

U-Cup Displacement Pump

3A2313E
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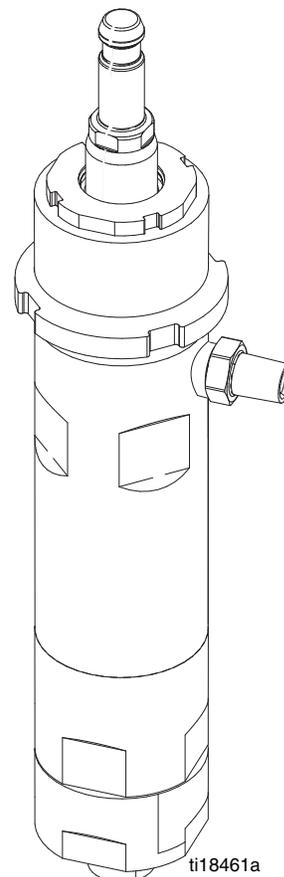
For use with composites in hazardous and non-hazardous locations. For professional use only.



Important Safety Instructions

Read all warnings and instructions in this manual and in your system manual. Save all instructions.

See page 2 for model information, including maximum working pressures.



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Related Manuals

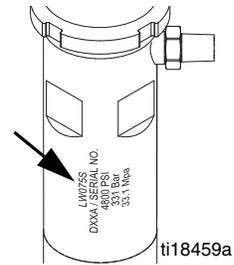
Manuals are available at www.graco.com.

Manual	Description
3A2315	NXT® Air Motor for FRP
3A2012	FRP Proportioner

Models

Check your displacement pump's identification marking for the 6-digit part number. Use the following matrix to define the construction of your displacement pump. For example, displacement pump model LW075S represents a wet-cup, 75 cc, Chromex™ coated rod, stainless steel displacement pump.

To order replacement parts, see **Parts** section starting on page 8. The digits in the matrix do not correspond to the reference numbers in the Parts drawings and lists.



L	W		075		S	
First Digit	Second Digit (Description)		Third, Fourth, and Fifth Digits (Displacement Pump Volume Per Cycle* in cc)		Sixth Digit (Pump Material)	
L (Lower)	W	Wet-cup style	075		S	Stainless Steel
			100		C	Carbon Steel

* Cycle refers to combination of one upstroke and one downstroke.

Model, Series	Maximum Working Pressure psi (MPa, bar)	Fluid Inlet	Fluid Outlet
LW075S, Series A	4800 (33.1, 331)	3/4 in. npt	3/8 in. npt
LW100C, Series A	3600 (24.8, 248)	3/4 in. npt	3/8 in. npt

Component Identification

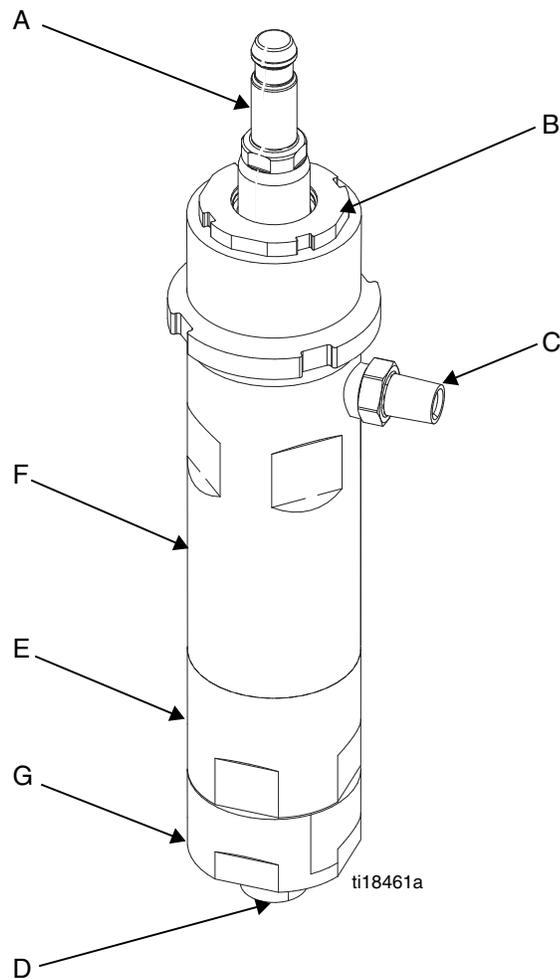


FIG. 1. Component Identification

Key:

- A Piston/Rod Assembly
- B Wet Cup
- C Fluid Outlet
- D Fluid Inlet
- E Lower Cylinder
- F Upper Cylinder
- G Intake Valve

Repair

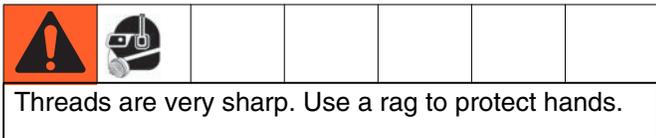


NOTICE

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.

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

Disassembly



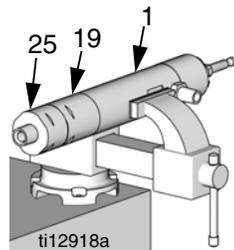
NOTE: Repair kits are available. See the chart on page 10 to order the correct kit(s) for your pump.

See FIG. 2 on page 5 for disassembled view of the displacement pump. Lay out all removed parts in sequence to ease reassembly. Clean all parts with a compatible solvent and inspect them for wear or damage.

1. Prior to removing pump, flush the system. See the system manual.
2. Perform Pressure Relief Procedure. See the system manual.
3. Remove the displacement pump from the system. See the system manual.

4. Place cylinder (1) sideways in a vise with soft jaws.

5. *If inlet ball check needs repair,* use an adjustable wrench on hex of foot valve (25) to unscrew it from the lower cylinder (19). Loosen vice briefly and tip out the ball (22).

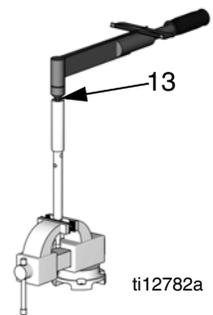


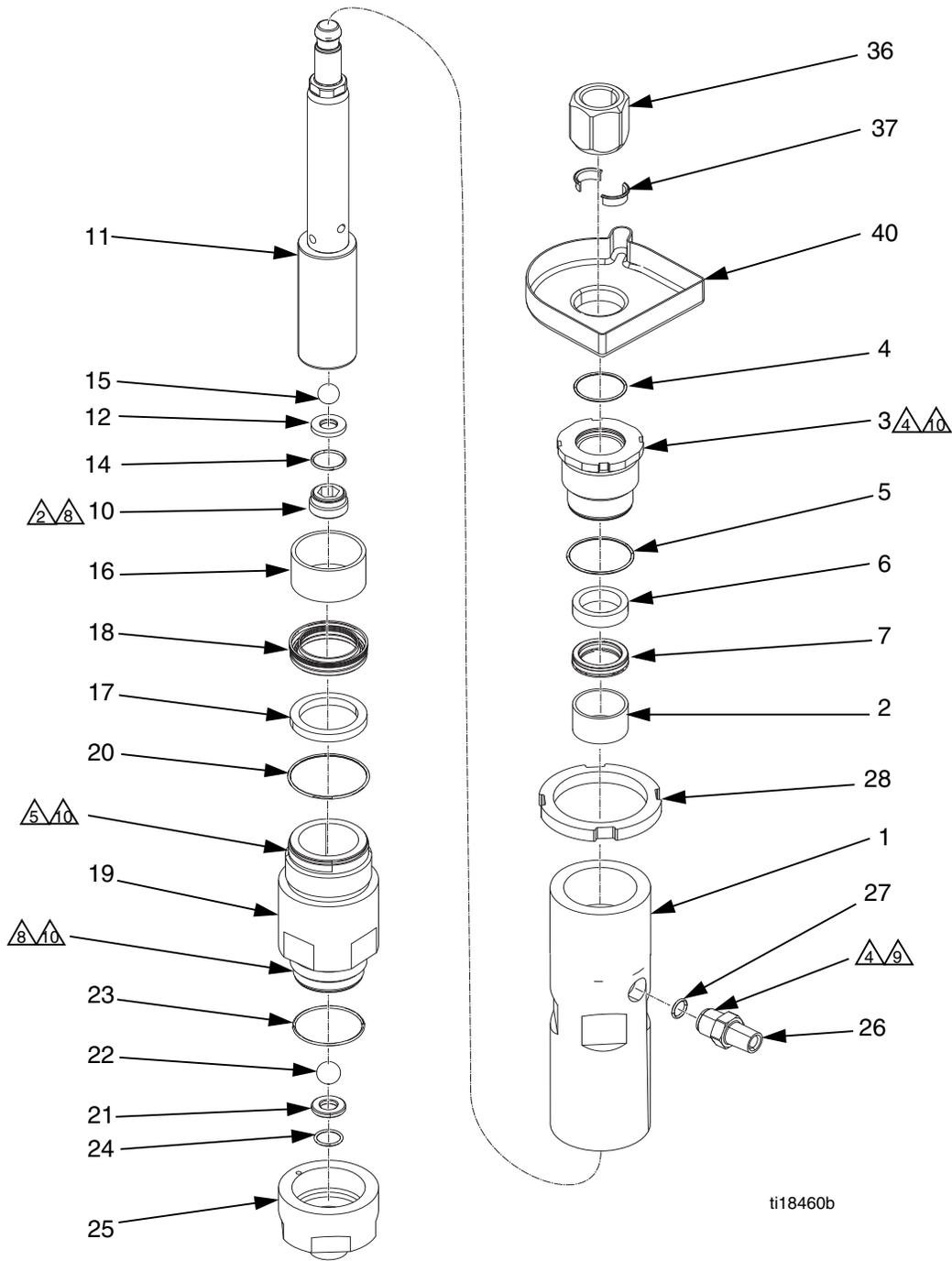
Remove the seat (21) and use an o-ring pick to remove the o-ring (24) from the foot valve.

6. *If the ball check does not need repair,* remove foot valve (25) and lower cylinder (19) as one piece. Use an adjustable wrench on hex of lower cylinder (19) to remove it from the upper cylinder (1) and slide it straight off the pump. Be careful not to damage the piston/rod assembly (11).
7. Remove the o-ring (20) from the top of the lower cylinder.
8. Loosen the wet cup (3).
9. Pull the piston/rod assembly out of the bottom of the upper cylinder. Remove the spacer (16), bushing (17), and seal (18) from the bottom of the upper cylinder (1).
10. Remove the wet cup (3).
11. Remove the bushing (6) and seal (7) from the bottom of the wet cup.

NOTE: The jam nut (28) can remain attached to the upper cylinder.

12. Remove the spacer (2) from the top of the upper cylinder (1).
13. Remove the wet cup seal (4) and the upper cylinder seal (5).
14. *If piston ball check needs repair,* clamp the rod flats in a vice. Use a 13 mm (1/2 in.) hex wrench to remove the flow-through nut (13) from end of piston.
15. Remove the o-ring (14), seat (12) and ball (15).





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- NOTE 1:** Apply lubricant to all o-rings and packings.
- △ Apply thread lubricant to threads.
 - △ Torque to 54-66 ft-lb (73-89 N•m).
 - △ Torque to 90.5-109.5 ft-lb (122-148.5 N•m).

- △ Torque to 74-86 ft-lb (100-117 N•m).
- △ Apply threadlocker.
- △ Apply lubricant to threads.

FIG. 2

Reassembly

See FIG. 3 on page 7 for detailed view of how parts are assembled, with torques and other specifications.

NOTICE

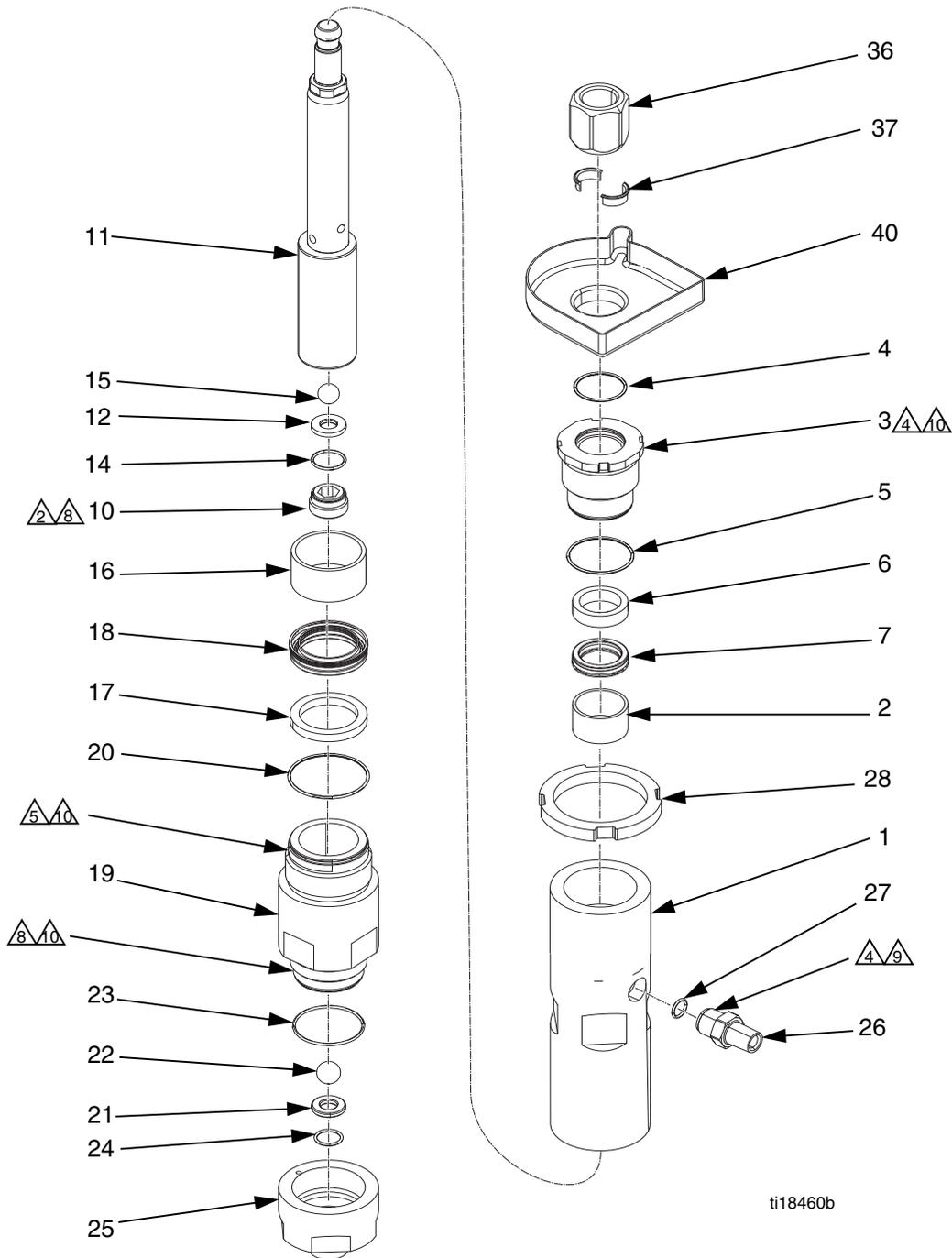
All threads, packings, and seals must be well lubricated. Use lubricant (Graco Part Number 111265) or a similar product.

1. Clean and inspect all parts.

NOTICE

Discard all o-rings removed from the pump. Compressed PTFE o-rings may cause the pump to leak.

2. Place the ball (15) in the piston body. Install the seat (12) and o-ring (14). Lubricate the o-ring and the threads of the flow-through nut (10). Screw the flow-through nut (10) into the piston/rod assembly.
3. Place piston in vice and torque flow-through nut (10) to 74-86 ft-lb (100-117 N•m). See illustration on page 4.
4. Lubricate and install new wet cup seal (4) and upper cylinder seal (5).
5. Install bushing (6) into the wet cup (3).
6. Lubricate and install the u-cup seal (7) into the wet cup (3).
7. Install the spacer (2) in the top of the upper cylinder.
8. Lubricate the threads then screw the wet cup (3) into the upper cylinder (1).
9. With the upper cylinder (1) upside down:
 - a. Drop spacer (16) into the bottom of the upper cylinder (1).
 - b. Drop the u-cup (18) into the bottom of the upper cylinder.
 - c. Partially thread the lower cylinder (19) into the upper cylinder (1) to press the u-cup seal into place until the seal seats.
 - d. Unthread lower cylinder then drop in the bushing (17).
- e. Push the piston/rod assembly into the upper cylinder (1).
- f. Put o-ring (20) in place.
- g. Lubricate threads then torque lower cylinder against upper cylinder to 90.5-109.5 ft-lb (122-148.5 N•m).
10. Lubricate and install the seal (23) on the bottom of the lower cylinder (19).
11. Install the o-ring (24) and intake seat (21) into the top of the foot valve. Lubricate the o-ring. The seat (21) is reversible. Turn over or replace as needed.
12. Lubricate the seal (23) and threads of the lower cylinder (19). Place the ball (22) on the seat (21).
13. Keeping cylinder upright so the seat remains firmly in place, screw the foot valve (25) into the lower cylinder (19) hand tight.
14. Clamp the cylinder in a vice and torque to 74-86 ft-lb (100-117 N•m).
15. Torque wet cup (3) to 54-66 ft-lb (73-89 N•m).



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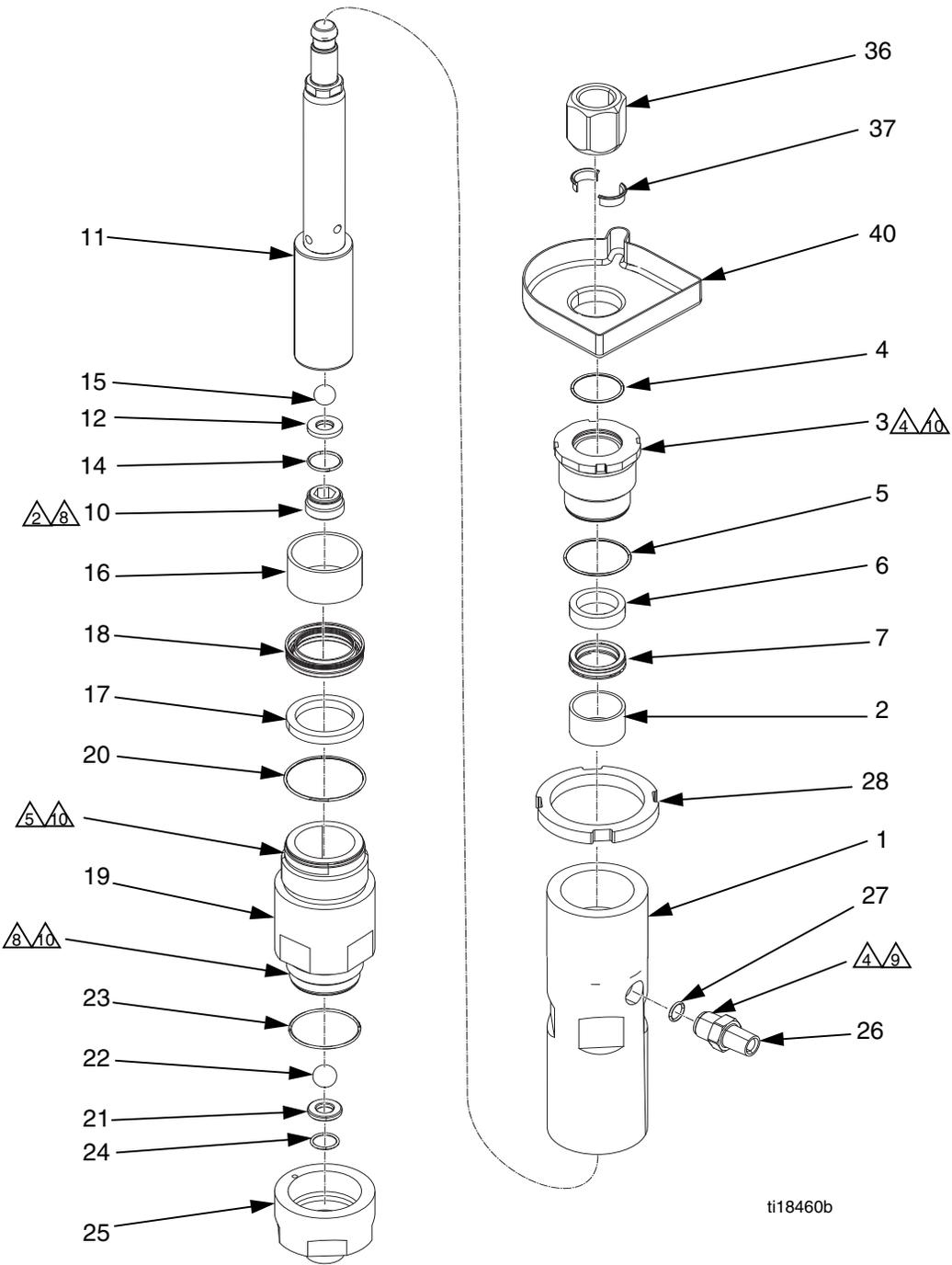
NOTE 1: Apply lubricant to all o-rings and packings.

- △ Apply thread lubricant to threads.
- △ Torque to 54-66 ft-lb (73-89 N•m).
- △ Torque to 90.5-109.5 ft-lb (122-148.5 N•m).

- △ Torque to 74-86 ft-lb (100-117 N•m).
- △ Apply threadlocker.
- △ Apply lubricant to threads.

FIG. 3

Parts



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NOTE 1: Apply lubricant to all o-rings and packings.

Apply thread lubricant to threads.

Torque to 54-66 ft-lb (73-89 N•m).

Torque to 90.5-109.5 ft-lb (122-148.5 N•m).

Torque to 74-86 ft-lb (100-117 N•m).

Apply threadlocker.

Apply lubricant to threads.

Ref.	Description	LW075S	LW100C	Qty.
1	CYLINDER, upper (also includes: 5, 20, 26, 27)	24A815	16P061	1
2*	SPACER, u-cup, throat	---	---	1
3	CUP, wet (also includes: 4, 5)	24A809	16P062	1
4	O-RING (pack of 10)	24A631	24A632	1
5*	O-RING, ptfе (pack of 10)	24P190	24P191	1
6*	BUSHING, throat	---	---	1
7*	SEAL, u-cup, throat	---	---	1
10†	NUT, flow through	---	---	1
11	KIT, piston and rod (also includes: 8, 9, 10, 12, 13, 14, 15)	25B082	25N495	1
12†	SEAT, carbide	---	---	1
14†	O-RING (pack of 10)	24P189	24P189	1
15◆	BALL, valve, check	---	---	1
16*	SPACER, u-cup, piston	---	---	1
17*	BUSHING, piston	---	---	1
18*	SEAL, u-cup, piston	---	---	1
19	CYLINDER, lower (also includes: 20, 23)	24A824	16P063	1
20*†	O-RING (pack of 10)	24P192	24P193	1
21†	SEAT, carbide	---	---	1
22◆	BALL	---	---	1
23†*	PACKING, o-ring (pack of 10)	24P196	24P196	1
24†	PACKING, o-ring (pack of 10)	24P194	24P195	1
25	VALVE, foot (also includes: 23)	24A836	16P064	1
26	FITTING, 3/8-18 npt x 3/4-16 unf (also includes: 27)	24A840	24A840	1
27	O-RING (pack of 10)	24E457	24E457	1
28	NUT, jam	24A636	24A637	1
36	NUT, coupler (used with coupling collar, ref. 37 to connect rod to air motor)	15T311	15T311	1
37	COLLAR, coupling, half-cylinder; for connecting to air motor (pack of 10)	24A619	24A619	2
39	FLUID, TSL™, 8 oz bottle	206994	206994	1
40	RESERVOIR, TSL	24A625	24A626	1

--- Not sold separately.

* Included in seal repair kit. See page 10.

† Included in seat repair kit. Stainless steel seats also are available. See page 10.

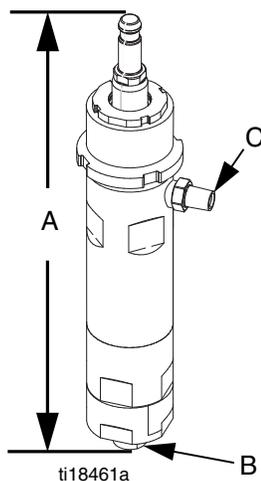
◆ Included in check ball kit. Tungsten carbide check balls also are available. See page 10.

Repair Kits

See parts illustration and parts list beginning on page 8 for descriptions of items included in each kit.

Kit Description	LW075S	LW100 C
* Seal Repair Kit Includes items 2, 5, 6, 7, 16, 17, 18, 20, and 23.	16N231	16N232
† Seat Repair Kit Includes items: seats (12, 21), o-rings (14, 20, 23, 24), and flow-through nut (10) Tungsten Carbide (Standard)	24A783	24A784
◆ Check Ball Kit Includes items: piston ball (15), and intake ball (22) Stainless Steel (Standard) Tungsten Carbide	24A263 24A669	24A264 24A670
Connecting Kit Includes tie-plate, 3 tie-rods, 3 tie-rod nuts, spring guard, coupling nut, 2 coupling collars, TSL reservoir, reservoir o-ring, and TSL.	16N242	16N243

Dimensions



Displacement Pump	A (Height*) in. (mm)	B (Inlet Size) in. npt	C (Outlet Size) in. npt	Weight lbs (kg)
LW075S	15.4 (391)	3/4 in.	3/8 in.	15.3 (6.9)
LW100C	15.4 (391)	3/4 in.	3/8 in.	18.6 (8.4)

* Height measured at mid-stroke.

Technical Data

U-Cup Displacement Pump		
	US	Metric
Maximum fluid working pressure		
LW075S	4800 psi	33.1 MPa, 331 bar
LW100C	3600 psi	24.8 MPa, 248 bar
Maximum operating temperature		
	160°F	71°C
Fluid inlet size	3/4 in. npt	
Fluid outlet size	3/8 in. npt	
Stroke length	2 in.	
Wetted parts	Stainless steel, tungsten carbide, UHM-WPE, PTFE, acetal. <i>LW100C only:</i> Also includes carbon steel.	

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.

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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

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Original instructions. *This manual contains English. MM 3A2313*

Graco Headquarters: Minneapolis

International Offices: Belgium, China, Japan, Korea

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