

Z-Series Chemical Pump Repair Kits

3A0281R
EN

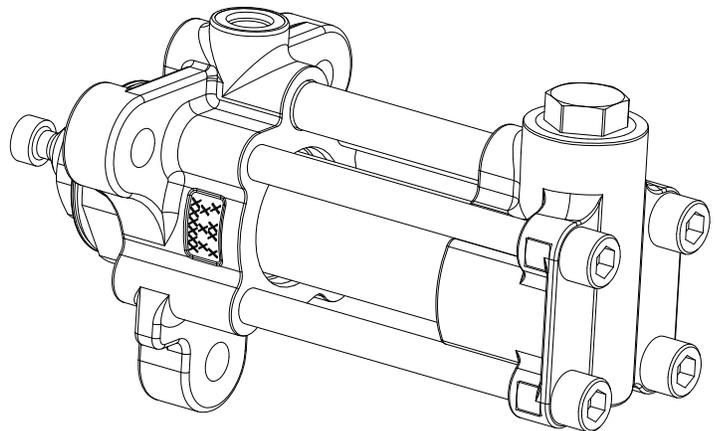
For repairing the seals, piston rod, and cylinder on Z-Series Chemical Pumps.
Not for use in explosive atmospheres.



Important Safety Instructions

Read all warnings and instructions in Z-Series Chemical Pump Instructions-Parts manual. Save those instructions.

See kit numbers on pages 11 through 14.



r_257891_3a0019_1h

Contents

Contents **2**
Related Manuals **2**
Repair **3**
Parts **5**
 S1, S3 and S4 Pumps 5
 S5 Pumps 8
Graco Information **14**

Related Manuals

Manual	Description
3A0019	Z-Series Chemical Pumps Instructions-Parts
3A6394	Z-Series Chemical Pumps High Wear Instructions-Parts

Repair

Install Piston Retainer

1. Disassemble pump assembly. See Z-Series Chemical Pump Instructions-Parts manual for instructions.
2. Replace worn or damaged parts with parts from repair kits.
3. See Z-Series Chemical Pump Instructions-Parts manual for complete assembly instructions.

NOTICE

To prevent damage to seals always use piston assembly tool (31) and rod installation tool (30) from repair kit when assembling the piston seals and displacement rod. See FIG. 1 and FIG. 3.

NOTE: Piston assembly tool is NOT needed for 5cc-15cc pump sizes.

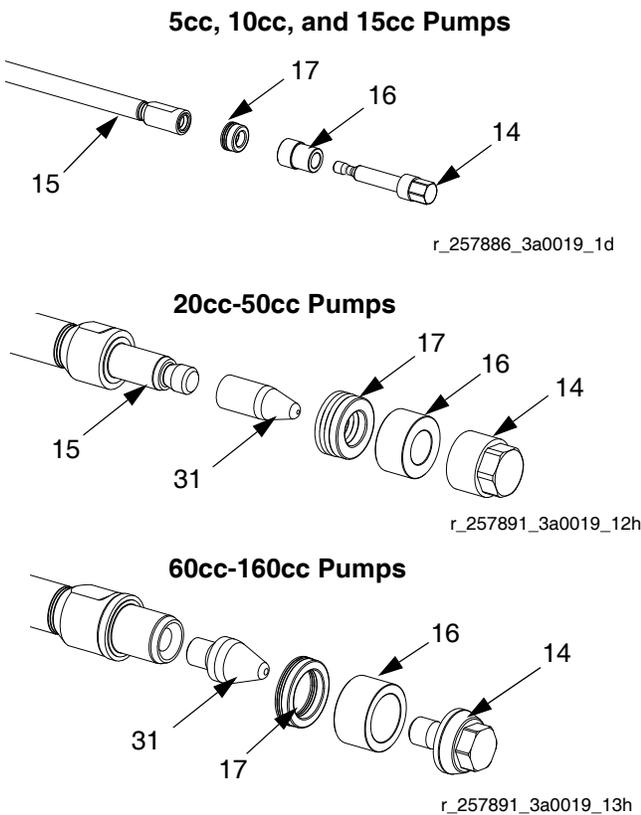


FIG. 1: S1, S3 & S4 Pumps Piston Assembly Tool (31)

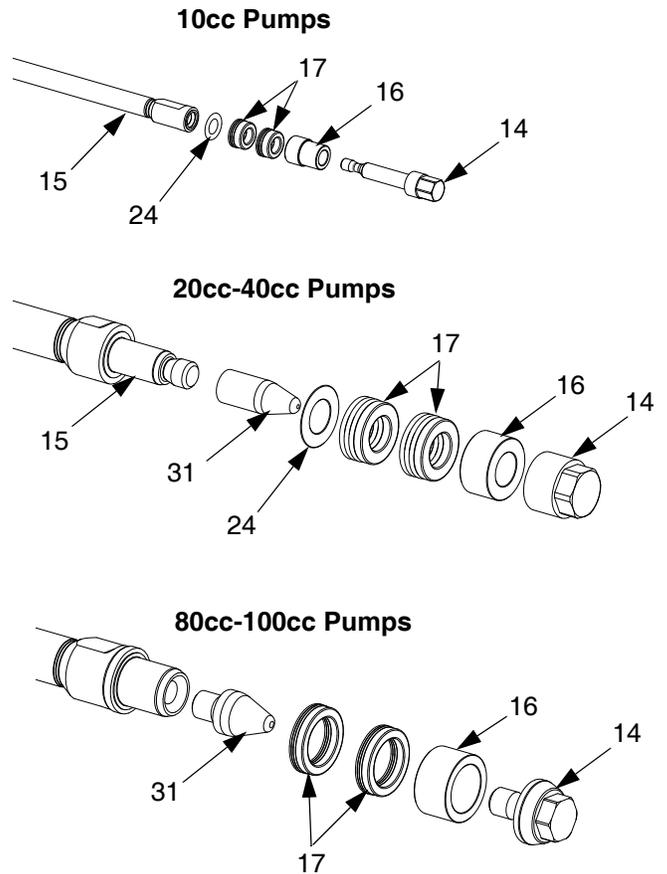


FIG. 2: S5 Pumps Piston Assembly Tool (31)

Install Displacement Rod

1. Replace worn or damaged parts with parts from repair kits.
2. See Z-Series Chemical Pump Instructions-Parts manual for complete assembly instructions.

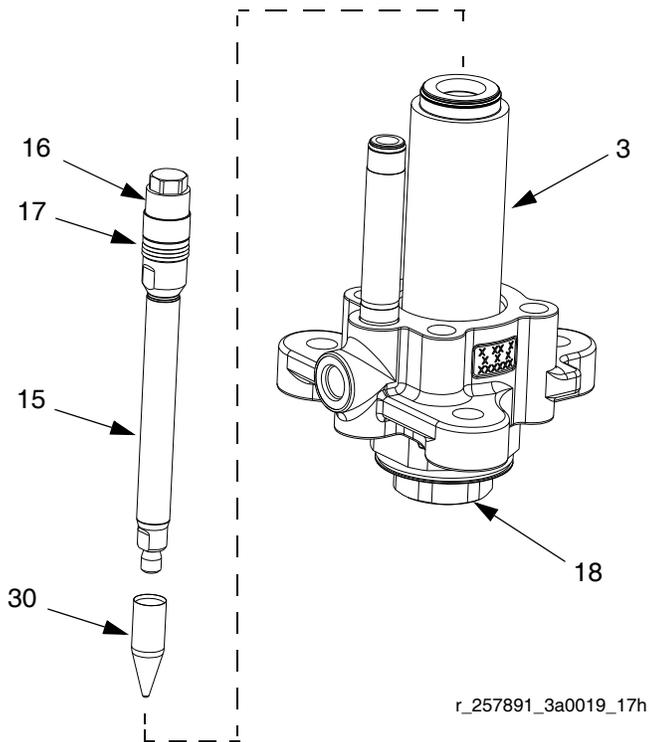
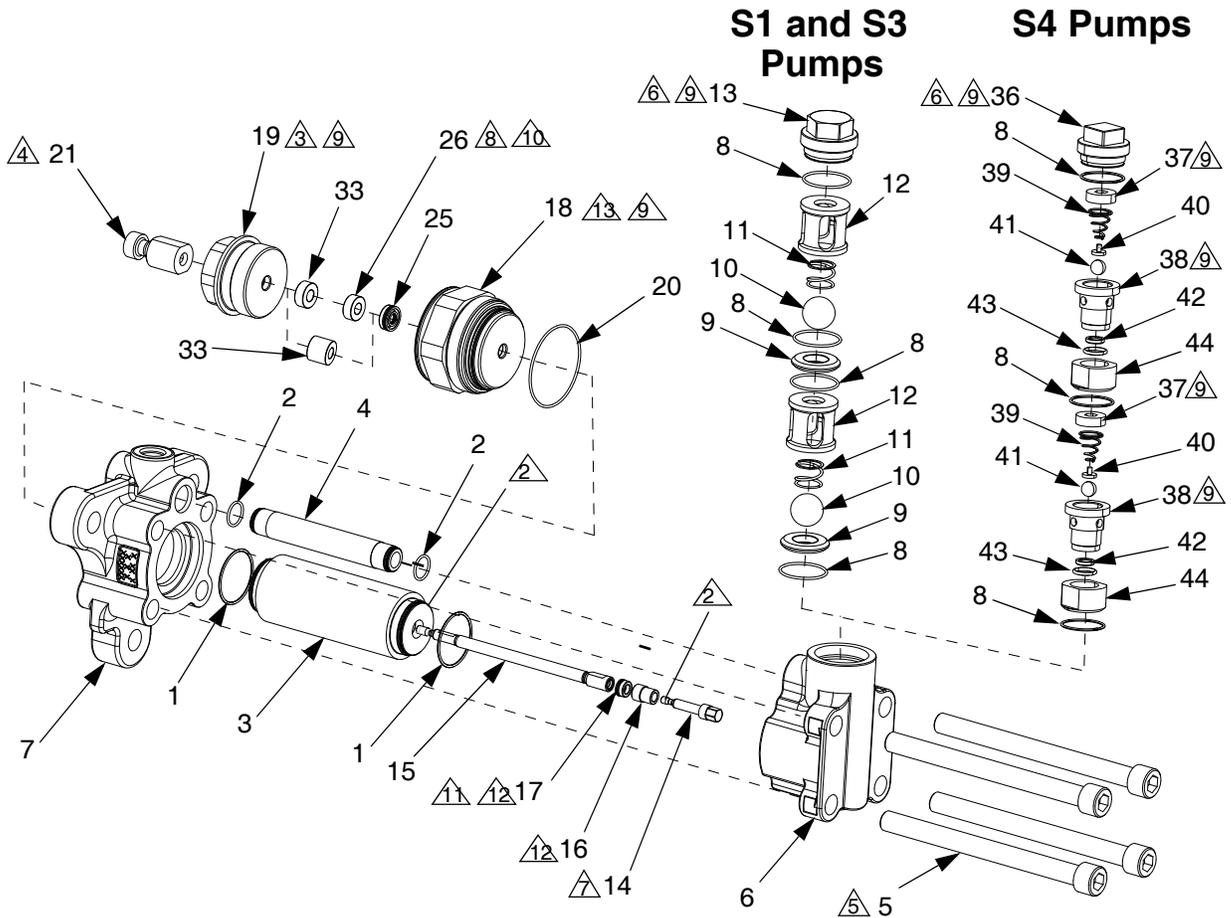


FIG. 3: Rod Assembly Tool (30)

Parts

S1, S3 and S4 Pumps

5cc, 10cc, and 15cc



1. Lubricate seals, o-rings, lead-in's and moving parts with grease.

2. Apply one stripe of removable strength anaerobic sealant on threads.

NOTICE

Specification sheets and Graco testing indicate that anaerobic sealant requires three days to fully cure. Failure to allow three days for full cure may result in parts coming loose during operation. If faster cure time is needed, Rapid Sealant Cure Kit is available, 24N985.

3. Torque to 50-ft-lbs (67.5 N•m).

4. Assemble and torque after displacement rod (15) is assembled through throat retainer (19). See table for torque specifications.

5. Torque tie bolts (4) in star pattern to 10 ft-lbs (13.5 N•m). Then torque again in star pattern to 50 ft-lbs (67.5 N•m). Finally torque again in star pattern to 120 ft-lbs (163 N•m).

6. Torque to 100 ft-lbs (135 N•m).

7. See table for torque specifications.

8. Must be pressed straight into housing.

9. Apply anti-seize lubricant to threads.

10. Ensure u-cup (26) springs face throat cartridge (18).

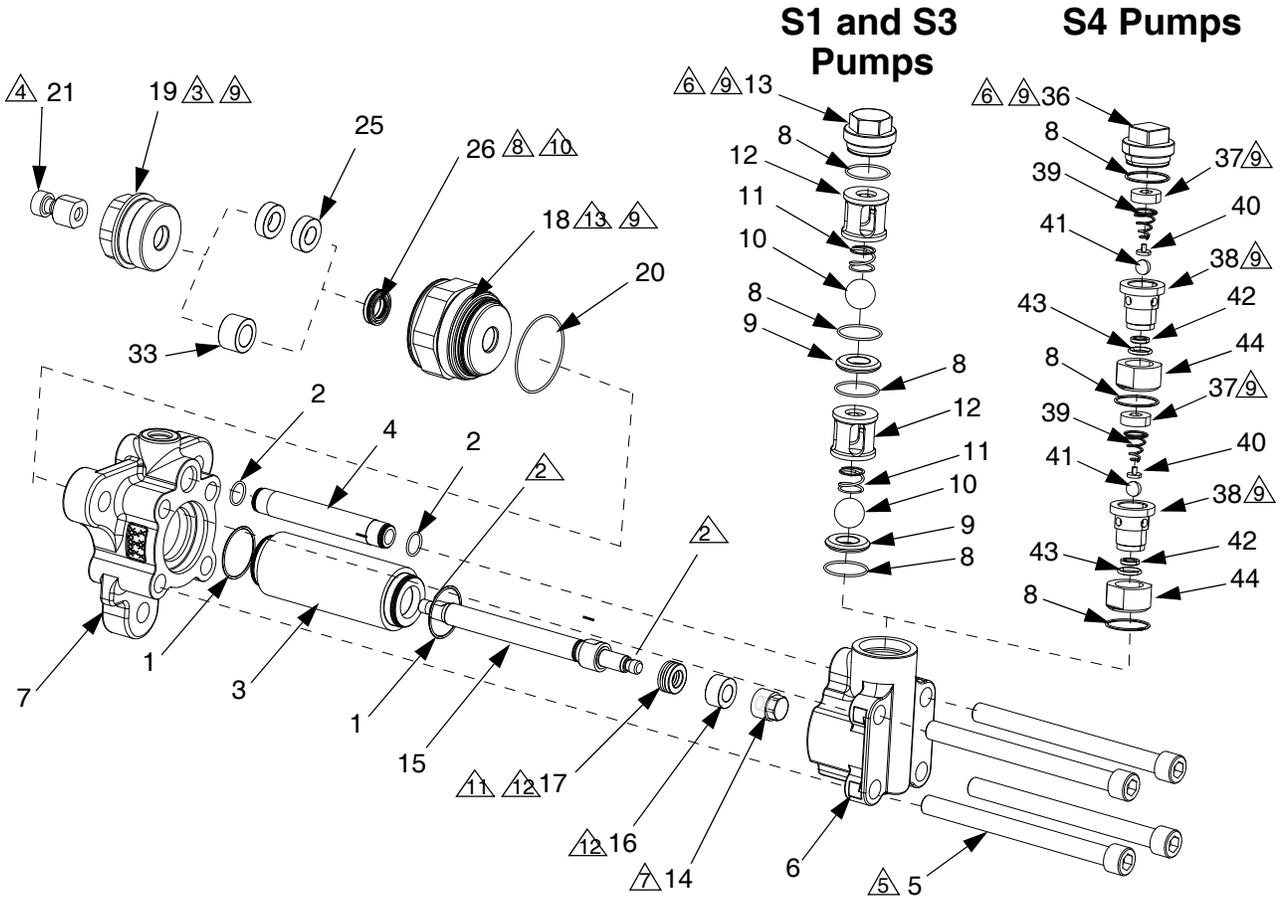
11. Ensure u-cup (17) springs face displacement rod (15).

12. Fully assemble u-cup (17) and bearing (16) onto displacement rod (15) before tightening piston retainer (14).

13. Torque to 200-ft-lbs (271 N•m).

Pump Size	Torque Specification	
	4	7
5cc	38 in-lbs (3.2 ft-lbs) (4.3 N•m)	38 in-lbs (3.2 ft-lbs) (4.3 N•m)
10cc	45 ft-lbs (60.75 N•m)	5.5 ft-lbs (7.45 N•m)
15cc	45 ft-lbs (60.75 N•m)	5.5 ft-lbs (7.45 N•m)

20cc, 25cc, 30cc, 35cc, 40cc, 45cc, and 50cc



1. Lubricate seals, o-rings, lead-in's and moving parts with grease.

⚠ Apply one stripe of removable strength anaerobic sealant on threads.

NOTICE

Specification sheets and Graco testing indicate that anaerobic sealant requires three days to fully cure. Failure to allow three days for full cure may result in parts coming loose during operation. If faster cure time is needed, Rapid Sealant Cure Kit is available, 24N985.

⚠ Torque to 50-ft-lbs (67.5 N•m).

⚠ Assemble and torque after displacement rod (15) is assembled through throat retainer (19). See table below for torque specifications.

⚠ Torque tie bolts (4) in star pattern to 10 ft-lbs (13.5 N•m). Then torque again in star pattern to 50 ft-lbs (67.5 N•m). Finally torque again in star pattern to 120 ft-lbs (163 N•m).

⚠ Torque to 100 ft-lbs (135 N•m).

⚠ See table for torque specifications.

⚠ Must be pressed straight into housing.

⚠ Apply anti-seize lubricant to threads.

⚠ Ensure u-cup (26) springs face throat cartridge (18).

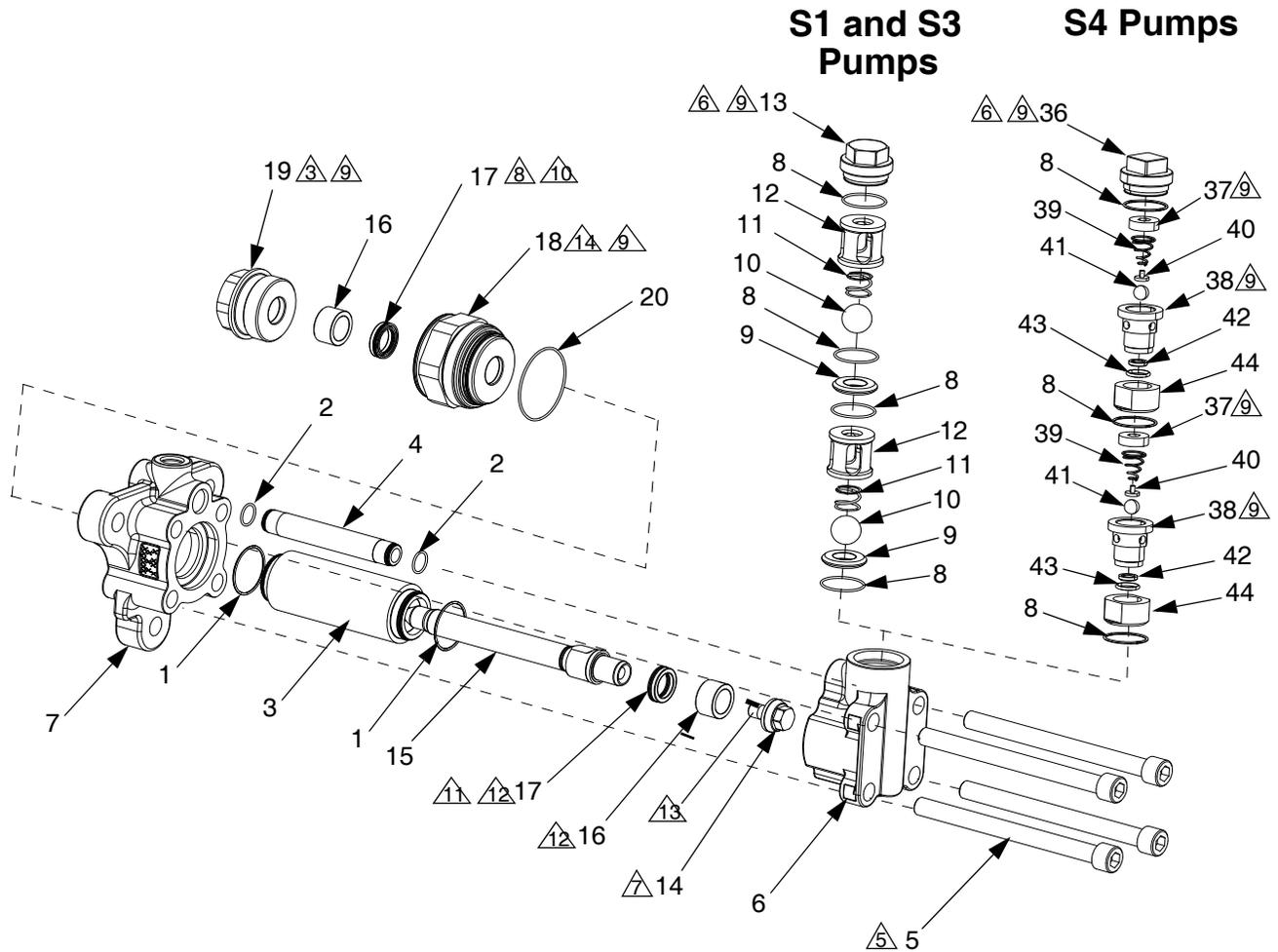
⚠ Ensure u-cup (17) springs face displacement rod (15).

⚠ Fully assemble u-cup (17) and bearing (16) onto displacement rod (15) before tightening piston retainer (14).

⚠ Torque to 200-ft-lbs (271 N•m).

Pump Size	Torque Specification	
	⚠	⚠
20cc	30-ft-lbs (40.6 N•m)	30-ft-lbs (40.6 N•m)
25cc	30-ft-lbs (40.6 N•m)	30-ft-lbs (40.6 N•m)
30cc	30-ft-lbs (40.6 N•m)	30-ft-lbs (40.6 N•m)
35cc	45-ft-lbs (60.75 N•m)	50-ft-lbs (67.5 N•m)
40cc	45-ft-lbs (60.75 N•m)	50-ft-lbs (67.5 N•m)
45cc	45-ft-lbs (60.75 N•m)	50-ft-lbs (67.5 N•m)
50cc	45-ft-lbs (60.75 N•m)	50-ft-lbs (67.5 N•m)

60cc, 65cc, 70cc, 75cc, 80cc, 86cc, 90cc, 100cc, 105cc, 120cc, 140cc, 150cc, and 160cc



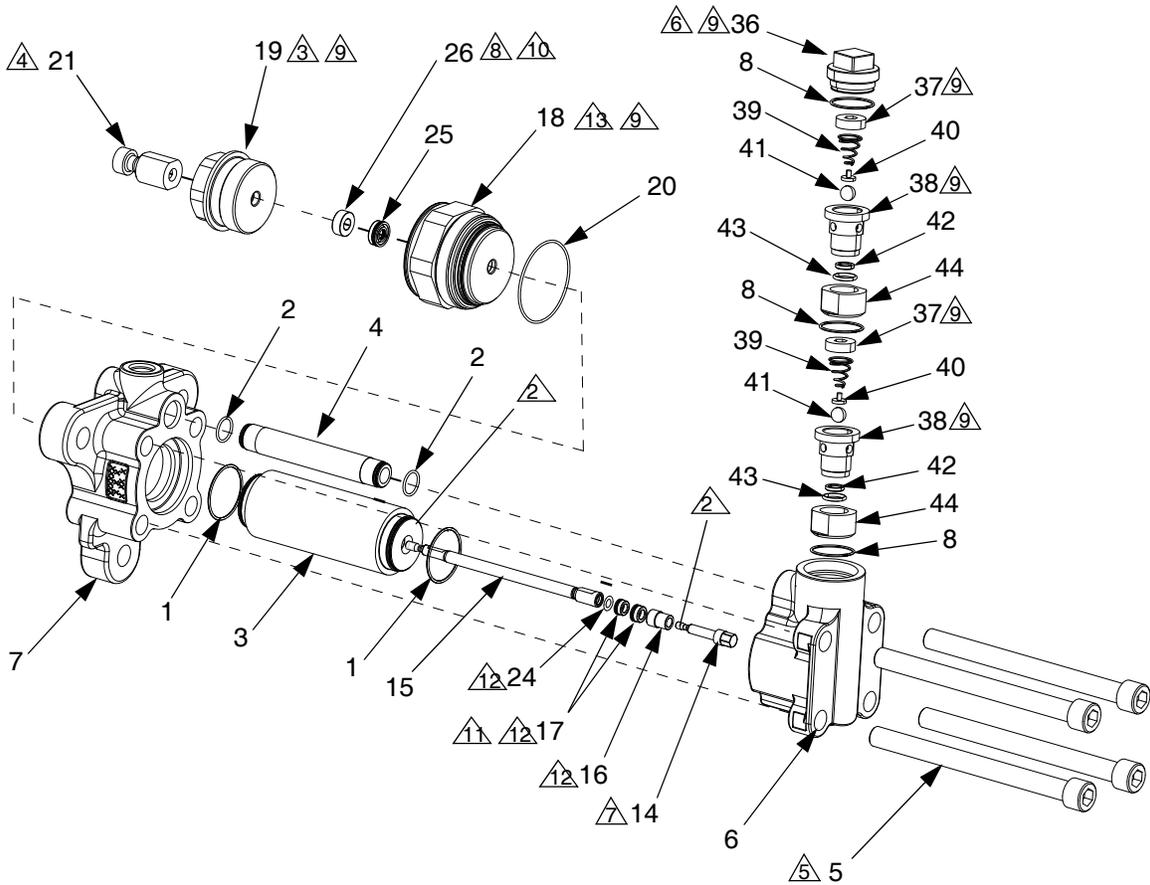
- 1. Lubricate seals, o-rings, lead-in's and moving parts with grease.
- Torque to 50-ft-lbs (67.5 N•m).
- Torque tie bolts (5) in star pattern to 10 ft-lbs (13.5 N•m). Then torque again in star pattern to 50 ft-lbs (67.5 N•m). Finally torque again in star pattern to the model specific torque below:
For 60cc, 65cc, 70cc, 75cc, 80cc, and 86cc:
Torque to 120 ft-lbs (163 N•m).
For 90cc, 100cc, 105cc, 120cc, 140cc, 150cc and 160cc:
Torque to 200-ft-lbs (271 N•m).
- Torque to 100 ft-lbs (135 N•m).
- For 60cc, 65cc, 70cc, 75cc, 80cc, and 86cc:
Torque to 80-ft-lbs (108 N•m).
For 90cc, 100cc, 105cc, 120cc, 140cc, 150cc and 160cc:
Torque to 160-ft-lbs (216 N•m).
- Must be pressed straight into housing.

- Apply anti-seize lubricant to threads.
- Ensure u-cup (17) springs face throat cartridge (18).
- Ensure u-cup (17) springs face displacement rod (15).
- Fully assemble u-cup (17) and bearing (16) onto displacement rod (15) before tightening piston retainer (14).
- Apply one stripe of removable strength anaerobic sealant on threads.
- Torque to 200-ft-lbs (271 N•m).

NOTICE
Specification sheets and Graco testing indicate that anaerobic sealant requires three days to fully cure. Failure to allow three days for full cure may result in parts coming loose during operation. If faster cure time is needed, Rapid Sealant Cure Kit is available, 24N985.

S5 Pumps

10cc



1. Lubricate seals, o-rings, lead-in's and moving parts with grease.

2. Apply one stripe of removable strength anaerobic sealant on threads.

NOTICE

Specification sheets and Graco testing indicate that anaerobic sealant requires three days to fully cure. Failure to allow three days for full cure may result in parts coming loose during operation. If faster cure time is needed, Rapid Sealant Cure Kit is available, 24N985.

3. Torque to 50-ft-lbs (67.5 N•m).

4. Assemble and torque after displacement rod (15) is assembled through throat retainer (19). See table for torque specifications.

5. Torque tie bolts (4) in star pattern to 10 ft-lbs (13.5 N•m). Then torque again in star pattern to 50 ft-lbs (67.5 N•m). Finally torque again in star pattern to 120 ft-lbs (163 N•m).

6. Torque to 100 ft-lbs (135 N•m).

7. See table for torque specifications.

8. Must be pressed straight into housing.

9. Apply anti-seize lubricant to threads.

10. Ensure u-cup (26) springs face throat cartridge (18).

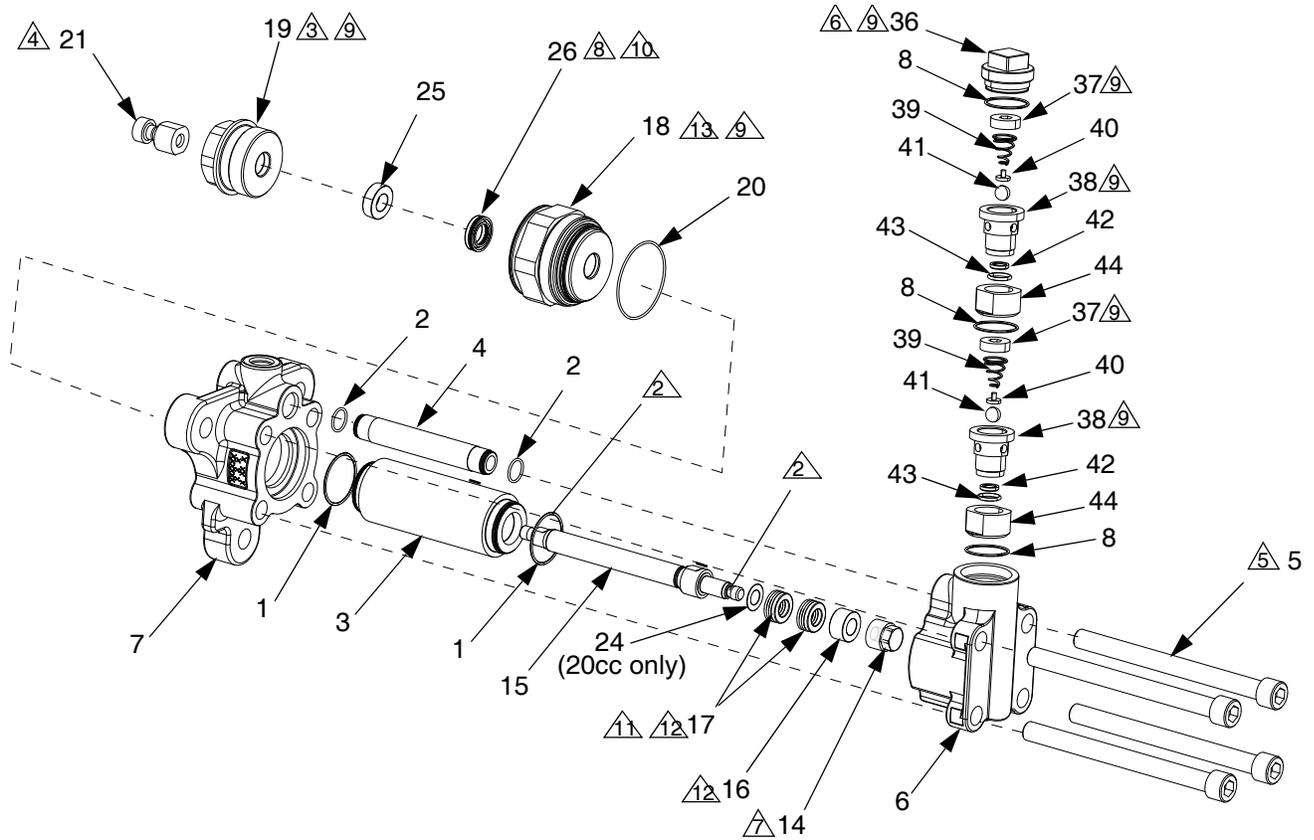
11. Ensure u-cups (17) springs face displacement rod (15).

12. Fully assemble u-cups (17) and bearing (16, 24) onto displacement rod (15) before tightening piston retainer (14).

13. Torque to 200-ft-lbs (271 N•m).

Pump Size	Torque Specification	
	4	7
10cc	45 ft-lbs (60.75 N•m)	5.5 ft-lbs (7.45 N•m)

20cc and 40cc



1. Lubricate seals, o-rings, lead-in's and moving parts with grease.

2. Apply one stripe of removable strength anaerobic sealant on threads.

NOTICE

Specification sheets and Graco testing indicate that anaerobic sealant requires three days to fully cure. Failure to allow three days for full cure may result in parts coming loose during operation. If faster cure time is needed, Rapid Sealant Cure Kit is available, 24N985.

3. Torque to 50-ft-lbs (67.5 N•m).

4. Assemble and torque after displacement rod (15) is assembled through throat retainer (19). See table below for torque specifications.

5. Torque tie bolts (4) in star pattern to 10 ft-lbs (13.5 N•m). Then torque again in star pattern to 50 ft-lbs (67.5 N•m). Finally torque again in star pattern to 120 ft-lbs (163 N•m).

6. Torque to 100 ft-lbs (135 N•m).

7. See table for torque specifications.

8. Must be pressed straight into housing.

9. Apply anti-seize lubricant to threads.

10. Ensure u-cup (26) springs face throat cartridge (18).

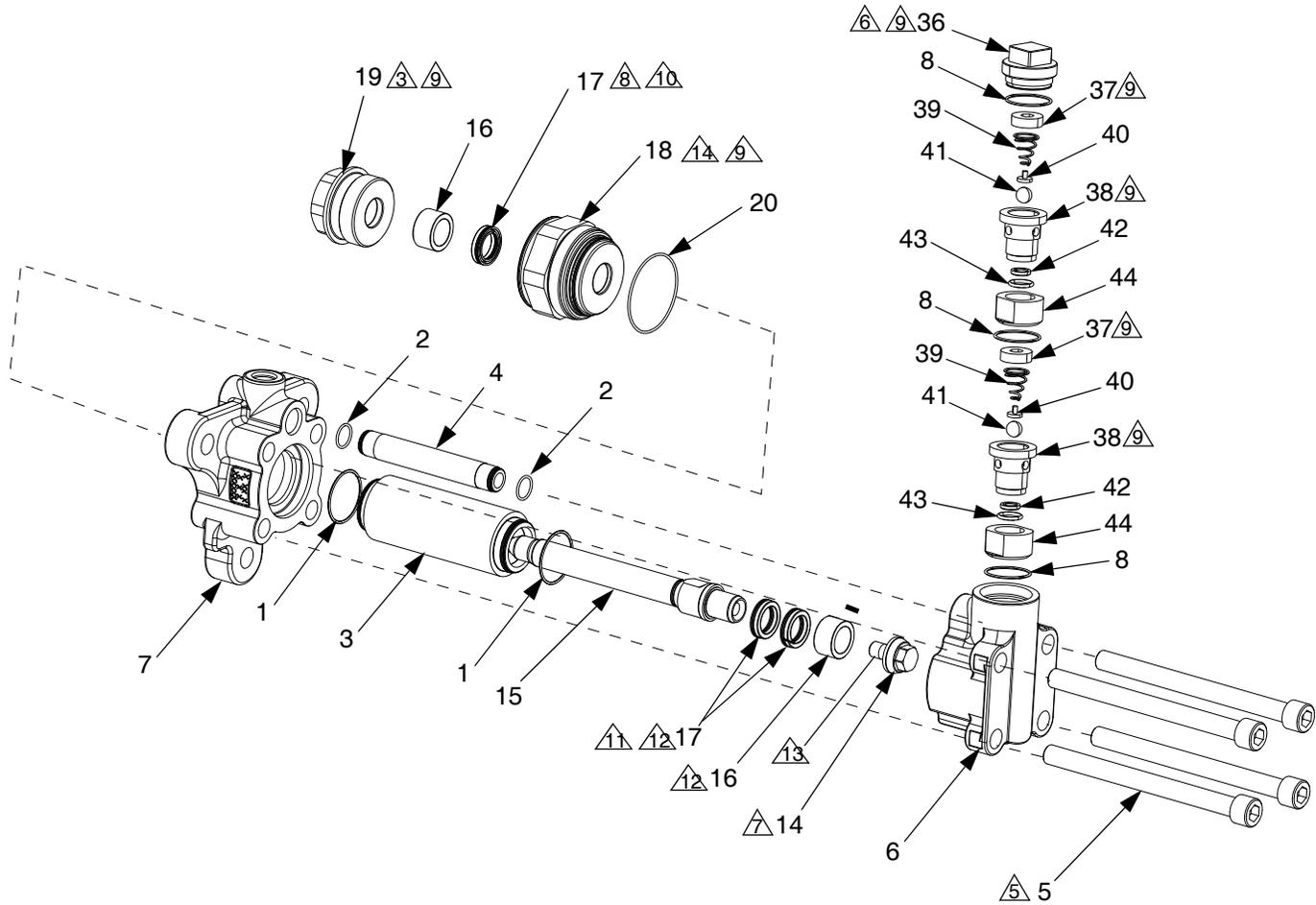
11. Ensure u-cups (17) springs face displacement rod (15) and bearing (16).

12. Fully assemble u-cup (17) and bearing (16)(24, for 20cc pumps only) onto displacement rod (15) before tightening piston retainer (14).

13. Torque to 200-ft-lbs (271 N•m).

Pump Size	Torque Specification	
	4	7
20cc	30-ft-lbs (40.6 N•m)	30-ft-lbs (40.6 N•m)
40cc	45-ft-lbs (60.75 N•m)	50-ft-lbs (67.5 N•m)

80cc and 100cc



- 1. Lubricate seals, o-rings, lead-in's and moving parts with grease.
- Torque to 50-ft-lbs (67.5 N•m).
- Torque tie bolts (5) in star pattern to 10 ft-lbs (13.5 N•m). Then torque again in star pattern to 50 ft-lbs (67.5 N•m). Finally torque again in star pattern to the model specific torque below:
For 60cc, 65cc, 70cc, 75cc, 80cc, and 86cc:
Torque to 120 ft-lbs (163 N•m).
For 90cc, 100cc, 105cc, 120cc, 140cc, 150cc and 160cc:
Torque to 200-ft-lbs (271 N•m).
- Torque to 100 ft-lbs (135 N•m).
- For 60cc, 65cc, 70cc, 75cc, 80cc, and 86cc:
Torque to 80-ft-lbs (108 N•m).
For 90cc, 100cc, 105cc, 120cc, 140cc, 150cc and 160cc:
Torque to 160-ft-lbs (216 N•m).
- Must be pressed straight into housing.

- Apply anti-seize lubricant to threads.
- Ensure u-cups (17) springs face throat cartridge (18).
- Ensure u-cups (17) springs face displacement rod (15).
- Fully assemble u-cups (17) and bearing (16) onto displacement rod (15) before tightening piston retainer (14).
- Apply one stripe of removable strength anaerobic sealant on threads.
- Torque to 200-ft-lbs (271 N•m).

NOTICE

Specification sheets and Graco testing indicate that anaerobic sealant requires three days to fully cure. Failure to allow three days for full cure may result in parts coming loose during operation. If faster cure time is needed, Rapid Sealant Cure Kit is available, 24N985.

Pump Parts

Ref.	Part	Description	Qty
1✓❖◆*		O-RING, cylinder	2
2✓❖◆*		O-RING, crossover tube	2
3❖		CYLINDER, pump	1
8◆†		O-RING, inlet	4
	258775	KIT, package of 4	-
	258776	KIT, package of 16	-
9†		SEAT, carbide	2
10†		BALL, sst	2
14*		RETAINER, piston	1
15*		ROD, displacement	1
16◆*		BEARING, piston	1(2)
17◆*		SEAL, piston	1(2)
20*	117286	O-RING, throat cartridge	1
21*		ADAPTER, rod (see Table 1)	1
24◆		BEARING, piston rod	1
25◆*		BEARING, throat	1
26◆*		SEAL, throat	1
30❖◆*		TOOL, rod installation	1
31◆		TOOL, piston seal installation	1
33		SPACER, throat	1
37•	17Y422	RETAINER, spring	2
38•	17Y345	HOUSING, check valve	2
39#•	131767	SPRING, cconical	2
40•	17Y400	RETAINER, housing	2
41#•		BALL	2
42#•		SEAT, carbide	2
43#•		O-RING	2
44•	17E786	RETAINER, check valve	2

✓ Refer to Table 2: Cylinder O-ring Kits for kit number.

❖ Refer to Table 3: Cylinder Kits for kit number.

◆ Refer to Table 4: Seal Kits for kit number.

* Refer to Table 5: Displacement Rod Kits for kit number.

† Included in Kit 258783.

Included in Kit 25B124.

• Included in Kit 25B123.

Table 1: Adapter Kits

Pump Model	Pump Size	Adapter Kit
L005S1	5cc	258966
L010S1 and L010S5	10cc	258966
L010S3	10cc	24U649
L015S1	15cc	258966
L020S1 and L020S5	20cc	258967
L020S3	20cc	24U650
L025S1	25cc	258967
L030S1	30cc	258967
L035S1	35cc	258786
L040S1 and L040S5	40cc	258786
L045S1	45cc	258786
L050S1	50cc	258786
L060S1 - L160S1	60cc - 160cc	Not included
L080S5 - L0100S5	80cc - 100cc	Not included

Table 2: Cylinder O-ring Kits

Pump Model	Pump Size	Cylinder O-ring Kit
L005S1	5cc	258774
L010S1 and L010S5	10cc	
L010S3	10cc	
L015S1	15cc	
L020S1 and L020S5	20cc	
L020S3	20cc	
L025S1	25cc	
L030S1	30cc	
L035S1	35cc	
L040S1 and L040S5	40cc	
L045S1	45cc	
L050S1	50cc	
L060S1	60cc	
L065S1	65cc	
L070S1	70cc	258773
L075S1	75cc	
L080S1 and L080S5	80cc	
L086S1	86cc	
L090S1	90cc	
L100S1 and L100S5	100cc	
L105S1	105cc	
L120S1	120cc	
L140S1	140cc	
L150S1	150cc	
L160S1	160cc	

Table 3: Cylinder Kits

Pump Model	Pump Size	Cylinder Kit
L005S1	5cc	262557
L010S1	10cc	258925
L010S3	10cc	24U651
L010S5	10cc	25E417
L015S1	15cc	258931
L020S1	20cc	258937
L020S3	20cc	24U652
L020S5	20cc	25E418
L025S1	25cc	258943
L030S1	30cc	258949
L035S1	35cc	24R310
L040S1	40cc	258795
L040S5	40cc	25E419
L045S1	45cc	24R311
L050S1	50cc	258801
L060S1	60cc	258807
L065S1	65cc	24H998
L070S1	70cc	25C252
L075S1	75cc	24N821
L080S1	80cc	258813
L080S5	80cc	25E420
L086S1	86cc	24H999
L090S1	90cc	24T165
L100S1	100cc	258819
L100S5	100cc	25E469
L105S1	105cc	24R011
L120S1	120cc	258825
L140S1	140cc	24T166
L150S1	150cc	24T167
L160S1	160cc	258831

Table 4: Seal Kits

Pump Model	Pump Size	Seal Kit	Reference Number and Quantity Included in Kit									
			1	2	8	16	17	24	25	26	30	31
L005S1	5cc	262561	2	2	4	1	1		1	1	1	
L010S1	10cc	258923	2	2	4	1	1		1	1	1	
L010S3	10cc	24U653	2	2	4	1	1		1	1	1	
L010S5	10cc	25E421	2	2	4	1	2	1	1	1	1	
L015S1	15cc	258929	2	2	4	1	1		1	1	1	
L020S1	20cc	258935	2	2	4	1	1		1	1	1	
L020S3	20cc	24U654	2	2	4	1	1		1	1	1	
L020S5	20cc	25E422	2	2	4	1	2	1	1	1	1	
L025S1	25cc	258941	2	2	4	1	1		1	1	1	
L030S1	30cc	258947	2	2	4	1	1		1	1	1	1
L035S1	35cc	24R306	2	2	4	1	1		1	1	1	1
L040S1	40cc	258793	2	2	4	1	1		1	1	1	1
L040S5	40cc	25E423	2	2	4	1	2		1	1	1	1
L045S1	45cc	24R307	2	2	4	1	1		1	1	1	1
L050S1	50cc	258799	2	2	4	1	1		1	1	1	1
L060S1	60cc	258805	2	2	4	2	2				1	1
L065S1	65cc	24J002	2	2	4	2	2				1	1
L070S1	70cc	25C253	2	2	4	2	2				1	1
L075S1	75cc	24N820	2	2	4	2	2				1	1
L080S1	80cc	258811	2	2	4	2	2				1	1
L080S5	80cc	25E424	2	2	4	1	2				1	1
L086S1	86cc	24J003	2	2	4	2	2				1	1
L090S1	90cc	24T162	2	2	4	2	2				1	1
L100S1	100cc	258817	2	2	4	2	2				1	1
L100S5	100cc	25E470	2	2	4	1	2				1	1
L105S1	105cc	24R009	2	2	4	2	2				1	1
L120S1	120cc	258823	2	2	4	2	2				1	1
L140S1	140cc	24T163	2	2	4	2	2				1	1
L150S1	150cc	24T164	2	2	4	2	2				1	1
L160S1	160cc	258829	2	2	4	2	2				1	1

Table 5: Displacement Rod Kits

Pump Model	Pump Size	Displacement Rod Kit	Reference Number and Quantity Included in Kit											
			1	2	14	15	16	17	20	21	24	25	26	30
L005S1	5cc	262562	2	2	1	1	1	1	1	1		1	1	1
L010S1	10cc	258924	2	2	1	1	1	1	1	1		1	1	1
L010S3	10cc	24U655	2	2	1	1	1	1	1	1		1	1	1
L010S5	10cc	25E472	2	2	1	1	1	2	1	1	1	1	1	1
L015S1	15cc	258930	2	2	1	1	1	1	1	1		1	1	1
L020S1	20cc	258936	2	2	1	1	1	1	1	1		1	1	1
L020S3	20cc	24U656	2	2	1	1	1	1	1	1		1	1	1
L020S5	20cc	25E473	2	2	1	1	1	2	1	1	1	1	1	1
L025S1	25cc	258942	2	2	1	1	1	1	1	1		1	1	1
L030S1	30cc	258948	2	2	1	1	1	1	1	1		1	1	1
L035S1	35cc	24R308	2	2	1	1	1	1	1	1		1	1	1
L040S1	40cc	258794	2	2	1	1	1	1	1	1		1	1	1
L040S5	40cc	25E475	2	2	1	1	1	2	1	1		1	1	1
L045S1	45cc	24R309	2	2	1	1	1	1	1	1		1	1	1
L050S1	50cc	258800	2	2	1	1	1	1	1	1		1	1	1
L060S1	60cc	258806	2	2	1	1	2	2	1					1
L065S1	65cc	24J004	2	2	1	1	2	2	1					1
L070S1	70cc	25C251	2	2	1	1	2	2	1					1
L075S1	75cc	24N823	2	2	1	1	2	2	1					1
L080S1	80cc	258812	2	2	1	1	2	2	1					1
L080S5	80cc	25E476	2	2	1	1	1	2	1			1	1	1
L086S1	86cc	24J005	2	2	1	1	2	2	1					1
L090S1	90cc	24T158	2	2	1	1	2	2	1					1
L100S1	100cc	258818	2	2	1	1	2	2	1					1
L100S5	100cc	25E477	2	2	1	1	1	2	1			1	1	1
L105S1	105cc	24R010	2	2	1	1	2	2	1					1
L120S1	120cc	258824	2	2	1	1	2	2	1					1
L140S1	140cc	24T159	2	2	1	1	2	2	1					1
L150S1	150cc	24T160	2	2	1	1	2	2	1					1
L160S1	160cc	258830	2	2	1	1	2	2	1					1

Graco Information

Sealant and Adhesive Dispensing Equipment

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, go to www.graco.com, or call to identify the nearest distributor.

If calling from the USA: 1-800-746-1334

If calling from outside the USA: 0-1-330-966-3000

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 3A0281

Graco Headquarters: Minneapolis
International Offices: Belgium, China, Japan, Korea

GRACO INC. AND SUBSIDIARIES • P.O. BOX 1441 • MINNEAPOLIS MN 55440-1441 • USA

Copyright 2009, Graco Inc. All Graco manufacturing locations are registered to ISO 9001.

www.graco.com

Revision R, November 2018