INSTALLATION AND OPERATING INSTRUCTIONS

VibraScreener®
Ranger Separator
MODEL: _____
REF. NO: _____

Defining Quality with Technology

VibraScreener® Ranger Separator™ family range, 18", 24", 30", 40″ 48″ and 60" diameters.

REF. C7/14

INSTALLATION AND OPERATING INSTRUCTIONS

RANGER SEPARATOR

VibraScreener® Ranger Separator™ models are manufacturer to the highest quality with particular attention to details for the best performance and customer satisfaction. If for any reason you experience difficulties operating this machine please contact us ASAP and we will assure your machine is working as promised.

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SECTION 1

INTRODUCTION

The Ranger Separator™ is the basic machine incorporated in several VibraScreener® arrangements and systems.

1. The coated Model No. RS30 PA for general purpose separation applications.
2. The Mirror polished steel Model No. RS30 MP for pharmaceutical and food applications.
3. The mild steel model No. RS24 MS for general purpose of heavy duty separation applications.

The following instructions are intended to serve as a general guide to obtaining the most efficient screening results, and satisfactory operation from your VibraScreener® Ranger Separator™ Screening Machine.

SECTION 2

2.0 SAFETY FIRST!

Read the following notes before operating the unit: -

1. Employers shall ensure that all operators who use all VibraScreener® Screeners and separators have received adequate training for health and safety purposes. The Employer must include training in the methods that may be adopted when using, maintaining and cleaning VibraScreener® Screeners. Attention must be drawn to the risks, which such use may entail, and precautions to be taken in accordance with site procedures.
2. Lift the unit only by the base using a forklift or pallet truck.
3. The unit must be installed on a firm level floor.
4. Connection of the motor to the electrical supply must be carried out by a qualified electrician.
5. All connections made to the Screener must be flexible and lightweight e.g. at the inlets and outlets. The flexible connections must allow for the larger movement at start-up and stop of ± 50mm horizontally and ± 25mm vertically.
6. Do NOT operate the Separator without the screen and deck securely in place.
7. Securely tighten all bolts and nuts according to instructions. Particular attention should be given to the band clamps.
8. Do NOT run the Screener above nominal motor speed.
9. Isolate the Separator from the electrical supply before carrying out any maintenance.
10. Regular inspection and maintenance is essential for continued safe operation of the machine. See Section 8.0.
11. Care must be taken when handling the motor during and after operation. The motor gets hot in operation and may cause injury to the operator.

SECTION 3

MACHINE SPECIFICATION

Model: Ranger Separator _____-____ ..... High Capacity

Operation: Separate and grade different materials sizes as well as to eliminate particles from powders.

Drawing No:

General Assembly : ..... _____

Installation .....

SECTION 4

1. INSTALLATION

If the machine is to be lifted, then it must only be by the base.

Before the machine is connected to the electrical supply, the following items must be checked:

1. All items on the packing list are received.
2. The screening machine is on a firm and level floor.
3. There is ample clearance between the sieving machine and other equipment to allow for the larger movement when the machine starts or stops.
4. Allow clearance for access to the 4 hexagon headed bolts under the base plate, for maintenance of the suspension mountings.
5. All connections to inlet and outlet spouts are flexible and lightweight.
6. Band clamps holding the screener assembly to the machine are tight. Initially the clamps will be stiff to operate. This is necessary to ensure efficient long term operation.

When the above items have been checked:

7. A qualified electrician should connect the Motor.

Below fig. 1.1 illustrates the installation of the Ranger Separator™ and fig. 1.2 illustrates the view from above for this machine. It can also be double deck or more.

Fig. 1.1 Ranger Separator™

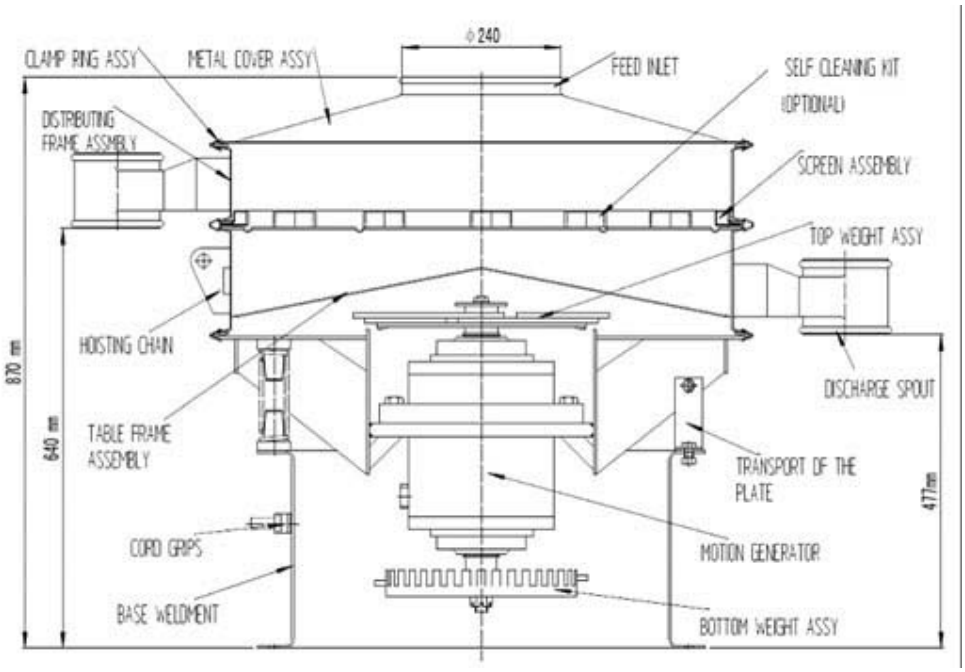
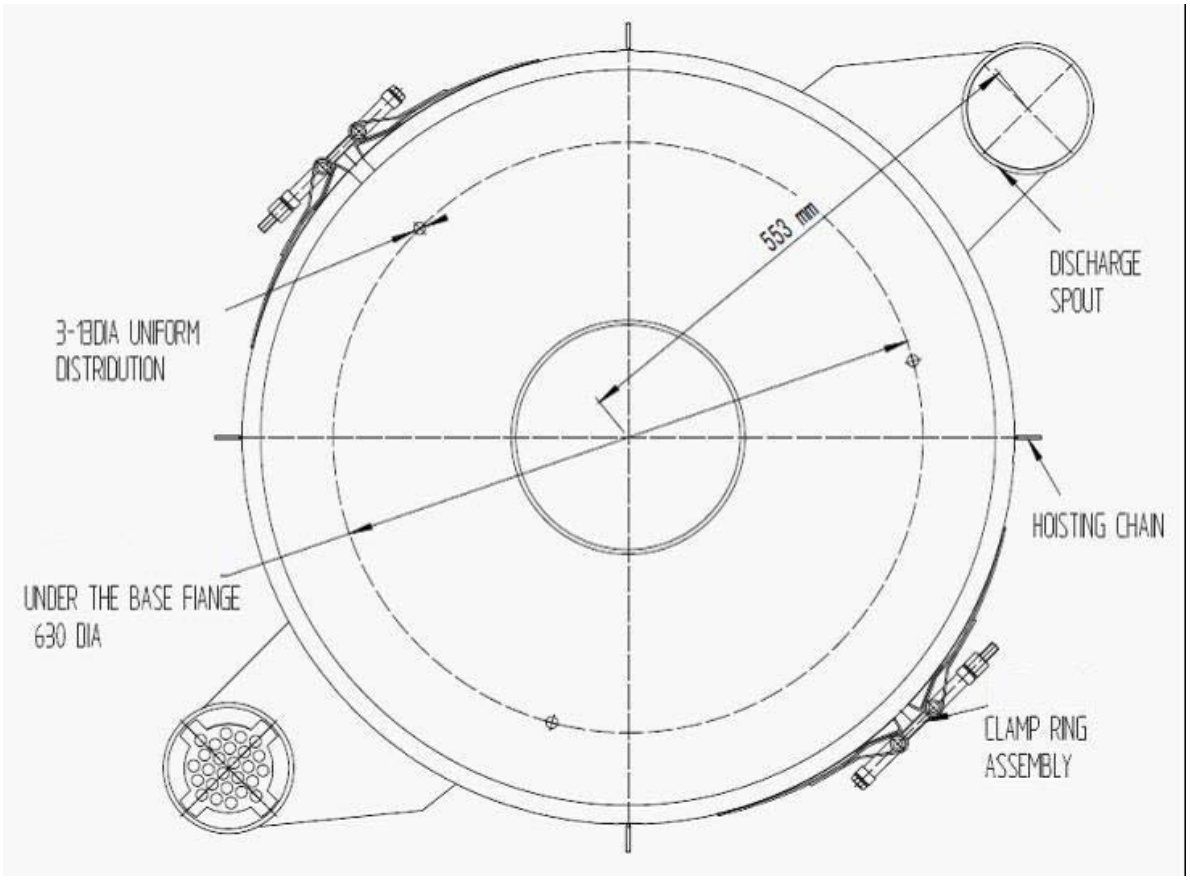


Fig. 2.2 Ranger Separator™ from above view



SECTION 4 (cont.)

Receiving and Installation
Please check the packaging and equipment after delivery of the equipment for damage. If any problems or defects are found with the machine or any accessory, please notify the shipper and VibraScreener Inc. immediately. A complaint must be submitted to the driver with relevant evidence.

Equipment installation

Equipment should be place on a solid, leveled foundation, and then performs the following installation steps.

1. If needed, use the pad between the base and foundation. The flat will be the screening machine.

2. The base has three (3) mounting holes. The use of this solid foundation in the direction of the gap between the screener and any fixed structure shall not be greater than 80mm, to allow the Ranger Separator™ machine freedom of movement.

4. The vibratory motor electrical wiring should be set to comply with the regulations of the local electric utility, operation, inspection regulations.

5. Any flexible connector (optional items) to be placed in the outlets and inlets of the Ranger Separator™ should be of at least 100mm from the end connection.

Horizontal and vertical movement

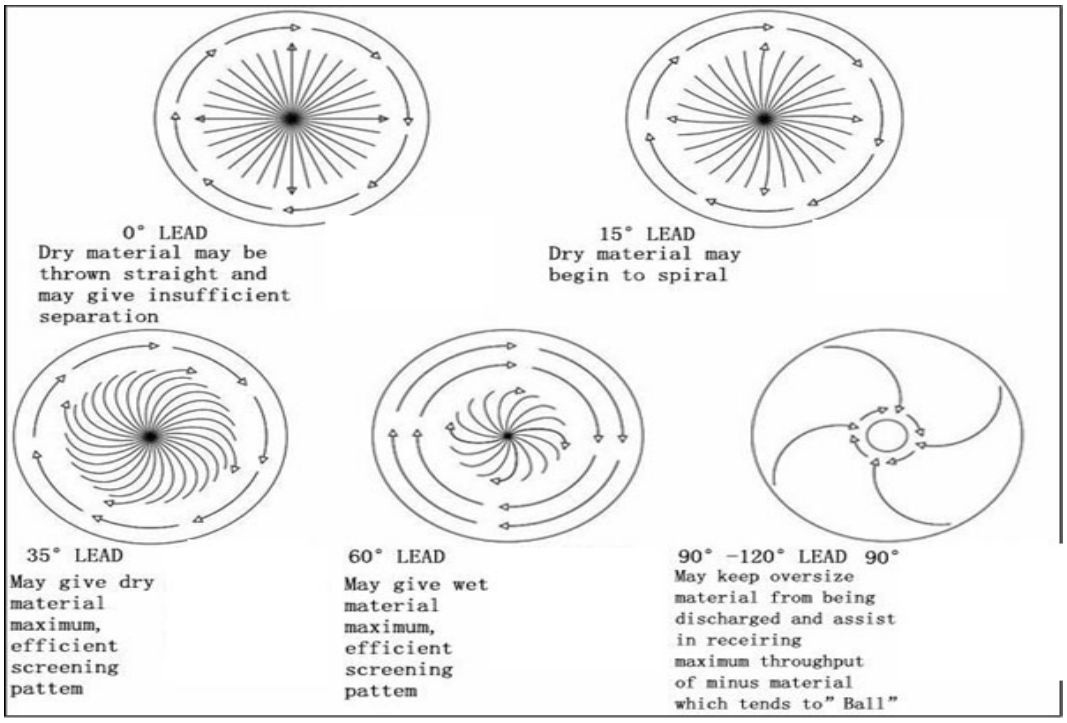
The VibraScreener® Ranger Separator™ is a grading and separation screening machine which its rubber suspension system and its Advanced Weight Adjustment Technology™ allows for three (3) directions of movement, vertical vibration, horizontal vibration and lead angle control vibration. These types of vibrations are aim to increase capacity of the screening area and to control the movement of products within the screen surface.

To achieve the best screening effect, you may need to adjust the vertical and horizontal direction and advance angle, this process is make easy and rapid with the Advanced Weight Adjustment Technology™. Specific regulation will be based on the screening of different material properties and vibration force adjustment wheel weight set varies. Heavy rough material or wet materials usually require additional vertical movement, which is under the vibration force is required to adjust the plate to provide a greater force. For light thin material you may need a smaller vertical movement only with the VibraScreener® Advanced Weight Adjustment Technology™ vibration force adjustment plate can provide a smaller force.

SECTION 4 (cont.)

Material movement pattern

Fig. 2.1



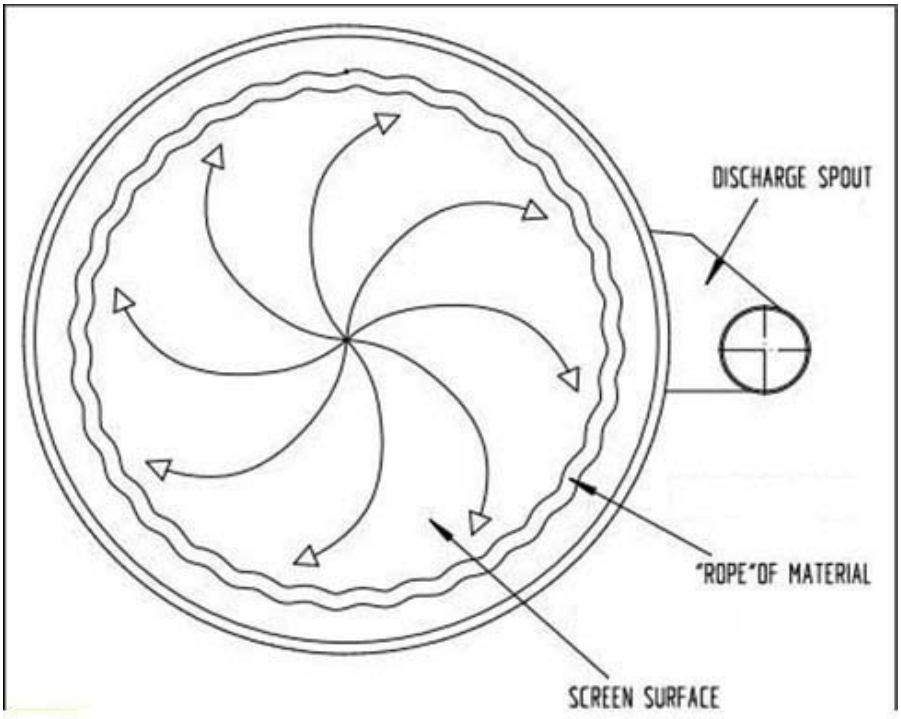
Large-capacity dehydration

The high capacity dewatering use of the Ranger Separator™ screening machine, such as large-size materials can be distributed in a ring sieve is very favorable (see Figure 2-2).

The effect of this technology acting as a dam, making the water flow down the mesh, rather than with the solid-state materials outflow discharge port. The effects into the ring also keep the solid-state logistics in the sieve longer; therefore, more water can pass screen thru without the need of a larger screen diameter. When the Advanced Weight Adjustment Technology is set to a higher advance angle, you can achieve the effect of cyclization.

SECTION 4 (cont.)

Fig. 2.2



Warning
When maintenance or adjustment of the Advanced Weight Adjustment Technology™ operators should be careful to ensure that the positioning and fastening devices are connected correctly. Otherwise, if the weight and reliable lock are set incorrectly can result dangerous injuries to the operators, this in part to the high speed motion of the machine; operators must also make sure all electrical connections are disconnected completely from the machine.

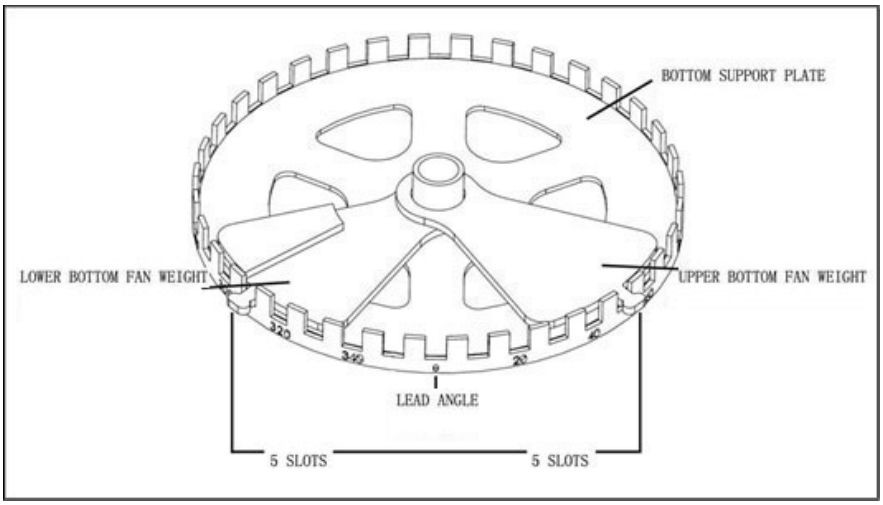
Advanced Weight Adjustment Technology™

To reduce the vertical vibration force, then lift both under the fan-shaped counterweight, both at the same time move the same number of slots in the direction of the advance angle away from the selected. Two with a heavy plate separation distance should be the same.

To adjust the advance angle, bring the two fan-shaped counterweight, and then select the advance angle left or right (maintaining the same spacing distance or the number of intervals notches).

SECTION 4 (cont.)

Fig. 2.3

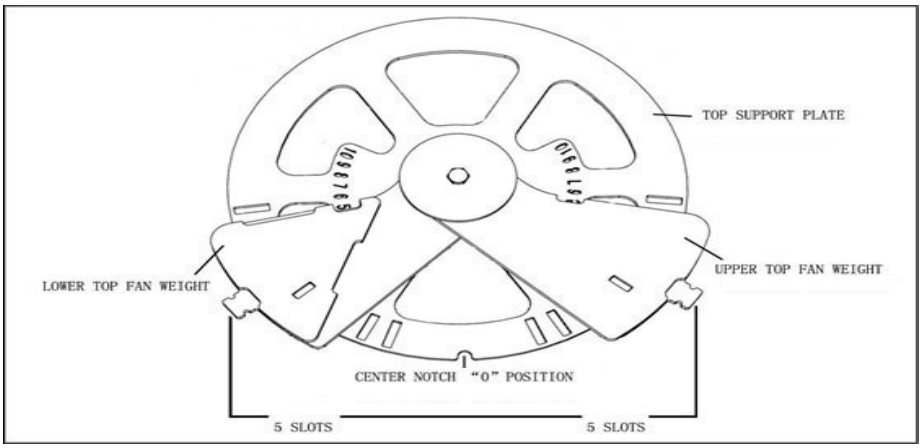


Adjust vibration force by following these steps:

To raise the level of the vibration force, lift on the two fan-shaped weight, and two notches to near the center or "0" position move in the same direction (see Figure 2-4) the same number of slots for two weight plate separation distance should be the same.

To reduce the level of vibration force to lift even a fan-shaped weight, both at the same time move the same number of slots in the direction of the advance angle away from the selected. Two with a heavy plate separation distance should be the same. Figure 2-4 shows examples of two fan-shaped with the weight average of the position are located away from the center of the notch or "0" position nine notches. **Tip**: the farther apart the plates are the higher the vibration force will be.

Fig. 2.4



SECTION 4 (cont.)

Ranger Separator™ - Advanced Weight Adjustment Technology™ up and down vibration adjustment plate typical setup is seeing in Figure 2-5. Settings may be based on the speed of each device, the advance angle, the screen deck number and type of material.

Fig. 2-5

Ranger Separator™ - Advanced Weight Adjustment Technology™ up and down vibration force adjustment wheel of a typical setup

The number of Screens decks	On the weight set number of slots	Under the weight set number of slots
	1500 RPM	1500 RPM
Single Deck	15-0-15	15-30-15
Dual Deck	12-0-12	12-50-12
Triple Deck	9-0-9	9-70-9
Four Decks	6-0-6	6-90-6

SECTION 5

Spares Parts

Note: To guarantee the best performance of your VibraScreener® machine we recommend using original spare parts ONLY. It is also highly recommended that all consumables and non-consumables parts be check periodically against wear and tear.

The following spare parts are recommended to be kept handy to keep downtime at a minimum and for the best performance of the Ranger Separator™:

1. A spare mesh for each micron size used.
2. A set of locking ring assembly.
3. A gasket per each deck (FDA approved is available).
4. A band clamp per deck.
5. 2x rubber mount or 6x metal springs
6. If you own 3 or more units we recommend a spare motor.
7. 1 grounding clip

If rubber mounts or metal springs are broken or worn for a long time, replace, follow these steps to install:

1. Disconnect and lock out the power.
2. Open the base of the unit to reach for mounts/springs bolts.
3. Remove the old rubber mounts or spring carefully.
4. Install the new rubber mounts or metal springs by tighten the bolts.

Screen positioning

Screen should be located in the center of the screen deck securely tighten with band clamps around the screen decks. A gasket should be use for every screen frame being use. The screen washer is also essential to the avoid death areas where products can accumulate. Fig. 3.1

SECTION 6

PROBLEM SOLVING

This section is a check list to enable the user to identify and correct faults which may have arisen since initial satisfactory operation of the machine.

For initial setting up refer to Section 3.

Note: that the term “plus fraction” means particles larger than the mesh size and” minus fraction “means the particles smaller than the mesh size.

	PROBLEM	CAUSE	ACTION
1.	Plus fraction with minus i.e. coarse particles present with screened fine particles.	a) Broken mesh.	a) Change mesh.
		b) Incorrect sealing.	b) Check sieve assembly has correct items. Check gasket conditions. Check tightness of clamp.
		c) Wrong mesh.	c) Change mesh.
		d) Sieve deck distortion.	d) Renew sieve deck.
2.	Throughput rate decreases.	a) Mesh not sufficiently taut.	a) Change mesh.
		b) Weight settings have moved.	b) Check tightness and compare with original settings.
		c) Mesh ”blinded“.	c) Stop machine feed, examine mesh, remove and clean, if problem not resolved refer to VibraScreener®
	a. Change in particle b. size distribution or	d) Check constitution other characteristics of feed.	of feed.
	c. Mesh size too fine.	e) Change mesh.	
3.	Minus fraction with plus, i.e. fine particles which should pass through the mesh, are discharged with the. coarse particles.	a) to e) as 2 above.	a) to e) as 2 above.

SECTION 6 (continued)

	PROBLEM	CAUSE	ACTION
4.	Fuses blow/overload trips.	a) Transient problems.	a) Replace fuses/re-set overload.
	Fuses blow again.	b) Motor failure.	b) Electrician to check motor.
		c) Check overload is not set too low.	c) Set overload to correct value. See Section (1.10).
5.	Screener assemblies rotating.	a) Insufficient clamping. tightened.	a) Check tightness of clamp. (Do not over tighten). See Section 4.
		b) Missing or damaged gaskets.	b) Check gasket for damage.
6.	Increased low frequency noise.	a) Mechanical parts loose.	a) Check clamps and all fastenings on machine.
7.	Product spillage.	a) Loose clamps.	a) Check clamps are tight.
		b) Damaged cone.	b) Check all sieve assemblies for splits or holes.
		c) Worn or damaged gaskets.	c) Check gaskets for damage.
8.	Sieve moves on floor.	a) Sieve not level.	a) Check that sieve is level and on a level floor.
		b) Worn mountings.	b) Check rubber mountings for wear.
		c) Incorrect mountings.	c) Check rubber mounts are to original specification.
9.	Excessive movement when stopping.	a) Damaged or soft suspension.	a) Change suspension mountings.

SECTION 7

MAINTENANCE ROUTINE

Running In

After the first 120 hours of operation, the separator will be run-in and all nuts and bolts should be checked for tightness, to ensure trouble-free operation.

CLAMPS

Check all clamps for tightness regularly as loose clamps could damage screener assemblies, (see Section 5) and if any looseness is apparent check other nuts and bolts.

SCREENER ASSEMBLY AND MESH

Clean any build up of material off the sieve assembly, and check mesh for tightness each week.

STAND

Castors - check fixing bolt tightness regularly

CLEANING PROCEDURE

1. Dis-assemble the screen deck in accordance with VibraScreener fitting instructions.
2. Remove all gaskets and check for wear or damage, replace if required.
3. Clean in accordance with on-site procedures for the appropriate cleaning methods and materials for the products being used.

Note:
Employers shall ensure that any operators who use VibraScreener® screeners and/or Separators have received adequate training for health and safety purposes. Including training in the methods which may be adopted when using, maintaining and cleaning VibraScreener® screeners and/or separators, and any risks which such use may entail and precautions to be taken in accordance with site procedures.

4. Re-assemble screen decks in accordance with VibraScreener® fitting instructions

SECTION 8

STANDARD MESH LIST

STANDARD		
Aperture Size mm	**Wire Diameter**	**Open Area %**
0.032	0.025	32
0.036	0.028	32
0.042	0.036	29
0.053	0.036	34
0.063	0.040	37
0.080	0.050	38
0.100	0.065	37
0.125	0.080	37
0.140	0.112	31
0.160	0.100	38
0.180	0.125	35
0.200	0.125	38
0.250	0.160	37
0.315	0.200	37
0.355	0.180	44
0.400	0.220	42
0.500	0.250	44
0.630	0.250	51
0.710	0.280	51
0.800	0.320	51
0.900	0.360	51
1.0	0.32	57
1.25	0.40	57
1.4	0.45	57
1.6	0.50	58
2.0	0.56	61
2.5	0.71	61
3.15	0.80	64
4.0	0.80	64
5.0	1.25	64
6.3	1.00	74
8.0	1.60	69

FINE		
Aperture Size mm	**Wire Diameter**	**Open Area %**
0.040	0.025	38
0.045	0.018	51
0.050	0.030	39
0.063	0.036	40
0.075	0.036	46
0.080	0.030	53
0.090	0.040	48
0.100	0.050	44
0.125	0.065	43
0.140	0.065	47
0.160	0.075	46
0.180	0.090	44
0.200	0.090	48
0.250	0.100	51
0.315	0.112	54
0.355	0.100	56
0.400	0.140	55
0.500	0.160	57
0.600	0.160	64
0.710	0.180	64
0.800	0.200	64
0.850	0.200	62
1.0	0.22	67
1.25	0.22	72
1.4	0.22	75
1.6	0.22	77

Warranty

VibraScreener Inc. manufacturer warranty policy guarantees that all equipment manufactured by them will be free from defective workmanship or materials for a period of 12 months from the date of first use provided this is within two years of the date of dispatch of the equipment.

We will rectify any manufacturing or material defect(s) by affecting a suitable repair or supplying a replacement part.

Always providing that:

1. Any such DEFECT(S) is reported in writing.

2. All equipment is installed, operated and maintained in accordance with specific recommendations of VibraScreener Inc. and Good Industry Practice.

3. VibraScreener® supplies all spare parts and consumable items.

4. Operational Spares should be frequently inspected and replaced as necessary. The life of these varies with the application and they are not guaranteed for any specific period.

5. Maintenance Spares are inspected and replaced if necessary every 12 months or 3000 operated hours, which ever is sooner.

6. Any consequential loss however caused is expressly excluded from this guarantee

VibraScreener Inc. will not be liable for any repairs or replacements (including labor costs) without our written approval.

VibraScreener Inc. gives no performance guarantees, unless specifically indicated in our proposal. The effects of erosion, corrosion and normal wear and tear are specifically excluded from this Warranty.

VibraScreener Inc. reserves the right to amend or change specifications, as part of their continuous development policy.

We make no other warranty or representation whatsoever expressed or implied.