

**Steadicam® G-70**  
**Iso-Elastic Stabilizer Arm**

**Manual**

LIT-\_\_\_\_\_  
Version 1.0

Tiffen  
Steadicam Division  
6933 San Fernando Road  
Glendale, California 91201 USA  
[Steadicam@tiffen.com](mailto:Steadicam@tiffen.com)

## STEADICAM G-70 ARM OPERATION MANUAL V1.10

Tiffen Steadicam LIT-\_\_\_\_\_

### **Description:**

The Steadicam G-70 Arm is the second release of Tiffen's new G-Series with our revolutionary *Geo* spring geometry. The design criteria: lighter, stiffer, less-expensive and user-maintainable, with unprecedented boom range, soft high/low 'bumpers' and a new feature called *Ride* which adjusts the quality of the 'float' or 'iso-elasticity'. (Note: *Iso-elasticity* can be defined as the vertical 'bandwidth' throughout which *lifting power* closely approximates load.

The G-70 includes a new no-tools arm-post control system. A lever releases the post, and a small thumbscrew independently controls rotational drag – from completely free on bearings to totally locked. Changing the post does not alter the amount of preset friction. At the body end of the arm, a new offset angle keeps the mount from banging against stops while running, and also steers the arm further out of your way as you shoot sideways.

The G-70 weighs just 10.8 lbs (4.9 kg), is four times as resistant to torque, has 32 inches (81.3 cm) of boom range and can be lifted or depressed right to its limits without shot-disturbing 'clunks'. The G-70 Arm segments are powered by co-axial, inner and outer titanium spring sets. Patent-pending *Geo* spring geometry tames high/low arm travel with adjustable-length crankshafts that rock the spring termination in and out as the arm raises or lowers and optimize performance throughout the lifting range.

Each arm segment has two adjusting knobs:

***Lift*** dials lifting power continuously from 12 lbs (5.4 kg) to 70 lbs (32 kg).

***Ride*** expands or contracts the crankshaft to dial ‘iso-elasticity’ from a hard ride resembling the classic IIIa arm, to an ultra-soft ‘iso’ ride – just shy of locking up at top and bottom.

### **Adjustment of Ride:**

*Ride* can only be adjusted when the respective arm segments are raised to their highest, unloaded position. Preset the *Ride* knob to the desired level of iso-elasticity *before* picking up the load or attempting to adjust the *Lift* knob.

The *Ride* knob has a 21-turn excursion from fully clockwise to fully counterclockwise. ***The stops at both ends of travel should not be forced.***

Turning *Ride* clockwise *hardens* the ride (the quality of float), and makes the arm segment *less* iso-elastic, for vehicle shots

Turning *Ride* counterclockwise *softens* the ride, and makes the arm segment *more* iso-elastic.

*Before adjusting Lift for a different weight of camera, we suggest that you preset the Ride knob to the middle of its travel (about 20 threads visible).*

*Note:* The G-70 arm becomes progressively more iso-elastic as *Lift* is decreased. Light loads may require clockwise adjustment of *Ride* to decrease iso-elasticity. Heavy loads, conversely, may require fully counterclockwise adjustment of *Ride* to obtain the desired iso-elasticity. We suggest you adjust *Ride* after adjusting *Lift* for any given load.

### **Adjustment of Lift:**

The *Lift* knob can best be adjusted when the arm segment is held slightly above level. Check that the spring itself is perpendicular to the adjusting mechanism, so the spring force is neutral – neither up or down – which reduces the effort needed to turn the knob.

When fully counterclockwise, the *Lift* knob yields approximately 12 lbs (5.4 kg) of lift.

When fully clockwise, the *Lift* knob yields approximately 70 lbs (32 kg) of lift

Note that the *Lift* knob can be turned clockwise about 32 turns. This means that *each turn of the Lift knob will add or subtract about 1.5 pounds of lift*. Raise or lower the arm segment so that the knob turns easily and be prepared to make as many quick turns as necessary to get the arm segment to lift the desired weight.

*When adjusting from a light load to a heavy load*, it helps to have an assistant independently control the height of the ‘upper’ arm (segment nearest to the body) and make his *Lift* adjustment at the same time as you adjust the ‘forearm’ (segment nearest to the camera).

*It also helps if you raise your docking stand so you can stand next to it and insert the arm post into the gimbal yoke of your docked sled with your heavy camera aboard. As you and your assistant adjust the Lift controls of both arm segments, they will gradually pick up the weight until it floats free of the dock.*

*When adjusting from a heavy load to a light load*, leave the heavy load aboard if possible, with the sled on the stand, and likewise remain adjacent to the stand while you lighten the *Lift* controls of both arm segments at the same time. Then

remove the heavy weight and rebalance the sled for the light camera and then see if *Lift* needs further adjustment.

*Lift* can be altered by forcefully holding the arm segments at the correct angle while adjusting, but be prepared for some exertion! You'll be shocked how energetic the springs will feel if you are raising or lowering the lift by 30 lbs, and remember the *one-pound per turn* rule of thumb. It may take a lot of turns.

*Note:* we recommend that the *Lift* of the G-70 be adjusted so that both arm segments float slightly above level. ***The stops at both ends of travel should not be forced.***

*Note:* the two 'Manhole Cover' nuts just below the Lift knob retain the lift-adjusting mechanism. The larger, outer nut retains the bearing in the 'manhole'. The smaller inner nut locks the threaded adjusting shaft in place. *Note: Unless the co-axial spring is slacked or removed, fully loosening either retaining nut can cause the shaft to violently disengage and may damage the mechanism.*

**(Complete, illustrated, user-disassembly and service instructions will be posted on Steadicam.com and will be available for download as a .pdf file.)**

Manual.Steadicam.G-70 Iso-Elastic Stabilizer Arm-Tiffen LIT-  
4.24.2006