

# Bioboards Helical Steel

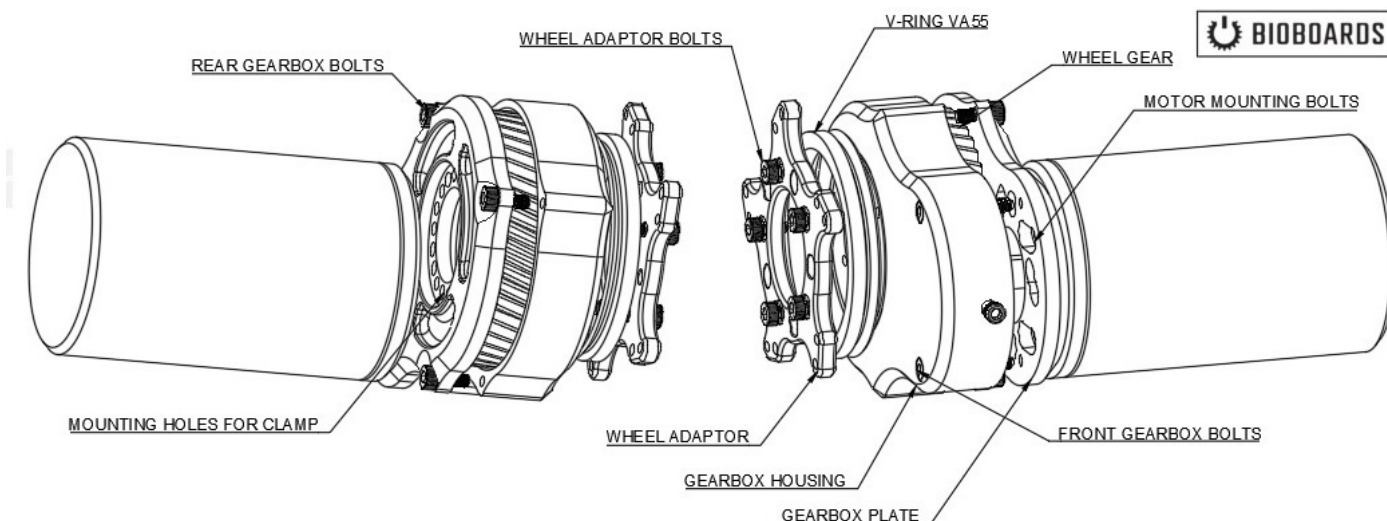
## Gear Drive System Instructions

**Gearing options:** Mod 1.5 1:2.2 , 1:2.6 , 1:3 , 1:3.5 Mod 1: 1:4

**Motor shaft support:** Max 27mm length, 10 mm motor shaft

**Motor size:** Max 65 x 102 mm motor

**Motor hole pattern:** 44mm



COMPONENT NAME	DESCRIPTION	QUANTITY PER SINGLE DRIVE
WHEEL ADAPTOR	6061 Aluminium anodised black	1
GEARBOX HOUSING	6061 Aluminium anodised black	1
GEARBOX PLATE	6061 Aluminium anodised black	1
WHEEL GEAR	46T m1.5 Helical steel gear with aluminium gearhub. Gear supported by 16005-2RS bearing	1
PINION GEAR	Attaches to the motor. Different tooth gears available which allows you to change gearing ratio	1
V-RING VA55	Vitrile Rubber	1
REAR GEARBOX BOLTS	DIN912 BZP Socket head cap m4x10mm	3
FRONT GEARBOX BOLTS	DIN912 BZP Socket head cap m4x25mm	2
WHEEL ADAPTOR BOLTS	DIN912 BZP Socket head cap m4x8mm	5
MOTOR MOUNTING BOLTS	DIN912 BZP Socket head cap m4x10mm	4
MOUNTING HOLES FOR CLAMP	M4x10mm bolts fasten directly onto the Bioboards hanger from inside the gearbox	6

### GEARING RATIOS

Wheel Gear	Pinion	Ratio	Recommended Application
46	13	3.5	AT 2WD
46	15	3.1	AT 2WD/4WD
46	18	2.6	2WD Street & 4WD AT
46	21	2.2	4WD Street
71	18	4	AT 2WD

# Gear Drive System Instructions

You will need green 648 and blue 243 Loctite for this assembly. Read all steps before you start.

## 01

First you screw and tight the hanger shaft to the hanger. We recommend blue loctite for this.

## 02

Use 6 M4 8mm screws to install the motor plate on the hanger with built in motor plate adapter. Make sure you choose the angle that you want you motors on compared to the deck. (And etc reverse or under deck mount) We recommend blue Loctite



## 03

Install the motor, use the position according to the picture depending on what gearing ratio you have. For 1:2.2 and 1:3 you need to adjust the backlash yourself so make sure you have a good backlash before you tight the screws. Use 4 M4 10mm screws (3 for 1:3.5) We recommend blue Loctite.



## 04

Repeat step 1-3 for the other side.

# Gear Drive System Instructions

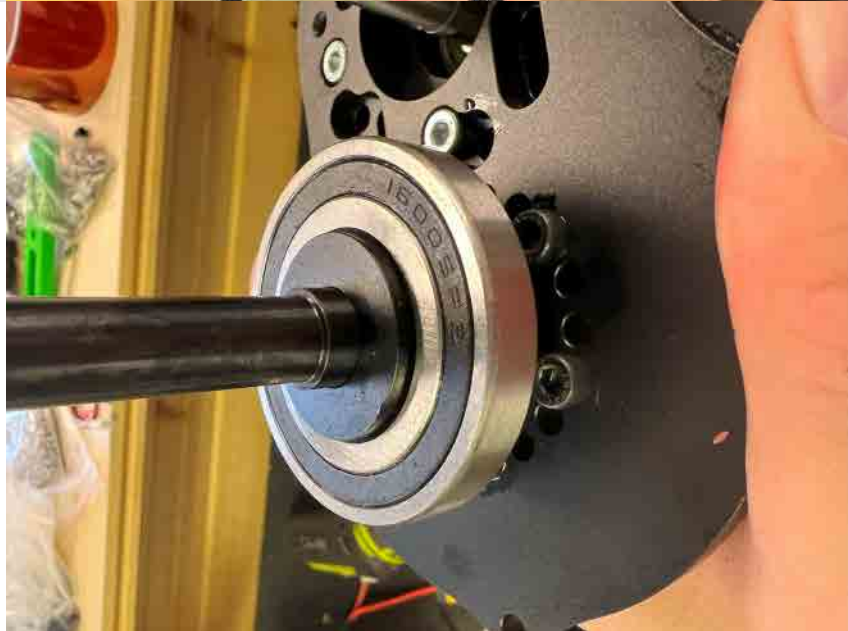
## 05

Now it should look like this:



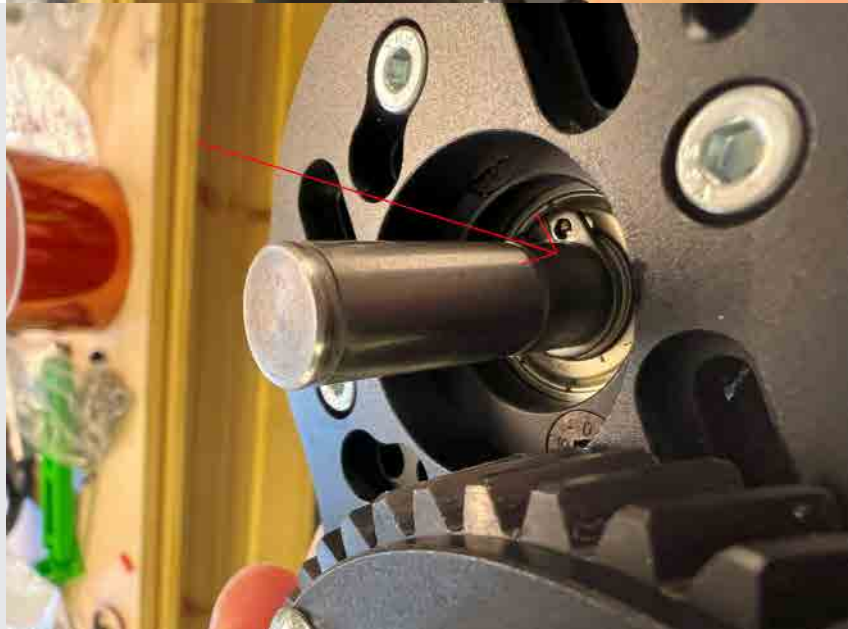
## 06

Put the wheel gear bearing on:



## 07

Now for motor shaft you need to put on a spacer between motor and motor pinion, it should be just so the motor pinion can't touch the motor plate and so it's get aligned later with wheel gear. It's usually a 7,8mm or 10,5mm spacer needed, but this depends on your motor. You can also use washers to adjust this perfect.



# Gear Drive System Instructions

## 08

Put green Loctite and the keyway on the motor shaft:



## 09

Install the motor pinion, as you can see on this picture it has a c-clip. This is not needed if your motor does not have a c-clip support on the end of the shaft, the green Loctite and keyway will do the work.



## 10

Screw the wheel gear adapter on to the wheel gear using 5 low head m4 screws. We recommend blue Loctite for this.



# Gear Drive System Instructions

## 11

Push on the wheel gear and adapter on to the bearing, sometimes its easier to first put the bearing into the wheel gear adapter and then push the bearing on to the hanger together with the wheel gear and wheel adapter



## 12

Check so the motor pinion and wheel gear are aligned and can turn well with correct backlash.



## 13

Now add grease:



# Gear Drive System Instructions

## 14

Put the geardrive case on:



## 15

Install the 2 M4 25mm screws to lock the geardrive case on to the motor plate, we recommend blue Loctite



## 16

Do the same on the other side, install 3 M4 10mm screws to lock the geardrive case on to the motor plate, we recommend blue Loctite:



## 17

Put some grease on the inside of the V-ring and push it on around the wheel adapter:



# Gear Drive System Instructions

## 18

Install the wheel end adapter using 5 M4 10mm (AT adapter) 5 M4 16mm (Kegel adapter) we recommend blue Loctite for this



## 19

You need a spacer between the geardrive and wheel, this is important its correct, if it's too long it will push the wheel gear out from the motor plate and make wheel gear adapter scratch against the case and damage it and give you resistance so you will get less range and higher motor temp. For Bioboards Rims it's a 11mm spacer and for TB 110 mm street wheels it's a 17,5mm spacer. For other rims and wheels please ask customer support.



## 20

Install the Rims or street wheel into the AT or street adapter using M4 screws. We recommend blue Loctite for a safety reason, but if you want to easier change rims /tyres etc don't use Loctite and check that they are tight before every ride.

**Have fun with your new Bioboard Helical Geardrive system!**