

# Elevators and Pump Supports

306287Z

EN

Used to raise and lower select Graco circulation and supply pumps. For professional use only.

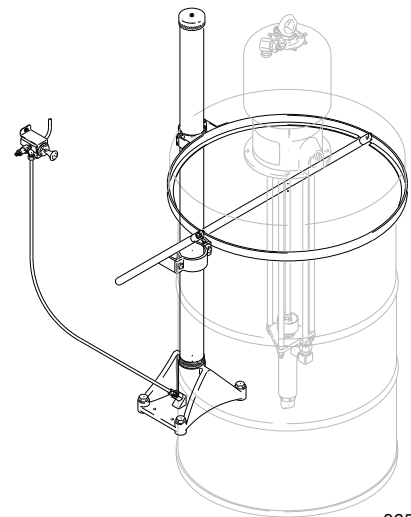
*200 psi (1.4 MPa, 14 bar) Maximum Air Input Pressure*



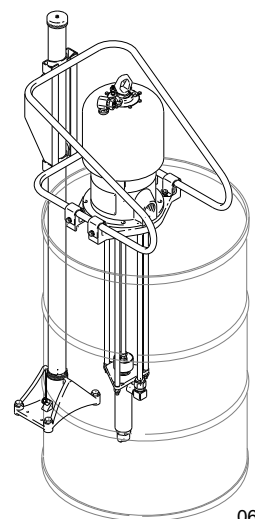
### Important Safety Instructions

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

See page 2 for a list of models.



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# Table of Contents

<b>Table of Contents</b> .....	<b>2</b>	<b>Service</b> .....	<b>7</b>
<b>List of Models</b> .....	<b>2</b>	Lubrication .....	7
<b>Warnings</b> .....	<b>3</b>	Seals and Gaskets .....	7
<b>Installation</b> .....	<b>4</b>	Push-Pull Valve .....	7
General Information .....	4	<b>Parts</b> .....	<b>8</b>
Fixed Mount Elevator .....	4	Elevator .....	8
Pump Support Bracket .....	5	Support and Control .....	10
Cover Support .....	5	Support and Control	
Air Connection .....	5	(Model 237746 Series A, 241663 Series A,	
<b>Operation</b> .....	<b>6</b>	237579, 237578) .....	12
Starting and Adjusting the Elevator .....	6	<b>California Proposition 65</b> .....	<b>14</b>
Changing Drums .....	6	<b>Dimensions</b> .....	<b>15</b>
		<b>Graco Standard Warranty</b> .....	<b>16</b>

## List of Models

### Elevators

Part Number	Series	Description
204385	E	Standard Elevator with Fixed Mounting
207408	D	Heavy Duty Elevator with Fixed Mounting - Designed with increased strength and rigidity to allow frequent raising and lowering loads ranging between 120-400 lbs. (54-81 kg).
205332	B	Bare Elevator
237746	A	Elevator Assembly, includes 204385 Elevator, 237578 Cover Support, and 237579 Air Control Kit
241663	A	Elevator Assembly, includes 204385 Elevator, 207562 Cover Support, and 207561 Air Control Kit

### Pump Supports






Part Number	Series	Description
206232	A	Frame Support (open mounting)
207562	A	Ring Support (cover mounting)
237578	A	Ring Support (cover mounting)

### Air Control Kits

Part Number	Series	Description
207561	A	For use with Supports 206232 or 207562
237579	A	For use with Support 237578

# 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.



 <b>WARNING</b>	
 	<p><b>EQUIPMENT MISUSE HAZARD</b></p> <p>Misuse can cause death or serious injury.</p> <ul style="list-style-type: none"> <li>• Do not operate the unit when fatigued or under the influence of drugs or alcohol.</li> <li>• Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See <b>Technical Data</b> in all equipment manuals.</li> <li>• 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 MSDS from distributor or retailer.</li> <li>• Do not leave the work area while equipment is energized or under pressure.</li> <li>• Turn off all equipment and follow the <b>Pressure Relief Procedure</b> when equipment is not in use.</li> <li>• Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.</li> <li>• Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.</li> <li>• Make sure all equipment is rated and approved for the environment in which you are using it.</li> <li>• Use equipment only for its intended purpose. Call your distributor for information.</li> <li>• Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.</li> <li>• Do not kink or over bend hoses or use hoses to pull equipment.</li> <li>• Keep children and animals away from work area.</li> <li>• Comply with all applicable safety regulations.</li> </ul>
 	<p><b>MOVING PARTS HAZARD</b></p> <p>Moving parts can pinch, cut or amputate fingers and other body parts.</p> <ul style="list-style-type: none"> <li>• Keep clear of moving parts.</li> <li>• Do not operate equipment with protective guards or covers removed.</li> <li>• Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the <b>Pressure Relief Procedure</b> in your separate pump manual and disconnect all power sources.</li> </ul>

# 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.

						
<p>To reduce the risk of serious injury, including fluid injection, splashing in the eyes or on the skin, or injury from moving parts:</p> <ol style="list-style-type: none"> <li>1. Always relieve air and fluid pressure in the pump before raising the elevator.</li> <li>2. Keep your fingers and hands away from moving parts when raising or lowering the elevator to prevent pinching or amputating them including between the drum and pump mounting assembly.</li> <li>3. When the pump is in the raised elevator position, do not leave it unattended. Keep air supplied to the elevator. Block the pump, drum cover or pump support bracket before working on the pump.</li> <li>4. Before working on the elevator, remove the pump and relieve air pressure to the elevator.</li> </ol>						

## Fixed Mount Elevator

Locate the elevator where there is at least 9 ft (2.75 m) overhead clearance. Mark and drill holes for 0.5 in. (13 mm) mounting bolts. See FIG. 2 and the dimensional drawing on page 15. Level the base (17), using shims if necessary. Secure the base to the floor using four 1/2 in. (13 mm) mounting bolts which are long enough to prevent the elevator from tipping.

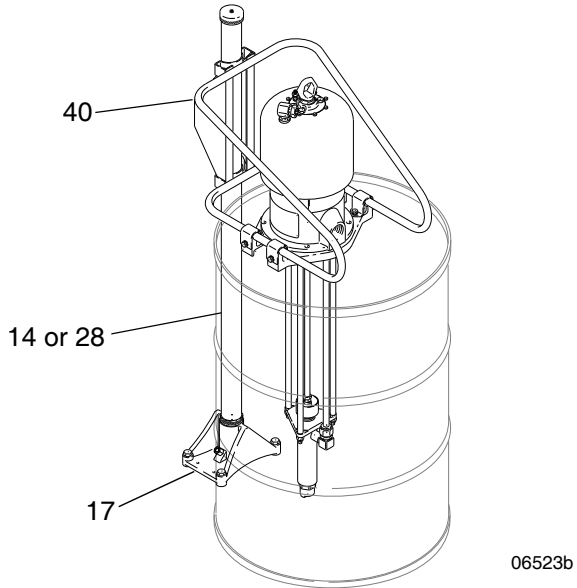


FIG. 1

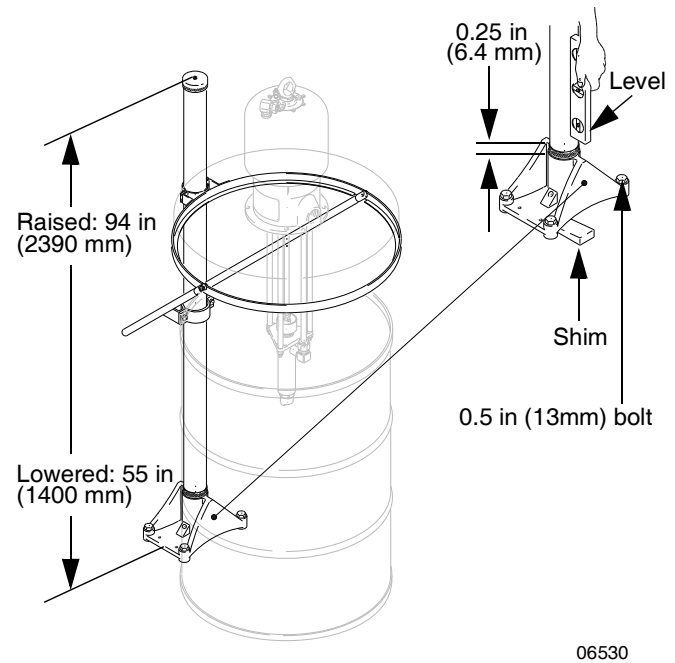
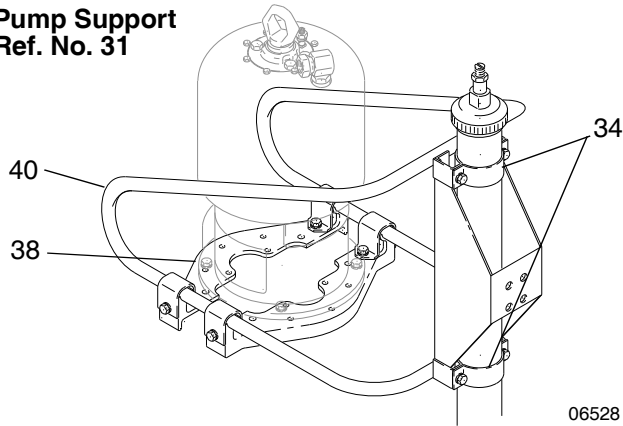


FIG. 2

## Pump Support Bracket

Set an open drum against the elevator base (17). Position the bracket (40) on top of the drum so that the clamp (34) recesses are tight against the elevator riser tube (14 or 28). See FIG. 1 and FIG. 3. Raise the riser tube up about 0.25 in. (6.4 mm), install the clamps (34) and tighten securely. Attach the pump mounting brackets (38)

### Pump Support Ref. No. 31

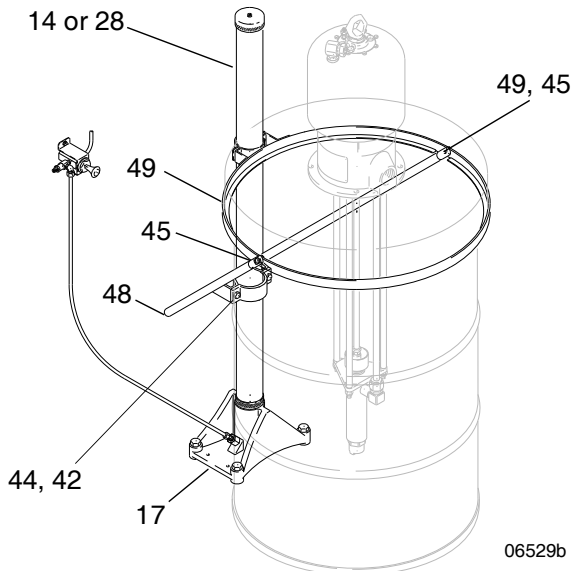


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FIG. 3

## Cover Support

Place the cover in its proper position in the support ring (49) and tighten the capscrews (45). Set an open drum against the elevator base (17) and put the cover on the drum so the support clamp (44) recesses are tight against the elevator riser tube (14 or 28). Raise the tube 0.25 in. (6.4 mm), then tighten the clamp screws (42). See FIG. 4.



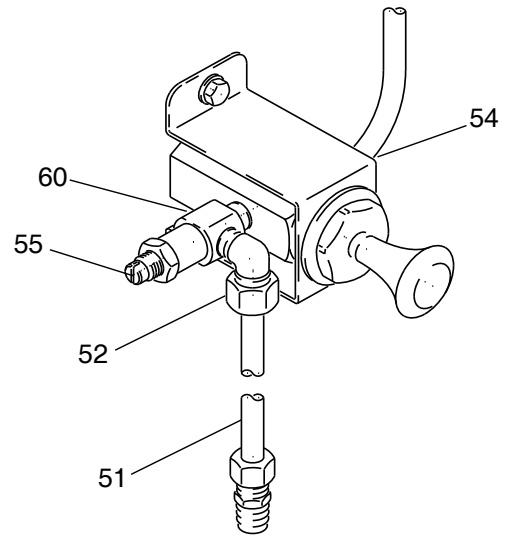
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FIG. 4

## Air Connection

Screw the restrictor valve (55) into the push-pull valve (60) as shown in FIG. 5. Mount the valve on the wall at a convenient height, using the mounting bracket (54). Connect the master air supply to the valve. Screw the elbow fitting (52) into the 1/8 npt(f) inlet of the restrictor valve. Push one end of the copper tube (51) into the elbow and tighten the fitting. Screw the straight fitting (53) into the base (17) of the elevator. Push the other end of the copper tube (51) into this fitting and tighten the fitting.

### Push-Pull Valve Ref. No. 60





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FIG. 5

# Operation

## Starting and Adjusting the Elevator

						
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Moving parts can pinch or amputate your fingers. When the pump is operating and when raising or lowering the elevator, keep your fingers and hands away from the elevator, pump support, drum cover, and lip of the drum.

You must adjust the elevator to ensure that the cover is supported by the drum.

1. Close all air regulators and air valves.
2. Open the main air bleed valve. Pull up on the air control valve and let the elevator rise to its full height. Normal operation requires only a few seconds for air pressure to build up or exhaust, and to start raising or lowering the elevator.
3. Set a full 200 liter (55 gal.) drum against the elevator base.
4. With your hands away from the drum and the cover, push down on the air control valve and lower the elevator until the cover rests on the lip of the drum. The support clamp recesses must be tight against the elevator riser tube.
5. Raise the elevator 1/4 in. (6.4 mm), then tighten the support clamp screws. This ensures that the cover rests on the drum lip when the elevator is in the lowered position.
6. Before operation, ensure that all fasteners and tube connections are tightened securely.

**NOTE:** To increase or decrease the operating speed of the elevator, loosen the hex nut of the restrictor valve and turn the valve needle either in or out.

## Changing Drums

						
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Moving parts can pinch or amputate your fingers. When the pump is operating and when raising or lowering the elevator, keep your fingers and hands away from the elevator, pump support, drum cover, and lip of the drum.

<b>NOTICE</b>
Shortened or recycled drums may cause the pump or agitator to bottom out in the drum, causing damage. Contact your fluid supplier to order a standard size drum.

1. Stop the pump. Close the pump air bleed valve.
2. Pull up on the air control valve to raise the elevator.
3. Remove the empty drum and place the full drum against the elevator base.
4. Lower the elevator. See **Starting and Adjusting the Elevator**.








# Service

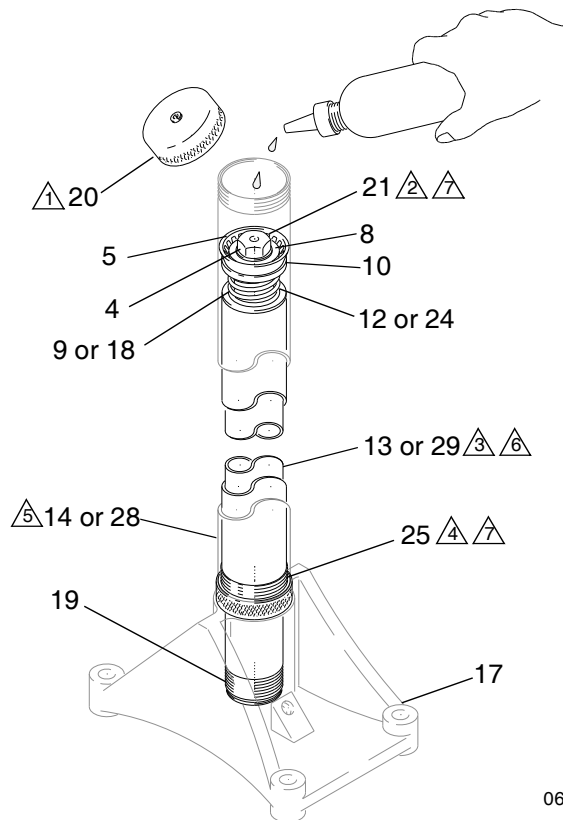
## Lubrication

Every two to six weeks, take the cap (20) off the riser tube (14 or 28) and put a few drops of light, high grade motor oil on the inside surface of the tube to lubricate the leather packing (10). See FIG. 6. When replacing the cap, torque to 20-40 ft-lb (37-54 N•m).

**NOTICE**

Be careful not to dent or damage the riser tube (14 or 28). Dents may cause the elevator to bind, making operation impossible.

-  Torque to 20-40 ft-lb (27-54 N•m)
-  Torque to 15-20 ft-lb (20-27 N•m)
-  Torque to 90-130 ft-lb (122-175 N•m)
-  Torque to 30-60 ft-lb (40-80 N•m)
-  Apply lubricant to inside surface
-  Apply tape
-  Apply Loctite® 263 Sealant to threads



06532

**FIG. 6**

## Seals and Gaskets

To replace the leather cup packings (10), screw the bearing housing (25) out of the riser tube (14 or 28) and slide the tube up off the piston (11). See FIG. 6. Screw the piston retainer capscrew (21) out of the piston body and remove the parts. Inspect parts for wear and damage and replace as necessary.

**NOTE:** When replacing packings, install a new spreader (5). This will increase the life of the packings.

Soak new leather packing (10) in light oil, and put lithium grease on the inside surface of the tube. Re-assemble in the reverse order. Apply Loctite® 263 thread sealant to the internal threads of the piston body (11) and the threads of the capscrew (21). Torque the capscrew to 15-20 ft-lb (20-27 N•m).





To replace the guide tube gasket (19), screw the guide tube (13 or 29) out of the elevator base (17). Take the gasket out. See FIG. 6. Be careful not to damage the outside bearing surface of the guide tube. Put a new gasket into the base. Put PTFE tape on the threads of the guide tube and screw it into the base. Torque to 90-130 ft-lb (122-175 N•m).





## Push-Pull Valve

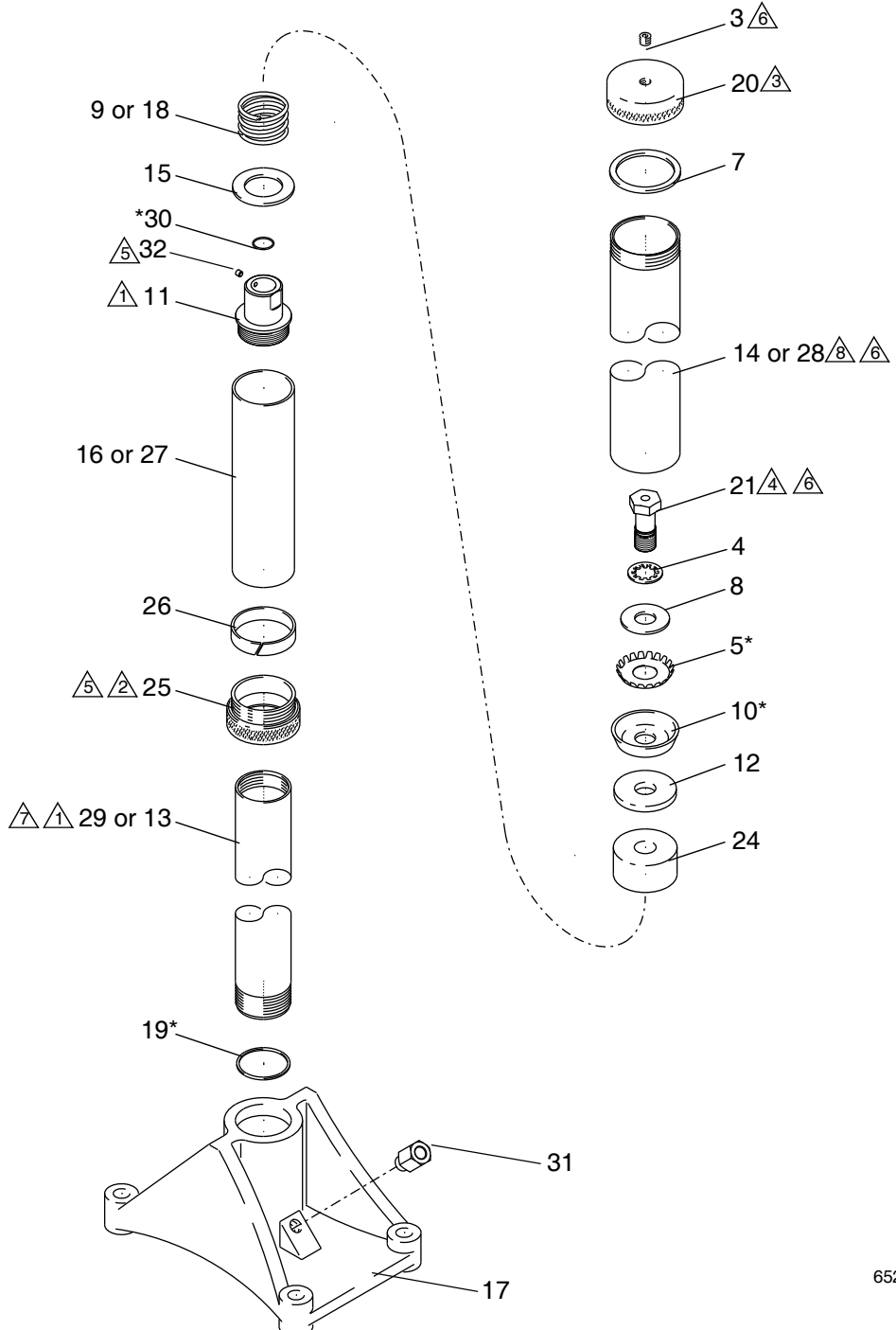
Remove the valve guide (71), washer (64), o-ring (66\*) and seal (67\*). Pull the assembled valve parts out of the valve body (70). See the Parts Drawing on page 10. Disassemble parts, clean and inspect. Re-assemble the valve, using new parts as necessary.

# Parts

## Elevator

-  Torque to 90-130 ft-lb (122-175 N•m)
-  Torque to 30-60 ft-lb (40-80 N•m)
-  Torque to 20-40 ft-lb (37-54 N•m)
-  Torque to 15-20 ft-lb (20-27 N•m)

-  Apply Loctite® TL-243 or TL242 to threads
-  Apply Loctite® 263 Sealant to threads
-  Apply tape
-  Apply lubricant to inside surface



6524b



## Elevator - Parts List

### Model 204385, Series E (see page 8)

Standard Elevator with Fixed Mounting

Includes items 3-17, 19-21, 25-26, 30, 31 below

### Model 207408, Series D (see page 8)

Heavy Duty Elevator with Fixed Mounting

Includes items 3-8, 10-11, 15, 17-21, 24-31 below

Ref. No.	Part No.	Description	Qty.
3	100139	PLUG, pipe; 1/8 npt	1
4	100422	LOCKWASHER, int shkprf; 3/4"	1
5*	150230	SPREADER, packing	1
7*	155899	GASKET, rubber	1
8	156306	WASHER, back-up	1
9	157633	SPRING, helical compression (Model 204385)	1
10*	158260	PACKING, cup; leather	1
11	192198	BODY, piston	1
12	158262	BEARING, piston (Model 204385)	1
13	158263	TUBE, guide (Model 204385)	1
14	158264	TUBE, riser (Model 204385)	1
15	158265	WASHER, special plain	1
16	158267	TUBE, stop (Model 204385)	1
17	158270	BASE, stationary (Model 204385 and 207408)	1
18	158388	SPRING, helical compression (Model 207408)	1
19*	158429	GASKET, copper	1
20	161320	CAP, tube	1
21	18F842	SCREW, cap	1
24	167870	GUIDE, riser tube (Model 207408)	1
25	167871	HOUSING, elevator bearing	1
26	167872	BEARING, PTFE tape	1
27	167873	TUBE, stop (Model 207408)	1
28	167874	TUBE, riser (Model 207408)	1
29	167875	TUBE, guide (Model 207408)	1
30*	107186	PACKING, o-ring	1
31	16T421	ADAPTER, pipe hex; 1/8 npt (mxf)	1
32	112095	SCREW, set	1

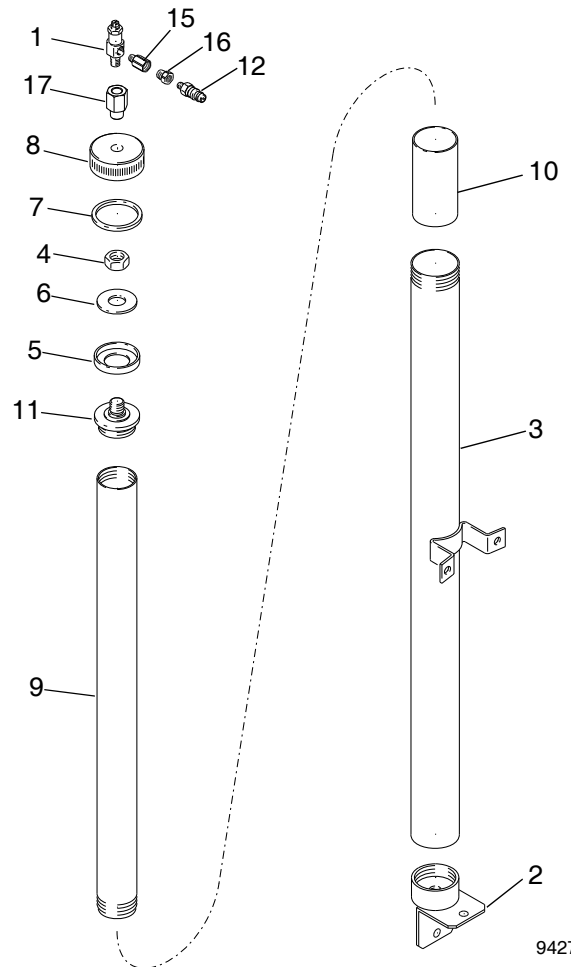
\*Recommended spare parts. Keep on hand to reduce down time.

### Model 205332, Series B (see below)

Bare Elevator



Includes items 1-17 below

Ref. No.	Part No.	Description	Qty.
1	203743	VALVE, restrictor; includes items 56- 59 on page 11	1
2	205333	CAP, elevator mounting	1
3	205334	TUBE, elevator riser	1
4	100155	NUT	1
5	150179	PACKING, cup; leather	1
6	156306	WASHER, flat	1
7	158109	GASKET; rubber	1
8	164246	CAP, tube air	1
9	164247	TUBE, guide, elevator	1
10	164248	SPACER	1
11	164249	PISTON	1
12	169969	FITTING, quick disconnect; 1/8 npt(m)	1
15	159840	ADAPTER; 1/4 npt(f) x 1/8 npt(m)	1
16	100030	BUSHING; 1/4 npt(m) x 1/8 npt(f)	1
17	16T421	ADAPTER, pipe hex; 1/8 npt (mxf)	1

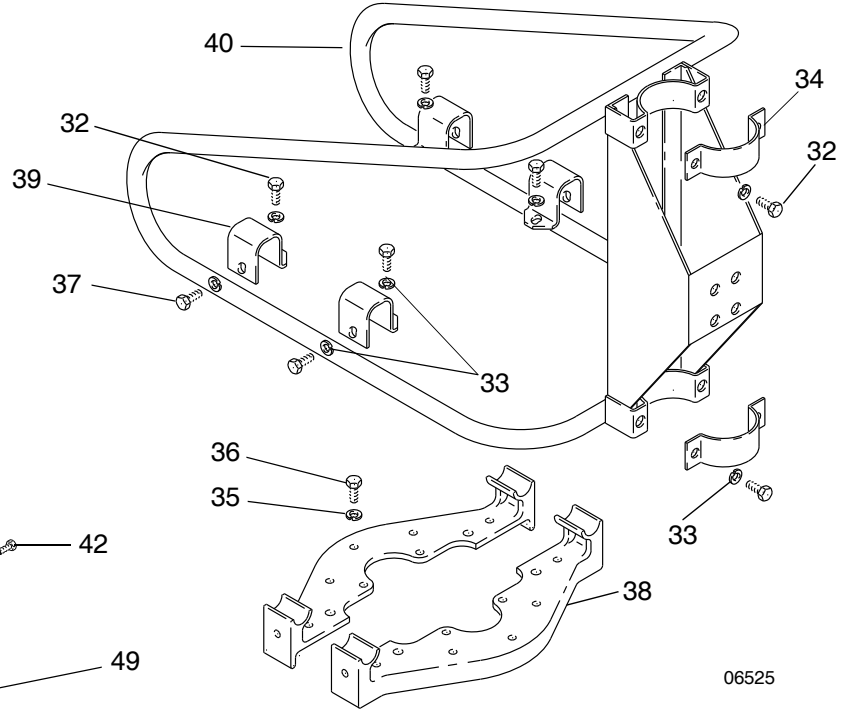


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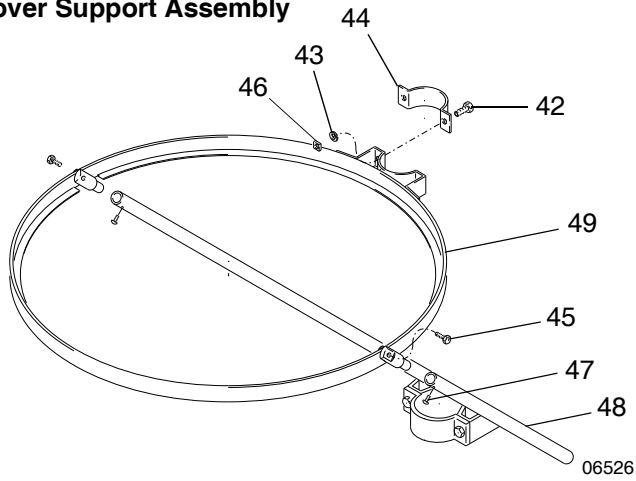
# Support and Control

-  Screw firmly against seat, back off 1/4 turn
-  Apply adhesive

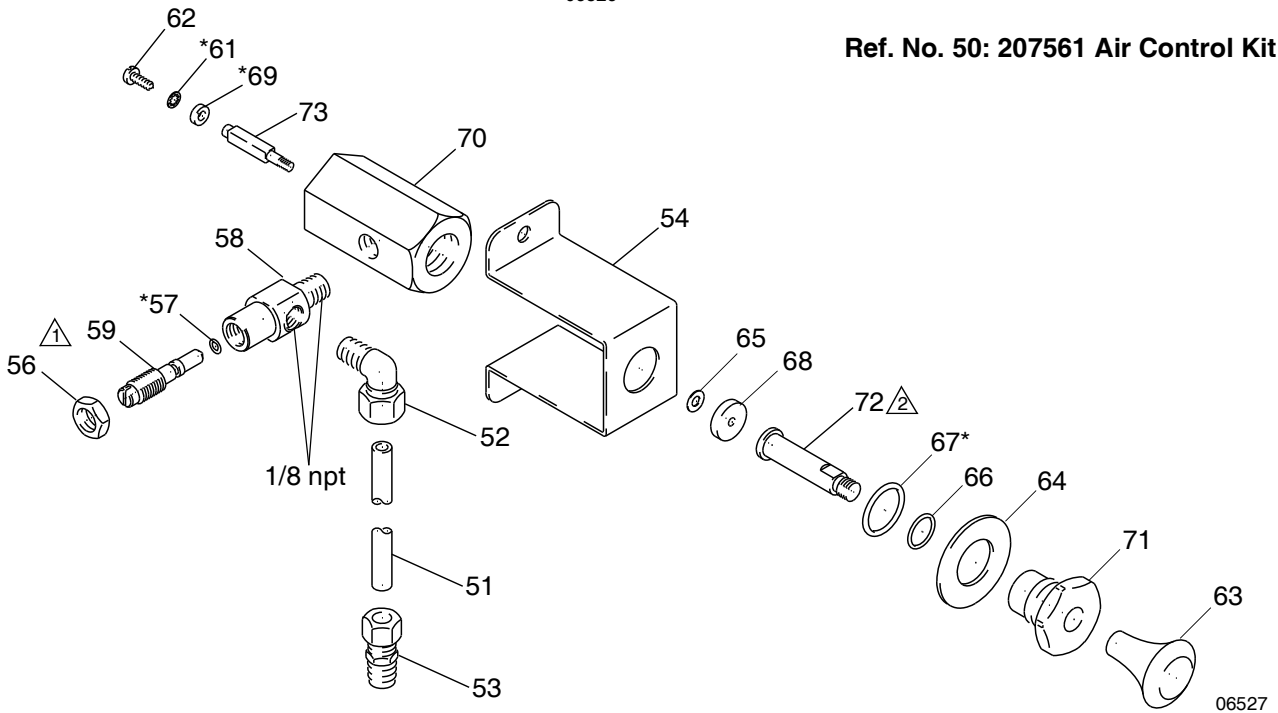
**Ref. No. 31: 206232 Pump Support Assembly**



**Ref. No. 41: 207562 Cover Support Assembly**



**Ref. No. 50: 207561 Air Control Kit**



## Support and Control - Parts List

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
<b>31</b>	<b>206232</b>	<b>PUMP SUPPORT ASSEMBLY</b> <b>Includes items 32- 40</b>	<b>1</b>	52	100112	FITTING, 90° male elbow; 0.25" (6.4 mm) tube, 1/8 npt	1
32	100057	SCREW, hex hd cap; 5/16-18 x 3/4"	8	53	100113	FITTING, straight; 0.25" (6.4 mm) tube, 1/8 npt	1
33	100214	LOCKWASHER, spring; 5/16"	12	54	154634	BRACKET, mounting	1
34	158271	CLAMP, tube; support ring and bracket	2	<b>55</b>	<b>203743</b>	<b>VALVE, restrictor</b> <b>Includes items 56-59</b>	<b>1</b>
35	100133	LOCKWASHER, spring; 3/8"	4	56	101448	NUT, hex jam; 3/8-24	1
36	100469	SCREW, hex hd cap; 3/8-16 x 3/4"	4	57*	157628	PACKING, o-ring	1
37	100538	SCREW, hex hd cap; 5/16-18 x 1/2"	4	58	160162	BODY, valve	1
38	166573	BRACKET, pump mounting	2	59	160163	NEEDLE, valve	1
39	166574	STRAP, support bracket	4	<b>60</b>	<b>202295</b>	<b>VALVE, push-pull</b> <b>Includes items 61-73</b>	<b>1</b>
40	206762	FRAME, support, pump	1	61*	100272	LOCKWASHER, int shkprf, no. 6	1
<b>41</b>	<b>207562</b>	<b>COVER SUPPORT ASSEMBLY</b> <b>Includes items 42-49</b>	<b>1</b>	62*	104560	SCREW, pan hd mach; 6-32 x 3/8"	1
42	100057	SCREW, hex hd cap; 5/16-18 x 3/4"	4	63	154519	KNOB	1
43	100214	LOCKWASHER, spring; 5/16"	4	64	154526	WASHER, special plain	1
44	158271	CLAMP, tube; support ring and bracket	2	65*	154570	WASHER, special plain	1
45	100022	SCREW, hex hd cap; 1/4-20 x 3/4"	2	66*	154594	PACKING, o-ring	1
46	100181	NUT, square; 5/16-18	4	67*	155500	SEAL, o-ring	1
47	100268	SCREW, rd hd mach; 10-24 x 3/8"	2	68*	155811	SEAL, flat cup; air intake	1
48	202776	BRACE, support	1	69*	155921	SEAL, flat cup; air exhaust	1
49	202777	RING, support	1	70	157160	BODY, valve	1
<b>50</b>	<b>207561</b>	<b>KIT, control, air</b> <b>Includes items 51-73</b>	<b>1</b>	71	157161	GUIDE, valve	1
51	057024	TUBE, copper; 0.25" (6.4 mm) tube, 5 ft (1.52 m)	1	72	161129	STEM, large round; air intake	1
				73	161132	STEM, small square	1

\*Recommended spare parts. Keep on hand to reduce down time.

# Support and Control (Models 237746 Series A, 241663 Series A, 237579, 237578)

## Model 237746, Series A

Standard Elevator with Fixed Mounting

Includes 204385 Elevator (see page 8), 237579 Air Control Kit, and 237578 Cover Support Assembly

## Model 241663, Series A

Standard Elevator with Fixed Mounting

Includes 204385 Elevator (see page 8), 207561 Air Control Kit (see page 10), and 207562 Cover Support Assembly (see page 10)

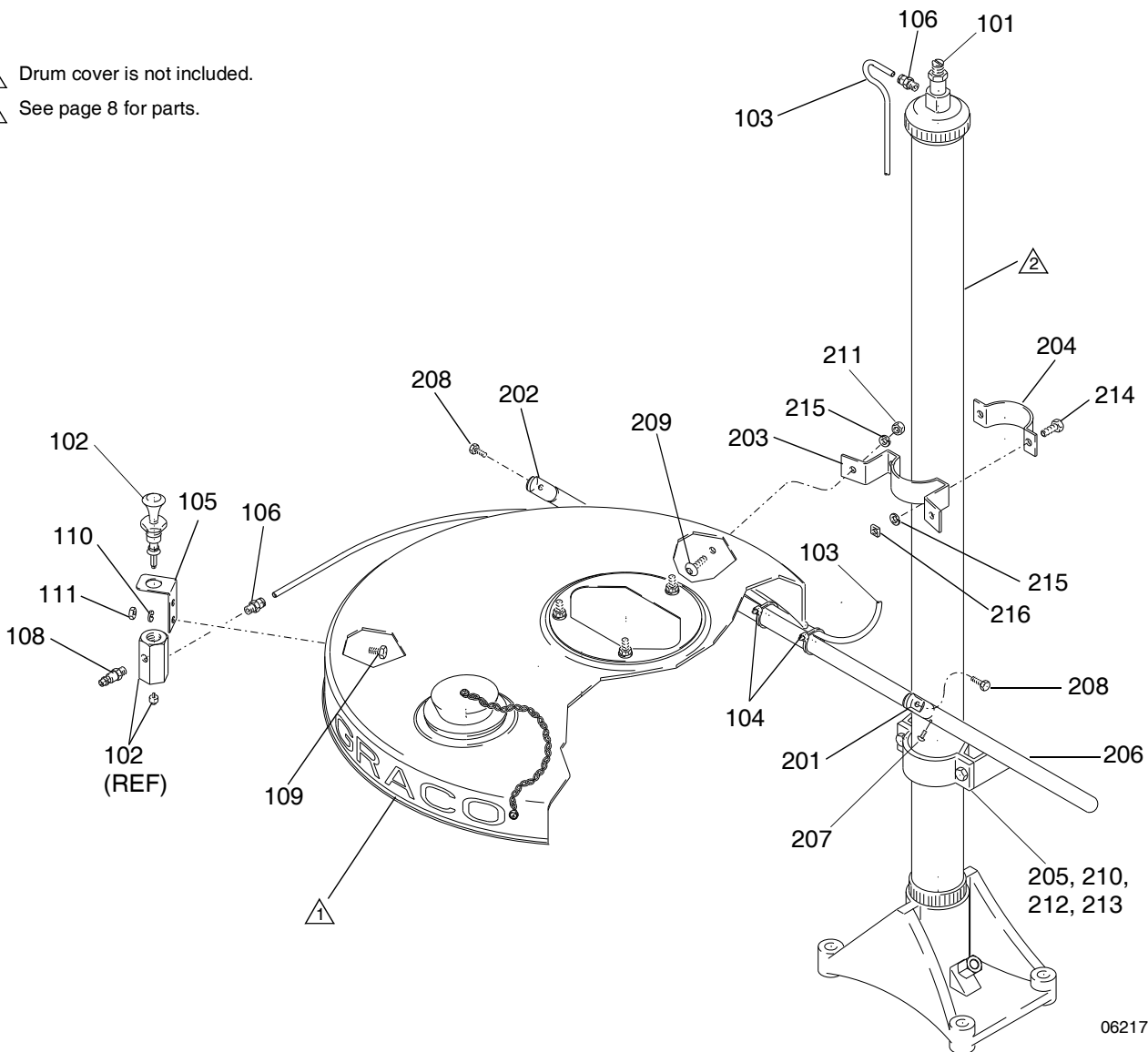
## 237579 Air Control Kit

Includes items 101-111

## 237578 Cover Support Assembly

Includes items 201-216

- ⚠ Drum cover is not included.
- ⚠ See page 8 for parts.



## Support and Control- Parts List (Models 237746 Series A, 241663 Series A, 237579, 237578)

### Model 237746, Series A

Standard Elevator with Fixed Mounting

Includes 204385 Elevator (see page 8), 237579 Air Control Kit, and 237578 Cover Support Assembly

### Model 241663, Series A

Standard Elevator with Fixed Mounting

Includes 204385 Elevator (see page 8), 207561 Air Control Kit (see page 10), and 207562 Cover Support Assembly (see page 10)

#### 237579 Air Control Kit

Ref. No.	Part No.	Description	Qty.
101	203743	VALVE, restrictor Includes items 56-59 (see page 10)	1
102	202295	VALVE, push-pull Includes items 61-72 (see page 10)	1
103		TUBE; nylon; 7 ft; purchase locally	1
104	103473	STRAP, tie wire	2
105	190231	BRACKET, valve	1
106	113208	FITTING, tube	2
108	169969	FITTING, air, quick disconnect	1
109	112896	SCREW, cap, hex hd; 1/4-20; 1/2" (13 mm) long	2
110	104123	WASHER, lock, spring; 1/4" size	2
111	104121	NUT, hex; 1/4-20	2

#### 237578 Cover Support Assembly

Ref. No.	Part No.	Description	Qty.
201	190272	STUD, brace, right side	1
202	190273	STUD, brace, left side	1
203	190187	BRACKET, support, rear	1
204	190181	BRACKET, riser tube	1
205	158271	CLAMP, support	1
206	202776	BRACE, support	1
207	100268	SCREW, rd hd machine; 10-24 x 3/8" (10 mm) long	2
208	112895	SCREW, cap, hex hd; 1/4-20; 3/4" (19 mm) long	2
209	112944	SCREW, cap, button hd; 5/16-18; 3/4" (19 mm)	2
210	100057	SCREW, cap, hex hd; 5/16-18; 3/4" (19 mm)	2
211	108946	NUT, hex; 5/16-18	2
212	100181	NUT, square; 5/16-18	2
213	100214	WASHER, lock, spring; 5/16" size	2
214	112894	SCREW, cap, hex hd; 5/16-18; SST	2
215	112904	WASHER, lock, spring; 5/16; SST	4
216	112900	NUT, square; 5/16-18; SST	2

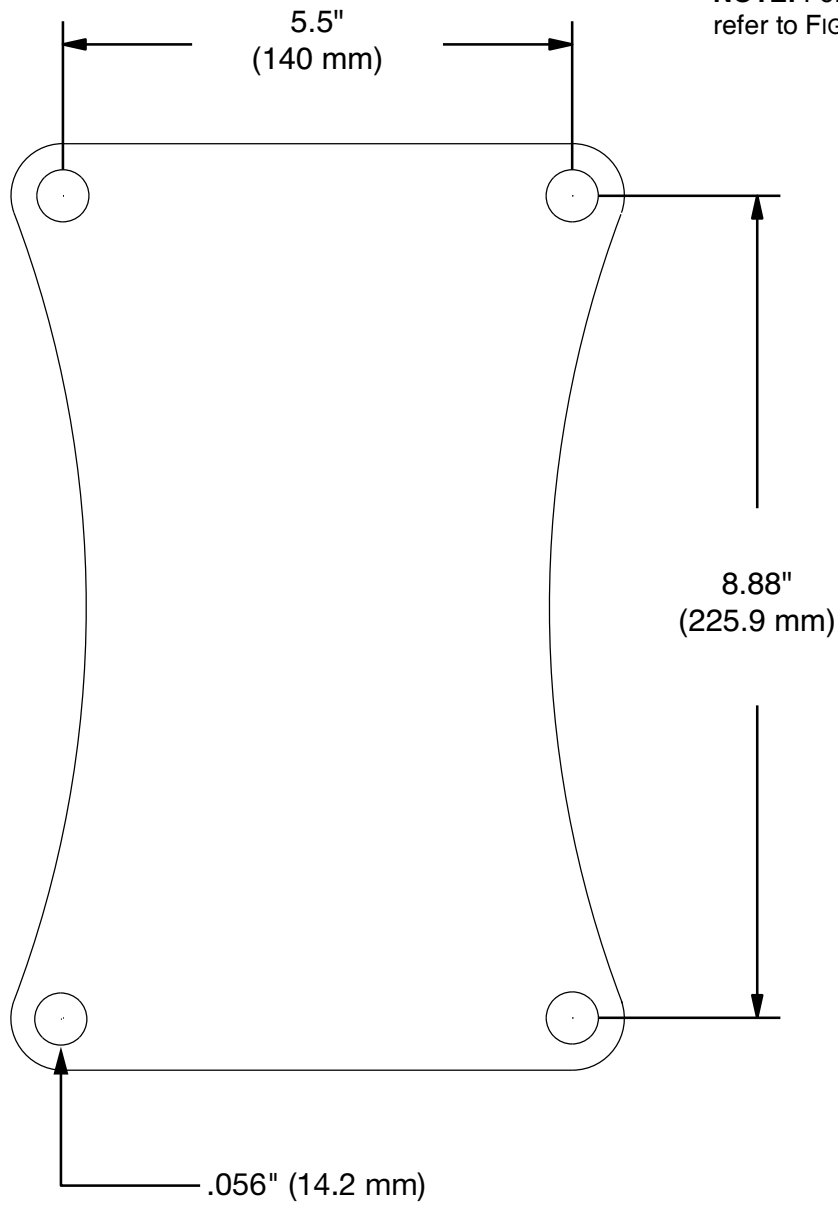
# California Proposition 65

## CALIFORNIA RESIDENTS

 **WARNING:** Cancer and reproductive harm. – [www.P65warnings.ca.gov](http://www.P65warnings.ca.gov).

# Dimensions

**NOTE:** For elevator height dimensions, refer to FIG. 2 and **Installation** on page 4.



06533

# 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.

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For the latest information about Graco products, visit [www.graco.com](http://www.graco.com).

For patent information, see [www.graco.com/patents](http://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 306287

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