

# STEADICAM<sup>®</sup>

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# PILOT

## QuickStart Guide



## Pilot™ Sled

### *The Pilot™ Sled*



### *Stage connectors*





**Co-Pilot™**  
3.5" monitor and  
AA battery pack

### Camera mounting plate



All four screws must be loose to free the camera mounting plate.

Make sure to tighten all four screws on the camera mounting plate when you attach your camera.

### Battery options

Recommended batteries: AA's for Co-Pilot, IDX E-7S (1.2 lbs.) for Pilot.



V-Lock with IDX E-7S battery. AB mount with Dionic 90 (1.7 lbs).

### Pilot™ Backpack

(With integrated MERLIN storage pocket.)



### Included accessories



T-handle allen wrench, 2.1mm DC power cable, RCA video cable, BNC to RCA adaptor, camera mounting screw and anti-rotation pin.

### *Attaching the camera*

First, find your camera's center of gravity. Try balancing it on something round like a pencil both fore and aft and side to side. Then, attach the center of the camera mounting plate 1/4" to 1/2" forward of the camera's fore and aft c. g., and centered over your camera's side to side c.g.

Secure the camera to the mounting plate with the screws provided. Use either two screws or one screw and an anti-rotation pin.

Place the camera onto the sled.



Tighten the four knobs securely.

The camera is now positioned so its center of gravity is slightly behind the centerline of the main posts. (See the blue tape in the photo below.) This is ideal for achieving good dynamic balance.



### *The docking bracket and balancing stud*

The sled hangs by the docking ring on the forked portion of the docking bracket. To balance the sled, spin the docking bracket towards you and slip the gimbal handle over the stud.

Be sure the stand is secure and won't tip over; use sandbags for safety.

We need to balance the sled in all three axes: top to bottom, side to side, and fore and aft. In general, we want the sled to hang upright and not be very "bottom-heavy."

Note: SteadiStand™ (p/n 601-7910) is available as an optional accessory.



## Static Balance

First, adjust your bottom heaviness by moving the gimbal on the post.



**Only loosen the gimbal with the sled horizontal.**

Slide the main post until everything is in balance, then move the gimbal towards the camera about one half inch and tighten the clamp. Let go of the sled and let it rotate through vertical. It should take about three seconds. Raise the gimbal to decrease the drop time; lower it to make the drop time longer.

Grossly adjust the fore aft balance by moving the lower spar as shown in the three photos below.



Fine-tune the fore aft and side to side balance with the knobs on the stage.



Adjusting the fore and aft balance.



Adjusting the side to side balance.



This is how a typical set-up should look, with the gimbal fairly close to the camera.

**Note:** We typically trim or alter this fine balance to help us aim the camera — for instance to hold headroom.

## Dynamic Balance

Dynamic balance is a term we use for a sled that stays level (main post vertical) as it is panned, i.e., it pans flat.

You have several possible adjustments, including moving the spar as shown (left), adding weights, and sliding the monitor or battery independently to achieve dynamic balance.

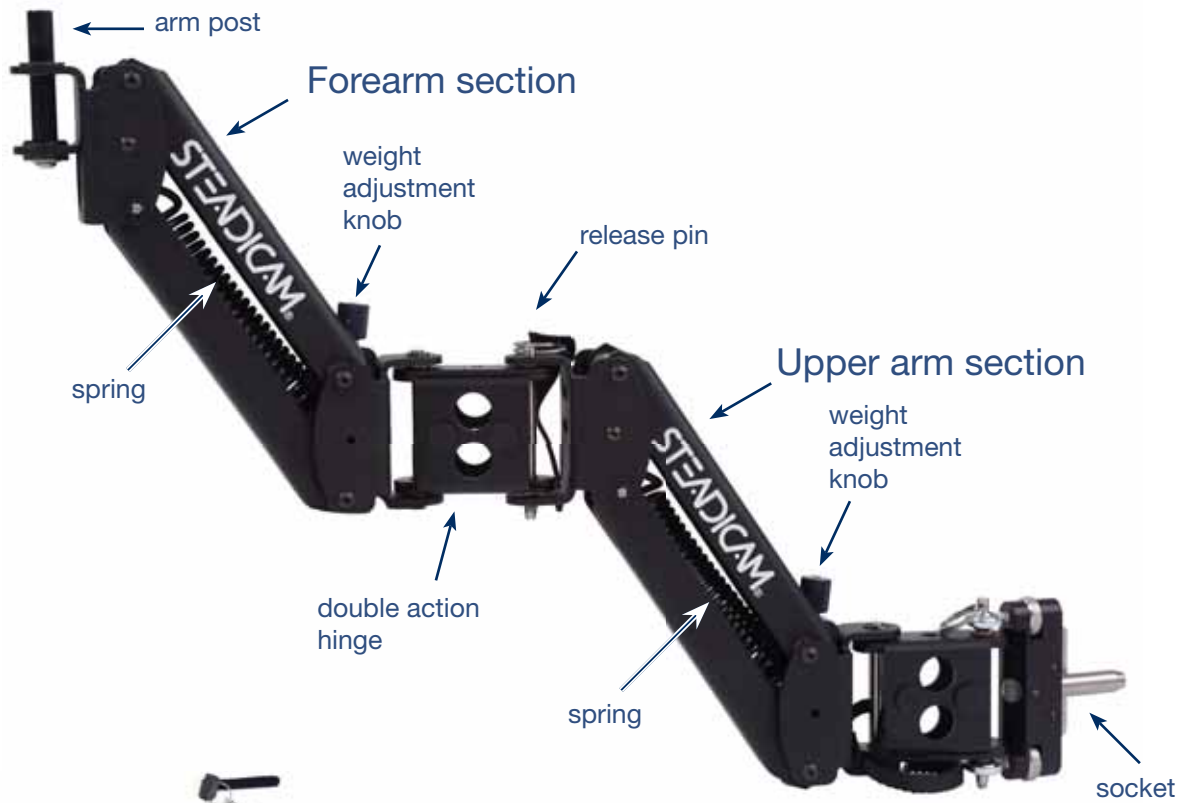
Download and read “The Dynamic Balance Primer” on [www.steadicam.com](http://www.steadicam.com) for more information on this complex subject. What’s great is the Pilot™ has many options to help you achieve dynamic balance.

### *The Pilot™ Vest*



The hip pads fit around your hip bones, not above them. If the vest is too short, lengthen the spar by loosening the four tee handle screws on the socket block and slide the spar to fit.

# The Pilot™ Arm



The arm rides in the backpack in two pieces.



To assemble the arm, align the two sections and insert the pin.

## Socket adjustments



As shown in the left photo, set the upper "side to side" adjustment to two to three turns out, and the bottom screw all the way in.

### *Putting on the vest*

The vest should be tight and not slip on your body. The front spar should be vertical. The vest should be long enough to engage your hip bones, but not so long that you can't lift your leg without disturbing the vest.

Start at the top and work your way down. Keep that spar vertical!



### *Adjusting the arm*

You've adjusted the balance of the sled, and put on your vest, now you need to adjust the arm to carry the load.

Insert the arm into the socket block fully as shown.



Use the two "Tee" headed screws to set the "in and out" angle of the arm. Start with the upper screw almost all the way in if you look like Michael (above). If you have a big belly, start with the upper screw further out.



Set the top screw and just barely tighten the bottom screw.

The two screws work in tandem. To make further adjustments, you must loosen one in order to tighten the other. Don't overtighten these screws!

Adjust these screws again after you pick up the Steadicam.



## Making it float

This is how you want to look wearing the Steadicam Pilot — natural and relaxed, with your hips turned slightly towards the sled. Note that the sled is not at your side, but more at a 45° angle to your hips.



With everything adjusted properly and with a natural stance, the rig should “float” next to you. A gentle touch with your left hand just below the gimbal guides the camera, while the right hand booms and places the whole sled in place.

*If the rig won't float next to you, you must adjust your posture and/or adjust the angle of the arm:*

If the rig is falling away from you, tighten the upper “Tee” head screw. If the rig wants to come too close, loosen the upper screw.

If the rig falls to your right, screw the top side to side adjustment in. If it falls left, turn the top side to side adjustment to show more threads.

Be careful to maintain a good and consistent posture while making these adjustments, or you will be fine tuning all day...

## Setting the arm's lift

You must be carrying the sled to adjust the arm lift. Adjust the lift with the arm angled slightly up — the knob will turn easily.



Each arm section should settle to a slightly upward angle as shown in the photos.

Adjust the forearm (the section nearest the sled) first, then the “upper arm” section.



Stand naturally and boom all the way up and down. Both arm sections should track together. Do not bend over or lean back as you boom up and down.

## Weight Kit & Telescoping Post

### Adding weight and increasing length

Use the telescoping post and the weight kit to increase inertia (improve stability) and/or to move the gimbal relative to the camera.



*Here are some examples of how to use the posts and the weights.*

*First, with a 5.2 pound camera on the Pilot:*



No weights: less inertia, Gimbal lower (lens higher).



All weights up: Gimbal closer to camera, inertia increases in pan.



All weights low: Gimbal lower (increases lens height), even more inertia than all weights up.

Longer posts: Gimbal much further from camera, tilt and roll inertia increased dramatically.

(Shown with all weights low and no weights).



*A 5.2 pound camera on the Co-Pilot:*



With the Co-Pilot and a heavy camera, all combinations of weights and post extension will work.

*Now, with a 1.1 pound camera on the Pilot:*



No weights.

All weights up, gimbal closer to camera.

Weights up with post extended, more inertia.

No weights, post extended, gain lens height and more inertia in tilt and roll, but no increase in pan.



The gimbal is really too low (above left) without the weights attached to the stage.

With weights (above right), the gimbal is in a better position for operating.

With a light camera and a short post, however, the weights can't be added to the lower spar without getting the gimbal too low.

With a very light camera you may need to add weights just to properly load up the arm (the arm needs at least 2 lbs of camera), and/or get the gimbal reasonably close to the camera in the shortest mode.

## Monitors



The 5.8" 4:3/16:9 monitor accepts both PAL and NTSC signals and it has two video inputs. The monitor operates on a nominal 12V.

The menu screens cycle with the menu button, and there are controls for brightness, contrast, color, tint, horizontal and vertical reverse (good for low mode operating), a 100%/50% dimmer, and a mode control (Full, Normal, Zoom 1, 2, and 3, and Wide 16:9)



Use the up down arrows to make adjustments.



The 3.5" monitor comes in two versions: PAL or NTSC and can be used separately by installing 9x AA internal batteries. It has thumbwheel controls for brightness and color.

## Low mode

You can work in what's called "low mode" with the Pilot or Co-Pilot and get the lens much lower than in normal or "high" mode, and even lower with the extended post.

In these pictures, Michael is using the optional F-bracket (P/N 078-7393-01). With the post extended, you don't need the F-bracket for low mode operating, but the lens will be higher.



With the types of cameras usually used with the Pilot and Co-Pilot, there's no easy or strong way to mount them from the top. We usually leave the camera mounted as it is in high mode, so the camera is upside down. If you leave the monitor in the same position, the image will be right side up as you shoot, but the image must be reversed in editing.

With the 5.8" monitor it's possible to place it above the spar and reverse the image for shooting (not shown).

If you need to keep the recorded image right side up, you'll need to design a lightweight cage to hold your camera. Make the cage so you can still add accessories, open the camera's viewfinder, access all controls, change batteries, and change tapes or cards.

***Don't bend over to get the lens lower!***

Maintain good form as shown in the photos.



With the camera right side up in low mode, you must rotate the Co-Pilot's monitor above the spar as shown in the photo.

### Accessories & Part Numbers

<i>P/N</i>	<i>Description</i>
FFR-000045	ENDURA CHARGER, PORTABLE, SINGLE CHANNEL
FFR-000046	ENDURA E7-S LI-ION BATTERY, 71WH V-MOUNT BATTERY PACK
FFR-000048	ENDURA E-7S STARTER KIT
MSC-200502	REMOTE CONTROL FOR PILOT 5.8" LCD MONITOR
MSC-200503	MONITOR UNIVERSAL AC ADAPTER, 12V X 1A
078-5238-01	BACKPACK, PILOT
078-7393-01	LOW MODE KIT, BRACKET
601-7910	ASSEMBLY STEADI-STAND
801-7920-04	START WEIGHT W/O-RING
801-7920-05	MIDDLE WEIGHT W/O-RING
FFR-000030	OBIE LIGHT
801-7800	MERLIN/PILOT VEST
801-7200-02	ASSY, ARM WITH PILOT POST
804-0000	ASSY, SLED PILOT
804-7300	ASSY, AA BATTERY MOUNT, PILOT
804-7310-01	ASSY, V-LOCK BATTERY MOUNT, PILOT
804-7310-02	ASSY, ANTON BAUER BATTERY MOUNT, PILOT
804-7305	ASSY, DUMMY AA BATTERY**
804-7900	ASSY, DOCKING BRACKET, PILOT
804-7290	MERLIN ARM POST CONVERSION KIT
804-7291	PILOT ARM POST CONVERSION KIT
MSC-200400	MONITOR, 3.5", 4:3 NTSC LCD
MSC-200401	MONITOR, 3.5", 4:3 PAL LCD
MSC-200500	MONITOR, 5.8" 4:3/16:9 NTSC/PAL LCD

\*\*Voltage at the top stage DC power plug can be reduced in AA battery pack type PILOTS using Alkaline AA batteries by installing two optional DUMMY AA battery cells (p/n 804-7305) in place of Alkaline battery cells. This will allow 12V only accessories to be operated from the DC power plug.





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