

# Instructions – Parts List



## Fire-Ball<sup>®</sup> 300 and 425 Grease Pumps

307880K

*Stationary installations and mobile units for pumping non-corrosive and non-abrasive lubricants.*



### Important Safety Instructions.

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

50:1 Ratio Fire-Ball 300 Pumps: 5000 psi (35 MPa, 350 bar) Maximum Working Pressure  
50:1 Ratio Fire-Ball 425 Pumps: 4000 psi (28 MPa, 276 bar) Maximum Working Pressure  
75:1 Ratio Fire-Ball 425 Pumps: 4000 psi (28 MPa, 276 bar) Maximum Working Pressure

Stationary Units					
Part No.	Pump	Type	Hose Kit	Cover	Follow Plate
225014	50:1 Fire-Ball 300	120 lb	X	X	X
223108	50:1 Fire-Ball 425	120 lb	X	X	X
244635	75:1 Fire-Ball 425	120 lb	X	X	X
225016	50:1 Fire-Ball 300	400 lb	X	X	X
225781	50:1 Fire-Ball 425	400 lb	X	X	X
244636	75:1 Fire-Ball 425	400 lb	X	X	X

Mobile Units						
Part No.	Pump	Type	Hose Kit	Cover	Follow Plate	Hold-down Kit
222085	50:1 Fire-Ball 300	120 lb	X	X	X	X
223107	50:1 Fire-Ball 425	120 lb	X	X	X	X
243817	75:1 Fire-Ball 425	120 lb	X	X	X	X
222071	50:1 Fire-Ball 300	400 lb	X	X	X	X
222075	50:1 Fire-Ball 425	400 lb	X	X	X	X
243818	75:1 Fire-Ball 425	400 lb	X	X	X	X

### WARNING

These systems are designed to be used only in pumping non-corrosive and non-abrasive lubricants. Any other use of the system can cause unsafe operating conditions and result in component rupture, fire, or explosion, which can cause serious bodily injury, including fluid injection.

PROVEN QUALITY. LEADING TECHNOLOGY.



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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



## 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 not sure, call your Graco distributor.
- Do not alter or modify this equipment.
- Check equipment daily. Repair or replace worn or damaged parts immediately.
- Do not exceed the maximum working pressure stated on the equipment or in the **Technical Data** for your equipment. Do not exceed the maximum working pressure of the lowest rated component in your system.
- 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.
- Handle hoses carefully. Do not pull on hoses to move equipment.
- Route hoses away from traffic areas, sharp edges, moving parts, and hot surfaces. Do not expose Graco hoses to temperatures above 66°C (150°F) or below -40°C (-40°F).
- Wear hearing protection when operating this equipment.
- Do not move or lift pressurized equipment.
- Comply with all applicable local, state, and national fire, electrical, and safety regulations.

# ⚠ WARNING



## SKIN INJECTION HAZARD

Fluid from the dispense valve, 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 is a serious injury. The injury may 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 dispensing nozzle.
- Do not stop or deflect leaks with your hand, body, glove or rag.
- Do not “blow back” fluid; this is not an air spray system.
- Always have the dispensing nozzle on the dispense valve when dispensing.
- Follow the **Pressure Relief Procedure** on page 8 if the tip clogs and before cleaning, checking or servicing the equipment.
- Tighten all fluid connections before operating the equipment.
- Check the hoses, tubes, and couplings daily. Replace worn or damaged parts immediately. Do not repair high pressure couplings; you must replace the entire hose.



## MOVING PARTS HAZARD

Moving parts can pinch or amputate your fingers.

- Keep clear of all moving parts when starting or operating the pump.
- Before checking or servicing the equipment, follow the **Pressure Relief Procedure** on page 8 to prevent the equipment from starting unexpectedly.



## FIRE AND EXPLOSION HAZARD

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

- Ground the equipment and the object being lubricated. Refer to **Grounding** on page 4.
- If there is any static sparking or you feel an electric shock while using this equipment, **stop dispensing immediately.** Do not use the equipment until you identify and correct the problem.
- Provide fresh air ventilation to avoid the buildup of flammable fumes from solvents or the fluid being dispensed.
- Keep the dispensing area free of debris, including solvent, rags, and gasoline.
- Do not smoke in the dispensing area.



## 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

## NOTES:

- Reference numbers and letters in parentheses in the text refer to the callouts in the figures and drawings.
- Always use Genuine Graco Parts and Accessories, available from your Graco distributor.

## Grounding

**⚠ WARNING**

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

### Ground all of this equipment:

- *Pump:* Use a ground wire and clamp as shown in Fig. 1. Remove the ground screw (Z) and insert through the eye of the ring terminal at end of ground wire (Y). Fasten the ground screw back onto the pump and tighten securely. *To order a ground wire and clamp, order part number 222011.*

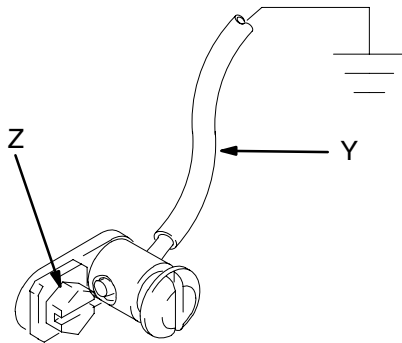


Fig. 1

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- *Air and fluid hoses:* Use only electrically conductive hoses.
- *Air compressor:* Follow manufacturer's recommendations.
- *Dispensing valve:* Ground through connection to a properly grounded fluid hose and pump.
- *Object being dispensed to:* Follow your local code.
- *Solvent pails used when flushing:* Follow your local code. Use only metal pails, which are conductive, placed on a grounded surface. Do not place the pail on a nonconductive surface, such as paper or cardboard, which interrupts the grounding continuity.
- *To maintain grounding continuity when flushing or relieving pressure,* hold a metal part of the dispensing valve firmly to the side of a grounded *metal* pail, then trigger the dispense valve.

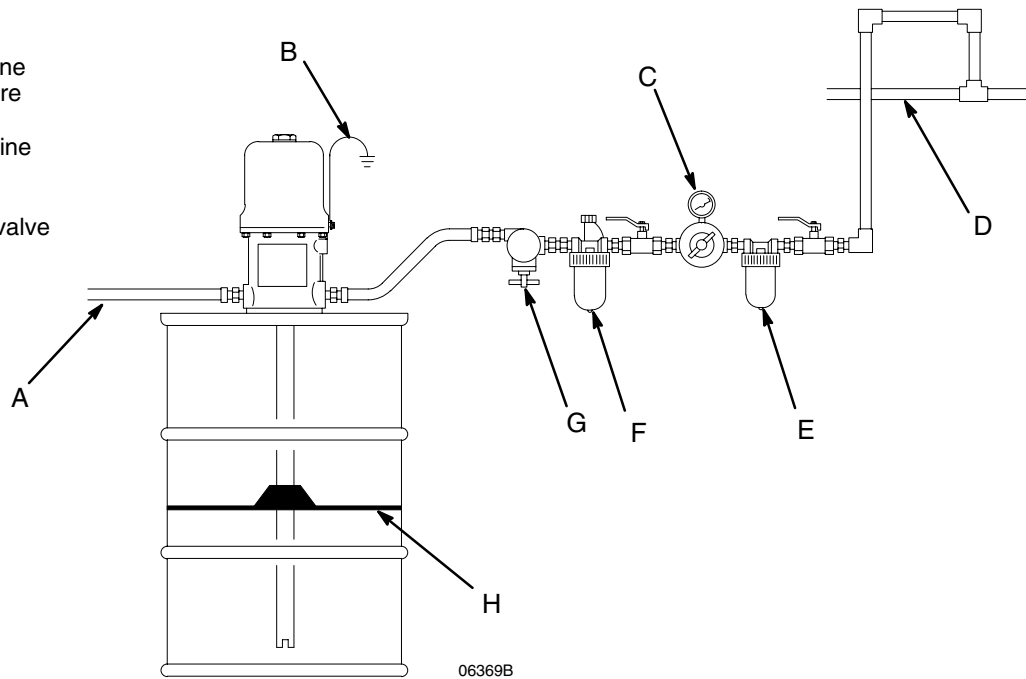
# Installation

**Note:** See page 7 for the mobile mounting installation. See page 5 for hose and air accessory installation.

## Typical Installation For Stationary Mountings

### Key

- A Fluid dispense line
- B Pump ground wire
- C Air regulator
- D Main air supply line
- E Air filter
- F Pump lubricator
- G Pump runaway valve
- H Follow plate



## Stationary Mounting Layout

1. Plan the layout for easy operator access to the pump air controls, sufficient room to change drums, and a secure platform.
2. For ease in changing drums, install a pump elevator.

## Open Drum, Cover Mounted Pumps

Models 225014, 225016, 225781, 233108, 244635, and 244636.

1. Remove the original drum cover.
2. Place the drum cover (3) on the drum, and fasten it with the screws and washers provided. Carefully guide the pump riser tube through the mounting gasket.

## Installing the Hose Kit See Fig. 2

*For pumps using Hose Kit 222072*

1. Install the 3/8" swivel adapter (102) in the pump air inlet or air regulator line coupler (d) whichever is applicable. Connect the 3/8" ID air hose (101) to the swivel. Connect the air hose to the air accessories.
2. Connect the 1/4" swivel adapter (104) to the pump fluid outlet. Connect the 1/4" ID fluid hose (103) to the swivel. Connect a suitable dispensing valve or extra hose to the 6-ft hose.

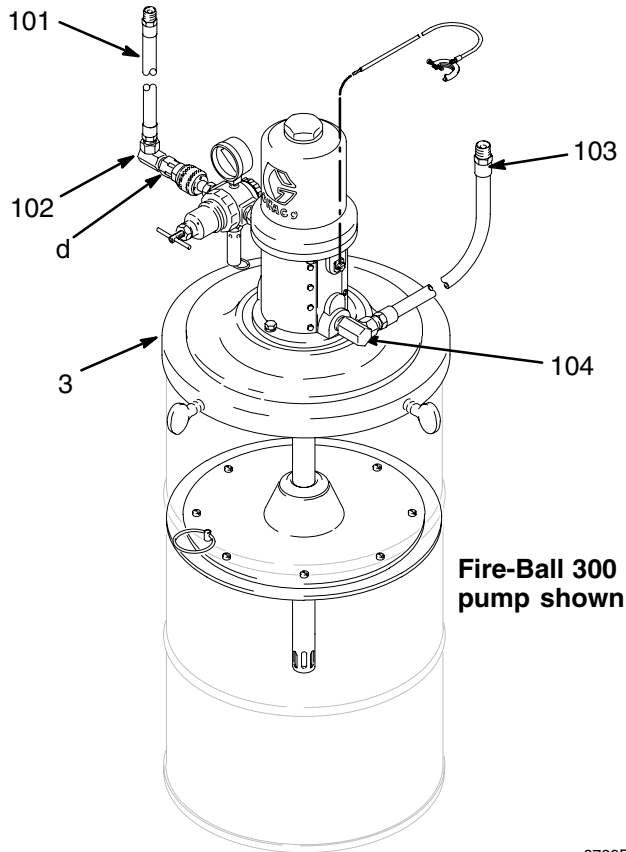
*For pumps using Hose Kit 222076*

1. Install the 1/2" swivel adapter (102) in the pump air inlet or air regulator line coupler (d) whichever is applicable. Connect the 1/2" ID air hose (101) to the swivel. Connect the air hose to the air accessories.
2. Connect the 3/8" swivel adapter (104) to the pump fluid outlet. Connect the 3/8" ID fluid hose (103) to the swivel. Connect a suitable dispensing valve or extra hose to the 6-ft hose.

# Installation

## Air Line and Accessories

**Note:** Install the air line accessories in the order shown in the Typical Installation on page 5.



## CAUTION

Do not hang air accessories directly on the air inlet. The fittings are not strong enough to support accessories and may cause one or more to break. Provide a bracket on which to mount accessories.

- Install a pump runaway valve (G) to shut off the air to the pump if the pump accelerates beyond the pre-adjusted setting. A pump that runs too fast can be seriously damaged.
- Install an air line lubricator (F) for automatic air motor lubrication.
- Install the air regulator (C) to control pump speed and pressure.
- On the main air supply line from the compressor, install an air line filter (E) to remove harmful dirt and contaminants from your compressed air supply.

## Grounding

Proper grounding is an essential part of maintaining a safe system. Read and follow the instructions in **Grounding** on page 4.

Fig. 2

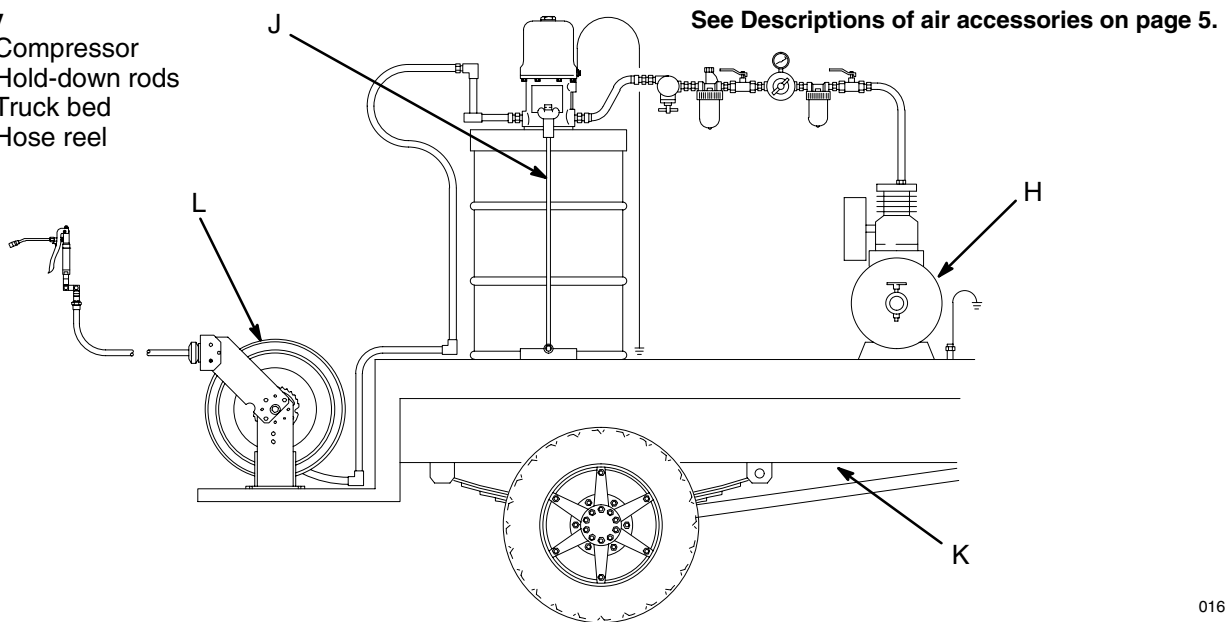
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# Installation

## Typical Installation For Mobile Mountings

### Key

- H Compressor
- J Hold-down rods
- K Truck bed
- L Hose reel



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**Note:** See page 5 for the stationary mounting installation and page 5 for hose and air accessory installation.

### Mobile Mounting Layout

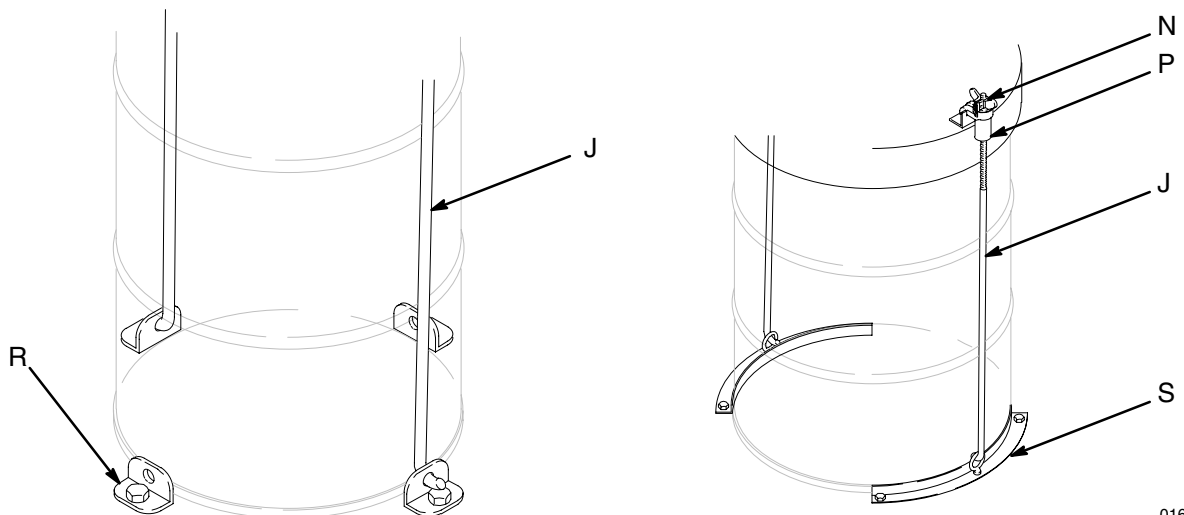
Plan the layout for easy operator access to the pump air controls, sufficient room to change drums, and a secure truck bed or mounting platform.

### Drum With Hold-down Kit

#### See Fig. Mounting 3

*Models 222071, 222075, 222085, 223107, 243817, and 243818*

1. Place the drum in the desired location.
2. Place the hold-down lugs (R) or drum locators (S) around the drum base and bolt directly to the truck bed or mounting platform.
3. Remove the cover hold-down brackets (P) and wing nuts (N) from the hold-down rods (J).



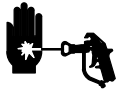
**Fig. 3**

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# Operation

## Pressure Relief Procedure

### WARNING



#### INJECTION HAZARD

To reduce the risk of serious injury, including fluid injection or splashing in the eyes or on the skin, always follow the

**Pressure Relief Procedure** whenever you

- Are instructed to relieve the pressure
- Shut off the pump
- Check or service any of the system equipment
- Install or clean the grease fitting couplers
- Stop dispensing

1. Close the pump air regulator.
2. Hold a metal part of the dispense valve firmly to a grounded metal waste container and trigger to relieve the fluid pressure.

### Start-up

1. Close the air regulators and bleed-type master air valves to all but one pump.
2. Open the master air valve from the compressor.
3. For the pump that is connected, trigger the dispensing valve into a grounded metal waste container making firm metal-to-metal contact between the container and valve. Open the bleed-type master air valve, and open the pump air regulator slowly, just until the pump is running. When the pump is primed and all air has been pushed out of the lines, release the trigger.
4. If you have more than one pump, repeat this process for each pump.

**Note:** When the pump is primed, and with sufficient air supplied, the pump starts when the dispensing valve is opened and shuts off when closed.

5. Set the air pressure to each pump at the lowest pressure needed to get the desired results.

### WARNING

The maximum working pressure of each pump in your system may not be the same. To reduce the risk of over-pressurizing any part of your system, be sure you know the maximum working pressure rating of each pump and its connected components. Never exceed the maximum working pressure of the lowest rated component connected to a particular pump.

To determine the fluid output pressure using the air regulator reading, multiply the ratio of the pump by the air pressure shown on the regulator gauge. For example:

50:(1) ratio x 100 psi air = 5000 psi fluid output

50:(1) ratio x 0.7 MPa air = 35 MPa fluid output

50:(1) ratio x 7 bar air = 350 bar fluid output

Limit the air to the pump so that no air line or fluid line component or accessory is over-pressurized.

### CAUTION

Never allow the pump to run dry of the fluid being pumped. A dry pump will quickly accelerate to a high speed, possibly damaging itself. If your pump accelerates quickly, or is running too fast, stop it immediately and check the fluid supply. If the supply container is empty and air has been pumped into the lines, prime the pump and lines with fluid, or flush it and leave it filled with a compatible solvent. Be sure to eliminate all air from the fluid system.

**Note:** A pump runaway valve can be installed on the air line to automatically shut off the pump if it starts to run too fast.

6. Read and follow the instructions supplied with each component in your system.
7. To shut off the system, always follow the **Pressure Relief Procedure** at left.





# Parts Drawings and Lists

## 50:1 Fire-Ball 300, 120-lb drum size

Model 225014, Includes items 1 to 4

Ref No.	Part No.	Description	Qty.
1	239887	PUMP, 50:1 Ratio Fire-Ball 300; See 308883 for parts	1
2	222072	HOSE AND FITTING KIT; See parts on page 14	1
3	204574	COVER; See 306345 for parts	1
4	220654	FOLLOW PLATE; See 306345 for parts	1

## 50:1 Fire-Ball 425, 120-lb drum size

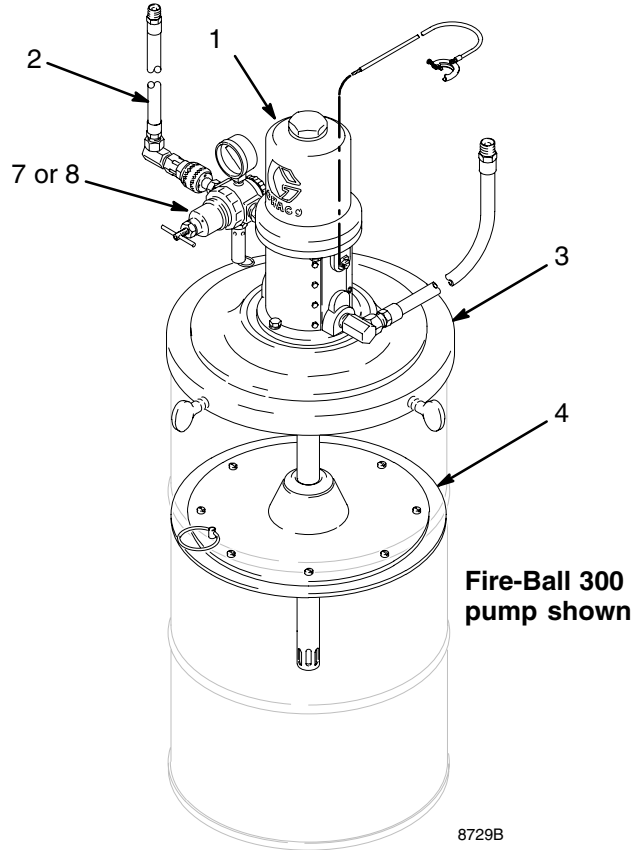
Model 223108, Includes items 1 to 4

Ref No.	Part No.	Description	Qty.
1	205394	PUMP, 50:1 Ratio Fire-Ball 425; See 306674 for parts	1
2	222076	HOSE AND FITTING KIT; See parts on page 14	1
3	204574	COVER; See 306345 for parts	1
4	223344	FOLLOW PLATE; See 306345 for parts	1

## 75:1 Fire-Ball 425, 120-lb drum size

Model 244635, Includes items 1 to 4

Ref No.	Part No.	Description	Qty.
1	239729	PUMP, 75:1 Ratio Fire-Ball 425; See 308777 for parts	1
2	222076	HOSE AND FITTING KIT; See parts on page 14	1
3	204574	COVER; See 306345 for parts	1
4	223344	FOLLOW PLATE; See 306345 for parts	1



# Parts Drawings and Lists

## 50:1 Fire-Ball 300, 400-lb drum size

Model 225016, Includes items 1 to 4

Ref No.	Part No.	Description	Qty.
1	239888	PUMP, 50:1 Ratio Fire-Ball 300; See 308883 for parts	1
2	222072	HOSE AND FITTING KIT; See parts on page 14	1
3	200326	COVER; See 306345 for parts	1
4	223845	FOLLOW PLATE; See 306345 for parts	1

## 50:1 Fire-Ball 425, 400-lb drum size

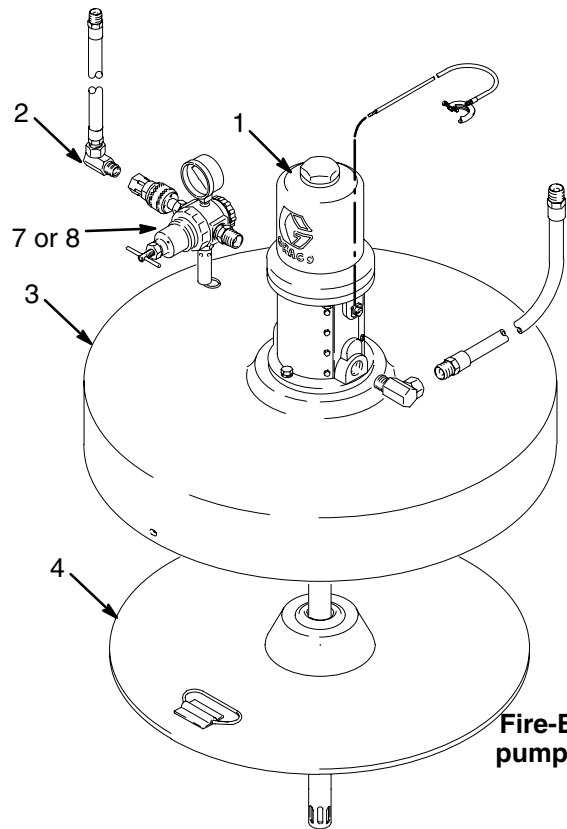
Model 225781, Includes items 1 to 4

Ref No.	Part No.	Description	Qty.
1	205395	PUMP, 50:1 Ratio Fire-Ball 425; See 306674 for parts	1
2	222076	HOSE AND FITTING KIT; See parts on page 14	1
3	200326	COVER; See 306345 for parts	1
4	223846	FOLLOW PLATE; See 306345 for parts	1

## 75:1 Fire-Ball 425, 400-lb drum size

Model 244636, Includes items 1 to 4

Ref No.	Part No.	Description	Qty.
1	239730	PUMP, 75:1 Ratio Fire-Ball 425; See 308777 for parts	1
2	222076	HOSE AND FITTING KIT; See parts on page 14	1
3	200326	COVER; See 306345 for parts	1
4	223846	FOLLOW PLATE; See 306345 for parts	1

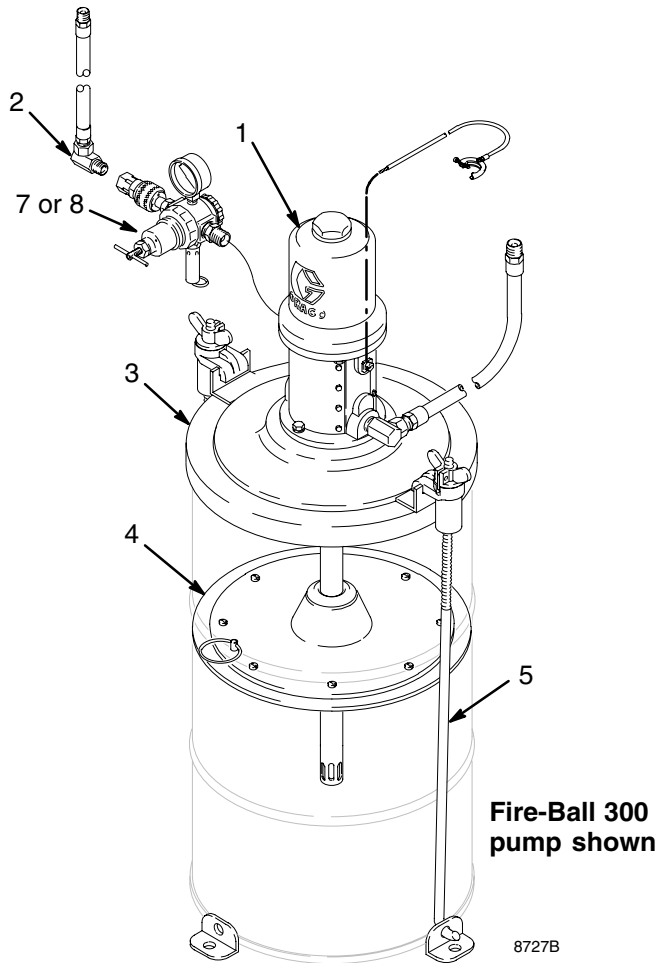


# Parts Drawings and Lists

## 50:1 Fire-Ball 300, 120-lb drum size

Model 222085, Includes items 1 to 5

Ref No.	Part No.	Description	Qty.
1	239887	PUMP, 50:1 Ratio Fire-Ball 300; See 308883 for parts	1
2	222072	HOSE AND FITTING KIT; See parts on page 14	1
3	222060	COVER	1
4	220654	FOLLOW PLATE; See 306345 for parts	1
5	222061	HOLD-DOWN KIT; See 306345 for parts	1



## 50:1 Fire-Ball 425, 120-lb drum size

Model 223107, Includes items 1 to 5

Ref No.	Part No.	Description	Qty.
1	205394	PUMP, 50:1 Ratio Fire-Ball 425; See 306674 for parts	1
2	222076	HOSE AND FITTING KIT; See parts on page 14	1
3	222060	COVER	1
4	223344	FOLLOW PLATE; See 306345 for parts	1
5	222061	HOLD-DOWN KIT; See 306345 for parts	1

## 75:1 Fire-Ball 425, 120-lb drum size

Model 243817, Includes items 1 to 5

Ref No.	Part No.	Description	Qty.
1	239729	PUMP, 75:1 Ratio Fire-Ball 425; See 308777 for parts	1
2	222076	HOSE AND FITTING KIT; See parts on page 14	1
3	222060	COVER	1
4	223344	FOLLOW PLATE; See 306345 for parts	1
5	222061	HOLD-DOWN KIT; See 306345 for parts	1

# Parts Drawings and Lists

## 50:1 Fire-Ball 300, 400-lb drum size

Model 222071, Includes items 1 to 5

Ref No.	Part No.	Description	Qty.
1	239888	PUMP, 50:1 Ratio Fire-Ball 300; See 308883 for parts	1
2	222072	HOSE AND FITTING KIT; See parts on page 14	1
3	207366	COVER; See 306345 for parts	1
4	223845	FOLLOW PLATE; See 306345 for parts	1
5	207361	HOLD-DOWN KIT; See 306345 for parts	1

## 50:1 Fire-Ball 425, 400-lb drum size

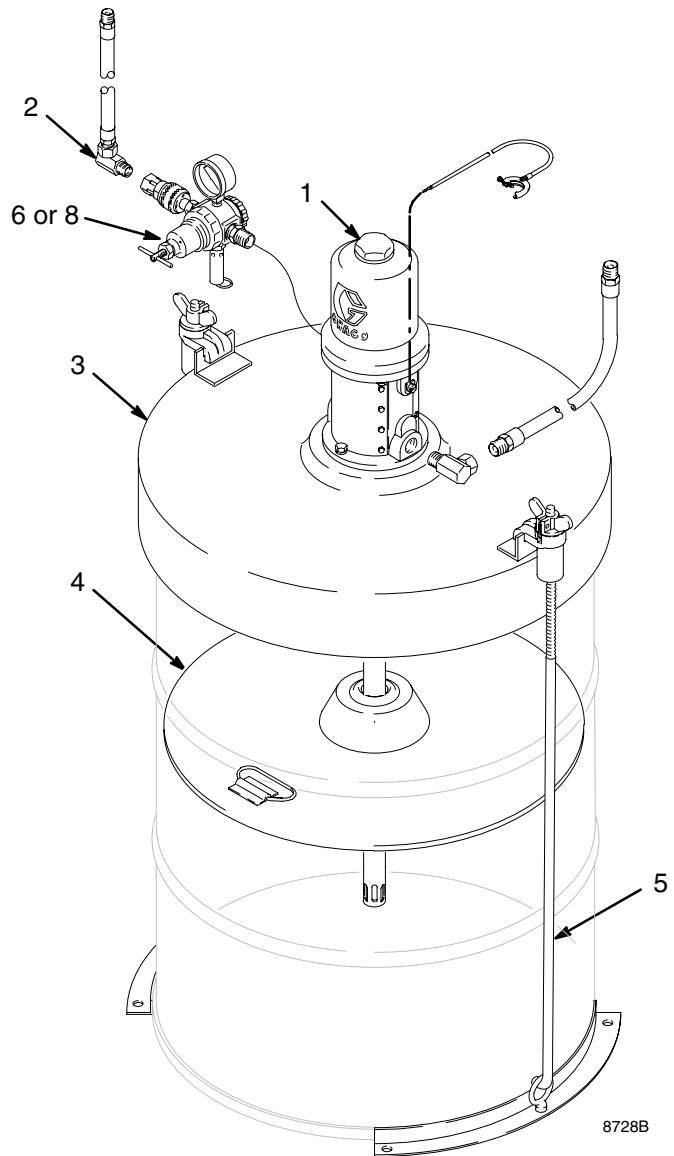
Model 222075, Includes items 1 to 5

Ref No.	Part No.	Description	Qty.
1	205395	PUMP, 50:1 Ratio Fire-Ball 425; See 306674 for parts	1
2	222076	HOSE AND FITTING KIT; See parts on page 14	1
3	207366	COVER; See 306345 for parts	1
4	223846	FOLLOW PLATE; See 306345 for parts	1
5	207361	HOLD-DOWN KIT; See 306345 for parts	1

## 75:1 Fire-Ball 425, 400-lb drum size

Model 243818, Includes items 1 to 5

Ref No.	Part No.	Description	Qty.
1	239730	PUMP, 75:1 Ratio Fire-Ball 425; See 308777 for parts	1
2	222076	HOSE AND FITTING KIT; See parts on page 14	1
3	207366	COVER; See 306345 for parts	1
4	223846	FOLLOW PLATE; See 306345 for parts	1
5	207361	HOLD-DOWN KIT; See 306345 for parts	1



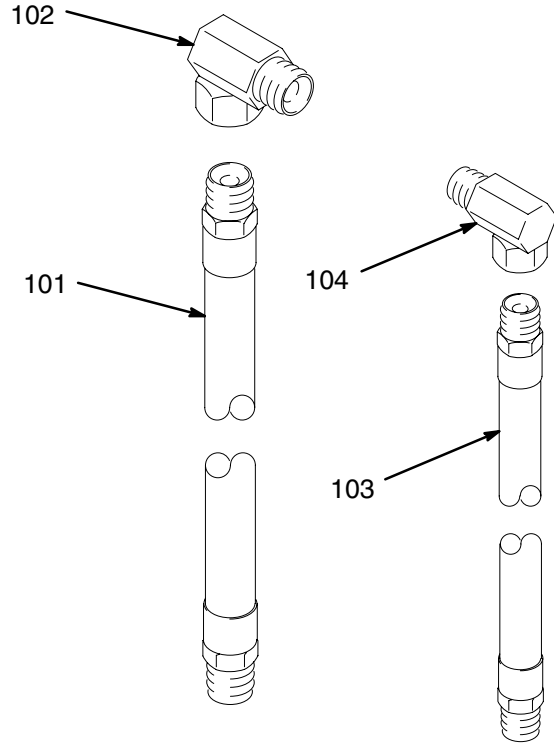
Fire-Ball 300  
pump shown

# Parts Drawings and Lists

## Model 222076

Hose and Fitting Kit

Ref No.	Part No.	Description	Qty.
101	205418	HOSE, air; 1/2" ID; cpld 1/2 npt(mbe); 72" long	1
102	155470	ADAPTER, 90°; 1/2 npt(m) x 1/2 npsm(f) swivel	1
103	109163	HOSE, fluid; 3/8" ID; 3/8 npt(mbe); 72" long	1
104	155494	ADAPTER, 90°; 3/8 npt(m) x 3/8 npsm(f) swivel	1



## Model 222072

Hose and Fitting Kit

Ref No.	Part No.	Description	Qty.
101	203320	HOSE, air; 3/8" ID; cpld 3/8 npt(mbe); 72" long	1
102	155494	ADAPTER, 90°; 3/8 npt(m) x 3/8 npsm(f) swivel	1
103	109150	HOSE, fluid; 1/4" ID; 1/4 npt(mbe); 72" long	1
104	155541	ADAPTER, 90°; 1/4 npt(m) x 1/4 npsm(f) swivel	1

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# Sound Data

See the pump instruction manual for technical data including wetted parts, port sizes, maximum air consumption, maximum delivery, and so on. Sound data for the pumps on these units are as follows:

## 50:1 Fire-Ball 300 Pumps

Tested at 100 psi (0.7 MPa, 7 bar) at 40 cycles per minute	
Sound Pressure Level, measured at 1 meter from unit	77.8 dB(A)
Sound Power Level, tested in accordance with ISO 9614-2	85.6 dB(A)

## 50:1 and 75:1 Fire-Ball 425 Pumps

Tested at 100 psi (0.7 MPa, 7 bar) at 15 cycles per minute	
Sound Pressure Level, measured at 1 meter from unit	80.9 dB(A)
Sound Power Level, tested in accordance with ISO 9614-2	94.6 dB(A)

# 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 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 Numbers

**TO PLACE AN ORDER**, contact your Graco distributor, or call one of the following numbers to identify the distributor closest to you:

**1-800-533-9655 Toll Free**

**612-623-6928**

**612-378-3590 Fax**

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

**Sales Offices:** Minneapolis

**International Offices:** Belgium, Korea, China, Japan

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