



MANTIS USER MANUAL V0.5

Thank you for purchasing a Mantis. We wish to ensure that you get the best result possible from this equipment.

SAFETY INSTRUCTIONS

- Do no load more than 38 lbs | 12.7 - 17.2 kg on a single Mantis head.
- Do not apply bending force to the Mantis, or mount it on any other connection point other than the barrel connector system.
- All loads must be suspended from the elastic line.
- When using the maglock hook with an eyebolt, be careful not to boom up higher than the head of the Mantis, as this will unhook the ring from the hook.
- Keep elastics free of oily residue including sunscreen. Oil on the elastics will reduce the effectiveness of the elastic locking mechanism causing the elastics to slide through.
- Inspect elastics before use and replace if any tearing, cuts or cracking are present. Inspect around the hook or easy rig QR connection point for holes or tears.
- Always keep a firm grip on the elastic while adjusting tension. It's designed so you only need one hand and don't need to touch the tensioning arm.
- Do not allow the elastic to slide through your hands when releasing tension
- Do not leave The Mantis tensioned when not in use. Leaving it under tension can cause temporary flat spots in the elastic. If flat spots do occur, release tension and re-tension. If the flat spots are still present, change out the bands and let that other band come back into shape.
- It's important not to cut the excess elastic off while the Mantis is tensioned because you won't be able to release the tension or re-thread the mantis if you change that elastic out. The elastics are also fluid filled, cutting them will drain the fluid and impact performance.
- Do not let go of your elastic bands when detaching from your camera, guide them to the mantis before letting go, otherwise they will snap back and may cause harm. Allowing the bands to snap to the Mantis can damage the system over time.

- Apply 303 aerospace protectant to Elastics every 6-8 weeks for maximum elastic life. Apply to elastic and wipe dry.
- The Mantis is safe to use in the rain both natural and artificial (film fx rain)

Video instructions can be found here: <https://blkbrd.film/video-demos/>

Legal Disclaimer

The information provided in this user manual is intended for general guidance on the proper use, maintenance, and care of the Mantis. Although every effort has been made to ensure the accuracy and completeness of the information herein, BLKBRD LLC accepts no responsibility or liability for any inaccuracies, errors, or omissions. It is the user's responsibility to read and understand this manual thoroughly before using the product.

Use of this product signifies the user's agreement to comply with all terms outlined in this manual. If you are uncertain about any instructions or warnings, contact BLKBRD LLC or an authorized distributor before proceeding with the product. info@blkbrd.film or chris@blkbrd.film 323-283-9752

Limitation of Liability

BLKBRD LLC is not responsible for any injuries, losses, damages, or other claims arising from the use or misuse of this product. This includes, but is not limited to:

- Direct damages, such as physical harm to the user or property.
- Indirect or consequential damages, including loss of profits, data, or business opportunities.
- Incidental damages resulting from improper assembly, maintenance, or operation of the product.

By using this product, the user acknowledges and accepts full responsibility for its operation, including compliance with local laws, regulations, and safety standards.

QUICK START GUIDE

One Mantis, or Two?

As a first step, you will need to decide how many Mantis units you will use on your camera. All Mantis systems provide the ability to mount one or two Mantis rigs.

There are three band strengths provided:

- HEAVY 28 - 38 lbs | 12.7 - 17.2 kg
- MEDIUM 15 - 30 lbs | 8.6 - 13.6 kg
- LIGHT 8-15 lbs | 3.6 - 8.6 kg

These ratings are *per band* which means that having two Mantis units will provide double the rating in lifting power, with a maximum lifting capacity of 34.4 kilograms with 2X heavy bands (black).

Camera Connectors

You must choose how to connect to your camera, as this determines which line you will thread into the Mantis. There are two different systems we use, a Maglock hook and an Easyrig quick release system with ball socket. For Easyrig, you must select the elastics which have the installed ring connector. For hook, you select the tubes that have no connector and are just bare rubber ends.

Which Camera Mount?

Once you have set up your Mantis(s) with elastics, by following the threading instructions on the Blackbird YouTube channel or below in this manual, you may mount the system.

<https://www.youtube.com/channel/UCJ2MX0zBU1bwWWmmGHUE4ZA/videos?app=desktop>

Ready-rig

Readyrig has the mount of Mantis built-in, you simply remove the alligator clips at the end of the arms, and fasten the Mantis with the supplied 1/4-20 standard screws supplied with nylon coating to secure the bolts.

Easyrig

The Easyrig requires an adapter for the Mantis. The Easyrig adaptor fits standard Easyrig posts (Stabil included), and with the supplied inserts, it also fits Minimax (stabil included).

The Easyrig adaptor fits to the end of the Easyrig without any modification. You simply fit the adaptor over the arm of the rig, placing the Easyrig line to the back or to the front of the arm depending on your placement of the Mantis. Fix the four plate screws with an M5 hex key. If placing the Mantis adapter behind the stock easy rig string you can remove all 4 screws fully and reattach the adapter behind the easy rig adjustment knob.

You can place a single mantis on either side of the easy rig adapter, we prefer the camera right side.

Scaffold / Speedrail

As with Easyrig, there are two steel mounting pins. For 1 ¼" (American standard) leave the included sleeve installed in the mount. For 1 ½" (Euro standard) you must remove the installed reduction sleeve. Simply back out the ⅜ 16" set screws and slide the sleeve out.

Walter Klassen Slingshot

As with the Ready-rig, you must remove the stock connector terminals and attach the Slingshot adaptors, this time fastening with the inbuilt set screws. Ensure a secure fit and test for fastening.

BAND SELECTION

Ensure that you select a band that is appropriate to the weight of your camera.
Selection of band comes down to three factors:

1. WEIGHT OF CAMERA

The thickness of the band must be matched to the camera weight, regardless of the number of tubes or camera distance from the head (i.e. low mode vs. high mode)

The closer your camera is to the middle of given weight range the better the system will perform. Using an elastic that is too strong for a given payload will result in poor performance much like using the wrong springs in a steadicam arm.

2. DUAL VS QUAD TUBE ELASTICS

A Mantis can have varying elastic run-length, determined by the number of black aluminum tubes (dual, quad or more.) and the length of those tubes. We have included below a chart for calculating the required length of elastic for a given configuration.

Dual Tube: 5' 5" Elastic

Quad Tube: 7' 10" Elastic

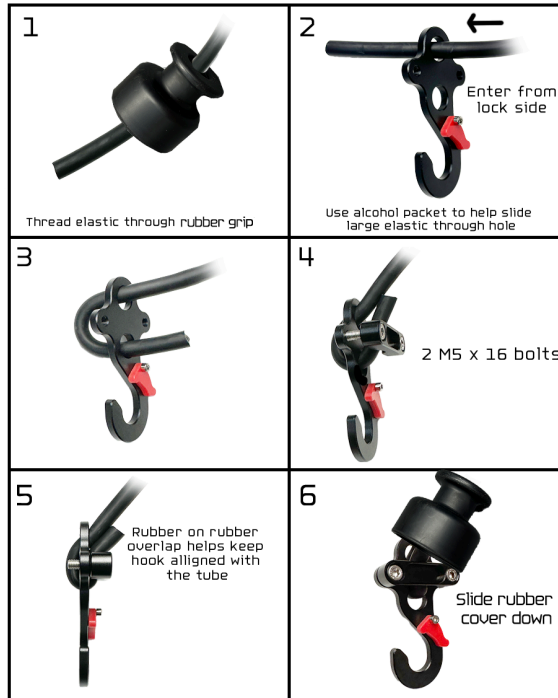
Dual Tube for Slingshot: 6' Elastic

3. ONE OR TWO MANTIS UNITS

If you are connecting two Mantis units to your camera, you will effectively halve the camera weight, or said another way, you will double the lifting power of a given elastic. As an example, if your camera is 8 kilograms, and you are lifting it with two Mantis units, you will need to lift 4 kilograms on each line, which means that you will be using two **light** bands, whereas with a single Mantis unit, you would need a **medium** band.

CAMERA CONNECTORS

CONNECTING THE MAGLOCK HOOK



CONNECTING THE EASY RIG QUICK RELEASE

Check out our video tutorial on how to install the easy rig quick release. You'll need to remove the 5 set screws from the original Easy Rig QR. Be careful here as they are sometimes quite difficult to remove, if you're unable to remove them use a heat gun or hair dryer to loosen up the loctite.

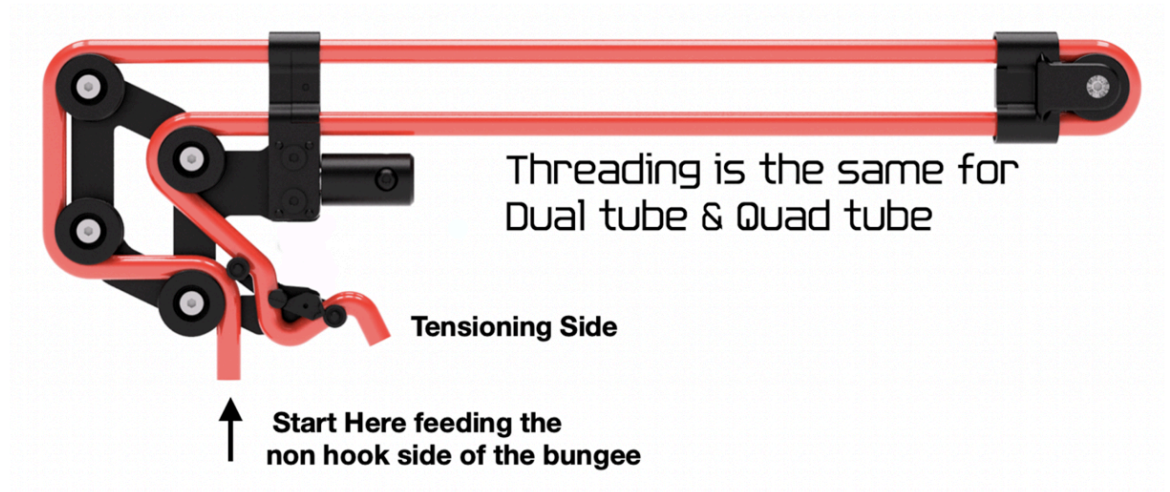
Using the same set screws attach our aluminum retrofit cap ensuring that the spring lines up with the hole on the underside of the cap.

Be careful not to overtighten the set screws as this can pinch the walls inside the mechanism and affect operation of the quick release.

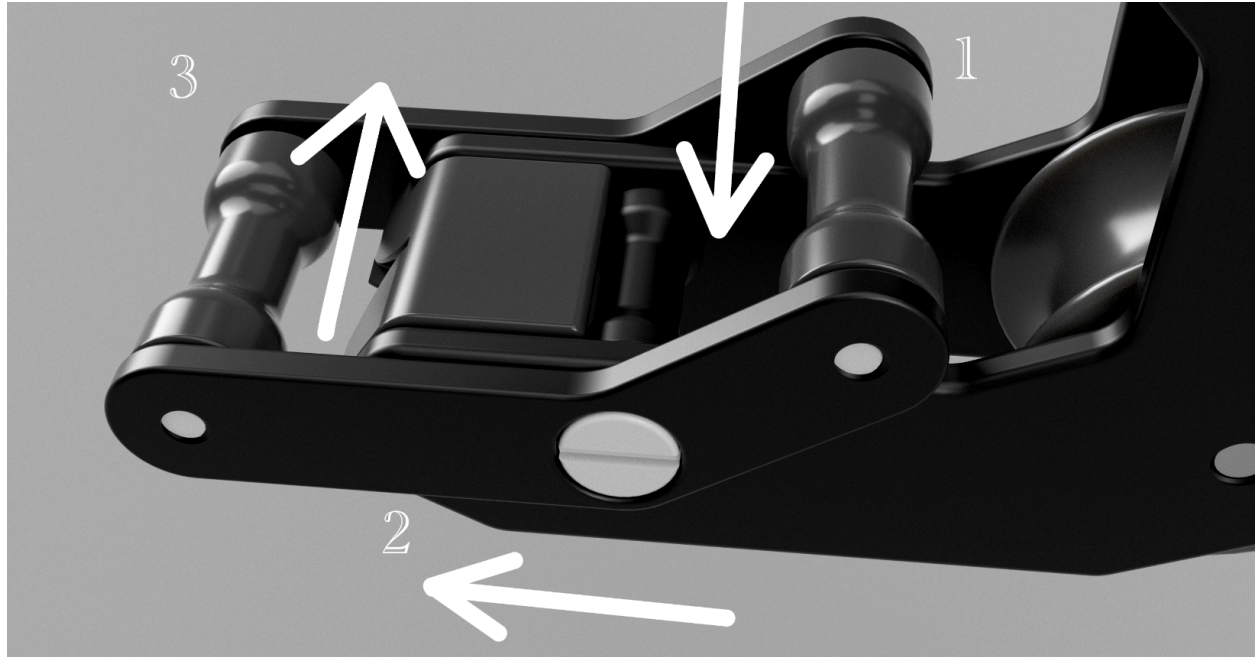
 [Easy Rig Quick Release Retrofit Install Tutorial](#)

THREADING THE MANTIS ELASTICS

Before you can thread the tube, you must put a camera connector on the camera side of the rubber line, so that the line is prevented from retracting into the head.



1. Thread the elastic up around the left side (as pictured above) of pulley 1
2. Thread elastic *upwards* past the left sides of pulleys 2 and 3 and into the top guide tube.
3. Thread the elastic around the return roller, tip the Mantis vertical so it falls through, and then feed the tube down the bottom guide tube back towards the head.
4. Once the tube lead appears inside the head, push the tube *downwards* past roller 4



6. Pass the cord over the top of locking roller 1, underneath locking roller 2, and over the top of locking roller 3 as pictured above.

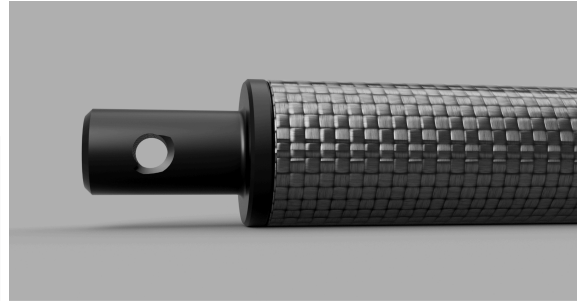
7. Once the lead cord is through the retention arm, pull the rubber through until a small amount is locked outside of the Mantis head.

8. Remove the lead thread and attach the cap to the end of the rubber over the cord loop.

QUAD TUBE

If you are using more than two tubes, you must repeat step 3 and 4 in the same fashion, turning the tube back 180 degrees along the return tube.

The Mantis connection is designed on the attachment pin of a Ready-rig arm. You must remove the Ready-rig interconnector to expose this pin, using a 5/32" driver on the screw that attaches the aluminum pull pin housing.



You can store the screw in the barrel thread designed to keep the screw, for return to the Read-rig, or to use to connect other accessories such as Easy-rig or Speedrail.

Once you have placed the Mantis on the Ready-rig pin, fansten using the supplied 1/4"-20 cap screw.

MINIMAX

Use the supplied Minimax insert to reduce the adaptor size. This adapter clicks in-to place over the aluminum. We do not recommend exceeding the maximum weight capacity of the Mini max while using the Mantis, Easy Rig will not warranty any damage done to the mini max from 3rd party products.

SPEEDRAIL ADAPTER

The pipe should be fitted with the 1 1/4 insert for Speedrail, or left as-is for 1 1/2 scaffold.

1. Fix the adaptor securely to the pipe with the four grub screws.
2. Insert one or two pin adaptors into the bracket.
3. Affix the Mantis with the supplied hex head screw.

DUAL MANTIS HEADS - HIGH MODE

If you are using two Mantises on a single bracket, and you are drawing the camera up high to just below the mount, the heads may touch each other. In this instance we have designed an extra wide bracket to place the pins slightly wider.

SLINGSHOT

The Walter Klassen Slingshot is similar to the Ready-rig, you must remove the standard connectors of this system and attach the Mantis adaptors (2x), which also have the same grub screw fixing method (hex number).

CAMERA CONNECTOR

You are almost ready to use your Mantis. You must now put the camera connector on to the camera. If you are using the hook, you will need to use our "Universal hook adapter" or attach one of the included plastic spuds directly to the side of your cameras top handle.

CONNECTION AND TENSIONING

You are ready to connect the camera to the rubber line. Test tension with your hand to see if it is close to your camera weight. If the rubber feels weak add tension via the tensioning mechanism.

TENSIONING MECHANISM

The self-locking retention arm of the Mantis uses the friction and elasticity of the rubber to arrest the line. In order to tension, you simply pull on the line down to add tension, then bring the line back toward your body to lock. If you're wearing the Mantis on a vest it's best to do this in small increments, and while holding the camera and lifting it slightly to aid tensioning.

Depending on the grade of rubber and weight of the camera, you may hear a clicking sound as the arm closes around the rubber and comes to a rest on the side plates. This is confirmation that the lock has fully fastened, but it may not immediately occur depending on line thickness and payload.

TENSIONING WITH CAMERA

Now you can test the line tension. You can do this with your own hand, or you can connect it immediately to the camera. Always tension the system with one hand on the camera, and one hand on the tensioning side of the elastic.

With your hands firmly gripping camera and elastic, you can open the lock and trade off lift with your camera hand against tension on your line hand. To test where your camera height sits, you must continue adding tension and letting your lifting hand down until the camera floats at your desired height. We recommend around belly button level to fully take advantage of all the boom range the Mantis has to offer.

AMOUNT OF LIFT

How much lift you provide from the system and how much you wish to provide yourself to lift the camera is a matter of preference. In our experience we have found that a 90/10 split of lift from the rubber to your hands works well, providing slightly more control overall compared to a system that is lifting the rig fully under the elastic lift.

YOU'RE READY TO SHOOT!

MAINTENANCE

Elastic Care

Inspect your elastics regularly and before each use.

Do not use elastics that have heavy cracking or cuts in them.

Do not overload elastics beyond their maximum rating, doing so can result in excessive wear on the elastics in the tensioning mechanism.

Apply 303 aerospace protectant to Elastics every 6-8 weeks for maximum elastic life. Apply to elastic and wipe dry. 303 wipes or spray are included with every Mantis and can also be ordered on amazon. <https://amzn.to/4fyHUyM>



Do not cut or trim the elastics, there is a fluid contained inside that will leak out and affect performance.

Tensioning method:

Before hooking into your camera add some pre tension to the system.

Pull the elastic straight down then bring your hand toward your body to engage the elastic lock.

Repeat this process pulling small amounts of elastic each time.

Once you've added some pre-tension go ahead and connect your camera, you'll likely need to add or release some tension. With your free hand, lift the camera up toward the Mantis.

To release tension grasp the elastic 1 ft from the tensioning mechanism, pull toward your body then straight down to release. Move your hand up toward the tensioner and then back toward your body to lock.

Do not let the elastic slide through your hands when releasing tension. The system is designed to be used with a firm grip on the elastic at all times.

To add tension, lift the camera up toward the Mantis with your free hand. Use your other hand to grasp the elastic close to the tensioning mechanism, pull toward your body then down, move your hand back toward your body to lock.

Reconfiguring (Dual Tube/Quad Tube):

Every configuration of Mantis is made up of shared components. If you purchase a Quad Tube configured Mantis you can easily convert it to a Dual Tube.

1. Unthread the 8 ft elastic
2. Remove the three return rollers and 2 outer tubes
3. Install one of the return rollers onto the two tubes extending from the main body of the Mantis
4. Tighten the screw on the return roller
5. Re-thread with a 6 ft elastic

Configure two Dual Tube Mantis stabilizers into a single Quad Tube Mantis.

1. Purchase/ Locate your "Extra Return Roller" available on the BLKBRD store
2. Remove the two return rollers from your Dual Tube Mantis stabilizers
3. Attach one return roller to each end of the tubes on one of your units.
4. Remove the two tubes from the other unit and attach them to the open side of the two return rollers.

5. Attach your “Extra Return Roller” to end of the second set of tubes.
6. Thread with an 8 ft elastic

Elastic Storage Clips:

Our elastic storage clips are designed to clip onto the aluminum tubes of the Mantis and hold the slack elastic after tensioning. The clips are sized for the Heavy and Medium elastics by default. If you wish to store Light elastics you'll need to install the included reduction plates.

Easy Rig Quick Release:

Our easy rig quick release retrofit kit allows you to attach an elastic band to an easy rig quick release. You'll need to order bands with the attachment pre-installed.

1. Take your existing Easy Rig quick release and remove and save the 6 set screws from around the aluminum cap.
2. Attach the aluminum cap from the retrofit kit and fasten with the set screws you saved.
4. Position the steel connector between the flanges of the aluminum cap and fasten with the m4 set pin.
5. Tighten and slide the rubber cap over the whole assembly.

Mag Lock Hook:

The mag lock hook is designed to auto lock when attached to a spud.

To remove the Mag Lock Hook from your camera either push the lock back while removing the hook, or rotate the lock to its most open position where it will be magnetically held.

The lock will not auto lock when in the open position

Plastic Spuds:

The plastic spuds are designed to mount to the side of your cameras top handle or to our gimbal ring adapters. When attaching the spuds use caution not to over tighten them or the hooks will not move freely when attached.

Spuds may be stacked with longer $\frac{3}{8}$ 16 bolts if desired.

Speedrail Adapter:

To mount the Mantis Speedrail adapter to a 1 $\frac{1}{4}$ " pipe (USA standard) use the included reduction collar.

For 1 ½" Speedrail back out the $\frac{3}{8}$ 16 set screws and remove the reduction collar. Slide onto the pipe and tighten the set screws.