

# WRANGLER 1708CE/2008CE

## IMPORTANT SAFETY INSTRUCTIONS



**WARNING:** Failure to observe these instructions can cause personal injury to machine operator or bystanders.



**WARNING:** Shock or electrocution hazard. **ALWAYS** unplug machine before performing any maintenance or service.



**WARNING:** Shock or electrocution hazard. **NEVER** connect this machine to an electrical outlet that is not properly grounded.



**WARNING:** Fire or explosion hazard. **NEVER** operate this machine in an explosive atmosphere (grain dust, flammable liquids or fumes, etc.).



**WARNING:** Fire or explosion hazard. **NEVER** attempt to pick up flammable or combustible materials or use such materials in tank.

### INTENDED USE

This machine is designed for scrubbing floors in an indoor environment. NSS does not recommend using this machine for any other purpose.

### FOR SAFETY:

- **ALWAYS** read and understand all instructions before operating or servicing machine.
- **ALWAYS** use this machine **ONLY** as described in this manual.
- **NEVER** attempt to operate this machine unless you have been trained in its operation.
- **NEVER** allow an untrained person to operate this machine.
- **NEVER** attempt to operate this machine if it is not working properly or has been damaged in any manner.
- **NEVER** disconnect or modify any switches or safety devices (circuit breaker).
- **NEVER** leave the machine plugged in to the electrical outlet when not in use.
- **NEVER** unplug the machine from an electrical outlet until after the machine is turned off.
- **NEVER** operate this machine if the cord and/or plug has been damaged, broken, cut, abraded or taped.
- **NEVER** handle the machine, cord or plug with wet hands.
- **ALWAYS** replace the entire cord when the cord or plug is damaged in any way.
- **NEVER** pull machine by the cord.
- **NEVER** operate this machine with any air opening blocked. Keep all air openings free of dust, lint, hair, etc.
- **NEVER** drop or insert any object into any machine opening.
- **NEVER** pick up anything that is burning or smoking, such as cigarettes, matches or hot ashes.
- **NEVER** spray this machine with water or any liquids.
- **NEVER** allow the vacuum motor to get wet.
- **NEVER** operate this machine with the side skirt removed.
- **NEVER** allow this machine to be used as a toy. Close attention is necessary when used by or near children.
- **ALWAYS** wear clean tennis shoes or "non-slip" shoes. Leather sole shoes will be extremely slippery.
- **ALWAYS** keep face, fingers, hair or any other body part or loose clothing away from any machine opening or moving part (revolving brush, pad driver, or vacuum motor).
- **ALWAYS** unplug the machine when attaching pads or brushes.
- **ALWAYS** be sure that the ramp is secured to the vehicle before attempting to load/unload.
- **ALWAYS** use extreme caution when operating the machine on a ramp or loading/unloading this machine into or out of a truck/trailer. Use extreme caution if the ramp is wet, oily, or covered with cleaning chemicals.
- **NEVER** stop or turn the machine on a ramp or incline.
- **NEVER** attempt to climb a grade or operate this machine on a ramp or incline of more than 8 degrees.
- **NEVER** park or store the machine near a dock, on ramps, near a furnace, boiler, open flame, or other high heat source.
- **NEVER** allow this machine to freeze.
- **NEVER** expose the machine to rain, snow, or extreme temperatures.
- **NEVER** store any items on this machine.
- **ALWAYS** store this machine indoors in a dry, cool area.

**ALL REPAIR SERVICE MUST BE PERFORMED BY AN NSS AUTHORIZED DISTRIBUTOR/ SERVICE STATION USING ONLY NSS ORIGINAL EQUIPMENT PARTS.**

**SAVE THESE INSTRUCTIONS**



# IMPORTANT SAFETY INSTRUCTIONS

## GROUNDING OF ELECTRICAL EQUIPMENT



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

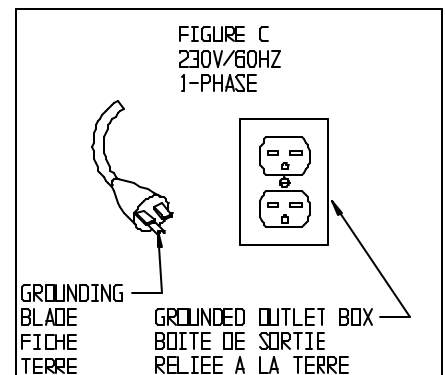
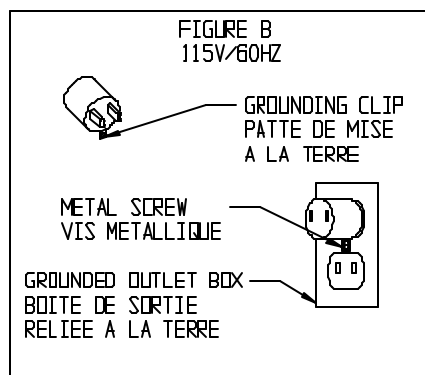
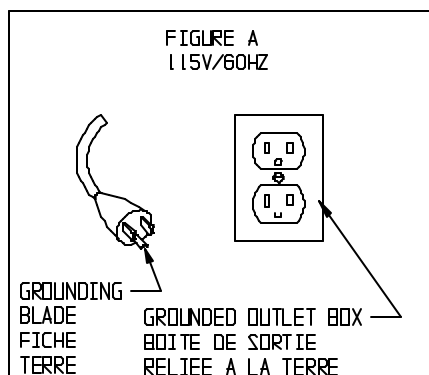
Always use a properly grounded 3-wire extension cord which has male and female plugs. If 25 foot extension cords are used, the electrical carrying capacity should be no less than 14-3 ST. For 50' foot extension cords no less than 12-3 ST.

### GROUNDING INSTRUCTIONS

This machine shall be grounded while in use to protect the operator from electric shock. The machine is provided with a three-conductor cord and a three-contact grounding type attachment plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances. The green conductor in the cord is the ground wire. Never connect this wire to anything other than the grounding pin of the attachment plug.

Check nameplate on the machine to be sure voltage and cycle stated is the same as the electrical outlet. Do not attempt to plug a 120 volt machine into a 240 volt outlet or a 240 volt machine into a 120 volt outlet. If the machine is provided with an attachment plug as shown in Figure A below, it is intended for use on a nominal 120 volt circuit. If a properly grounded receptacle as shown in Figure A is not available, an adapter may be installed as shown in Figure B if the outlet box that houses the receptacle is grounded. Be sure to fasten the grounding tab (the green colored rigid ear, lug or the like extending from the adapter) with a metal faceplate screw.

If the machine is provided with an attachment plug as shown in Figure C, it is intended for use on a nominal 240 volt circuit. No adapter is available for this plug.



NOTE: In Canada, the use of a temporary adaptor is not permitted by Canadian electrical code.

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## MACHINE INSPECTION

- Carefully unpack the Wrangler 1708/2008 and recycle all packing materials.
- Inspect machine for damage or missing components. If damage is found, contact the local freight company and file a freight claim.

## DAILY USE

The Wrangler 1708/2008 is very maneuverable and is designed to scrub floors as you operate the machine from behind. **Always** dust mop the floor before scrubbing. You may also need to **preclean** some types of spills or stains before scrubbing. Plan your work so that you make long, straight paths with the fewest amount of turns possible. Remove as many obstacles as possible from the area to be scrubbed. The Wrangler 1708/2008 is designed for light to medium scrubbing. Consult your local NSS distributor for more complete procedures and chemical advice.

## MACHINE COMPONENTS AND OPERATION

### Solution Tank

The solution tank is the lower part of the machine body. The tank has a capacity of **8 gallons (30 liters)** and is filled by pouring the water and cleaning chemicals through the mesh covered opening at the front of the machine. Drain the solution tank through the solution valve or the sight hose at the rear of the machine.

### To prepare the solution tank:

- **Never** use water over 140°F (60°C). Excessively hot water **may** damage components such as the tanks.
- Pour all liquids through mesh filter at the front of the solution tank.
- Put 1 to 2 gallons of clean water into the solution tank first to help dilute the chemicals and prevent excess sudsing.
- Do not put strip solution in solution tank. Apply with mop and bucket and rinse with clean water in solution tank.
- Consult your local NSS distributor for complete chemical advice. Dilute the cleaning chemicals according to the manufacturer's instructions.
- Add the cleaning chemicals to the solution tank and fill with water as needed.

### Recovery Tank

The recovery tank is the upper part of the machine body. The tank has a capacity of **10 gallons (38 liters)**. The recovery tank is closed by a rectangular, clearview lid assembly. The recovery tank has a foam-sensitive float shut-off assembly. As the water or foam level rises, the float ball will rise and shut off the air flow of the vacuum motor to the squeegee. It does **not** shut off the vacuum motor. Drain the recovery tank through the black hose at the rear of the machine.

### To prepare the recovery tank:

- **Always** use a defoamer to protect the vacuum motor of this machine. **Every time** you empty the recovery tank, we recommend that you add at least 4 to 6 ounces of defoamer chemical into the recovery tank before resuming work. Vacuum the defoamer into the empty recovery tank through the squeegee vac hose.
- Make sure the recovery tank drain hose is tight on the plug.

### Squeegee Assembly

The squeegee assembly is packed in a box inside of the main shipping carton. Remove the squeegee assembly from the box and inspect for concealed damage. The squeegee assembly has a wide, flat frame to help prevent damage, two (2) mounting knobs, and two (2) small wheels to prevent "rollover" in reverse.

### To install the squeegee assembly:

- Place the squeegee lift arm in the storage (up) position.
- Loosen the two mounting knobs and slide the squeegee assembly onto the mounting plate. The roller wheels must face the operator.
- Hand tighten the mounting knobs. Do **not** use tools to tighten the knobs as this will defeat the "breakaway" design.

### To adjust the squeegee assembly:

- As the Machine is used, the squeegee blades will wear or need to be replaced due to damage. Some adjustment may be needed.
- Squeegee blades should lay over slightly (like a window squeegee) when the machine is moving forward or in reverse.
  - Adjust the blade angle by turning the wing nut on the pivot arm clockwise/counterclockwise.
  - Do not add any weights or other pressure to the squeegee mechanism. It will not improve the performance or service life.

### To install a brush or pad driver and pad:

- There are a wide range of pads or brushes available for the many cleaning applications of this machine. Consult your local NSS distributor for application recommendations.
- Turn off all switches and empty all liquids from the recovery and solution tank.
  - Raise the brush motor into the "up" position. The foot pedal is at the rear left of the machine. Step on the pedal and slide it to the right into the notch.
  - Step on the foot pedal latch at the *front* of the machine chassis.
  - Lift the machine body by the opening for the solution tank. Tilt the machine body backward until the handles rest on the floor.

**For BRUSH Attachment:**

- Align the notches of the brush with the lugs of the drive casting.
- Turn the brush clockwise to lock onto the drive casting.
- Turn the brush counter-clockwise to remove.

**For PAD DRIVER and PAD Attachment:**

- Remove pad driver assembly from drive casting on end of brush motor shaft by turning the driver counter-clockwise.
- Turn the pad driver upside down on the floor. Remove the pad holding cup.
- Remove the center cutout of the 17" (43cm) or 17" (43cm) pad if present and place pad on the face of the pad driver. The pad *must be centered* on the driver to prevent wobbling or bouncing.
- Install and secure the pad holding cup to the pad driver. Turn the pad driver over so that the pad faces the floor.
- Align the notches of the pad driver with the lugs of the drive casting.
- Turn the pad driver clockwise to lock onto the drive casting.

**Control Panel**

The operator control panel is located at the rear area of the machine. This panel has components that control various machine functions.

Starting from the *left* side:

- The circuit breaker is for both the brush motor and the vacuum motor.
- The first switch turns the brush motor on and off .
- The next switch turns the vacuum motor on and off.
- The battery meter shows the state of charge of the batteries during operation.

## ROUTINE MAINTENANCE

At the completion of every use you must perform these simple procedures to ensure proper machine operation and cleaning performance.

### Daily Maintenance

- Empty and rinse clean the recovery tank.
- Leave lid off recovery tank to prevent moisture from building up.
- Remove and rinse clean the squeegee assembly.
- Remove and rinse clean the pad driver or brush.
- Inspect machine components for wear or damage. Repair or replace as needed.

### Weekly Maintenance

- Verify all daily maintenance has been performed.
- Check solution flow to pad driver/brush. Flush clean solution tank and hose with a mixture of 8oz. (250ml) vinegar to one gallon (4 liters) warm water.
- Inspect squeegee hose for clogs and holes. Be sure red access cap inside tank is in position.

### Monthly Maintenance

- Verify all daily and weekly maintenance has been performed.
- Lubricate the axle bearings of the two large 8" (20cm) wheels. Use a high grade water-resistant grease.
- Lubricate the caster with moisture resistant foaming-type spray.

### MANDATORY Periodic Maintenance

It is important for you to maintain a record of the amount of machine operating hours in order to perform this machine maintenance. It is **mandatory** that the following maintenance procedure be performed at the described interval. This procedure should be performed by an authorized NSS distributor or service center. Failure to perform this procedure may result in poor machine performance, machine component damage and failure.

- Inspect brush drive motor and vacuum motor carbon brushes for wear at 750 hours.
- Replace brush drive motor carbon brushes when they are 1/2" (13mm) in length.
- Replace the vacuum motor carbon brushes when they are 7/16" (11mm) in length. This can be done one time and then the vacuum motor must be replaced.

## TROUBLE-SHOOTING

<u>PROBLEM</u>	<u>CAUSE</u>	<u>SOLUTION</u>
No solution flow.	Clogged filter. The solution valve is closed. Obstruction in the solution hose. Solution valve or linkage damaged. Solution hose kinked. Solution tank is empty.	Clean filter. Open the solution valve. Remove the obstruction. Repair/replace the valve linkage. Check for kinks at valve and remove. Fill the tank.
Solution flow does not stop.	The solution valve is open. Solution valve or linkage damage. Solution valve is dirty. Damaged seat and washer in valve. The valve stem is dirty. Hose disconnected or damaged between sol. tank & valve.	Close the solution valve. Repair/replace the valve linkage. Clean the solution valve. Replace valve. Clean and lubricate valve stem. Reinstall or replace hose.
Will not pick up any water from floor.	Squeegee is up. Squeegee hose is off. Vac motor switch is off. Recovery tank is full. Vacuum shut-off float is stuck. Obstruction/damage in the squeegee, squeegee hose or standpipe. Leaking over gasket. Vac motor is not running. Recovery drain hose not plugged properly.	Lower squeegee. Reinstall hose. Turn vac motor switch "on". Empty tank. Open float valve/remove obstruction. Remove obstruction/repair damage.  Remove old gasket/replace. Have an authorized serviceman repair. Install drain hose plug properly.
Will not pick up all of the water from the floor.	Debris on squeegee blades. Squeegee blade is worn/damaged. Obstruction/damage in the squeegee, squeegee hose, or standpipe. Squeegee angle needs adjustment. Vacuum motor worn out. Recovery tank drain hose damaged.	Clean squeegee Reverse/replace squeegee blade. Remove obstruction/repair damage.  Adjust angle. Repair/replace vac motor. Repair/replace recovery drain hose.
Cleaning is not even.	Brush/pad is worn. Damage to brush assembly, casters or solution valve.	Replace brush/pads. Have an authorized serviceman repair.
Machine does not run.	Circuit breaker tripped.	Reset circuit breaker.

**NOTE: If any problems remain after taking the above steps, contact your local authorized distributor/service station for further evaluation and repair.**

**NOTES:**



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