

US FARM SYSTEMS

# SLOPED SCREEN ASSEMBLY

## MAINTENANCE AND REPAIR



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# Sloped Screen Separator

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# Sloped Screen Separator



## DESCRIPTION

The U.S. Farm Systems Sloped Screen Assembly is designed to separate solids from waste drainage pits. Sloped screen is located just after the pump and is the primary separator of solids. Basic construction of these separators uses a sloped screen that is similar for all screens, with the length and width and gap (screen opening) being the primary difference.

The screen opening size depends on quantity of material and whether it is being used as a primary screen or secondary screen. The primary screen is used mainly for bedding material, while the secondary screen is used mainly for fertilizer.

The system above shows two slope screens with screw press and conveyor in center.

## Basic Operation

Water with solids is pumped into the manifold located inside top of separator. From manifold this solution is dispersed across top of sloped screen, where solids are removed and is either transferred to a screw press for further liquid reduction (as for bedding), or is now ready for fertilizer. Liquid is returned by way of discharge pipe to lagoon.

# Sloped Screen Separator

## Maintenance

### Monthly

#### Before You Start

Maintenance is primarily an inspection process to make sure the screens and supports are in good condition and there is no leaks.

Generally sloped screens that have been in operation for a month will require some maintenance.

1. clean face of sloped screen with pressure washer and inspect face for calcium build-up.
2. If excessive calcium build-up occurs, this will need to be removed with muriatic acid for screen to function properly.

#### **Warning:**

***Muriatic acid is a poison, follow all precautions as stated on Muriatic acid container.***

3. Excessive algae is harder to detect because it usually grows on back side of screen. This will show up as less production. A card or paper can be slid between screen gap and show as dark green. To remove algae, remove filter from water canister, and add chlorine tablets
4. Look for excessive sand by either running hand across screen horizontally to feel gritty, or by inserting paper into gaps in screen . To remove sand, use turbo nozzle within 3" of screen (Fig 5).
5. Check filter for spray bar, located above face of sloped screen to insure clear nozzle operation.
6. Check spray-bar for proper operation.

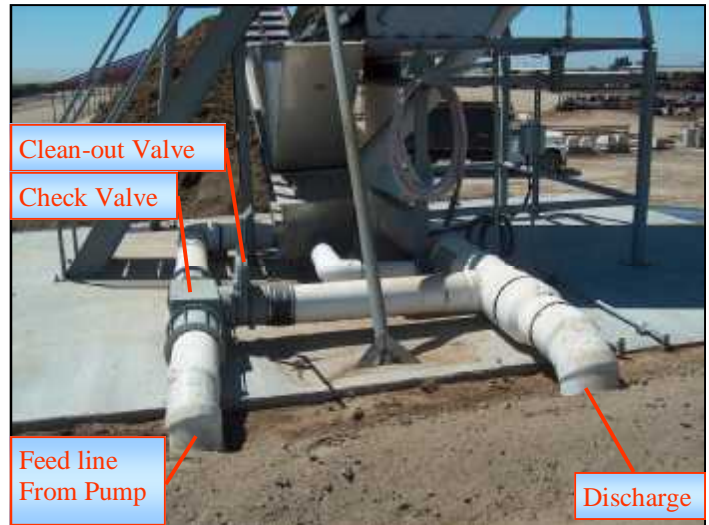
#### **Back-flush** (if system has optional clean-out valve)

Back-flush system for removal of debris from inside manifold.  
See Fig 2

1. Shut off pump.
2. Open clean-out valve.
3. Close valve after debris clears.

#### **Note:**

This may require more than one operation. Each time you will need to restart pumps to refill line, then repeat steps 1 through 3.



**Fig 1 Piping Description and Location**

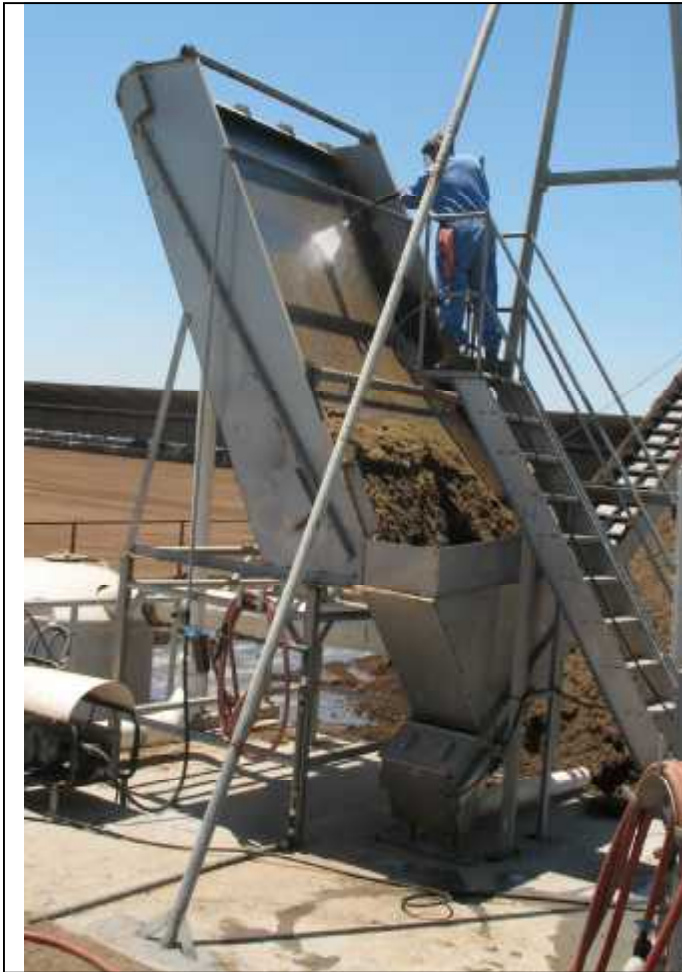


**Fig 2 Normal Flow Direction**



**Fig 3 Back-flush Direction**

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**Fig 4** *Cleaning Screen with Turbo Nozzle*

## **Trouble Shooting**

1. Use misters when temperature exceeds 70°F. This keeps solids from drying to screen which causes overflow when pump starts.
2. Check for cleanliness of screen as talked about on previous page. The three main factors that reduce the efficiency of screen are; sand, calcium, and algae.
3. If this does not solve the problem, water may be highly concentrated with solids. This commonly occurs in winter with less water used on dairy. To check, turn a water faucet fully open, into pit for 24 hours. If this fixes the problem, you now need to figure the best way to add water. This can be accomplished without fresh water. Call a US Farm Systems Representative for more information.