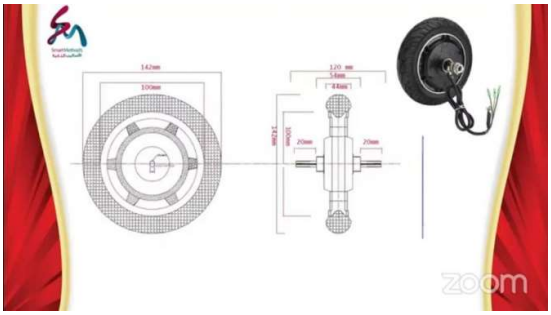
Second Task – Mech Track

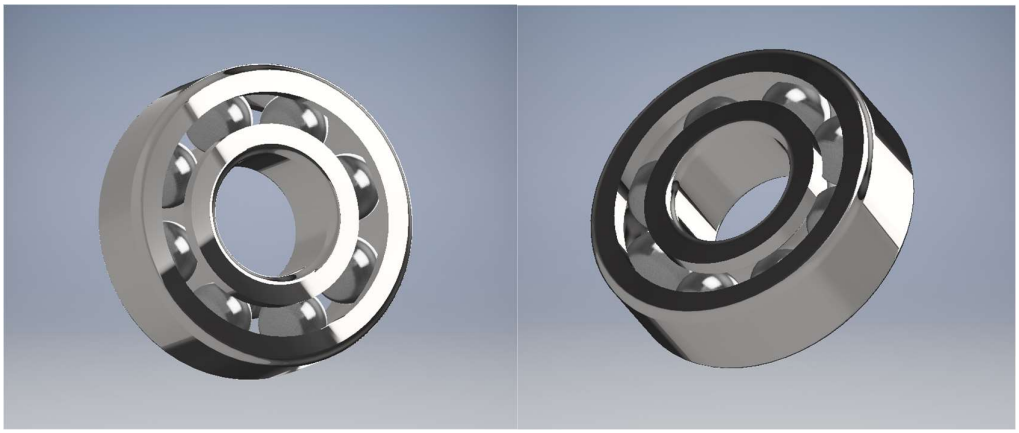
By: Amer Maghrabi

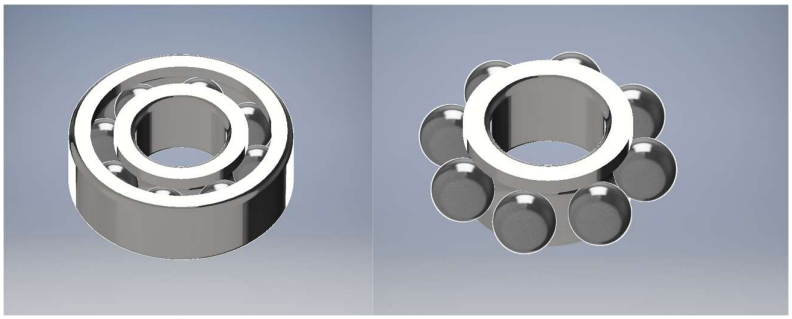
I designed 3 CAD models according to the provided design criteria:



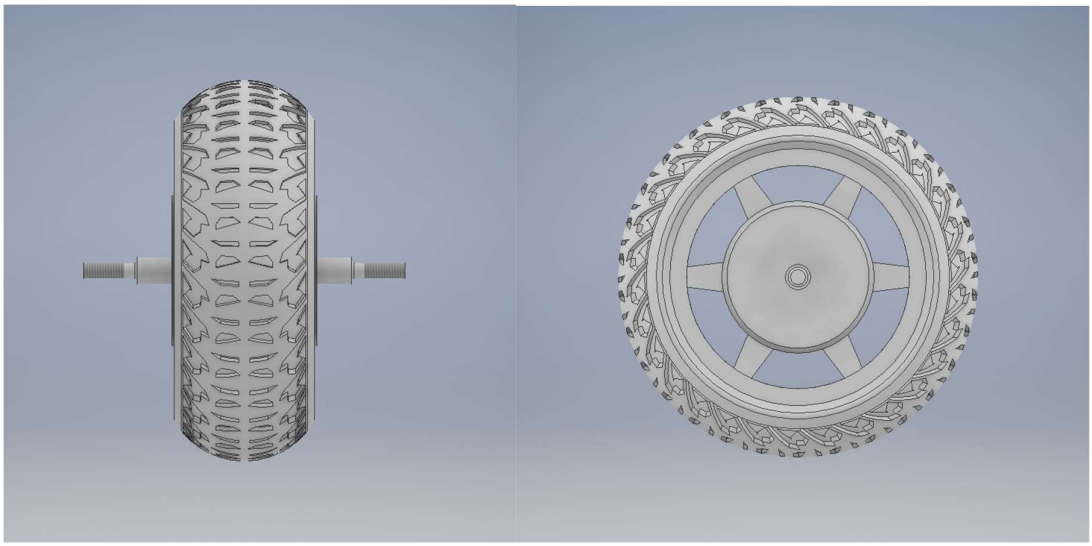
Ball Bearing

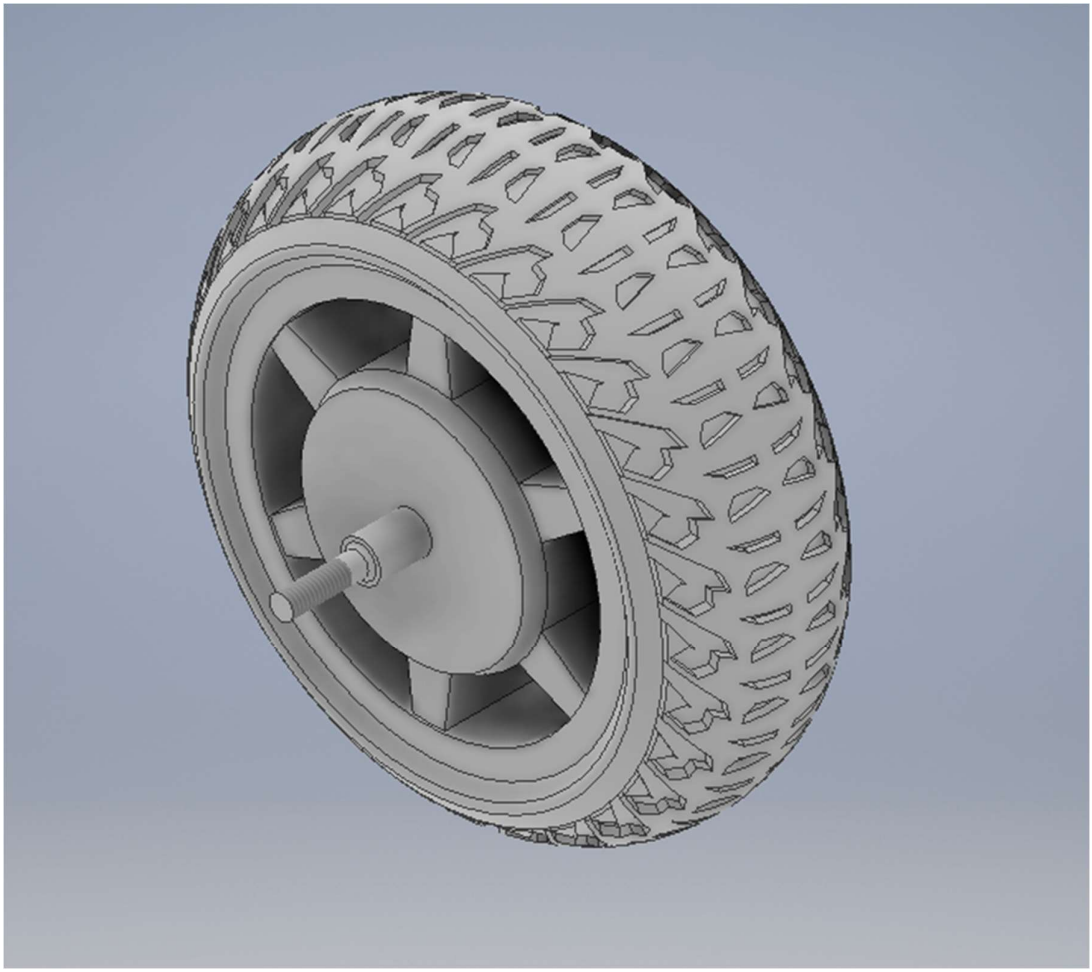
According to the 62 Series Table by HCH Bearing Americas [1], a similar standard bearing size in the market (Basic Bearing No. 6206). It can be bought to save time and cost of manufacturing.





Brushless Motor Wheel





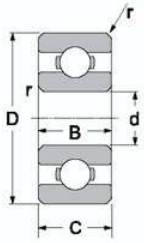
The Suspension System:

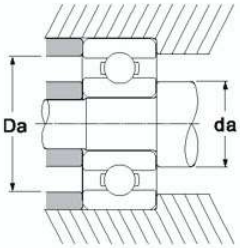
References

[1] https://www.hchbearingamericas.com/62-series-bearings-2/

DEEP GROOVE BALL BEARINGS

62 Series





Any combination of closures is available

Basic Bearing No.	Nominal Bearing Dimensions						Preferred Shoulder Diameters							
	d		D		B,C		r (min)		da (min)		da (max)		Da (max)	
	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
624	4	0.1575	13	0.5118	5	0.1968	0.2	0.007	5.6	0.220	6.2	0.244	11.4	0.449
625	5	0.1969	16	0.6299	5	0.1968	0.3	0.012	7.0	0.276	7.6	0.299	14.0	0.551
626	6	0.2362	19	0.7480	6	0.2362	0.3	0.012	8.0	0.315	9.5	0.374	17.0	0.669
627	7	0.2756	22	0.8661	7	0.2756	0.3	0.012	9.0	0.354	12.2	0.480	20.0	0.787
628	8	0.3149	24	0.9448	8	0.3149	0.3	0.012	10.0	0.394	12.1	0.476	17.0	0.669
629	9	0.3543	26	1.0236	8	0.3149	0.3	0.012	11.5	0.453	...	...	14.0	0.945
6200	10	0.3937	30	1.1811	9	0.3543	0.6	0.024	12.7	0.500	16.0	0.630	26.0	1.024
6201	12	0.4724	32	1.2598	10	0.3937	0.6	0.024	14.7	0.578	17.0	0.670	28.0	1.102
6202	15	0.5906	35	1.3780	11	0.4331	0.6	0.024	17.9	0.703	20.0	0.787	31.0	1.220
6203	17	0.6693	40	1.5748	12	0.4724	0.6	0.024	20.0	0.787	23.5	0.926	36.0	1.417
6204	20	0.7874	47	1.8504	14	0.5512	1.0	0.039	24.6	0.969	28.0	1.102	42.0	1.654
6205	25	0.9843	52	2.0470	15	0.5906	1.0	0.039	30.0	1.181	32.0	1.260	47.0	1.850
6206	30	1.1811	62	2.4409	16	0.6299	1.0	0.039	35.0	1.378	39.0	1.535	57.0	2.244
6207	35	1.3780	72	2.8346	17	0.6693	1.1	0.043	41.0	1.614	45.0	1.772	65.5	2.579
6208	40	1.5748	80	3.1496	18	0.7087	1.1	0.043	46.0	1.811	51.0	2.008	73.5	2.894
6209	45	1.7717	85	3.3465	19	0.7480	1.1	0.043	51.0	2.008	55.5	2.185	78.5	3.091
6210	50	1.9685	90	3.5433	20	0.7874	1.1	0.043	56.0	2.205	60.0	2.362	83.5	3.287
6211	55	2.1654	100	3.9370	21	0.8268	1.5	0.059	62.0	2.441	67.0	2.638	92.0	3.622
6212	60	2.3622	110	4.3307	22	0.8661	1.5	0.059	68.0	2.677	75.0	2.953	102.0	4.016
6213	65	2.5591	120	4.7244	23	0.9055	1.5	0.059	73.0	2.874	80.5	3.169	112.0	4.409
6214	70	2.7559	125	4.9213	24	0.9449	1.5	0.059	78.0	3.071	85.0	3.346	117.0	4.606
6215	75	2.9528	130	5.1181	25	0.9843	1.5	0.059	83.0	3.268	90.5	3.563	122.0	4.803
6216	80	3.1496	140	5.5118	26	1.0236	2.0	0.0787	89.0	3.504	95.5	3.760	131.0	5.157
6217	85	3.3465	150	5.9055	28	1.1024	2.0	0.0787	94.0	3.701	103.0	4.055	141.0	5.551
6218	90	3.5433	160	6.2992	30	1.1811	2.0	0.0787	99.0	3.898	109.0	4.291	151.0	5.945
6219	95	3.7402	170	6.6929	32	1.2598	2.1	0.0827	106.0	4.173	116.0	4.567	159.0	6.260
6220	100	3.9370	180	7.0866	34	1.3386	2.1	0.0827	111.0	4.370	122.0	4.803	169.0	6.654
6221	105	4.1399	190	7.4803	36	1.4173	2.1	0.0827	116.0	4.567	125.0	4.921	179.0	7.047
6222	110	4.3307	200	7.8740	38	1.4961	2.1	0.0827	121.0	4.764	132.0	5.197	189.0	7.441

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