

# Haith Tickhill Group of Companies

## Vibroflume

### Contents

Contents	1
Introduction	1
Safety Precautions	2
Handling & Installation	3
Specifications	4
Description	4
Adjustment	5
Operating Instructions	6
Maintenance	7
Lubrication	8
Gearmotor Mounting Position – Important Information	8
Cleaning	8
Parts & Spares	8
Electrical Information	9
Notice	9
Relevant Information	10

### Introduction

This Instruction Manual contains information peculiar to the type of machinery shown above; its purpose is to assist with the running and maintenance of the machinery to which it relates and also to comply with the requirements of Machinery Directive 2006/42/EC.

‘Haith’ means ‘The Haith Tickhill Group of Companies’ which includes ‘Tickhill Engineering Co. Ltd.’, ‘Haith Engineers Ltd.’ & ‘Haith Industrial Ltd.’

All persons working with the machine must familiarize themselves with the contents of this Manual prior to operation. It is the responsibility of the purchaser of the machinery to ensure that all personnel are fully aware of the safe working practices advocated herein.

This Manual covers the operation and servicing of the equipment supplied by Haith as titled above. The Manual is divided into sections as listed in the contents; these are arranged so the users can acquaint themselves with the system equipment and service parts as may be required.

Haith policy is one of continuous development and we therefore reserve the right to amend any of the information contained herein without prior notice.

#### **Please Note:**

When requiring replacement parts or issuing instructions for repairs, customers should, in their own interest always specify the use of Haith genuine replacement parts.

Parts that have not been supplied by Haith cannot be relied upon for correct materials, dimensions or finish.

Haith cannot therefore, be responsible for any damage arising from the use of such parts. It is in your own best interest to ensure that only replacement parts supplied by Haith are used.

**Haith Tickhill Group of Companies**  
**Vibroflume**

**Safety Precautions**

Although the machine has been designed to be as safe as practicable, there are areas to which the user must be aware to ensure personal safety and the safety of others.

**Power Supply:**

**Electricity:** Always ensure that electrical equipment is well maintained. Under no circumstances should anyone attempt to modify or repair electrical equipment other than suitably qualified personnel.

**Note: When any work is carried out on the machine, DANGER and/or WARNING notices must be displayed and the system must be isolated and locked off.**

**Moving Parts:**

The machine has been guarded as far as possible so as not to cause any detriment to its effectiveness. However, special care must be taken at all times and it is emphasized that operatives must work only at recognized workstations.

**Guards:**

The machine must be isolated from the power supply before any guards, chutes or protective devices are removed, under no circumstances must the power be supplied to any part of the machine whilst any guards, chutes or protective devices are damaged, removed or rendered inoperable.

**Noise:**

The machinery has been designed to keep the noise risks resulting from the emission of airborne noise as low as possible. However the risk is real and all precautions necessary should be taken by the Customer/Operator.

**Vibration, Explosion, Fire and Radiation:**

This machine does not under normal working conditions generate any hazard from vibration, a risk of explosion, fire or radiation.

**Dust:**

The machinery may create a certain amount of dust; the manufacturer obviously has no control over the type of product or amount of dust created from the various types of products. Please ensure the correct protective equipment is used at all times.

**Emergency Stop:**

Emergency Stop button(s) are situated in strategic positions on the machine or machines (if part of a Haith System), when pressed, the machine(s) will stop and can only be restarted by the main start button(s) after resetting the Emergency Stop.

**Protective Clothing:**

Protective clothing must be worn at all times when working on or near machinery (Dust masks, eye protection, ear defenders etc.).

(cont...)

**Haith Tickhill Group of Companies**  
**Vibroflume**

**Safety Precautions (cont...)**

**Static Electricity:**

There is no hazard from static electricity, providing the machine is earthed.

**Additional Precautions:**

The strict rule regarding children and young persons under the age of sixteen is; that under no circumstances what so ever must the previously mentioned persons be allowed access to a dangerous position near the machine.

**Please Note:**

These notes are general observations only and the site-specific rules and regulations must also be taken into account. Haith cannot be held responsible for any misuse of equipment.

It is the responsibility of the owner/user to assess the hazards and implement a site safety plan for the operation of the machinery. The machinery must not be operated without all guards and safety devices in place and working correctly; when guards are removed for maintenance purposes, the isolators must be locked in the OFF position. If during any maintenance or testing procedure the machinery is to be operated with any of its guarding and/or safety devices removed or disabled, then a competent person must assess the risks and implement safeguards to ensure the safety of him/herself and the safety of others.

**Handling & Installation**

**Whole Machine:**

- ① The machine may be lifted and manoeuvred by means of an appropriately sized Crane or Forklift Truck; the machine may be approached from either side.
- ! Ensure the machine is empty of water and silt before lifting.
- ! Ensure Forktruck is capable of safely lifting the machine.
- ! Always lift and manoeuvre on firm and level ground.
- ! Never lift the machine higher than necessary.
  
- ! **Lifting machinery and Forktrucks must be operated by suitably qualified personnel.**
  
- ! **Once the installation work is complete the rotational direction of the Motor(s) must be checked and corrected if necessary, prior to operation.**
  
- ! **All the electrical work must be carried out by a qualified Electrician.**

## Haith Tickhill Group of Companies

### Vibroflume

#### Specifications

<b>Serial No.</b>	<b>24141-003</b>
<b>Electrical Supply</b>	415V 3 Phase – 60.0 A
<b>Dimensions (mm)</b>	See Drawing on CD\Drawing

#### Description

##### **Separator Section:**

The Separator consists of an inverted irregular pyramid shaped tank mounted at the reception position, it has a fully enclosed Elevator attached to the bottom which collects the heavy items and discharges them to the side. The lighter items are transported within the water flow, over the weir to the De-Watering Section.

Water is pumped from the Base Tank into the Separator at the junction between the Separator Tank and the Discharge Elevator, the water jet is diverted into the Separator Tank creating an upward surge. The produce entering into this surge is encouraged up and over the side weirs, whilst the heavy items sink and pass through the bottom aperture to the Discharge Elevator.

##### **De-Watering Section:**

This Section receives the items from the Separator, directly onto a vibratory screen bed, whilst travelling along, most of the water is removed and also particles smaller than the screen aperture fall into the Base Tank below.

The small particles settle and form a build-up of silt in the bottom of the tank which is removed automatically by an Auger/Scraper Elevator.

The items larger than the screen aperture are carried along the vibratory screen bed and discharged forward.

The purpose of the machine is to wash and separate items by weight and size within its limits.

The machine must not be used for any purpose other than as described in this Manual.

**Haith Tickhill Group of Companies**  
**Vibroflume**

**Adjustment**

**Machine must be isolated from power supply before carrying out adjustments.**

**Cleaning Door(s):**

To Remove;

- Remove bolts.
- Remove Door.

To Replace;

- Hold Door in position.
- Replace and tighten bolts.

**Manually Operated In-Line Knife Valve (if fitted):**

Lift or lower actuating handle.

- Fully Open = Valve rod fully out.
- Fully Closed = Valve rod fully in.

**Auger Drive:**

**Chain Tension:**

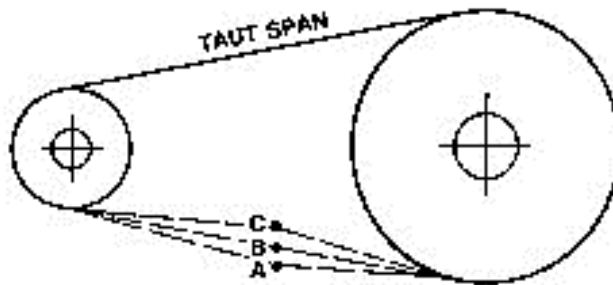
The chain tension is adjusted by rotating an eccentric polyethylene block thus...

1. Loosen fixing bolt.
2. Turn block until chain is the correct tension.
3. Retighten fixing bolt.

The chain should be tensioned until there is mid-span movement in horizontal drives of approx. 5% and mid-span movement in vertical drives of approx. 2.5% of the tangent length between the sprockets.

Recommended Possible Mid-span Movement A-C

Centre-line Angle ∇	Tangent Length between Sprockets					
	150mm	300mm	400mm	600mm	1000mm	2000mm
Horizontal to 45°	7.5mm	15mm	20mm	30mm	50mm	100mm
45° to Vertical	3.7mm	7.5mm	10mm	15mm	25mm	50mm



A-C = Total Possible Mid-Span Movement

A-B = Depth of Horizontal Free Sag

(cont...)

**Haith Tickhill Group of Companies**  
**Vibroflume**

**Adjustment (cont...)**

**Separator Elevator:**

**Belt Tension:**

The adjusting screws are situated at the discharge end of the Elevator main framework, this adjustment is used to tension the belt and set the drive roller at 90° in relation to the centre-line of the belt. The belt must not be over-tensioned as this will cause alignment problems and excessive wear to all moving parts, the belt should be tensioned until a positive drive is gained, the belt should not be so tight that it becomes deformed around the rollers...

1. Ensure machine is isolated from power supply.
2. Tension belt.
3. Ensure the drive roller is positioned at 90° in relation to the centre-line of the belt.
4. Run the belt, if it moves towards the side of the machine, STOP the belt.
5. Turn the adjuster nut clockwise half a turn at the side to which the belt is travelling.
6. Repeat instructions 4 & 5 until the belt runs centrally along the machine.

**Scraper Elevator:**

**Belt Tension:**

The adjusting screws are situated on the sides of the drive shaft bearing plates.

The tail shaft is fixed and therefore only the drive shaft can be used for tensioning, tension belt until a positive drive is gained only.

1. Ensure machine is isolated from power supply.
2. Tension belt.
3. Ensure the drive roller is positioned at 90° in relation to the centre-line of the belt.

**Gland Packing:**

- ① The gland packing is designed to leak in a controlled manner at a rate of approx. 20 drops per minute. This leakage is essential for cooling and lubricating the seal.
- ① Adjust the rate of leakage by turning the packing plate nuts, allowing the packing to settle between adjustments.
- ① **See CD – Manual\Other for further information.**

**Operating Instructions**

- ① **Controlled from the Main Panel. See the Operating Instruction Manual**

**Haith Tickhill Group of Companies**

**Vibroflume**

**Maintenance**

	10 hours	50 hours	200 hours	2000 hours	
Check Guards and Safety Devices.	■				Securely fixed, not damaged and are working effectively.
Cleaning.	■				Pressure wash (not electrical equipment).
Check condition of Plugs and Cables.		■			If damaged, a qualified Electrician should make repairs immediately.
Check for Physical Damage.		■			Inspect entire machine and make repairs as necessary.
Check Chain(s).		■			Adjust as necessary. Lubricate.
Check condition of Drive Belt(s).		■			Tension or replace as necessary.
Check Gearbox(es).			■		Check oil level, top up as necessary, unless 'sealed for life' design.
Check Bearing(s).			■		Replace if excessively worn.
Grease Points.			■		Generally 2 full pumps. For Bearing lubrication see 'Relevant Information' section.
Renew Gearbox Oil.				■	Drain and refill to level, unless 'sealed for life' design.

**All component manufacturer literature must be adhered to, over and above these recommendations. The machine must be isolated from the power supply before any maintenance or adjustments are carried out, unless stated otherwise. Regular maintenance of this equipment is very important to keep it in a good running condition, if it is not carried out as specified in this Manual premature parts failure could occur.**

## Haith Tickhill Group of Companies

### Vibroflume

#### Lubrication

Gearboxes	See 'Relevant Information' Section
Chains	SAE 20/50 Multigrade Oil or equivalent
Grease Points	Grease – Lithium EP2 or equivalent

#### Motor/Gearbox Mounting Position – Important Information

The Motor/Gearbox Units are fitted with the correct specific components and filled with the correct quantity and grade of oil to suit the mounting position which they have been fitted.

If for any reason the Motor/Gearbox position has to be adjusted, then it is advisable to check with Haith before proceeding as this sometimes dramatically reduces the life of some types/sizes of Gearbox.

#### Cleaning

- It is recommended that the machine is washed with a pressure washer type cleaner at the end of each shift or more frequent if circumstances allow.
- The life span and effectiveness of the machine will be reduced if thorough cleaning is not carried out regularly.
- ! **DO NOT PRESSURE WASH ANY ELECTRICAL COMPONENTS AS THEY ARE WATER RESISTANT (IP65) NOT WATERPROOF AND THE INGRESS OF WATER WILL RESULT IN COMPONENT FAILURE.**

#### Parts & Spares

The use of Haith supplied replacement parts will ensure correct materials, dimensions and high standards of quality in line with the original equipment. When ordering replacement parts, always quote the Serial No, Part No. & Description. The information, specification and illustration as detailed in this Operation and Maintenance Manual are correct at the time of issue.

- **Serial No: 24141-003**
- ① **See Drawing on CD Drawing**



## **Haith Tickhill Group of Companies** **Vibroflume**

### **Electrical Information**

- ! All electrical work must be carried out by a qualified Electrician and comply with local regulations.
- ! The machine must be earthed.
- ! The rotational direction of all Motors must be checked, any action taken to correct the rotational direction must be carried out by a qualified Electrician.

### **Notice**

Any alterations whatsoever to the machine(s) by anyone other than a representative of the Haith Tickhill Group of Companies could contravene E.C. regulations.

Any second-hand machinery supplied by the Haith Tickhill Group of Companies will at the very least conform to the Essential Health and Safety Requirements (unless sold on a 'sold as seen' basis, in this case it is the responsibility of the purchaser/user to ensure the machinery meets the correct requirements before use).

The Haith Tickhill Group will not be held responsible for dangerous areas or situations arising from poor installation or modifications to machinery by others.

The information contained in the Manual is issued as a guide and is not intended to be definitive. The Manual has been compiled from details and specifications available at the time of manufacture and to the best of knowledge is correct at the time of printing. Information regarding any modifications performed by the Haith Tickhill Group of Companies after printing will be passed on to the customer if deemed necessary.

The Haith Tickhill Group of Companies will not be held responsible for any errors, omissions or misinterpretations caused by language translation.

To allow for design and specification improvements, the information in this Manual is subject to change at any time without notice.

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**Vibroflume**

**Relevant Information**

See CD – Manual\Other