MOISTURE CONTROL ADJUSTMENTS

- FIRST, before attempting to start any grain dryer, you MUST read the owners manuals for recom mended settings. Following is an attempt to help you understand adjustments of the moisture con trol, and using the high and low speed pots.
- The GOAL of the moisture control is to keep the grain at a constant temperature at a point that is 2/3 of the way through the drying process. We use a starting temperature of 100 degrees fahrenheit when the dryer is running in full heat. For dry and cool purposes the temperature in creases to 135 degrees fahrenheit. To make things easier we will only discuss the full heat adjustments, but adjust ments for dry and cool work the same.
- The moisture control is what adjusts the final output temperature of the grain. You should only make adjustments to the moisture control when the grain coming out of the dryer is too wet or too dry to your desired moisture. <u>Do</u> not adjust the moisture control if you start seeing the actual grain temperature get ting too far from the setpoint.
- Now comes <u>YOUR GOAL</u>. Your goal is to use the high and low meter roll potentiometers to keep the actual grain temperature near the moisture control set point. When the unload switch is in "2 speed" the meter rolls speed up and slow down depending upon the temperature of the grain, and the set point on the moisture control. In 2 speed if the grain temperature is below the setpoint on the moisture control, the meter rolls are running on the low meter roll pot setting. Any time that the grain temperature is above the moisture control setting the meter rolls are running on the high speed setting.
- Here is how to decide what kind of adjustment to the meter rolls should be made. First of all you have to know what the moisture control setpoint is, and also you need to be watching the acutal temperature of the grain.

Watch the acutal grain temperature and get an idea of the "range" of temperatures that you are getting. Remember the setpoint is 100 de grees so the temperature of the grain on high speed, and low speed should stay pretty close to this setting. <u>When people start complaining</u> that they can not get a steady moisture coming out of their dryer, they normally find that the actual grain temperature is not staying near the moisture control setpoint. The most important thing to making the moisture control working accurately is to keep the temperature near the set point. It can not have swings that show the grain temperature is getting 10 degrees away from the setting. You have to view the grain temperature as a window. The acutal temps have to stay within this window, if they do not then you have to adjust the high, or low meter roll pots.

Meter Roll Pot Adjustments

- Your next move is to know how to adjust the pots. Watch the "swing" of grain temperature and this will tell you which pot to adjust. If the grain tem perature is falling well below the moisture setpoint, you will generally adjust the low speed pot. If the acutal temp is rising well above the setpoint then you generally adjust the high speed pot. If the grain temp is falling below the setpoint this means that even though the meter rolls are on low speed the grain temp is still dropping. This shows that on low speed the grain is leaving the dryer too fast. so you will need to slow down the low speed pot. The same works on high speed. If the temperature is going well above the set point, this means that even though the meter rolls are running on high speed, the grain is not getting out of the dryer fast enough. It is still acquiring more heat, so you need to turn up the high speed meter roll pot.
- <u>Make small adjustments when changing the</u> speed pot settings, and remember you will not see the result of this change until the dryer has ran a full cycle of drying. So make an adjustment and be prepared to wait about an hour. You have to give the adjustment time to effect the drying pro cess. Not waiting will make matters worse. Be PA TIENT.

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- After any changes are made, you should monitor the range of the grain temperature. If you made the correct adjustment the range should not be as wide as earlier. Remember your goal is to keep the actual grain temperature near the mois ture control set point. <u>An ideal range of tempera</u> <u>ture is 5-7 degrees above and below the</u> <u>moisturecontrol setpoint.</u> This means that if the set point is 100 degrees, the grain temperature should drop to around 93-95 degrees on low speed, and raise to 105-107 on high speed. By keeping this range close to the setpoint of the moisture con trol, you are regulating the output moisture of the dryer.
- After you have the "Range" of temperatures keeping steady with the moisture control setpoint, you should leave the high and low speed pots alone. Their only purpose is to keep this range of grain temperatures near the setpoint. <u>You do NOT adjust the speed</u> pots to change the output moisture of the <u>dryer</u>.
- To change the dryers' exiting moisture you now return to the moisture control. At this point we are assuming that the "Range" of grain tem peratures are staying near the setpoint. If this is the case, and you are not getting the output moisture you desire, we need to adjust the mois ture control setpoint. A good rule of thumb is that 5 degrees on the moisture control will equal about one point of moisture at the *exit of the dryer*. This means that if you are getting 17% moisture grain at the discharge and you want to go to 16%, you should increase the moisture control setpoint about 5 degrees. By holding the grain in the dryer longer to reach the added 5 degrees (100 degrees raised to 105 degrees), you are removing more mois ture. The same works in reverse. If the grain is too dry, try decreasing the moisture control setpoint. This decreases the amount of time the grain stays in the dryer. *The less time the grain is in the* dryer, the wetter it comes out of the dryer.

Things to Remember

- Give the dryer time to react to any change in the meter roll pot settings, or the moisture control setpoint. You have to remember that when a change is made, it is only going to show the results when a dryer has made a complete cycle of grain.
- <u>To adjust the output moisture you make</u> <u>changesto the moisture control setpoint, not the</u> <u>meter roll pots</u>.
- Use the rule of thumb that 5 degrees on the mois ture control equals about 1 point of moisture at the exit of the dryer. Remember when changing the setpoint, you will not see it's results until the dryer has ran a full cycle of grain.
- Use the meter roll pots to adjust the grain tem perature to within a range around the moisture control setpoint. *Do not use the meter roll pots to adjust the output moisture of the dryer.*
- Use the range of temperatures to determine how much to adjust the meter roll settings. If the range is real close to the setpoint, you will make very small adjustments to the meter rolls. If the tem perature range is well above or below the setpoint, you can make a larger adjustment to the meter rolls.