

# BLAC-RAC<sup>®</sup>

WEAPON RETENTION SYSTEMS



Operation Manual

Model 1082





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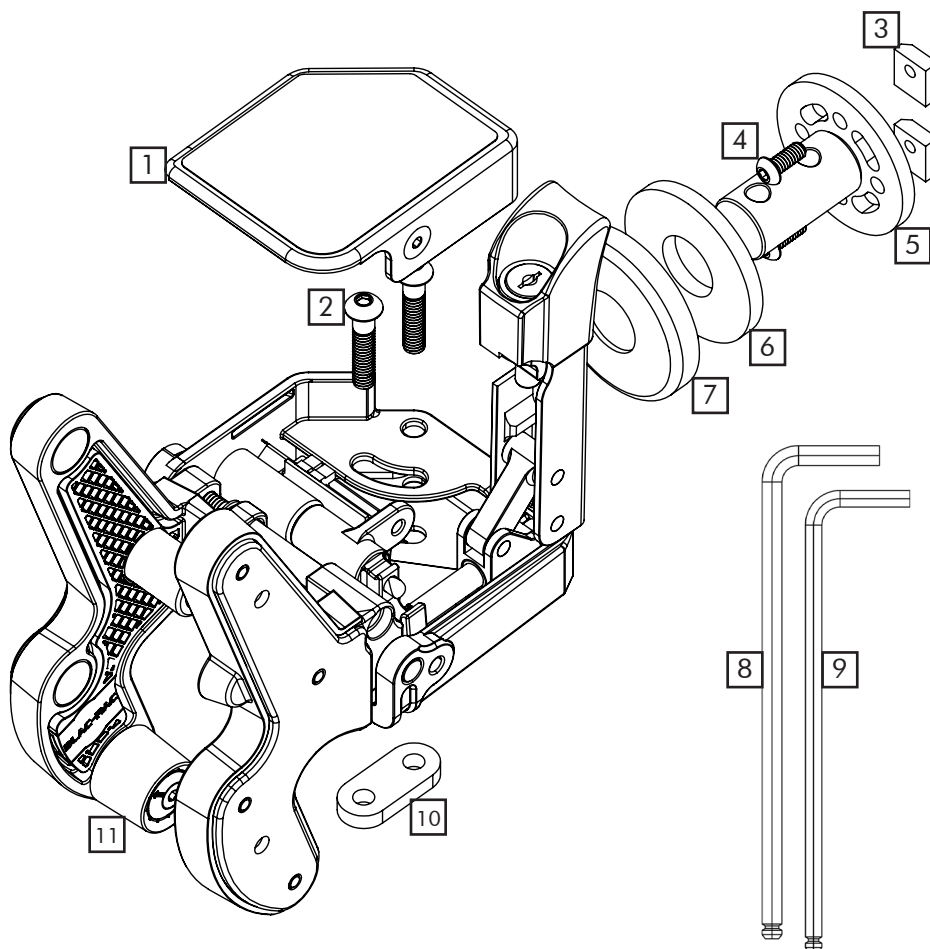
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Troubleshooting

Contact

208.855.9388  
[info@blac-rac.com](mailto:info@blac-rac.com)

# SECTION 1 | Parts Diagram



1	Security Cover
2	x2 Mounting Bolts 5/16-18 x 1 1/2" Button Head Bolt
3	x2 T-Nut
4	x2 Yoke Bolts 1/4-20 x 5/8" Button Head Bolt
5	Yoke
6	Yoke Vibration Pad
7	Yoke Security Cover
8	3/16" Wrench
9	5/32" Wrench
10	Double Nut
11	Eccentric Pistol Grip Rest

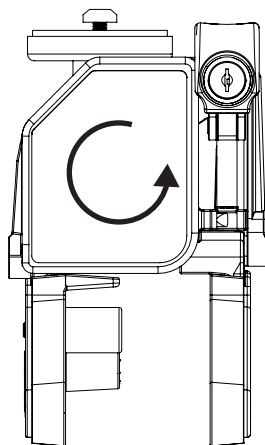
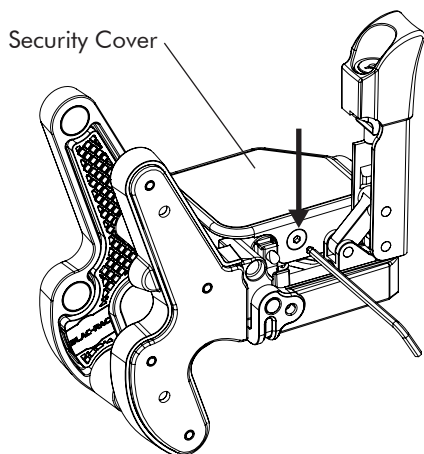
## IMPORTANT

Look at the bottom of each page for installation videos; which can be found on our website [blac-rac.com/instructions](http://blac-rac.com/instructions) or by searching via YouTube

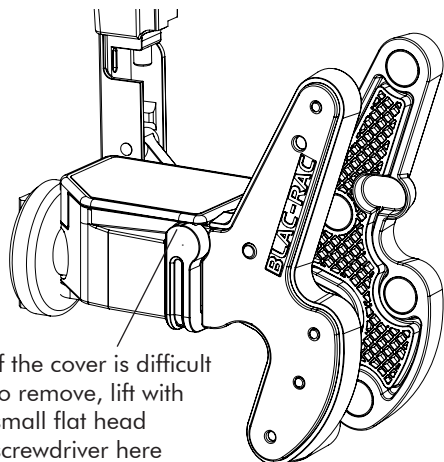
# SECTION 2 | Removal of Security Cover

[1] Unlock the BLAC-RAC and place it in the open position.

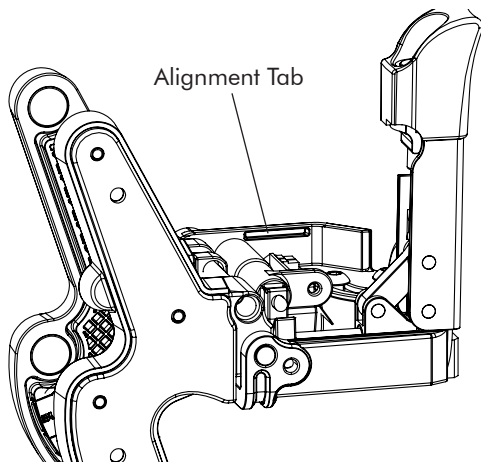
[2] Loosen the allen head bolt completely as shown; however, you will not be able to remove the bolt from the security cover. Rotate the security cover counter-clockwise and lift. If it is difficult to remove, use a small flat head screwdriver to lift off the cover.



[3] To reinstall, place the security cover on the unit slightly counter-clockwise from square. Rotate the cover clockwise to seat it into the alignment tab. The allen head bolt will align with threads inside the unit, tighten down the bolt securely with the supplied 5/32" allen wrench



If the cover is difficult to remove, lift with small flat head screwdriver here

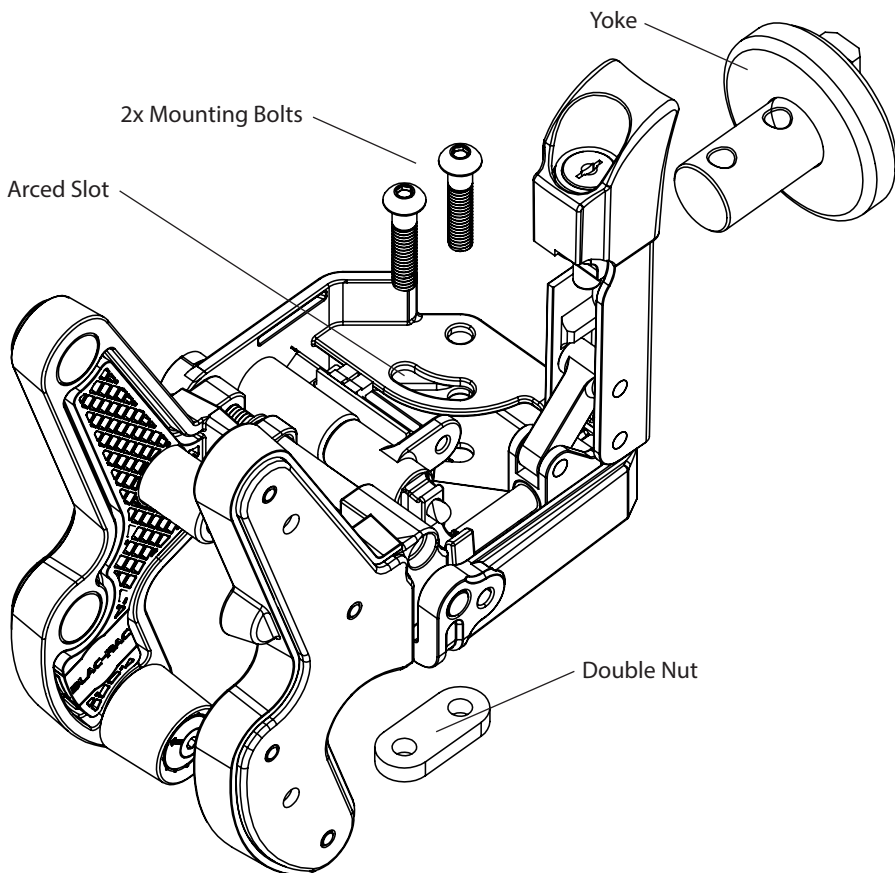


# SECTION 3

## Removal/Adjustment of Yoke

The design of the BLAC-RAC allows it be installed with up to a 45° angle from center. One of the mounting bolts is inserted through the arced slot. This slot allows for proper positioning depending on the application.

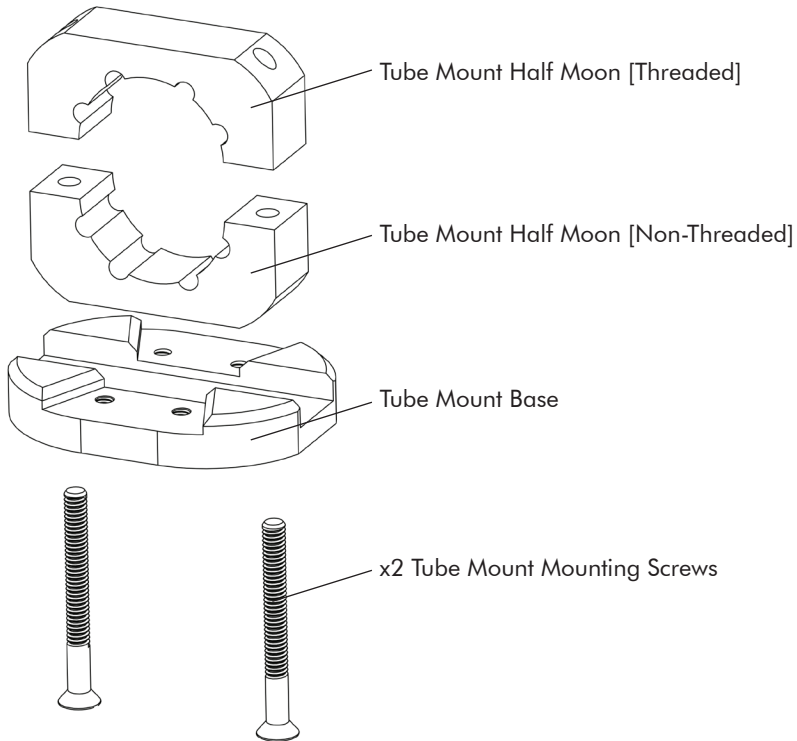
[1] Remove the two mounting bolts using the supplied 3/16" allen wrench. On the bottom side of the unit, there is a double nut, which secures the yoke to the unit. As you remove the mounting bolts, the double nut may fall free.



[2] Remove the yoke by pulling straight out from the unit. Remove the yoke security cover and the yoke vibration pad to access the yoke bolts. Retain for re-installation.

# SECTION 4

## Tube Mount Installation



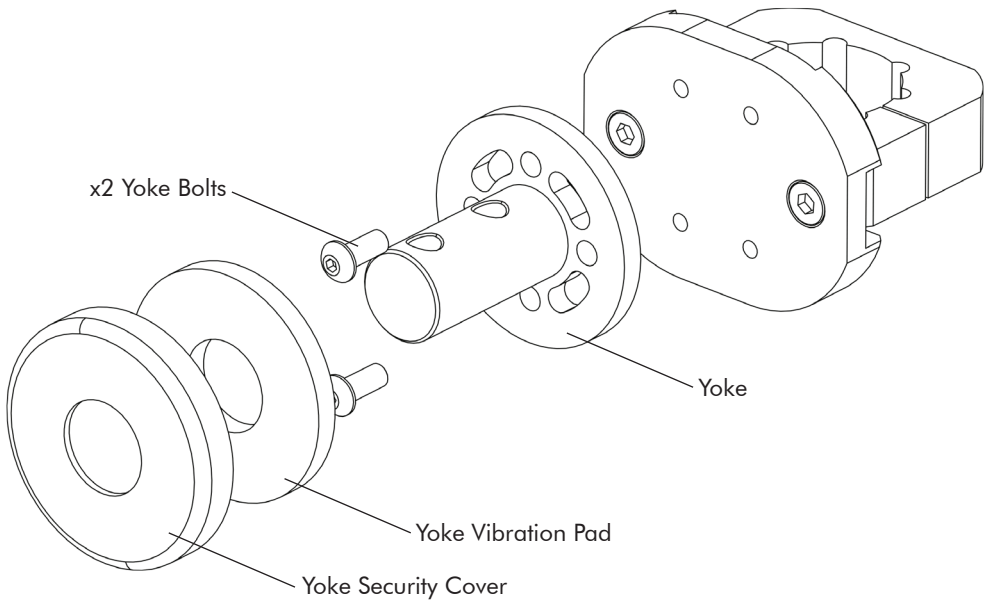
[1] The tube mount must be disassembled prior to installation. Disassemble by removing the two screws using a 5/32" allen wrench.

[2] Place the non-threaded half on the side of the tube the BLAC-RAC will be installed. Install the base on to the non-threaded side until the two holes align with the holes in the threaded side. Insert the two screws and hand tighten as snug as possible. Using a torque wrench, incrementally tighten to 5-7 foot pounds ensuring the gap on each side is equal.



# SECTION 5

## Mounting **BLAC-RAC** to Tube Mount



[1] Apply threadlocking fluid to the two yoke bolts and attach it to the mount base. Use whichever bolt pattern fits your application. Torque to 7 - 10 foot pounds.

Note: Orientation of the two through holes in the yoke will typically run parallel to the roll bar or tubing. However, you may orient the Yoke to best serve your desired application.

[2] Place the yoke vibration pad followed by the yoke security cover over the yoke.

[3] Place the BLAC-RAC over the yoke aligning the two holes on the yoke with the mounting hole and slot of the BLAC-RAC.

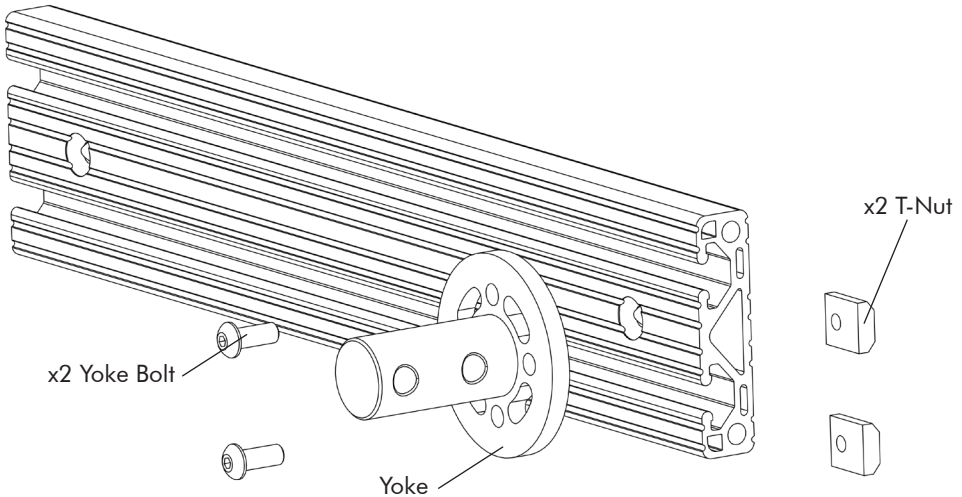
[4] Apply threadlocking fluid to the bolts and insert through the hole and slot and into the double nut. Forward pressure may need to be applied to the BLAC-RAC to allow the alignment of the holes. Torque to 15 - 20 foot pounds.

[5] Reinstall the security cover.



# SECTION 6

## Mounting **BLAC-RAC** to T-Channel



**CAUTION:** The user is responsible for determining the proper installation location, surface type, and that the mounting hardware used can hold the T-Channel and BLAC-RAC securely.

BLAC-RAC Manufacturing, Inc. accepts no liability of any kind or extends any warranty for any type to user defined and installed mounting schemes or materials used in mounting the product to any surface whether stationary or mobile.

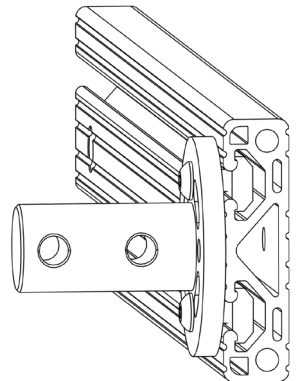
[1] Place and apply thread locking fluid to the two yoke bolts through the holes on the yoke and loosely attach the t-nuts. Slide the yoke into the slots of the T-Channel and remember you can orient the Yoke 360°. Select the orientation that fits your application. Torque to 7 - 10 foot pounds.

[2] Place the yoke vibration pad followed by the yoke security cover over the yoke.

[3] Place the BLAC-RAC over the yoke aligning the two holes on the yoke with the mounting hole and slot of the BLAC-RAC.

[4] Apply threadlocking fluid to the bolts and insert through the hole and slot and into the double nut. Forward pressure may need to be applied to the BLAC-RAC to allow the alignment of the holes. Torque to 15 - 20 foot pounds.

[5] Reinstall the security cover.



# SECTION 7

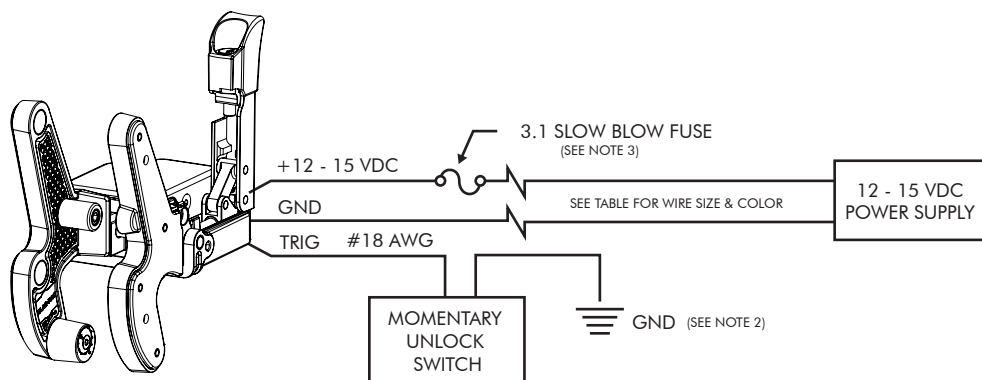
## Electrical Wiring Installation

The BLAC-RAC must be wired in exact adherence to these instructions. Failure to properly wire the unit, including the required 3.1 Amp Slow Blow Fuse will cause the BLAC-RAC to malfunction. Wiring incorrectly will void the warranty.

BLAC-RAC MANUFACTURING INC. desires a successful installation process and will provide technical assistance as needed.

The BLAC-RAC requires a 12VDC power source to operate. The BLAC-RAC can be wired directly to the battery (always on) or to power source controlled by the vehicle's ignition switch. At initial activation, the BLAC-RAC will cycle one time for its 8 second timing cycle and then return to the locked position. This ensures the BLAC-RAC is functioning normally.

There is a 3.15 Amp Slow Blow Fuse with a time delay of 500ms installed in the cable assembly. The BLKAC-RAC requires the use of the fuse in order to function properly. A single BLAC-RAC requires a power source that can provide 10 amps for 300ms. To activate 2 units simultaneously, the power source must be capable of providing 20 amps.



### Notes:

[1] For proper operation, the source resistance between the BLAC-RAC and the power source should not exceed 0.1 Ohms

[2] Proper wiring procedures require a clean ground and use of an external star washer to ensure metal to metal contact for painted or plated surfaces.

[3] Fuse (P/N 04773.15MXP ) can be purchased directly from BLAC-RAC (No fuse other than the one described can be used)

SECTION 7 | Electrical Wiring Installation

GROUND [-]	BLACK		WIRE LENGTH	WIRE GAUGE	WIRE GAUGE TRIG
POWER [+]	RED		8 FT.	#18 AWG	#18 AWG
			13 FT.	#16 AWG	
TRIGGER	GREEN		20 FT.	#14 AWG	

A momentary switch is not provided. The end user must define how the BLAC-RAC will be wired and activated. The electrical rating of a momentary switch we have supported upon request is rated at 3 amps at 125VAC SPST Momentary.

IMPORTANT If the Green Trigger is not used, it is HIGHLY recommended that it be completely insulated from any possible electrical conductive surface.

IMPORTANT – If the Blac-Rac is wired to 120VAC power, you must convert the 120 VAC to 12VDC. A licensed electrician is recommended to complete this type of installation.

The 3.15 Amp Slow Blow Fuse must remain installed on the power wire extending from the BLAC-RAC.

UPGRADE FOR ELECTRONIC MODELS BELOW



- Prevents hot-wiring of the electronic lock if an external power source is applied to power wires
- Compatible with a siren control box or momentary switch
- Undetectable inside vehicle, cannot be “skimmed” with EMF detection
- Field upgradeable for all BLAC-RAC electronic models currently in service
- Compatible ONLY with BLAC-RAC weapon retention systems
- Small size makes device easy to conceal in hard to reach areas
- Each COLD-WIRE device can secure one or two BLAC-RAC weapon retention systems
- Proprietary and patented technology

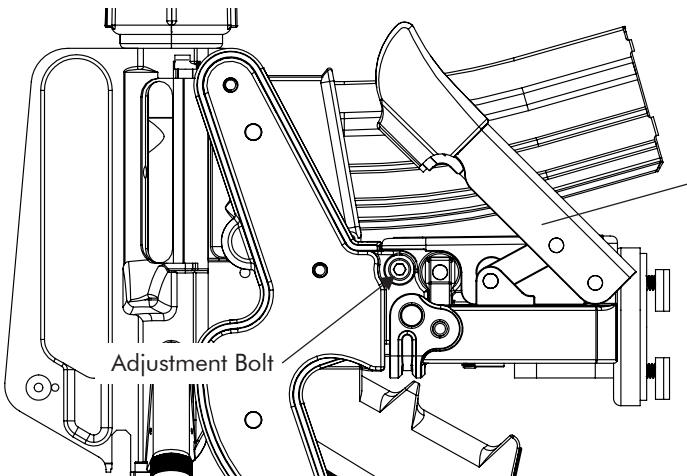
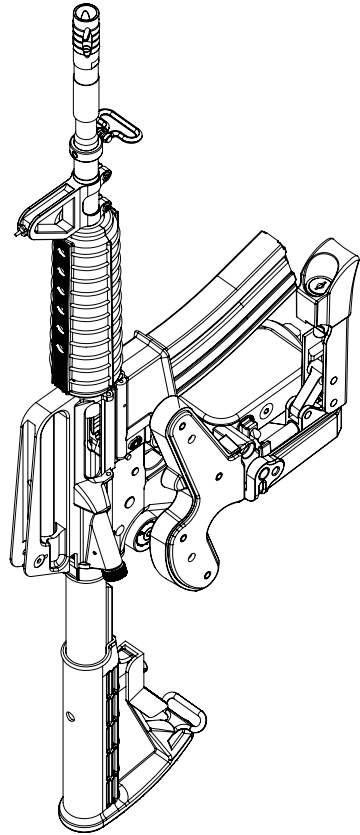
# SECTION 8

## Adjustment of Breech Width

The Breech Adjustment is used to adjust the width and/or pressure of the BLAC-RAC, depending on the receiver width of the firearm being secured. The BLAC-RAC will accommodate most weapon's platforms in use by law enforcement today.

[1] In the open position, place your firearm into the grip pad as shown.

[2] Close the BLAC-RAC using the handle until it engages the firearm. When closing the handle, the user should feel slight resistance half way through the handle stroke for maximum security and stability. Continue to adjust the breech adjustment until the firearm does not move or shift in the device. If the clamping action is too loose or tight, or does not engage the firearm, adjust the bolt as shown. Clockwise to increase clamp pressure and counter clockwise to decrease clamp pressure.



Slight resistance should be felt in the handle at this position

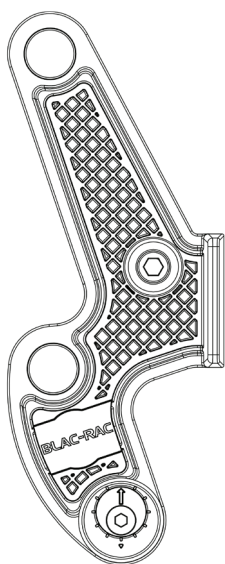
# SECTION 9

## Adjustment of Eccentric Pistol Grip Rest

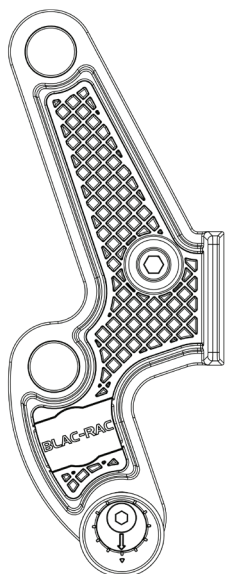
All BLAC-RAC models come equipped with the Eccentric Pistol Grip Rest. This feature provides greater flexibility for positioning the weapon in the BLAC-RAC when using third party grip sets that differ from the standard mil-spec grips that come from many manufacturers of M4's & AR15 equivalents.

The function of the Eccentric Pistol Grip Rest is the ability to adjust the "length of pull" from the trigger guard to the back of the pistol grip. This useful functionality allows your customized weapon to always "sit" properly within the rack.

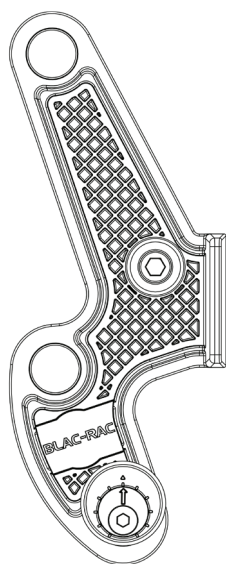
The Eccentric Pistol Grip Rest is shown below in various configurations.



For mil-spec grips the arrow is facing up with the thinnest part of the outer shell facing up towards the trigger post.



When using large third party grip sets, the Eccentric Pistol Grip Rest should be adjusted with the arrow facing down, for maximum length of pull distance.



In this picture, the grip rest is set to the shortest length of pull. The arrow is facing up to the trigger post and the thickest portion of the outer shell is up towards the trigger post.

The Eccentric Pistol Grip Rest is field adjustable. In most cases, it only requires adjusting the outer shell by hand. If you need to modify the arrow direction, use the 5/32" allen wrench and remove the grip rest. Reposition it where desired. Please note the "star" pattern for location of the grip rest into the pads.

# SECTION 10

## Trigger Guard Installation

Use of the BLAC-RAC ALTA Trigger Guard is required for optimal security. Trigger guard **MUST** be installed with both roll pins on M4 style lowers with removable trigger guards.

The BLAC-RAC ALTA trigger guard replacement allows the user to enjoy all the benefits of the BLAC-RAC system while significantly improving the security of the system.

Below are steps required to ensure your weapon is safe and secure in the BLAC-RAC.

**WARNING BEFORE STARTING, MAKE SURE THE WEAPON IS UNLOADED, THE CHAMBER IS EMPTY AND THE SAFETY IS ENGAGED. ALWAYS OBSERVE SAFE FIREARM HANDLING AT ALL TIMES.**

Tools Required:

- 1/8" Punch
- Small Hammer
- Electric Drill
- No. 30 (.128") Drill Bit
- ALTA Trigger Guard Kit



[1] Remove the current trigger guard using the 1/8" punch; depress the front detent spring and rotate the trigger guard down, clear of the receiver. Using the same punch, drive out the rear roll pin for use in the re-installation of the replacement trigger guard.



For instructional video search "**BLAC-RAC** Trigger Guard Installation" on YouTube



# SECTION 10

## Trigger Guard Installation

[2] Installation of the replacement guard requires you to support the underside of the trigger guard, carefully drive in the rear roll pin using the 1/8" punch. Verify the hole alignment is correct before proceeding.



[3] Align the front hole of the trigger guard with the existing hole in the receiver. Using the No. 30 drill bit, drill through the entire trigger guard hole until the drill bit passes through the bottom side of the receiver. Make sure the trigger guard holes align. This will ensure a straight hole from top to bottom.



[4] While supporting the underside of the trigger guard, carefully drive in the front roll pin using the 1/8" punch. Verify the hole alignment is correct before proceeding. Roll pin should be equally flush on both sides of the weapon.



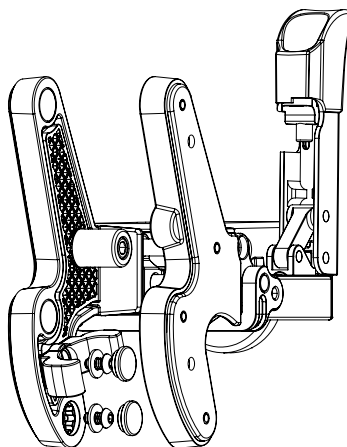
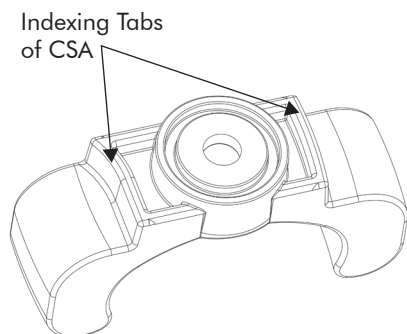
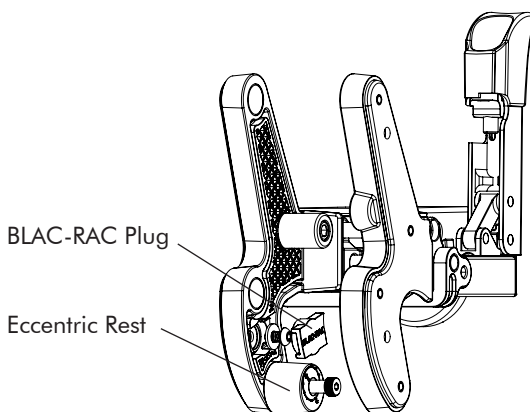
# SECTION 11

## Conventional Stock Adapter [CSA] Installation

[1] Remove the small plug marked with BLAC-RAC and the Eccentric Pistol Grip Rest.

[2] Remove the screw and washer behind the BLAC-RAC marked plug.

[3] Place the CSA in the cavity left by the BLAC-RAC marked plug, using the indexing tabs for proper fit.



[4] Install the washer and screw into the CSA. Insert CSA rubber cap over top screw to prevent marring of weapon finish.

[5] Install the extra screw, washer, and rubber cap into the Eccentric Pistol Grip Rest cavity.

[6] Place your conventional stock weapon into the BLAC-RAC and make adjustments to the Breech Adjustment Bolt to change the width of the clamping action to accommodate the weapon.

# TROUBLESHOOTING

Troubleshooting Procedures Found on Next Pages

## General Information

The BLAC-RAC requires a 12-volt DC power source capable of providing up to 10 amps to operate a single BLAC-RAC and a 12V power source with up to 20A to operate two. The BLAC-RAC can be opened by a stand-alone momentary switch or by a siren control switch that provides timed power. The type of momentary switch used must be “normally open” for a standard BLAC-RAC and “normally closed” if using a BLAC-RAC with COLD-WIRE.

Installations that are using a stand-alone momentary switch can be wired directly to the battery (always on) or a power source controlled by the vehicle’s ignition switch. If the BLAC-RAC is wired to ignition power, the BLAC-RAC will cycle one time for its 8-second cycle and then return to the locked position each time the ignition switch is placed in the on position. This ensures the BLAC-RAC is functioning normally. The BLAC-RAC will not cycle each time the key is turned on if it is wired directly to battery power. It should be noted that the BLAC-RAC will have constant power even while the vehicle is unattended if it is wired directly to battery power.

The standard delay time for the BLAC-RAC is 8 seconds. If using a siren box, the gun lock switch must provide timed power for at least 8 seconds. BLAC-RAC electronic units can be ordered with specific delay time depending on the application. Special orders could have a longer than normal lead time.

The BLAC-RAC opens by using a negative ground trigger. If a control box or timer is used that uses a positive ground trigger, a relay will be necessary to reverse polarity to a negative trigger to open the BLAC-RAC.

COLD-WIRE prevents the BLAC-RAC from being opened if the power wires feeding the unit are cut and an external power source is applied to the wires. COLD-WIRE uses a transmitter to send a digital signal to a receiver that is part of the circuit board installed in the BLAC-RAC. A COLD-WIRE equipped BLAC-RAC will not open if it does not receive a signal from the transmitter after the command to open is initiated. To operate correctly, COLD-WIRE must be used with a BLAC-RAC that has a V4 circuit board installed. All new production electronic models will ship with the V4 circuit board. Earlier models, pre-2019, will have earlier firmware which will need to be upgraded and can be done in the field. A single COLD-WIRE transmitter can be used with two units. Once a BLAC-RAC has been paired with a transmitter, that unit must be used with a transmitter or it will not open. Any transmitter can be used with any BLAC-RAC. The circuit board must be replaced to use it without a COLD-WIRE transmitter.

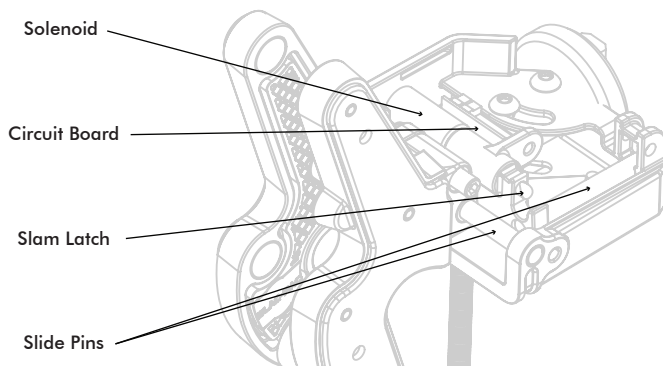
Please refer to [blac-rac.com/instructions](http://blac-rac.com/instructions) for installation videos.

# TROUBLESHOOTING

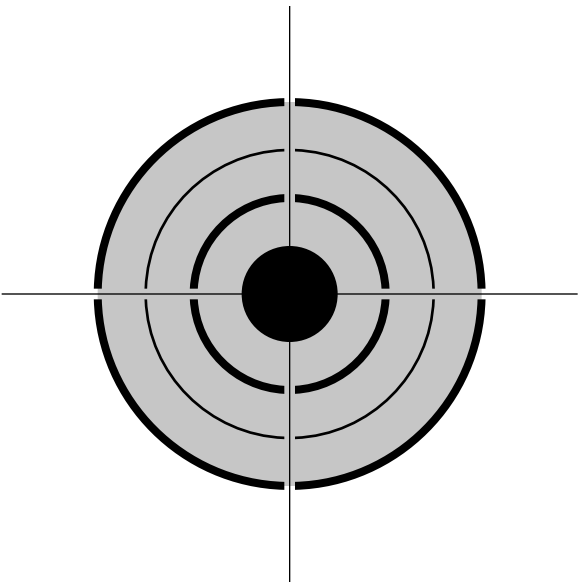
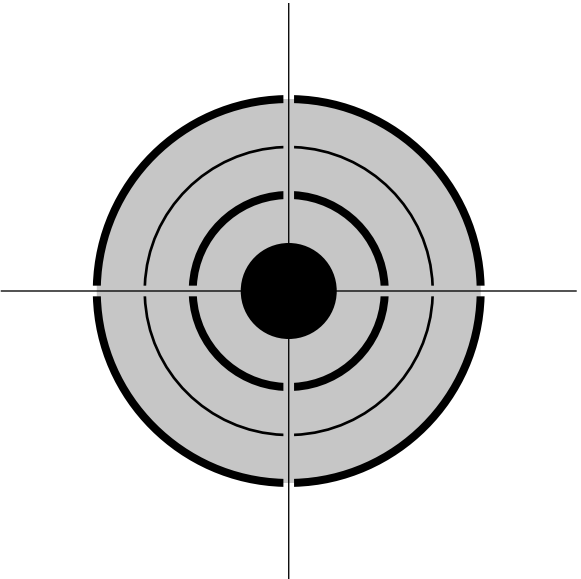
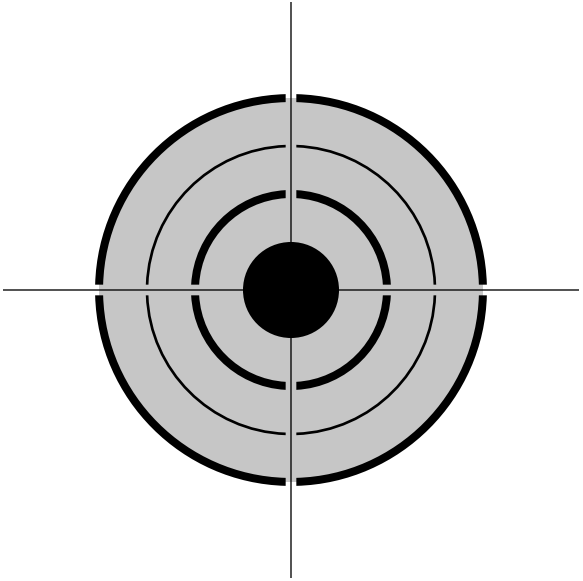
PROBLEM	CHECK	POSSIBLE CAUSE	ACTION
BLAC-RAC does not Open Electronically	Vehicle Power Supply	Output is not 12 Volts DC	Replace Supply so Output is 12 Volts DC
	Wires	Bad Ground	Ground BLAC-RAC to Negative Power Supply Terminal
		Pinched Wires	Inspect for Pinching Connecting BLAC-RAC to Power Supply
			Inspect for Pinching Inside Lid Cover
		Wires not Connected	Confirm Connectors are Plugged into Circuit Board
	Fuse	Blown Fuse	Replace ONLY with Littelfuse 04773.15MXP
		Fuse not in Contact with Fuse Housing	Unscrew Housing and Ensure Fuse is Making Contact
	Switch	Switch is not Functioning Correctly	Replace Switch
		Incorrect Switch Selection (if using COLD-WIRE)	COLD-WIRE Requires a Normally-Closed Momentary Switch
	Slam Latch Pin	Pin has Seized inside Solenoid	Return Unit to BLAC-RAC Factory for Warranty
	Circuit Board	Circuit Board has Failed	Field Repair with New Circuit Board
			Return Unit to BLAC-RAC Factory for Warranty
	Solenoid	Solenoid Wires Pinched or Damaged	Return Unit to BLAC-RAC Factory for Warranty
		Solenoid has Failed	

# TROUBLESHOOTING

PROBLEM	CHECK	POSSIBLE CAUSE	ACTION
BLAC-RAC loose on T-Channel	T-Channel (Section 6)	Vibration	Apply Medium Strength Threadlocker to Bolts
		Improper Torque Applied to Yoke Bolts	Torque Bolts to 7 - 10 ft-lbs
BLAC-RAC loose on Yoke	Yoke (Section 3)	Vibration	Apply Medium Strength Threadlocker to Bolts
		Improper Torque Applied to Yoke Bolts	Torque Bolts to 15 - 20 ft-lbs
Weapon Rattles or is Loose when in BLAC-RAC	Breech Width (Section 8)	Breech Width is not Adjusted Correctly	Adjust Breech Width Correctly
	Weapon	Weapon does not Fit	Do not use BLAC-RAC to Secure Weapon
Delay Timer not Working or Requires the Switch to be Held Down to Open	Circuit Board	Circuit Board has Failed	Field Repair with New Circuit Board
			Return Unit to BLAC-RAC Factory for Warranty
Rough Handle Operation when Opening or Closing BLAC-RAC  (RECOMMENDED YEARLY MAINTENANCE)	Slide Pins	Contaminants have Settled on Pins	Clean Rods and Apply a Liberal Amount of Lithium Grease
		Rods are no Longer Lubricated	Clean Rods and Apply a Liberal Amount of Lithium Grease



For instructional video search **"BLAC-RAC"** on YouTube



2.0" Ø Outer Target  
Every Step Reduces Ø 1/2"