

Prelab Table for the check required to begin Lab #2

Parameter	Numerical Value	SI Units
Motor Armature Resistance R_m		Ω
Motor Armature Inductance L_m		mH
Motor Efficiency η_m		
Motor Torque Constant k_t		$\frac{N \cdot m}{amp}$
Back EMF k_{em}		$\frac{V \cdot sec}{rad}$
Motor Shaft Moment of Inertia J_m		$kg \cdot m^2$
Total Gear Inertia J_l		$kg \cdot m^2$
Motor Viscous Damping Coefficient B_m		$\frac{N \cdot m \cdot sec}{rad}$
Internal Gear Ratio K_{gi}	14	
the external motor gear has $N_3 = 72$ teeth		
the load gear has $N_4 = 72$ teeth		
External Gear Ratio K_{ge}		
Total Gear Ratio K_g		
Gearbox Efficiency η_g		
Moment of Inertia on Motor Side J_{eq}		$kg \cdot m^2$
Viscous Damping on Motor Side B_{eq}		$\frac{N \cdot m \cdot sec}{rad}$
Amplifier Gain K_a	1	V/V
Motor Transfer Function:	$G_{m,2nd}(s) =$ $G_{m,1st}(s) =$	