

# Service Tips

- HAMMER CHANGING
- HAMMERMILL BALANCE
- PTO FAILURE
- CONVEYOR BELTS

## HAMMER CHANGING:

Changing hammers in a tub grinder can often prove to be a challenge. Although grinders vary in size one thing tends to be common from one grinder to another, the hammers are usually retained by rods that pass through the hammer body and hammermill rotor plates and the rods must be removed in order to change the hammer. The problem is that the rods are normally stuck to the hammermill rotor plate with tree sap, etc., or are damaged and can't be pulled through the rotor plate holes.

If you have rods to remove use the following procedure to make the job a little easier.

- (1) Prior to removing the rods soak them with a lubricant or penetrating oil such as WD40 or diesel fuel where they pass through the hammermill rotor plates. Let the lubricant soak on the rods for as long as is necessary to cut into tree sap and sticky substances that work into the space between the rods and the rotor plates; this could mean for a little as an hour or two, or as long as overnight.
- (2) After soaking the rods for a sufficient period of time use a large pipe wrench, rotate the hammer rods completely around several times. This is usually difficult at first but once the lubricant soaks through the rotor plate holes the rods will begin to loosen. If you can't rotate a rod then it hasn't soaked long enough. After the rods have been loosened they should be easy to remove.
- (3) Damaged rods; if hammer rods will rotate but will not come out easily then maybe damaged or bent next to where the hammers are mounted. A bent rod can't be pulled through the hammermill rotor plates easily but you can often help it along by doing the following: Using a hand grinder cut down the high spots you see on hammer rods; often you can see a swollen spot that is causing the problem.

## HAMMERMILL BALANCE:

New hammermill rotors should run perfectly smooth if they don't they are out of balance.

An out of balance hammermill rotor will cause vibration and if bad enough will over time cause catastrophic failure through the drive line. If you hit something with the hammermill rotor causing it to vibrate, check first for a broken hammer or insert and if these items are ok check for a broken hammermill bearing or housing. If you continue to have vibration

next step is to check for bent rotor shaft. This will require that you remove the complete hammermill assembly and have the main shaft checked for straightness.

After a hammermill has been rebuilt it should be dynamically (spin) balanced prior use. A hammermill rotor is balanced with no rods or hammers installed; anything that considered a wear part and that may change in weight from time to time is not installed during the balancing process.

#### PTO FAILURE (Grinders)

The most common cause of PTO failure in grinders is either letting the PTO get out of adjustment (too loose), or attempting to engage the PTO with the grinding mechanism jammed. In both cases the pressure plates inside the PTO unit slip excessively and become burned.

To be engaged most industrial duty PTO's require that a man use his full body weight pushing on a long handle. If you can engage the PTO with only your arm strength, and no body weight, it is not adjusted properly. Check the inspection plate on your PTO the proper amount of force required, and note that it will be in foot pounds, not inch pounds.

If your machine has power assist unit to engage the PTO such as an air hydraulic cylinder, it will be necessary to disengage the power assist and test for proper adjustment manually. Additionally, if the power assist is out of adjustment and is constantly putting pressure on the PTO in either the engage or disengage direction it cause excessive wear of your PTO's throw-out yoke and bearing.

#### CONVEYOR BELT:

The most common cause of conveyor belt failure is letting the belt get out of adjustment to one side or the other. This normally means the belt is rubbing up against a metal part of the machine and is wearing on both the machine and the belt. Keep all conveyor belts adjusted in the middle of their track area for longer life and better performance.