

Sponge-Jet® Sponge Blasting System

Sponge-Jet Media Recycler User Manual™

Model:

35-E

Electric Recycler



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1.0 Introduction

The Electric Media Recycler™ separates large and small foreign matter from reusable Sponge Media™ abrasives. A specially weighted, rotating spindle, oscillates spent Sponge Media abrasives and surface contaminants through two screens and classifies the materials for separate collection.

Designed for industrial durability, the Electric Media Recycler can process up to **800** pounds (350 kgs) of foreign matter and Sponge Media abrasives per hour.

Inspection of the Electric Media Recycler will reveal it to be of relatively simple design. As a result, few parts are subject to wear under normal operating conditions.

Note: During operation, the **Lower Base Assembly (Fig. B, #6)** experiences very little vibration. This base supports the **Vibratory Portion (Fig. B, #7)** and the **Sieve Assembly (Fig. A)** of the Electric Media Recycler and is mounted on a cross frame with two lockable casters and two swivel casters.

The Electric Media Recycler is powered by energy from the motor directly transmitted through the flywheel shaft.

The **Sieve Assembly (Fig. A)** of the Electric Media Recycler sits inside the **Vibratory Portion (Fig. B, #7)** and is secured by four (4) heavy-duty clamps, called **Pan Clamps (Fig. C)**. The entire Sieve Assembly and Vibratory Portion is isolated from the Lower Base Assembly by three (3) **Suspension Rods (Fig. B, #5)** and consists of the following: Feeding Ring/Hopper, Screens mounted to Stainless Steel Ring/Clips, Flat Gaskets, Double Deck Main Rim, Shallow Funnel and Media Downspouts. (Illustrated in Fig. A)

In the center of the Vibratory Portion is an eccentric **Flywheel (Fig. B, #4)**. The vibratory energy generated directly by this Flywheel is transmitted to the Sieve Assembly. Beneath the flywheel housing and located on the lower end of the shaft is an adjustable eccentric weight. When this weight rotates, the upper eccentric Flywheel causes the media to move across the screen in a horizontal direction.

Unpacking Instructions

- Before uncrating the Electric Media Recycler, please review the packing list. If there are any discrepancies, please notify your Sponge-Jet Distributor, Representative or Sponge-Jet, Inc., at 603-431-6435 or (in the USA) 800-776-6435. In Europe, please call +44(0) 1253-390731.
- Examine all screens and components to insure damage has not occurred during shipment.
- Operate the Electric Media Recycler on a sturdy, flat surface. This will assure maximum efficiency.
- Vibrating parts should **never** come in contact with the static parts of the machine or its surroundings.
- Check to be sure the screen elements are level.

2.0 Media Classification

IMPORTANT: It would be difficult to overemphasize the importance of separating oversize and undersize particles from reusable Sponge Media abrasive. Proper separation is critical to reducing airborne dust and minimizing the risk of clogging the Sponge-Jet Feed Unit™ while blasting.

The Media Classification Process In Brief:

1. After connecting the Electric Media Recycler to an adequate electric supply. Activate the Electric Media Recycler.
2. Before re-use Sponge Media abrasive is added through the **Feeding Ring/Hopper (Fig. A, #1)** located on the top of the Electric Media Recycler.
3. Reusable Sponge Media abrasive and small contaminants pass through the **Top Screen (Fig. A, #6)**. Oversize particles do not pass through the top screen, but are carried out of the **Large Particle Downspout (Fig. A, #8)**.
4. Sponge Media abrasive and any remaining contaminants pass down to the **Bottom Screen (Fig. A, #7)** where reusable Sponge Media abrasive is carried over the bottom screen and exits the Electric Media Recycler via the **Reusable Media Downspout (Fig. A, #9)**. Smaller contaminants and spent media abrasives fall below the **Bottom Screen** as undersized particles and are ejected through the **Fine Particle Downspout (Fig. A, #4)**.

2.1 Top Screen - Large Particle Classification

The **Top Screen (Fig. A, #6)** is a stainless steel, standard #3* mesh screen used to separate unwanted foreign matter larger than a particle of Sponge Media abrasive. Items such as nuts, bolts or rocks are separated and discharged as oversized particles through the **Large Particle Downspout (Fig. A, #8)**.

WARNING: Oversize particles, if re-introduced back into the Working Mix, can be damaging as they could (1) become a projectile capable of injuring people, (2) harm the work surface, (3) pierce a pressurized blast hose, (4) clog the Feed Unit and/or (5) damage or jam the drive mechanism.

2.2 Reusable Media

Sponge Media abrasives that do not pass through the **Bottom Screen (Fig. A, #7)** exit the Electric Media Recycler via the **Reusable Media Downspout (Fig. A, #9)**. Sponge Media abrasive that exits this downspout can be reused in the Sponge-Jet Feed Unit.

2.3 Bottom Screen - Fine Particle Classification

The **Bottom Screen (Fig. A, #7)** is a stainless steel, number #16* mesh screen used to separate foreign matter smaller than most Sponge Media particles. Fine particles are separated from Sponge Media and discharged through the **Fine Particle Downspout (Fig. A, #4)** as undersize particles and are normally considered waste. Fine particles usually include paint chips, broken down ("spent") abrasive and separated urethane particles. These fine particles, if reintroduced to the Sponge Media abrasive Working Mix, will increase ambient dust levels at the work site.

Important: The acceptability of increased dust levels is usually established within the responsibilities of each project superintendent. Usually undersize particles are considered waste. Hazardous materials such as, but not limited to, lead paint, chromates, radionuclides, cadmium, or PCB's can present special demands upon the user to manage the waste stream according to best practices and all applicable regulations.

***The standard size for the Top Screen is #3, the Bottom Screen is #16, unless other sizes are specified or provided for differing throughput or particle size distribution.**

- With reasonable care and maintenance, the Electric Media Recycler is a reliable, efficient part of the Sponge Blasting™ System. Questions that arise may be addressed to Sponge-Jet, Inc.'s 24-Hour Technical Support, at 603-431-6435 or (in the USA) 800-776-6435. In Europe, please call +44(0) 1253-390731.

3.0 Electrical Requirements

This Sponge-Jet Electric Recycler model is equipped with a 1 HP 115v/230v, 60 Hz, 3450 RPM explosion proof motor, requiring 11.2/5.6 amps.

Warning: This Motor is not Thermally Protected.

The unit comes equipped with 10 feet of 12 AWG supply wire. The use of extension cords is strongly discouraged.

4.0 Normal Operation

4.1 Feed Connections

IMPORTANT: It is essential not to restrict the movement of the vibrating portion of the machine. It is recommended that no rigid connections be added to the inlet/outlet of the Electric Media Recycler. Rigid connections can reduce the efficiency of the Electric Media Recycler and lead to early fatigue of the sheet metal parts and weldments.

4.2 Adjustment of Pan Clamps

The **Pan Clamps (Fig. C)** have a simple adjustment that allows for different thickness **Flat Gaskets (Fig. A, #5)**.

Adjustment is made by turning the **Steel Hook Top (Fig. C, #4)**. Under normal operation, adjustment should not be necessary if all pans and gaskets are in the proper location. Pressure required to close the four (4) **Pan Clamps** should not exceed fifteen (15) pounds each at the end of the lever **Handle (Fig. C, #1)**. A **Lock Nut (Fig. C, #3)** behind the **Steel Hook Top** should be tightened just enough to prevent the **Steel Hook Top** from turning when dismantling portions of the **Sieve Assembly (Fig. A)**.

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| <p>WARNING: DO NOT APPLY EXCESSIVE FORCE WHILE TIGHTENING THESE CLAMPS. THE VIBRATION OF THE RECYCLER WILL CAUSE THE OVERTIGHTENED CLAMPS TO BREAK.</p> |
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4.3 Filling the Electric Media Recycler

Sponge Media abrasive is added through the **Feeding Ring/Hopper (Fig. A, #1)** located on the top of the Electric Media Recycler.

After connecting the Electric Media Recycler to an adequate electrical supply (see section 3.0), activate the Electric Media Recycler by turning the main on/off switch to "ON". A powerful gyrating vibration should occur in a horizontal plane.

5.0 Advanced Operation

Important: Before operation, **if any substantial disassembly has occurred to the Electric Media Recycler**, it is important to verify the following has been completed:

5.1 Amplitude of Vibration

Adjustment during the use of the machine should be kept to a minimum. The one variable with which the operator should be concerned is the amplitude of vibration. The Electric Media Recycler has one (1) **Flywheel (Fig. B, #4)**, which is adjustable to five (5) varying degrees of “off-center”. This adjustment will modify horizontal amplitude. Located below the Flywheel housing (on the flywheel shaft) is an adjustable weight. When the weight is set off center from the upper flywheel weight, varying amounts of vertical deflection occur. This deflection is also a function of the RPM from the Flywheel.

5.2 Procedure for Adjustment of Amplitude

Adjust the Flywheel as follows:

1. Remove the Sieve Assembly to expose the top bearing housing bracket.
2. In the bracket there will be a ½” “thru-hole”. Rotate the Flywheel until the ½” socket head cap screw comes into view. Amplitude setting numbers will range from 1 to 3.
3. Remove this screw until Flywheel slide weight can be rotated to the desired setting number.
4. Tighten the screw securely.

A second adjustment is available by moving the kicker weight. To adjust the kicker weight, remove the **Side Cover (Fig. B, #2)**. The kicker weight is located directly above the upper coupling flange. One (1) bolt holds the fan shaped weight to the shaft by a squeeze fit. This weight is set by the factory at zero degrees with flywheel weights. To achieve maximum amplitude, loosen with a 5/16” Allen wrench and rotate the weight 180 degrees and tighten. Settings between 0 degrees and 180 degrees may achieve best production for different products.

NOTE: The amplitude setting of the Electric Media Recycler, with the flywheel shaft running at 3450RPM, should not exceed flywheel setting #3, which is factory set. Adjustment requires the use of a RPM calibration tool.

WARNING: Failure to use a calibration tool or properly set the RPM rate can damage the equipment and will void the warranty.

5.3 Alignment

Prior to shipment this Electric Media Recycler has been adjusted for efficient operation. Under normal operating conditions, these settings should not need attention. However, shocks can occur during shipment, which may necessitate some slight re-alignment. Efficient operation results when the motor and the flywheel shaft are parallel. When this occurs, the faces of the flywheel Upper Coupling Flange and the motor flange are also parallel.

If uneven vibrating or jerking occurs, determine that the coupling faces are parallel by measurement. If they are not parallel, adjust by varying the length of the three (3) **Suspension Rods (Fig. B, #5)**. This operation is performed by loosening and screwing up or down the three (3) pairs of hexagon nuts. Secure the base of the Suspension Rods and the lower compressed rubber bushings. After adjustment is made, these nuts must be securely tightened. At the same time, check to be sure the faces of the flanges remain parallel.

5.4 Alignment of Flanges

A minimum clearance of 1 ¼" (32 mm) must be maintained between the faces of the Coupling Flanges. The Coupling Flanges must be held parallel to within .010". Parallel alignment of the flange is performed by adjusting the three (3) lower Suspension Rod nuts. After the coupling flanges are proven to be parallel, installation of the flexible rubber coupling may proceed.

NOTE: The flexible rubber coupling is 1" (24.5 mm) thick with four (4) 1/8" (3.2 mm) thick bosses.

WARNING: Never run the motor with only the flexible rubber coupling attached to the motor flange. Failure to observe this precaution may result in serious damage and/or injury.

5.5 Sieve Assembly

The dismountable **Sieve Assembly (Fig. A)** is constructed of stainless steel. When it is correctly assembled and fastened, the rim weldments should be durable. Failure to properly assemble and fasten the Sieve Assembly will sharply shorten the life of the weldments.

The Sieve Assembly consists of five parts. Assemble as follows:

1. Place the **Fine Particle Downspout (Fig. A, #4)** through the hole provided in the **Vibratory Portion (Fig. B, #7)**. **Note:** Be sure the downspout is centered.
2. Place a **Flat Gasket (Fig. A, #5)** into the **Shallow Funnel (Fig. A, #10)**.
3. Place the **Stainless Steel Ring/Clip (Fig. A, #2)** with the #16* mesh screen attached, (Important Place mesh screen up**) into the Shallow Funnel and on top of the Flat Gasket.
4. Place a Flat Gasket onto the Stainless Steel Ring/Clip making sure to center the Flat Gasket.
5. Place the **Double Deck Main Rim (Fig. A, #3)** over the Flat Gasket and Stainless Steel Ring/Clip and into the Shallow Funnel.
6. Place a Flat Gasket into the Double Deck Main Rim.
7. Place the Stainless Steel Ring/Clip with the #3* mesh screen attached, (**IMPORTANT:** Place mesh screen side up**) into the Double Deck Main Rim and on top of the Flat Gasket.
8. Place a Flat Gasket onto the Stainless Steel Ring/Clip, making sure to center the Flat Gasket.
9. Place the Feeding Ring/Hopper over the Flat Gasket, making sure that the **Large Particle Downspout (Fig. A, #8)** is opposite from the **Reusable Media Downspout (Fig. A, #9)**.
10. Attach the **Pan Clamps. (Fig. C)** These must be closed to secure the Sieve Assembly.

***The standard size for the Top Screen is #3, the Bottom Screen is #16, unless other sizes are specified or provided for differing throughput or particle size distribution.**

****IMPORTANT: All screens must be assembled with mesh on the top. Incorrect fitting is an easy mistake and will cause the Electric Media Recycler to operate unsatisfactorily.**

6.0 Routine Maintenance

IMPORTANT: Under **NO** circumstances should any inspection, adjustment or lubrication be conducted while the Electric Media Recycler is running or connected to an electric supply.

6.1 Lubrication

Electric Media Recyclers have been tested before shipment. **DO NOT** grease this Electric Media Recycler until it has been operated for 500 hours. Re-lubricate using ½ pump or small amount every 500 hours of operation. **DO NOT OVERGREASE.**

Recommended Lubricants are:

1. Citco AP, Citco oil
2. Ore-Lube K2
3. Mobilux Grease #2, Socony Mobil Oil Co.
4. Val-Lith #1P, Valvoline Co.
5. VS SGA, MM Industries, Inc.
6. Multifak #2, Texaco Inc.
7. Alvanie R#, Shell Oil Co.

WARNING: DO NOT FORCE EXCESSIVE GREASE. Damage could occur to the bearings and motor system.

6.2 Access to Grease Fittings

1. The two (2) bearings are greased by access through the grease fittings on the side of the machine.

IMPORTANT: If the machine has not been used for one year, add 1 to 2 pumps of grease.

7.0 Rebuild Maintenance

7.1 Replacement of Top Roller Bearing

1. Remove the **Sieve Assembly**.
2. Remove grease lines.
3. Remove ring (6) 5/16" hex head cap screws, top bearing housing cap and brass mole connector.
4. Remove top bearing housing with bearing.
5. Loosen the top bearing sleeve bolt.
6. Carefully press bearings and seal out of housing and top bearing sleeve.
7. Clean and deburr housing and sleeve - examine parts for wear.
8. Press new bearing and seal into sieve and housing.
IMPORTANT: Re-pack bearing with grease (See recommended lubricants).
9. Replace top bearing sleeve and sleeve bolt.
IMPORTANT: Use thread locker on sleeve bolt (Perma Lok MM115 or equal).
10. Insert top housing cap and 5/16" hex head cap screws.
11. Reattach grease lines.

7.2 Replacement of Flywheel Bearing

1. Remove **Sieve Assembly**.
2. Release **Side Cover** clamp and open cover.
3. Loosen and remove top two (2) flexible rubber coupling locknuts (3/8" - 16 thread).
4. Remove three (3) 5/8-11 hex nuts from **Suspension Rods** above rubber bushings.
5. Remove top sieve weldment.
6. Follow steps 1 through 6 of "Replacement of Top Roller Bearing" (if not already complete).
7. Loosen two (2) 3/8-16 set screws - Remove **Flywheel**.
8. Loosen ten (10) 3/8-16 set screws.

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9. Loosen one (1) 7/16" hex head cap screws from ends of shaft -
Loosen two (2) 3/8-16 socket head cap screws - Remove upper
coupling flange.
 10. Remove ten (10) 3/8-16 socket head cap screws and grease line.
 11. Remove flywheel housing from top sieve weldment.
 12. Loosen 1/4" cap screws - remove **Flywheel** top cap and bottom cap.
 13. Slide **Flywheel** shaft (with bearings) through bottom of housing.
 14. Remove circlip - Press bearing from shaft.
 15. Press outside race of roller bearings from flywheel housing.
 16. Remove seals from top and bottom caps.
 17. Clean and inspect all parts for wear - deburr all parts as required.
 18. Follow steps 1 through 16 to in reverse order to reassemble.

IMPORTANT: Follow steps for proper alignment after assembly

Figures

Figure A: Sieve Assembly

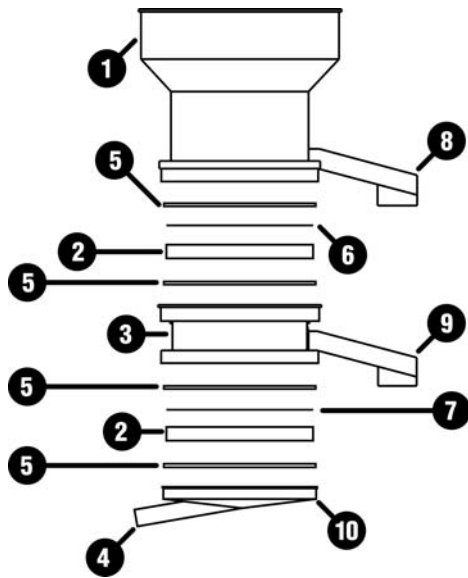


Figure A

1. Feeding Ring/Hopper

Sponge-Jet Media is poured into the Feeding Ring/Hopper located on the top of the Electric Media Recycler for classification.

2. Stainless Steel/Ring Clip

Mesh Screens are mounted to the Stainless Steel Ring/Clips

3. Double Deck Main Rim

Located in the center of the Sieve Assembly, the Reusable Media Downspout is part of this Rim.

4. Fine Particle Downspout

Part of the Shallow Funnel. All particles that fall through the bottom screen are discharged through the Fine Particle Downspout.

5. Flat Gaskets

Four flat buna rubber gaskets.

6. Top Screen

Stainless Steel mesh screen used to separate the oversize items larger than a particle of Sponge Media abrasive from the reusable Sponge Media abrasive.

(See section 5.5 – Sieve Assembly, for proper screen installation)

7. Bottom Screen

Stainless Steel mesh screen used to separate undersize material normally considered waste from the reusable Sponge Media abrasive.

(See section 5.5 – Sieve Assembly, for proper screen installation)

8. Large Particle Downspout

Oversized particles that cannot pass through the top screen are discharged through the Large Particle Downspout.

9. Reusable Media Downspout

Particles that do not fall through the Bottom Screen are discharged through the Reusable Media Downspout.

10. Shallow Funnel

Located under the Bottom Screen, the shallow funnel collects and directs fine particulate into the Fine Particle Downspout.

Figure B: Vibratory Portion and Lower Base Assembly

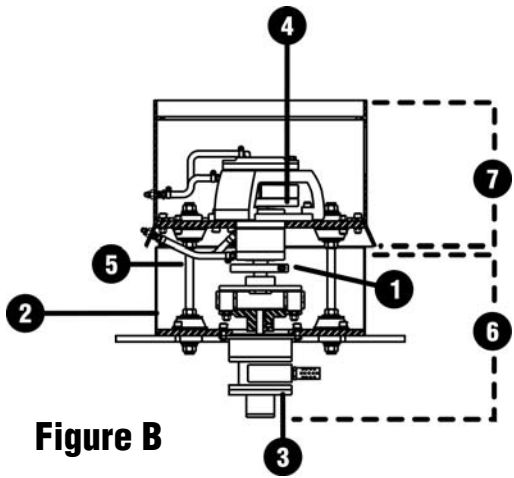
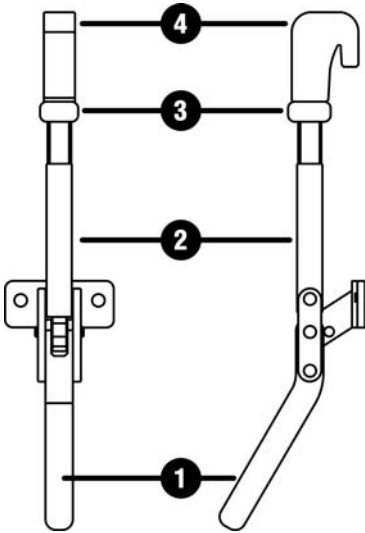


Figure B

- 1. Weight**
This off center weight causes the upper eccentric Flywheel to move media across the screen.
- 2. Side Cover**
This removable cover serves as protection for the components located inside the Lower Base Assembly.
- 3. Flywheel**
The vibratory energy generated directly by the Flywheel is transmitted to the Sieve Assembly.
- 4. Suspension Rods**
The Sieve Assembly and the Vibratory Portion is isolated from the frame by the three suspension rods.
- 5. Lower Base Assembly**
The Lower Base Assembly supports the Main Controls, Air Motor, Vibratory Portion and the Sieve Assembly.
- 6. Vibratory Portion**
The Vibratory Portion is located over the Lower Base Assembly and supports the Sieve Assembly.

Figure C: Pan Clamps



1. Handle

The lever Handle is used to secure the Pan Clamp to the Sieve Assembly.

2. Threaded Rod

The Steel Hook Top threads onto the Threaded Rod.

3. Lock Nut

The Lock Nut is used to prevent the Steel Hook Top from swiveling when dismantling the Pan Clamps.

4. Steel Hook Top

Adjustment for varying sized gaskets is made by turning the Steel Hook Top.

Figure C

8.0 Specifications

Weight

300 lb. / 136 kilo

Gaskets

One set (4) buna flat gaskets

Clamps

One set (4) double-deck Pan Clamps with Lock Nuts

Screens

One (1) top #3* mesh (.047" wire diameter / .286" open area) stainless steel screen soldered to a 3/4" x 1-1/2" high tubular mesh ring (top) and one (1) #16* mesh standard (.018" wire diameter / .044" open area) stainless steel screen soldered to a 3/4" x 1-1/2" high tubular mesh ring.

Stainless Steel Parts

Top: 8" main rim/angle with 6" long oversize chute & finger scroll; Bottom: 15"x3" high deck section with scroll cone (6" op.) and oversize chute.

***The standard size for the Top Screen is #3, the Bottom Screen is #16, unless other sizes are specified or provided for differing throughput or particle size distribution.**

- For **24-hour technical service**, contact Sponge-Jet, Inc. Technical Support, at 603-431-6435 or (in the USA) 800-776-6435. In Europe please call 44 (0) 1253-390731.

NOTES: _____

MODEL#: _____

SERIAL#: _____