

WP 05-WH1404

Revision 6

Advance 5000B Floor Scrubber, 41-W-001A & B

Technical Procedure

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APPROVED FOR USE

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INTRODUCTION^{1, 2, 3, 4}

This procedure provides instructions for operating the Advance 5000B Floor Scrubber, 41-W-001A & B. An Equipment Logbook is attached to the floor scrubber and is used to record outstanding deficiencies, fluid addition, and other corrective actions.

Performance of this procedure creates records that are documented in the Equipment Logbook.

REFERENCES

BASELINE DOCUMENTS

- WP 02-RC.01, Hazardous and Universal Waste Management Plan
- WP 10-WC3011, Maintenance Process
- WP 12-IS.01, Industrial Safety Program - Structure and Management

REFERENCED DOCUMENTS

- 41-W-001, *Advance Hydro Retriever 5000B Operation and Maintenance Manual*
- WP 04-AD3011, Equipment Lockout/Tagout

PRECAUTIONS AND LIMITATIONS

- The Waste Handling Engineer (WHE) must be contacted immediately if operator doubts the safe operating condition of the scrubber.
- If preoperational checks do not meet satisfactory completion, the scrubber shall be operated **ONLY** after it has been serviced and/or repaired, and a satisfactory preoperational check has been performed.
- The recovery tank **MUST NOT** be filled over one inch from top. Also, powdered chemicals **MUST NOT** be used **UNLESS** solution is premixed prior to filling tank.

PREREQUISITE ACTIONS

- 1.0 Perform preoperational checks prior to the first operation of a scrubber on any shift.
- 2.0 Verify area contamination levels are less than established U.S. Department of Energy (DOE) limits requiring radiological controls prior to operating floor scrubber.

- 3.0 WHE, determine if equipment can be safely operated with an identified deficiency in accordance with 41-W-001. WHE **SHALL** perform the following prior to releasing equipment for operation:
- Determine any special temporary operating instructions.
 - Initiate CAUTION tags, as applicable, in accordance with WP 04-AD3011.

PERFORMANCE

1.0 PREOPERATIONAL CHECKS

- 1.1 Record hour meter reading in Equipment Logbook.

NOTE

Deficiencies such as removing obstacles, cleaning spilled liquids, and removing trash may be corrected while performing checklist.

- 1.2 Inspect for the following prior to scrubber use (inspections are required only on days when equipment is used):
- General Condition: No damage, loose parts, oil leaks, grease, oil, or trash
 - Battery Compartment: Free from acid spills, no loose or missing caps/cables
 - Lugs tight
 - Tires in good condition, etc.
 - Fire extinguisher
- 1.3 Turn Master Key to ON and verify the following:
- Driving lights Illuminate
 - Warning lights Illuminate
 - Horn sounds
- 1.4 Drive unit in travel mode (forward and reverse) to test the following:
- Steering operates smoothly and does not pull to either direction
 - Brakes in good condition and do not drag
- 1.5 Stand up and verify the seat switch cuts off drive power.

- 1.6 Verify charge meter indicates in WORK RANGE.

CAUTION

To prevent damage to scrubber, the scrubber **MUST NOT** be driven in reverse with squeegee **DOWN**.

- 1.7 Place squeegee lever in DOWN and verify the following:
- 1.7.1 Vacuum motor starts.
 - 1.7.2 Squeegee DOWN indicator light comes ON.
 - 1.7.3 Squeegee has full contact with floor.
- 1.8 Place squeegee lever in UP and verify the following:
- 1.8.1 Vacuum motor stops.
 - 1.8.2 Squeegee DOWN indicator light goes OFF.
- 1.9 Place scrub brushes switch in DOWN and verify the following:
- 1.9.1 Scrub brushes lower to floor.
 - 1.9.2 Scrub brushes DOWN indicator light comes ON.
- 1.10 Move solution lever towards OPEN to verify solution spray operates.
- 1.11 Move solution lever to CLOSED.
- 1.12 Place scrub brushes switch in UP and verify the following:
- 1.12.1 Scrub brushes raise off floor.
 - 1.12.2 Scrub brushes DOWN indicator light goes OFF.
- 1.13 Place broom lever in SWEEP and verify the following:
- 1.13.1 Broom lowers to floor.
 - 1.13.2 Broom DOWN indicator light comes ON.

- 1.14 Place broom lever in UP and verify the following:
 - 1.14.1 Broom raises off floor.
 - 1.14.2 Broom DOWN indicator light goes OFF.
- 1.15 Initiate Action Requests (ARs) to address any deficiencies that cannot be corrected by Waste Handling Operations (WHO).
- 1.16 Notify the WHE of the operational status of the floor scrubber, and of any deficiencies discovered during checks, and their status (corrected, ARs generated, etc.).
- 1.17 Record the following in Equipment Logbook:
 - Verified area contamination levels are less than established DOE limits requiring radiological controls.
 - Verified equipment status – satisfactory or unsatisfactory
 - Any corrective actions taken
 - Deficiencies which were not corrected
 - Outstanding/newly generated ARs
- 1.18 Enter time and date, and sign Equipment Logbook to document performance of preoperational checks.

2.0 SCRUBBER START-UP

- 2.1 If scrubber battery has been charged, perform the following to disconnect scrubber from battery charger:
 - 2.1.1 Ensure CHARGE lights on charger are OFF.
 - 2.1.2 Disconnect charger power cord from scrubber battery power plugs.
 - 2.1.3 Connect battery power plugs to scrubber power plugs.
- 2.2 Ensure preoperational check for current shift is complete in Equipment Logbook.
- 2.3 Turn Master Key to ON.
- 2.4 Turn lights ON, as necessary.

- 2.5 Release parking brake.
- 2.6 Depress foot control pedal for traveling.

NOTE

Broom FULL FLOAT should be used only on very irregular or uneven floors. Use at other times gives poor sweeping service and increases wear on broom.

3.0 SCRUBBER OPERATION

- 3.1 Sweep area prior to scrubber use if area is heavily littered.
- 3.2 If sweeping function is required, place broom lever in SWEEP.
- 3.3 Verify the following occurs:
 - Broom motor starts
 - Broom lowers to floor
 - Broom DOWN indicator light comes ON
- 3.4 Place broom lever in UP when sweeping function is NOT required.
- 3.5 Verify the following occurs:
 - Broom motor stops
 - Broom raises to UP position
 - Broom DOWN indicator light goes OFF

CAUTION

To prevent damage to scrubber, the scrubber MUST NOT be driven in reverse with squeegee DOWN.

- 3.6 Place squeegee lever in DOWN if squeegee is required.
- 3.7 Verify the following occurs:
 - Squeegee lowers to floor
 - Vacuum motor starts
 - Squeegee DOWN indicator light comes ON

- 3.8 Place squeegee lever in UP when squeegee is no longer required.
- 3.9 Verify the following occurs:
- Squeegee raises to UP position
 - Vacuum motor stops
 - Squeegee DOWN indicator light goes OFF
- 3.10 Place scrub brushes switch in DOWN if scrub brushes are required.
- 3.11 Verify the following occurs:
- Scrub brushes lower to floor
 - Brush motor starts
 - Scrub brushes DOWN indicator light comes ON
- 3.12 Place scrub brushes switch in UP when scrub brushes are no longer required.
- 3.13 Verify the following occurs:
- Scrub brushes raise to UP position
 - Brush motor stops
 - Scrub brushes DOWN indicator light goes OFF

NOTE

Too much solution can affect pickup performance and sweeping effectiveness. Solution CANNOT be dispensed without scrub brushes operating.

- 3.14 Move solution lever towards OPEN to dispense amount of solution desired.
- 3.15 Move solution lever to CLOSED when cleaning solution is no longer required.
- 3.16 Begin scrubbing with slow, even, forward pedal pressure, since scrubbing results will usually be best when done at low speed.

NOTE

If all solution is not picked up, too much solution is being dispensed **OR** squeegee adjustment may be required.

- 3.17 Ensure all solution is being picked up.
- 3.18 If excessive foaming occurs while scrubbing, add defoaming agent to recovery tank.
- 3.19 If double scrubbing is required due to very dirty floors, scrub as follows:
- 3.19.1 **DO NOT** attempt to scrub too large an area at one time to prevent area from drying.
 - 3.19.2 Make first pass with squeegee UP to allow solution more time to work.
 - 3.19.3 Make second pass with squeegee DOWN to pick up accumulation.
- 3.20 Perform the following if DRAIN RECOVERY TANK warning light comes ON, signifying filling of recovery tank:
- 3.20.1 Immediately raise scrub brushes.
 - 3.20.2 Raise squeegee.
 - 3.20.3 Perform Section 5.0, Emptying Recovery Tank.
 - 3.20.4 Perform the following, if required.
 - Section 6.0, Emptying Debris Tray
 - Section 8.0, Refilling Solution Tank
- 3.21 When scrubbing is completed, **GO TO** Section 4.0, Scrubber Shutdown, and shut down scrubber.

4.0 SCRUBBER SHUTDOWN

- 4.1 Ensure scrubber is clear of exits, access to stairways, and fire equipment.
- 4.2 Engage parking brake.

4.3 Ensure the following:

- Headlights switch is in OFF.
- Scrub brushes switch is in UP.
- Squeegee lever is in UP.
- Broom lever is in UP.
- Solution lever is in CLOSED.

4.4 Turn Master Key to OFF.

4.5 **GO TO** Section 5.0 followed by Section 6.0, and Section 7.0, Cleaning Scrub Brushes, perform all steps in sequence, and **RETURN TO** Step 4.6.

4.6 Clean vacuum filter as follows:

4.6.1 Open right rear access panel.

4.6.2 Open small filter door.

4.6.3 Remove filter.

4.6.4 Rinse filter in clean water.

4.6.5 Wring out and dry filter thoroughly.

4.6.6 Replace filter.

4.6.7 Close small filter door.

4.6.8 Close right rear access panel.

4.7 Flush vacuum hose and pickup tool as follows:

4.7.1 Open left side rear access door to recovery tank.

4.7.2 Run water down through pickup tube (left side of tank from rear of machine).

4.7.3 Ensure full length of tool between blades is clear of obstructions, cleaning tool, and blades as necessary.

4.7.4 Verify blades for wear and tear.

4.7.5 Close left side rear access door to recovery tank.

- 4.8 Clean outside of machine using a clean, damp cloth, moistening cloth with auto wax for extra protection.
- 4.9 Inspect machine for loose or damaged parts.
- 4.10 **IF** charge meter indicates low in WORK RANGE, or out of WORK RANGE,
THEN perform Section 9.0, Normal Battery Charge.

NOTE

Sections 5.0 through 9.0 will be performed only when required.

5.0 EMPTYING RECOVERY TANK

- 5.1 Ensure master key is in OFF and parking brake is engaged.
- 5.2 Open left side rear access door.

NOTE

The recovery tank can be tipped in its mount for sludge removal and flushing.

- 5.3 Remove drain valve from hanger and empty tank.
 - 5.4 Deposit water into a collection container or dump water into sanitary sewer.
 - 5.5 Flush tank and drain hose with clean water.
 - 5.6 Clean and apply a light coat of grease to drain valve, if necessary.
 - 5.7 Replace drain valve on hanger.
 - 5.8 Close left side rear access door.
- 6.0 EMPTYING DEBRIS TRAY**
- 6.1 Ensure master key is in OFF and parking brake is engaged.
 - 6.2 Open lower broom access panel on right side of machine.
 - 6.3 Open broom access door by twisting handle.
 - 6.4 Slide tray out of machine.
 - 6.5 Empty tray.
 - 6.6 Flush tray with water to clean perforations.

- 6.7 Slide tray into machine.
- 6.8 Close broom access door.
- 6.9 Close lower broom access panel.

7.0 CLEANING SCRUB BRUSHES

- 7.1 Ensure master key is OFF and parking brake is engaged.
- 7.2 Ensure scrub brushes switch is in UP with scrub brushes raised.
- 7.3 Remove four brushes as follows:
 - 7.3.1 Disengage each spring lock on each scrub brush holder.
 - 7.3.2 Rotate each brush so lugs are aligned to pass through slots in holder.
 - 7.3.3 Lower each brush from brush holder.
 - 7.3.4 Slide each brush from under brush holder.
- 7.4 Rinse brushes under running water.
- 7.5 Inspect brushes for wear.
- 7.6 Replace with new brushes, if necessary.
- 7.7 Reinstall four brushes as follows:
 - 7.7.1 Slide each brush under brush holder.
 - 7.7.2 Lift each brush so lugs pass through slots in holder.
 - 7.7.3 Lock each brush in place by twisting brush to engage lugs in spring locks.

8.0 REFILLING SOLUTION TANK

- 8.1 Ensure master key is in OFF and parking brake is engaged.
- 8.2 Open solution tank cover.

8.3 Fill solution tank:

- 8.3.1 If using powdered chemicals, premix cleaning solution in accordance with manufacturer's recommendation.
- 8.3.2 Fill tank with correct mixture of clean water and appropriate cleaning solution in accordance with manufacturer's recommendation.

8.4 Close solution tank cover.

9.0 BATTERY CHARGING

CAUTION

Batteries shall not be charged unless conditions in prerequisite actions, **OR** Step 4.10, are met. Except for emergencies, charger shall be allowed to complete charge cycle since partial charges, or charges starting at near full capacity, significantly shorten battery life.

- 9.1 Move scrubber to charging area.
- 9.2 Apply parking brake.
- 9.3 Turn master key to OFF.
- 9.4 Open right side door.
- 9.5 Raise battery cover.
- 9.6 Leave open while charging.
- 9.7 Disconnect battery power cable from scrubber.
- 9.8 Connect battery power cable to charger cable.
- 9.9 Observe charger automatically starts after a short (approximately 30-second) delay.