved after following the steps above, very slowly loosen the tip guard retaining nut or hose end coupling and relieve pressure gradually, then loosen completely. Then clear the tip or hose.

Start Up

WARNING

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 6.

Whenever you stop spraying for a moment, engage the gun safety latch. See Fig. 2.

WARNING

The wallet-sized warning card provided with this gun should be kept with the operator at all times. The card contains important treatment information should an injection injury occur. Additional cards are available at no charge from Graco Inc.

1. Start the pump. Adjust the fluid pressure so the spray is completely atomized. Always use the lowest pressure necessary to get the desired results. Higher pressure may not improve the spray pattern and will cause premature tip and pump wear.
2. If adjusting the pressure does not give a good spray pattern, try another tip size. Be sure to relieve pressure completely before changing tips.
3. Use a full-open, full-close trigger action. Hold the gun about 14 in. (350 mm) from and at right angles to the work surface. Do not swing the gun in an arc. Practice to find the best length and speed of stroke.

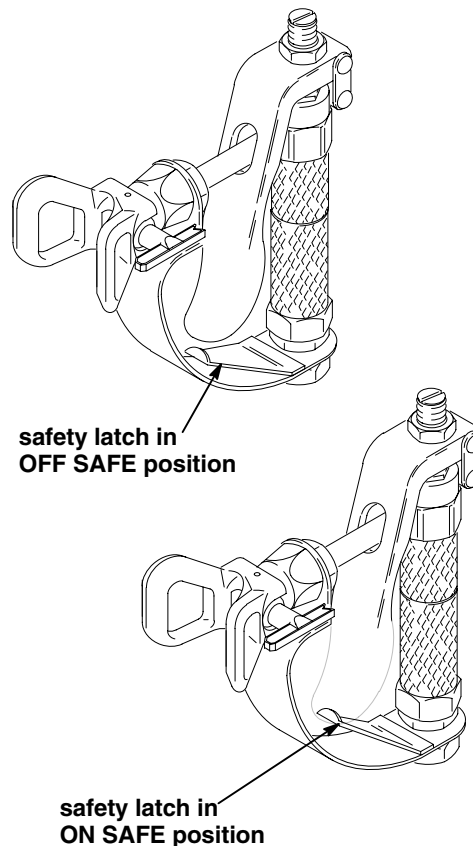


Fig. 2

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Operation

Adjusting the Spray Pattern

⚠ WARNING

To reduce the risk of a fluid injection injury, never use the gun with the tip guard or trigger guard removed.

To adjust the orientation of the spray pattern, **relieve the pressure**. Engage the safety latch, and loosen the tip guard retaining nut (B). Rotate the tip/guard assembly (18, 28) to the spray pattern orientation you desire. See Fig. 3.

⚠ WARNING

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 6.

The spray tip orifice size and spray angle determines the coverage and size of pattern. When more coverage is needed, use a larger spray tip rather than increasing fluid pressure.

Tip/guard assembly (18, 28) is oriented for a vertical spray pattern as shown.

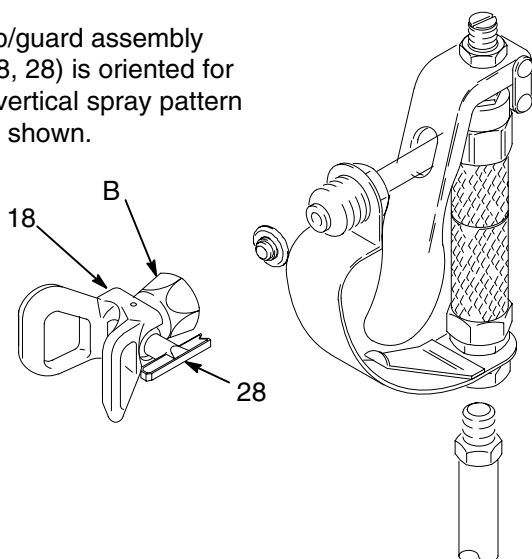


Fig. 3

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⚠ CAUTION

Openings in the tip guard are designed to reduce paint buildup on the guard while spraying. Any damage to the sharp edges of the openings causes paint to collect at that area. To reduce the risk of damage, never hang the gun by the tip guard.

Cleaning or Clearing the Spray Tip

Clean off the front of the tip frequently during the day's operation and at the end of the work day. Always **relieve the pressure**. Then, use a solvent soaked brush to clean the spray tip and to keep fluid buildup from drying and clogging the spray tip.

If the spray tip clogs while spraying, clear it as follows:

1. Engage the gun safety latch.
2. Turn the arrow-shaped handle on the tip (28) 180° to the cleaning position.
3. Disengage the gun safety latch, and trigger the gun into a grounded metal pail.

Fluid pressure should force out the clog.
4. Engage the gun safety latch, and turn the arrow-shaped handle 180° to the spray position.
5. Disengage the gun safety latch, and resume spraying.

If the tip is still clogged, disassemble and manually clean it. See page 10.

⚠ CAUTION

Never soak the entire gun in solvent. Prolonged exposure to solvent can ruin the packings.

Operation

Flushing

NOTE: Flush the gun before the fluid being spraying can dry in it.

WARNING

To reduce the risk of serious injury from fluid injection, splashing, or static sparking:

- Be sure the entire system and the flushing pails are properly grounded.
- Always hold a metal part of the gun firmly to the side of a grounded metal pail when flushing.
- Follow the flushing procedure carefully.

1. Relieve the pressure.

WARNING

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 6.

2. Remove the spray tip. See Fig. 3.
3. Flush the gun, and spray system with a compatible solvent as instructed in your separate pump instruction manual.

If Valve Will Not Stop Spraying

Check the clearance between the tip of the trigger and the safety latch. See **Adjusting the Trigger** on page 11. Also, disassemble and clean the gun.

If Fluid Leaks Around Packing Nut

The packings and/or needle may need replacing. See **Parts** on page 12.

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Service

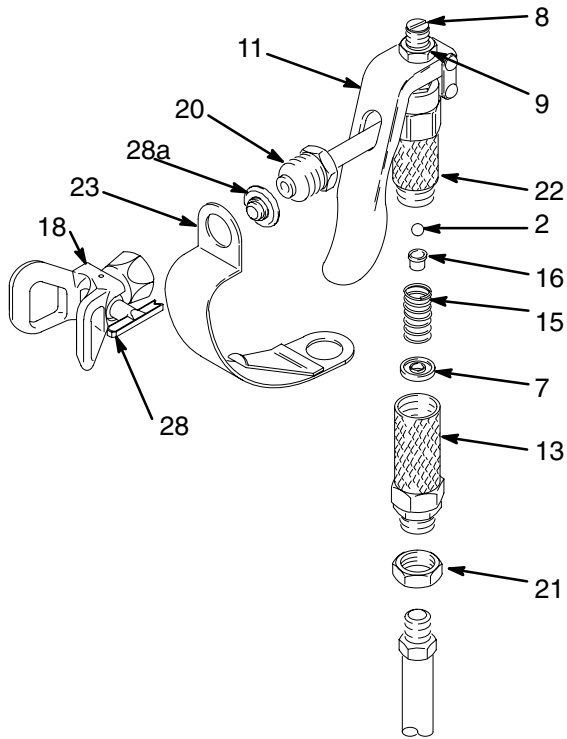


Fig. 4 03959A

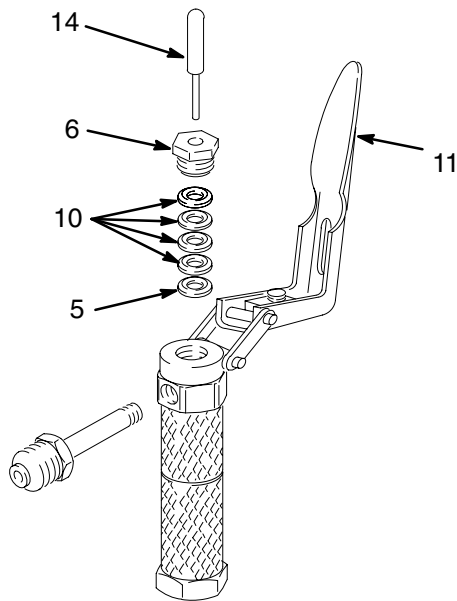


Fig. 5 03962A

See Fig. 4 and Fig. 5.

1. **Relieve the pressure**, and disconnect the hose.

⚠ WARNING

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 6.

2. Remove the tip/guard assembly (18, 28) and the tip gasket (28a).
3. Unscrew the nut (21). Remove the trigger guard (23).
4. Unscrew the nipple (20).
5. Remove the locknut (9) and screw (8).
6. Swing the trigger (11) out of the way. Unscrew the packing nut (6). Remove the valve stem (14). Use a wire hook to pull the packings (10) and gland (5) out of the body (22). See Fig. 5.
7. Unscrew the lower body (13) from the upper body. Remove the spring (15), retainer (16), and ball (2). See Fig. 4.
8. Clean and inspect parts. Replace worn or damaged parts. Disassemble and manually clean the tip/guard assembly (18, 28) if they are dirty.

NOTE: Always replace all four packings (10) and the gland (5) at the same time.

9. Install the support (7), spring (15), retainer (16) and ball (2) in the lower body (13). Screw the lower body firmly into the upper body (22). See Fig. 4
10. Lubricate the packings (10) and gland (5). Install these parts one at a time into the gun body (22). Install the valve stem (14) and packing nut (6). See Fig. 5.
11. Flip the trigger down and install the screw (8) and locknut (9).
12. Screw the nipple (20) into the gun body (22).
13. Install the trigger guard (23) and secure with the locknut (21).
14. Reinstall the tip gasket (28a) and the tip/guard assembly (18, 28).
15. Adjust the trigger before using the gun. See **Adjusting the Trigger**, on page 11.

Service

Adjusting the Trigger

See Fig. 6.

WARNING

Proper adjustment of the trigger is essential to be sure the gun trigger safety makes the gun inoperative when engaged. Improper adjustment may allow the gun to be triggered even with the gun trigger safety locked, resulting in serious injury, including fluid injection and splashing in the eyes or on the skin.

1. Relieve the pressure.

WARNING

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 6.

2. Lock the gun trigger safety. Check the free play between the inside end of the trigger (11) and the tip of the gun trigger safety (A); it should be 0.123 in. (3.18 mm).
3. To adjust, loosen the locknut (9) and adjust the screw (8) as necessary to obtain the free play. Then, without changing the position of the screw, tighten the locknut. Check the free play again. Readjust if necessary.

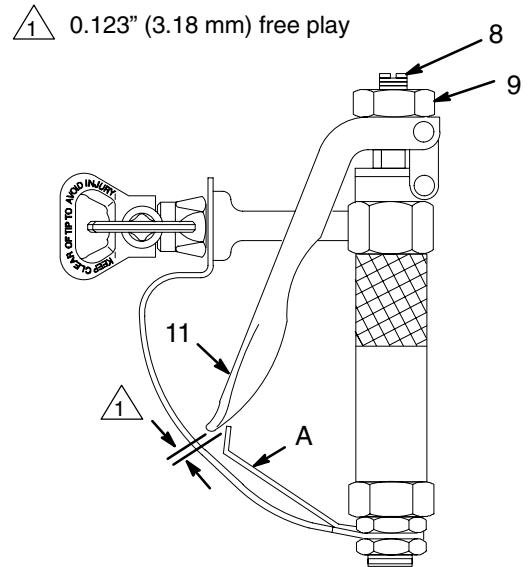


Fig. 6

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Parts

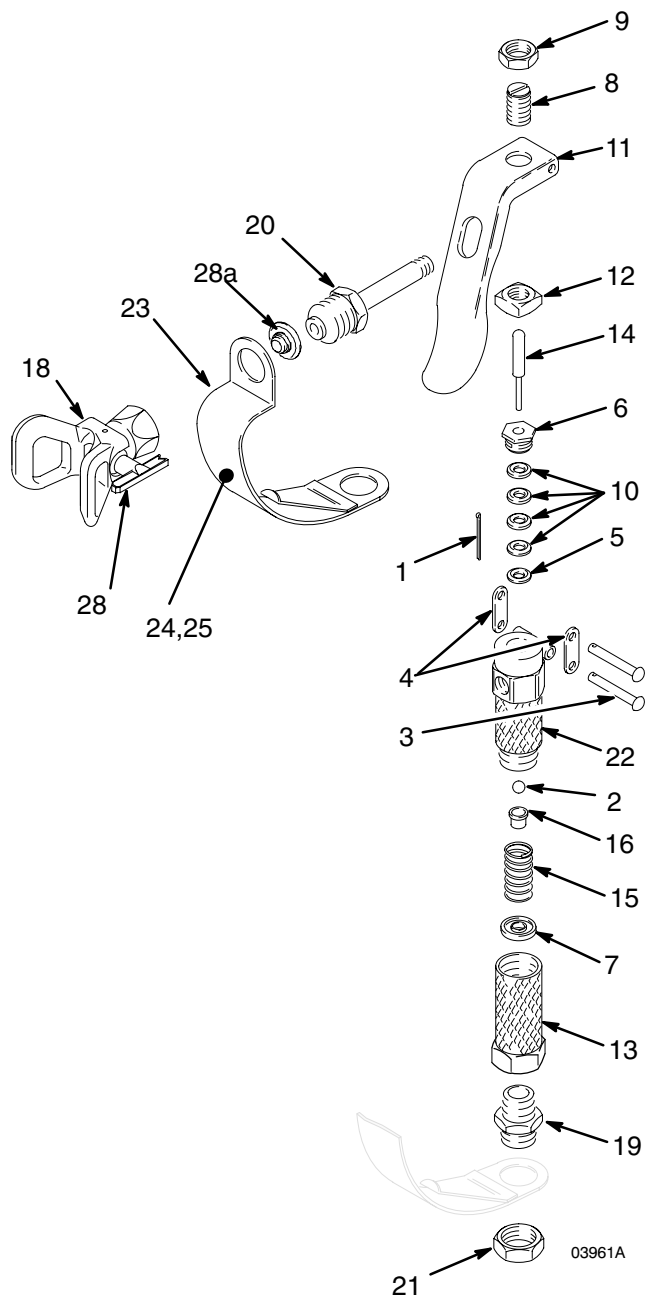
Model 210890, Series D

Ref. No.	Part No.	Description	Qty.
1	101514	PIN, cotter; 0.06 (1.6 mm) dia; 1.25 in. (32 mm) long	1
2*†	101701	BALL, carbide; 0.25 (6.4 mm) dia	1
3*	150496	PIN, pivot	2
4*	150497	LINK, pivot pin	2
5†	150501	GLAND, male; piston packing	1
6	150503	NUT, packing; piston	1
7	150507	SUPPORT, spring	1
8*	150512	SCREW, adjusting	1
9*	150513	LOCKNUT, valve stem adj. screw	1
10*†	150514	V-PACKING, leather	4
11	150859	TRIGGER	1
12	150860	NUT, square	1
13	157441	BODY, valve, lower	1
14	158080	STEM, valve	1
15	159080	SPRING, compression	1
16*†	166660	RETAINER, spring and ball	1
18	222674	TIP GUARD ASSEMBLY	1
19	172525	ADAPTER, increase 3/8 npt to 3/4–16 thd	1
20*	172526	NIPPLE, pipe; reducing; 7/8–14 x 1/8 npt	1
21	172524	NUT, hex; 3/4–16 thd	1
22	206809	BODY & SEAT ASSY. (upper)	1
23	212007	GUARD, trigger	1
24	187145	PLATE, warning	1
25	102299	RIVET, blind	2
26†	172479	TAG, warning (not shown)	1
27†	179960	CARD, wallet warning (not shown)	1
28	GHDXXX	TIP OF CHOICE	1
28a	176167	GASKET (supplied with tip of choice, item 28)	1

** Recommended tool box spare parts. Keep these parts on hand to reduce down time.*

† The replacements for these parts are available in **Gun Repair Kit 207845**. Purchase the kit separately.

‡ Extra warning tags and cards are available at no charge.



Technical Data

Category	Data
Maximum working pressure	4500 psi (31 MPa, 310 bar)
Fluid valve orifice size	0.188 in. (4.78 mm) dia.
Length	4.5 in. (114 mm)
Height	7.0 in. (178 mm)
Width	1.5 in. (38 mm)
Weight	2.0 lb (0.9 kg)
Wetted parts	Zinc-plated steel, alloy steel, tungsten carbide, thiokol impregnated leather, Delrin®.

Delrin® is a registered trademark of the DuPont Company.

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Graco Warranty

Graco warrants all equipment listed in this manual which is 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.

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, gas engines, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

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

FOR GRACO CANADA CUSTOMERS

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Graco Phone Number

TO PLACE AN ORDER, contact your Graco distributor, or call this number to identify the distributor closest to you:

1-800-533-9655 Toll Free
612-623-6928
612-378-3590 Fax

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Sales Offices: Minneapolis, Detroit
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