



Proven Performance

K-BAR Industries, Faribault, MN, 55021

MPPWE

ITEM NUMBER:	_____
SERIAL NUMBER:	_____
Engine Model:	_____
Pump Model:	_____
Flow:	_____ Pressure: _____
Hose Length:	_____ Lance Length: _____
Nozzle Size:	_____

Installation, Operation, and Maintenance Manual

PRESSURE WASHER: *Cleans dirty surfaces with high pressure water.*

To the Owner:

Thank you for purchasing a Northstar pressure washer. Your machine is designed for long life, dependability, and the top performance you demand! Take time now to read through this manual so you better understand the machine's operation, maintenance and safety precautions. Everyone who operates this machine must read and understand this manual. The time you take now will prolong your machine's life and prepare you for its safe operation. Enjoy the exceptional performance of your Northstar pressure washer, the industry leader! The manufacturer reserves the right to make improvements in design and/or changes in specifications at any time without incurring any obligation to install them on units previously sold.

Quick Facts

Engine Oil	Engine is shipped without oil. Fill before starting. Use SAE 10W-30 motor oil.	
Pump Oil	Pump is shipped with oil. Change oil plug and check pump oil level before starting. Use SAE 30 Non-detergent pump oil (item# 4043) or Cat Pump oil (item# 22158) for oil changes.	
Water	Make sure your water flow is 20% higher than the pressure washer's flow rate. Make sure your water is clean and particle free.	
Storage	Do not allow water to freeze in the pump, hose, or spray gun. Add fuel stabilizer to the fuel tank before long term storage.	
Spraying Chemicals	Use any North Star brand or equivalent pressure washer chemicals. Couple the chemical injector to the pump outlet. Use black nozzle.	
Maintenance Schedule	Engine:	Oil: change after first 20 hours, then annually or every 100 hours. Spark Plug: clean every 100 hrs., replace annually or every 300 hrs. Air Filter: clean every 100 hours, replace annually or every 300 hrs.
	Cat Pump:	Oil: change after first 50 hours, then every 3 months or 500 hours.
	General Pump:	Oil: change after first 40 hours, then every 3 months or 500 hours.

Read and understand all manuals before operating.

Any Questions, Comments, Problems or Parts Orders

In the United States

Northstar Customer Service

Call 1-800-270-0810

Hours: Monday - Friday 7:00 AM to 5:30 PM

Saturday 7:30 AM-11:30 AM Central Time

In the United Kingdom

Call 02392639752

Northern Tool and Equipment Co. (UK) Ltd.

Unit 2, Keel Close,

Portsmouth, Hants PO3 5QD, England

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Important Safety Instructions

- WARNING** -Risk of injection or injury to persons - Do not direct discharge stream at persons or animals. Do not use a hose if exterior damage is evident.
- CAUTION** -Risk of explosion. Do not spray flammable liquids. Do not operate in a flammable environment.
- Risk of asphyxiation - Exhaust fumes are deadly. For outdoor use only. Avoid inhaling exhaust fumes.
- Risk of fire. Do not add fuel when the product is operating or hot.
- Gun kicks back. Hold with both hands.
- To reduce the risk of injury, read operating instructions carefully before use.

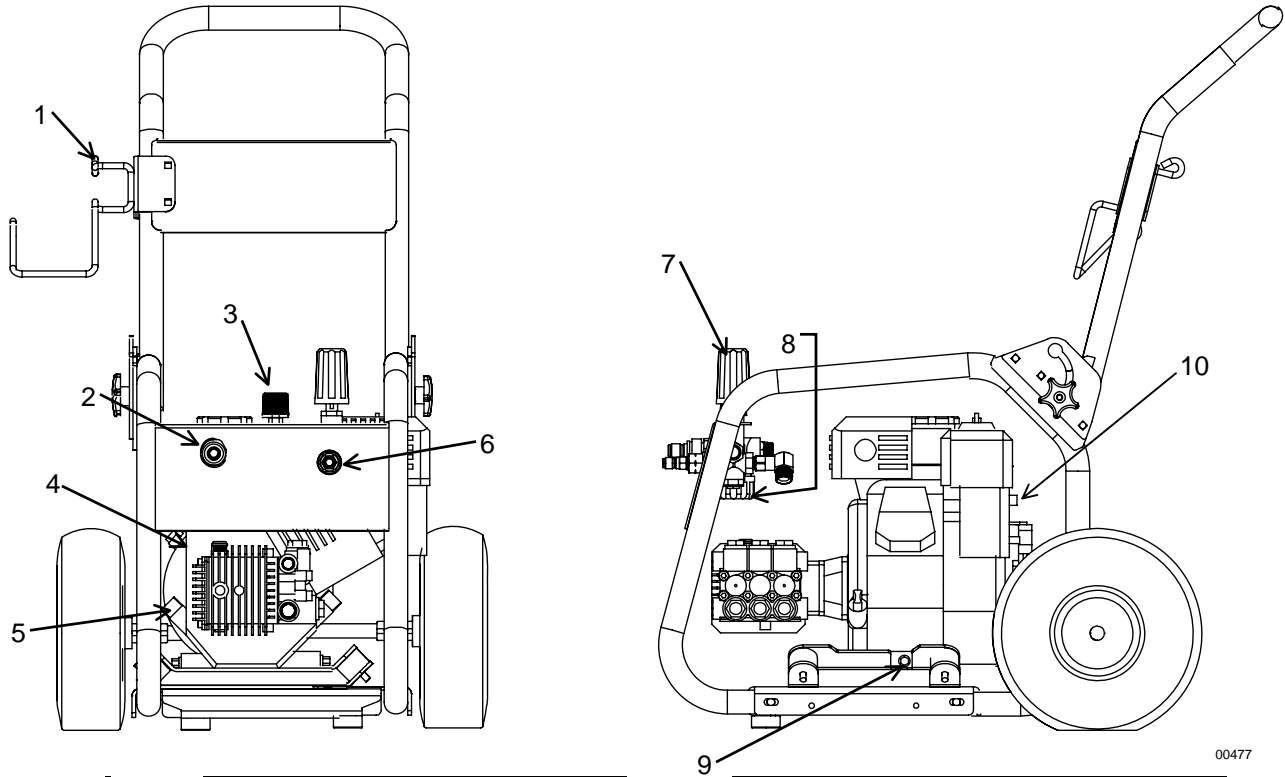
WARNING - When using this pressure washer, basic precautions should always be followed, including the following:

- 1.) Read all the instructions before using this product.
- 2.) To reduce the risk of injury, close supervision is necessary when the pressure washer is used near children. Do not allow irresponsible use by children. Always stop the unit and bleed or relieve pressures before leaving unattended, disconnecting hoses, or servicing the pump.
- 3.) Know how to stop the unit and bleed pressures quickly. Be thoroughly familiar with the controls.
- 4.) Stay alert - watch what you are doing.
- 5.) Do not operate when fatigued or under the influence of alcohol or drugs. Never smoke while operating or fueling this machine.
- 6.) Keep operating area clear of all persons.
- 7.) Do not overreach or stand on unstable support. Keep good footing and balance at all times. Wear footwear capable of maintaining a good grip on wet surfaces. Do not place the machine on soft or unstable ground.
- 8.) Follow the maintenance instructions specified in all manuals. Do not run machine without sufficient lubrication or sufficient water to cool the pump.
- 9.) Wear safety glasses, gloves, face protection and appropriate clothing when operating the machine.
- 10.) Do not operate this machine with broken or missing parts. Never alter the manufacturer's original design or deactivate any safety device on the machine.
- 11.) Risk of exposure to dangerous chemicals. Wear protective gloves when handling and cleaning with chemicals. Follow the chemical manufacturer's directions. Understand all safety hazards and first aid for all chemicals being used. Check whether dangerous chemicals have been used and take any precautions that may have been recommended by the supplier of these chemicals when cleaning filters. Do not pump highly abrasive fluids or use with incompatible chemicals or solvents.
- 12.) Know the pressure and temperature limits of your machine. Be sure all high pressure accessories meet or exceed your machine's limits. Do not set the pressure relief valve above the machine's limit.
- 13.) Do not move this machine by pulling on the hose. Do not use the pump to support other items of equipment that impose unacceptable loads on the pump. Do not attempt to use this machine as a prop.
- 14.) To reduce risk of injury, do not secure the spray gun open. Your spray gun is equipped with a built-in trigger safety latch to guard against accidental trigger release and potentially dangerous high pressure spray. Rotate the safety latch to the locked position when not spraying.
- 15.) Do not clean this machine with its own spray. Cleaning should be done with a damp sponge with the engine OFF.

SAVE THESE INSTRUCTIONS

Machine Component Identification

157816, 157817, 157818, 157819, 157820



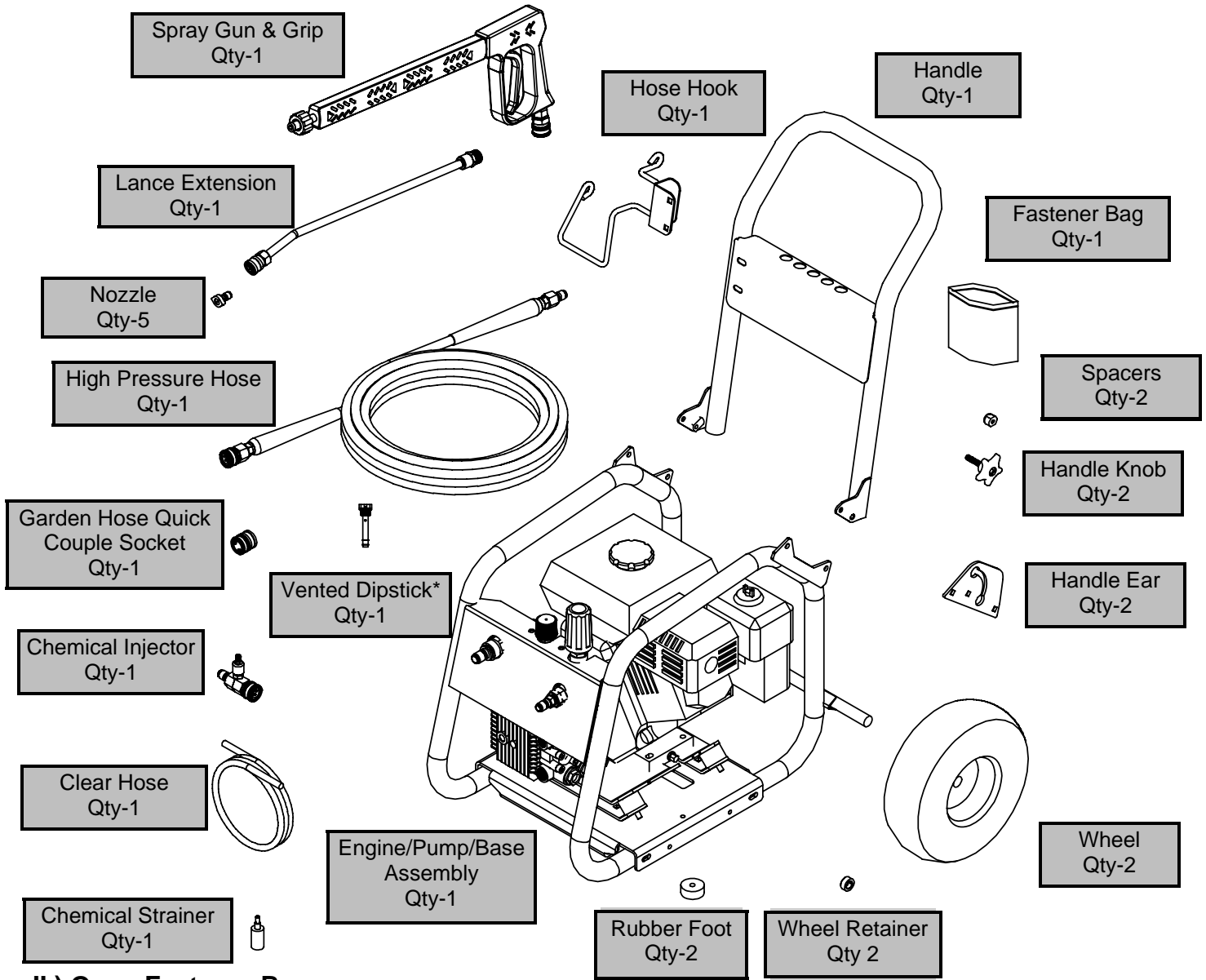
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Ref #	Description	Ref #	Description
1	Hose/Gun Holder	6	Water Outlet (Pressure Hose)
2	Water Inlet (Garden Hose)	7	Pressure Adjustment (unloader)
3	Easy Start Knob	8	Inlet Filter
4	Engine Start/Stop Switch	9	Engine Oil Drain
5	Engine Oil Fill	10	Engine Controls (see engine manual)

Installation Instructions

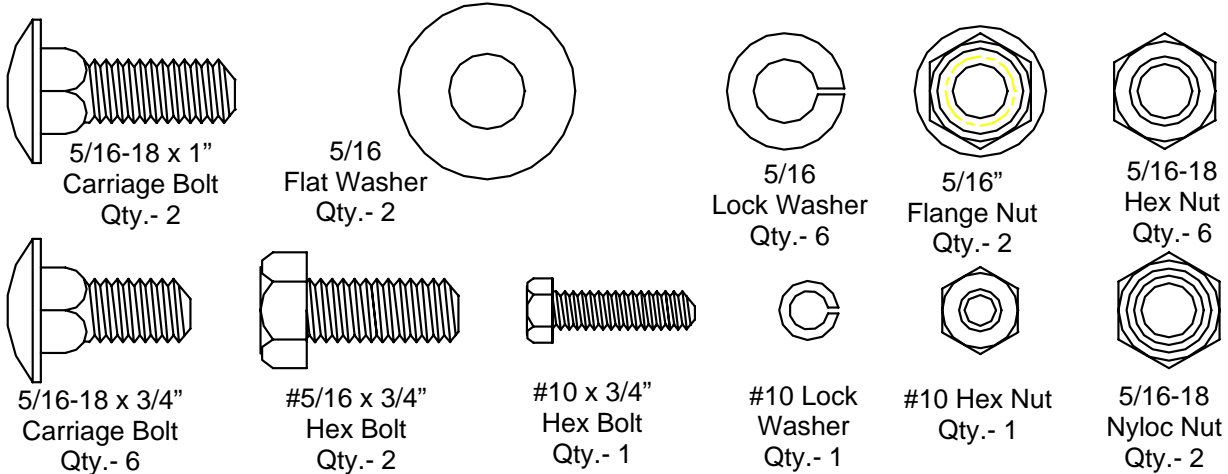
I.) Unpack

Separate and identify the components found in the box(es). Use the assembly instructions in this manual for assembly.



II.) Open Fastener Bag

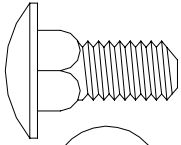
A. Open fastener bag and separate the fasteners.



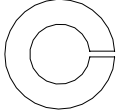
III.) Assembly Instructions

A. Assemble Hinge Ears to pressure washer with carriage bolts, lock washers, and hex nuts. Thread nut on to bolt hand tight.

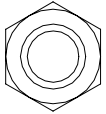
Item #	Description	Qty.
32525	Hinge Ear	2



5/16-18 x 3/4" Carriage Bolt
Qty. 4

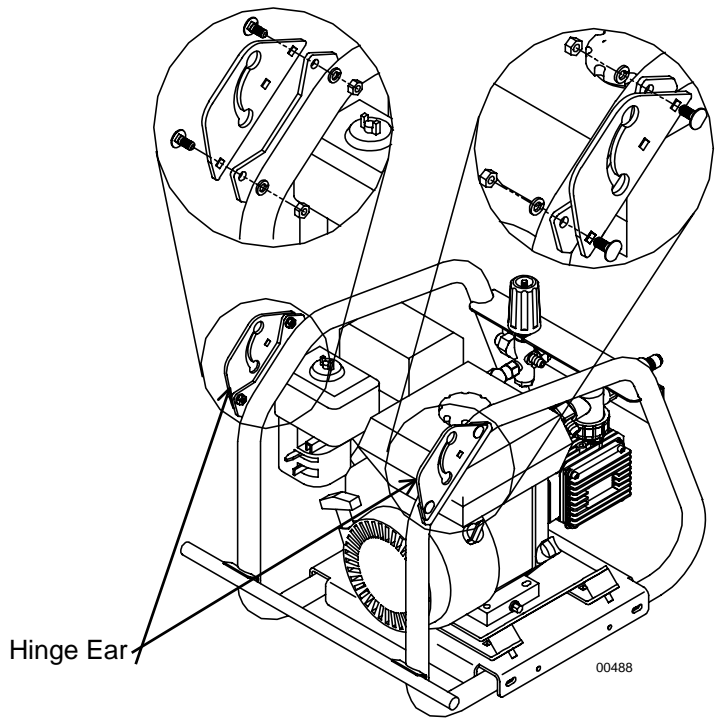


5/16 Lock Washer
Qty. 4



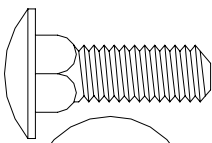
5/16-18 Hex Nut
Qty. 4

00489

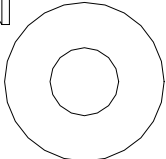


B. Attach Handle to Hinge Ears with carriage bolts, flat washers and nyloc nuts. Tighten nyloc nuts then loosen 1/4 turn so handle hinges freely.

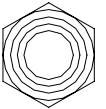
Item #	Description	Qty.
32459	Handle	1



5/16-18 x 1" Carriage Bolt
Qty. 2

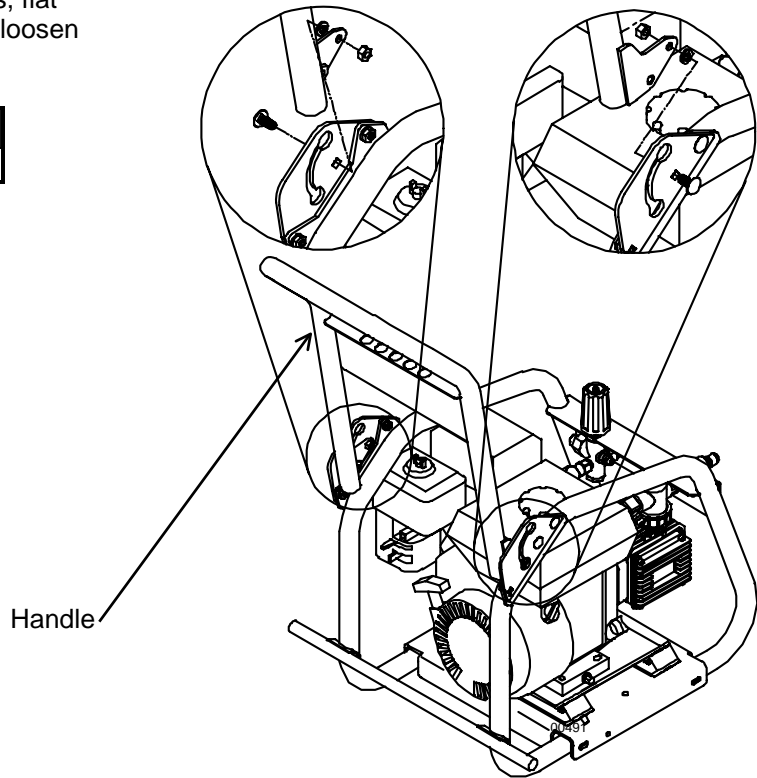


5/16 Flat Washer
Qty. 2



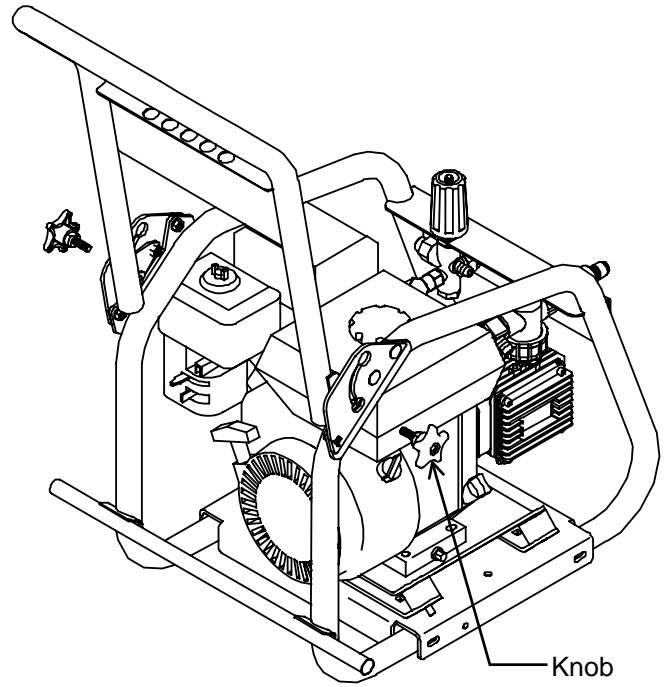
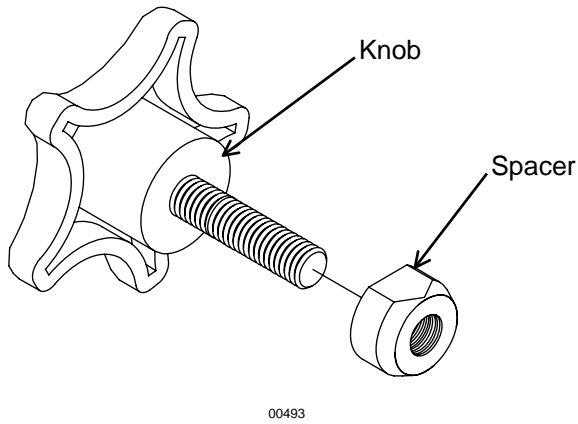
5/16-18 Nyloc Nut
Qty. 2

00490



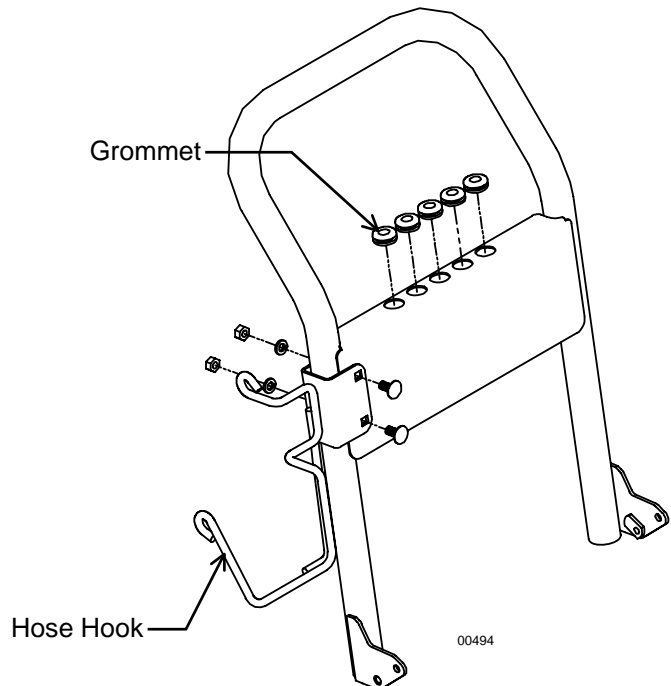
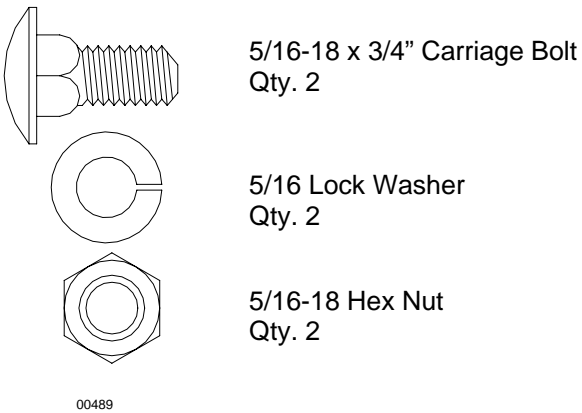
C. Tighten all nuts from step A. Assemble Spacers on to Knobs. Thread Knob and Spacer to secure Handle.

Item #	Description	Qty.
32463	Knob	2
32738	Spacer	2




D. Attach Hose Hook to Handle with bolts, lock washer and hex nuts. Insert Grommets as shown.


Item #	Description	Qty.
32612	Hose Hook	1
17156	Grommet	5




E. Attach Gripper Clip to base with a bolt, lock washer and hex nut. Remove plastic axle covers before attaching Wheels to Base. Attach Wheels to Base with Wheel Retainer using the 5/32" allen wrench in the fastener bag.

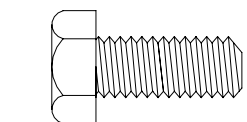
Item #	Description	Qty.
2278	Wheel	2
305200	Wheel Retainer	2
52033	Gripper Clip	1
2215	Black Rubber Foot	2

 #10 x 3/4" Hex Bolt
Qty. 1

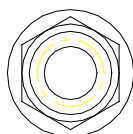
 #10 Lock Washer
Qty. 1

 #10 Hex Nut
Qty. 1

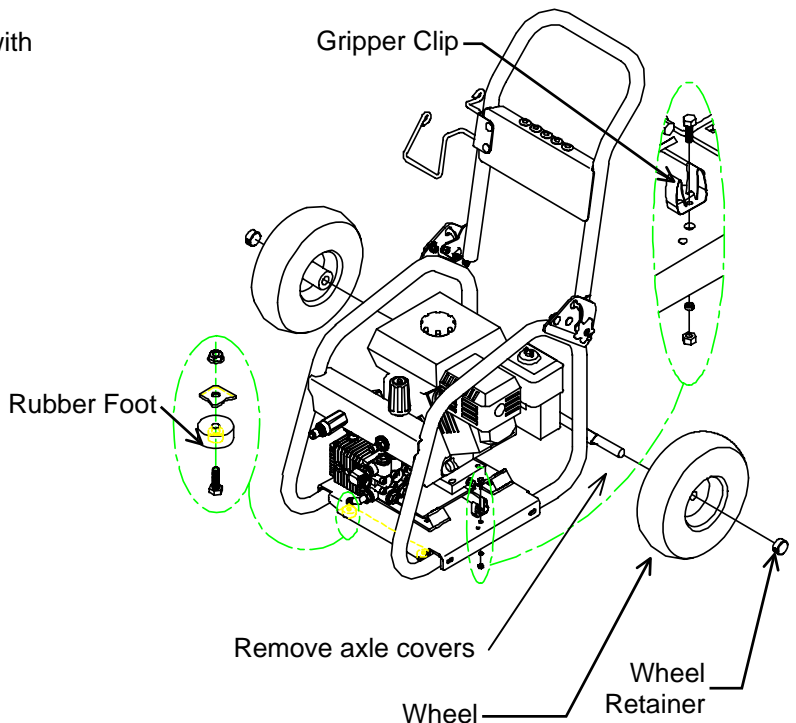
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5/16 x 3/4" Hex Bolt
Qty. 2



5/16 Flange Nut
Qty. 2



00495

Quantities Of Fluid

Engine/Pump	Type of Fluid	QTY
Honda GX 200	SAE 10W30	20.16oz (.59L)
Honda GX 340	SAE 10W30	37.12oz (1.1L)
Honda GX 390	SAE 10W30	37.12oz (1.1L)
General TP2530	SAE 30*	11.0oz (0.33L)
General EZ4040	SAE 30*	14.0oz (0.41L)
Cat 2SFX30GZ	SAE 30**	11.83oz (0.35L)
Cat 5DX40G1	SAE 30**	22.65oz (0.67L)
Cat 4SF40G51	SAE 30**	23.66oz (0.7L)

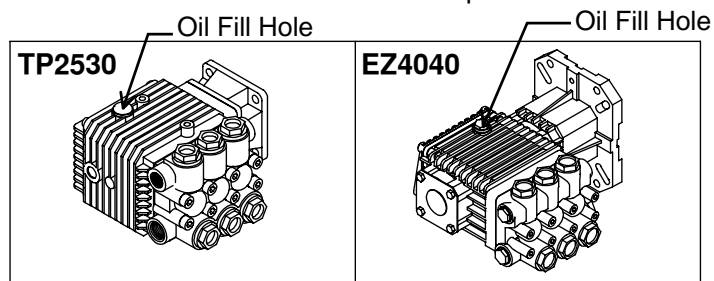
*SAE Non-Detergent Oil (order Pump Oil Item# 4043)

**SAE Non-Detergent (order Cat Pump Oil Item# 22158)

IV.) Pump Preparation

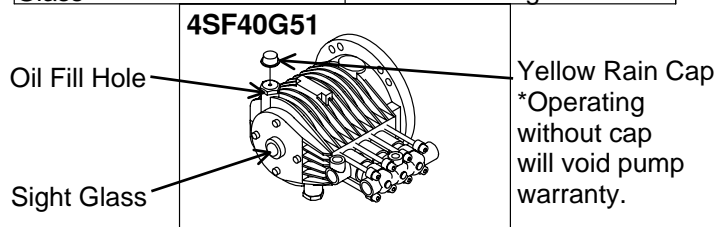
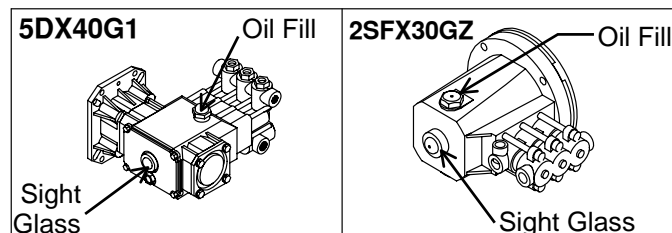
*General Pumps Only

- Remove the shipping plug from the oil fill hole.
- Screw the vented dipstick into oil fill hole.
- Check oil level in the pump. Make sure it is between the max/min marks on the vented dipstick.



**Cat Pumps Only

- Remove shipping tape from oil fill cap
- Make sure the oil is 1/2 way up oil sight glass.
- Push yellow cap onto red oil fill cap(157820 Only).



V.) Engine Preparation

- Fill engine with oil to the top of the engine oil fill neck.
- Fill fuel tank with unleaded gasoline, 86 octane min.

VI.) Chemical Injector Preparation

- Push clear hose onto chemical strainer.
- Push other end of clear hose onto chemical injector.

Operating Instructions

Read and understand the entire manual before operating the pressure washer.
Follow these instructions every time you use the pressure washer.

I.) Pre-Operation

- ☑ A.) Position the machine for easy access to all controls.
- ☑ B.) Position the machine on a solid surface, with less than a three degree slope, and so it is protected from external damage.
- ☑ C.) Position the machine so that ambient lighting is sufficient for the surface you are cleaning can be seen easily. Use artificial light if needed.
- ☑ D.) Check hoses, fittings, wand, trigger gun and fuel connections for signs of wear, cracks and looseness. Replace as required.
- ☑ E.) Check and clean the nozzle orifice.
- ☑ F.) Check and clean the water inlet screen and filter.
- ☑ G.) Read entire manual, especially the important safety instructions listed on page 2.
- ☑ H.) Check and maintain proper oil levels in the pump and engine.

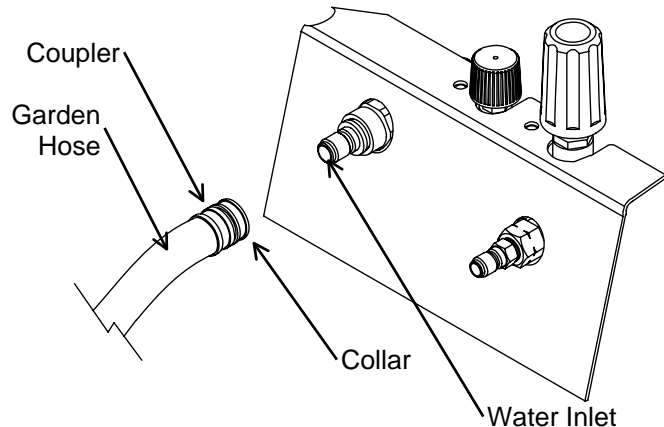
II.) Check Your Water Supply

- ☑ A.) Make sure the water supply is clean. Debris can cause excess pump wear and reduce performance.
- ☑ B.) An insufficient water supply will damage your pump. Make sure the water supply is steady and is 20% over the rated flow of your pump. Use a stopwatch to time how long it takes to fill a 5 gallon bucket with your garden hose.
Example: If the rated flow is = 3gpm
Then required flow = $3 \times 1.20 = 3.6\text{gpm}$
 $5\text{gallons} / 3.6\text{gpm} = 1.39\text{ minutes}$
 $1.39\text{min} \times 60\text{sec}/\text{min} = 83\text{ seconds}$
Therefore, you must be able to fill a 5 gallon bucket in 83 seconds or faster.
- ☑ C.) The water supply garden hose must have an inside diameter of at least 5/8". If the hose is more than 100 ft. long, the diameter must be at least 3/4".
- ☑ D.) Never use a reservoir tank as a water source. This pressure washer is designed for a pressurized water source such as a city water faucet. Sucking water out of a tank may cause pump cavitation and damage to your pump. However, the inlet pressure of the pump must not exceed 115 psi (8 bar).
- ☑ E.) Always use a flexible rubber hose for your water supply. Do not use rigid piping.
- ☑ F.) Do not pump flammable liquids or liquids containing incompatible chemicals or solvents.

III.) Attach Garden Hose

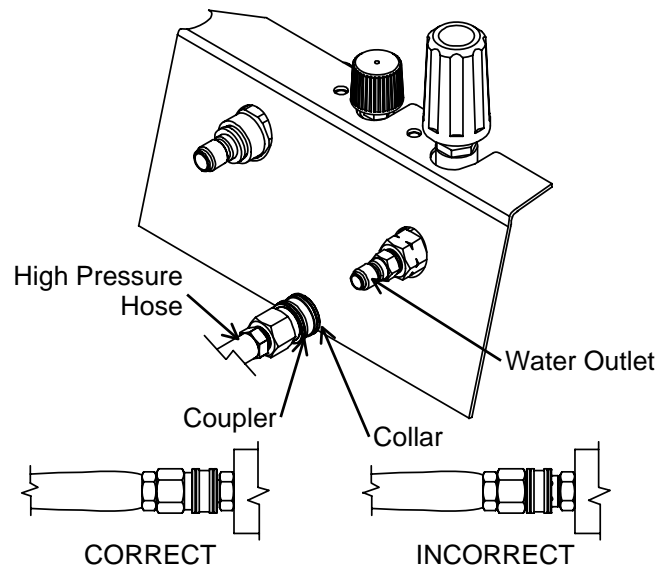
Your pressure washer is equipped with a garden hose quick couplers. Follow these steps to use the quick couplers.

- A.) Spin the coupler onto your garden hose.
- B.) Pull back the collar on the coupler.
- C.) Snap the coupler onto the water inlet.



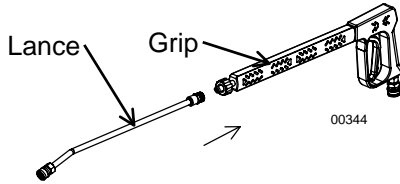
IV.) Attach High Pressure Hose

Your pressure washer hose is equipped with quick couplers. Pull the collar back and push the coupler onto the water outlet nipple. Make sure the collar slides over the ball bearings. Once the connection is made, pull on the hose to assure a positive connection. Connect the hose to the gun in the same manner.



V.) Attach Gun & Lance

Connect the lance to the grip using the 22MM thread-on quick coupler. The o-rings seal the connection so you only have to tighten the quick coupler hand tight.



VI.) Turn Water Supply ON

Make sure the hose is not kinked. A kinked hose will provide insufficient water supply to the pump and will reduce its life. Make sure the hose remains unkinked after moving the pressure washer.

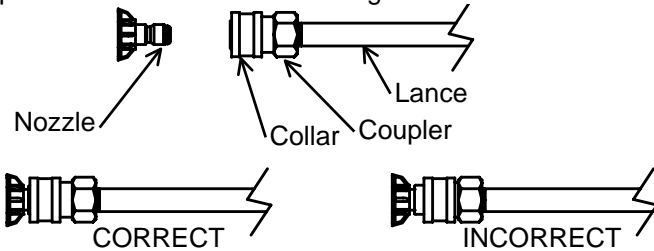
VII.) Squeeze Trigger

Squeeze the trigger until a steady flow of water sprays out the nozzle. Make sure all the air is out of the hoses before running the pressure washer. This step is very important, it will prolong the pump's life. NEVER run the pump dry.

VIII.) Attach Nozzle

Color of Nozzle:	Spray Angle	Used For:
Red	0	Highest Impact
Yellow	15	Tough Stains/ Stripping
Green	25	General
White	40	Light Cleaning
Black	65	Applying Chemicals

Your pressure washer is equipped with five nozzles. To install a nozzle simply pull back the collar and push the nozzle into the coupler. Once the connection is made, pull on the nozzle to assure a tight connection.



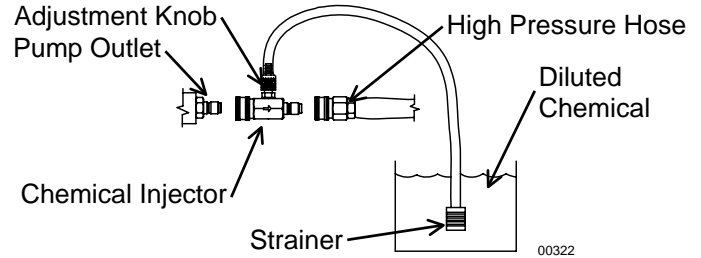
WARNING: Make sure the nozzle is correctly inserted. The nozzle may become a projectile if not inserted correctly. Do not attempt to use different types of nozzles that may not fit the coupler.

IX.) Applying Chemicals

WARNING: Only use North Star pressure washer chemicals or chemicals specifically formulated for pressure washers. Follow the chemical manufacturer's recommendations. Understand all safety precautions and first aid for all chemicals.

NOTE: Your pressure washer is equipped with a low pressure chemical injector. The proper chemical used for the proper application can speed up cleaning jobs tremendously.

A.) Snap the quick couple chemical injector onto the pump outlet and high pressure hose and submerge the suction strainer into the chemical solution.



B.) You need to use the black nozzle to spray chemicals onto the cleaning surface.

C.) The amount of chemical applied can be changed by turning the chemical adjustment knob located on the chemical injector.

D.) Squeeze the spray gun trigger. The chemical injector will draw the chemical into the water stream.

E.) Apply chemicals evenly to the cleaning surface. Allow the chemicals to react with the dirt, clean at high pressure with green nozzle.

F.) Never use more chemical than is necessary to clean the surface.

G.) If you do not intend on using chemicals, we suggest removing the chemical injector to obtain maximum cleaning pressure.

X.) Start Engine

***Refer to the engine manual to start your engine.**

IMPORTANT: The water must be turned on before starting. Running the pump dry will cause damage and void the warranty.

WARNING: Check that there are no leaks in the vicinity of the pump before starting engine.

A.) Turn Easy Start Knob to "Start."

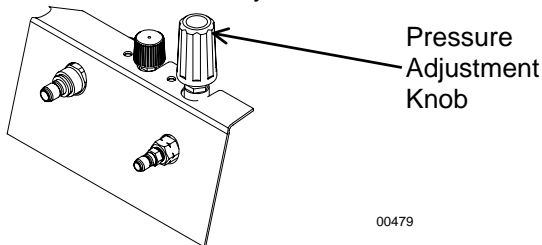
B.) Refer to engine manual to start the engine.

C.) Turn Easy Start Knob to "Run." Once the engine is started, begin cleaning.

WARNING: Do not inhale the exhaust from the engine. Do not point the lance at anyone even if the engine has stopped because there could be a release of water under retained pressure if the spray gun trigger is actuated.

XI.) Adjust Pressure

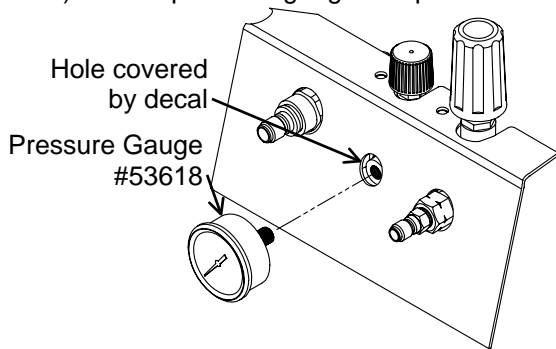
The unloader valve regulates the operating pressure of the pump. You can change the pressure by turning the adjustment knob on the unloader. The maximum pressure is set at the factory and locked.



WARNING: Do not alter the unloader valve's maximum pressure. Excess pressures could cause serious injury and/or pump damage. Any alteration other than turning the adjustment knob will void your warranty.

You can install an optional pressure gauge from Northern Tool and Equipment Co. p/n 53618 (gauge reads in PSI) to your pressure washer. To order call (800) 556-7885.

- Follow Shut-Down Instructions.
- Cut away decal from hole (shown below).
- Remove plug.
- Apply teflon tape to threads.
- Thread pressure gauge into port.



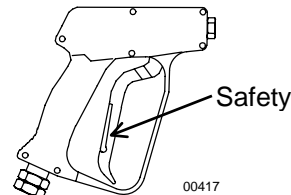
XII.) Cleaning

WARNING: Wear eye, ear, hand, foot and skin protection at all times while operating this pressure washer.

DANGER: Do not point the spray wand at yourself or at any person. Bodily injury may result from water under high pressure.

CAUTION: Be careful on painted or delicate surfaces. The pressure may damage the surface if the nozzle is too close.

IMPORTANT: Your spray gun is equipped with a built-in trigger safety latch to guard against accidental trigger actuation and potentially dangerous high pressure spray. Rotate the safety latch to the locked position when not spraying.



- Hold the lance with two hands, have a sturdy stance.
- Point lance at dirty surface and squeeze trigger.
- Wash from the bottom to the top, using side to side motions. This washes away heavy dirt and allows the detergent to soak as you work toward the top.
- Use the width of the spray pattern to wash in a wide path. Overlap spray paths for complete coverage.
- The nozzle should be 12" to 24" from the work, closer for tough areas.
- Small parts should be washed in a basket so the pressure does not push them away. Larger, light weight parts should be clamped down.
- The pressure washer is set to the maximum rated pressure when it leaves the factory. There are two easy ways to lower your pressure.
 - Turn the black unloader knob counter clockwise
 - Reduce the engine speed.

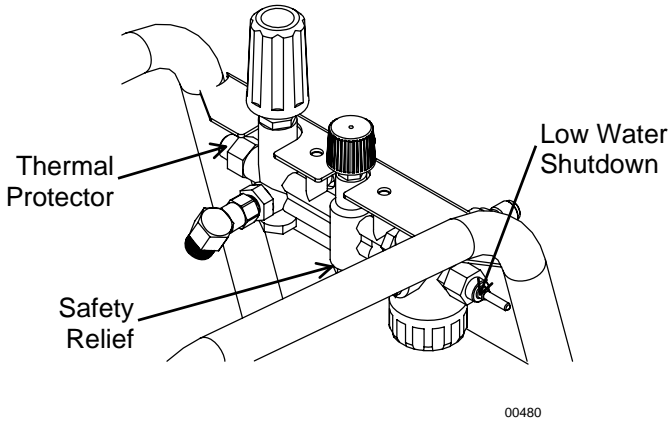
XIII.) Shut-Down Instructions

WARNING: Do not leave an operating machine unattended. Always shut the machine OFF and relieve the pressure before leaving the machine. Never disconnect the high pressure hose from the pump or spray gun while the system is pressurized. Depressurize the system by squeezing the spray gun trigger after the engine is turned OFF.

- Turn engine OFF.
- Close engine fuel line valve.
- Turn water supply OFF.
- Actuate spray gun trigger to relieve system pressure.
- Remove garden hose.
- Remove pressure hose.

SAFETY FEATURES

WARNING: If the safety relief valve ever discharges water, turn the engine off and do not use the machine. See a dealer or call Customer Service at 1-800-270-0810.



II.) Thermal Protector

The thermal protector protects your pump from overheated water. When the spray gun trigger is released, the pump **DOES NOT** stop pumping. Water is circulated through the unloader valve and pump. The circulating water heats up quickly. The thermal protector discharges water when it reaches 140°F preventing pump damage .

I.) Safety Relief

The safety relief valve is a backup safety feature. If the unloader malfunctions, the safety relief valve will open and relieve system pressure.

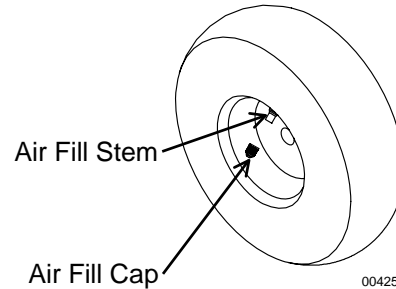
Maintenance Instructions

***Refer to the Honda Engine Owner's Manual for Engine Maintenance Instructions**

Maintenance Mode

Before performing any maintenance on the pressure washer, it must be placed in maintenance mode.

- A.) Turn off engine.
- B.) Turn off water supply.
- C.) Bleed water from system.
- D.) Shut off fuel valve.
- E.) Unplug spark plug wire from spark plug.



Maintenance Schedule

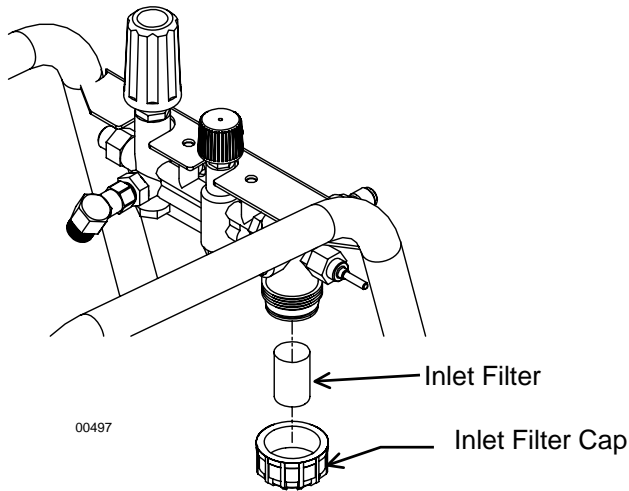
What to Check	When To Check	What to Do
Inlet Filter	Each Use	Clean
Tires	Each Use	Check Pressure
Hoses	Each Use	Check for Wear
Bolts	Each Use	Check for Loose Bolts

Checking the Tire Air Pressure

- A.) Remove air fill cap.
- B.) Fill tire to 20psi (1.4bar).
- C.) Replace air fill cap.

Cleaning The Inlet Filter

WARNING: Check whether dangerous chemicals have been used, and take precautions when handling filters.

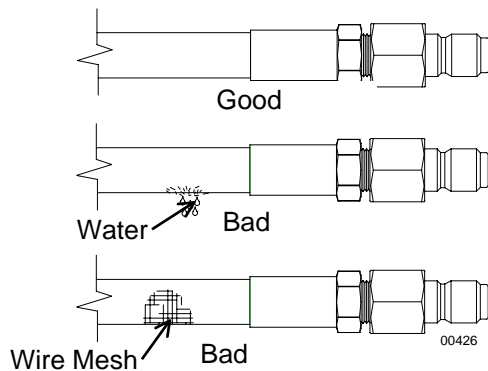


- A.) Unscrew inlet filter cap.
- B.) Remove inlet filter.
- C.) Run water through to clean filter.

Checking the Hoses

WARNING: Do not use a finger or skin to check for leaks. Escaping fluid under pressure has sufficient force to penetrate the skin, causing serious injury. Do not operate the pressure washer if the hose is cracked, worn, or leaking.

- A.) Check all hoses for leaks.
- B.) Check all hoses of worn areas.



Changing The Pump Oil (General)

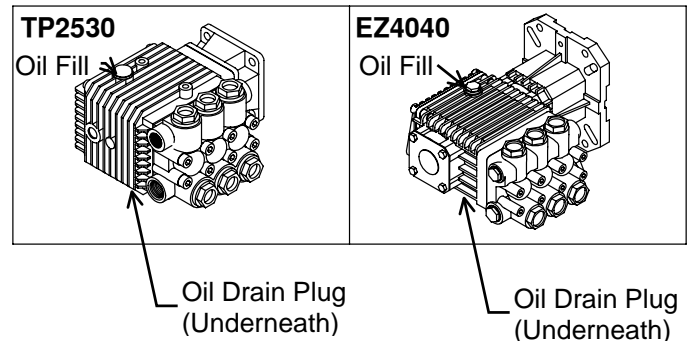
*Change oil after first 40 hours, then every 3 months or 500 hours

- 1.) Remove oil drain plug.
- 2.) Drain pump oil.
- 3.) Replace oil drain plug.
- 4.) Fill pump with SAE 30 non-detergent pump oil.
- 5.) Use dip stick to fill to proper level.

Quantities Of Fluid

Pump	Type of Fluid	QTY
General TP2530	SAE 30**	11.0oz (0.33L)
General EZ4040	SAE 30**	14.0oz (0.41L)

**Non-Detergent Oil (order pump oil Item #4043)



Changing The Pump Oil (Cat)

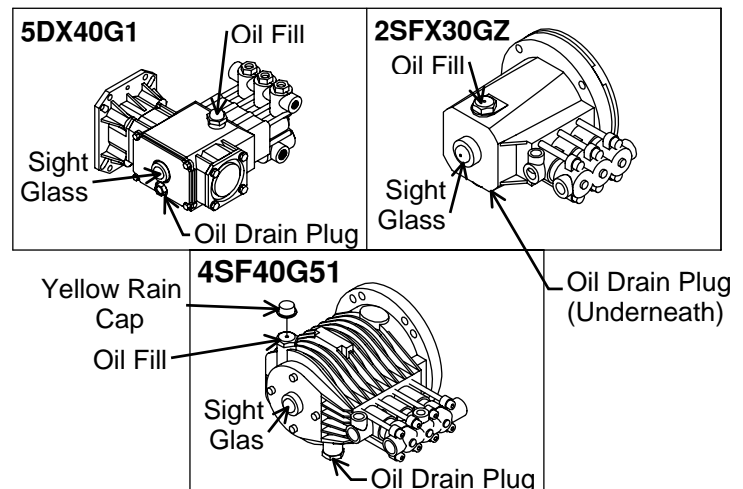
*Change oil after first 50 hours, then every 3 months or 500 hours.

- 1.) Remove oil drain plug.
- 2.) Drain pump oil.
- 3.) Replace oil drain plug.
- 4.) Remove yellow rain cap(157820 only).
- 5.) Remove oil fill cap.
- 6.) Fill pump with SAE 30 non-detergent pump oil.
- 7.) Fill half way up sight glass.
- 8.) Replace oil fill cap.
- 9.) Replace yellow rain cap(157820 only).

Quantities Of Fluid

Pump	Type of Fluid	Qty. (oz./L)
Cat 2SFX30GZ	SAE 30**	11.8oz (0.35L)
Cat 5DX40G1	SAE 30**	22.7oz (0.67L)
Cat 4SF40G51	SAE 30**	23.7oz (0.7L)

**SAE Non-Detergent Oil (order Cat pump oil Item# 22158)



Moving and Handling Instructions

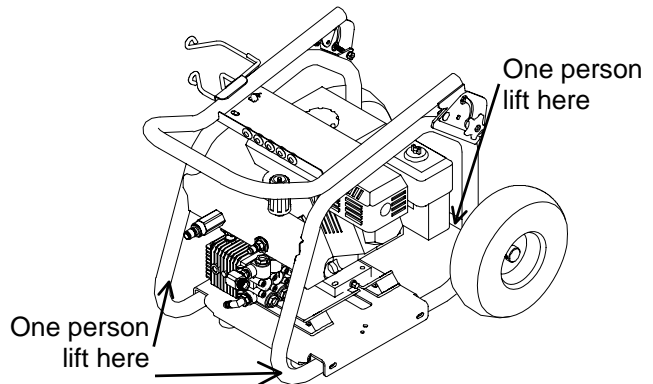
Maneuvering Your Pressure Washer

- 1.) Pull the handle back with both hands.
- 2.) Rotate the handle downward to a comfortable height.
- 3.) Push the pressure washer forward as you walk.



Lifting Your Pressure Washer

- 1.) To reduce risk of injury, it is recommended that two adults lift the pressure washer.
- 2.) Only lift the pressure washer by the roll bars and axle. Do not use the pump or engine as a lifting point.



Long Term Storage

During cold weather, store the pressure washer indoors and move it outdoors before starting the engine. Follow these instructions to prevent the pump from freezing during storage.

Storage:

Before you store the pressure washer, make sure you do the following:

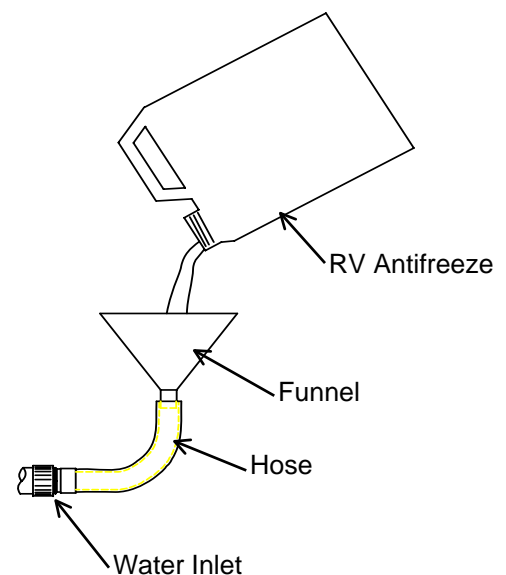
- 1.) Remove gasoline from engine or add fuel stabilizer to the gasoline to prevent gumming.
- 2.) If adding stabilizer, run pressure washer with high pressure hose for five minutes.
- 3.) Shut down pressure washer by turning engine start switch OFF.
- 4.) Disconnect high pressure and garden hose.
- 5.) Remove spark plug, turn engine start switch OFF, and turn fuel valve OFF.
- 6.) Pour one teaspoon of engine oil into spark plug hole. Cover the spark plug hole with a rag and turn engine over several times to lubricate cylinder.
- 7.) Replace spark plug.

Winter Storage:

Items needed: 12" piece of garden hose or equivalent, funnel and RV antifreeze (approximately 6 oz.)

- 1.) Follow the storage instructions listed above.
- 2.) Disconnect spark plug cable. Make sure the engine start switch is OFF, and the fuel valve is OFF.
- 3.) Attach the garden hose with funnel to the pump inlet (see illustration).
- 4.) Pour RV antifreeze into the funnel, turn the engine over until antifreeze comes out the pump outlet.

- 5.) Drain all water from the high pressure hose. Depress trigger on gun and drain all water out of gun/lance.



Troubleshooting

ENGINE WILL NOT START

Causes	Solutions
Low Oil Shutdown	Fill engine with the adequate amount of oil.
Cold Engine	Choke engine to start.
No Fuel	Add gas to engine. Make sure fuel shutoff valve is open
Pressure build-up from initial use	Trigger spray gun to relieve pressure.
Engine not turned ON	Place ON/OFF switch in the ON position.
Spark plug wire not attached	Attach spark plug wire to spark plug.

ENGINE STOPS WHEN TRIGGER IS PULLED

Causes	Solutions
Insufficient water supply	Connect to water supply with more water flow.

LOW/SURGING PRESSURE

Causes	Solutions
Insufficient water supply	Increase water flow. Check for kinked or pinched hose.
Plugged inlet screen	Pull out and clean screen carefully.
Need to use high pressure nozzle	Change to the green nozzle.
Plugged nozzle	Remove nozzle, check for blockage.
Worn nozzle	Replace nozzle.
Leak in high pressure line	Fix leaks.

NO CHEMICAL INJECTION

Causes	Solutions
Adjustment knob turned OFF	Rotate adjustment knob counter-clockwise.
Need to use different nozzle	Change to the black nozzle.
Back pressure from extra long hose	Try shorter hose.
Leak in clear chemical hose	Replace hose. Use hose clamps if necessary.
Chemical strainer not submerged	Make sure strainer is completely submerged in solution.

Any Questions, Comments, Problems or Parts Orders

In the United States
North Star Customer Service

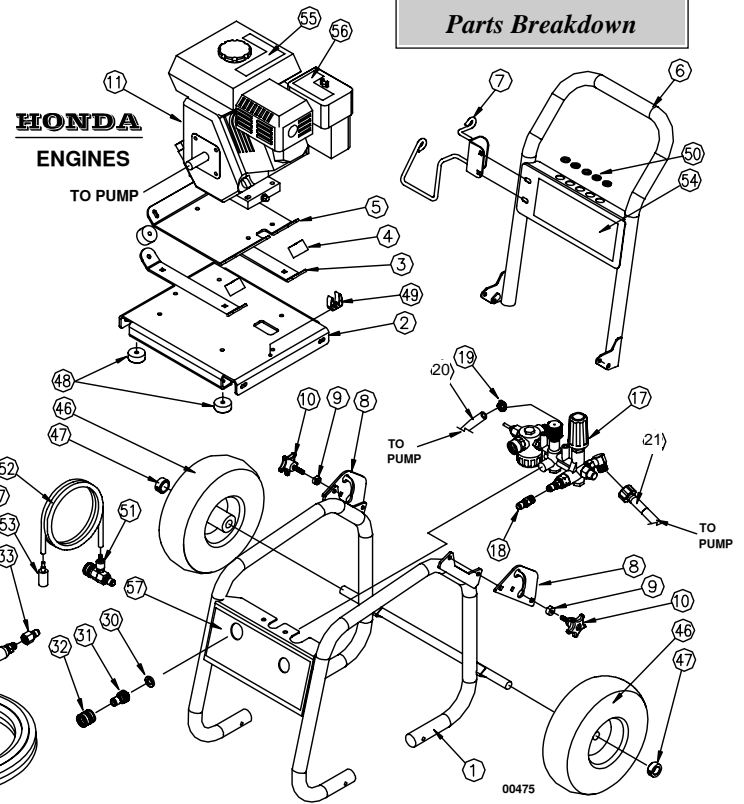
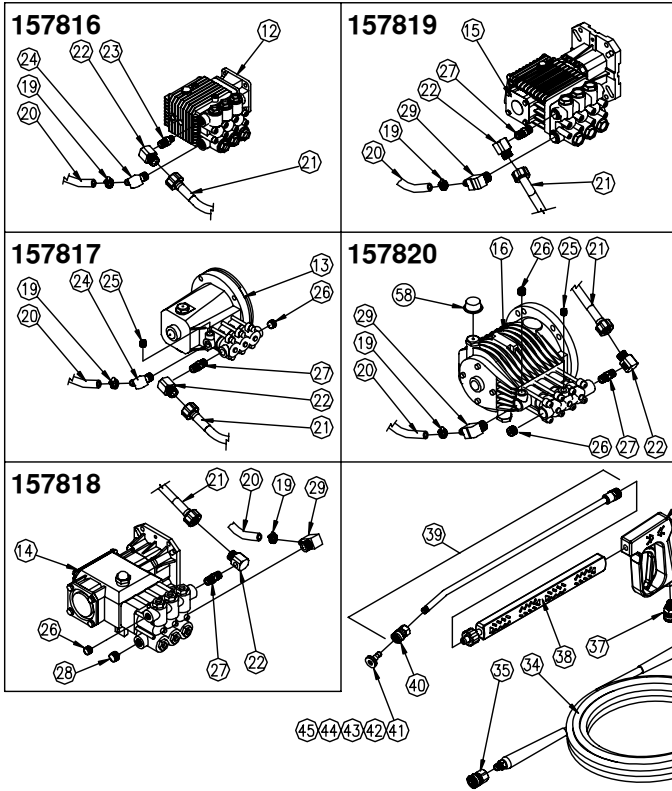
Call 1-800-270-0810
 Hours: Monday - Friday 7:00 AM to 5:30 PM
 Saturday 7:30 AM-11:30 AM Central Time

In the United Kingdom
 Call 02392639752

Northern Tool and Equipment Co. (UK) Ltd.
 Unit 2, Keel Close,
 Portsmouth, Hants PO3 5QD, England

PPWE

Parts Breakdown

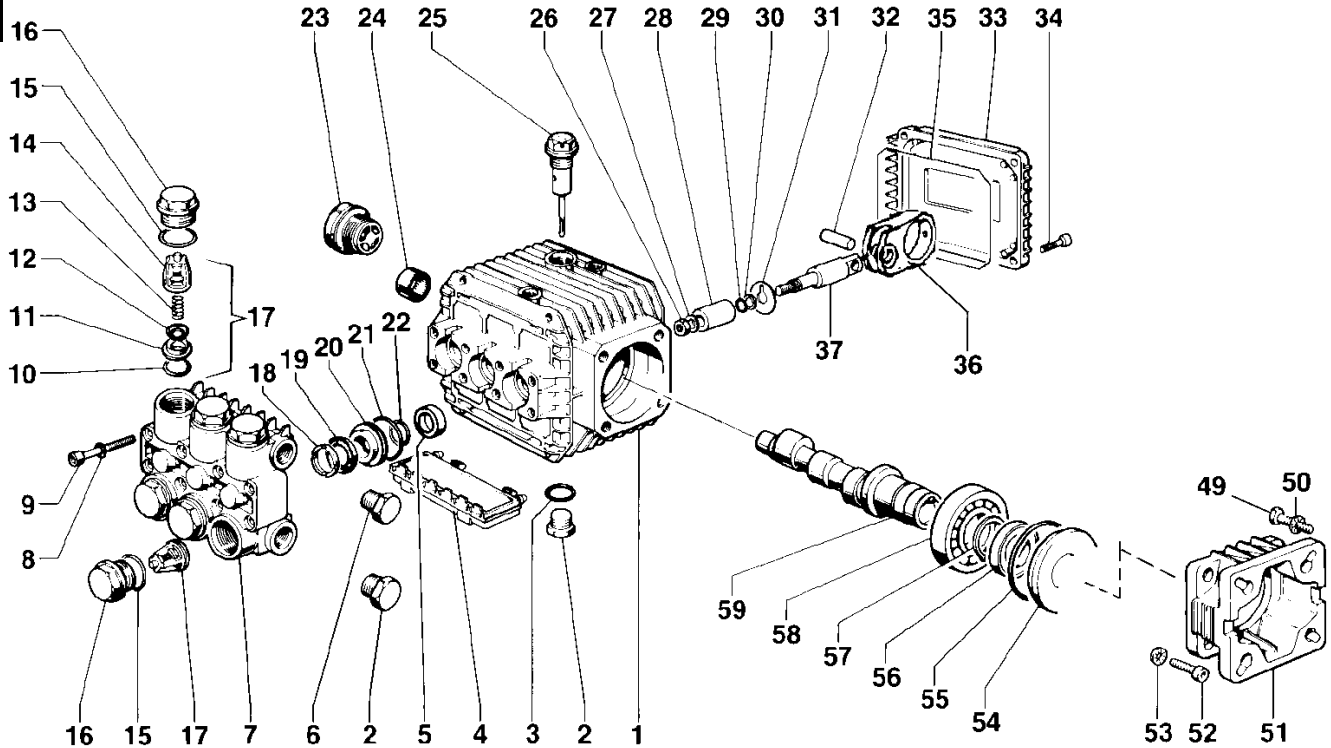


ITEM	PART#	DESCRIPTION	QTY	MODEL
1	34631	Roll Cage Weldment	1	157816, 17
	34632	Roll Cage Weldment	1	157818, 19, 20
2	32454	Base	1	157816, 17
	32523	Base	1	157818, 19, 20
3	32465	Lower Iso Bracket	2	157816, 17
	31102	Lower Iso Bracket	2	157818, 19, 20
4	32567	Rubber Iso Mount	4	157816, 17
	30825	Rubber Iso Mount	4	157818, 19, 20
5	32537	Upper Iso Base	1	157816, 17
	308302	Upper Iso Base	1	157818, 19, 20
6	32459	Handle	1	157816, 17
	32527	Handle	1	157818, 19, 20
7	32612	Hose Hook	1	all
8	32535	Hinge Ear	2	all
9	32738	Spacer	2	all
10	32463	Knob	2	all
11	606512	6.5hp Honda GX Engine	1	157816, 17
	601090	11hp Honda GX Engine	1	157818
	601091	13hp Honda GX Engine	1	157819, 20
12	32915	General Pump TP2530	1	157816
13	30956	Cat Pump 2SFX30GZ	1	157817
14	30239	Cat Pump 5DX40G1	1	157818
15	32739	General Pump EZ4040	1	157819
16	30377	Cat Pump 4SF40GS1	1	157820
17	34624	PCM 4000	1	all
18	313106	Q.C. nipple, male 3/8 npt	1	all
19	2263	Hose Clamp	2	all
20	2264	1/2" bypass hose	20"	all
21	305417	High Pressure Hose	1	157816,17,18
	34103	High Pressure Hose	1	157819,157820
22	32951	Fitting, 3/8npt x 22mm elbow	1	all
23	32952	Fitting, male 3/8 x 1/4 npt	1	157816
24	32972	Elbow, male 3/8 x 1/2 hose	1	157816, 17
25	2248	Plug, male 1/4 npt	1	157817
26	2249	Plug, male 3/8 npt	1	157817, 20 (2)
27	2296	Fitting, male 3/8 x 3/8 npt	1	157817,18,19,20
28	30511	Plug, male 1/2 npt	1	157818
29	32971	Elbow, male 1/2 x 1/2 hose	1	157818, 19, 20
30	5232	Rubber Gasket	1	all
31	30623	Inlet Quick Couple Nipple	1	all

ITEM	PART #	DESCRIPTION	QTY	MODEL
32	30624	Inlet Quick Coupler	1	all
33	313108	Coupler, 3/8 female npt	1	all
34	32084	50' x 3/8" x 3000 PSI Hose	1	157816, 17, 18
	32270	50' x 3/8" x 4000 PSI Hose	1	157819, 20
35	313109	Q.C. Nipple, 3/8 female npt	1	all
36	313107	Coupler, 3/8 male npt	1	all
37	2227	Spray Gun	1	all
38	22622	Quick Split Lance	1	all
39	319300	18 1/2" Lance Extension	1	157816, 17, 18
	32647	28" Lance Extension	1	157819, 20
40	2234	Nozzle Quick Coupler	1	all
41	25200	0° #3.5 Nozzle (red)	1	157816, 17
	25302	0° #4.0 Nozzle (red)	1	157819, 20
	253092	0° #4.5 Nozzle (red)	1	157818
42	25202	15° #3.5 Nozzle (yellow)	1	157816, 17
	25309	15° #4.0 Nozzle (yellow)	1	157819, 20
	253093	15° #4.5 Nozzle (yellow)	1	157818
43	252002	25° #3.5 Nozzle (green)	1	157816, 17
	253091	25° #4.0 Nozzle (green)	1	157819, 20
	253094	25° #4.5 Nozzle (green)	1	157818
44	252001	40° #3.5 Nozzle (white)	1	157816, 17
	253024	40° #4.0 Nozzle (white)	1	157819, 20
	253095	40° #4.5 Nozzle (white)	1	157818
45	253096	65° #40.0 Nozzle (black)	1	all
46	2278	Wheel/Tire Assembly	2	all
47	305200	Wheel Retainer	2	all
48	2215	Black Rubber Foot	2	all
49	52033	Large Gripper Clip	1	all
50	17156	Black Rubber Grommet	5	all
51	31934	Chemical Injector, 2.1mm	1	157816, 17
	31935	Chemical Injector, 2.3mm	1	157818, 19, 20
52	33488	Braided Chem. Inj Hose	3 ft.	all
53	2212	Chemical Strainer	1	all
54	34485	Handle Decal	1	all
55	32542	Engine Decal	1	157816, 17
56	32585	Engine Decal	1	157818, 19, 20
57	34487	Frame Decal, 2000PPW	1	157816, 17
	34486	Frame Decal, 3000PPW	1	157818
	34488	Frame Decal, 3500PPW	1	157819, 20
58	35364	Yellow Rain Cap	1	157820

TP2530J34 - Triplex

GENERAL PUMP *A member of the Interpump Group*



ITEM	PART #	DESCRIPTION	QTY
1	51.0106.22	CRANKCASE	1
2	98.2100.00	PLUG, 3/8	1
3	90.3833.00	O-RING	1
4	51.2091.02	PROTECTOR	1
5	90.1565.00	OIL SEAL	3
6	98.2041.00	PLUG, 1/4	1
7	51.1200.41	MANIFOLD	1
8	96.6938.00	WASHER	8
9	99.1943.00	SCREW	8
10	90.3841.00	O-RING	6
11	36.2003.66	VALVE SEAT	6
12	36.2001.76	VALVE PLATE	6
13	94.7376.00	SPRING	6
14	36.2025.51	VALVE CAGE	6
15	90.3847.00	O-RING	6
16	98.2216.00	VALVE CAP	6
17	36.7115.01	VALVE ASSEMBLY	6
18	51.1000.51	HEAD RING	3
19	90.2620.00	PACKING	3
20	51.0800.70	PACKING RETAINER	3
21	90.3604.00	O-RING	3
22	90.3835.00	O-RING	3
23	97.5968.00	SIGHT GLASS	1
24	20.2128.35	NEEDLE BEARING	1
25	98.2103.00	OIL DIP STICK	1
26	92.2216.00	NUT	3
27	96.7008.00	WASHER	3
28	51.0400.09	PLUNGER, 15mm	3
29	90.3572.00	O-RING	3
30	90.5022.00	BACK UP RING	3
31	96.0707.00	FLINGER WASHER	3
32	97.0310.00	CONNECTING ROD PIN	3
33	51.1600.22	CRANKCASE COVER	1
34	99.1867.00	SCREW	4

ITEM	PART #	DESCRIPTION	QTY
35	90.3917.00	COVER O-RING	1
36	51.0301.22	CONNECTING ROD	3
37	51.0500.56	PLUNGER ROD	3
49	99.2730.00	SCREW, J34 OPTION	4
50	96.7014.00	WASHER, J34 OPTION	4
51	10.0346.22	FLANGE, J34 OPTION	1
52	99.1867.00	SCREW	4
53	96.6938.00	WASHER	4
54	50.2115.51	SPACER	1
55	90.4097.00	O-RING	1
56	90.1644.00	OIL SEAL	1
57	90.0667.00	SNAP RING	1
58	20.2835.21	BEARING	1
59	51.0221.65	CRANKSHAFT	1

VALVE KIT

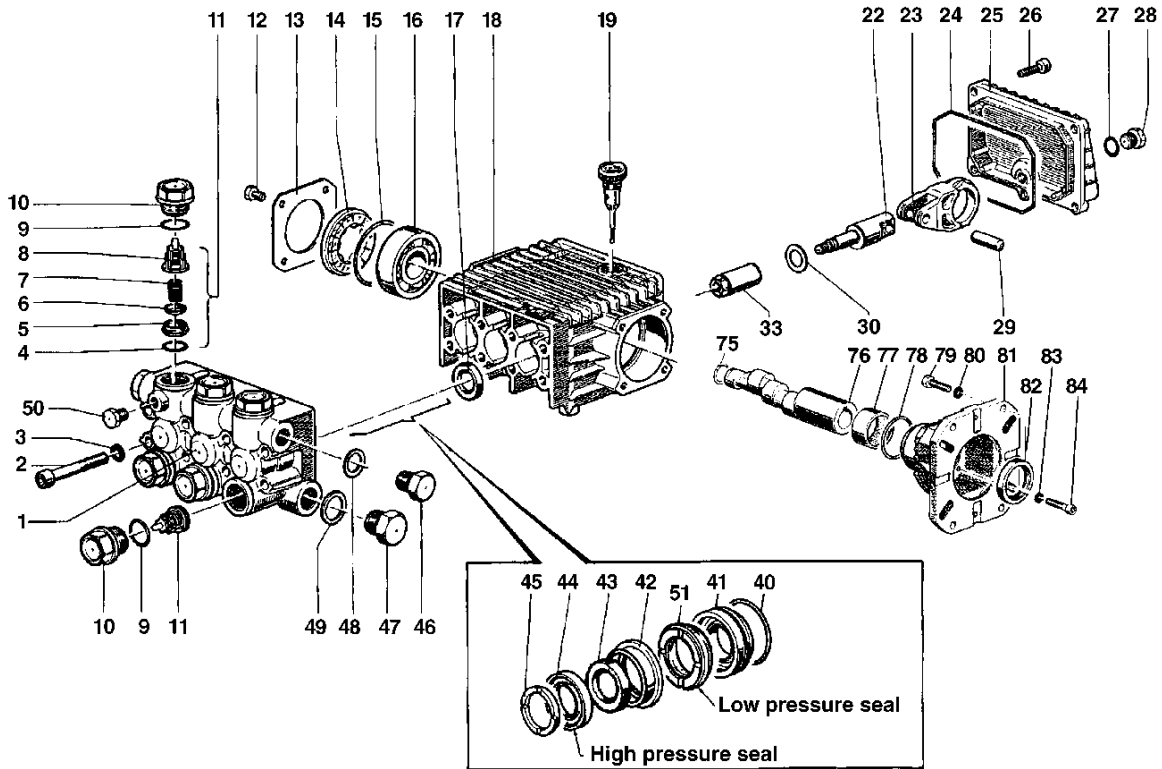
123		
ITEM	PART #	QTY
10	90.3841.00	6
11	36.2003.66	6
12	36.2001.76	6
13	94.7376.00	6
14	36.2025.51	6

SEAL KIT

97		
ITEM	PART #	QTY
18	51.1000.51	3
19	90.2620.00	3
21	90.3604.00	3
22	90.3835.00	3

EZ Series 44 G – Triplex

GENERAL PUMP *A member of the Interpump Group*



ITEM	PART #	DESCRIPTION	QTY
1	44.1206.41	MANIFOLD	1
2	99.3175.00	SCREW	8
3	96.7014.00	WASHER	8
4	90.3841.00	O-RING	6
5	36.2003.66	VALVE SEAT	6
6	36.2001.76	VALVE	6
7	94.7376.00	SPRING	6
8	36.2025.51	VALVE CAGE	6
9	90.3847.00	O-RING	6
10	98.2226.00	CAP SCREW	6
11	36.7115.01	VALVE ASSEMBLY	6
12	99.1807.00	SCREW	4
13	50.1500.74	BEARING COVER	1
14	44.2118.01	SPACER	1
15	90.4097.00	O-RING	1
16	91.8328.00	BALL BEARING	1
17	90.1614.00	OIL SEAL	3
18	44.0100.22	CRANKCASE	1
19	98.2103.00	OIL DIPSTICK	1
22	44.0501.66	PISTON GUIDE	3
23	44.0300.22	CONNECTING ROD	3
24	90.3920.00	O-RING	1
25	44.1600.22	REAR COVER	1
26	99.1837.00	SCREW	5
27	90.3585.00	O-RING	1
28	98.2041.00	CAP SCREW	1
29	97.7340.00	PIN	3
30	96.6967.00	WASHER	3
33	44.0402.66	PLUNGER, 13mm	3
40	90.3612.00	O-RING	3
41	44.0803.70	PACKING RETAINER	3
42	44.2162.70	INTERMEDIATE RING	3
43	90.5076.00	PACKING	3
44	90.2602.00	PACKING	3

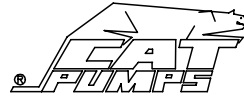
ITEM	PART #	DESCRIPTION	QTY
45	44.1002.51	HEAD RING	3
46	98.2100.00	CAP SCREW	1
47	98.2176.00	CAP SCREW	1
48	96.7380.00	WASHER	1
49	96.7514.00	WASHER	1
50	98.1966.00	CAP SCREW	1
51	90.2603.00	SEAL, LOW PRESSURE	3
75	90.0635.00	RETAINING RING	1
76	44.0221.65	CRANKSHAFT	1
77	91.8568.00	ROLLER BEARING	1
78	90.4097.00	O-RING	1
81	10.0518.22	FLANGE FOR GAS ENGINES	1
82	90.1690.00	OIL SEAL	1
83	96.6938.00	WASHER	4
84	99.1912.00	SCREW	4

VALVE KIT

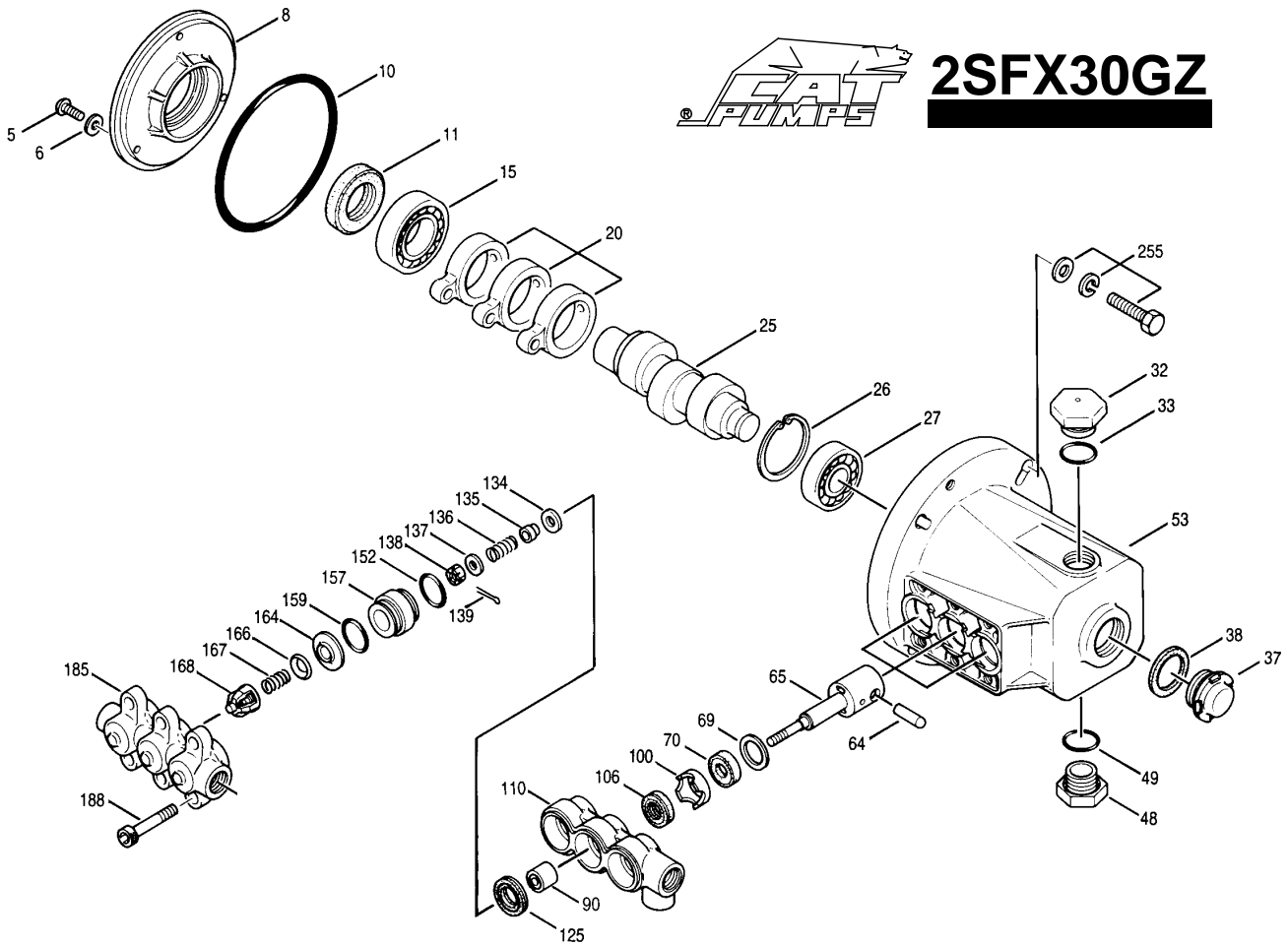
123		
ITEM	PART #	QTY
4	90.3841.00	6
5	36.2003.66	6
6	36.2001.76	6
7	94.7376.00	6
8	36.2025.51	6

SEAL KIT

156		
ITEM	PART #	QTY
40	90.3612.00	1
41	44.0803.70	1
42	44.2162.70	1
43	90.5076.00	1
44	90.2602.00	1
45	44.1002.51	1
51	90.2603.00	1



2SFX30GZ



ITEM	PART #	DESCRIPTION	QTY
5	89551	Screw, HHC (M6x16)	3
6	150810	Washer, Seal (M6)	3
8	44857	Cover, Bearing, Inner	1
10	14044	O-Ring Bearing Cover	1
11	44859	Seal, Oil	1
15	14488	Bearing, Ball, Inner	1
20	542951	Rod, Connecting	3
25	542441	Crankshaft, 3450RPM, 3/4", 4.7mm	1
26	12385	Ring, Retaining	1
27	15710	Bearing, Ball, Outer	1
32	45690	Cap, Oil Filler	1
33	14179	O-Ring, Oil Filler Cap - 70	1
37	43987	Gauge, Bubble Oil	1
38	44428	Gasket, Flat Flex, Oil Gauge - 80	1
48	44842	Plug, Drain (1/2" NPT)	1
49	14179	O-Ring, Drain Plug - 70	1
53	541018	Crankcase	1
64	16948	Rist, Pin	3
65	542958	Rod, Plunger	3
69	20017	Washer (M24)	3
70	25461	Seal, Oil	3
100	44869	Retainer, Seal	3
106	44876	LPS w/S-Spg	3
110	44874	Manifold, Inlet	1
124	45847	Ceramic Plunger	3
125	43245	HPS w/S PS	3
134	45854	Valve, Inlet	3
135	44871	Spacer	3
136	44872	Spring, Inlet Valve	3
137	88575	Washer, Conical (M6)	3

ITEM	PART #	DESCRIPTION	QTY
138	81240	Nut, Hex (M6)	3
152	26089	O-Ring, Adapter - 80	3
157	44878	Spacer, Discharge, Seat	3
159	26089	O-Ring, Adapter - 80	3
164	44881	Seat	3
166	43723	Valve	3
167	541062	Spring	3
168	44565	Retainer, Spring	3
185	44879	Manifold, Discharge	1
188	87859	Screw, HSH (M8x75)	6
249	30968	Kit, Adapter Mount, Gas	1
255	30517	Kit, Bolt Mount	1

VALVE KIT

34052		
ITEM	PART #	QTY
152	26089	3
159	26089	3
164	44881	3
166	43723	3
167	541062	3
168	44565	3

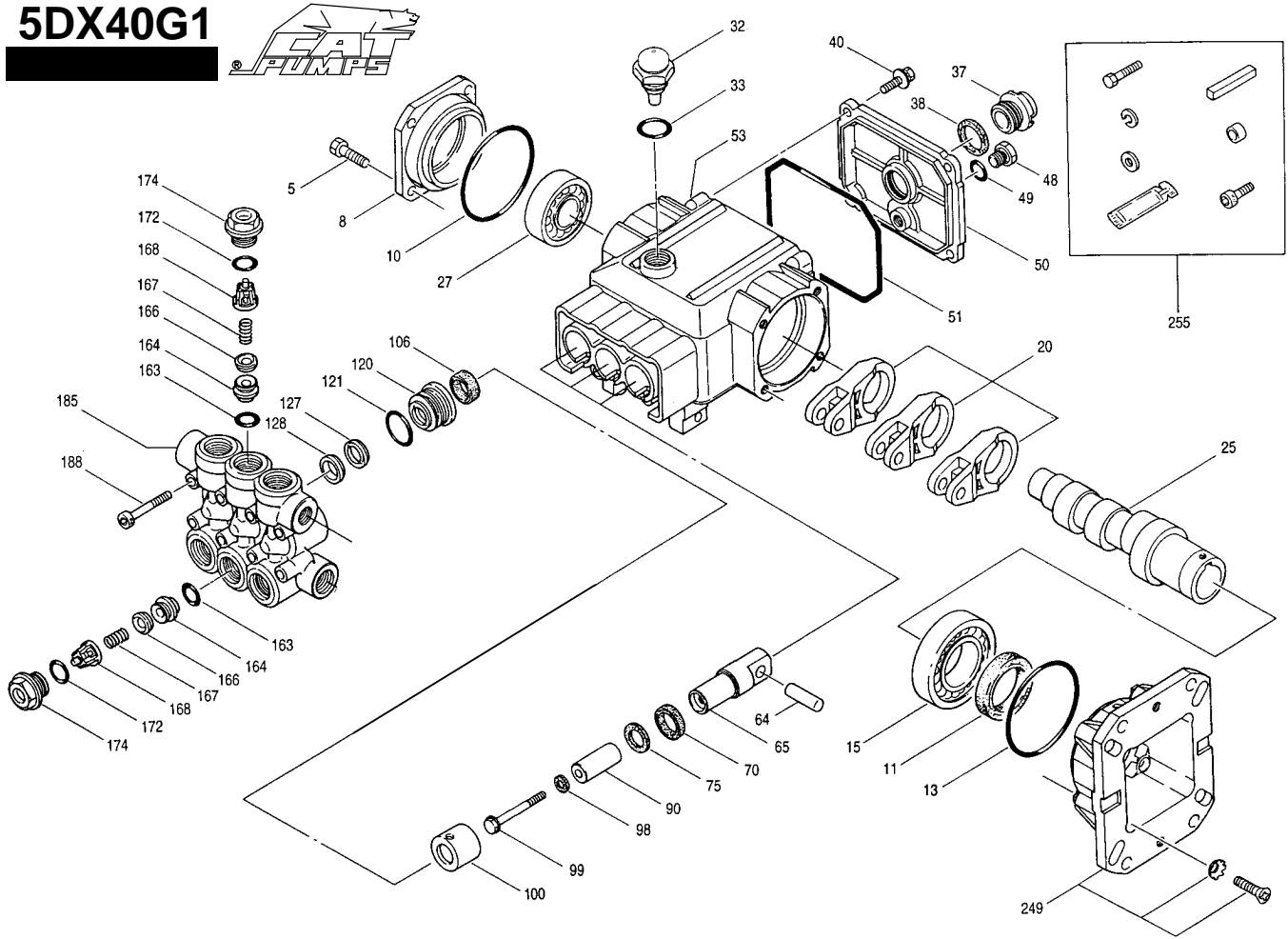
INLET VALVE KIT

34688		
ITEM	PART #	QTY
134	45854	3
135	44871	3
136	44872	3
137	88575	3
138	81240	3
152	26089	3
159	26089	3

SEAL KIT

34053		
ITEM	PART #	QTY
106	44876	3
125	43245	3
152	26089	3
159	26089	3

5DX40G1



ITEM	PART #	DESCRIPTION	QTY
5	92521	Sems Hex Head Screw (M8x20)	4
8	46461	Bearing Case	1
10	14037	O-Ring, Flange	1
11	46419	Oil Seal, Crankshaft	1
12	14037	O-Ring, Bearing Case	1
15	146421	Bearing - Inner	1
20	46677	Connecting Rod	3
25	46460	Crankshaft (9.0mm)	1
27	14480	Bearing - Outer	1
32	46798	Domed Oil Filler Cap	1
33	14179	O-Ring, Oil Filler Cap	1
37	43987	Bearing - Outer	1
38	44428	Gasket, Flat Flex	1
40	92519	Sems Hex Head Screw (M6x16)	4
48	25625	Drain Plug	1
49	23170	O-Ring, Drain Plug	1
50	46379	Crankcase Cover	1
51	14048	O-Ring, Crankcase Cover	1
53	46454	Crankcase	1
64	46404	Pin, Plunger Rod	3
65	46728	Plunger Rod	3
70	29257	Oil Seal, Crankcase	3
75	46732	Barrier Slinger	3
90	46727	Plunger	3
98	46730	Sealing Gasket, Plunger Retainer	3
99	46729	Plunger Retainer	3
100	46408	Seal Retainer	3
106	46435	Lo-Pressure Seal	3
120	46471	Seal Case	3
121	13980	O-Ring, Seal Case	3

ITEM	PART #	DESCRIPTION	QTY
127	46617	V-Packing	3
128	46618	Male Adapter	3
163	17547	O-Ring, Seal Case	6
164	46658	Valve Seat	6
166	46429	Valve Spring	6
167	43750	Valve Spring	6
168	46583	Spring Retainer	6
172	17615	O-Ring, Valve Plug	6
174	46388	Valve Plug	6
185	46526	Manifold Head	1
188	87868	Hex Socket Head Bolt (M8x107)	8
249	46679	Flange	1
255	30519	Bolt Mount Kit	1

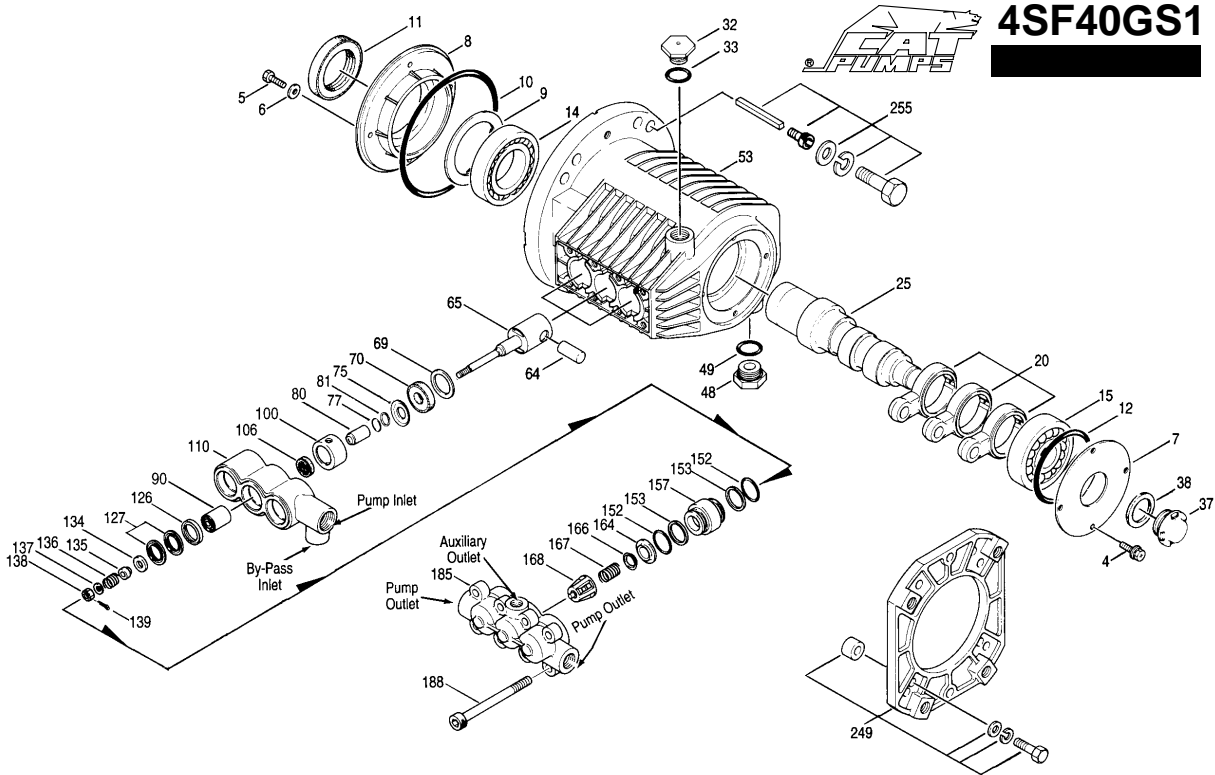
VALVE KIT

34060		
ITEM	PART #	QTY
163	17547	6
164	46658	6
166	46429	6
167	43750	6
168	46583	6
172	17615	6

SEAL KIT

34062		
ITEM	PART #	QTY
106	46435	3
121	13980	3

4SF40GS1



ITEM	PART #	DESCRIPTION	QTY
4	92519	Sems. Comb. Head Screw (M6x16)	4
5	92520	Sems. Comb. Head Screw (M6x20)	4
6	150810	Sealing Washer (M6)	4
7	45707	Bearing Cover	1
8	45172	Bearing Case - Inner	1
9	45173	Washer	1
10	89811	O-Ring, Bearing Case	1
11	141852	Oil Seal	1
12	14037	O-Ring, Bearing Cover	1
14	45174	Bearing - Inner	1
15	45175	Bearing - Outer	1
20	45572	Connecting Rod - "H"	3
25	45575	Crankshaft (5.7mm)	1
32	45690	Oil Filler Cap	1
33	14179	Oil Ring, Oil Filler Cap	1
37	43987	Bubble Oil Cage	1
38	44428	Flat Flex Gasket	1
48	44842	Drain Plug	1
49	14179	O-Ring, Drain Plug	1
53	45168	Crankcase	1
64	45179	Piston Pin	3
65	46644	Piston Rod, Sleeved - "H"	3
69	26952	Seal Washer	3
70	27339	Oil Seal	3
75	43568	Barrier Slinger	3
77	25392	O-Ring, Sleeve	3
80	46646	Sleeve	3
81	29003	Back-up Ring	3
83	45183	Seal Retainer	3
106	45188	Lo-Pressure Seal	3
110	45187	Inlet Manifold	1
124	45848	Plunger	3
126	45190	Female Adapter	3
127	45191	V-Packing	6
134	45845	Inlet Valve	3
135	44871	Spacer	3
136	45186	Inlet Valve Spring	3

ITEM	PART #	DESCRIPTION	QTY
137	88575	Conical Washer (M6)	3
138	27000	Slotted Nut (M6)	3
139	14158	Cotterpin	3
152	43781	O-Ring, Adapter	6
153	21986	Back-up Ring, Adapter	6
157	45192	Adapter-Spacer	3
164	45194	Valve Seat	3
166	43721	Valve	3
167	43751	Valve Spring	3
168	44564	Spring Retainer	3
185	45193	Discharge Manifold	1
188	87860	Hex Socket Head Screw (M8x100)	8
249	30972	Adapter Mount Kit - Gas	1
255	30518	Bolt Mount Kit - Gas	1

VALVE KIT

34055		
ITEM	PART #	QTY
152	43781	3
153	21986	3
164	45194	3
166	43721	3
167	43751	3
168	44564	3

INLET VALVE KIT

34770		
ITEM	PART #	QTY
134	45845	3
135	44871	3
136	45186	3
137	88575	3
139	14158	3
152	43781	3

SLEEVE & SEAL KIT

34063		
ITEM	PART #	QTY
75	43568	3
77	25392	3
80	46646	3
81	29003	3
106	45188	3
127	45191	3
139	14158	3
152	43781	3

SEAL KIT

34054		
ITEM	PART #	QTY
106	45188	3
127	45191	3
139	14158	3
152	43781	3