OPERATION MAINTENANCE AND SAFETY INSTRUCTIONS FOR BIGFOOT™ SERIES GAS ENGINE UNITS AGGRESSOR™ SERIES ELECTRIC MOTOR UNITS BIGFOOT-E™ SERIES ELECTRIC MOTOR UNITS

Description

BIGFOQT™ gasoline engine, AGGRESSOR™ and BIGFOOT-E™ electric motor high-pressure washers are designed for either intermittent or continuous heavy-duty pressure cleaning jobs. With the use of a suitable high quality cold-water formulation cleaning detergent, they may be used for a variety of pressure cleaning applications to include equipment and machinery and concrete or masonry surfaces.

Unpacking

Unpack shipping carton or crate carefully, checking for hidden damage or missing components. Immediately contact your distributor or the delivering carrier, as appropriate, concerning problems. Shipping damage is the responsibility of the carrier and, if found, the carrier must be promptly notified.

General Safety Information

FIRE SAFETY – GASOLINE ENGINE
Use extreme caution in handling gasoline and filling gas tank. Use only approved containers for storing gasoline and do not place the container within six feet of the washer during operation. Wait 30 minutes after engine is shut down before adding fuel to avoid fire or explosion from gasoline contact with hot engine.

ELECTRICAL SAFETY – ELECTRIC MOTOR
AGGREESSOR™ and BIGFOOT™ electric motor pressure washers are available in a wide variety of motor sizes, voltage and phase combinations. Each single-phase model is equipped with a power cord and plug. Three phase models are furnished with cord but without plug. A suitable power plug must be installed on the power cord to match the configuration of available power outlets. The power supply must be the proper voltage and phase to match the motor. The AGGRESSOR™ series and model IE do not require a motor starter and may be directly plugged into a suitable power outlet at the proper voltage and phase. The power outlet must have sufficient amperage capacity to supply full load motor operation as follows:

AGGRESSOR™ II	-14 amps	BIGFOOT™ IIIEA-	20 amps
AGGRESSOR™ III	-19 amps	BIGFOOT™ IIIEB-	10amps
BIGFOOT™ IE-	12 amps	BIGFOOT™ IVEA-	26 amps
BIGFOOT™ IIEA -	21 amps	BIGFOOT™ IVEB-	13 amps
BIGFOOT™ IIEB-	14 amps	BIGFOOT™ VE	40/20 amps
BIGFOOT™IIEC-	7 amps	BIGFOOT™VIE-	52/26 amps

Electrical Safety Warnings

DO ensure that machine is properly grounded through the power supply in accordance with the National Electric Code and local codes. If in doubt, have the receptacle checked by a qualified electrician.

DO plug the machine into a GFCI (Ground Fault Current Interrupter) protected outlet, if possible, for maximum safety.

DO wear rubber footgear when operating machine.

DO connect a secondary ground wire (on stationary mounted units) from the frame of the machine to a building structural steel member or an earth ground rod for maximum safety.

DO immediately replace or repair worn or damaged power cords.

DO NOT spray water on the motor, motor starter or any electrical parts.

DO NOT operate the machine outside without protection in rain, snow or wet precipitation.

DO NOT attempt to service the machine without first disconnecting and locking out power supply. Only a qualified electrician or technician must do service.

DO NOT alter, modify or use the machine with any voltage phase or hertz other than that specified on the machine data plate.

DO NOT stand in water while operating this machine.

DO NOT allow machine to operate unattended (unless equipped with optional motor control system).

WARNING: Failure to follow the above safety precautions could result in serious injury or death.

Operational Safety Warnings

DO ensure that the trigger gun is properly secured when the unit is in operation to prevent hose whip.

DO frequently inspect all connections, fittings and hoses for high-pressure water leaks. Any leaks must be immediately repaired to prevent potential injury.

DO immediately replace any pressure hose that shows signs of leaks, damage, excessive wear or if the outer casing is worn through.

DO wear eye protection and gloves when using this machine.

DO open trigger gun momentarily after the pump is shut down to release trapped pressure.

DO NOT attempt to use the machine for anything other than its intended purpose of water pressure cleaning using a hand held gun.

DO NOT run any fluid other than water with or without alkaline detergent through the machine.

DO NOT allow the water stream from the nozzle to contact the skin or any part of the body. Serious injury or death can result.

WARNING: If a water jet of any kind penetrates the skin, seek medical attention immediately.

DO NOT stand directly over the high-pressure hose during operation or while hose is still pressurized after operation.

DO NOT attempt to operate the machine at higher than its rated pressure.

DO NOT operate the machine if any components are worn or damaged.

WARNING: Failure the follow the above safety precautions could result in serious injury or death.

Operation

TO OPERATE

1. Ensure that fuel tank on BIGFOOT™ contains sufficient gasoline and the engine oil is at a safe level.
2. Ensure that the power cord on AGGRESSOR™ and/or BIGFOOT™ E is plugged into a receptacle of proper voltage and current rating.
3. Connect 5/8" heavy-duty water hose to a hose bib (spigot) and connect the male end to the water inlet swivel fitting on the machine.
4. Connect the high-pressure hose to the machine using the quick disconnect fitting.
5. Turn on the water supply to the machine.
6. Place the end of the chemical pickup tube into a container containing a concentrated alkaline liquid cleaning solution that has been formulated to work with cold water. Do not use acid solutions. Ensure that chemical feed valve is open (AGGRESSOR™ models).
7. Start engine – Manual recoil start on BIGFOOT™ I, II, IIIA & IIIB, electric start on all other models. Before starting engine, squeeze the trigger gun momentarily to release trapped pressure.
8. Squeeze trigger on the gun to activate the high-pressure spray to test for proper operation.
9. If a lower rated nozzle pressure is desired, the pressure may be decreased by adjusting the variable pressure unloader valve while observing the pressure gauge. On BIGFOOT™ I, II, III and BIGFOOOT™ IE and IIE, the unloader valve has a black knob that can be turned by hand. On BIGFOOT™ IV and other models, the unloader valve has an adjustment screw that must be turned with a suitable wrench. Turning the

adjustment on the unloader valve clockwise increases pressure and counterclockwise decreases pressure. CAUTION: DO NOT ATTEMPT TO INCREASE PRESSURE HIGHER THAN RATED SYSTEM PRESSURE FOR THE MODEL BEING USED. IF UNLOADER KNOB IS TURNED WITH TRIGGER GUN ON, DAMAGE TO THE UNLOADER MAY RESULT. ALWAYS ADJUST UNLOADER WITH TRIGGER GUN OFF. Note: If pressure is to be changed frequently, it is best to use alternate nozzles instead of unloader valve adjustment. Contact factory for information.

10. Release the trigger on the gun and install the black nozzle.
11. Squeeze the trigger on the gun. A mixture of soap and low-pressure water will exit the nozzle. Adjust the chemical flow. Washer is now ready for cleaning.

Instructions for Use of Chemical Injections System

SMC cold pressure washers are equipped with HI-LO chemical systems. The operating procedure is as follows:

1. Install the black nozzle on the gun.
2. Place the siphon pickup tube into the liquid chemical.
3. Turn on the pressure washer and squeeze the trigger gun. You should get a soft low-pressure water spray and the chemical will be drawn through the tube. It will take a few seconds for the chemical to fill up the system and start to come out the nozzle.
4. Use the gun to apply the soft low-pressure spray of water and detergent to the object or surface to be cleaned, taking care to cover all the surface area with detergent.
5. Release the trigger gun.
6. Remove the black soap nozzle from the gun.
7. Install one of the color coded nozzle on the gun:

   Red – 0° stream
   Yellow – 15° wide fan spray
   Green – 25° wide fan spray
   White – 40° wide fan spray

NOTE: The green (25°) nozzle is used for most applications.

8. Squeeze the trigger gun to get clear high-pressure spray at full system pressure (a few seconds will be required to clear out the chemical already in the system). The high-pressure spray is used to finish cleaning.
9. When the cleaning cycle is complete, put the black nozzle back on, squeeze the trigger and draw clear water through the injector to clear out any chemical residue. Failure to do this will allow chemical to gum up the injector between uses.

To Clean

1. Using low-pressure black soaping nozzle, apply chemical evenly over the surface OF THE OBJECT TO BE CLEANED. If the surface to be cleaned is vertical, work from bottom to top to apply the chemical.
2. Select a color-coded pressure nozzle. See above instructions for use of chemical system. **CAUTION:** Release trigger gun to stop water flow before attempting to change the nozzle.
3. Using high-pressure rinse, direct the water flow onto the surface to be cleaned. Adjust the distance from the nozzle as needed to get desired cleaning effect. On vertical surfaces, rinse from the top down. **CAUTION:** Ensure that all chemical residue is rinsed away. Any chemical not washed away can cause residual deterioration.
4. If any areas are not thoroughly clean after the first pass, repeat steps 1 through 3 until clean.
5. The shut off gun is designed for the convenience of shutting off the water for brief intervals during operation. **CAUTION:** Do not allow trigger gun to remain shut off (no water flow) for longer than 2 minutes at a time to prevent pump damage from heat build up in water system. If the water flow is to be interrupted for longer than 2 minutes, shut off the gasoline engine or electric motor. **NOTE:** If this machine is equipped with optional motor control system, (electric motor driven units), the motor/pump will shut down automatically.

To Shut Down

1. Install black soap nozzle (trigger released – water flow off).

2. Remove chemical pickup tube from chemical container and place the end of tube in a container of clean water.
3. Squeeze the trigger gun and allow the clean water to clean out the chemical system.

Freeze Protection

Mix one gallon of suitable alcohol type anti-freeze with water in the proper ratio to protect to the lowest anticipated temperature. Determine the mixing ratio from the anti-freeze container instructions. The best and most readily available alcohol anti-freeze is automotive windshield washer solvent.

Pour the anti-freeze solution into a suitable container such as a 5-gallon bucket. Connect a 2 to 3 foot length of 3/4" hose to unit and insert the other end into the anti-freeze. Start the engine or turn on motor switch, squeeze gun trigger and allow unit to fill with anti-freeze. If there is water in the unit
, allow pump to run until anti-freeze may be seen exiting the nozzle. Allow the anti-freeze to flow into a 5-gallon bucket to save anti-freeze. Stop engine or turn off motor switch. Washer is now ready for storage.

When washer is to be operated again, connect garden hose to eater supply and turn water on, squeeze gun trigger and let antifreeze drain back into 5-gallon bucket. This procedure must be done after each usage of the washer until freezing conditions no longer exist.

If difficulty is encountered in getting the pump to pick up suction of the anti-freeze from the bucket, do one of two things:

1. Reconnect a water hose to the machine water inlet, turn on the water supply and run pump for a few seconds. This will prime the pump. Disconnect water hose, connect anti-freeze to fill hose and pump housing. When full, drop the hose into the anti-freeze bucket and proceed as above.
2. With anti-freeze hose connected, lift end of hose to a level above the pump and pour water of anti-freeze in the hose to fill hose and pump housing. When full, drop the hose into the anti-freeze bucket and proceed as above.

Maintenance

PUMP LUBRICATION
All AGGRESSOR™, BIGFOOT™ and BIGFOOT™-E models are equipped with oil bath ceramic plunger type pumps. Lubricant level should be checked frequently by observing the sight glass on pump housing. In some BIGFOOT™ gasoline engine units, there is also a separate sight glass on the gear box that should be periodically checked. Normal lubricant level is 1/2 full sight glass. When lubricant is added to the gear box on BIGFOOT™ gasoline engine units, use SAE 90 gear oil.

Pump oil and gear oil should be changed after the initial 50 hours of pump operation and every 500 hours thereafter.

ENGINE MAINTENANCE
All BIGFOOT™ models are equipped with Industrial/Commercial heavy-duty engines. See engine manufacturer's instructions enclosed. Repairs and service can be handled by any engine manufacturer's authorized service center.

BELT MAINTENANCE
On belt-drive models, check belt tension and inspect belts for wear at least once per year. Adjust belt tension, if necessary, to achieve a 1/2" mid span deflection. Worn or frayed belts should be replaced. Belts should only be replaced in complete sets.

CHEMICAL SYSTEM PROBLEMS
If chemical flow does not occur when the black soap nozzle is installed and the chemical valve on the panel is opened, do the following:

1. Check to be sure that the chemical container has chemical in it and that the black nozzle is on the wand.
2. Place the end of chemical suction tube into a container of clear water while system is in operation to flush the chemical injector.
3. If problem still exists, it will be necessary to remove, disassemble and clean the chemical injector to remove hardened chemical residue or foreign material.

NOZZLE COLOR CODING
SMC COLD WATER MODELS

RED	0° Stream
YELLOW	15° Wide Fan Spray
GREEN	25° Wide Fan Spray
WHITE	40° Wide Fan Spray

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TROUBLE SHOOTING GUIDE

SYSTEM	POSSIBLE CAUSES	CORRECTIVE ACTION
Engine won't start. (Gas engine models)	1. Lack of fuel 2. Trapped pressure in gun 3. Discharged battery (BIGFOOT™ IV & V models) 4. Engine needs servicing 5. Pump binding	1. Refill gas tank 2. Momentarily squeeze gun trigger 3. Service battery 4. Service engine 5. Repair or replace unloader
Nozzle pressure too low	1. Nozzle tip partially clogged with dirt. 2. Wrong size nozzle tip 3. Nozzle worn 4. Pump needs servicing 5. Inadequate water supply to machine 6. Unloader improperly adjusted	1. Remove & clean nozzle tip 2. Use correct size nozzle tip 3. Replace nozzle 4. Service Pump 5. Connect to adequate water supply 6. Readjust unloader
Chemical system will not work	1. Chemical container empty 2. Improper nozzle 3. Clogged injector	1. Refill container with chemical 2. Use black nozzle 3. Clean and flush chemical injector system
Nozzle pressure too high	1. Improperly adjusted unloader valve.	1. Adjust unloader
Overload relay on motor starter trips (Electric motor models)	1. Low voltage to machine 2.B ad power cord or plug. 3.I mproper setting on overload relay 4.B ad motor	1. Check power supply 2. Replace defective power cord or plug 3. Set relay setting slightly higher than normal amperage 4. Check motor

FOR SERVICE ASSISTANCE OR PARTS NEEDS CONTACT:

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