



Simulation Report

Design Input Configurations

Design Details

Date	: Fri Feb 06 2026 16:49:09 GMT+0530 (India Standard Time)
Simulation Name	: greaves_mobility
Type of motion	: Linear
Operating Temperature	: 20

Magnet Parameters

Magnet Shape	: Axial Ring
Magnet Pole Count	: 2
Magnet Material	: Sintered Neodymium Iron Boron (NdFeB)
Material Grade	: N45
Remanence (mT at 20 deg C)	: 1350
Temperature Coefficient (%/deg C)	: -0.12
Coercivity (kA/m)	: 11

Magnet Dimensions

Outer Diameter (mm)	: 6
Inner Diameter (mm)	: 3
Height (mm)	: 85

Start Position

X Position (mm)	: 0
Y Position (mm)	: 0
Z Position (mm)	: -41

Start Angle



X Angle (Deg)	:	0
Y Angle (Deg)	:	0
Z Angle (Deg)	:	0

End Position

Final X Position	:	0
Final Y Position	:	0
Final Z Position	:	41
Step Size (mm)	:	1

Sensor Parameters

Sensor 1 : DRV5055

Sensor #	:	1
Device	:	DRV5055
Part Number	:	DRV5055A1QLPG
Package	:	TO-92
Pin Count	:	3
Sensor Family	:	Linear Hall-effect sensors
Vcc (V)	:	3.3
Max Vcc (V)	:	5.5
Min Vcc (V)	:	3
Temperature Compensation (%C)	:	0.12
Max Input (mT)	:	21
Min Input (mT)	:	-21
Input Referred Noise (uTRMS)	:	18.2
Sensitivity Dir	:	Y
Sensitivity (mV/mT)	:	60
Quiescent O/P (V)	:	1.65

Sensor Placement



Start Position

X Position (mm)	:	4
Y Position (mm)	:	0
Z Position (mm)	:	0

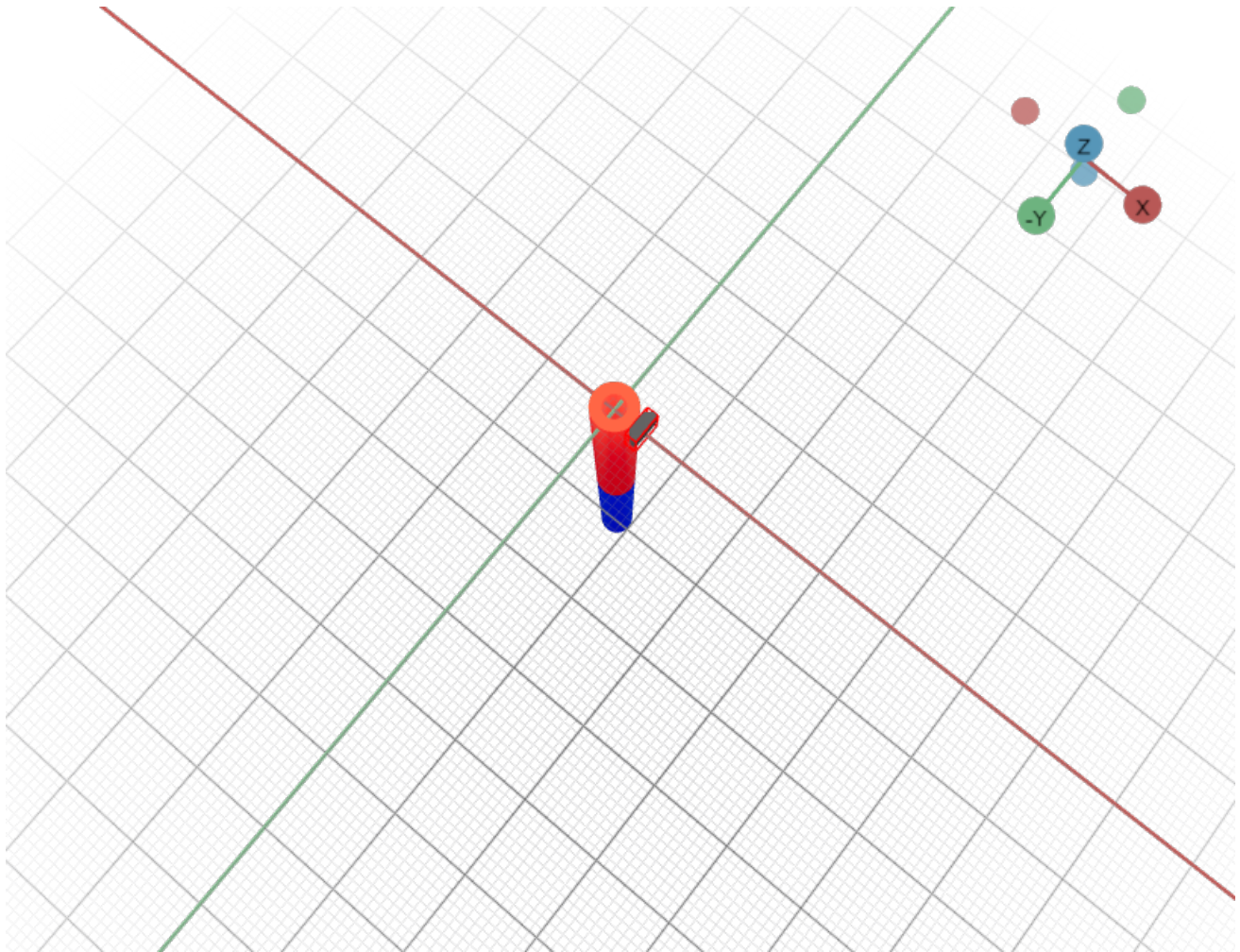
Start Angle

X Angle (Deg)	:	0
Y Angle (Deg)	:	0
Z Angle (Deg)	:	90



Simulation Output - Animation

Magnet Animation Movement



Magnet Animation

Magnet Motion Value (Angle or Displacement)	Magnet X Position (mm)	Magnet Y Position (mm)	Magnet Z Position (mm)	Magnet X Angle (Deg)	Magnet Y Angle (Deg)	Magnet Z Angle (Deg)
0	0	0	-41	0	0	0
1	0	0	-40	0	0	0
2	0	0	-39	0	0	0



Magnet Motion Value (Angle or Displacement)	Magnet X Position (mm)	Magnet Y Position (mm)	Magnet Z Position (mm)	Magnet X Angle (Deg)	Magnet Y Angle (Deg)	Magnet Z Angle (Deg)
3	0	0	-38	0	0	0
4	0	0	-37	0	0	0
5	0	0	-36	0	0	0
6	0	0	-35	0	0	0
7	0	0	-34	0	0	0
8	0	0	-33	0	0	0
9	0	0	-32	0	0	0
10	0	0	-31	0	0	0
11	0	0	-30	0	0	0
12	0	0	-29	0	0	0
13	0	0	-28	0	0	0
14	0	0	-27	0	0	0
15	0	0	-26	0	0	0
16	0	0	-25	0	0	0
17	0	0	-24	0	0	0
18	0	0	-23	0	0	0
19	0	0	-22	0	0	0
20	0	0	-21	0	0	0
21	0	0	-20	0	0	0
22	0	0	-19	0	0	0
23	0	0	-18	0	0	0
24	0	0	-17	0	0	0
25	0	0	-16	0	0	0
26	0	0	-15	0	0	0
27	0	0	-14	0	0	0
28	0	0	-13	0	0	0



Magnet Motion Value (Angle or Displacement)	Magnet X Position (mm)	Magnet Y Position (mm)	Magnet Z Position (mm)	Magnet X Angle (Deg)	Magnet Y Angle (Deg)	Magnet Z Angle (Deg)
29	0	0	-12	0	0	0
30	0	0	-11	0	0	0
31	0	0	-10	0	0	0
32	0	0	-9	0	0	0
33	0	0	-8	0	0	0
34	0	0	-7	0	0	0
35	0	0	-6	0	0	0
36	0	0	-5	0	0	0
37	0	0	-4	0	0	0
38	0	0	-3	0	0	0
39	0	0	-2	0	0	0
40	0	0	-1	0	0	0
41	0	0	0	0	0	0
42	0	0	1	0	0	0
43	0	0	2	0	0	0
44	0	0	3	0	0	0
45	0	0	4	0	0	0
46	0	0	5	0	0	0
47	0	0	6	0	0	0
48	0	0	7	0	0	0
49	0	0	8	0	0	0
50	0	0	9	0	0	0
51	0	0	10	0	0	0
52	0	0	11	0	0	0
53	0	0	12	0	0	0
54	0	0	13	0	0	0



Magnet Motion Value (Angle or Displacement)	Magnet X Position (mm)	Magnet Y Position (mm)	Magnet Z Position (mm)	Magnet X Angle (Deg)	Magnet Y Angle (Deg)	Magnet Z Angle (Deg)
55	0	0	14	0	0	0
56	0	0	15	0	0	0
57	0	0	16	0	0	0
58	0	0	17	0	0	0
59	0	0	18	0	0	0
60	0	0	19	0	0	0
61	0	0	20	0	0	0
62	0	0	21	0	0	0
63	0	0	22	0	0	0
64	0	0	23	0	0	0
65	0	0	24	0	0	0
66	0	0	25	0	0	0
67	0	0	26	0	0	0
68	0	0	27	0	0	0
69	0	0	28	0	0	0
70	0	0	29	0	0	0
71	0	0	30	0	0	0
72	0	0	31	0	0	0
73	0	0	32	0	0	0
74	0	0	33	0	0	0
75	0	0	34	0	0	0
76	0	0	35	0	0	0
77	0	0	36	0	0	0
78	0	0	37	0	0	0
79	0	0	38	0	0	0
80	0	0	39	0	0	0

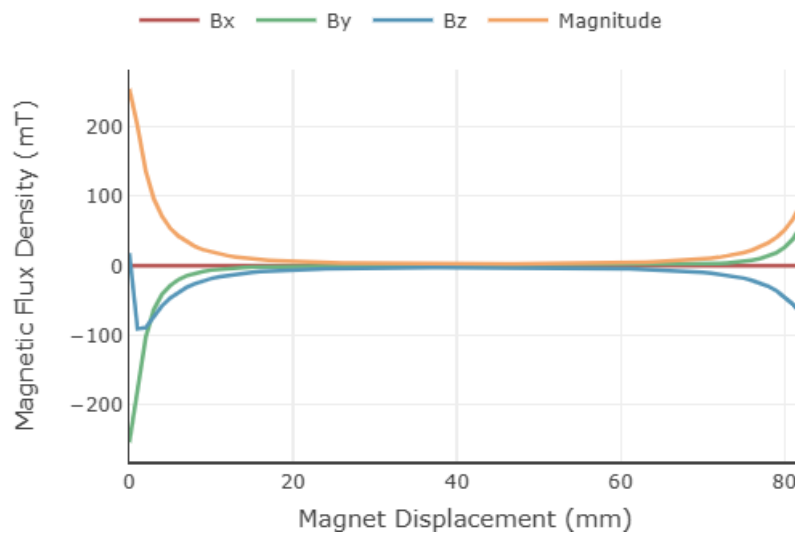


Magnet Motion Value (Angle or Displacement)	Magnet X Position (mm)	Magnet Y Position (mm)	Magnet Z Position (mm)	Magnet X Angle (Deg)	Magnet Y Angle (Deg)	Magnet Z Angle (Deg)
81	0	0	40	0	0	0
82	0	0	41	0	0	0



Simulation Output - Sensor 1 : DRV5055

Magnet Field vs Distance Graph



Magnet Field vs Distance Graph

Magnet Displacement (mm)	Bx	By	Bz	Magnitude
0	0	-253.9911	17.79886	254.61398
1	0	-180.39526	-90.6773	201.903
2	0	-102.60025	-89.2165	135.96468
3	0	-63.04922	-72.45772	96.04855
4	0	-41.27331	-57.78408	71.01046
5	0	-28.22035	-46.39695	54.30529
6	0	-19.94194	-37.68511	42.63624
7	0	-14.48137	-30.99089	34.20738
8	0	-10.76755	-25.80093	27.95761
9	0	-8.17531	-21.73498	23.22166
10	0	-6.32385	-18.51452	19.56472
11	0	-4.97373	-15.93559	16.69374



Magnet Displacement (mm)	Bx	By	Bz	Magnitude
12	0	-3.97044	-13.8483	14.40624
13	0	-3.21195	-12.14169	12.55935
14	0	-2.62944	-10.733	11.05039
15	0	-2.17561	-9.55987	9.80431
16	0	-1.81735	-8.57492	8.76538
17	0	-1.5311	-7.74173	7.89168
18	0	-1.29982	-7.03209	7.15121
19	0	-1.11102	-6.42393	6.51929
20	0	-0.95542	-5.8998	5.97666
21	0	-0.82603	-5.44582	5.50811
22	0	-0.71753	-5.05086	5.10157
23	0	-0.62582	-4.7059	4.74733
24	0	-0.54772	-4.40361	4.43754
25	0	-0.48073	-4.13795	4.16578
26	0	-0.42286	-3.90399	3.92682
27	0	-0.37254	-3.6976	3.71632
28	0	-0.32847	-3.51536	3.53067
29	0	-0.28963	-3.3544	3.36688
30	0	-0.25517	-3.21233	3.22245
31	0	-0.22437	-3.08711	3.09525
32	0	-0.19667	-2.97704	2.98353
33	0	-0.17156	-2.88068	2.88578
34	0	-0.14863	-2.79682	2.80077
35	0	-0.12752	-2.72444	2.72742
36	0	-0.10794	-2.66268	2.66487
37	0	-0.08961	-2.61084	2.61237
38	0	-0.0723	-2.56833	2.56935



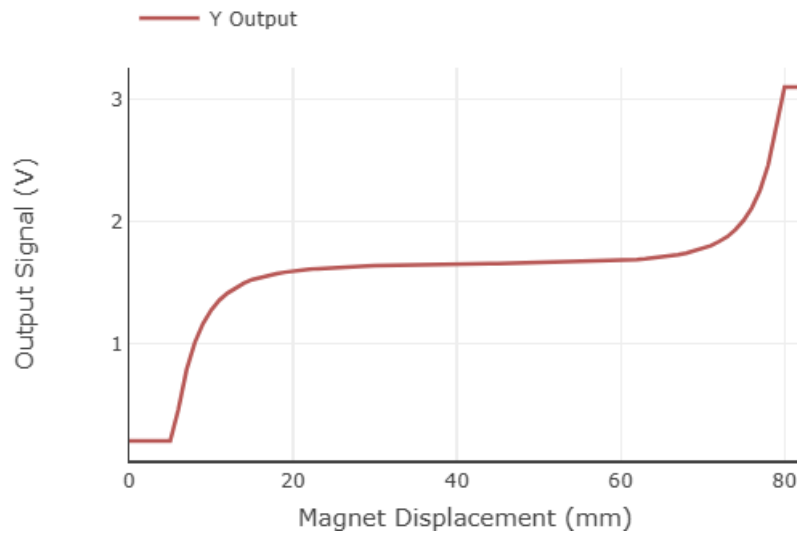
Magnet Displacement (mm)	Bx	By	Bz	Magnitude
39	0	-0.05579	-2.53469	2.5353
40	0	-0.03989	-2.50955	2.50987
41	0	-0.02442	-2.49265	2.49277
42	0	-0.00922	-2.48381	2.48383
43	0	0.00589	-2.48294	2.48294
44	0	0.02106	-2.49002	2.49011
45	0	0.03645	-2.50513	2.5054
46	0	0.05224	-2.52844	2.52898
47	0	0.0686	-2.56018	2.5611
48	0	0.08572	-2.6007	2.60211
49	0	0.10381	-2.65045	2.65248
50	0	0.12309	-2.70997	2.71276
51	0	0.14384	-2.77994	2.78366
52	0	0.16634	-2.8612	2.86603
53	0	0.19094	-2.95471	2.96087
54	0	0.21803	-3.06165	3.0694
55	0	0.2481	-3.1834	3.19305
56	0	0.2817	-3.3216	3.33353
57	0	0.31951	-3.47821	3.49286
58	0	0.36235	-3.65554	3.67346
59	0	0.41119	-3.85635	3.87821
60	0	0.46728	-4.08392	4.11056
61	0	0.53211	-4.34221	4.37469
62	0	0.60757	-4.63597	4.67561
63	0	0.69603	-4.97096	5.01945
64	0	0.80052	-5.35421	5.41373
65	0	0.92491	-5.79433	5.86769



Magnet Displacement (mm)	Bx	By	Bz	Magnitude
66	0	1.07421	-6.30194	6.39284
67	0	1.255	-6.89026	7.00362
68	0	1.47599	-7.57586	7.71831
69	0	1.74888	-8.37969	8.56024
70	0	2.08954	-9.32846	9.55962
71	0	2.51989	-10.45655	10.7559
72	0	3.07062	-11.80867	12.20137
73	0	3.78539	-13.44345	13.96622
74	0	4.72746	-15.4386	16.14618
75	0	5.99024	-17.89806	18.87388
76	0	7.71449	-20.96205	22.33654
77	0	10.11719	-24.82107	26.80379
78	0	13.54134	-29.73515	32.67334
79	0	18.54577	-36.05951	40.54915
80	0	26.07758	-44.2757	51.38461
81	0	37.8384	-55.01276	66.76937
82	0	57.17597	-68.94113	89.56545



Device Output Graph - 1



Device Output Graph - 1

Magnet Displacement (mm)	Device Output : Y Output
0	0.2
1	0.2
2	0.2
3	0.2
4	0.2
5	0.2
6	0.46026
7	0.78493
8	1.00682
9	1.16203
10	1.27296
11	1.35363
12	1.41185
13	1.45837



Magnet Displacement (mm)	Device Output : Y Output
14	1.49424
15	1.52227
16	1.54247
17	1.55831
18	1.57185
19	1.58261
20	1.59381
21	1.60013
22	1.6067
23	1.61209
24	1.61752
25	1.62214
26	1.62489
27	1.62835
28	1.63015
29	1.63281
30	1.63531
31	1.63739
32	1.63719
33	1.63916
34	1.64128
35	1.64136
36	1.64535
37	1.64576
38	1.64419
39	1.64594
40	1.64819



Magnet Displacement (mm)	Device Output : Y Output
41	1.64843
42	1.64675
43	1.6495
44	1.65228
45	1.65229
46	1.65389
47	1.65401
48	1.65483
49	1.65605
50	1.65907
51	1.65851
52	1.66013
53	1.66079
54	1.66362
55	1.66653
56	1.66649
57	1.67143
58	1.67125
59	1.67396
60	1.67632
61	1.68253
62	1.68714
63	1.69227
64	1.69792
65	1.70419
66	1.71432
67	1.72673



Magnet Displacement (mm)	Device Output : Y Output
68	1.73906
69	1.75708
70	1.77513
71	1.79969
72	1.83434
73	1.87298
74	1.93143
75	2.00684
76	2.10903
77	2.25267
78	2.45978
79	2.75644
80	3.1
81	3.1
82	3.1



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