MOISTURE MANAGER OPERATING GUIDE

This guide assumes that you have followed all of the instructions in the "<u>**D**ryer **S**tart</u> Up Quick Reference <u>**G**uide</u>" (**DSG**), up to this point. I assume you have the dryer full of grain and are ready to begin the drying process. These instructions are only a starting point, you must make adjustments from here to fit your specific needs.

 Start the fans and heaters and adjust them according to the instructions in the (DSG), run the heat for about 110% of the listed drying time, without discharging any grain.
Example: 25% moisture grain using Full Heat has a drying time of 54 minutes, so about 50 or 60

Example: 25% moisture grain using Full Heat has a drying time of 54 minutes, so about 59 or 60 minutes would be 110%.

After the initial drying time above, set the dryer unload to single (<u>1</u>) speed.
Turn the moisture manager <u>CONTROL POWER (9)</u> ON and set the <u>CONTROL MODE (4)</u> to the <u>MANUAL MAIN SPEED</u> setting, adjust the <u>MAIN SPEED ADJUST (5)</u> (POT) potentiometer, the one with the control knob, to the designated percentage setting in the included chart on page 4 for

Full Heat or page 5 for Dry and Cool.

Example: 25% moisture would be 18% on the main POT for Full Heat.

Remember the voltage Reading on the voltmeter (<u>11</u>) <u>DC VOLTMETER</u> you will need this reading when you set the high and low speed POTs, item # 10, following later.

- Set the moisture control <u>DISPLAY SETPOINT (3)</u> to 17% or the desired moisture output you would like before areation. Aeration may remove 1 or more points in the cooling process, if cooled slow. The moisture control setpoint will not control the dryer until you switch it to, auto(3 speed) later.
- 4. To change the desired moisture setting hold down the <u>DISPLAY SETPOINT (3)</u> and turn the <u>SETPOINT ADJUSTMENT (12)</u> up or down as required.,
- Let the dryer run for about 110% of the listed drying time again (about an hour for 25% grain). Then begin to test the moisture with a moisture meter you consider to be accurate. Always average at least 3 samples for accuracy.
- 6. After 1 or more hours on manual, the unit should have reached an even gradient of wet at the top, varying, to dry at the bottom. If you are getting the desired moisture content you want, and the moisture of the out put grain has been consistent, switch the <u>CONTROL MODE (4)</u> to the <u>AUTO (3 SPEED)</u> setting. The unit will then run Main, High, or Low as required to maintain the set moisture.

- 7. Having determined the average discharge moisture, calibrate the moisture manager to that setting. Example 1: Your moisture tester gives you an average moisture of 17% but the moisture manager is reading out 18.3%. You would then calibrate the moisture manager (-1.3%), that would make the moisture manager read 17% the same as your moisture tester. Example 2: Your moisture tester gives you an average moisture of 17% but the moisture manager is reading out 16.1%. You would then calibrate the moisture manager (+.9%), that would make the moisture manager read 17% the same as your moisture tester.
- 8. To change the calibration hold down <u>DISPLAY CALIBRATION (1)</u> switch and turn the <u>CALIBRATION ADJUSTMENT (13)</u> up or down as required.
- 9. After the moisture manager has been initially calibrated you may need to fine tune it later, to read like your stand alone moisture tester.
- 10. Adjust the high and low speed POTs. Do you **Remember the voltage reading** mentioned above? To adjust the <u>HIGH SPEED ADJUST (10)</u> high speed POT, Change the moisture setting on the moisture manager to a setting 2 or 3 points above the current moisture reading, this will cause the control to go to high speed. The high speed light should be on. Adjust the high speed <u>POT (10)</u>, one with a screw slot, up or down until the voltage reads 15% higher than it did on main.

To adjust the <u>LOW SPEED ADJUST (6)</u> low speed POT, Change the moisture setting on the moisture manager to a setting 2 or 3 points below the current moisture reading, this will cause the control to go to low speed. The low speed light should be on. Adjust the low speed <u>POT (6)</u>, one with a screw slot, up or down until the voltage reads 15% lower than it did on main.

- 11. Run the unit for a few hours. Check the moisture control accuracy against your stand alone meter, fine tune the <u>DISPLAY CALIBRATION (1)</u> moisture control if needed.
- 12. If the moisture manager is staying on main most of the time, cycling once in a while to low or to high, it is set where it needs to be. You can look at the print out and tell what it is doing, if it is changing, and how often.
- 13. If it is staying on low most of the time then the main control needs to be turned down just a little (1 or 2 percent) on the <u>MAIN SPEED ADJUST (5)</u> main POT. If it is staying on high most of the time then the main control needs to be turned up just a little (1 or 2 percent)) on the <u>MAIN SPEED</u> <u>ADJUST (5)</u> main POT. Do this until the moisture control is staying on main most of the time.

Remember each time you make an adjustment it takes about 110% of the listed drying time, to see the result of the change you made, <u>(about an hour for 25% grain)</u>.

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Full Heat

Initial Moisture	Moisture Removed	Approx. Dry Time	1-Module Main Speed	2-Module Main Speed	3-Module Main Speed
17%	2 pts.	16 min.	62	100	100
18%	3 pts.	21 min.	47	99	100
19%	4 pts.	26 min.	38	81	99
20%	5 pts.	32 min.	31	67	99
21%	6 pts.	37 min.	27	57	86
22%	7 pts.	42 min.	24	50	76
23%	8 pts.	47 min.	21	44	67
24%	9 pts.	51 min.	19	41	62
25%	10 pts.	54 min.	18	39	58
26%	11 pts.	58 min.	17	36	54
27%	12 pts.	62 min.	16	34	51
28%	13 pts.	67 min.	15	31	47
29%	14 pts,	72 min.	14	29	44
30%	15 pts.	76 min.	13	27	41
31%	16 pts.	81 min.	12	26	39
32%	17 pts.	86 min.	11	24	37
33%	18 pts.	91 min.	11	23	35
34%	19 pts.	96 min.	10	22	33
35%	20 pts.	100 min.	10	21	31

Dry & Cool

Initial Moisture	Moisture Removed	Approx. Dry Time	1-Module Main Speed	2-Module Main Speed	3-Module Main Speed
17%	2 pts.	18 min.	36	56	99
18%	3 pts.	24 min.	27	42	90
19%	4 pts.	30 min.	21	33	72
20%	5 pts.	35 min.	18	28	62
21%	6 pts.	40 min.	16	25	54
22%	7 pts.	45 min.	14	22	48
23%	8 pts.	50 min.	13	20	43
24%	9 pts.	55 min.	12	18	39
25%	10 pts.	60 min.	11	16	36
26%	11 pts.	65 min.	10	15	33
27%	12 pts.	70 min.	9	14	31
28%	13 pts.	75 min.	8	13	29
29%	14 pts,	80 min.	8	12	27
30%	15 pts.	85 min.	7	11	25
31%	16 pts.	90 min.	7	11	24
32%	17 pts.	95 min.	6	10	22
33%	18 pts.	100 min.	6	10	21
34%	19 pts.	105 min.	6	9	20
35%	20 pts.	110 min.	5	9	19

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