



GLIDECAM®
SMOOTH SHOOTER™

MANUAL

GLIDECAM INDUSTRIES, INC.

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Manufactured in the U.S.A.

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VERSION 2

NOTICE - PLEASE READ

The ANTI-SPRING ROTATOR depicted below is no longer required or included with your Glidecam Smooth Shooter.

Your system has been modernized and now uses TWO RETAINING BOLTS per spring instead of one. By positioning these BOLTS side by side the SPRINGS cannot rotate, thereby rendering the ANTI-SPRING ROTATOR shown below obsolete. If you take a close look at your new Smooth Shooter you will see that the SPRINGS already installed inside are held on one end by TWO RETAINING BOLTS that are positioned parallel to each other.

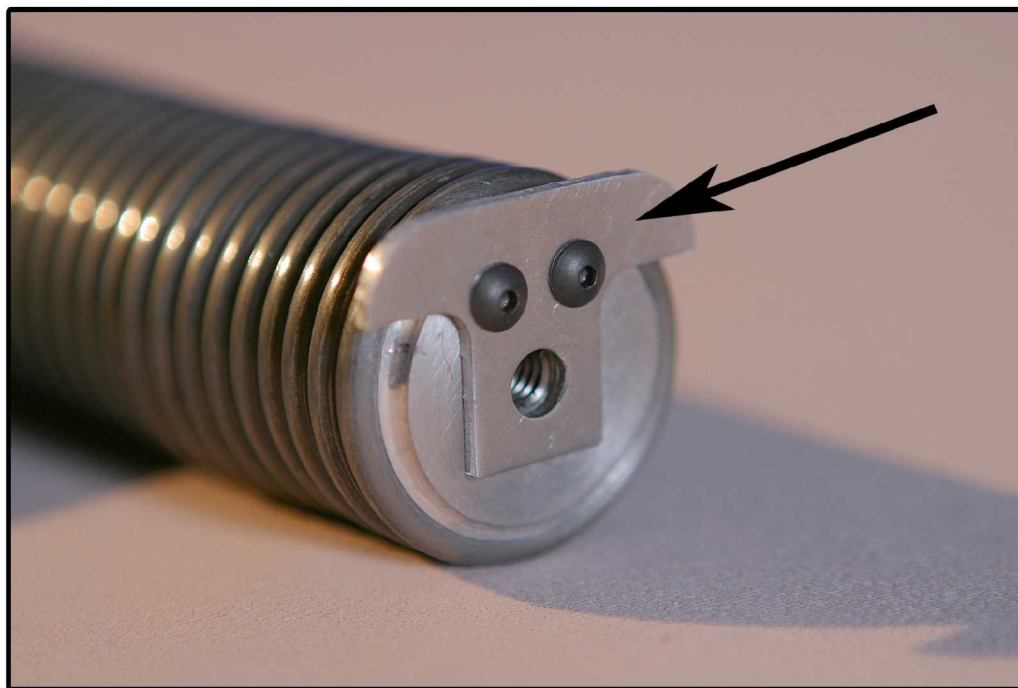


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CHAPTER ONE

INTRODUCTION

Congratulations on your purchase of a GLIDECAM SMOOTH SHOOTER.

In order to use the GLIDECAM SMOOTH SHOOTER system, it is best to have a basic understanding of how the system works in advance. So please make sure you read this section before trying to setup and operate the GLIDECAM SMOOTH SHOOTER.

The GLIDECAM SMOOTH SHOOTER Camera Stabilization System is designed to allow you to walk, run, go up and down stairs, shoot from moving vehicles and travel over uneven terrain without any camera instability or shake, when used with the GLIDECAM 2000 PRO or GLIDECAM 4000 PRO (not included). The GLIDECAM 2000 PRO and GLIDECAM 4000 PRO are generally used as hand-held camera stabilizers; however, they can also be used with the GLIDECAM SMOOTH SHOOTER, and when they are, they are referred to as a SLED. The SLED carries your camera and is attached to the end of the SPRING-LOADED SUPPORT ARM, which, in turn, is attached to the GLIDECAM SUPPORT VEST.

When using the GLIDECAM 2000 PRO or GLIDECAM 4000 PRO in hand-held mode, your arm is carrying the weight of the SLED. However, when the 2000 PRO or 4000 PRO are used with the SMOOTH SHOOTER, it is the SMOOTH SHOOTER'S SPRING-LOADED SUPPORT ARM that carries the weight of the SLED. Because of this, you will now be able to shoot for extended periods of time, whereas before, the stress associated with hand-holding the SLED reduced your shooting time.

While the GLIDECAM SMOOTH SHOOTER is in essence a very simple device, its simplicity doesn't lend ease in answering that often asked question, "how does it work?" To answer this question completely would require delving into Newtonian Physics and Classical Mechanics. We would have to explain - center of gravity displacement, inertia, reduced friction and angular motion reduction etc. However, a quick answer reveals the GLIDECAM SMOOTH SHOOTER works by "isolating" your body's motion from your camera, while your camera is balanced in an isolated and relatively motionless state.

The GLIDECAM SMOOTH SHOOTER requires practice and understanding to achieve professional looking results. We highly recommend that the user read this manual thoroughly before setting up and operating the GLIDECAM SMOOTH SHOOTER. Doing so will save you time, and will minimize the risk of damage to your camera or the GLIDECAM SMOOTH SHOOTER. It is important to perform and follow the Setup and Operation's procedures in the proper sequence, so as to avoid both frustration and a possible accident.

If you need technical assistance, you can call our **Technical Support Line at 1-781-585-7900**, between the hours of 10:00 AM and 5:00 PM, Eastern Standard Time, Monday through Friday. We're sure that once you have your GLIDECAM SMOOTH SHOOTER up and running, you will find years of enjoyment with it.

CHAPTER TWO **QUICK SETUP**

Since you will be using your GLIDECAM SMOOTH SHOOTER with either a GLIDECAM 2000 PRO or a GLIDECAM 4000 PRO (hereafter referred to as the SLED), you should make sure that your SLED is already setup and properly balanced. Please see the GLIDECAM 2000 PRO or 4000 PRO Manual for details regarding proper SLED setup and balancing procedures.



Figure 1



Figure 2

Included is a GLIDECAM SMOOTH SHOOTER DOCKING BRACKET, which allows you to park your SLED while it is not in use. Securely attach and tighten the DOCKING BRACKET onto the 5/8" RECEIVING PIN of an INDUSTRY-STANDARD C-STAND (Not Included) as in figures 1 and 2.

It is always best to park your SLED on the provided DOCKING BRACKET, as in figure 3. However, if you do not currently have a C-STAND, it is acceptable to park your SLED on a TABLE TOP and therefore not use the DOCKING BRACKET.



Figure 3

When you park your SLED onto the DOCKING BRACKET, make sure that the SLED'S HANDLE is facing directly outwards as in figure 3. By parking your SLED this way on the DOCKING BRACKET, it will be easily accessible to you when it comes time to put the SLED onto the end of the SUPPORT ARM.



Figure 4

The GLIDECAM SMOOTH SHOOTER'S SUPPORT ARM (figure 4) comes preconfigured with two EXTENSION SPRINGS, which are already installed. These SPRINGS are also preset to their weakest LOAD SETTING. Later, in the CONFIGURATION SECTION, we will discuss how to make adjustments to the arm in detail. For now, leave the SPRINGS in the SUPPORT ARM at their factory setting.

Now, install the BLACK ARM POST into the ARM POST CLAMP at the end of the SUPPORT ARM, as in figures 5 and 6.



Figure 5

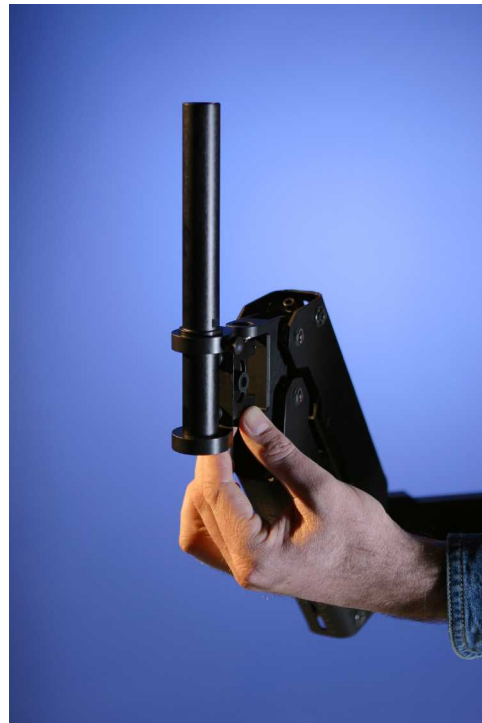


Figure 6



Figure 7

Tighten the ARM POST into the ARM POST CLAMP, making sure to align the NOTCHES in the ARM POST so that they face the TIGHTENING SCREW as shown in figure 7. Do not OVERTIGHTEN this PLASTIC TIGHTENING SCREW, for this could damage the THREADS. The reason that the TIGHTENING SCREW is made of plastic is so that it will not scratch the ARM POST.



Figure 8



Figure 9

Put the GLIDECAM SUPPORT VEST on next. Adjust the STRAPS on the VEST until the VEST fits you comfortably; however, make sure that the VEST is not on too loosely, for it needs to bear the combined weight of the SUPPORT ARM and SLED. Also, you should take note that if you are planning on walking up and down stairs or walking over uneven terrain, that you should make sure that the very bottom of the vest is not positioned so low on your torso that it inhibits your legs from moving up and down fully.

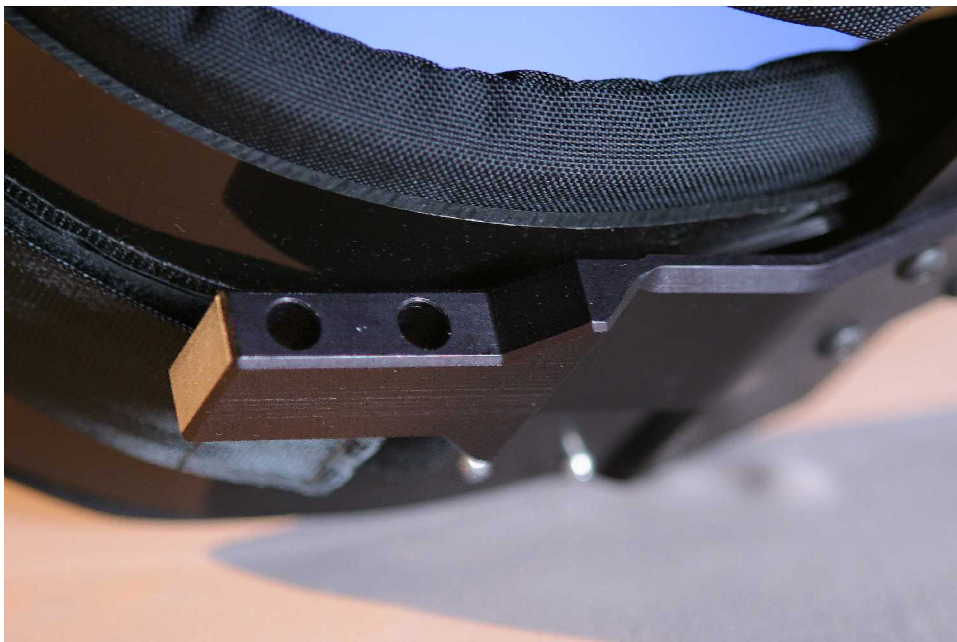


Figure 10

Connect the SMOOTH SHOOTER SUPPORT ARM to the GLIDECAM SUPPORT VEST. First, note the location of the two RECEIVING HOLES in the ARM CONNECTOR BAR shown in figure 10. Next, carefully align and guide the two STEEL PINS located on the back end of the RIGID ARM down into the two RECEIVING HOLES as in figure 11. Make sure that the arm is fully inserted into the RECEIVING HOLES as in figure 12.

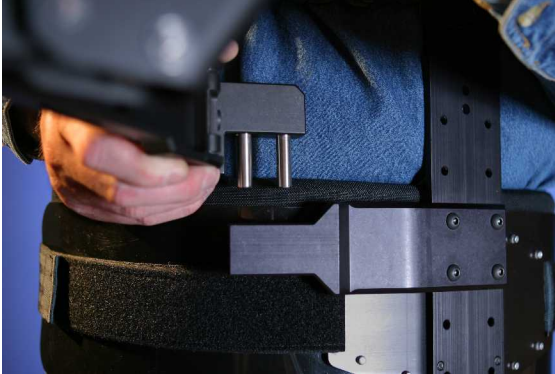


Figure 11



Figure 12

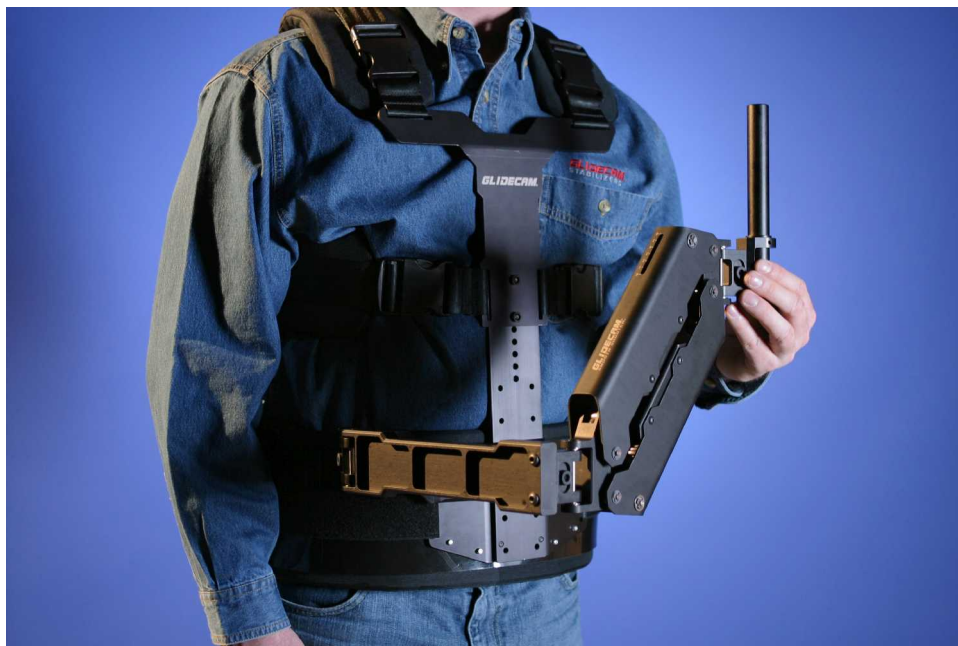


Figure 13

If everything has been done properly so far, you should now have the SUPPORT ARM attached to the VEST, as in figure 13.



Figure 14



Figure 15

You can now attach the SUPPORT ARM to the SLED by carefully aligning and guiding the ARM POST all the way into the bottom of the SLED HANDLE as in figures 14 and 15. After you have done this, hold onto the SLED HANDLE **firmly** so that as you **carefully** lift the SLED straight up and out of the DOCKING BRACKET, you can make sure that the weight of the SLED is in the control of **your** ARM and not the SPRING-LOADED SUPPORT ARM. Now gradually let the SUPPORT ARM take over the job of holding the weight of the SLED. If your SLED is **too heavy** for the SUPPORT ARM at its current LOAD SETTING, the weight of the SLED will angle the SUPPORT ARM downwards. If your SLED is **too light** for the SUPPORT ARM at its current LOAD SETTING, the SLED will angle the SUPPORT ARM upwards.

If your SLED is the correct weight for the SUPPORT ARM at its current LOAD SETTING, the ARM will remain level as in figure 16.



Figure 16

If your SLED is **too heavy** for the SUPPORT ARM, in the ARM'S current factory setting, you will need to increase the SPRING TENSION of the ARM by following the procedures outlined in the ADJUSTING THE LOAD SETTINGS OF YOUR SUPPORT ARM section of this manual.

If your SLED is **too light** for the SUPPORT ARM, in the ARM'S current factory setting, you will need to decrease the LOAD CAPACITY of the ARM by removing one of the SPRINGS as outlined in the REMOVING THE SPRINGS FROM YOUR SUPPORT ARM section of this manual.



Figure 17

The GLIDECAM SMOOTH SHOOTER is designed to work best when the system is operated with the SLED positioned directly in front of you, as in figures 17 and 18. This position allows you a clear view of either the LCD MONITOR on your camcorder or the LCD MONITOR on the BASE PLATFORM of your SLED.



Figure 18

Also, you should note that when using the GLIDECAM 2000 PRO or GLIDECAM 4000 PRO in HAND-HELD mode, you were instructed to firmly hold onto the HANDLE. This was due to the fact that you had to support the entire weight of the system in your hand. However, now that the SMOOTH SHOOTER SUPPORT ARM is holding the weight of the system, holding the HANDLE gently, as in figure 18, yields superior results.

CHAPTER THREE **ADJUSTING THE LOAD SETTINGS** **OF YOUR SUPPORT ARM**

In order to change the LOAD SETTING of the SUPPORT ARM, you will need to either change the SPRING TENSION within the ARM, or add or remove a SPRING from the ARM. Both of these changes can be made using the supplied ALLEN WRENCHES (not shown).

When you receive your GLIDECAM SMOOTH SHOOTER, it comes preconfigured with both SPRINGS already installed and set to their weakest SPRING TENSION setting.

In order to adjust the SPRING TENSION in the SUPPORT ARM, you must first make sure that the SLED is not on the end of the ARM and that the ARM is not attached to the VEST. You must also make sure that the ARM is not under load and that it is angled upwards.



Figure 19

To increase or decrease the SPRING TENSION within the ARM, you will need to either lengthen or shorten the SPRING with an ALLEN WRENCH as shown in figures 19 and 20.



Figure 20



Figure 21

When you change the length of the SPRINGS, you will be able to see their positions change in the GUIDE SCALE WINDOWS located on the top and bottom of the SUPPORT ARM (figure 21).

The MARKINGS next to the GUIDE SCALE WINDOWS indicate the different LOAD SETTINGS. You can set the SPRINGS from 0 to 6 and anywhere in between, with 0 being the weakest, and 6 being the strongest.

If your SLED is **too heavy** for the SUPPORT ARM, you will need to increase the SPRING TENSION of the ARM. If your SLED is **too light** for the SUPPORT ARM, you will need to decrease the SPRING TENSION of the ARM. Additionally, you may need to either add or remove a SPRING from the SUPPORT ARM to either increase or decrease the ARM'S load-carrying capacity. Your goal in making these adjustments is to support the weight of the SLED while the ARM remains level, as shown in figure 16.

When you use the SUPPORT ARM with only one SPRING in it, it can hold a maximum load of **9 pounds** at its strongest setting. When you use the SUPPORT ARM with two SPRINGS in it, it can hold a maximum load of **18 pounds** at its strongest setting. It should be pointed out that the maximum loads above refer to the weight of your CAMERA and SLED combined, and not just the weight of your CAMERA alone.

NOTE: The SMOOTH SHOOTER SUPPORT ARM is optimized to take advantage of the principle that the more inert a camera system is, the more stable it is. In other words, the heavier your camera or combined camera and SLED are, the more stable your resulting footage will be. So therefore you should always try to use the SMOOTH SHOOTER SUPPORT ARM at its maximum LOAD CAPACITY for a given SPRING combination. In practice, this optimization will occur when a 9-pound SLED is used with only one SPRING installed in the arm, or when an 18-pound SLED is used with two SPRINGS installed in the arm.

We have provided **STEEL WEIGHT PLATES** (not shown) with the SMOOTH SHOOTER so that you may use them to increase the total weight of your SLED. This is so that the combined weight of your CAMERA and SLED can equal approximately 9 pounds when used with one SPRING in the ARM, or 18 pounds when used with two SPRINGS in the ARM.

In addition to the STEEL WEIGHT PLATES, we have also provided two different types of ARM POSTS; one black, lightweight ARM POST, and one heavy, stainless steel ARM POST. These are shown in figure 22.

The heavy, stainless steel ARM POST weighs approximately 1.25 pounds and can be used to quickly increase the total load at the end of the ARM. Increasing the load at the end of the SUPPORT ARM is, in effect, equivalent to increasing the weight of the SLED.



Figure 22

CHAPTER FOUR **REMOVING THE SPRINGS** **FROM YOUR SUPPORT ARM**



Figure 23

In general, when using a GLIDECAM 2000 PRO, you will achieve superior stabilization with only one SPRING installed in the SUPPORT ARM. When using a GLIDECAM 4000 PRO, you will achieve superior stabilization with two SPRINGS installed in the SUPPORT ARM.



Figure 24



Figure 25

In order to remove or install either of the SPRINGS in the SUPPORT ARM, you must first make sure that the SLED is not on the end of the ARM and that the ARM is not attached to the VEST. You must also make sure that the ARM is not under load and that it is angled upwards. With the ARM angled upwards, you can easily remove the ADJUSTER BOLT or BOLTS as shown in figures 23-25.

With both ADJUSTER BOLTS removed, you can now angle the SUPPORT ARM downwards, thereby allowing you easy access to each SPRING'S RETAINING BOLT as in figure 26.

NOTE: You will not be able to angle the SUPPORT ARM downwards if one of the ADJUSTER BOLTS remains attached to the SPRING. Both ADJUSTER BOLTS must be removed for the ARM to be angled downwards.



Figure 26

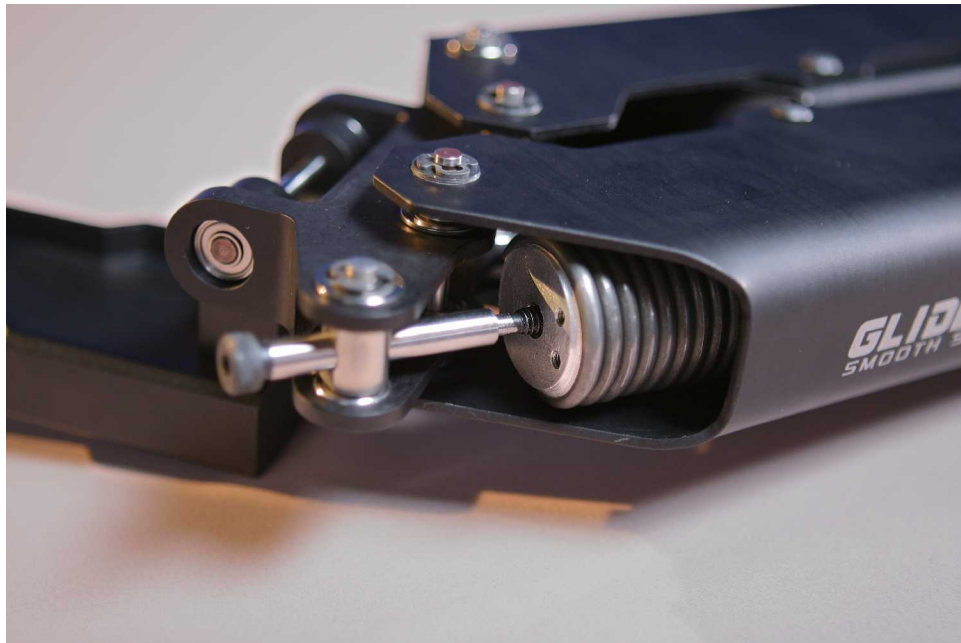


Figure 27

With the ARM angled downwards, you can now easily remove the RETAINING BOLT or BOLTS as shown in figures 26 and 27.



Figure 28

Now that the ADJUSTER BOLTS and RETAINING BOLTS are disconnected from each end of the SPRING, you will be able to slide the SPRING out of the SUPPORT ARM as shown in figure 28.

CHAPTER FIVE **INSTALLING THE SPRINGS** **INTO YOUR SUPPORT ARM**



Figure 29

When installing the SPRINGS into the SUPPORT ARM, you need to pay close attention to the alignment of the ANTI-SPRING ROTATOR that is attached to the end of each SPRING as shown in figure 29.



Figure 30

Make sure the SUPPORT ARM is angled downwards so you can easily install the SPRINGS. Also, when inserting a SPRING into the SUPPORT ARM, make sure that the ANTI-SPRING ROTATOR end of the SPRING is aligned as in figure 30.



Figure 31

Insert the SPRING into the SUPPORT ARM, and thread the RETAINING BOLT into the end of the SPRING as in figure 31.



Figure 32

Use one of the ALLEN WRENCHES to firmly tighten the RETAINING BOLT into the back of the SPRING as in figure 32.

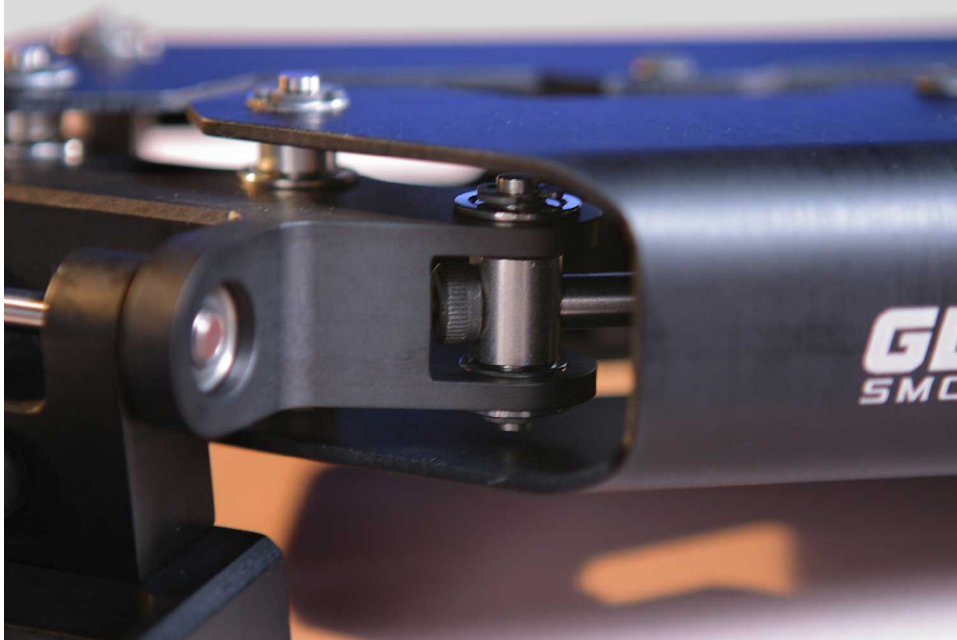


Figure 33

Now that the SPRING is connected to the RETAINING BOLT, angle the SUPPORT ARM upwards, taking care that the HEAD of the RETAINING BOLT does not hit any part of the ARM as in figure 33.



Figure 34

With the SPRING inside the SUPPORT ARM and the ARM angled upwards, manually connect an ADJUSTER BOLT so that it threads into the center of the SPRING as shown in figure 34. Using an ALLEN WRENCH, rotate the ADJUSTER BOLT clockwise until the SPRING reaches at least the position marked “0” on the GUIDE SCALE WINDOW.

NOTE: When installing two SPRINGS into the SUPPORT ARM, you will need to make sure that both RETAINING BOLTS are installed **first**, before you will be able to connect either of the ADJUSTER BOLTS.

CHAPTER SIX

WARNINGS

If you are not parking your SLED on the DOCKING BRACKET, please make sure that you are very careful when picking up and putting down your SLED. Your SLED can be heavy and could cause injury to your back if you are not cautious when using it. Be sure to bend your legs, instead of your back when lifting the SLED up, or when placing the SLED down. **If you have lower back problems, or have had prior back injuries, then you should not use the GLIDECAM SMOOTH SHOOTER.** Again, if you use the SMOOTH SHOOTER, please make sure you do so carefully. You may wish to consider using a store bought back brace or back support pad around your back and waist, to give your back some extra support.

You should also make sure that you are very careful when using the SMOOTH SHOOTER at night or in low light conditions. Do not make the mistake of focusing so much on what you are shooting that you trip over something, or wander into something dangerous like a body of water or automobile traffic. If you do end up using the SMOOTH SHOOTER around water, then be very, very careful that you do not fall into the water. Always have at least two assistants with you if you use your GLIDECAM SMOOTH SHOOTER around water. Even though the foam padded VEST portion of the SMOOTH SHOOTER can act like a flotation device, it will not help you float in water if the SLED and ARM are still attached to it. If you do find yourself in water, then immediately remove the GLIDECAM SMOOTH SHOOTER from your body and get to safety. Also, never place your fingers, etc., into the open sections of the SPRING ARM, for they can be crushed in the mechanism as it moves.

NOTE: It is best to always wear protective KNEE PADS when operating your SMOOTH SHOOTER. Use the type of KNEE PADS that are used in the roller blade, in-line skating sports world, for they are very rugged. Wearing KNEE PADS will help to protect your knees in the advent that you fall forward, and falling on your knees with the combined weight of your body and your GLIDECAM SMOOTH SHOOTER system could very seriously damage your knees, so please behave like a professional and wear KNEE PADS.

NOTE: Never run so fast with the SMOOTH SHOOTER that you could fall down while running, as this could seriously injure yourself, and/or damage your equipment.

NOTE: EVERY TIME YOU USE THE GLIDECAM SMOOTH SHOOTER, YOU SHOULD ALWAYS LOOK THE SYSTEM OVER COMPLETELY BEFORE YOU ACTUALLY USE IT. THE REASON FOR THIS PRE-SHOOT INSPECTION IS TO ENSURE REASONABLE SAFETY FOR BOTH THE OPERATOR AND THE EQUIPMENT. WHEN INSPECTING THE SYSTEM LOOK TO SEE IF ALL THE CLIPS THAT HOLD THE SUPPORT ARM TOGETHER, AND THE VARIOUS CONNECTORS AND FASTENERS ARE ALL IN PROPER WORKING ORDER. ONLY WHEN YOU ARE SURE THAT THE SYSTEM IS WORKING CORRECTLY SHOULD YOU THEN USE THE SMOOTH SHOOTER. AGAIN, THIS PRE-SHOOT INSPECTION SHOULD BE DONE EVERY TIME YOU USE THE GLIDECAM SMOOTH SHOOTER.

CHAPTER SEVEN

MAINTENANCE

Bearing Maintenance: The integrally shielded BALL BEARINGS on your GLIDECAM SMOOTH SHOOTER are made of hardened steel alloy. If after some period of time your BEARINGS don't turn smoothly, you can oil them lightly. We recommend that you use very little oil. Very little, because this is all that is needed, and anything more than a little will end up coming out of the bearing and onto the rest of your SMOOTH SHOOTER. The shields on the BEARINGS protect the BEARINGS from dirt and sand, etc. However, even with these shields in place, direct contact with sand or other debris could render the BEARINGS inoperative. So avoid contaminants of this nature when ever possible. Oil should be applied between the races of the bearing and its shields.

Storage: If you are going to store your GLIDECAM SMOOTH SHOOTER for a long period of time, then please make sure that the SUPPORT ARM is stored with the SPRINGS set at their weakest and least stretched out position. Always store the system with the SPRING ARM angled in its uppermost, relaxed position. Also, please store the SMOOTH SHOOTER in a normal or low humidity area whenever possible. If you are unable to find an environment like this, then we suggest you store the SMOOTH SHOOTER in a plastic container or bag.

Packing and Transportation: Whenever you are shipping, packing, or traveling with your GLIDECAM SMOOTH SHOOTER, please do not attempt to compress or squeeze the plastic WAIST SUPPORT section of the VEST too tightly, as this could break the plastic. Also, when shipping, make sure that all of the parts of the SMOOTH SHOOTER are packed in such a way that they cannot bang into, or rub directly against one another.

Cleaning: Do not use solvents or harsh cleaners of any kind on your GLIDECAM SMOOTH SHOOTER. If your SMOOTH SHOOTER becomes dirty, use only a cloth or sponge with water to rub it clean. Harsh cleaning products could damage the finish of your SMOOTH SHOOTER.

CHAPTER EIGHT **WARRANTY**

For one year from the date of shipment, we will repair or replace your Glidecam Smooth Shooter, free of charge, in the event of a defect in materials or workmanship (the shipment date appears on your purchase receipt) that occurs during normal use in accordance with the Glidecam Smooth Shooter's instruction manual. Shipping, packing, and insurance costs to and from the factory are your responsibility. This limited warranty extends only to the original purchaser, and you will need your purchase receipt. This warranty does not cover, by way of example, damage caused by products not supplied by us, or damage resulting from mishandling in transit, accident, misuse, vandalism, neglect, modification, or lack of reasonable care of the Glidecam Smooth Shooter, or service by anyone other than us. There are no express warranties except as listed herein. This warranty gives you specific legal rights and you may also have other rights that vary from state to state.

WE ARE NOT LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THE SMOOTH SHOOTER SYSTEM OR ARISING OUT OF ANY BREACH OF THIS WARRANTY. ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO THE ONE-YEAR WARRANTY PERIOD.

To obtain service during (or after) the warranty period: Contact the Glidecam Industries Inc. Customer Service Department by calling 1-781-585-7900, or write to us at: Glidecam Industries, Inc. 23 Joseph Street, Kingston, MA 02364 U.S.A., and explain the problem.

**DO NOT SEND THE SMOOTH SHOOTER TO US WITHOUT FIRST
OBTAINING A RETURN AUTHORIZATION NUMBER.**