Description:

The new T97NSR LHG™ (Lower Hand Guard) is a CNC machined, 6061 alloy, firearms accessories mounting platform and lower hand guard that improves ergonomics and offers distinctive enhancements to the T97NSR bullpup rifle. It was produced by the product developers at M14.ca, the OEM of the M14.ca Blackfeather "RS" rifle stock and the M14.ca CASM™ scope mount series, under the new web site: www.T97.ca. The T97.ca LHG™ is the second major development (after the T97.ca FTU™) in a series of planned upgrades for the Norinco T97NSR bullpup rifle.

The LHG™ replaces the T97NSR's factory lower hand guard, pistol grip and trigger but offers several notable changes from the original hand guard, namely:

1. A precisely re-engineered trigger group that offers a reduced, smoother trigger travel and optimized pull weight
2. A trigger blocking device with similar ergonomics and function to the AR-15 rifle (reversible)
3. A primary housing recounted with improved ergonomics and a rough texture, Type II anodized finish
4. A primary housing with a removable Winter trigger guard (allowing interchange with T97.ca ATG*)
5. AR-15 pistol grip compatibility
6. A primary housing with a tension point that ensures a tight rifle to housing fit
7. Forward sling points that are compatible with Brownells part no. 100-002-084
8. A primary housing with provisioning for Magpul polymer rail sections and/or the M14.ca 4" aluminum picatinny rail section
9. A connect point for a gas shroud that will seat a brass catcher
10. A primary housing that ships with a new oversized magazine release button to offer improved magazine changes. (Review "Manual of Arms T97.ca Magazine Release Button")
**Accessories**

Notable accessories planned for the T97.ca LHG™ enhancement project include:

1. A new Angled Trigger Guard or "ATG"
2. A "Gas Shroud" for left handed shooters
3. A new recoil pad that allows for Magpul Enhanced Recoil Pad Installation and Brownells part no. 100-002-084 sling swivel stud compatibility
4. A new foregrip that attaches to the existing LHG™ Winter Trigger Guard
5. An enhanced magazine release

Finally, the LHG™ field strip is unchanged. Prior to continuing with the installation of the T97.ca please review our Legal Notice as below.

**Legal Notice**

This document is provided for information purposes only. As with any firearm part or accessory, the T97.ca LHG™ should be installed only by a qualified gunsmith or by persons specifically experienced with the maintenance and modification of the T97NSR rifle. If you are unsure of your abilities to complete the install, consult a qualified gunsmith.

By opening this package, you expressly agree that under no circumstances and under no legal or equitable theory, whether in tort, contract, strict liability or otherwise, shall The Upgrade Path Inc., or any of its employees, directors, officers, agents, vendors or suppliers be liable to you or to any other person for any indirect, special, incidental or consequential damages, injury of any nature or death resulting from the installation or use of the T97.ca LHG™.

**IMPORTANT NOTES:**

DO NOT USE PLASTIC/POLYMER RAIL SECTIONS AT 6 O'CLOCK FOR VERTICAL FOREGRIPS ON THE T97.ca LHG DUE TO POTENTIAL FOR BREAKAGE AND SHOOTER INJURY. USE ONLY M14.CA KEYED, ALUMINUM 4" PICATINNY RAIL SECTIONS IN THIS LOCATION AND SECURE WITH BLUE THREADLOCKER.

THE NEW T97 ALLOY LHG IS SOLD AS A SECONDARY TRIGGER BLOCKING MECHANISM. THIS IS NOT TO BE CONSIDERED OR RELIED ON AS A PRIMARY SAFETY.

THIS NEW TRIGGER BLOCKING MECHANISM IS MEANT TO BE USED ONLY FOR READYING A T97 FOR IMMEDIATE FIRING MORE EASILY AND QUICKLY. THE NEW TRIGGER BLOCKING MECHANISM BLOCKS ONLY THE TRIGGER, NOT THE ACTUAL FIRING MECHANISMS, IE; THE HAMMER AND FIRING PIN ARE NOT BLOCKED.

THE T97 PRIMARY SAFETY MECHANISM IS STILL IN THE ORIGINAL 180 DEGREE ROTATIONAL DEVICE AT THE REAR OF THE RIFLE, AND THIS PRIMARY SAFETY SHOULD STILL BE ENGAGED WHENEVER MUZZLE DIRECTION, CONTROL, SAFE STORAGE, OR ANY OTHER SAFETY ISSUES ARE PARAMOUNT!
T97.ca LHG™ Installation Overview:

The installation of the LHG™ requires the removal of the original hand guard and installation of a AR-15 pistol grip. The installation process is simple but may require adjustment of the new Trigger Blocking Device spring for tension and "feel." A spare spring is provided with your blue threadlocker should you elect to make changes here (complete instructions below).

NOTE: The shorter spring for your Trigger Blocking Device (TBD) is pre-installed by T97.ca and a set screw is in place without blue threadlocker to allow for end user adjustment. Use caution when adjusting the spring tension as it will affect how your Trigger Blocking Device operates! The Trigger Blocking Device has been factory tested for firm tension. Apply blue threadlocker. Always test your TBD prior to use! If spring tension changes, make adjustments or replace detent and spring as required.

HOGUE® AR-15 Overmolded Pistol Grip Note

The LHG™ ships without an AR-15 type pistol grip due to the myriad choices available to the end user. The new Angled Trigger Guard from T97.ca is based on and designed to fit with the Hogue® soft AR-15 pistol grip with no beavertail. The Hogue® grip, with finger grooves, tacky / soft texture, and ergonomically optimised grip angle, is highly recommended however choosing a proper feeling grip is a personal decision. Just be aware that if you are planning on an "ATG" upgrade, this option will properly fit the Hogue® AR-15 non-beavertail pistol grip with no modifications.

Background Information Regarding Set Up of the LHG™ Trigger Blocking Device/AR-15 Selector Spring

(IMPORTANT, READ THIS IF YOU ARE MAKING ADJUSTMENTS TO YOUR TRIGGER BLOCKING DEVICE OR CHANGING SPRING FOR TENSION AND FEEL)

AR-15 pistol grips all come with a hole pre-drilled for the AR-15 selector shaft spring. The T97.ca LHG™ however has different contours than an AR-15 lower, and placing the selector shaft and newly designed thumb lever in an ergonomically optimised location, required moving the shaft slightly forward of the AR 15 location.

This means that the shaft detent tensioning spring no longer lines up with the hole in the AR pistol grip which originally located and retained much of the spring length.

The T97 LHG™ uses a standard AR-15 selector shaft detent, with the standard AR 15 tension spring shortened to provide proper fit into the shorter space between the pistol grip and the shaft.

Illustration: AR-15 Detent (installed RIM DOWN, POINT UP)
This spring tension regulates the feel of the selector lever, and proper tension here is critical for proper operation of the trigger blocking mechanism. Too long, with too much tension, produces a thumb lever feel that is difficult to move between on and off. Too short, with too little tension, creates a situation where the trigger blocking mechanism may be inadvertently moved.

Obviously, getting this spring tension just right is important to the safe functioning of the trigger block mechanism, but in user testing, different shooters liked different tension settings for the lever.

To allow for personal preference, the T97 LHG ships with TWO different length springs (see illustration). One slightly shorter, that is pre-installed with firm tension. And one slightly longer, that can be use to adjust spring tension.

![Illustration: T97.ca LHG™ Trigger Blocking Device Springs](image)

**NOTE:** The shorter spring for your Trigger Blocking Device (TBD) is pre-installed by T97.ca and a set screw is in place without blue threadlocker to allow for end user adjustment. Use caution when adjusting the spring tension as it will affect how your Trigger Blocking Device operates! The Trigger Blocking Device has been factory tested for firm tension. Apply blue threadlocker. Always test your TBD prior to use! If spring tension changes, make adjustments or replace detent and spring as required.

For maximum retention of lever positioning, it is recommended that this spring tension be installed or adjusted for the firmest setting that is comfortable to the individual user (see Installing an AR 15 compatible pistol grip on to the T97 LHG and setting up the Trigger Blocking Device for Optimal Use below). For those inclined to further experimentation, a standard AR-15 full length spring may be used as a replacement by drilling a new hole [ in the proper location, and of the proper depth, ] in the pistol grip of choice. However, once again, spring tension here can affect the reliability of setting and retaining the Trigger Blocking Device on the T97.ca LHG™.

**NOTE:** The trigger blocking mechanism lever is easily removable, and replaceable for left or right side use. An extra lever is available for a slight extra cost to install selector levers on both sides, making the selector lever ambidextrous.
Installing an AR 15 compatible pistol grip on to the T97 LHG and setting up the Trigger Blocking Device for Optimal Use

Tools Required

1. 3/16" Allen wrench for installing AR-15 pistol grip
2. 3/32" Allen wrench for adjusting spring tension on Trigger Blocking Device

NOTE: Included with the T97.ca LHG™ is a tube of blue threadlocker, two slightly different length springs, a pistol grip retaining screw and washer, and a standard AR 15 selector lever detent.

START HERE

Remove ammunition and safety check your rifle prior to installing the T97.ca LHG™

1. Field strip the rifle as per manufacturer instructions and remove the lower hand guard.

2. With the pistol grip of your choice available for installation, turn the LHG™ upside down to provide access to the small hole under the selector lever shaft.

3. Insert the selector lever detent into the hole, pointed end first.

4. Choose one of the springs. It is recommended to try the longer one first, and insert the spring into the hole against the flat rimmed bottom of the selector shaft detent.

5. With the LHG™ still upside down, fit the pistol grip in place, and screw in the retaining screw with washer.

6. Try the Trigger Blocking Mechanism Change Lever for feel by rotating it 90 degrees, on and off several times. There should be a firm resistance to movement and a definite click into place when the lever is moved between the on and off positions.
7. Try the trigger for movement when the trigger blocking lever is horizontal. There should be little or no movement.

8. If the lever and trigger feel right, you are done.

   NOTE: If there is no perceptible click into place, when the thumb lever is rotated 90 degrees, the detent is probably upside down or the spring is too short. Remove the pistol grip and check the detent pin orientation, and select the longer spring.

   If the lever is too difficult to move with firm thumb pressure, remove the pistol grip, remove the long spring, and install the shorter spring.

**Trigger Blocking Device Lever Swapping**

   The change lever is installed at the factory in the right hand thumb position [left side]. If preferring the lever on the right side, undo the allen screw holding the washer on the right side of the thumb lever from the shaft, undo the allen screw on the thumb lever on the left side, remove the lever from the shaft, swap the lever for the washer, and re-install. NOTE: a drop of blue threadlocker here will ensure maximum retention of the thumb lever.

9. Once the Trigger Blocking Device lever is installed and working to satisfaction, install the T97.ca LHG™ in the same manner as the factory original ensuring that the trigger bar latches onto the Trigger Group's shoulder screw. Test for function by pointing the cleared and safe rifle in a safe direction and testing the trigger. Image shows T97.ca trigger group stainless shoulder screw which must latch to T97NSR trigger bar.

3. Do not discard the factory housing pin. The original housing pin is required to seat the new LHG™. Seat the LHG™ and install it now.

**Seating the LHG™ and Adjusting Tension**

4. With the original housing pin installed, the last step is to adjust the tension screw to ensure your LHG™ fits tight. Turn your LHG™ upside down and begin turning in the set screw under the forearm until you make barrel contact, then 1/8 of 1 turn to set. Barrel contact should be sufficient to ensure your LHG™ fit is tight. The last step is to remove the small lock screw as illustrated lower right, apply blue threadlocker and turn in to tightly lock position of the tension screw.
Illustration: LHG™ Tension Screw Shown (LEFT). LHG™ Lock Screw shown (RIGHT).

Illustration: Interior View of LHG Tension Screw.

**NOTE:** adjusting the tension further will probably not have any significant effect on accuracy, however tension adjustments can have a definite effect on vertical POI (Point of Impact). And, adjusting the tension too tight can make assembly and disassembly of the lower more difficult, as the alloy lower must be bent slightly or “sprung” into place to insert and remove the LHG™ retaining pin.

**LAST STEP LHG INSTALLATION**

5. With an empty chamber, and in a safe direction, Dry fire the T97 a few times to get used to the much improved trigger. Rotate the trigger blocking mechanism lever 90 degrees to confirm trigger blocking actually occurs with the assembled rifle. The weight of the trigger pull may have changed slightly, plus or minus, however the travel and take up are now reduced considerably, and this may take a bit of practice to adapt to. The new trigger has been reengineered with different leverage and spring, to reset faster, and give a noticeable spot in the pull that is the new release point. This should feel almost like a two stage trigger, instead of the overly long, mushy, creepy, inconsistent trigger pull the T97 had previously. While we make no claims that the T97 LHG will improve inherent accuracy, the improved trigger may improve usable accuracy.

The installation of the *T97.ca LHG™* is now complete. Note: blue threadlocker should be left to set for a minimum of 4 hours.

Support Inquires: Talk or Text Direct 250 888 9982 or email info@m14.ca
INSTALLING THE NEW MAGAZINE RELEASE BUTTON

1.) Remove old button from right side of the magazine release by unscrewing counter clockwise. Some of these buttons may be staked in place so may require extra torque. Some of the buttons may have the screw protruding into the slot so a split screwdriver may be required. A split screwdriver is simply made from a standard slot head by grinding a notch in the middle with clearance for the shaft protrusion similar to the image shown.

2.) Install the new oversize button on the shaft by turning it on clockwise. The depth of the new button should be set so that the bottom of the button still has clearance when the magazine release is pressed in enough to drop the magazine. If it is installed too deep on the shaft, the button may contact the receiver blocking the magazine from release properly.

3.) Use a drop of blue threadlocker on the magazine release shaft threads, then lock button into place (the correct height) with the enclosed M4-0.7 x 4mm socket set screw.

USING THE MAGAZINE RELEASE BUTTON: A NEW MANUAL OF ARMS FOR THE T97NSR

The new, enlarged magazine release button greatly improves and speeds magazine changes by allowing the magazine release to take place with a different technique. Shooters with average or large hands may now rotate the rifle slightly clockwise, grip the magazine with the left hand (non-firing hand) and with the hand still gripping the magazine, release the button with the thumb. This simplifies and speeds up magazine changes and maintains the right hand on the pistol grip in firing position.

**Formal Instructions (Right Handed Shooters):**

1. With the rifle shouldered, your right hand on your pistol grip and finger off the trigger, with the muzzle pointing safely down range, turn the rifle clockwise.

2. With your rifle turned clockwise, with left hand thumb, reach under the magazine well and depress the magazine release button while stripping out the magazine.

3. Insert new magazine.

**For clarification, see our "New T97NSR Manual of Arms" video on the Internet:**

https://instagram.com/p/5sgqADNigi/?taken-by=m14.ca.manufacturing

Support Inquires: Talk or Text Direct 250 888 9982 or email info@m14.ca
ENGINEERING AND DESIGN CONSIDERATIONS FOR T97.ca LHG™ BY T97.ca CONSULTING GUNSMITH

The Chinese / Canadian import T97 original design is based on the Chinese current military issue T95 service rifle, so the basic design is definitely reliable, durable and well engineered. The T95 was modified to fire semi-automatic only, to take the .223/5.56 cartridge, and to use STANAG compatible M16 magazines, to become the Civilian Legal T97. Unfortunately, only a few of these original T97s were imported into Canada before the Canadian firearms authorities deemed them too easy to modify into a full auto configuration. A few years later, after some modifications at the Chinese factory, North Silva had the new model T97NSR re-certified as a Canadian compliant semi auto only. This gave the new improved T97NSR the distinction of being a very inexpensive bullpup rifle with regular Non-restricted status in Canada.

However, even though reliability and accuracy with the T97NSR were soon proved, there were many complaints from users regarding poor ergonomics and awkward handling. Becoming proficient with a new manual of arms for a bullpup design can have a steep learning curve but some of these obvious deficiencies in ergonomics can be improved on with practice. But even with lots of practice, some of the complaints remained quite valid and the search was on with Canadian gun owners and suppliers to find ways to modify the T97NSR to improve and speed up the handling.

One of the major complaints regarding the T97NSR was with regards to the poor standard issue iron sights, and the very limited options to install optics. The iron sights and awkward cheek weld were considered as limiting factors in attempting to achieve the inherent accuracy that this rifle was thought to be capable of. Thus, T97.ca created their FTU [Flat Top Upper] to resolve the T97NSR optics issues with a re-designed alloy upper replacement, which incorporated a full length picatinny rail for solid, stable optics mounting. And at the same time, they designed in a non-reciprocating side pull cocking handle, which much improved the T97NSR loading and cycling experience. By going to a much more ergonomically correct side cocking handle, the rail height was also lowered considerably, to create an ideal sight line for optics and a much better cheek weld. This T97NSR upgrade was immediately so popular, that North Silva contracted with T97.ca to have one thousand FTU railed uppers installed, and they then offered the new improved T97NSR/FTU model to their customers.

The T97NSR/FTU model became a very cost effective, handy little rifle, and when mounted with a red dot or small scope, ideal for a bush gun, truck rifle, ranch rifle, varmint rifle, or for many other roles. The T97NSR/FTU was even favorably compared to other bullpup rifles costing much more. But there were still considerable improvements that could be made to make the T97NSR/FTU even better.

With the LHG™, T97.ca has created an entirely new and redesigned CNC machined alloy lower that pairs well with the FTU™ (see illustration at top of this document). The T97 trigger is charitably referred to as “MUSHY”. The weight is acceptable for a service rifle, but the pull is appallingly lengthy. A “surprise break” is sometimes achievable, but consistency is not acceptable. Given that a good trigger job is the foundation for best accuracy, T97.ca re-engineered the T97NSR trigger with all new metal parts, new trigger pin pivot point geometry, and a much smoother and more reliable AR-15 trigger spring. The resulting improvements to the T97 trigger pull are absolutely amazing. This one change alone puts the T97NSR into a whole different level of usability. FAST trigger manipulation and consistent trigger break are now available for the T97NSR. This new alloy trigger has a much improved “look and feel” over the original plastic trigger.

Along with the vastly improved trigger pull, a conveniently located thumb actuated Trigger Blocking Device was added. This trigger block looks and feels much like the popular AR-15 style selector lever, and is designed to be mounted on either or both sides, (ambidextrous). This change vastly improves the ergonomics and fast handling of the T97NSR. While the new trigger block device actively blocks only the trigger, and while it is not an actual hammer block or firing pin blocking SAFETY, this effectively makes the T97 much more convenient to ready for
firing. The original [awkwardly placed] rear safety is not affected or removed. The new trigger block is merely an additional much appreciated feature.

Along with the AR-15 type Trigger Block Lever, the alloy LHG™ was ergonomically enhanced for optimum handling and balance by contouring, slotting, and lightening for minimum weight with maximum strength. The LHG was also modified to use the popular interchangeable AR 15 pistol grips, of non-beavertail variety. The new pistol grip angle is much more comfortable, better pointing for fast shooting, and matches the AR 15 for consistent muscle memory across platforms. The new AR-15 pistol grip is supplemented by various fore grip improvements and options.

The alloy fore arm has been lightened considerably and contoured for comfort with ergonomically placed cooling slots that act as textured grips. Also, mounting slots at 6 o’clock for the M14.ca picatinny rails. There are built in sling swivel mounting points for left and right hand slings. And, the lower has a built in mounting point for a future gas deflector, for left handed SHOOTERS. The entire alloy lower is rough textured with a bead blast finish, then given Type II anodizing.

Finally, as one of the most noteworthy improvements, at the originally very awkward rear mounted magazine release, there are several options planned to improve this critical device. Shipping with the LHG is a simple, round, oversized, alloy magazine release button. This oversized button greatly improves the speed of magazine changes. Videos of the new much easier T97NSR magazine change technique are posted on Instram under user heading m14.ca.manufacturing. More upgrades are planned.
T97.ca LHG Product Data Sheet

Specifications:

**Product Name:** T97.ca LHG (Flat Top Upper)

**Type:** Lower Hand Guard and Trigger Group

**Material:** 6061 Alloy, Type II Hard Anodized

**Color:** Black

**OAL:** 13.75in.

**Weight:** 16.2 oz. (6.2oz. weight gain from original)

**Compatibility:** Fits T97NSR, T97NRR and QBZ95 family of rifles (Norinco and Dominion Arms)

**Company:** The Upgrade Path Inc. for T97.ca

**Contact:** Sales/Support Tel./Talk 250 888 9982

**Web Info.:** [http://www.t97.ca](http://www.t97.ca)

**Email:** info@m14.ca

Shipping Components:

- 1 x 6061 alloy with Type II anodizing LHG™ (Lower Hand Guard)
- 1 x 6061 alloy Trigger Group
- 1 x 6061 alloy Trigger Blocking Bar
- 1 x 6061 alloy Trigger Blocking Button
- 1 x 6061 alloy Trigger Blocking Disc
- 1 x 6061 alloy Trigger Guard/Pistol Grip Retainer
- 1 x T97.ca Magazine Release Button with M4-0.7 x 4mm socket set screw
- 1 x “T97.ca LHG Installation Instructions” sheet
- 1 x Blue threadlocker package, Long Selector Spring, Optional Short Selector Spring and Set Screw

Screws:

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Replacement Screws:

A complete set of replacement screws and set screws can be requested for a small fee should they be required. Send email to info@m14.ca

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