

SUBJECT: BUCKET, POT, PAN & UTENSIL WASHERS - ROUTINE MAINTENANCE	NO. DRM-2025-001	REV 0
	DATE: 01/29/25	
	MODEL: VARIOUS	

INTRODUCTION: Regular, routine maintenance (sometimes referred to as preventative maintenance) is essential to keep your machine operating at maximum efficiency and reliability. Maintenance frequency depends on the number of hours the machine is in use and the amount and type of soil being removed. All maintenance requirements can be grouped in levels of competency which are generally classified from operators to qualified technicians.

AFFECTED MODEL NUMBERS: The following maintenance procedures are applicable to the Douglas machines listed in Table 1.1.

Table 1.1				
LD-10 ELEL	LD-20 ELEL	LD-36 ELEL	SD-10 ELEL	SD-20 ELEL
SD-20-BW ELEL	SD-36 ELEL	SD-36-BW-ELEL	LD-12-PT ELEL	LD-20-PT-ELEL

DEFINITIONS: The following definitions are provided for general guidance about who should be responsible for routine maintenance. These definitions may change based on company guidelines and do not eliminate any safety standards (such as OSHA standards).

- *Operator* - A person who operates equipment or a machine.
- *Technician* - A person employed to look after technical equipment such as machinery. Technicians should be capable of taking operational readings, making changes to operational inputs, performing basic maintenance requirements, and understands the use of basic hand tools.
- *Certified Technician* - A skilled professional who has the knowledge and training to perform technical tasks in a specific field and/or work on a specific manufacturer’s machinery. Certified technicians are able to accurately diagnose and fix problems, and ensure a high standard of work
- *Maintenance Periodicity* – Maintenance that repeats after fixed interval
- *Maintenance Level* – The level of expertise required to perform the maintenance
- *OSHA* - Occupational Safety and Health Administration
- *Lock Out / Tagout (LOTO)* - A procedure that prevents the release of hazardous energy while servicing or repairing equipment
- *Preventative Maintenance* – Sometimes referred to as routine maintenance is the practice of regularly performing maintenance on assets to prevent them from breaking down. This can include inspection, cleaning, lubricating, removing components for replacement, and other maintenance actions that are not corrective or predictive in nature.
- *Scheduled Preventative Maintenance*- Preventative maintenance which is performed over a set interval

- *Conditional or Situational Preventative Maintenance* – Preventative maintenance, which is accomplished outside its normal periodicity, depending on conditions found during operation. Situational maintenance items included in this publication are noted with an “R” after the maintenance designator.
- *Periodicity Numbering* – For purposes of this publication and for maintenance planning, the periodicity is labeled with its calendar periodicity designation and a “-#” after the periodicity designation to identify specific procedures. Example: “M” is the designation for Monthly. The first monthly maintenance requirement is labeled “M-1,” second monthly maintenance requirement is “M-2,” so and so forth...Refer to Table 1.2 for the periodicity code (numbering) meaning.

Code	Meaning
D-#	Daily
D-#R	Daily or as required
W-#	Weekly
W-#R	Weekly or as required
M-#	Monthly
M-#R	Monthly or as required
Q-#	Quarterly
Q-#R	Quarterly or as required
S-#	Semiannually
S-#R	Semiannually or as required
A-#	Annually
A-#R	Annually or as required

PERIODICITY & LEVEL: Table 1.3 includes the recommended periodicity and recommended level of competency to perform preventative maintenance procedures listed in this publication.

Maintenance Item	Periodicity	Level	Picture / Figure	Procedure
Exterior cleaning of the machine	D-1	Operator	NA	2.1
Before starting the machine, check to ensure the drain valve is shut and the filters are in place	D-2R	Operator	Fig 2.1 -Fig 2.3	2.2
Drain and clean the interior of the machine. Visually inspect the spray bars and spray nozzles/rinse jets for clogging, wear or missing. Clean float switch and heating elements	D-3R	Operator	Fig 2.1 -Fig 3.0	2.3
Spray bar and nozzle removal, inspection, and cleaning	M-1R	Technician	Fig 3.1 -Fig 3.2	3.1
Inspect heating elements	M-2	Technician	Fig 3.3 thru 3.5	3.2
Wash Pump Motor Lubrication ^{Note 1}	Q-1	Technician	Fig 3.6 & 3.7	3.3
Steam / Vapor Extraction Fan Inspection	Q-2	Technician	Fig 3.8 thru 3.10	3.4

Note 1: Some pump motor bearings have sealed bearings. Lubrication of bearings only applies to motors that have lubrication fittings

Note 2: If you have one of the larger pan washers, such as the model SD-36, LD-36, or LD-20-PT you

may need to grease the 12” (30.5 cm) steam extraction fan bearings.

Note: It is the end user organization’s responsibility to review all recommended maintenance documents and procedures related to this machinery and determine the applicability of levels of safeguards, safety requirements, and level of competency to perform routine maintenance procedures.

NOTE: Daily maintenance items need to be done at the beginning or end of a regular shift, depending on the maintenance item, or if the machine is not cleaning to its normal standards

NOTE: As a precaution, you must disconnect or turn off all incoming power to the machine before proceeding with any maintenance. Additionally, refer to your organization’s safety program for additional guidelines that may apply.

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TECHNICIAN MAINTENANCE ITEMS:

- 3.1 M-1R:** Wash Spray bar and rinse manifold inspection, nozzle removal, and cleaning:
1. Shut the machine off
 2. Allow the machine to cool down and drain the machine
 3. Inspect all wash spray bar and rinse manifold nozzles for debris.
 4. If debris is found in the rinse manifold, remove the nozzles to clean. Clean the nozzles, inspect for damage or wear then reinstall the nozzles. Note: if while cleaning or after cleaning the rinse nozzles there is water leaking from the jets continuously, it is likely the rinse water automatic inlet valve is not closing properly.
 5. If debris is found in the spray arm nozzles / jets, remove the debris by pulling it out or forcing it back into the jet pipe.
 - a. Wash arms can be quickly removed for inspection. Simply press the quick release lever and grasp the two pins to rotate (Fig 3.2).
 - b. If debris is in the jet pipe, remove the end cap (Fig 3.1) to extract any obstruction from the pipe. Once clean, reinstall the end cap.
 6. Once spray arm cleaning is complete, re-install the spray arm(s)
 7. The machine can now be put back in operation

Completed: Yes No

- 3.2 M-2:** Inspect the heating element(s)
1. Shut the machine off; Lockout the machine
 2. Allow the machine to cool down and drain the machine
 3. Clean the interior of the machine.
 4. Remove the filter and filter and the filter bases (Fig 2.2 and 2.3)
 5. Visually inspect the heating element(s) (Fig 3.3) for coatings of scale and corrosion
 - a. Clean if necessary. Sediment should be removed from the element as it can act as an insulator and shorten heater life.
 6. Inspect the wiring for the heating element to ensure all wiring is in good condition with no signs of insulation breakdown

Fig 3.1 Spray arm end cap



Fig 3.2 Wash arm removal



Fig 3.3 Heating element



7. Open the heating element terminal box (Fig 3.4). Check the terminal connections to the heating element, to ensure they are snug and free of contamination
 - a. If corrosion is indicated in the electrical enclosure, check the gasket and replace it if necessary.
 - b. Check conduit to ensure moisture is not able to enter electrical enclosure.
 - c. If connections are loose, retighten the connections.
8. Clear lockout; Restore the machine to operation.
9. Check temperature control (Fig 3.5) operation to ensure accurate and safe process operation. Check the temperature gauge compared to the temperature control setting

Completed: Yes No

3.3 Q-1: Wash Pump Motor Lubrication. Use an electric motor bearing grease like Shell Dollum or Chevron Sill.

1. Turn Power OFF. Lockout the machine
2. Allow the machine to cool down.
3. Remove pump access panel to access the pump (Fig 3.6)
4. Wipe the gun tip and fitting before application. Remove the fitting cap on the grease fitting (if one in place).
5. Inspect the grease fitting (Fig 3.7) to ensure it is not leaking or defective. Replace defective or damaged fittings.
6. When delivering the calculated grease amounts, never hold the nozzle onto the grease fitting when pumping grease with the grease lever.
7. Be conscious of the risk of over pressurization and do not force the lever arm if there is strong back pressure. Typically 2 to 3 strokes of a standard grease gun is sufficient
8. When grease delivery is completed, wipe the fitting
9. Always replace the cap on the fitting(s) (if applicable)
10. Restore pump access panel
11. Clear lockout; Restore the machine to operation.

Completed: Yes No

Fig 3.4 Element terminal box

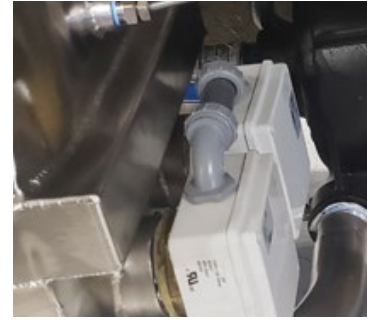


Fig 3.5 Temperature Control



Fig 3.6 Wash Pump



Fig 3.7 Lubrication fittings



3.4 Q-2: Steam / Vapor Extraction Fan(Fig 3.8) Inspection

1. Turn Power OFF. Lockout the machine
2. Allow the machine to cool down.
3. Inspect the exterior of the extraction fan duct work for oxidation
 - a. Clean if necessary
4. Remove the fan by removing the screws in the fan flange (Fig 3.9)
5. Clean high temperature silicone from the ductwork and fan flange surfaces
6. Inspect the fan wheel (Fig 3.10)
 - a. Clean of necessary
 - b. Check to see if fan wheel spins by hand
7. With an inspection mirror, with the fan removed, inspect the inside of the duct work.
 - a. Ensure there is not a build up on the internal walls
8. Apply high temperature silicone sealant to the fan flange surface.
9. Reinstall the fan
10. Clear lockout; restore the machine to operation

Completed: Yes No

Fig 3.8 Steam Extraction Fan



Fig 3.9 Steam Extraction Fan

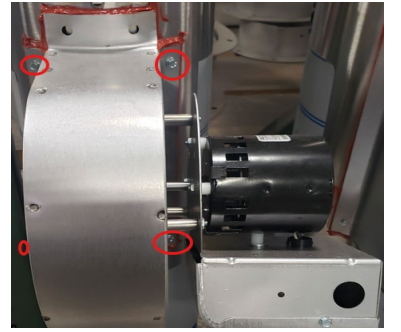


Fig 3.10 Fan wheel

