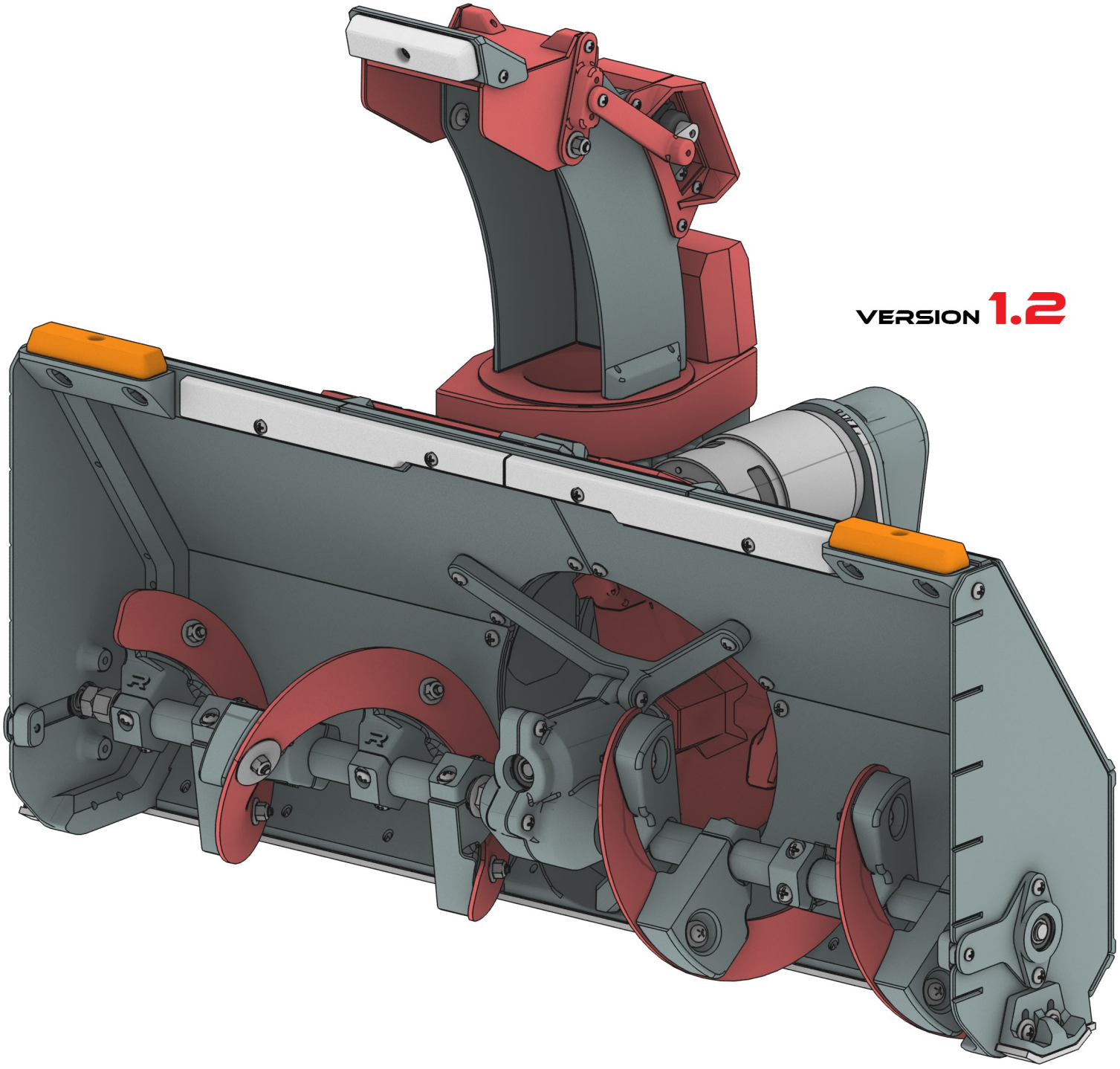
SPYKER WORKSHOP



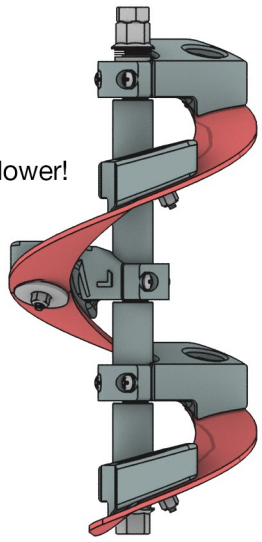
VERSION 1.2

1X-2 MINI SNOW BLOWER

Designed by Moo Spyker (Ryan Butler)

INTRODUCTION

Thank you for your purchase of your very own 3d printed snow blower!
This machine can be a lot of fun but always keep in mind how dangerous it is.



❗ NEVER stick your hands inside the machine while it is still plugged in. UNPLUG IT!
❗ DO NOT aim the shoot towards anyone while in operation.

Please use common sense when operating this machine, treat it like you would a full sized snow blower!
Spyker Workshop is not responsible for any harm caused from the use of this machine.

You can follow along with this instruction manual on our YouTube video build series.
Find the video here: www.youtube.com/user/thegreatestmoo

See **OPERATION** and **ELECTRONICS** on the next page for setup and blower use.

SOME OF THE ITEMS REQUIRED

See the **HARDWARE** page at the back of this manual to see all the hardware you need to complete the assembly of this kit.

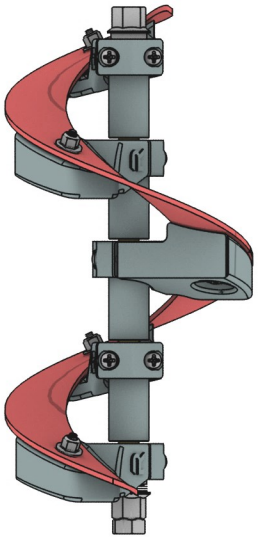
You also need the following:
- Dremel + Disk (To grind/cut some parts)
- Metal Saw (To cut some parts)
- Grease (For worm gear drive)
- Threadlock (For set screws, removeable type)
- Common household tools (Philips screw driver, pliers, wrench, etc.)
- Sandpaper / File (Some parts may require additional work to fit together properly)

ELECTRONICS

- 6 channel radio or more
- Servo modified for continuous rotation (You must modify the servo)
- Servo for lifting blower up and down
- 540, 550 or 775 Sized brushed motor (Or brushless)
- Speed controller

MOUNT

- Mounting system (For Kyosho Blizzard purchase mount kits separately)
- Design your own mounting system to connect to other RC vehicles



New 1X-2 Auger

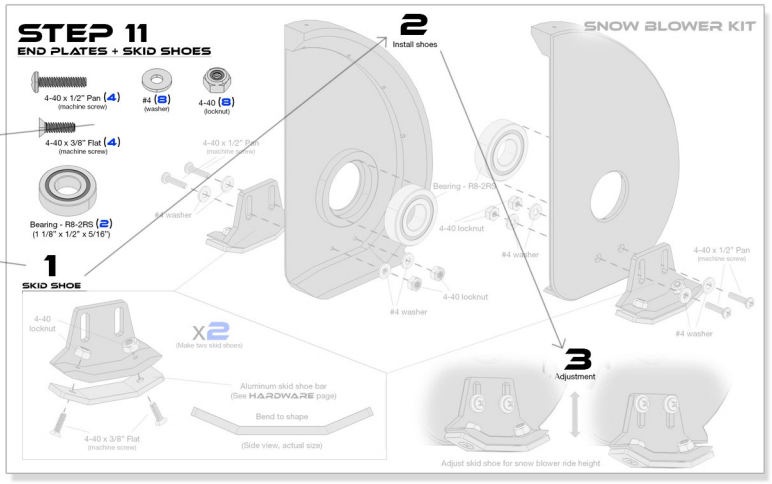
MANUAL WORKFLOW

This instruction manual has an easy to follow format on each page.

Under each step lists all the hardware needed for the current step.

Most steps have an order to follow **1**, **2**, **3**, etc.

Make sure you read all the text on each step so you don't miss anything!



❗ Start off by drilling out all your parts using the **DRILL GUIDE** on the back.

If you get stuck on any part during the build you can email me at spyker.sales@hotmail.com for assistance, have fun!

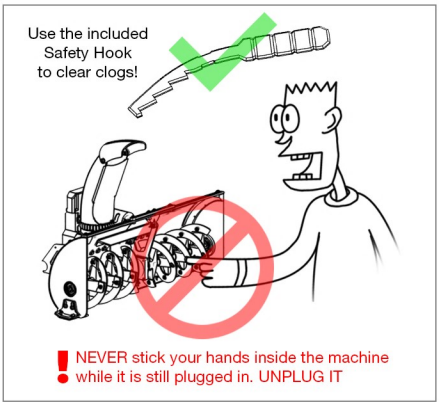
OPERATION

HOW TO USE YOUR BLOWER

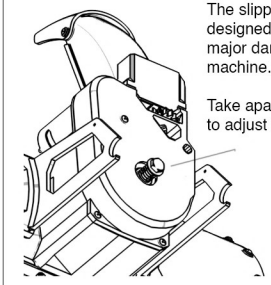
Best used in cold temperatures below 30F (20F is ideal).
High humidity will effect the blowers performance (Wet snow).

You should place your snow blower outside in the cold several minutes before using it to let it adjust to the temperature.
This will help prevent snow from sticking to the machine!

If your machine clogs up, power the machine off and clear the blockage carefully.



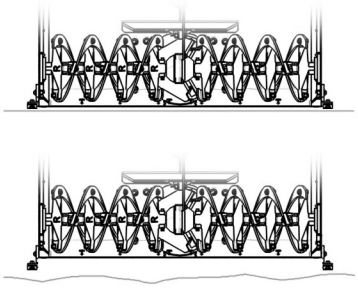
! NEVER stick your hands inside the machine while it is still plugged in. UNPLUG IT



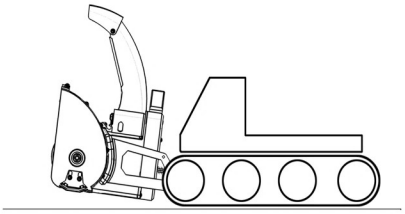
The slipper clutch is designed to help prevent major damage to the machine.

Take apart the belt cover to adjust the tension.

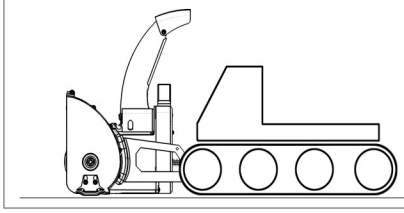
Tighten = More powerful / Risk of damage
Loosen = Less chance of damage



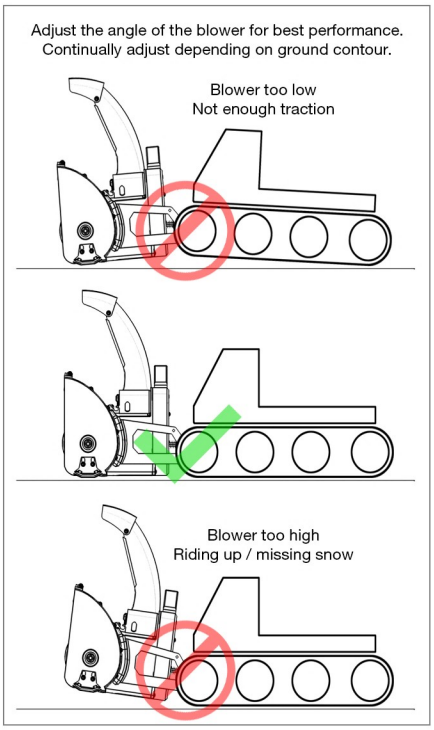
Adjust the skid shoes for uneven surfaces to prevent getting hung up on the ground

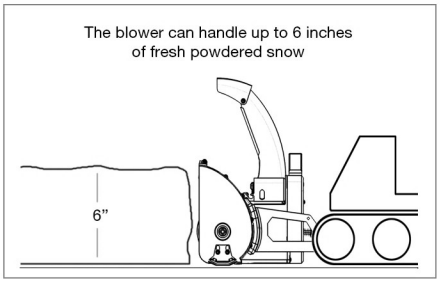


Lift the blower up to turn and maneuver the machine.



The chute can aim directly behind the machine when using a 360 degree servo.



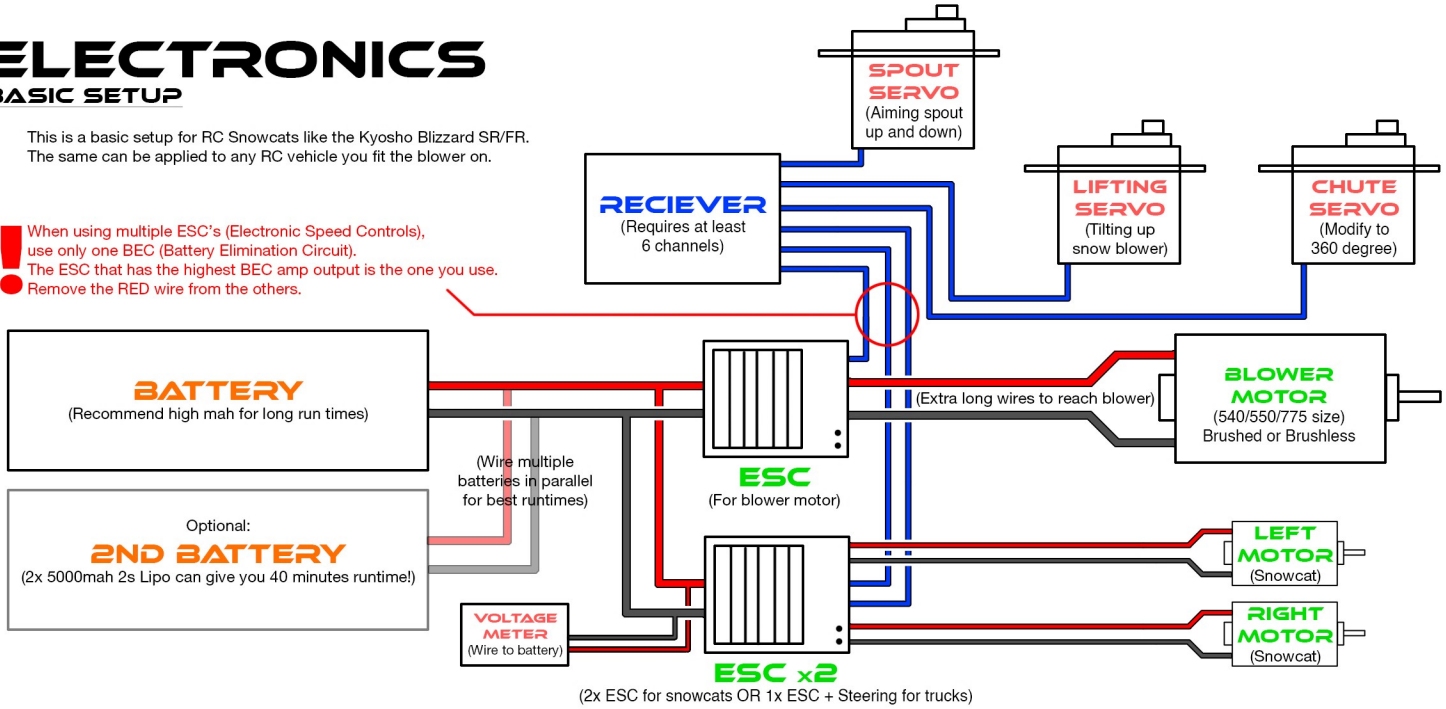


ELECTRONICS

BASIC SETUP

This is a basic setup for RC Snowcats like the Kyosho Blizzard SR/FR.
The same can be applied to any RC vehicle you fit the blower on.

! When using multiple ESC's (Electronic Speed Controls), use only one BEC (Battery Elimination Circuit). The ESC that has the highest BEC amp output is the one you use. Remove the RED wire from the others.

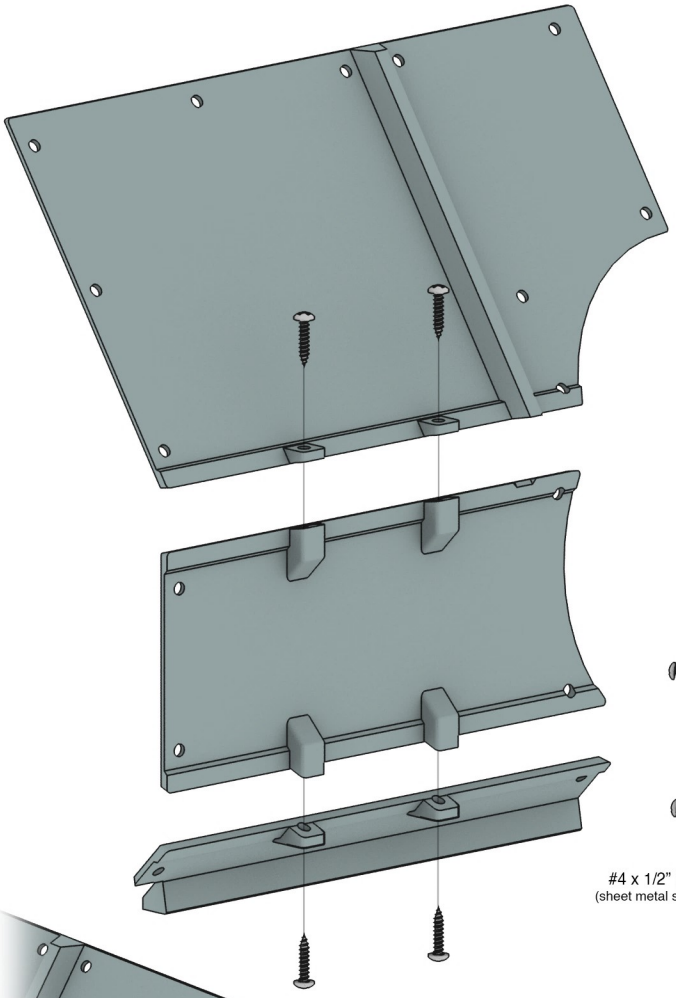


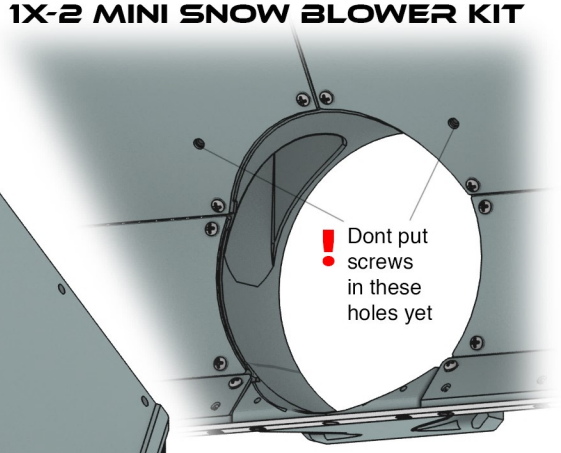
STEP 1 Start by drilling out all printed parts using the **DRILL GUIDE** page.
Next use the **CUTTING / DRILLING GUIDE** page.

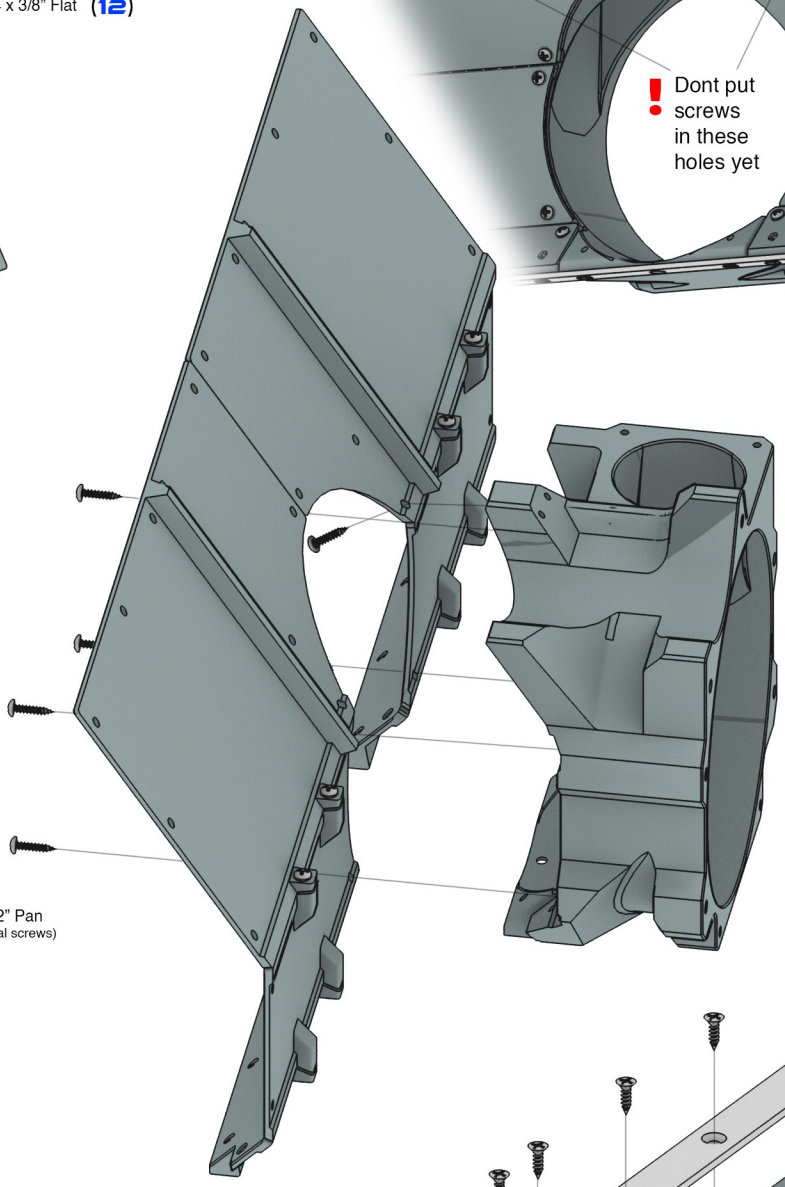
STEP 2
BODY / SCRAPER BAR


#4 x 1/2" Pan (28)

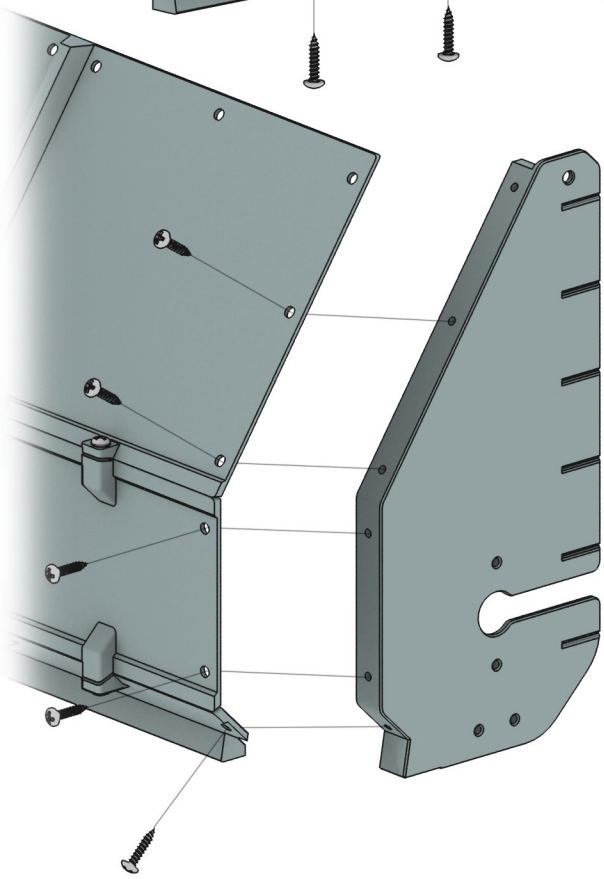

#4 x 3/8" Flat (12)

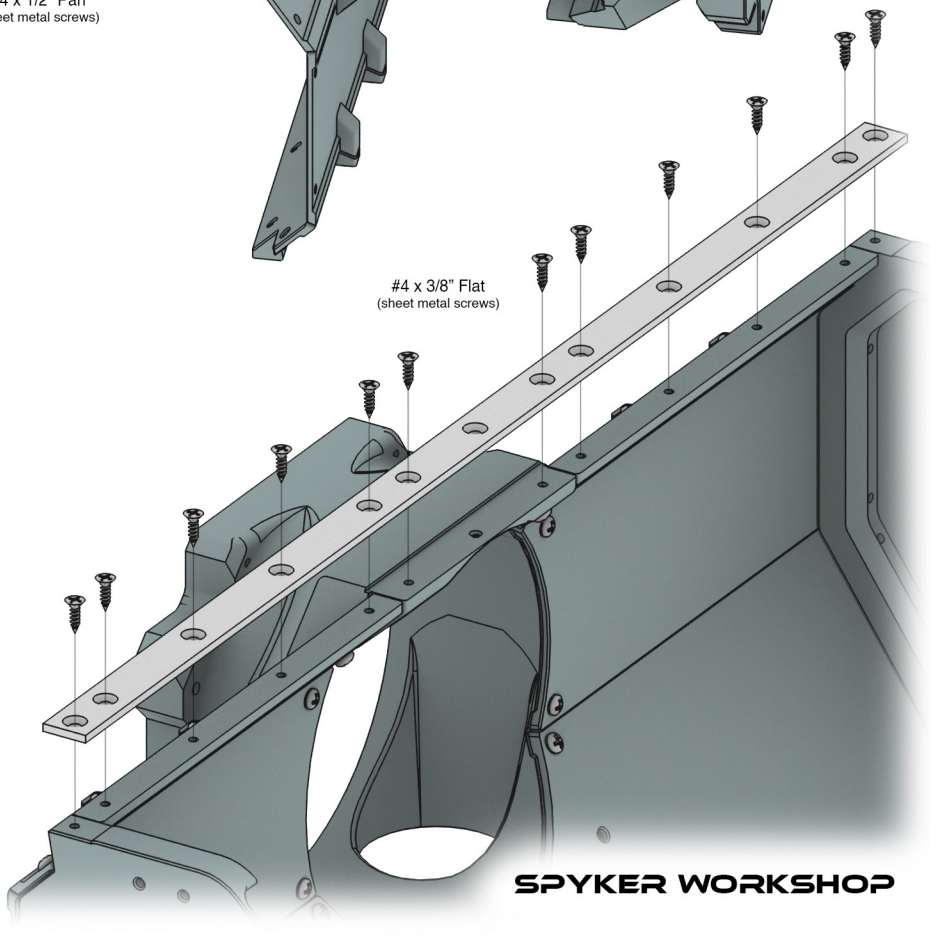






#4 x 1/2" Pan
(sheet metal screws)





#4 x 3/8" Flat
(sheet metal screws)

STEP 3

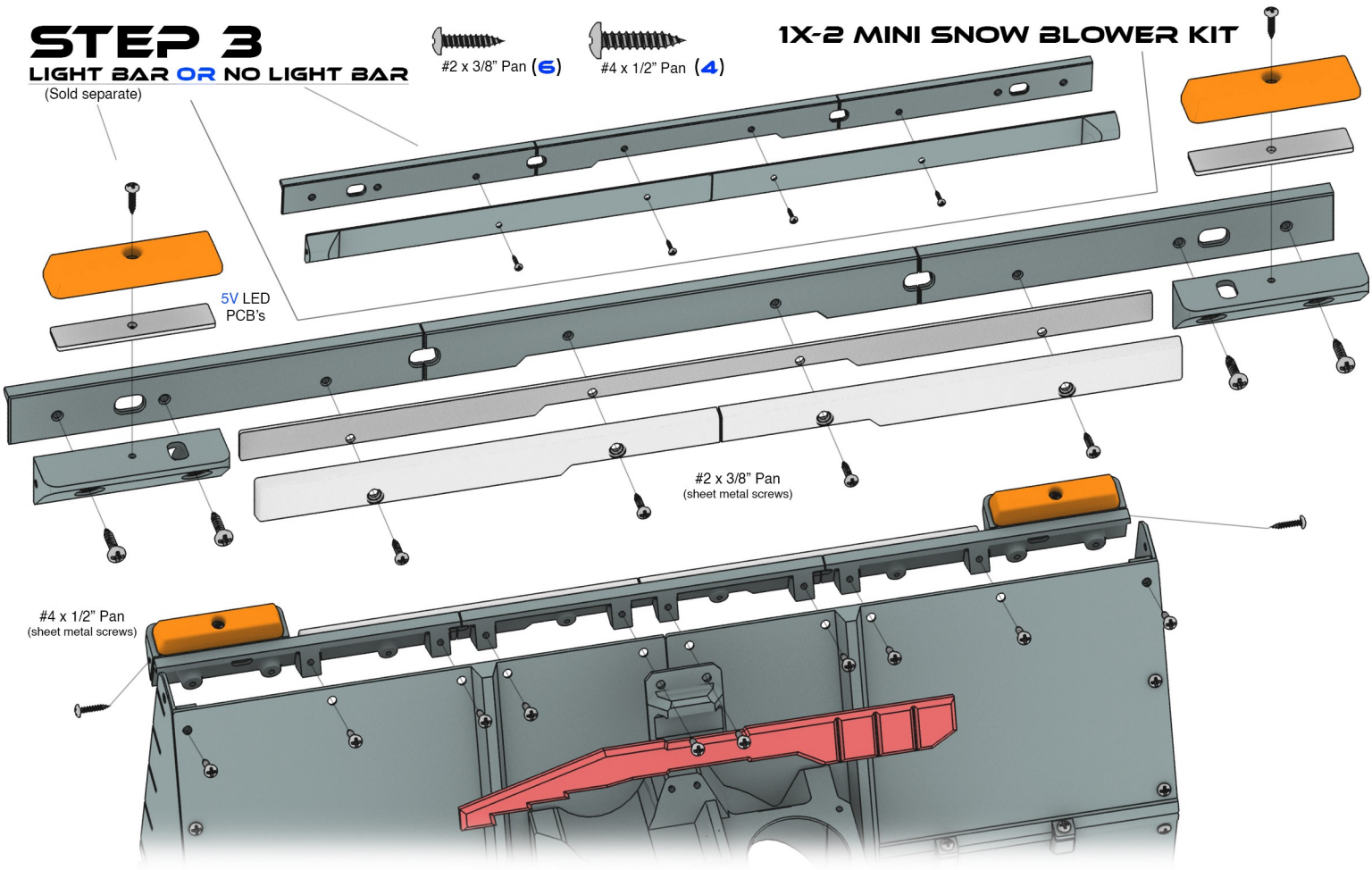
LIGHT BAR OR NO LIGHT BAR

(Sold separate)

#2 x 3/8" Pan (6)

#4 x 1/2" Pan (4)

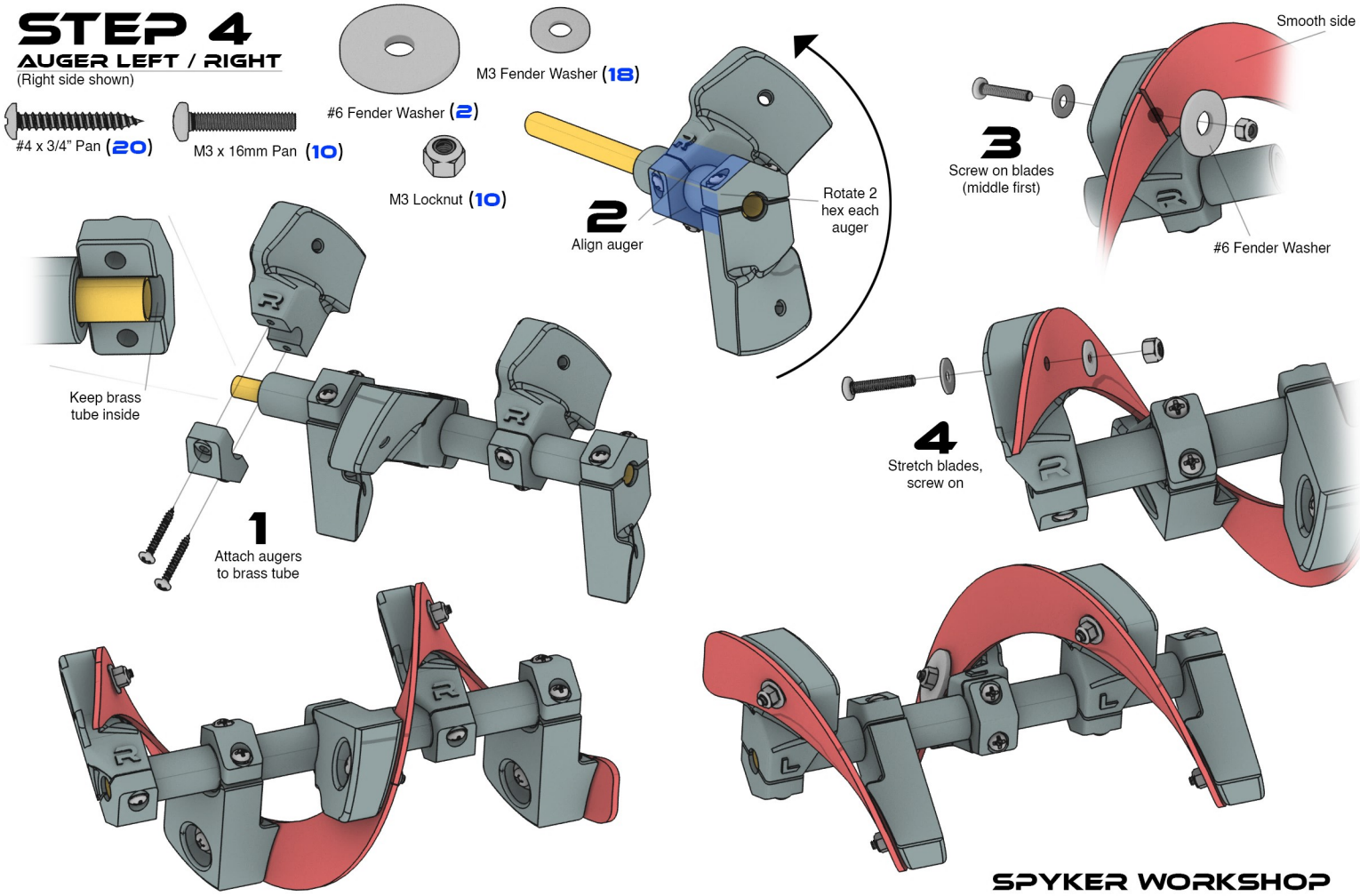
1X-2 MINI SNOW BLOWER KIT



STEP 4

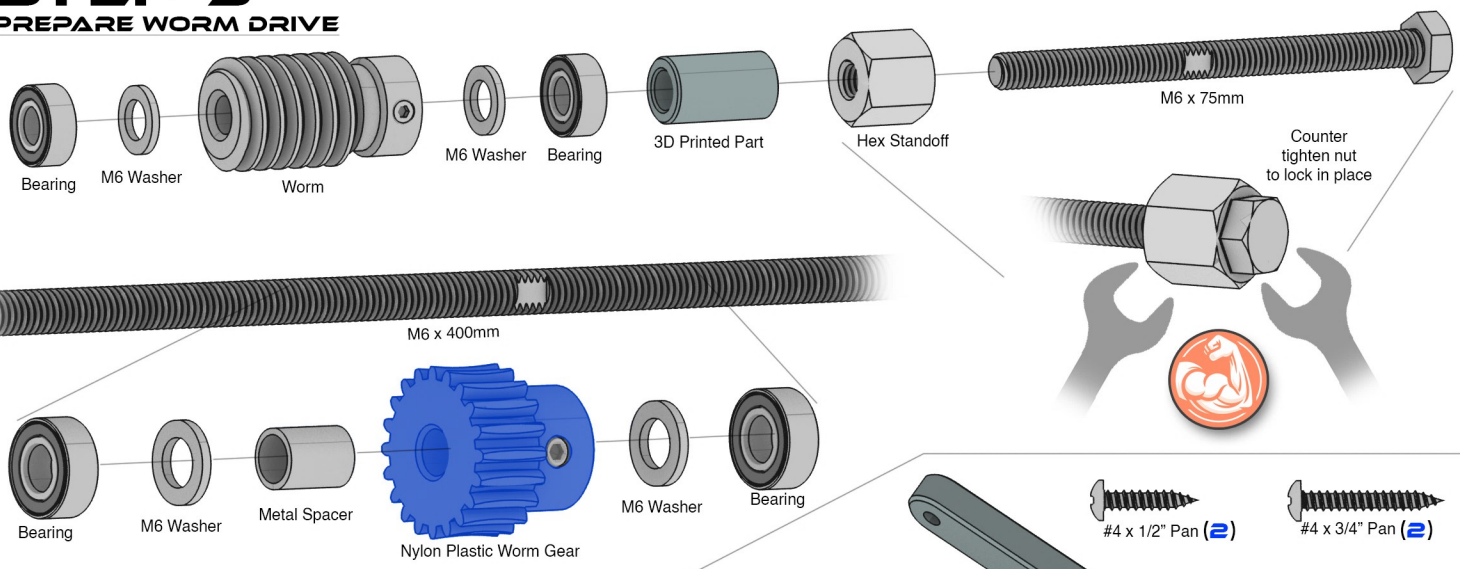
AUGER LEFT / RIGHT

(Right side shown)

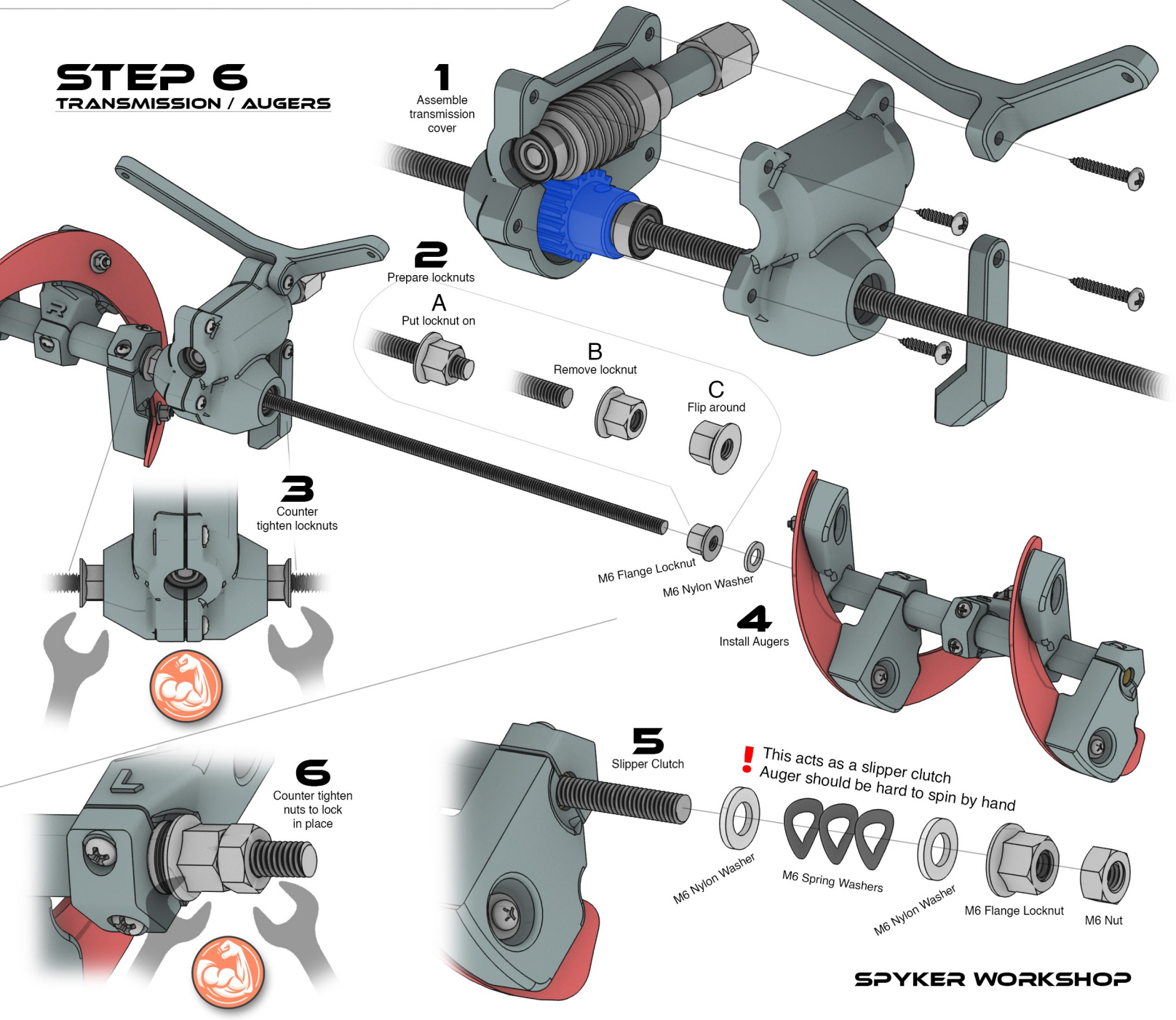


SPYKER WORKSHOP

STEP 5
PREPARE WORM DRIVE



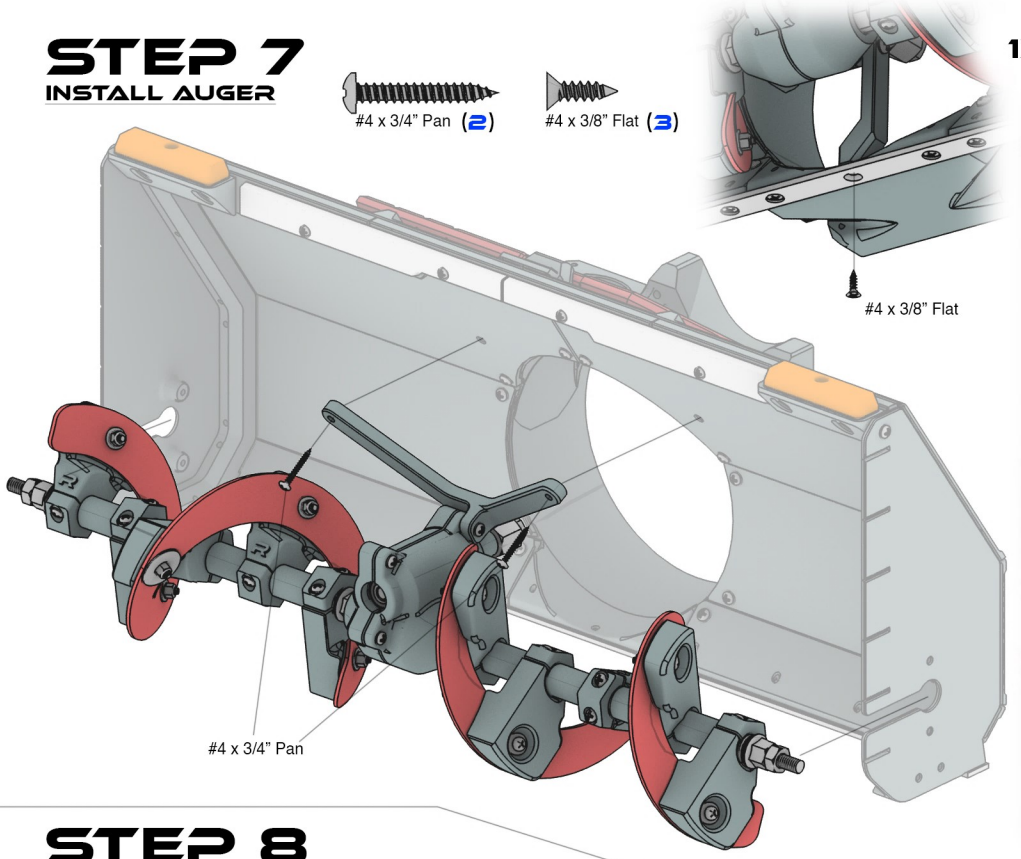
STEP 6
TRANSMISSION / AUGERS



STEP 7
INSTALL AUGER

#4 x 3/4" Pan (2)

#4 x 3/8" Flat (3)

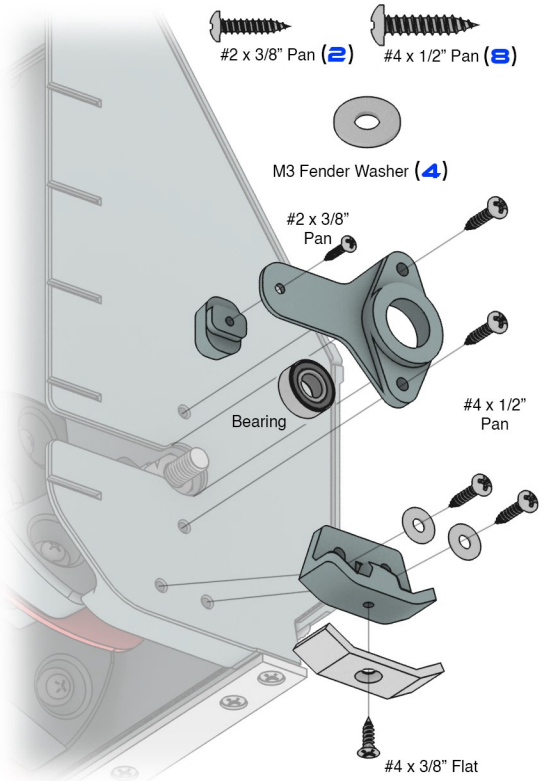


1X-2 MINI SNOW BLOWER KIT

#2 x 3/8" Pan (2)

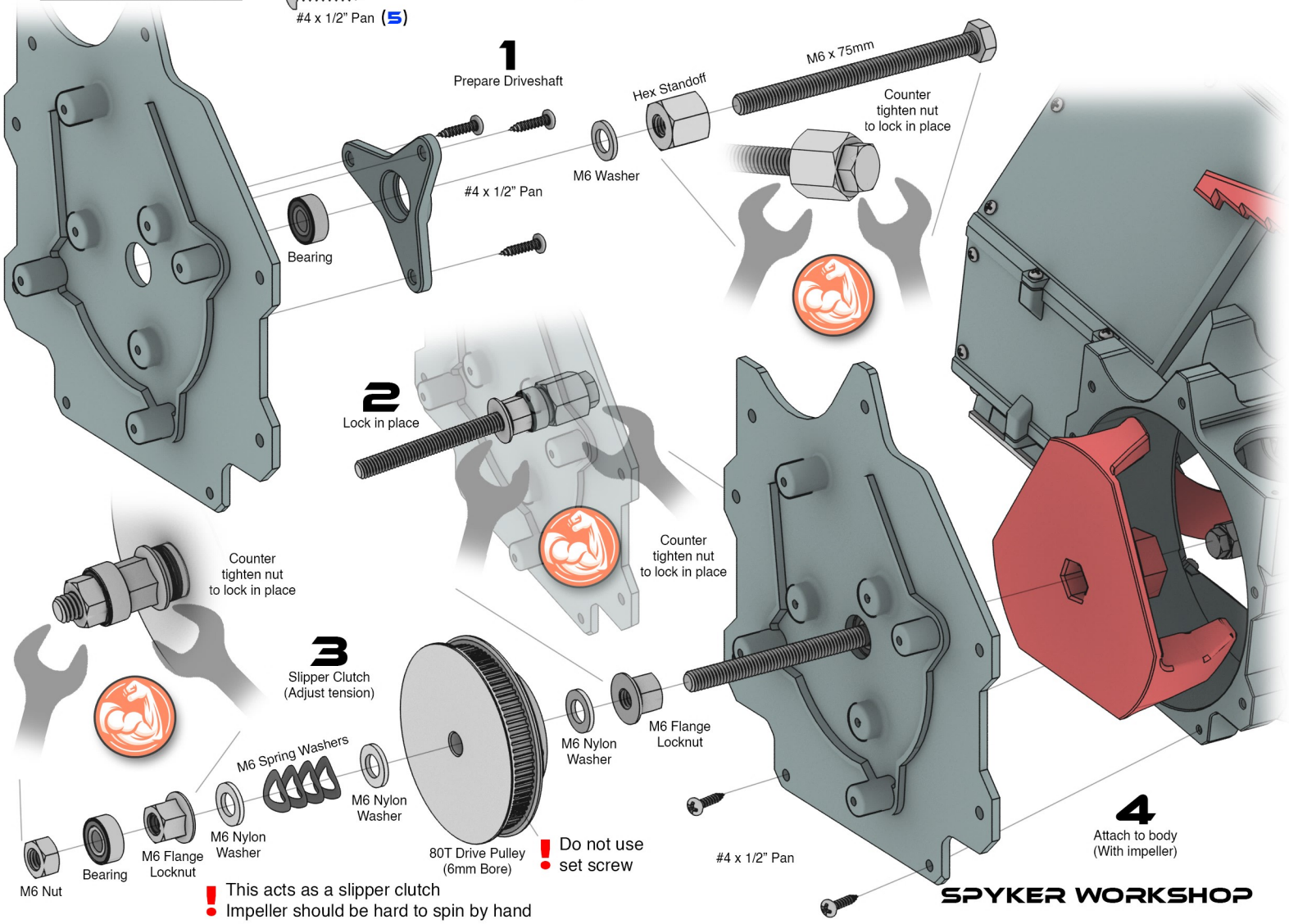
#4 x 1/2" Pan (8)

M3 Fender Washer (4)



STEP 8
IMPELLER DRIVE

#4 x 1/2" Pan (5)



! This acts as a slipper clutch
Impeller should be hard to spin by hand

SPYKER WORKSHOP

1X-2 MINI SNOW BLOWER KIT

STEP 9
MOTOR MOUNT PLATE

(CNC Aluminum Upgrade OR 3D Printed)
Sold Separate

Recommended Motors:

Brushed	Brushless
10-15k RPM MAX	1000KV MAX
775 (10-15k RPM)	Lower = Safer
540/550 (35T, 45T, 55T)	RPM = V * KV

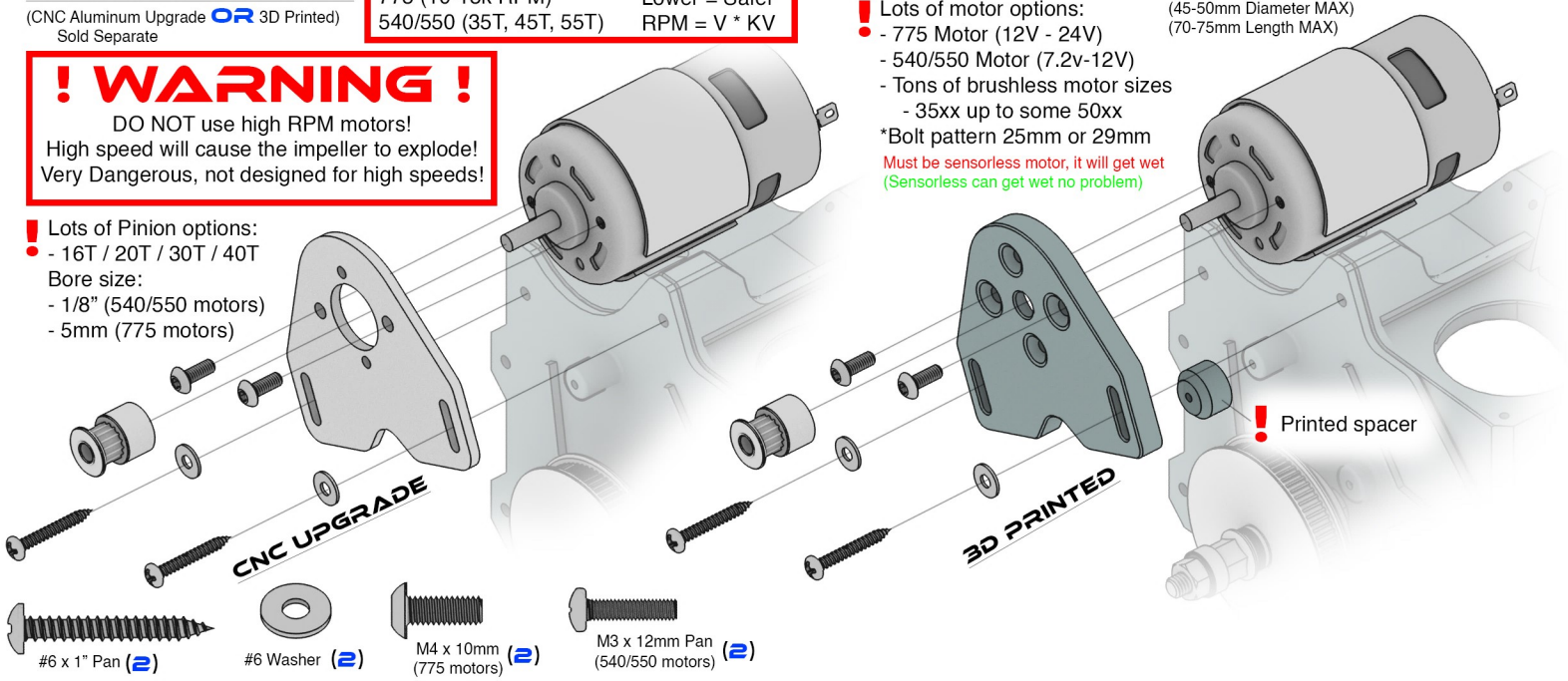
! WARNING !
DO NOT use high RPM motors!
High speed will cause the impeller to explode!
Very Dangerous, not designed for high speeds!

! Lots of Pinion options:
- 16T / 20T / 30T / 40T
Bore size:
- 1/8" (540/550 motors)
- 5mm (775 motors)

! Lots of motor options:
- 775 Motor (12V - 24V)
- 540/550 Motor (7.2v-12V)
- Tons of brushless motor sizes
  - 35xx up to some 50xx

*Bolt pattern 25mm or 29mm
Must be sensorless motor, it will get wet
(Sensorless can get wet no problem)

(45-50mm Diameter MAX)
(70-75mm Length MAX)



#6 x 1" Pan (2)
#6 Washer (2)
M4 x 10mm (775 motors) (2)
M3 x 12mm Pan (540/550 motors) (2)

STEP 10
BELT / MOTOR COVER

#4 x 1/2" Pan (9)

3 Adjust belt tension by loosening screws

Belt should be tight but not TOO tight...

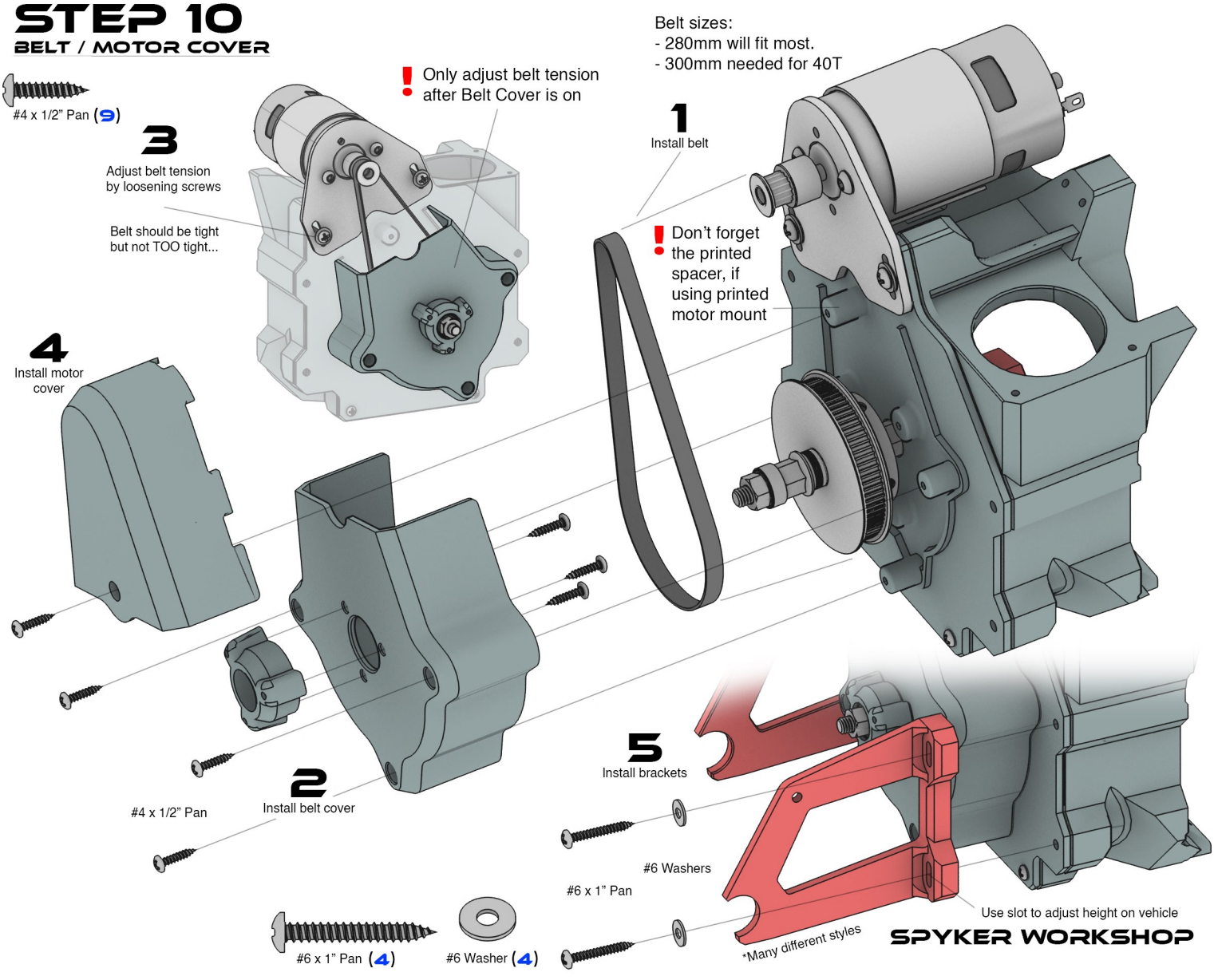
! Only adjust belt tension after Belt Cover is on

Belt sizes:
- 280mm will fit most.
- 300mm needed for 40T

1 Install belt

! Don't forget the printed spacer, if using printed motor mount

4 Install motor cover



#4 x 1/2" Pan

2 Install belt cover

5 Install brackets

#6 Washers
#6 x 1" Pan

Use slot to adjust height on vehicle

*Many different styles

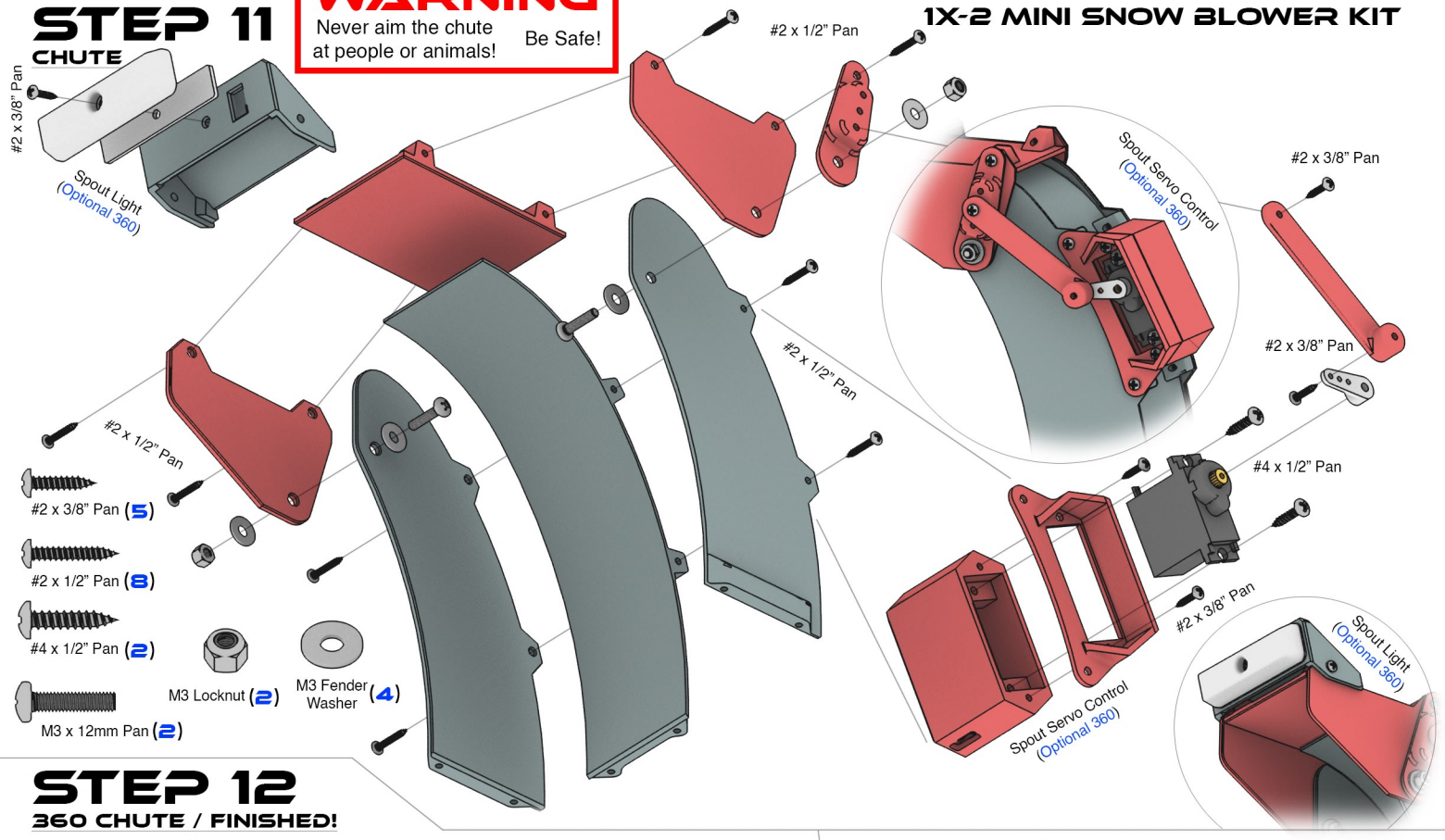
#6 x 1" Pan (4)
#6 Washer (4)

SPYKER WORKSHOP

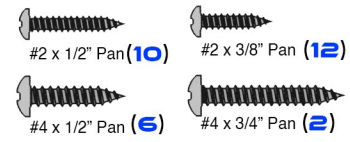
1X-2 MINI SNOW BLOWER KIT

STEP 11
CHUTE

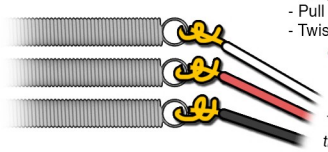
WARNING
Never aim the chute at people or animals! Be Safe!



STEP 12
360 CHUTE / FINISHED!

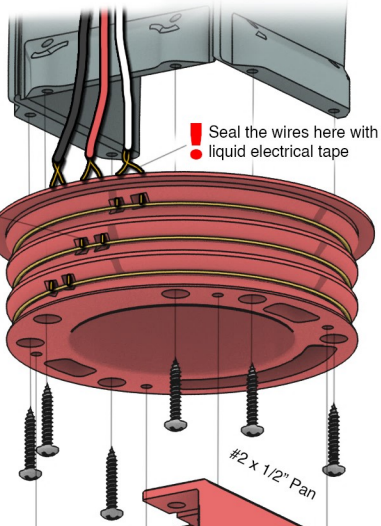


1 Loop and solder wires to spring (Optional 360)

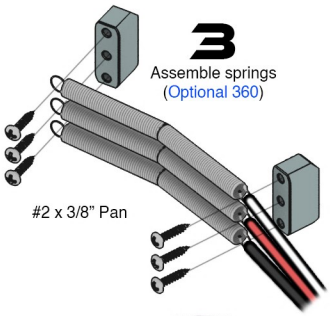


2
- Wrap brass wire around
- Pull up through slots
- Twist together, solder

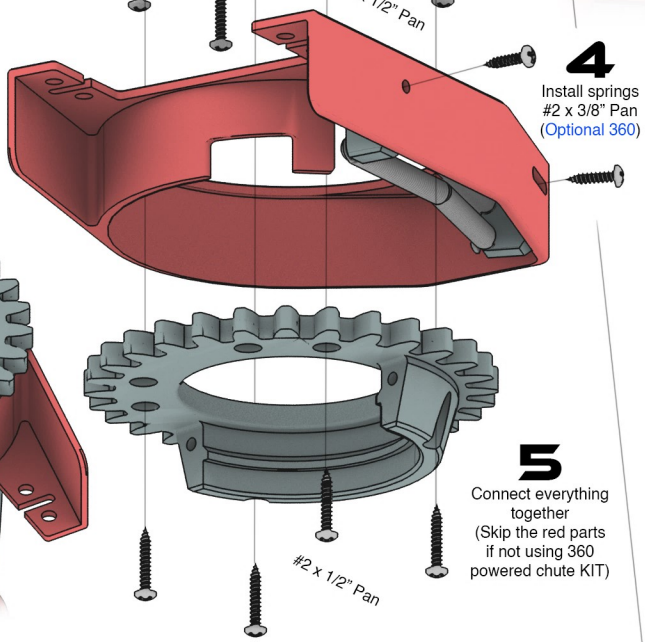
(Optional 360)

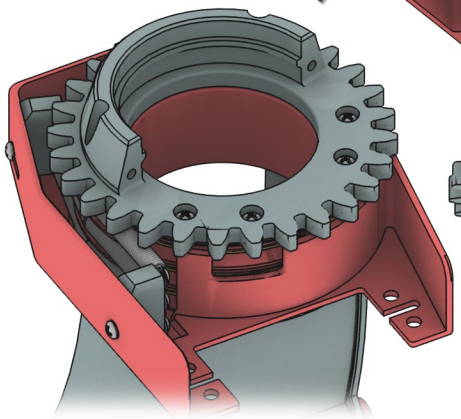


3 Assemble springs (Optional 360)



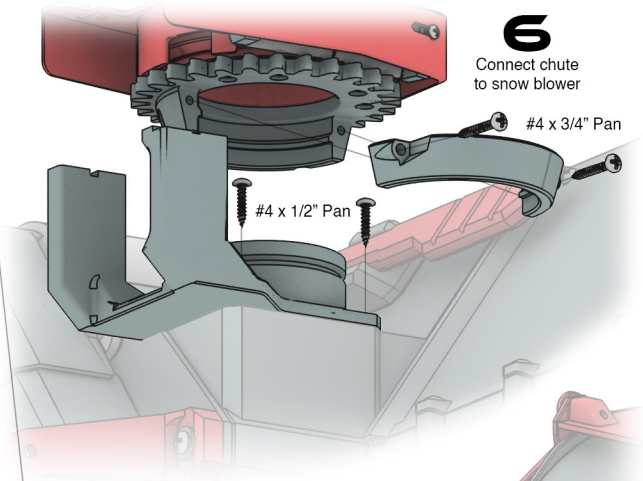
4 Install springs #2 x 3/8" Pan (Optional 360)



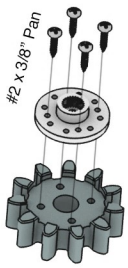


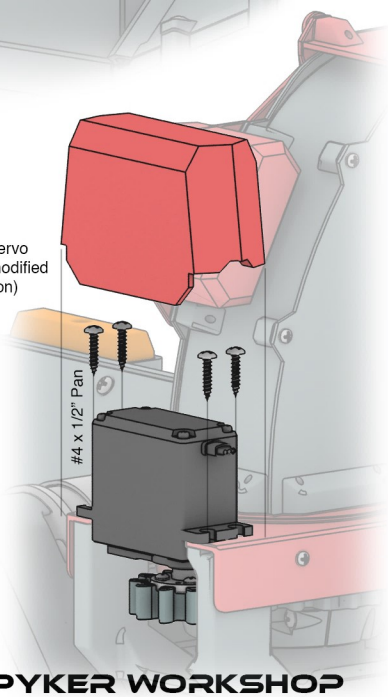
5 Connect everything together (Skip the red parts if not using 360 powered chute KIT)

6 Connect chute to snow blower



7 Attach chute servo (Servo must be modified for 360 rotation)





SPYKER WORKSHOP

HARDWARE

1X-2 MINI SNOW BLOWER KIT

This list contains all the hardware needed to build your snow blower.
Hardware kits for sale at: WWW.SPYKERWORKSHOP.COM

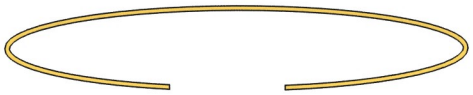
Lots of upgrades also sold, please check them out!

Scale 1:1


#2 x 3/8" Pan (12)


#2 x 1/2" Pan (6)


#4 x 1/2" Pan (2)


Solid Brass Wire 0.032"(0.8mm)(~20AWG) x 3ft (1)


Spring 2.5"(60-65mm)L x 0.188"(4-5mm)OD x 0.023"(0.5-0.6mm)wire
Extension Spring (3)

360 Powered Chute Upgrade Hardware


#2 x 3/8" Pan (20)


M6 Flange Locknut (8)
(Smooth Bottom)

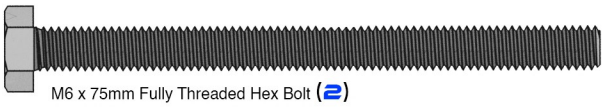

M6 Nut (4)


M6 Spring/Wave Washer (14)


M6 Nylon Washer (10)


M6 Washer (6)
(Thick)


#2 x 1/2" Pan (20)

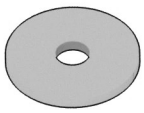

M6 x 75mm Fully Threaded Hex Bolt (2)


6mm x 13mm x 5mm Bearing (8)
(MR686-2RS)


#4 x 3/8" Flat (20)

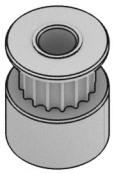

#6 Washer (8)


#4 x 1/2" Pan (80)

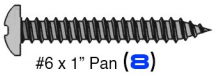

#6 Fender Washer (2)

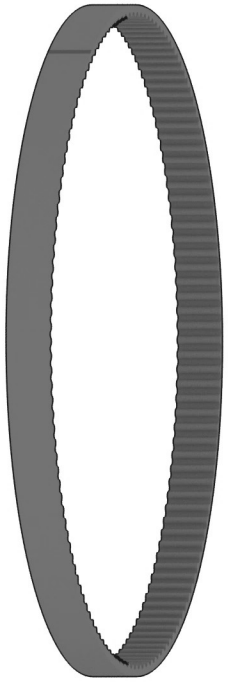

Metal Spacer
8mm OD x 6mm ID
10mm Long (1)


13mm Hex Standoff
12mm Long
M6 Thread (2)


GT2 16T / 20T / 30T Pulley
5mm / 3.175mm(1/8") Bore (1)
(40T Pulley Requires 300mm Belt)

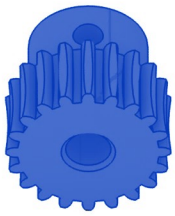

#4 x 3/4" Pan (28)


#6 x 1" Pan (8)


GT2 280mm Belt
(140T) 6mm Wide (1)


M3 x 12mm Pan (4)


M3 Fender Washer (36)

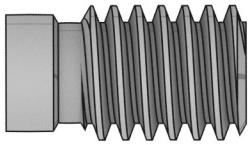

1M (Module) 20Teeth
Nylon Plastic Worm Gear
6mm Bore (1)

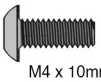

GT2 80T Pulley 6mm Bore (1)


M3 x 16mm Pan (12)


M3 Locknut (14)


M4 x 5mm Set Screw (5)


1M (Module)
Steel Worm
6mm Bore (1)


M4 x 10mm Button (10)

See 'Cutting/Drilling Guide' page.
(Not to scale)

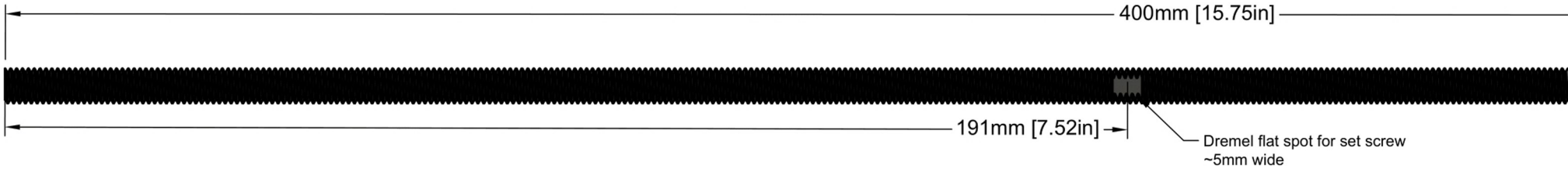

Aluminum Bar - 1/2" x 3/32" x 1.5ft (1)


M6 x 400mm Threaded Rod (1)

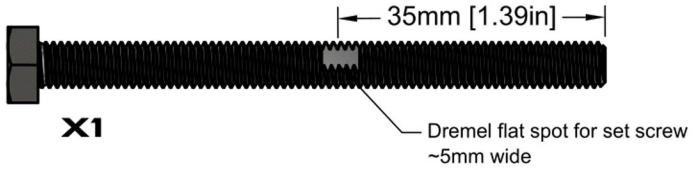

Brass Tube 6mm ID 7mm OD x 300mm (1)

CUTTING/DRILLING GUIDE

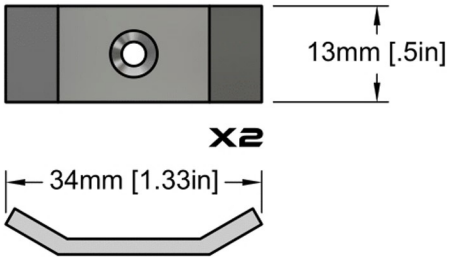
M6 Threaded Rod



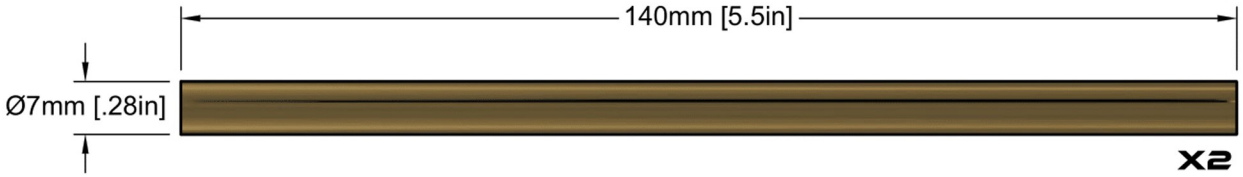
M6 x 75mm Hex Bolt (Fully Threaded)

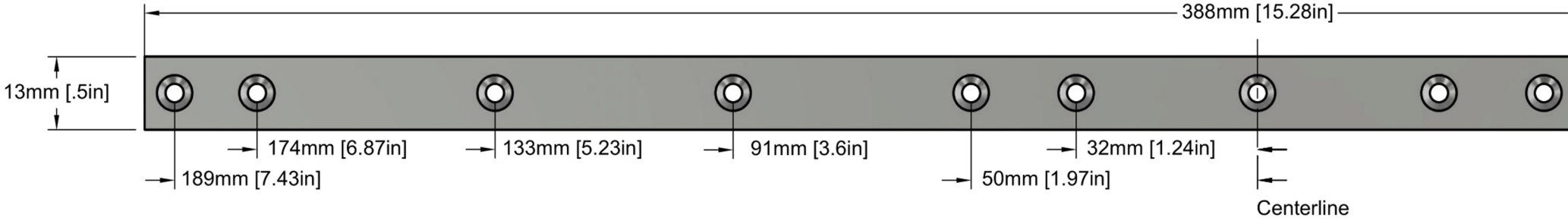


$\frac{1}{2}$" x $\frac{3}{32}$" Aluminum Bar (Need 450mm/1.5ft)



7mm OD 6mm ID Brass Tube (Need 300mm/1ft)





1X-2 MINI SNOW BLOWER KIT

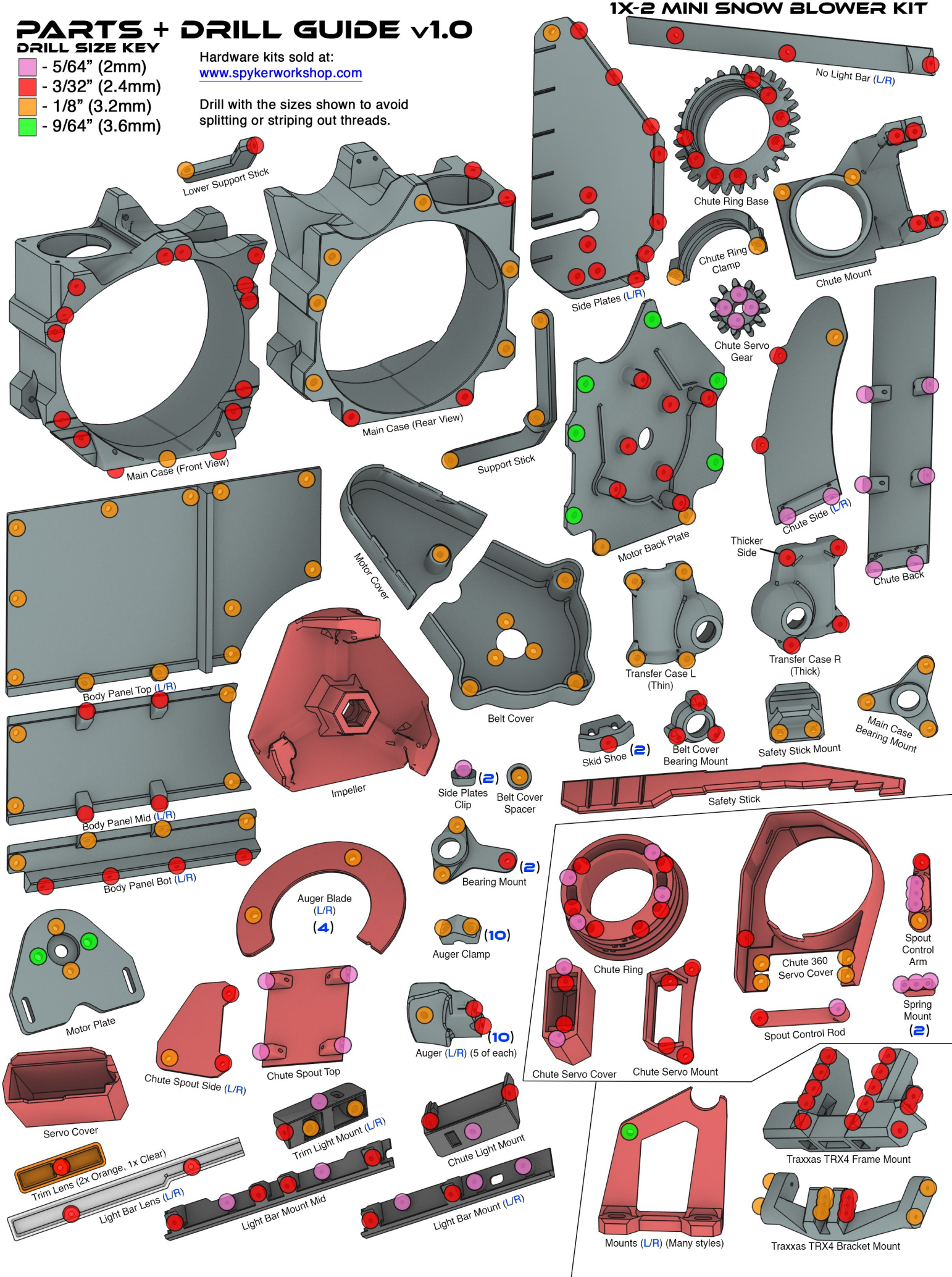
PARTS + DRILL GUIDE v1.0

DRILL SIZE KEY

- 5/64" (2mm)
- 3/32" (2.4mm)
- 1/8" (3.2mm)
- 9/64" (3.6mm)

Hardware kits sold at:
www.spykerworkshop.com

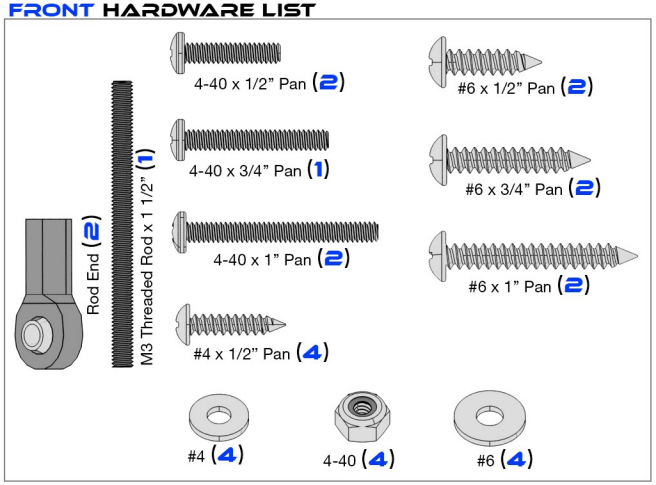
Drill with the sizes shown to avoid splitting or striping out threads.



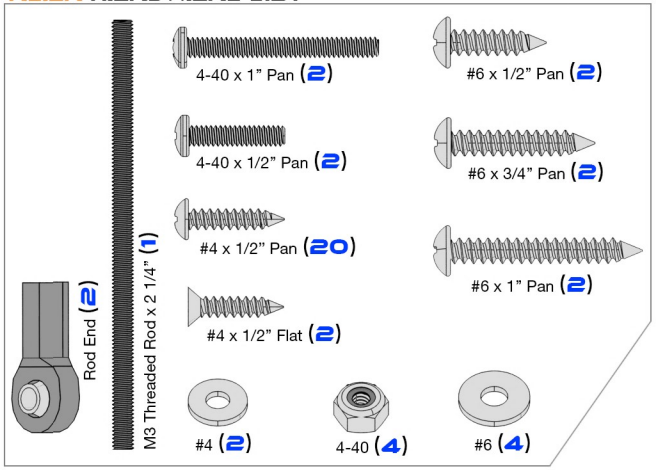
FRONT / REAR MOUNT

MANUAL FOR KYOSHO BLIZZARD SR / FR

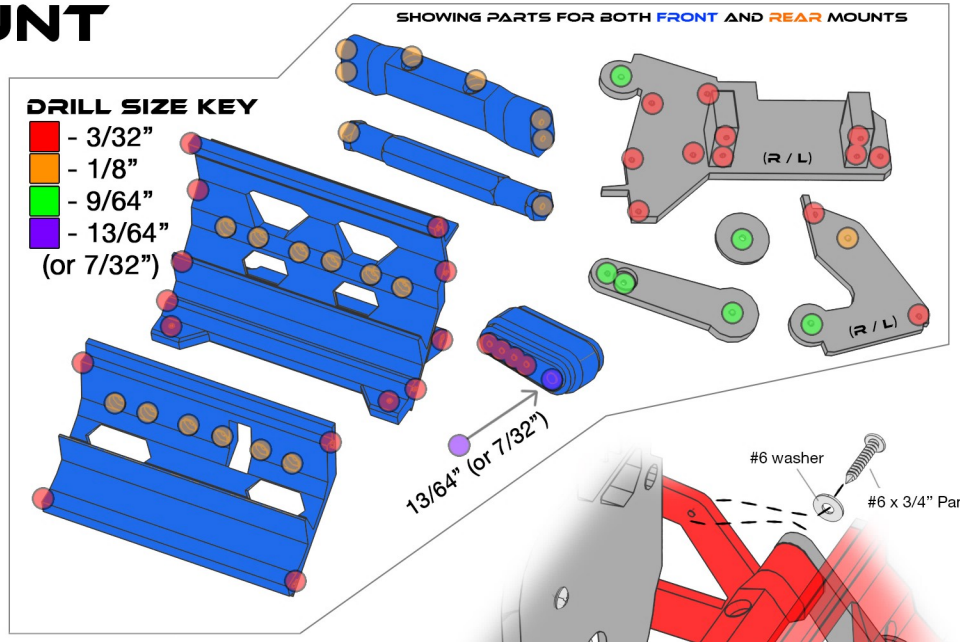
FRONT HARDWARE LIST

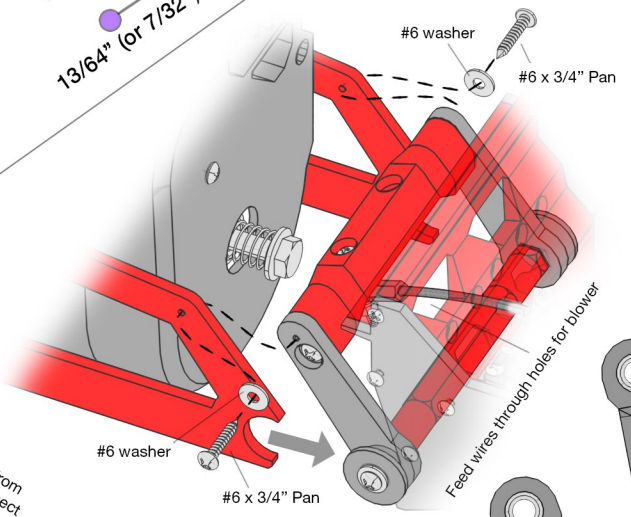


REAR HARDWARE LIST



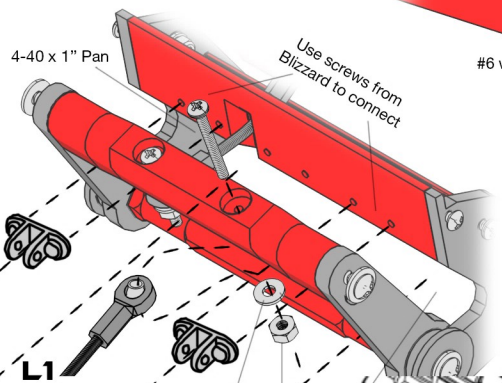
SHOWING PARTS FOR BOTH FRONT AND REAR MOUNTS





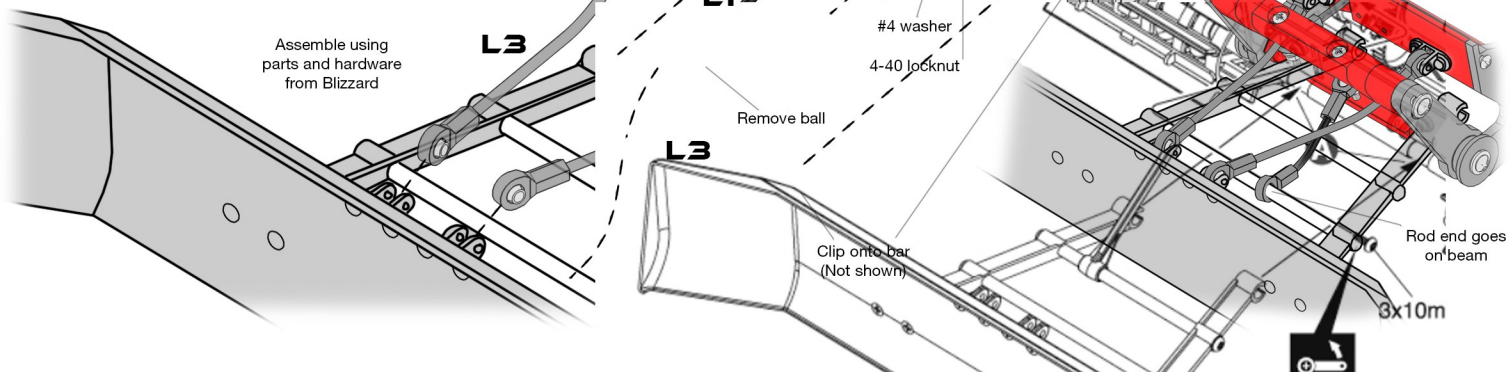
CONNECT SNOW BLOWER

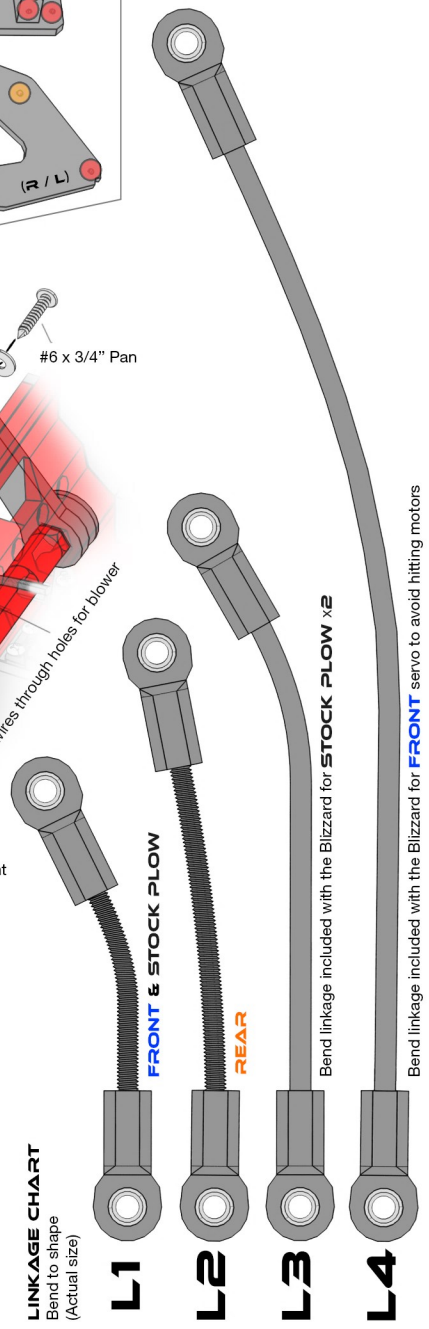
Works on the FRONT or REAR mount



CONNECT BLIZZARD PLOW

You can attach the plow on either the FRONT or REAR mount





SPYKER WORKSHOP

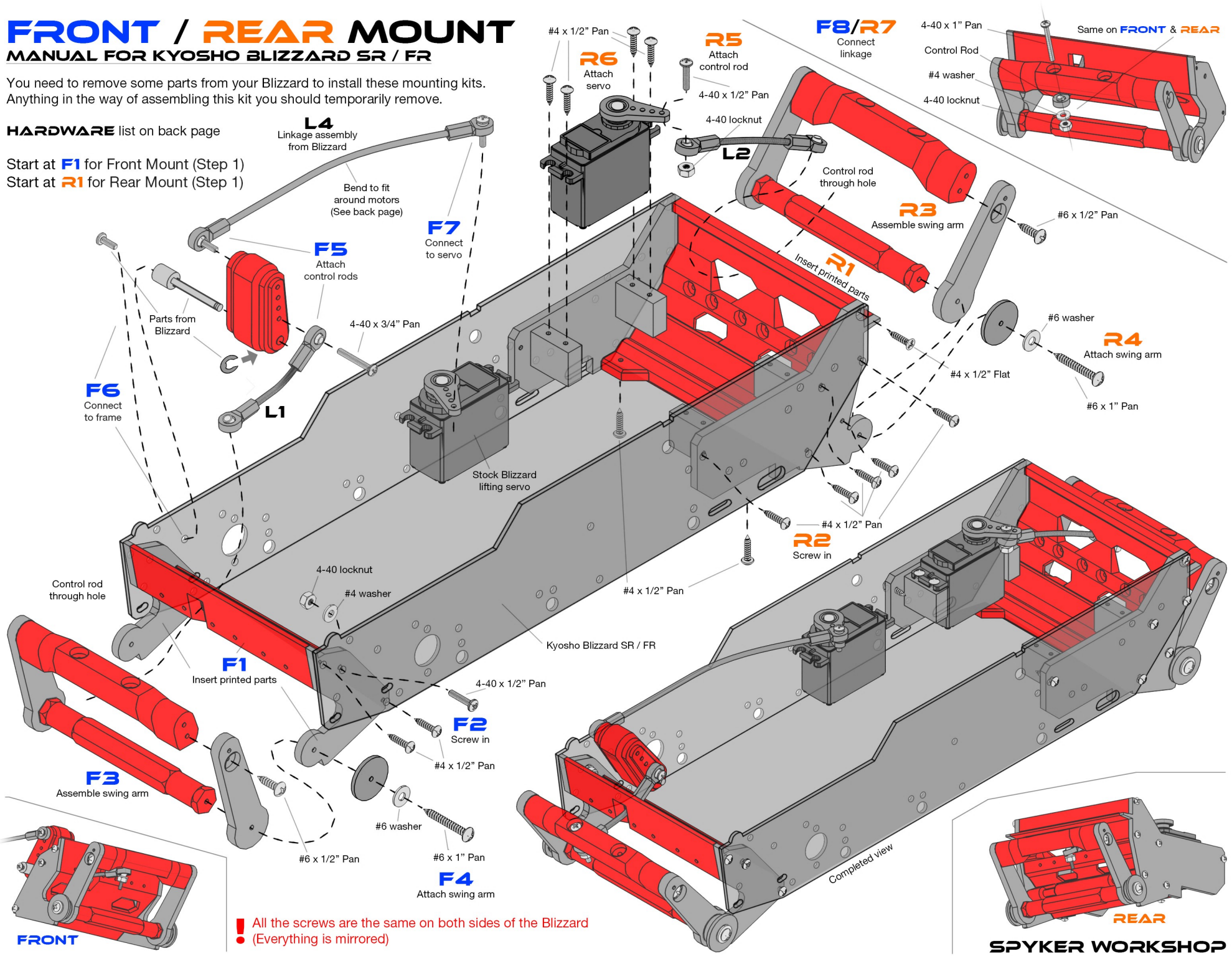
FRONT / REAR MOUNT

MANUAL FOR KYOSHO BLIZZARD SR / FR

You need to remove some parts from your Blizzard to install these mounting kits.
Anything in the way of assembling this kit you should temporarily remove.

HARDWARE list on back page

Start at **F1** for Front Mount (Step 1)
Start at **R1** for Rear Mount (Step 1)



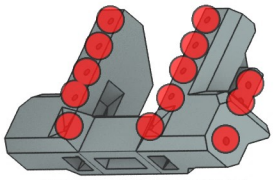
! All the screws are the same on both sides of the Blizzard
(Everything is mirrored)

SPYKER WORKSHOP

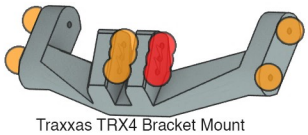
1X-2 MINI SNOW BLOWER
TRAXXAS TRX-4 MOUNT GUIDE

DRILL SIZE KEY

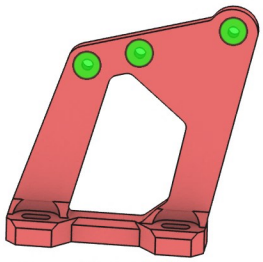
- 3/32”
- 1/8”
- 9/64”



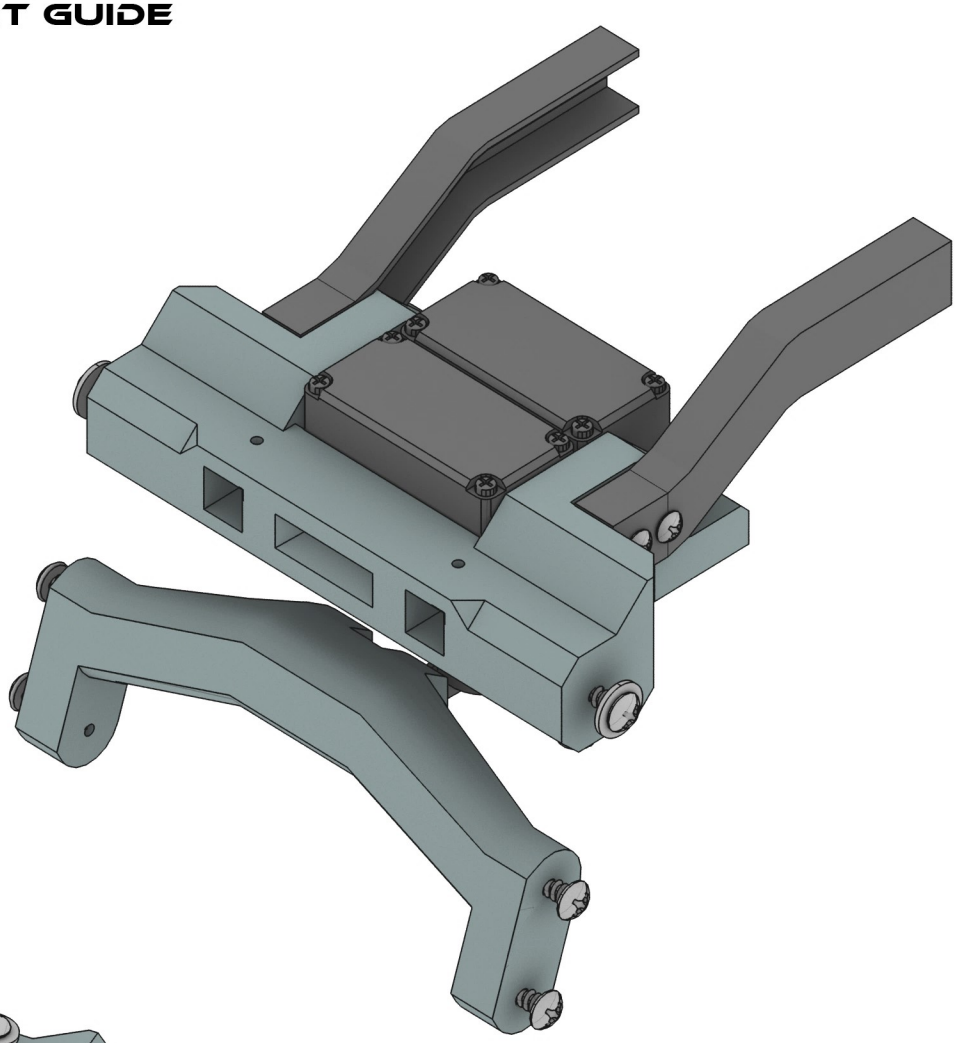
Traxxas TRX4 Frame Mount

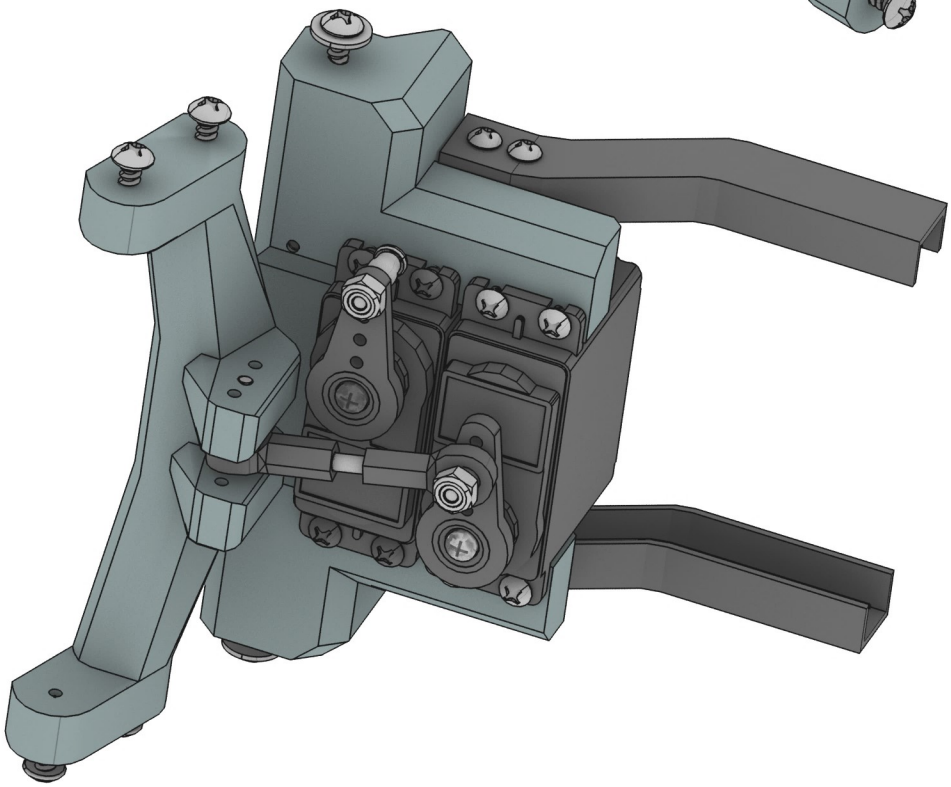


Traxxas TRX4 Bracket Mount



Traxxas Bracket (L/R)





SPYKER WORKSHOP