Calculation of the mass and moment of inertia of the slit paddle wheel assy about it's rotation axis ~|| to S/C X axis												
EIS-opt-desnote-moi_slit												
CMB (NRL)												
01-Jul-99												
Dimensions from Bob Moye's conceptual design												
For rods & disks, Icg = 1/2mr^2. For slabs, Icg = 1/12m(a^2 + b^2)												
|| axis theorem: I' = Icg + mb^2, where b is the distance from the cg to the new axis												
The linear dimensions in this spread sheet were entered in inches, but I convert results to cm in Col. I and beyond.												
This is the design current as of 6/13/99 - prior to the Birmingham meeting. Only the moving components are considered.												
item	# req'd	matl	dens	length/thk '	w "	h "	dia "	Vol cm^3	mass(g)	Ixx (gcm^2)		
shaft	1	ss	7.8	1.25			0.186	0.556579	4.341317	0.121122512		
encoder disk	1	al	2.7	0.062			2	3.191852	8.618	27.79994353		
gear	1	ss	7.8	0.183			0.562	0.7439	5.802423	1.477948946		
hub	1	ss	7.8	0.2188			0.375	0.396005	3.088841	0.350296234		
spacer	2	ss	7.8	0.031			0.438	0.076542	1.194058	0.184735862		
paddle	4	al	2.7	0.156	0.5	0.69		0.881952	9.525079	14.35193058		
									32.56972	44.28597767		
sanity check:			Compare an aluminum, disk 1/8" thick and the same diameter									
	1	al	2.7	0.125			1.56	3.915167	10.57095	20.74629973		