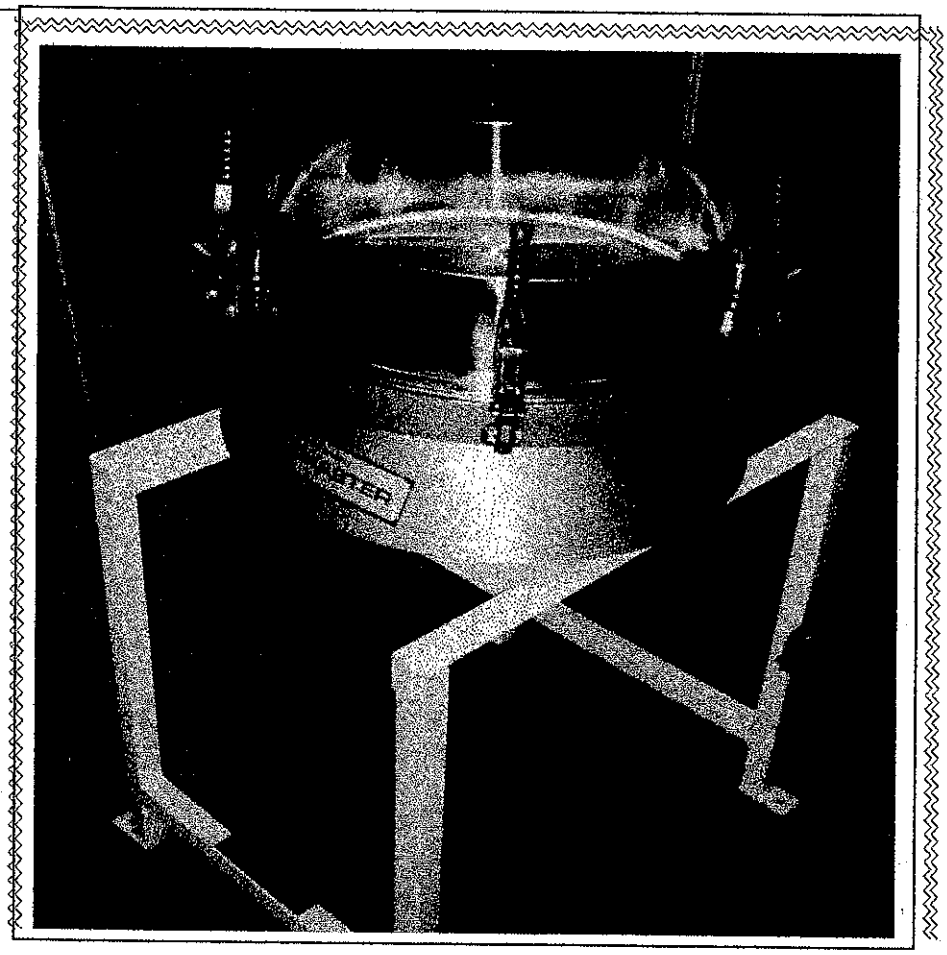
Fg Farleygreene Limited

FARLEYGREENE LIMITED • MOLESEY BUSINESS CENTRE • CENTRAL AVENUE • WEST MOLESEY • SURREY • KT8 2QZ • ENGLAN
TEL: 0181-941 9155 / 0181-941 9255 • FAX: 0181-941 9166

INSTRUCTION & MAINTENANCE MANUAL

Sievmaster 550



INDEX

SIEVMASTER 550

General

The SLIMLINE-SIEVMASTER 550 vibratory sieving machine is manufactured to the provide users with a compact but powerful sieving machine suitable for confined spaces and/or low level sieving.

The machine can be combined with either a bag tip/dust hood station and will discharge the sieved product directly into the next process or into a conveying system. The machine is designed with special consideration for the food, pharmaceutical and other hygiene conscious industries, being constructed entirely from stainless steel and without crevices. The motor is IP65 rated, therefore the whole machine can be washed down without fear of ingress of dust or water.

Installation

The unit is normally supplied in an assembled format ready for connection to the electrical supply. The machine may be supplied on wheels or for a static/fixed location.

With fixed systems the equipment should be located into position and the floor fixings positioned to secure the unit to the floor, ensuring the screen is in a level position. Small packing shims should be used to even up any discrepency in the heights of the fixing feet. Always use the largest possible fixing bolt, do not use 'penny' washers as a substitute for the correct size fixing as these will almost certainly work loose and create an eventual problem.

During installation ensure that there is sufficient clearance around the vibrating parts of the equipment, and that there is sufficient space for the operator to remove any galleries, mesh frames, dust hoods etc. It is also very important to ensure that the electrical supply connecting cable is positioned in such a way as to allow movement of the machine, removal of parts and that it does not rub on the vibrating parts.

Units mounted upon wheels or tracks should only be operated with wheel locks locking the wheels.

Maintenance

The unit has been purposely designed to be simple and easy to maintain, the unit has only replacable parts which require substitution rather than mechanical downtime. Farleygreene will be pleased to provide a full parts service and have all items required in stock should any replacement parts ever be necessary.

Motor

The vibratory motor fitted to the unit is of the twin out of balance wieght type, a pair of semicircular weights are positioned at each end of the motor main shaft. Position relative to one another and to their respective opposite end provides the mode of vibration to the screen. Adjustments should only be made with due attention to the leaflet enclosed. Under no circumstances should extra weights be added or replacement weights be manufactured, as this will seriously reduce the motor life and could cause damage to the unit or persons using the equipment.

The motor is continuously rated and can be allowed to run indefinitely however occassional checks to ensure the fixing bolts are secure should be made. Do not allow the motor or any parts to run without them being secured, undue noise will indicate loose components, and they should be tightened immediately before damage can render the components unusable.

Electrical termination

Farleygreene terminate the input cable to a fixed and static terminal box, it is recommended that this arrangement is retained. Any alteration to the supplied assembly (unless it is of an approved system by Farleygreene) could result in serious electrical failure and possible shock to the operator. A qualified electrician, only, should be allowed to connect the equipment to the mains using suitable cable, glanding and connectors.

Farleygreene recommend the installation of motor overload protection devices, earth leakage detection trip and single phasing protection. It is also often convenient to use a plug and socket connector, this allows for the operator to remove the unit away from the electrical supply, especially useful when cleaning down.

If the machine is connected to an alternative electrical socket, or supply, care should be made to ensure that that the phase orientation is the same, failure to observe this could result in poor performance of the unit.

Full details of the power requirements of the equipment is detailed on the motor plate and the Farleygreene name/model plate.

Clamps

The sieve assemblies are held in place by quick release toggle action clamps. These clamps are preset to secure the mesh assembly without distorting the light guage sieve pans. Each clamp has an adjustable front pad which can be positioned to increase or decrease the pressure. Adjustment is made by releasing the pinch nut and rotating the threaded bolt to the desired setting. Care should be taken to prevent over stressing the sieve pans as too much pressure will create distortion and subsequent poor sealing, similarly too light a pressure will not securely hold the sieve pans during vibration.

Do not use extension tubes or devices to lever the clamps closed as this will not only over tighten the clamp but will most likely damage the clamp linkage and result in failure of the clamp. Firm hand pressure is the desired tightness.

Occasional oiling of the pivot points within the linkage should be carried out using a good quality oil (in some instances regard for the compatibility of the lubrication to the process should be considered). Ensure the pinch nut is locked to the arm of the clamp before running the machine. NEVER RUN THE MACHINE WITHOUT THE CLAMPS SECURING THE SIEVE PANS.

Sieve assemblies

The Sievmaster 550 uses the same design sieve meshes and pans as all other Sievmaster units of similar size, therefore all items are interchangable between different models. Sievmaster 500,700 and 700 Hyg. machines.

Mesh frames are available in two basic constructions, either bonded or manually remeshable.

Bonded meshes are factory pretensioned and fixed to a stainless steel ring with a high strength adhesive. Bonded screens are extremely accurate as the pretensioning system pulls the strands in a single direction all together, therefore consistant size of aperture is maintained. The bond also provides an extremely clean and easily washed arrangement it is therefore of great benefit to those constantly changing materials or when superior hygiene is required. They are not a servicable item but can be returned to Farleygreene for remeshing when necessary.

Manually meshed rings comprise two rings screwed together, manufactured to sandwich the mesh material between them. This produces a tensioned screen. The mesh is tensioned between the rings, using special pliers, whilst the screws are tightened. Care is required to maintain the aperture of the mesh in a square format, uneven or diagonal pulling will produce a diamond shaped and irregular shaped holes thus resulting in inconsistant product size. Farleygreene offer a remeshing service should the client require.

The mesh rings are always fitted into the sieve pan assembly with either a single 'U' channel gasket or two flat gaskets, these provide a seal ensuring the unsieved product does not contaminate the already sieved product. These should always be used when operating the unit, they should be replaced if they become worn.

Connecting the sieve fines discharge to the next process or a conveyor

When connecting the outlet of the sieve to another item of equipment it should be carried out using a similar sleeve arrangement as that of the dust hood to sieve sleeve. Sufficient space must be allowed between each piece of equipment to provide enough flexibility to ensure that the vibration is not transmitted from the sieve, failure to allow sufficient flexibilty will result in excess stress on the pans and fatigue cracking will occur. Farleygreene recommend a minimum of 75mm of clearance.

FARLEYGREENE MANUFACTURE ALL THEIR EQUIPMENT FOR LONG TROUBLE FREE LIFE. WE ARE PLEASED TO ASSIST ALL OUR CUSTOMERS WITH ADVICE ON THE BEST POSSIBLE WAY OF USING THE CHOSEN MACHINERY AND WILL WELCOME ANY DISCUSSION TO HELP CREATE AN EFFICIENT AND SUCCESSFUL INSTALLATION.

Dust hood/bag tip stations

The Farleygreene dust hood/bag tip station is an accessory which provides operators freedom to carry out the job of sack slitting and tipping without the dusty environment normally associated with this operation. The arrangement comprises a generous sack slitting table and a dust collecting hood with a suction take off port, a griddle over the discharge port to prevent accidental dumping of a full sack onto the sieve screen and a bag disposal port at the rear of the hood.

The hood MUST be connected to a suitable dust extraction system or dust collector. Care must be made during the selection of the dust collecting unit to ensure that all risks are adequately considered:-

ADEQUATE AIR VOLUME, to suck across the hood inlet and any other equipment connected to the collector. Advice should be sought from a reputable dust extraction or ventilation company.

EXPLOSION RISK, to ensure that any possible explosion risk is assessed and catered for within the design of the collector or ducting. NB it is normal for explosion panels and ducting to be directed to an external area to prevent secondary explosions.

The bottom of the dust hood and the top of the sieve is fitted with a flexible connector designed to be rugged in service but light enough not to impart any stress into the vibrating parts of the sieve pans. Care should be made after cleaning or mesh changing to ensure that this sleeve is connected correctly to prevent any escape of product. Most sleeves consist of an outer which is fixed at both ends and an internal loose sleeve which hangs into the top sieve pan, the inner acts as a deflector preventing build up of material around the top rim of the sieve pan. Substitute sleeves should be replaced using the same material of construction or a similar light flexible material.

Sleeves are available with elasticated, cord ties, or toggle clasp connections. Farleygreene have a wide selection of systems to suit most needs.

Suggested spares list Sievmaster 550

Toggle clamp assembly

Gasket

Mesh ring assembly meshed as required

Suggested spares for Dust hood/bag tip station

Connecting sleeve

Wheels (mobile machines)

ELECTRIC EXTERNAL VIBRATORS

INSTALLATION REQUIREMENTS

1) The vibrator must be fitted to a substantial mounting plate having a clean and flat surface. Any uneven tensioning could induce stresses and consequent breaking of the casting.

2) The mounting plate must be attached to a stiff member or members to dissipate the vibration over a greater area.

3) The vibrator must be rigidly fastened to the mounting plate by the correct size high tensile bolts, nuts and spring washers. It is recommended that a torque wrench is used to tighten the nuts according to the table below.

4) The bolt sizes used should be proportional to the holes in the vibrator. It is recommended that the bolt clearance is no more than 1mm.

5) The tensioning of the bolts should be checked after the first hour of operation and then during regular maintenance thereafter.

6) **Electrically, the current consumption (amps) should be checked on initial start-up to ensure it does not exceed that which is stamped on the nameplate of the vibrator. If the current is excessive it indicates that there is resonance in the structure stopping the vibrator reaching full speed. The vibrator would sooner or later burn out in this situation. To remedy this the force of the vibrator must be reduced or the rigidity of the structure improved until the correct current consumption is achieved.**

7) It is strongly recommended that overloads are used to safeguard vibrators

FIXING BOLT SIZES & TIGHTENING TORQUES

Bolt Dia. mm.	Torque kg. m	Torque lbs. ft
8	2.2	16
10	4.4	32
12	7.5	54
14	12	87
16	18.5	134

Bolt Dia. mm.	Torque kg. m	Torque lbs. ft
20	36	260
22	49	354
24	58	419
27	100	723

Vibration Force Adjustment

Vibration force can be regulated by adjusting the eccentric weights. Peak vibration force and therefore maximum amplitude is obtained when the adjustable weights are perfectly aligned to the fixed ones.

a) Adjusting the weights as Fig. A.
Loosen the nut (2) to enable the adjustable weights (3) to move freely.
Ensure that the moving weights locate onto the notches of the fixed weights (1) at the desire position on the disc and tighten the nut (2) securely.

b) Adjusting the weights as Fig. B.
Loosen the screw (1) to enable the adjustable weights (2) to move freely.
Turn the moving weights to the desired position on the disc and tighten the screw (1) securely.

IMPORTANT

The adjustment of the weights must be made identically each end of the vibrator.
The adjustment discs are marked with either 9 or 10 positions, the numbers of which are percentages (%) of the maximum centrifugal force developed by the vibrator.

Some vibrators have discs with dual purpose scales.
The inner scale is for 50 Hz as used in Europe.
The outer scale is for 60 Hz as used in America etc.
These do not apply to 150 Hz and 200 Hz vibrators.