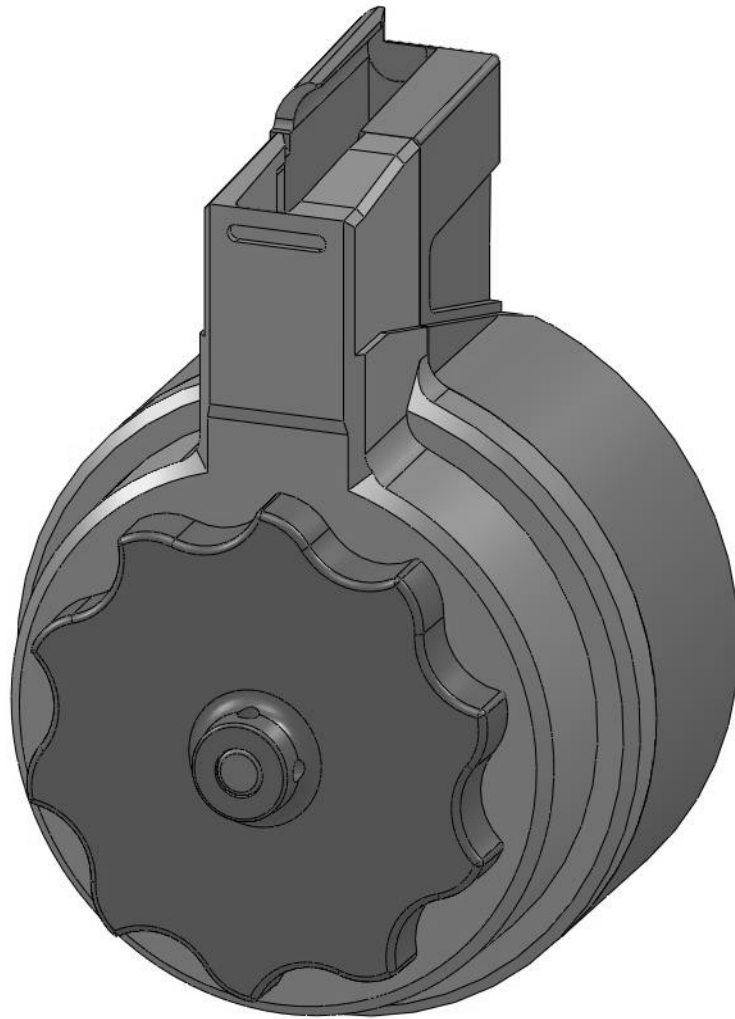


**Allied Armament Inc.**  
**X-91 Magazine Owners Manual**  
Rev. 1



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## Safety Warnings



**Firearm and ammunition handling and use increases exposure to lead and other substances which can be toxic. Please use and maintain firearms and this device in a well ventilated area to minimize exposure to these substances.**

**This drum magazine is intended to be used on Heckler and Koch HK-91 series rifles and copies or derivatives thereof. Modification to allow use on any other firearm could result in injury. It is intended to be used with NATO specification 7.62x51/308 Winchester ammunition of the full metal jacket style. Use of soft nose, hollow point or other styles of ammunition may cause malfunction.**

**This drum contains a very powerful spring. Read all precautions and instructions before attempting to service this device. Eye protection is highly recommended when disassembling or assembling the magazine. DO NOT TURN HAND WHEEL THEN LET GO!!! SAFE OPERATION AND PRODUCT LONGEVITY REQUIRES THAT ANY TENSION ON THE SPRING BE APPLIED AND RELEASED GRADUALLY. FAILURE TO DO SO CAN RESULT INJURY, DAMAGE TO THE INTERNAL MECHANISM OR HOUSING, AND WILL VOID WARRANTY.**

## Overview

Thank you for your purchase of the Allied Armament X-91 drum magazine. This magazine is intended to function in HK-91 series rifles, their derivatives and copies. Please read all operating instructions before using this unique magazine.

The magazine is designed to feed fifty rounds of 7.62x51 NATO ammunition into your firearm, keeping pace with the demands of a G3 machine gun. The high strength aluminum housing is coated with Cerakote<sup>®</sup> high tech ceramic paint for excellent scratch and wear resistance. The internal pieces are made of high strength aluminum alloys that are anodized to protect the internal assembly from wear, oxide coated steel for improved corrosion resistance and high impact plastics to provide a lifetime of use. To power this magazine, a custom clock spring is housed behind the high-impact plastic hand wheel.

**Note about the fit and finish:** Cerakote<sup>®</sup> may feel rough to the touch, but it is one of the most wear and chemical resistant finishes that also provides greatly decreased friction between parts. The finish should feel slightly rough, this is normal. There is also normally a small amount of movement between the housing halves.

## Operation

### Loading the X-91:

To load the X-91 magazine, the hand wheel must be turned in small increments to allow the insertion of each round. It is important to not over turn the hand wheel as doing so can allow the inserted rounds to fall out of the grooves. **Only use NATO Spec. 7.62x51 FMJ ammunition.**

**Step 1:** With an empty magazine, turn hand wheel clockwise from the front to compress the spring.



Empty Drum Magazine (cotter pin to show rotation)



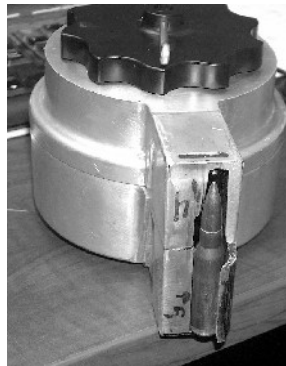
Rotate Hand Wheel CW ~1 wheel notch

**Step 2:** While keeping the spring compressed, slide a cartridge primer end first into the gap created.



Sliding cartridge into the magazine

**Step 3:** Slide the cartridge to the rear, and **slowly** release the hand wheel to release the spring.



Loaded cartridge

**Step 4:** Repeat from step 1-3, however as the magazine begins to fill it may become necessary to push the previous cartridges down as you turn the hand wheel. This can be done using the next to load cartridge as shown.

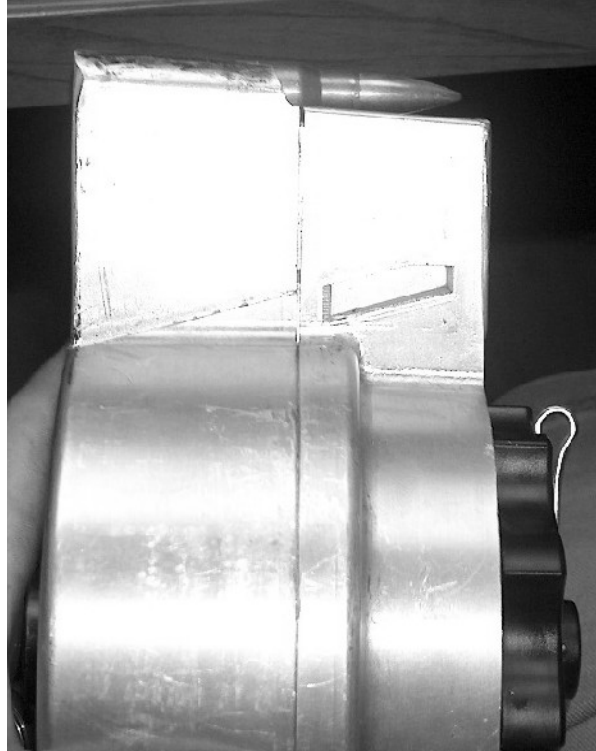


Using the next cartridge to force down the stack as turning hand wheel

## IMPORTANT



After loading 50 rounds, check that the angle of the cartridge is correct.



Correct Angle, cartridge should be in line, or slightly elevated from the magazine

If this is not the case, turn the hand wheel slightly and depress the rounds into the magazine. Release the spring tension slightly faster and this should be the result. Additionally, jarring the magazine slightly with a firm tap to the rear can correct this issue. If neither of these correct this issue, lubrication may be required, please read the section on lubrication.

## **Unloading the X-91**

Due to the large amount of tension in the spring it is not suggested to leave the X-91 magazine loaded for extended periods of time. To unload the magazine, apply slight pressure to the hand wheel, similar to loading, and press the cartridge from the primer side out of the front of the magazine. Slowly release the hand wheel to bring the next cartridge to the opening. Repeat until empty.

## **Lubrication**

The X-91 is designed to operate without lubrication under normal operation. During break-in or after extensive use lubrication may be required to get adequate performance. Graphite powder and PTFE dry wax are the only approved lubricants for the X-91. **DO NOT USE OIL BASED LUBRICANTS** as they will cause dust/debris to harden and can weaken plastic components. To apply a lubricant start with an empty magazine. Apply a thin layer of either approved lubricant to the top follower and each of the first 10-15 cartridges loaded into the magazine. Continue to load as normal, the motion of the cartridges distributes the lubricant throughly along the pathways inside the magazine. If required this should only be performed periodically as the powder lubricants can accumulate impeding operation. WD-40 or similar light oil/rust preventative can be applied to the clock spring during disassembly only.

## **Cleaning**

Periodic cleaning can be done with warm soapy water and a nylon or natural bristle brush. The main area of build-up will be the feed area of the magazine and the first follower. These can be lightly scrubbed to remove debris then rinsed. **DO NOT USE POWDER SOLVENTS** as they can damage the plastic components. Thoroughly dry the magazine with a lint free rag when done. If lubrication is required reapply on the next loading.

Intensive cleaning requires disassembling the mechanism which is NOT advised. If necessary to disassemble the mechanism please read through the instructions completely to prevent damage.

## Disassembly

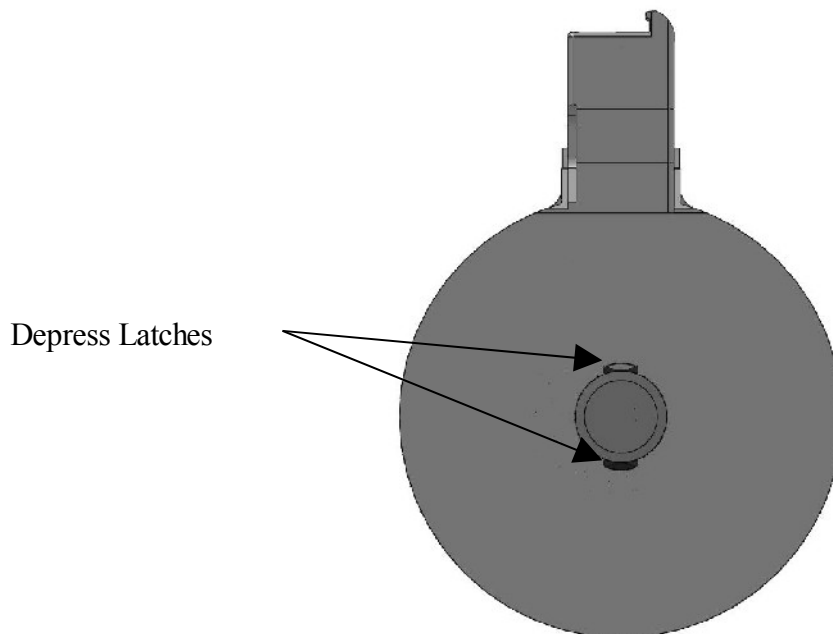
**Please read all instructions before disassembling the X-91 magazine.**

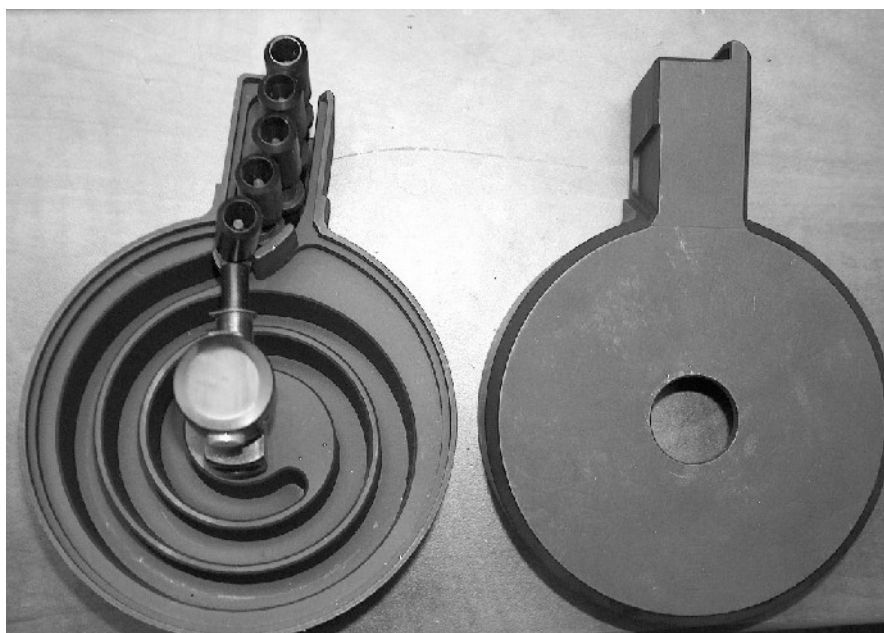
**Tools Required:** 1/8" Drift Punch (coat handle with electrical tape), outside snap ring pliers

**Optional:** Dental Pick

**Step 1:** Unload the magazine.

**Step 2:** Depress the rear latches and pull on the back housing to remove it. This can be aided by the use of a thin metal pick to hold one latch depressed while depressing the other. Be sure to not allow the telescoping rod or followers to disengage from the track.

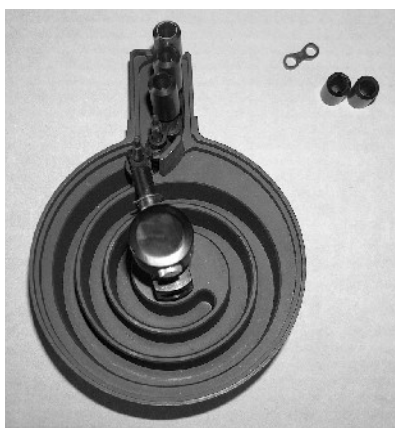




Rear Removed

**THERE IS NOW A LARGE AMOUNT OF SPRING TENSION ON THE FOLLOWERS. BE CAREFUL NOT TO ALLOW THEM OUT OF THE PATH.**

**Step 3:** Remove the rear of the follower connected to the telescoping arm. Remove the next follower rear and the plastic link connecting these two.



Follower rears and link removed

**Step 4:** Wind the magazine slightly using the hand wheel, similar to loading, to remove tension from the followers.



Wind slightly

**Step 5:** While keeping the tension off the followers, rotate the linked followers counter clockwise as an assembly, then slip them out of the telescoping arm. **Tension must be kept on the hand wheel during this operation. The follower assembly is held together by the magazine housings. During this operation the followers and links may become separated, if this occurs consult the exploded diagram and assembly instructions for proper follower assembly.**

**Step 6:** Remove the tension on the spring by slowly allowing it to unwind. As this is done the telescoping arm must be depressed in order to clear the stop. **Keep track of the number of revolutions as you unwind. Each drum is wound to a specific tension and may be unique.**

**My Drum took \_\_\_\_\_ revolutions to unwind.**

**Step 7:** Using the drift punch, carefully drive the roll pin out of the hand wheel. **On certain drums there are two sets of holes for the roll pin to use, only one is correct for your drum. Marking the end of the center hub before removing the roll pin to indicate which set of holes to use during reassembly is advised.**

**Step 8:** Gently press the center hub out of the hand wheel and through the front housing.

**Step 9:** The hand wheel should now be able to be lifted off of the clock spring. **DO NOT ATTEMPT TO REMOVE THE CLOCK SPRING.**

**Step 10:** The telescoping rod can be removed from the center hub using outside snap ring pliers to remove the spring clip.

**Removal of the rear latches and clock spring are not recommended and as such are not covered in this manual.**



**DO NOT ATTEMPT TO REMOVE THE CLOCK SPRING**

The X-91 is now completely disassembled. Thorough cleaning should be done using soapy water and a nylon or natural hair brush. Parts should be thoroughly dried before reassembly, a light coating of WD-40 or similar to the clock spring can be applied at this time.

## Reassembly

**Tools Required: 1/8" Drift Punch (coat handle with electrical tape), outside snap ring pliers, long narrow rod (screwdriver, punch or similar)**

**Please read all assembly instructions before proceeding. This section assumes a completely disassembled magazine and certain steps may be omitted for only partial disassembly.**

**Step 1:** Align the notch in the hand wheel with the end of the clock spring and gently press the hand wheel over the spring.

**Step 2:** Reassemble the telescoping arm by placing the small side of the steel arm tube through the large hole in the center hub. Reinstall the spring ring with snap ring pliers. The aluminum arm shaft is then inserted into the steel arm tube.

**Step 3:** Insert the center hub into the front housing, slight movement of the hand wheel may be required to align it with the center hub.

**Step 4:** Rotate the center hub so that the telescoping arm is contacting the stop in the front housing. While holding this orientation align the disassembly mark on the hub with a set of holes in the hand wheel. Drive in the roll pin that was removed during disassembly.

**Step 5:** Rotate the center hub counter clock wise to wind the spring. It will be necessary to depress the telescoping arm to clear the stop. Turn the hub the number of revolutions that were done during disassembly. When that number of revolutions has been done, slowly unwind while pulling the telescoping arm out until it contacts the stop.

**If you did not keep track of the revolutions, wind the hub until it cannot be turned any farther, then unwind it 3 revolutions and set the telescoping arm against the stop.**

**Step 6:** Assemble your followers as shown below.

**Step 7:** Wind the drum slightly and rotate the telescoping arm into the orientation shown below.

Once here, slide the first follower through the hole in the telescoping arm and rotate the assembly in the reverse of disassembly. Slowly unwind the hand wheel, the arm may not contact the stop before tension is released, this is normal as the followers are not restrained.

**Step 8:** Slide the plastic link over the last two followers and slide both follower rears on.

**Step 9:** Wind the drum to the shown position, the hand wheel must be facing the ground or the followers will fall out.

Position the rear housing as shown against the center hub.

Press the rear housing onto the front housing, turning slightly to line up the magazine halves. It may be necessary to press the rear latches to allow them to slip through the rear housing. Press the magazine halves together until the rear latches click out behind the rear housing. Slowly unwind the magazine.

The X-91 is has now been reassembled. The assembly and disassembly procedure is available in video format at Allied Armament's website and Youtube.

## Trouble Shooting

**Problem:** The cartridge leaving the magazine hits the front feed ramp and does not enter the chamber.

**Solutions:**

- Check ammunition, only clean NATO Spec 7.62x51 FMJ will function properly
- Check feed angle as shown earlier. If incorrect, lubrication may be required.

**Problem:** Magazine fit on my firearm seems overly tight.

**Solutions:**

- Due to the large number of Hechler and Koch rifles, their derivatives and clones, and the sheet metal receiver, we have found wide variation in magazine well size. The X-91 was designed to fit the nominal size, however each firearm is slightly different. Additionally, the X-91 magazine will not flex as much as a sheet metal magazine.
- If magazine fit is too tight, the X-91 can be filed to fit. **This will void your warranty on the magazine housing, but not internal mechanisms, and may cause fit issues on other firearms.**
- The other option is to identify the location of the tightness and flex the sheet metal, and stretch the magazine well accordingly. **This may void any manufacturer warranty on your firearm. Check with your manufacturer prior to performing this operation.**
- The usual spot is the magazine well having a slight hour-glass shape which can be corrected using large pliers inserted into the magazine well then opened to slightly stretch it.

**Problem:** Magazine fit on my firearm seems excessively loose.

**Solutions:**

- Due to the large number of Hechler and Koch rifles, their derivatives and clones, and the sheet metal receiver, we have found wide variation in magazine well size. The X-91 was designed to fit the nominal size, however each firearm is slightly different. Additionally, the X-91 magazine will not flex as much as a sheet metal magazine.
- Magazine fit on a loose gun can only be corrected by resizing the magazine well.
- **This may void any manufacturer warranty on your firearm. Check with your manufacturer prior to performing this operation.** To resize a magazine well

smaller, a rubber dead blow hammer with light taps along the magazine well with the X-91 drum installed can usually correct this problem. **This may cause fit issues with sheet metal magazines.**

**Note on use in CETMEs:** Traditional sheet metal magazines are generally interchangeable between the CETME rifles and the HK-91/G3 series firearms. However we have found slight differences between the magazine well and the magazine latch locations between Hechler and Koch manufactured firearms, the clone firearms (Vector, PTR-91, Century Arms International, etc.) and CETMEs. The X-91 will function in CETMEs if the magazine fits in and properly latches. In our experience the CETME magazine well is formed differently than on HK-91/G3 series guns. This causes issues in the corners of the magazine interfering with the magazine well.

## Warranty

THIS WARRANTY IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, WRITTEN OR ORAL, WHETHER EXPRESSED BY AFFIRMATION, PROMISE, DESCRIPTION, DRAWING, MODEL OR SAMPLE. ANY AND ALL WARRANTIES OTHER THAN THIS ONE, WHETHER EXPRESSED, IMPLIED INCLUDING IMPLIED WARRANTIES ARE HEREBY DISCLAIMED. The X-91 carries a 90 day limited warranty. The warranty covers defects and flaws from workmanship or material defects and does not cover failures due to: misuse, normal wear and tear, dropping, use of unauthorized lubricants, use of ammunition other than NATO specification 7.62x51 FMJ, or modifications, other than modifications to the housings for fit and function on a particular firearm, in which case the housings will not be covered under warranty, but internal mechanism will be covered as above. Units repaired by Allied Armament will remain under the original warranty period plus an additional thirty (30) days from the date the repaired unit is returned. The warranty covers parts and labor required to repair the magazine only, and does not cover shipping to or from Allied Armament.

To contact Allied Armament for repair please have the following information available:

- Name, Address, Phone Number and E-mail
- Date of Purchase
- Invoice # if purchased from Allied Armament
- Type of ammunition used
- Firearm it was used in
- Description of failure

Send information to:

Allied Armament Inc.

55948 Columbia River Hwy

Scappoose, OR 97056

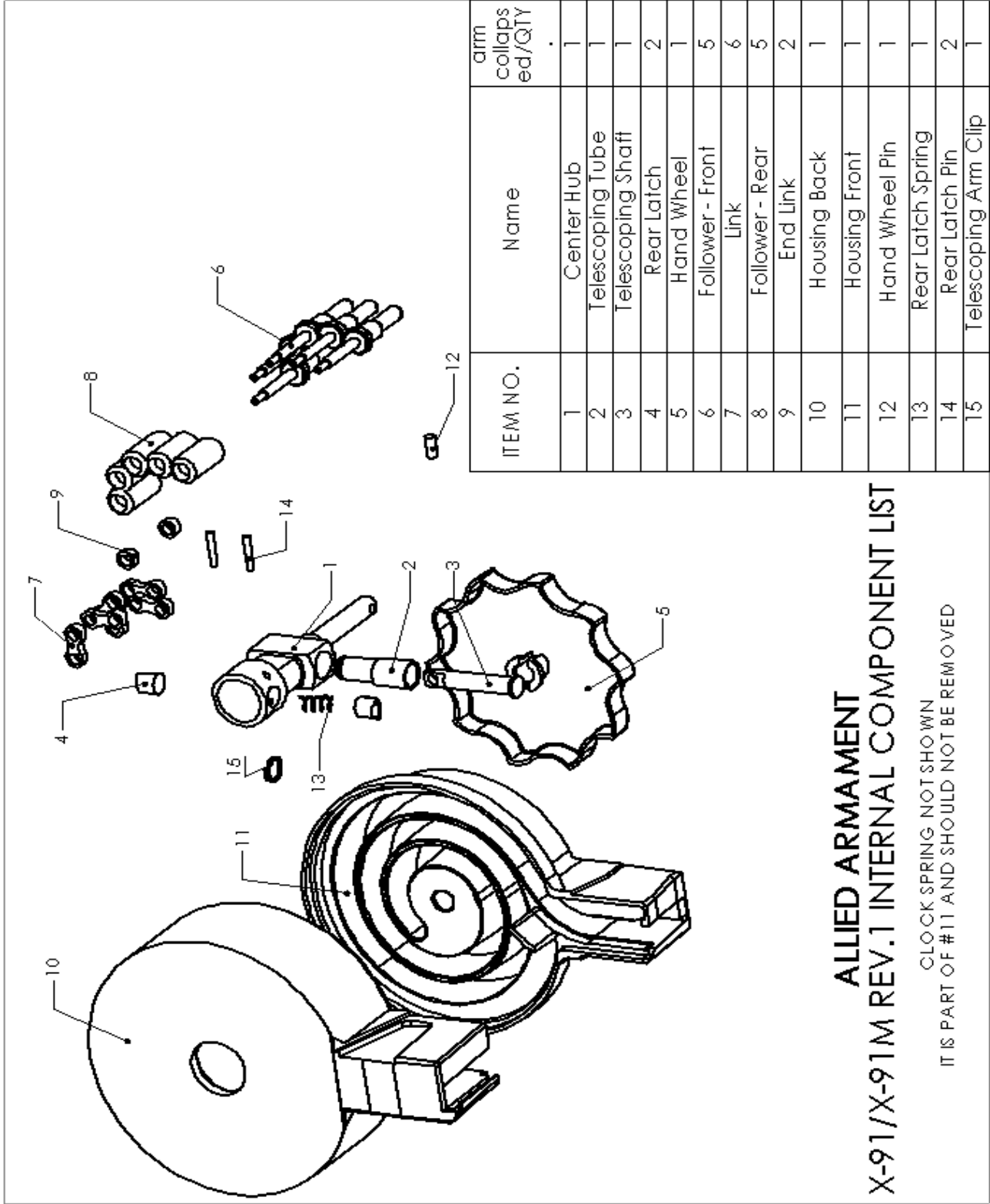
or contact us at:

503-543-5154

or

[repairs@alliedarmament.com](mailto:repairs@alliedarmament.com)

**DO NOT SHIP REPAIRS UNTIL AUTHORIZATION HAS BEEN RECEIVED**  
**ENSURE THAT RMA # IS CLEARLY MARKED ON PACKAGE TO SPEED REPAIRS**  
**DO NOT SHIP A LOADED MAGAZINE!!!**



ITEM NO.	Name	arm collapsed/QTY
1	Center Hub	1
2	Telescoping Tube	1
3	Telescoping Shaft	1
4	Rear Latch	2
5	Hand Wheel	1
6	Follower - Front Link	5
7	Follower - Rear Link	6
8	Follower - Rear	5
9	End Link	2
10	Housing Back	1
11	Housing Front	1
12	Hand Wheel Pin	1
13	Rear Latch Spring	1
14	Rear Latch Pin	2
15	Telescoping Arm Clip	1

**ALLIED ARMAMENT**  
**X-91/X-91M REV.1 INTERNAL COMPONENT LIST**

CLOCK SPRING NOT SHOWN  
 IT IS PART OF #11 AND SHOULD NOT BE REMOVED