



**SAM XT TRAINING**

**SAM**<sup>®</sup>  
MEDICAL



**SAM**<sup>®</sup>  
MEDICAL

# WHY WE NEED TOURNIQUETS

# WHY WE NEED TOURNIQUETS



**Of 4,596 battlefield fatalities reviewed in the US military between 2001 and 2011, 119 died from potentially survivable extremity hemorrhage.**

Eastridge BJ, Mabry RL, Seguin P, Cantrell J, Tops T, Uribe P, Mallett O, Zubko T, Oetjen-Gerdes L, Rasmussen TE, Butler FK, Kotwal RS, Holcomb JB, Wade C, Champion H, Lawnick M, Moores L, Blackbourne LH. Death on the battlefield (2001-2011): implications for the future of combat casualty care. *J Trauma Acute Care Surg.* 2012 Dec;73(6 Suppl 5):S431-7.

# WHY WE NEED TOURNIQUETS



**4,297 casualties with extremity trauma in US military 2001-2010. 30% had tourniquets applied. 92% of casualties with tourniquets survived.**

Kragh JF Jr, Dubick MA, Aden JK, McKeague AL, Rasmussen TE, Baer DG, Blackbourne LH. U.S. Military use of tourniquets from 2001 to 2010. Prehosp Emerg Care. 2015 Apr-Jun;19(2):184-90.

# WHY WE NEED TOURNIQUETS



**19 police departments in Wisconsin 2010-2015. Law enforcement rendered care 56 times, 42 of which were extremity hemorrhage controlled by tourniquets.**

Stiles CM, Cook C, Sztajnkrycer MD. A Descriptive Analysis of Tactical Casualty Care Interventions Performed by Law Enforcement Personnel in the State of Wisconsin, 2010-2015. Prehosp Disaster Med. 2017 Jun;32(3):284-288.

## WHY WE NEED TOURNIQUETS



**From March 2013 - Feb 2014, 542 patients with vascular trauma were treated at 14 trauma centers. 18.4% were upper extremity arterial, 26% were lower extremity.**

**Prehospital tourniquet use for extremities occurred in 20.2% of cases.**

DuBose JJ, Savage SA, Fabian TC, Menaker J, Scalea T, Holcomb JB, Skarupa D, Poulin N, Chourliaras K, Inaba K, Rasmussen TE; AAST PROOVIT Study Group. The American Association for the Surgery of Trauma PROspective Observational Vascular Injury Treatment (PROOVIT) registry: multicenter data on modern vascular injury diagnosis, management, and outcomes. *J Trauma Acute Care Surg.* 2015 Feb;78(2):215-22; discussion 222-3.





# SAM EXTREMITY TOURNIQUET



# SAM<sup>®</sup> XT

Extremity Tourniquet



A firefighter in full gear, including a helmet and safety glasses, is kneeling on the ground at night. He is focused on organizing an open emergency medical kit (EMT bag) which contains various medical supplies like bandages and tools. In the background, a person is lying on a stretcher, partially covered by a grey blanket. The scene is dimly lit, with some blurred lights in the distance, suggesting an emergency scene at night.

**ENGINEERED TO PRESERVE LIFE**



ENGINEERED TO PRESERVE LIFE

## TRUFORCE™ BUCKLE

Slack is the main cause of failed tourniquet application. The TRUFORCE™ buckle technology auto-locks to eliminate nearly all tourniquet slack by incorporating innovative baseline force control, activating the locking prongs.





ENGINEERED TO PRESERVE LIFE

## TIME BAND

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Weather-resistant hook and loop system functions when fully submerged, providing maximum security in the harshest weather. Outer material is optimized for night vision.





ENGINEERED TO PRESERVE LIFE

## WINDLASS C-HOOKS

Secures the Metal Windlass Rod using an intuitive angular design, making windlass locking easier and more efficient.





ENGINEERED TO PRESERVE LIFE

## TRUFLEX™ PLATE

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Durable nylon construction distributes force as targeted pressure for maximum strength and flexibility, able to bend on smaller extremities without breaking.



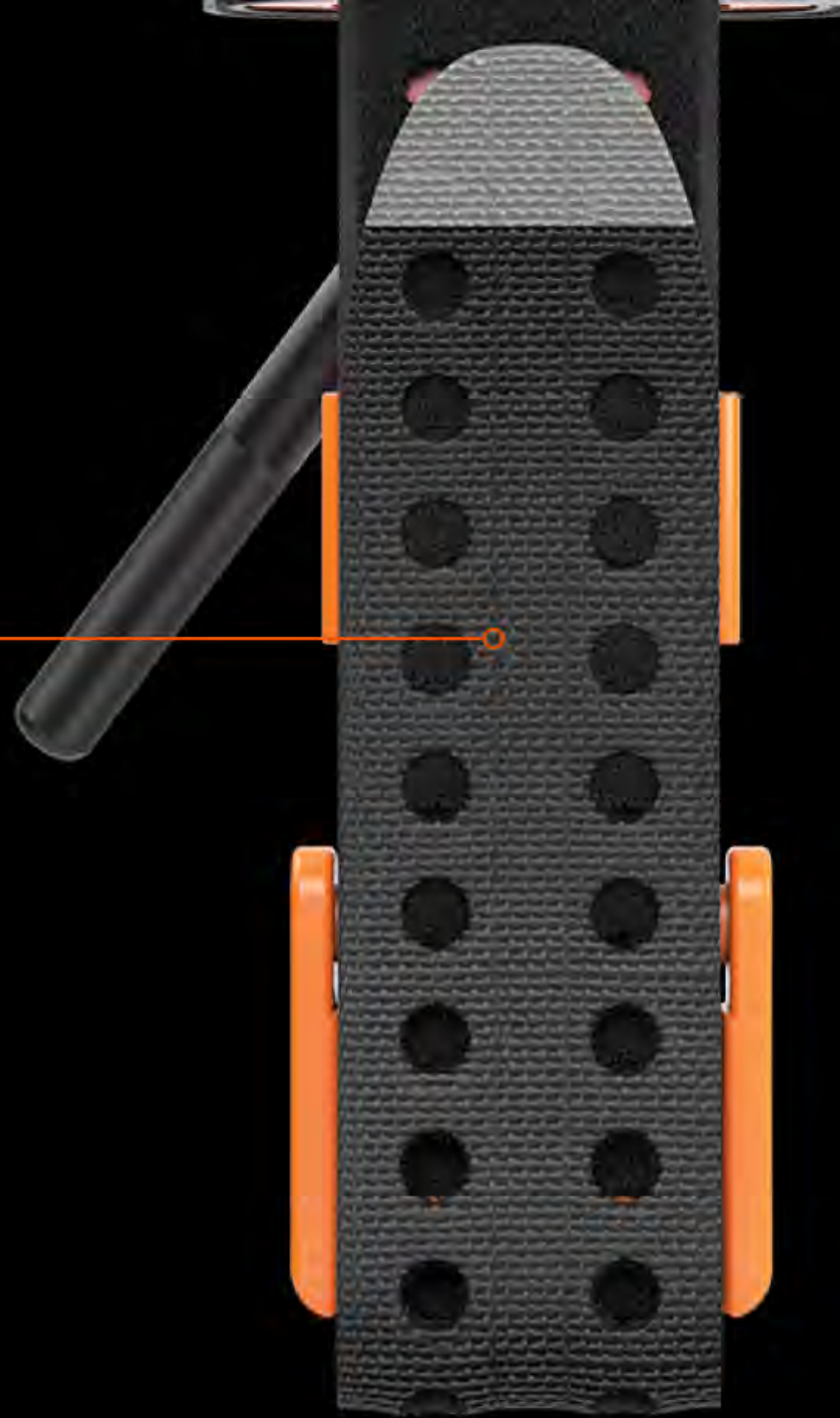


ENGINEERED TO PRESERVE LIFE

## PRECISION STRAP

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Velcro®-dependent tourniquets can fail when wet or dirty. The allweather Precision Strap is made of single-layer nylon webbing. It features intervalled holes that lock with the TRUFORCE™ Buckle to create a consistent, efficient primary security system. The secondary hook and loop system secures the remaining strap, adding stability and safety.





ENGINEERED TO PRESERVE LIFE

## PRECISION TAB

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Intuitive design allows for quicker, easier tourniquet application. Material is optimized for night vision.





**THREE MODELS AVAILABLE**

# THREE MOELS



**Tactical Black**



**Hi-Viz Orange**



**Hi-Viz Blue**





# WHY SAM XT?

## WHY SAM XT? | CONTROL SLACK

**Tourniquets on casualties in war have been loose in 4%–9% of uses, and such slack risks death from uncontrolled bleeding.**



## WHY SAM XT? | CONTROL SLACK

**At a combat support hospital in Baghdad over a 7 month period, 232 patients had tourniquets.**

**13 of those were loose and  
2 of those patients died.**

SPEED

**Slack reduction for SAM XT means FEWER windlass turns are required, which means less time to apply.**





SPEED

**The low friction TRUFORCE  
Buckle and low resistance  
strap operate with  
unrivalled efficiency.**



## WHY SAM XT? | SECURE WITH CONFIDENCE

**As pain increases for casualties,  
they may try and remove  
tourniquets on their own.**



SECURITY

## **SAM XT's initial security measure does not require Velcro.**

As pain increases for casualties, they may try and remove tourniquets on their own. At full occlusion pressure, it is nearly impossible to disengage the TRUFORCE® Buckle or remove the strap without first untwisting the windlass. Prohibiting the casualty from removing the tourniquet due to pain.





A person in silhouette is holding a rifle against a bright, hazy background. The person's hands are visible, gripping the rifle. The rifle is a long-barreled firearm, possibly a sniper rifle, with a scope and other attachments. The background is a bright, overexposed area, possibly a sky or a large window, creating a strong contrast with the dark silhouette of the person and the rifle. The overall mood is somber and focused.

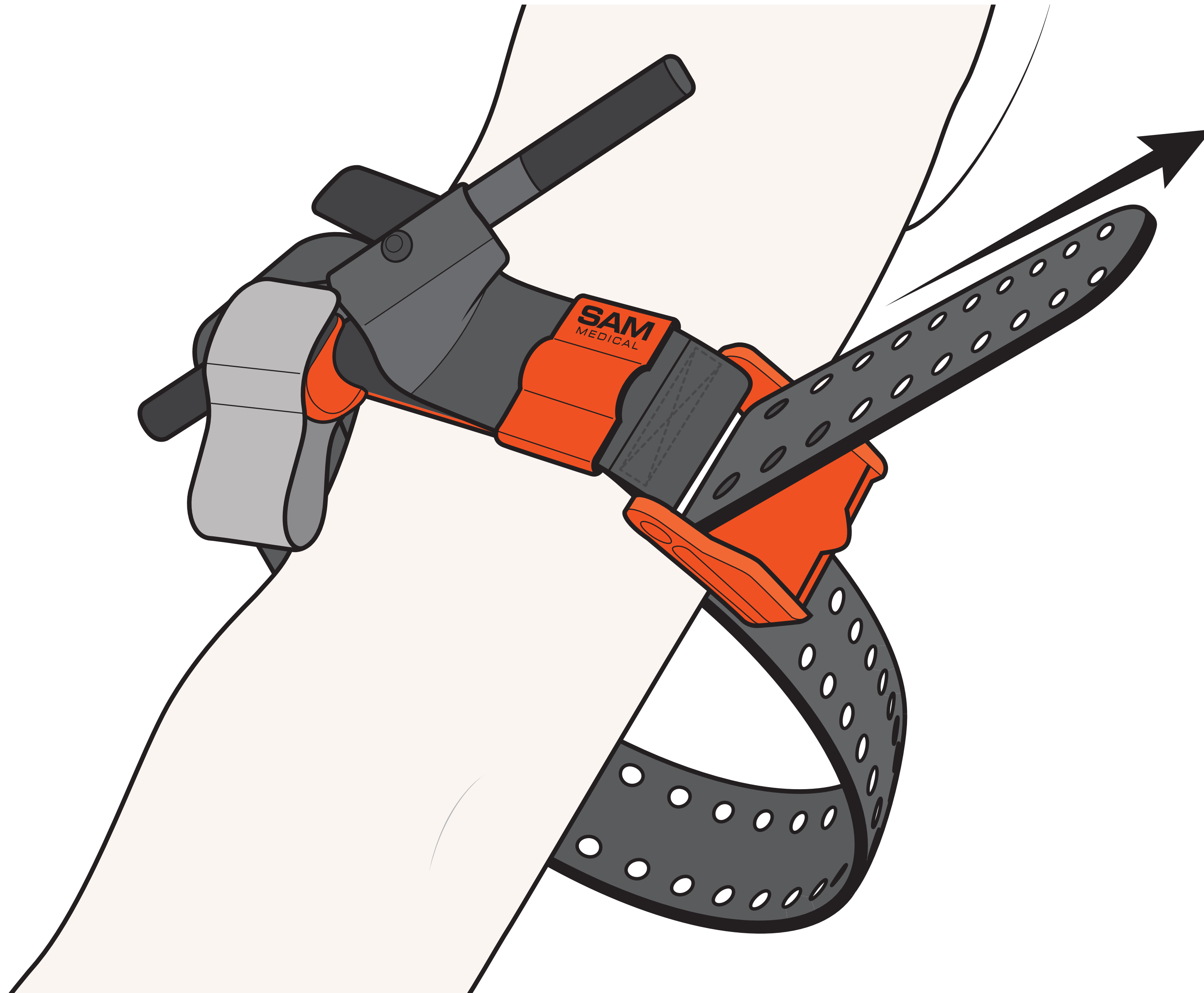
# SAM XT APPLICATION



[https://www.youtube.com/watch?v=VukQZ5\\_gONQ](https://www.youtube.com/watch?v=VukQZ5_gONQ)

[https://www.youtube.com/watch?v=l\\_XQxliLVak](https://www.youtube.com/watch?v=l_XQxliLVak)





## STEP 1

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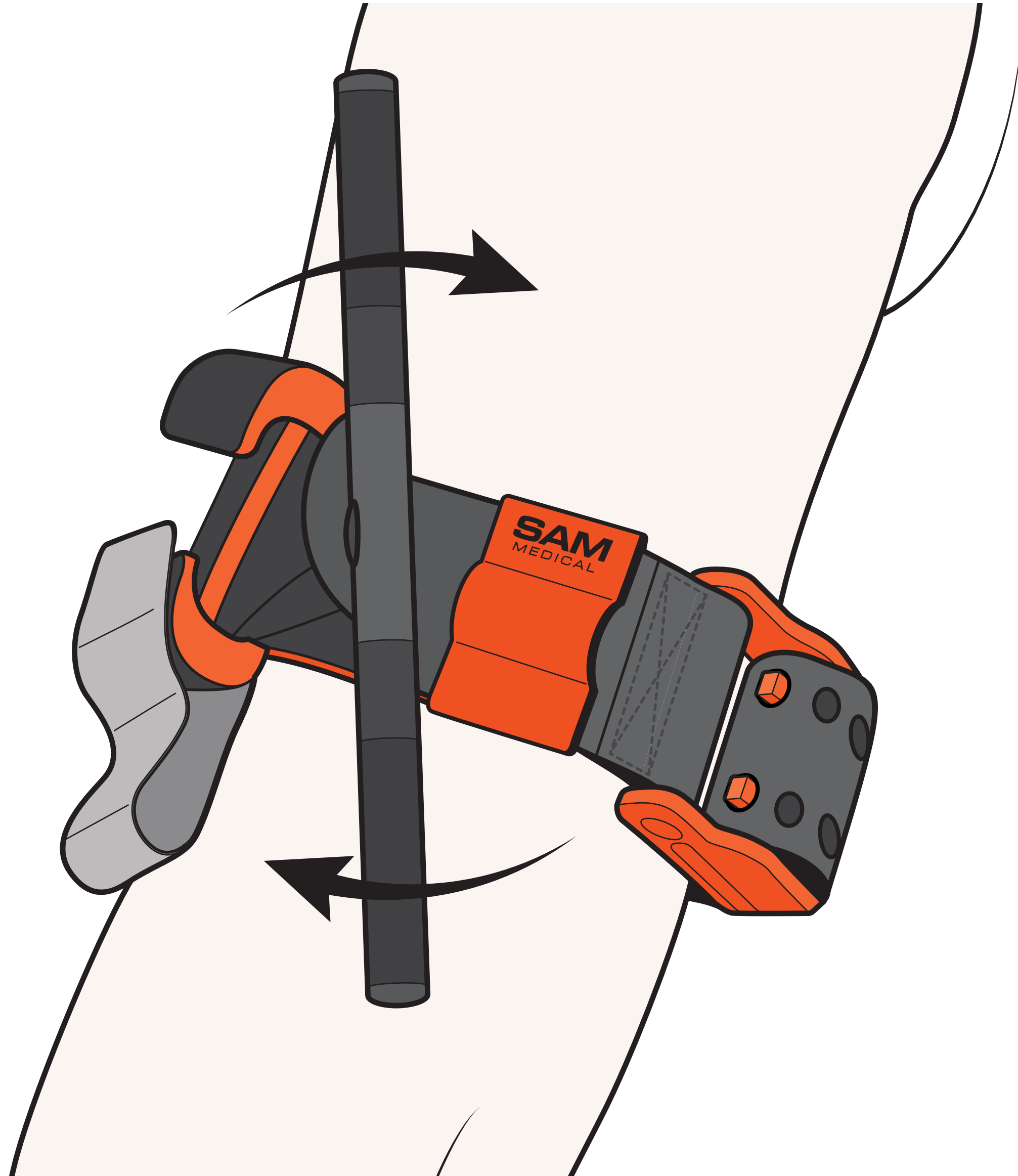
**Locate the site of injury\* and place the SAM<sup>®</sup> XT around the limb, directly onto the skin 2-3 inches above the wound.**



## STEP 2

**Insert the tip of the strap through the opening in the buckle. Grip the strap close to the buckle and pull hard and steady against the buckle until it stops. Maintaining tension, press the strap back upon itself to hold it in place. Do not cover WINDLASS C-HOOKS.**





## STEP 3

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**Twist the metal windlass rod until the bleeding has stopped.**

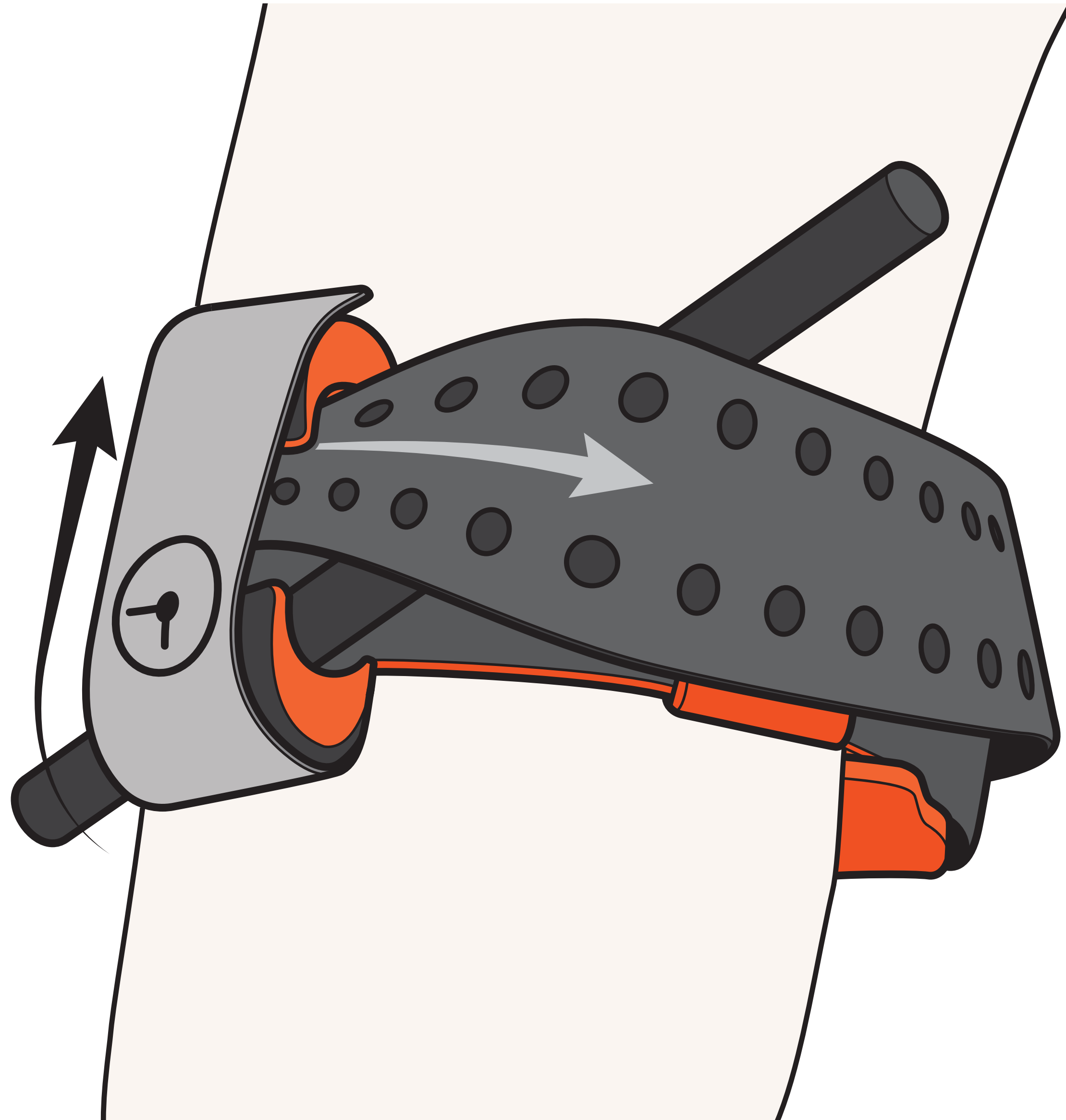


## STEP 4

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**Fix the metal windlass rod inside the Windlass C-hooks and confirm that bleeding has stopped. If bleeding continues, try to further tighten the tourniquet with additional twists of the metal windlass rod. If this fails to stop the bleeding, apply a second SAM<sup>®</sup> XT side by side next to the first and ensure bleeding has stopped.**





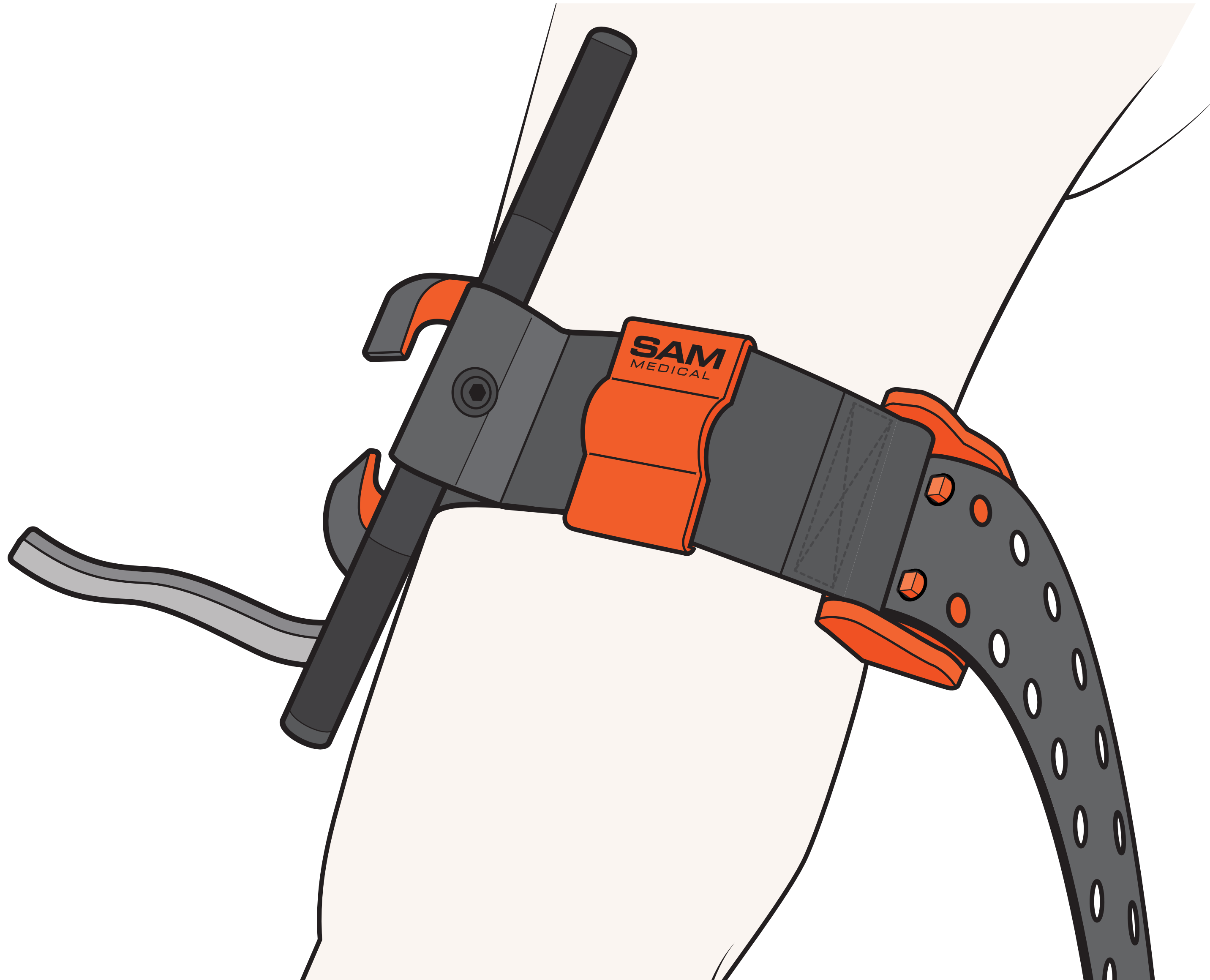
## STEP 5

Wrap strap between Windlass C-hooks, over rod and around the limb.

Secure the (🕒) Time Band over Windlass C-hooks and record time of application.

# REMOVAL INSTRUCTIONS



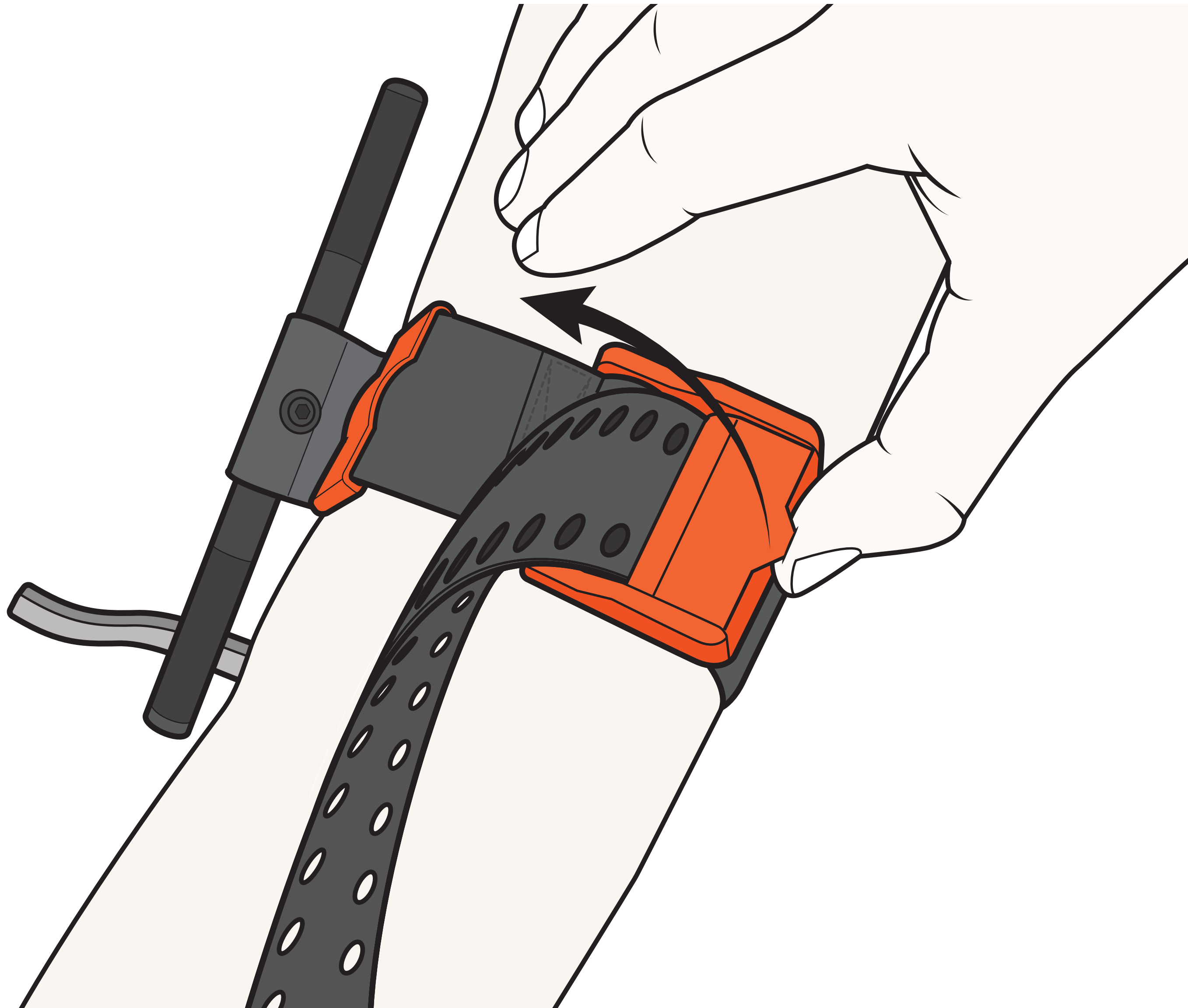


## STEP 1

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**Leave tourniquet in place until directed by a medical practitioner.**

**To remove SAM<sup>®</sup> XT  
Release the (🕒) Time Band & untwist metal windlass rod.**



## STEP 2

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**Lift the tab on the front of the buckle to allow prongs to retract.**

**DISPOSAL:**  
**Dispose of device per facility policy.**



# RESET SAM XT





<https://www.youtube.com/watch?v=nKgPkISEuQ4>



# SUMMARY





# SUMMARY

**CONTROL SLACK**

**APPLY WITH SPEED**

**SECURE WITH CONFIDENCE**



REGULATORY

CE

ALL ENVIRONMENTS  
MIL STD  
**810 G**  
PROVEN

ISO

2



# DATA SOURCES

- 1** Eastridge BJ, Mabry RL, Seguin P, Cantrell J, Tops T, Uribe P, Mallett O, Zubko T, Oetjen-Gerdes L, Rasmussen TE, Butler FK, Kotwal RS, Holcomb JB, Wade C, Champion H, Lawnick M, Moores L, Blackbourne LH. Death on the battlefield (2001-2011): implications for the future of combat casualty care. *J Trauma Acute Care Surg.* 2012 Dec;73(6 Suppl 5):S431-7.
- 2** Kragh JF Jr, Dubick MA, Aden JK, McKeague AL, Rasmussen TE, Baer DG, Blackbourne LH. U.S. Military use of tourniquets from 2001 to 2010. *Prehosp Emerg Care.* 2015 Apr-Jun;19(2):184-90.
- 3** Heldenberg E, Givon A, Simon D, Bass A, Almogy G, Peleg K. Terror attacks increase the risk of vascular injuries. *Front Public Health.* 2014 May 30;2:47.
- 4** Kapur GB, Hutson HR, Davis MA, Rice PL. The United States twenty-year experience with bombing incidents: implications for terrorism preparedness and medical response. *J Trauma.* 2005 Dec;59(6):1436-44.
- 5** Stiles CM, Cook C, Sztajnkrycer MD. A Descriptive Analysis of Tactical Casualty Care Interventions Performed by Law Enforcement Personnel in the State of Wisconsin, 2010-2015. *Prehosp Disaster Med.* 2017 Jun;32(3):284-288.



# DATA SOURCES

- 7** DuBose JJ, Savage SA, Fabian TC, Menaker J, Scalea T, Holcomb JB, Skarupa D, Poulin N, Chourliaras K, Inaba K, Rasmussen TE; AAST PROOVIT Study Group. The American Association for the Surgery of Trauma PROspective Observational Vascular Injury Treatment (PROOVIT) registry: multicenter data on modern vascular injury diagnosis, management, and outcomes. *J Trauma Acute Care Surg.* 2015 Feb;78(2):215-22; discussion 222-3.
- 8** Polston RW, Clumpner BR, Kragh JF Jr, Jones JA, Dubick MA, Baer DG. No slackers in tourniquet use to stop bleeding. *J Spec Oper Med.* 2013 Summer; 13(2):12-9.
- 9** Kragh JF Jr, Walters TJ, Baer DG, Fox CJ, Wade CE, Salinas J, Holcomb JB. Practical use of emergency tourniquets to stop bleeding in major limb trauma. *J Trauma.* 64(2 Suppl):S38-49; discussion S49-50, 2008.
- 10** Baruch EN, Kragh JF, Berg AL, Aden JK, Benov A, Shina A, Schlaifer A, Ahimor A, Glassberg E, Yitzhak A. Confidence-Competence Mismatch and Reasons for Failure of Non-Medical Tourniquet Users. *Prehosp Emerg Care.* 2016 Aug 5:1-7.



**MORE INFO**

**[sammedical.com](http://sammedical.com)**



**THANK YOU**

**SAM**<sup>®</sup>  
MEDICAL



**MORE THAN SURVIVAL™**