MIROMAX Ltd
Dumu 3C, LT-11119, Vilnius
www.miromax.lt | miromax@miromax.lt
Phone: +370 700 30 154
Phone: +370 648 16 391

8000 W

MECHANICAL PARAMETERS

Nr.	Parameter	VALUE	Units	Notes	Picture
1	Motor model	**QS-273 8000W / V3 / H50 / 48-144V**			
2	Motor type	**3 phase** Outer Rotor BLDC / PMSM hub motor			
3	Axle Configuration	Single Shaft			
4	Motor diameter	303	mm		
5	PCD	5*112	mm	Other PCD on request: 4*98; 5*114.3; 5*118	
6	CB	60	mm	Other on request	
7	Brake system	Disc Brake		PCD 3*80mm, M8	
8					
9	Speed (depends on wheel size)	120	km/h	Optional 40-70 km/h	
10	Matched Wheel	14 inch		Suitable RIMS: 14 inch or above	
11					
12	Color	Black	-		
13	N.W. // G.W.	24 / 26	kg		
14	Package	43*43*41	cm^3	Carton	

Example of E-Conversion kit:

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MOTOR SPECIFICATION:

Nr.	Basic parameters	Value	Units	Notes
1	Rated Power [kW]	8	kW	
2	Max Power [kW]	16	kW	Peak 20 kW in few sec
3	Rated Voltage [V]	72	V	Optional 48-144V
4	Rated Current [A]	140	A	
5	Peak Input Current [A]	280	A	@96V 210A
6	Max Phase Current [A]	500-600	A	In short time
7	Max Current duration time [s]	10	Sec.	
8				
9	Number of Pole pairs	16	Pairs	32pcs.
10	Magnet Height	50	mm	
11	Max RPM	933	RPM	Depending on kV
12	**kV** (RPM per Volt)	**13.0**	**RPM/V**	Optional kV: 6.0 / 9.0 / 13.0 / 14.9 / 18.0 / 19.4 etc.
13	Rated torque [N.m]	150	N.m.	
14	Max Torque [N.m]	320	N.m.	
15	Max Efficiency [%]	86-92	%	
16				
17	Phase Resistance [mΩ]		mΩ	
18	Phase Induction [100 kHz]		uH	
19				
20	Hall sensors	2	Set.	One for spare, Waterproof connector
21	Hall sensor electrical Angle	120	°	
22	Hall working Voltage	5	V	
23	Temperature sensor	KTY83/122		Other type on request
24	Recomended working temperature	up to 70	°C	Peak 120°C; * 1 NOTE
25				
26	Waerproof Grade	54	IP	
27	Cooling type	AIR		Natural AIR cooling
28	Cross Section of Phase Wire	16	mm^2	not include insulation layer)

Picture

1 NOTE: Suggestion (Setting of Controller)
When it's 90 ℃ inside of motor (in 30s), the current should be limited 50%.
When it's 120 ℃, the controller shut down. When it drop down to 70℃, the controller work again.

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QS-273 MOTOR TEST CURVE

Description	U	I	P1	M	n	P2	EFF
	[V]	[A]	[W]	[N.m]	[RPM]	[W]	[%]
No Load	72.43	11.02	798.6	0.9	1 160.6	113.7	14.2
Max Eff	**71.18**	**142.1**	**10 115**	**88.5**	953.7	8 840	87.3
Max P out	70.11	192.6	13 510	144.0	745.7	11 245	83.2
Max Torque	70.55	123.0	8 681	176.8	294.5	5 454	62.8
End	70.55	123.0	8 681	176.8	294.5	5 454	62.8

Description	U	I	P1	M	n	P2	EFF
	[V]	[A]	[W]	[N.m]	[RPM]	[W]	[%]
No Load	96.48	7.929	765.1	0.2	1 250	26.18	3.4
RATED	**97.98**	**126.8**	**12 425**	**89.4**	**1 176**	**11 000**	**88.5**
Max Eff	97.80	116.0	11 343	82.6	1 182	10 222	90.1
Max P out	97.17	149.3	14 509	126.0	969	12 783	88.1
Max Torque	95.58	73.04	6 982	224.0	158	3 706	53.1
End	96.45	29.89	2 883	209.8	0	0	0

Description	U	I	P1	M	n	P2	EFF
	[V]	[A]	[W]	[N.m]	[RPM]	[W]	[%]
No Load	96.38	5.83	562.7	0.8	1000.9	83.84	14.9
Max Eff	**96.08**	**100.7**	**9 676**	**81.8**	**1001.1**	**8 574**	**88.6**
Max P out	95.6	**251.5**	24 042	190.6	984.1	19 639	81.7
Max Torque	95.59	**248.3**	23 733	**255.4**	579.0	15 483	65.2
End	96.34	0.560	53.96	0.5	0	0	0

Please note that the test curves have been done at different currents. Therefore the torque is different. However at respectively currents the torque at 72V and 96V will be the same. For example @72V 142A -> 88Nm respectively similarly @96V 107A -> 89Nm.

The test curves at different motor windings and controller settings will be different. These curves only for general information.

Regarding Motor Supply Voltage / RPM and Power.

For example if motor is with windings 72V, this motor can also be run at lower voltages, such as 48V. The difference is that you wouldn't get as much power output since a lower voltage is associated a lower max attainable rpm. As power (W or Nm/s) is the product of angular speed (1/seconds) and torque (nm), with the same amount of torque and a lower rpm, you would have a lower power output.

You can achieve the same amount of torque at any voltage as torque is directly dependent on current. You may see something called a torque constant, such as Nm/A or ft-lbs/A. Simply multiply by the current, and you'll get the torque output before accounting for mechanical and electrical losses.

The main limiting factor on the amount of current you can pump into a motor is heat, which can melt the insulating varnish if too high.

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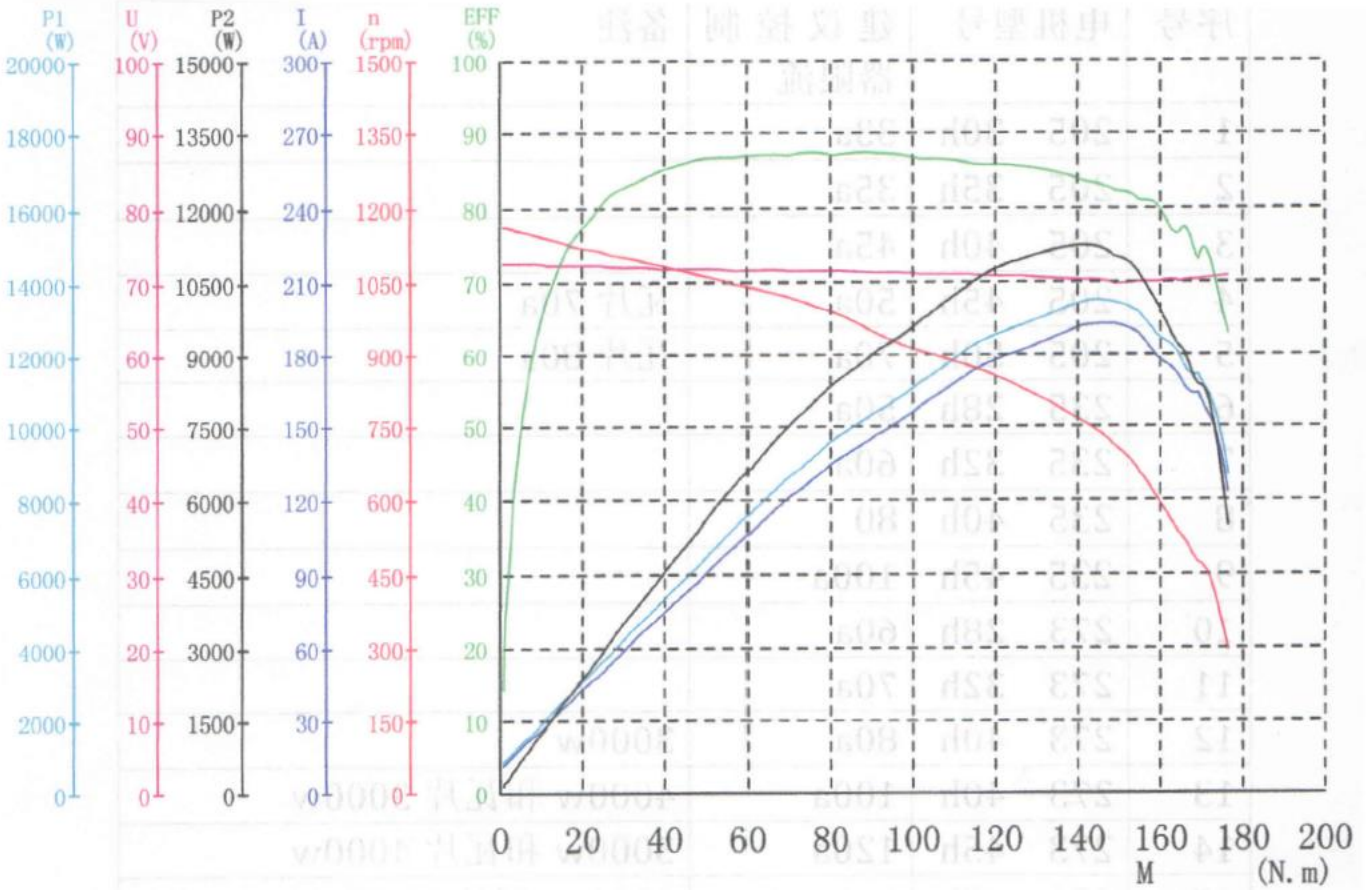

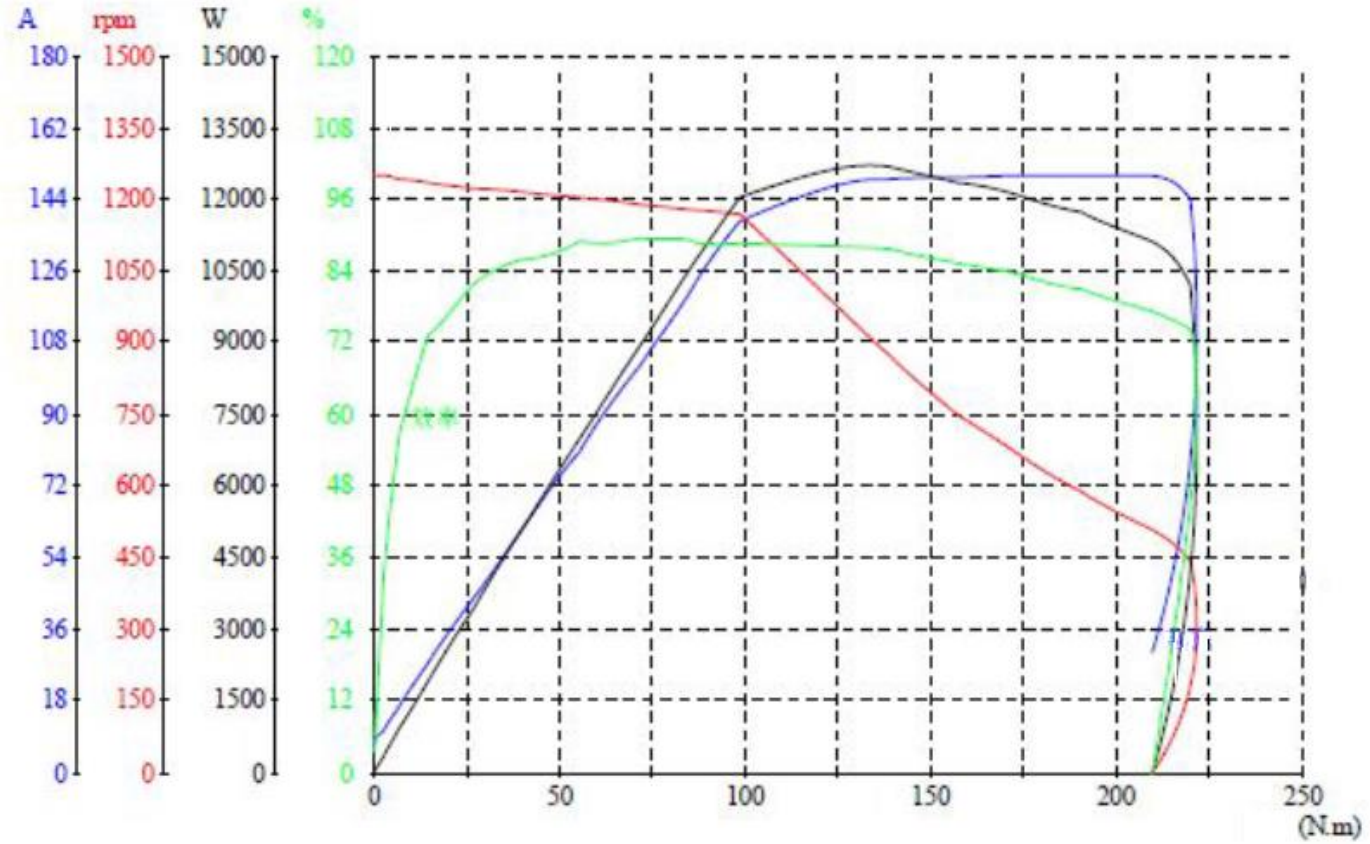

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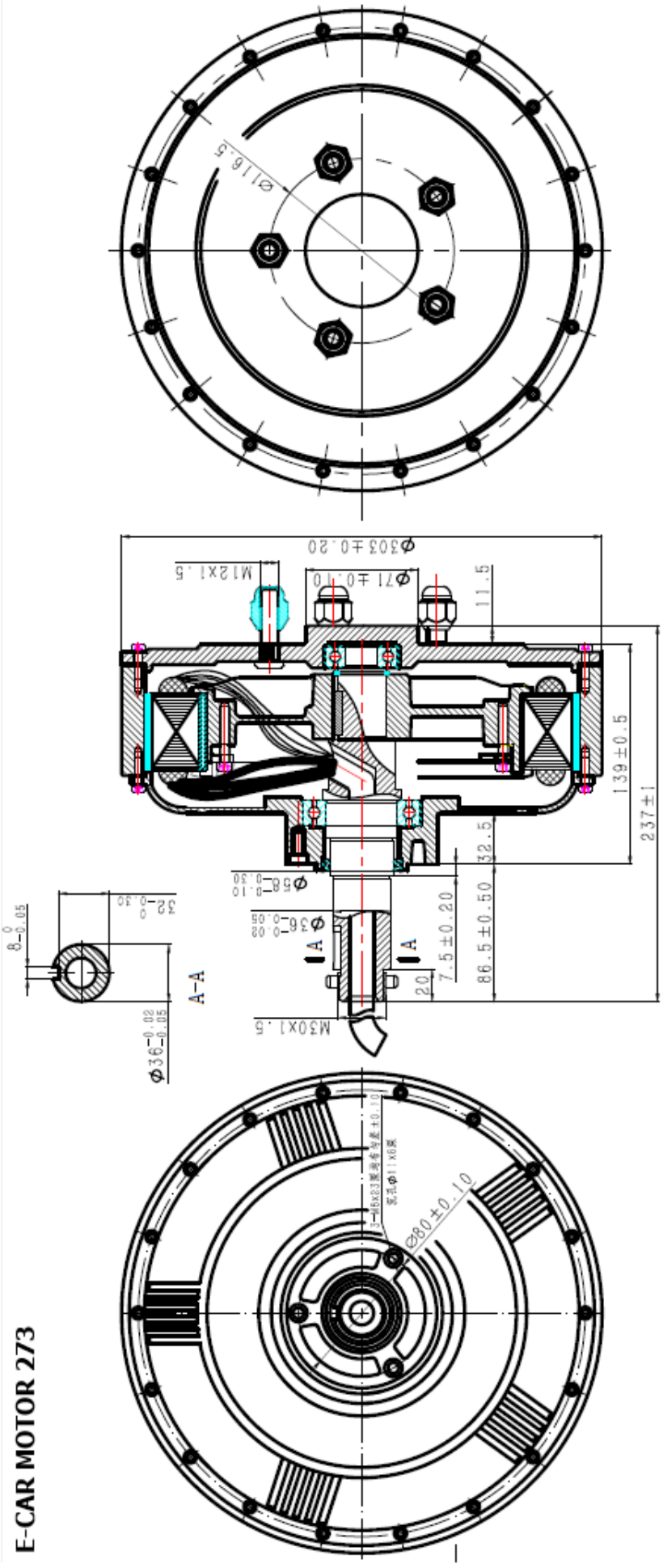
DRAWING



E-CAR MOTOR 273

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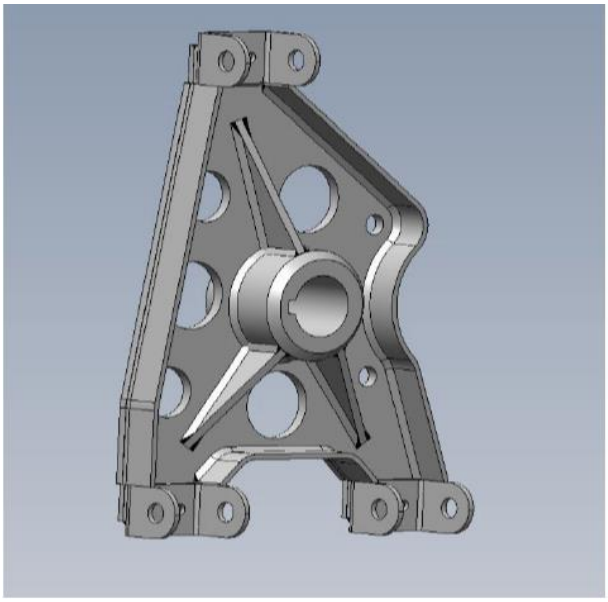

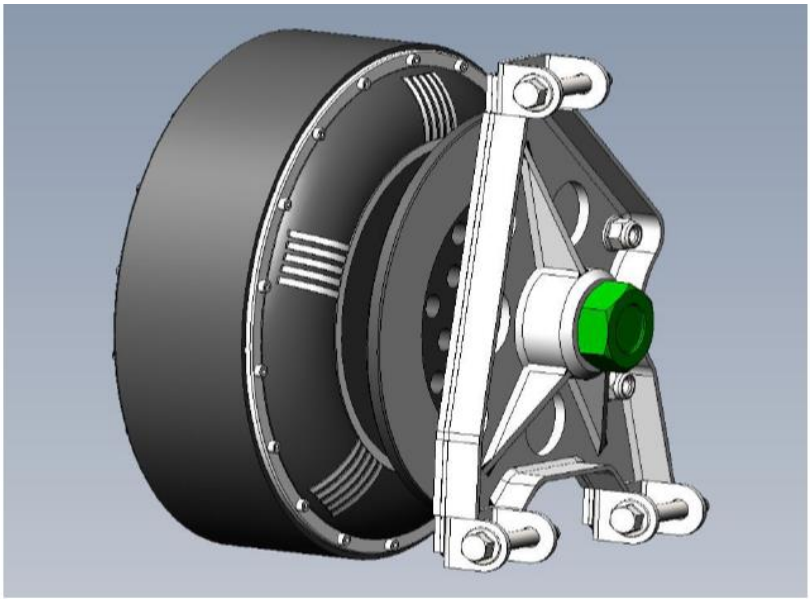

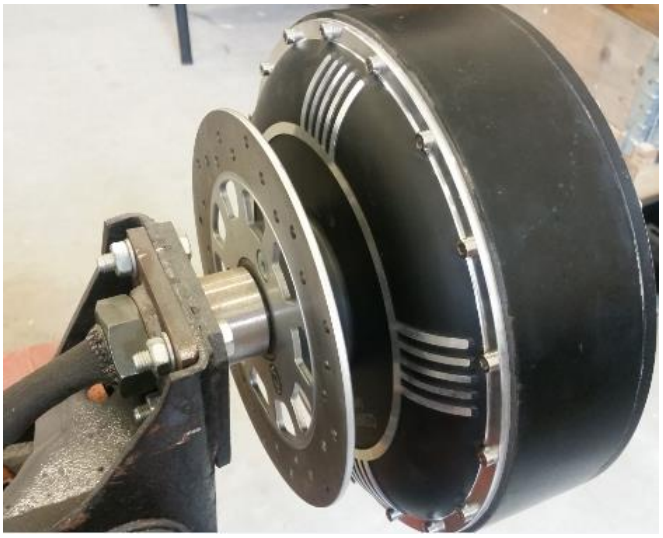

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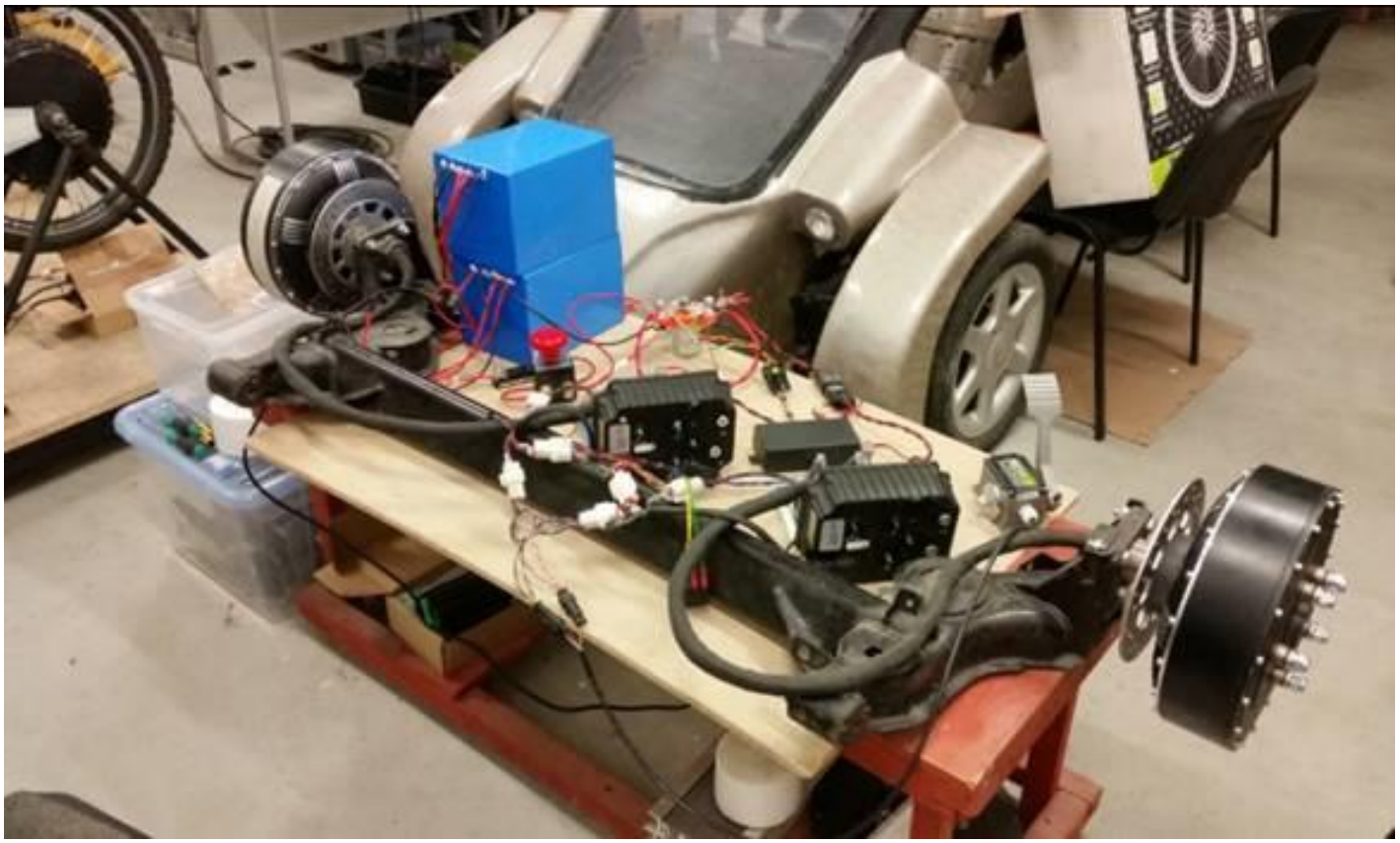

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PICTURES

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CONVERSION KIT