

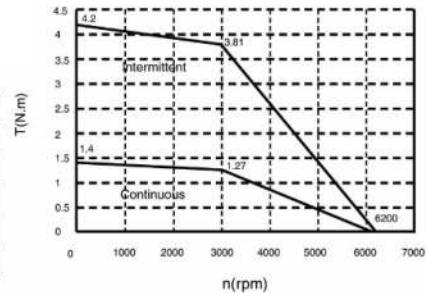
### Voltage and Current:

So after we chose the right working speed and torque, and made sure the inertia ratio is low enough and the finite accuracy is sufficient, now we need to choose the operating voltage / current.

Let's assume we chose a 400W motor, with nominal speed of 3000rpm and rated torque of 1.27 Nm. The following datasheets are of two different motors, both comply with our demands:

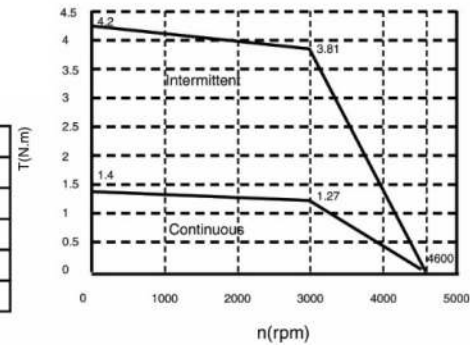
#### Motor A:

No. of poles	6
DC Link Voltage $U_{DC}$ (DC Link)	300
Rated power $P_N$ (W)	400
Rated Torque $T_N$ (N.m)	1.27
Rated Speed $n_N$ (rpm)	3000
Rated Current $I_N$ (A)	3.1



#### Motor B:

No. of poles	6
DC Link Voltage $U_{DC}$ (DC Link)	80
Rated power $P_N$ (W)	400
Rated Torque $T_N$ (N.m)	1.27
Rated Speed $n_N$ (rpm)	3000
Rated Current $I_N$ (A)	6.9



Both motors produce a mechanical / electrical power of 400W at the specified knee on the graph. Both give the same nominal speed and nominal torque.