

MVB Pump

3A2334B

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Provides a predetermined, proportional amount of lubricant to lubrication points. For use with Graco MVB gearboxes. For professional use only.



Important Safety Instructions

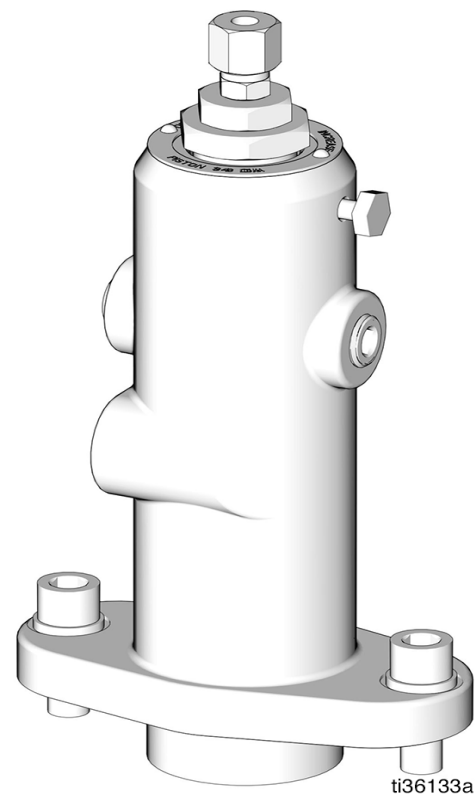
Read all warnings and instructions in this manual and in the related system component manuals before using the equipment. Save all instructions.

Model 563565

1/4 inch diameter piston
8000 psi (552 bar, 55.2 MPa) Maximum Working Pressure







Model 563566

3/8 inch diameter piston
3000 psi (207 bar, 20.7 MPa) Maximum Working Pressure






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>SKIN INJECTION HAZARD</p> <p>High-pressure fluid from dispensing device, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. Get immediate surgical treatment.</p> <ul style="list-style-type: none"> • Do not point dispensing device at anyone or at any part of the body. • Do not put your hand over the fluid outlet. • Do not stop or deflect leaks with your hand, body, glove, or rag. • Follow the Pressure Relief Procedure when you stop dispensing and before cleaning, checking, or servicing equipment. • Tighten all fluid connections before operating the equipment. • Check hoses and couplings daily. Replace worn or damaged parts immediately.



WARNING

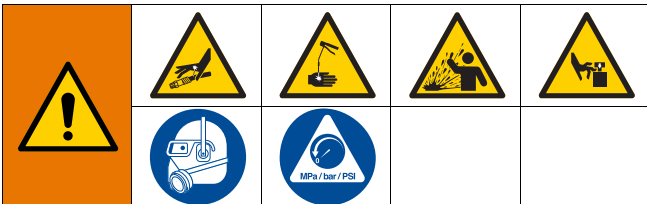
 	<p>EQUIPMENT MISUSE HAZARD</p> <p>Misuse can cause death or serious injury.</p> <ul style="list-style-type: none"> • Do not operate the unit when fatigued or under the influence of drugs or alcohol. • Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See Technical 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 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.

Installation

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 dispensing and before cleaning, checking, or servicing the equipment.

1. Disconnect power source.
2. Loosen outlet fitting or alternate outlet until no more lubricant or air leaks from the fitting. (FIG. 1)

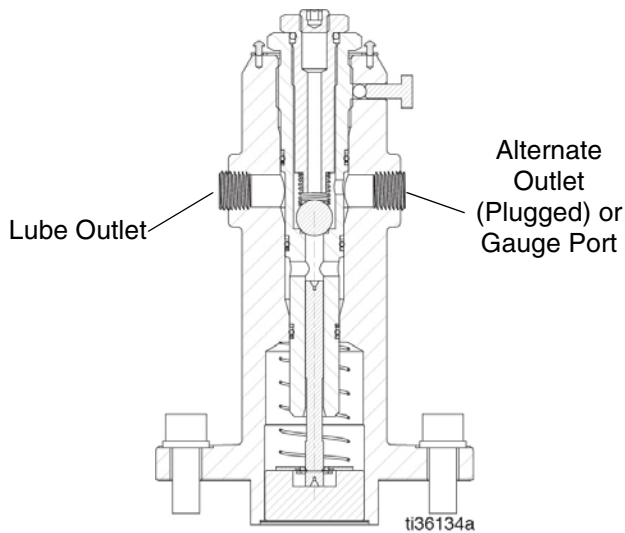


FIG. 1

Pump Adjustment

The pump output is adjustable using the 1-1/2 inch (28.58 mm) hex nut (a) on the top of the pump. Adjusting the hex nut changes the inlet port position in relation to the piston top, which regulates the discharge volume.



To adjust the pump output:

1. Follow **Pressure Relief Procedure**, page 4.
2. Loosen screw (8k) (FIG. 2).
3. Turn hex nut (a) (FIG. 2):
 - Clockwise to increase output
 - Counterclockwise to decrease output

NOTE: Do NOT exceed 0.484 inch (12.24 mm) to prevent insufficient thread engagement of the cylinder and piston assembly.

4. When the desired output volume is attained, re-tighten the screw (8k), and torque the screw (8k) to 20 in/lbs.
5. Re tighten the outlet fitting or the alternate outlet plug.

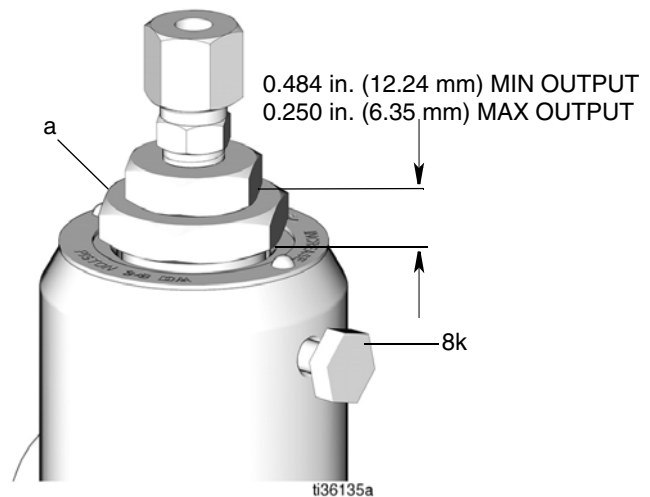


FIG. 2

Table 1 provides output changes in relation to the number of turns the hex nut is adjusted.
Note that full stroke is when the hex nut is flush with body.

Table 1: Output Adjustments

Stroke	1/4 in. (6.35 mm) Diameter Piston		3/8 in. (9.53 mm) Diameter Piston	
	cubic inch	cubic cm	cubic inch	cubic cm
Full stroke*	0.012	0.197	0.030	0.492
1/4	0.011	0.187	0.028	0.466
1/2	0.011	0.175	0.027	0.439
3/4	0.010	0.164	0.025	0.413
1	0.010	0.156	0.024	0.387
1-1/4	0.009	0.146	0.022	0.361
1-1/2	0.008	0.134	0.020	0.334
1-3/4	0.008	0.124	0.019	0.308
2	0.007	0.115	0.017	0.282
2-1/4	0.006	0.103	0.016	0.256
2-1/2	0.006	0.093	0.014	0.230
2-3/4	0.005	0.084	0.012	0.203
3	0.004	0.072	0.011	0.177
3-1/4	0.004	0.062	0.009	0.151
3-1/2	0.003	0.051	0.008	0.125
3-3/4	0.003	0.041	0.006	0.098

*hex nut turns counterclockwise from full stroke

Disassembly Procedure



All reference numbers in parenthesis refer to FIG. 3 on page 8.

1. Disconnect the power source.
2. Follow **Pressure Relief Procedure**, page 4.
3. Place the pump upside down in a vise with the pump body in a soft-jaw vise for protection.
4. Depress the piston guide (6) and remove the self-locking ring (8e) and piston guide (6).
5. Withdraw the piston assembly and piston return spring (4).
6. With the bottom of the piston visible remove the retainer ring (8c or 8f), retainer spring (1), and piston return spring (4).
7. Remove the pump from the vise and turn over. Put the pump in soft-jaw vise with the adjustment nut facing upward.
8. Loosen set screw (8k) to relieve locking force on the piston valves (5). Removal is not necessary.
9. Remove pipe plug (8h or 8j). Unthread and remove the piston valve (5), being careful not to cut the o-rings.
10. Replace o-ring and backup rings, if damaged or worn.
11. Remove the pump from the vise.
12. Place the piston valve (5) in the vise and remove the indicator port adapter (9).
13. Remove the piston valve (5) from the vise and remove the ball (8a) and spring (3).

Assembly Procedure

1. Place the piston valve (5) in a soft jaw vise and return the ball (8a) and spring (3). Thread in indicator port adapter (9) and torque to 12 ft-lbs (16 N•m).
2. Remove the piston valve (5) from vise.
3. Place the pump body (10) in a soft jaw vise with flange end facing down.
4. Thread in piston valve (5), being careful not to cut the o-rings.
5. Apply a small amount of pipe sealant to pipe plug (8h or 8j) and, while holding indicator port adapter (9) with a wrench, tighten the pipe plug (8h).
6. Remove pump body (10) from the vise and turn so that the flange end faces up.
7. Replace piston return spring (4).
8. Assemble the retainer ring (8c or 8f) and retainer spring (1) on the piston.
9. Lightly oil piston and insert into piston valve (5).
10. Insert the piston guide (6) and depress slightly to allow the self-locking ring (8e) to be installed.

Parts

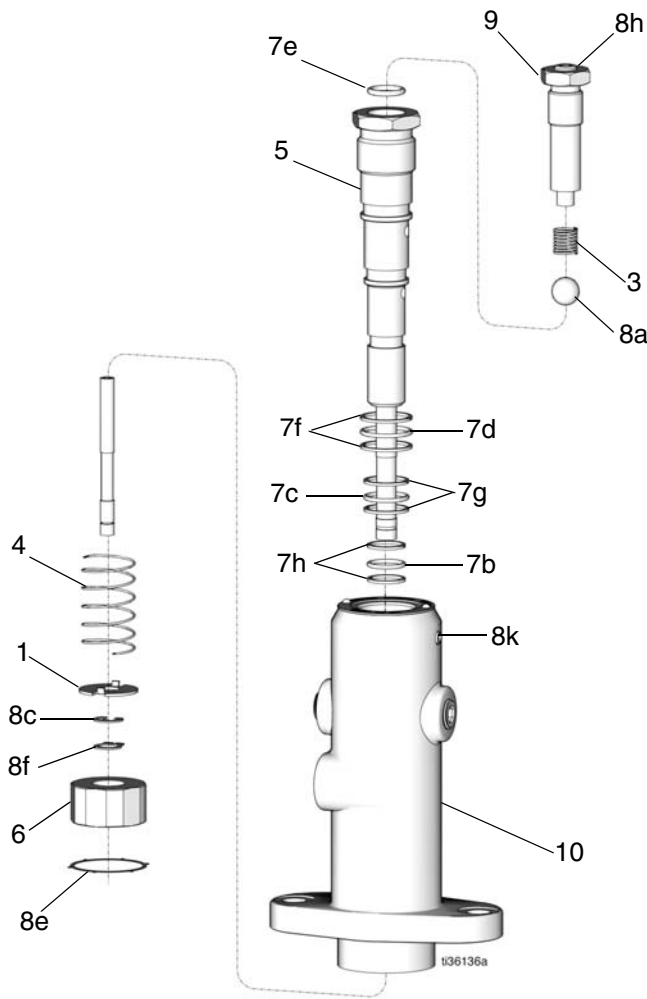


FIG. 3

Ref	Part	Description	Qty
1†*	556495	RETAINER, spring (model 563565)	1
1†*	556496	RETAINER, spring (model 563566)	1
2†*	556726	GASKET, pump (not shown)	1
3†*	556960	SPRING, piston	1
4†*	557012	SPRING, return piston	1
5*	563115	VALVE, piston, 1/4 cylinder (model 563565)	1
◆	563119	VALVE, piston, 3/8 cylinder (model 563566)	1
6*	560469	GUIDE, piston	1
7†*	558015	KIT, MVB pump seal	1
7a	556338	BALL, 0.188 diameter (not shown)	1
7b	556558	O-RING, backup, -015 fluoro-carbon	1
7c	555683	O-RING, backup, -017 fluoro-carbon	1
7d	C38312	O-RING, -019 fluoro-carbon	1
7e	555687	O-RING, -012 fluoro-carbon	1
7f	126066	RING, backup, -19, PTFE	2
7g	126067	RING, backup, -17, PTFE	2
7h	556588	RING, backup, -015 PTFE	2
8†*	558016	KIT, MVB Pump Hardware	1
8a	124923	BALL, chrome, .500	1
8b	123977	TAG, direction (not shown)	1
8c*	124925	RING, retainer, -25 E-ring	1
8e	558666	RING, retainer, 1-1/2"	1
8f★	126751	RING, retainer, 3/8"	1
8g	100133	WASHER, lock, 3/8" (not shown)	2
8h	557349	PLUG, pipe, 1/8" nptf model 563565	1
8j	557391	PLUG, pipe, 1/4" nptf model 563566	2
8k	131775	SCREW, HHCS 1/4 x 0.37	1
8l	558674	SCREW, SHCS, 3/16 x 1.00 (not shown)	2
9	560458	Indicator Port Adapter	1
10	560472	BODY, pump, MVB	1
11	260085	SCREW, drive, #2 x 0.125 (not shown)	2

* 1/4 in. piston size only

★ 3/8 in. piston size only

* Parts are included in Piston Kit 1/4 MVB Pump: 563918

◆ Parts are included in Piston Kit 3/8 MVB Pump: 563919

† Parts are included in Seal Kit 563920.

California Proposition 65

CALIFORNIA RESIDENTS

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

Technical Specifications

MVB Pump		
	US	Metric
Model 563565, 1/4 in. (6.35 mm) Piston		
Maximum Output per Stroke	0.012 cubic inches	0.917 cubic cm
Minimum Output per Stroke	0.0025 cubic inches	0.041 cubic cm
Pressure Rating with Single-lobe Cam	8000 psi	552 bar, 55.2 MPa
Pressure Rating with Double-lobe Cam	5000 psi	345 bar, 34.5 MPa
Pressure Rating with Triple-lobe Cam	4000 psi	276 bar, 27.6 MPa

Model 563566, 3/8 in. (9.53 mm) Piston		
Maximum Output per Stroke	0.030 cubic inches	0.492 cubic cm
Minimum Output per Stroke	0.006 cubic inches	0.098 cubic cm
Pressure Rating with Single-lobe Cam	3000 psi	207 bar, 20.7 MPa
Pressure Rating with Double-lobe Cam	2000 psi	138 bar, 13.8 MPa
Pressure Rating with Triple-lobe Cam	1500 psi	103 bar, 10.3 MPa

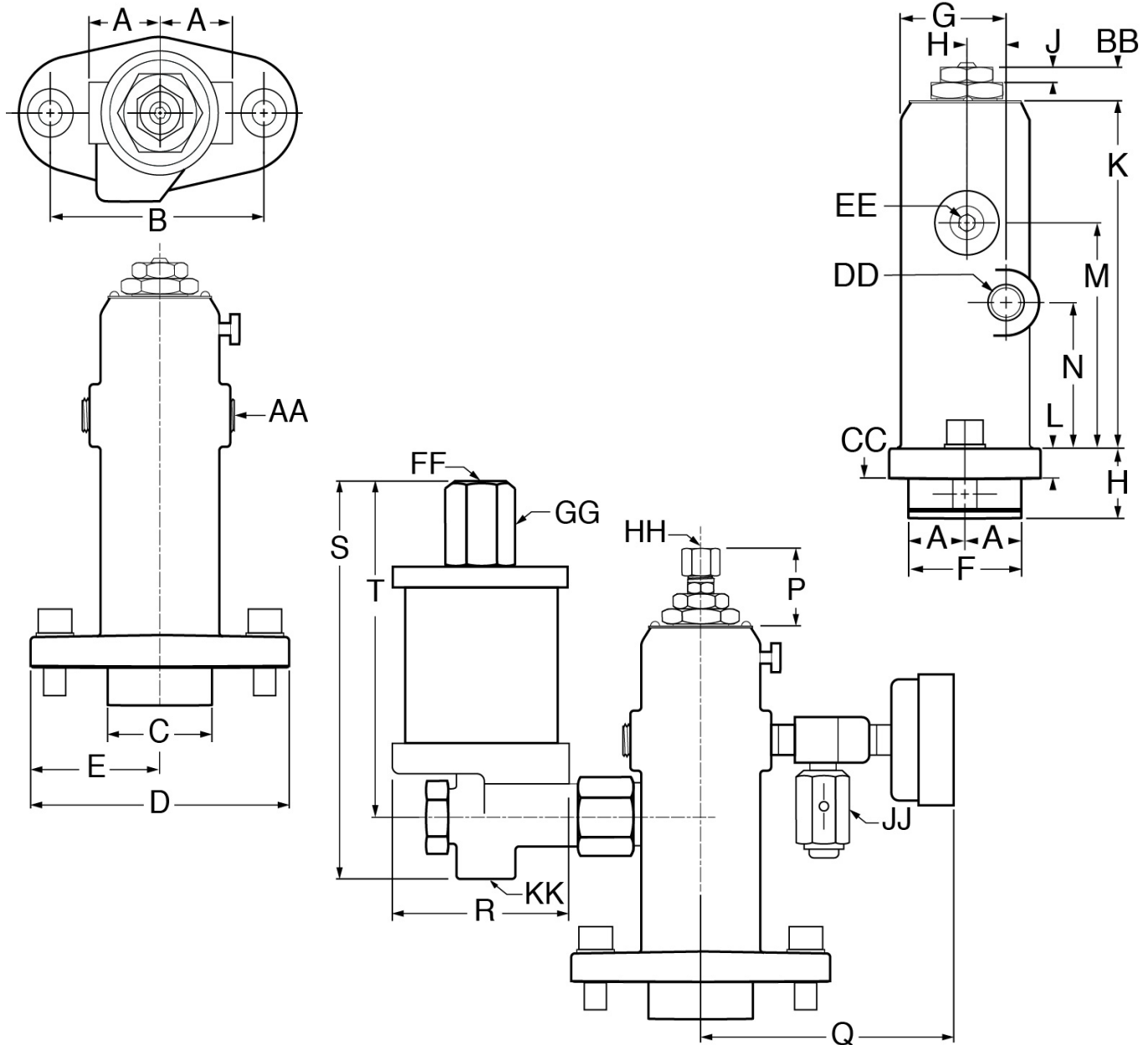
Both Models 563565 and 563566	
Outlet Port	1/4 - 18 NPSF
Inlet Port	3/8 - 18 NPSF
Minimum Strokes Per Minute*	5
Maximum Strokes Per Minute*	250
* Make sure that, taking into account selection of gear ratio and choice of cam, the actual number of pump strokes is between 5 and 250.	

Pump Output in Pints (Liters) per day

Single Camshaft rpm (Pump Strokes/Min)	Model 563565, 1/4 in. (6.35 mm) Piston				Model 56366, 3/4 in. (9.53 mm) Piston			
	Minimum Output Adjustment		Maximum Output Adjustment		Minimum Output Adjustment		Maximum Output Adjustment	
	0.12456 (Constant*)		0.59832		0.29909 (Constant*)		1.4902	
	Pints	Liters	Pints	Liters	Pints	Liters	Pints	Liters
20	2.49	1.18	11.97	5.66	5.98	2.83	29.92	14.15
30	3.74	1.77	17.95	8.49	8.97	4.24	44.88	21.23
40	4.98	2.36	23.93	11.32	11.96	5.66	59.84	28.30
50	6.23	2.95	29.92	14.15	14.95	7.07	74.80	35.38
60	7.47	3.53	35.90	16.98	17.95	8.49	89.76	42.46
70	8.72	4.12	41.88	19.81	20.94	9.90	104.72	49.53

* Constant X strokes per minute = Output in pints per day. For 2 or 3 lobe cams, multiply camshaft RPM X 2 or 3.

Dimensions



Ref	Inch	mm	Ref	Inch	mm
A	1.188	30.18	K	5.875	149.23
B	3.544	90.02	L	0.5	12.7
C	1.77	44.98	M	4.0	101.60
D	4.375	111.13	N	2.75	69.85
E	2.188	55.58	P	1.125	28.58
F	2.375	60.33	Q	4.281	108.74
G	2.00	50.8	R	2.875	73.03
H	0.625	15.88	S	6.375	161.93
J	0.250	6.35	T	5.50	139.7

Ref	Description
AA	1/4-18 NPSF
BB	0.484 - 0.250 in. (12.29 - 6.35 mm) Max Output
CC	Mounting Surface
DD	3/8-18 NPSF Lube Inlet
EE	1/4-8 NPSF Lube Outlet
FF	1/4-18 NPSF Return to Crankcase
GG	Filter Primer Option
HH	Pressure Indicator
JJ	System Fill Option
KK	1/4 NPSF Inlet (Near) 1/4 NPSF Drain (Far)

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.

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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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For the latest information about Graco products, visit www.graco.com.

TO PLACE AN ORDER, contact your Graco distributor or call to identify the nearest distributor.

Phone: 612-623-6928 or **Toll Free:** 1-800-533-9655, **Fax:** 612-378-3590

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Original instructions. This manual contains English. MM 3A2334

Graco Headquarters: Minneapolis

International Offices: Belgium, China, Japan, Korea

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