Instructions-Parts

2:1 Ratio Monark® Pump

307985N

EN

Used for transfer, supply, and recirculation of compatible fluids. For professional use only.

200 psi (1.4 MPa, 14 bar) Maximum Fluid Working Pressure
100 psi (0.7 MPa, 7 bar) Maximum Air Input Pressure

Part No. 223185, Series C

55 Gallon (200 Liter) Drum Size, UHMWPE and Leather Packed

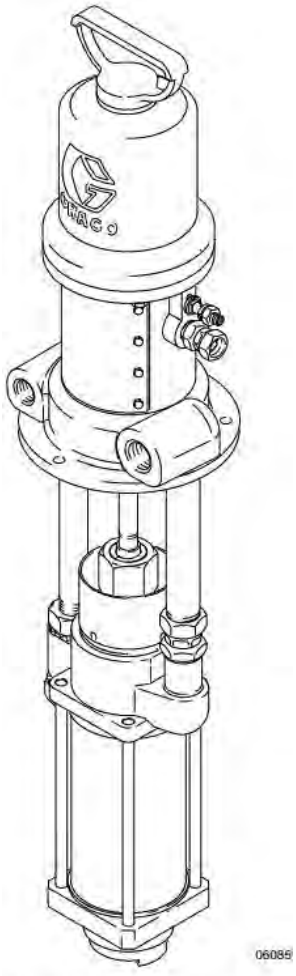
Part No. 223186, Series C

Stubby Size, UHMWPE and Leather Packed

See page 3 for model information, including maximum working pressure and approvals.

Important Safety Instructions

Read all warnings and instructions in this manual before using the equipment. Be familiar with the proper control and usage of the equipment. Save these instructions.



Model 223186 Shown

Contents

Models

Part	Series	Maximum Working Pressure psi (MPa, bar)	Description	Approvals
223186	C	200 (1.4, 14)	Stubby Size, UHMWPE and Leather Packed	CE Ex II 2 G T6 UK CA
223185			55 Gallon (200 Liter) Drum Size, UHMWPE and Leather Packed	CE 2575 Ex II 1/2 G Ex h IIB T6 Ga/Gb ETL23ATEX0276 ITS21UKEX0322 UK CA 0359

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.

⚠ WARNING

FIRE AND EXPLOSION HAZARD

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:

- 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** in page 6 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.

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 Specifications** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See **Technical Specifications** in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request Safety Data Sheets (SDSs) from distributor or retailer.
- Do not leave the work area while equipment is energized or under pressure. (If applicable.)
- Turn off all equipment and follow the **Pressure Relief Procedure** in page 9 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.

⚠ WARNING

MOVING PARTS HAZARD

Moving parts can pinch, cut or amputate fingers and other body parts.

- Keep clear of moving parts.
- Do not operate equipment with protective guards or covers removed.
- Equipment can start without warning. Before checking, moving, or servicing equipment, follow the **Pressure Relief Procedure** in page 9 and disconnect all power sources.

TOXIC FLUID 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 Sheets (SDSs) 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.

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.

Installation

General Information

NOTE: Reference numbers and letters in parentheses in the text refer to the callouts in the figures and the parts drawing.

NOTE: Always use Genuine Graco Parts and Accessories, available from your Graco distributor. If you supply your own accessories, be sure they are adequately sized and pressure rated for your system.

FIG. 2 is only a guide for selecting and installing system components and accessories. Contact your Graco distributor for assistance in designing a system to suit your particular needs.

Prepare the Operator

All persons who operate the equipment must be trained in the safe, efficient operation of all system components as well as the proper handling of all fluids. All operators must thoroughly read all instruction manuals, tags, and labels before operating the equipment.

Grounding

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.

Pump: order Part No. 237569 Ground Wire and Clamp. See FIG. 1. Loosen the grounding lug locknut (W) and washer (X). Insert one end of the ground wire (Y) into the slot in lug (Z) and tighten the locknut securely. Connect the other end of the wire to a true earth ground.

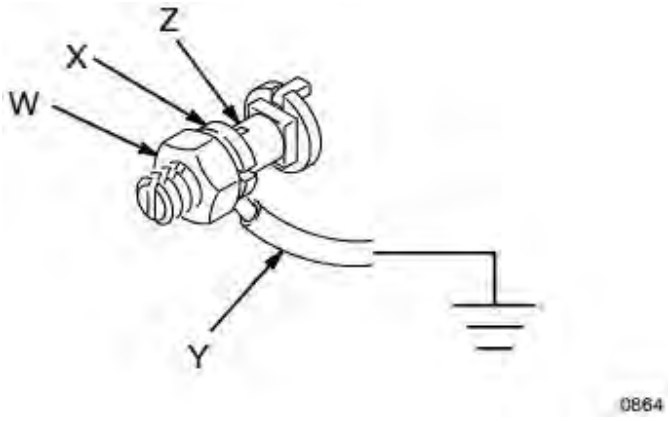


FIG. 1: Ground Wire

Air and fluid hoses: Use only electrically conductive hoses.

Air compressor: follow manufacturer's recommendations.

Spray gun: ground through connection to a properly grounded fluid hose and pump.

Fluid supply container: follow local code.

Object being sprayed: follow local code.

Solvent pails used when flushing: follow local code. Use only conductive metal pails, placed on a grounded surface. Do not place the pail on a nonconductive surface, such as paper or cardboard, which interrupts grounding continuity.

To maintain grounding continuity when flushing or relieving pressure: hold metal part of the spray gun/dispense valve firmly to the side of a grounded metal pail, then trigger the gun.

Mounting the Pump

Mount the pump to suit the type of installation planned. Refer the **Dimensions and Mounting**, page 17, section.

If the pump is immersed, be sure the pump intake is 1/2 in. (13 mm) off the bottom of the fluid container.

If the pump is mounted on the wall or on a stand, connect a suction line to the pump's 1–1/2 in. npt(f) fluid inlet and place the other end of the line in the fluid container.

Key:

A Bleed-Type Master Air Valve (required, for pump)
B Air Filter/Regulator
C Air Line Lubricator
D Fluid Drain Valve (required)
E Surge Tank
F Fluid Shutoff Valves
G Fluid Filter
H Fluid Pressure Regulator
J Air Spray Gun
K Back Pressure Regulator
L Pump
M Air Supply Line
N Bleed-Type Master Air Valves (for accessories)
Y Main Fluid Supply Line
R Pump Runaway Valve
S Main Fluid Return Line
T Secondary Fluid Return Line
Y Ground Wire (required; see page 6 for installation instructions)

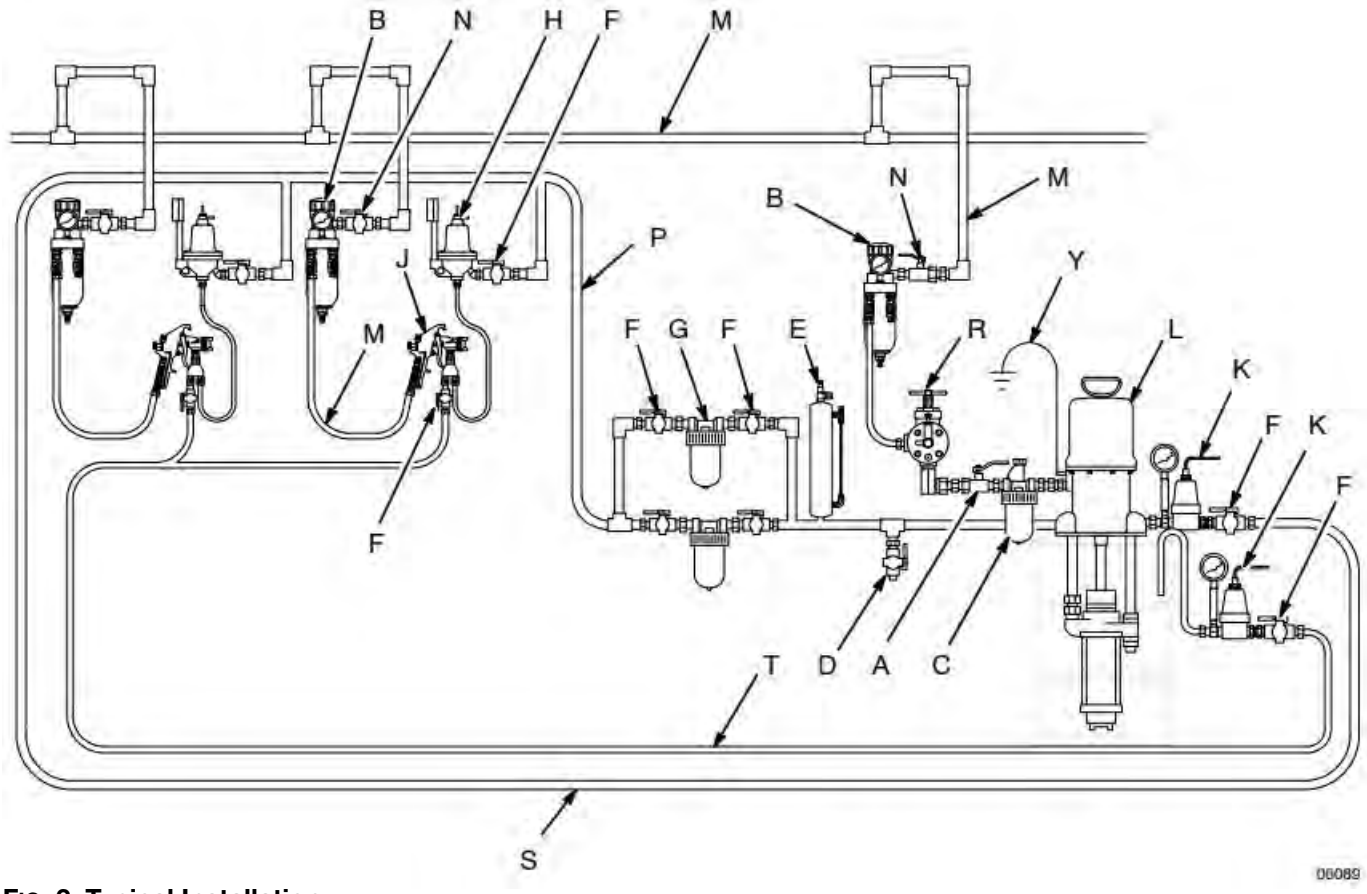


FIG. 2: Typical Installation

Available Accessories (must be purchased separately)

Air Line Accessories

A bleed-type master air valve (A) is required in your system to help reduce the risk of serious injury, including splashing of fluid in the eyes or on the skin, and injury from moving parts if you are adjusting or repairing the pump.

The bleed-type master air valve relieves air trapped between this valve and the pump after the air is shut off. Trapped air can cause the pump to cycle unexpectedly. Locate the valve close to the pump.

- **The bleed-type master air valve (A)** is required in your system to relieve air trapped between it and the air motor when the valve is closed (see the **WARNING** above). Be sure the bleed valve is easily accessible from the pump, and is located **downstream** from the air filter/regulator (B). Order Part No. 113269 Bleed Valve.
- **The air filter/regulator (B)** controls pump speed and outlet pressure by adjusting the air pressure to the pump and the air spray gun. It also removes harmful dirt and moisture from the compressed air supply. Locate the pump air filter/regulator upstream from the pump's bleed-type master air valve (A). Also, supply an air filter/regulator at each spray booth.
- **A pump runaway valve (R)** automatically shuts off the pump if it starts running too fast. A pump which runs too fast can be seriously damaged.
- **An air line lubricator (C)** provides automatic air motor lubrication. Install downstream from the pump air filter/regulator (B).
- **Install additional air bleed valves (N)** at each air line drop, to isolate accessories for servicing.

Fluid Line Accessories

A fluid drain valve (D) is required in your system to help reduce the risk of serious injury, including splashing of fluid in the eyes or on the skin.

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.

- **The fluid drain valve (D)** is required in your system to relieve fluid pressure in the hose and gun (see the **WARNING** above).
- **Install a surge tank (E)** to reduce fluid line pulsations.
- **Install two fluid filters (G)** to remove impurities from the fluid before it reaches the spray gun (J). Install fluid shutoff valves (F) upstream and downstream from each filter; this arrangement enables you to continue spraying while cleaning a filter.
- **Install a fluid pressure regulator (H)** to provide precise fluid pressure control at each spray booth.
- **Install fluid shutoff valves (F)** where shown.

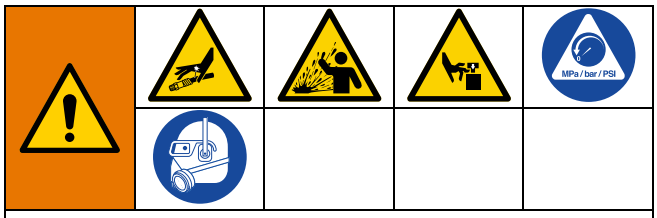
Fluid Return Line

- **Install a main fluid return line (S)** to circulate fluid back to the pump's return port.
- **Install a secondary fluid return line (T)** to circulate fluid from the spray guns back to the fluid supply container.
- **Install a back pressure regulator (K)** on each fluid return line, after the last gun station, to provide constant system back pressure for all spray guns and proper pressure for fluid circulation.

Operation

Pressure Relief Procedure

Follow the Pressure Relief Procedure whenever you see this symbol.

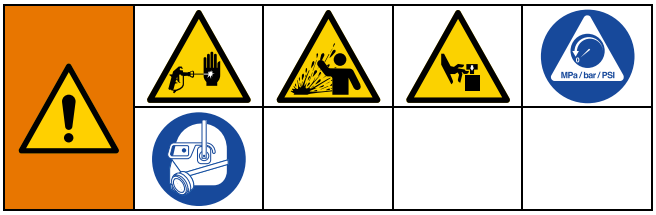


This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, splashing fluid and moving parts, follow the Pressure Relief Procedure when you stop spraying and before cleaning, checking, or servicing the equipment.

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

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

Packing Nut



Check the tightness of the packing nut/wet-cup (U) periodically. The nut should be tight enough to prevent leakage. Torque the nut to 20--24 ft-lb (27--33 N.m); do not over tighten or you may damage the packings. Follow the **Pressure Relief Procedure** before adjusting the nut. before adjusting the nut. See FIG. 3.

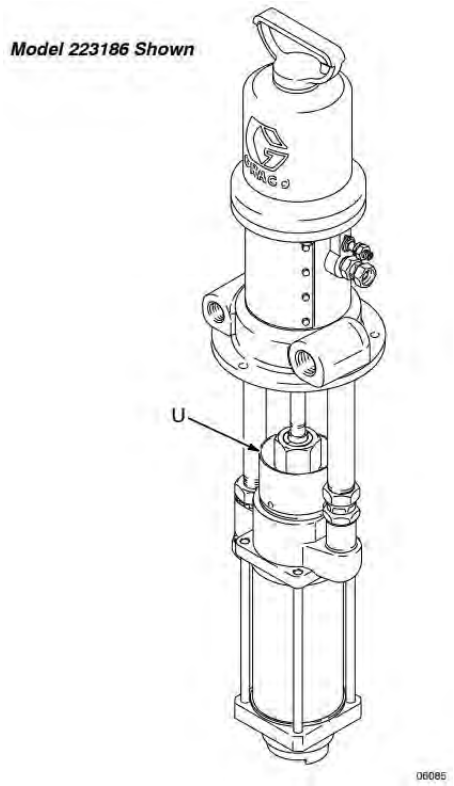


FIG. 3: Packing Nut Location

If the pump is not immersed, fill the packing nut/wetcup 1/2 full with a compatible solvent. Keep the cup filled at all times to help prevent the fluid you are pumping from drying on the exposed displacement rod and damaging the throat packings.

Flush the Pump Before First Use

The pump is tested with lightweight oil, which is left in to protect the pump parts. If the fluid you are using may be contaminated by the oil, flush it out with a compatible solvent. See the **Flushing**, page 11 section.

Prime the Pump

To avoid fire and explosion, always ground equipment and waste container. To avoid static sparking and injury from splashing, always flush at the lowest possible pressure.

1. Remove the spray nozzle from the gun. See the gun instruction manual.
2. Close all bleed-type air valves (A, N). See FIG. 2.
3. Close the pump air filter/regulator (B).
4. Close the fluid drain valve (D).
5. Check that all fittings throughout the system are tightened securely.
6. Connect the air supply line to the pump air inlet.
7. Open the bleed-type air valves (A, N).
8. Hold a metal part of the gun firmly to the side of a grounded metal pail and hold the trigger open.
9. Open the air filter/regulator (B) until the pump starts. Run the pump slowly until all air is pushed out and the system is fully primed. Always use the lowest pressure necessary to get the desired results. Higher pressures cause premature tip and pump wear.
10. Release the gun trigger and lock the trigger safety.

    In a circulating system, the pump will run continuously and slow down or speed up on demand, until the air supply is shut off.

    In a direct supply system, with adequate air pressure supplied to the motor, the pump will start and stop as you open and close the gun.
11. Follow the **Pressure Relief Procedure** on page 9. Install the spray nozzle in the gun, as explained in the gun manual.

COMPONENT RUPTURE HAZARD

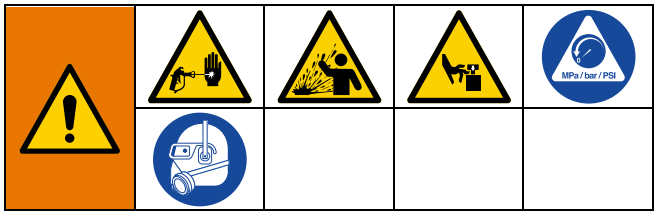
To reduce the risk of overpressurizing your system, which could cause component rupture and serious injury, **never** exceed 100 psi (7 bar) air supply pressure to the pump.

12. Use the air filter/regulator (B) to control pump outlet pressure and pump speed. Always use the lowest pressure necessary to get the desired results. Higher pressure causes premature pump wear.

NOTICE

Do not allow the pump to run dry. It will quickly accelerate to a high speed, causing damage. If your pump is running too fast, stop it immediately and check the fluid supply. If the container is empty and air has been pumped into the lines, refill the container and prime the pump and the lines, or flush and leave it filled with a compatible solvent. Eliminate all air from the fluid system.

Maintenance



Shutdown and Care of the Pump

For overnight shutdown, stop the pump at the bottom of its stroke to prevent fluid from drying on the exposed displacement rod and damaging the throat packings. Follow the **Pressure Relief Procedure** on page 9.

Always flush the pump before the fluid dries on the displacement rod. See **Flushing** below.

Flushing

FIRE AND EXPLOSION HAZARD

Before operating the pump, ground the system as explained below. Also read the section **FIRE AND EXPLOSION HAZARD**, page 4. Be sure the entire system and flushing pails are properly grounded. Refer to **Grounding**, page 6.

Flush the pump:

- Before the first use
- When changing colors or fluids
- Before fluid can dry or settle out in a dormant pump (check the pot life of catalyzed fluids).
- Before storing the pump.

Flush with a fluid that is compatible with the fluid you are pumping and with the wetted parts in your system.

Check with your fluid manufacturer or supplier for recommended flushing fluids and flushing frequency.

NOTICE

Never leave water or water-base fluid in the pump overnight. If you are pumping water-base fluid, flush with water first, then with a rust inhibitor such as mineral spirits. Relieve the pressure, but leave the rust inhibitor in the pump to protect the parts from corrosion.

1. Follow the **Pressure Relief Procedure** on page 9**.**
2. Remove the spray nozzle from the gun.
3. Hold a metal part of the gun firmly to the side of a grounded metal pail.
4. Start the pump. Always use the lowest possible fluid pressure when flushing.
5. Trigger the gun.
6. Flush the system until clear solvent flows from the gun.
7. Follow the **Pressure Relief Procedure** on page 9.
8. Clean the spray nozzle separately, then reinstall it.

Corrosion Protection for Carbon Steel Pumps

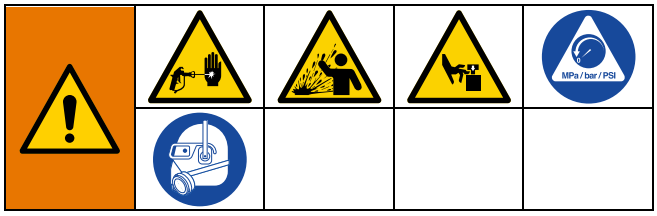
NOTICE

Water, or even moist air, can cause your pump to corrode. To help prevent corrosion, **never** leave the pump filled with water or air. Follow the instructions under **Flushing**, at left.

Fluid Piston and Intake Valve Adjustment

The fluid piston and intake valves are factory set for pumping medium viscosity fluids. See the separate displacement pump manual, 307983, for adjustment procedures to pump lighter or heavier viscosity fluids.

Troubleshooting



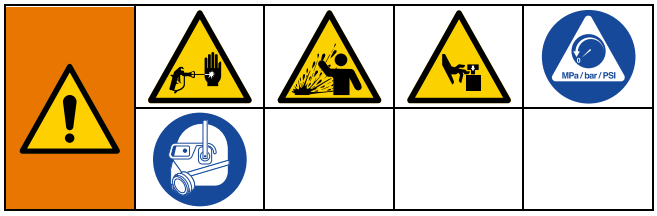
1. Follow the **Pressure Relief Procedure** on page 9.

2. Check all possible problems and solutions before disassembling pump.

Problem	Cause	Solution
Pump fails to operate.	Restricted line or inadequate air supply.	Clear; increase air supply.
	Dirty or damaged air motor.	Service air motor (see 307043).
	Clogged fluid hose, gun, or nozzle.	Clear.*
Pump operates but output is low on both strokes.	Restricted line or inadequate air supply.	Clear; increase air supply.
	Exhausted fluid supply.	Refill; reprime or flush.
	Clogged fluid hose, gun, or nozzle.	Clear.*
	Loose packing nut or worn throat packings.	Tighten packing nut (see **Packing Nut**, page 9); replace throat packings.
	Piston and intake valves need adjustment.	Adjust; see manual 307983.
Pump operates but output is low on downstroke.	Held open or worn intake valve.	Clear; service. See manual 307983.
Pump operates but output is low on upstroke.	Held open or worn fluid piston valve or packings.	Clear; service. See manual 307983.
Erratic or accelerated operation.	Exhausted fluid supply.	Refill; reprime or flush.
	Piston and intake valves need adjustment.	Adjust; see manual 307983.
	Held open or worn intake valve.	Clear; service. See manual 307983.
	Held open or worn fluid piston valve or packings.	Clear; service. See manual 307983.

* To determine if the fluid hose or gun is obstructed, follow the Follow the **Pressure Relief Procedure** on page 9. Disconnect the fluid hose and place a container at the pump fluid outlet to catch any fluid. Turn on the air just enough to start the pump (about 20–40 psi [1.4–2.8 bar]). If the pump starts when the air is turned on, the obstruction is in the fluid hose or gun.

Repair



Disconnecting the Displacement Pump

NOTE: For displacement pump repair instructions, refer to the separate displacement pump manual 307983, supplied.

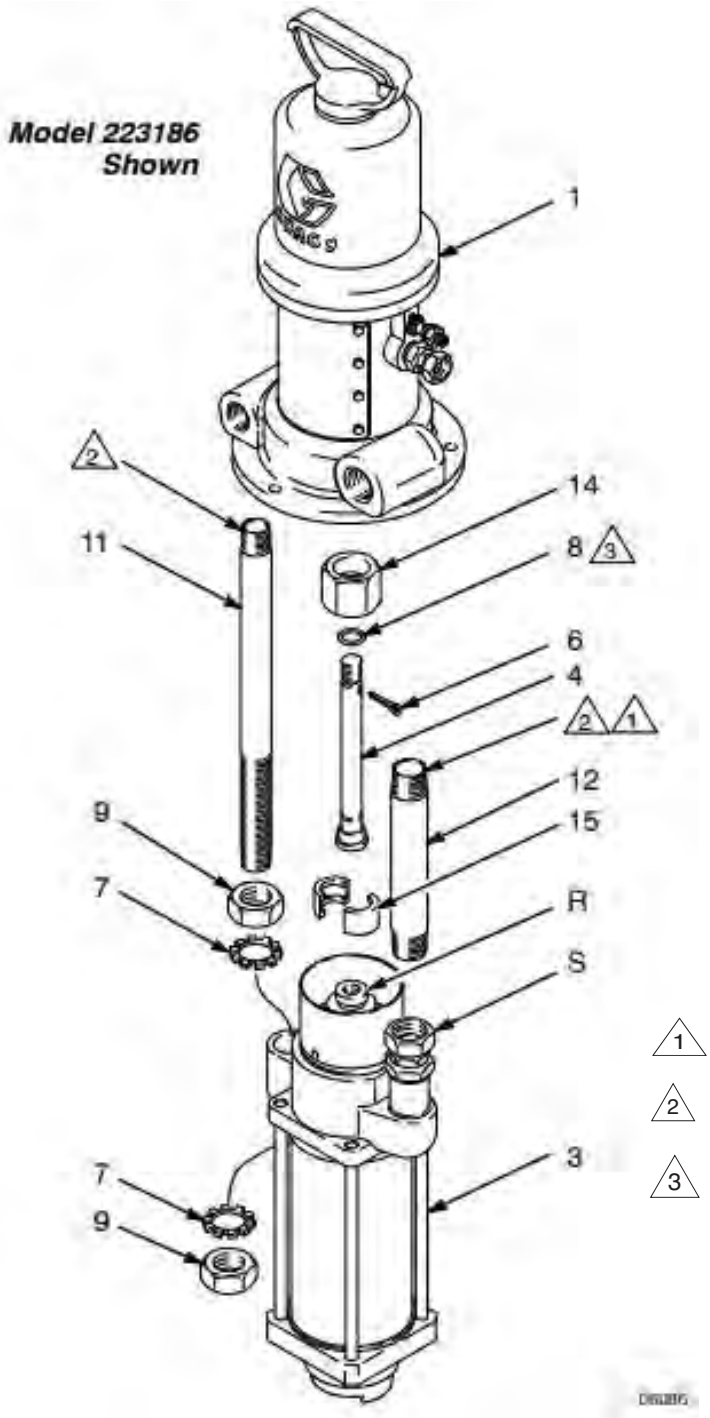
1. Flush the pump if possible. Stop the pump at the bottom of its stroke. Follow the **Pressure Relief Procedure** on page 9.
2. Disconnect all hoses and remove the pump from its mounting.
3. Unscrew the coupling nut (14) from the displacement rod (R). Remove the coupling collars (15). See FIG. 4.
4. Unscrew the lower locknut (9) and lockwasher (7) from the return mounting tube (11).
5. Unscrew the swivel union (S) from the supply mounting tube (12).

NOTICE

If you are removing the mounting tubes, wrench the tubes close to the motor base to prevent thread damage in the base. Use thread sealant on the male threads when reinstalling.

Reconnecting the Displacement Pump

1. Position the displacement pump on the mounting tubes (11, 12). Thread the upper locknut (9) onto the return mounting tube (11) a couple of turns. Tighten the swivel union (S) securely onto the supply mounting tube (12). See FIG. 4.
2. But the connecting rod (4) and displacement rod (R) together; if necessary, adjust the locknuts (9) on the return mounting tube (11) to align the rods.
3. Position the coupling collars (15) so they engage with the connecting rod (4) and displacement rod (R). Lower the coupling nut (14) over the coupling collars and screw it securely onto the displacement rod.
4. Tighten the locknuts (9) securely.
5. Remount the pump and connect all hoses.
6. Turn on the air to the motor and run the pump slowly. Adjust the locknuts (9) on the return mounting tube (11) as necessary until the pump operates smoothly at minimum air pressure to the motor. Tighten the locknuts securely.
7. Reconnect the ground wire if it was disconnected during repair.
8. If the pump is not immersed, fill the packing nut/wet-cup 1/2 full of compatible solvent.



1 Torque to 65–75 ft-lb (88–102 N.m).

2 Use thread sealant when reinstalling.

3 Lubricate.

FIG. 4: Connecting the Displacement Pump

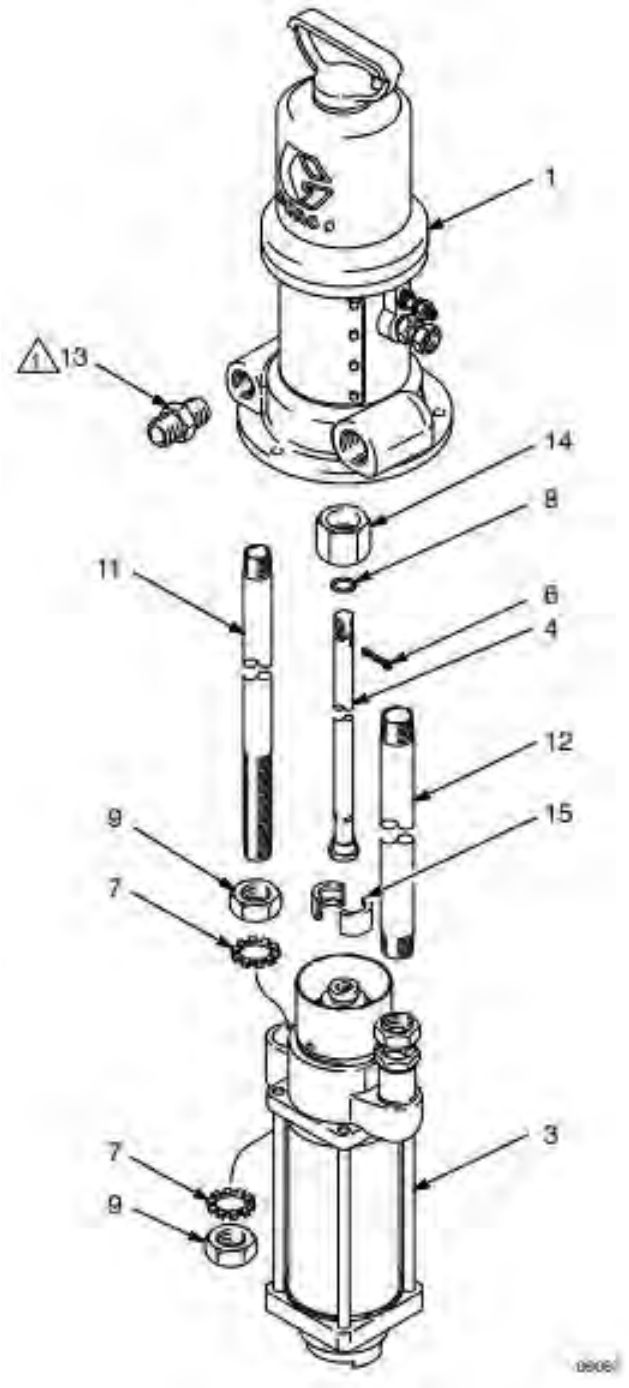
Parts

Model 223185, Series C

2:1 Ratio Monark Pump, 55 Gallon (200 Liter) Drum Size; UHMWPE and Leather Packed

Ref.	Part	Description	Qty.
1	206955	AIR MOTOR, Monark; see 307043 for parts	1
3	223177	PUMP, displacement; used on Model 223185; see 307983 for parts	1
4	191611	ROD, connecting; 19.54 in. (496.3 mm) long	1
6	100579	PIN, cotter	1
7	118160	LOCKWASHER, ext shakeproof	2
8	156082	O-RING; nitrile rubber	1
9	171217	NUT, special lock; 3/4 garden hose thread	2
11	162646	TUBE, return; 24.675 in. (626.7 mm) long	1
12	190177	TUBE, supply; 19.3 in. (490.2 mm) long	1
13	160032	NIPPLE; 3/4 npt (used on Model 223185 only)	1
14	190117	NUT, coupling	1
15	190066	COLLAR, coupling	2

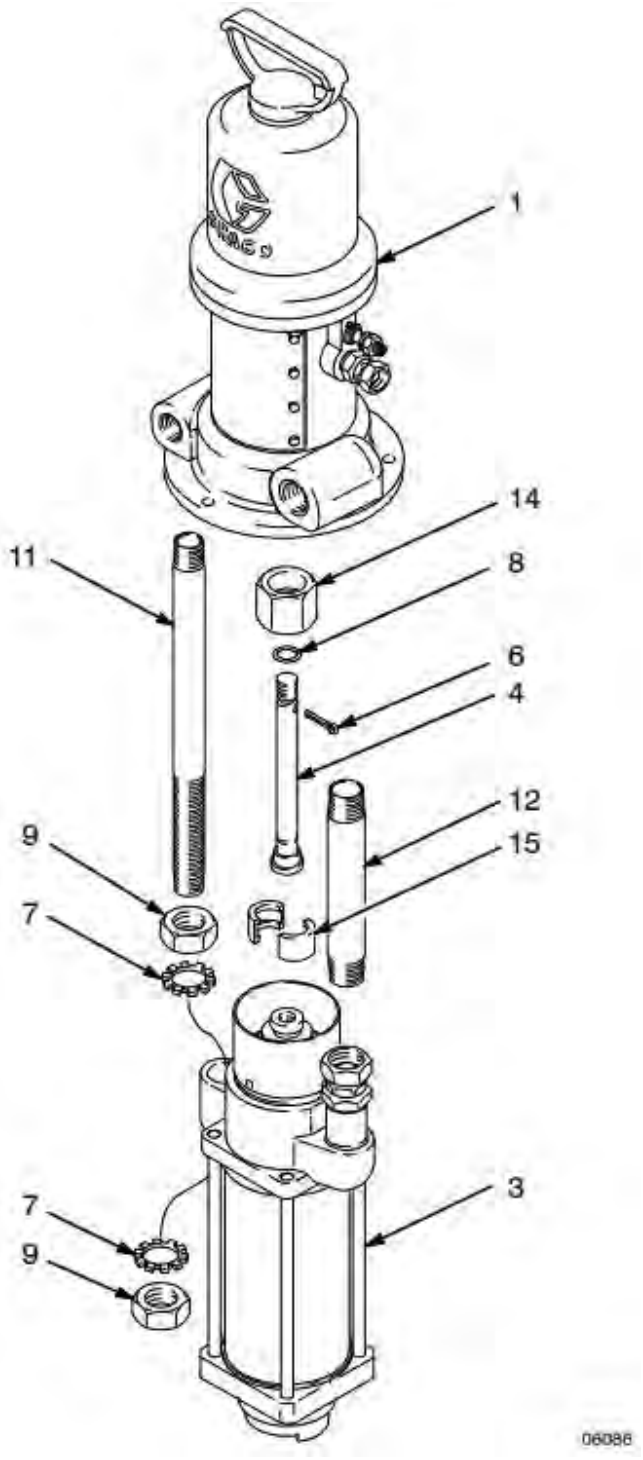
⚠1 Used on Models 223185 only.



Model 223186, Series C

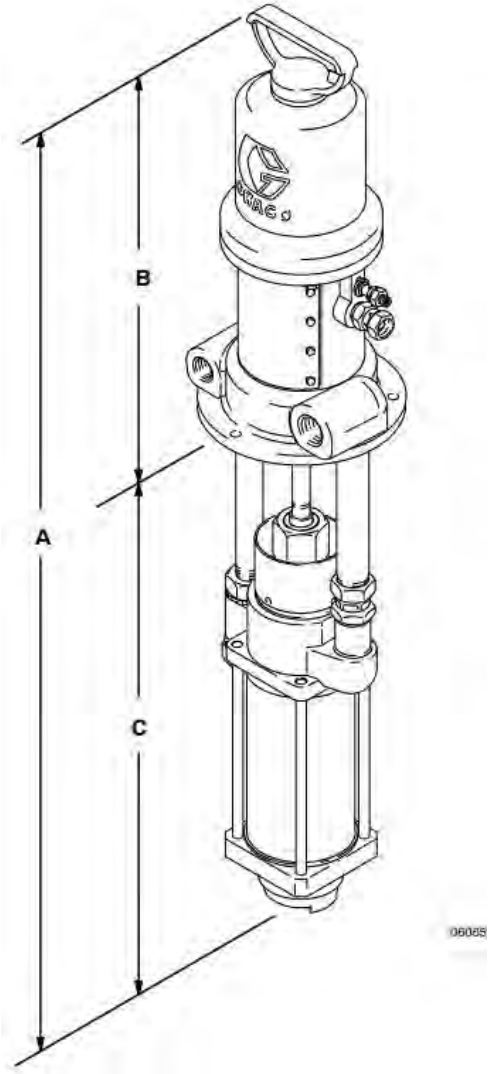
2:1 Ratio Monark Pump, Stubby Size; UHMWPE and Leather Packed

Ref.	Part	Description	Qty.
1	206955	AIR MOTOR, Monark; see 307043 for parts	1
3	223177	PUMP, displacement; used on Model 223185; see 307983 for parts	1
4	191736	ROD, connecting;	1
6	100579	PIN, cotter	1
7	118160	LOCKWASHER, ext shakeproof	2
8	156082	O-RING; nitrile rubber	1
9	171217	NUT, special lock; 3/4 garden hose thread	2
11	181120	TUBE, return; 12.812 in. (325.4 mm) long	1
12	190178	TUBE, supply; 6.75 in. (171.5 mm) long	1
14	190117	NUT, coupling	1
15	190066	COLLAR, coupling	2



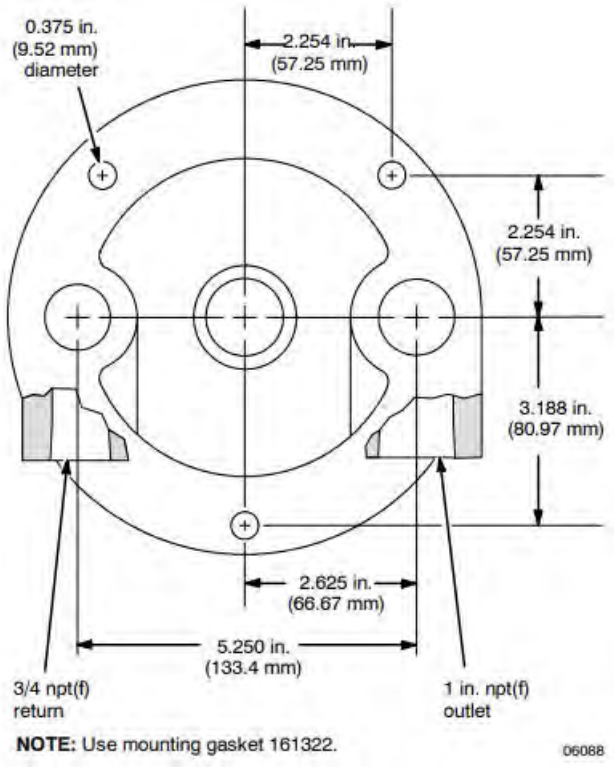
Dimensions and Mounting

Dimensions



Model No.	A		B		C	
	in.	mm	in.	mm	in.	mm
223185	47.81	1215	15.31	389	32.5	826
223186	35.31	897	15.31	389	20	508

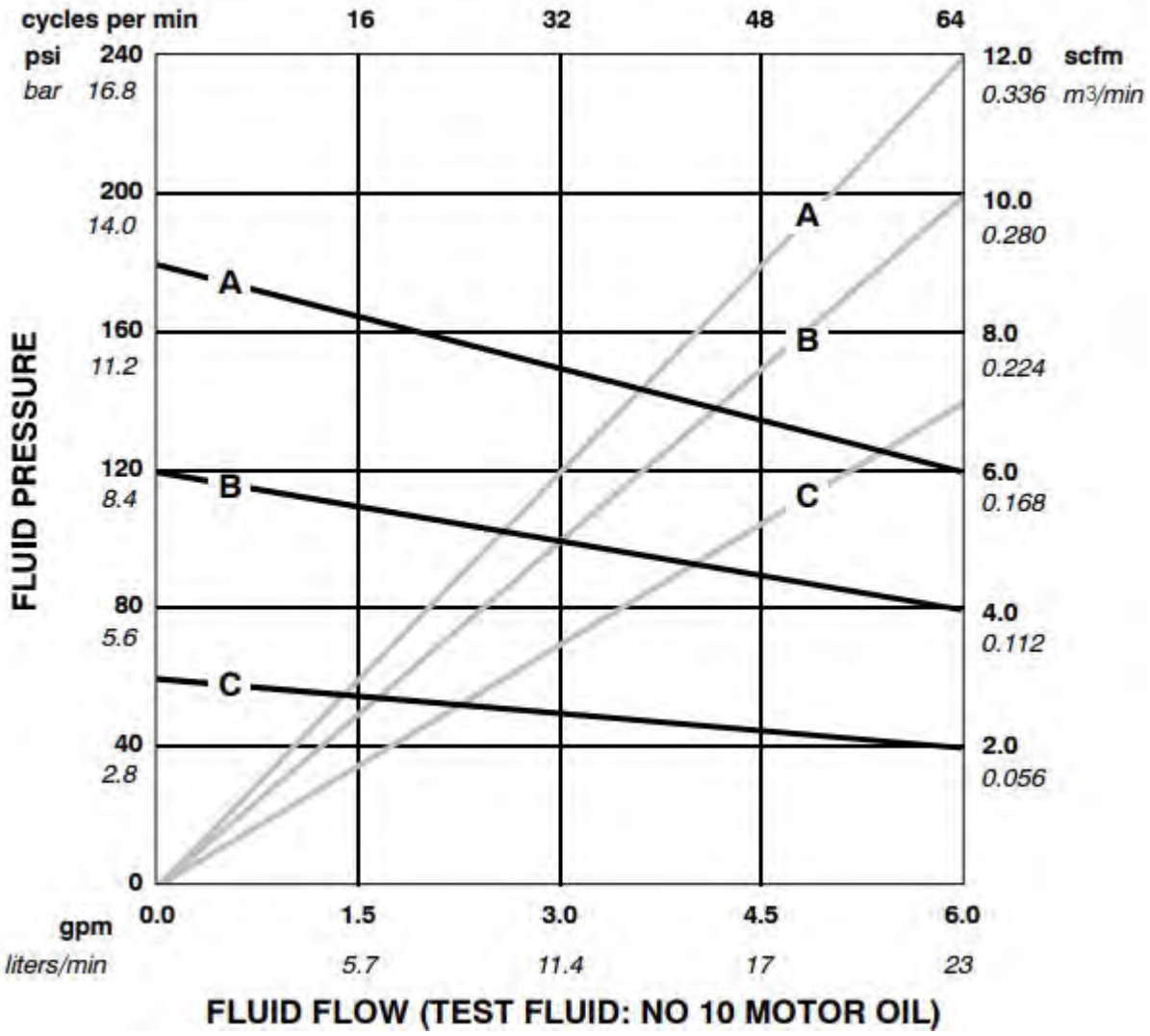
Mounting Hole Layouts



Performance Charts

KEY: Fluid Outlet Pressure - Black Curves Air Consumption - Gray Curves.

A 100 psi (7 bar) air pressure
B 70 psi (4.9 bar) air pressure
C 40 psi (2.8 bar) air pressure



To find Fluid Outlet Pressure (bar/psi) at a specific fluid flow (lpm/gpm) and operating air pressure (bar/psi):

1. Locate desired flow along bottom of chart.
2. Follow vertical line up to intersection with selected fluid outlet pressure curve (black). Follow left to scale and read fluid outlet pressure.

To find Pump Air Consumption (m#/min or scfm) at a specific fluid flow (lpm/gpm) and operating air pressure (bar/psi):

1. Locate desired flow along bottom of chart.
2. Follow vertical line up to intersection with selected air consumption curve (gray). Follow right to scale and read air consumption.

Technical Specifications

Category	US	Metric
Ratio	2:1	
Maximum fluid working pressure	200 psi	14 bar
Maximum air input pressure	100 psi	7 bar
Pump cycles per 1 gallon (3.8 liters)	11	
Fluid flow at 60 cycles per minute	5.5 gpm	21 liters/min
Fluid inlet size	1–1/2 npt(f)	
Fluid outlet size	1 in. npt(f)	
Air inlet size	3/8 npsm(f)	
Weight	40 lb	18.14 kg
Maximum pump operating temperature	180°F	82°C
* Sound level at 100 psi, 60 cycles per minute	62.6 dBa	
* Sound power level at 100 psi, 60 cycles per minute	71.8 dBa	
Wetted Parts		
Supply and Return Tubes	Nickel-plated carbon steel Refer to manual 307983	
Air Motor Base	Aluminum	
Displacement Pump	Refer to manual 307983	
Notes		
* *Tested in accordance with ISO 3744.*		

California Proposition 65

CALIFORNIA RESIDENTS

⚠ **WARNING:** Cancer and reproductive harm – www.P65warnings.ca.gov.

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
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Graco Information

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 or call to identify the nearest distributor.
Phone: 612-623-6921 or Toll Free: 1–800–328–0211, Fax: 612-378-350

Original instructions. This manual contains English. MM 307985
Graco Headquarters: Minneapolis
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Revision N, August 2023