T12 Full Heat Wheat Drying Rate Chart

Procedure to set unload rotor speed:

1. Using your grain input moisture and desired plenum temperature, use Chart 1 to calculate the approximate unload rate. Start dryer unload.
2. Use Chart 2 to calculate the approximate time it will take to turn the dryer over one complete time.
3. After the time from Chart 2 has expired, adjust unload rotor speed accordingly. If grain moisture is too wet, decrease unload speed by 3% for every 1% moisture is off, if too dry, do the opposite. Allow at least 1/3 the turnover time in Chart 2 between changes.
4. When the actual grain moisture is within 0.5% of your target (or desired) grain moisture, calibrate the discharge moisture sensor by following instructions on touchscreen (TOOLS→CALIBRATE SENSORS).
5. Once moisture sensor has been calibrated and you are within 0.5% of your desired output moisture on the touchscreen, you can switch the unload from Manual to Automatic. Note the Grain Column Temperature, often automatic control works best based off grain temp.

Chart 1 shows suggested unload rotor speed settings based on plenum temperature and amount of moisture to be removed. The values in the chart are a good **starting point** when first selecting the unload speed. Final running speed may differ from charts as user may adjust speed as dryer runs.

Example: to dry 20%Wheat to 17% with a plenum temperature of 170°, initial unload rate should be set to: 37 %

Chart 1 T12 Unload Rate (%) for Wheat at Listed Moistures*

Moisture Removal	Plenum Temperature								
	140 °F	150 °F	160 °F	170 °F	180 °F	190 °F	200 °F	210 °F	220 °F
18-17%	36	42	48	54	60	66	72	77	83
19-17%	29	33	38	43	48	52	57	62	67
20-17%	24	28	33	37	41	45	49	53	57
21-17%	21	25	29	32	36	39	43	46	50
22-17%	19	22	25	29	32	35	38	41	45
23-17%	17	20	23	26	29	32	34	37	40
24-17%	16	18	21	23	26	29	31	34	36
25-17%	14	17	19	21	24	26	28	31	33
26-17%	13	15	17	20	22	24	26	28	30
27-17%	12	14	16	18	20	22	24	26	28
28-17%	11	13	15	16	18	20	22	24	26
29-17%	10	12	13	15	17	18	20	22	23
30-17%	9	11	12	14	15	17	18	20	21
31-17%	8	10	11	13	14	15	17	18	20
32-17%	8	9	10	12	13	14	15	17	18

Chart 2 T12 Dryer Specifications

Unload Rate (%)	Freq. (Hz)	Bu/hr*	Minutes to Turn Over
10	6	132	150
20	12	264	75
30	18	396	50
40	24	528	38
50	30	660	30
60	36	792	25
70	42	924	21
80	48	1056	19
90	54	1188	17
100	60	1320	15

Heat Holding Capacity:	285
Overall Holding Capacity:	330
Maximum Unload Rate:	1320

***The charts above show approximate unload rates and capacities, and in no way are guaranteed. They can vary due to flow gate settings, varieties of grain, weather conditions, and amount of fines.

NOTE: If the dryer has mulitple plenum and several different plenum set points are being used, an equivalent plenum temp must be calculated.

$$Eq.\,Plenum\,Temp = PT1 * \frac{\#\ of\ Tiers\ P1}{Total\ \#\ of\ Tiers} + PT2 * \frac{\#\ of\ Tiers\ P2}{Total\ \#\ of\ Tiers} \ldots ect.$$

Example: On a TM1610 dryer with the top plenum set to 210°F and the bottom plenum set to 180°F the equivalent temp is calculated as follows:

$$210°F * \frac{4\ Tiers\ Top\ Plenum}{10\ Tiers\ Total} + 180°F * \frac{6\ Tiers\ Lower\ Plenum}{10\ Tiers\ Total} = 84 + 108 = 192°F\ equivalent\ temp$$

9/30/2020 CSH