TM1616EXNO Heat & Vacuum Cool 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% Corn to 15% with a plenum temperature of 170°, initial unload rate should be set to: 45 %

Chart 1 TM1616EXNO Unload Rate (%) for Corn 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**
16-15%	67	76	86	95	100	100	100	100	100
17-15%	52	59	66	74	81	88	96	100	100
18-15%	43	49	55	61	67	73	79	85	92
19-15%	36	42	47	52	57	62	68	73	78
20-15%	31	36	40	45	49	54	58	63	67
21-15%	28	31	35	39	43	47	51	55	59
22-15%	24	28	31	34	38	41	45	48	52
23-15%	21	24	27	30	33	36	39	42	45
24-15%	19	21	24	27	29	32	35	37	40
25-15%	16	19	21	23	26	28	30	33	35
26-15%	14	16	18	20	22	24	26	28	30
27-15%	12	14	16	18	19	21	23	25	26
28-15%	11	12	14	15	17	18	20	21	23
29-15%	9	10	11	13	14	15	17	18	19
30-15%	7	8	10	11	12	13	14	15	16

Chart 2 TM1616EXNO Dryer Specifications

Unload Rate (%)	Freq. (Hz)	Bu/hr*	Minutes to Turn Over
10	6	300	413
20	12	600	207
30	18	900	138
40	24	1200	103
50	30	1500	83
60	36	1800	69
70	42	2100	59
80	48	2400	52
90	54	2700	46
100	60	3000	41

Heat Holding Capacity:	1556
Overall Holding Capacity:	2067
Maximum Unload Rate:	3000

***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:

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

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