US FARM SYSTEMS

Dewatering Conveyor

MAINTENANCE AND REPAIR

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Dewatering Conveyor

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Dewatering Conveyor

DESCRIPTION

The US Farm Systems De-watering Conveyor is the last piece of equipment in the mechanical separation process. Its main function is to stack the manure after it has been run through an auger and (or) slope screen. Many sizes are available depending on the size of the dairy and the storage needs of the dairyman. Various lengths and widths are offered as well as stationary or swing type. The secondary function of the conveyor also provides additional dewatering since the tub itself is a two piece design incorporating a perforated inner screen.

The conveyor is a complex piece of equipment with many moving parts. It's very important to maintain and keep it in good working condition because depending on what breaks, it could be potentially very costly to repair when the damage could have been avoided through proper maintenance.

Dewatering Conveyor

Break In Period

Based on each individual application, conveyors will run at different speeds according to the overall flow rate of the material being dropped into it. The only thing you really have to keep an eye on during initial startup and break-in is that it’s running the correct speed. If there is very little manure being carried up, it is running too fast and should be slowed down. If it is piling up and overflowing, it is running too slow and should be sped up. A conveyor running overloaded can cause a lot of damage to itself. Premature wear, broken shafts, broken chains, destroyed bearings. Breaking the manure chain could rip apart all sorts of things. Even worse, you could buckle the whole conveyor. Changing the speed is as simple as changing a sprocket size (or making an adjustment to the variable drive if added as an option). So call US Farm Systems to adjust your conveyor if you feel that it is not running at the right speed.

On some occasions, the manure chain might make a popping sound as it travels around. This is fairly normal and rarely causes any damage to the conveyor. If the popping gets excessively loud and hard, call US Farm Systems to check if it is in within working range.

Also, the conveyor is timed to run for two minutes longer than the rest of the system in order clear out the material. If it does not do this, the material left on the screen could dry up. This can cause the motor to overload on the next startup. Call US Farm Systems if you are having this problem.

Finally, if you have a swing conveyor make sure to keep the ropes tied up. A strong gust of wind can blow a conveyor in a direction you didn’t plan for, bend apart a hopper, and leave a stack of manure where you didn’t plan to put it.

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Scheduled Maintenance

(completed once a month)

1. Grease top Shaft bearings (5 shots every month - figure 1)

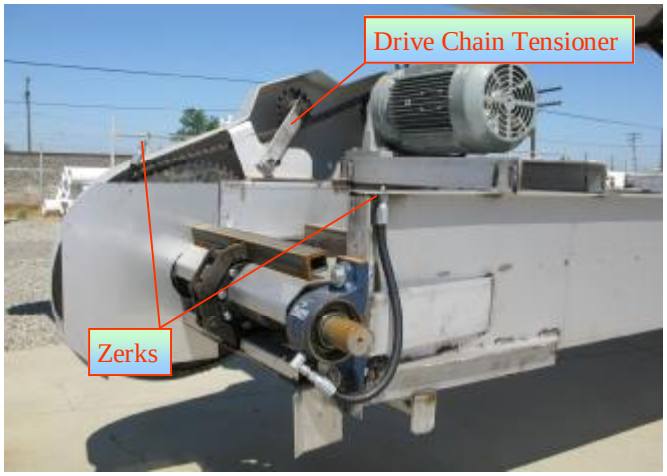

Fig 1 Grease Zerk Locations

2. Check drive chain tension (chain will stretch over time and will need a link removed - figure 1)
3. Lube drive chain
4. Check drain to make sure it is clean (A plugged drain could cause over filling in the hopper and will raise the water level to the lower shaft and bearings causing premature wear)
5. Check and adjust conveyor chain tension (A sloppy chain will wrap causing snapped shafts and torn screens)

Steps to adjust conveyor chain

1. Turn off power
2. Remove cover (figure 2)
3. Spray out inside of UHMW bearing housing to allow bearing to slide freely during adjustment (figure 3)
4. Tighten adjustment nut on each side until slack has been removed. Then tap nut with hammer to make sure slack is fully removed (figure 5)
5. Measure distance from each side of shaft to back of conveyor to make sure it is equal. If not, repeat step 4. (figure 4)
6. Re-tighten tensioner to maximum strength (figure 5)

NOTE: If chain is within 2" of the back of the conveyor, it is time to remove some links. See next page

Fig 2 Remove Cover

Fig 3 Clean out bearing housing

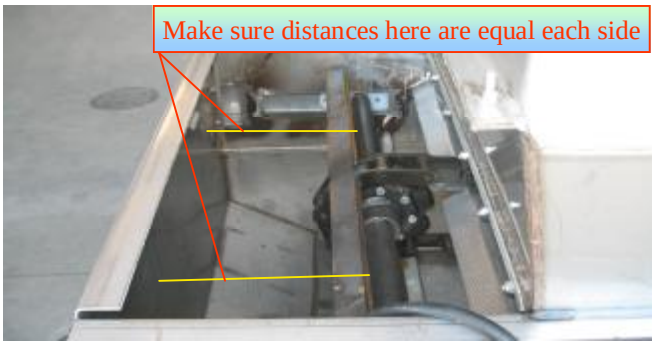

Fig 4 Measure shaft distance

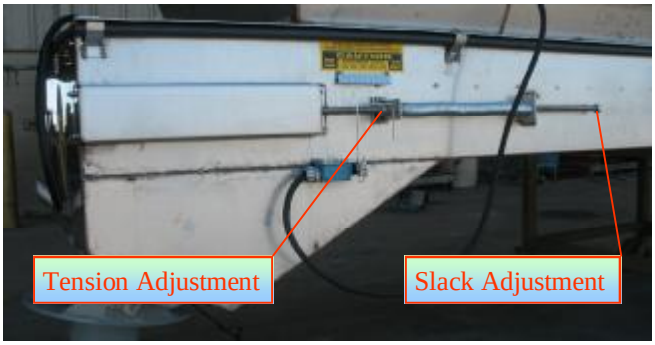

Fig 5 Tension & Slack Adjusters

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Shortening Conveyor Chain

Eventually after so much adjustment, you will run out and have to remove links from the chain. With the proper tools, the job can be completed in about 30 minutes. Here are the steps you will follow:

1. Clean out the UHMW bearing slide housing (so the bearing will slide freely) (figure 1)
2. Completely loosen the all thread adjusters until they are almost completely removed (figure 2)
3. Grind off a link (figure 3)
4. Pull chain up to figure out where you will need to reconnect
5. Cut excess
6. Reconnect with master link & insert roll pins (figure 4)
7. Tighten adjustment nut on each side until slack has been removed. Then tap nut with hammer to make sure slack is fully removed (figure 5)
8. Measure distance from each side of shaft to back of conveyor to make sure it is equal. If not, repeat step 7. (figure 6)
9. Re-tighten tensioner to maximum strength (figure 7)

Fig 1

Fig 2

Fig 3

Fig 4

Fig 5

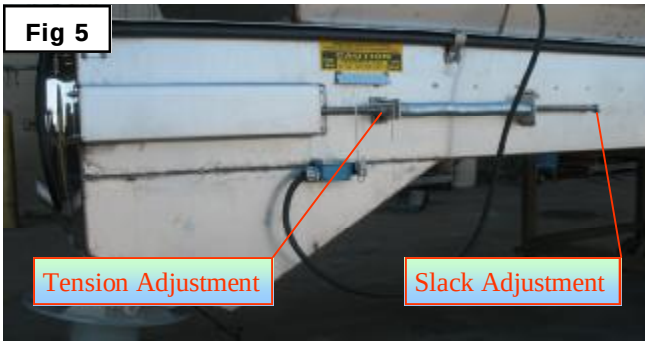

Fig 6

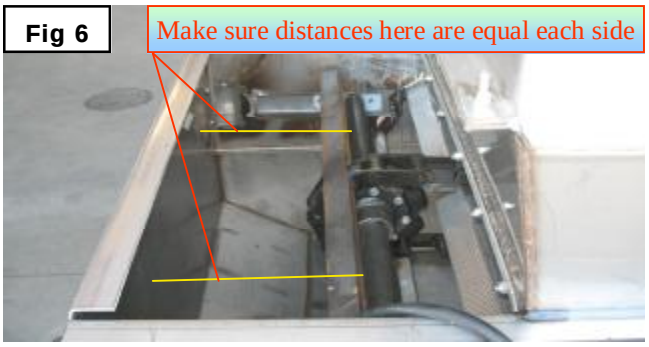

Fig 7