# **INSTRUCTIONS-PARTS LIST**



Rev A Supersedes 802–133 &

802-278

308-505

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

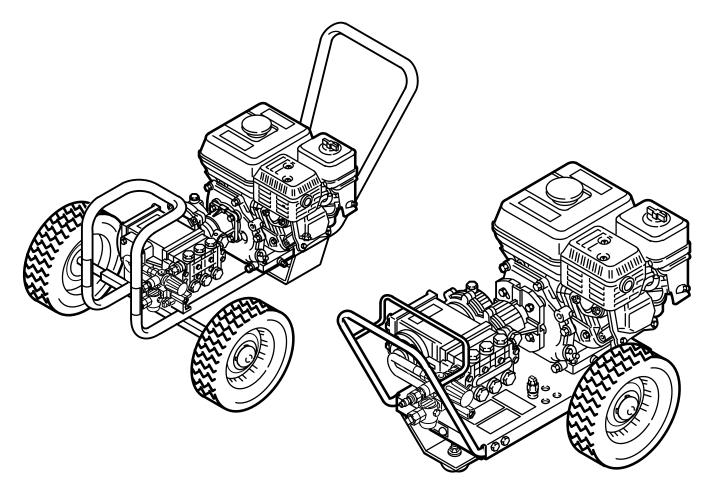
## HYDRA-CLEAN® 1535, 2040 Pressure Washer

P/N 800-165, Series B P/N 800-367, Series A

1500 psi (103 bar) OPERATING PRESSURE 1900 psi (131 bar) MAXIMUM WORKING PRESSURE

P/N 800–164, Series C P/N 800–290, Series B

2000 psi (138 bar) OPERATING PRESSURE 2400 psi (165 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. Remove the ignition cable from the spark plug.
- 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 or transporting of unit, disconnect the water supply , and turn off the fuel supply valve.

#### 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.

#### 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 pressures. 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 HA VE 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.

#### FUEL AND EMISSION HAZARDS

*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  $-40^{\circ}$  F ( $-40^{\circ}$  C).

*NEVER* fill the fuel tank while the unit is running or hot. The fuel used in this unit is combustible and when spilled on a hot surface can ignite and cause a fire. *ALWAYS* fill tank slowly to avoid spilling.

*NEVER* operate the unit in a closed building. The exhaust contains carbon monoxide, a poisonous, odorless, invisible gas which can cause serious injury or death if inhaled.

*NEVER* alter the throttle setting, which is factory set. Tampering with this adjustment can damage the pressure washer and will void the warranty.

#### **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

#### TERMS

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

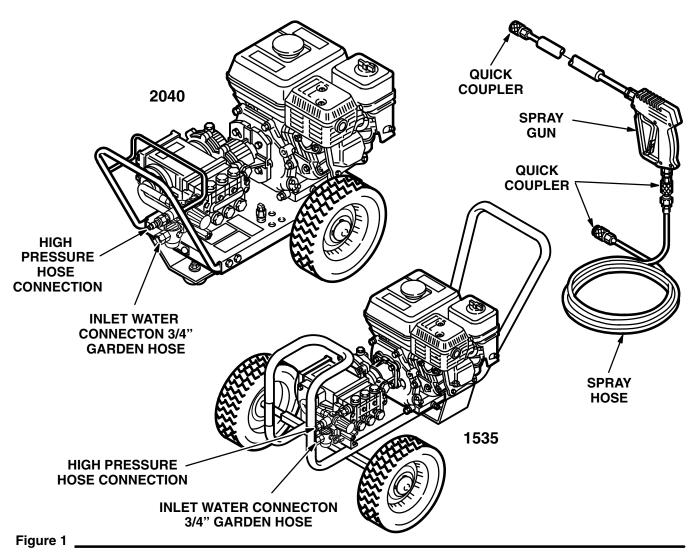
**CAUTION:** Alerts user to avoid or correct conditions that could cause damage to or destruction of equipment.

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

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.



#### **Check for Shipping Damage**

The unit should be checked for any damage that may have occurred in shipping. Any damage should be noted and the **carrier notified immediately**.

#### Set Up

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 af fect 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 crossconnection 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.

If inlet water pressure is over 60 psi (4.1 bar) a regulating water valve P/N 800–258 must be installed at the garden hose connection.

Do not exceed 160  $^\circ$   $\,$  F (70  $^\circ$   $\,$  C) inlet water temperature.

Connect a hose with at least a 3/4 inch (19 mm) ID from the water supply to the unit's 3/4 inch 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, inside back cover).

#### STARTUP

Use this procedure whenever starting the pressure washer to help insure that the unit is ready to operate and starting is done safely.

1. Check oil levels.

Engine: Add SAE 30 or 10W–30 weight detergent oil as necessary.

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

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

#### WARNING

*DO NOT* refuel a hot engine. Refueling a hot engine could cause a fire. Use only fresh, clean regular or unleaded gasoline. Close the fuel shutoff valve during refueling.

3. 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.

- 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 and be sure the spark plug ignition cable is pushed firmly onto the spark plug. On those units equipped with an ignition shutoff switch, the switch should be in the "on" position. Throttle should be in the "run" position.
- 6. Start the engine.
- **NOTE:** For easier starting, have one person start the pressure washer while another person triggers the spray gun.

If the engine is cold, completely close the engine choke. Grasp the starter rope, brace one foot on the pressure washer chassis and pull rope rapidly and firmly. Continue holding the rope as it returns. Pull and return the rope until the engine starts. In cool weather, the choke may have to be kept closed for 10 to 30 seconds before opening it to keep the engine running. Otherwise, open the choke as soon as the engine starts.

If the engine is warm, leave the choke open, or just partly close it. Start the engine as described in the preceding paragraph. When it starts, be sure to open the choke completely.

#### - CAUTION ·

On recoil start engines, never let the starter rope return by itself. It could jam the recoil system.

- 7. *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.
- 8. *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. T urn of f 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.

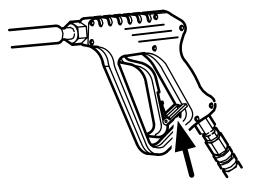
9. See the chemical injector or sandblaster kit manual for detailed cleaning information if these accessories are used.

#### Trigger Safety Latch

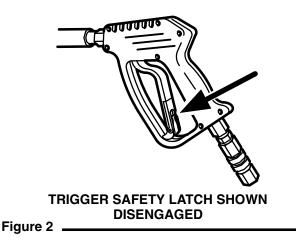
#### WARNING ·

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



Installing and Changing Spray Tips

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 old tip and/or install a new one, 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.

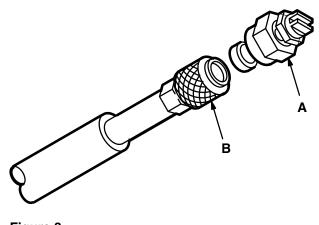


Figure 3

### 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. Remove the ignition cable from the spark plug.
- 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 or transporting of unit, disconnect the water supply, and turn off the fuel supply valve.
- 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 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 engine, pump and gear reducer (if used). After changing the oil in these components following their respective break-in periods, the interval between required changes is longer.

If the unit is operating in dusty conditions, these maintenance checks should be made more often.

#### – 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 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.
Each 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. Change gear reducer oil. Use SAE 90 gear oil.
Each 100 hours of operation or 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
Each 500 hours of operation or 6 months	Change pump oil. Use SAE 20 or 30 non-detergent oil. Change gear reducer oil. Use SAE 90 gear oil.

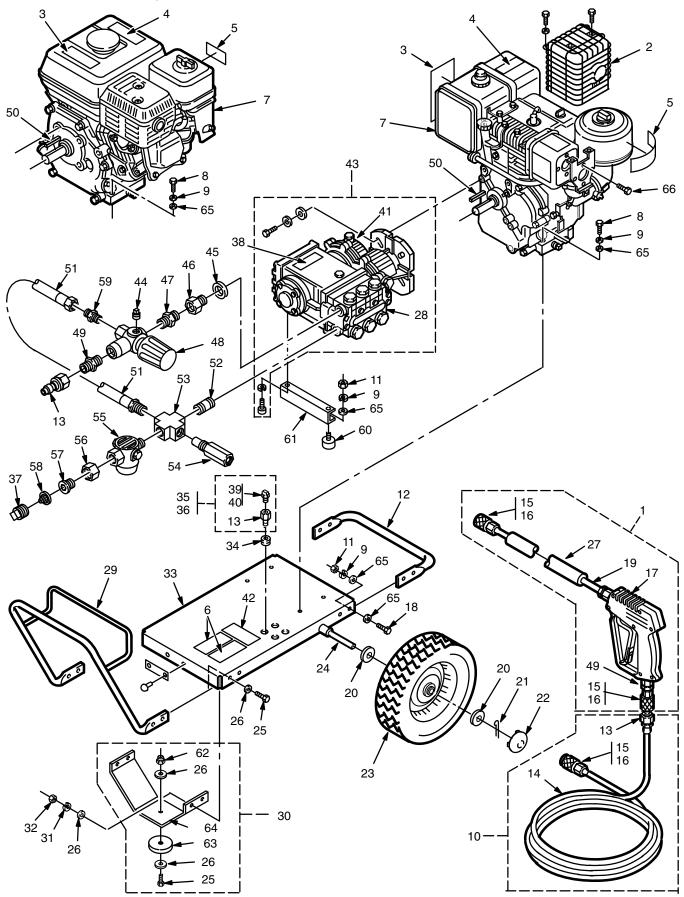
#### WARNING

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
Engine will not start or is hard to start	No gasoline in fuel tank or carburetor.	Fill the tank with gasoline, open fuel shut off valve. Check fuel line and carburetor.
is hard to start	Low oil (on units with low oil sensor).	Add to proper level.
	Start/Stop switch in Stop position.	Move switch to start position.
	Water in gasoline or old fuel.	Drain fuel tank and carburetor. Use new fuel and dry spark plug.
	Choked improperly. Flooded engine.	Open choke and crank engine several times to clear out gas.
	Dirty air cleaner filter.	Remove and clean.
	Spark plug dirty, wrong gap or wrong type.	Clean, adjust the gap or replace.
	Spray gun closed.	Trigger spray gun.
Engine misses or	Partially plugged air cleaner filter.	Remove and clean.
lacks power	Spark plug dirty, wrong gap or wrong type.	Clean, adjust the gap or replace.
Low pressure and/or	Worn or wrong size tip.	Replace with tip of proper size.
pump runs rough	Inlet filter clogged.	Clean. Check more frequently.
	Worn packings, abrasives in water or natural wear.	Check filter. Replace packings. See PUMP SERVICE.
	Inadequate water supply.	Check water flow rate to pump.
	Fouled or dirty inlet or discharge valves. Even a small particle can cause the valve to stick.	Clean inlet and discharge valve assemblies. Check filter.
	Restricted inlet.	Check garden hose, may be collapsed or kinked.
	Worn inlet or discharge valves.	Replace worn valves.
	Leaking high pressure hose.	Replace high pressure hose.
Water leakage from under pump manifold	Worn packings.	Install new packings. See PUMP SERVICE.
Water in pump	Humid air condensing inside crankcase.	Change oil as specified in MAINTENANCE.
	Worn packings.	Install new packings. See PUMP SERVICE.
	Oil seals leaking.	Install new oil seals. See PUMP SERVICE.
Frequent or premature	Scored, damaged or worn plungers.	Install new plungers. See PUMP SERVICE.
failure of the packings	Abrasive material in the fluid being pumped.	Install proper filtration on pump inlet plumbing.
	Inlet water temperature too high.	Check water temperature; may not exceed 160°F.
	Overpressurizing pump.	Do not modify any factory-set adjustments. See EQUIPMENT MISUSE HAZARD.
	Excessive pressure due to partially plugged or damaged tip.	Clean or replace tip. See Installing and Changing Spray Tips.
	Pump running too long without spraying.	Never run pump more than 10 minutes without spraying.
	Running pump dry.	Do not run pump without water.
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.
Oil leakage between the gear reducer cover and case	Worn gasket.	Replace the gasket. See SERVICE SECTION.
Oil leakage between the gear reducer cover and the pump	Worn oil seals and/or o-ring.	Replace oil seals and/or o-ring. See SERVICE SECTION.
Oil leakage between the gear reducer case and the engine	Worn oil seal.	Replace oil seal. See SERVICE SECTION.

#### PARTS DRAWING

800–164 & 800–290 Hydra–Clean® 2040 Pressure Washer



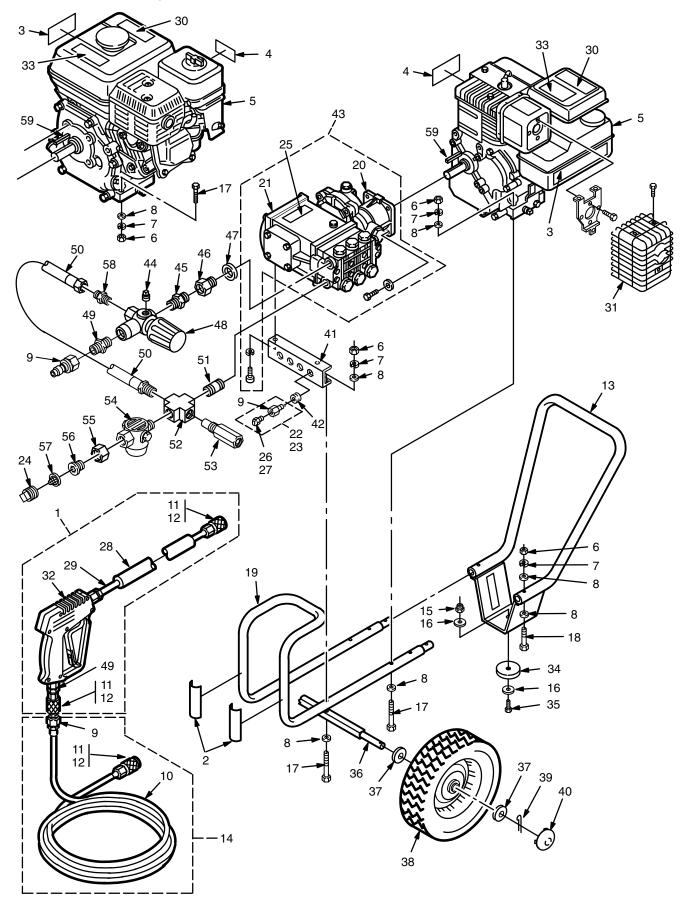
#### PARTS LIST

### 800–164 & 800–290 Hydra–Clean® 2040 Pressure Washer

REF	PART	•		REF			
NO.	NO.		ΫΤΩ	NO.		DESCRIPTION	QTY
1	800–394	GUN & WAND ASSEMBLY (incl. 15, 17, 19, 27, 49)	1	33 34		CHASSIS GROMMET, Rubber	4
2	802-257	GUARD, Muffler, Briggs &	I	35		TIP ASSEMBLY, 15 Degree	4
-	002 207	Stratton	1	00	000 170	(incl. 13, 39)	1
3	802–367	LABEL, Identification, 2040	1	36	800–174	TIP ASSEMBLY, 0 Degree	
4	802–363	LABEL, Caution	1			(incl. 13, 40)	1
5		LABEL, Identification, 2040	1	37		PLUG, Plastic	1
6		LABEL, Warning, chassis	1	38		LABEL, Keep From Freezing	1
7 *	802–141	ENGINE, 8 hp, Briggs &		39	801-729	TIP, Spray 15 Degree	1
_	000 000	Stratton I/C	1	40		TIP, Spray 0 Degree	1
•		ENGINE, 8 hp, Honda OHV	1	41		GEAR RÉDUCER (see page 1	
8	802-127	SCREW, Cap, hex hd. 5/16–18 x 1-3/4	4	42 43		LABEL, Warning, ventilation PUMP & GEAR REDUCER	1
9	801_025	WASHER, Lock 5/16	4 10	43	002-299	ASSEMBLY (incl. 28, 41)	1
10		HOSE ASSEMBLY, w/Couplers	10	44	801-709	PLUG, Square hd. 1/4	1
10	000 0/4	(incl. 13, 14, 15)	1	45		WASHER, Flat	1
11	801–024	NUT, Hex 5/16–18	6	46		ADAPTER, 3/8 G x 3/8 NPT	1
12		BUMPER	1	47		NIPPLE, Hex 3/8	1
13	801–090	COUPLER, Male 1/4	4	48		UNLOADER, 2000 psi	1
14		HOSE, High Pressure, 50'	1	49		NIPPLE, Hex 3/8 x 1/4	2 1
15		COUPLER, Female 1/4 (incl. 16)	) 3	50	801–137	KEY, Square 1/4 x 2	•
16		O–RING, Female Coupler 1/4	3	51	802–124	HOSE, Bypass (incl. 59)	1
17		GUN, Spray	1	52		NIPPLE, 1/2 x 2	1
18	801–941	SCREW, Cap, hex hd.		53		CROSS, 1/2	1
10	001 005	5/16–18 x 1	4	54		VALVE, Thermal Relief	1
19 20		WAND, 20"	1 4	55 56	800-113	NUT, Garden Hose	1
20		WASHER, Flat 5/8 PIN, Cotter 1/8 x 1-1/2	4 2	50 57		ADAPTER, Garden Hose	1
22		HUB CAP	2	58	801-112	STRAINER, Garden Hose	1
23		WHEEL & TIRE ASSEMBLY	2	59	802-627	NIPPLE, Hex 3/8 NPSM x	
24	802–139		1	00	002 02.	1/4 NPT	1
25		SCREW, Cap, hex hd.		60	801–367	BUMPER, Rubber	2
		3/8–16 x 1-1/4	5	61		BRACKET, Support	1
26		WASHER, Flat 3/8	6	62		NUT, Lock 3/8–16	1
27		SLEEVE, 18"	1	63		BUMPER, Rubber	1
28	803–405	PUMP ASSEMBLY, 2000 psi		64		BRACKET, Front Leg	1
~~	004 544	(see page 18)	1	65		WASHER, Flat 5/16	14
29		HANDLE	1	66 *	^   100–078	SCREW, Cap, hex hd.	4
30	800-175	FRONT LEG ASSEMBLY	1				
31	901 262	(incl. 25, 26, 62, 63, 64) WASHER, Lock 3/8	1 4	*			
32		NUT, Hex 3/8–16	4		Model 2040		
02	070		-		Model 2040	(800–290)	

#### PARTS DRAWING

800–165 & 800–367 Hydra–Clean® 1535 Pressure Washer



#### PARTS LIST

### 800–165 & 800–367 Hydra–Clean® 1535 Pressure Washer

REF       PART       REF       PART       REF       PART       QTY         1       800-394       GUN & WAND ASSEMBLY (incl. 11, 28, 29, 32, 49)       1       31       0
1       800–394       GUN & WAND ASSEMBLY (incl. 11, 28, 29, 32, 49)       31       31       803–245       GUARD, Muffler, Briggs & Stratton       1         2       179–885       LABEL, Warning, chassis       1       32       803–350       GUN, Spray       1         3       802–366       LABEL, Identification, 1535       1       33       181–867       LABEL, Warning, ventilation       1         4       802–373       LABEL, Identification, 1535       1       34       801–504       BUMPER, Rubber       1         5       802–264       ENGINE, 5 hp, Honda OHV       1       35       801–546       SCREW, Cap, hex hd.       3/8–16 x 1-1/4       1         0       803–239       ENGINE, 5 hp, Briggs & Stratton I/C       1       36       802–273       AXLE       1         6       801–024       NUT, Hex 5/16–18       8       37       801–235       WASHER, Flat 5/8       4         7       801–025       WASHER, Icock 5/16       8       38       106–062       WHEEL & TIRE ASSEMBLY       2         8       801–023       WASHER, Flat 5/16       8       39       801–880       PIN, Cotter 1/8 x 1-1/2       2         9       801–007       HOSE, High Pressure, 50'       1
(incl. 11, 28, 29, 32, 49)       1       Stratton       1         2       179–885       LABEL, Warning, chassis       1       32       803–350       GUN, Spray       1         3       802–366       LABEL, Identification, 1535       1       33       181–867       LABEL, Warning, ventilation       1         4       802–373       LABEL, Identification, 1535       1       34       801–504       BUMPER, Rubber       1         5       802–264       ENGINE, 5 hp, Honda OHV       1       35       801–546       SCREW, Cap, hex hd.       1         0       803–239       ENGINE, 5 hp, Briggs & 3/8–16 x 1-1/4       1       3/8–16 x 1-1/4       1         6       801–024       NUT, Hex 5/16–18       8       37       801–235       WASHER, Flat 5/8       4         7       801–025       WASHER, Lock 5/16       8       38       106–062       WHEEL & TIRE ASSEMBLY       2         8       801–023       WASHER, Flat 5/16       8       39       801–880       PIN, Cotter 1/8 x 1-1/2       2         9       801–007       HOSE, High Pressure, 50'       1       41       802–267       BRACKET, Support       1         11       801–009       COUPLER, Female 1/4 (incl. 12)
2       179–885       LÅBEL, Warning, chassis       1       32       803–350       GUN, Spray       1         3       802–366       LABEL, Identification, 1535       1       33       181–867       LABEL, Warning, ventilation       1         4       802–373       LABEL, Identification, 1535       1       34       801–504       BUMPER, Rubber       1         5       802–264       ENGINE, 5 hp, Honda OHV       1       35       801–546       SCREW, Cap, hex hd.         0       803–239       ENGINE, 5 hp, Briggs &
3       802–366       LABEL, Identification, 1535       1       33       181–867       LABEL, Warning, ventilation       1         4       802–373       LABEL, Identification, 1535       1       34       801–504       BUMPER, Rubber       1         5       802–264       ENGINE, 5 hp, Honda OHV       1       35       801–546       SCREW, Cap, hex hd.       3/8–16 x 1-1/4       1         0       803–239       ENGINE, 5 hp, Briggs & 3/8–16 x 1-1/4       1       3/8–16 x 1-1/4       1         6       801–024       NUT, Hex 5/16–18       8       37       801–235       WASHER, Flat 5/8       4         7       801–025       WASHER, Lock 5/16       8       38       106–062       WHEEL & TIRE ASSEMBLY       2         8       801–023       WASHER, Flat 5/16       8       39       801–880       PIN, Cotter 1/8 x 1-1/2       2         9       801–090       COUPLER, Male 1/4       4       40       104–811       HUB CAP       2         10       801–007       HOSE, High Pressure, 50'       1       41       802–267       BRACKET, Support       1         11       801–009       COUPLER, Female 1/4 (incl. 12) 3       42       801–012       GROMMET, Rubber       4
4       802–373       LABEL, Identification, 1535       1       34       801–504       BUMPER, Rubber       1         5       802–264       ENGINE, 5 hp, Honda OHV       1       35       801–546       SCREW, Cap, hex hd.       3/8–16 x 1-1/4       1         0       803–239       ENGINE, 5 hp, Briggs & 3/8–16 x 1-1/4       1       36       802–273       AXLE       1         6       801–024       NUT, Hex 5/16–18       8       37       801–235       WASHER, Flat 5/8       4         7       801–025       WASHER, Lock 5/16       8       38       106–062       WHEEL & TIRE ASSEMBLY       2         8       801–023       WASHER, Flat 5/16       8       39       801–880       PIN, Cotter 1/8 x 1-1/2       2         9       801–090       COUPLER, Male 1/4       4       40       104–811       HUB CAP       2         10       801–007       HOSE, High Pressure, 50'       1       41       802–267       BRACKET, Support       1         11       801–009       COUPLER, Female 1/4 (incl. 12) 3       42       801–012       GROMMET, Rubber       4
B03-239       ENGINE, 5 hp, Briggs & 3/8-16 x 1-1/4       1         Stratton I/C       1       36       802-273       AXLE       1         6       801-024       NUT, Hex 5/16-18       8       37       801-235       WASHER, Flat 5/8       4         7       801-025       WASHER, Lock 5/16       8       38       106-062       WHEEL & TIRE ASSEMBLY       2         8       801-023       WASHER, Flat 5/16       8       39       801-880       PIN, Cotter 1/8 x 1-1/2       2         9       801-090       COUPLER, Male 1/4       4       40       104-811       HUB CAP       2         10       801-007       HOSE, High Pressure, 50'       1       41       802-267       BRACKET, Support       1         11       801-009       COUPLER, Female 1/4 (incl. 12) 3       42       801-012       GROMMET, Rubber       4
Stratton I/C       1       36       802–273       AXLE       1         6       801–024       NUT, Hex 5/16–18       8       37       801–235       WASHER, Flat 5/8       4         7       801–025       WASHER, Lock 5/16       8       38       106–062       WHEEL & TIRE ASSEMBLY       2         8       801–023       WASHER, Flat 5/16       8       39       801–880       PIN, Cotter 1/8 x 1-1/2       2         9       801–090       COUPLER, Male 1/4       4       40       104–811       HUB CAP       2         10       801–007       HOSE, High Pressure, 50'       1       41       802–267       BRACKET, Support       1         11       801–009       COUPLER, Female 1/4 (incl. 12) 3       42       801–012       GROMMET, Rubber       4
6       801–024       NUT, Hex 5/16–18       8       37       801–235       WASHER, Flat 5/8       4         7       801–025       WASHER, Lock 5/16       8       38       106–062       WHEEL & TIRE ASSEMBLY       2         8       801–023       WASHER, Flat 5/16       8       39       801–880       PIN, Cotter 1/8 x 1-1/2       2         9       801–090       COUPLER, Male 1/4       4       40       104–811       HUB CAP       2         10       801–007       HOSE, High Pressure, 50'       1       41       802–267       BRACKET, Support       1         11       801–009       COUPLER, Female 1/4 (incl. 12) 3       42       801–012       GROMMET, Rubber       4
7       801–025       WASHER, Lock 5/16       8       38       106–062       WHEEL & TIRE ASSEMBLY       2         8       801–023       WASHER, Flat 5/16       8       39       801–880       PIN, Cotter 1/8 x 1-1/2       2         9       801–090       COUPLER, Male 1/4       4       40       104–811       HUB CAP       2         10       801–007       HOSE, High Pressure, 50'       1       41       802–267       BRACKET, Support       1         11       801–009       COUPLER, Female 1/4 (incl. 12) 3       42       801–012       GROMMET, Rubber       4
10         801–007         HOSE, High Pressure, 50'         1         41         802–267         BRACKET, Support         1           11         801–009         COUPLER, Female 1/4 (incl. 12) 3         42         801–012         GROMMET, Rubber         4
10         801–007         HOSE, High Pressure, 50'         1         41         802–267         BRACKET, Support         1           11         801–009         COUPLER, Female 1/4 (incl. 12) 3         42         801–012         GROMMET, Rubber         4
10         801–007         HOSE, High Pressure, 50'         1         41         802–267         BRACKET, Support         1           11         801–009         COUPLER, Female 1/4 (incl. 12) 3         42         801–012         GROMMET, Rubber         4
11 801–009 COUPLER, Female 1/4 (incl. 12) 3 42 801–012 GROMMET, Rubber 4
12 801–202 O–RING, Female Coupler 1/4 3 43 802–300 PUMP & GEAR REDUCER
13 800–184 HANDLE 1 ASSEMBLY (incl. 20, 21) 1
14 800–374 HOSE ASSEMBLY, w/Couplers 44 801–709 PLUG, Square hd. 1/4 1 (incl. 9, 10, 11) 1 45 801–868 NIPPLE, Hex 3/8 1
15       801–499       NUT, Lock 3/8–16       1       46       801–905       ADAPTER, 3/8 G x 3/8 NPT       1         16       801–015       WASHER, Flat 3/8       2       47       801–907       WASHER, Flat       1
17 802–277 SCREW, Cap, hex hd. 48 802–316 UNLOADER, 1500 psi 1
5/16–18 x 2-1/2         6         49         801–103         NIPPLE, Hex 3/8 x 1/4         2           18         802–127         SCREW, Cap, hex hd.         50         802–124         HOSE, Bypass (incl. 58)         1
$5/16-18 \times 1-3/4$ 2 51 801-523 NIPPLE, 1/2 x 2 1
19 802–269 CHASSIS 1 52 801–622 CROSS, 1/2 1
20 802–266 GEAR REDUCER (see page 15) 1 53 800–115 VALVE, Thermal Relief 1
21 802–265 PUMP ASSEMBLY, 1500 psi 54 800–113 FILTER 1
(see page 20) 1 55 801–111 NUT, Garden Hose 1
22 800–173 TIP ASSEMBLY, 15 Degree 56 801–110 ADAPTER, Garden Hose 1
(incl. 9, 26) 1 57 801–112 STRAINER, Garden Hose 1
23 800–174 TIP ASSEMBLY, 0 Degree 58 802–627 NIPPLE, Hex 3/8 NPSM x
(incl. 9, 27) 1 1/4 NPT 1
24 402–278 PLUG, Plastic 1 59 801–137 KEY, Square 1/4 x 2 1
25 803–083 LABEL, Keep From Freezing 1
26 801–729 TIP, Spray 15 Degree 1
27 801–730 TIP, Spray 0 Degree 1
28 801–957 SLEEVE, 18" 1 D Model 1535 (800–367)
29 801–935 WAND, 20" 1 * Model 1535 (800–165)
30 802–363 LABEL, Caution 1

#### 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** on page 2 before proceeding.

#### **Replacing the O–Ring**

- 1. Remove the four bolts and lockwashers, and the four washers, bumpers, and bolts. Then pull the pump and gear reducer assembly off the engine.
- 2. Drain the gear reducer oil by placing a container under it and removing the drain plug with a 22 mm wrench. Replace the o-ring if damaged.
- 3. Remove the four screws and lockwashers with a 6 mm wrench and pull the gear case of f the gear cover.
- 4. Remove the old o-ring. Clean the gear cover and case surface. Lightly coat the new o-ring with grease and install it in the gear case.
- 5. Follow steps 4 through 6 under Assembling the Gear Reducer if this is all the service required.

#### **Replacing the Gasket**

- 1. Follow steps 1 through 3 under Replacing the O–Ring.
- 2. Using a 4 mm wrench, loosen the setscrew and pull the gear off the pump with a gear puller.
- 3. Remove the four screws and lockwashers from the gear cover.
- 4. Remove the gear cover and gasket from the pump. Clean the gear cover and pump surface. Lightly coat both sides of the gasket with grease and install it on the gear cover.
- 5. Follow the instructions under Assembling the Gear Reducer if this is all the service required.

#### Replacing the Oil Seal

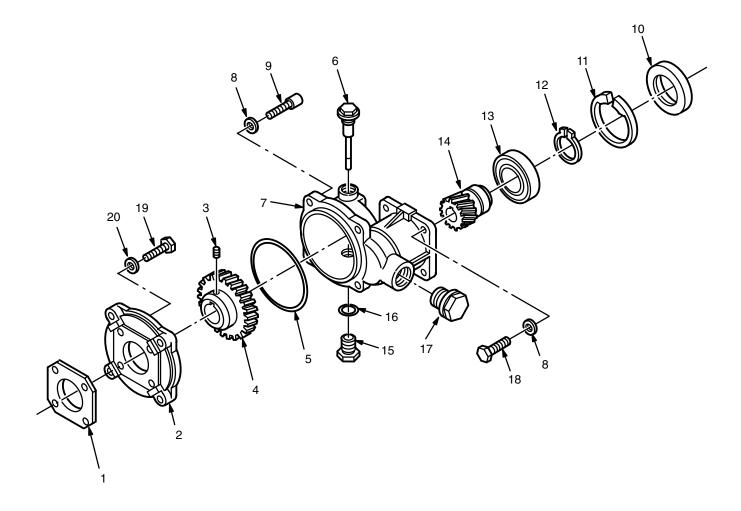
**NOTE:** The oil seal MUST be replaced if removed.

- 1. Follow steps 1 and 2 under Replacing the O-Ring.
- 2. Pry the oil seal out of the gear case. Be careful not to damage the gear case.
- 3. Wipe the inner surface of the gear case clean, then lightly coat it with grease. Place the oil seal into the gear case. Use a socket, placed against the surface of the seal, to push the seal into the case until its top surface is past the ridge in the bore.
- 4. Follow steps 4 through 6 under Assembling the Gear Reducer if this is all the service required.

#### Assembling the Gear Reducer

- 1. Make sure the gasket is properly placed on the gear cover. Refer to step 4 under Replacing the Gasket. Then, install the gear cover on the pump shaft.
- 2. Align the holes in the gear cover with the holes in the pump. Apply low strength Loctite <sup>(®)</sup> (blue) on the screw threads and secure the cover with the four screws and lockwashers. Tighten them oppositely and evenly.
- 3. Align the gear's slot with the key on the pump shaft and slide the gear onto the shaft, up to the pump's shoulder. Apply low strength Loctite <sup>®</sup> on the setscrew threads and tighten the setscrew to lock the gear on the shaft.
- 4. Make sure the o-ring is in place. Refer to step 4 under Replacing the O-Ring. Install the gear case on the cover, aligning the holes, and secure it with the four screws and lockwashers. T ighten them oppositely and evenly.
- 5. Grease the engine shaft. Align the gear 's slot with the key on the engine shaft and slide the gear reducer onto the shaft, up to the engine's shoulder.
- 6. Secure the gear reducer to the engine with the four bolts and lockwashers.

# PARTS DRAWING 802–266 Gear Reducer (1535)



# PARTS LIST 802–266 Gear Reducer (1535)

REF	PART		
NO.	NO.	DESCRIPTION	QTY
1	802–350	GASKET	1
2	802–351	COVER, Mounting	1
3	802–334		1
4	802–352	GEAR, Pump	1
4 5	802–353	O–RING	1
6		DIPSTICK	1
7	802–354	CASE, Mounting	1
8		WASHER, Lock	8
9	802–342	SCREW	4
10		SEAL, Oil	1
11		RING, Snap	1
12		RING, Snap	1
13		BEARING	1
14	802–359	GEAR, Engine	1
15	801–484	CAP, G 3/8 BSP	1
16		O–RING	1
17		GAUGE, Sight	1
18		BOLT, 5/16–24 x 1"	4
19	802–360		4
20	801–139	WASHER, Lock	4

#### 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** on page 2 before proceeding.

#### **Replacing the Gasket**

- NOTE: To maintain a good seal, the gasket must be replaced whenever the gear reducer is disassembled.
- 1. Remove the four bolts and lockwashers, washers and pull the pump and gear reducer assembly of f the engine.
- 2. Drain the gear reducer oil by placing a container under it and removing the drain plug with a 22 mm wrench. Replace the o-ring if damaged.
- 3. Remove the nine screws with a 6 mm wrench and pull the gear case off the gear cover.
- 4. Remove the old gasket. Clean the gear cover and case surface. Lightly coat the new gasket with grease and install it in on the gear case.
- 5. Follow steps 5 through 7 under Assembling the Gear Reducer if this is all the service required.

#### **Replacing the Oil Seals**

- 1. Follow steps 1 through 3 under Replacing the Gasket.
- 2. Loosen the setscrew, using a 4 mm wrench, and pull the gear off the pump with a gear puller.
- 3. Using a 6 mm wrench, remove the four screws. Be sure to keep them separate from the other nine screws removed previously.
- 4. Remove the four oil seals and replace them.
- 5. Follow steps 2 through 7 under Assembling the Gear Reducer if this is all the service required.

#### **Replacing the O-Ring**

- 1. Follow the instructions under Replacing the Gasket and Replacing the Oil Seals to disassemble the gear reducer.
- 2. Pull the gear cover of f the pump and replace the o-ring.
- 3. Follow instructions under Assembling the Gear Reducer if this is all the service required.

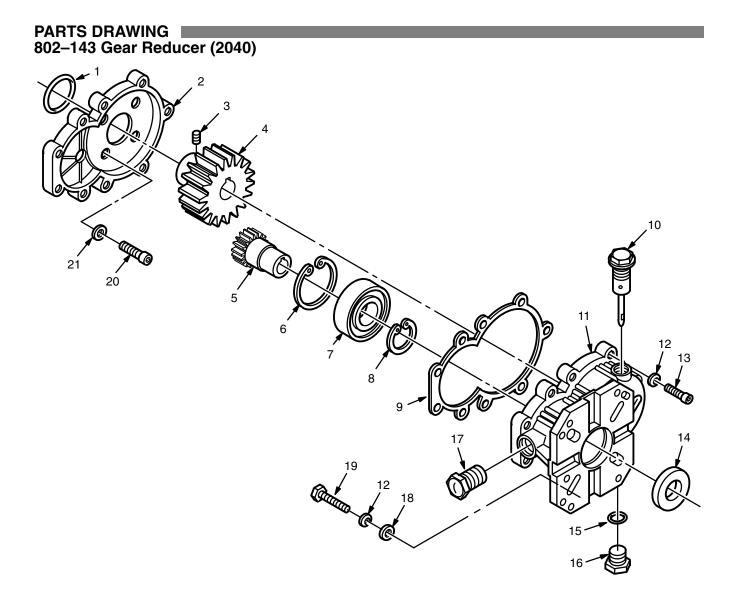
#### Replacing the Oil Seal

NOTE: The oil seal MUST be replaced if removed.

- 1. Follow steps 1 and 3 under Replacing the Gasket.
- 2. Remove the snap ring from the gear case, using a snap ring pliers. Pull the gear and bearing.
- 3. Push the seal from the inside to the outside of the gear case by placing screwdriver against the seal and lightly tapping it with hammer.
- 4. Wipe the inner surface of the case clean, then lightly coat it with grease. Place the oil seal into the gear case. Use a socket, placed against the surface of the seal, to push the seal into the case until its top surface is past the ridge in the bore.
- 5. Place the gear and bearing back into the gear case and install the snap ring.
- 6. Follow steps 4 through 7 under Assembling the Gear Reducer if this is all the service required.

#### Assembling the Gear Reducer

- 1. Grease the o-ring and make sure it's properly placed on the gear cover.
- 2. Place the four oil seals and screws in the gear cover. Place the o-ring on the screw to hold it in the cover.
- 3. Apply low strength Loctite <sup>(®)</sup> (blue) on the screw threads, align the screws with the holes in the pump, and tighten the screws oppositely and evenly.
- 4. Grease the pump shaft. Align the gear's slot with the key on the pump shaft and slide the gear onto the shaft, up to the pump's shoulder. Apply low strength Loctite<sup>®</sup> on the setscrew threads and tighten the setscrew to lock the gear on the shaft.
- 5. Make sure the gasket is in place (refer to step 4 under Replacing the Gasket). Install the gear cover on the case, aligning the holes, and secure it with the nine screws and lockwashers. T ighten the screws evenly in a crisscross pattern.
- 6. Grease the engine shaft. Align the gear 's slot with the key on the engine shaft and slide the gear reducer onto the shaft, up to the engine's shoulder.
- 7. Secure the gear reducer to the engine with the four bolts, lockwashers, and washers.

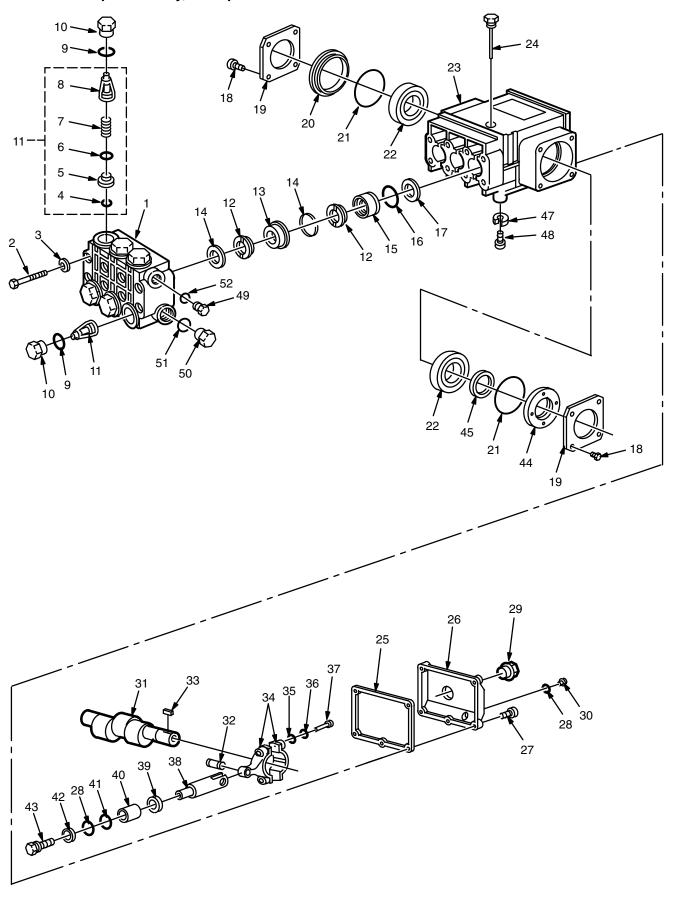


# PARTS LIST 802–143 Gear Reducer (2040)

REF NO.	PART NO.	DESCRIPTION	QTY
1		O–RING	1
2		COVER, Mounting	1
3		SCREW, Set	1
4 5		GEAR, Pump	1
5	802–336	GEAR, Engine	1
6		RING, Snap	1
7		BEARING	1
8		RING, Snap	1
9		GASKET	1
10		DIPSTICK	1
11		CASE, Mounting	1
12		WASHER, Lock	13
13		SCREW	9
14		SEAL, Oil	1
15		O-RING	1
16		CAP, G 3/8 BSP	1
17		GAUGE, Sight	1
18		WASHER, Flat	4
19		BOLT, 5/16–24 x 1"	4
20		SCREW	4
21	802–347	SEAL, Oil	4

### PARTS DRAWING

802–265 Pump Assembly, 1500 psi



#### PARTS LIST

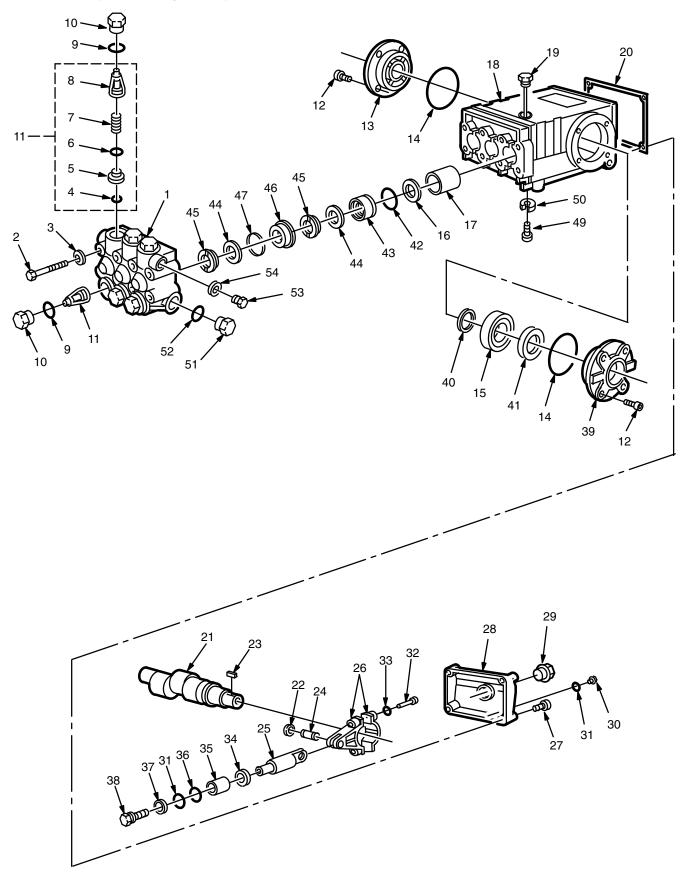
#### 802–265 Pump Assembly, 1500 psi

REF NO.	PART NO.	DESCRIPTION	QTY	REF NO.	PART NO.	DESCRIPTION	QTY
1		MANIFOLD, 1500 psi	1	27		SCREW, Cap, socket hd.	5
2		SCREW, Cap, socket hd.	8	28	1	O–RING	-
3		WASHER, Lock	8	29	802-345	GAUGE, Sight	1
4	*	O-RING		30		PLUG, Oil Drain	1
5	*	SEAT, Valve		31	803–328	CRANKSHAFT	1
5 6	*	PLATE, Valve		32	803–275	PIN, Wrist	3
7	*	SPRING		33	802–794	KEY	1
8	*	GUIDE, Valve		34	803–276	ROD, Connecting	3
9	•	O–RING		35		WASHER, Flat	6
10	•	CAP		36		WASHER, Lock	6
11	*	VALVE ASSEMBLY		37		SCREW, Cap, socket hd.	6
12	#◆	PACKING		38		GUIDE, Piston	3 3
13	<b>♦</b>	RETAINER, Packing		39		WASHER, Flinger	3
14	<b>♦</b>	RING, Head		40	801–661	PLUNGER, Ceramic	3
15	•	RETAINER, Packing		41		RING, Backup	
16	•	O–RING		42		WASHER	
17	\	SEAL, Oil		43		SCREW, Piston	
18		SCREW, Cap, hex hd	8	44		SPACER	1
19		COVER, Crankcase	2	45		SEAL, Crankshaft	1
20		SPACER	1	46	NOT USE		_
21		O–RING	2	47		WASHER, Lock	2
22		BEARING, Ball	2	48		SCREW, Cap, socket hd.	2
23		CRANKCASE	1	49		PLUG, Hex	1
24		DIPSTICK	1	50		PLUG, Hex	1
25		GASKET, Cover	1	51		WASHER, Flat	1
26	802–526	COVER, Crankcase	1	52	801–485	WASHER, Flat	1

Part of kit 1, 801–472 Valve Kit
Part of kit 4, 802–306 Valve Cap Kit
Part of kit 6, 801–474 Plunger Repair Kit
Part of kit 19, 801–662 Packing Kit
Part of kit 23, 801–658 Oil Seal Kit
Part of kit 27, 801–664 Packing and Retainer Kit

### PARTS DRAWING

803–405 Pump Assembly, 2000 psi



#### PARTS LIST

#### 803-405 Pump Assembly, 2000 psi

REF NO. 1		DESCRIPTION MANIFOLD, 2000 psi	<b>QTY</b>	<b>REF</b> NO. 28	<b>PART</b> NO. 803–321	DESCRIPTION COVER, Crankcase, 2000 psi	<b>QTY</b>
2		SCREW, Cap, hex hd.	8	29		GAUGE, Sight	1
3		WASHER, Lock	8	30		PLUG, Oil Drain	1
4	*	O–RING	U	31	₩ ₩	O-RING	•
	*	SEAT, Valve		32	803–294	SCREW, Cap, socket hd	6
5 6 7	*	PLATE, Valve		33		WASHER, Lock	6
	*	SPRING		34		WASHER, Flinger	3
8	*	GUIDE, Valve		35		PLUNGER, Ceramic	3
9	•	O–RING		36	<i>L</i>	RING, Backup	
10	•	CAP		37	1-	WASHER	
11	*	VALVE ASSEMBLY		38	1-	SCREW, Piston	
12	803–283	SCREW, Cap, socket hd.	8	39	803–295	COVER, Crankcase	1
13	803–284	COVER, Crankcase	1	40	803–296	SHIM	2
14		O–RING, Crankcase Cover	2	41	*	SEAL, Oil	
15	803–285	BEARING, Tapered Roller	2	42		O–RING	
16		SEAL, Oil		43		RETAINER, Packing	
17		BUSHING, Piston	1	44	<b>■</b> †	PACKING	
18		CRANKCASE	1	45		RING, Head	
19		DIPSTICK	1	46		RETAINER, Packing	
20		GASKET, Cover	1	47		RING, Long Life	
21	803–332	CRANKSHAFT, 2000 psi	1	48	NOT USE	ED	
22	803–288	RING, Retaining	6	49		SCREW, Cap, socket hd.	2
23	802–794	KEY	1	50	802–304	WASHER, Lock	2
24	803–289	PIN, Wrist	3	51	801–482	PLUG, Hex	1
25		GUIDE, Piston, 2000 psi	3	52	801–483	WASHER, Flat	1
26	803–291	ROD, Connecting	3	53		PLUG, Hex	1
27	803–273	SCREW, Cap, socket hd	5	54	801–485	WASHER, Flat	1

\* Part of kit 1, 801–472 Valve Kit
□ Part of kit 2, 801–473 Oil Seal Kit
\* Part of kit 3, 802–511 Crankshaft Seal Kit
• Part of kit 4, 802–306 Valve Cap Kit *ν* Part of kit 6, 801–474 Plunger Repair Kit
† Part of kit 8, 801–486 Packing Kit
■ Part of kit 28, 801–487 Packing and Retainer Kit

#### - 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 dif ferent 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 801–474 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 801–474.
- 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 flinger and oil seal, if it is being replaced 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.

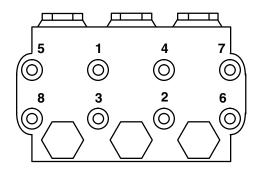


Figure 4

#### Servicing the V–Packings

- **NOTE:** There are two types of packing kits: one is just packings, 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.

#### ACCESSORIES

(Must be purchased separately)

#### DOWNSTREAM CHEMICAL INJECTOR KIT (1535) 800–139 DOWNSTREAM CHEMICAL INJECTOR KIT

(2040) 800–111 For injecting harsh cleaning chemicals downstream from the pump.

## UPSTREAM CHEMICAL INJECTOR KIT 800–257

For injecting mild cleaning chemicals upstream into the pump.

- 5. Thoroughly clean the packing cavities and examine.
- 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

Be very sure the parts are installed in the proper order and facing the correct direction. See Pump assembly on pages 18 and 20. Improperly installed parts will cause a malfunction.

7. Reassemble the manifold as instructed in Servicing the Plungers.

#### BACKFLOW PREVENTOR 801–133

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

#### 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.

	Model 800–165	Model 800–367	Model 800–164	Model 800-290			
Engine (air–cooled, 4 cycle)	5 hp Honda OHV	Honda OHV 5 hp Briggs & Stratton I/C		8 hp Honda OHV			
Gasoline Tank Capacity	3.8 quarts (3.6 liter)	3 quarts (2.8 liter)	6 quarts (5.7 liter)	6.2 quarts (6 liter)			
Water Pump Maximum Working Pressure	1500 psi (103 bar)	1500 psi (103 bar)	2000 psi (138 bar)	2000 psi (138 bar)			
Water Pump Maximum Flow	3.5 gpm (13 lpm)	3.5 gpm (13 lpm)	4 gpm (15 lpm)	4 gpm (15 lpm)			
Inlet Hose Connection	3/4" garden hose (f)	3/4" garden hose (f)	3/4" garden hose (f)	3/4" garden hose (f)			
Weight	105 lb (48 kg)	105 lb (48 kg)	152 lb (68 kg)	158 lb (70 kg)			
Dimensions Length Width Height	37" (940 mm) 19" (483 mm) 20" (508 mm)	37" (940 mm) 19" (483 mm) 20" (508 mm)	36" (914 mm) 21" (533 mm) 22.5" (572 mm)	36" (914 mm) 21" (533 mm) 22.5" (572 mm)			
Maximum Inlet Water Temperature			160° F (70° C)	160° F (70° C)			
Wetted Parts High Pressure Hose Bypass Hose	Acrylonitrile and Buna–N cover and tube Synthetic yarn and EPDM						
Pressure Washer (including fittings)	Anodized aluminum, Aluminum or bronze alloys, Brass Copper, Nylon– PTFE composite, Ceramic, Buna–N, Cotton phenolic, 303, 304, and 316 Stainless steel, Polymide–12 thermoplastic, PTFE®, Carbon steel, Zinc with or without yellow chromate plate						
	PTFE						

#### TECHNICAL DATA

#### THE GRACO WARRANTY

#### WARRANTY AND DISCLAIMERS

Graco warrants all equipment manufactured by it 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. As purchaser's sole remedy for breach of this warranty, Graco will, for a period of twenty four months from date of sale, repair or replace any part of the equipment proven 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, 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 with Graco equipment of 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 for examination by Graco to verify 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.

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