Instructions-Parts

Check-Mate[®] 800 Displacement Pump



334127D

For use with hot-melt applications. For professional use only.

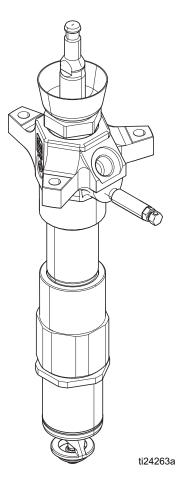
5850 psi (40 MPa, 403 bar) Maximum Fluid Working Pressure 400° F (204° C) Maximum Operating Temperature

See page 2 for model information.



Important Safety Instructions

Read all warnings and instructions in this manual and in all related manuals. Save all instructions.



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Models

Part No.	Drum Size	Seal Material
24W152	5 Gallon (20 Liter)	Carbon Filled PTFE
24W153	5 Gallon (20 Liter)	Glass Filled PTFE
24W150	55 Gallon (200 Liter)	Carbon Filled PTFE
24W151	55 Gallon (200 Liter)	Glass Filled PTFE

Related Manuals

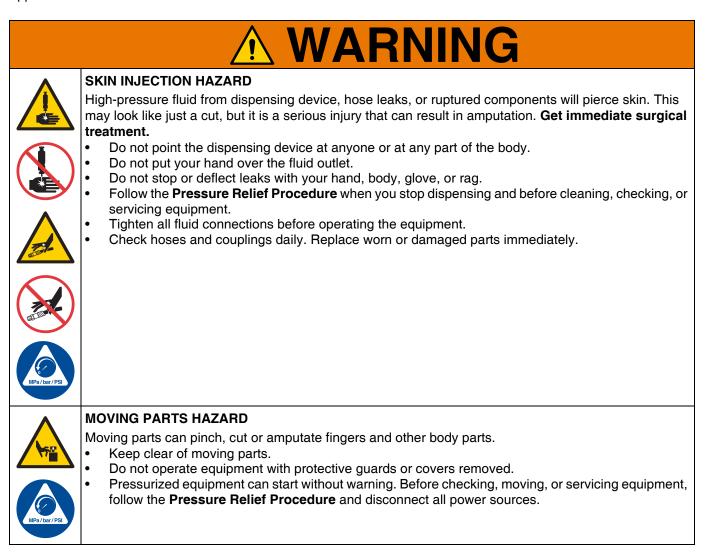
Manuals are available at www.graco.com.

Component manuals are in English.

334128	Throat Seal Repair Kit, Instructions-Parts
334131	Bulldog $^{ extsf{B}}$ and Senator $^{ extsf{R}}$ Air Motors Tie Rod Kit, Instructions-Parts
334132	NXT [®] Air Motor Tie Rod Kit, Instructions-Parts

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.



WARNING

 FIRE AND EXPLOSION HAZARD 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: 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. Never spray or flush solvent at high pressure. 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. Hold gun firmly to side of grounded pail when triggering into pail. Do not use pail liners unless they are anti-static or conductive. 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.
BURN HAZARD Equipment surfaces and fluid that is heated can become very hot during operation. To avoid severe burns: • Do not touch hot fluid or equipment.
 EQUIPMENT MISUSE HAZARD Misuse can cause death or serious injury. 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 manufacturer's warnings. For complete information about your material, request Safety Data Sheet (SDS) from distributor or retailer. Do not leave the work area while equipment is energized or under pressure. 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.

WARNING
TOXIC FLUID OR FUMES HAZARD
Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.
 Read Safety Data Sheet (SDS) to know the specific hazards of the fluids you are using. Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.
PERSONAL PROTECTIVE EQUIPMENT
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:
 Protective eyewear, and hearing protection. Peoplicators, protective elething, and gloves as recommended by the fluid and solvent manufacturer.
 Protective eyewear, and nearing protection. Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacture

Component Identification

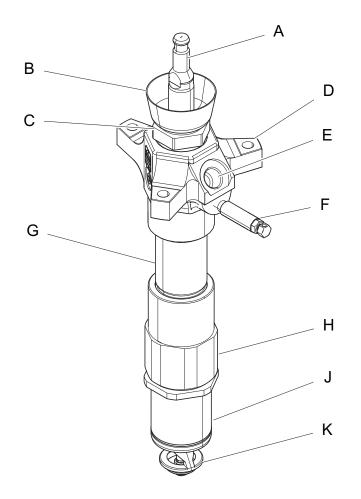


FIG. 1: Check-Mate 800 Displacement Pump Component Identification

Key:

- A Displacement Pump
- B Wetcup
- C Throat Packing
- D Outlet Housing
- E Fluid Outlet
- F Bleed Valve
- G Cylinder
- H Intake Housing
- J Intake Cylinder
- K Priming Pistion

Installation

Grounding



The equipment must be grounded to reduce the risk of static sparking. Static sparking can cause fumes to ignite or explode. Grounding provides an escape wire for the electric current.

Pump: the displacement pump is grounded with a wire connecting the pump to the control enclosure. Locate the small hole (W) in the pump outlet housing. Attach the ground wire (Y) to the pump outlet housing using the ground screw (X) supplied with your system. Tighten the ground screw securely. Do not operate the equipment without the ground wire in place.

Air compressor: follow manufacturer's recommendations.

Fluid supply container: follow local code.

Object being dispensed: follow local code.

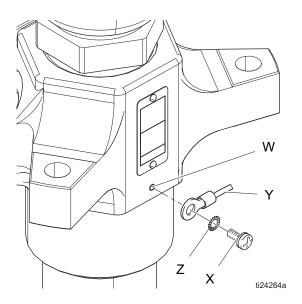


FIG. 2: Attach Grounding Wire

Connect to a Graco Air Motor

The displacement pump may be installed on Senator, Bulldog, King[®], and NXT air motors using Tie Rod Kits. See the following kit manuals for installation instructions.

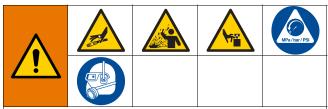
Manual	Tie Rod Kit	Air Motor
		Bulldog
334131	24V752	Senator
		King
334132	24V754	NXT

Operation

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.



Heated fluid can cause severe burns and can cause equipment surfaces to become very hot. Wear protective gloves and clothing when operating this equipment in a heated system. Allow the equipment to cool thoroughly before servicing.

- 1. Lock the gun/valve trigger safety.
- 2. Close all air bleed valves (required in your system) to shut off the air supply to the pump.
- 3. Unlock the gun/valve trigger safety.
- 4. Hold a metal part of the gun/valve firmly to the side of a grounded metal pail and trigger the gun/valve to relieve pressure.
- 5. Lock the gun/valve trigger safety.
- 6. Open the pump bleeder valve (required in your system), having a container ready to catch the drainage.
- 7. Leave the pump bleeder valve open until you are ready to spray/dispense again.

If you suspect that the spray tip/nozzle or hose is completely clogged, or that pressure has not been fully relieved after following the steps above, very slowly loosen the tip retaining nut or hose end coupling and relieve pressure gradually, then loosen completely. Clear the tip/nozzle or hose.

Pump Startup, Adjustment, and Shutdown Instructions

These operations depend on the system you are using. Refer to the instructions for your system.

Repair

NOTE: The numbers and letters in parentheses used in the Repair section refer to the callouts shown in the Figures. Also see **Parts**, beginning on page **16**.

Required Tools

- Torque wrench
- Bench vise with soft jaws
- Rubber mallet
- Hammer
- O-ring pick
- 13 mm (1/2 in.) diameter brass rod
- Set of socket wrenches
- Set of adjustable wrenches
- Pipe wrench
- Screwdriver
- Heat gun
- Gloves
- Thread lubricant
- Thread sealant

Disconnect the Pump



Heated fluid can cause severe burns and can cause equipment surfaces to become very hot. Wear protective gloves and clothing when operating this equipment in a heated system. Allow the equipment to cool thoroughly before servicing.

NOTE: The priming position can be serviced without disconnecting the displacement pump from the motor. See **Replace the Priming Piston** on page **11**.

- 1. Flush the pump, if possible. Stop the pump at the bottom of its stroke to prevent fluid from drying on the exposed displacement rod.
- 2. Relieve the pressure. See **Pressure Relieve Pro-**cedure on page **8**.
- 3. Allow the pump to cool if it is being used in a heated system.

NOTE: It may be necessary to use a heat gun to ease disassembly of some parts.

- 4. Disconnect the air and fluid hoses.
- 5. Disconnect the pump from the heated platen.
- 6. Disconnect the displacement pump from the motor as explained in the instructions for the system you are using.

Replace the Throat Packings

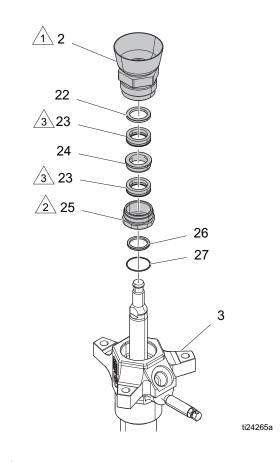


The throat packings are available as pre-assembled kits.

Pump Part No.	Throat Seal Repair Kit
24W152	24V752
24W153	24V753
24W150	24V752
24W151	24V753

- 1. Relieve the pressure. See **Pressure Relief Proce**dure on page 8.
- See Figure 3. Unscrew the packing nut (2) using a pipe wrench. Remove the o-ring (27) and washer (26) from the bottom of the packing housing (25) or from the outlet housing (3).
- 3. Place the flats of the packing nut (2) in a vise. Unscrew the packing housing (25) and discard it and the packings.
- 4. Remove the washer (24), seal (23), and back up washer (22) from the packing nut.
- The throat repair kit is pre-assembled. Screw the kit into the packing nut (2), making sure that the backup washer (22), seal (23), and washer (24) are properly positioned on top of the packing housing (25) with the lips of the seal facing down. Torque the packing housing (25) to 225 +/- 10 ft-lb (305 +/- 14 N•m).
- 6. Before installing the packing housing into the pump, generously lubricate the seals with the high temperature grease supplied with the repair kit.

- 7. If necessary, use an arbor press to install the o-ring (27) in the packing housing (25).
- Screw the packing nut (2) and packing housing (25) into the outlet housing (3). Torque to 150 +/- 30 ft-lb (203 +/- 41 N•m).



- A Torque to 225 +/- 10 ft-lbs (305 +/- 147 N•m).
- A Torque to 150 +/- 30 ft-lbs (203 +/- 41 N•m).
- Lips of the u-cup packing must face down.

FIG. 3: Replace Throat Packings

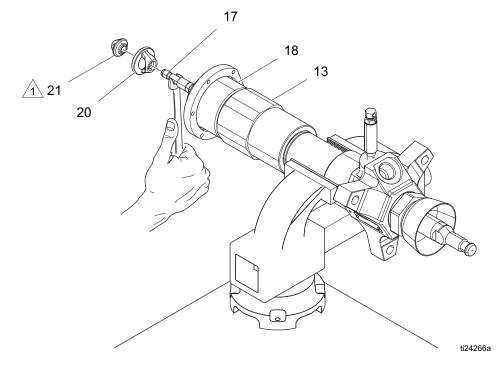
Replace the Priming Piston



Pump Part No.	Throat Seal Repair Kit
24W152	237910
24W153	237910
24W150	237909
24W151	237909

 Stop the pump on the down stroke with the flats of the priming piston rod (17) exposed below the intake cylinder (18). It is not necessary to disconnect the displacement pump from the motor, but you may have to disconnect it from the heated platen.

- 2. Relieve the pressure. See **Pressure Relief Proce**dure on page **8**.
- 3. Hold the flats of the priming piston rod (17) with an adjustable wrench and use a second wrench to unscrew the priming piston seat (21) from the rod.
- 4. Slide the priming piston (20) off the rod. Inspect the inner and outer surfaces of the piston (20) for scoring, wear, or other damage.
- Slide the priming piston (20) onto the rod (17) until it stops. Hold the rod (17) steady with a wrench on the flats and screw the seat (21) onto the rod with another wrench. Torque to 60 +/- 3 ft-lb (81 +/- 4 N•m).



- ▲ Torque to 60 +/- 3 ft-lbs (81 +/- 4 №m).
- A Torque to 390 +/- 45 ft-lbs (529 +/- 61 N•m).
- 3 Torque to 150 +/- 30 ft-lbs (203 +/- 41 N•m)

FIG. 4: Replace Priming Piston

Replace the Intake Valve



The intake valve (V) is available as a pre-assembled, pre-lubricated kit. The kit includes the valve and all seals and packings, and also includes the intake valve seat (15) and seal (16).

Pump Part No.	Repair Kit
24W152	253546
24W153	237907
24W150	253546
24W151	237907

- 1. Relieve the pressure. See **Pressure Relief Procedure** on page **8**.
- 2. Disconnect the displacement pump. See the system manual for instructions.
- 3. Place the pump in a vise with the outlet housing (3) positioned as shown in Figure 5.
- 4. Remove the priming piston (20). See **Replace the Priming Piston** on page **11**.
- 5. Using a pipe wrench on the hex of the intake cylinder (18), unscrew it from the intake housing (13).

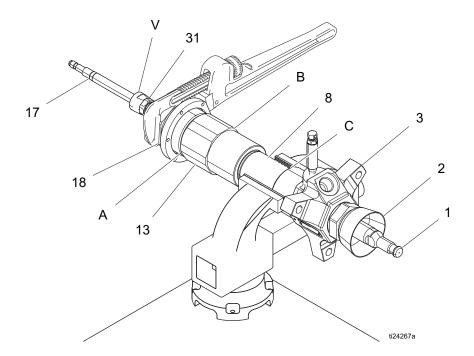
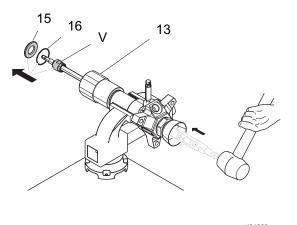


FIG. 5: Remove Priming Piston and Intake Cylinder

6. Pull the intake seat (15) and seal (16) out the bottom of the intake housing (13).

NOTE: If the seat (15) is difficult to remove, insert a brass rod through the top of the housing (13) and drive the seat out with a hammer.



ti24269a

FIG. 6: Remove Valve Assembly

- Firmly tap the piston rod with a rubber mallet until the valve assembly comes free. Take care not to drop the valve assembly (V) as it comes free.
- 8. To repair the piston, cylinder, seals, and rods, see **Repair the Piston** on page **14**.
- Slide the intake housing (13) onto the priming piston rod (17), making certain that the smooth surface of the valve stop (VS) is facing down toward the pump intake. Screw the housing (13) onto the cylinder (8). See Figure 7.

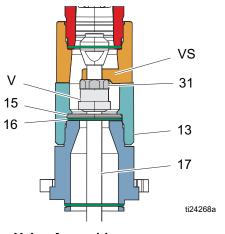


FIG. 7: Replace Valve Assembly

- 10. Lubricate the priming piston rod (17), then slide the pre-assembled intake valve (V) into the rod, making certain that the packing nut (31) goes on the rod first. Push the valve assembly up the rod as far as possible. Use a rubber mallet on the priming piston rod (17) to drive the valve assembly up to the stop (VS).
- 11. The intake seat (15) is reversible. Push it into the housing (13) until it seats securely. Lubricate the seal (16) and install it in the bevel around the bottom of the seat.
- 12. Screw the intake cylinder (8) into the intake housing (13). Using a pipe wrench on the hex of the cylinder (8), torque the cylinder to 385-400 ft-lb (522-542 N•m).
- 13. Replace the priming piston. See **Replace the Prim**ing **Piston** on page **11**.
- 14. Reconnect the displacement pump to the air motor as explained in the instructions for the system you are using.

Repair the Piston



The piston valve is available as pre-assembled, pre-lubricated Kit No. 237906, which includes the piston seat/guide assembly (P, items 6, 9, 10, 11, and 12).

- 1. Follow the steps in **Replace the Intake Valve** on page **12**.
- 2. Remove the outlet housing (3).
- Using a rubber mallet, drive the displacement rod (1) and the priming piston rod (17) out of the cylinder (8). Inspect the outer surfaces of the rods for damage by running a finger over the surface.

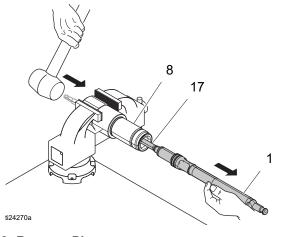


FIG. 8: Remove Piston

 Remove the seal (6) from the bottom of the cylinder (8). Shine a light into the cylinder to examine the inside surface for scoring or damage.

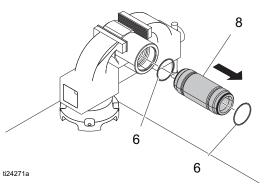


FIG. 9: Remove Seal

- Only if the cylinder is damaged or there is evidence of leaking around the top of the cylinder (8), unscrew the cylinder from the outlet housing using a pipe wrench. Remove the top cylinder seal. See Figure 9.
- 6. Place the flats of the displacement rod (1) in a vise. Unscrew the piston (9) from the displacement rod; the priming piston rod (17) comes with it. Slide the piston seat/guide assembly (10, 11, and 12) off the piston (9) as shown in Figure 10.

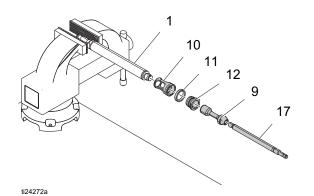
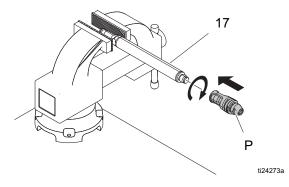
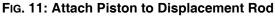


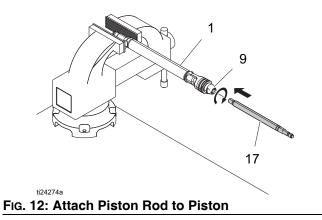
FIG. 10: Remove Piston Seat/Guide Assembly

- 7. Place the piston (9) flats in a vise and unscrew the rod (17).
- 8. Place the pre-assembled piston seat/guide assembly (P, items 10, 11, and 12) onto the piston (9) so the 45 beveled seating surfaces match.
- Place the flats of the displacement rod (1) in a vise. Screw the piston (9) onto the displacement rod (1) hand tight, then torque to 250-265 ft-lb (339-359 N•m).





 Using an adjustable wrench on the flats of the priming piston rod (17), screw the rod into the piston (9). Torque to 92-101 ft-lb (125-137 N•m). Be careful not to create burrs on the flats of the rod.



11. If the cylinder (8) was removed from the valve housing (13), lubricate the seal (6) and place it on the top of the cylinder. (The cylinder is symmetrical, so either end can be the top.) Screw the cylinder into the valve housing.

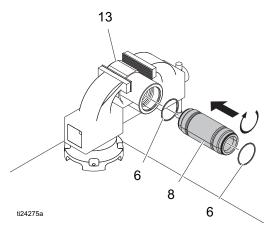


FIG. 13: Attach Cylinder to Valve Housing

12. Screw the outlet housing (3) onto the cylinder. Torque to 390 +/- 45 ft-lb (528 +/- 61 N•m). Lubricate the displacement rod (1). Slide the rod, piston assembly, and priming piston rod (17) into the cylinder (10) from the bottom until the top of the rod (1) protrudes from the packing nut (2).

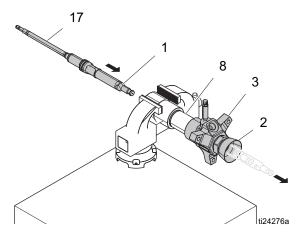


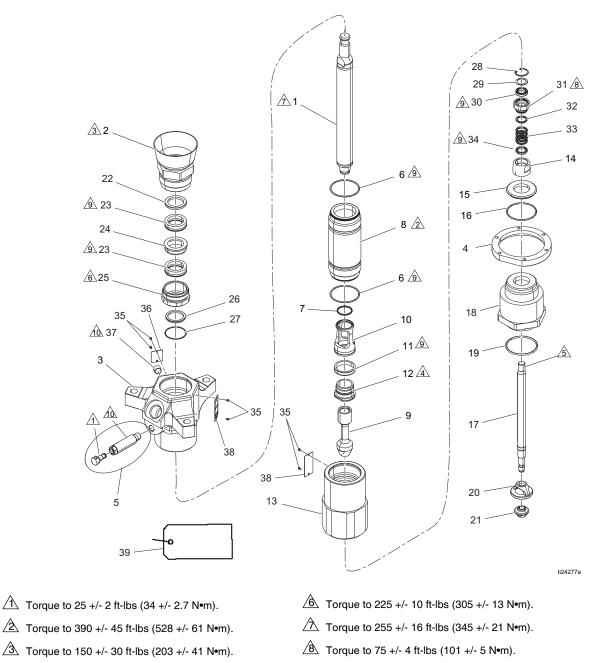
FIG. 14: Slide Piston Assembly and Rod into Cylinder

- 14. Lubricate the seal (6) and install it on the bottom of the cylinder (8).
- 15. Follow the steps in **Replace the Intake Valve** on page **12** to assemble the pump.

Parts

5 Gallon (20 Liter) Pumps

24W152, Pump with Carbon Filled Seals 24W153, Pump with Glass Filled Seals



- Apply lubricant.
 - Apply sealant to threads.

Torque to 97 +/- 5 ft-lbs (131 +/- 7 N•m). Fig. 15: Models 24W153 and 24W153

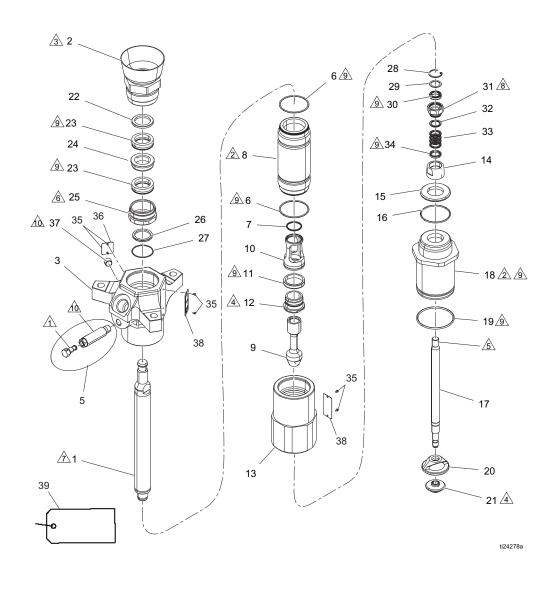
A Torque to 60 +/- 3 ft-lbs (81 +/- 4 N•m).

Ref	Part	Description	Qty	Ref	Part	Description	Qty
1	16Y958	ROD, displacement, chromex,	1	22	195233†	WASHER, seal back-up	1
2	237799	11 cm NUT, packing	1	23	120286†	PACKING, u-cup (24W152)	2
3	190598	HOUSING, outlet	1	20	113021†	PACKING, u-cup (24W153)	2
4	190620	FLANGE	1	24	195234†	WASHER, scraper 1.476 x 2.157	1
5	237908	KIT, repair bleed valve	1	25	190585†	NUT, packing	1
6	113040*	PACKING, o-ring	2	26	195232†	WASHER, rod scraper	1
7	*	BEARING, piston guide cm 200	1	27	104537†	PACKING, o-ring, ptfe	1
8	189437	CYLINDER, pump	1	28	113015♦	RING, retainer	1
9	189439*	SEAT, piston, sst	1	29	190523♦	WASHER, retainer	1
10	15M520*	GUIDE, piston, 200	1	30	120285♦	PACKING, u-cup (24W152)	1
11	113355*	BEARING, piston	1	30	113020♦	PACKING, u-cup (24W153)	1
12	189441*	SEAT, piston	1	31	190762�	NUT, seal	1
13	190597	HOUSING, valve	1	32	184246�	GLAND, packing male	1
14	189514�	VALVE, intake	1	33	109301♦	PACKING, vee	4
15	189446�	SEAT, valve	1	34	184196�	GLAND, packing female	1
16	113041♦	PACKING, o-ring	1	35	100508	SCREW, drive	6
17		ROD, piston	1	36		PLATE, designation	1
18	190608	CYLINDER, intake	1	37	101754	PLUG, pipe, 3/8 nptf	1
19	113054	PACKING, o-ring	1	38	184090▲	LABEL, warning	2
20	190606�	PISTON, pump	1	39	172479▲	TAG, warning	1
21	190607�	SEAT, piston	1				

- --- Not available for individual sale.
- ▲ Replacement Warning labels, signs, tags, and card are available at no cost.
- † Parts are available in throat repair kit 24V752 (for 24W152) and 24V753 (for 24W153).
- * Parts are available in piston repair kit 237906.
- Parts are available in intake valve repair kit 253546 (for 24W152) and 237907 (for 24W153).
- Parts are available in priming piston repair kit 237910.

55 Gallon (200 Liter) Pumps

24W150, Pump with Carbon Filled Seals 24W151, Pump with Glass Filled Seals



- ⚠ Torque to 25 +/- 2 ft-lbs (34 +/- 2.7 №m).
- A Torque to 390 +/- 45 ft-lbs (528 +/- 61 N•m).
- A Torque to 150 +/- 30 ft-lbs (203 +/- 41 N•m).
- A Torque to 60 +/- 3 ft-lbs (81 +/- 4 N•m).
- ⚠ Torque to 97 +/- 5 ft-lbs (131 +/- 7 №m).

Fig. 16: Models 24W150 and 24W151

- A Torque to 225 +/- 10 ft-lbs (305 +/- 13 N•m).
- A Torque to 255 +/- 16 ft-lbs (345 +/- 21 N•m).
- A Torque to 75 +/- 4 ft-lbs (101 +/- 5 N•m).
- Apply lubricant.
- Apply sealant to threads.

Part	Description	Qty	Ref	Part	Description	Qty
16Y958	ROD, displacement, chromex,	1	22	195233	WASHER, seal back-up	1
	11 cm	•	00	120286†	PACKING, u-cup (24W150)	2
237799	NUT, packing	1	23	113021†	PACKING, u-cup (24W151)	2
190598	HOUSING, outlet	1	0.4	405004±	WASHER, scraper 1.476 x	
237908	KIT, repair, bleed valve	1	24	195234†	2.157	I
113040*	PACKING, o-ring	2	25	190585†	NUT, Packing	1
*	BEARING, piston guide cm 200	1	26	195232†	WASHER, rod scraper	1
189437	CYLINDER, pump	1	27	104537†	PACKING, o-ring, ptfe	1
189439*	SEAT, piston, sst	1	28	113015♦	RING, retainer	1
15M520*	GUIDE, piston, 200	1	29	190523♦	WASHER, retainer	1
113355*	BEARING, piston	1	30	120285♦	PACKING, u-cup (24W150)	1
189441*	SEAT, piston	1	30	113020♦	PACKING, u-cup (24W151)	1
190597	HOUSING, valve	1	31	190762�	NUT, seal	1
189514�	VALVE, intake	1	32	184246♦	GLAND, packing male	1

109301♦ PACKING, vee

184090▲ LABEL, warning

172479▲ TAG, warning

184196♦ GLAND, packing female

SCREW, drive

PLATE, designation

PLUG, pipe, 3/8 nptf

--- Not available for individual sale.

190241 SEAT, piston

276378 PISTON,

189446 SEAT, valve

113041♦ PACKING, o-ring

ROD, piston

CYLINDER, intake

PACKING, o-ring

Ref Part

- ▲ Replacement Warning labels, signs, tags, and card are available at no cost.
- † Parts are available in throat repair kit 24V752 (for 24W150) and 24V753 (for 24W151).
- Parts are available in piston repair kit 237906.
- Parts are available in intake valve repair kit 237907 (for 24W150) and 253546 (for 24W151).
- Parts are available in priming piston repair kit 237909.

Technical Specifications

-		Metric
Maximum fluid working pressure	5850 psi	40 MPa, 403 bar
Displacement pump effective area	1.24 in. ²	8 cm ²
Maximum pump operating temperature	400°F	200°C
Fluid outlet size	1 in. npt(f)	
Wetted parts	Carbon steel, chrome, zinc, nickel plating, alloy steel, ductile iron, fluoroelastomer, PTFE, bronze, stainless steel (304, 316, 440, and 17-4 PH)	
Weight		
24W152	59 lb	27 kg
24W153	59 lb	27 kg
24W150	59 lb	27 kg
24W151	59 lb	27 kg
Length		
On upstroke	31.15 in.	791.2 mm
On downstroke (priming piston exposed)	33.75 in.	857.2 mm

Notes	::

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 334127

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

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www.graco.com Revision D, November 2017