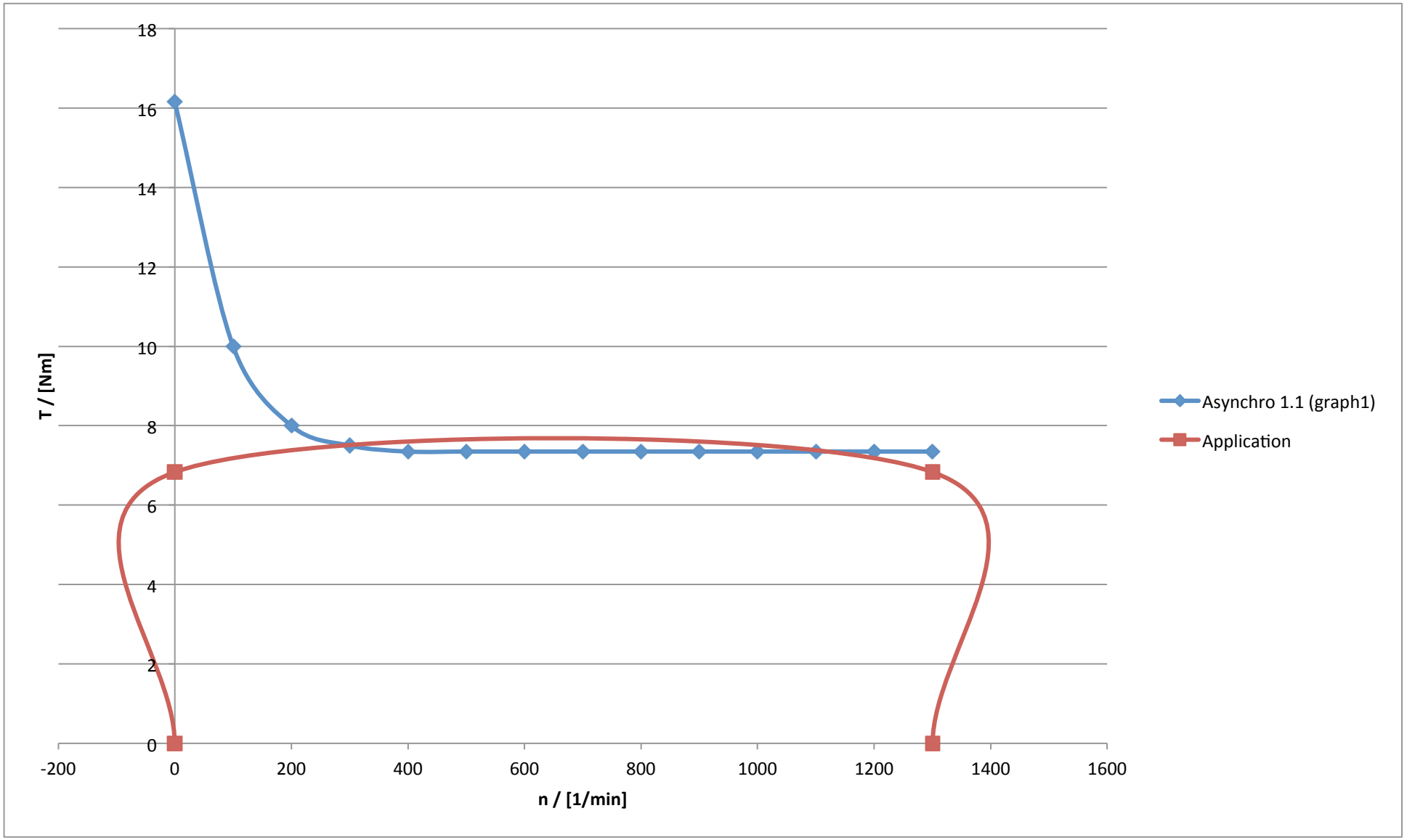
Lift Sizing

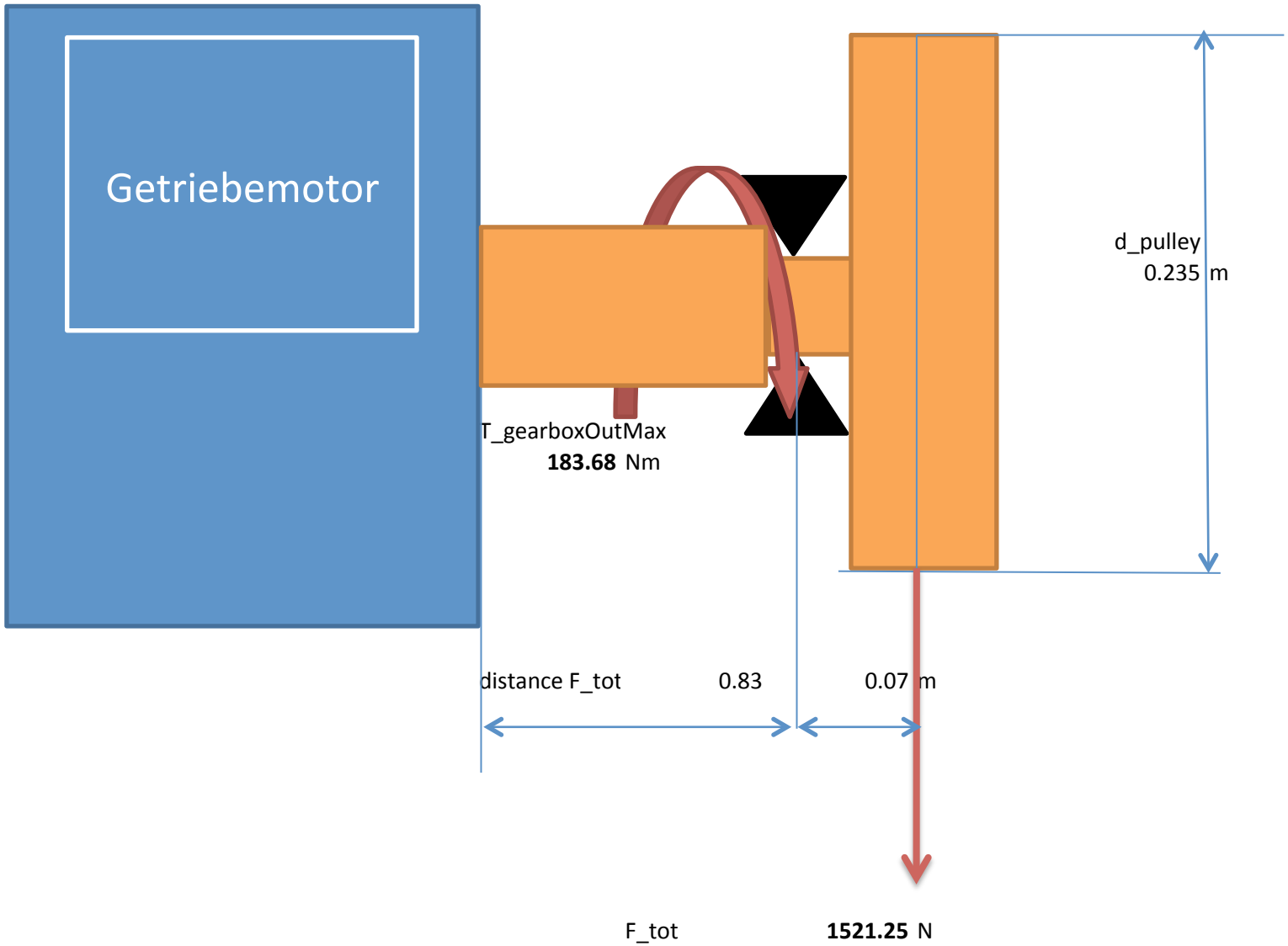
	m	125	kg	Moved Mass
	angle	90	°	Lift application
	a	1	m/s^2	
	v	0.4	m/s	
	friction	0.1	[ ]	Overall friction
x	F_additional	170	N	Additional force (special chain-axis?)
	F_friction	7.51169E-15	N	friction due guideway-system (on a vertical axis this value is 0!)
	F_gravity	1226.25	N	gravity force
	F_acc	125	N	acceleration force
	F_tot	**1521.25**	N	total of all
	pulley			
	d_pulley	0.235	m	diameter
x	J_pulley	0.5794	kgm^2	Inertia of pulley (~0.5*m*r^2)
	alpha_pulley	8.510638298	rad/s^2	
	T_gearboxOutMax	183.68	Nm	Gearbox Output Torque
	n_gearboxOutMax	32.51	1/min	Gearbox Output rotational speed
	Gearbox			
	i	40	[ ]	Gearbox Ratio
x	J_gearbox	0.000500	kgm^2	Gearbox Inertia (input)
	efficency	0.75	[ ]	
	T_gearboxInMax	6.35	Nm	Gearbox Input Torque
	n_gearboxInMax	1300	1/min	Gearbox Input rotational speed

	Coupling (shaft)			
x	J_coupling	0.001	kgm^2	Inertia Coupling (~0.5*m*r^2)
x	T_additional_resistance	0.1	Nm	Additional resistance (e.g. bearing)
	Motor	Asynchro 1.1 (graph 1)		
x	J_motor	0.005	kgm^2	Motor Inertia
	T_motorMax	6.83	Nm	Max required Torque Motor
	n_motorMax	1300	1/min	Max required Speed Motor
	Inertia missmatch			
	J_moved	1.7257813	kgm^2	
	J_reduced	1.44E-03	kgm^2	
	i_mismatch	0.588	[ ]	Inertia missmatch

Graph


18
16
14
12
10
8
6
4
2
0
T / [Nm]
-200
0
200
400
600
800
1000
1200
1400
1600
n / [1/min]
Asynchro 1.1 (graph1)
Application

Set-up


Getriebemotor
d_pulley
0.235 m
T_gearboxOutMax
183.68 Nm
distance F_tot
0.83
0.07 m
F_tot
1521.25 N

Application

n / [1/min]	T / [Nm]
0	0.00
0	6.83
1300	6.83
1300	0.00