

Maintenance of the Hallett 1000

Introduction

This document describes the routine maintenance of the Hallett 1000 and is supplemental to the Instruction Manual GH44. The Instruction Manual should be thoroughly read first as it contains important safety information. The Hallett 1000 should be installed in compliance with all applicable federal, state/provincial, and local regulations. The maintenance is divided into weekly, monthly, and annual activities and can be modified if the unit is operating on a seasonal basis.

Contents

Introduction	1
Weekly Activities.....	1
First Week	1
Weekly	2
Monthly Activities.....	2
First Month	2
Every 4 Months	3
Every 16 Months	3
Annual Activities	4
Every year.....	4
Every 5 years.....	4
Log Sheets	4

Weekly Activities

Some Hallett 1000 installations may be fully monitored with data logging capabilities and telemetry for operator notification. For sites with no central controller, monitoring the performance of the system can be combined with maintenance activities.

First Week –After commissioning a new system, it is advisable to perform the following tasks:

- Inspect piping for leaks particularly piping overhead of the Hallett.

- Review the main operational parameters such as UV Dose, UVI, and UVT.
- Review the Message History for any incidents such as warnings or alarms
- Review the System Info screens for Total Starts (of the lamp) and Power Ups (of the unit) – this information can reveal excessive lamp cycling or unreliable input power
- Confirm PCB fan and UV fan are both operational
- Confirm purge valve is working and purge water flows to drain
- Confirm shutoff valve (if installed) stops the water flow when valve is de-energized

Weekly – For systems that are monitored, there are no weekly requirements.

For unmonitored systems, perform the following tasks every week for the first month of operation:

- Review the main operational parameters such as UV Dose, UVI, and UVT.
- Review the Message History for any incidents such as warnings or alarms
- Review the System Info screens for Total Starts (of the lamp) and Power Ups (of the unit) – this information can reveal excessive lamp cycling or unreliable input power

Monthly Activities

Some activities may depend on the regulation requirements.

First Month – After the first month of operation, it is advisable to perform the following tasks:

- Review the main operational parameters such as UV Dose, UVI, and UVT.
- Review the Message History for any incidents such as warnings or alarms
- Review the System Info screens for Total Starts (of the lamp) and Power Ups (of the unit) – this information can reveal excessive lamp cycling or unreliable input power
- Inspect cleanliness of air filter – clean or replace if necessary. A dirty air filter will warrant monthly maintenance.
- Inspect the inside of the UV chamber for dust. This includes the UV Lamps, the outside of the quartz sleeves, the reflectors and the photodiodes of the UV sensors. Wipe off any dust with a clean, soft cloth or paper towel. Rubbing alcohol can be used on these surfaces.
- Inspect inside of quartz sleeve for cleanliness. If there is any sign of fouling in the first month, confirm operation of the wiper and purge valve. Lowering the purge valve setpoint may be required.

- Inspect the surfaces of the reflectors. If there is any sign of diminished surfaces, examine the room for exposure to chemicals. Remove any corrosive substances or increase ventilation.
- Confirm shutoff valve (if installed) stops the water flow when valve is de-energized
- If required, perform UV sensor reference check – see document GH72.
- If required, perform Reflectance Check – see document GH100.

Every 4 Months – After every four months of operation, perform the following tasks:

- Review the main operational parameters such as UV Dose, UVI, and UVT.
- Review the Message History.
- Inspect cleanliness of air filter.
- Inspect the inside of the UV chamber for dust.
- Inspect inside of quartz sleeve for cleanliness.
- Inspect the surfaces of the reflectors.
- Confirm PCB fan and UV fan are both operational
- Confirm shutoff valve (if installed) stops the water flow when valve is de-energized

Every 16 Months – After every sixteen months of operation, perform the following tasks:

- Review the main operational parameters such as UV Dose, UVI, and UVT.
- Review the Message History.
- Review the System Info screens for Total Starts (of the lamp) and Power Ups (of the unit).
- Replace UV Lamps (both lamps must be replaced). Reset Lamp Lifetime counter.
- Inspect cleanliness of air filter.
- Inspect the inside of the UV chamber for dust.
- Inspect inside of quartz sleeve for cleanliness.
- Inspect the surfaces of the reflectors.
- Inspect the pcb/ballast chamber for dust. Clean off any accumulated dust.
- Confirm PCB fan and UV fan are both operational
- Confirm shutoff valve (if installed) stops the water flow when valve is de-energized
- Perform UV sensor reference check – see document GH72.
- Perform Reflectance Check – see document GH100.

Annual Activities

Since the UV lamp lifetime for the Hallett 1000 is 16 months, it is more practical to perform the majority of the necessary maintenance when the UV lamps require replacement. However, if the unit is not operating continuously (batch process), or if used in a seasonal application, the maintenance tasks should be performed on an annual basis.

Every year – After every year of operation, perform the following tasks:

- Review the main operational parameters such as UV Dose, UVI, and UVT.
- Review the Message History.
- Review the System Info screens for Total Starts (of the lamp) and Power Ups (of the unit).
- Inspect cleanliness of air filter.
- Inspect the inside of the UV chamber for dust.
- Inspect inside of quartz sleeve for cleanliness.
- Inspect the surfaces of the reflectors.
- Inspect the pcb/ballast chamber for dust. Clean off any accumulated dust.
- Confirm PCB fan and UV fan are both operational
- Confirm shutoff valve (if installed) stops the water flow when valve is de-energized
- Perform UV sensor reference check – see document GH72.
- Perform Reflectance Check – see document GH100.

Every 5 years – After every five years of operation, perform the following tasks:

- Replace the quartz sleeve including quartz seals.
- Clean the automatic quartz cleaning device (wiper assembly). Remove any build up of scale or minerals.
- Replace the seals within the top manifold for the wiper adapter.
- Replace the O rings within the piping adapters.
- Replace UV sensor if it fails to meet the reference check.

Log Sheets

Suggested log sheet templates have been provided on the following pages.

Every 16 Months Log Sheet

Date		Location		UV Dose	
Model #		Operator Name		UVI	
Serial #		Unit Status		UVT	

Lamp Life Remaining		Max Flow		Real-time clock correct? Y / N	
PCB Temp.		Sys Temp.		Lamp Temp.	
Firmware Ver.		Total Starts		Life-time Cnt	
Left Lamp		Left Water		Right Water	

#	Task Description	Performed	Comments
1	Review/record operational parameters		
2	Review the Message History		
3	Replace UV Lamps		
4	Reset Lamp Lifetime Counter		
5	Inspect Air Filter		
6	Inspect Inside of UV Chamber		
7	Inspect Inside of Quartz Sleeve		
8	Inspect Reflectors		
9	Inspect the PCB Area for Dust		
10	Confirm PCB Fan Operating		
11	Confirm UV Fan Operating		
12	Confirm Shutoff Valve Opens & Closes		
13	Perform UV Sensor Ref. Check		
14	Perform Reflectance Check		

Notes:

