

SaniForce™ Pail Unloader System

3A5401C
EN

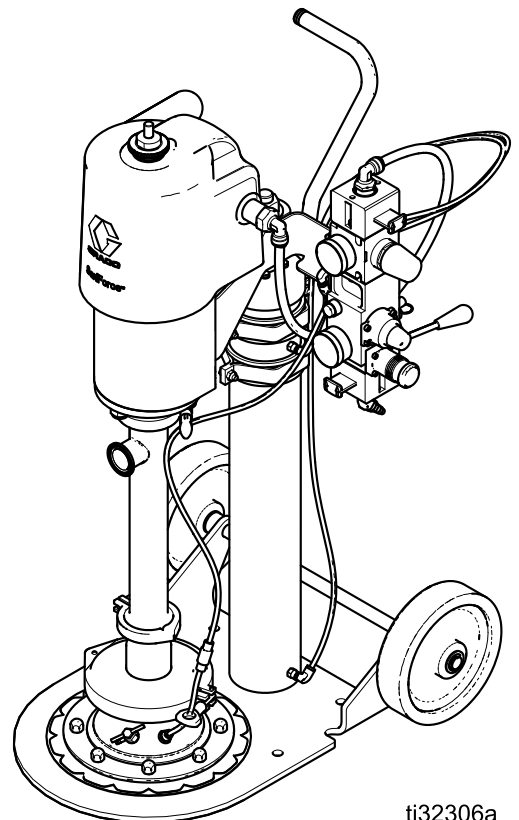
For use with food grade bulk supply of medium to high viscosity product.
For professional use only.



Important Safety Instructions

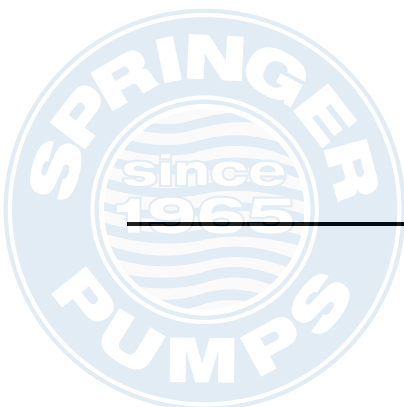
Read all warnings and instructions in this manual and in manuals identified in the Related Manuals table on page 2. **Save all instructions.**

*Maximum Working Air Pressure: 100
psi (0.7 MPa, 7 bar)
Maximum Working Fluid Pressure: 650
psi (4.5 MPa, 45 bar)*



ti32306a






PROVEN QUALITY. LEADING TECHNOLOGY.



Contents

Models.....	2	Air Cylinder Repair.....	8
Related Manuals	2	Change Pump Mounting Position	11
Configuration Matrix.....	3	Parts.....	12
Warnings	4	Hose Routing	17
Troubleshooting.....	6	Technical Data	18
Repair.....	8	Graco Standard Warranty.....	20
Pressure Relief Procedure.....	8		

Models

Model	Certification	Approvals
SPU.A01AAA1AA0C21	EN 10204, type 2.1	  II 2 GD Ex h IIA T4 Gb X Ex h IIIA 100°C Db X
SPU.A01AAA1AA0C31	EN 10204, type 3.1	
SPU.A01AAB1AA0C21	EN 10204, type 2.1	  II 2 GD Ex h IIA T4 Gb X Ex h IIIA 100°C Db X  EC 1935/2004
SPU.A01AAB1AA0C31	EN 10204, type 3.1	

Related Manuals

Manual Number	Title
3A5564	SaniForce 6:1 Sanitary Pumps, Instructions and Parts
3A5400	SaniForce Pail Unloader System, Operation
3A5800	SaniForce Air Controls, Instructions/Parts



Configuration Matrix

Check the identification plate (ID) for the Configuration Number of your pump. Use the

following matrix to define the components of your system.

Sample Configuration Number: **SPU A01AAA1AA0C21**

SPU	A	01	A	A	A	1	AA	0	C21
Sanitary Pail Unloader	Frame	Pump	Platen	Seal Style	Seal Material	Controls	Accessories	Wash Bin	Certification

NOTE: Some combinations are not possible. Please check with your local supplier.









Sanitary Pail Unloader	Frame		Pump		Platen		Seal Style	
SPU	A	Stainless Steel	01	6:1 Priming Piston	A	5-7 gallon plastic pail	A	Static








Seal Material		Controls		Accessories		Wash Bin		Certification	
A	PTFE	1	Exposed pneumatic	AA	Mobile	0	None	C21	EN 10204 type 2.1
B	Buna-N							C31	EN 10204 type 3.1



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.

 <h1 style="margin: 0;">WARNING</h1>	
   	<p>FIRE AND EXPLOSION HAZARD</p> <p>Flammable fumes, such as solvent and paint fumes, in work area can ignite or explode. Paint or solvent flowing through the equipment can cause static sparking. To help prevent fire and explosion:</p> <ul style="list-style-type: none"> • Use equipment only in well ventilated area. • Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static sparking). • Ground all equipment in the work area. See Grounding instructions. • 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. • 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.
 	<p>SPECIAL CONDITIONS FOR SAFE USE</p> <p>Equipment must comply with the following conditions to avoid hazardous condition which can cause fire or explosion:</p> <ul style="list-style-type: none"> • Clean plastic parts only in well ventilated area. • Do not clean with a dry cloth.
  	<p>PRESSURIZED EQUIPMENT HAZARD</p> <p>Fluid from the equipment, leaks, or ruptured components can splash in the eyes or on skin and cause serious injury.</p> <ul style="list-style-type: none"> • Follow the Pressure Relief Procedure when you stop spraying/dispersing and before cleaning, checking, or servicing equipment. • Tighten all fluid connections before operating the equipment. • Check hoses, tubes, and couplings daily. Replace worn or damaged parts immediately.

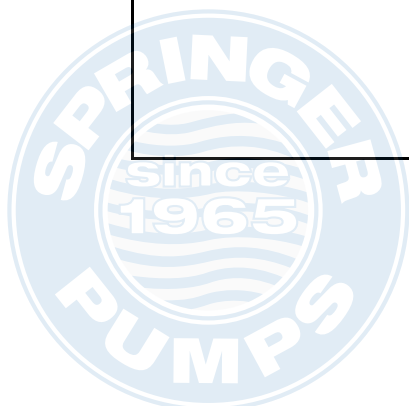
 <h1 style="margin: 0;">WARNING</h1>	
 	<p>MOVING PARTS HAZARD</p> <p>Moving parts can pinch or amputate fingers and other body parts.</p> <ul style="list-style-type: none"> • Keep clear of moving parts. • Do not operate equipment with protective guards or covers removed. • Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the Pressure Relief Procedure and disconnect all power sources.
	<p>SPLATTER HAZARD</p> <p>During blow off of platen, splatter may occur.</p> <ul style="list-style-type: none"> • Use minimum air pressure when removing platen from container.
 	<p>EQUIPMENT MISUSE HAZARD</p> <p>Misuse can cause death or serious injury.</p> <ul style="list-style-type: none"> • Do not operate the unit when fatigued or under the influence of drugs or alcohol. • Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See Technical Data in all equipment manuals. • Use fluids and solvents that are compatible with equipment wetted parts. See Technical Data in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request Safety Data Sheet (SDS) from distributor or retailer. • Turn off all equipment and follow the Pressure Relief Procedure when equipment is not in use. • Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only. • Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards. • Make sure all equipment is rated and approved for the environment in which you are using it. • Use equipment only for its intended purpose. Call your distributor for information. • Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces. • Do not kink or over bend hoses or use hoses to pull equipment. • Keep children and animals away from work area. • Comply with all applicable safety regulations.
	<p>PERSONAL PROTECTIVE EQUIPMENT</p> <p>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:</p> <ul style="list-style-type: none"> • Protective eyewear, and hearing protection. • Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.

Troubleshooting



- Prior to performing any repairs, perform the Pressure Relief procedure.
- Check all possible problems before disassembling the ram, pump, or platen.

Problem	Cause	Solution
Ram will not raise or lower.	Closed air valve (BA) or clogged upstream air line.	Open, clear.
	Not enough ram air pressure.	Increase.
	Worn or damaged piston.	Replace.
	Ram director valve closed or clogged.	Open, clear.
Ram raises and lowers too fast.	Ram air pressure is too high.	Decrease.
Air leaks around cylinder rod.	Worn rod seal.	Replace.
Fluid squeezes past platen wipers.	Ram air pressure is too high.	Decrease.
	Worn or damaged wipers.	Replace.
Pump will not prime properly or pumps air.	Closed air valve or clogged air line.	Open, clear.
	Not enough ram or pump air pressure.	Increase.
	Worn or damaged piston.	Replace.
	Ram director valve closed or clogged.	Open, clear.
	Ram director valve is dirty, worn, or damaged.	Clean, service.
Air assist valve will not hold pail down or push platen up.	Closed air valve or clogged air line.	Open, clear.
	Not enough air pressure.	Increase.
	Valve passage clogged.	Clean.
	Ram director valve not in UP position.	Move valve to UP position.
Pump fails to operate.	Restricted air line or inadequate air supply.	Clear air line or increase air supply.
	Insufficient air pressure; closed or clogged air valves, etc.	Open or clean air valves, etc.
	Exhausted fluid supply.	Change pail.
	Damaged air motor.	Service.



Problem	Cause	Solution
Pump operates, but output low on both strokes.	Restricted air line or inadequate air supply.	Clear air line or increase air supply.
	Insufficient air pressure; closed or clogged air valves, etc.	Open or clean air valves, etc.
	Exhausted fluid supply.	Change pail.
	Obstructed fluid line, valves, dispensing valve, etc.	Clear. Relieve pressure and disconnect fluid line. Turn on air. If pump starts, the fluid line is clogged.
	Worn throat packing.	Replace throat packing.
	Damaged cylinder seal.	Replace seal.
Pump operates, but output low on down stroke.	Held open or worn fluid inlet valve.	Clear or service fluid inlet valve.
	Damaged cylinder seal.	Replace seal.
Pump operates, but output low on up stroke.	Held open or worn fluid piston or piston seal.	Clear or service fluid piston or piston seal.
Erratic or accelerated operation.	Exhausted fluid supply.	Change pail.
	Held open or worn fluid inlet valve.	Clear or service fluid inlet valve.
	Held open or worn fluid piston or piston seal.	Clear or service fluid piston or piston seal.

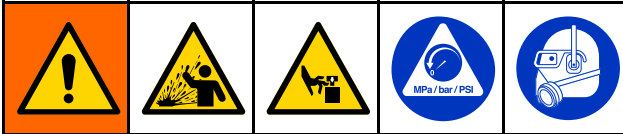


Repair

Pressure Relief Procedure

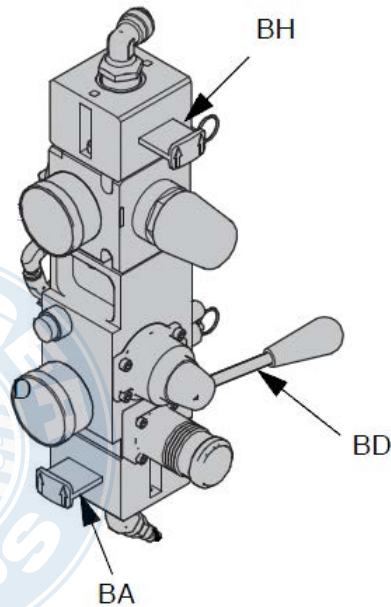


Follow the Pressure Relief Procedure whenever you see this symbol.

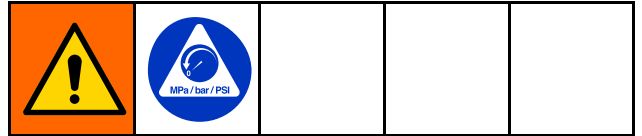


This equipment stays pressurized until pressure is relieved manually. To help prevent serious injury from moving parts, or from pressurized fluid, such as splashing in the eyes or on skin, follow the Pressure Relief Procedure when you stop pumping and before you clean, check, or service the equipment.

1. Close the air motor slider valve (BH) and the main air slider valve (BA).
- NOTE:** Both are relieving air valves.
2. Set the ram director valve (BD) to DOWN. The ram will slowly drop.
 3. Jog the ram director valve (BD) up and down to bleed air from ram cylinder.
 4. Open dispense valve or trigger gun to relieve pump output pressure.



Air Cylinder Repair



To reduce the risk of serious injury during air cylinder repairs:

- Do not use pressurized air to remove any air cylinder interior components.
- Use a lift or more than one person to move the components attached to the bracket (18) after the bracket is no longer attached to the air cylinder piston rod (2).

NOTES:

- Removing or inserting the interior components will require removal of the upper air fitting (23) from the air cylinder. Failure to remove the fitting will damage the o-rings (14) on the ram top bearing (4) and the piston (3) during removal or installation of the shaft (2) and all components attached to it.
- Do not remove any alignment pins (6) when repairing the air cylinder.

Access Air Cylinder Components

When you service the air cylinder always install new o-rings (14) in the ram top bearing (4) and piston (3).

Before beginning any repairs, if possible, lower the ram assembly so that it is at its lowest point, shut off and purge any air to the cylinder, and make provisions for the safe movement of items as they are removed or installed.

△1 Apply sanitary grease to o-rings and surface of air cylinder piston rod (2) prior to assembly.

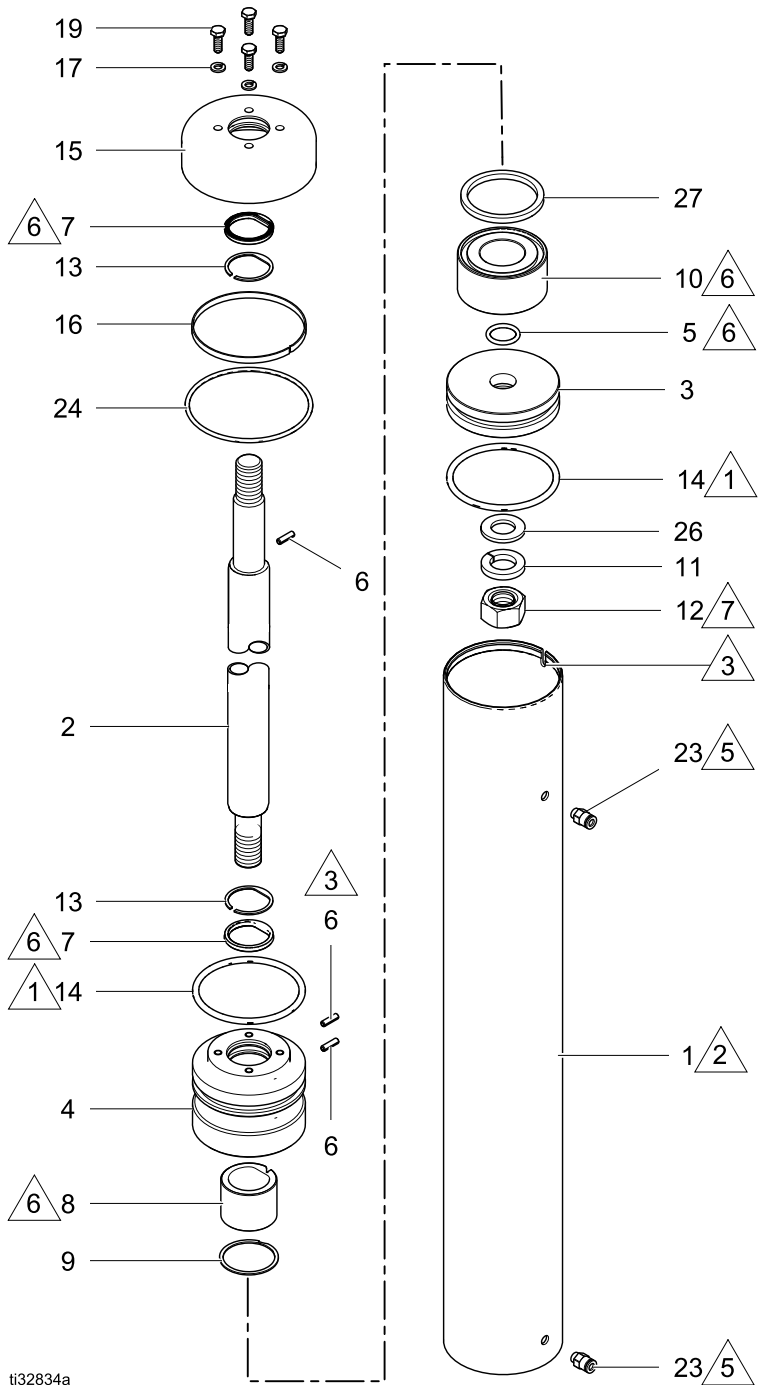
△2 Add grease to cylinder bore prior to insertion of air cylinder piston rod assembly.

△3 Engage ram top bearing alignment pin with alignment slot in air cylinder after insertion into air cylinder.

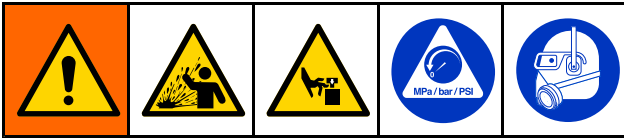
△5 Apply pipe sealant to tapered pipe threads.

△6 Apply grease to seals and bearing surfaces.

△7 Apply medium strength thread locker to threads and torque nut to 40 ft-lb (54 N•m).



Disassemble Air Cylinder Cap



1. Perform the Pressure Relief procedure and turn off facility air to the system.
2. Disconnect the bracket (101) from the air cylinder piston rod:
 - a. Ensure that the pump is in a safe position that will prevent tipping or provide a means of support.
 - b. Disconnect the air supply hose to the pump at the air controller.
 - c. Disconnect the air hose at both air fittings (210) on the air cylinder.
 - d. Remove the nut (109) and washer (108).
 - e. Without disconnecting the pump from the bracket, lift the bracket off of the air cylinder piston rod and set aside.
3. Remove the air cylinder end cap (15):
 - a. Remove the screws (19) and washers (17).
 - b. Lift the end cap off of the air cylinder and carefully move the cap past the alignment pin (6) on the air cylinder piston rod.
4. Examine the cap seal and rings for damage or wear. Replace if necessary.

Air Cylinder Piston Component Repair

NOTICE

Do not tilt the air cylinder piston rod to one side when removing it from the air cylinder or when installing it. Such movement can damage the piston or inside surface of the air cylinder.

NOTE: Some components will not pass the alignment pin on the top of the air cylinder piston rod and must be removed from the bottom of the piston rod. The alignment pin should not be removed unless it is damaged.

Part positions and orientation

Part	Description
Ram Top Bearing (4)	

Seal (7)	<ul style="list-style-type: none"> • u-cup lips face in direction of piston assembly • inner flat aligns with flat on air cylinder piston rod • ring (13) located above the seal
Bearing (8)	<ul style="list-style-type: none"> • alignment slot must be at top to allow engaging alignment pin inside ram top bearing (4) • retainer (9) located below the bearing (8) holding it into ram top bearing (4)
Piston (3)	
O-ring (5)	<ul style="list-style-type: none"> • located in hole in center of piston (3)

1. Removing the air cylinder piston rod assembly:
 - a. Remove the top air cylinder fitting (23).
 - b. Remove the retaining ring (16) from inside the air cylinder.
 - c. Lift the air cylinder piston rod assembly out of the air cylinder.
 - d. Examine all components for wear or damage and replace as needed. Refer to the appropriate procedures that follow to repair the affected component(s).
2. To remove the ram top bearing assembly components or the piston assembly components:
 - a. Use non-marring tools to grasp and hold the air cylinder piston rod (2) and remove the nut (12) and washer (11).
 - b. Slide the desired assembly off of the air cylinder piston rod for repair.
3. Installing the air cylinder piston rod assembly:
 - a. Examine the interior of the air cylinder. There should be a coating of grease over the entire inner surface. Apply food safe grease to any areas that need application.
 - b. Insert the piston (3) end of air cylinder piston rod assembly into the air cylinder and lower until the alignment pin on the upper ram bearing (4) can be positioned in the slot on the air cylinder.

NOTE: Ensure that the retaining ring groove is free of debris and lubricant so that the retaining ring will seat fully.

- c. Install the retaining ring (16) in the air cylinder.

Reassemble Air Cylinder Cap and Unloader

1. Align the flat side of the seal (7) and ring (13) with each other and with the space between two of the screw holes on the end cap (15). The u shape lips of the seal (7) must point upward when viewing the cap in the orientation it will have when installed on the air cylinder. Apply food grade lubricant to the seal (7).
2. Carefully install the end cap past the alignment pin on the air cylinder piston rod (2).
3. Position the end cap above the air cylinder so that the flats on the seal (7) and ring (13) align with the flat surface of the air cylinder piston rod.
4. Press the end cap down onto the air cylinder. Rotate the end cap as needed to align the holes in the end cap with the holes in the ram top bearing (4).
5. Install the screws (19) and washers (17) and tighten.
6. Using thread tape on the fitting threads, install the fitting (23) in the top air hole of the air cylinder.
7. Reassemble pail unloader:
 - a. Install the bracket (101) on the air cylinder piston rod; engage the bracket slot with the alignment pin on the air cylinder piston rod.
 - b. Install the washer (108) and nut (109) and tighten. Torque to 30 ft-lb (40.7 N•m).
 - c. Attach the air supply hose to the pump at the air controller.
 - d. Attach both air cylinder air hoses.

Change Pump Mounting Position

Pump positioning is critical to ensure that all product is removed from a pail and to ensure that undue force is not applied to system components.

If the pump is removed from the unit, or if the pump position may have changed from the factory setting, it will be necessary to alter the pump attachment at the pump mounting bar (102)

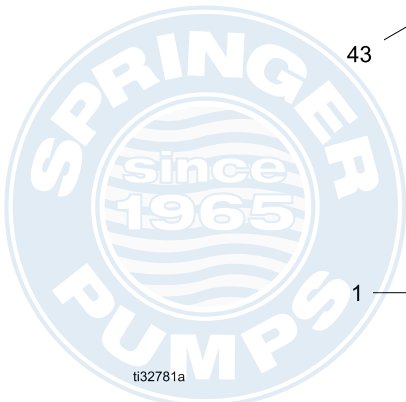
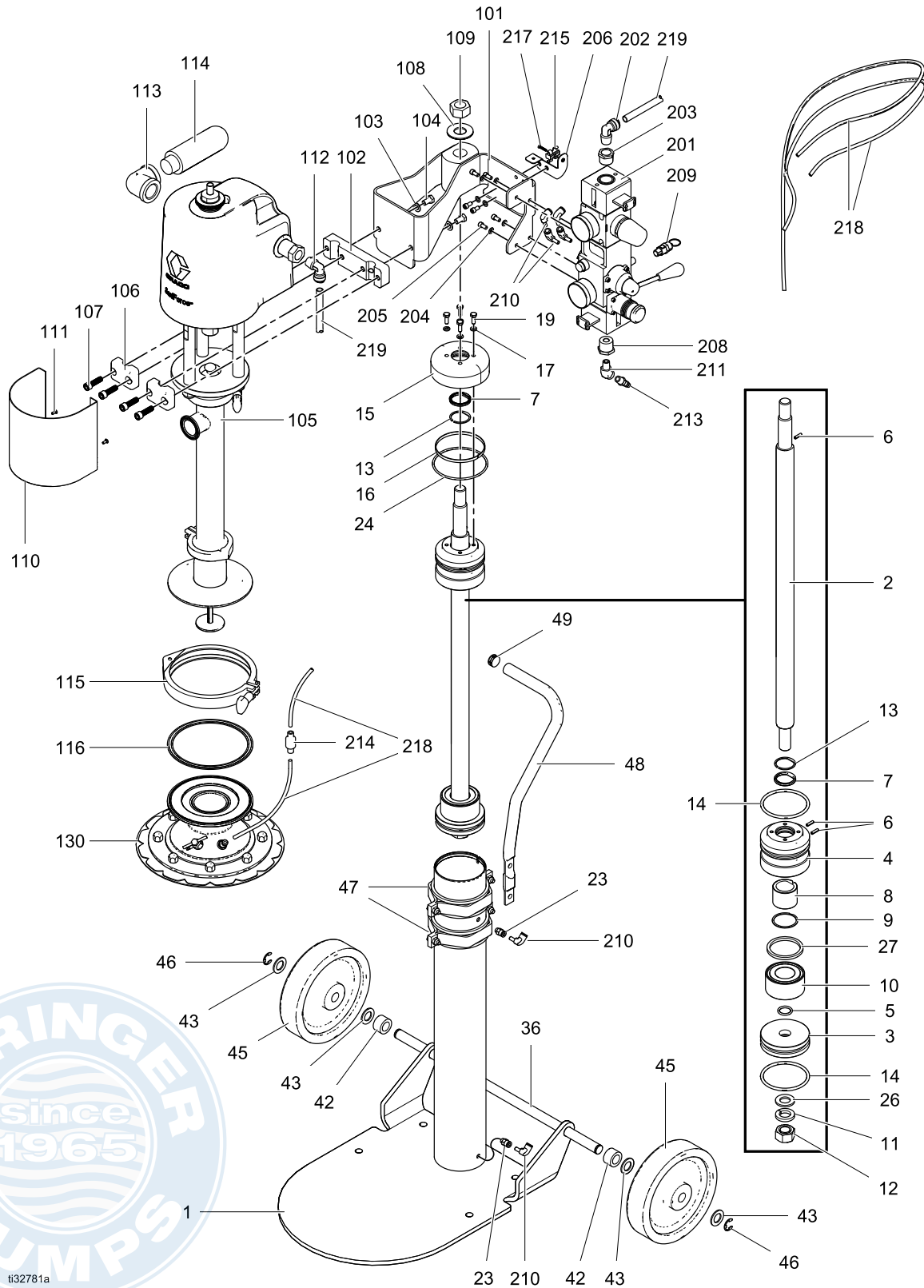
NOTE: The pump is attached at the correct location at the factory. If the screws (107) have not loosened, or been removed, the pump should be considered properly positioned.

To adjust the position of the pump at the pump mounting bar:

1. With air pressure to the unit turned off, lower the air cylinder to the bottom of its travel. If the platen is resting on the baseplate, the air cylinder may not be at the bottom of its travel, so the procedure below should be performed.
2. Remove guard (110) and loosen the screws (107) at the tie rod clamps (106).
3. Use the ram director valve (BD) to make sure that the air piston is at the bottom of its travel.
4. Tighten the screws (107) and torque to 240 in-lb (27.1 N•m).



Parts



Parts/Kits Quick Reference

Use these tables as a quick reference for parts and kits. Some parts can be ordered separately in a quantity of one. Most parts are available in repair kits. Repair kits provide the total number of parts needed to perform the repair associated with the kit.

Ref.	Part	Kit	Description	Total Qty.
Frame and cart				
1	25D964	— — —	FRAME	1
2	— — —	280627	ROD, piston	1
3	— — —	280627	PISTON	1
4	— — —	280627	BEARING, ram top	1
5	— — —	280627 25D963	PACKING, o-ring	1
6	15U979	280627 25D963	PIN, spring	3
7	15U189	25D965 280627 25D963	SEAL, u-cup	2
8	— — —	280627	BEARING, ram end cap	1
9	— — —	280627 25D963	RETAINER	1
10	— — —	280627	SPACER	1
11	— — —	280627 25D963	WASHER	2
12	— — —	280627 25D963	NUT	1
13	— — —	25D965 280627 25D963	SPACER	2
14	— — —	280627 25D963	PACKING, o-ring	2
15	— — —	25D965	CAP	1
16	— — —	280627 25D963	RING, retaining	1
17	— — —	25D965	WASHER	4
19	— — —	25D965	SCREW	4
23	— — —	— — —	FITTING, 1/8 npt	2
24	— — —	25D965	O-RING	1
26	— — —	280627 25D963	WASHER	1
27	— — —	280627	O-RING	1
41	— — —	25D954	AXLE	1
42	— — —	25D954	BEARING	2
43	— — —	25D954	WASHER, flat	4
45	— — —	25D954	WHEEL	2
46	— — —	25D954	RING, retaining	2
47	— — —	25D955	HANGER	2
48	— — —	25D955	HANDLE	1
49	— — —	25D955	PLUG	1

Parts

Ref.	Part	Kit	Description	Total Qty.
Pump and platen				
101	— — —	25D956	BRACKET, motor mounting	1
102	17A123	25D956	BAR, pump mount	1
103	112914	25D956	WASHER	2
104	15D008	25D956	BOLT, 3/8–16 sst	2
105	25M912	— — —	PUMP, 6:1 priming piston 2.1 certified; includes air motor and lower unit (refer to separate manual)	1
	24G785	— — —	AIR MOTOR	
	25M906	— — —	LOWER unit, priming piston, complete	
105	25M912C31	— — —	PUMP, 6:1 priming piston, 3.1 certified; includes air motor and lower unit (refer to separate manual)	1
	24G785	— — —	AIR MOTOR	
	25M906C31	— — —	LOWER unit, priming piston, complete	
106	17A120	25D956	CLAMP, tie rod	2
107	127586	25D956	SCREW, socket hd, sst	4
108	— — —	25D956	WASHER	1
109	— — —	25D956	NUT	1
110	17A124	— — —	GUARD	1
111	127624	— — —	SCREW, 8–32	2
112	16F384		FITTING 1/2 npt x 1/2 ptc	1
113	500251	— — —	FITTING, 90 elbow	1
114	512914	— — —	MUFFLER	1
115	16D245	— — —	CLAMP, 6 in. sanitary	1
116	16D246	25D960	GASKET, 6 in. sanitary	1
130	25D958	— — —	PLATEN assembly; PTFE, includes ref 131–140; type 2.1	1
	25D958C31	— — —	PTFE, includes ref 131–140; type 3.1	
	25D957	— — —	Buna-N, includes ref131–134, 136–140; type 2.1, EC 1935	
	25D957C31	— — —	Buna-N, includes ref131–134, 136–140; type 3.1, EC 1935	
131	— — —	— — —	PLATEN	1
132	— — —	— — —	RETAINER	1
133	15V115	25D961	WIPER, support PTFE platen	1
	15V115	25D962	Buna-N platen	
134	15V109	25D961	WIPER, main PTFE platen	1
	17J217	25D962	Buna-N platen	
135	15V442	25D961	WIPER, support	1
136	— — —	25D960	O-RING	1
137	— — —	25D960	O-RING	1
138	25D959	— — —	NUT, cap, 1/4–20	8
139	— — —	— — —	VALVE, bleed	1
140	— — —	— — —	FITTING, tube	1

Ref.	Part	Kit	Description	Total Qty.
Air control				
201	25M879	— — —	CONTROL, air (<i>refer to separate air controller manual</i>)	1
202	16F384	— — —	FITTING, 1/2 npt x 1/2 ptc	1
203	100896	— — —	FITTING, bushing	1
204	— — —	— — —	WASHER	6
205	— — —	— — —	SCREW, CAP 1/4 X 1/2	6
206	— — —	— — —	BRACKET, hose guide	1
207	— — —	— — —	GUIDE, cable	1
208	100615	— — —	BUSHING	1
209	113498	— — —	VALVE, safety, 100 psi	2
210	113318	— — —	FITTING, elbow, plug in	5
211	119789	— — —	FITTING, elbow, street	1
212	— — —	— — —	WASHER	1
213	169970	— — —	FITTING, LINE AIR	1
214	17T771	— — —	VALVE, check	1
215	— — —	— — —	CLAMP, routing	1
216	— — —	— — —	SCREW 6–32 x 3/8	1
217	— — —	— — —	SCREW, 6–32 x 3/4	1
218	503128	— — —	TUBE, polyethylene, 1/4 OD	17 ft
219	590570	— — —	TUBE, polyethylene, 1/2 OD	3 ft
220	17W723	— — —	TIE, cable, metal content (not shown)	2
▲	15V954	— — —	LABEL, warning	1

— — — *Not sold separately.*

▲ Replacement Warning labels, signs, tags, and cards are available at no cost.

Kits for frame and cart

- 25D964 Frame; base, wheel brackets, and air cylinder weldment; includes ref 1
- 25D965 Air cylinder dust cap; includes ref 7, 13, 15, 17, 19, 24
- 280627 Piston assembly; includes ref 2–14, 16, 26, 27
- 25D963 Piston seals; includes ref 5–7, 9, 11–14, 16, 26
- 25D954 Wheel assembly; includes ref 41–46
- 25D955 Handle assembly; includes ref 47–49

Kits for pump and platen

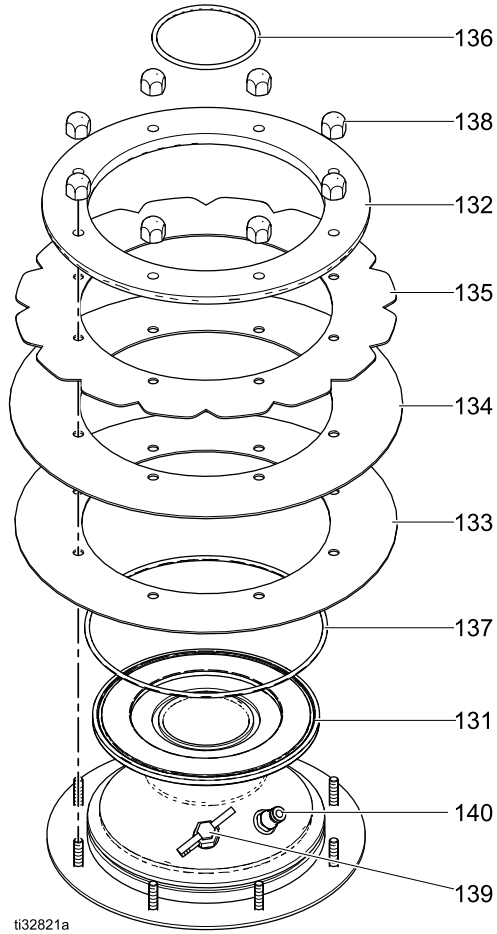
- 25D956 Motor mount; includes ref 101–104, 106–109
- 25D960 Platen seals; includes ref 116, 136, 137
- 25D961 Wipers for PTFE platen; includes ref 133–135
- 25D962 Wipers for Buna—N platen; includes ref 133–134

Kits for air controls

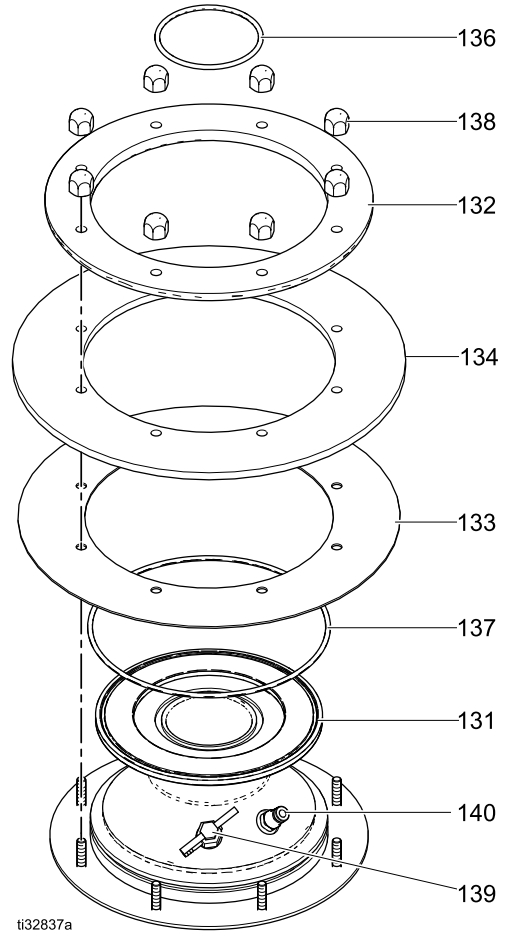
- 25E054 Hoses and fittings; includes ref 202, 210, 214, 215, 217–220

Parts

PTFE Platen Assembly

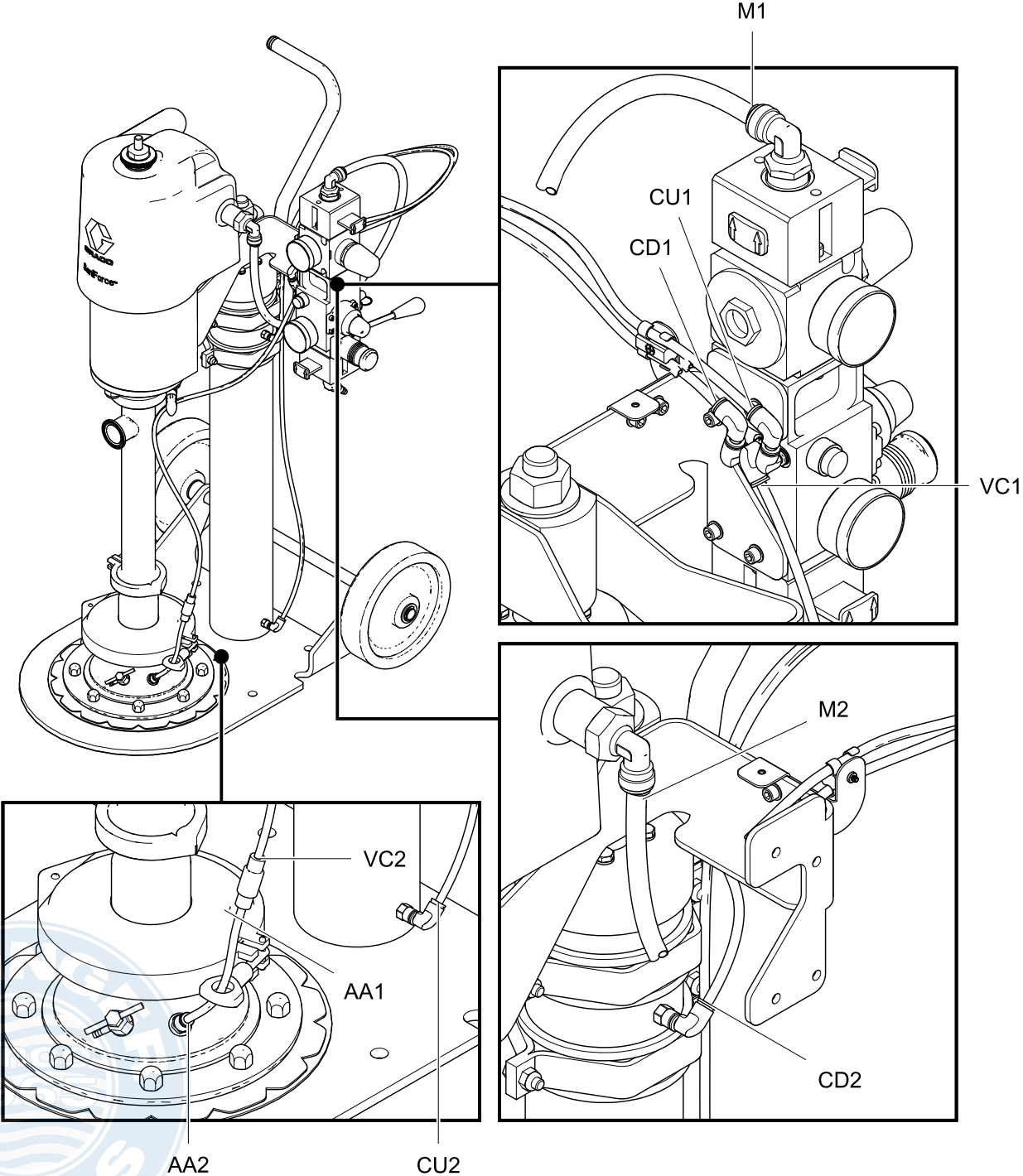


Buna-N Platen Assembly

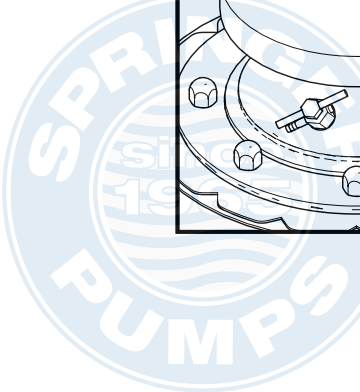


Hose Routing

This diagram shows how air hoses are routed and their connection points. For example, the cylinder up (CU) hose attaches at CU1 and CU2.



ti33580a



Technical Data

Sanitary Pail Unloader		
	US	Metric
Maximum fluid working pressure	650 psi	4.5 MPa, 44.8 bar
Maximum air inlet pressure	100 psi	0.7 MPa, 6.9 bar
Air consumption	See pump manual	
Maximum recommended pump speed	60 cycles/min, 4 gpm (15 liters/min) delivery	
Maximum ambient temperature (air motor)	90° F	32° C
Maximum fluid temperature†	120° F	49° C
Fluid Outlet Size		
Stainless Steel	1.5 in. Sanitary Flange	
Weight		
Stainless Steel	approximately. 160 lb	approximately 72.6 kg
Wetted Parts (See pump manual for pump wetted parts)		
316 Stainless Steel, Polyethylene, Nitrile, PTFE.		
Sound data		
Sound power*	78.5 dBa	
Sound pressure**	71.6 dBa	

* Sound power at 70 psi (0.48 MPa, 4.8 bar), 20 cpm. Sound power measured per ISO-9614-2.

** Sound pressure was tested 3.28 feet (1 m) from equipment.

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:** 612-378-3505

All written and visual data contained in this document reflects the latest product information available at the time of publication. Graco reserves the right to make changes at any time without notice.
Original Instructions. This manual contains English. MM 3A5401

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