Distributor Delivery - Check List
Operator Instructions - Check List

Machine: _____

Customer: _____

Serial#: _____

Salesman: _____

Safety

1. Run only in well ventilated area, do not run inside (HN Series excluded, if ducted outside)
2. Gas only in gas tank (Shut off before refueling)
3. Diesel only in diesel tank (Shut off before refueling)
4. Avoid contact with coil, mufflers, exhaust, & hoses to prevent burns
5. Keep others and children away from area being cleaned to prevent personal injury
6. Do not point the gun at anyone or any part of the body.
7. Electric machines:
    a. Don't operate in wet area
    b. Keep cords and plugs dry and grounded (Do not use extension cords)
    c. Hook up only to proper voltage and amperage circuit as explained in operation manual.
8. Never operate in presence of flammable vapors, dust, gases, etc.
9. Do not hose off or spray off machine, keep water out of all electrical components including generator, motor, transformers, etc.
10. Wear safety glasses and protective clothing

Before Start-Up

1. Check engine and pump oils daily, add as needed, check before starting to avoid hot muffler contact.
2. Check for adequate water supply
3. Check to be sure all power switches are off
4. Turn engine to on, choke, turn key to start, shut off choke (Plug in and turn power switch on for electric powered units)
5. After engine is running burner switch may be turned on
6. Chemical metering valve - adjust as needed - rinse soap line when finished - keep closed when not in use
7. Thermostat setting – 250°F when using steam nozzle
8. Nozzles 0°=high impact, 15°=normal use nozzle, 40°=rinse nozzle, Low Pressure=car wash, low impact, Steam nozzle=use when very high temperature as needed (lock collar on nozzle quick connect)
9. Clear rocker switch turns on auxiliary power located on back of electrical box (1000 watts max), (SC only)
10. Checks for leaks in hoses and guns, or damaged electrical cords, get repaired immediately to avoid personal injury.
11. If the burner fires when the trigger spray gun is not pulled, get repaired immediately to avoid personal injury

Shut Down

1. Burner switch to off position
2. Rinse and close chemical valve
3. Run machine until cold water comes out, turn off unit
4. Release pressure from hose
5. Add antifreeze to unit if necessary

Automatic ON/OFF Units (CN, HX, HG)

1. After trigger is released, motor will run for 60 seconds, then turn off (HG Series turns off without delay). Pull trigger gun and motor will restart.
2. Turn off rocker switches at the end of each work day, or when not using machine for an extended period pull the trigger on the spray gun to relieve locked pressure.
3. Disconnect all electrical power to machine before doing any service, because the machine can start up at any time.

Maintenance

DESCRIPTION	TYPE	QUANTITY
Gas Engine Fuel	Unleaded Regular 87 Octane	.5 to 7.5 Gallons
Engine Oil	SAE 30 WT Detergent Oil	1.3 to 2 quarts w/ filter
Pump Cat Oil	Cat Hydraulic 10/W/30	10 to 25 ounces
Pump AR Oil	General Hydraulic or 30/W/non-detergent	12 to 24 ounces
Diesel Burner	Diesel #2 or Kerosene, Clean filters as needed	7.5 to 18 gallon

Delivery Paperwork

1. Operation Manual delivered-Show safety warnings, operation, trouble shooting, and warranty card
2. Service Contract delivered and explained (Optional)
3. Gun / Wand / Hose & Accessories delivered

SEE Operation & Service Manual for complete information

(Salesperson to explain these items upon delivery. Customer should read and understand the Manual before operation)

INSTALLATION GUIDELINES

Refer to the Operation Manual for additional information. All installations are to be performed by qualified technicians.

Electric Systems including the Hot-2-Go, HG, HD, HX, and CPE series:

2 HP systems require a 20-ampere 115V dedicated receptacle and rated plug. Do not bend the prongs on the plug to make it fit a 15 AMP outlet.
All other portable 5, 6, and 6.5 single phase electric motor systems, require connection to a wall mounted 30 amp rated motor disconnect switch at each operating site via S, ST, STO, SOO, or STOO waterproof type power cable with a GFCI. This connection maybe directly hardwired or through a properly rated NEMA plug and receptacle. The disconnect switch should be fused or connected directly to a properly rated circuit breaker equal to 1.25 times the system full load operating current. Three phase systems do not require a GFCI, but it is recommended.

Complete all electrical installations using the wire sizes specified below. Do not use extension cords! Do not employ wire runs in excess of 100 feet without increasing wire size accordingly. Call factory for additional information.

Single Phase	Code	AWG Wire Size	Three Phase	Code	AWG WIre Size
1.5 HP-120V	-E1	#14			
2 HP-120V	-E1	#12	6 HP-230V	-E3	#12
5 HP-208/230V	-E2	#10	7.5HP-230 & 480V	-E3,E4	#12
6.5 HP-230V	-E2	#10	10 HP-480V	-E4	#12
7.5 HP-230V	-E2	# 8	10HP-230V	-E3	#10
10 HP-208/230V	-E2	# 6	10HP-208V	-E3	# 8

Permanent installations should be wired with rated electrical conduit using THHN, THWN or THW type electrical wire with the same disconnect switch, over current protection device and wire sizes specified above. The disconnect switch should be visible and within 20 feet of the operating system.

All systems should be installed in a dry operating environment and not be exposed to flammable liquids, fumes, solvents, gases or dusts or enclosed in a manner that will prevent air circulation, easy service and repair. Permanent installations shall have at least 36 inches deep of free clearance in front of the front control panel.

Confirm electrical system operating voltages between each phase and check motor current amp draw on each phase while operating under full load. This operating current must not exceed the nameplate ampere rating of the motor nor vary more than five percent between phases. If this current is too high, reduce the operating pressure until the current is equal to or less than the motor nameplate rating. Never increase the system operating pressure for any reason above this point. For 208V applications: motors, transformers, and electrical contactor must be rated or rewired for 208V and voltage/amperage must match nameplate on motor.

Do not install systems where there is a chance of freezing.

Electric Natural Gas Fired Systems:

All natural gas fired systems are permanently installed with the same electrical requirements specified above.
Confirm the gas supply is adequate and the installation complies with the following table:

Natural Gas / Liquid Propane Supply Installation

Requirements:
4 GPM water = 360,000 BTU
5 GPM water = 440,000 BTU
7-8 GPM water = 660,000 BTU
Natural Gas: 4" Water Column
Liquid propane: 12" Water Column

Pipe Chart: For 440,000 BTU

Length	Pipe Size
0-50'	1 ¼"
51-150'	1 ½"
151-200'	2"

Refer to "pipe chart" for proper pipe size. If inadequate supply pipe is used, the water will not heat to spec. and/or a volatile ignition will occur. Every fitting counts as an additional 10' of pipe length

All HN Series systems should be installed at the height above ground level required by local building and safety codes. Locate HN Series systems with the exhaust port at least 24 inches from any vertical surface and 72 inches below any horizontal surface. Vent burner exhaust outside building with 10" ducting and use the draft diverter, Part# BGD10 on all installations to maintain proper heat rise and flame retention. Installations above 2000 ft may require modifications to burner jets, check with a factory service technician.

All systems should be securely anchored to an appropriate foundation in a well-ventilated area away from exposure to moisture, drafts and wind to insure proper burner operation. Systems should not be installed where exposure to flammable gases, fumes, solvents, dusts or other combustible materials is possible.

- Do not install HN systems in closed rooms without providing adequate venting for fresh air circulation to insure proper burner operation.
- Do not install systems where there is a chance of freezing.
- Install filter when using rigid supply plumbing.
- Gas regulator may be needed if gas pressure is too high.

Gas and Diesel Engine Driven Systems:

For permanent installations, anchor all units with four 0.375 Grade 5 (or harder) bolts through existing frame holes. Use 3 inch minimum concrete anchors or through bolts on truck or trailer beds with lock nuts or washers. If unit is fed with water supply tank, use 3/4" hose, fittings and filter and confirm that pump inlet vacuum does not exceed 5" hg on units up to 7 gallons per minute. Use 1" hose on 8 – 10 gallon per minute machines.

For engine driven units mounted within closed van type vehicles, provide an external engine exhaust line that is larger in diameter than the factory exhaust pipe and vent this exhaust to the outside of the vehicle, but not below the vehicle's interior floor height. Also, insure that adequate fresh air circulation exists with in the van for engine cooling purposes to prevent heat build up and for engine fresh air intake. At least 12 inches clearance is recommended on all sides of the unit. Provide a burner exhaust vent to the outside through the van roof that is at least 8 inches diameter, or through the side panel that is at least 10 inches in diameter, and position this vent to avoid water, dirt and debris collection. No flammable liquids, aerosols, flammable materials, should be stored within 24" of the unit and should not be stored below the unit. During the refueling of the unit ALL ignition sources and switches should be OFF and there should be a person with the proper fire extinguisher and training within the vicinity of the unit in case of a fire. Unit should not be left running unattended or out of site.

For units with 120-volt generators and burners, do not install where the generator, burner or other 120-volt electrical components maybe exposed to moisture, dust, flammable gases, fumes or solvents.

Trailer Systems:

Position unit on trailer to insure a minimum of 9% tongue weight under loaded and unloaded conditions. Do not exceed max GVW rating for trailer, hitch, or vehicle towing capacity. State DMV regulations differ, confirm the trailer conforms to your state's code. Check lug nuts and bolts for tightness. If equipped with electric trailer brakes, a brake controller and wiring plug will need to be installed that matches your tow vehicle.

INSTALLATION PERFORMED TO THESE GUIDELINES BY _____ ON _____ (date)