

Universal Mark-II 4K (UHD) Upgrade Instructions

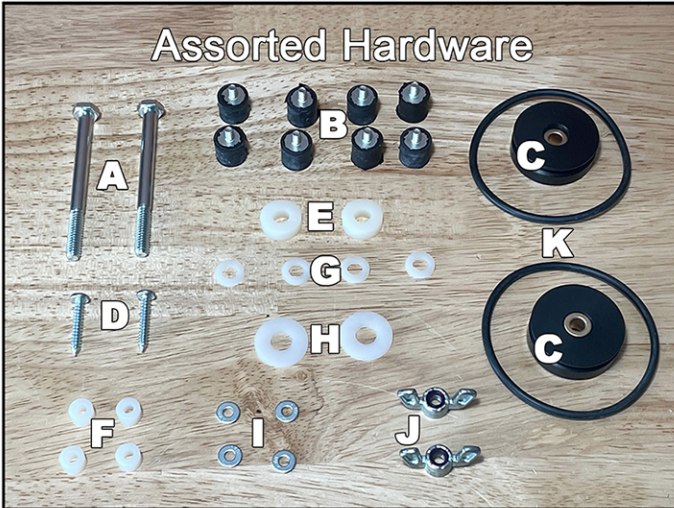
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5 LIGHT-PIN

5 LIGHT-PIN

Carefully unpack, separate, and locate the items seen here.

Assorted Hardware

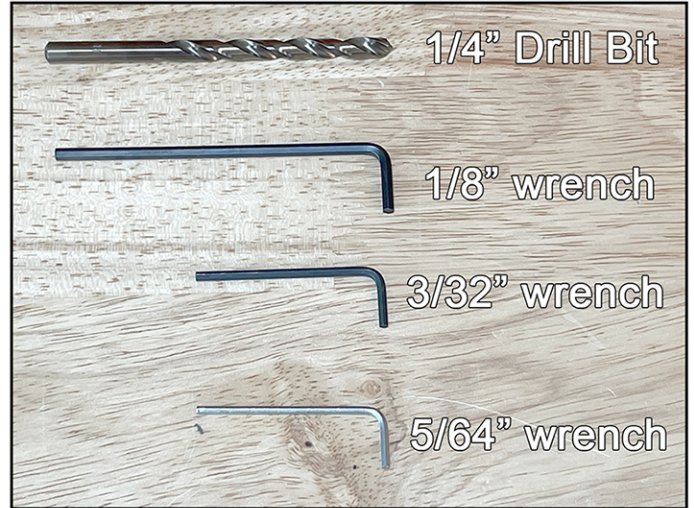


1/4" Drill Bit

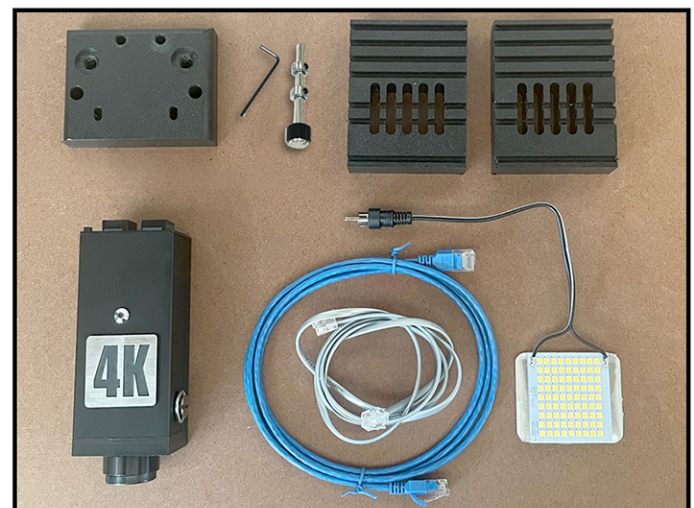
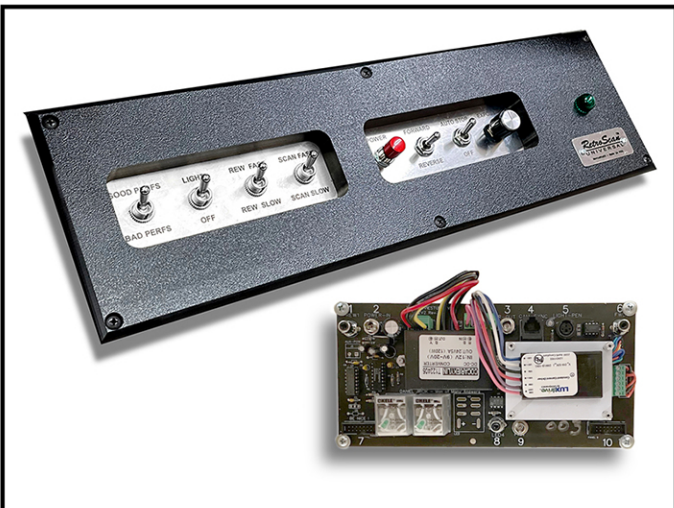
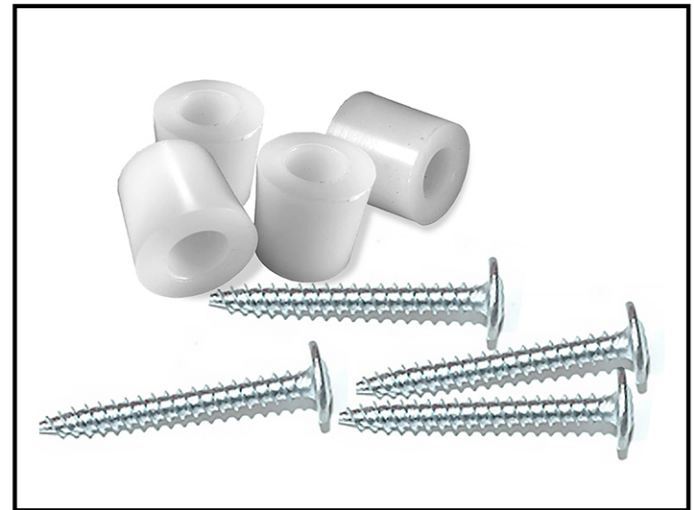
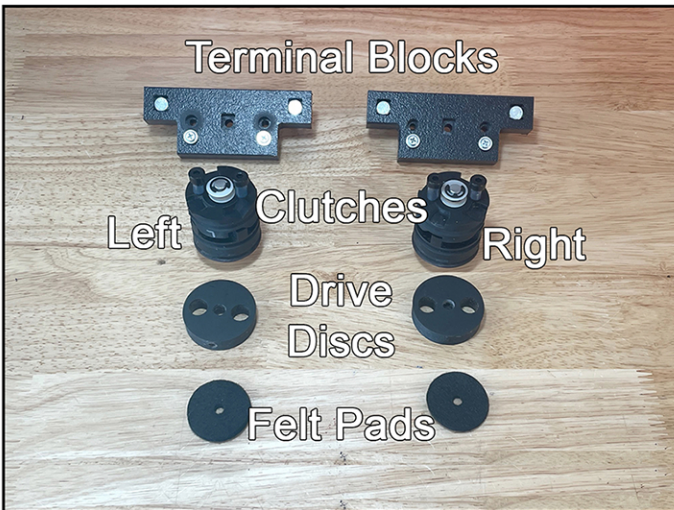
1/8" wrench

3/32" wrench

5/64" wrench



Terminal Blocks

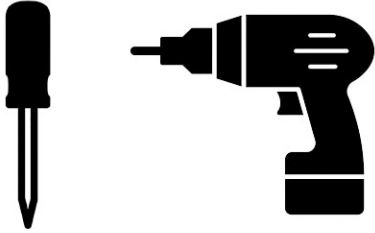


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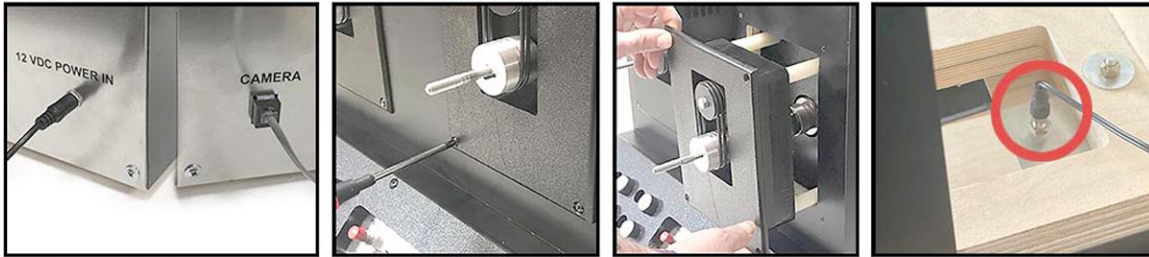
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The MovieStuff Universal Mark-II 4K (UHD) upgrade kit consists of a variety of components. Beyond the new, higher resolution camera, there are changes to the motor drive assemblies as well as the gate assemblies and light source. The total amount of time required to install the upgrade kit should be about an hour, maybe less, depending on your familiarity with tools.

Please note that, after installation, all removed components must be returned to MovieStuff, LLC. Instructions for the return, as well as the specific address, are found at the end of the instructions.



To proceed with the installation of the new Mark-II 4K (UHD) upgrade kit, you will need a long #2 Medium Phillips Screwdriver and also a light duty electric hand drill. All other tools will be provided in the kit.



The first step is to remove the two motor assemblies. To do this, unplug all cables from the back of the unit. Then remove the 4 corner screws on each motor assembly and gently pull them from the chassis. You must also unplug the motor cable (circled in red) from inside the main housing. If your motors are in the Motor Extension Kit, you will need to remove the two blank front panels to access the motor cable plugs. Once the motor assemblies are removed, place both motor assemblies on a convenient, clean and level work surface.

Over the years, the Mark-II has employed several different clutches in its motor assemblies. Before proceeding with replacement of the clutches and the installation of your Upgrade Kit, you will need to determine which clutch type is in your unit. Carefully compare the clutch in your motor assemblies to the clutches below and jump to the page number indicated for instructions on how to safely remove the existing clutches (if needed).



Page 3



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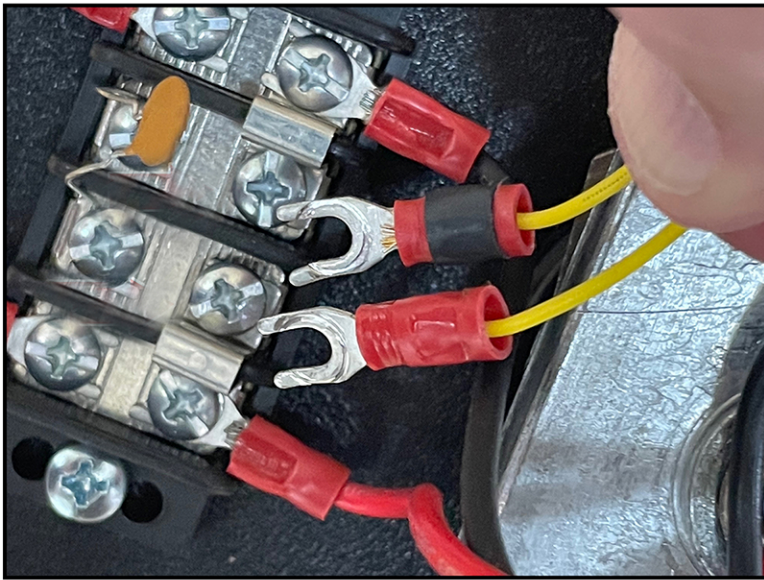
Page 9



Page 12
(replacement not needed)

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Using a #2 medium Phillips screw driver, disconnect all cables from the existing terminal block.



Then remove the screws holding terminal block to motor assembly.



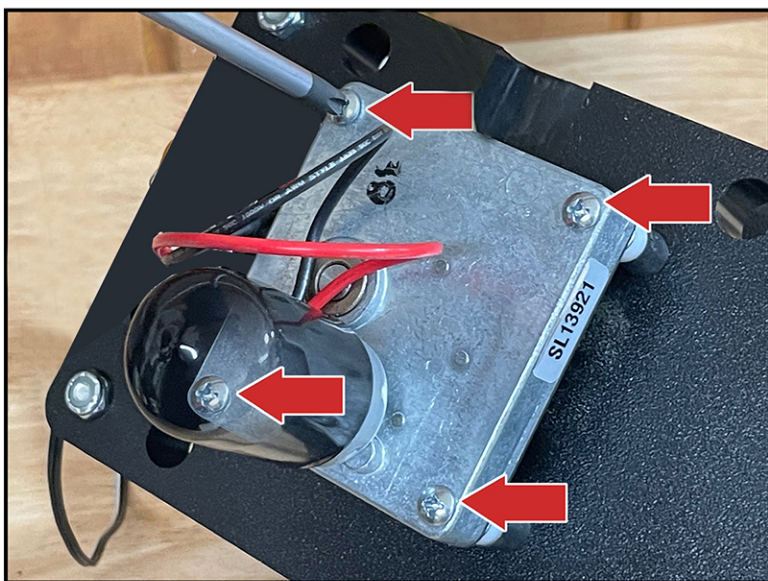
Remove existing terminal block

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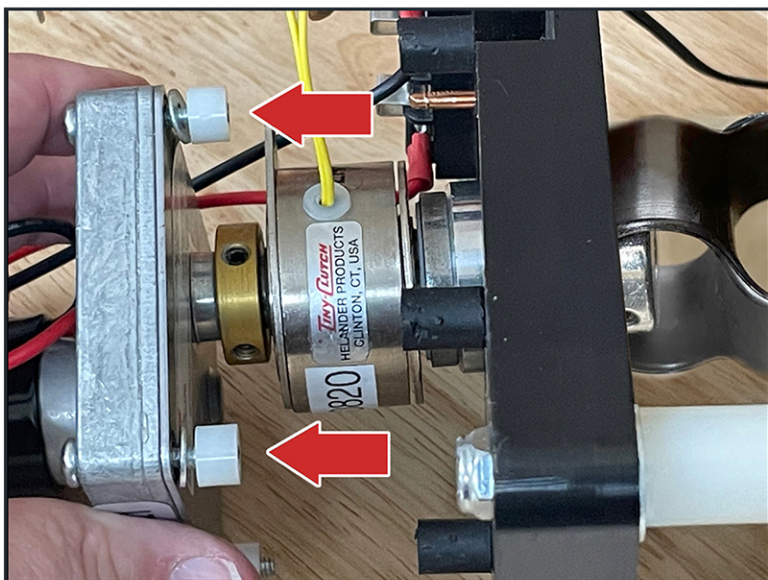


Using the provided 3/32" hex wrench, loosen the set screw on the flex joint.



Using #2 medium Phippips screw driver, remove screws holding motor in place. Do not lose the screws or the spacers!

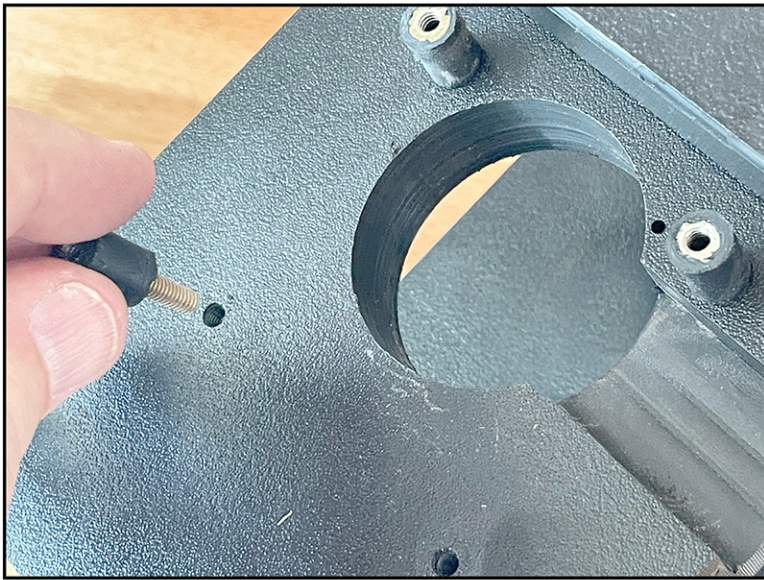
NOTE: The take up and rewind motors are different. Be sure to keep them separated.



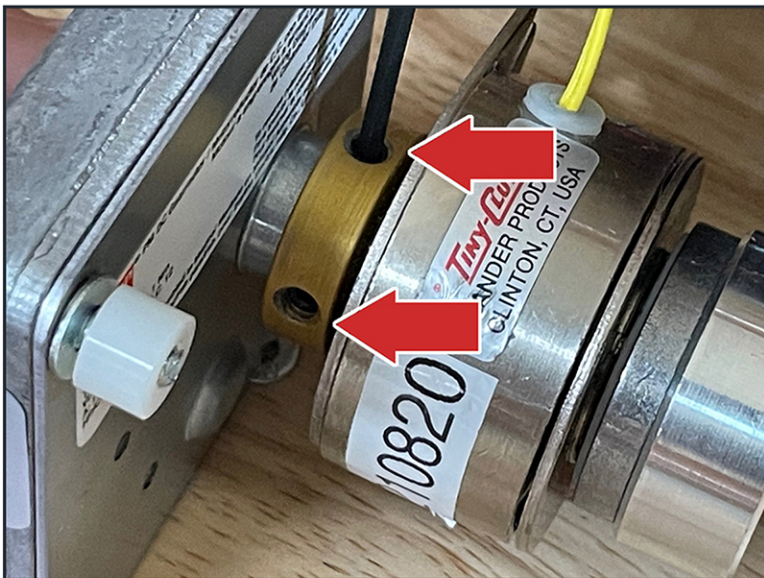
Pull the motor/clutch assembly from the platform.

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Remove the existing rubber isolation motor mounts.



Using the provided 3/32" hex wrench, loosen both set screws on the collar of the existing clutch.

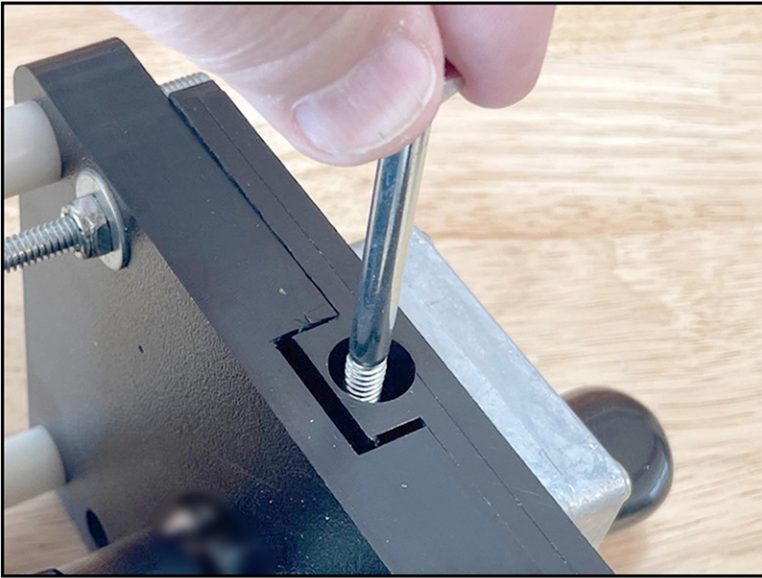


Remove the clutch from the motor shaft.

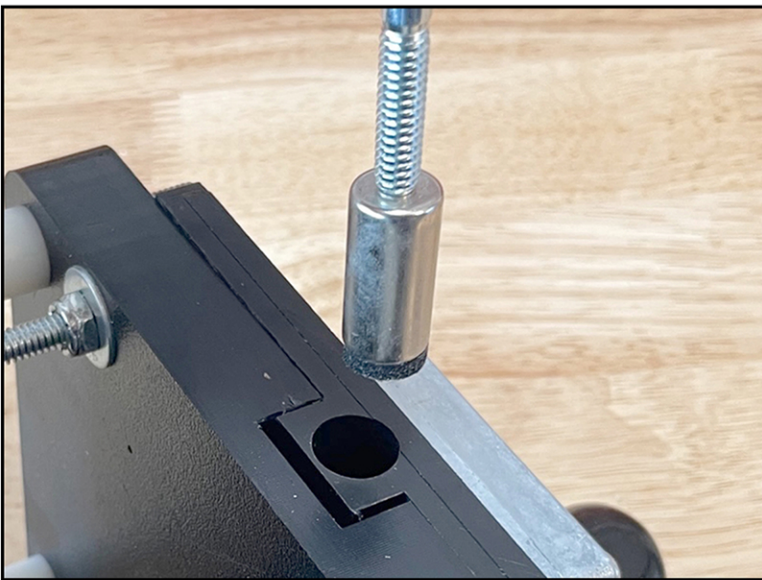
Proceed to page 12.

Universal Mark-II 4K (UHD) Upgrade Instructions

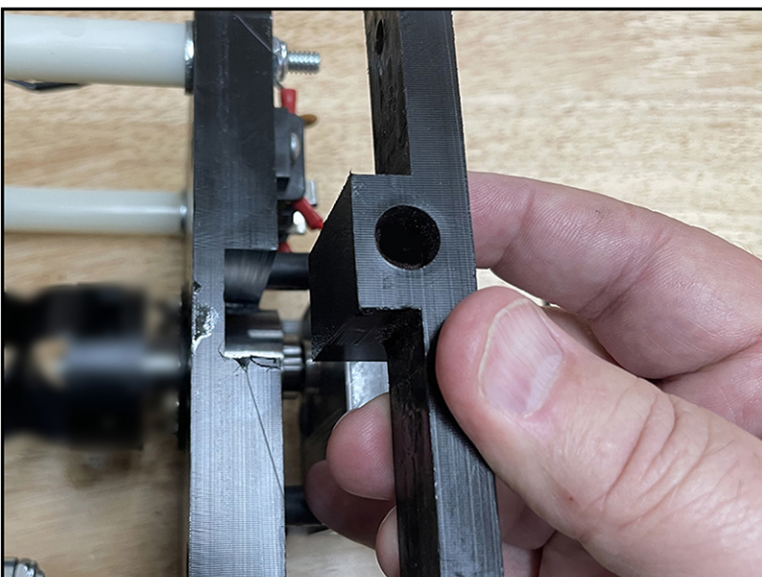
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Use provided bolt or any other convenient steel shaft and insert into magnet bracket.



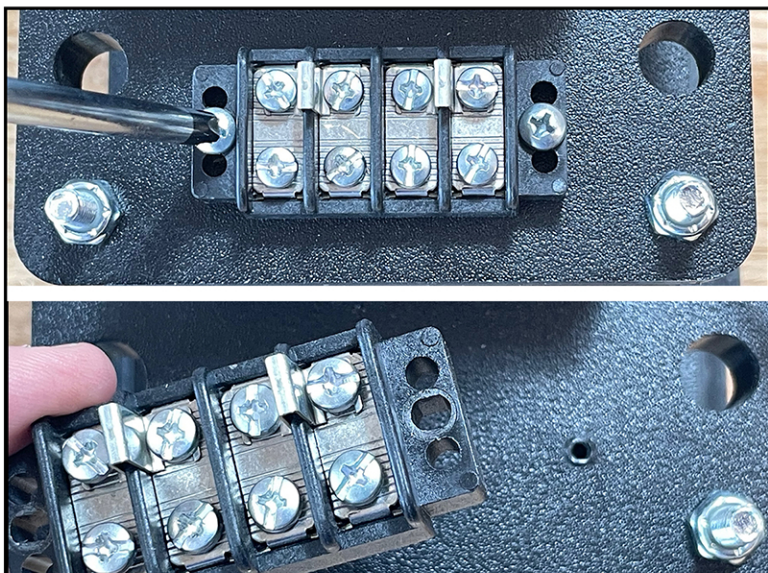
Remove magnet.



Using a #2 medium Philips screw driver, remove the screws and magnet bracket from the motor assembly.

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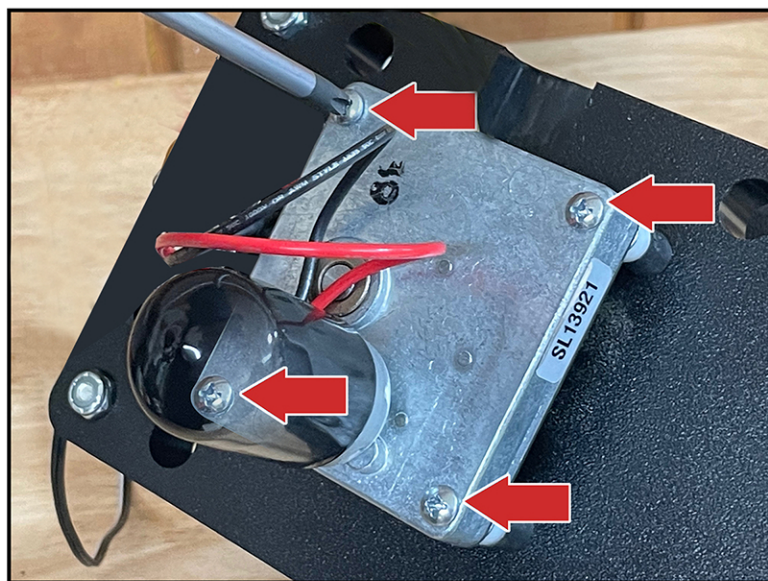
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Using a #2 medium Philips screw driver, disconnect all cables from the existing terminal block.

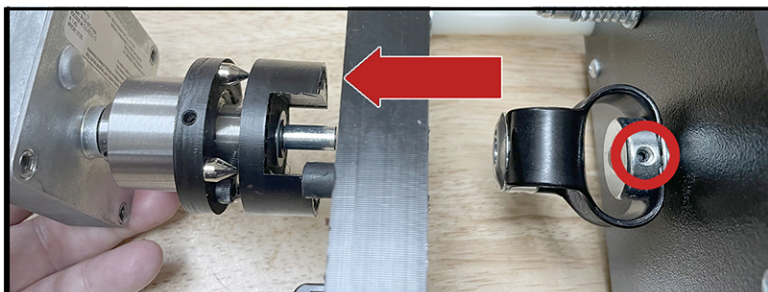
Then remove screws holding terminal block to motor assembly.

Remove existing terminal block.



Remove all 4 screws holding motor in place. Do not lose the screws or the spacers!

NOTE: The take up and rewind motors are different. Be sure to keep them separated.



Gently pull the motor from the assembly.

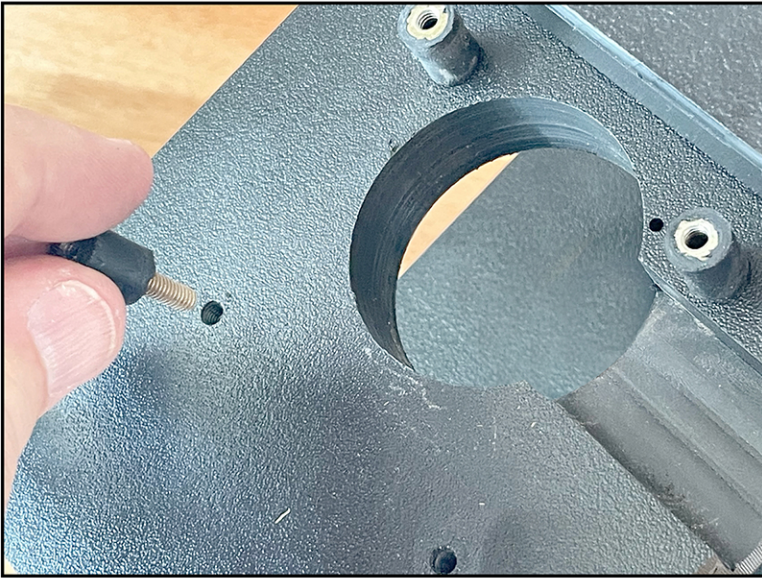
Using the provided 3/32" hex wrench, loosen the set screw circled in red that holds the flex joint in place.



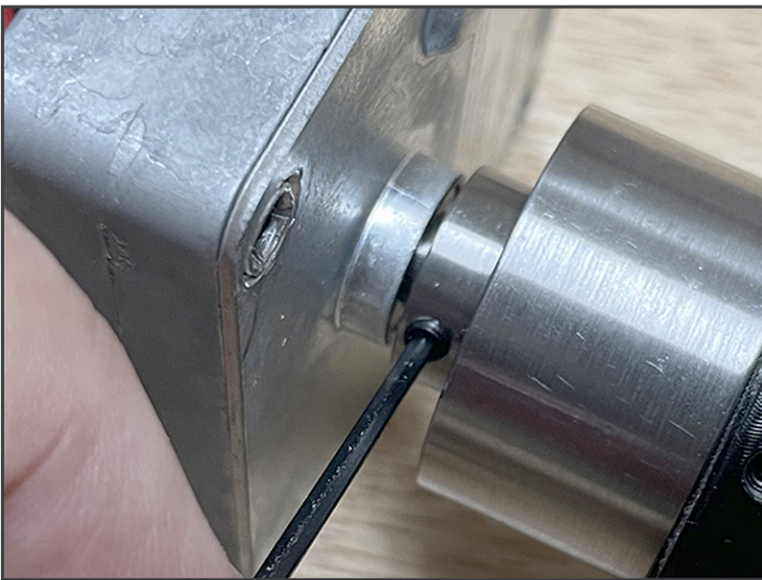
Remove the flex joint.

Universal Mark-II 4K (UHD) Upgrade Instructions

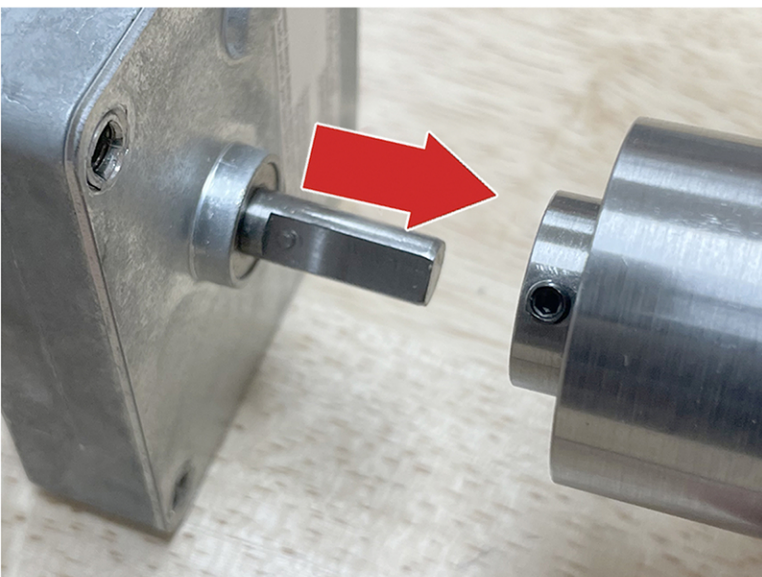
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Remove all 4 of the rubber isolation motor mounts.



Using the provided 3/32" hex wrench, loosen the set screw on the motor shaft.

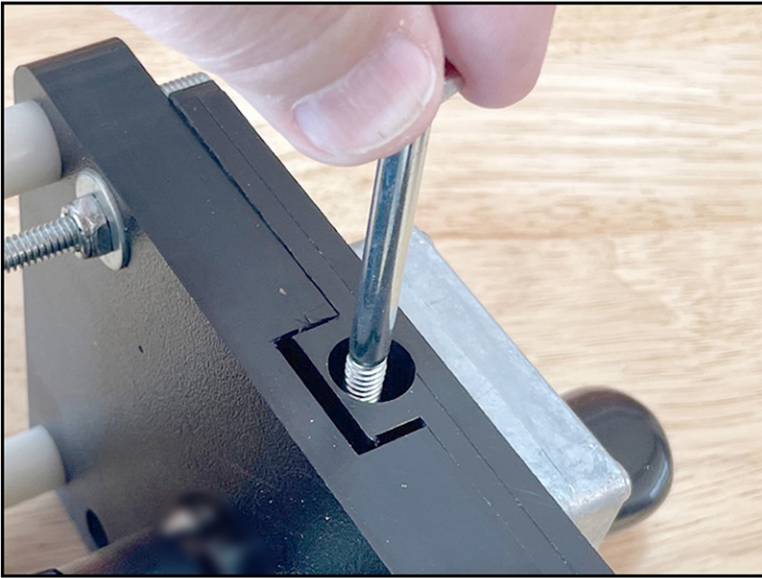


Slide the clutch assembly from the motor shaft.

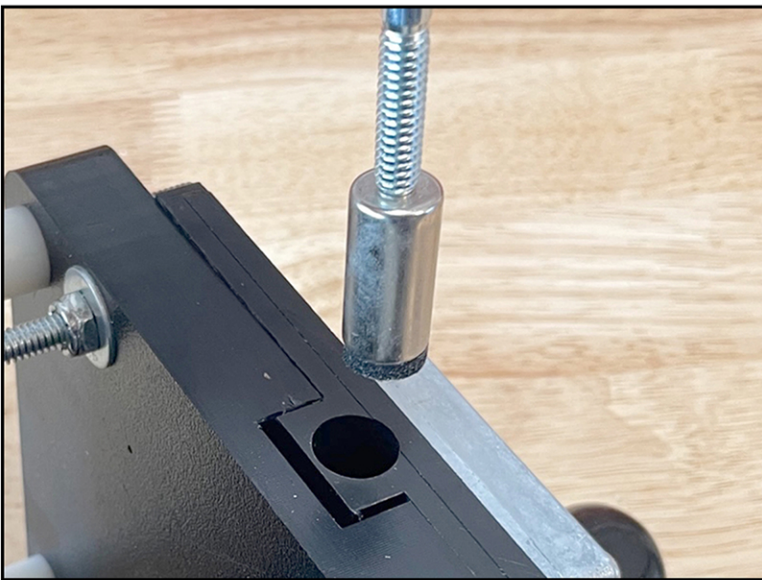
Proceed to page 12.

Universal Mark-II 4K (UHD) Upgrade Instructions

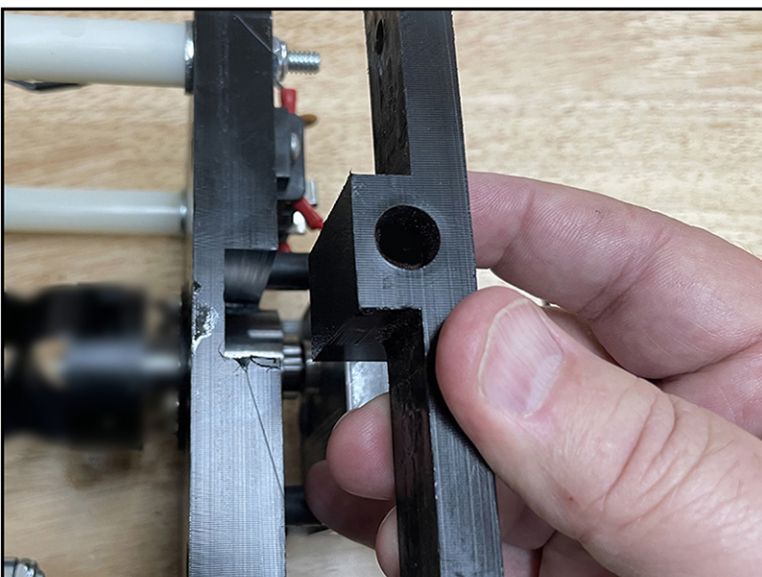
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Use provided bolt or any other convenient steel shaft and insert into magnet bracket.



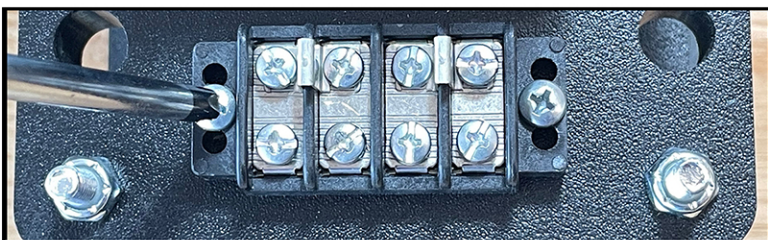
Remove magnet.



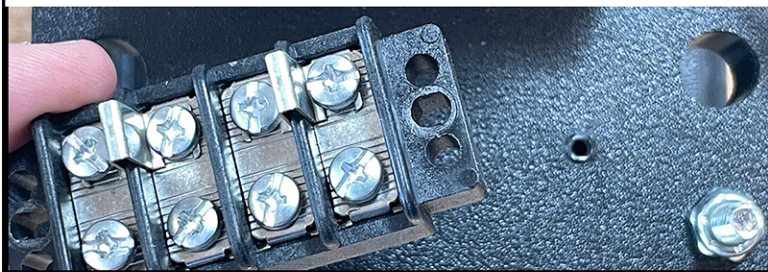
Using a #2 medium Philips screw driver, remove the screws and magnet bracket from the motor assembly.

Universal Mark-II 4K (UHD) Upgrade Instructions

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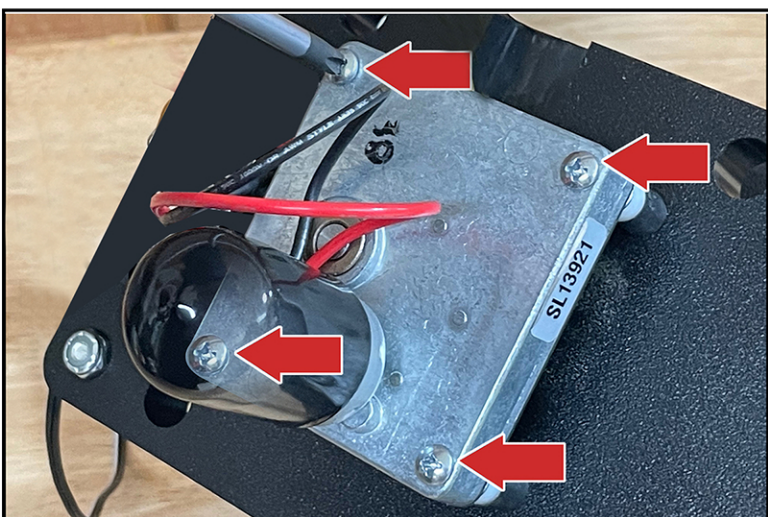


Using a #2 medium Philips screw driver, disconnect all cables from the existing terminal block.



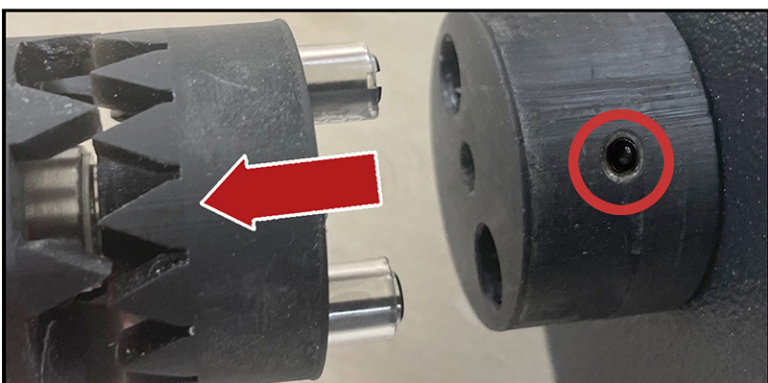
Then remove screws holding terminal block to motor assembly.

Remove existing terminal block.

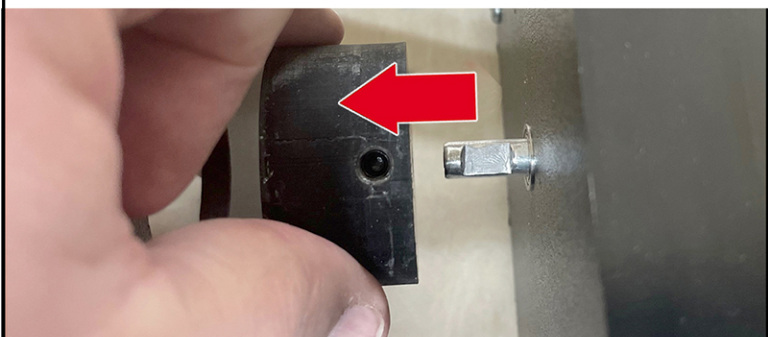


Remove all 4 screws holding motor in place. Do not lose the screws or the spacers!

NOTE: The take up and rewind motors are different. Be sure to keep them separated.



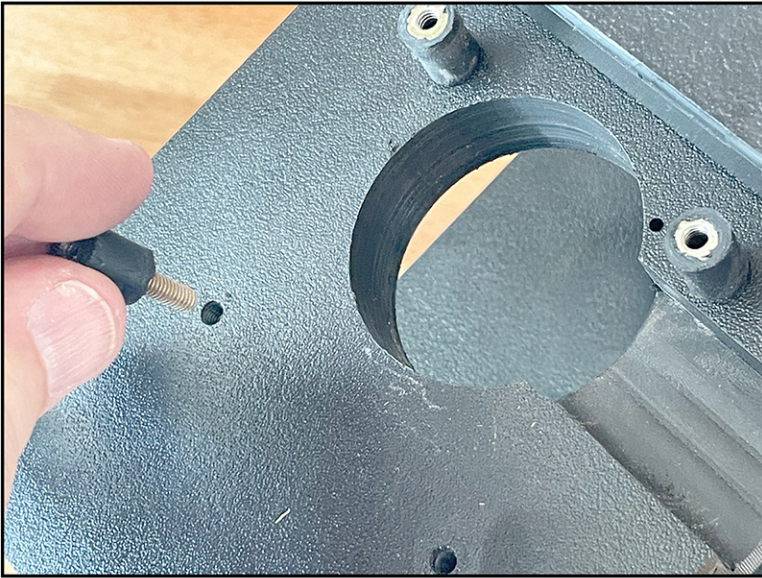
Gently pull motor and clutch from motor assembly.



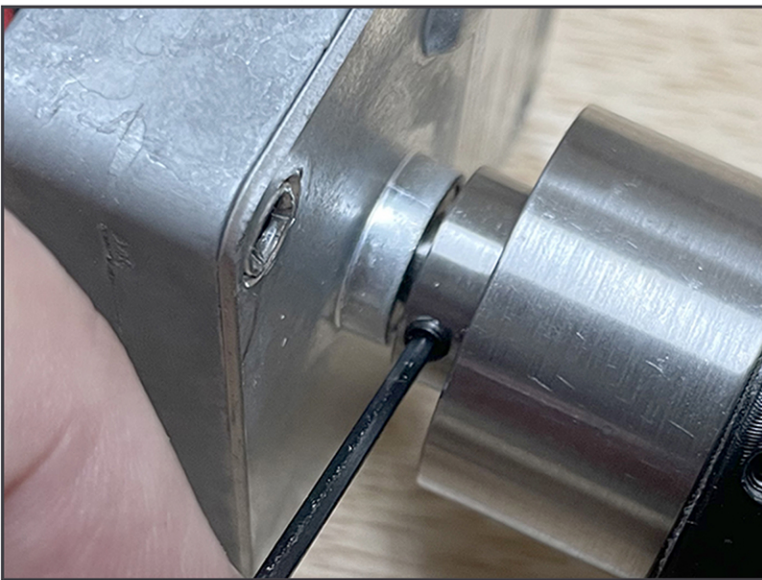
Using the provided 1/8" hex wrench, loosen the set screw circled in red and remove the drive disc.

Universal Mark-II 4K (UHD) Upgrade Instructions

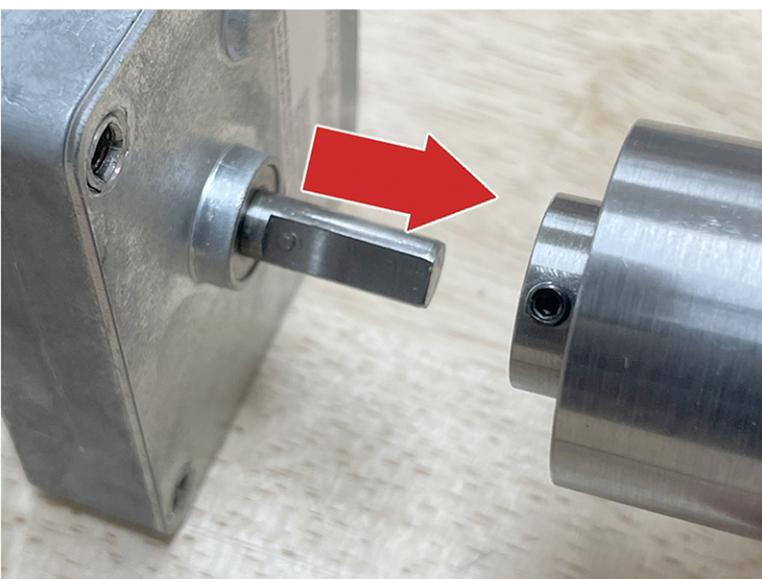
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Remove all 4 of the rubber isolation motor mounts.



Using the provided 3/32" hex wrench, loosen the set screw on the motor shaft.

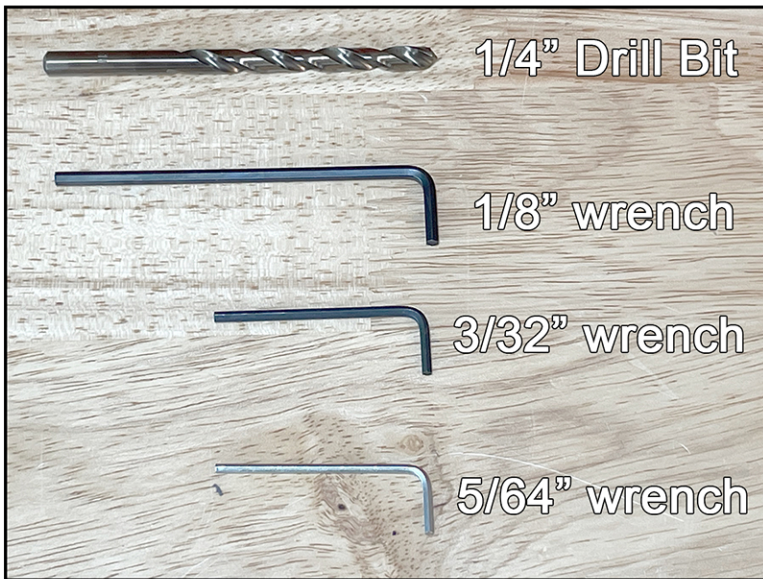


Slide the clutch assembly from the motor shaft.

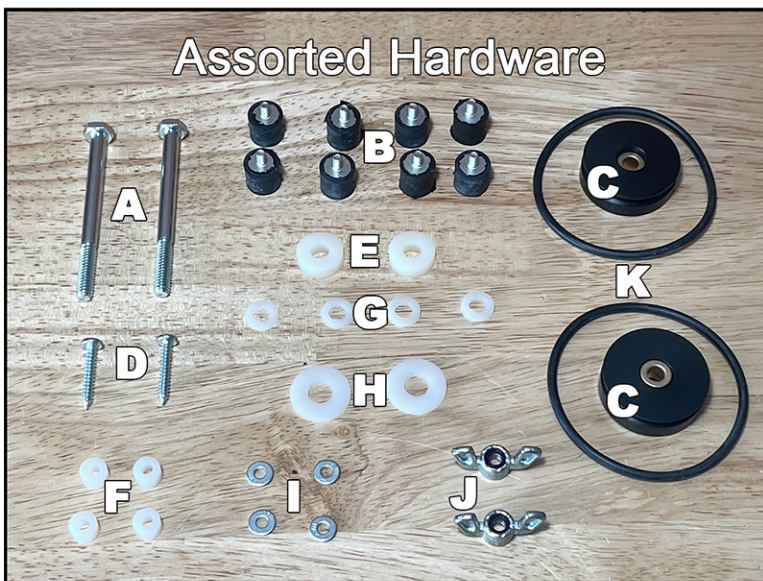
Proceed to page 12.

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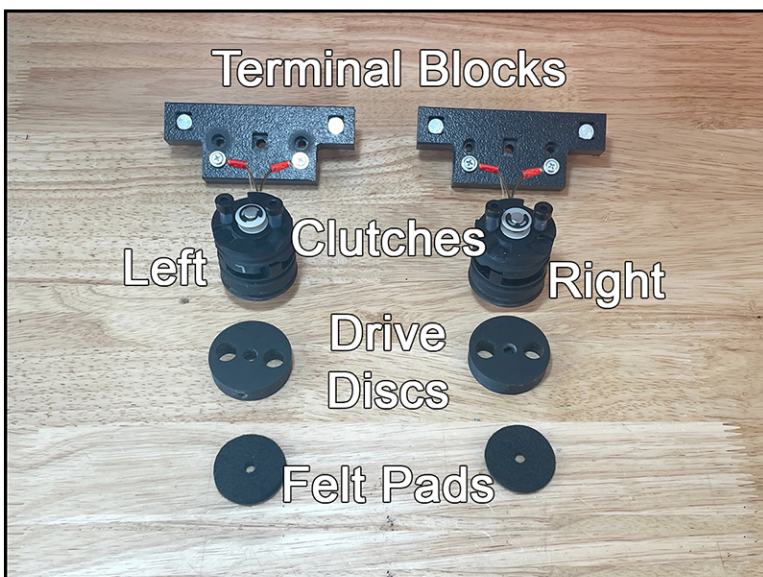
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Locate the three included hex wrenches as well as the 1/4" drill bit.



Locate and indentify the required hardware shown in the picture.

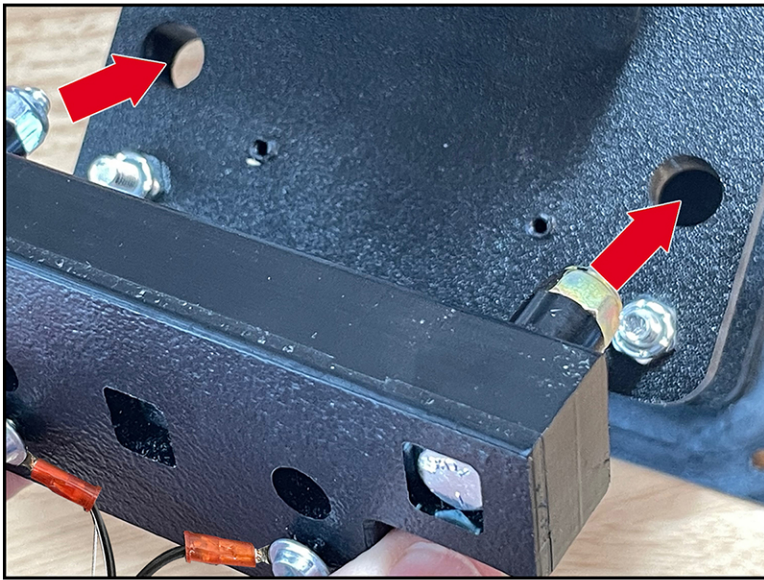


Locate and indentify the clutches, terminal blocks, drive discs and felt pads.

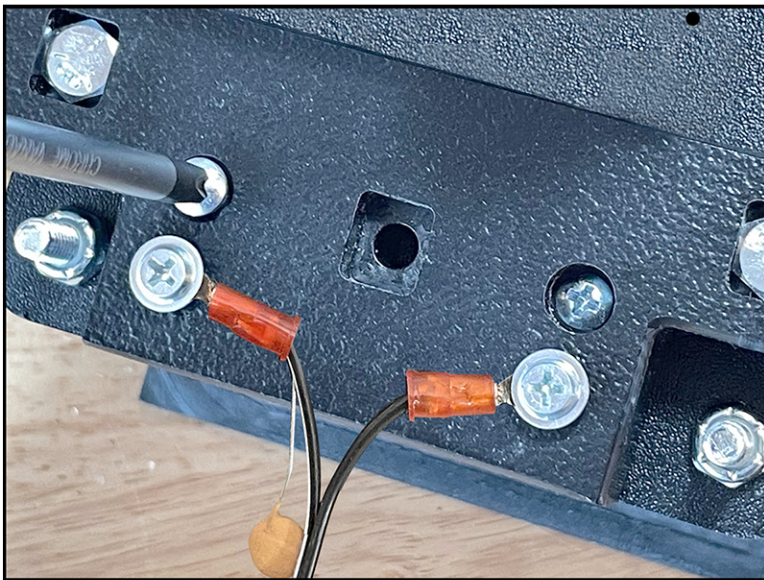
Please note that the clutches are marked with "L" and "R".

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Align the new terminal block with the holes in the motor assembly panel and press firmly into place.



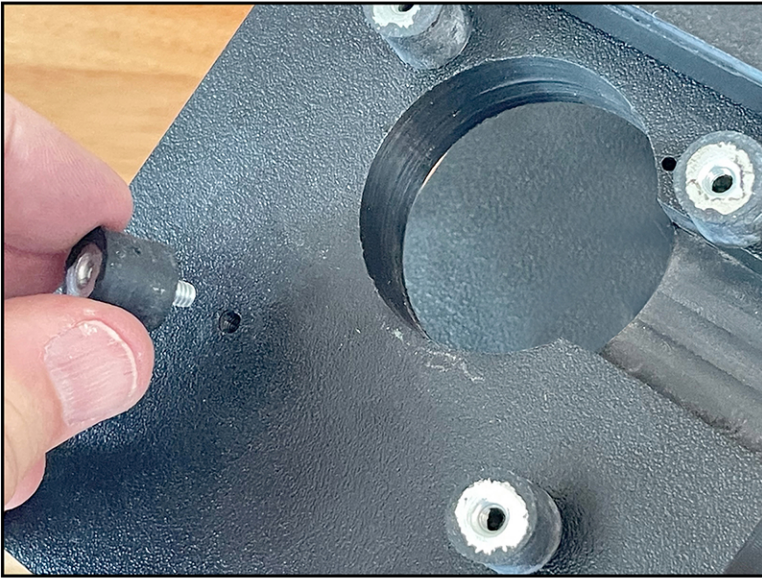
Using a medium #2 philips screw driver, secure the terminal block to the motor assembly using the two #8 screws (D) provided in the kit.



Use an electric hand drill with provided 1/4" bit to drill a hole through the motor assembly panel.

Universal Mark-II 4K (UHD) Upgrade Instructions

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Install the new rubber isolation motor mounts and firmly tighten by hand.



Place one nylon spacer (H) on the end of the main threaded reel shaft.



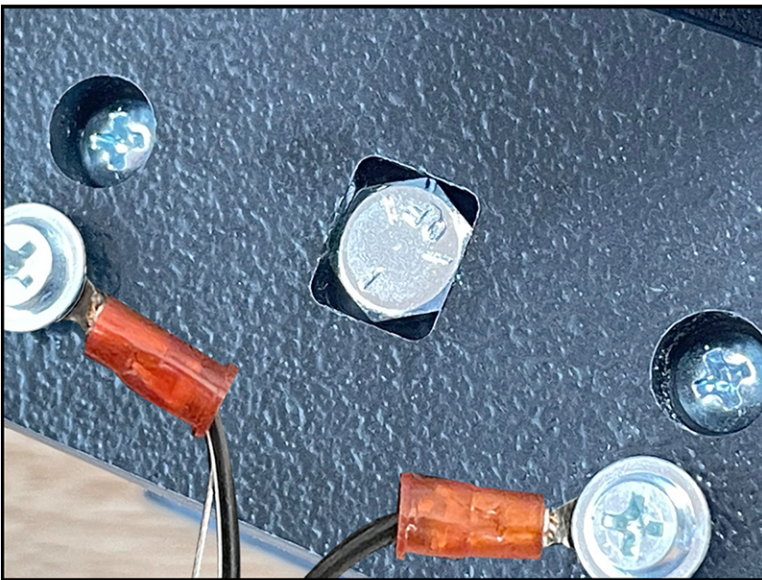
Align the Drive Disc so that the set screw is aligned with the flat spot on the shaft. Press the Drive Disc onto the shaft and gently but firmly tighten the set screw. Please note that the shaft end should be flush with the disc.

Universal Mark-II 4K (UHD) Upgrade Instructions

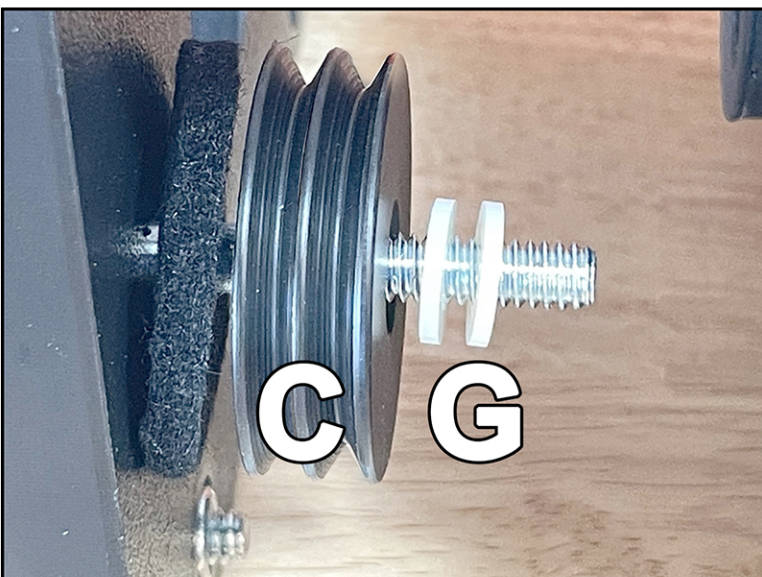
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Insert one of the 1/4" bolts into the previously drilled hole.



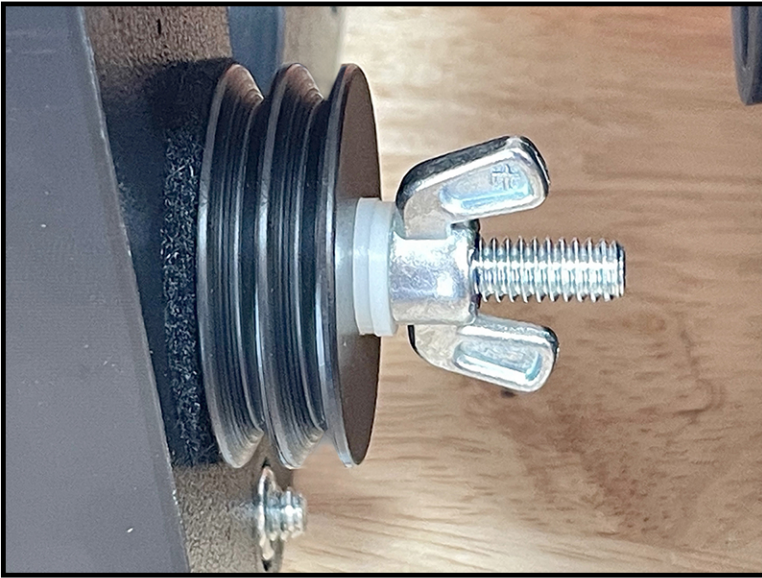
Push the bolt into place until the head is flush with the surface of the panel.



Place a felt pad, the pulley (C) and two of the nylon spacers (G) as shown in the picture.

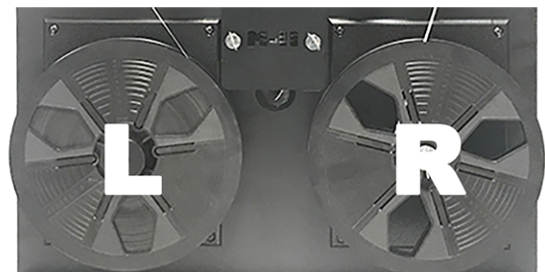
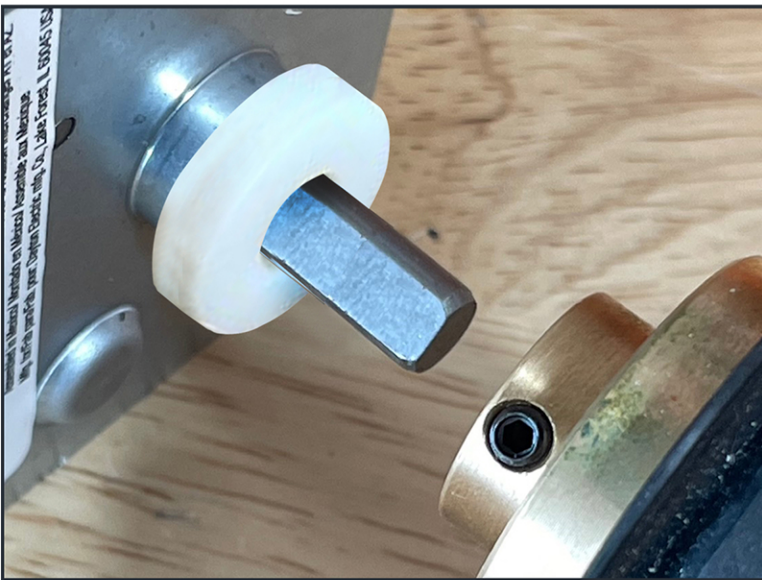
MovieStuff Universal Clutch Replacement

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Tighten the wingnut (J) until the pulley requires minimal effort to turn with your fingers. The pulley should not “spin” or be loose.

(The wingnut has a nylon center to prevent it from coming undone so it is normal for the wingnut to be a bit hard to turn.)



NOTE: “L” & “R” clutch markings are referenced to a front view of the unit.



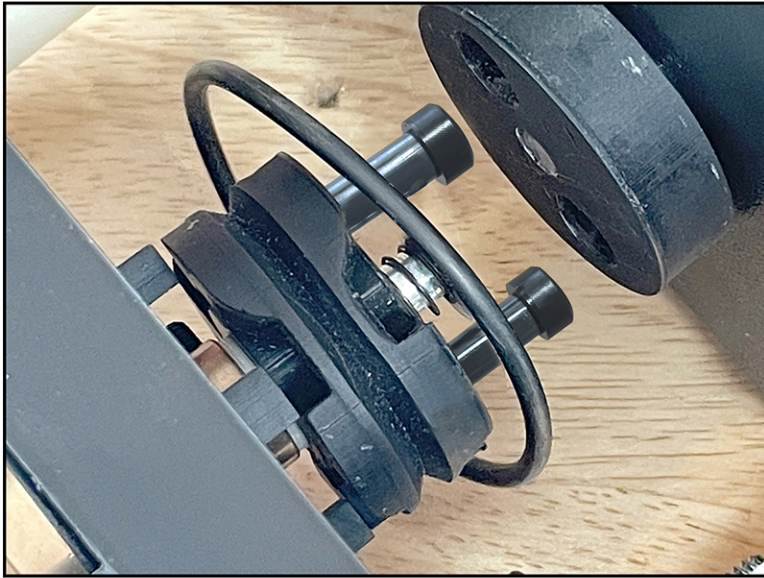
Place one nylon spacer (E) on the motor shaft as shown.

Align the clutch set screw with the flat spot on the motor shaft.

Slide the new clutch assembly onto the shaft until the clutch just touches the spacer. Then tighten the set screw using the provided 5/64” hex wrench.

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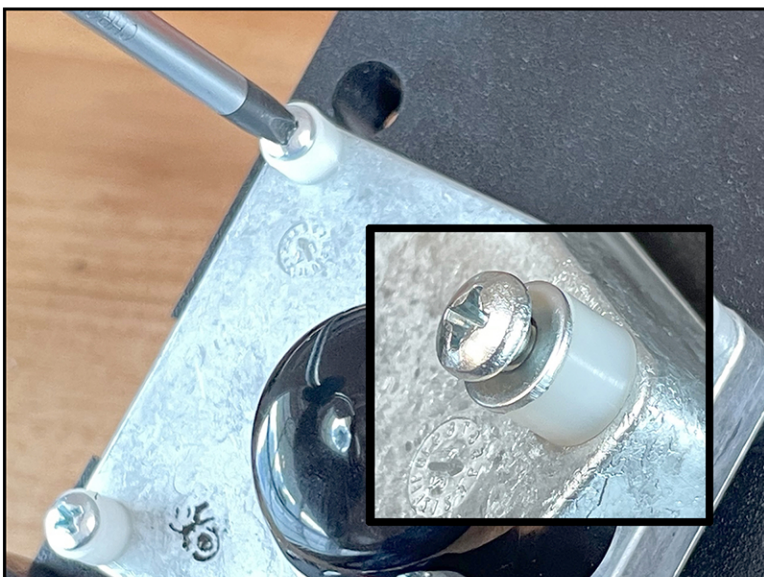
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Insert the motor/clutch assembly into the position. Be sure to place a belt (K) onto the clutch assembly before full installation.



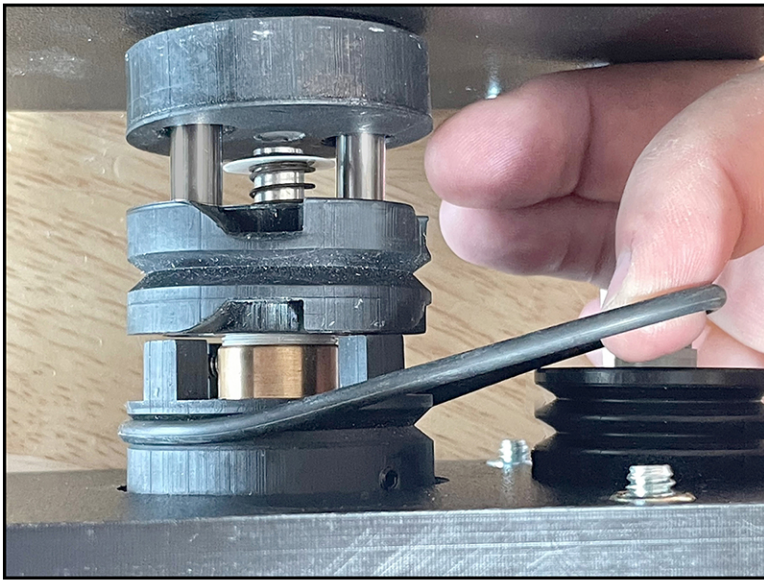
Align the clutch posts with the holes in the Drive Disc.



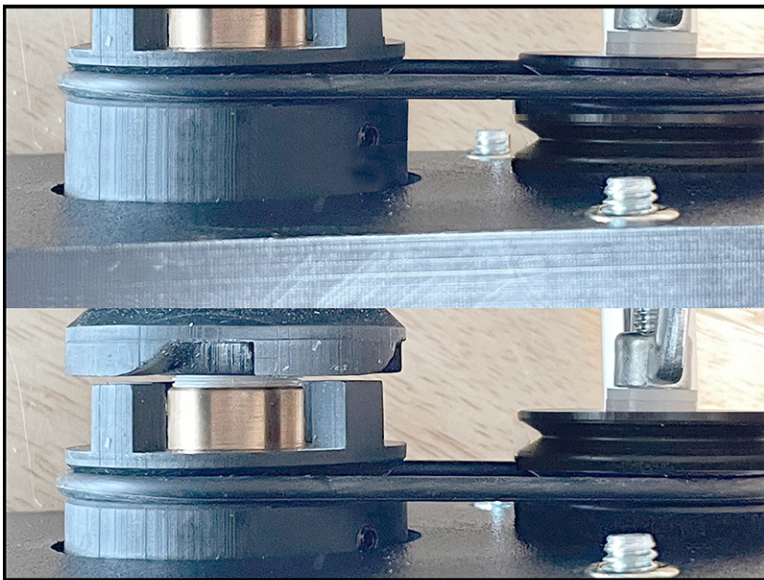
Attach the motor to the panel using the original screws. Note that any spacers or washers now go on the backside of the motor. Extra washers (I) and extra spacers (F) have been included, if needed. Screws should be firm but careful not to strip the threads.

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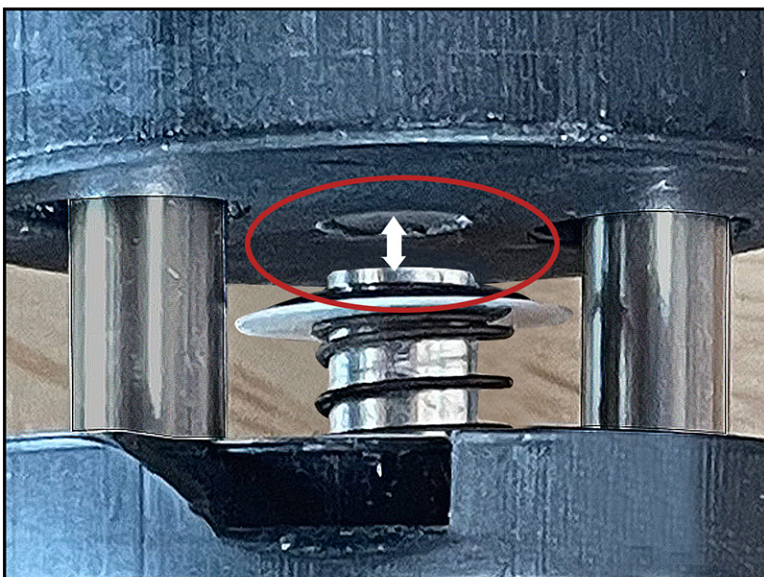


Place the belt onto the groove nearest the panel.



Stretch the belt onto the clutch pulley.

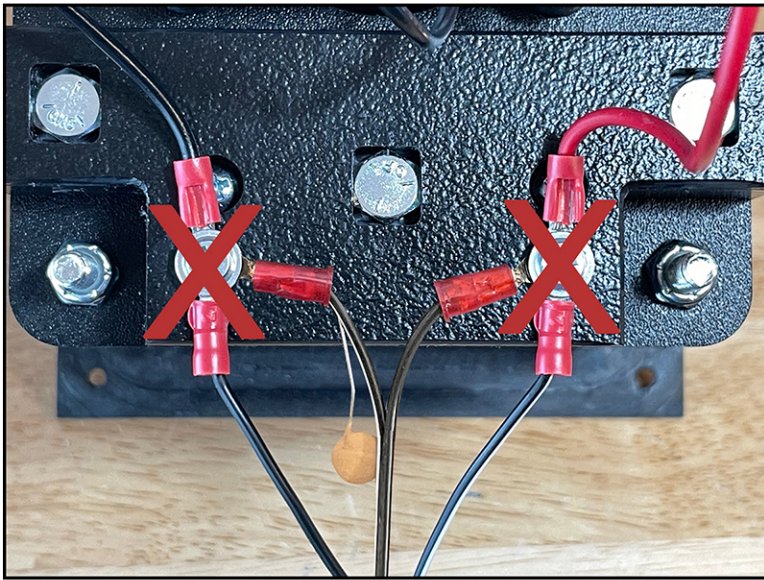
Depending on best alignment, use either the top or bottom groove.



Take a moment to verify that there is space between the spring loaded clutch shaft and the end of the reel drive shaft. The amount of space can be minimal as long as they do not touch. If they do touch, do not attempt to use and contact me about making adjustments.

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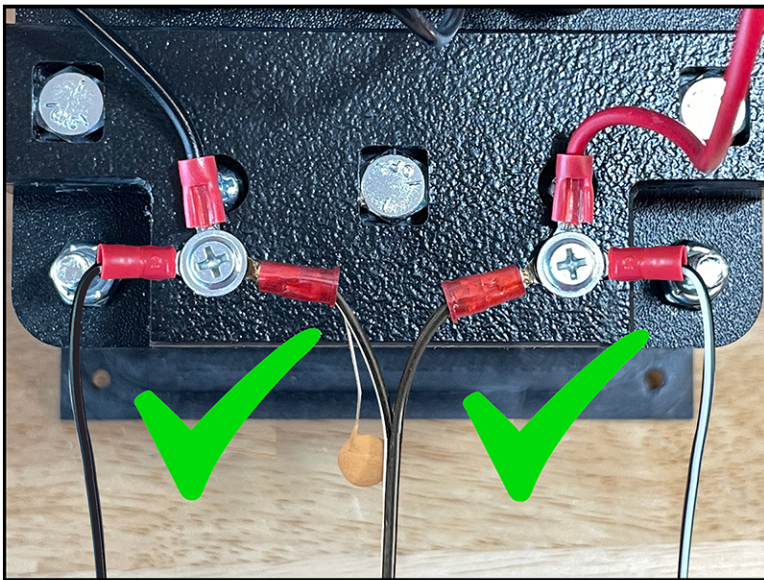
Re-connect the motor cables. Note the red motor wire and the cable with the white stripe are on the right terminal.

Use the #2 philips screwdriver to securely fasten the cables. Please note that cable ends should not protrude over the edge of the terminal block or they will hinder inserting the motor assembly back into the Mark-II housing.

You will note there is already a short motor cable attached to the terminal block. This is wired purposely in reverse to more easily test the unit outside of the scanner.

Locate the short testing cable originally supplied with the unit as well as the unit's power supply.

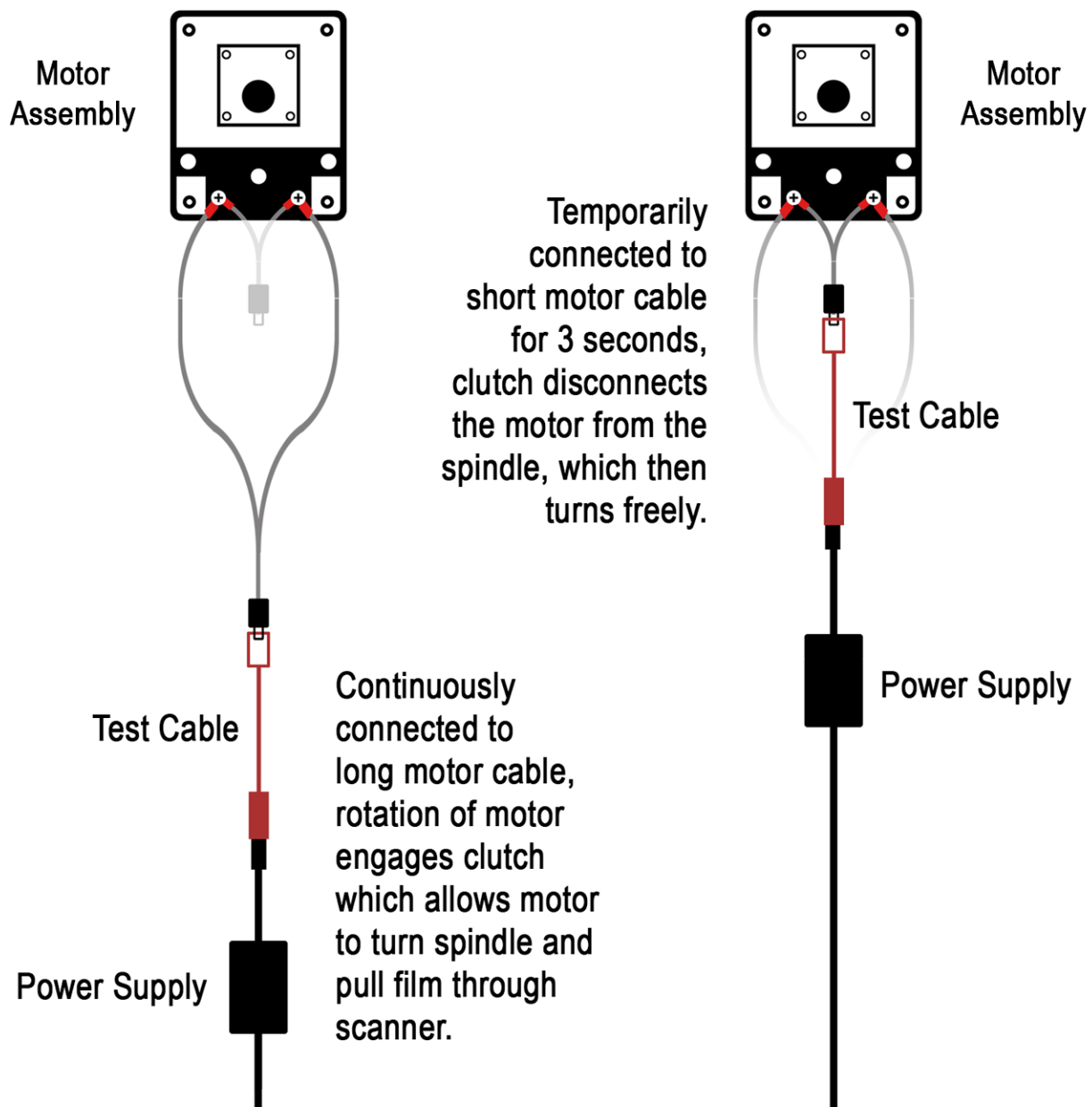
Plug scanner's 12 volt power supply into the black socket end of test cable then follow the instructions on the following page to test correct operation of the clutch.



Universal Mark-II 4K (UHD) Upgrade Instructions

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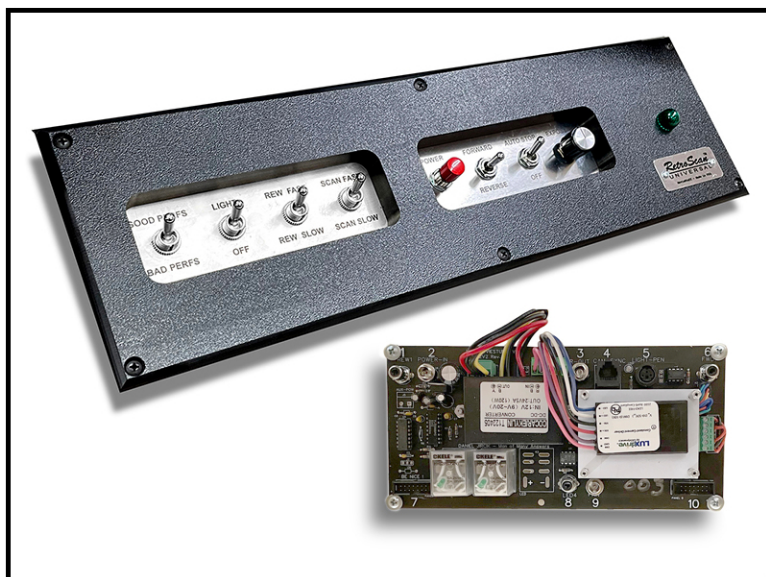
When installed in the unit, the long motor cable is normally used to connect the motor to the system. But, for testing purposes to bypass the scanner electronics, the motor can be connected directly to the scanner's 12 volt power supply via the **Test Cable** as shown.



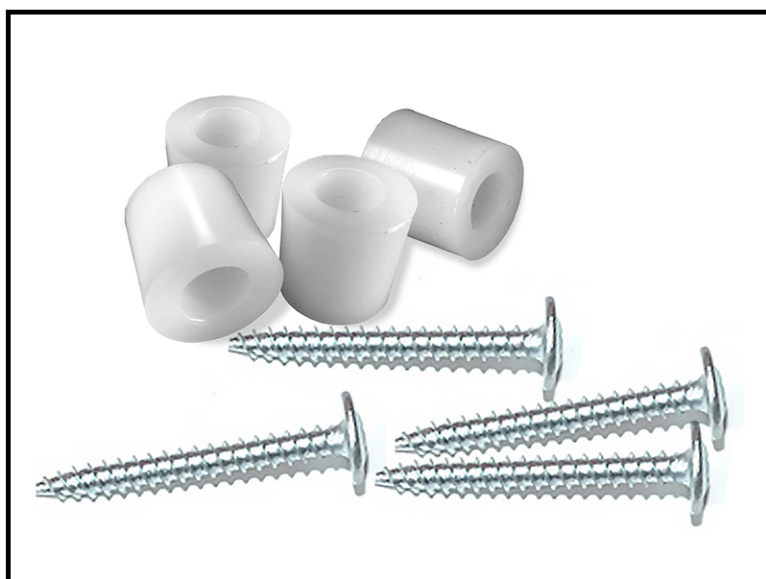
The reel spindle must be connected to the motor when pulling film through the system - but - must be disconnected from the motor when the reel needs to turn freely. This is achieved by way of a mechanical clutch which engages or disengages, depending on the direction of motor shaft rotation. Applying continuous positive voltage will lock the motor to the spindle. Temporary negative voltage will unlock the motor from the spindle. During normal operation, this change in polarity is done automatically by the scanner's internal circuitry when switching to forward or reverse but, for testing purposes, can be manually controlled by directly connecting the power supply to either the (positive) long motor cable or (negative) short motor cable as illustrated.

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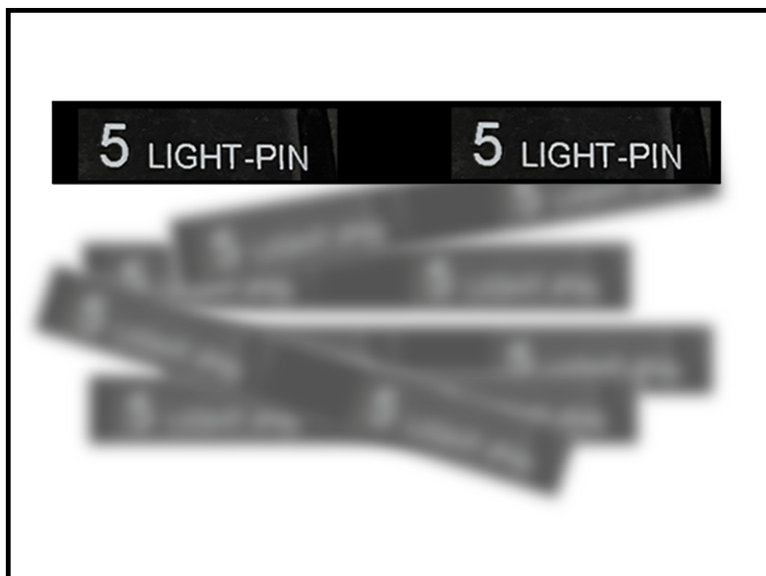


Locate the new motherboard and the new control panel.



Locate the 4 nylon standoffs and the 4 wide head screws.

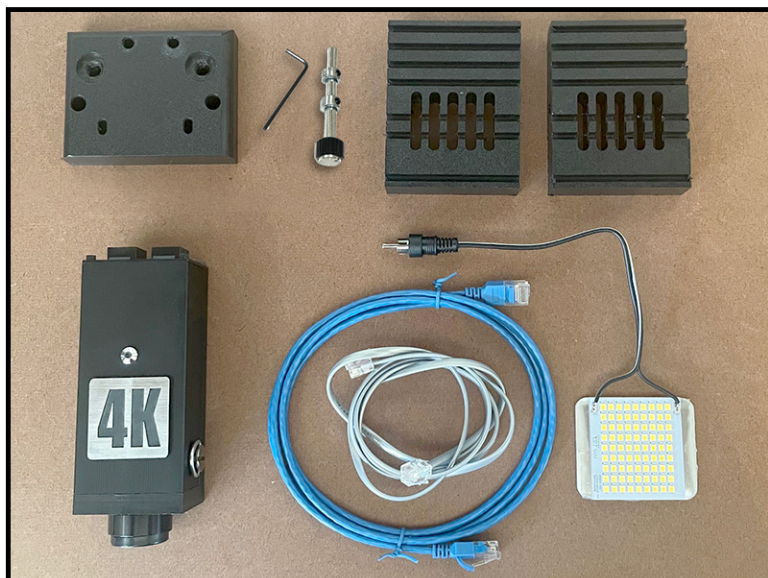
Please note that the ends of the screws are very sharp! Handle with care.



Locate the multiple pre-printed labels. These are self adhesive and will be used later to organize all the various cables in the Mark-II unit. Do not lose them!

Universal Mark-II 4K (UHD) Upgrade Instructions

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Locate the 4K camera, cables, led panel, gate block, CamGuide, and 2 light house side panels.



Using a medium #2 Phillips screw driver, remove all the screws holding the upper back cover panel and back motor cover panels in place and set aside.

Do not lose the screws as they will be needed again to reattach the back cover(s) later.



Using a medium #2 Phillips screwdriver, remove and save the 4 screws holding the lower, metal back panel in place.

Universal Mark-II 4K (UHD) Upgrade Instructions

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Using a #2 medium Philips screwdriver, remove and save the 6 mounting screws and gently remove the front panel. Keep track of the green dome, which can be removed by unscrewing it from the panel.

Disconnect any and all cables in the unit and set aside.



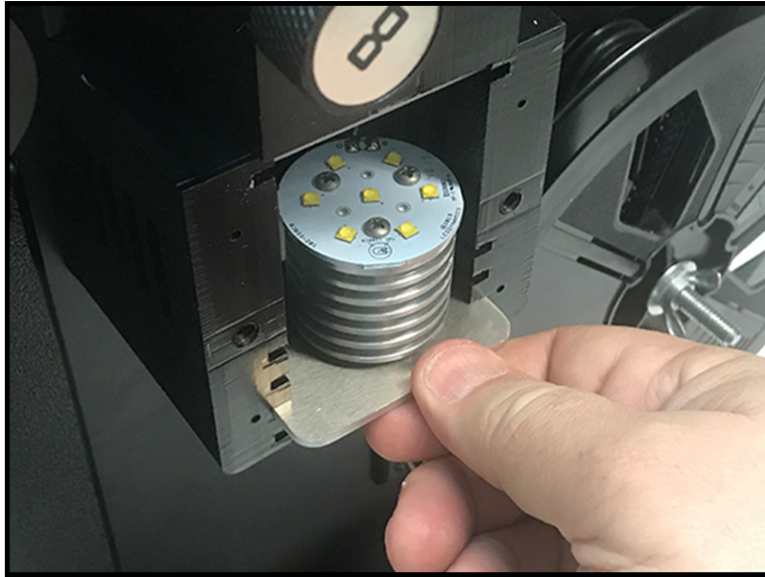
Remove and save the two thumb screws holding the front panel of the light house.



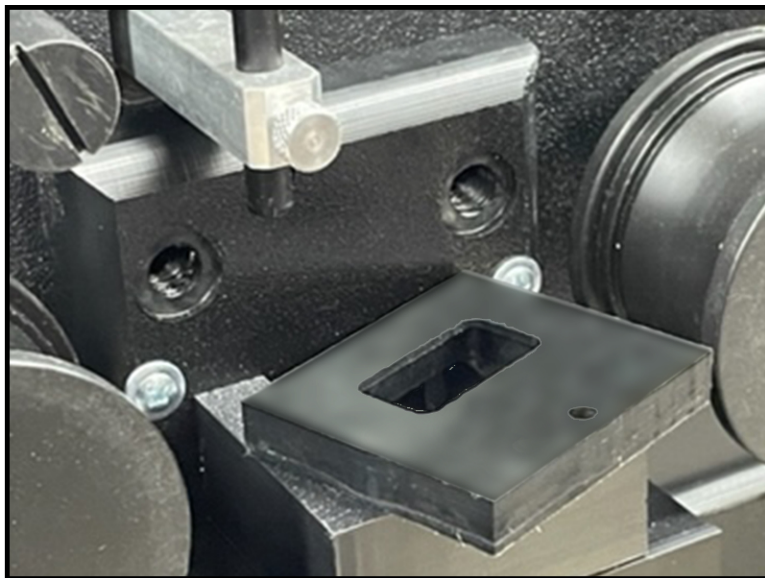
Unplug the existing LED.

Universal Mark-II 4K (UHD) Upgrade Instructions

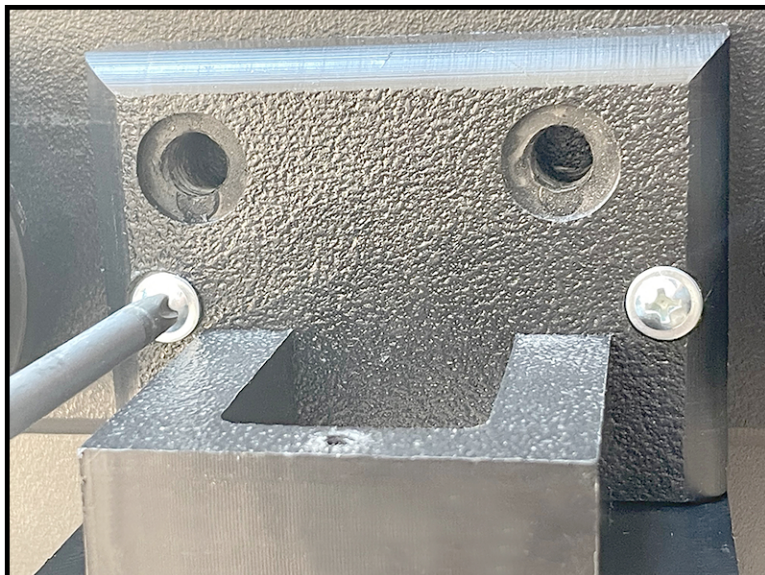
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Remove existing diffusers as well as the existing LED.



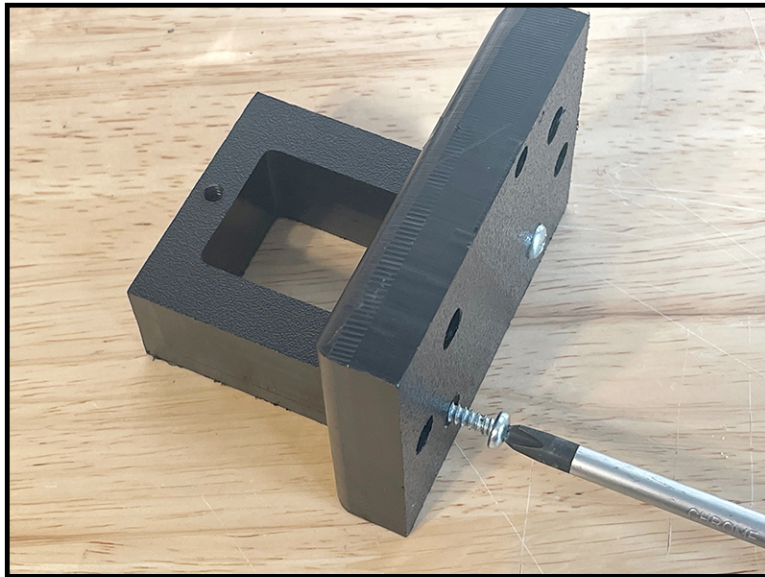
Remove the film guides as well as any mask that might be in place.



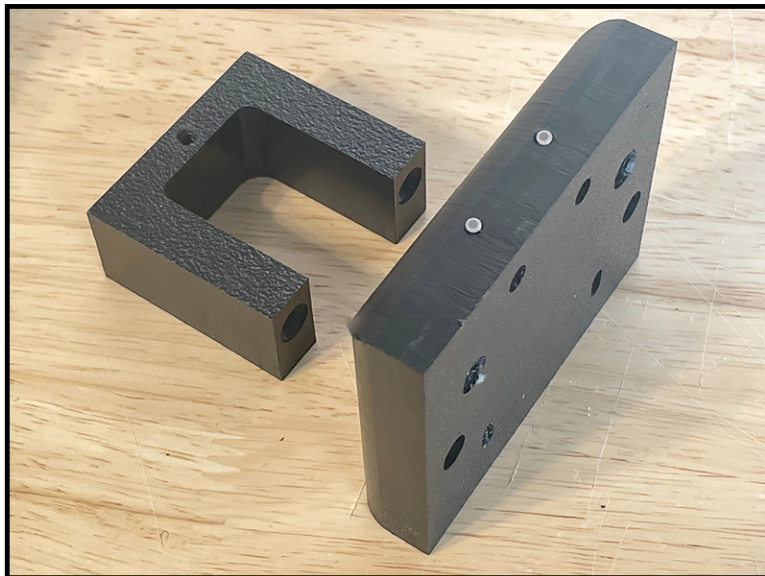
Using a medium #2 Phillips screwdriver, remove and save the two screws holding the gate block in place.

Universal Mark-II 4K (UHD) Upgrade Instructions

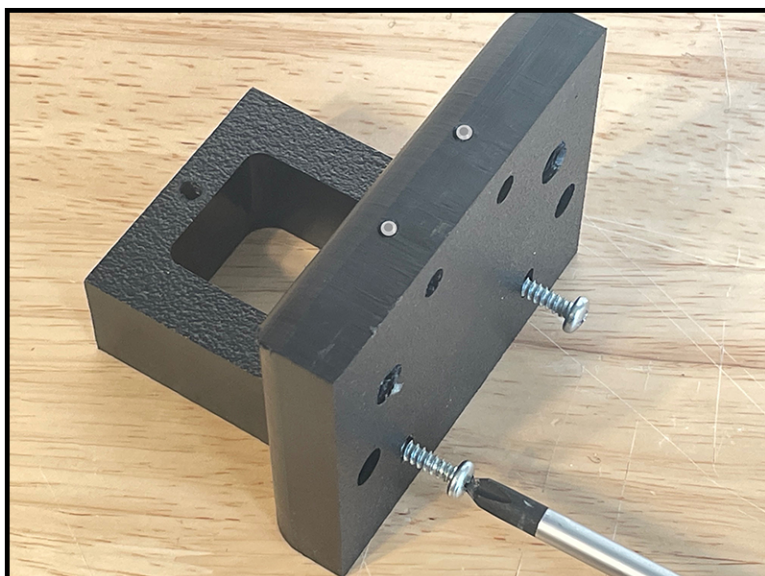
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Using a medium #2 Phillips screwdriver, remove and save the two screws on the back of the gate block. Remove and save the U shaped Light Well.



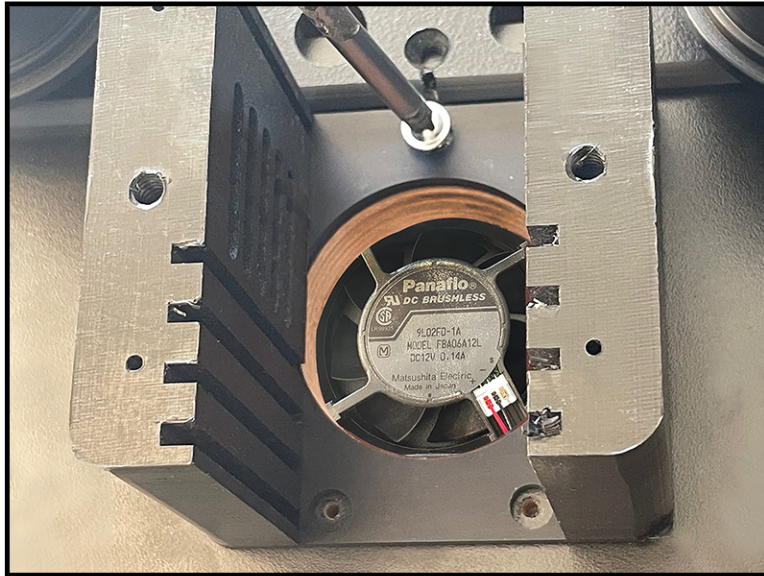
On a flat surface, align the new gate block with the U shaped LightWell.



Hold the assembly flat while replacing the screws holding the assembly together then set this finished piece aside for the moment.

Universal Mark-II 4K (UHD) Upgrade Instructions

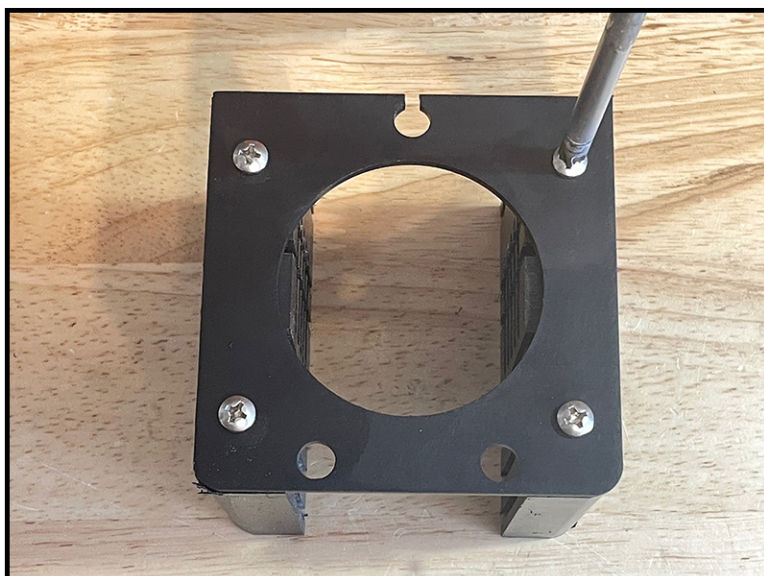
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Using a medium #2 Phillips screwdriver, remove and save the three screws that hold the Light House to the unit.



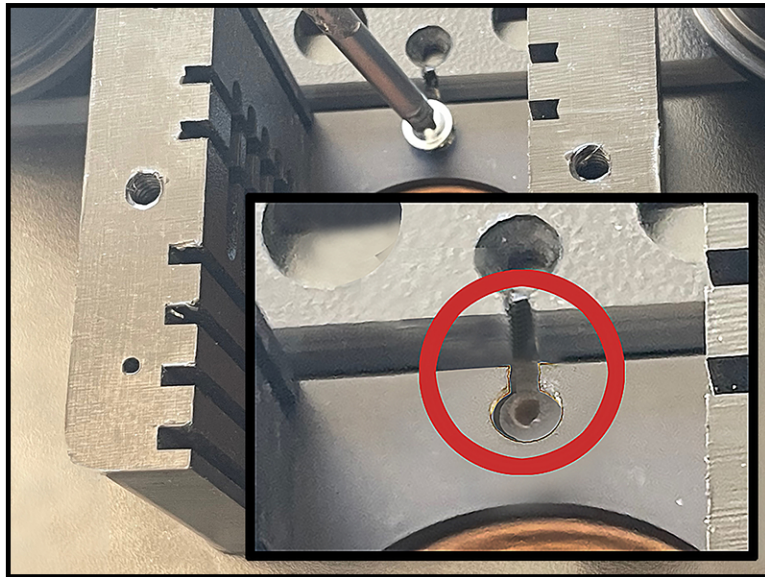
On a flat surface, stand the two new Light House side panels as shown. Please note the rounded corners.



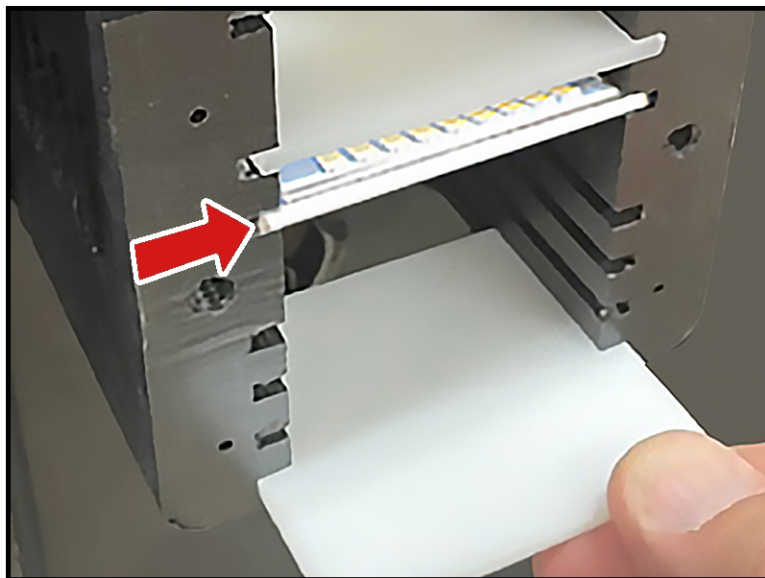
Remove the rear metal Light House mounting panel and place it on the new Light House side panels. Attach using the same screws, making sure that the edges of the mounting panel are flush with the side panels.

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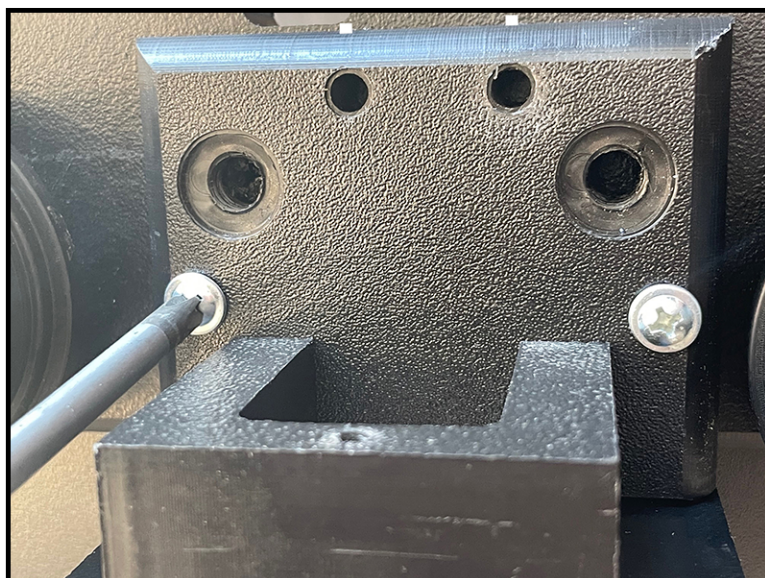
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Using the existing screws, re-mount the Light House. Be sure to align the notch circled in red with the notch on the upper roller panel. Also, be sure to push the Light House assembly up until it touches the roller assembly and hold it there while tightening screws.



Insert the LED panel into the middle slot position as shown with the red arrow. The diffuser should go in the slot right above it. The other diffuser can be stored in the bottom slot. For specifics on LED/diffuser combinations, please see page 9 of the Mark-II instructions.



Attach the new gate block assembly to the upper roller panel using the long Philips head screws as shown.

NOTE: Make sure that the gate block is sitting flat and centered on the Light House.

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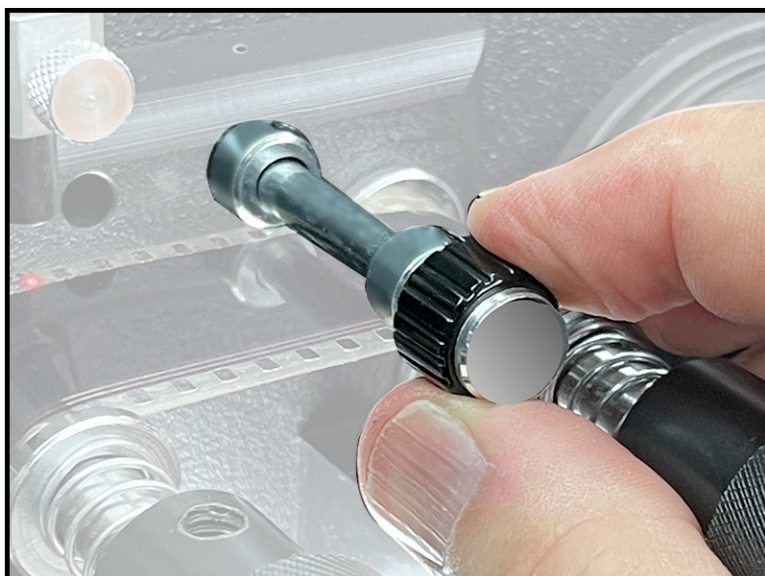
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Double check to be sure that all power cables have been unplugged from the back of the unit. Then Plug the new LED into its socket.



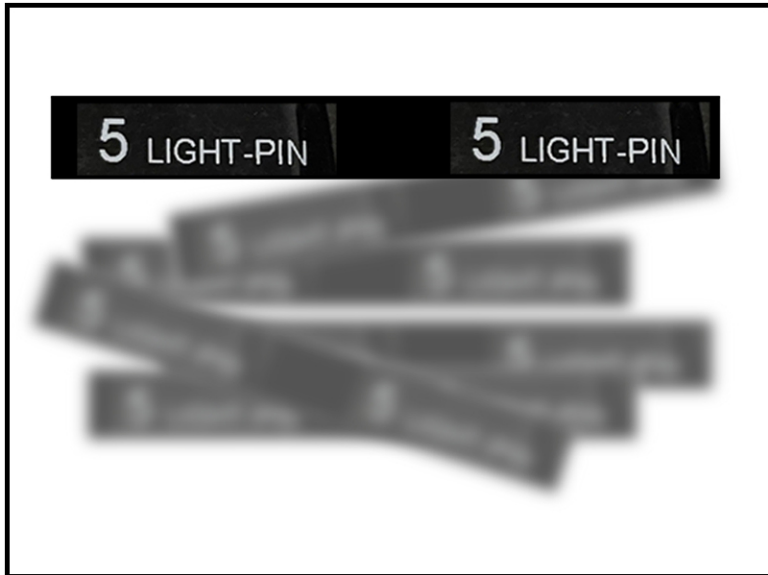
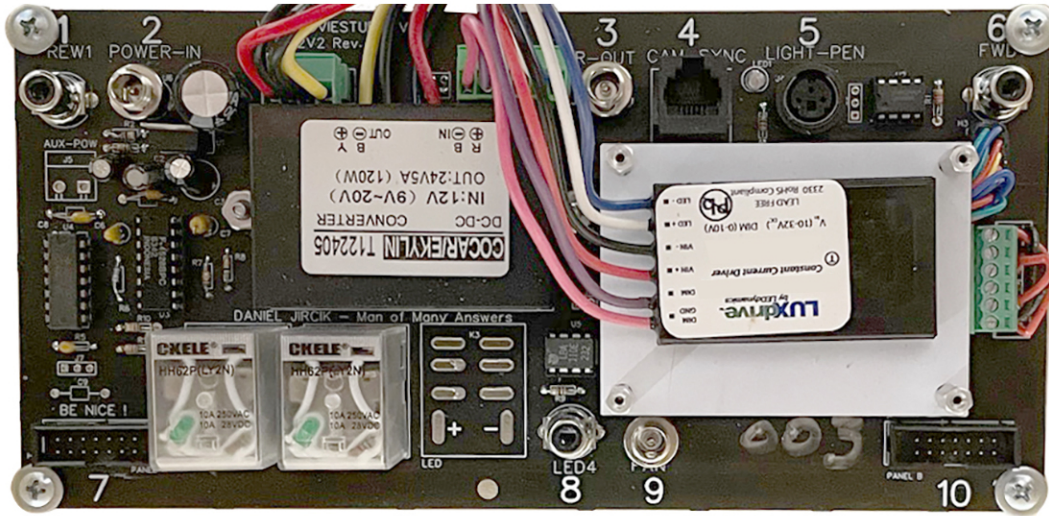
Locate the front Light House cover and re-attach with the two thumb screws.



The new CamGuide inserts into one of the two holes on the new gate block assembly. For details on how to use it properly, please see page 8 of the 4K Mark-II instructions.

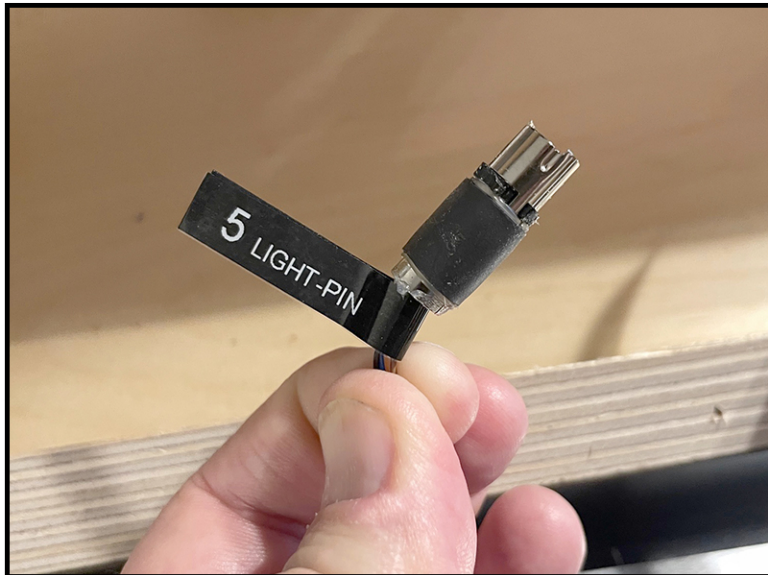
Universal Mark-II 4K (UHD) Upgrade Instructions

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The motherboard has numbered connectors on the outer edge of the board.

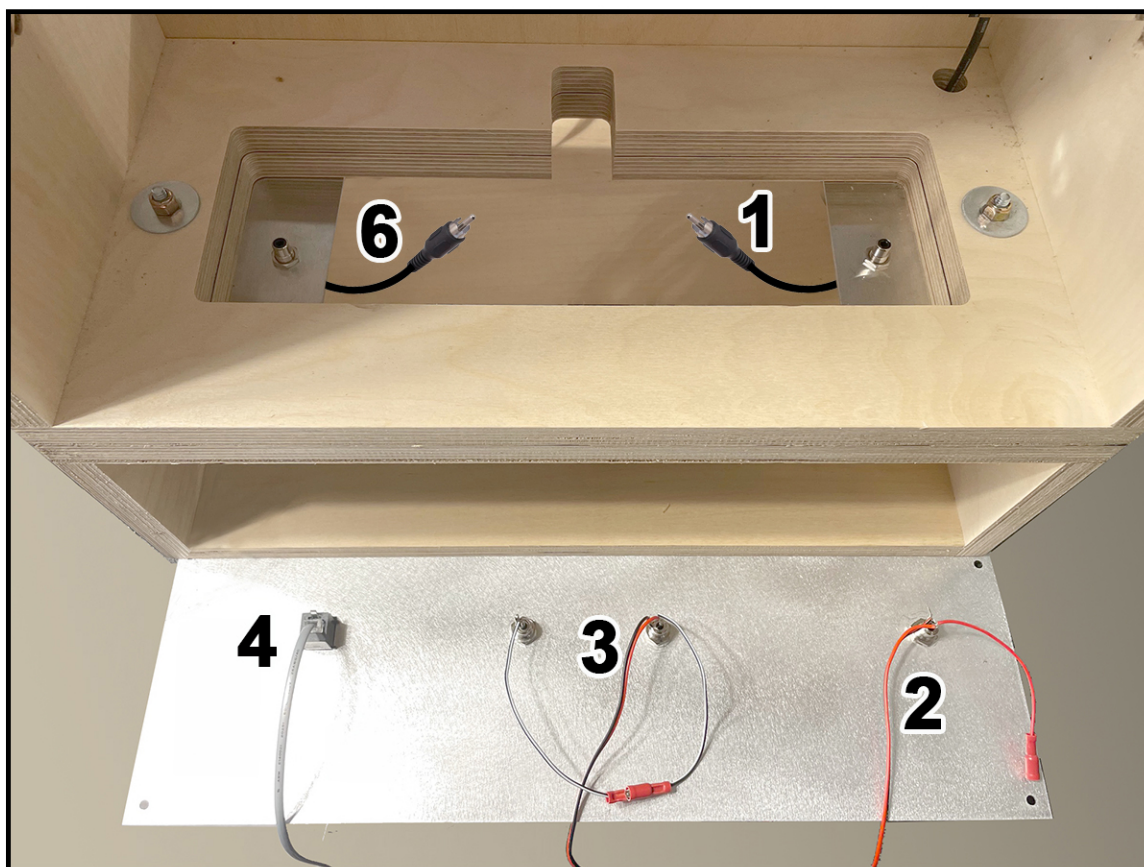
The provided labels will be used to organize all the remaining cables inside your unit.



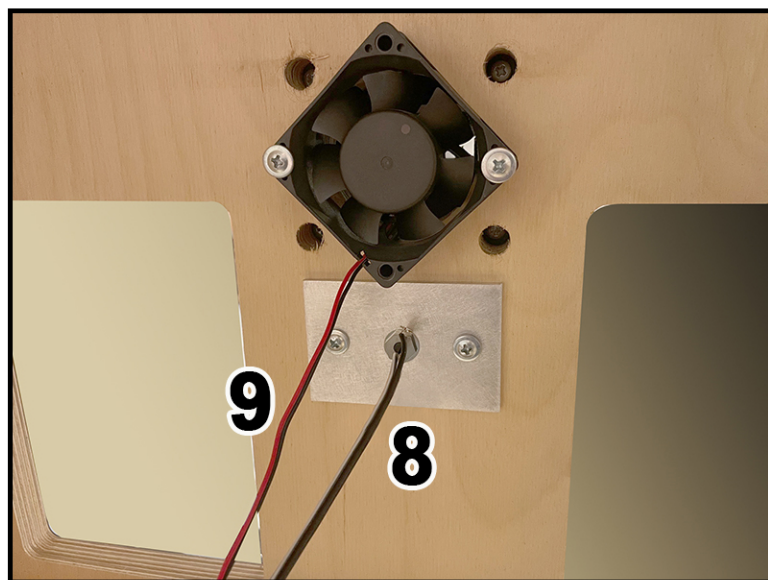
When attaching the label, be sure to carefully align the two ends before pressing the adhesive backing together. It is very sticky and impossible to pull apart once attached. The label should go on the end of the cable as show.

Universal Mark-II 4K (UHD) Upgrade Instructions

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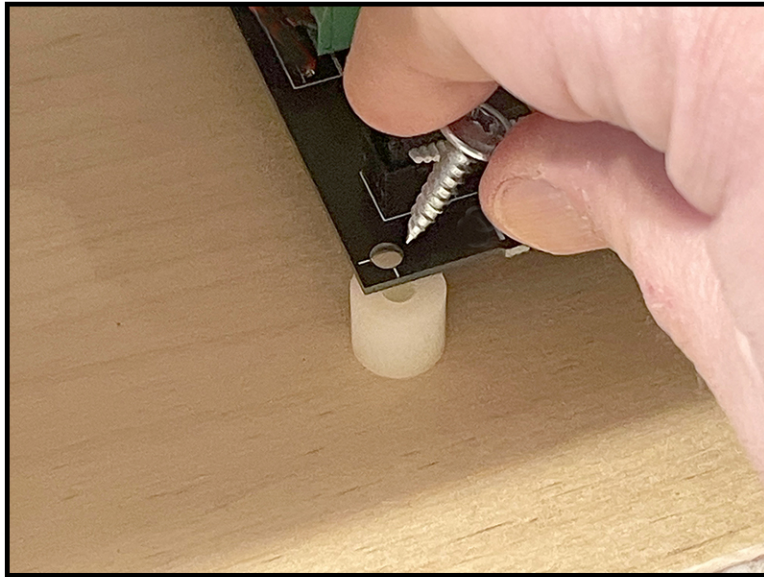
After removing all previous cables, your unit should look like this. The only cable to remain in place would be your LightPin cable (#5) as there is typically no need to remove it.



Attach the labels to the cable ends as per the numbers seen in these reference photos. Be sure to double check your work.

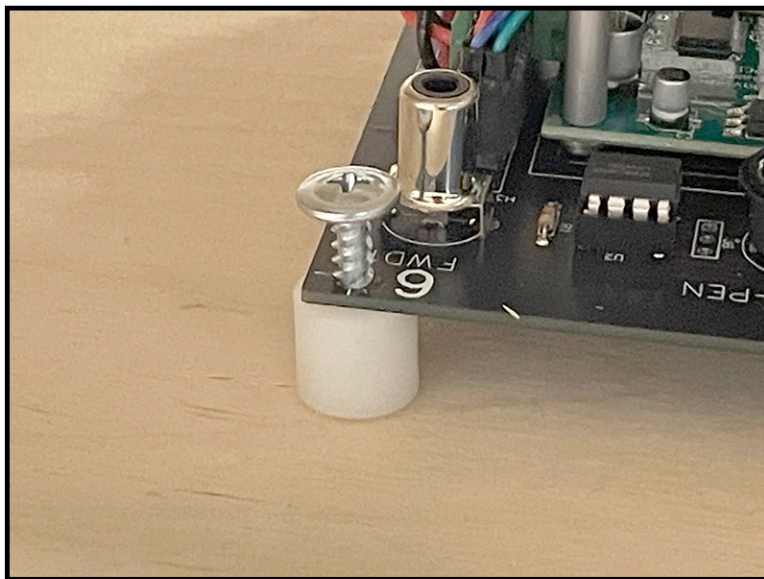
Universal Mark-II 4K (UHD) Upgrade Instructions

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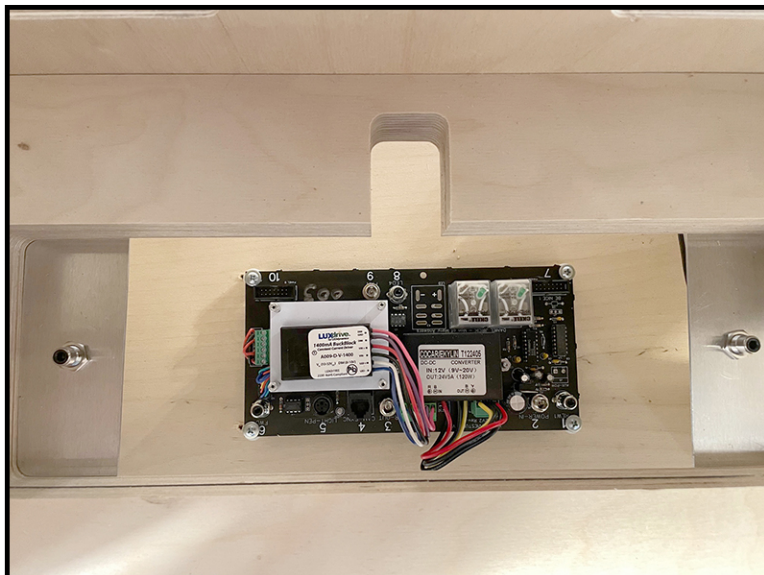


Place the motherboard in the middle of the lower section of the housing.

Place a nylon spacer and a screw in each corner of the motherboard but do not tighten.



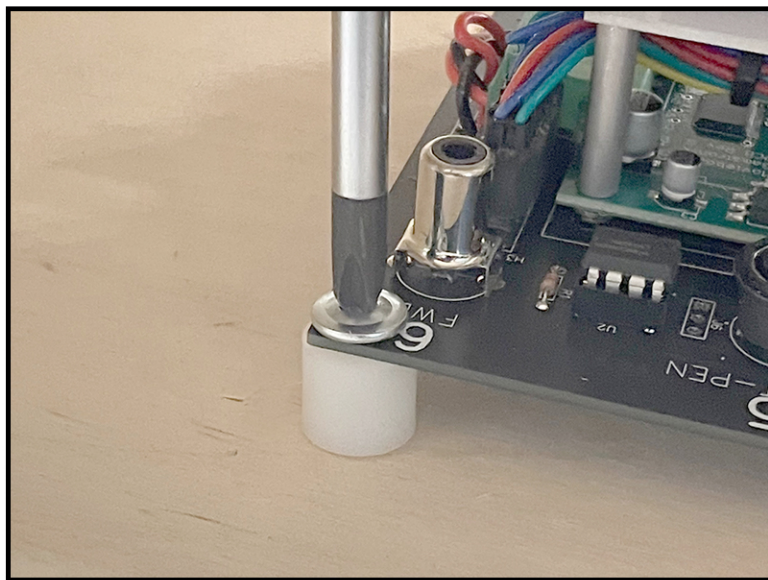
The standing screw will allow you to move the motherboard around for properly placement without losing track of the spacer or the screw.



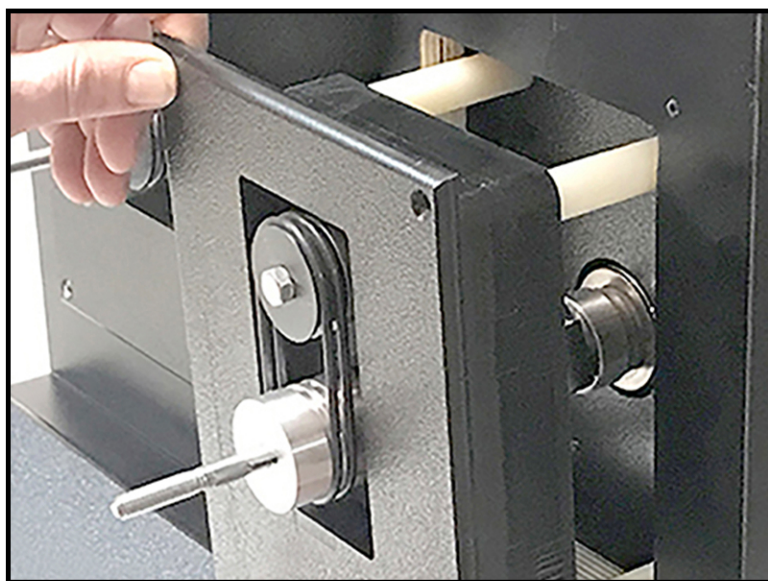
Looking down on the opening, this is how the motherboard should be aligned. Placement is not critical as long as you have clear access to each of the screw heads.

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The tips of the screws are very pointy and sharp. No drilling is required. Using a long #2 Phillips screwdriver, press down firmly and drive the screw into the wood. Do not over-tighten. The screws should simply be snug enough to hold the motherboard in place.



Using the numbers as your guide, reconnect all the cables to the appropriate points on the edge of the motherboard.

Reinstall both top and bottom back panels as well as both motors and secure with screws.



Reinstall the front control panel and secure with screws.

Universal Mark-II 4K (UHD) Upgrade Instructions

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For specifics on how to install and connect the new 4K (UHD) camera, as well as how to use the new functions of the unit, please see the link provided in the email for a printable PDF of instructions.

Once you have installed the new 4K (UHD) camera and connected it to a PC with the appropriate specs, your unit will be ready to test. It is highly advised that you use disposable film until you are comfortable that the unit is working properly. It is possible that the wingnut on the clutch drag pulley may need to be adjusted to achieve proper operation of the new clutch type. Please feel free to contact us at moviestuff@swtexas.net or call 512-284-7197 if you have any questions.

PLEASE NOTE:

To avoid additional billing or interruption of customer support, all removed components must be returned to MovieStuff, LLC within 2 weeks of receipt of upgrade kit.

Due to value of returned components, shipping must be tracked with signature required. Email tracking number to moviestuff@swtexas.net

Ship to:

MovieStuff
7708 Lohman Ford Rd.
Ste 101E - #102
Lago Vista, Texas 78645
512-284-7197