

V1.26

First Full Assembly — Hand Driven Rotation

PURPOSE

— Adding eccentric shaft and hand crank

HOUSING

Print Quality: 7/10

Overall Width: 64mm

Overall Height: 48.7mm

Generating Radius R: 28mm

Eccentricity e: 4mm

K Ratio: 7

Issues: Massive friction from PLA on PLA

Rating: 7/10

ROTOR

Print Quality: 7/10

Apex Radius: 28mm

Apex-to-Apex Chord: 48.5mm

Apex Spacing: 120 degrees

Issues: Slight movement from rotor in housing

Rating: 7/10

GEARS

Mesh Quality: Good — very little slippage

Binding: None

Notes: Gears work but could be slightly small

Rating: 6/10

ECCENTRIC SHAFT

Function: Correct — but requires lubrication

Issues: High friction without lube

MOTION TEST

Rotor Rotates: Yes

Full Orbit: Yes

Smoothness: 7/10

LESSONS LEARNED

- Gears slipped under extreme load — good as proof of concept
 - Eccentric shaft works but definitely needs lubrication
 - Insane amount of friction between PLA parts — lube required
 - Kiri moved under human power for the first time
-

CHANGES FOR NEXT VERSION

- Lubrication throughout
 - Better more efficient shaft
 - Larger gears
 - Cover so rotor does not jump out or move upwards
-

LOCKED PARAMETERS — CARRIED FORWARD

Generating Radius (R)	28mm
Eccentricity (e)	4mm
K Ratio	7 — RX-7 Proportion
Housing Width	64mm
Housing Height	48.7mm
Gear Module	0.80
Fixed Gear Teeth	20
Rotor Gear Teeth	30
Gear Ratio	3:2
Eccentric Shaft Offset	4mm
