# Rebuilt CD-ROM motor

A low cost alternative for small brushless outrunner motors

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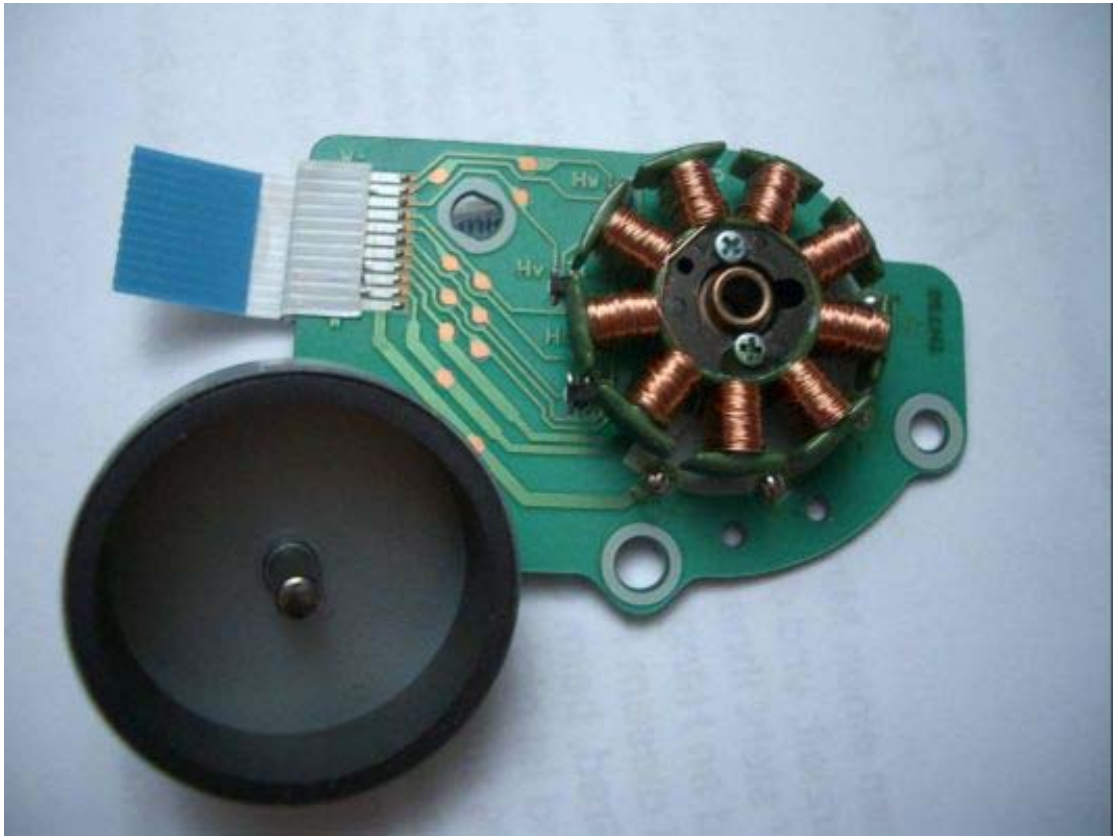
AZM ‘G’ - Oct.26, 2003

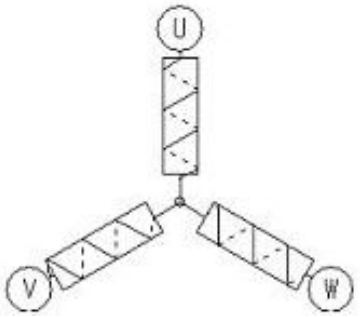
CD-ROM motors operate a various speeds, 200 to 500 RPM, depending on the reading head position.

A 48X speed player has a maximum speed of just under 10,000 RPM.

They are 3-phase brushless motors with Hall sensors

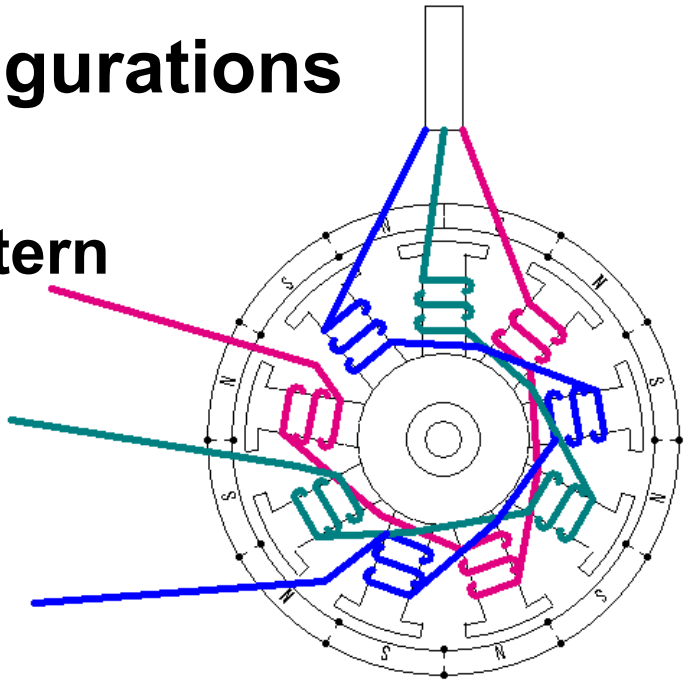


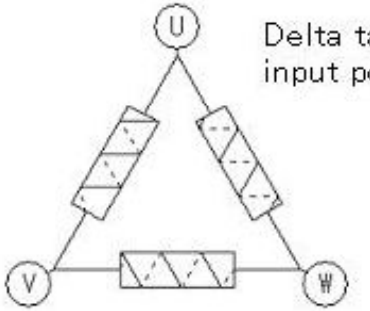
# Winding configurations




## ‘Y’ or star pattern

Better for speed
But low in torque.

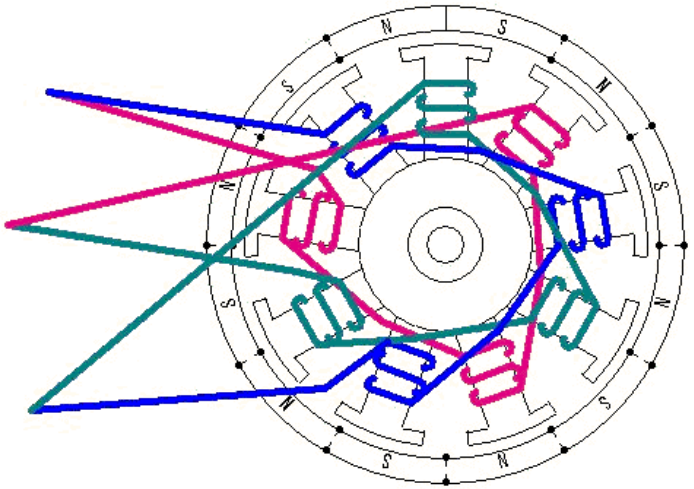




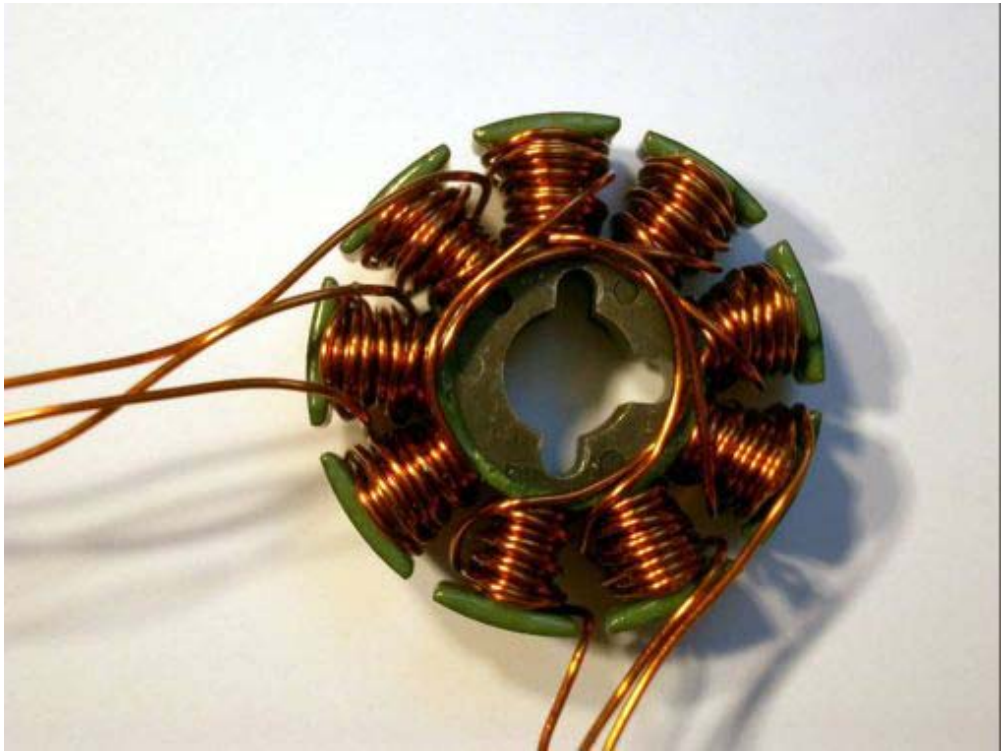

Delta takes x3
input power

## Delta pattern

More torque &
More power input

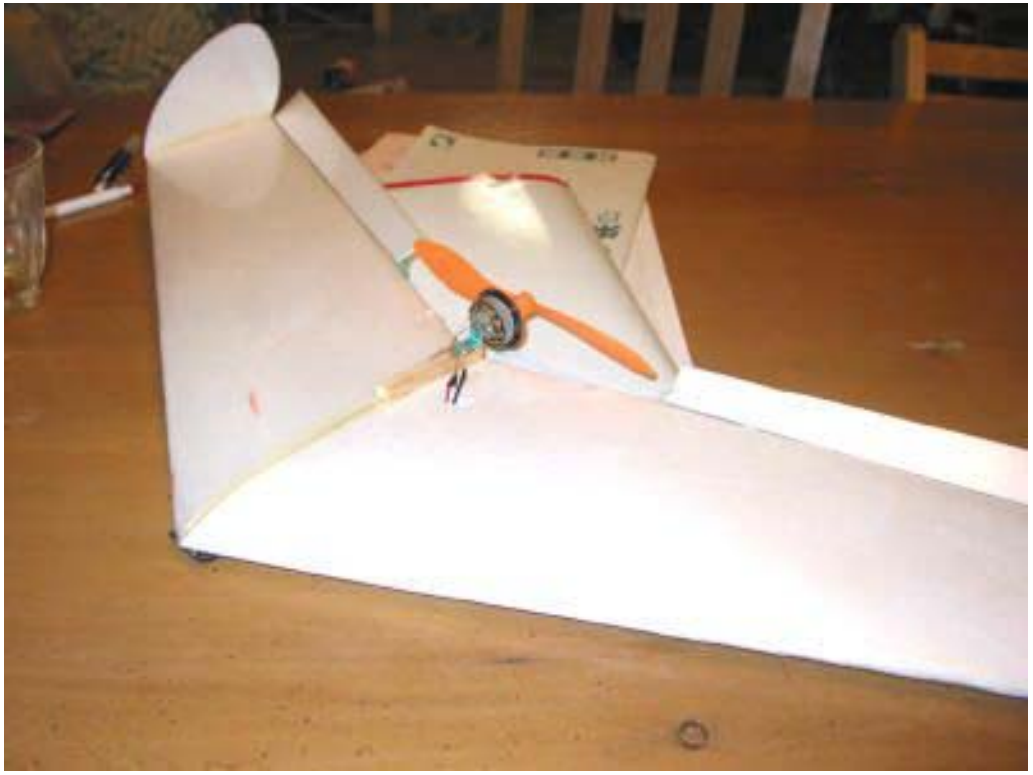


# 1st Modification: Rewound stator



# 2nd Modification: Replace rotor magnet ring with 12 Neodym magnets (5x5x1mm)

**Rewound with 26 AWG, 0.4mm, 20 turns:**
**GWS 7x6SF, 5.63V, 5.86A, 33.00W, 4,010rpm**
**GWS 6x5SF, 6.10V, 4.92A, 30.00W, 6,720rpm**



Ref: Satoru, on ezonemag.com

**20 turns, delta, 24 AWG, 0.5mm wire, 6x3 prop pulls 6.5A on 7x350 NiCd.**

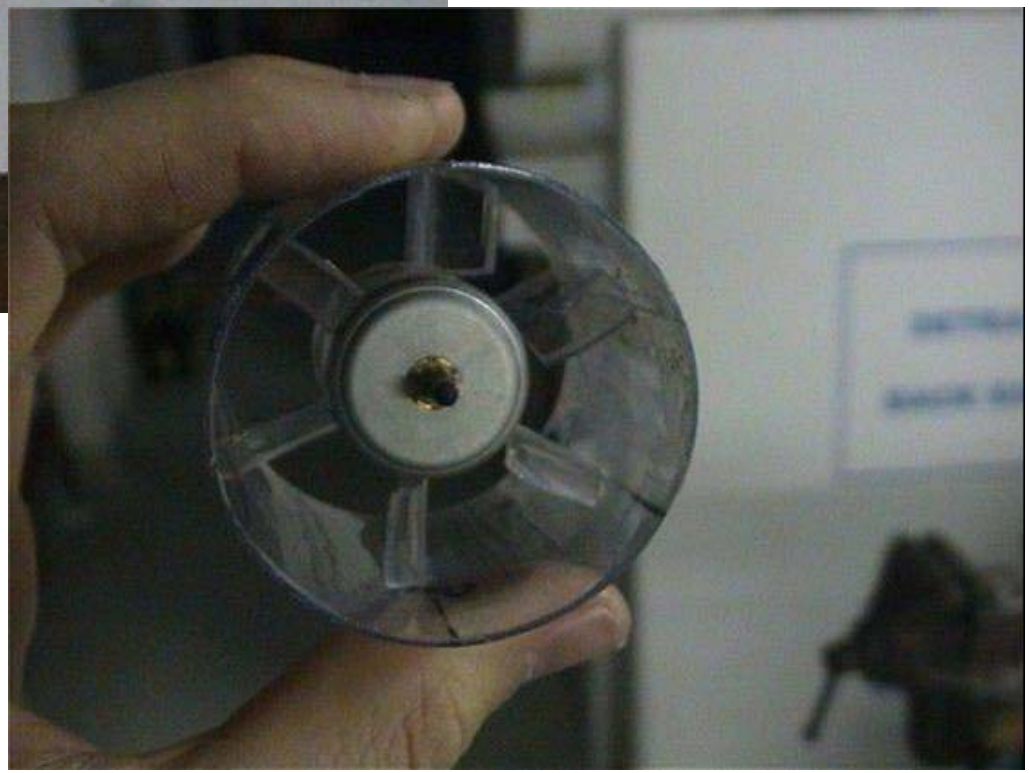
**This 39” glider is now able to climb at an angle of 30 to 45 degree. Running time is about 5 minutes.**

Ref: Wolfgang Korosec, Switzerland.

# GWS gearbox adaptation for bigger props

Ref: rcall on ezonemag.com

# Homemade
# Electric Ducted Fan



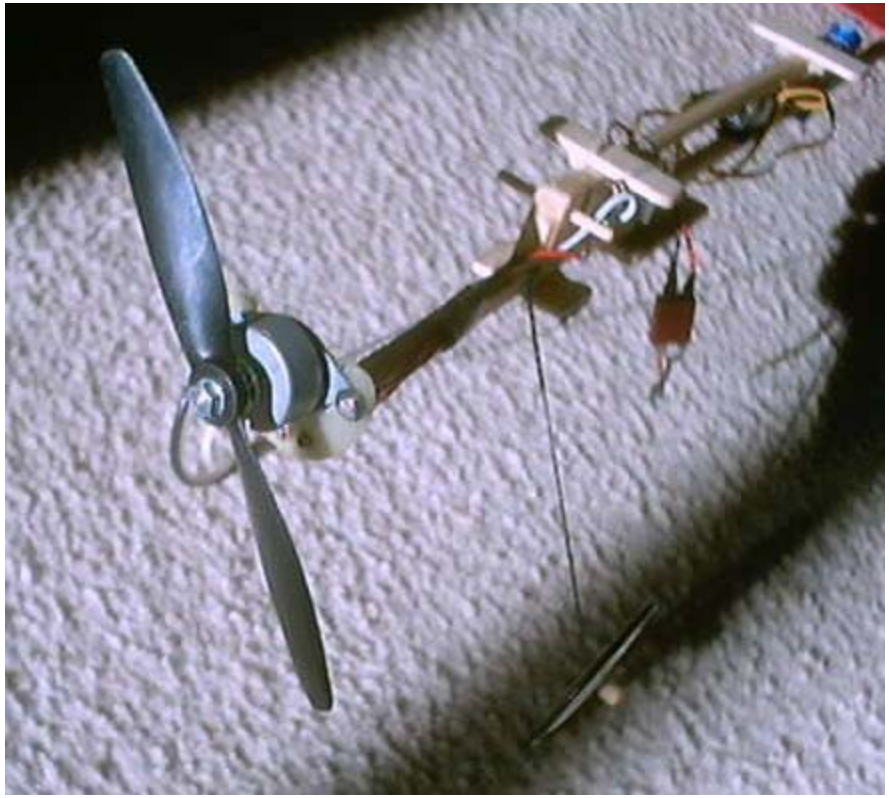
- Three 1040 kokams cells
- GWS 2030X3 EDF prop

Original magnet;
4.95A, 36500rpm,116 gr static thrust

New 12 pole magnet;
4.22A, +-36000 rpm, 110 gr

Ref: Niels Polfliet, Belgium

# My first attempt



**6x3 prop, 28 turns of 28 AWG,**
**5x5x1 N44 magnets,**
**2 lithium polymer cells**

**Tyson's Darth Vader Pylon Trainer**
**26" WS, 117 sq.in. , ~6oz**
**2-cell Li-Ion pack, 7x5 prop, 5800rpm (3.2A).**
**Consecutive loops at 3/4 throttle**