
Operation and Maintenance Manual

HB100R – MSE, Greenvale

(Project SBAN7475)



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Project Ref : SBAN9999 (Generic)

Client : M&SE

Supplier / Contractor : Siltbuster Ltd

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Issued To	Of:			
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1. Introduction

This manual sets out the operation and maintenance requirements for the HB100R lamella clarifier unit designed and fabricated by Siltbuster Limited for MSE, Installed at Greenvale ARP, Market Drayton.

The HB100R assembly includes the lamella clarifier unit complete with plastic lamella sheets and with top mounted sludge rake. The detailed design of the rake was adapted to suit MSE's requirements to enable a load sensor to measure the turning torque of the rake via a floating mount. Flash mixers were added to the inlet (flash/flocc) chamber and a GRP cover was also provided.

Many additional options are available (Inlet tank mixers, instrumentation (outlet quality, sludge level) etc) and these are each covered by separate manuals where applicable.

Details of the installation procedures are set out in Method Statements issued separately.

2. Set-up and Operation

The lamella clarifier units will be set up to run at design flows and loads. These are determined and agreed with the customer prior to installation for each project.

The function and normal operation of each main component is described below:

Weirboards:

The clarified water is release via 4No weirboards that run parallel to the unit, 2 each side of the main lamella sets. The water runs into launders that transfer to a common outlet at the outlet end. The launders may require cleaning. This is best done "little and often" to avoid sending a significant volume of product to the outlet end at any time.

The weirboards are mounted on slotted holes and have been adjusted to give an even distribution of flow. These boards are adjustable to raise or lower all boards, but this requires removal of scraper units to provide access. We therefore recommend that levels are adjusted by the scum beach (below) and the scraper unit.

Plates:

The lamella plates sit within restraining slots, which keep them held apart and at carefully designed positions within the body of the clarifier. Made from smooth texture PVC, these plates create plan area against which solids settle out from the slowly rising flow.

Sheets Dimensions:

HB100R 12200mm x 1220mm x 6mm (116 No in 2 bays)

Rake:

Leave the central rake running continuously. If the unit is to be out of commission for an extended period of time then empty the hopper of sludge and then turn off the rake drive.

When re-starting, start the rake drive first before adding sludge load.

3. Recommended Maintenance

The precise requirements and frequency of maintenance depends on the nature of product. However, the table below summarises a typical recommended maintenance regime.

Summary Table of recommended maintenance regime	
Item/frequency	Requirement
Daily tasks	
Visual	Visually check over the units and look and listen to ensure that: The flows are unimpeded and producing satisfactory effluent quality The main rake is running smoothly and continuously and the drive motor is not hot (it should feel comfortably warm to the touch)
Weekly Tasks	
Cleaning	Check launders and scum boxes for build up of solids and clean down if necessary
Quarterly Tasks	
Rake	Check Rake drive Oil Level (quarterly)
Occasional	
Plates	The degree of build-up of product on the plastic lamella sheet surfaces is hard to predict, but may require occasional cleaning down. We recommend that plates are cleaned IN-SITU by draining down the upper portion of the unit and then steam/pressure hosing between each pair of sheets. (Note that the PVC plastic sheets loose strength above 60 degrees celcius).

Clearly, after experience of running the unit for a period of time the above frequencies may be adjusted to suit.

4. Recommended Spare Parts

Spare parts are listed as “critical” (those that we recommend are kept on-site) and “non-critical” (those that can be ordered as and when required).

Supplier and contact details are listed below.

Table of recommended spare parts	
Critical Spares	
	None
Non-critical Spares	
Gearbox Oil	Shell Omala EP220 or similar.

All installed units are painted to the “Industrial” paint specification, detailed within the Appendices.

5. Supplier Contact List

The Siltbuster units have been fabricated and installed by:

Siltbuster Limited
Unipure House,
Wonastow Road (West),
Monmouth,
Monmouthshire, NP25 5JA.
Tel.01600 772256,
Fax 01600 775312,
e-mail enquiries@siltbuster.com

Item	Supplier	Parts Ref	Contact	Address
Rake Drive Motor/Gearbox and Flash Mixers	APT Ltd	0.25Kw 306L4 2916 MC T P71/BN71	Steve Dennis t:01442212671	apt@amirpower.co.uk
Note: Motor Gearbox units are supplied by APT Ltd, Original Manufacturer is BONFIGLIOLI				
GRP Cover	Hereford Glass Fibre		Dillon Muir	dillon@hgfcomposites.co.uk

6. Datasheets and Manuals

Unit datasheets and individual part/component manuals are appended

- 6.1 HB100R General Drawing and Datasheet
- 6.2 HB100R GRP Cover details
- 6.3 Technical Briefing Note – Paint Specifications and Datasheets
- 6.4 Manufacturers Literature:
Bonfiglioli Rake Drive (relevant extracts)
- 6.5 Flash Mixer Details