Split-Ring Compound-Planet Epicyclic Gear System Designer

A great way to get high gear ratios with tons of tooth engagement in only a couple stages! :-D

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Input into green cells | Output in yellow.

Name	Symbol	# Teeth	Equations and consierations:	***teeth OK?***
Input Diametral Pitch	Dp1	6.5		
Sun Gear 1 Toothcount	Ns1	12	Ns1 must be evenly divisible by P	GOOD
Planet Gears 1 Toothcount	Np1	42	Np1=(Na1-Ns1)/2, bust be whole #	GOOD
Annulus Gear 1 Toothcount	Na1	96	Na1 must be evenly divisible by P	GOOD
Output Diametral Pitch	Dp2	6.7407407407	Dp2=(Dp1*(Na2-Np2))/(Na1-Np1)	
Sun Gear 2 Toothcount	Ns2	14	Ns2=Na2-(2*Np2), must be evenly divisible by P	GOOD
Planet Gears 2 Toothcount	Np2	42	Np2=Np1*n, must be whole #	GOOD
Annulus Gear 2 Toothcount	Na2	98	Na2=(n*Na1)+P, must be whole #	GOOD
# of planets in carrier	P	2	Will this many planets fit around the annulus? Check your drawing...	
2nd stage multiplier	n	1	Must be rational number. ...does this make Na2 teeth too tiny?	
Ratio First Stage	R1	9	R1=(Na1/Ns1)+1	
Ratio Second Stage	R2	48	R2=(n*Na1)/(Na2-(n*Na1))	
Final Ratio at Output Shaft	Rf	**432**	Rf=R1*R2	

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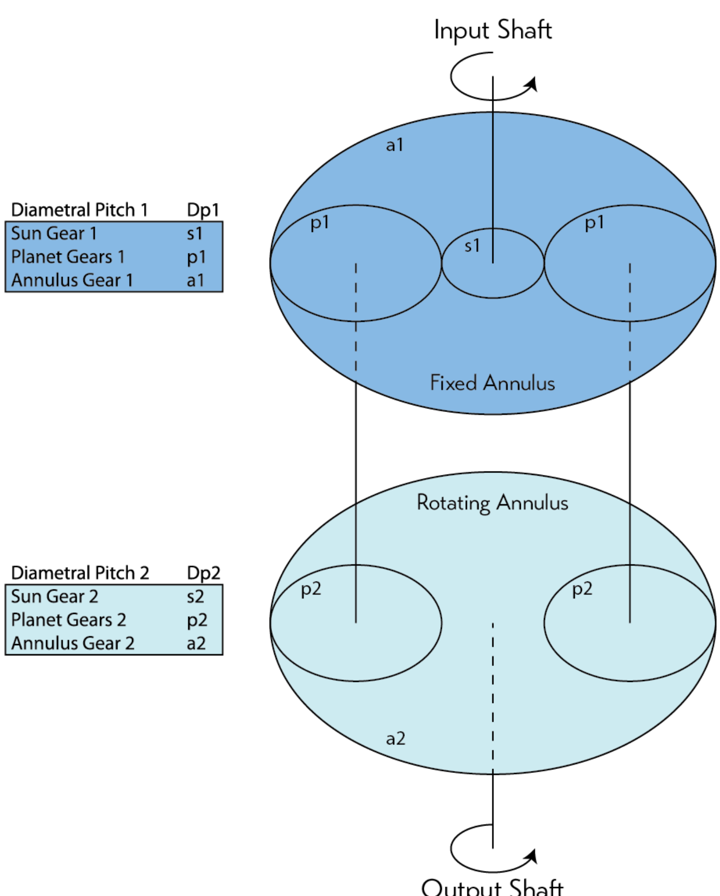

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Idea Propulsion Systems