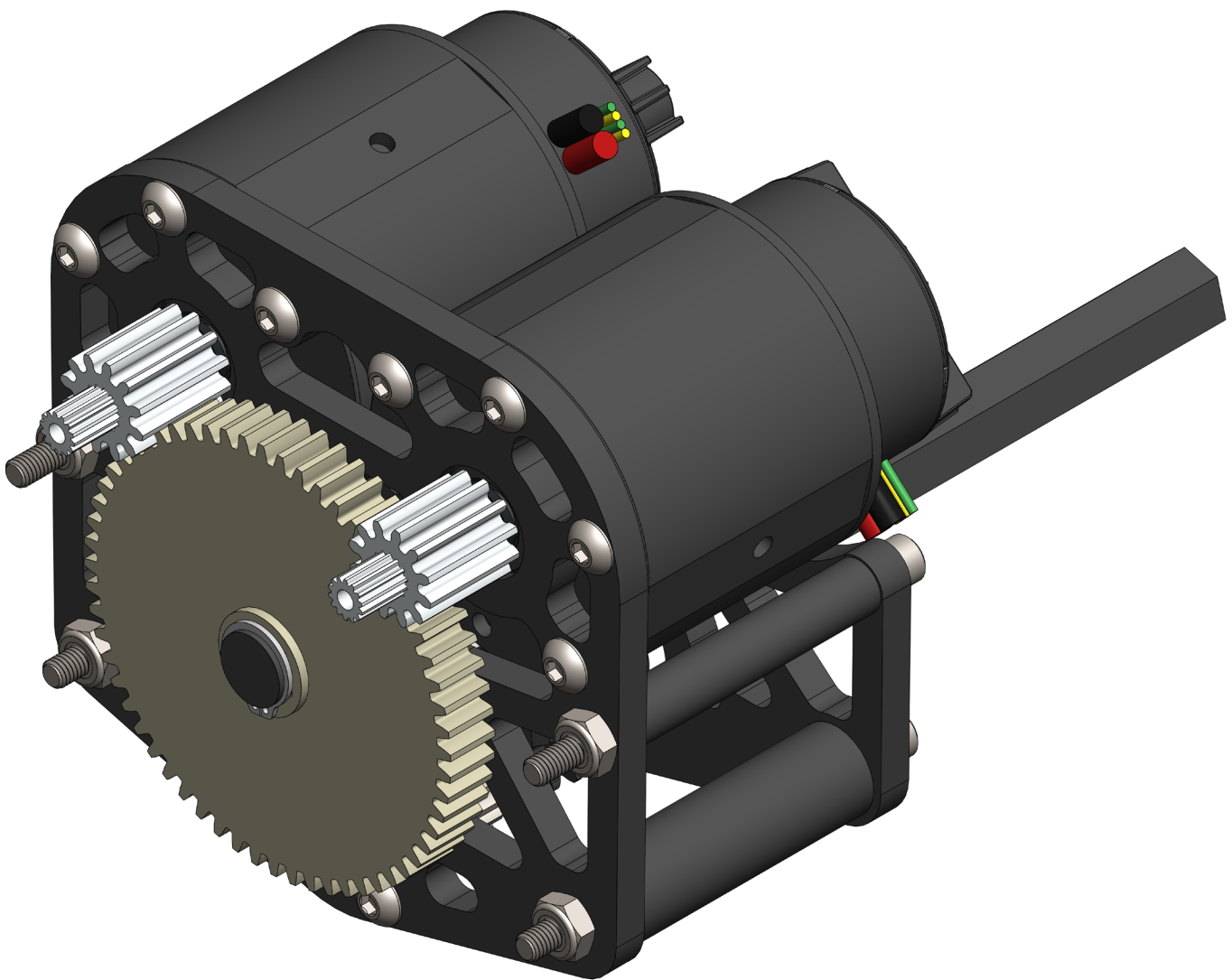


# WCP SS Flipped Gearbox (Single Speed, 2 Stages) - User Guide (Rev 1)



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# WCP SS Flipped Gearbox (Single Speed, 2 Stages) - User Guide (Rev 1)



## What is the WCP SS Flipped Gearbox (Single Speed, 2 Stages)?



This gearbox is one of the coolest ones WCP sells. This gearbox was designed specifically for the Falcon 500 but also supports Minicims. The transmission supports 3.25", 4" and 6" wheels and the use of clamping/bearing blocks.

We recommend the purchase of steel gears for all stages for increased life, but aluminum will do just fine.

# WCP SS Flipped Gearbox (Single Speed, 2 Stages) - User Guide (Rev 1)



## Recommended Tools

Picture	Name
	Allen Wrench Set
	Snapping Pliers

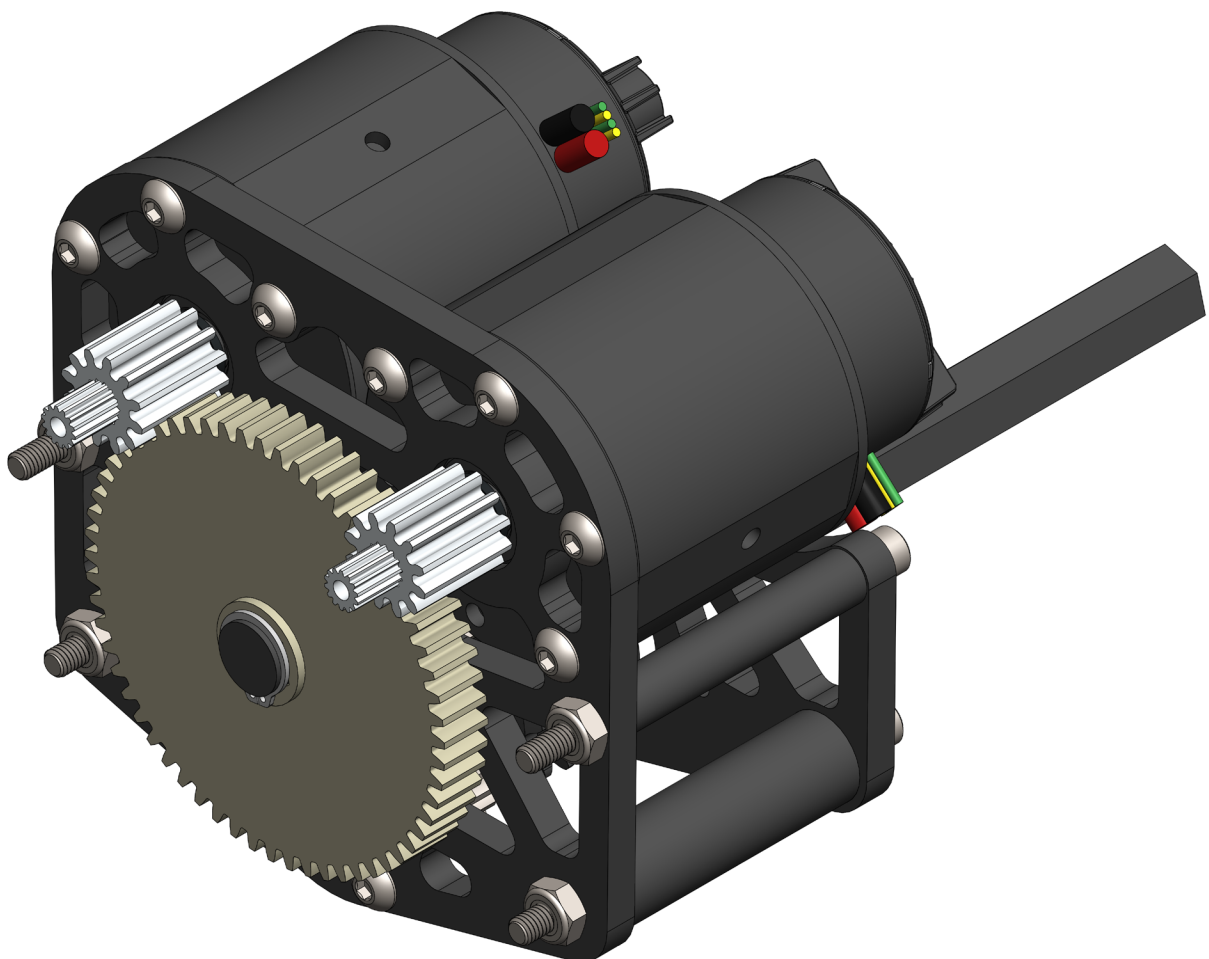
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## Assembly Instructions

The gearbox should be fully assembled before installation, unless there is a space issue during installation that would prevent this.

Note: Blue Loctite (McMaster P/N 1004A12) is recommended on all bolts that thread into a tapped hole.



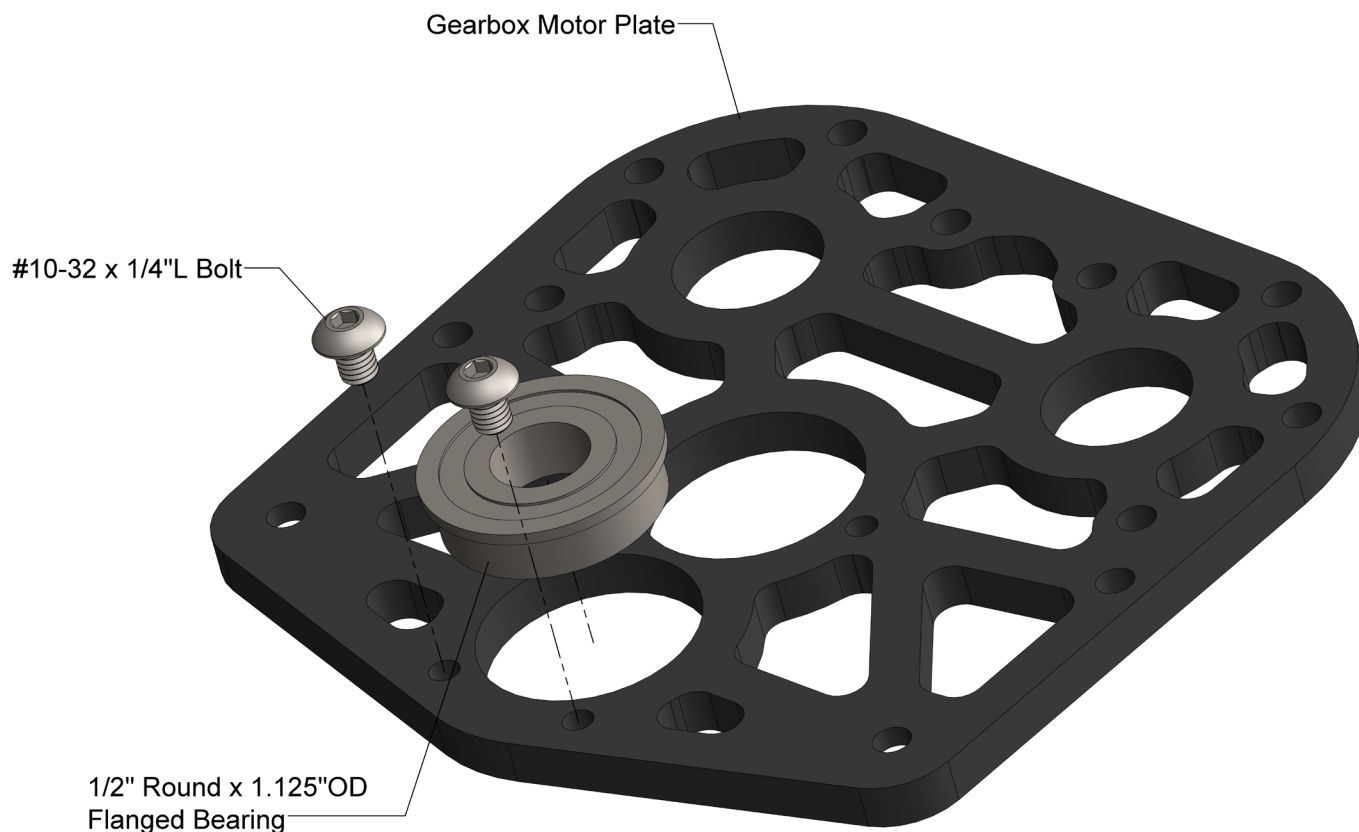
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## Step 1

Bearing should be a slip fit into the plate. If needed an arbor press can be used to press the bearing in. Use the 2 #10-32 x 1/4"L bolts to retain the bearing.

Note: Bearing flange goes on the opposite side of the plate from the C-bore.



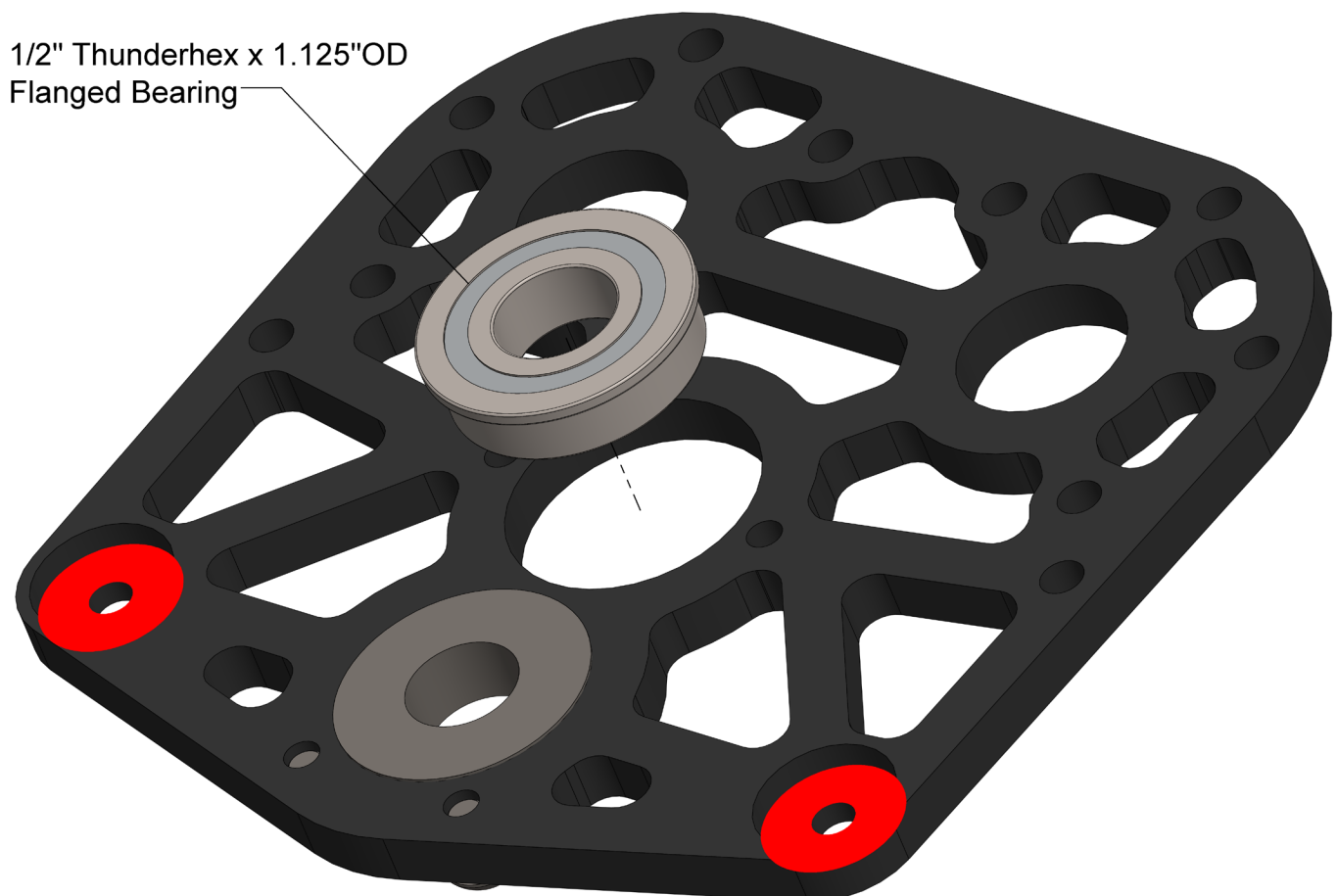
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## Step 2

Bearing should be a slip fit into the plate. If needed an arbor press can be used to press the bearing in.

Note: The bearing flange goes on the same side as the C-bore on the plate (highlighted in red).



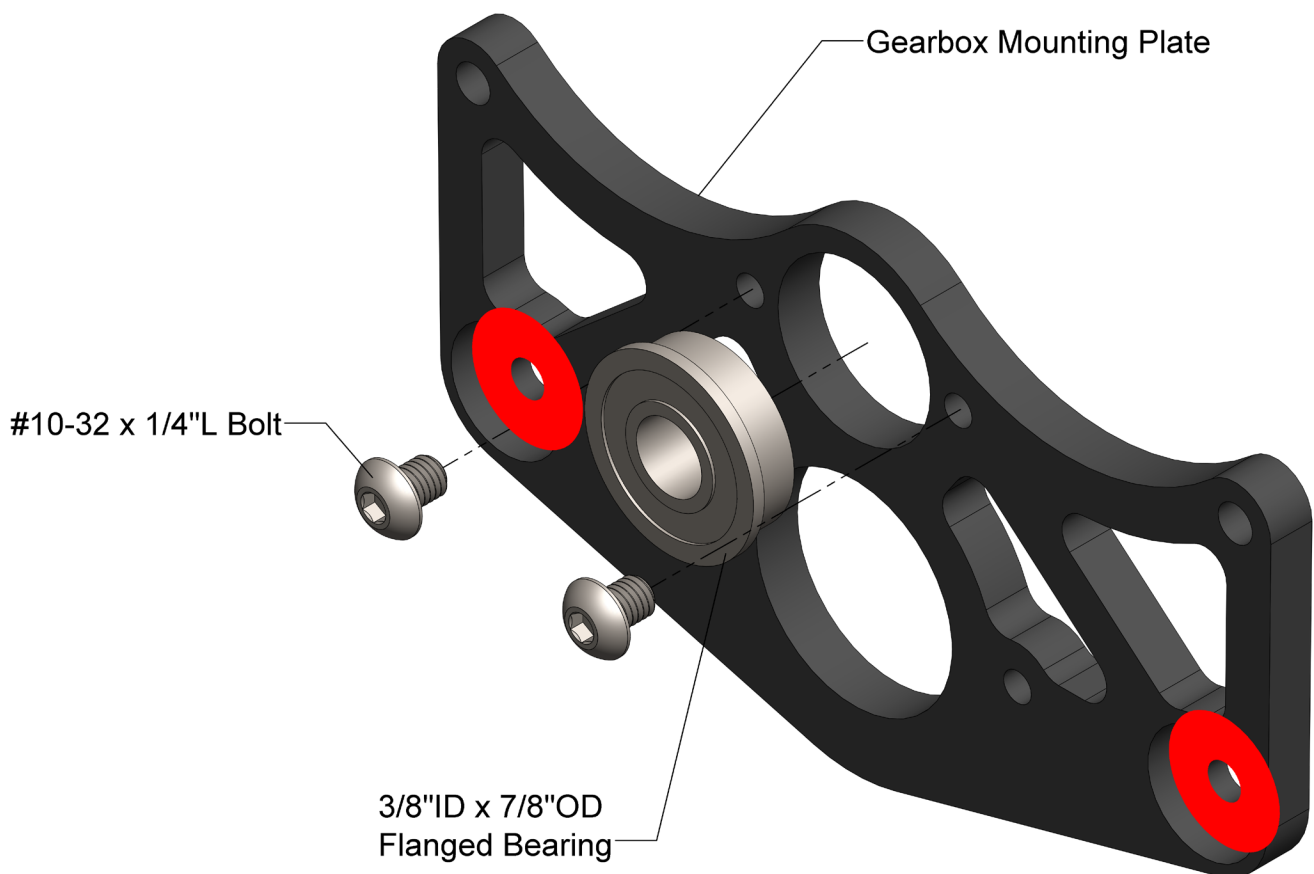
# WCP SS Flipped Gearbox (Single Speed, 2 Stages) - User Guide (Rev 1)



## Step 3

Bearing should be a slip fit into the plate. If needed an arbor press can be used to press the bearing in. Use the 2 #10-32 x 1/4" L bolts to retain the bearing.

Note: The bearing flange goes on the same side as the C-bore on the plate (highlighted in red).





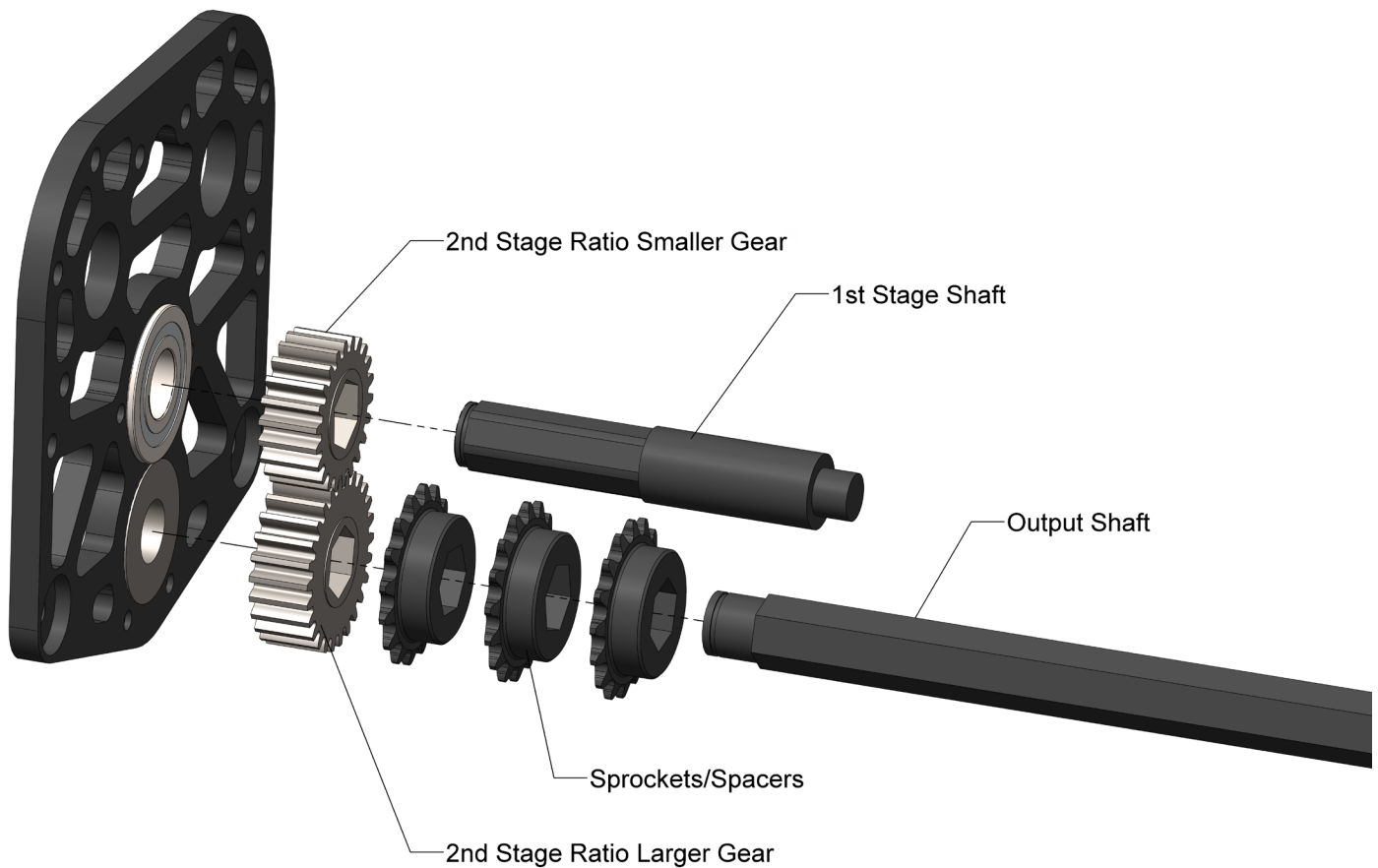
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## Step 4

We recommend that you cut the drive shaft to the correct length before installation.

Slide desired gears, drive sprockets/pulleys, and spacers onto shaft.



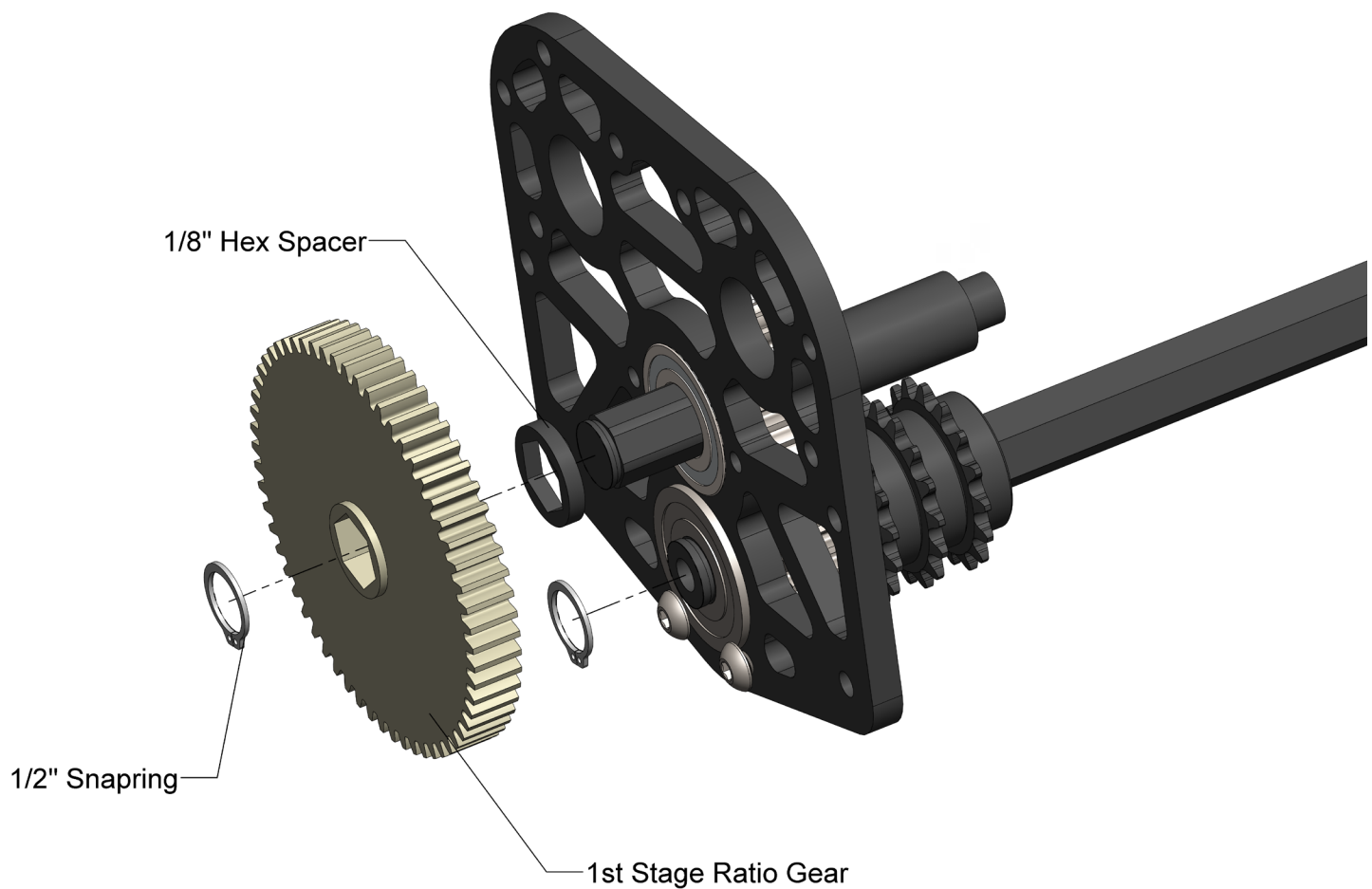
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## Step 5

Retain output shaft with 1/2" snapping.

Install first stage gear and spacer. Retain these with a 1/2" snapping.



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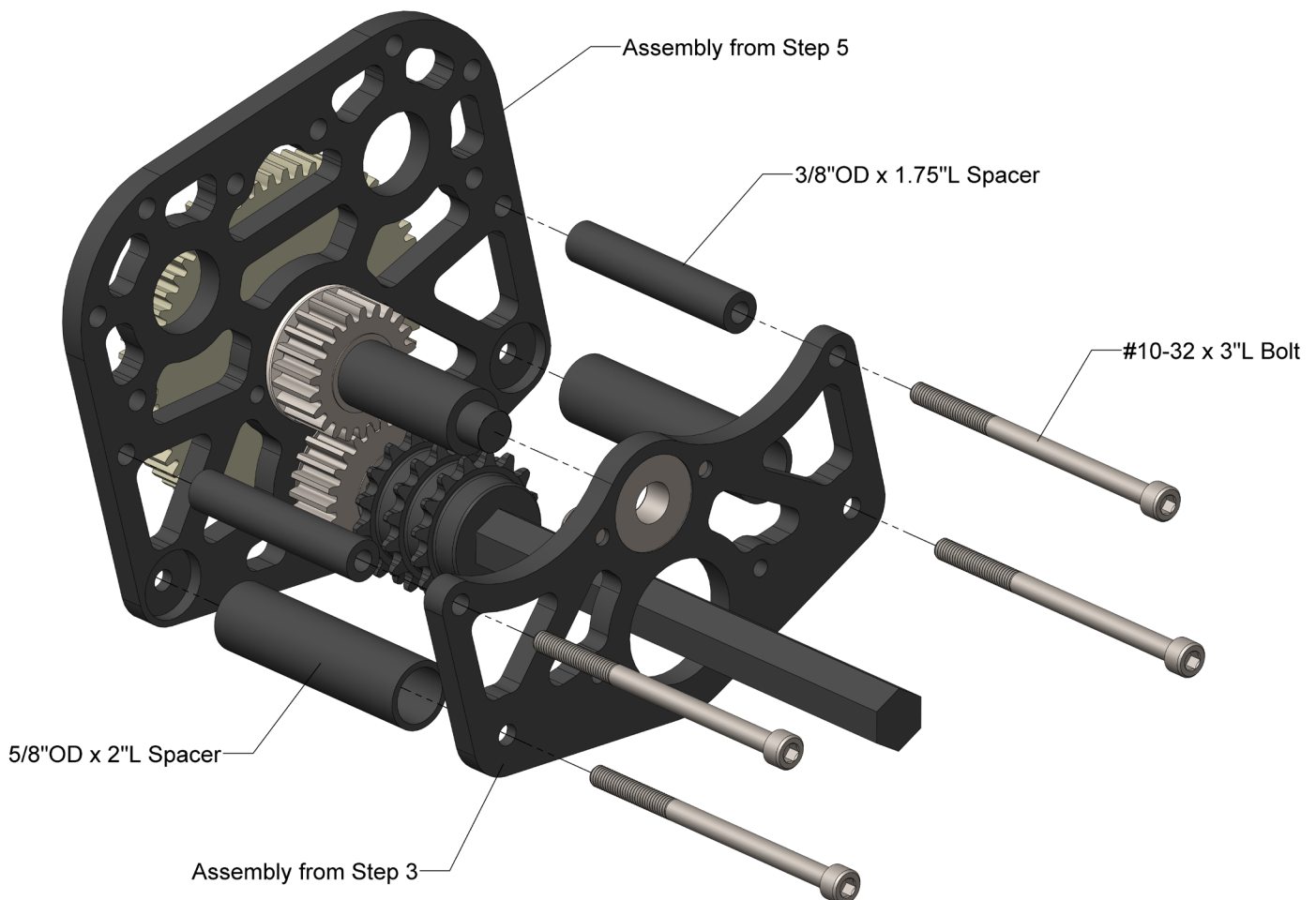
## Step 6

The 4 #10-32 x 3"L bolts should slip all the way through the gearbox.

The nuts for the upper 2 #10-32 bolts can be installed now.

The lower 2 #10-32 bolts should be installed during the mounting of the gearbox as they help support the gearbox.

**Note:** Be sure that the larger OD spacers are fully seated in their respective C-bore before fully tightening any bolts.



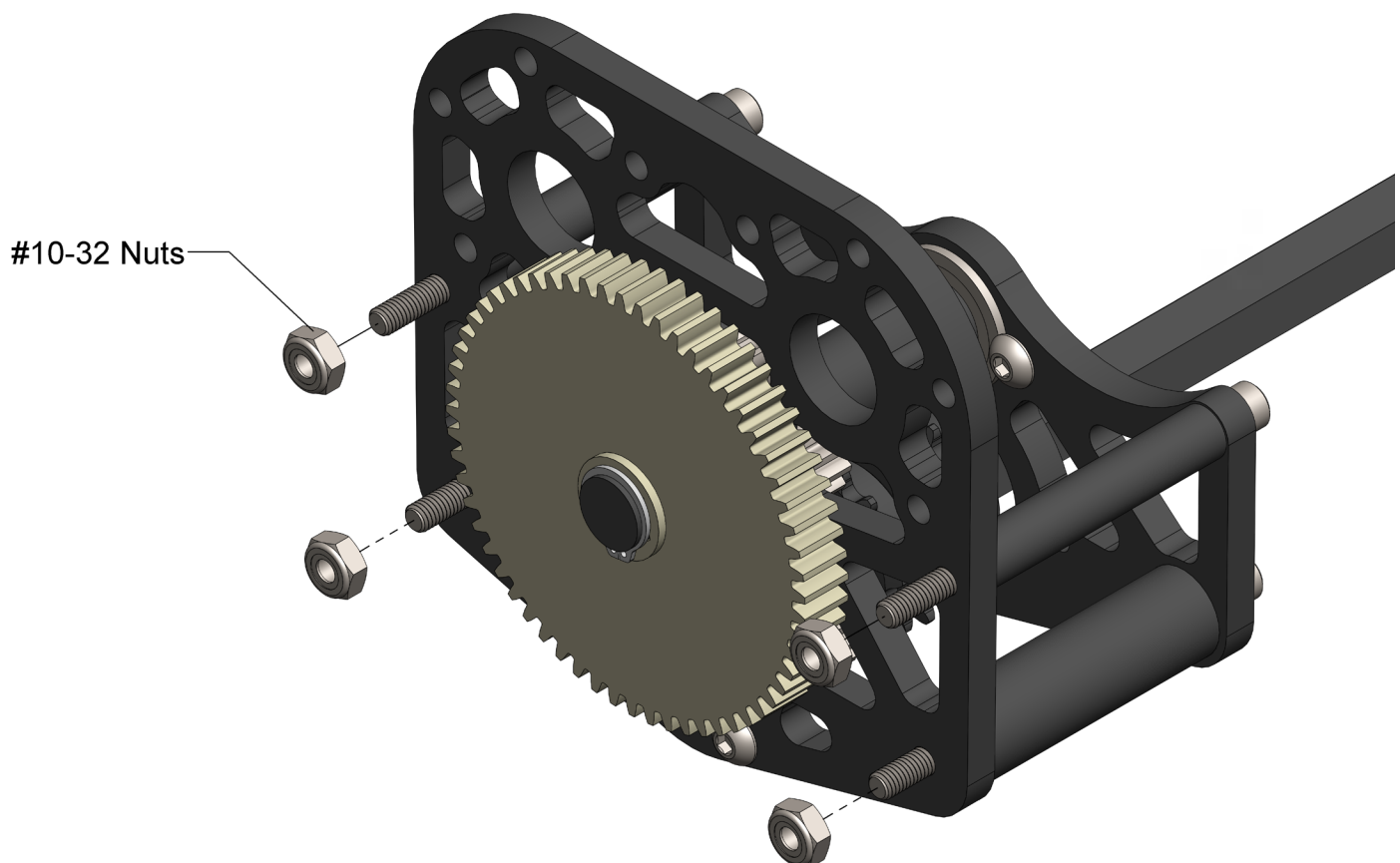
# WCP SS Flipped Gearbox (Single Speed, 2 Stages) - User Guide (Rev 1)



## Step 7

Once the gearbox is mounted, the remaining 2 #10-32 nuts can be installed.

Note: Be sure that the larger OD spacers are fully seated in their respective C-bore before fully tightening any bolts.



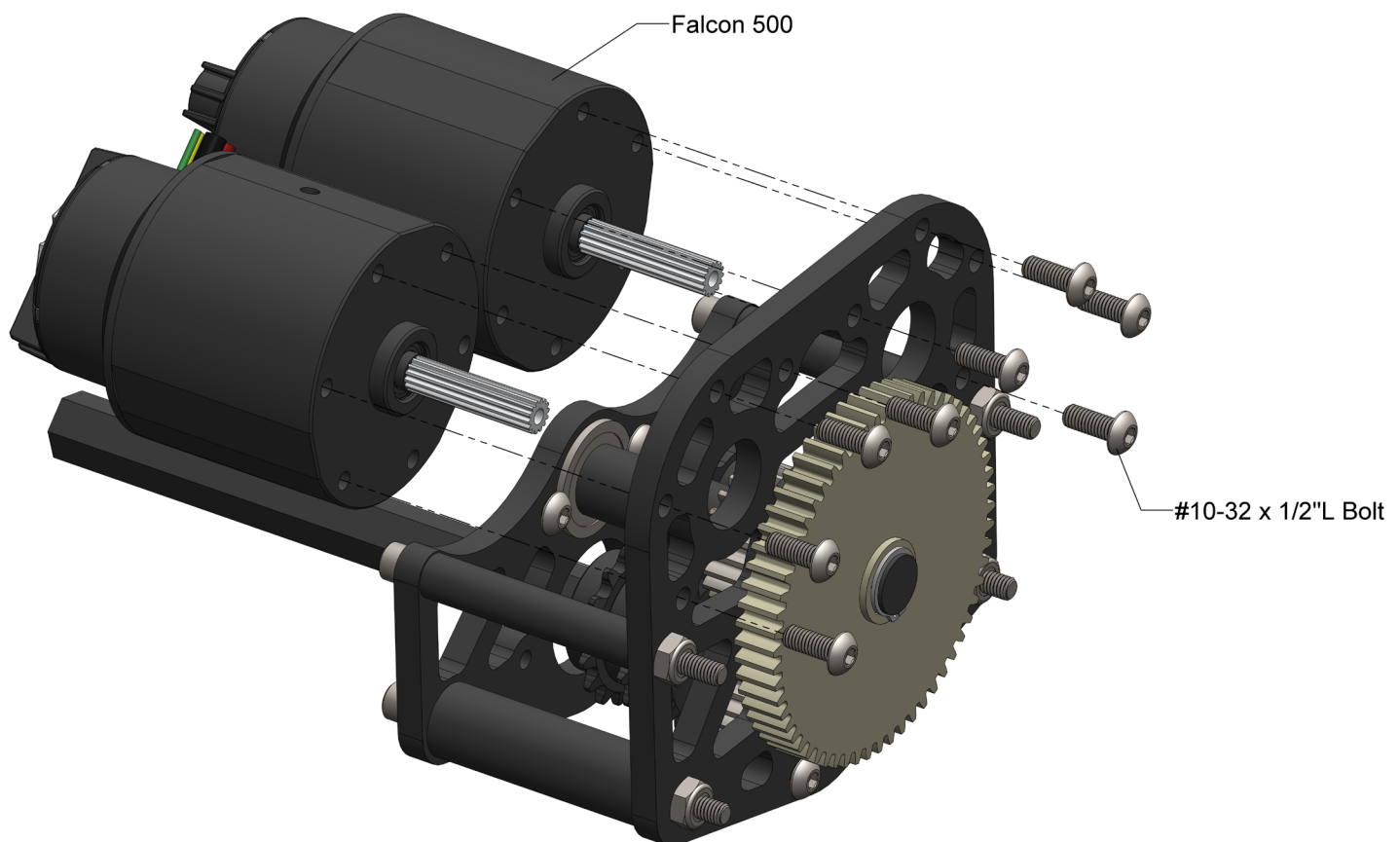
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## Step 8

Use up 8 #10-32 x 1/2"L bolts to attach the Falcons.

Note: Only 4 bolts are required but more may be added for extra security.

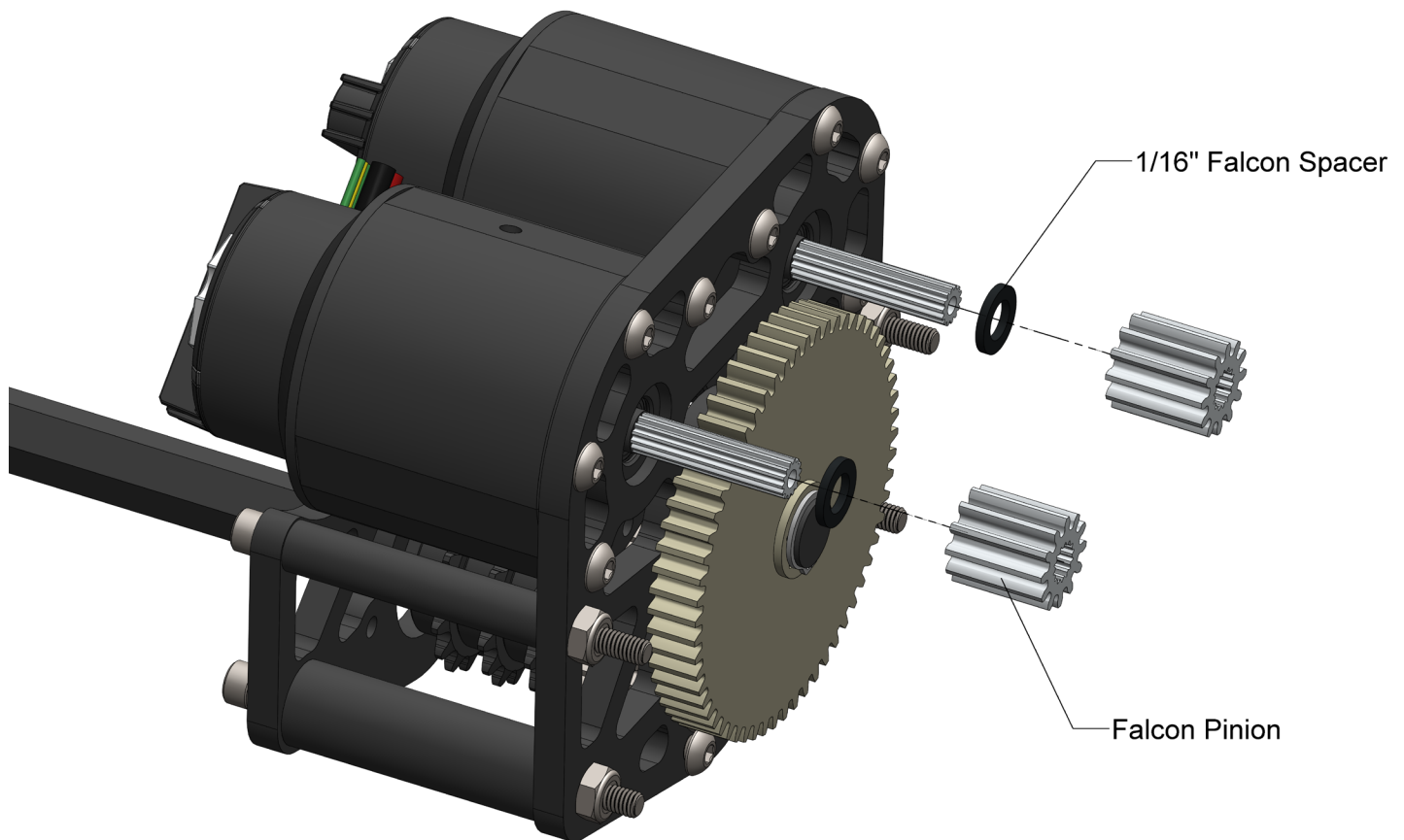


# WCP SS Flipped Gearbox (Single Speed, 2 Stages) - User Guide (Rev 1)



## Step 9

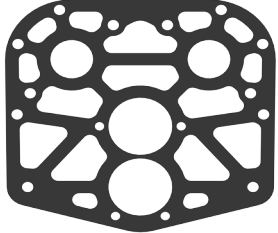
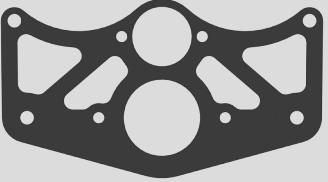
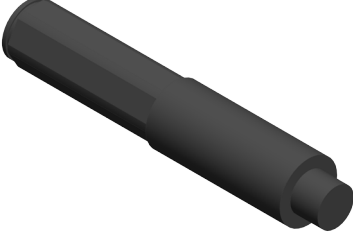
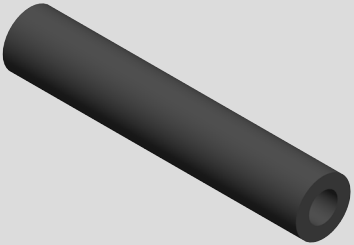
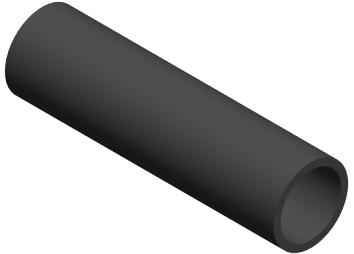
Install the 1/16" Falcon spacer between the motor and pinion. Use desired stack up of spacers to constrain the pinion on the shaft.



# WCP SS Flipped Gearbox (Single Speed, 2 Stages) - User Guide (Rev 1)

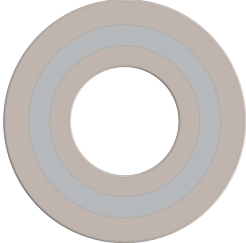





## Kit Contents

Picture	Name	QTY	Kit
	Gearbox Motor Plate	1	Base Kit
	Gearbox Mounting Plate	1	Base Kit
	1st Stage Shaft	1	Base Kit
	3/8"OD x 1.75"L spacer	2	Base Kit
	5/8"OD x 2"L Spacer	2	Base Kit

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Picture	Name	QTY	Kit
	1/2" Thunder Hex ID x 1.125"OD Flanged Bearing	1	Base Kit
	1/2" Round x 1.125"OD Flanged Bearing	1	Base Kit
	3/8"ID x 7/8"OD Flanged Bearing	1	Base Kit
	1/2" Snapping	2	Base Kit
	#10-32 x 1/4"L Bolt	4	Base Kit



# WCP SS Flipped Gearbox (Single Speed, 2 Stages) - User Guide (Rev 1)


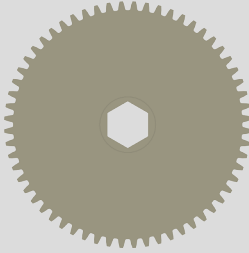
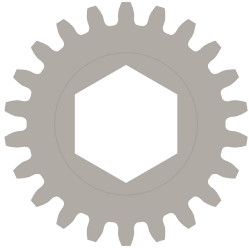
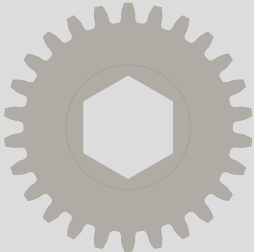
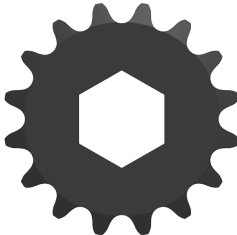


Picture	Name	QTY	Kit
	#10-32 x 3"L Bolt	4	Base Kit
	#10-32 Thin Nuts	4	Base Kit
	1/8" Hex Spacer	1	Base Kit

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## Recommended Parts to Buy

Picture	Name	QTY
	Falcon Pinion	2
	1st Stage Ratio Larger Gear	1
	2nd Stage Ratio Smaller Gear	1
	2nd Stage Ratio Larger Gear	1
	Sprocket(s)	1-3

# WCP SS Flipped Gearbox (Single Speed, 2 Stages) - User Guide (Rev 1)

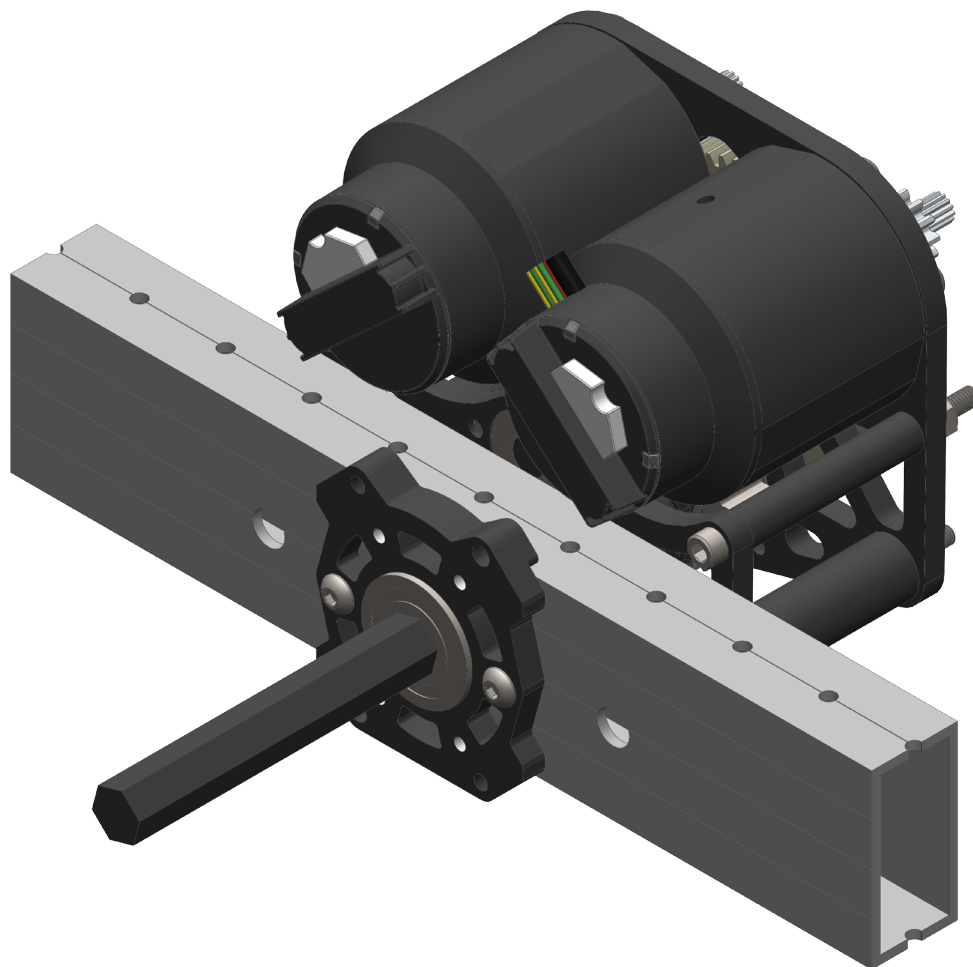


Picture	Name	QTY
	Falcon 500 Motor	2
	WCP SS - Output Shaft	1



## Application Example - Versa Block Mounting

This method is recommended for teams that do not have the ability to do precision machining or do not want to spend the time to machine the drive rail. Mounting the gearbox with this method can be accomplished with a cordless drill and basic hand tools.



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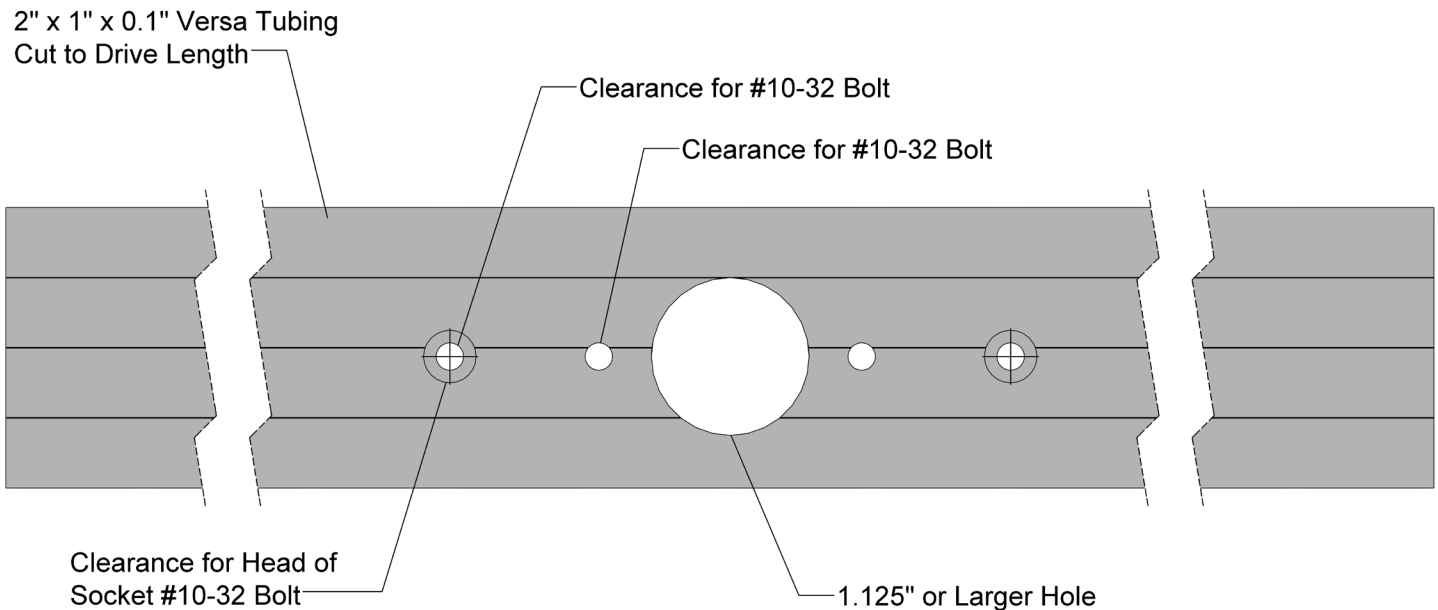


## Holes to Drill

The center hole can be drilled out using a step bit to 1.125" or larger. This hole is for clearance. Align the Versa Block with the center of this hole and match drill the two #10-23 clearance holes.

Before assembly of the gearbox bolt the mounting plate to the tube using the Versa Block and the holes just drilled. Match drill the mounting holes in the gearbox plate into the tube.

The outside wall of the outer mounting holes are recommended to be drilled out to clearance for the bolt head. If you choose to not do this, then a longer bolt will be needed, that is not provided.

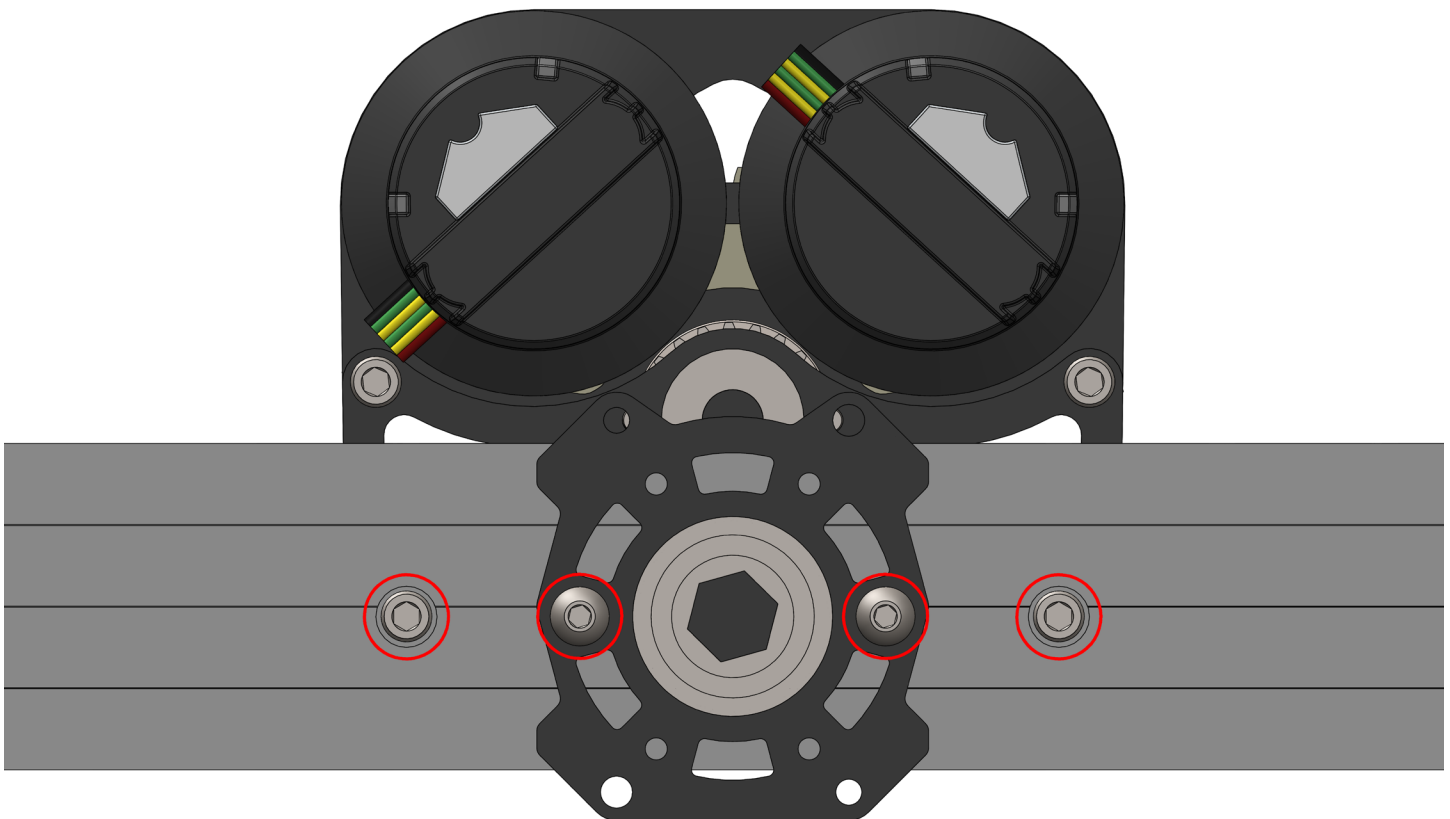


# WCP SS Flipped Gearbox (Single Speed, 2 Stages) - User Guide (Rev 1)



## Bolt Locations

The recommended locations for bolts to mount the gearbox are shown below in red.



# WCP SS Flipped Gearbox (Single Speed, 2 Stages) - User Guide (Rev 1)



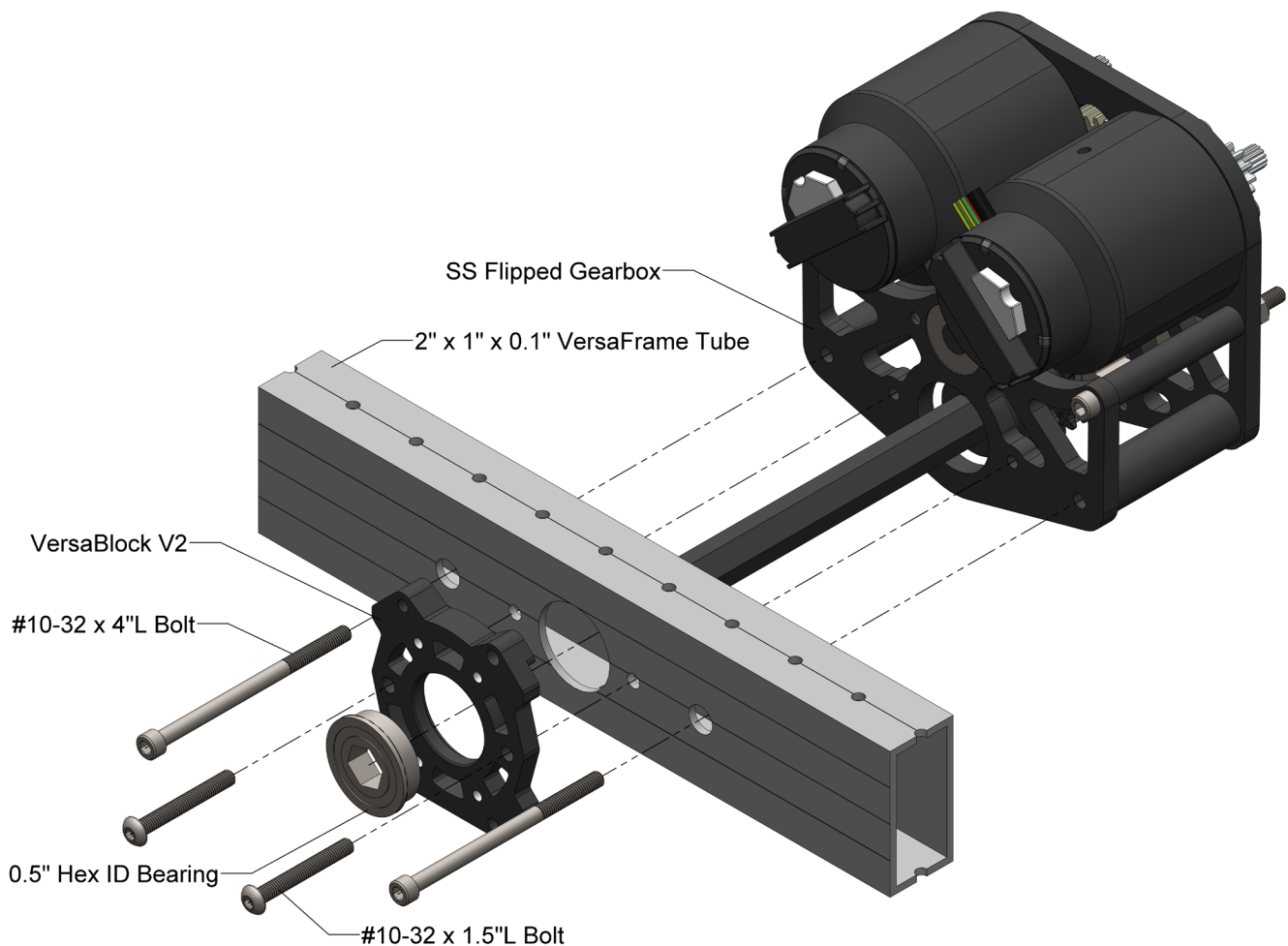
## Gearbox Mounting

Use the two provided #10-32 x 4"L bolts to attach the gearbox to the tube.

Install the bearing and Versa Block with 2 #10-32 x 1.5"L bolts.

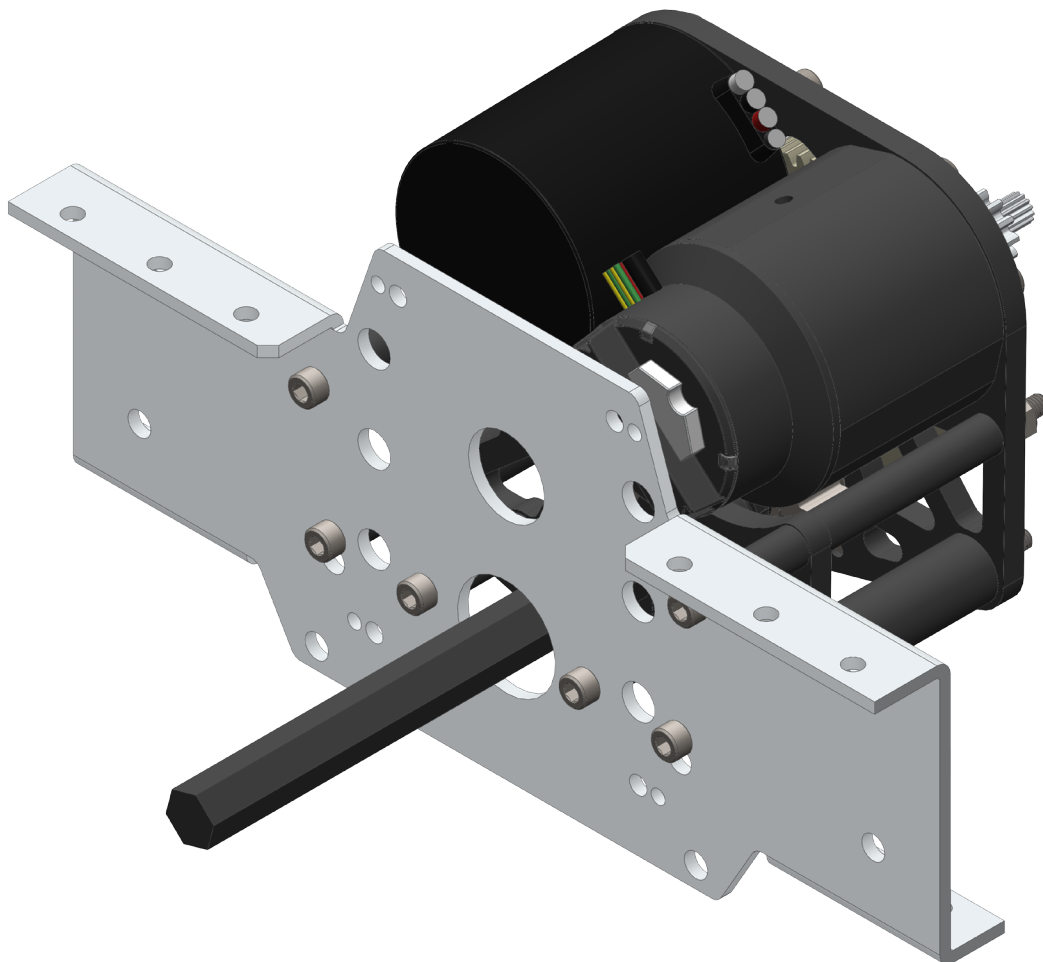
Note: Spacers will need to be added between the 1/2" hex bearing and the sprockets depending on how the drivetrain is set up.

Note: After installation, attach a wheel to the output shaft and ensure the gearbox spins smoothly.





## Application Example - AM Kit Chassis





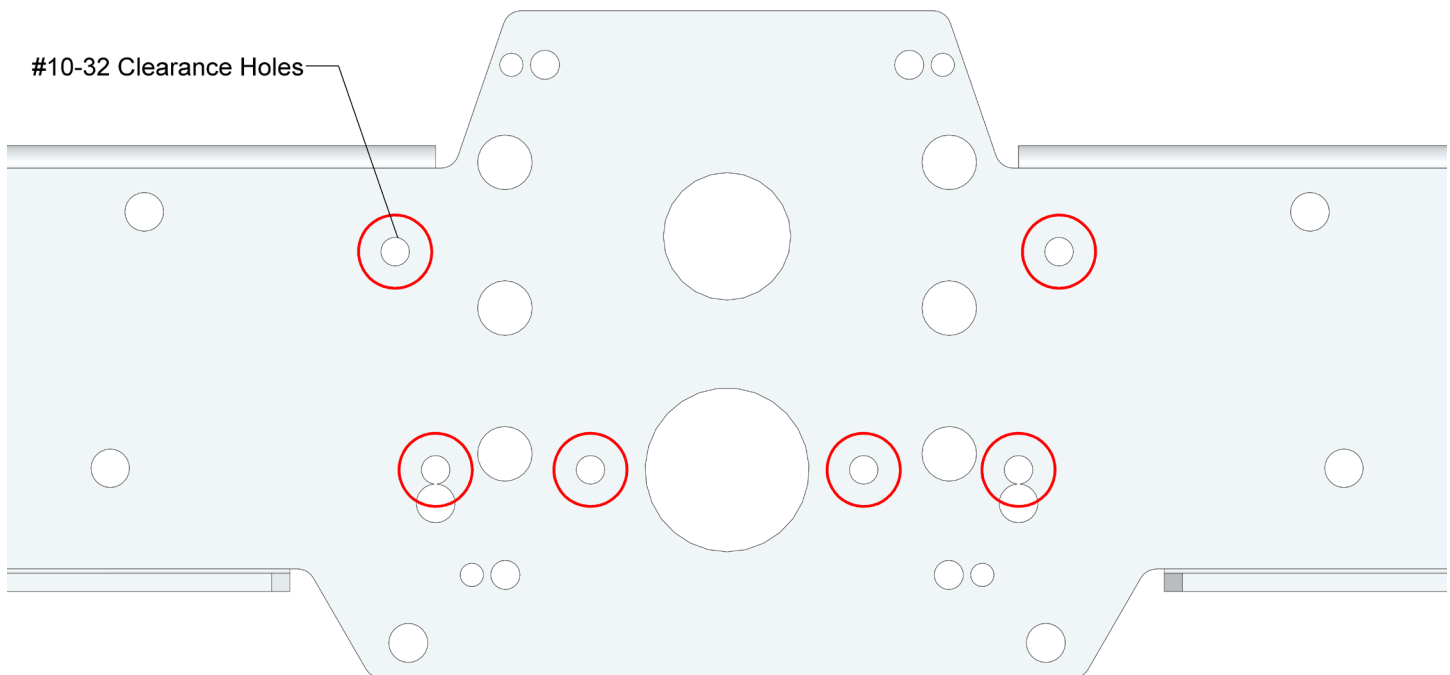
# WCP SS Flipped Gearbox (Single Speed, 2 Stages) - User Guide (Rev 1)



## Holes to Drill

Before assembly of the gearbox, use the mounting plate to help with drilling the hole locations.

Insert a 1.125" bearing into the AM gearbox rail. The bearing should stick out on one side. Use this bearing to align the mounting plate of the gearbox to the drive rail. Match drill the holes shown in the image below. Be sure to remove bearing after drilling all holes.

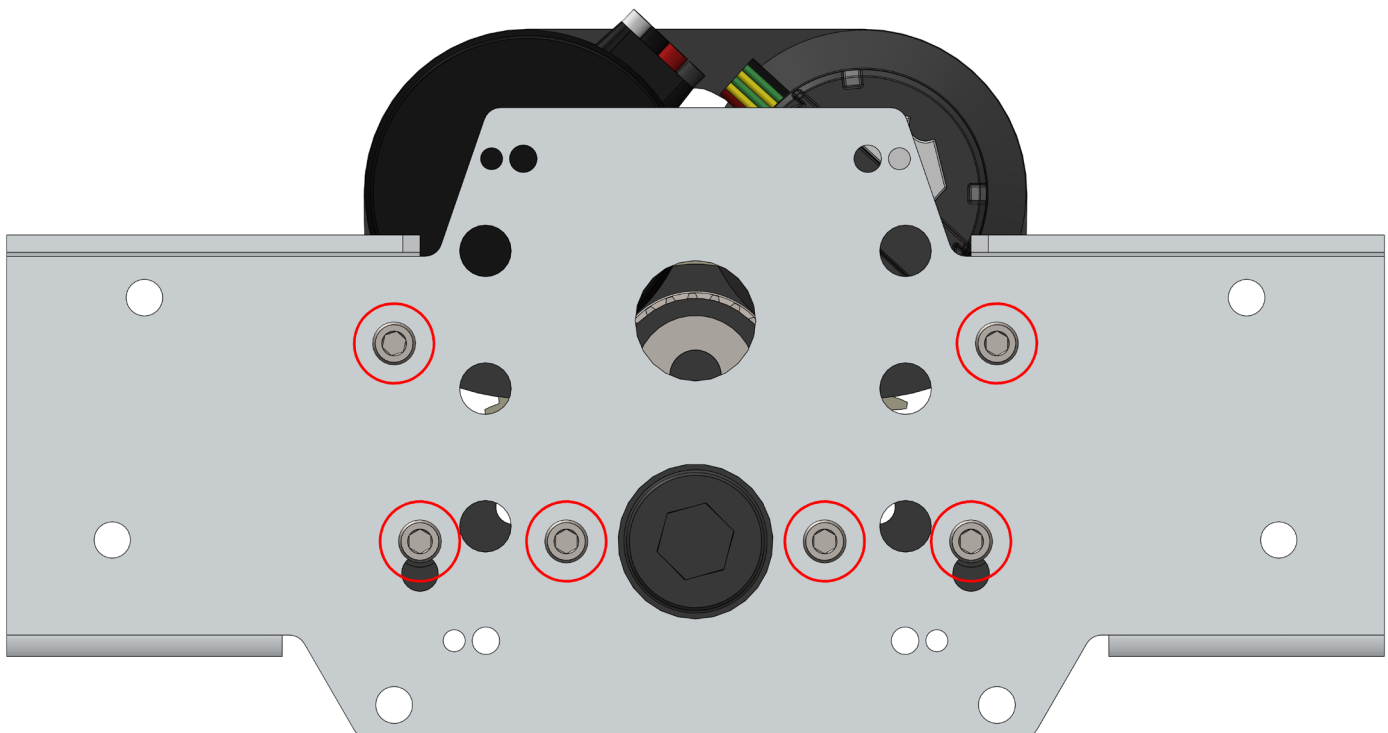


# WCP SS Flipped Gearbox (Single Speed, 2 Stages) - User Guide (Rev 1)



## Bolt Locations

The recommended locations for bolts to mount the gearbox are shown below in red.



# WCP SS Flipped Gearbox (Single Speed, 2 Stages) - User Guide (Rev 1)



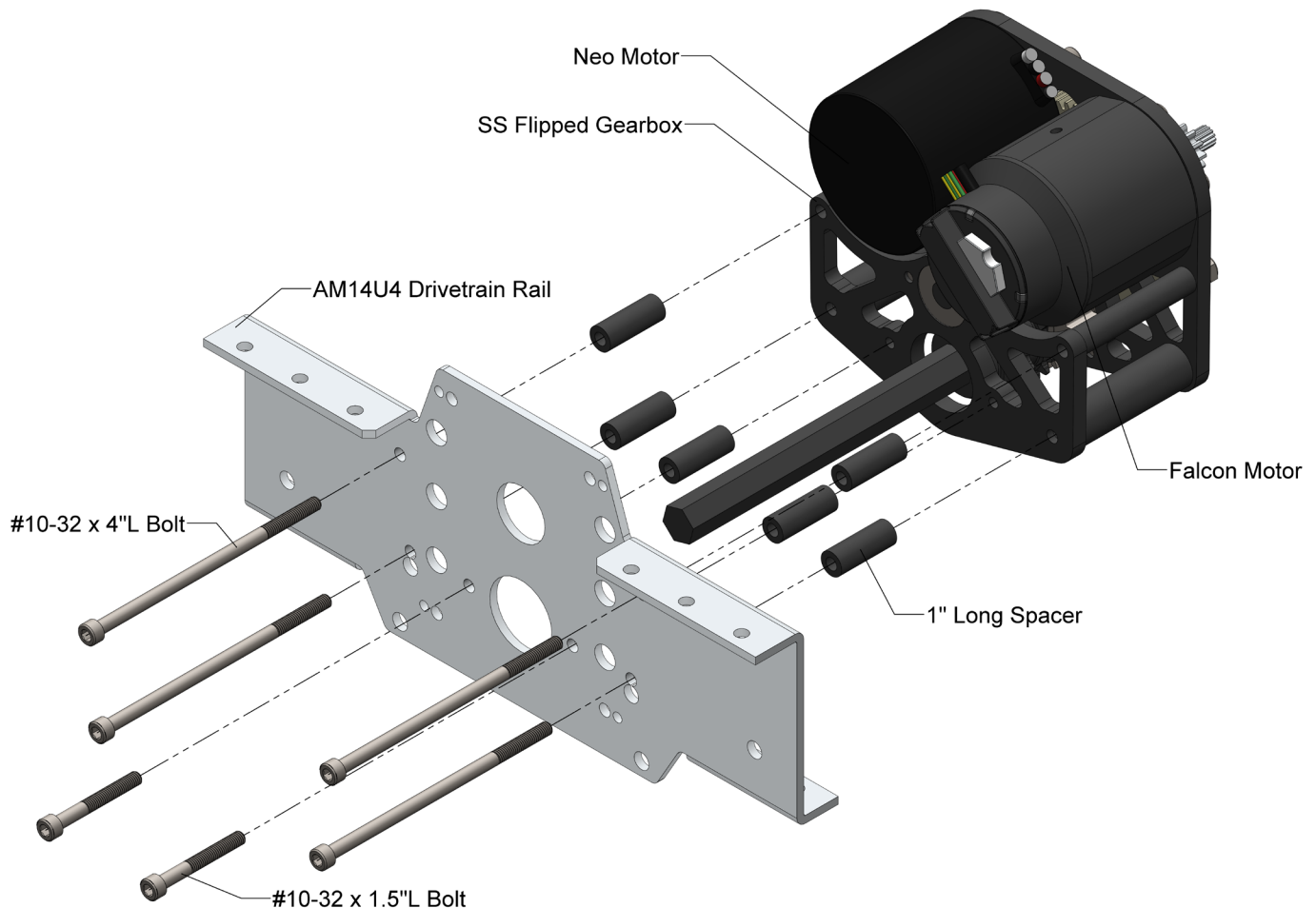
## Gearbox Mounting

Use the four #10-32 x 4"L bolts to attach the gearbox to the tube. Two additional #10-32 x 1.5"L Bolts may be added for additional support.

In order to use the Flacon motors in this setup, 1" spacers must be added between the drive rail and gearbox. If the Neo is used, shorter spacers may be used.

**Note:** Spacers will need to be added between the wheel and the sprockets, depending on wheel size and spacing.

**Note:** After installation, attach a wheel to the output shaft and ensure the gearbox spins smoothly.



# WCP SS Flipped Gearbox (Single Speed, 2 Stages) - User Guide (Rev 1)



## FAQ

Q: What size wheels does this gearbox support?

A: This gearbox supports wheel sizes from 3.25" to 6".

# WCP SS Flipped Gearbox (Single Speed, 2 Stages) - User Guide (Rev 1)



## Revision Table

Revision Date	Revision #	Description
1/14/2020	1.1	First revision created.
1/17/2020	1.2	Updated bearing names in step 1 and 2.