Accel/Decel - Data Chart (TBD)

PWM (Old Set)	Accelerator
50	1
60	1.11
70	1.16
80	1.2
90	1.23
100	1.265
110	1.28
120	*TBD*
130	*TBD*

Acc Gains:
Kp = 1.8
Ki = 1.4
Kd = 0.65

STATUS:	
	Note
	Checked
	Working on - Potential Issue
	Projected
	Issue - Check Times Sheet

PWM (New Set)	Accelerator
50	*TBD*
60	*TBD*
70	*TBD*

80	*TBD*			
90	*TBD*			
100	*TBD*			
110	*TBD*			
120	*TBD*			
130	*TBD*			

Counts - Data Chart

PWM	Counter A	Counter B	Difference:
50	4892	4890	GREAT - 2
60	4897	4751	FINE/DECENT - 146
70	4886	3860	CRITICAL - 1026
80	4885	3655	CRITICAL - 1230
90	4898	3979	CRITICAL - 919
100	4898	4561	MODERATE - 337
110	4883	4604	FINE/DECENT - 279
120	4892	4412	ISSUE - 480
130	4888	4319	ISSUE- 569

STATUS:			DIFFERENCE:	
	Note		GREAT	< 100
	Checked		FINE/DECENT	100 - 299
	Working on - Potential Issue		MODERATE	300 - 399
	Projected		ISSUE	400- 650
	Issue - Check Times Sheet		CRITICAL	> 650

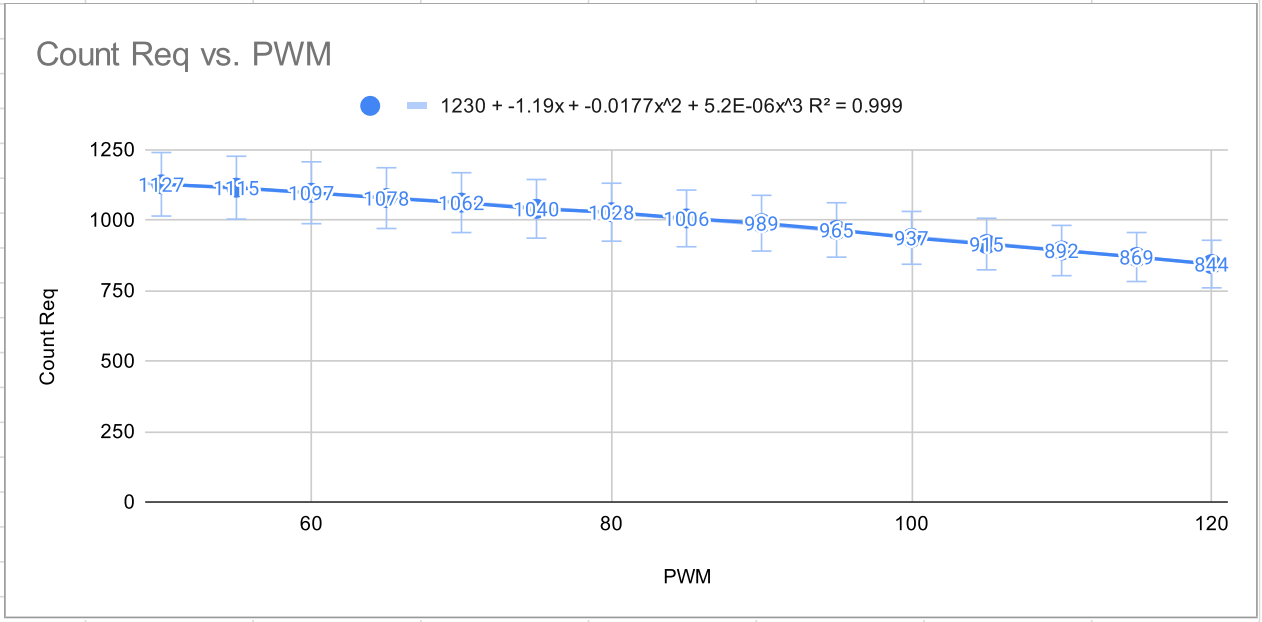
Counts/Distance without PID - Data Char

PWM	Count A - Try 1	Count B - Try 1	Difference:	Distance:
50	4897	4834	GREAT - 63	85 Inches
60	4890	4631	FINE - 259	80.5 Inches
70	4884	3601	CRITICAL - 1283	65.75 Inches
80	4894	3605	CRITICAL- 1289	63.25 Inches
90				
100				
110				
120				
130				

STATUS:			DIFFERENCE:	
	Note		GREAT	< 100
	Checked		FINE/DECENT	100 - 299
	Working on - Potential Issue		MODERATE	300 - 399
	Projected		ISSUE	400- 650
	Issue - Check Times Sheet		CRITICAL	> 650

50CM - Data Chart

PWM	Count Req
50	1127
55	1115
60	1097
65	1078
70	1062
75	1040
80	1028
85	1006
90	989
95	965
100	937
105	915
110	892
115	869
120	844



STATUS:	
	Note
	Checked
	Working on - Potential Issue
	Projected
	Issue - Check Times Sheet

PID - Data Chart

PWM (Old Set)	Kp	Ki	Kd
50	2	1.6	0.65
60	2.15	1.7	0.55
70	2.25	1.77	0.5
80	2.3	1.85	0.44
90	2.33	1.9	0.41
100	2.365	1.925	0.3975
110	2.39	2.05	0.375
120	2.415	2.12	0.35
130	2.43	2.17	0.315

Consider PID also takes up encoder counts. Will have to redo PID for all values again.

STATUS:

	Note
	Checked
	Working on - Potential Issue
	Projected
	Issue - Check Times Sheet

PWM (New Set)	Kp	Ki	Kd
50	1.8	1.6	0.4
60	1.76	1.57	0.425
70	1.72	1.545	0.46
80	1.69	1.51	0.49

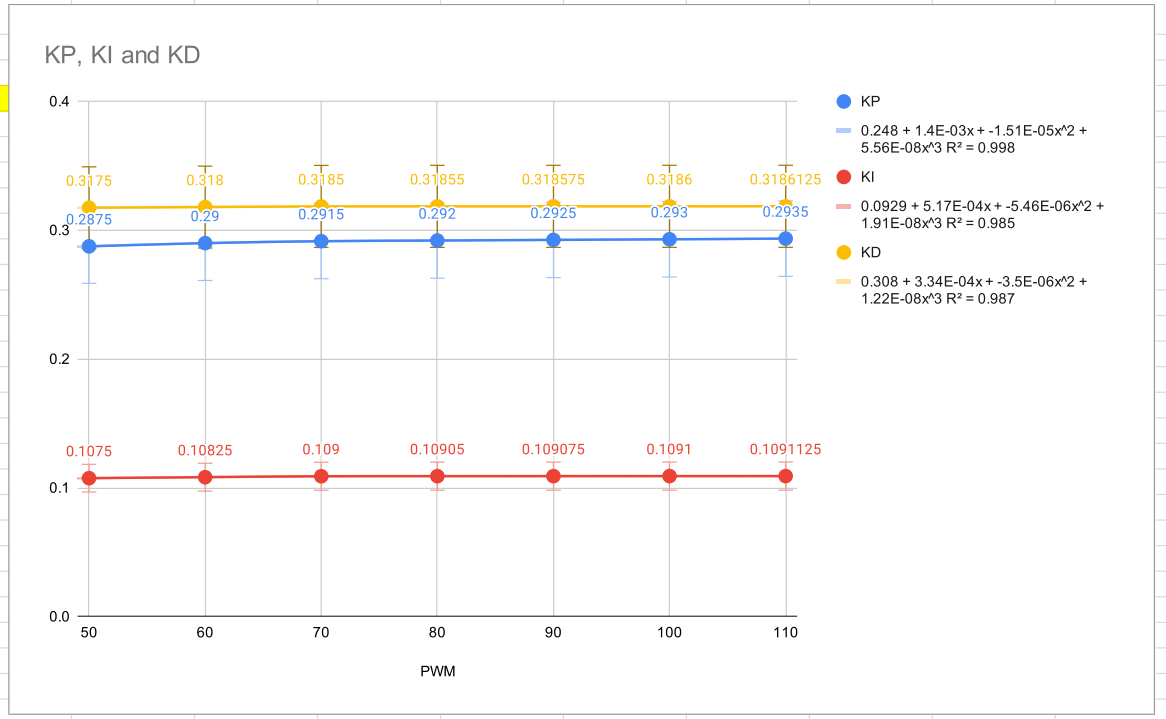
90	1.665	1.4925	0.515		
100	1.64	1.47	0.5375		
110	1.6225	1.4575	0.5525		
120	1.5975	1.4315	0.5675		
130	1.5795	1.4175	0.5855		
				0	
PWM (2ND New Set)	**Kp**	**Ki**	**Kd**		
50	0.291	0.11	0.339		
60	0.2	0.1	0.3		
70	0.14	0.0925	0.265		
80	0.098	0.0825	0.23		
90					
100					
110					
120					
130					
PWM (3RD New Set)	**Kp**	**Ki**	**Kd**		
50					
60					
70					
80					
90					
100					
110					
120					

PID LITHIUM - Data Chart

PWM	KP	KI	KD	RECALLED COUNTS
50	0.2875	0.1075	0.3175	1127
60	0.29	0.10825	0.318	1097
70	0.2915	0.109	0.3185	1062
80	0.292	0.10905	0.31855	1028
90	0.2925	0.109075	0.318575	989
100	0.293	0.1091	0.3186	937
110	0.2935	0.1091125	0.3186125	892

STATUS:

	Note
	Checked
	Working on - Potential Issue
	Projected
	Issue - Check Times Sheet

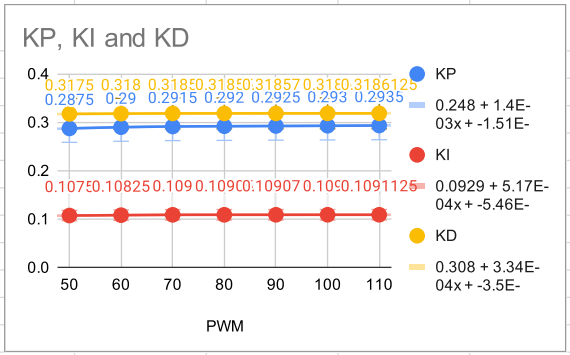


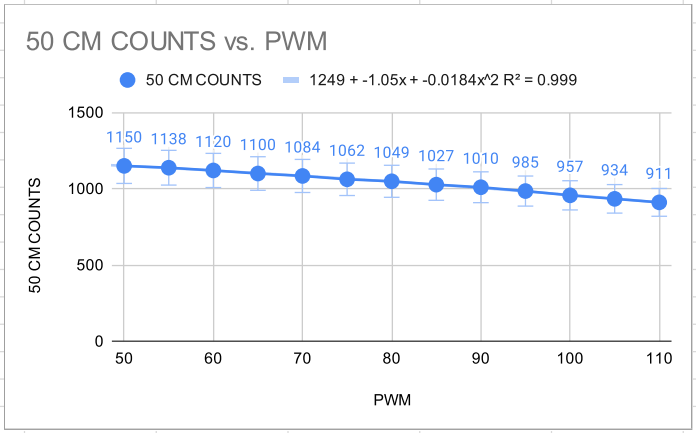
PID 2AA with Distance - Data Chart

PWM	COUNT CM	KP	KI	KD	COUNT	50 CM COUNTS
50	49	0.2875	0.1075	0.3175	1127	1150
55	49	0.2886	0.108	0.3178	1115	1138
60	49	0.29	0.10825	0.318	1097	1120
65	49	0.2905	0.1087	0.3183	1078	1100
70	49	0.2915	0.109	0.3185	1062	1084
75	49	0.29152	0.10902	0.3185	1040	1062
80	49	0.292	0.10905	0.31855	1028	1049
85	49.3	0.29205	0.10913	0.3186	1006	1027
90	49	0.2925	0.109075	0.318575	989	1010
95	49	0.29239	0.10911	0.318625	965	985
100	49	0.293	0.1091	0.3186	937	957
105	48.85	0.29289	0.1091	0.3186	915	934
110	48.85	0.2935	0.1091125	0.3186125	892	911

STATUS:

	Note
	Checked
	Working on - Potential Issue
	Projected
	Issue - Check Times Sheet

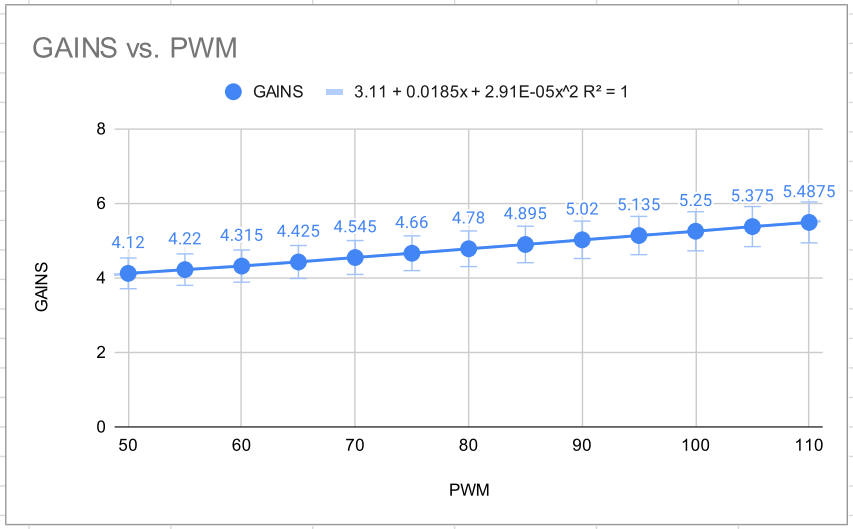




PWM	50 CM COUNTS
50	1150
55	1138
60	1120
65	1100
70	1084
75	1062
80	1049
85	1027
90	1010
95	985
100	957
105	934
110	911

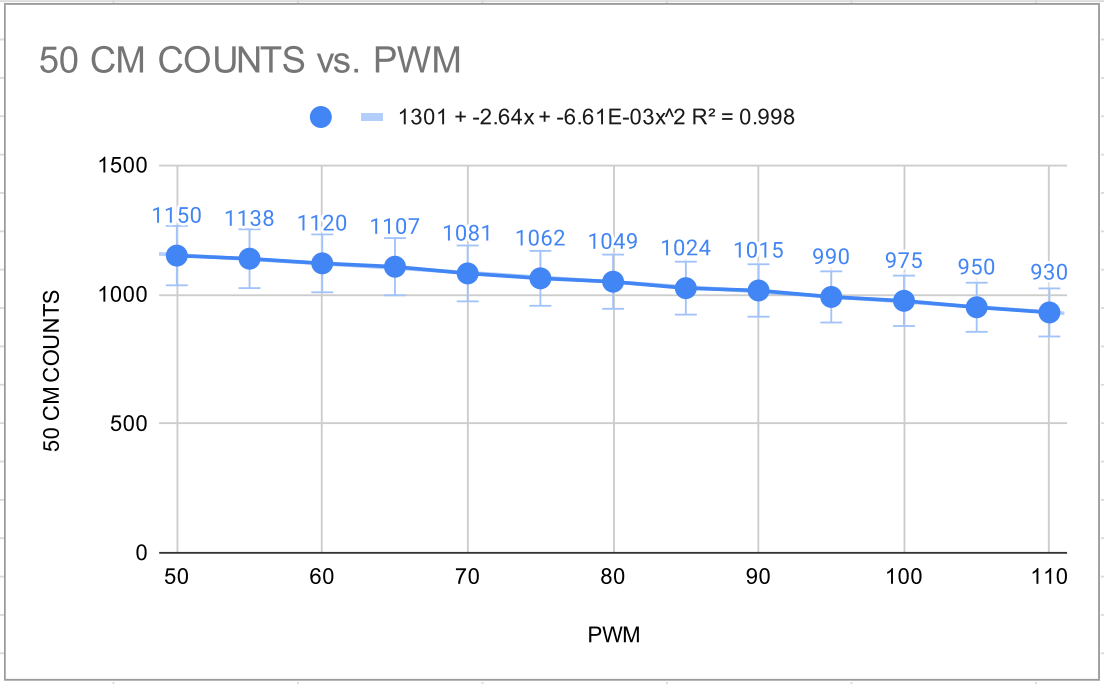
PD Gains - Data Chart

PWM	GAINS	50 CM COUNTS
50	4.12	1150
55	4.22	1138
60	4.315	1120
65	4.425	1100
70	4.545	1084
75	4.66	1062
80	4.78	1049
85	4.895	1027
90	5.02	1010
95	5.135	985
100	5.25	957
105	5.375	934
110	5.4875	911



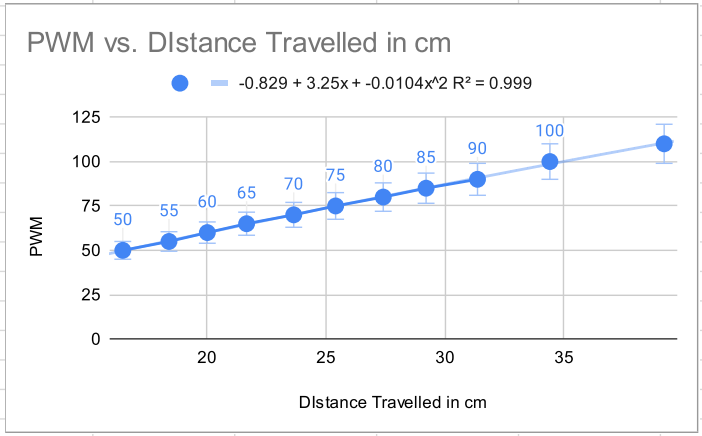
Count Calibrater - Data Chart

PWM	50 CM COUNTS	GAINS
50	1150	4.12
55	1138	4.22
60	1120	4.315
65	1107	4.425
70	1081	4.545
75	1062	4.66
80	1049	4.78
85	1024	4.895
90	1015	5.02
95	990	5.135
100	975	5.25
105	950	5.375
110	930	5.4875



CM/SECONDS - Data Chart

PWM	DIstance Travelled in cm		Time	KP	KI	KD
50	16.46	82.3	5000	0.2875	0.1075	0.3175
55	18.4	92	5000	0.2886	0.108	0.3178
60	20.01	100.05	5000	0.29	0.10825	0.318
65	21.66	108.3	5000	0.2905	0.1087	0.3183
70	23.64	118.2	5000	0.2915	0.109	0.3185
75	25.4	127	5000	0.29152	0.10902	0.3185
80	27.4	137	5000	0.292	0.10905	0.31855
85	29.2	146	5000	0.29205	0.10913	0.3186
90	31.36	156.8	5000	0.2925	0.109075	0.318575
95			5000	0.29239	0.10911	0.318625
100	34.4	172	5000	0.293	0.1091	0.3186
105			5000	0.29289	0.1091	0.3186
110	39.2	196	5000	0.2935	0.1091125	0.3186125



STATUS:	
	Note
	Checked
	Working on - Potential Issue
	Projected
	Issue - Check Times Sheet

DIstance Travell	PWM
16.46	50
18.4	55
20.01	60
21.66	65
23.64	70
25.4	75
27.4	80
29.2	85
31.36	90
	95
34.4	100
	105
39.2	110

Back Inconsistency - Data Chart

PWM	COUNT MM				
50					
55					
60	2 mm				
65	GOOD				
70	7 mm	Inconsistent and Good Sometimes			
75					
80					
85					
90					
95					
100					
105					
110					
STATUS:					
	Note				
	Checked				
	Working on - Potential Issue				
	Projected				
	Issue - Check Times Sheet				

Turn (84.75 Deg for 32 Speed) Consistency Test - Data Chart

TEST #	COUNT CM
1	4.5
2	4.5
3	4.5
4	4.5

STATUS:	
	Note
	Checked
	Working on - Potential Issue
	Projected
	Issue - Check Times Sheet

Times: Straight Moves - Data Chart

PWM (Old Set)	Time (200 cm):	Est. Track Time:
50	*TBD*	*TBD*
60	*TBD*	*TBD*
70	**ISSUE**	**ISSUE**
80	**ISSUE**	**ISSUE**
90	**ISSUE**	**ISSUE**
100	5.86 Seconds	~64 Seconds
110	5.55 Seconds	~62 Seconds
120	5.05 Seconds	~58 Seconds
130	4.33 Seconds	~53 Seconds

Notes for Est: Take 30 Block Track with 20 Turns into consideration, where each turn is 1 second. Each block is 50 cm long + 25 for starting point

STATUS:	
	Note
	Checked
	Working on - Potential Issue
	Projected
	Issue: Undertravelling and bad drift. Count issue

PWM (New Set)	Time (200 cm):	Est. Track Time:
50	*TBD*	*TBD*
60	*TBD*	*TBD*
70	*TBD*	*TBD*
80	*TBD*	*TBD*

90	*TBD*	*TBD*						
100	*TBD*	*TBD*						
110	*TBD*	*TBD*						
120	*TBD*	*TBD*						
130	*TBD*	*TBD*						

Times: Turns - Data Chart

PWM	Time (Right):	Time (Left):	Est. Track Time:
50	*TBD*	*TBD*	*TBD*
60	*TBD*	*TBD*	*TBD*
70	*TBD*	*TBD*	*TBD*
80	*TBD*	*TBD*	*TBD*
90	*TBD*	*TBD*	*TBD*
100	*TBD*	*TBD*	*TBD*
110	*TBD*	*TBD*	*TBD*
120	*TBD*	*TBD*	*TBD*
130	*TBD*	*TBD*	*TBD*

STATUS:			
	Note		
	Checked		
	Working on - Potential Issue		
	Projected		
	Issue: Undertravelling and bad drift		