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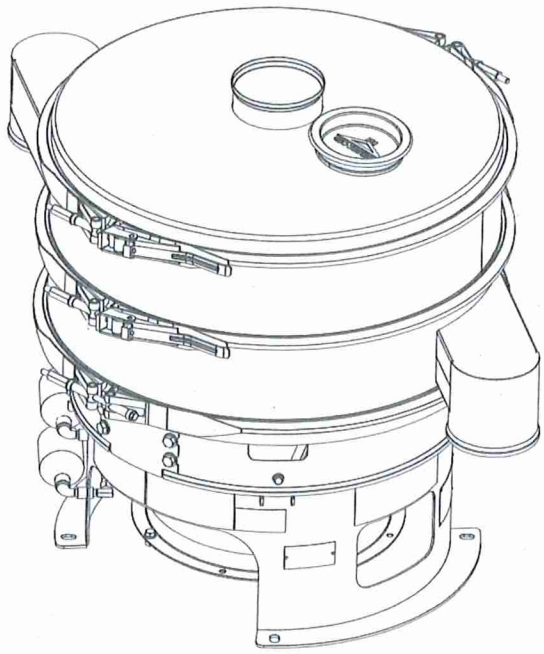
HX Round Separators

HX30 AND HX40

Field Installation and Operation Manual



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SWECO HX ROUND SEPARATORS

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SWECO HX ROUND SEPARATORS

ABOUT THIS MANUAL

As equipment is updated over time, changes to supporting documents may occur in the form of simple revisions or development of completely new documents.

To ensure that the document you are using is still active and that it has not been superseded by a more recent version, contact your local SWECO representative. They can check the document distribution system to verify the document and version you have.

This manual pertains to HX30 and HX40 SWECO Global Round Separators.

For CE compliant units all components and the equipment comply with CE Machinery Directive and the Low Voltage Directive.

This document has been translated from English for the user's convenience only. In the event of a conflict between this translated document and the English version, the English version takes precedence. SWECO makes no guarantees or warranties regarding the accuracy of the translation. Therefore, the user agrees to use this translated document at their own risk and to hold SWECO harmless for any claims / losses / causes of action arising from their use of this translated document.

HOW TO USE THIS MANUAL

This manual is to be used by anyone installing, operating or maintaining the a SWECO separator manufactured by SWECO.

This manual is organized in paragraphs of technical information. To easily find specific information refer to the table of contents found at the front of this manual or the index found at the back of this manual.

Illustrated parts breakdown and drawings applicable to the equipment and tasks covered by this manual can be found at the back of this manual.

While every effort has been made to ensure the accuracy of the information contained in this manual, SWECO will not be held liable for any errors in this material or for any consequences arising from the use of information contained in this manual.

SERVICE AFTER THE SALE

If you need assistance in any form regarding the operation of your process equipment, contact your SWECO Representative or the SWECO home office immediately. Constant "Service-After-The-Sale" is the keynote of SWECO.

The information disclosed herein includes proprietary rights of SWECO. Neither this document nor the information disclosed herein shall be reproduced or transferred to other documents or used or disclosed to others for manufacturing purposes, or for any other purposes, except as specifically authorized in writing by SWECO. If this manual is supplied in connection with the sale or delivery of SWECO equipment, it is to be used solely for maintenance, repair, or installation of such equipment.
Information contained within this publication is subject to change without notice.

1. HEALTH SAFETY AND ENVIRONMENT (HSE)

Equipment manufactured by SWECO is typically installed and operated where hazardous conditions are likely to be present. Be sure to read and understand all HSE information contained in this manual before installing, operating or maintaining the Global Round Separator.

Be sure to review any additional HSE information from local or national codes for the location where the equipment is being used as well as any job site specific regulations that must be followed.

All activities are to be undertaken in a safe and professional manner. Site requirements exceeding those herein shall take precedence to the recommendations in this manual.

The following explains the different type of advisories that may be found in this manual.

WARNING	THIS ADVISORY DRAWS ATTENTION TO ACTIONS THAT COULD RESULT IN PERSONAL INJURY.
CAUTION	THIS ADVISORY DRAWS ATTENTION TO ACTIONS THAT COULD RESULT IN EQUIPMENT DAMAGE.
NOTE	THIS ADVISORY GENERALLY PROVIDES RELEVANT INFORMATION TO HELP THE READER UNDERSTAND THE HIGHER-LEVEL CONTEXT OF A SPECIFIC TASK.
TIP	THIS ADVISORY OFFERS A SUGGESTION OR RECOMMENDATION THAT COULD MAKE A TASK EASIER OR MORE CONVENIENT.

1.1 Equipment-Specific Warnings, Cautions, and Notes

WARNINGS

1. Unit produces severe vibration and contains rotating parts. Accidental start-up of unit could result in death or serious injury. Turn off and lock-out system power before servicing.

2. When installing or maintaining this separator, shut off and lock out power before removing guards (base door, cover, etc.). Follow all local and national electrical codes. Failure to comply could result in severe personal injury or property damage.

3. Electrocution can occur if water contacts live electrical components. Shut off and lock out power before maintenance or repairs. Failure to comply could result in death, severe personal injury, and/or property damage.

4. Keep all doors and guards in place at all times to avoid exposure to parts rotating at high speeds. While the power is on, severe injury can occur if hands or feet are placed inside the unit.

5. To prevent possible shock, ground machine per local and national electrical codes. A qualified electrician must perform all wiring. Failure to comply could result in severe personal injury or property damage.

6. Read and understand this manual in its entirety before installing or operating the machine. Installation, adjustment, repair, and maintenance must be performed by qualified personnel. Do not perform any service other than those contained in this manual unless you are qualified. Failure to follow safe installation and servicing guidelines could result in severe personal injury or property damage.

7. Take care when removing the lubricator from the machine. The lubricator should be turned off before being unscrewed from the machine. Grease may be ejected from the cartridge if it is not empty.

8. Do not wear loose fitting clothes or articles. Items can get caught in moving parts and result in severe personal injury.

9. When maintaining or adjusting eccentric weights, use extreme caution to correctly attach all keys, retainers, and fasteners. Failure to lock weights securely in place can result in parts being thrown from machine at high speed endangering personnel.

10. Do not start and stop your separator more than four times an hour on a continuous basis. Frequent starting can cause heat buildup which will damage the vibratory motor. Contact your SWECO representative if your process requires frequent starting and stopping.

11. If machine base is mounted in an elevated position, the base bottom must be guarded to protect from vibrating pinch points. Failure to comply can result in serious injuries!

12. Higher amplitudes occur during shut down and start-up of unit. Stand clear of unit and keep accessory equipment away during these cycles.

13. Keep hands clear of pinch points. Failure to comply could result in severe personal injury.

14. If processing hazardous materials, check safety data sheets (SDS's) for hazard information, follow necessary procedures and wear proper protective equipment (PPE) per SDS and company policy prior to servicing equipment.

15. Units are to be lifted with shipping brackets intact. When lifting, be sure lifting device can handle the load. Prior to lifting, make sure area is clear of obstacles or personnel and sufficient room is provided to accommodate parts. Make certain load is balanced and stable. Always use trained personnel for lifting and loading operations. Failure to comply could result in severe personal injury or property damage.

CAUTIONS

1. Over center "Latch Type" clamp bands are NOT to be used on lower table joint. Unit frame could come apart if not properly secured. Risk of serious injury due to crushing can occur.

2. Use caution when loosening clamp bands due to the bands being tensioned. Loosen bolts prior to unlatching clamp band. Failure to comply can cause risk of hand injury.

3. Always tighten clamp ring before tightening center tie-down assembly. This will help assure proper vertical location of screen center and help prevent premature screen failure.

4. This equipment must be installed, operated, and maintained by qualified personnel to avoid personal injury or damage to property.

5. Securely tighten all nuts and bolts on the vibrating unit according to the instructions in this manual. Pay special attention to the motor mounting bolts. If a motor (vibratory motor) vibrates loose, damage to the power cord and to the structure may result as well as risk of personal injury.

6. Do not start motor before removing shipping brackets. Failure to remove shipping brackets before start-up can cause damage to unit, motor, structure, and possible personal injury.

7. Inspect motor weight parts during maintenance. If any structural weakness appears, replace the part.

8. Vibratory motor (motor) power cord must be correctly installed into base junction box. Failure to adjust cord length properly can cause cord breakage (if too short) or dangerous rubbing on vibrating parts (if too long).

9. Screens are fragile, Handle them carefully. Never place tools or parts on the screen or damage to the screen may occur. As screen life is dependent on a several variables, like mesh size, flow rate, material properties, vibration level, maintenance, etc., screen life cannot be guaranteed. Screens should be frequently inspected to check for wear or damage. Note that if screens continue to vibrate for hours after initial failure (tearing), wire segments may break loose from the mesh and fall into the screened product.

10. Provide proper guarding for personnel against harm from dust, fumes, or hazardous chemicals. Failure to comply could result in personal injury.

11. All persons operating the equipment and working in general area should wear standard safety equipment (i.e. safety glasses, ear protection, steel-toed boots) to prevent risk of personal injury. All safety items must conform to local safety requirements.

12. If noise level exceeds 80dB in your environment, hearing protection is required to avoid impairment or loss of hearing.

13. Never operate with missing or worn parts. Failure to comply could result in personal injury or property damage.

14. At no time should the separator be operated without frames. This can cause the table to disengage from the support springs which can cause permanent damage to the table gussets, motor cord, springs, spools, and lube lines as well as risk of personal injury.

15. When starting machine after an extended shutdown period, make sure settings are correct and then activate lubricators. Failure to comply will prevent vibratory motor from being lubricated and will cause damage to the bearings.

16. Avoid prolonged fixed position when servicing the unit by moving around frequently.

NOTES

1. WARNING and CAUTION labels have been placed on this separator where needed. If these labels become illegible, consult your SWECO Representative for replacement of labels.

2. Turn off Tech-Lube™ (or ANY lubrication system) when removing vibratory motor for any period of time.

3. Any motor that has been opened will not be replaced under warranty and any repair performed by the customer or outside will void warranty.

4. Use only authentic SWECO aftermarket parts to assure proper component fit and function.

1.2 Equipment Hazards

Lock out and tag any feed pumps or accessory equipment connected to the separator. Be sure to isolate and tag any inlet piping that could deliver product or other materials into the equipment during installation or maintenance.

When operating the separator, operators may be exposed to rotating components and equipment vibration.

1.3 Installer and Operator PPE

SWECO recommends a standard set of personal protective equipment (PPE), which includes:

- Safety Gloves
- Safety Glasses
- Steel-Toe Shoes (or equivalent)
- Hard Hat
- Work Pants and Long-Sleeved Shirts

This list is strongly recommended. Because SWECO products are used in a variety of environments, some facilities may require PPE that exceeds this list. ALWAYS comply with onsite PPE requirements.

SWECO HX ROUND SEPARATORS

EQUIPMENT USE

The SWECO Global Round Separator is a screening device designed to separate solids from liquids, segregate smaller particles from larger particles, and remove foreign matter. The HX Round Separator is a system designed to be used to separate materials into various particle sizes. The separator is able to deliver high-yield product recovery.

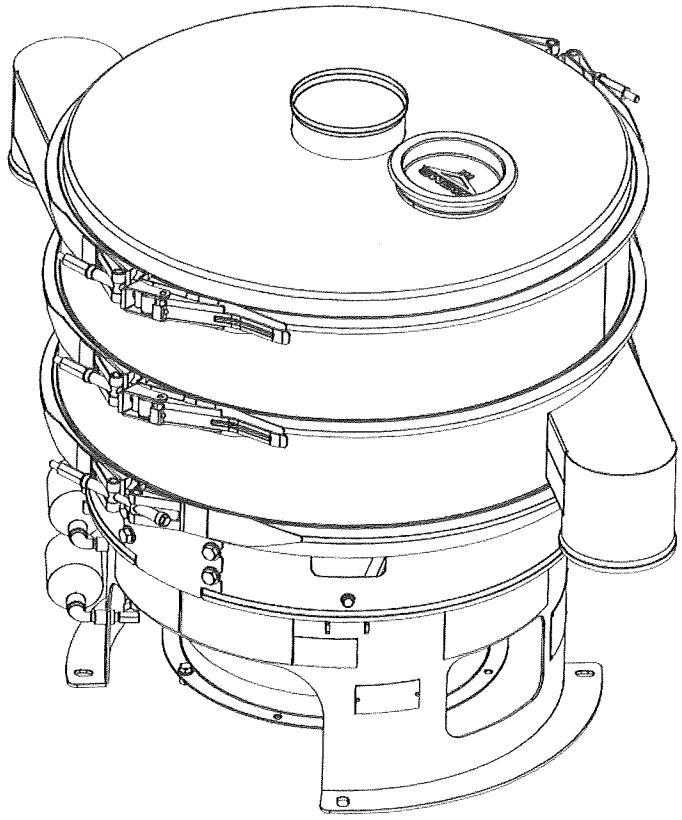


Figure 1. HX Round Separator

EQUIPMENT FUNCTION

The round separator consists of a lower table that holds a vibratory motor, and a series of screen decks, with each deck having a steel frame, discharge spout, and screen. As many as five frames can be formed into one SWECO separator for simultaneous separation into five fractions. The frames are attached to the lower table, using clamp rings. The vibratory motor transmits vibration to the screen(s). This vibration causes smaller particles to drop through the screen, while larger oversize particles pass off the top of the screen and into discharge spouts.

The HX Separator transmits high vibrational forces, even with five frames. Its weight adjustment system allows for faster, more precise top and bottom motor weight adjustments. Its open base construction allows for easier motor weight access, faster inspection, and more thorough cleaning underneath the separator, preventing dirt and/or product build-up.

3.1 Identification of Main Components

Figure 2 shows the main components of an HX Separator with five screen frames. This image is for reference purposes only. Other frame configurations are available. Before installing, familiarize yourself with its basic parts:

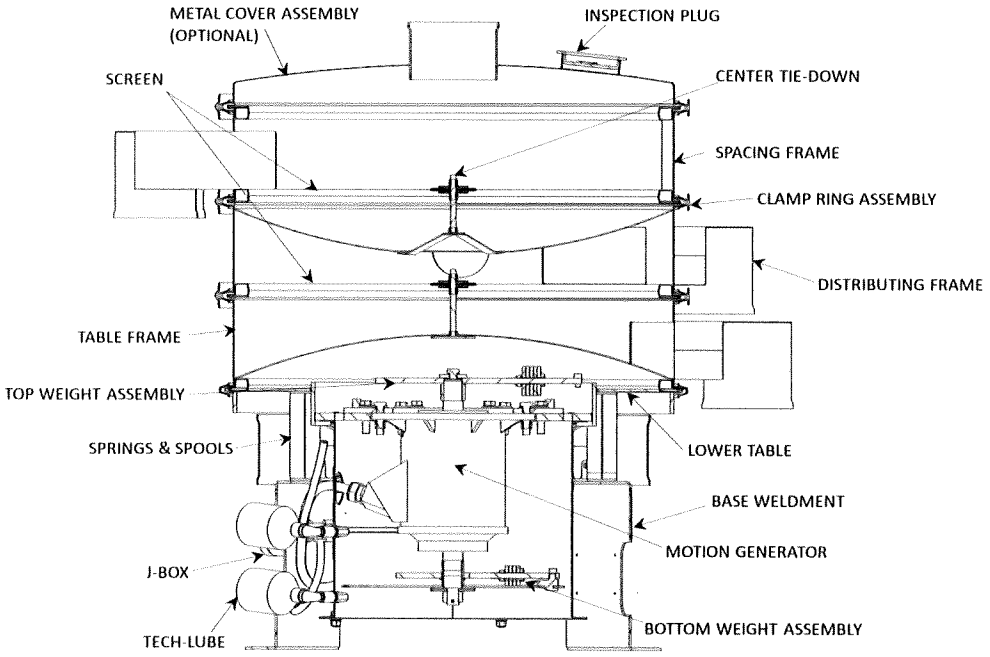


Figure 2. Typical HX Separator Main Components (HX30 Shown)

SPECIFICATIONS

4.1 Screen Nominal Diameter/Area

Product screen:.....30 in/4.8ft^2 (762 mm/0.46 m^2)
40 in/7.9ft^2 (1016 mm/0.73 m^2)

4.2 Operating Temperature

Ambient Operating Temperature ..... -10-52°C (14-125°F)

Processing Frame Temperature.....-10-93°C (14-200°F)

*For higher processing temperatures SWECO engineering will evaluate application

4.3 Capacities

Above scalping screen: .....Varies based on unit size and frame height

Between scalping and product screens: .....Varies based on unit size and frame height

4.4 Weights

NOTE

REFER TO NAMEPLATE ON THE BASE FOR UNIT WEIGHT.

Clamp Rings: 30in.....6 pounds (2.7 kg)

	40in	7 pounds (3.15 kg)
Domed Cover:	30in	28 pounds (13 kg)
	40in	42 pounds (19 kg)
Screen frames:		10 – 30 pounds (4.5 – 14 kg)
Base stand:	30in	35 pounds (16 kg)
	40in	34 pounds (15 kg)
Screen:	30in	15 pounds (7 kg)
	40in	20 pounds (9 kg)
Motor:		120 pounds (54 kg)

4.5 Vibratory Motors

Horsepower: ½ HP (0.37 kW)

Speed (60Hz): 1800 RPM
Speed (50Hz): 1500 RPM
Speed (60Hz): 1200 RPM

4.6 Torque Specifications

Bolt Torque Specifications			
Location	Size of Bolt / Screw / Nut	Torque ft-lb	Nm
Unit Assembly			
Frame Clamp Ring	3/8"-16 UNC	32	43
	½"-13 UNC	40	54
Base Assembly			
Motor bolts	M12 GR 10.9	89	120
Top and Bottom Weight plate bolts	M10 GR 10.9	48	65
Shipping Bracket Bolts/Weight Guard Cone	M12 STAINLESS STEEL	41	55
	M10 STAINLESS STEEL	25	33
J-BOX ASSEMBLY/WEIGHTS	M8 STAINLESS STEEL	15	20

Table 1 Fastener Torque Specification

4.7 Motor Specifications

Refer to the motion generator (motor) nameplate found on the base of your separator for motor specification specifics. Figure 4 is a blank motor nameplate for reference.

4.8 Unit Nameplate

Standard Unit

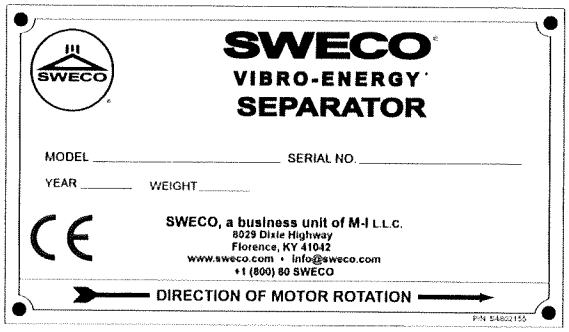


Figure 3 HX Separator Nameplate Example

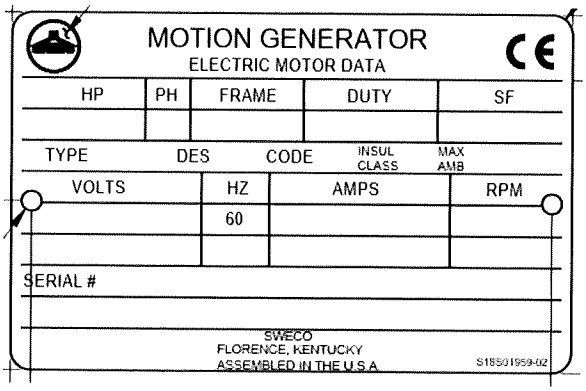


Figure 4 Motor Nameplate Example

4.9 Noise Data

CAUTION

CHECK NOISE LEVEL IN THE INSTALLED UNIT ENVIRONMENT. IF NOISE LEVEL EXCEEDS 80DB(A), HEARING PROTECTION IS REQUIRED TO AVOID IMPAIRMENT OR LOSS OF HEARING.

The sound level depends on the structure, size and setting of the separator. The sound level is generally lower during normal operation, when the processed product passes through the separator, compared to the sound level during operation without product. Because of the wide range of products, values for the reduction of the sound pressure level during normal operation with product cannot be given. Under no load conditions, without product, the machine generally does not produce high noise levels and is typically below 80 dB(A). However, hearing protection PPE is still recommended.

The wall covering and size of room within which the machine is sited, and location of other equipment within the room, will affect the noise level. It is therefore very difficult to give a specific figure for the noise level for each machine and will need to be assessed once installation is complete to see if any acoustic attenuation is needed to reduce the noise level to acceptable levels.

UNPACKING AND INSPECTING

Inspect all goods as received from the shipping company BEFORE setting up and operating the machine. Report a claim to the carrier and SWECO immediately of any damage or loss to the machine. A relevant certificate must be supplied upon delivery. Inform all parties of any damage discovered when the packing material is removed. Keep any damaged goods subject to examination.

Also check the Bill of Lading for any items shipped separately, including manuals, CDs, or spare parts (if applicable). Installation can begin once an order is confirmed as received and complete, in an undamaged condition.

6. HANDLING

WARNING

CLAMP RINGS ARE NOT DESIGNED TO WITHSTAND THE TOTAL MACHINE WEIGHT, AND THE UNIT SHOULD NEVER BE LIFTED FROM THE TOP.
LIFTING LUGS LOCATED ON THE COVER (IF APPLICABLE) ARE TO BE USED FOR LIFTING ONLY THE COVER!

Unit is always secured for transportation with integrated shipping brackets. Normally the unit is mounted to a sturdy integral skid. On occasion, the entire unit is crated for overseas or special shipping conditions. If the unit arrives in a crate, take care when opening the crate and use all recommended PPE (Refer to paragraph 1.3).

- Always use trained personnel for lifting and loading operations.
- Make sure area is clear of obstacles or personnel and sufficient room is provided to accommodate parts.
- Make sure lifting equipment is suitable for purpose and certified where necessary.
- Complete unit must be lifted from the bottom with shipping brackets bolted in place.
- Handle carefully to avoid damage to exterior or internal components.
- Make sure load is balanced and stable.

6.1 Lifting Unit

WARNING

THE SEPARATOR IS HEAVY, WEIGHING 300-700LBS. (136-318 KG), DEPENDING ON THE SEPARATOR OPTIONS AND QUANTITY OF THE FRAMES.

WARNING

THE THREE OR FOUR (3 OR 4) RED SHIPPING BRACKETS MUST BE ATTACHED FROM THE BASE TO THE LOWER TABLE DURING LIFTING. FAILURE TO COMPLE COULD RESULT IN SEVERE PERSONAL INJURY OR PROPERTY DAMAGE. FAILURE TO COMPLY WITH LIFTING INSTRUCTIONS COULD RESULT IN SEVERE PERSONAL INJURY OR PROPERTY DAMAGE.

WARNING

MAKE SURE THE UNIT IS SHUT DOWN, LOCKED OUT, AND TAGGED OUT BEFORE ATTEMPTING ANY LIFTING PROCEDURES! FAILURE TO COMPLY WILL RESULT IN SEVERE PERSONAL INJURY OR PROPERTY DAMAGE.

TIP

IT IS MUCH SAFER TO LIFT A BARE UNIT (UNIT WITHOUT A PALLET OR FRAMES) WITH A CRANE THAN A FORKLIFT.

6.1.1 Lifting Unit with a Pallet

6.1.1.1 Forklift

1. Make sure the unit is secured to the pallet, and that the pallet is in good condition.

2. Make sure the area is clear of obstacles or personnel.

3. Make sure there is sufficient room to accommodate unit and lifting equipment.

4. Insert forklift tines into each pallet pocket.

5. Slowly and carefully raise pallet and move to desired location.

6. Lower the pallet to the floor. Remove forklift tines from pallet pockets.

6.1.1.2 Crane

The unit is lifted with two (2) slings, each the same length.

1. Place a sling through each pallet forklift pocket, with the opposite ends collected above the separator, and adequately secured to a crane boom.

- **a.** Make sure the load is balanced and stable.
- **b.** Make sure the slings/straps are not rubbing or pulling on separator components.
- **c.** Handle carefully to avoid damaging internal or external components.

2. Make sure area is clear of obstacles or personnel.

3. Make sure there is sufficient room to accommodate unit and lifting equipment.

4. Slowly and carefully lift unit and move to desired location.

5. Lower pallet to the floor. Remove straps.

6.1.2 Lifting Unit Without a Pallet

NOTE

THIS PROCEDURE CAN ALSO BE USED TO LIFT THE UNIT OFF A PALLET FOR INSTALLATION.

1. Make sure shipping brackets are securely installed, if they were removed for any reason (Refer to paragraph 10.3 for shipping bracket removal procedures.

2. Make sure area is clear of obstacles or personnel, and that there is sufficient room to accommodate unit and lifting equipment.

3. Remove the frame, beginning with the top cover, and individually remove each frame.

a. Remove clamp band securing top cover to top screen frame.

b. Use a two-man lift to remove the top cover. Set aside in a safe location

NOTE

IF COVER AND FRAMES ARE EQUIPPED WITH A LIFTING LUG, SECURE WITH A LIFTING CABLE OR STRAP TO REMOVE.

c. Remove the clamp securing the top screen frame.

d. Use a two-man lift to remove the screen frame. Set aside in a safe location.

e. Repeat for remaining frames, until the lower table is exposed.

4. Insert the appropriately sized hoist ring into three of the outer holes on the lower table (Figure 5).

a. The eye bolts must be 120° apart from each other.

b. Use manufacturer's recommended washer and nut with the hoist ring.

c. Apply torque to the lifting hardware, referring to the manufacturer's specifications.

5. Connect lifting straps or chains to the hoist rings.

a. Make sure the straps or chains are rated to support the weight of the lower table and base assembly.

6. Carefully lift the unit and move into position.

7. Carefully lower into position.

8. Remove all lifting hardware from lower table.

9. Repeat steps 2-6 to lift and move the frame back on the lower table.

10. When the frame is lowered into position, reinstall the clamp band between the lower table and the bottom frame.

a. Apply the appropriate amount of torque to the clamp band (Refer to paragraph 4.6).

11. Remove all lifting hardware from unit.

12. Make sure all clamp bands are tight and appropriately torqued (Refer to paragraph 4.6).

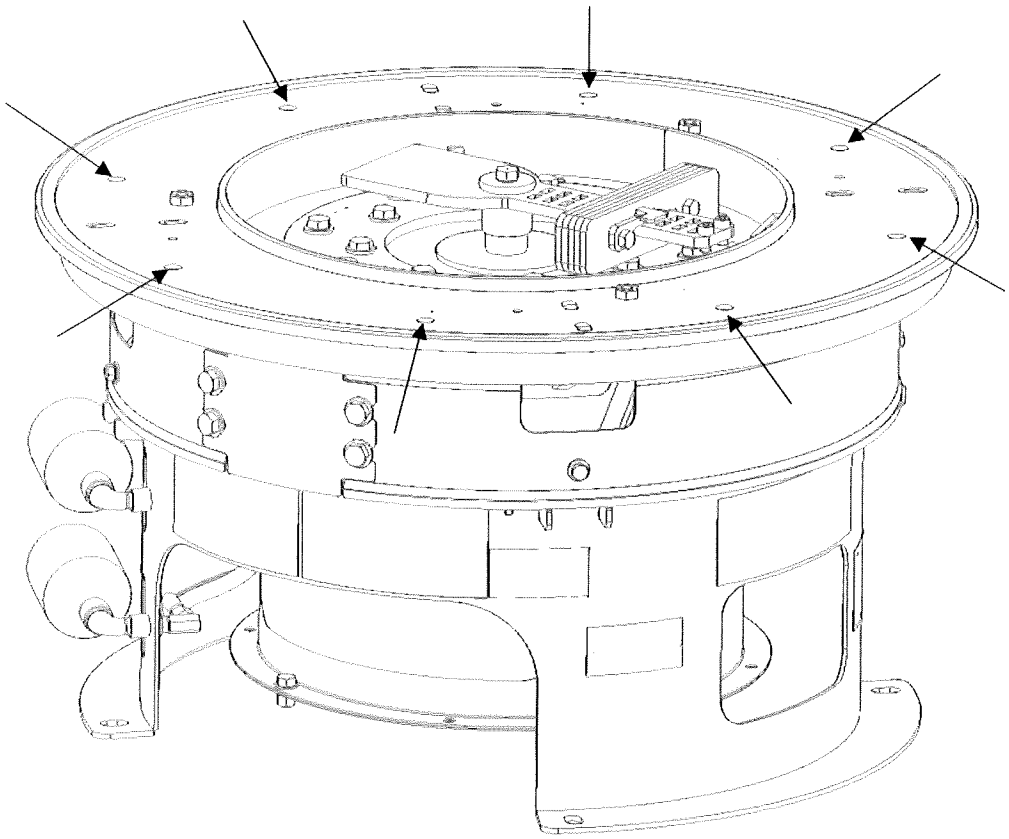


Figure 5 Outer Holes on Lower Table (Arrowed)

6.2 Lifting Motor

Refer to paragraph 16.6 for procedures explaining how to remove unit motor.

STORING PRIOR TO USE

7.1 Storing Unit

Equipment can be stored (upon arrival) in the shipping crate/pallet for a 12 to 24 month preservation period. Always store equipment in ambient temperature 41°F (5°C) to 110°F (43°C), so it is not exposed to dust, vibration, or extreme weather conditions. If unit has been removed from its original crate/pallet, cover with a tarpaulin during any preservation period.

7.2 Storing Vibratory motor

When stored for an extended period, motors should be removed from the unit and stored indoors, in a clean, dry, well-ventilated area, with vibration and dust-free conditions.

- Store motor in ambient temperature 41°F (5°C) to 110°F (43°C), with a relative humidity 60% or lower.
- Protect from unfavorable weather conditions, and avoid damp and salty environments, if possible.
- If the motor has been stored for longer than two years, it should be evaluated by authorized and trained personnel to make sure the grease is intact and that there is no bearing damage, such as brinelling, and that the ground insulation is sound and not damaged from condensation.
- Refer to the original equipment manufacturer's operation manual supplied in the technical data book for information regarding motor.

7.3 Storing Screens

When screens are shipped loose, store screens in their cardboard container. Horizontal or vertical stacking is permissible. Avoid mechanical damage. While screens are washed prior to shipment, they should always be cleaned and sanitized prior to use.

PREPARING SITE FOR INSTALLATION

8.1 Equipment Location

CAUTION

PROVIDE PROPER CLEARANCE. FAILURE TO COMPLY WILL RESULT IN DAMAGE TO THE UNIT AND SCREENS.
INSTALLING UNIT ON A WEAK FOUNDATION WILL REDUCE THE EFFICIENCY OF THE UNIT.

When determining a location for the unit, be sure to leave adequate clearance for operation, maintenance, removal of parts, cleaning, and shut down motion. Make sure space around machine is sufficient so qualified personnel can work in safe conditions. Make sure an adequate clearance between vibrating unit and any stationary structure. There should be very little or no vibration detectible on the base when the separator is in operation.

A minimum clearance of 20 inches (508 mm) in all directions is required.

8.2 Equipment Foundation

The supporting floor or structure must be able to support twice the net unit weight of the separator, AND allowances for material loading to minimize transmitted vibration. Refer to sales drawing (if applicable), specific to your sales order, for weight that applies to your unit. Consult SWECO for static and dynamic loading. If there are any questions or concerns, use local or national codes as a guide.

PREPARING UNIT FOR INSTALLATION

WARNING

USE PROCEDURES FROM PARAGRAPH 6 FOR STEPS THAT REQUIRE LIFTING AND MOVING UNIT.

WARNING

SHIPPING BRACKETS MUST REMAIN ATTACHED DURING ANY LIFT PROCEDURE. FAILURE TO COMPLY COULD RESULT IN SEVERE PERSONAL INJURY OR PROPERTY DAMAGE!

1. Move unit to installation site.

a. Make sure the planned unit installation site meets space and power supply requirements, and that it is evaluated and approved for this equipment.

2. Unpack unit from shipping container/pallet/skid.

a. Follow procedures from paragraph 0. Perform delivery inspection if the unit was not already inspected.

b. Remove any bolts/hardware securing the unit to the container/pallet/skid.

c. Lift unit off container/pallet/skid, and place close to installation location.

INSTALLING UNIT

WARNING

THE THREE OR FOUR (3 OR 4) RED SHIPPING BRACKETS MUST BE ATTACHED DURING LIFTING. FAILURE TO COMPLE COULD RESULT IN SEVERE PERSONAL INJURY OR PROPERTY DAMAGE.

CAUTION

THIS EQUIPMENT MUST BE INSTALLED, OPERATED AND MAINTAINED BY QUALIFIED PERSONNEL TO AVOID PERSONAL INJURY OR DAMAGE TO PROPERTY.

CAUTION

HOSES MUST BE FLEXIBLE ENOUGH SO AS NOT TO HINDER THE MOTION OF THE SEPARATOR. FAILURE TO COMPLY CAN CAUSE DAMAGE TO HOSES OR MATERIAL BEING PROCESSED.

CAUTION

CLAMP BAND MUST BE PROPERLY SEATED AND TIGHT. FAILURE TO COMPLY CAN CAUSE PARTS TO RELEASE AND RESULT IN PERSONAL INJURY OR PROPERTY DAMAGE.

10.1 Securing Unit to the Floor

1. After unpacking and preparing the unit for installation, place the separator in position, using appropriate lifting techniques as discussed in paragraph 6.

2. Place unit on the installation site.

3. Carefully position the separator on the foundation to provide easy access to doors, guards, and internal parts.

4. Make sure there is adequate space between the feed source and screening surface for proper material discharging.

5. Securely anchor the unit to level foundation or floor with bolts through each mounting hole to prevent movement during operation.

a. The base stand weldment has two (2) supports (Refer to Figure 6), and each has a foot pad with two 0.625in (16 mm) mounting holes.

b. Level separator using shims between base feet and foundation as required. Failure to level the unit may affect or prevent fines discharge from the frames.

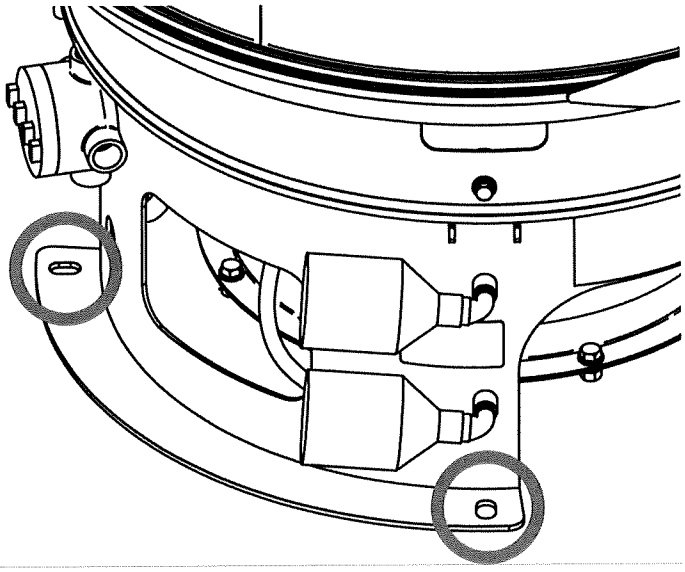


Figure 6 Detail View, Single HX Separator Mounting Support (Mount Holes Circled)

10.2 Assembling Unit

Units can ship fully assembled or broken down to their base components. If your unit is already assembled, skip to paragraph 10.6. Otherwise, prepare to assemble frames. Frames are individually installed on the drive. Then, a cover is affixed to the top frame, preventing debris from entering through the top.

Clamp rings are used to hold various sections of the separator in place. Check all clamp rings as they can loosen during shipment. For clamp rings with 3/8" hardware, tighten to 32 ft-lbs. (43Nm). For clamp rings with ½" hardware, tighten to 40 ft-lbs. (54Nm). All clamp rings MUST be properly installed and tight.

10.2.1 Assembling Frame(s)

1. Assemble and install frame(s).

a. Place the first frame on top of the drive assembly.

1 Position the frame so the spout is in the right location.

b. Wrap clamp band around frame and the top of the drive assembly (Refer to Figure 8).

c. Tighten clamp band between the frame and the drive assembly.

1 The clamp band must be tight to prevent frames from separating during operations, causing damage to screen gasket(s), frame(s), or screen(s).

d. Carefully place screen in the groove at the top of the frame (Refer to Figure 7).

1 Secure screen in place with mounting hardware in the center of the screen cloth.

2. Place the second frame on top of the first frame.

a. Position the frame so the spout is in the right location.

3. Wrap clamp band around the new frame and the frame below it.

4. Tighten clamp band.

a. The clamp band must be tight to prevent frames from separating during operations, causing damage to screen gaskets(s), frame(s), or screen(s).

5. If the screen has a center tie down tighten it down after the clamp band has been tightened. Make sure the screen is level.

6. Carefully place next screen in the groove at the top of the frame.

a. Secure in place with mounting hardware in the center of the screen cloth.

7. Repeat steps 2 through 6 for each frame.

8. Install cover to the top of the frame (Refer to Figure 9) if applicable.

9. Wrap clamp band around cover and top frame.

10. Tighten clamp band.

a. The clamp band must be tight to prevent frames from separating during operations, causing damage to screen gasket(s), frame(s), or screen(s).

11. Inspect all unit nuts, bolts, and fasteners to confirm they are all tight to prevent them from loosening and causing damage to unit or harm to personnel. Refer to torque specifications in paragraph 4.6 for more details.

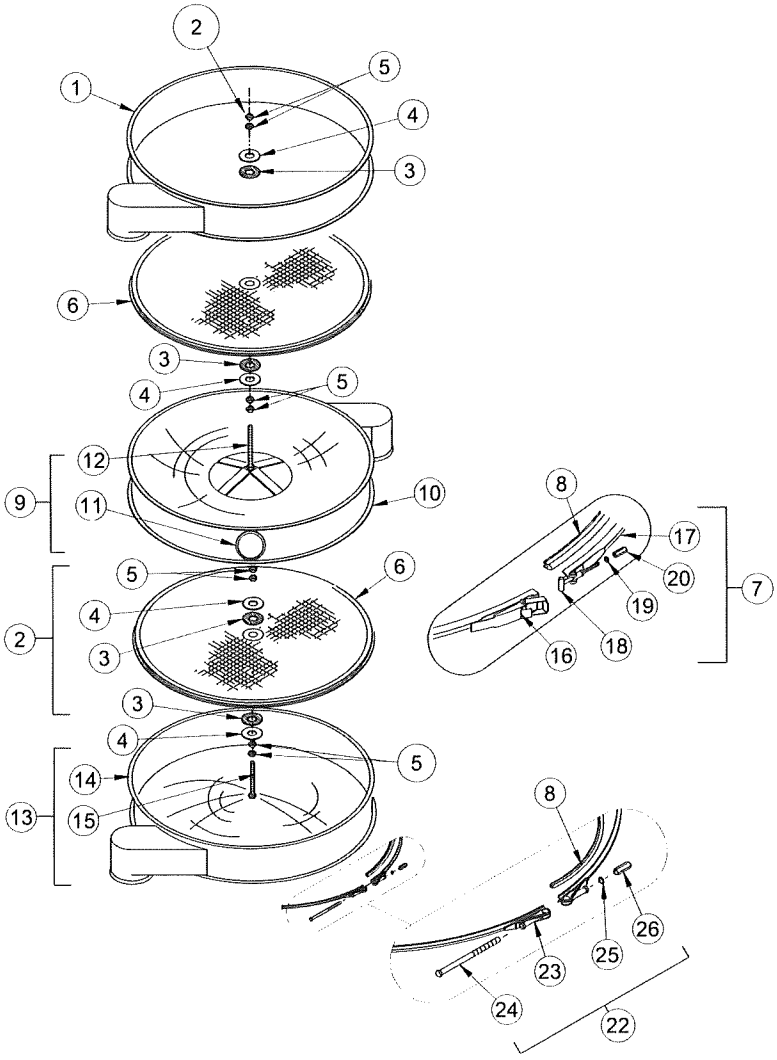


Figure 7 Screen Placed in Frame

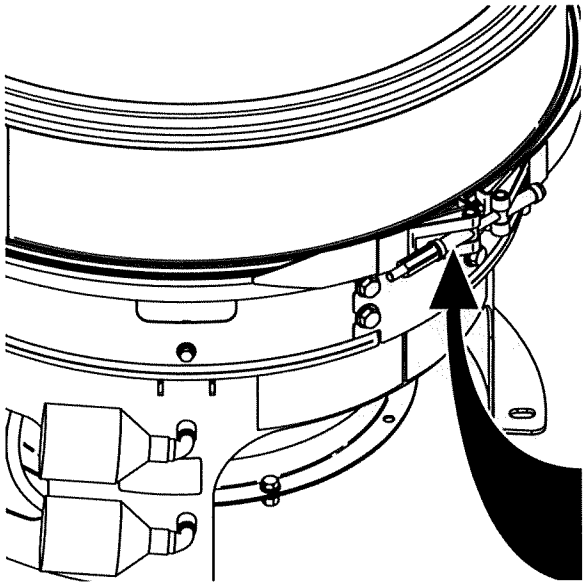


Figure 8 Clamp Band Tension Adjuster (Arrowed)

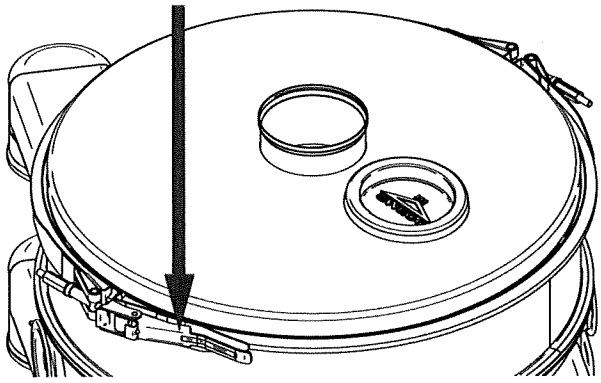


Figure 9 Top Cover Clamp Band Tension Adjuster (Arrowed)

10.3 Removing Shipping Brackets

TIP

THE BRACKETS CAN BE REMOVED WITH THE SEPARATOR SKIRT IN PLACE, BUT IT IS MUCH EASIER TO ACCESS THEM WITH THE SKIRT REMOVED.

1. If the unit comes with a skirt assembly, remove the skirt assembly. If the unit does not have a skirt proceed to step 2.

CAUTION

DO NOT LET THE SKIRT ASSEMBLY FALL ON THE JUNCTION BOX OR ANY ACCESSORIES. FAILURE TO COMPLY CAN RESULT IN EQUIPMENT DAMAGE.

a. The skirt assembly is secured to the base assembly with 4 bolts. It is three major pieces: 2 skirt pieces, and 1 inspection cover.

b. Loosen the four bolts holding the inspection cover (Figure 10, circled). Pull the cover free.

c. Remove the four bolts holding the skirt assembly to the lower table (Figure 10, Arrowed, only 2 of 4 bolts shown). The skirt assembly pieces will drop free.

2. The three or four red shipping brackets are located between the base stand and drive table and marked with a tag. They MUST be removed after the unit has been installed, but before connecting electrical power to the vibratory motor.

3. Once unit is installed on a foundation, remove hardware and red shipping brackets. Retain parts for future moving, lifting, or shipping purposes.

4. Retain shipping bracket hardware for later use. Store in a secure location.

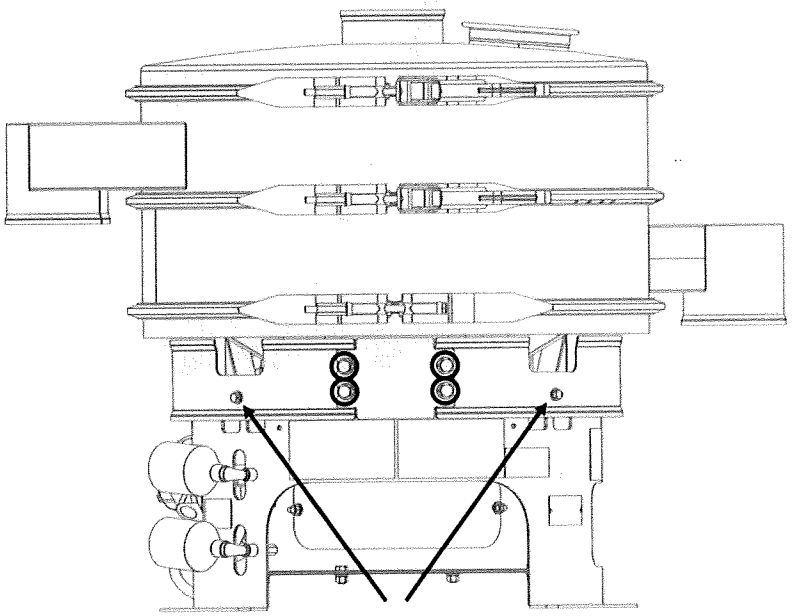


Figure 10. HX Skirt Assembly Mounting Hardware (Arrowed) and Inspection Cover Hardware (Circled)

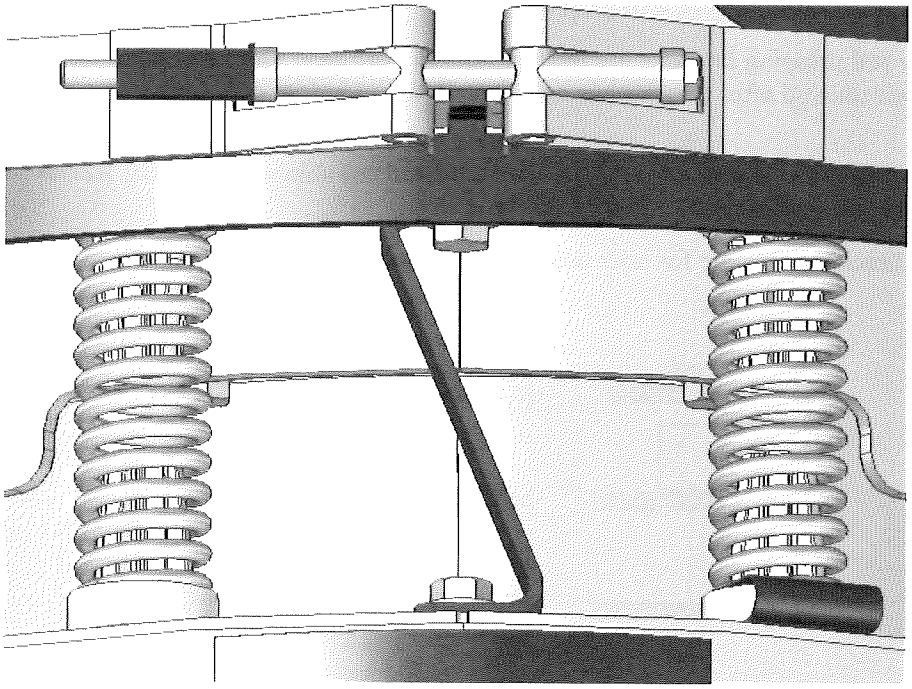


Figure 11. Shipping Bracket Between Springs (Skirt Assembly Removed for Clarity)

10.4 Completing Electrical Connections

WARNING

FAILURE TO MATCH NAMEPLATE VALUES WITH INPUT POWER COULD RESULT IN PERSONAL INJURY OR PROPERTY DAMAGE.

1. Refer to the motor manual for information concerning electrical connections.

2. Refer to the motor nameplate, which identifies the serial number, voltage, speed, and type specific to your equipment.

a. Make sure that motor nameplate matches purchase order requirements.

3. Inspect power supply to make sure the voltage, frequency, and current carrying capacity match the motor nameplate.

4. Refer to motor operator's manual located in data book for electrical connections.

5. Check power inlet line for a suitable protection device.

a. The vibratory motor must be protected with a magnetic starter or circuit breaker with heaters rated for running current (following all local and national electrical codes).

10.4.1 Electrical Controls

WARNING

JUNCTION BOX SHOULD BE OPENED ONLY AFTER TURNING OFF POWER BY THE MEANS OF THE MAIN DISCONNETTOR SWITCH AND LOCK-OUT/TAG-OUT PERFORMED.

NOTE

CUSTOMERS ARE RESPONSIBLE FOR SOURCING A UNIT CONTROL SYSTEM.

The electrical control specifications can vary per order. The connecting cable from the electrical control to the separator J-box and the cable from the electrical control to input power is supplied by the customer. If working around hazardous toxic based fluids verify electrical cables are rated to withstand the environmental conditions.

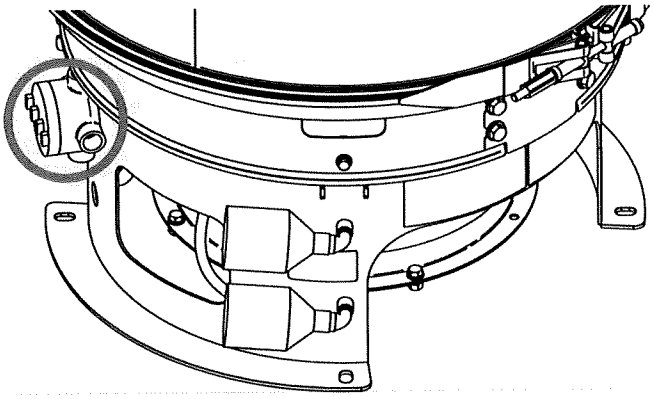


Figure 12. HX Separator Junction Box (Circled)

10.5 Verifying Correct Vibratory Motor Rotation

WARNING

EXERCISE EXTREME CAUTION WHEN WORKING AROUND MOTORS WITH GUARDS REMOVED. NEVER REACH INSIDE UNIT WHILE IN OPERATION. FAILURE TO COMPLY COULD RESULT IN SEVERE PERSONAL INJURY OR PROPERTY DAMAGE.

1. After completing electrical connections, remove the bottom motor weight cover (Refer to Figure 13).

2. Make sure all personnel are clear of the separator, then bump start the unit by turning it on, then quickly turning it off.

3. Check rotation of the motor weights.

4. The vibrator should rotate in the correct direction.

a. The weights move from *left to right* (counterclockwise when looking down on the unit from the top) when viewed through the inspection area.

b. If rotation is incorrect, shut off and lock out power. Interchange any two of the main power leads to reverse rotation and then observe for proper rotation.

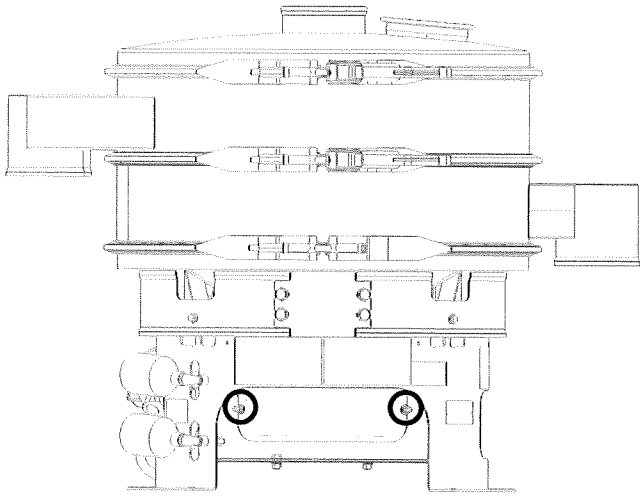


Figure 13. Bottom Motor Weight Cover (Arrowed) and Retaining Hardware (Circled)

10.5.1 Motor Adjustments

The SWECO separator is a screening device that vibrates about its center of mass. Vibration of the machine is caused by the eccentric weights located on each end of the motor shaft as the motor turns.

- The top force wheel primarily creates vibration in the HORIZONTAL plane.
- The bottom force wheel primarily creates the VERTICAL motion.
- The lead angle (of the bottom force wheel) controls the pattern of material flow.

One weight is installed on each end of the motor shaft. Each weight can be moved closer or further from the motor shaft, with adjustable positions labeled 1-10.

- If the weights are moved closer to the motor shaft, the amount of vibration is decreased.
- If the weights are moved further from the motor shaft, the vibration is increased.

There is no single ideal vibration setting for all products and processes. The separator must be adjusted to produce the correct vibration for your application.

10.5.2 Eccentric Weight Data

Unit vibration is caused by the eccentric weights located on each end of the motor shaft. For the best screening efficiency, additional adjustments are needed, because optimal settings will differ for each material. Before making any weight or speed adjustments, check vibration amplitude. After vertical and horizontal amplitudes have been determined, refer to following instructions for top and bottom weight adjustments.

10.6 Completing Spout (Discharge) Connections

NOTE

CUSTOMERS ARE RESPONSIBLE FOR SOURCING HOSES TO CONNECT TO DISCHARGE SPOUTS. ALL CONNECTIONS BETWEEN THE SEPARATOR AND OTHER EQUIPMENT MUST BE MADE USING FLEXIBLE HOSES. THE BEST HOSE IS ONE THAT IS COMPATIBLE WITH THE PROCESS AND THE MOST FLEXIBLE. FLEXIBLE HOSES SHOULD BE PROPERLY SUPPORTED AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

Frame spouts are connected to flexible hoses. Connectors between all product inlet (cover), product discharge (spouts), and material conveyors must be properly positioned and flexible so as not to hinder the action of the separator. These connectors should not be compressed and must be installed in a vertical position. These hoses must be flexible enough to stay connected to each frame spout while the unit is moving during operations.

1. Install flexible hoses.

a. Install flexible hoses with enough slack to not hinder the action of the separator.

b. Avoid over-stretching the connectors. A guideline for connector length is 1.5 times the diameter of the inlet.

c. Make sure the bend radius of each connection is no less than the minimum bend radius recommended by the manufacturer.

d. It is important that the flexible hoses do not restrict the motion of the machine.

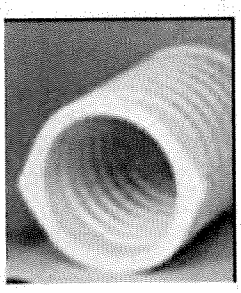


Figure 14 One Type of Flexible Hose

PREPARING UNIT FOR OPERATION

WARNING

WHEN INSTALLING OR MAINTAINING THIS SEPARATOR, SHUT OFF AND LOCK OUT POWER BEFORE REMOVING GUARDS (BASE PLATE, COVER, ETC.). FOLLOW ALL LOCAL AND NATIONAL ELECTRICAL CODES. FAILURE TO COMPLY COULD RESULT IN SEVERE PERSONAL INJURY OR PROPERTY DAMAGE.

1. Make sure unit is completely installed.

2. Shut off power and lock circuit breaker.

3. Set up the force weights and lead angle weights per instructions (Refer to paragraphs 11.4 and 11.5) or based on settings found to be successful in previous trials.

4. Make sure feeding pipeline (inlet) is securely connected, flexible, and not restricting the motion of the machine.

5. Check that the hardware and the three or four red shipping brackets have been removed.

6. Verify unit is secured to a firm foundation to prevent movement during operation.

7. Verify that all flange bolts are secure and tightened to proper torque (Refer to paragraph 4.6).

11.1 Cleaning Prior To Use

Prior to dispatch from SWECO the separator will be cleaned to remove dirt, dust, and other debris associated with the manufacture and assembly of such equipment. Before operation, ensure that the machine and accessory parts are clean to keep the machine safe and working to maximum efficiency.

11.2 Normal Operation Setup

WARNING

CLEANING OF THE SEPARATOR MUST ONLY BE CARRIED OUT WHEN THE MACHINE IS SWITCHED OFF, STATIONARY, AND ISOLATED FROM THE ELECTRICAL SUPPLY. FAILURE TO COMPLY COULD RESULT IN SEVERE PERSONAL INJURY OR PROPERTY DAMAGE.

When the separator is running under normal conditions, there are several parameters that can be considered or adjusted to optimize performance:

- Screen Selection
- Flow Rate
- Vibration Amplitude
- Eccentric Weight Adjustments

11.2.1 Screen Selection

CAUTION

SCREEN LIFE DEPENDS ON SEVERAL VARIABLES, LIKE MESH SIZE, FLOW RATE, MATERIAL PROPERTIES, VIBRATION LEVEL, MAINTENANCE, ETC. SWECO CANNOT GUARANTEE HOW LONG A SCREEN WILL LAST. SCREENS SHOULD BE FREQUENTLY INSPECTED TO CHECK FOR WEAR OR DAMAGE. NOTE THAT IF SCREENS CONTINUE TO VIBRATE FOR HOURS AFTER INITIAL FAILURE (TEARING), WIRE SEGMENTS MAY BREAK LOOSE FROM THE MESH AND FALL INTO THE SCREEN PRODUCT.

The selection of the screen mesh will depend on several factors, namely flow rate, dry or wet material, material size, moisture content and percentage of solids present.

To ensure optimum performance, the finest screen size possible should be used with consideration given to the relative screen life. Consult SWECO or your local Representative for the wide variety of screen mesh available.

11.2.2 Flow Rate

CAUTION

IF PROCESSING HAZARDOUS MATERIALS, CHECK SAFETY DATA SHEETS (SDS'S) FOR HAZARD INFORMATION AND FOLLOW NECESSARY PROCEDURES PRIOR TO SERVICING EQUIPMENT.

The material being screened, whether wet or dry, must be fed to the screen at a constant, even rate and at a low velocity. Flow control devices for both wet and dry screenings must be used to achieve these characteristics.

Contact your local SWECO Representative concerning the various flow control devices that are available.

11.2.2.1 Dry Screening

If the final distribution is controlled with baffles or other flow control devices, dry material may be fed by any of the commonly used conveyors or feeders to ensure consistent, even flow perpendicular to the screen surface (Refer to Figure 15).

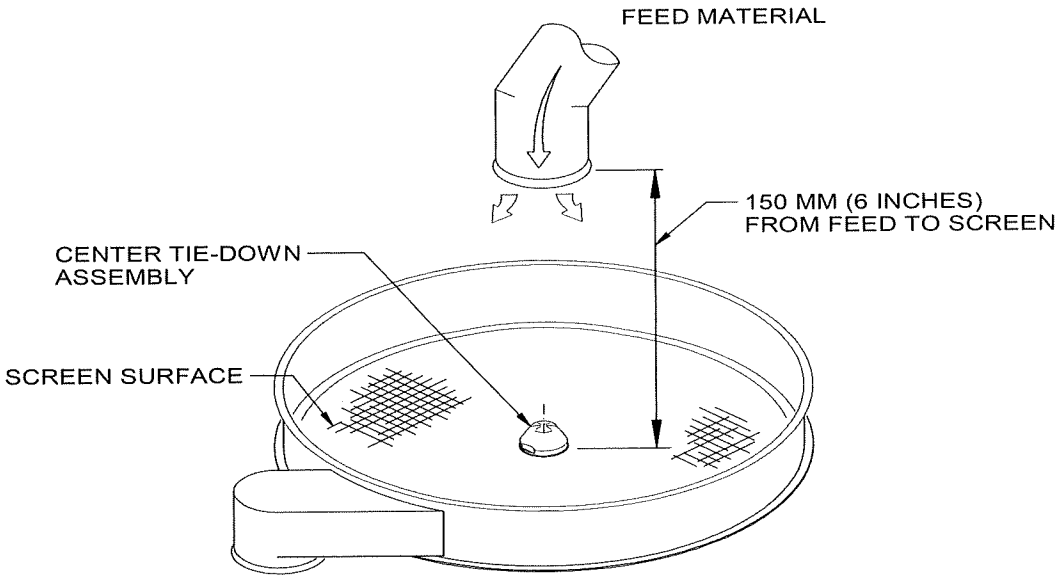


Figure 15 Dry Screening Example

11.2.2.2 Wet Screening

The wet screening device shown below (Refer to Figure 16) is a velocity reducer recommended for liquid feed to control the velocity and distribution of the material onto the screen.

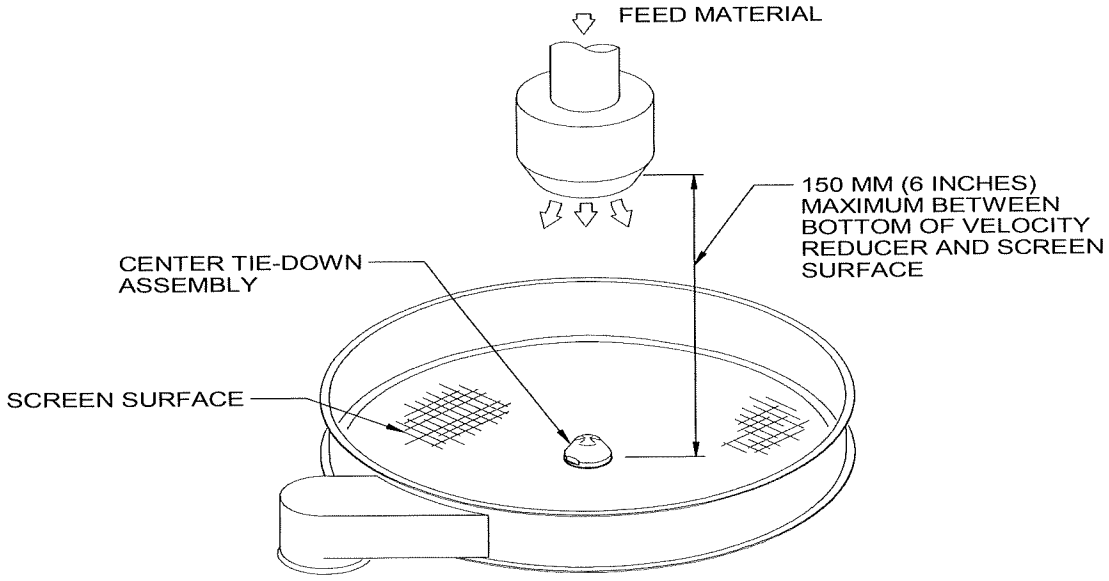


Figure 16 Wet Screening Example

11.3 Setting Vibration Amplitude

CAUTION	DO NOT EXCEED MAXIMUM AMPLITUDES SHOWN OR DAMAGE TO EQUIPMENT CAN OCCUR. INCORRECT AMPLITUDE CAN LEAD TO PREMATURE SCREEN FAILURE.

NOTE	AMPLITUDE WILL NOT BE IMPACTED MUCH WITH CHANGES IN RPM, THEREFORE, CARE MUST BE TAKEN NOT TO EXCEED MAXIMUM ALLOWED AMPLITUDE WHEN INCREASING SPEED.

Each separator is tested prior to shipment and the weight settings are adjusted to result in acceptable levels of horizontal and vertical amplitude. Nylon ties are then installed to keep the weights from moving during shipment.

Make small adjustments when changing motor weight positions and lead angle; consider how each change will affect the motion of the material on the screen and observe the changes after adjusting. Are the solids moving faster or slower? Are they spread out evenly on the screen, piling up in the center, or piling up at the outside wall of the chamber? Methodically adjusting settings will help make predictable changes to unit motion and the way the solids are distributed on the screen.

Horizontal and vertical amplitudes must be measured to understand separator performance and make consistent changes. To analyze the motion of the separator, a vibration gauge sticker (Refer to Figure 17) is available to help measure vibration amplitude. This sticker is attached to the frame flange of the machine near the screen level. The gauge independently measures both horizontal and vertical motion.

The horizontal and vertical amplitude markings are numerically labeled in 1/16" increments (e.g. 1= 1/16"; 2 = 1/8", etc.). To read the vibration amplitude, start the machine and wait a few seconds for the motion to stabilize. To get the best reading your eyes should be on the same level as the gauge. You will see the white triangles split into two separate triangles as shown in Figure 18.

Observe where the triangular lines appear to cross each other. The motion measurement value is at the point where the two white triangles meet. If the number is "1" the vibration amplitude is 1/16". If it is halfway between "1" and "2" it is 3/32".

If an amplitude sticker is not available, it is easy to make one with a pen and an adhesive note, or a piece of paper.

Maximum amplitudes are based on motor speed and should not exceed the following measurements:

1200 RPM – 1/4" maximum

1500 RPM – 3/16" maximum

1800 RPM – 1/8" maximum

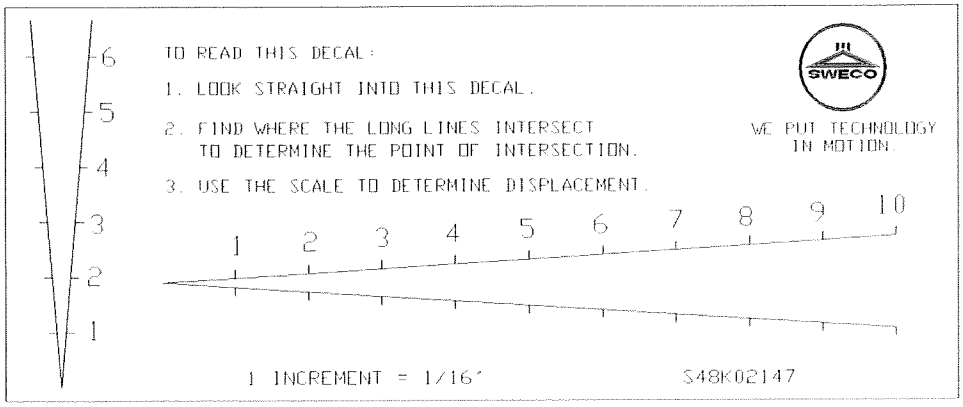


Figure 17 Vibration amplitude label

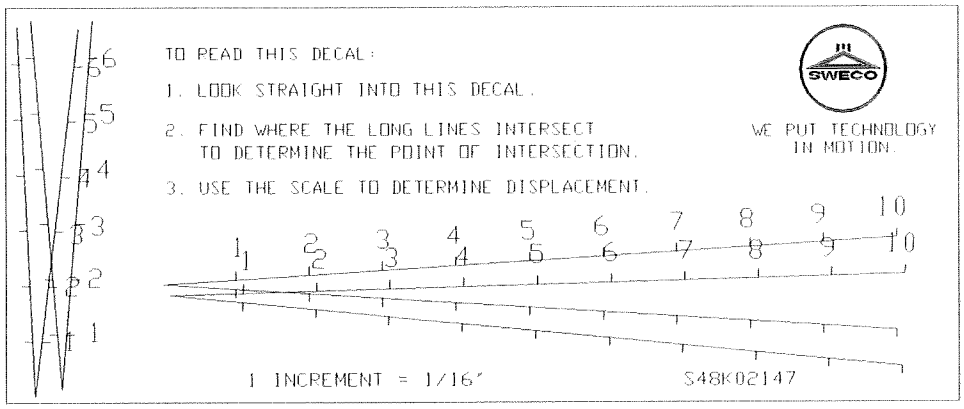


Figure 18 Sample Horizontal (Between 2 & 3) and Vertical (Between 1 & 2) Intersections During Operation

11.4 Adjusting Top Weights

WARNING

WHEN INSTALLING OR MAINTAINING THIS SEPARATOR, SHUT OFF AND LOCK OUT POWER BEFORE REMOVING GUARDS (BASE DOOR, COVER, ETC.). FOLLOW ALL LOCAL AND NATIONAL ELECTRICAL CODES. FAILURE TO COMPLY COULD RESULT IN SEVERE PERSONAL INJURY OR PROPERTY DAMAGE.

NOTE

BOTH TOP AND BOTTOM WEIGHTS ARE SET AT SLOT 5 AT THE FACTORY.

TOP WEIGHT ADJUSTMENTS

The top weights control the horizontal motion of the unit. If the material being screened is *sticky* or *viscous* and does not travel properly on the screen, it may be necessary to increase the top force. Also, if bottom force adjustments did not correct the condition and additional throw is needed to properly discharge the material, adjustments to the top force will be needed.

Follow these steps to adjust the top weights:

1. Shut off power and lock circuit breaker.
2. To adjust the top weights for the unit the frame must be removed. Refer to section 10.2 for procedure.
3. Tie wraps are used to keep the weights in place during shipment; snip off and discard before making any weight adjustments.
4. Follow these procedures to adjust the vibrating force:
   - To decrease horizontal vibrating force, lift weight latch and move weight plates back towards center of upper weight arm and slide into desired slots. Lock weight latch after adjustments.
   - To increase horizontal vibrating force, lift weight latch and move weight plates away from center of upper weight arm and slide weights into desired slots. Lock weight latch after adjustments.
5. Re-install frames. Refer to section 10.2 for procedure.
6. Repeat procedure until an optimum horizontal movement is achieved.

WARNING

WHEN MAINTAINING OR ADJUSTING ECCENTRIC WEIGHTS, USE EXTREME CAUTION TO CORRECTLY ATTACH ALL KEYS, RETAINERS, AND FASTENERS. FAILURE TO LOCK WEIGHTS SECURELY IN PLACE CAN RESULT IN PARTS BEING THROWN FROM MACHINE AT HIGH SPEED ENDANGERING PERSONNEL.

WARNING

SECURE IN PLACE ALL GUARDS, ENCLOSURES, INSPECTION PLUGS, AND FASTENERS BEFORE STARTING THIS EQUIPMENT. FAILURE TO COMPLY COULD RESULT IN SEVERE PERSONAL INJURY OR PROPERTY DAMAGE.

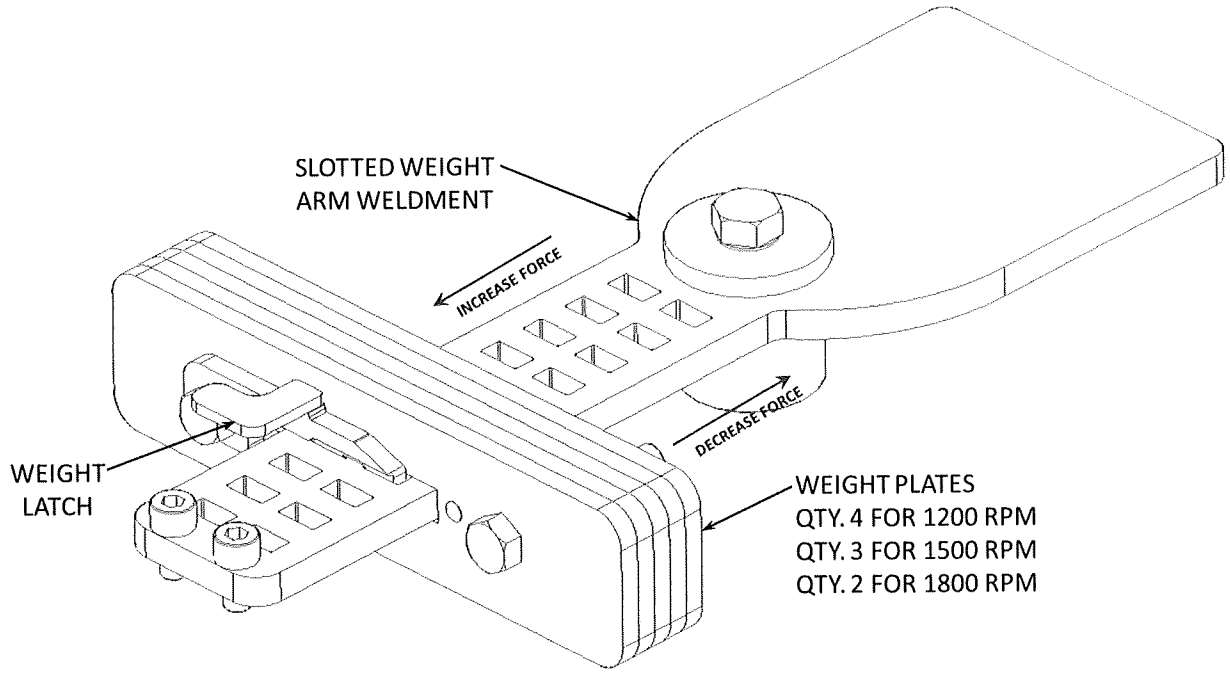


Figure 20
Top Weight Assembly

NOTE

BOTH TOP AND BOTTOM WEIGHTS ARE SET AT SLOT 5 AT THE FACTORY.

WARNING

YOUR UNIT IS SHIPPED WITH THE APPROPRIATE NUMBER OF WEIGHT PLATES DEPENDENT UPON THE RPM. THE MAXIMUM QUANTITY OF TOP WEIGHT PLATES FOR 1200 RPM IS FIVE, QUANTITY FOUR FOR 1500 RPM AND QUANTITY THREE FOR 1800 RPM. DO NOT EXCEED RECOMMENDED QUANTITY OR CAN OVERLOAD BEARINGS AND CAUSE DAMAGE TO THE MOTOR.

11.5 Adjusting Bottom Weights

WARNING

WHEN INSTALLING OR MAINTAINING THIS SEPARATOR, SHUT OFF AND LOCK OUT POWER BEFORE REMOVING GUARDS (BASE DOOR, COVER, ETC.). FOLLOW ALL LOCAL AND NATIONAL ELECTRICAL CODES. FAILURE TO COMPLY COULD RESULT IN SEVERE PERSONAL INJURY OR PROPERTY DAMAGE.

NOTE

BOTH TOP AND BOTTOM WEIGHTS ARE SET AT SLOT 5 AT THE FACTORY.

BOTTOM WEIGHT ADJUSTMENTS

The bottom weights control the vertical motion of the unit and pattern that the material forms when moving across the screen. The lead angle controls the pattern of material flow.

If after starting the motion generator and feeding the material onto the screen you do not have the desired pattern, shut down the unit and follow the below procedures to make adjustments to the bottom force and/or lead angle.

1. Shut off power and lock circuit breaker.
2. After all vibration has ended, remove hardware and bottom weight access door to adjust the bottom force and lead angle.
3. Tie wraps are used to keep the weights in place during shipment; snip off and discard before making any weight adjustments.
4. Locate bottom carrier plate. On this plate the slots are incremented every 5 degrees and numbered every 30 degrees from 0 to 330. These numbers represent the lead angle setting in degrees. Figure shows an example of a 0° lead angle.
5. Follow these procedures to adjust the vibrating force or to the lead angle:
   - To decrease vertical vibrating force, lift weight latch and move locked weight plates back towards center of weight arm weldment and slide weights into desired slots. Lock weight latch after adjustments.
   - To increase vertical vibrating force, lift weight latch and move locked weight plates away from center of weight arm weldment and slide weights into desired slots. Lock weight latch after adjustments.
   - To adjust lead angle, push weight plates inward and lift to the right or to the left of the selected lead angle.
6. Re-install bottom weight access door.
7. Repeat procedure until an optimum vertical movement and material pattern is accomplished.

WARNING

WHEN MAINTAINING OR ADJUSTING ECCENTRIC WEIGHTS, USE EXTREME CAUTION TO CORRECTLY ATTACH ALL KEYS, RETAINERS, AND FASTENERS. FAILURE TO LOCK WEIGHTS SECURELY IN PLACE CAN RESULT IN PARTS BEING THROWN FROM MACHINE AT HIGH SPEED ENDANGERING PERSONNEL.

WARNING

SECURE IN PLACE ALL GUARDS, ENCLOSURES, INSPECTION PLUGS, AND FASTENERS BEFORE STARTING THIS EQUIPMENT. FAILURE TO COMPLY COULD RESULT IN SEVERE PERSONAL INJURY OR PROPERTY DAMAGE.

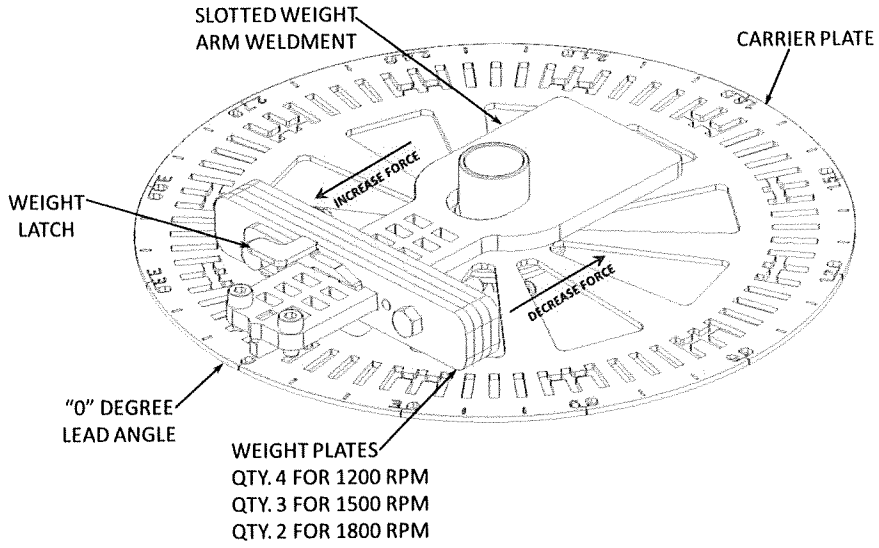


Figure 22 Bottom Weight Assembly

NOTE

BOTH TOP AND BOTTOM WEIGHTS ARE SET AT SLOT 5 AT THE FACTORY.

WARNING

YOUR UNIT IS SHIPPED WITH THE APPROPRIATE NUMBER OF WEIGHT PLATES DEPENDENT UPON THE RPM. THE MAXIMUM QUANTITY OF TOP WEIGHT PLATES FOR 1200 RPM IS FOUR QUANTITY THREE FOR 1500 RPM AND QUANTITY TWO FOR 1800 RPM. DO NOT EXCEED RECOMMENDED QUANTITY OR CAN OVERLOAD BEARINGS AND CAUSE DAMAGE TO THE MOTOR.

OPERATING UNIT

12.1 Start-Up Checklist

Check that the following procedures have been completed **prior** to operation:

- ☐ Separator is oriented properly to provide easy access to doors, guards and important components.
- ☐ Tools and lifting equipment have been removed.
- ☐ Machine has adequate clearance in all directions for operation, removal of parts, cleaning and shut down motion. Minimum clearance of 6 inches (150 mm) is required in all directions between separator and any stationary structure. For CE compliant units, minimum clearance of 20 inches (508 mm) is suggested.
- ☐ Separator is level and mounted securely to floor/structure.
- ☐ Shipping brackets have been removed and stored for possible re-use.
- ☐ Motor and power supply are correct voltage/frequency.
- ☐ Machine is properly electrically grounded.
- ☐ Power supply cable from motor to base has enough freedom of movement.
- ☐ Electrical connections are properly fastened and meet local and national codes.
- ☐ Vibratory motor rotates in the correct direction (left to right when viewed through 6" port or counter-clockwise when viewed from the top).
- ☐ Amperage has been checked and does not exceed rating shown on motor nameplate.
- ☐ Separator is clean of any liquids/solids.
- ☐ Screens are clean and properly installed.
- ☐ Frame clamp band is secure and properly torqued.
- ☐ Horizontal and vertical amplitudes have been measured to evaluate separator performance.
- ☐ Eccentric weights and lead angle settings are correct for the application.
- ☐ Hosing is in good condition, properly installed and flexible.
- ☐ Electrical Control (if applicable) is functioning properly and control door is closed and bolted.
- ☐ Unit nuts, bolts and fasteners are in place and to torque specifications (Refer to paragraph 4.6).
- ☐ Doors and guards are in place and secure.
- ☐ No unusual noises originating from machine.

12.2 Starting Unit

WARNING

STAND CLEAR OF UNIT AND KEEP ACCESSORY EQUIPMENT AWAY DURING SHUTDOWN, AS HIGHER AMPLITUDES CAN OCCUR DURING STARTING AND STOPPING PROCESSES.

1. Apply power and turn on unit by use of the inverter keypad located on the control box (if applicable).

   a. Perform a visual and audio check on the unit to make sure it is properly operating. Vibration should be consistent, and unit should not generate abnormal sounds.

      1 If unit is making unusual sounds, shut down and investigate as necessary.

2. Introduce product feed.

   a. The product must be supplied to the machine at a constant, even flow, perpendicular to the screen surface.

3. Monitor flow as needed until processing is complete.

OPERATING OBSERVATIONS

13.1 Material Distribution Patterns

NOTE

FIGURE 19 REFERENCES EXAMPLES USED TO DEMONSTRATE THE EFFECT THAT A SETTINGS CHANGES CAN HAVE ON THE MOTION AND DISTRIBUTION OF THE MATERIAL ON TOP OF THE SCREEN.

The performance of the separator is affected by how well the product is distributed across the screen. The best performance is generally achieved if the solids are evenly distributed and remain in motion. It is possible to observe distinct patterns in the product as it rotates and travels across the screen. These distribution patterns can be optimized for each of the three stages of the collection, drying, and discharge cycle.

Once the amount of vibration has been set, the distribution pattern of product on the vibrating screen is strongly regulated by the lead angle. The lead angle can be read from the bottom force wheel. Numbers are visible on the bottom force wheel with a number every 5 degrees.

When the separator is operating in forward motion, the bottom weights lead the top weights by a number of degrees. This can be demonstrated by rotating the (locked-out) motor by hand and observing the weights as they pass by the access windows from left to right. This setting creates a "twisting" motion that causes the material on the screen to tumble and rotate. This is easier to see when the material is dry, as liquid in the wet material binds it together. Lead angle changes affect the motion of the solids. Figure 19 shows the relative effect of these changes, with a description below:

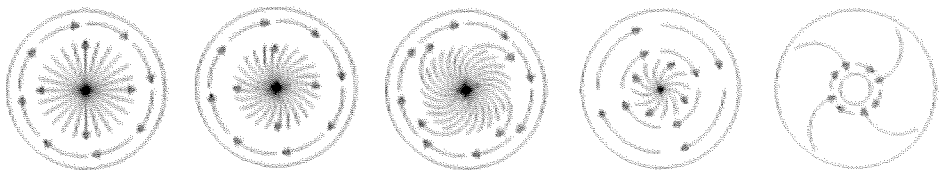


Figure 19. Material Distribution Patterns

a. 0° Lead. Dry material is thrown straight and provides accumulation toward the border of the screen.

b. 20° Lead. Dry material begins to spiral.

c. 40° Lead. Gives dry material best uniform distribution on screen.

d. 60° Lead. Gives wet material a uniform distribution on screen.

e. 90-120° Lead. Keeps product from accumulating at the border area of the screen. This lead angle creates a mild product accumulation toward the center of the screen

13.1.1 Feeding and Filtration

A good initial lead angle is **40 degrees**. This setting causes most solids to maintain a circular traveling path across the majority of the screen's surface area. Some adjustments will be needed to optimize the pattern. Wet solids tend to move slowly.

13.1.2 Discharging Solid Particles

The material travel path needs adjusted if operators want to quickly process solids. Solids discharge faster if they pass near the solids discharge port (located on the outer circumference of the screen). Refer to Figure 20. This motion leaves the center of the screen (Figure 20, item a) vacant while the solids (Figure 20, item b) "rope" around the outer edge of the screen in a circular path. This pattern can often be achieved by reversing the motor rotation while leaving the lead angle unchanged.

Different process slurries require different lead angle settings. Consult SWECO for tips on troubleshooting other lead angle settings.

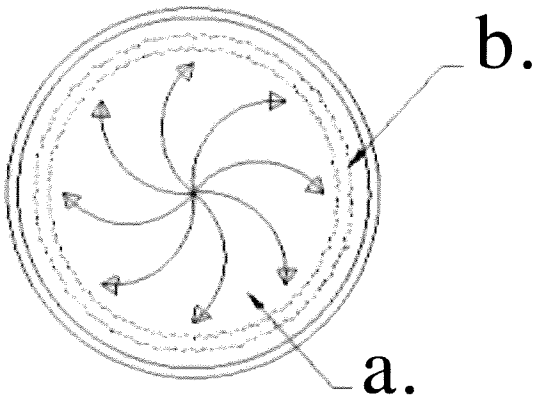


Figure 20 Outward Movement of Solids

SHUTTING DOWN UNIT

WARNING

STAND CLEAR OF UNIT AND KEEP ACCESSORY EQUIPMENT AWAY DURING SHUTDOWN, AS HIGHER AMPLITUDES CAN OCCUR DURING STARTING AND STOPPING PROCESSES.

CAUTION

DO NOT START AND STOP THE SEPARATOR MORE THAN FOUR TIMES AN HOUR. FREQUENT STARTING AND STOPPING CAN CAUSE HEAT BUILD-UP THAT WILL DAMAGE THE MOTOR.

CONTACT A SWECO REPRESENTATIVE IF YOUR PROCESS REQUIRES FREQUENT STARTING AND STOPPING.

NOTE

ALWAYS LOCK OUT/TAG OUT POWER TO SEPARATOR WHEN PERFORMING MAINTENANCE, REPAIRS, OR PARTS REPLACEMENT PROCEDURES.

1. Shut off product flow.
   a. Allow remaining material to process through separator.
2. Shut down separator.
3. Allow unit to come to a complete stop.
4. Inspect screens.
   a. Screens should be cleaned each time the separator is shut down.

MAINTAINING AND REPAIRING SEPARATOR

WARNING

SHUT OFF AND LOCK OUT POWER WHEN INSTALLING OR MAINTAINING THIS SEPARATOR. FOLLOW ALL LOCAL AND NATIONAL ELECTRICAL CODES. ELECTROCUTION CAN OCCUR IF WATER CONTACTS LIVE ELECTRICAL COMPONENTS. FAILURE TO COMPLY COULD RESULT IN SEVERE PERSONAL INJURY OR PROPERTY DAMAGE.

WARNING

ALL PERSONS OPERATING THE EQUIPMENT AND WORKING IN GENERAL AREA SHOULD WEAR STANDARD SAFETY EQUIPMENT (I.E. SAFETY GLASSES, EAR PROTECTION, STEEL-TOED BOOTS) TO PREVENT RISK OF PERSONAL INJURY. ALL SAFETY ITEMS MUST CONFORM TO LOCAL SAFETY REQUIREMENTS.

15.1 Preventive Maintenance Schedule

Unit Daily Maintenance

ITEM	TASK
Electrical Cables	Check condition and connections are securely fastened. Check for fraying and/or damage. Rectify as required.
Unit	Visually examine unit for signs of wear and/or damage. Repair/replace as needed. Run unit and perform audible checks. Investigate as needed. Clean unit from solids build-up.
Screens	Clean screens from solids build-up. Check screens for wear and/or damage. Replace as needed.
Horizontal and Vertical Amplitude	Check and record amplitude reading. Adjust as needed.
Flexible Hose/Connectors	Check for holes, cracks, or damage. Replace as needed. Check connectors are properly fastened to screener at connection point. Adjust as needed.
Center Tie-Down (if applicable)	Check for wear and/or damage. Replace as needed Check center tie-down is level with screen. Make adjustments as needed. Check for tightness (no tools center tie-down – LH Thread)
Spout Connectors (if applicable)	Check for holes, cracks, or damage. Replace as needed. Check connectors are properly fastened to screener at connection point. Adjust as needed
Techlube™ (If applicable)	Check operation lights. Refer to Techlube™ manual for LED signals and meanings. Visually check grease level. If empty, replace Techlube™ canisters and batteries.

Unit Weekly Maintenance

ITEM	TASK
Eccentric Weights	Check eccentric weight setting is appropriate for application.
Gaskets: Screens	Clean screen gaskets from solids build-up. Check gaskets for wear, cracks and/or damage. Replace as needed.
Hardware	Check for missing hardware. Replace as needed. Check for tightness. Torque appropriately.
Clamp Rings/Bands	Check for tightness. Verify proper torque. Check for fatigue, bent or cracked components. Replace if needed.
Electrical Control (if applicable)	Check control and switches function properly. Rectify as required. Check cover is properly tightened.
Nuts and bolts	Check for missing hardware. Replace as needed. Check for tightness. Torque appropriately.
Balls and sliders (if applicable)	Check for wear and/or damage. Replace as needed.
Electrical Control (if applicable)	Check control and switches function properly. Correct/repair/replace as needed. Check cover is properly tightened.

Unit Quarterly Maintenance

ITEM	TASK
Springs/Spools	Check for wear and/or damage. Replace as needed. Check for uneven compression. Replace spring(s) if needed. Check for missing hardware (if applicable). Replace as required.
Optional Quick Change System	Check system components are secure. Tighten if needed. Check tubing for aging or wear. Replace as needed. Check reservoir level. Fill with approved fluid if needed.

Vibratory Motor Maintenance

ITEM	TASK
Motor (Vibratory motor)	Lubricate motor bearings per instructions in supplied motor manual. Check and remove any build-up of solids from electrical motors. Check M12, Grade 10.9 hardware that secure motor after installation, 4 to 8 hours of operation and then verified every 3 months. Torque to 89 ft-lbs. (121 Nm) if needed.

MAINTENANCE LOG

DATE	HOURS RUN	VISUAL / AUDIBLE CHECK		REMARKS	SIGNATURE
		YES	NO		

15.2 Inspecting Hardware

- Refer to Torque Specifications in paragraph 4.6.
- Check that all unit nuts, bolts, and fasteners (bolts for mounting, guards, doors, etc.) are in place and tight to prevent them from loosening and causing damage to unit or harm to personnel.
- Check after initial 30 minutes of operation.
- The HX unit is supplied with bolt-down frames. Check and retighten the hex nuts securing the frames to the torque specified below to prevent frame rotation and damage to gasket, frame, or screen.
- SWECO recommends inspecting the M12, Grade 10.9 bolts used to secure the vibratory motor and re-tightened to maximum torque of 89 ft-lbs (121 Nm).
    - Check torque after **installation and after 4 to 8 hours of operation and then verified every 3 months thereafter.**
    - Do not run vibratory motor with bolts missing or not to the appropriate torque value.

15.3 Cleaning Unit

A complete and regular cleaning of the machine, accessory parts, and workplace is advisable to keep the machine safe and working to maximum efficiency.

15.4 Maintaining Screens

Screens should be inspected **daily** for blinding and cleaned as required. It is recommended to wash the screens each time the separator is shut-down. Mild soap and water are suggested. Do not use pressure washer to clean screens or damage to fine mesh screens can occur.
Screens should be inspected **daily** to check for wear or damage. Replace as needed. As screen life is dependent on a wide variety of issues like mesh size, flow rate, material properties, vibration level, maintenance, etc., we cannot guarantee how long a screen will last. Note that if screens continue to vibrate for hours after initial failure (tearing), wire segments may break loose from the mesh and fall into the screened product. If you need assistance in determining a good cleaning method for your particular application, contact your local SWECO Representative.

WARNING

IF PROCESSING HAZARDOUS MATERIALS, CHECK SAFETY DATA SHEETS (SDS'S) FOR HAZARD INFORMATION AND FOLLOW NECESSARY PROCEDURES PRIOR TO SERVICING EQUIPMENT.

CAUTION

SCREENS ARE FRAGILE, HANDLE THEM CAREFULLY. NEVER PLACE TOOLS OR PARTS ON THE SCREEN OR DAMAGE TO THE SCREEN MAY OCCUR.

15.5 Maintaining Screen Gaskets

Check screen gaskets **weekly** that they are mounted correctly on the screen ring. Check for evidence of cracking, breakage or crimps. Replace as needed. Clean gasket with each screen change. Do not over-stretch gaskets. Always store spare gaskets flat on a shelf, never on a hook, and in a clean environment.
In addition, check condition of O-rings and replace as needed. Periodically check for cleanliness and clean as needed.

NOTE

USE ONLY SWECO SCREEN CHANNEL GASKETS TO ASSURE PROPER FIT AND FUNCTION. USE OF ANY OTHER GASKETS CAN CAUSE STRUCTURAL DAMAGE TO THE UNIT, DAMAGE TO THE HOSE, OR NEGATIVELY AFFECT PROCESSING RATES.

15.6 Maintaining Flexible Hoses

CAUTION

HOSES ARE TO BE FLEXIBLE ENOUGH SO AS NOT TO HINDER THE MOTION OF THE SEPARATOR. FAILURE TO COMPLY CAN CAUSE DAMAGE TO HOSE OR MATERIAL BEING PROCESSED.

All connections between the HX Separator and other equipment must be made using flexible hose. Check the condition of the hoses **daily**. Visually examine for holes, cracks, bulges or damage and replace as needed. The life expectancy is estimated at 6 months for normal usage and the connectors are recommended to be replaced.
The best hose is the hose that is compatible with the process and the most flexible. Flexible hoses should be adequately supported and installed in accordance with the manufacturer's recommendations. Make sure that the bend radius of each connection is no less than the minimum bend radius recommended by the manufacturer. It is important that the flexible hoses do not restrict the motion of the machine. Check that they are properly fastened to separator at connection point. Adjust as needed.

15.7 Springs and Spools

WARNING

AVOID PINCH POINTS WHEN REPLACING SPRINGS/SPOOLS. FAILURE TO COMPLY COULD RESULT IN PERSONAL INJURY.

CAUTION

AVOID PINCH POINTS WHEN REPLACING SPRINGS/SPOOLS. FAILURE TO COMPLY COULD RESULT IN PERSONAL INJURY.

Check support springs and spools for wear or damage and replace as needed. SWECO recommends initial inspection at 500 hours and then every 5000 hours. Check for uneven compression of springs. Replace spring(s) if needed. Fatigue of springs will cause poor performance. Fracture of springs will cause abnormal shaking and, if not corrected, will cause structural damage. When replacing, make sure springs are in alignment with spools and that spring guards (if applicable) are installed to the springs. See paragraph 16.3 for instructions if needed.

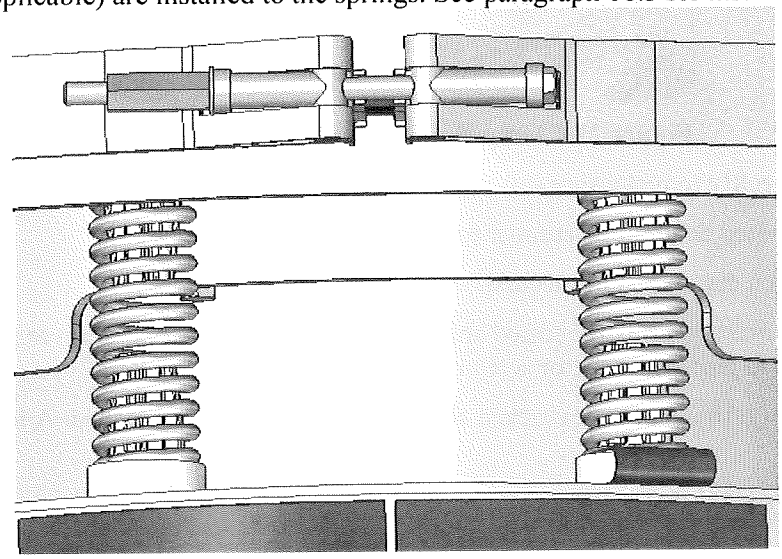


Figure 21 Springs and Spools Installed (Skirt Assembly and Spring Boots Removed for Clarity)

15.8 Clamp Bands

WARNING

CLAMP BANDS MUST BE PROPERLY SEATED AND TIGHT. FAILURE TO COMPLY CAN RESULT IN PERSONAL INJURY OR PROPERTY DAMAGE.

Clamp bands are used to secure the bottom frame to lower table assembly, frames to one another, and the feed cover to the top frame.

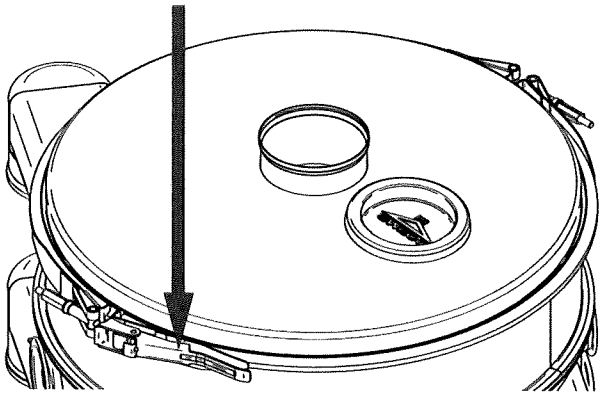


Figure 22 Clamp Band Securing Cover to Frame

1. Inspect clamp band **weekly** to make sure it is properly seated.

2. Use a heavy rubber coated dead blow hammer to help seat the clamp if needed.

a. Check and retighten clamp band if needed.

b. The frame clamp must be properly seated and tight before beginning operation to prevent it from loosening and causing damage to gasket, frame, or screen.

3. Inspect clamp band for fatigue, bent or cracked components and replace if needed. A loose clamp will generate heat.

15.9 Vibratory Motor Weight Parts

- Periodically inspect top and bottom vibratory motor weight parts.
- Check that parts are tight and secure. Replace any part if structural weakness appears.

15.10 Lubricating Vibratory Motor Bearing

Proper lubrication of the top and bottom motor bearings is essential for long motor life and operation of your separator. Motor weights impose severe loads on motor bearings. To prevent excessive wear on bearings a rigid lubrication program must be maintained.

15.10.1 Manual Lubrication

CAUTION

ALL VIBRATORS ARE LUBRICATED AT THE FACTORY. USE ONLY PRESCRIBED GREASE IN VIBRATOR. IF DIFFERENT GREASE IS USED, VIBRATOR CAN BE DAMAGED, AND WARRANTY WILL BE VOIDED.
USE ONLY PRESCRIBED AMOUNT OF GREASE TO LUBRICATE VIBRATOR. TOO MUCH GREASE WILL CAUSE BEARINGS TO OVERHEAT AND RESULT IN PREMATURE BEARING FAILURE.
DO NOT START AND STOP YOUR SEPARATOR MORE THAN FOUR TIMES AN HOUR ON A CONTINUOUS BASIS. FREQUENT STARTING CAN CAUSE HEAT BUILD-UP WHICH WILL DAMAGE THE MOTOR. CONTACT YOUR SWECO REPRESENTATIVE IF YOUR PROCESS REQUIRES FREQUENT STARTING AND STOPPING.

NOTE

REFER TO THE VIBRATORY MOTOR MANUAL PROVIDED FOR ADDITIONAL MAINTENANCE.
UNIT IS LUBRICATED WITH TECHLUBE AND SHOULD NOT BE MANUALLY LUBRICATED.
ANY REPAIRS PERFORMED BY THE CUSTOMER WILL VOID WARRANTY. ANY MOTOR THAT HAS BEEN OPENED BEYOND THE REMOVAL OF THE WEIGHT COVERS WILL NOT BE REPLACED UNDER WARRANTY.

Refer to the following procedures to manually lubricate the vibratory motor:

1. Shut off and lock out power. Make sure machine comes to a complete stop.
2. Access the top lube fitting.
3. Carefully clean all old grease and dirt from the grease inlet fittings and from the grease gun.
4. Lubricate top and bottom bearings through the grease fittings every 2000 hours of operation.

PARTS REPLACEMENT

CAUTION

THIS EQUIPMENT MUST BE INSTALLED, OPERATED, AND MAINTAINED BY QUALIFIED PERSONNEL TO AVOID PERSONAL INJURY OR DAMAGE TO PROPERTY.

NOTE

PART NUMBERS CAN VARY PER MACHINE. WHEN ORDERING REPLACEMENT PARTS REFER TO DATA PLATE LOCATED ON MACHINES' BASE STATING MODEL AND SERIAL NUMBER TO HELP GUARANTEE CORRECT REPLACEMENT PARTS.

After many hours of operation, parts begin to wear and may need to be replaced. The following paragraphs show the procedures used when replacing worn or damaged parts.

16.1 Recommended Spare Parts

For continuous, uninterrupted service of your SWECO Separator we recommend the following spare parts for each unit:

1. One screen of each mesh.
2. One clamp ring assembly.
3. Two channel gaskets of same material on your unit.
4. One center tie-down assembly
5. Eight springs.
6. Sixteen spring spools.
7. One Tech-Lube™ kit.
8. When three or more separators are in operation, or separating high value product, SWECO also recommends stocking of a spare motion generator.
9. If unit assembly has self-cleaning screens or ball trays it is recommended extra sliders and balls be stocked.

16.2 Removing Screens

WARNING

WHEN INSTALLING OR MAINTAINING THIS SEPARATOR, SHUT OFF AND LOCK OUT POWER BEFORE REMOVING GUARDS (SKIRT, COVERS, ETC.). FOLLOW ALL LOCAL AND NATIONAL ELECTRICAL CODES. FAILURE TO COMPLY COULD RESULT IN SEVERE PERSONAL INJURY OR PROPERTY DAMAGE.

CAUTION

PROVIDE ENOUGH CLEARANCE AROUND AND ABOVE THE SEPARATOR FOR REMOVAL AND REPLACEMENT OF PARTS. FAILURE TO COMPLY COULD RESULT IN DAMAGE TO PARTS.

SCREENS ARE FRAGILE. HANDLE THEM CAREFULLY. NEVER PLACE TOOLS OR PARTS ON THE SCREEN OR DAMAGE TO SCREEN MAY OCCUR. CHECK SCREENS FREQUENTLY FOR EXCESS WEAR OR DAMAGE. SCREEN LIFE IS NOT GUARANTEED BY SWECO, DUE TO SEVERAL ISSUES, SUCH AS MESH SIZE, FLOW RATE, MATERIAL PROPERTIES, VIBRATION LEVEL, MAINTENANCE, ETC.

NOTE

NOTE THAT IF SCREENS CONTINUE TO VIBRATE FOR HOURS AFTER INITIAL FAILURE (TEARING), WIRE SEGMENTS MAY BREAK LOOSE FROM THE MESH AND FALL INTO THE SCREENED PRODUCT.

Screens can be extremely delicate and must be mounted securely in the separator. All screens must be visually inspected before handling or changing. If a screen is worn, used or damaged or you are replacing a screen with a different mesh, follow these procedures for removal of the screen(s):

1. Shut off and lock out power.

2. Disconnect any flexible hoses from frames and feed cover related to screen change.

3. Loosen frame clamp bands.

4. Carefully lift frames off unit and set aside.

5. Remove center tie down assembly.

6. Remove worn screens from frames.

7. Replace screens and washer as needed.

8. Reinstall frames.

9. Reconnect flexible hoses.

10. Inspect all clamp bands and make sure all are secure.

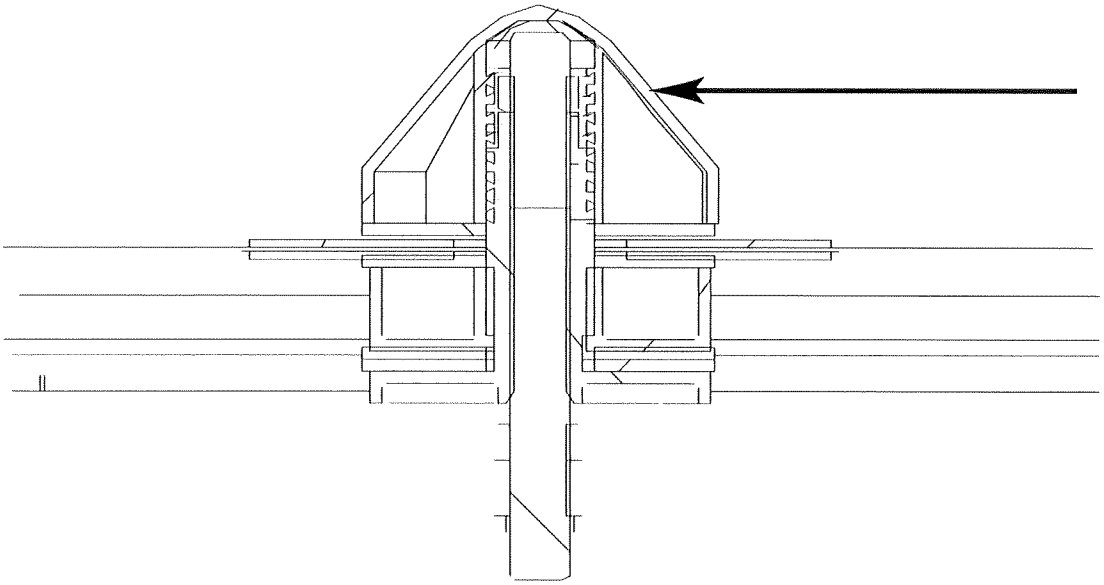


Figure 23 Center Tie Down Assembly on Screen Cross-Section(Arrowed), Detail View

16.3 Replacing Springs and Spools

WARNING

SHUT OFF AND LOCK OUT BEFORE SERVICING EQUIPMENT. FAILURE TO COMPLY CAN RESULT IN PERSONAL INJURY OR PROPERTY DAMAGE.

WARNING

AVOID PINCH POINTS WHEN REPLACING SPRINGS/SPOOLS. FAILURE TO COMPLY COULD RESULT IN PERSONAL INJURY.

KEEP HANDS CLEAR FROM OPENING. FAILURE TO COMPLY COULD RESULT IN PERSONAL INJURY.

NOTE

SPOOLS SHOULD BE REPLACED ANY TIME A SPRING IS REPLACED TO MAKE SURE THE EQUIPMENT PROPERLY FUNCTIONS.

If a spring is worn/broken or the spools are worn and need to be replaced, follow these steps for replacement:

1. Shut off and lock out power.

2. Disconnect any flexible hoses from frames and feed cover.

3. For safe access, remove all parts located above the lower table so springs are under less tension.

a. Loosen and remove hardware securing lower frame to lower table.

b. Remove all parts located above the lower table (clamp band, feed cover, frames, screens, etc.), including the clamp band securing the lower frame to the drive table (Refer to Figure 24).

4. Remove any grounding straps present.

5. There are welded studs located on the base stand and underside of the drive table that hold the spools and spring in place.

a. When replacing just one spring, tilt side of drive table where spring is located by using a scissor jack (G48C60600-00AE) under the lower table.

1 Position jack near the spring needing replacement or in between two springs needing replaced.

2 Lift high enough that the spring is at full length and slide bottom of defective spring from spools.

b. When replacing two or more springs, remove springs on each side of lifting device.

6. Remove upper and lower spring spools from welded studs.

7. Install new spring/spool(s). Make sure springs are in alignment with spools.

a. Reinstall grounding straps where needed (one above and one below the spring in two locations, total quantity of four).

8. Lower the lower table.

9. Remove lifting device.

10. Repeat steps 5-9 to replace remaining springs/spools/grounding straps.

11. Reassemble separator.

a. Make sure clamp band securing top cover and the top frame is seated properly and tight before beginning operation.

b. Make sure hardware securing frames are secure and tightened to appropriate torque (Refer to paragraph 4.6).

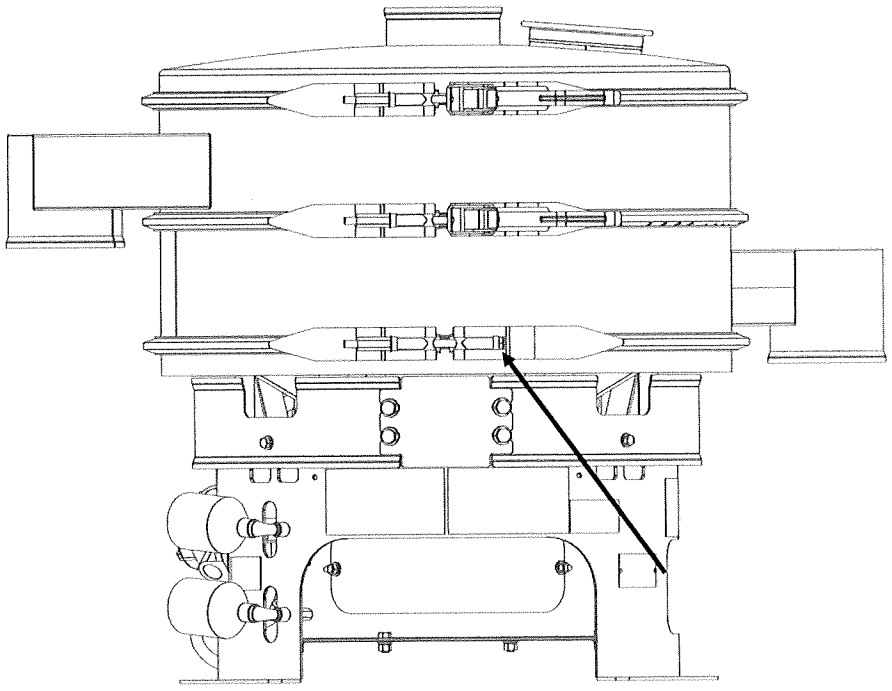


Figure 24 Clamp Band Securing Lower Frame to Drive Table (Arrowed)

16.4 Removing/Reinstalling Bottom Motor Weight Guard

The bottom motor weight guard can be removed from the lower table assembly to provide additional access to the bottom weights.

1. Make sure unit is shut down, and power is locked out.

2. Remove all four nuts and bolts from around the bottom of the motor column and weight guard cover (spaced 90° apart). The weight guard will drop down from the motor column.

3. Repeat the process to reinstall the bottom weight guard.

16.5 Repairing Vibratory Motor

WARNING

BEFORE ATTEMPTING ANY REPAIRS DURING THE WARRANTY PERIOD, CONTACT YOUR LOCAL SWECO REPRESENTATIVE FOR REPAIR AND/OR REPLACEMENT INSTRUCTIONS.
UNAUTHORIZED REPAIR ATTEMPTS WILL VOID WARRANTY. REFER TO FACTORY FOR REPAIR INSTRUCTIONS ON EXPLOSION PROOF (TEEP) TYPE VIBRATORY MOTORS.

Consult your local SWECO Representative or manufacturer motor manual for specific repair instructions. Refer to paragraph 16.6 for motor removal procedures and 16.7 for motor installation procedures.

16.6 Removing Vibratory Motor

WARNING

SHUT OFF AND LOCK OUT POWER PRIOR TO CLEANING AND PERFORMING MAINTENANCE. FOLLOW ALL LOCAL AND NATIONAL ELECTRICAL CODES. ELECTROCUTION CAN OCCUR IF WATER CONTACTS LIVE ELECTRICAL COMPONENTS. FAILURE TO COMPLY COULD RESULT IN SEVERE PERSONAL INJURY OR PROPERTY DAMAGE.
AVOID PINCH POINTS WHEN REPLACING SPRINGS/SPOOLS. FAILURE TO COMPLY COULD RESULT IN PERSONAL INJURY.

NOTE

THE VIBRATORY MOTOR CAN BE REMOVED WITH THE BASE REMAINING SECURED TO THE FOUNDATION OR FLOOR.

If the vibratory motor needs to be repaired or replaced, follow these instructions for removal.

1. Make sure unit is shut down and power to the unit is locked out/tagged out.

2. Disconnect any flexible hoses from frames and feed cover.

3. Remove the frames installed above the lower table.

a. Frames should be progressively removed, from top to bottom, by loosening the clamp bands securing the frames to each other.

4. Remove the table screen frame by loosening the clamp band securing it to the lower table.

5. Remove the lower motor weight guard (Figure 25, Item 2).

a. Refer to paragraph 16.4 for lower motor weight guard removal procedures.

6. Remove the center bolt securing the top motor weight (Refer to Figure 25, Item 3).

7. Pull top motor weight and arm free from motor (Refer to Figure 25, Item 4).

8. Remove the cotter pin (Refer to Figure 25, Item 5) and nut (Figure 25, Item 6) underneath the lower motor weight (Refer to Figure 26 for detail view).

a. Carefully support the lower motor weight (Refer to Figure 25, Item 7) and carrier plate (Figure 25, Item 8) before completely removing the cotter pin and nut. This will prevent them from falling uncontrollably.

9. Disconnect the lubrication lines.

a. Loosen both the upper and lower lines and detach at the base weldment (Refer to Figure 25, Item 9).

10. Loosen the electrical cord grip (Refer to Figure 25, Item 11) and remove the cord from the junction box (Refer to Figure 25, Item 12) to pull free.

11. Remove the bolts securing the motor plate to the lower table frame (outer ring of bolts, 8 total).

12. Thread a M12-1.75 shouldered lifting bolt where the upper motor weight bolt (Refer to Figure 25, Item 3) threads to the motor.

13. Secure lifting chains or straps to the shouldered lifting bolt.

a. Motors weighs as much as 80 lbs. [36 kg]. Make sure the lifting equipment is rated to support this weight.

14. Slowly and carefully lift motor out of center column and move to secure location or workspace.

a. Feed lube lines and electrical cord through the openings in the center column so they are not snagged and damaged as the motor rises.

15. Lower motor onto secure space.

a. Completely remove lube lines.

1 Note the wiring and lubrication locations and positions for later reinstallation.

b. Remove motor plate from motor (8 bolts) and retain for future use.

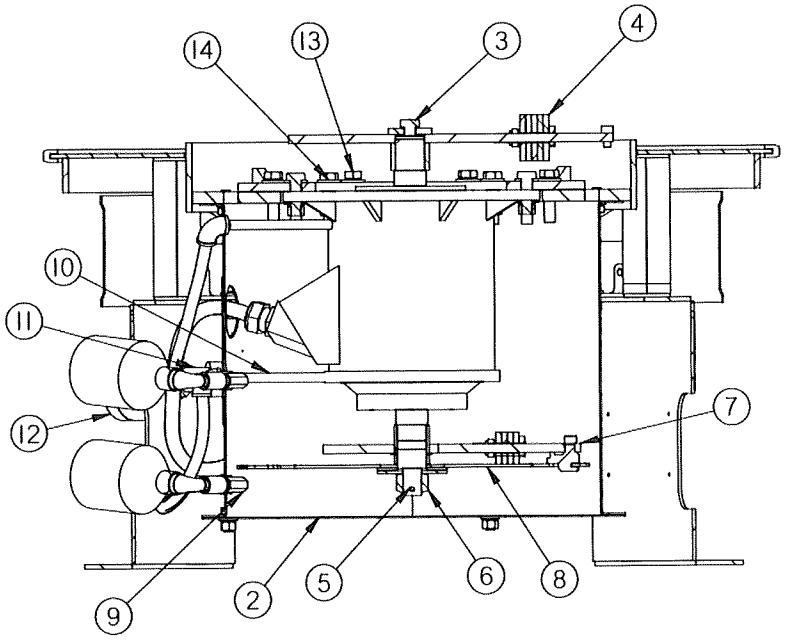


Figure 25 HX Separator Cross-Section, Frames and Table Frame Removed

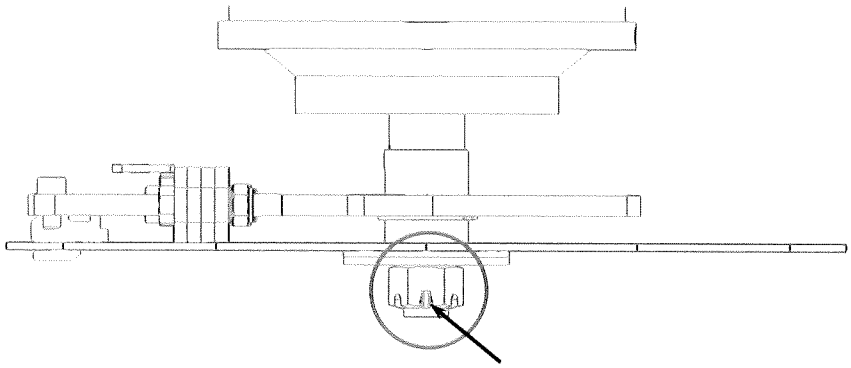


Figure 26 Lower Motor Weight Cotter Pin (Arrowed) and Retaining Nut (Circled), Detail Views

16.7 Replacing Vibratory Motor

WARNING

DO NOT PUT HANDS BETWEEN VIBRATORY MOTOR AND INSIDE OF MOTOR COLUMN. FAILURE TO COMPLY CAN RESULT IN PERSONAL INJURY.

WARNING

NEVER RUN VIBRATORY MOTOR WITH WEIGHTS EXPOSED. FAILURE TO COMPLY COULD RESULT IN SEVERE PERSONAL INJURY OR PROPERTY DAMAGE.

CAUTION

FAILURE TO ADJUST CORD LENGTH PROPERLY CAN CAUSE CORD BREAKAGE (IF TOO SHORT) OR DANGEROUS RUBBING ON VIBRATING PARTS (IF TOO LONG).

1. Make sure the new/repaired motor is ready for installation.

2. Install upper and lower lube lines to the motor.

3. Connect electrical cord grip to motor. A new cord grip comes with each new motor.

4. Mount motor plate to top of motor using 8 bolt locations (89 ft-lbs or 121 N-m)

5. Thread a M12-1.75 shouldered lifting bolt where the upper motor weight bolt (Refer to Figure 27, Item 3) threads to the motor.

6. Secure lifting chains or straps to the shouldered lifting bolt.

a. Motors weigh as much as 80 lbs. [36 kg]. Make sure the lifting equipment is rated to support this weight.

7. Slowly and carefully lift motor and move until it is directly above the center column of the HX Separator lower weight table.

8. Slowly and carefully lower the motor into position.

a. Carefully feed lube line and electrical cord through the openings in the center column so they are not snagged and damaged as the motor is lowered into position.

9. Align motor plate bolt holes to bolt holes in lower table.

10. Secure the motor plate with the bolts, using the appropriate pattern (Refer to Figure 28) to evenly secure motor.

a. Apply 5 ft-lb (7 Nm) of torque to each bolt.

b. Apply 20 ft-lb (27 Nm) of torque to each bolt.

c. Apply 50 ft-lb (68 Nm) of torque to each bolt.

d. Apply final 89 ft-lb (121 Nm) of torque to each bolt.

11. Remove the shouldered lifting bolt from the motor.

12. Reconnect the lube lines to the couplings welded to the base.

13. Reconnect the electrical cable to the cord grip.

14. Reconnect the electrical cord grip to the junction box (Refer to Figure 27, Item 12) mounted to the base weldment.

a. Make sure wiring from the motor to the junction box is properly connected.

b. Make sure wiring from the junction box to the control panel is properly connected.

c. There must be sufficient slack in the motor cord for proper unit operation.

15. Reinstall lower motor weight (Refer to Figure 27, Item 7) and lead angle assemblies (Refer to Figure 27, Item 8) with desired settings.

a. Push the bottom motor weight onto the motor shaft.

b. Install the lead angle assembly to the motor shaft.

c. Install new rubber washer and steel washer to motor shaft.

d. Reinstall locking nut to the motor shaft.

e. Tighten locking nut to 50 ft-lb (68 Nm).

f. Push cotter pin through locking nut.

g. Bend cotter pin ends to retain locking nut. Make sure the ends are bent up so they do not hit the weight guard.

h. Refer to paragraph 11.5 for specific adjustment procedures.

16. Reinstall upper motor weight assembly (Refer to Figure 27, Item 4) with desired setting.

a. Place motor shaft hub, then weight arm weldment, weights, top washer, lock washer, then top bolt on the top motor shaft.

b. Install top washer on top of the upper motor weight assembly.

c. Install bolt securing the upper motor weight to the top motor shaft with a torque of 41 ft-lb (55 NM).

d. Refer to paragraph 11.4 for specific adjustment procedures.

17. Reinstall lower motor weight guard (Refer to Figure 27, Item 2).

18. Reinstall frame table and frames.

a. Refer to paragraph 10.2.1 for specific installation procedures.

19. Connect all spouts to discharge hoses.

20. Apply power to the unit and prepare for operation per instructions and procedures from paragraph 0.

21. Function test the separator by allowing the unit to run for one hour.

22. Shut down after completing one hour of operation.

23. Confirm all motor bolts remain torqued to 89 ft-lbs (121 Nm).

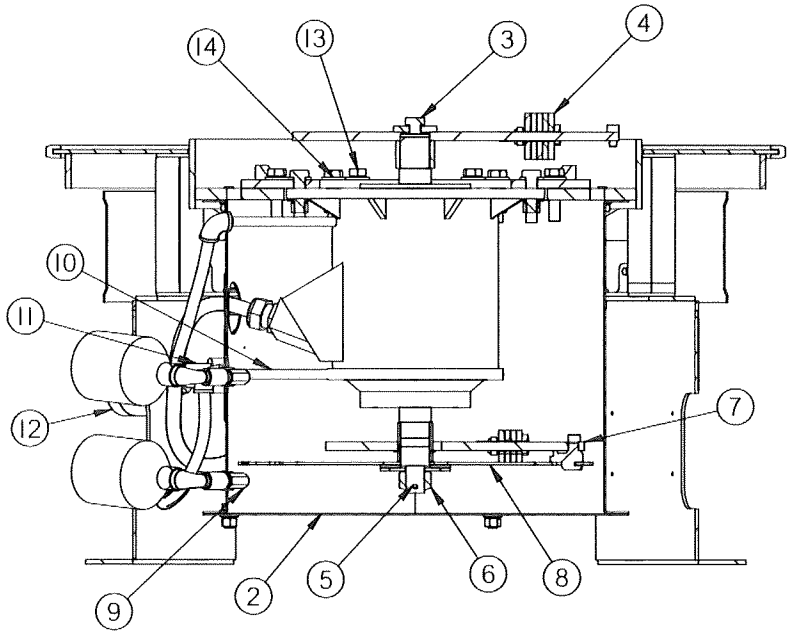


Figure 27 HX Separator Cross-Section, Frames and Table Frame Removed

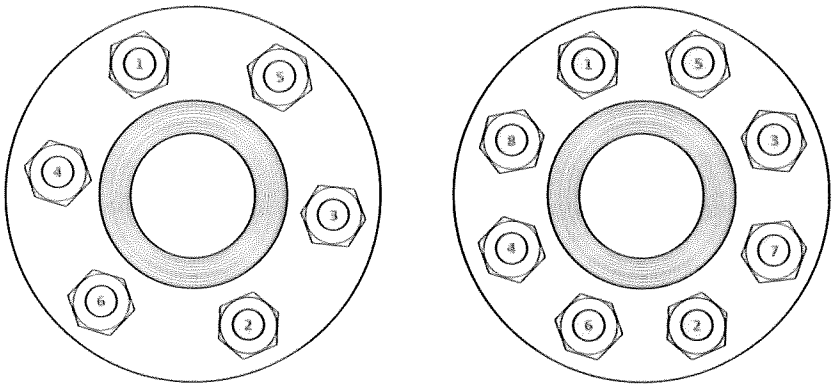


Figure 28 Six Wedge Bolt (Left) and Eight Wedge Bolt (Right) Tightening Patterns

16.8 Self-Cleaning Screen Kit (Optional Equipment)

It is essential that the screens be kept clean for the unit to operate properly. The SWECO Self-Cleaning Screen Kit prevents the screens from becoming dirty or blinded (product accumulated between the screen wires). It also prevents material from sticking to the screen, which will improve dry sizing and liquid/solid separation. The Self-Cleaning Screen Kit is held between the separator frames by the outside clamping ring. When the separator is in operation, the sliders bounce and rotate between the perforated plate and the separator screen (see Figure 29). The bouncing and rotating action of the cleaning sliders dislodge mesh-clogging materials and scrape away fibrous materials that tend to stick to the screen cloth.

Inspect sliders on a weekly basis for excessive wear and replace if necessary. In addition, if cleaning efficiency starts to decline, it is recommended to replace the sliders.

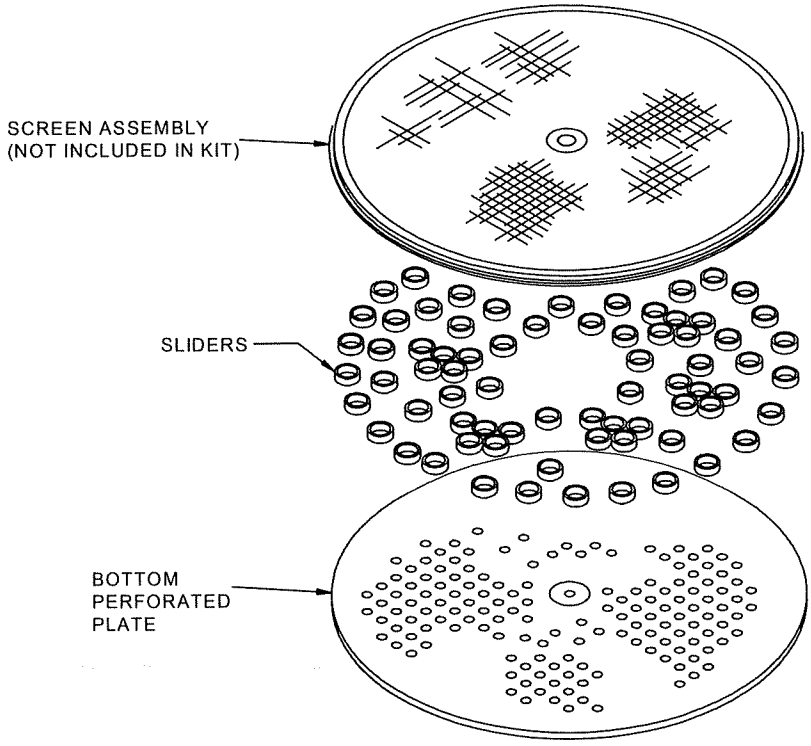


Figure 29: Self-Cleaning Screen Kit

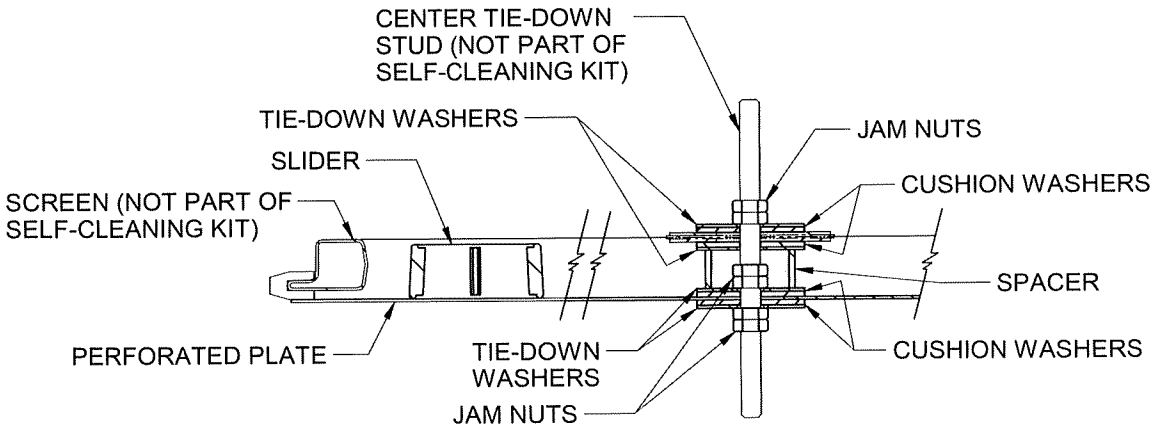


Figure 30: Cross Section of Self-Cleaning Kit

Piggybacking of sliders can stretch or tear the screen. To prevent this problem, replace sliders when they have worn to 85% of their original height.

16.9 Ball Tray Assembly (Optional Equipment)

The SWECO Ball Tray Assembly can be used to prevent screens from becoming dirty or blinded (product accumulated between the screen wires) and to prevent material from sticking to the screen. A coarse screen is mounted below the sizing screen. Elastomer balls are placed on this coarse screen and the unit's vibrating action causes the balls to bounce against the underside of the screen cloth. The bouncing and rotating action of the balls dislodge the mesh-clogging materials and scrape away the fibrous materials that tend to stick to the screen cloth. Higher vertical separator motion is required to activate the balls cleaning action. The ball tray system is used only for dry screening.

Weekly inspect balls for excessive wear and replace if necessary. In addition, if cleaning efficiency starts to decline, it is recommended to replace the balls.

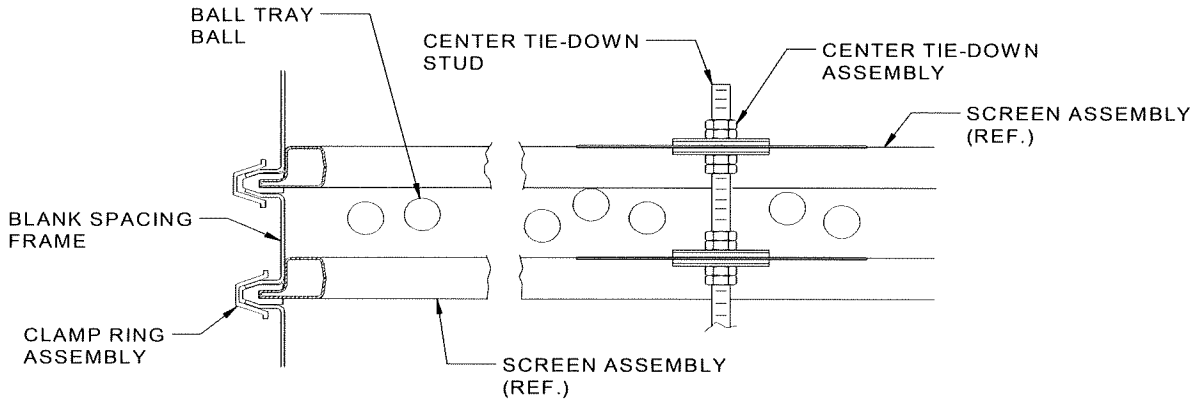


Figure 31: Cross Section of Ball Tray Assembly

TROUBLESHOOTING

PROBLEM	PROBABLE CAUSE	SUGGESTED REMEDY
SEPARATOR STOPS	TRIPPED	CHECK CIRCUIT BREAKER
VIBRATORY MOTOR FAILS TO ROTATE	MAIN SUPPLY DOWN	CHECK SUPPLY CHECK SUPPLY FUSES
SHORT SCREEN LIFE	SOLIDS LOADING TOO HEAVY	USE COARSER SCREEN
SCREEN FATIGUE	NOT ENOUGH TENSION	TIGHTEN CLAMP RINGS AND THEN TIGHTEN CENTER TIE DOWN
SEPARATOR MAKES UNUSUAL LOUD NOISE	MOTOR BEARINGS WORN	REPLACE MOTOR
	SPRING FAILURE	REPLACE SPRINGS
	LOOSE BOLTS	CHECK AND RETIGHTEN
	LOOSE SCREEN	CHECK AND RETIGHTEN CLAMP RING AND CENTER TIE-DOWN
	FRAMES/COVER NOT CLAMPED PROPERLY	CHECK AND RE-TIGHTEN CLAMP RINGS. TIGHTEN 3/8" HARDWARE TO 32 FOOT POUNDS (43 NM). TIGHTEN 1/2" HARDWARE TO 40 FOOT POUNDS (54 NM).
SEPARATOR MAKES UNUSUAL VIBRATION	VIBRATORY MOTOR ROTATING IN WRONG DIRECTION	REVERSE ROTATION (MUST ROTATE CCW FROM TOP)
	DAMAGED SPRINGS	CHECK AND REPLACE AS NEEDED
	SEPARATOR NOT LEVEL	USE SHIMS BETWEEN BASE AND FOUNDATION AS NEEDED

PROBLEM	PROBABLE CAUSE	SUGGESTED REMEDY
	TOP/BOTTOM WEIGHT SETTINGS INCORRECT	ADJUST WEIGHTS
VIBRATORY MOTOR OVERHEATING (70DEG OVER AMBIENT).	BEARING OUT OF GREASE	SERVICE BEARINGS
	BEARING WORN OUT	REPLACE MOTOR
BUILD UP ON SCREEN OR TOO MUCH SPILLS OVER DISCHARGE	SCREEN MESH TOO SMALL OR SCREEN LOOSE	CHANGE TO LARGER MESH SCREEN
		MAKE SURE SCREENS ARE PROPERLY INSTALLED
	VIBRATORY MOTOR NOT ROTATING IN CORRECT DIRECTION	REVERSE ROTATION
	SCREEN CLOTH TENSION LOOSE ON SCREEN PANEL	REPLACE SCREEN PANEL
	LEAD ANGLE OR TOP/BOTTOM WEIGHT SETTINGS INCORRECT	MAKE ADJUSTMENTS AS NECESSARY
SOLIDS MIGRATING AND NOT DISCHARGING OR CONVEYING PROPERLY	MOTOR NOT RUNNING	CHECK VIBRATORY MOTOR
	MOTOR ROTATING IN WRONG DIRECTION	REVERSE ROTATION
	LOOSE SCREEN CLOTH	REPLACE SCREENS
	UNIT NOT LEVEL	LEVEL AS NEEDED

ILLUSTRATED PARTS BREAKDOWN

The following information shows the parts lists and drawings that apply to the HX Separators. This information provides dimensional data, SWECO part numbers, a brief description of the parts, and quantities needed for reordering. Also included are drawings showing the location of each part stated in parts lists.

The fourth digit of the SWECO part number designates the material of construction and can vary. See note specifying available material codes. When reordering, specify material type of unit or part.

NOTE

BELOW IS A LIST OF AVAILABLE TYPES OF STEEL/MATERIAL AND THEIR CODES:
"C" REPRESENTS CARBON STEEL
"S" REPRESENTS 304 STAINLESS STEEL
"Y" REPRESENTS 316L STAINLESS STEEL

Accessories and replacement parts must meet the technical requirements. This can be guaranteed by using original parts from SWECO.

NOTE

PART NUMBERS CAN VARY PER MACHINE. WHEN ORDERING REPLACEMENT PARTS REFER TO DATA PLATE LOCATED ON MACHINES' BASE STATING MODEL AND SERIAL NUMBER TO HELP GUARANTEE CORRECT REPLACEMENT PARTS.

18.1 DRIVE PARTS BREAKDOWN

Table 2 Drive Parts Breakdown (Reference Figure 32)

ITEM NO.	DESCRIPTION	SWECO PART NO.	MS	304 SST	316 SST	QTY
1	Lower Table Weldment **30"** **40"**	 H30_70400-00__ H40_70400-00__	C	S	Y	1
2	Motor Mounting Flange	G30_00405-00__	C	S	Y	1
3	Hex Head Cap Screw, M12-1.75x50mm ISO 4017, Class 10.9	103181359				16
4	Hex Nut, M12-1.75, ISO 4032, Class 10.9	103181393				8
5	Flat Washer, M12, ISO 7089, A4-70	103181385				30
6	Base Weldment **30"** **40"**	 H30_70100-00__ H40_70100-00__	C	S	Y	1
7	Spring Spool, Polyurethane	S48K00226				16
8a 8b 8c 8d	J-Box UL, CSA Nema 7 CE, IP66/IP67, CLI ATEX Zone 1 & 2, 21 & 22 UL, CSA Aluminum	 01-1508 103067108 102933843 01-1343				1
9	Bottom Weight Guard	H30_70439-00__	C	S	Y	1
10	Decal, Instruction Label	S48K02139				1
11	Decal, Warning Eccentric Weights	S48K02137				1
12	Decal, J-Box Label (Do Not Rotate)	F20K19007				1
13	Lower Weight Guard Cover	H30_70436-00__			Y	1
14	Nameplate Data Nameplate Data, CE	S18S01961 S48S02155				1
15	Motor Tag	-				1
16	-	-				
17	-	-				
18	Bottom Weight Access Door	H30_70127-00__	-	-	Y	1
19	Flat Washer, M8, ISO 7089, A4-70		-	-	103181384	4

SWECO HX ROUND SEPARATORS

ITEM NO.	DESCRIPTION	SWECO PART NO.	MS	304 SST	316 SST	QTY
20	Safety Washer, Schnorr, Type S, M8		-	103181381	-	4
21	Hex Nut, M8-1.25, ISO 4032, A4-70		-	-	103181389	2
22	-	-				
23	-	-				
24	Drive Screws, #4 x 3/16", RH		-	04-1246	-	6
25	Shipping Bracket	H30_71949-00__	C	-	-	3
26	Hex Head Cap Screw, M12-1.75 x 30mm, ISO 4017				103181348	6
27	Flat Washer, M12, ISO 7089				103181385	6
28	Table Gasket, 30", Black Nitrile	S30E81130				1
29	Grounding Straps	S48S00443				4
30	Top Weight Assembly 1200 RPM 1500 RPM 1800 RPM	 H30_01700-00__ H30_01701-00__ H30_01702-00__	-	S	Y	1
31	Bottom Weight Assembly, 1200 RPM 1500 RPM 1800 RPM	 G30_01750-00__ G30_01751-00__ G30_01752-00__	-	S	Y	1
32	Safety Washer, Schnorr, Type S, M12		-	103181383	-	17
33	Spring, 5" Free Length, 0.225" Wide	S30S00203				8
34	Spring Safety Tube, White Neoprene	G60W70193-00				8
35	Flat Washer, M10, ISO 7089		-	-	103181387	16
36	Safety Washer, Schnorr, Type S, M10		-	103181378	-	13
37	Hex Head Cap Screw, M10-1.5 x 20mm, ISO 4017		-	-	103181360	12
38	Hex Nut, M10-1.5, ISO 4032		-	-	103181394	4
39	-	-			-	
40	Lube Fitting, 1/8-NPT (Supplied by Motion Generator)	00-149				2
41	Hex Head Cap Screw, M12-1.75x40, ISO 4017		-	-	103181355	1
42	Split Lock Washer, M12		05-382	05-306	05-271	1
43	Washer	G30S01732-00XB				1
44	Upper Weight Arm	G30S01703				1
45	Spacer	G30S01730-00				1
46	-	-				
47	Socket Head Cap Screw, M8-1.25x16, ISO 4762		-	-	103181368	2
48	Hex Locknut, M10-1.5, ISO 7040		-	-	103181400	2
49	Washer, Sealing, .434 I.D. x .75 O.D., 18-8 SST, Black Neoprene Bonded	05-405				1
50	Upper Weight Plate 1200 RPM 1500 RPM 1800 RPM	 H30_01705-00__	-	S	Y	 5 4 3
51	Hex Head Cap Screw, M10-1.5, ISO 4017 1200 RPM – 60mm Length 1500 RPM – 50mm Length 1800 RPM – 40mm Length				 103181354 103181356 103181363	2
52	Safety Washer, Schnorr, Type S, M10		-	103181378	-	1
53	Weight Latch	G30_01704-00__	-	S	Y	1

ITEM NO.	DESCRIPTION	SWECO PART NO.	MS	304 SST	316 SST	QTY
54	Retaining Ring, 38mm, External, DIN 471	103180761				1
55	Lower Weight Hub	H30_00790-00	-	S	-	1
56	Weight Arm Weldment	G30_00783	-	S	Y	1
57	Carrier Plate	H30S01730-00XS	-		-	1
58	Weight Washer, Orange Silicone	G30X00791-00				1
59	Weight Washer	G30S00789-00				1
60	Hex Slotted Nut, M20-2.5, Class 8, ISO 7035		103181397	-	-	1
61	Cotter Pin, 5/32" x 1-3/4" Long, ASME B 18.8.1		-	103181415	-	1
62	Socket Head Cap Screw, M8-1.25x16, ISO 4762		-	-	103181368	2
63	Hex Locknut, M10-1.5, ISO 7040		-	-	103181400	2
64	Safety Washer, Schnorr, Type S, M10		-	103181378	-	1
65	Washer, Sealing, .434" I.D. x .75" O.D., 18-8 SST, Black Neoprene	05-405				1
66	Lower Weight Plate 1200 RPM Assembly 1500 RPM Assembly 1800 RPM Assembly	H30_00787-00__	-	S	Y	 4 3 2
67	Hex Head Cap Screw, M10-1.5, ISO 4017 1200 RPM – 50mm Length 1500 RPM – 45mm Length 1800 RPM – 40mm Length				 103181356 103181362 103181363	2
68	Motion Generator, 1/2 HP	See Sales Order				1
69	Tech-Lube™ System Standard Food Grade Kluber	G30K05744	 -F1 -F4 -F6	-	 -SS-F1 -SS-F4 -SS-F6	1
70 - 78	See Lube Kit Parts Breakdown for Details (Table 3)					
75	Scissor Jack, 1-1/2 Ton (Optional)	G48C60600-00AE				1

Notes:

1) The first underscore (_) in part number is material code placeholder. The material code is found to the right in the table.

2) The last two underscores (__) is the finish code placeholder as determined by unit specific build.

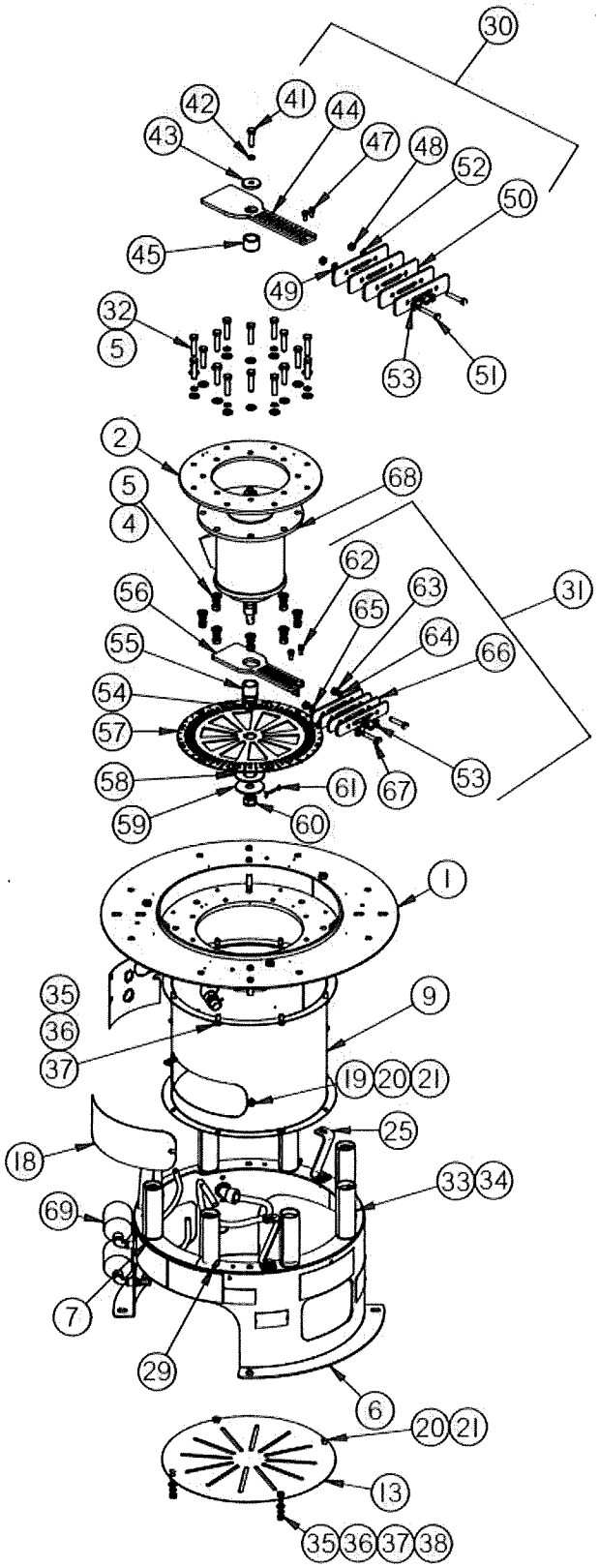


Figure 32 Parts Breakdown Exploded View

18.2 LUBE KIT PARTS BREAKDOWN

Table 3 Lube Kit Parts (Reference Figure 33)

ITEM NO.	DESCRIPTION	SWECO PART NO.	MS	304 SST	316 SST	QTY
68	Motion Generator, 1/2 HP	See Sales Order	-	-	-	1
69	Tech-Lube™ System Standard Food Grade Kluber	G30K05744	-F1 -F4 -F6	-	-SS-F1 -SS-F4 -SS-F6	1
70	Lube Hose Assembly, 1/4" I.D. x 13" Standard Food Grade Kluber	10-1084	-F1 -F4 -F6	-	-SS-F1 -SS-F4 -SS-F6	2
71	Lube Fitting, 1/4-NPT		00-258	-	00-1634	2
72	Elbow, 1/8-FNPT x 90° Standard Food Grade Kluber		02-126 -F1 -F4 -F6	-	02-770 -F1 -F4 -F6	2
73	Elbow, 1/4-MNPT x 1/4-FNPT, Swivel, 90° Standard Food Grade Kluber		10-479 -F1 -F4 -F6	-	10-757 -F1 -F4 -F6	2
74	Elbow, 1/4-FNPT x 90° Standard Food Grade Kluber		02-1119 -F1 -F4 -F6		02-1323 -F1 -F4 -F6	2
75	Scissor Jack, 1-1/2 Ton (Optional)	G48C60600-00AE	-	-	-	1
76	Grease Cartridge Standard FDA Food Grade Kluber	S48K42040 -F1 -F4 -F6	-	-	-	2
77	Nipple, 1/8-NPT x ~5" Long Standard Food Grade Kluber		02-118 -F1 -F4 -F6	-	02-113 -SS-F1 -SS-F4 -SS-F6	2
78	Lube Kit (Optional) Standard FDA Food Grade Kluber	G30K00752-F1	-F1 -F4 -F6	-	-SS-F1 -SS-F4 -SS-F6	

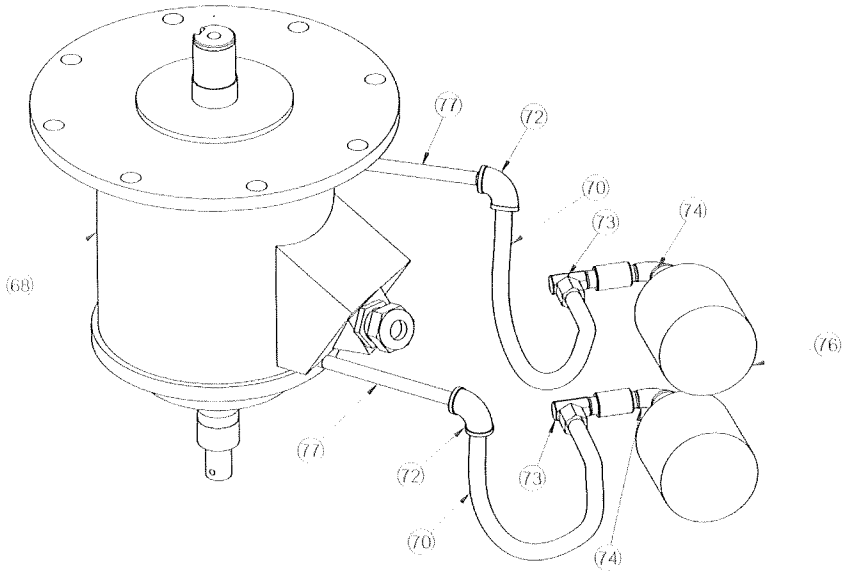


Figure 33 Lube Kit Parts Breakdown

18.3 STANDARD FRAMES PARTS AND ACCESSORIES BREAKDOWN

Table 4 Standard Frames Parts Breakdown (Reference Figure 34)

ITEM NO.	DESCRIPTION	SWECO PART NO.	QTY
1	Example Spacing Frame *(Other Frame Sizes Available, Consult SWECO)*	S30_80600-00__ S40_80600-00__	1
2	Center Tie-Down Assembly, 304SST (Includes Items #3-5) (Quantities Apply per One Assembly)	S30S00940	REF
3	Cushion Washer, White Neoprene	S30W00921	2
4	Center Tie-Down Washer, 304SST	S30S00922	2
5	Hex Jam Nut, 3/8-NC, 316SST	03-159	5
6	Screen (Specify Material and Mesh)	Consult SWECO	1
7	Over-Center Clamp Ring Assembly (Includes Items #20-24) (Quantities Apply per One Assembly)	S30S81124 S40S81124	REF
8	Supertaut Plus II Gasket, White TPE FDA (Other Materials Available)	S30W11104 S40W11104	1
9	Example Distributing Frame Assembly *(Other Frame Sizes Available, Consult SWECO)*	G30_82615-00__ G30_82615-00__	1
10	Example Distributing Frame Weldment *(Other Frame Sizes Available, Consult SWECO)*	G30_82620-00__ G40_82620-00__	1
11	Round Inspection Plug, 4", White Neoprene (For 6" Frames)	S48W00832	2
12	Center Tie-Down Stud, 3/8-NC x 4" Long, 304SST	S30S02624	1
13	Example Table Frame Assembly *(Other Frame Sizes Available, Consult SWECO)*	S30_82900-00__ S40_82900-00__	1
14	Example Table Frame Weldment *(Other Frame Sizes Available, Consult SWECO)*	S30_82910-00__ S40_82910-00__	1
15	Center Tie-Down Stud, 3/8-NC, 304SST 2-5/8" Long (4" Table Frame) 4-5/8" Long (6" Table Frame)	 S30S00915 S30S00916	1
16	Clamp Ring Half, Over Center-Trunnion, 304SST	S30S81122 S40S81122	1
17	Clamp Ring Half, Trunnions, 304SST	S30S81110 S40S81110	1
18	T-Bolt, 3/8-NC x 6" Long, 304SST	S48S81121	1
19	Clamp Ring Washer, 304SST	S48S01113	2
20	Coupling Nut, 3/8-NC x 1-3/4", Brass	03-271	2
21	Hex Head Cap Screw, 3/8-NC x 8-1/4", 304SST (Not Shown)	S48S01121	1
22	V-Clamp Ring Assembly (Includes Items #23 - 26)	S30S81105 S40S81105	REF
23	Clamp Ring Half, Trunnions, 304SST	S30S81110 S40S81110	2
24	Hex Head Cap Screw, 3/8-NC x 8-1/4", 304SST (Not Shown)	S48S01121	2
25	Clamp Ring Washer, 304SST	S48S01113	2
26	Coupling Nut, 3/8-NC x 1-3/4", Brass	03-271	2

Note: Above parts list are for standard frames, parts and accessories. Consult SWECO for additional frame sizes, spout sizes, materials, finishes, accessories, etc. and their associated part numbers.

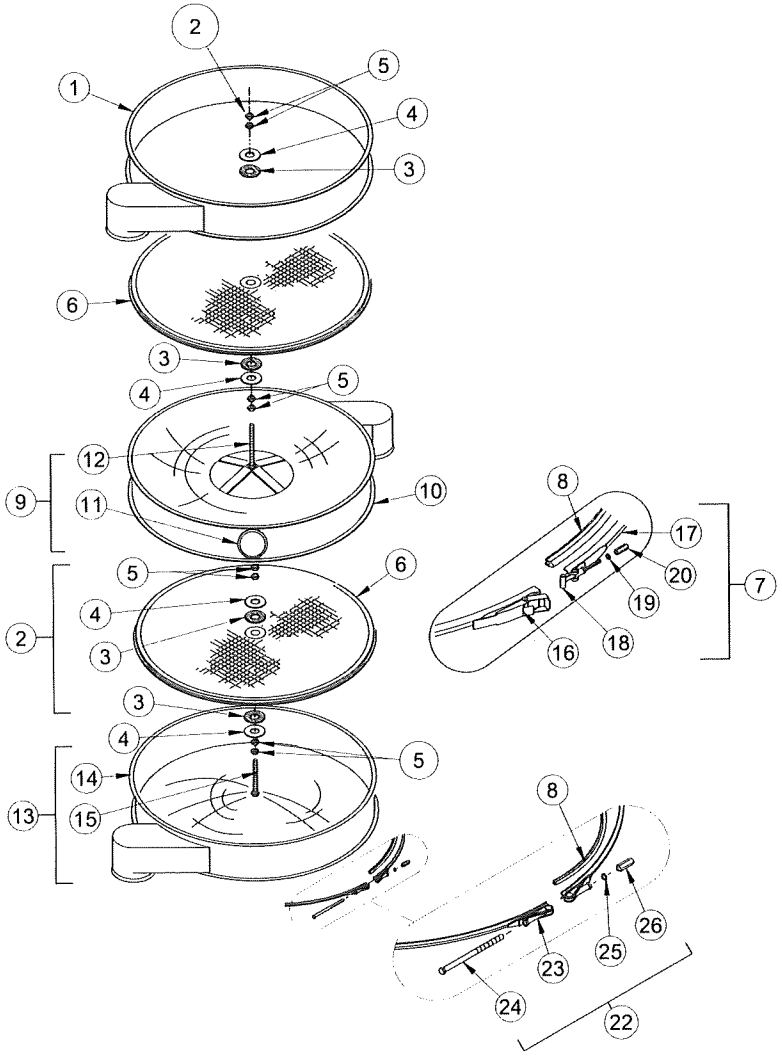


Figure 34 Standard Frames, Parts and Accessories

Table 5 Cover, Self-Cleaning Kit & Ball Tray Parts Breakdown (Reference Figure 35)

ITEM NO.	DESCRIPTION	SWECO PART NO.	QTY
1	Example Metal Cover Assembly (Includes Items #2-6)	G30_81400-00__ G40_81400-00__	REF
2	Cover Weldment	G30_81410-00__ G40_81410-00__	1
3	Round Inspection Plug, 6", White Neoprene	S48W00827	1
4	Supertaut Plus II Tension Ring, 304SST	S30S11085 S40S11085	1
5	Clamp Ring Assembly, Over Center (Includes Items #7-12) (Quantities Apply to One Assembly)	S30S81124 S40S81124	REF
6	Supertaut Plus II Gasket, White TPE FDA (Other Materials Available)	S30W11104 S40W11104	1
7	Machine Bolt, 3/8-NC x 8-1/4", 304SST (Not Shown)	S48S01121	1
	Clamp Ring Assembly, Over Center (Includes Items #6-10) (Quantities Apply to One Assembly)	S30S81124 S40S81124	REF
8	Clamp Ring Half, Over Center-Trunnion, 304SST	S30S81122 S40S81122	1
9	Clamp Ring Half, Trunnions, 304SST	S30S81110	1

SWECO HX ROUND SEPARATORS

ITEM NO.	DESCRIPTION	SWECO PART NO.	QTY
		S40S81110	
10	T-Bolt, 3/8-NC x 6" Long, 304SST	S48S81121	1
11	Clamp Ring Washer, 304SST	S48S01113	2
12	Coupling Nut, 3/8-NC x 1-3/4", Brass	03-271	2
13	Self-Cleaning Kit with White Nylon Sliders & White Neoprene Cushion Washers (Includes Items #14-19) (Other Materials Available)	S30S01045-17-W S40S01045-17-W	1
14	Spacer, 304SST	S30S01047 S40S01047	1
15	Bottom Perforated Plate, 304SST	S30S01046 S40S01046	1
16	Center Tie Down Washer, 304SST	S30S00922	REF
17	Hex Jam Nut, 3/8-NC, 316SST	03-159	5
18	Sliders, White Nylon (Other Materials Available)	S48K41017	40
19	Cushion Washer, White Neoprene (Qty. 4 Required for Self-Cleaning Kit, Qty. 2 Required for Center Tie-Down)	S30W00921 S40W00921	REF
20	Spout Connector, 6" Dia. x 12" Long (Other Materials Available) Black Neoprene FDA White Neoprene FDA	 S30N01904 S30W01904	1
21	Ball Tray Assembly with Gum Rubber Balls (Includes Items #5 & 22-26)	S30_81600-05 S40_81600-05	1
22	Center Tie Down Stud, 3/8-NC 8" Long (For Ball Tray) 4" Long (For 4" & 6" Distributing Frames) 2-5/8" Long (For 4" Table Frames) 4-5/8" Long (For 6" Table Frames)	 S18S00915-06 S30S02624 S30S00915 S30S00916	1
23	Ball Tray Center Tie-Down Assembly (Items Include #16, 17 & 19)	S30S00940 S40S00940	1
24	Blank Frame, 2"	S30_81601-00__ S40_81601-00__	1
25	Screen, Supertaut Plus, 4MG (Unless Otherwise Specified)	30A8A004M 40A8A004M	1
26	Ball Tray Ball, Gum Rubber (Other Materials Available)	S48K01605	30

Note: Above parts list are for standard frames, parts and accessories. Consult SWECO for additional frame sizes, spout sizes, materials, finishes, accessories, etc. and their associated part numbers.

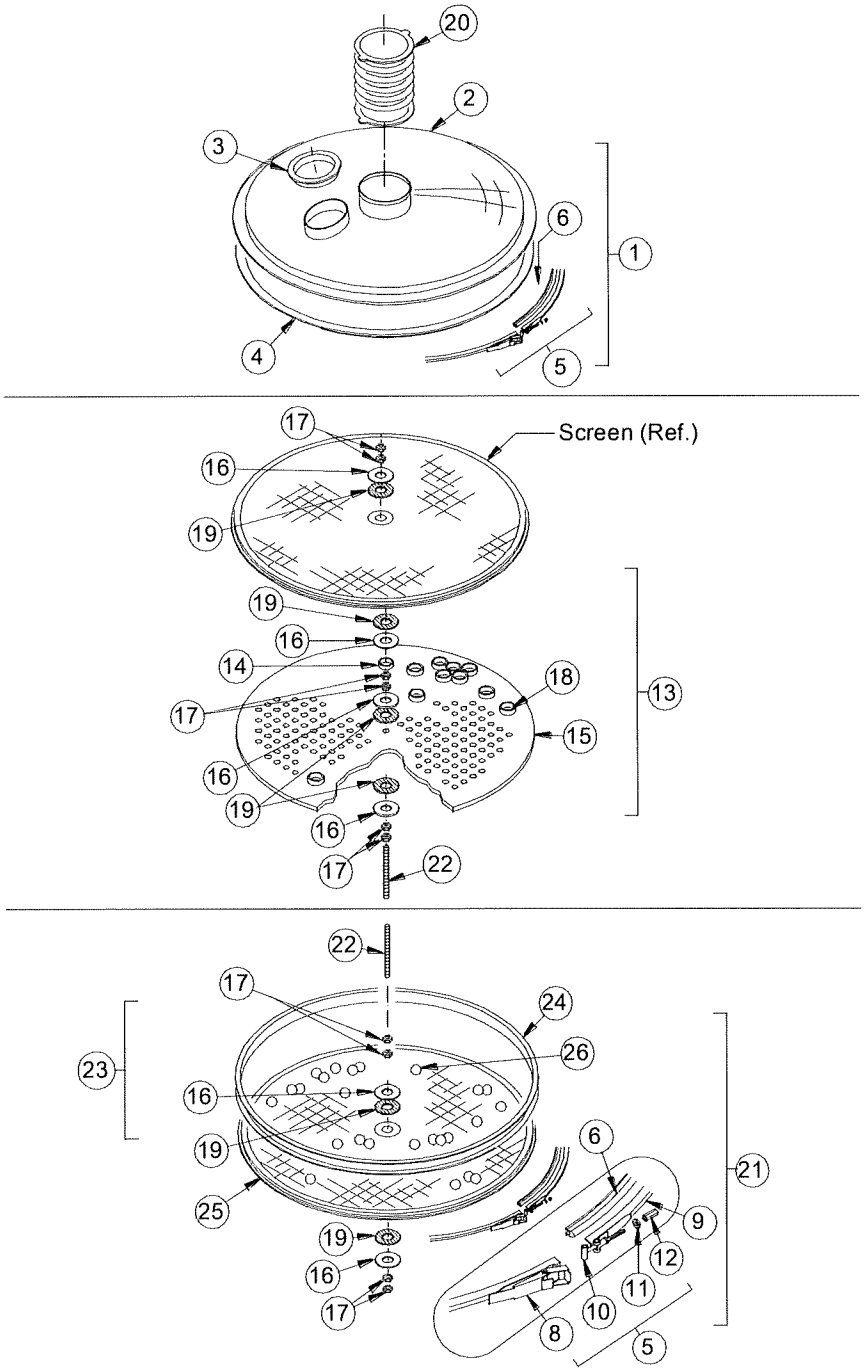


Figure 35 Cover Assembly (Top), Self-Cleaning Kit (Middle), Ball Tray Assembly (Bottom)

DIMENSION DRAWINGS

Tensile Bolting Cloth				
Mesh TBC	Opening Inch	Opening Micron	Wire Dia.	% Open Area
14	.0620	1575	.0090	76.4
16	.0535	1359	.0090	73.3
18	.0465	1184	.0090	70.2
20	.0410	1041	.0090	67.2
22	.0380	965	.0075	69.7
24	.0342	889	.0075	67.2
26	.0310	787	.0075	64.8
28	.0282	716	.0075	62.4
30	.0268	681	.0065	64.8
32	.0248	630	.0065	62.7
34	.0229	582	.0065	60.7
36	.0213	541	.0065	58.7
38	.0198	503	.0065	56.7
40	.0185	470	.0065	54.8
42	.0183	465	.0055	59.1
44	.0172	437	.0055	57.4
46	.0162	411	.0055	55.8
48	.0153	389	.0055	54.2
50	.0145	368	.0055	52.6
52	.0137	348	.0055	51.0
54	.0130	330	.0055	49.4
58	.0127	323	.0045	54.6
60	.0122	310	.0045	53.3
62	.0116	295	.0045	51.7
64	.0111	282	.0045	50.7
70	.0106	269	.0037	54.9
72	.0102	259	.0037	53.8
74	.0098	249	.0037	52.7
76	.0095	241	.0037	51.7
78	.0091	231	.0037	50.6
80	.0088	224	.0037	49.6
84	.0084	213	.0035	49.8
88	.0079	201	.0035	47.9
90	.0076	193	.0035	47.8
94	.0071	180	.0035	45.0
105	.0065	165	.0030	46.9
120	.0058	147	.0025	47.3
145	.0047	119	.0022	46.4
165	.0042	107	.0019	47.1
200	.0034	86	.0016	46.2
230	.0029	74	.0014	46.0
300	.0022	56	.0012	42.0

Mill Grade				
Mesh Mil Gd	Opening Inch	Opening Micron	Wire Dia.	% Open Area
2	.4460	11328	.0540	79.6
3	.2923	7424	.0410	76.7
4	.2150	5461	.0350	74.0
5	.1680	4267	.0320	70.6
6	.1387	3523	.0280	69.6
7	.1149	2918	.028	64.8
8	.1000	2540	.0250	64.0
9	.0881	2238	.230	62.7
10	.0800	2032	.0200	64.0
11	.0709	1801	.0200	61.0
12	.0653	1659	.0180	60.8
14	.0544	1382	.0170	57.2
16	.0465	1181	.0160	55.4
18	.0406	1031	.0150	53.4
20	.0360	914	.0140	51.8
22	.320	813	.135	49.6
24	.0287	729	.0130	47.4
26	.0275	699	.0110	51.1
28	.0257	653	.0100	51.8
30	.0238	605	.0095	51.0
32	.0223	566	.0090	50.9
34	.0204	518	.0090	48.1
36	.0188	478	.0090	45.8
38	.0178	452	.0085	45.8
40	.0165	419	.0085	43.6
45	.0142	361	.0080	40.8
50	.0125	318	.0075	39.1
55	.0112	284	.0070	37.9
60	.0102	259	.0065	37.5

Market Grade				
Mesh MG	Opening Inch	Opening Micron	Wire Dia.	% Open Area
2	.4370	11100	.0630	76.4
3	.2790	7087	.0540	70.1
4	.2023	5138	.0475	65.9
4	.1870	4750	.0630	56.0
5	.1590	4039	.0410	63.2
6	.1318	3348	.0348	62.7
7	.1080	2743	.0350	57.2
8	.0984	2449	.0286	60.2
10	.0742	1885	.0258	56.3
11	.0730	1854	.0180	64.5
12	.0603	1532	.0230	51.8
14	.0510	1295	.0204	51.0
16	.0445	1130	.0181	50.7
18	.0386	980	.0173	48.3
20	.0340	864	.0162	46.2
24	.0277	704	.0140	44.2
30	.0203	542	.0128	37.1
35	.0178	447	.0118	37.9
40	.0150	381	.0104	36.0
50	.0110	279	.0090	30.3
60	.0092	234	.0075	30.5
80	.0070	178	.0055	31.4
100	.0055	140	.0045	30.3
120	.0046	117	.0037	30.5
150	.0041	104	.0026	37.9
170	.0035	89	.0024	35.4
200	.0029	74	.0021	33.6
250	.0024	61	.0016	36.0
270	.0016	32.2	.0016	32.2
325	.0014	30.5	.0014	30.5
400	.0010	36.0	.0010	36.0
500	.0010	25.0	.0010	25.0
635	.0008	25.0	.0008	25.0

Clear Opening		
Clear Opening	Wire Dia.	% Open Area
1.0000	.105	81.9
.7500	.063	82.0
.6250	.063	82.5
.5625	.063	81.0
.5000	.047	86.0
.4375	.047	79.3
.3750	.047	79.2
.3125	.047	75.5
.2500	.047	70.9
.1875	.041	57.3
.1250	.041	56.7

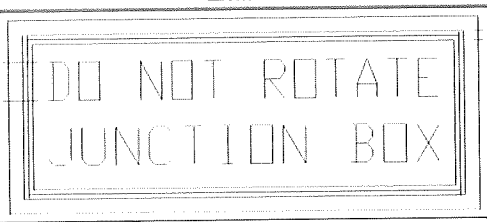
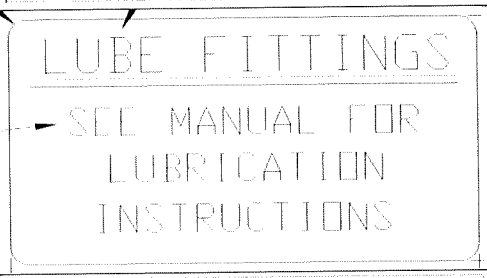
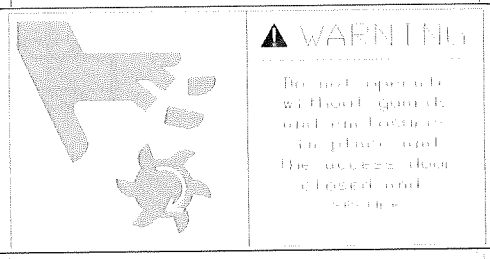
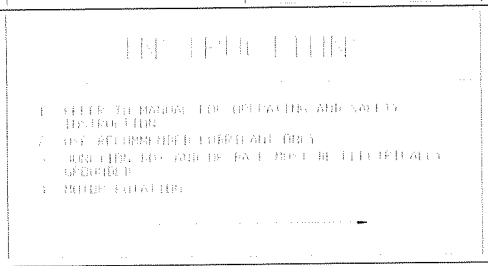
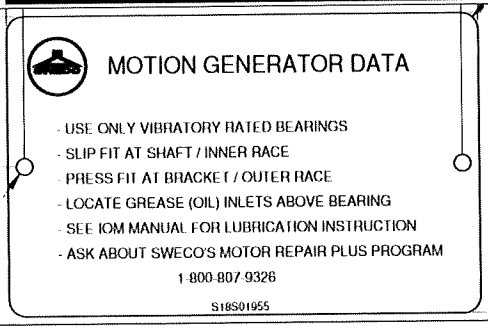
U.S. Std. Sieve		
Std. Sieve	Opening In Inches	Opening In Micron
3.5	.2205	5600
4	.1870	4750
5	.1575	4000
6	.1319	3350
7	.1102	2800
8	.0929	2360
10	.0787	2000
12	.0669	1700
14	.0551	1400
16	.0455	1130
18	.0394	1000
20	.0335	850
25	.0280	710
30	.0236	600
35	.0197	500
40	.0167	425
45	.0140	355
50	.0118	300
60	.0098	250
70	.0083	212
80	.0071	180
100	.0059	150
120	.0049	125
140	.0042	106
170	.0035	90
200	.0030	75
230	.0025	63
270	.0021	53
325	.0018	45
400	.0015	38
500	.0010	25
635	.0008	20

Screen Mesh Conversion Table

EQUIPMENT TAGS AND LABELS

20.1 Warning Labels

Table 6 Unit Warning Labels

Label	Meaning
	Junction Box positioned to minimize stress and wear on the electrical cables and shall not be rotated.
	The manual contains proper instructions on lubrication of unit. User should refer to these instructions.
	Rotating parts are present and covered by guards, enclosures and access doors. Serious injury could occur if these are not secured before operating the unit.
	Overview of instruction for unit. Refer to manual for full instruction, only use recommended lubrication, make sure unit is grounded and the motor rotation.
	Make sure latches are fully engage before operating the unit.
	General information about motion generator.

SWECO HX ROUND SEPARATORS

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