

# INSTRUCTIONS-PARTS LIST



# 309016

Rev. B

  
**This manual contains important warnings and information.  
READ AND KEEP FOR REFERENCE.**  
INSTRUCTIONS

First choice when quality counts.™

Direct-Drive

## AquaMax™ Pressure Washers

### Model 804594, Series A

**AquaMax DD6814** pressure washer with 5.5-hp engine and 680 liters/hr (3 gpm) pump on Hi-Boy cart with hose, gun, and tips  
*140 bar, 14 MPa (2000 psi) Maximum Working Pressure*

### Model 804597, Series A

**AquaMax DD9021** pressure washer with 11-hp engine and 900 liters/hr (4 gpm) pump on Hi-Boy cart with hose, gun, and tips  
*210 bar, 21 MPa (3000 psi) Maximum Working Pressure*

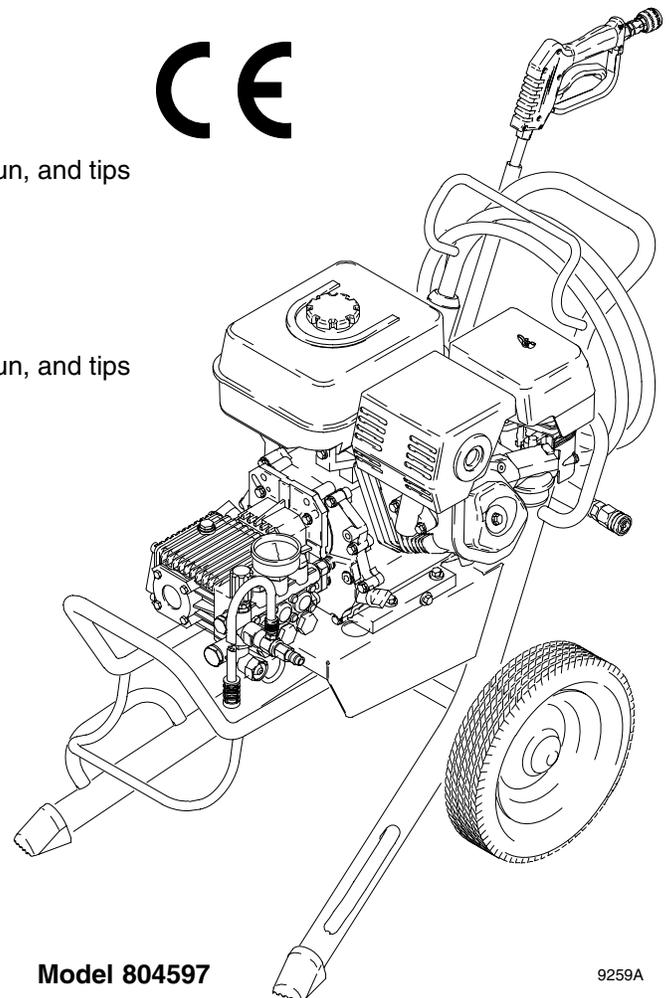
### Model 804596, Series A

**AquaMax DD9023** pressure washer with 13-hp engine and 900 liters/hr (4 gpm) pump on Hi-Boy cart with hose, gun, and tips  
*230 bar, 23 MPa (3300 psi) Maximum Working Pressure*

U.S. Patent  
Patented 1983, Canada  
and other patents pending

### Related Manual

Spray Gun ..... 308511



GRACO INC. P.O. BOX 1441 MINNEAPOLIS, MN 55440-1441

©COPYRIGHT 1999, GRACO INC.

Graco Inc. is registered to I.S. EN ISO 9001

# Table of Contents

Warnings ..... 2  
 Installation ..... 4  
 Operation ..... 5  
 Troubleshooting ..... 10  
 Pump Service  
   Model 804594 (DD6814) ..... 12  
   Models 804596 (DD9023) & 804597 (DD9021) ... 14  
 Parts Drawings and Lists  
   Model 804594 (DD6814) ..... 16  
   Models 804596 (DD9023) & 804597 (DD9021) ... 18  
 Pump Repair Kits ..... 20  
 Technical Data ..... 21  
 Graco Warranty ..... 22  
 Graco Phone Number ..... 22

## Warning Symbol



This symbol alerts you to the possibility of serious injury or death if you do not follow the instructions.

## Caution Symbol



This symbol alerts you to the possibility of damage to or destruction of equipment if you do not follow the instructions.

# ! WARNING

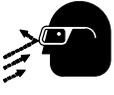


### INJECTION HAZARD

Spray from the gun, leaks, or ruptured components can inject fluid into your body and cause serious injury. Fluid splashed in the eyes or on the skin can also cause serious injury.

- Fluid injected into the skin might look like just a cut, but it is a serious injury. **Get emergency medical attention.**
- Do not point gun at anyone or at any part of body.
- Do not stop or deflect leaks with hand, body, glove, or rag.
- Do not put hand or fingers over spray tip.
- Tighten fluid connections before starting equipment.
- Engage the gun trigger safety whenever you stop spraying.
- Follow **Pressure Relief Procedure** on page 5 if spray tip clogs and before cleaning, checking, or servicing equipment.
- Repair or replace worn or damaged parts immediately.
- Check hoses, tubes, and coupling daily. Do not repair high-pressure couplings: replace entire hose. Fluid hoses must have spring guards on both ends to prevent kinks and rupture.

# WARNING

	<p><b>MOVING PARTS HAZARD</b> Moving parts, such as the drive belt, can pinch or amputate fingers.</p> <ul style="list-style-type: none"><li>• Keep clear of moving parts when starting or operating this equipment.</li><li>• Do not operate the pressure washer without all guards and interlocks installed and functioning.</li></ul>
	<p><b>HAZARDOUS FLUIDS</b> Improper handling of hazardous fluids can cause serious injury or death due to splashing in eyes, ingestion, or bodily contamination.</p> <ul style="list-style-type: none"><li>• Know specific hazards of fluid being used.</li><li>• Store hazardous fluids in approved containers. Dispose of hazardous fluids per local, state, and national guidelines.</li><li>• Wear protective eyewear, gloves, clothing, and respirator as recommended by the fluid manufacturer.</li></ul>
	<p><b>FUEL HAZARD</b> The fuel used in this unit is combustible and when spilled on a hot surface can ignite and cause a fire. Do not fill the fuel tank while the engine is running or hot.</p>
	<p><b>EXHAUST HAZARD</b> The exhaust contains poisonous carbon monoxide which is colorless and odorless. Do not operate this equipment in a closed building.</p>
	<p><b>EQUIPMENT MISUSE HAZARD</b> Misuse of the pressure washer or accessories could cause them to rupture and result in fluid injection, splashing in the eyes or on the skin, or other serious injury.</p> <ul style="list-style-type: none"><li>• Do not alter or modify any part or factory-set adjustment of this equipment.</li><li>• Do not exceed the maximum working pressure of any component or accessory in the system.</li><li>• Do not use any chemicals that are incompatible with the wetted parts as stated in <b>Technical Data</b> on page 21.</li><li>• Do not alter throttle setting.</li></ul>

# Setup

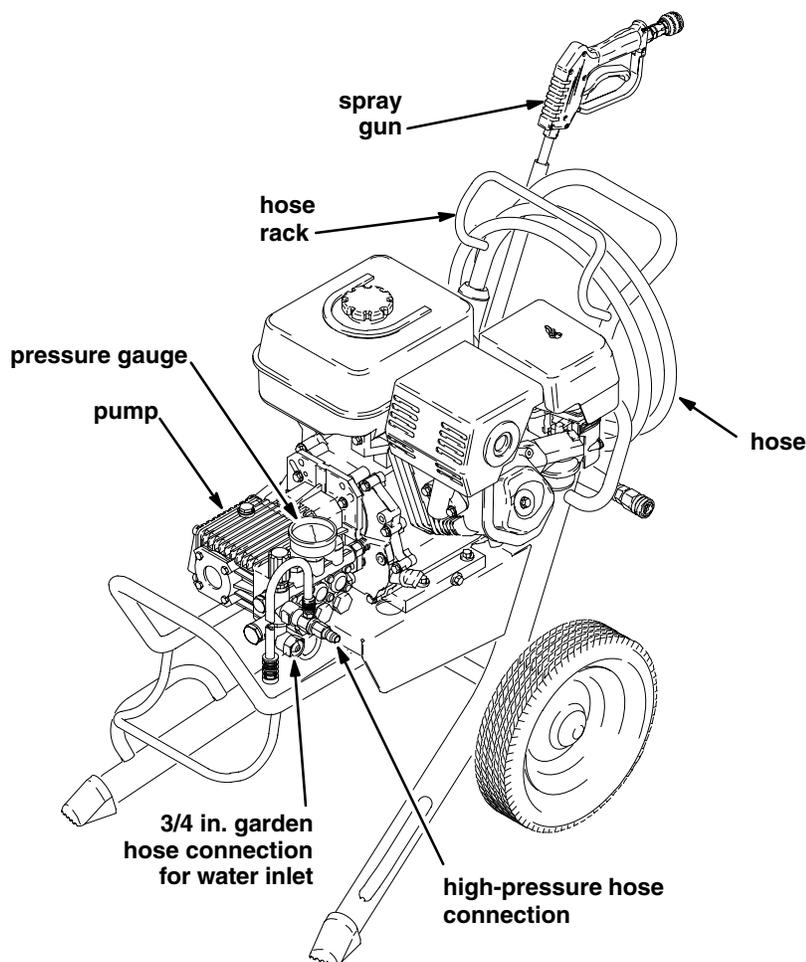


Fig. 1

9259A

## Check for Shipping Damage

Check the unit for any damage that could have occurred during shipping. **Notify the carrier immediately** if there is any damage.

## Setup

Connect the high-pressure hose between the pump outlet and the gun inlet. Both of these connections are made with quick couplers.

### **⚠ CAUTION**

Up to 100 ft (30 m) of high-pressure hose may be used. Longer hoses might affect pressure washer performance and chemical injector performance.

Install the appropriate spray tip on the wand. See **Installing and Changing Spray Tips** on page 7. If you are using a sandblaster kit, see its separate manual for installation instructions.

## Connect to Water Supply

### **⚠ CAUTION**

Before you connect to the water supply, check your local plumbing code regarding cross-connection to the water supply. A backflow preventer, Part No. 801133, is available to prevent backflow of contaminated water into the fresh water supply. Install it upstream from the pump.

If inlet water pressure is over 414 kPa, 4.1 bar (60 psi), a regulating water valve, Part No. 800258, must be installed at the garden hose connection.

Do not exceed 70° C (160° F) inlet water temperature.

Connect a hose with at least a 3/4 in. (19 mm) ID from the water supply to the unit's 3/4 in. garden hose inlet. The supply hose should not be more than 50 ft (15 m) long.

**NOTE:** The water source at the unit *must* have a minimum flow rate equal to that of the unit. See **Technical Data** on page 21.

# Operation

## Pressure Relief Procedure

**⚠ WARNING**

**INJECTION HAZARD**  
The system pressure must be manually relieved to prevent the system from starting or spraying accidentally. Fluid under high pressure can be injected through the skin and cause serious injury. To reduce the risk of an injury from injection, splashing fluid, or moving parts, follow the **Pressure Relief Procedure** whenever you

- Are instructed to relieve the pressure
- Stop spraying for more than 10 minutes
- Check or service any of the system equipment
- Install or clean the spray nozzle

1. Engage the trigger safety latch.
2. Turn the engine off.
3. Pull the plug wire off the spark plug.
4. Shut off the water supply.
5. Disengage the trigger safety latch, and trigger the gun to relieve pressure. Then engage the trigger safety latch again.

*If you suspect that the spray tip or hose is completely clogged or that pressure has not been fully relieved after following the steps above, disengage the trigger safety latch, and trigger the gun to relieve pressure. Wrap a rag around the hose end coupling, and **very slowly** loosen the coupling to relieve pressure gradually, then loosen it completely, and clear the tip or hose.*

**⚠ WARNING**

**PRESSURE INDICATED ON GAUGE**  
The pressure gauge (shown in Fig. 1) indicates the *spraying pressure* when the gun is triggered and the *bypass pressure* when the gun is not triggered. Pressure at the gun may be significantly higher than the bypass pressure indicated on the pressure gauge. Therefore, always follow the **Pressure Relief Procedure** above regardless of the pressure indicated on the gauge.

## Operating Cautions

Always observe the following **CAUTIONS** when operating the pressure washer to avoid costly damage to the pressure washer.

**⚠ CAUTION**

Do not allow the pressure washer to idle for more than 10 minutes. Doing so could cause the recirculating water to overheat and seriously damage the pump. Turn off the pressure washer if it will not be spraying for 10 minutes. **If heated inlet water is used, reduce this time further.** Do not operate the pressure washer with the inlet water screen removed; the screen helps keep abrasive sediment out of the pump, which could clog the pump or damage the cylinders. Keep the screen clean. Do not pump caustic materials through the pump; such materials could corrode the pump components. However, it is safe to pump antifreeze through the pump for cold-weather transport and storage.

## Trigger Safety Latch

**⚠ WARNING**

To reduce the risk of serious bodily injury, including fluid injection and splashing in the eyes or on the skin, **always** engage the trigger safety latch when you stop spraying, even for a moment. In the engaged position, the trigger safety latch prevents the gun from being triggered accidentally by hand or if it is dropped or bumped. Be sure the latch is pushed fully down to prevent the gun from being triggered. See Fig. 2.

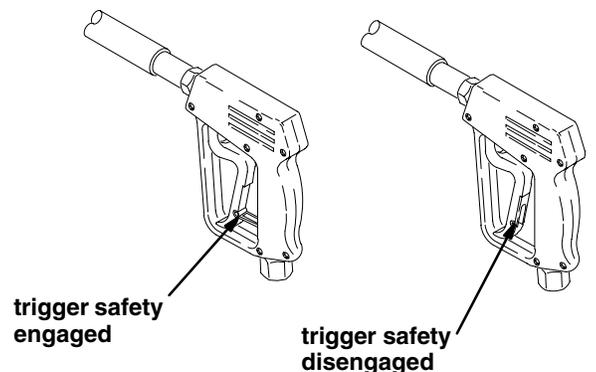


Fig. 2

04612

# Operation

## Startup

Always use this startup procedure to ensure that the unit is started safely and properly.

1. Check the oil levels.

**NOTE:** All units are equipped with a low-oil sensor that shuts the engine off if the oil level falls below a certain level. If the unit stops unexpectedly, check the oil and the fuel levels. Check the oil level each time the unit is refueled.

### **WARNING**



#### **FIRE HAZARD**

Do not refuel a hot engine. Refueling a hot engine could cause a fire. Use only fresh and clean regular or unleaded gasoline. Close the fuel shutoff valve when refueling.

2. Check the fuel level.

### **CAUTION**

Never run the unit dry. Costly damage to the pump will result. Always be sure the water supply is completely turned on before operating.

3. Turn on the water supply.
4. Trigger the gun until water sprays from the tip indicating that the air is purged from the system.
5. Open the fuel shutoff valve. Be sure the spark plug ignition cable is pushed firmly onto the spark plug. Put the switch in the ON position, and put the throttle in the RUN position.

6. Pull the starter rope to start the engine. Brace one foot on the pressure washer cart, and pull the starter rope out quickly. Pull and return the rope until the engine starts.

### **CAUTION**

Do not allow the starter rope to snap back against the engine. Return it gently to prevent damage to the recoil mechanism.

**NOTE:** For easier starting, have one person start the engine while another person triggers the spray gun.

**If the engine is cold,** start the engine with the choke completely closed. In cool weather, you might have to let the engine run with the choke closed for the first 20 to 30 seconds, then open it completely. In warm weather, open the choke completely as soon as the engine starts.

**If the engine is warm,** start the engine with the choke completely open or partially closed. When the engine starts, open the choke completely.

## Chemical Injector Operation

**NOTE:** See manual 308513 for detailed chemical injector operation and service instructions.

1.   **Relieve the pressure.** See page 5.

2. Insert the chemical filter (attached with clear tubing to the chemical injector) into the container of chemical.
3. Install the black, large-orifice chemical tip (see **Installing and Changing Spray Tips** on page 7).

The large orifice of the chemical injector tip causes a drop in pressure that actuates the chemical injector. Changing back to a small diameter spray tip deactivates the chemical injector and produces high pressure for rinsing. The chemical filter can be left in the chemical container during high-pressure use. To regulate the flow rate of the chemical, turn the chemical adjustment knob on the injector. Maximum chemical flow is two full turns counterclockwise from the closed (clockwise) position.

# Operation

## Installing and Changing Spray Tips

Tips are stored in storage holes on the cart of the pressure washer.

**WARNING**

To reduce the risk of serious bodily injury, including fluid injection and splashing in the eyes or on the skin, use extreme caution when changing spray tips. **Always** follow the procedure below.

1. **Relieve the pressure.**  
See page 5.
2. Select a spray tip appropriate for your application. Spray tips are stamped with 4- or 5-digit numbers. The first two digits denote the spray angle. The following table lists the spray tips.

**NOTE:** The chemical injector tip is brass and has a large opening and a black plastic cap.

Spray Tip Number	Spray Pattern Fan Angle
00XXX	0° blaster (red)
15XXX	15° (yellow)
25XXX	25° (green)
40XXX	40° (white)

3. Point the gun and wand away from yourself and anyone else.
4. Without holding your hand over the spray tip (A), pull back the quick coupler ring (B). Remove the current tip, install a different one, and push back the ring. See Fig. 3.

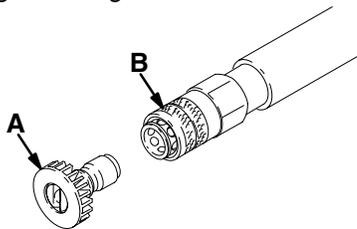


Fig. 3

04929

5. Pull on the tip to be sure the tip is secure before you spray again.

**CAUTION**

To avoid blowing the O-ring out of the quick coupler due to the high pressure in the system, never operate the pressure washer without a tip securely mounted in the quick coupler.

**NOTE:** See the sandblaster kit manual for detailed cleaning information if this accessory is used.

## Shutdown, Flushing, and Storage

Antifreeze Flush Kit 802327 is available to make flushing easier. This kit is for flushing the system with 50% antifreeze solution prior to transporting or storing the pressure washer in below-freezing temperatures.

**CAUTION**

If water does freeze in the pressure washer, thaw it in a warm room before trying to start it. Do not pour hot water on or into the pump; it could crack the ceramic plungers.



For **Pressure Relief**, see page 5.

- If the pressure washer will be exposed to freezing temperatures, flush the unit with a 50% antifreeze solution. **Relieve the pressure** and flush the pressure washer before you use it again to remove the antifreeze.
- Before long-term (overnight) storage or transporting of unit, disconnect the water supply and turn off the fuel supply valve.
- After each use, wipe all surfaces of the pressure washer with a clean, damp cloth.
- Perform the appropriate maintenance. See **Maintenance** chart on page 9.

# Notes

# Maintenance

Observe regular maintenance intervals to ensure that you get maximum performance and life from the pressure washer.

There is a break-in period for the engine and pump. After you change the oil in these components following their break-in periods, the interval between required maintenance procedures is longer.

If operating the unit in dusty conditions, you should perform these maintenance procedures more often.

**Always relieve the pressure before you begin.**



For **Pressure Relief**, see page 5.

Interval	Maintenance
Daily	Clean water inlet screen and filter. Check engine and pump oil levels. Fill as necessary. Check gasoline level. Fill as necessary.
After first 5 hours of operation	Change engine break-in oil. Drain oil when warm. Use SAE 30 or 10W-30 detergent oil.
After first 25 hours of operation	Retorque exhaust manifold nuts to 27 N-m (20 ft-lb). Do not over tighten.
Every 25 hours of operation	Clean and remove air cleaner foam. Wash with water and detergent. Dry thoroughly. Rub with oil, and squeeze to distribute oil.
After first 50 hours of operation	Change pump break-in oil. Use SAE 20 or 30 non-detergent oil.
Every 100 hours of operation or every 3 months	Clean or replace paper air cleaner cartridge. Tap gently to remove dirt. Change engine oil. Use SAE 30 or 10W-30 detergent oil. Retorque exhaust manifold nuts to 27 N-m (20 ft-lb). Do not over tighten.
Every 500 hours of operation or every 6 months	Change pump oil. Use SAE 20 or 30 non-detergent oil.

# Troubleshooting

## **WARNING**

To reduce the risk of serious injury, including fluid injection and splashing in the eyes or on the skin, always follow **Pressure Relief Procedure** on page 5 before you proceed.

<b>Problem</b>	<b>Cause</b>	<b>Solution</b>
Engine does not start or is hard to start	<p>No gasoline in fuel tank or carburetor</p> <p>Low oil</p> <p>Start/Stop switch in Stop position</p> <p>Water in gasoline or fuel is old</p> <p>Choked improperly, engine flooded</p> <p>Dirty air cleaner filter</p> <p>Spark plug dirty, wrong gap, or wrong plug type</p> <p>Spray gun closed</p>	<p>Fill the tank with gasoline, and open fuel shutoff valve. Check fuel line and carburetor.</p> <p>Add to proper level.</p> <p>Move switch to Start position.</p> <p>Drain fuel tank and carburetor. Use new fuel and dry spark plug.</p> <p>Open choke, and cycle engine several times to clear out gas. Use a dry spark plug.</p> <p>Remove and clean.</p> <p>Clean, adjust spark plug gap, or replace.</p> <p>Trigger spray gun while starting.</p>
Engine misses or lacks power	<p>Partially plugged air cleaner filter</p> <p>Spark plug dirty, wrong gap, or wrong plug type</p>	<p>Remove and clean.</p> <p>Clean, adjust spark plug gap, or replace.</p>
Low pressure and/or pump runs rough	<p>Worn or wrong size tip</p> <p>Inlet filter clogged</p> <p>Worn packings, abrasives in water, or natural wear</p> <p>Inadequate water supply</p> <p>Fouled or dirty inlet or discharge valves</p> <p>Restricted inlet</p> <p>Worn inlet or discharge valves</p> <p>Leaking high-pressure hose</p>	<p>Replace with tip of proper size.</p> <p>Clean. Check more frequently.</p> <p>Check filter. Replace packings. See <b>Pump Service</b> on page 12 or 14.</p> <p>Check water flow rate to pump.</p> <p>Clean inlet and discharge valve assemblies. Check filter.</p> <p>Check garden hose; it might be collapsed or kinked.</p> <p>Replace worn valves. See <b>Pump Service</b> on page 12 or 14.</p> <p>Replace high-pressure hose.</p>
Water leaking from under pump manifold	<p>Worn packings</p>	<p>Install new packings. See <b>Pump Service</b> on page 12 or 14.</p>

# Troubleshooting

Problem	Cause	Solution
Water on oil side of pump	<p>Humid air condensing inside crankcase</p> <p>Worn packings</p> <p>Oil seals leaking</p>	<p>Change oil as specified in <b>Maintenance</b> on page 9.</p> <p>Install new packings. See <b>Pump Service</b> on page 12 or 14.</p> <p>Install new oil seals. See <b>Pump Service</b> on page 12 or 14.</p>
Frequent or premature failure of packings	<p>Scored, damaged, or worn plungers</p> <p>Abrasive material in the fluid being pumped</p> <p>Inlet water temperature too high</p> <p>Over pressurizing pump</p> <p>Excessive pressure due to partially plugged or damaged tip</p> <p>Pump running too long without spraying</p> <p>Running pump dry</p>	<p>Install new plungers. See <b>Pump Service</b> on page 12 or 14.</p> <p>Install proper filtration on pump inlet plumbing.</p> <p>Check water temperature; may not exceed 70° C (160° F).</p> <p>Do not modify any factory-set adjustments. See <b>Equipment Misuse Hazard</b> on page 3.</p> <p>Clean or replace tip. See <b>Installing and Changing Spray Tips</b> on page 7.</p> <p>Never run pump more than 10 minutes without spraying.</p> <p>Do not run pump without water.</p>
Strong surging at inlet, and low pressure on discharge side	Foreign particles in the inlet or discharge valve or worn inlet and/or discharge valves	Clean or replace valves. See <b>Pump Service</b> on page 12 or 14.

# Pump Service — Model 804594

## AquaMax DD6814

Always relieve the pressure before you begin.



For **Pressure Relief**, see page 5.

### NOTES:

- The following metric wrenches are needed: 5 mm, 13 mm, and 22 mm.
- There is a tool kit to aid in servicing the pump: Tool Kit 800271 includes tools to aid in removing packing retainers.
- Repair kits are available. See the individual repair sections in this manual, and see the instructions that come with the kits for location of parts. For the best results, use all parts in the kits.

### Valves

**NOTE:** For a set of six valves, order 801472. See **Pump Repair Kits** on page 20.

1. Remove the hex plug from the manifold using a 22 mm socket.
2. Examine the O-ring under the hex plug, and replace if cut or distorted.
3. Remove the valve assembly from the cavity; the assembly can come apart.
4. Install the new valve. Install the O-ring and hex plug, and torque to 45 N-m (33 ft-lb).

**NOTE:** Retorque the plug after 5 hours of operation.

### Pumping Section

1. Remove the eight capscrews and lockwashers from the manifold using a 5 mm wrench.
2. Carefully separate the manifold from the crankcase.

**NOTE:** You might have to tap the manifold lightly with a soft mallet to loosen it.

### CAUTION

Keep the manifold properly aligned with the ceramic plungers when removing to avoid damage to the plunger or seals.

3. Carefully examine each plunger for any scoring or cracking, and replace as necessary.

### Servicing the Plungers

**NOTE:** Plunger Repair Kits are available for replacing retainers, O-rings, washers, and backup rings for three cylinders. See **Pump Repair Kits** on page 20.

1. Loosen the plunger retaining nut five to six turns, using a 13 mm wrench. Push the plunger toward the crankcase to separate the plunger and retaining screw.
2. Remove the nut from the plunger, and examine the O-ring, backup ring, and copper bearing/gasket washer. Replace these parts, if necessary, using parts from Plunger Repair Kit 801474.
3. Remove the plunger and flinger from the plunger shaft. Clean, examine, and replace parts as necessary.
4. Inspect the plunger shaft for oil leakage from the crankcase. If leaking is obvious, replace the oil seals. If leaking is very minor, **do not** remove the seals, because they cannot be reused. Oil Seal Kits are available to replace the seals. See **Pump Repair Kits** on page 20.
5. Lightly grease the flinger and oil seal if they are being replaced, and put them on the plunger shaft. Then install the plunger.

# Pump Service — Model 804594

## AquaMax DD6814

6. Lightly grease the retaining screw and the outer end of the plunger. Place the washer, O-ring, and backup ring around the screw, and install the nut through the plunger. Torque to 15 N-m (11 ft-lb).
7. If you plan to replace the packings, see **Servicing the V-Packings** at right.
8. Lubricate the outside of each plunger. Slide the manifold onto the crankcase, being careful not to damage the seals.
9. Install the capscrews and washers fingertight. Torque the screws to 12 N-m (8.8 ft-lb) following the tightening pattern shown in Fig. 4. Uneven tightening could cause the manifold to bind or jam.

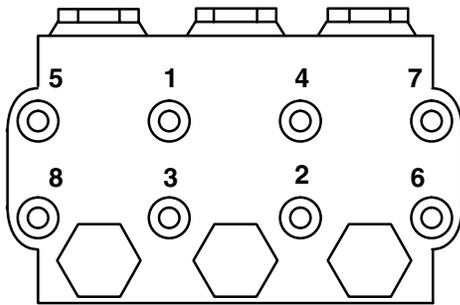


Fig. 4

9292A

### Servicing the V-Packings

There are two types of packing kits: one is packings only, the other includes the packings, rings and retainers. See **Pump Repair Kits** on page 20.

1. Remove the manifold as outlined in **Pumping Section** on page 12.
2. Carefully pull the packing retainer from the manifold. Examine the O-ring, and replace if cut or damaged.
3. Remove the v-packing and head ring. Pull out the intermediate retainer ring. Remove the second v-packing and second head ring.
4. Inspect all parts, and replace as necessary.
5. Thoroughly clean the packing cavities, and examine for debris or damage.
6. Lightly grease the packing cavities, and replace the packings in the following order: head ring, v-packing, intermediate ring, head ring, v-packing, and packing retainer with the O-ring installed in the retainer groove.

### CAUTION

Install the parts in the proper order and facing the correct direction. Improperly installed parts will cause a malfunction.

7. Reassemble the manifold as instructed in **Servicing the Plungers** on page 12.

# Pump Service — Models 804596 & 804597

## AquaMax DD9023 & DD9021

Always relieve the pressure before you begin.



For **Pressure Relief**, see page 5.

### NOTES:

- The following metric wrenches are needed: 6 mm, 13 mm, and 27 mm.
- There is a tool kit to aid in servicing the pump: Tool Kit 800271 includes tools to aid in removing packing retainers.
- Repair kits are available. See the individual repair sections in this manual, and see the instructions that come with the kits for location of parts. For the best results, use all parts in the kits.

### Valves

**NOTE:** For a set of six valves, order 801472. See **Pump Repair Kits** on page 20.

1. Remove the hex plug from the manifold using a 27 mm socket.
2. Examine the O-ring under the hex plug, and replace if cut or distorted.
3. Remove the valve assembly from the cavity; the assembly can come apart.
4. Install the new valve. Install the O-ring and hex plug, and torque to 99 N-m (73 ft-lb).

**NOTE:** Retorque the plug after 5 hours of operation.

### Pumping Section

1. Remove the eight capscrews and lockwashers from the manifold using a 6 mm wrench.
2. Carefully separate the manifold from the crankcase.

**NOTE:** You might have to tap the manifold lightly with a soft mallet to loosen.

### CAUTION

Keep the manifold properly aligned with the ceramic plungers when removing to avoid damage to the plunger or seals.

3. Carefully examine each plunger for any scoring or cracking, and replace as necessary.

### Servicing the Plungers

**NOTE:** Plunger Repair Kits are available for replacing retainers, O-rings, washers, and backup rings for three cylinders. See **Pump Repair Kits** on page 20.

1. Loosen the plunger retaining nut five to six turns, using a 13 mm wrench. Push the plunger toward the crankcase to separate the plunger and retaining screw.
2. Remove the nut from the plunger, and examine the O-ring, backup ring, and copper bearing/gasket washer. Replace these parts, if necessary, using parts from appropriate Plunger Repair Kit listed on page 20.
3. Remove the plunger and flinger from the plunger shaft. Clean, examine, and replace parts as necessary.
4. Inspect the plunger shaft for oil leakage from the crankcase. If leaking is obvious, replace the oil seals. If leaking is very minor, **do not** remove the seals, because they cannot be reused. Oil Seal Kits are available to replace the seals. See **Pump Repair Kits** on page 20.
5. Lightly grease the flinger and oil seal, if it is being replaced and, replace them on the plunger shaft. Then install the plunger.

# Pump Service — Models 804596 & 804597

## AquaMax DD9023 & DD9021

6. Lightly grease the retaining screw and the outer end of the plunger. Place the washer, O-ring, and backup ring around the screw, and install the nut through the plunger. Torque to 19.5 N-m (14.4 ft-lb).
7. If you plan to replace the packings, see **Servicing the V-Packings** at right.
8. Lubricate the outside of each plunger. Slide the manifold onto the crankcase, being careful not to damage the seals.
9. Install the capscrews and washers fingertight. Torque the screws to 30 N-m (22 ft-lb) following the tightening pattern shown in Fig. 4. Uneven tightening could cause the manifold to bind or jam.

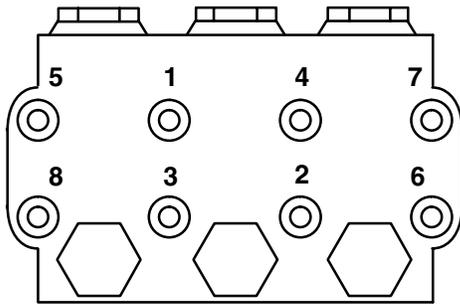


Fig. 4

9292A

### Servicing the V-Packings

There are two types of packing kits: one is packings only, the other includes the packings, rings, and retainers. See **Pump Repair Kits** on page 20.

1. Remove the manifold as outlined in **Pumping Section** on page 14.
2. Carefully pull the packing retainer from the manifold. Examine the O-ring, and replace if cut or damaged.
3. Remove the v-packing and head ring. Pull out the intermediate retainer ring. Remove the second v-packing and second head ring.
4. Inspect all parts, and replace as necessary.
5. Thoroughly clean the packing cavities, and examine for debris or damage.
6. Lightly grease the packing cavities, and replace the packings in the following order: head ring, v-packing, intermediate ring, head ring, v-packing, and packing retainer with the O-ring installed in the retainer groove.

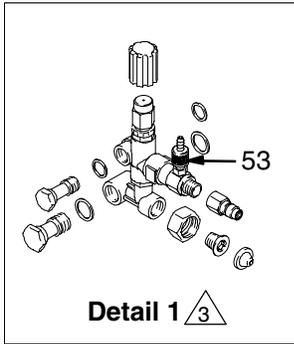
### CAUTION

Install the parts in the proper order and facing the correct direction. Improperly installed parts will cause a malfunction.

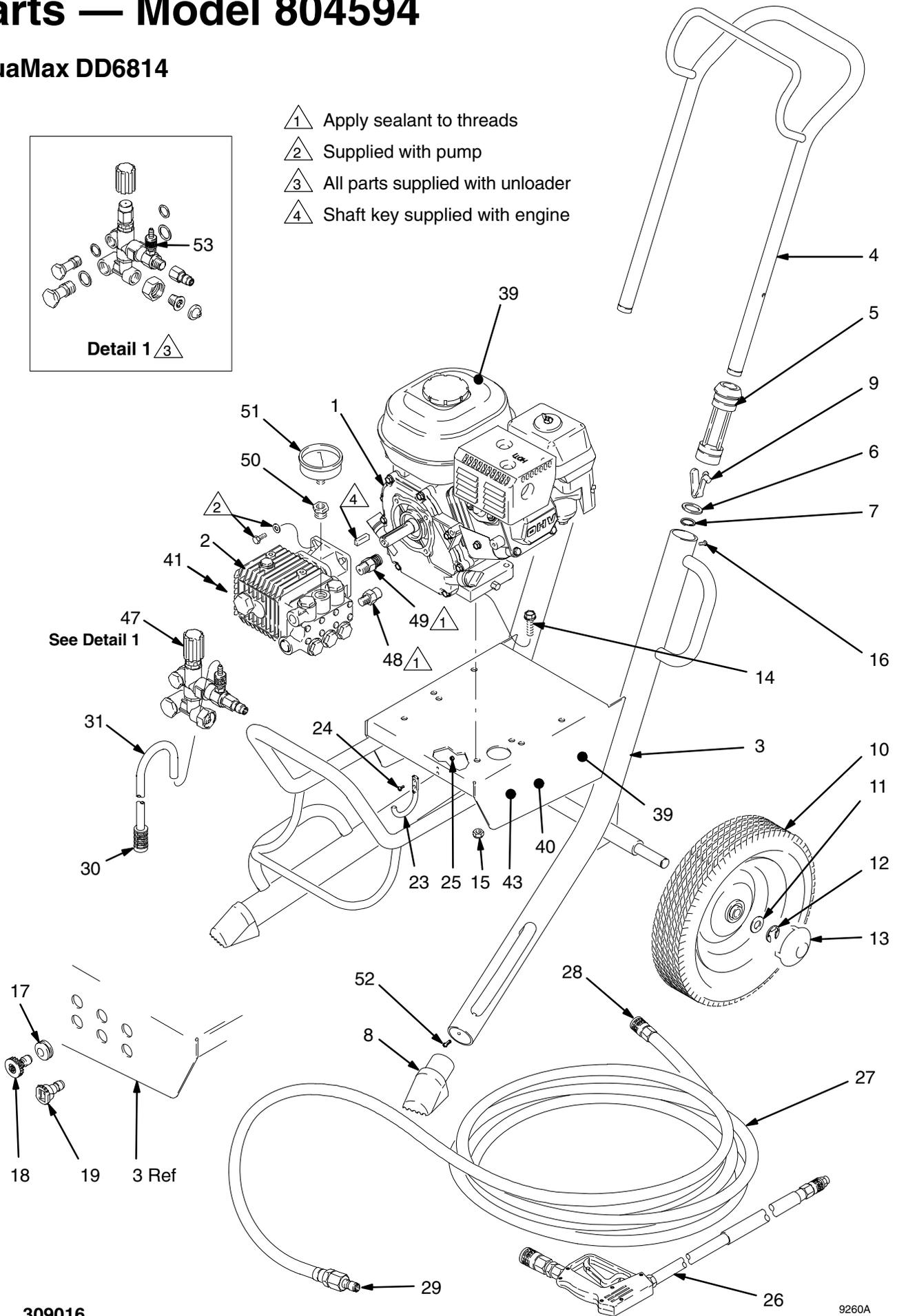
7. Reassemble the manifold as instructed in **Servicing the Plungers** on page 14.

# Parts — Model 804594

## AquaMax DD6814



-  1 Apply sealant to threads
-  2 Supplied with pump
-  3 All parts supplied with unloader
-  4 Shaft key supplied with engine



# Parts — Model 804594

## AquaMax DD6814

### USE ONLY GENUINE GRACO PARTS AND ACCESSORIES

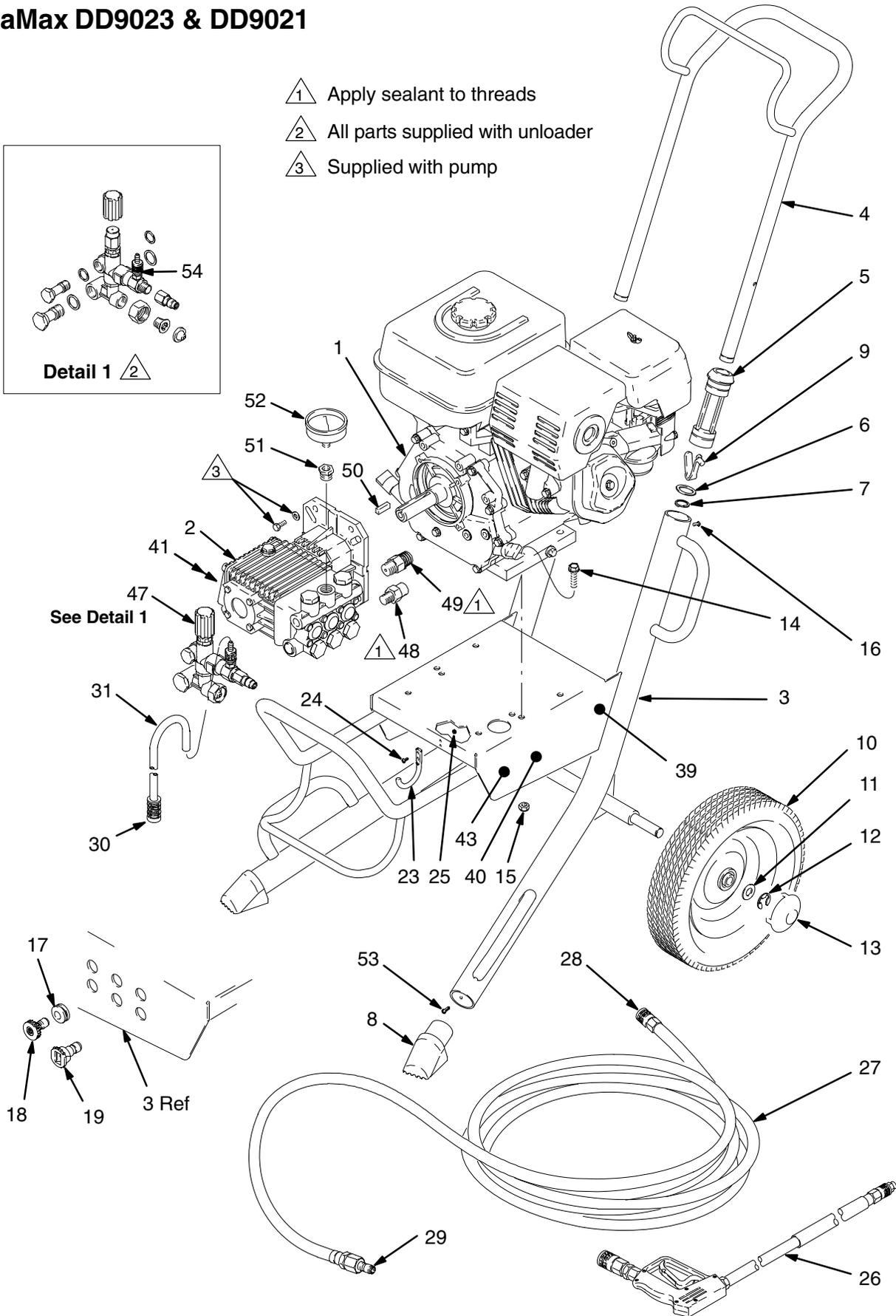
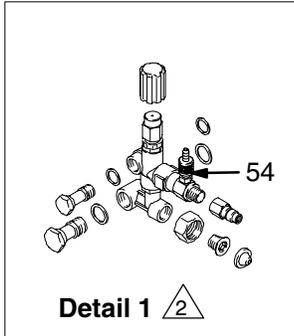
Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	802264	ENGINE, Honda™ OHV; 5.5 hp	1	23	114801	HOOK, pail	1
2	804531	PUMP ASSEMBLY	1	24	112380	SCREW, mach, fil hd; 1/2 in.	2
3	240998	FRAME, cart	1	25	109466	LOCKNUT	2
4	239998	HANDLE, cart	1	26	804381	GUN & WAND ASSEMBLY <i>See instruction manual 308511</i>	1
5	191084	SLEEVE, cart	2	27	804479	HOSE, high pressure; 3/8 x 50 ft (15 m)	1
6	183350	WASHER	2	28	801569	QUICK COUPLER, female; 3/8	1
7	110243	RING, retaining	2	29	801568	QUICK COUPLER, 3/8; male	1
8	115481	FOOT, cart	2	30	801683	STRAINER, chemical	1
9	112827	BUTTON, snap	2	31	194188	TUBING, chemical	1
10	179811	WHEEL, semi-pneumatic	2	39▲	290013	LABEL, danger	1
11	154636	WASHER	2	40▲	290131	LABEL, warning	1
12	101242	RING, retaining, ext	2	41▲	290133	LABEL, "Prevent Freezing"	1
13	104811	CAP, hub	2	43	195405	LABEL, identification	2
14	110837	SCREW, flange, hex hd; 5/16 in.	4	47	804543	KIT, unloader/injector	1
15	111040	NUT, lock, nylock; 5/16–18 in.	4	48	800742	VALVE, thermal relief	1
16	108795	SCREW, mach, pan hd	4	49	804546	VALVE, relief	1
17	801012	GROMMET, rubber	6	50	804593	ADAPTER, pressure gauge	1
18	805543	TIP, spray, Q-type; 0004 (0° – red)	1	51	804582	GAUGE, pressure	1
	805544	TIP, spray, Q-type; 1504 (15° – yellow)	1	52	115496	SCREW, thread forming, panhead	2
	805545	TIP, spray, Q-type; 2504 (25° – green)	1	53	244350	KIT, repair, chemical injector	1
	805546	TIP, spray, Q-type; 4004 (40° – white)	1				
19	805634	TIP, spray, chemical injector, (black)	1				

▲ *Extra danger and warning labels are available free of charge.*

# Parts — Models 804596 & 804597

AquaMax DD9023 & DD9021

-  Apply sealant to threads
-  All parts supplied with unloader
-  Supplied with pump



9261A

# Parts — Models 804596 & 804597

## AquaMax DD9023 & DD9021

### USE ONLY GENUINE GRACO PARTS AND ACCESSORIES

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1		ENGINE	1	23	114801	HOOK, pail	1
	114703	Model 804596: Honda™ OHV; 13 hp	1	24	112380	SCREW, mach, fil hd; 1/2 in.	2
	803158	Model 804597: Honda™ OHV; 11 hp	1	25	109466	LOCKNUT	2
2		PUMP ASSEMBLY	1	26	804381	GUN & WAND ASSEMBLY <i>See instruction manual 308511</i>	1
	114707	Model 804596	1	27	804474	HOSE, high pressure; 3/8 x 50 ft (15 m)	1
	804503	Model 804597	1	28	801569	QUICK COUPLER, female; 3/8	1
3	240998	FRAME, cart	1	29	801568	QUICK COUPLER, 3/8; male	1
4	239998	HANDLE, cart	1	30	801683	STRAINER, chemical	1
5	191084	SLEEVE, cart	2	31	194188	TUBING, chemical	1
6	183350	WASHER	2	39▲	290013	LABEL, danger	1
7	110243	RING, retaining	2	40▲	290131	LABEL, warning	1
8	115481	FOOT, cart	2	41▲	290132	LABEL, "Prevent Freezing"	1
9	112827	BUTTON, snap	2	43		LABEL, identification	
10	179811	WHEEL, semi-pneumatic	2		195406	Model 804596	2
11	154636	WASHER	2		195407	Model 804597	2
12	101242	RING, retaining, ext	2	47		KIT, unloader/injector	1
13	104811	CAP, hub	2		114706	Model 804596	1
14	110837	SCREW, flange, hex hd; 5/16 in.	4		804528	Model 804597	1
15	111040	NUT, lock, nylock; 5/16–18 in.	4	48	804397	VALVE, thermal relief	1
16	108795	SCREW, mach, pan hd	6	49		VALVE, relief	1
17	801012	GROMMET, rubber	6		114705	Model 804596	1
18		TIP, spray, Q-type; 0° – red			804547	Model 804597	1
	805543	Model 804596: 0004	1	50	801137	KEY, shaft	1
	805547	Model 804597: 00045	1	51	804595	ADAPTER, pressure gauge	1
		TIP, spray, Q-type; 15° – yellow		52	804582	GAUGE, pressure	1
	805544	Model 804596: 1504	1	53	115496	SCREW, thread forming, panhead	2
	805548	Model 804597: 15045	1	54	244350	KIT, repair, chemical injector	1
		TIP, spray, Q-type; 25° – green					
	805545	Model 804596: 2504	1				
	805549	Model 804597: 25045	1				
		TIP, spray, Q-type; 40° – white					
	805546	Model 804596: 4004	1				
	805550	Model 804597: 40045	1				
19	805634	TIP, spray, chemical injector, (black)	1				

▲ *Extra danger and warning labels are available free of charge.*

# Pump Repair Kits

Repair Kit			Description	Qty.	Parts for Entire Pump	Parts for One Cylinder
Pressure Washer Model 804594	Pressure Washer Model 804596	Pressure Washer Models 804596 and 804597				
<b>804033</b> Oil seal	<b>801658</b> Oil seal	<b>801658</b> Oil seal	Oil seal	3	*	
<b>801472</b> Valve assembly	<b>804402</b> Valve assembly	<b>804402</b> Valve assembly	O-ring Valve seat Valve Spring Valve cage	6 6 6 6 6	*	
<b>804034</b> Valve cap	<b>804403</b> Valve cap	<b>804403</b> Valve cap	O-ring Cap	6 6	*	
<b>804036</b> Packing assembly	<b>114793</b> Packing assembly	<b>804404</b> Packing assembly	O-ring Packing retainer Intermediate ring Packing Packing Head ring	1 1 1 1 2 2		*
<b>801474</b> Plunger assembly	<b>241325</b> Plunger assembly	<b>801474</b> Plunger assembly	Washer O-ring Back up Retaining screw Flinger	3 3 3 3 3	*	

# Technical Data

	<b>Model 804594 (AquaMax DD6814)</b>	<b>Model 804596 (AquaMax DD9023)</b>	<b>Model 804597 (AquaMax DD9021)</b>
Engine (4 cycle, air cooled)	5.5-hp Honda™ OHV	13-hp Honda™ OHV	11-hp Honda™ OHV
Gasoline tank capacity	3.6 L (3.8 quarts)	6.5 L (6.9 quarts)	6.5 L (6.9 quarts)
Water pump maximum working pressure	140 bar, 14 MPa (2000 psi)	230 bar, 23 MPa (3300 psi)	210 bar, 21 MPa (3000 psi)
Water pump maximum flow	680 liters/hr (3 gpm)	900 liters/hr (4 gpm)	900 liters/hr (4 gpm)
Inlet hose connection	3/4-in. garden hose (f)	3/4-in. garden hose (f)	3/4-in. garden hose (f)
Weight (without gun and hose)	47 kg (103 lb)	69 kg (151 lb)	69 kg (151 lb)
Dimensions			
Length	927 mm (36.5 in.)	927 mm (36.5 in.)	927 mm (36.5 in.)
Width	533 mm (22 in.)	533 mm (22 in.)	533 mm (22 in.)
Height	788 mm (31.5 in.)	813 mm (32.5 in.)	813 mm (32.5 in.)
Maximum inlet water temperature	70° C (160° F)	70° C (160° F)	70° C (160° F)
Sound data (measured per ISO 3744)			
Sound pressure level	93.1 dB(A)	97.4 dB(A)	95.8 dB(A)
Sound power level	103.5 dB(A)	111.6 dB(A)	106.3 dB(A)
Wetted parts	<p>High-pressure hose acrylonitrile and Buna-N cover and tube</p> <p>Pressure washer (including fittings) anodized aluminum; aluminum or bronze alloys; brass copper; NylonPTFE® composite; ceramic; Buna-N; cotton phenolic; 303, 304, and 316 stainless steel; polyimide-12 thermoplastic; PTFE®; carbon steel; zinc with or without yellow chromate plate</p> <p><i>Honda™ is a trademark of the Honda Corporation.</i></p> <p>PTFE®</p>		

# Graco Warranty

Graco warrants all equipment manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale by an authorized Graco distributor 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**

The parties acknowledge that they have required that the present document, as well as all documents, notices and legal proceedings entered into, given or instituted pursuant hereto or relating directly or indirectly hereto, be drawn up in English. Les parties reconnaissent avoir convenu que la rédaction du présent document sera en Anglais, ainsi que tous documents, avis et procédures judiciaires exécutés, donnés ou intentés à la suite de ou en rapport, directement ou indirectement, avec les procédures concernées.

## **ADDITIONAL WARRANTY COVERAGE**

Graco does provide extended warranty and wear warranty for products described in the "Graco Contractor Equipment Warranty Program".

# Graco Phone Number

**TO PLACE AN ORDER**, contact your Graco distributor, or call this number to identify the distributor closest to you:  
**1-800-690-2894 Toll Free**

*All written and visual data contained in this document reflect the latest product information available at the time of publication.  
Graco reserves the right to make changes at any time without notice.*

**Sales Offices:** Minneapolis, Detroit  
**International Offices:** Belgium, Korea, Hong Kong, Japan

**GRACO INC. P.O. BOX 1441 MINNEAPOLIS, MN 55440-1441**

**[www.graco.com](http://www.graco.com)**

PRINTED IN USA 309016 June 1999, Revised October 2000