

INSTRUCTIONS-PARTS LIST



308-522

Rev A

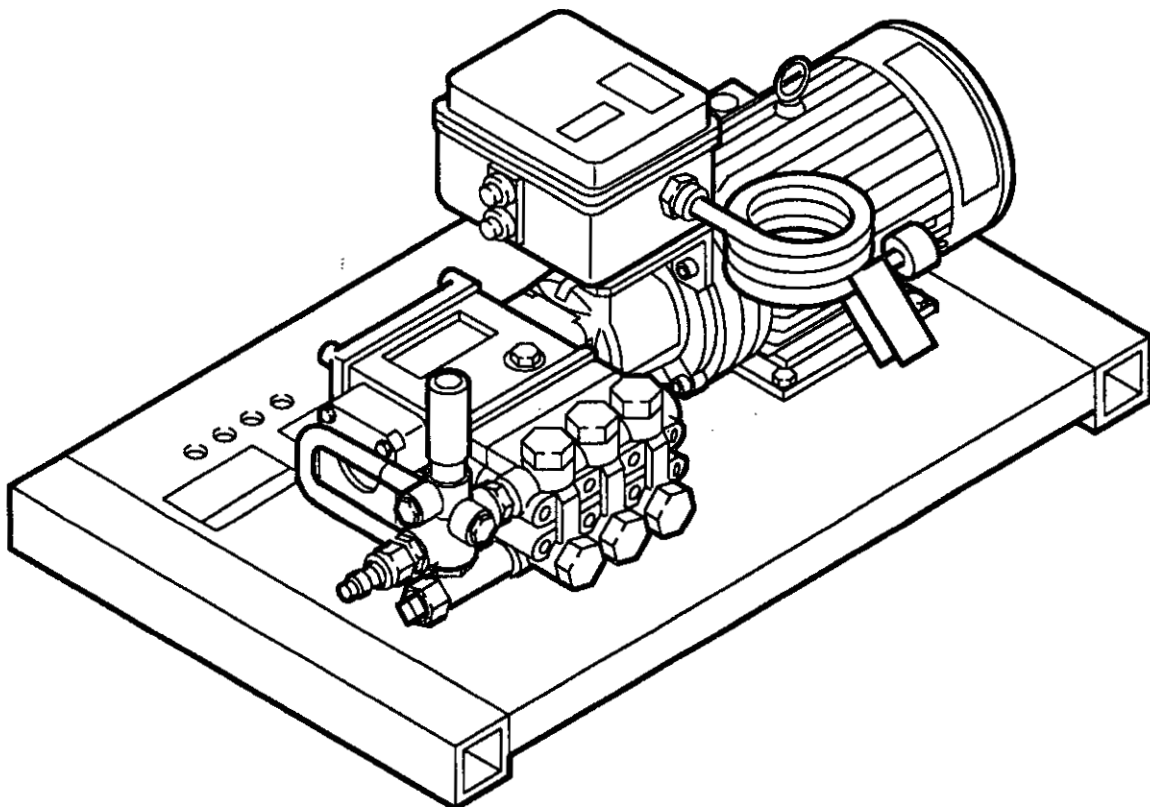
This manual contains **IMPORTANT**
WARNINGS and **INSTRUCTIONS**
READ AND RETAIN FOR REFERENCE

HYDRA-CLEAN® 4040 Pressure Washer

Model 800-345, Series A 230/460 Volt, 3 Phase

4000 psi (276 bar) OPERATING PRESSURE

4300 psi (296 bar) MAXIMUM WORKING PRESSURE



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

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WARNING

**HIGH PRESSURE SPRAY CAN CAUSE SERIOUS INJURY.
FOR PROFESSIONAL USE ONLY. OBSERVE ALL WARNINGS.**

Read and understand all instruction manuals before operating equipment.

FLUID INJECTION HAZARD

General Safety

This pressure washer generates very high fluid pressure. Spray from the gun, leaks or ruptured components can inject fluid through your skin and into your body and cause extremely serious bodily injury including the need for amputation. Also, fluid injected or splashed into the eyes or on the skin can cause serious damage.

NEVER point the spray gun or wand at anyone or at any part of the body. *NEVER* put hand or fingers over the spray tip.

ALWAYS follow the **Pressure Relief Procedure**, before cleaning or servicing any part of the sprayer.

NEVER try to stop or deflect leaks with your hand or body.

Be sure equipment safety devices are operating properly before each use.

Medical Treatment

If any fluid appears to penetrate your skin, get **EMERGENCY MEDICAL TREATMENT AT ONCE. DO NOT TREAT AS A SIMPLE CUT.** Tell the doctor exactly what fluid was injected.

NOTE TO PHYSICIAN: *Injection in the skin is a traumatic injury. It is important to treat the injury surgically as soon as possible. Do not delay treatment to research toxicity. Toxicity is a concern with some exotic coatings injected directly into the bloodstream. Consultation with a plastic surgeon or reconstructive hand surgeon may be advisable.*

Pressure Relief Procedure

To reduce the risk of serious bodily injury, including fluid injection and splashing in the eyes or on the skin, always follow this procedure whenever you stop spraying for more than 10 minutes, when shutting down, and before checking or repairing any part of the system.

1. Engage the trigger safety latch.
2. Turn the sprayer off.
3. Disconnect the electrical supply.
4. Shut off the water supply.
5. Disengage the trigger safety latch and trigger the gun to relieve pressure, and then engage the trigger safety latch again.
6. Before long-term (overnight) storage, disconnect the water supply and disconnect the electricity.

Spray Gun Safety Devices

Be sure all gun safety devices are operating properly before each use. Do not remove or modify any part of the gun; this can cause a malfunction and result in serious bodily injury.

SAFETY LATCH: Whenever you stop spraying for a moment, always set the gun safety latch in the engaged or "safe" position, making the gun inoperative. Failure to properly set the safety latch can result in accidental triggering of the gun.

SPRAY TIP SAFETY: Use extreme caution when cleaning or changing spray tips. If a spray tip clogs while spraying, engage the gun safety latch immediately. *ALWAYS* follow the **Pressure Relief Procedure** and then remove the spray tip to clean it.

GROUNDING INSTRUCTIONS

This product must be grounded. If it should malfunction or break down, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This equipment is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

DANGER

Improper connection of the equipment-grounding conductor can result in the risk of electrocution. Check with a qualified electrician or service person if you are in doubt as to whether the outlet is properly grounded. Do not modify the plug provided with the product – if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

GROUND FAULT CIRCUIT INTERRUPTER PROTECTION

To comply with the National Electrical Code (NFPA 70) and to provide additional protection from the risk of electric shock, connect this pressure washer to a

receptacle that is protected by a ground-fault circuit-interrupter (GFCI).

EXTENSION CORDS

Use only 4-wire extension cords that have 4-prong grounding-type plugs and 4-pole cord connectors that accept the plug from the product. Use only extension cords that are intended for outdoor use. These extension cords are identified by a marking, "Acceptable for use with outdoor appliances; store indoors while not in use." Use only extension cords having an electrical rating not less than the rating of the product. Do not use damaged extension cords. Examine extension cord before using and replace if damaged. Do not abuse extension cord and do not yank

or pull on any cord to disconnect. Keep cord away from heat and sharp edges. Always disconnect the extension cord from the receptacle before disconnecting the product from the extension cord.

WARNING

To reduce the risk of electrocution, keep all connections dry and off the ground. Do not touch plug with wet hands.

EQUIPMENT MISUSE HAZARD

General Safety

Any misuse of the pressure washer or accessories, such as overpressurizing, modifying parts, using incompatible chemicals and fluids, or using worn or damaged parts, can cause them to rupture and result in fluid injection, splashing in the eyes or on the skin, or other serious bodily injury, fire, explosion or property damage.

NEVER alter or modify any part of this equipment; doing so could cause it to malfunction.

CHECK all spray equipment regularly and repair or replace worn or damaged parts immediately.

ALWAYS wear protective eyewear and appropriate clothing. If using a chemical injector, read and follow the chemical manufacturer's literature for recommendations on additional protective equipment, such as a respirator.

System Pressure

This sprayer can develop high operating pressure. Be sure that all spray equipment and accessories are rated to withstand the maximum working pressure of this sprayer. **DO NOT** exceed the maximum working pressure of any component or accessory used in the system.

Chemical Compatibility

BE SURE that all chemicals used in the chemical injector are compatible with the wetted parts of the hose, gun, wand and tip, as given in the Technical Data (inside back cover). Always read the chemical manufacturer's literature before using any chemical in this pressure washer.

HOSE SAFETY

High pressure fluid in the hoses can be very dangerous. If the hose develops a leak, split or rupture due to any kind of wear, damage or misuse, the high pressure spray emitted from it can cause a fluid injection injury or other serious bodily injury or property damage.

ALL FLUID HOSES MUST HAVE STRAIN RELIEFS ON BOTH ENDS. The strain reliefs help protect the hose from kinks or bends at or close to the coupling, which can result in hose rupture.

TIGHTEN all fluid connections securely before each use. High pressure fluid can dislodge a loose coupling or allow high pressure spray to be emitted from the coupling.

NEVER use a damaged hose. Before each use, check entire hose for cuts, leaks, abrasion, bulging cover, or damage or movement of the hose couplings. If any of these conditions exist, replace the hose immediately. **DO NOT** try to recouple high pressure hose or mend it with tape or any other device. A repaired hose cannot contain the high pressure fluid.

HANDLE AND ROUTE HOSES CAREFULLY. Do not pull on hoses to move the pressure washer. Do not use chemicals which are not compatible with the inner tube and cover of the hose. **DO NOT** expose Graco hose to temperatures above 200° F (93° C) or below -40° F (-40° C).

MOVING PARTS HAZARD

Moving parts can pinch or amputate fingers or other body parts. **KEEP CLEAR** of moving parts when starting or operating the pressure washer.

NEVER operate the pressure washer without all guards and interlocks installed and functioning. Follow the

Pressure Relief Procedure before checking or servicing the pressure washer to prevent discharging high pressure fluid from the gun.

TERMS

WARNING or DANGER: Alerts user to avoid or correct conditions that could cause bodily injury.

CAUTION: Alerts user to avoid or correct conditions that could cause damage to the equipment.

NOTE: Identifies helpful procedures and information.

IMPORTANT

United States Government safety standards have been adopted under the Occupational Safety and Health Act. These standards—particularly the General Standards, Part 1910, and the Construction Standards, Part 1926—should be consulted.

INSTALLATION

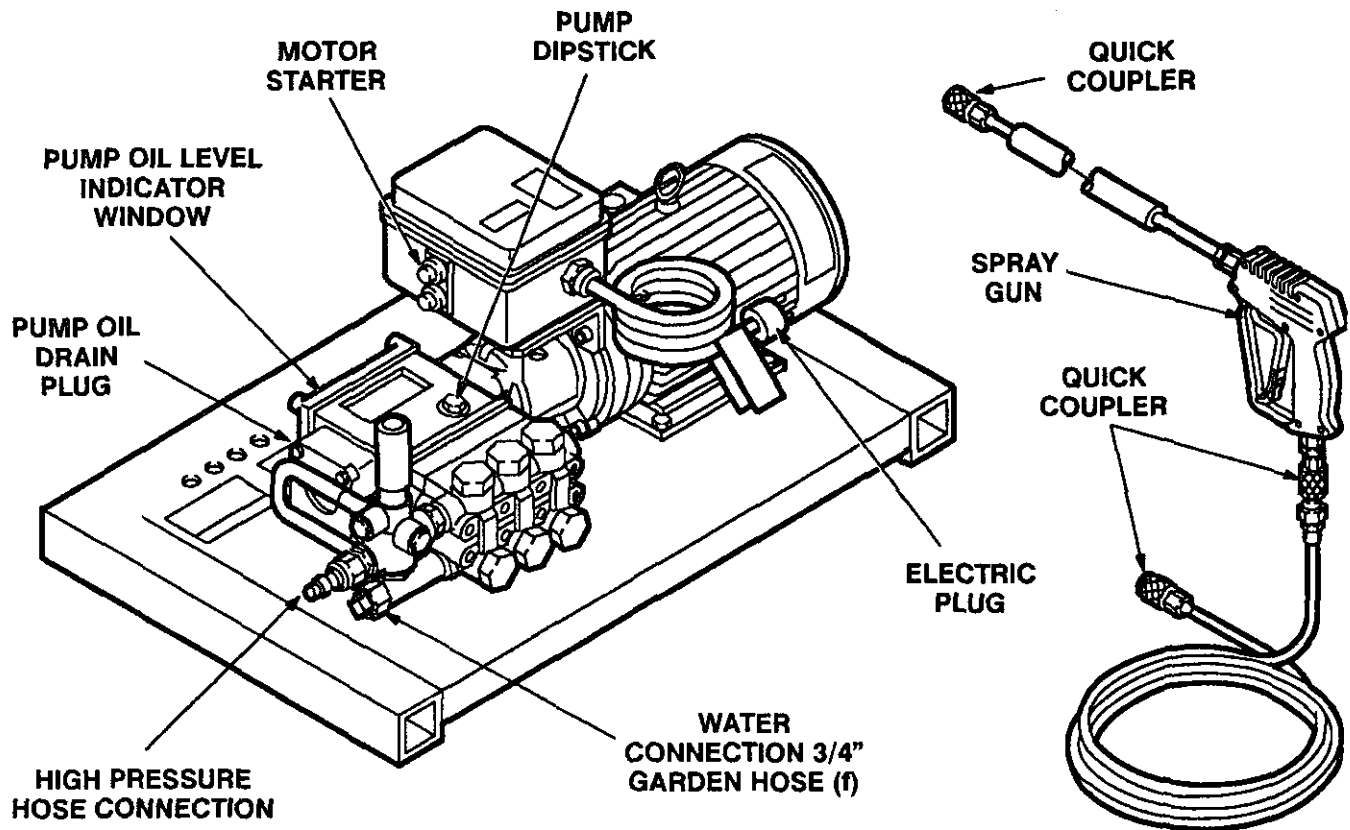


Figure 1

Check for Shipping Damage

Check the unit for any damage that may have occurred in shipping. Notify the carrier immediately if there is any damage.

Set Up

Before plugging in the unit, be sure the electrical service matches the specification in Technical Data (inside back cover) and the voltage label on the unit. With the unit off, plug the power supply cord into a grounded, GFCI-protected outlet. Do not remove the electrical plug which comes with the unit or bend connecting prongs to fit an improper outlet! Use an extension cord that meets the requirements of the *EXTENSION CORD* section and is no more than 100 ft (30 m) long. Added length of cord will affect current draw of unit.

If you are using a downstream chemical injector, install it between the pump unloader and the high pressure hose, using the quick couplers provided.

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 may affect sprayer performance, and chemical injector performance, if used.

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

Connect to Water Supply

CAUTION

Before attaching to the water supply, check your local plumbing code regarding cross-connection to the water supply.

A backflow preventer, P/N 801-133, is available to prevent backflow of contaminated water into the fresh water supply. Install it upstream from the pump.

Install a regulating water valve, P/N 800-258, if inlet water pressure is over 60 psi (4.1 bar).

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

Connect a hose with at least a 3/4 inch (19 mm) ID and not longer than 50 ft (15 m) to the unit's 3/4 inch garden hose inlet.

NOTE: The water source at the unit *must* have a minimum flowrate equal to that of the unit (see Technical Data, inside back cover).

STARTUP

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

1. Check the oil level.

Pump: Add SAE 20 or 30 weight non-detergent oil as necessary.

2. Turn on the water supply.

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. Trigger the gun until water sprays from the tip indicating that the air is purged from the system.
4. Plug the electrical cord into proper, grounded, GFCI-protected outlet.
5. **ALWAYS** engage the gun's trigger safety latch whenever you stop spraying, even for a moment to reduce the risk of fluid injection or splashing in the eyes or on the skin if the gun is bumped or triggered accidentally.
6. **ALWAYS** observe the following **CAUTIONS** to avoid costly damage to the pressure washer.

CAUTION

DO NOT allow the pressure washer to idle for more than 10 minutes. Doing so may cause the recirculating water to overheat and seriously damage the pump. Turn off the pressure washer if it will not be spraying or cleaning at least every 10 minutes. If heated inlet water is used, reduce this time further.

DO NOT run the pump dry, which will quickly damage the pump. Be sure the water supply is fully turned on before starting the pump.

DO NOT operate the pressure washer with the inlet water screen removed. This screen helps keep abrasive sediment out of the pump, which could clog or scratch the pump. Keep this screen clean.

DO NOT pump caustic materials; such materials may corrode the pump components.

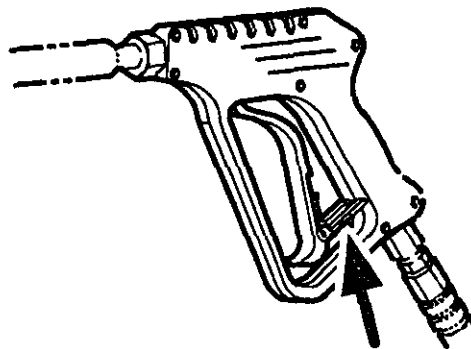
7. See the chemical injector or sandblaster kit manual for detailed cleaning information if these accessories are used.

Trigger Safety Latch

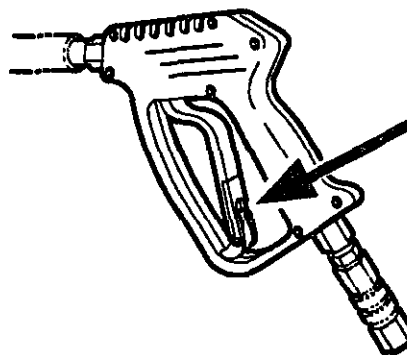
WARNING

To reduce the risk of serious bodily injury, including fluid injection, splashing in the eyes or on the skin, **ALWAYS** engage the trigger safety latch whenever spraying stops, 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 when engaging it or it cannot prevent the gun from being triggered. See Figure 2.



TRIGGER SAFETY LATCH SHOWN ENGAGED



TRIGGER SAFETY LATCH SHOWN DISENGAGED

Figure 2

Installing and Changing Spray Tips

WARNING

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

1. Follow the **Pressure Relief Procedure**.
2. Point the gun and wand away from yourself and anyone else.
3. Without holding your hand over the spray tip (A), pull back the quick coupler ring (B), remove the tip and then release the ring. See Figure 3.
4. Be sure the tip is secure before starting to spray again.
5. Tip holding holes are provided on the chassis.

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.

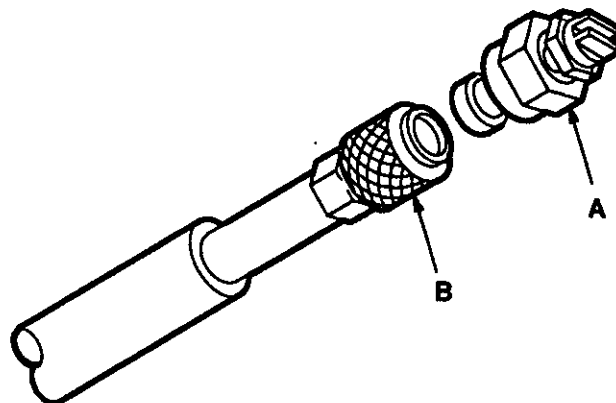


Figure 3

SHUTDOWN, FLUSHING AND STORAGE

WARNING

Pressure Relief Procedure

To reduce the risk of serious bodily injury, including fluid injection and splashing in the eyes, or on the skin, always follow this procedure whenever you stop spraying for more than 10 minutes, when shutting down, and before checking or repairing any part of the system.

1. Engage the trigger safety latch.
2. Turn the sprayer off.
3. Disconnect the electrical supply.
4. Shut off the water supply.
5. Disengage the trigger safety latch and trigger the gun to relieve pressure, and then engage the trigger safety latch again.
6. Before long-term (overnight) storage, disconnect the water supply and disconnect the electricity.

1. If the pressure washer will be exposed to freezing temperatures, drain all water out of the pump. If it must be stored in freezing temperatures, flush the unit with a 50% anti-freeze solution. Relieve pressure. Flush the pressure washer before using it again to remove the anti-freeze.

NOTE: An anti-freeze flush kit P/N 802-327 is available to make flushing easier.

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 may crack the ceramic plungers!

2. After each use, wipe all surfaces of the pressure washer with a clean, damp cloth.
3. Perform the appropriate maintenance. See the maintenance chart.

MAINTENANCE

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

There is a break-in period for the pump. After changing the oil initially, the interval between required changes is longer.

WARNING

To reduce the risk of serious bodily injury, including fluid injection, splashing in the eyes or on the skin or injury from moving parts, always follow the **Pressure Relief Procedure Warning** before proceeding.

Interval	What to do
Daily	Clean water inlet screen and filter. Check pump oil level. Fill as necessary.
After first 50 hours of operation	Change pump break-in oil. Use SAE 20 or 30 non-detergent oil.
Each 500 hours of operation or 6 months	Change pump oil. Use SAE 20 or 30 non-detergent oil.

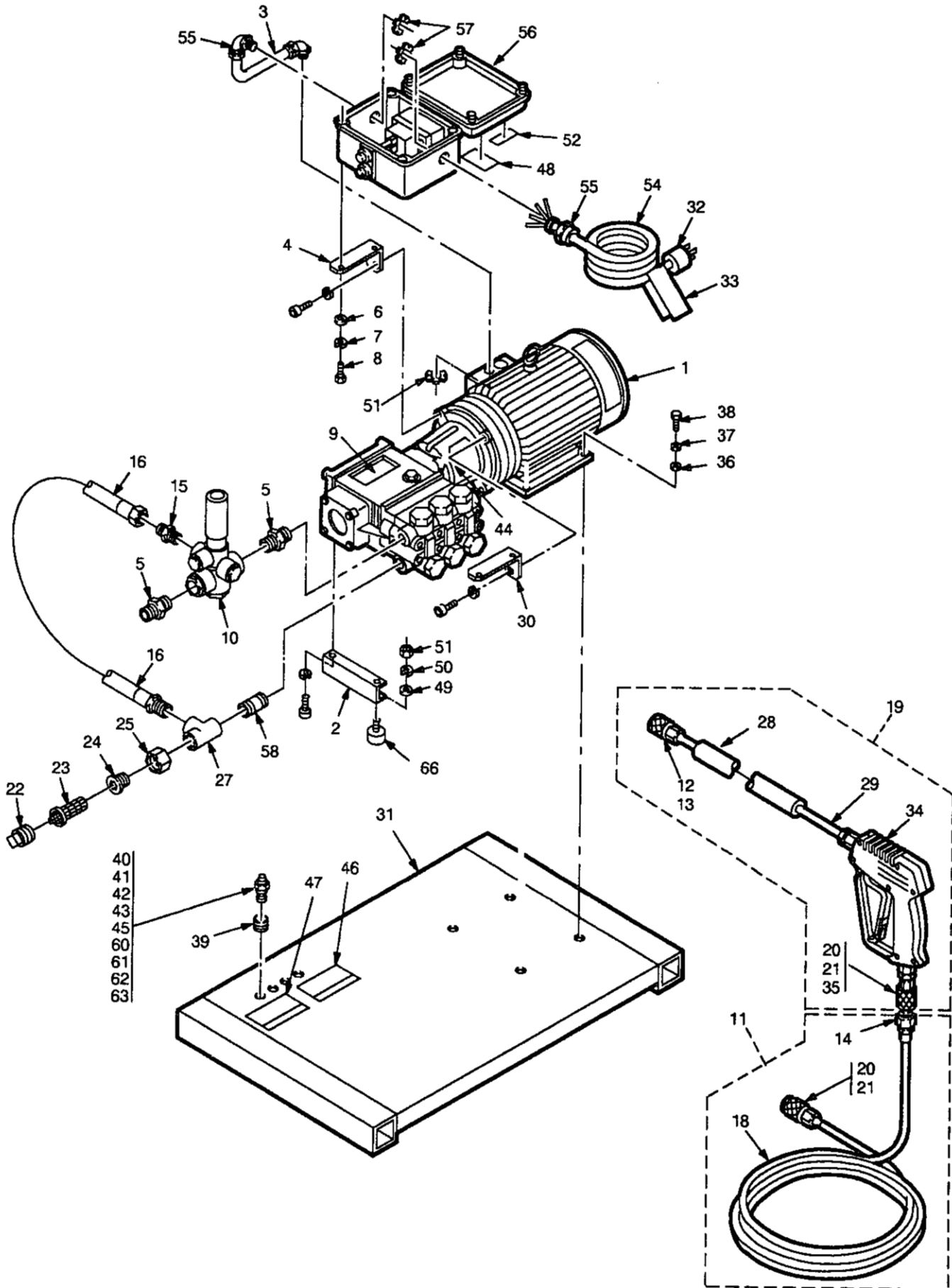
TROUBLESHOOTING CHART

WARNING

To reduce the risk of serious bodily injury, including fluid injection, splashing in the eyes or on the skin, or injury from moving parts, always follow the **Pressure Relief Procedure Warning** before proceeding.

PROBLEM	CAUSE	SOLUTION
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>Coupling slippage.</p> <p>Fouled or dirty inlet or discharge valves. Even a small particle can cause the valve to stick.</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 PUMP SERVICE.</p> <p>Check water flow rate to pump.</p> <p>Tighten or replace.</p> <p>Clean inlet and discharge valve assemblies. Check filter.</p> <p>Check garden hose, may be collapsed or kinked.</p> <p>Replace worn valves.</p> <p>Replace high pressure hose.</p>
Water leakage from under pump manifold	Worn packings.	Install new packings. See PUMP SERVICE.
Water in pump	<p>Humid air condensing inside crankcase.</p> <p>Worn packings.</p> <p>Oil seals leaking.</p>	<p>Change oil as specified in MAINTENANCE.</p> <p>Install new packings. See PUMP SERVICE.</p> <p>Install new oil seals. See PUMP SERVICE.</p>
Frequent or premature failure of the 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>Overpressurizing 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 PUMP SERVICE.</p> <p>Install proper filtration on pump inlet plumbing.</p> <p>Check water temperature; may not exceed 160°F.</p> <p>Do not modify any factory-set adjustments. See EQUIPMENT MISUSE HAZARD.</p> <p>Clean or replace tip. See Installing and Changing Spray Tips.</p> <p>Never run pump more than 10 minutes without spraying.</p> <p>Do not run pump without water.</p>
Strong surging at the inlet and low pressure on the discharge side	Foreign particles in the inlet or discharge valve or worn inlet and/or discharge valves.	Clean or replace valves. See PUMP SERVICE.
Unit will not start	<p>Unit not plugged in.</p> <p>Electrical service off/GFCI activated.</p> <p>Thermal overload has tripped.</p>	<p>Check power cord.</p> <p>Check fuse/circuit breaker. Check for proper grounding.</p> <p>Press stop button on the motor starter.</p>

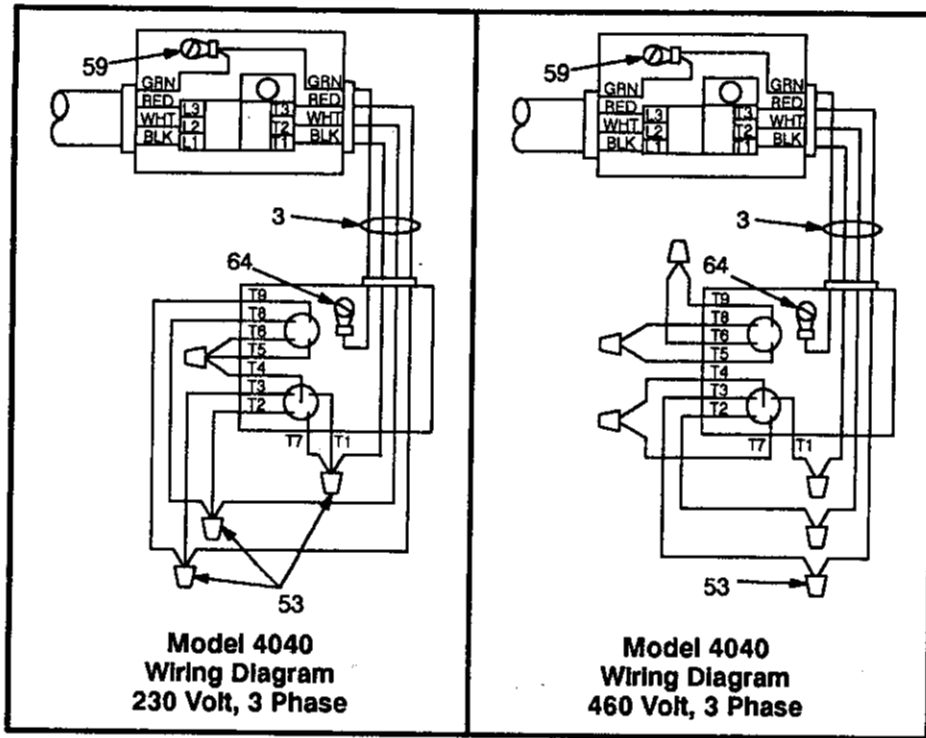
PARTS DRAWING
800-345 Hydra-Clean® 4040 Pressure Washer
 For wiring diagram, see page 14



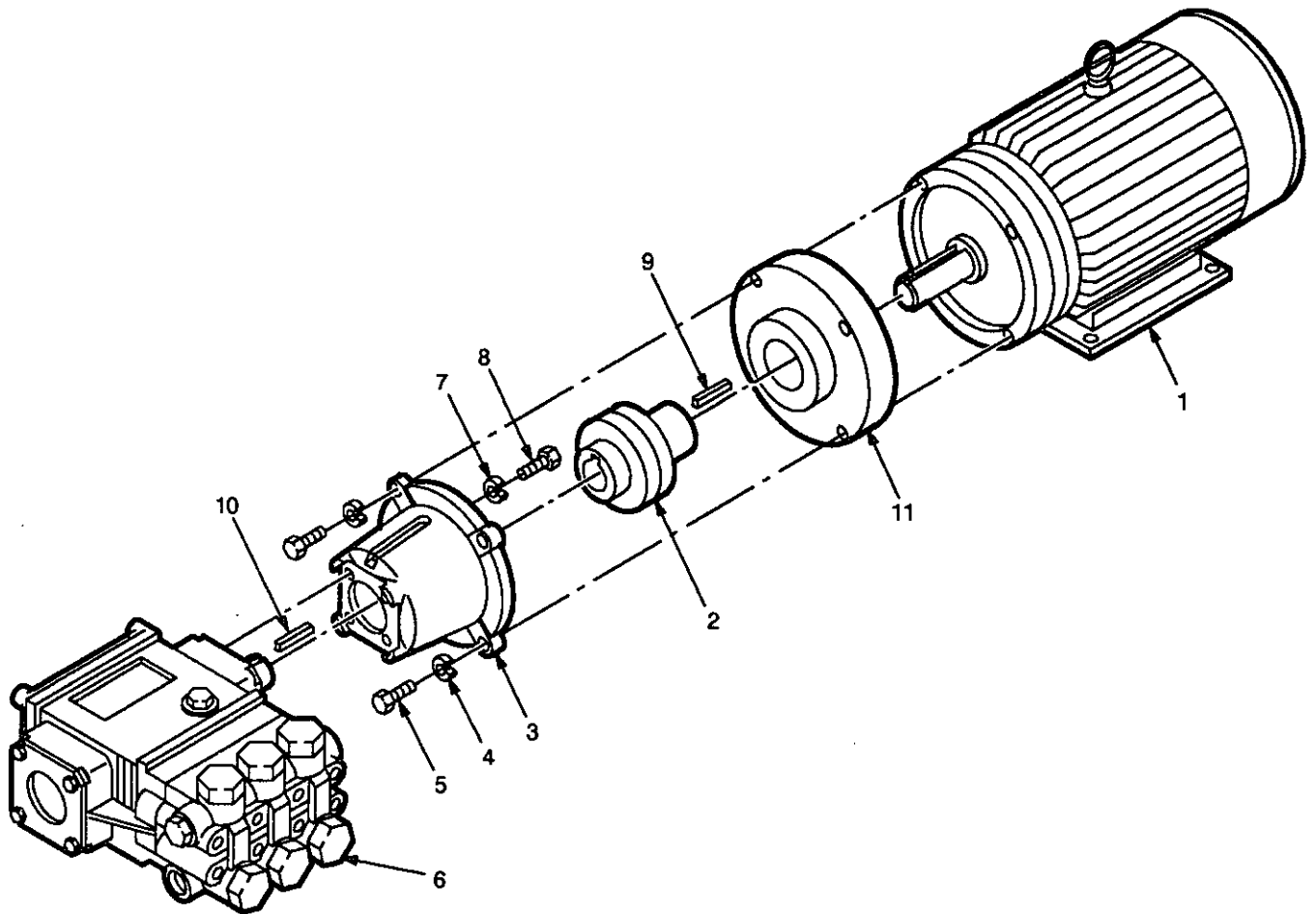
PARTS LIST

800-345 Hydra-Clean® 4040 Pressure Washer

REF NO.	PART NO.	DESCRIPTION	QTY	REF NO.	PART NO.	DESCRIPTION	QTY
1	800-579	PUMP & MOTOR ASSEMBLY (see page 15)	1	35	156-849	NIPPLE, Hex 3/8	1
2	803-554	BRACKET, Pump Support	1	36	803-591	WASHER, Flat 1/2	4
3	801-382	CORD, Power 10/4	48 in	37	802-784	WASHER, Lock 1/2	4
4	803-263	BRACKET, Starter, left	1	38	803-592	SCREW, Cap, hex hd. 1/2-13 x 1-1/2	4
5	159-239	NIPPLE, Hex 1/2 x 3/8	2	39	801-012	GROMMET, Rubber	5
6	802-732	WASHER, Flat #6	4	40	800-124	TIP ASSEMBLY, 0004 (includes 45, 60)	1
7	802-731	WASHER, Lock #6	4	41	800-125	TIP ASSEMBLY, 1504 (includes 45, 61)	1
8	803-484	SCREW, Cap, pan hd.	4	42	800-126	TIP ASSEMBLY, 2504 (includes 45, 62)	1
9	803-517	LABEL, Keep From Freezing	1	43	800-127	TIP ASSEMBLY, 4004 (includes 45, 63)	1
10	800-427	UNLOADER, 4000 psi	1	44	801-008	DECAL, Graco G	2
11	800-450	HOSE ASSEMBLY, w/Quick Couplers (includes 14, 18, 20)	1	45	801-090	QUICK COUPLER, Male 1/4	4
12	801-009	QUICK COUPLER, Female 1/4 (includes 13)	1	46	176-250	LABEL, Warning, chassis	1
13	154-594	O-RING, Quick Coupler 1/4	1	47	176-981	LABEL, Warning, chassis	1
14	801-568	QUICK COUPLER, Male 3/8	2	48	803-396	LABEL, Warning/Caution	1
15	802-534	NIPPLE, Hex 1/2 NPSM x 1/2 NPT	1	49	100-527	WASHER, Flat 5/16	2
16	803-141	HOSE, Bypass	1	50	100-214	WASHER, Lock 5/16	2
17	803-395	LABEL, Model 4040	1	51	100-188	NUT, Hex 5/16-18	2
18	803-519	HOSE, High Pressure 3/8 x 50 ft	1	52	803-007	LABEL, Caution, 230 volt, 3 phase	1
19	800-429	GUN & WAND ASSEMBLY (incl. 12, 20, 28, 29, 34, 35)	1		803-006	LABEL, Caution, 460 volt, 3 phase	152
20	803-157	QUICK COUPLER, Female 3/8 (includes 21)	2	53	801-226	CONNECTOR, Wire	4
21	156-082	O-RING, Quick Coupler 3/8	2	54	801-382	CORD, Power 12/4	8 ft
22	402-278	PLUG, Plastic	1	55	802-811	CORD GRIP	3
23	804-051	STRAINER/FILTER	1	56	804-043	SWITCH, Starter, 15 hp 230 Volt	1
24	801-110	ADAPTER, Garden Hose	1		803-749	SWITCH, Starter, 15 hp 460 Volt	1
25	801-111	NUT, Garden Hose	1	57	801-937	NUT, Lock, electrical	1
27	801-106	TEE, 1/2	1	58	801-523	NIPPLE, 1/2 x 2	1
28	801-957	SLEEVE, 18"	1	59	801-221	TERMINAL, Ring	1
29	801-134	WAND, 32"	1	60	801-599	TIP, Spray 0004	1
30	803-262	BRACKET, Starter, right	1	61	801-600	TIP, Spray 1504	1
31	800-441	CHASSIS	1	62	801-601	TIP, Spray 2504	1
32	802-993	PLUG, Locking 15 hp, 460 volt	1	63	801-602	TIP, Spray 4004	1
33	803-186	LABEL, Cordset	1	64	801-304	TERMINAL, Ring	1
34	803-351	GUN, Spray, SST (See Instruction Manual 308-511)	1				



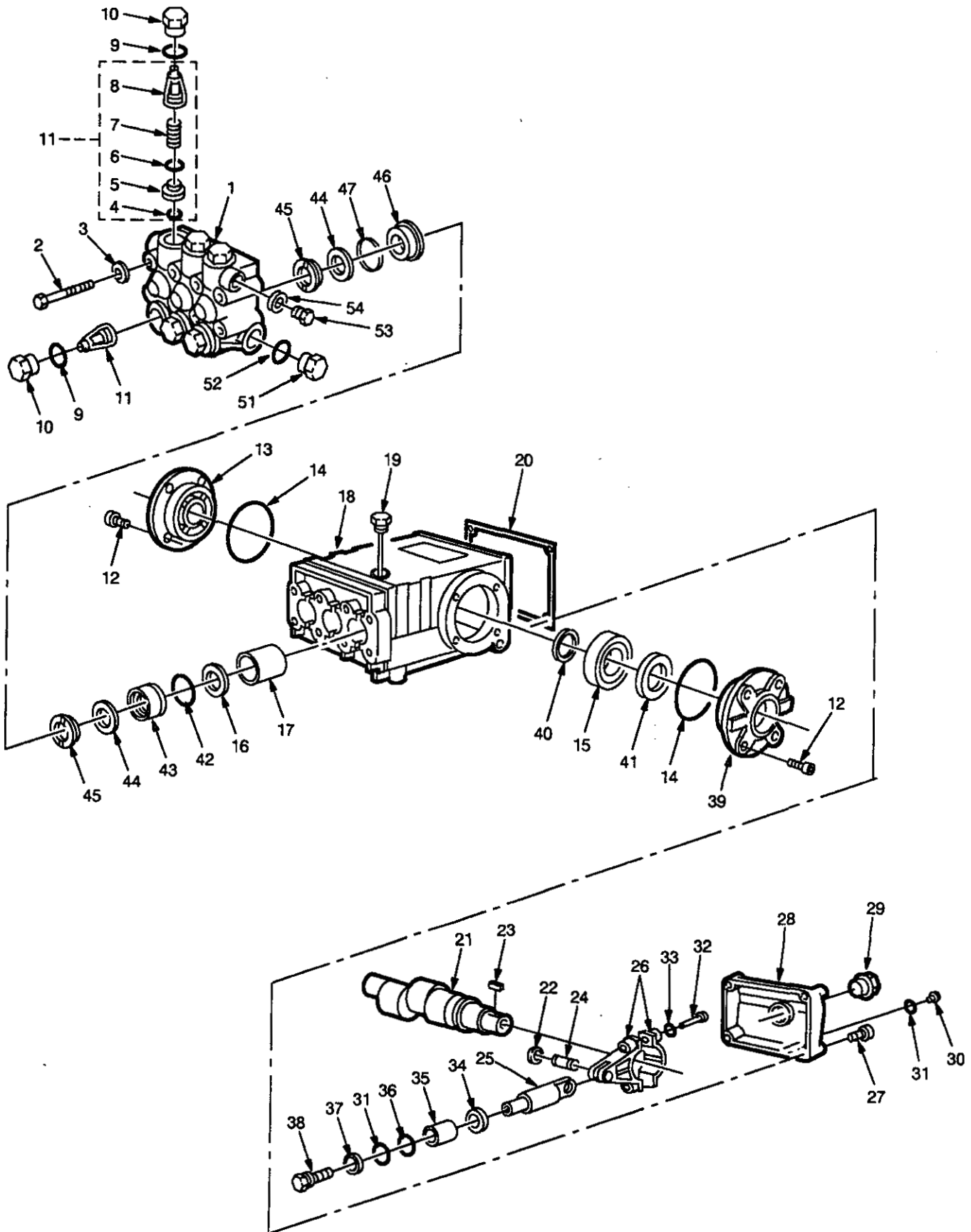
PARTS DRAWING
800-579 Pump and Motor Assembly



PARTS LIST
800-579 Pump and Motor Assembly

REF NO.	PART NO.	DESCRIPTION	QTY
1	803-584	MOTOR, 15.0 hp TEFC, 3 phase	1
2	802-698	COUPLER, 15 hp	1
3	802-540	HOUSING	1
4	802-784	WASHER, Lock 1/2	4
5	803-750	SCREW, Cap, socket hd. 1/2-13 x 3	4
6	802-508	PUMP (see page 16)	1
7	100-527	WASHER, Lock 5/16	4
8	801-559	SCREW, Cap, hex hd. M8 x 30	4
9	802-783	KEY, Motor	1
10	802-794	KEY, Pump	1
11	803-552	RING, Adapter	1

PARTS DRAWING
803-508 Pump Assembly, 4000 psi



PARTS LIST
803-508 Pump Assembly, 4000 psi

REF NO.	PART NO.	DESCRIPTION	QTY	REF NO.	PART NO.	DESCRIPTION	QTY
1	801-647	MANIFOLD	1	28	803-507	COVER, Crankcase	1
2	801-468	SCREW, Cap, hex hd.	8	29	802-345	GAUGE, Sight	1
3	801-469	WASHER, Lock	8	30	802-793	PLUG, Oil Drain	1
4	KIT 1	O-RING		31	KIT 107	O-RING	
5	KIT 1	SEAT, Valve		32	803-294	SCREW, Cap, socket hd.	6
6	KIT 1	PLATE, Valve		33	801-652	WASHER, Lock	6
7	KIT 1	SPRING		34	KIT 107	WASHER, Flinger	
8	KIT 1	GUIDE, Valve		35	801-490	PLUNGER, Ceramic	3
9	KIT 106	O-RING			803-502	PLUNGER, Ceramic	3
10	KIT 106	CAP		36	KIT 107	RING, Backup	
11	KIT 1	VALVE ASSEMBLY		37	KIT 107	WASHER	
12	803-283	SCREW, Cap, socket hd.	8	38	KIT 107	SCREW, Piston	
13	803-506	COVER, Crankcase	1	39	803-505	COVER, Crankcase	1
14	802-500	O-RING, Crankcase Cover	2	40	803-296	SHIM	2
15	803-324	BEARING, Tapered Roller	2	41	KIT 3	SEAL, Oil	
16	KIT 2	SEAL, Oil		42	KIT 109	O-RING	
17	803-286	BUSHING, Piston	1	43	KIT 109	RETAINER, Packing	
18	803-501	CRANKCASE	1	44	KIT 109	PACKING	
19	801-475	DIPSTICK	1		KIT 112	PACKING	
20	803-144	GASKET, Cover	1	45	KIT 109	RING, Head	
21	803-287	CRANKSHAFT	1	46	KIT 109	RETAINER, Packing	
22	803-288	RING, Retaining	6	47	KIT 109	RING, Long Life	
23	802-794	KEY	1	51	801-482	PLUG, Hex	1
24	803-289	PIN, Wrist	3	52	801-483	WASHER, Flat	1
25	803-503	GUIDE, Piston	3	53	801-484	PLUG, Hex	1
26	803-291	ROD, Connecting	3	54	801-485	WASHER, Flat	1
27	803-292	SCREW, Cap, socket hd.	5				

Kit No.	Repair Kit Part No.	Ref. No.	Description	Qty.
1	801-472 Valve	4	O-RING	6
		5	SEAT, Valve	6
		6	PLATE, Valve	6
		7	SPRING	6
		8	GUIDE, Valve	6
		11	VALVE ASSEMBLY	6
2	801-473 Oil Seal Kit	16	SEAL, Oil	3
3	802-511 Crankshaft Seal	41	SEAL, Oil	2
106	802-509 Valve Cap 4000 psi	9	O-RING	6
		10	CAP	6

Kit No.	Repair Kit Part No.	Ref. No.	Description	Qty.
107	803-510 Plunger Repair 4000 psi	31	O-RING	1
		34	WASHER, Flinger	1
		36	RING, Backup	1
		37	WASHER	1
		38	SCREW, Piston	1
109	803-511 Packing & Retainer 4000 psi	42	O-RING	1
		43	RETAINER, Packing	1
		44	PACKING	2
		45	RING, Head	1
		46	RETAINER, Packing	1
		47	RING, Long Life	1
112	803-512 Packing 4000 psi	44	PACKING	6

PUMP SERVICE

WARNING

To reduce the risk of serious bodily injury, including fluid injection, splashing in the eyes or on the skin, or injury from moving parts, always follow the **Pressure Relief Procedure Warning** before proceeding.

NOTE: The following metric wrenches are needed: M10, M13 and M30. Repair kits are available. Refer to the individual repair sections and the pump parts page for more details. For the best results, use all parts in the kits.

NOTE: There are two different tool kits to aid in servicing the pump. P/N 800-298 is used to ease installation of packings. P/N 800-271 includes the items in 800-298 and tools to aid in the removal of packing retainers.

Valves

NOTE: For a set of six valves, order P/N 801-472.

1. Remove the hex plug from the manifold using an M30 wrench.
2. Examine the o-ring under the hex plug and replace it if it is cut or distorted.
3. Remove the valve assembly from the cavity; the assembly may come apart.
4. Install the new valve. Install the o-ring and hex plug; torque to 75 ft-lb (103 Nm).

NOTE: Retorque the plug after 5 hours of operation.

Pumping Section

1. Remove the eight capscrews and lockwashers from the manifold using an M13 wrench.
2. Carefully separate the manifold from the crankcase.

NOTE: It may be necessary 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 kit, P/N 803-510 is available to replace retainers, o-rings, washers and backup rings for three cylinders.

1. Loosen the plunger retaining screw five to six turns, using an M10 wrench. Push the plunger towards the crankcase to separate the plunger and retaining screw.
2. Remove the screw from the plunger and examine the o-ring, backup ring and copper bearing/gasket washer. Replace these parts, if necessary, using kit 803-510.
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. Otherwise, DO NOT remove these seals as they cannot be reused. An oil seal kit is available to replace the seals.
5. Lightly grease the oil seal, if it is being replaced, and the flinger and replace them on the plunger shaft. Then install the plunger.
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 screw through the plunger. Torque to 14.4 ft-lb (19.5 Nm).

NOTE: If you plan to replace the packings, refer to Servicing the V-Packings.

7. Lubricate the outside of each plunger. Slide the manifold onto the crankcase, being careful not to damage the seals.
8. Install the capscrews and washers finger-tight. Torque the screws to 21.7 ft-lb (29 Nm) following the tightening pattern (Figure 4). Uneven tightening may cause the manifold to bind or jam.

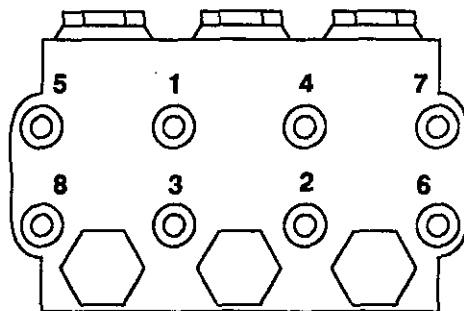


Figure 4

Servicing the V-Packings

NOTE: There are two types of packing kits: one is packings only, the other includes the packings, rings and retainers.

1. Remove the manifold as outlined in the Pumping Section.
2. Carefully pull the packing retainer from the manifold. Examine the o-ring and replace it if it is 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 and damage.
6. Lightly grease the packing cavities and then 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.

ACCESSORIES

(Must be purchased separately)

DOWNSTREAM CHEMICAL INJECTOR KIT 800-649

For injecting harsh cleaning chemicals downstream from the pump. Stainless steel construction.

UPSTREAM CHEMICAL INJECTOR KIT 800-257

For injecting mild cleaning chemicals upstream into the pump.

BACKFLOW PREVENTOR 801-133

Prevent back-up of contaminated water into fresh supply. Install upstream of pump.

WATER SANDBLASTING KIT 800-120

For abrasive cleaning of stubborn dirt and paint. Requires a spray tip (801-600) which is not included in kit.

ANTI-FREEZE FLUSH KIT 802-327

For flushing system with 50% anti-freeze solution prior to transporting or storing pressure washer in below freezing temperatures.

INLET PRESSURE REGULATOR 800-258

Regulates inlet water pressure to 60 psi (4 bar) maximum.

TECHNICAL DATA

	Model 800-345
Motor (Totally Enclosed Fan Cooled)	15.0 hp, 3 phase
Electrical Service	230 volt/40 amp/3 phase
Optional Service	460 volt/20 amp/3 phase
Water Pump Maximum Working Pressure	4000 psi (276 bar)
Water Pump Maximum Flow	4.0 gpm (15 lpm)
Unit Weight	475 lbs (215 kg)
Dimensions	
Length	43 in (1092 mm)
Width	24 in (610 mm)
Height	19 in (483 mm)
Maximum Inlet Water Temperature	160° F (70° C)
Inlet Hose Connection	3/4 in garden hose (f)
Wetted Parts	
High Pressure Hose	Acrylonitrile and Buna-N cover and tube
Bypass Hose	Synthetic yarn and EPDM
Pressure Washer (including fittings)	Anodized aluminum, Aluminum or Bronze alloys, Brass, Copper, Nylon-Teflon® composite, Ceramic, Buna-N, Cotton Phenolic, 303, 304, and 316 Stainless Steel, Polyimide-12 Thermoplastic, Teflon®, Carbon Steel, Zinc with or without Yellow Chromate Plate
	<i>Teflon® is a registered trademark of the DuPont Company.</i>

THE GRACO WARRANTY

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IMPORTANT PHONE NUMBERS

TO PLACE AN ORDER, contact your Graco distributor, or call this number to identify the distributor closest to you: **1-800-328-0211 Toll Free**

FOR TECHNICAL ASSISTANCE, service repair information or assistance regarding the application of Graco equipment: **1-800-543-0339 Toll Free**

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PRINTED IN U.S.A. 308-522 1/91

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