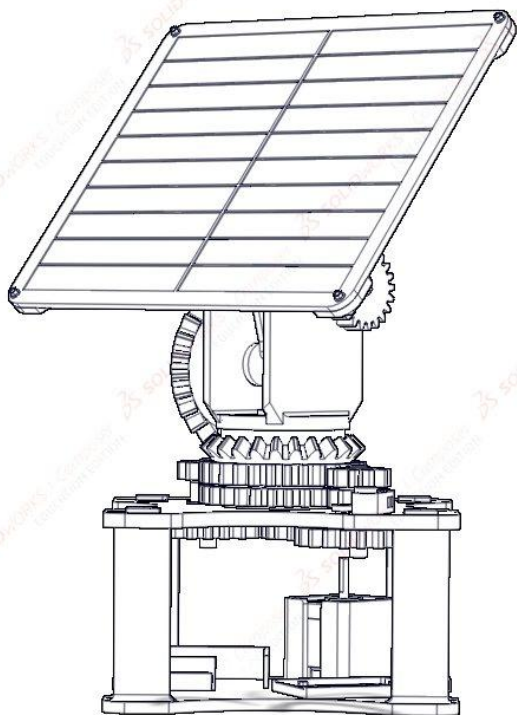


ESC Sun Tracker with One Actuator Motion Manual



Description	BOM ID	Qty
2489K23 One-Way Locking Needle-Roller Bearing Clutch	1	2
5972K322 Ball Bearing	2	2
6627T91 Stepper Motor	3	1
Azimuth - Base Gear	4	1
Azimuth - Bevel Secondary Gear	5	1
Azimuth - Electrical Slip Ring	6	1
Azimuth - Gear Spacer 1	7	1
Azimuth - One-Way Spur Gear	8	1
Azimuth - Shaft	9	2
Azimuth - Shaft Spur Gear	10	2
Azimuth - Spur Secondary Gear	11	1
Base Gear - Driven Gear	12	1

Description	BOM ID	Qty
Base Gear - Driven Gear (OW Bearing)	13	1
Base Gear - Driver Gear	14	1
Elevation Linkage - Coupler Linkage	15	3
Elevation Linkage - Crank Cam Linkage 1	16	1
Elevation Linkage - Linkage Joint	17	1
Elevation Linkage - Linkage Joint Cap	18	5
Elevation Linkage - Rocker Linkage 5	19	1
Elevation Rotation - Driven Bevel Gear	20	1
External Housing - Elevation Orienting Cap	21	1
External Housing - Gear Base	22	1
Indented hex flange head machine screw _am	32	4
instrument ball bearing_68_am	33	2

Description	BOM ID	Qty
New Chassis	23	1
prevailing torque hex nut _am	34	4
Ratchet - Post Mount	24	2
Ratchet - Spring Loaded Pawl	25	1
Solar Mount - Driving Gear	26	1
Solar Mount - Segmented Driven Gear	27	2
Solar Mount - Solar Panel Connection	29	1
Solar Mount - Solar Panel Sim	28	1
Solar Mount - Through Pin	30	1

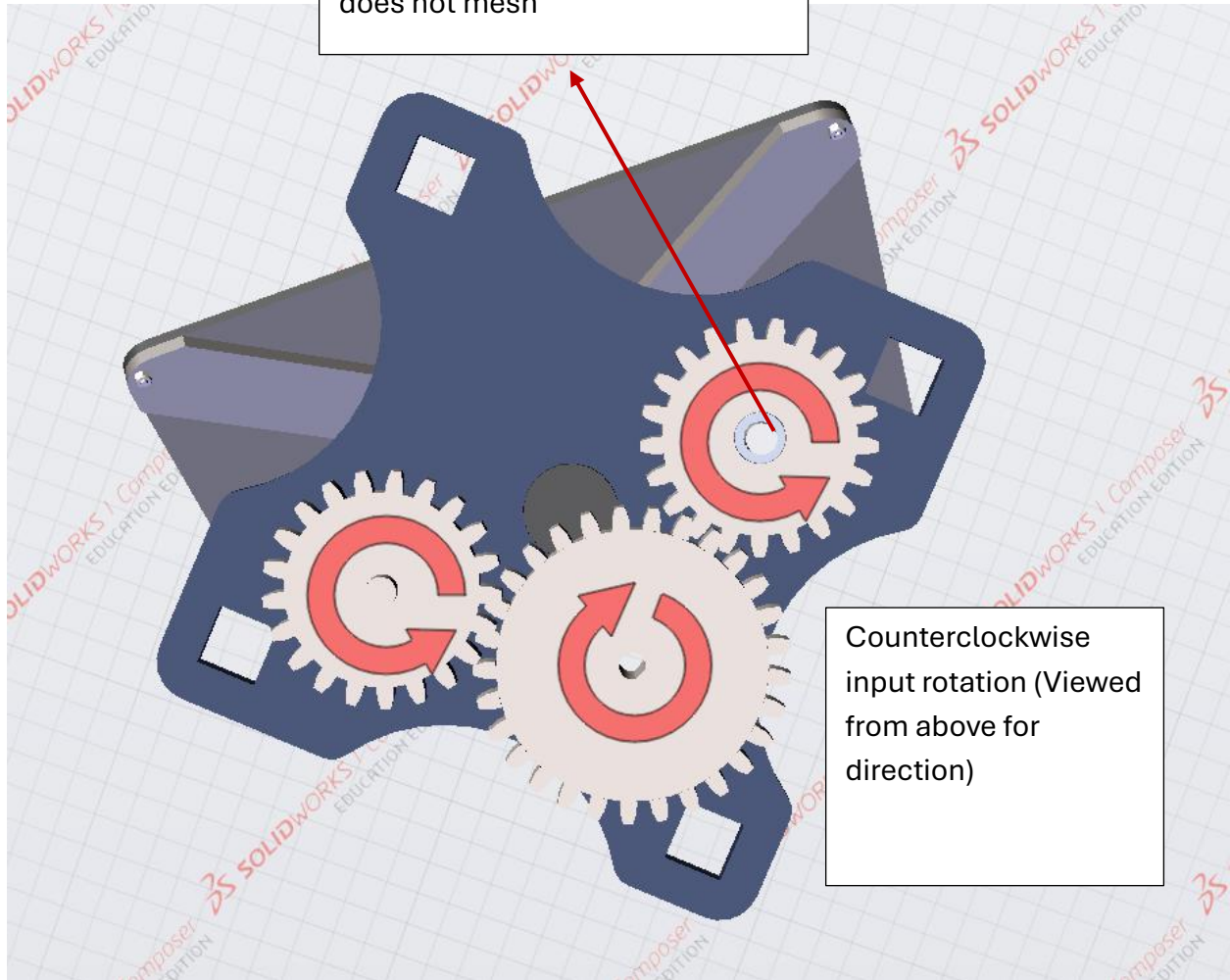
PSU LF Capstone

Matthew Kuzmich
Logan Ellenberger
Jake Licata
Michael Day

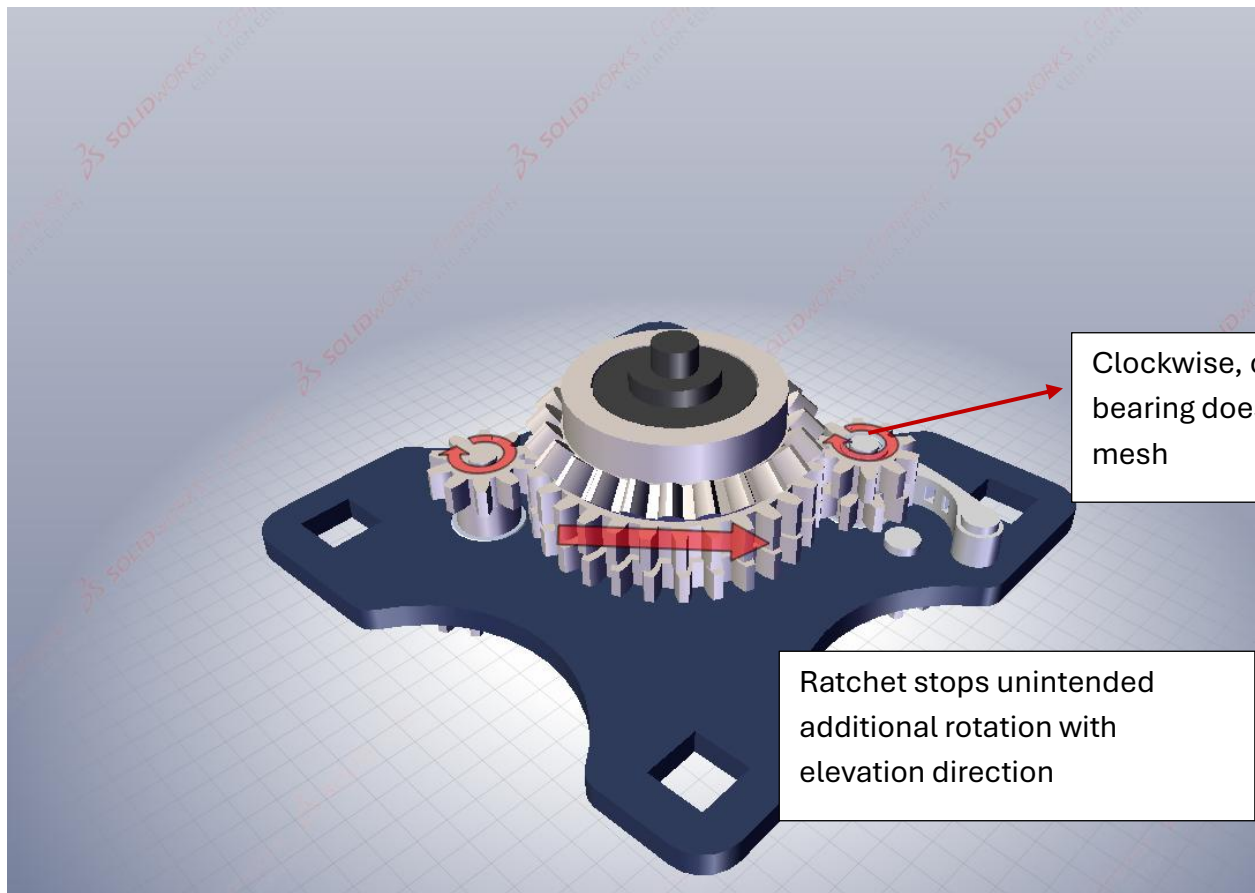
David Gogiberidze
Saje Behari
Jeffery Su

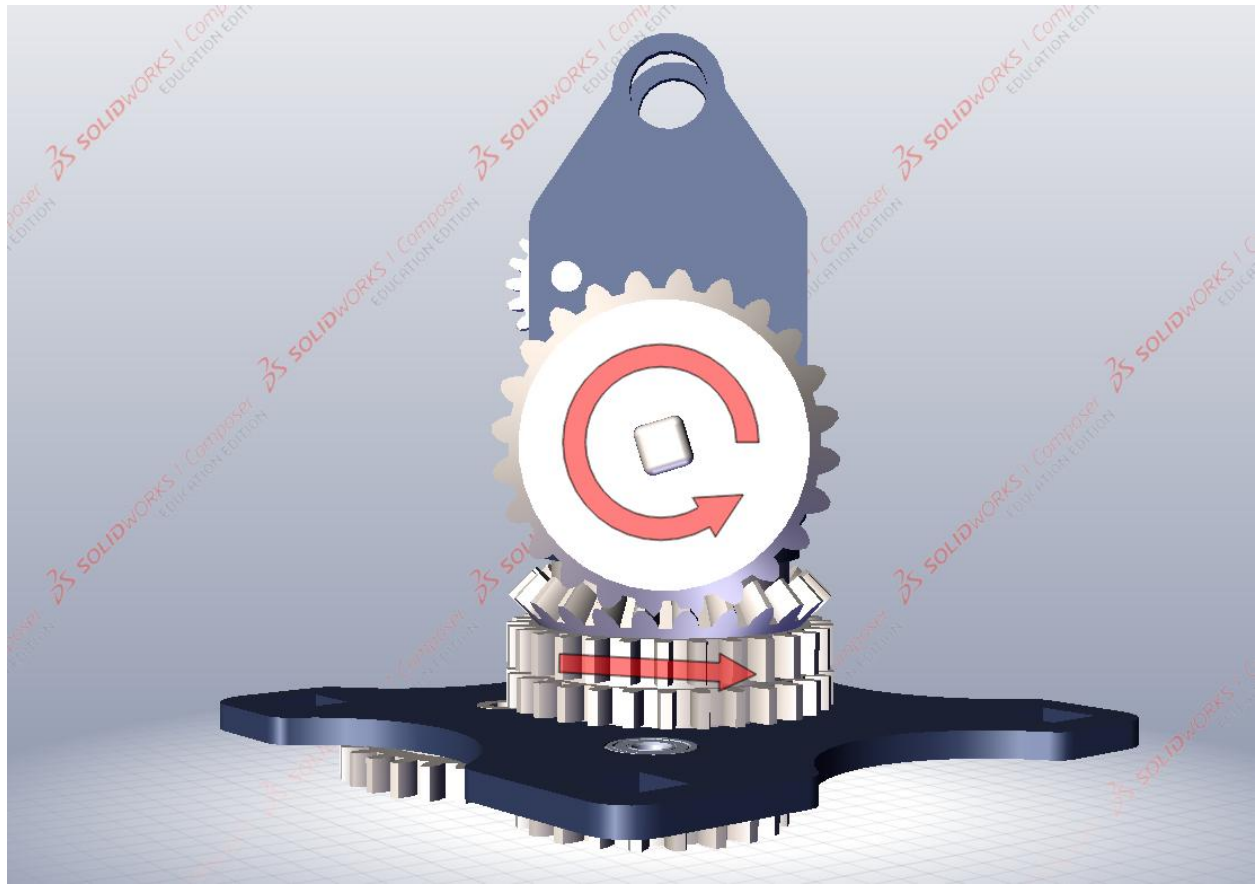
ELEVATION ROTATION

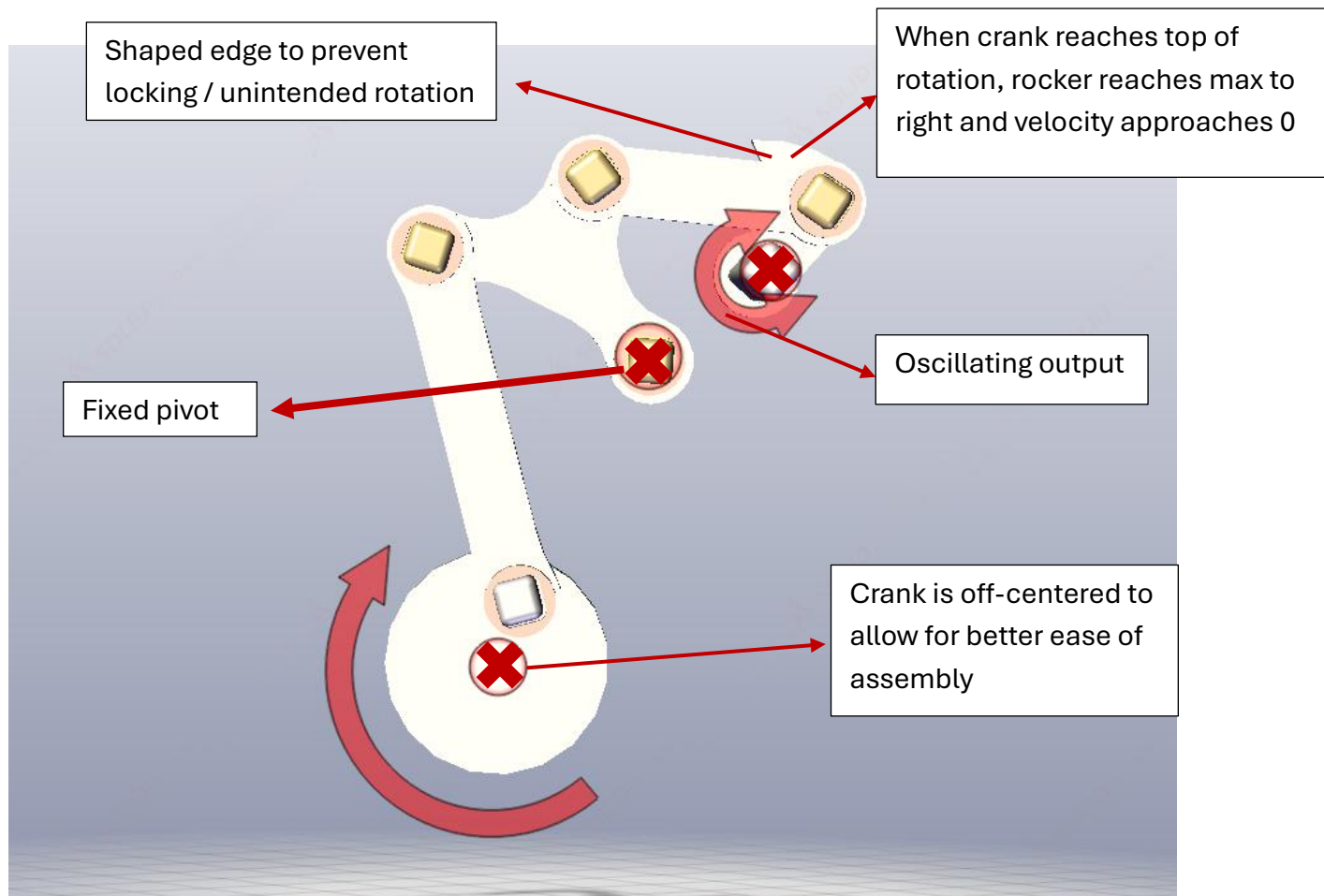
Clockwise, one-way bearing
does not mesh



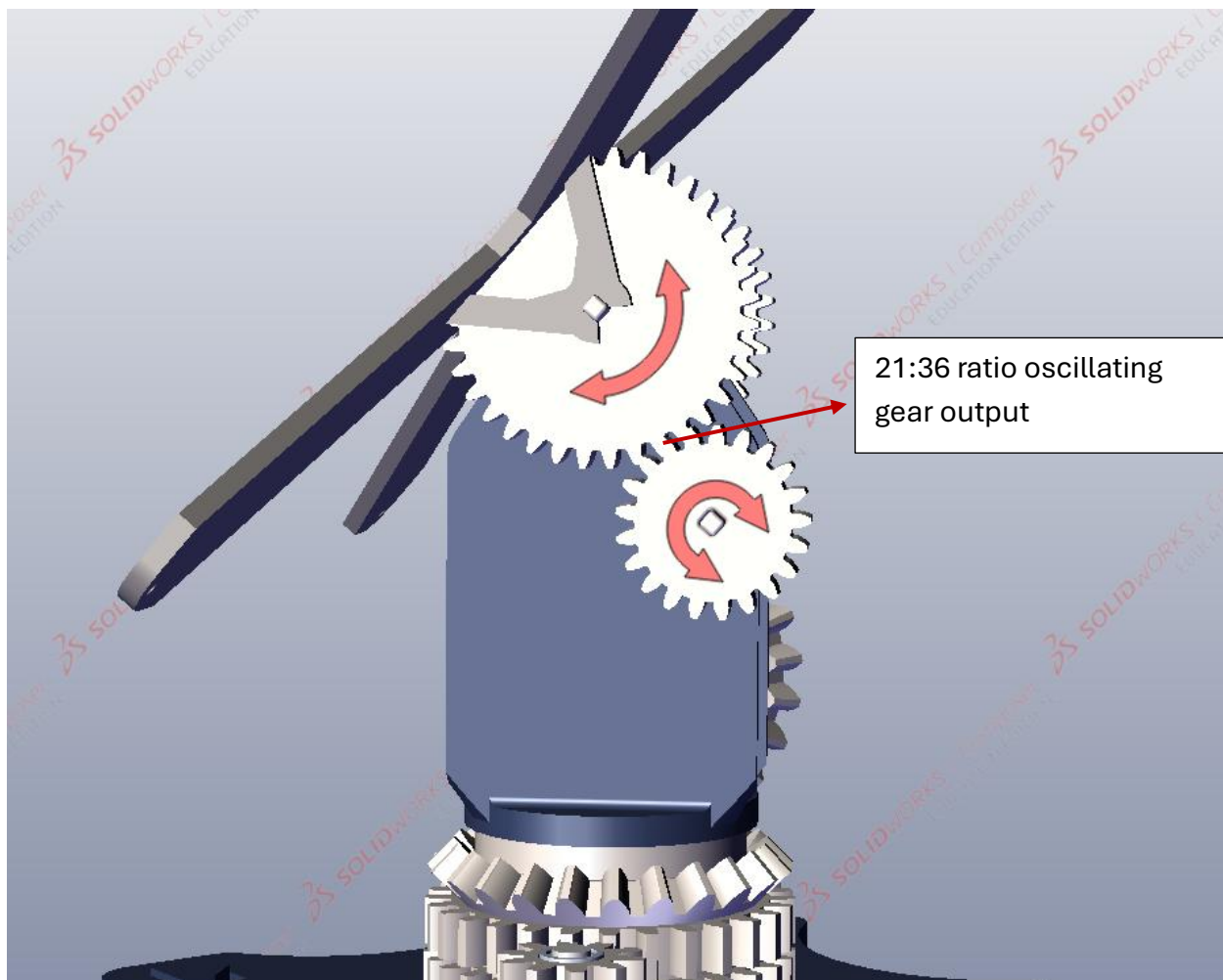
Counterclockwise
input rotation (Viewed
from above for
direction)





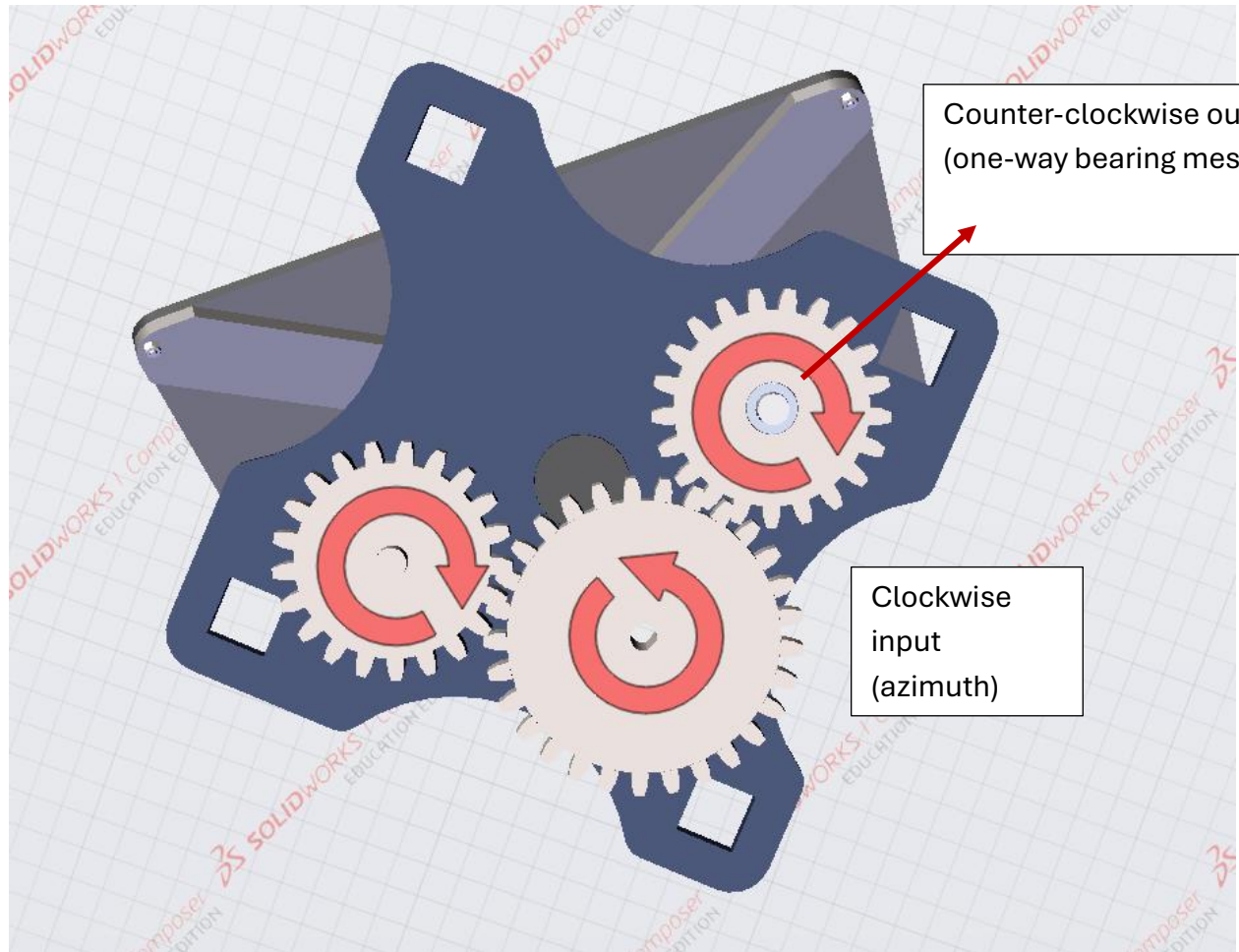


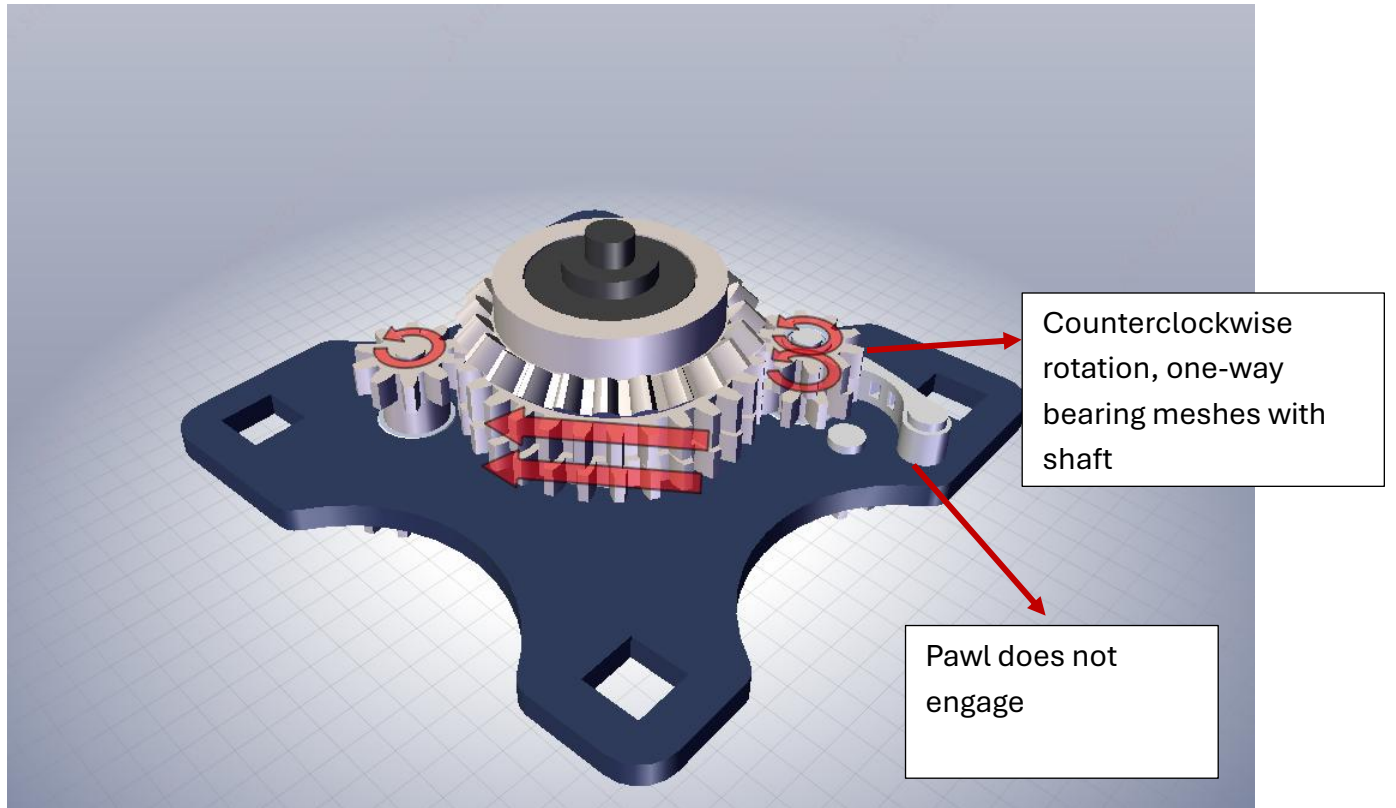
Six bar linkage: Crank and rocker. Two four bar loops.

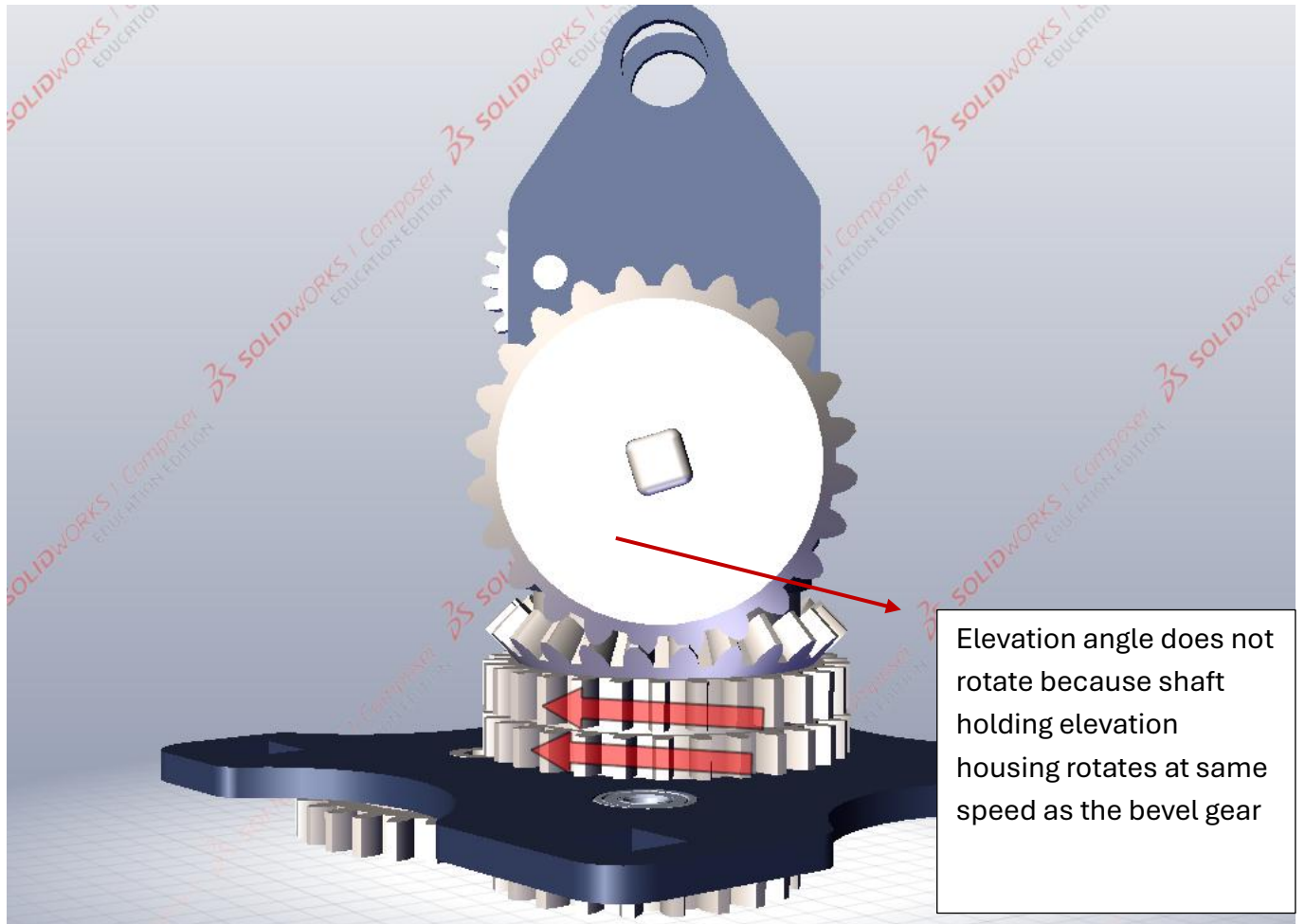


21:36 ratio oscillating
gear output

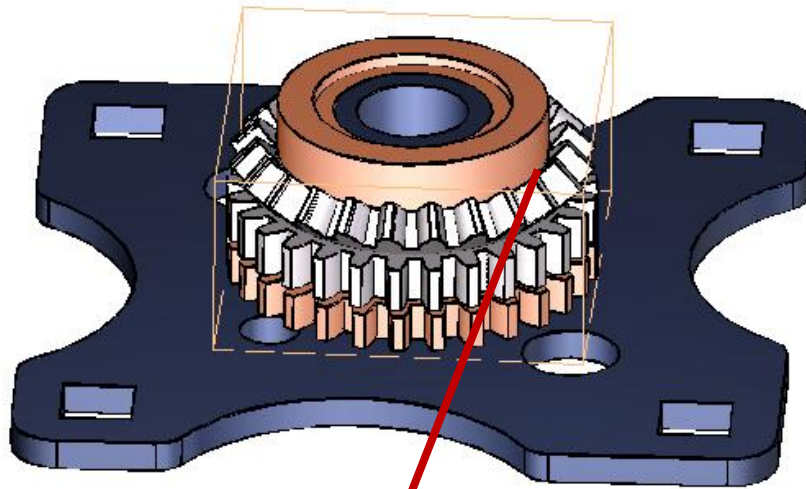
AZIMUTH ROTATION







Elevation angle does not rotate because shaft holding elevation housing rotates at same speed as the bevel gear



Scale analysis. Specific angle of wind gust can allow for falling out of place. Freewheel between top gear and base gear can require for both gears to rotate for azimuth direction