

**Operator's and Maintainer's Manual  
for the**

**WILCOX<sup>®</sup>**

**BOSS X<sup>e</sup>**  
TM

**High Power  
Fire Control System**

**CAGEC: 004F1**



**BTAC<sup>®</sup>**  
**ENABLED**



## **OSHA LASER OPERATOR SAFETY REQUIREMENTS**

*Inside the United States, State and Federal OSHA require the operation of Class 3B laser products to occur only under a formalized laser safety program as defined in ANSI Z136.1 Compliance with OSHA requirements are the sole responsibility of the purchaser / user.*

*Many countries have similar safety of use requirements. Reference the International IEC 60825 part 14, User's Guide for Laser Safety, outside the US."*

## **FEDERAL RESTRICTIONS ON CLASS 3B WEAPON SIGHTS**

*This product is in conformity with performance standards for laser products under 21 CFR 1040, except with respect to those characteristics authorized by Variance Number 2021-V-0922 effective November 2, 2021.*

*The following restrictions apply:*

- *The sale of this product is restricted to Federal, State or local government law enforcement agencies only, through a direct purchase order and shall not be sold to individual personnel of these agencies or organizations.*
- *Immediately terminate laser emissions if optical aids (e.g., monocular, binoculars, weapon mounted optics, telescopes, etc.) are in use near the laser termination or its beam path. It is necessary and intended that the invisible beam emitted by this device be viewed by the user through night vision equipment.*
- *The purchasing organization must maintain a property log that lists the type and number of each device owned and the responsible party having control of these devices, and must maintain an active training program for its employees in the safe use of this laser system.*
- *Batteries shall be removed when the product is not intended to operate, in order to prevent unauthorized use.*

***BLACK & WHITE - NO GRAY!™***

**▲ WARNING ▲**

***You are required to thoroughly read all instructions and product safety information in the BOSS Xe Operator's Manual before using this product. FAILURE TO COMPLY WITH PROPER INSTRUCTIONS COULD RESULT IN PROPERTY DAMAGE, INJURY AND/OR DEATH. Wilcox is not responsible for damages resulting from improper use and/or maintenance. Customers may obtain a copy of the Manual by contacting Wilcox Customer Service at 603-431-1331.***

***This product contains technical data as defined in the International Traffic in Arms Regulations ITAR 22 CFR 120.10. Export of this material is restricted by the Arms Export Control Act 22 U.S.C. 2751 et seq. and may not be exported to foreign persons without prior written approval from the U.S. Department of State.***

## **TABLE OF CONTENTS**

<b><u>Para. No.</u></b>	<b><u>Title</u></b>	<b><u>Page</u></b>
	Table of Contents .....	iii
	Table of Tables .....	vi
	Table of Illustrations.....	vii
	Preface .....	ix
	Operator's Manual to Software Version Cross-Reference .....	x
	Safety Summary.....	xi
	S1 - Laser Radiation Output Parameters.....	xix
	S2 - Symbols.....	xxi

## **SECTION 1 - OVERVIEW**

1.1	General Safety Warnings.....	1
1.2	Model Number and Equipment Name .....	4
1.3	Manufacturer .....	4
1.4	Purpose of Equipment .....	4

## **SECTION 2 - INTRODUCTION**

2.1	Product Description .....	5
2.2	List of <i>BOSS Xe</i> Major Components .....	6
2.3	List of <i>BOSS Xe</i> Subcomponents and Features .....	7
2.4	Description of <i>BOSS Xe</i> Major Components.....	11
2.5	Description of <i>BOSS Xe</i> Sub-Components.....	13
2.6	Technical Data .....	21



## TABLE OF CONTENTS (CONT'D)

<b>Para. No.</b>	<b>Title</b>	<b>Page</b>
<b>SECTION 3 - OPERATION</b>		
3.1	Mounting and Dismounting the <i>BOSS Xe</i> .....	22
3.2	Installing the High Power Lock Out Screw on the <i>BOSS Xe</i> .....	24
3.3	Attaching the Control Activation Keypad to the <i>BOSS Xe</i> .....	25
3.4	Attaching the Rail Clamp to the Weapon Rail.....	26
3.5	Boresight Procedure (Establishing Theoretical Zero with a Laser Boresight Kit).....	27
3.6	Restoring Factory Defaults.....	31
3.7	Operating the <i>BOSS Xe</i> .....	32
3.7.1	Performing Daytime Engagement with the <i>BOSS Xe</i> .....	33
3.7.2	Performing Nighttime Engagement with the <i>BOSS Xe</i> .....	34
3.7.3	Changing <i>BOSS Xe</i> Reticle Configuration.....	35
3.7.4	Performing Engagements with the <i>BOSS Xe</i> Powered Off.....	36
3.7.5	Activating the Panic Alert.....	37
3.7.6	Enabling or Disabling Bluetooth.....	38

## TABLE OF CONTENTS (CONT'D)

<b><u>Para. No.</u></b>	<b><u>Title</u></b>	<b><u>Page</u></b>
-------------------------	---------------------	--------------------

### **SECTION 4 - MAINTENANCE**

4.1	Care of the <i>BOSS Xe</i> .....	39
4.2	Battery Replacement.....	41
4.3	Inspecting and Replacing O-Rings .....	44
4.4	Storage .....	46
4.5	Shipping .....	46

### **APPENDIX A - WARRANTY STATEMENT**

A.1	Standard Limited Warranty.....	47
A.2	Warranty Claim and Service Information.....	49

### **APPENDIX B - ABBREVIATIONS**

B.1	Abbreviations.....	50
-----	--------------------	----

### **APPENDIX C - SPARE PARTS**

C.1	Spare and Optional Parts List.....	51
-----	------------------------------------	----

## TABLE OF TABLES

<b><u>Table No.</u></b>	<b><u>Title</u></b>	<b><u>Page</u></b>
S1-1	<i>BOSS Xe</i> Worst Case Laser Safety Parameters (Green Laser) .....	xix
S1-2	<i>BOSS Xe</i> Worst Case Laser Safety Parameters (Red Laser) .....	xx
S1-3	<i>BOSS Xe</i> Product Performance Specifications Models G10 (Red Laser) and G11 (Green Laser) .....	xx
2.4-1	Control Activation Keypad Functions .....	12
2.5-1	Button Operations (by Mode) .....	14
2.5-2	Mode Options Tree .....	16
2.5-3	LED Indicator Operational States .....	18
2.6-1	<i>BOSS Xe</i> Technical Data .....	21
3.7-1	IR Aiming Laser Cant Indication .....	34
3.7-2	Reticle Shape Options .....	35
3.7-3	Bluetooth Configuration Notifications .....	38
C-1	Spare Parts List .....	52
C-2	Optional Parts List .....	52

## TABLE OF ILLUSTRATIONS

<b><u>Fig. No.</u></b>	<b><u>Title</u></b>	<b><u>Page</u></b>
S2-1	<i>BOSS Xe</i> Product Symbols.....	xxi
1.1-1	<i>BOSS Xe</i> Laser Safety Label.....	2
1.1-2	<i>BOSS Xe</i> Laser Aperture Label .....	3
1.1-3	<i>BOSS Xe</i> Product Identification Labels.....	3
2.2-1	Major Component Identification.....	6
2.3-1	Subcomponent Identification - <i>BOSS Xe</i> (1 of 4).....	7
2.3-2	Subcomponent Identification - <i>BOSS Xe</i> (2 of 4).....	8
2.3-3	Subcomponent Identification - <i>BOSS Xe</i> (3 of 4).....	9
2.3-4	Subcomponent Identification - <i>BOSS Xe</i> (4 of 4).....	10
2.3-5	Cleaning Kit Identification - <i>BOSS Xe</i> .....	10
2.5-1	Control Pad Functionality.....	14
3.1-1	Mounting the <i>BOSS Xe</i> to the Primary Weapon .....	23
3.2-1	Installing the High Power Lock Out Screw on the <i>BOSS Xe</i> .....	24

**TABLE OF ILLUSTRATIONS (CONT'D)**

<b><u>Fig. No.</u></b>	<b><u>Title</u></b>	<b><u>Page</u></b>
3.3-1	Attaching the Control Activation Keypad to the <i>BOSS Xe</i> .....	25
3.4-1	Attaching the Rail Clamp to the Weapon Rail.....	26
3.5-1	Boresight Chart for the <i>BOSS Xe</i> Mounted to a SIG MCX Rattler .....	28
3.7-1	Iron Sights (Rear View).....	36
4.2-1	Replacing the Primary Battery in the <i>BOSS Xe</i> .....	42
4.2-2	Replacing the Clock Battery in the <i>BOSS Xe</i> .....	43
4.3-1	Inspecting and Replacing O-Rings .....	45

## **PREFACE**

1. SCOPE. The purpose of this Operator's Manual is to assist the operator in the operation and maintenance of the *BOSS Xe*.

The information in this manual should not replace the experience of a trained operator. Keep this manual and all safety instructions for future use. The information must be provided to each product user.

2. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATION. Wilcox requests that all errors, omissions, and discrepancies be forwarded to the Program Management Department, Wilcox Industries, Corp., One Wilcox Way, Newington, NH 03801. To submit feedback by e-mail, visit **[www.wilcoxind.com](http://www.wilcoxind.com)** and click on **"Contact Us"**.

© 2020-2022 Wilcox Industries Corp. All rights reserved. Printed in USA. US Patents. 9,752,853, 10,086,527, 10,557,687, 10,581,214, and 10,175,029. European Patent No. 3540363. Additional patents pending. *Wilcox®* and the Wilcox "X" icon are federally registered trademarks of Wilcox Industries Corp. U.S. *Xe™*, *Black and White - No Gray™*, *"Our Customer's Life Depends on It"™* and *ERGOCTO™* are trademarks of Wilcox Industries Corp. *BTAC* is a Federally registered trademark of Blueforce Development Corp. All other trademarks and registered trademarks in this manual are the property of their respective companies. Specifications and other data are subject to change without notice.

**OPERATOR'S MANUAL  
TO SOFTWARE VERSION CROSS-REFERENCE**

When utilizing any version of the *BOSS Xe* software, it is critical to reference the correct version of the Operator's Manual for the software you are using. The following table provides a cross-reference for tracking Operator's Manual release revision numbers to software revision releases.

<b>Manual Rev.</b>	<b>Covers Software Rev.</b>
A-1	02.00
A-2	01.01

## **SAFETY SUMMARY**

WARNING and CAUTION statements have been strategically placed throughout the text to indicate operating or maintenance procedures, practices, or conditions considered essential to the protection of personnel (WARNING) or equipment and property (CAUTION). NOTES emphasize necessary and important data. CAUTIONS and NOTES appear in the text as applicable. Definitions for WARNINGS, CAUTIONS and NOTES are as follows:

### **▲ WARNING ▲**

Highlights an operation or maintenance procedure, practice, condition, statement, etc., which, if not strictly observed, could result in injury to or death of personnel.

### **■ CAUTION ■**

Highlights an operating or maintenance procedure, practice, condition, statement, etc., which, if not strictly observed, could result in damage to, or destruction of, equipment or loss of mission effectiveness.

### **NOTE**

Highlights an essential operating or maintenance procedure, condition or statement.



## ▲ **WARNING** ▲

### **Laser Safety**

- *The BOSS Xe is a Class 3B laser product which emits visible and infrared laser radiation from the front end of the device. Both visible and infrared laser light can be dangerous if misused. Laser light reflected or refracted off mirrored surfaces may be equally harmful.*
  - *Never stare into a laser.*
  - *Never point lasers at someone's eyes.*
  - *Never point the lasers at other persons as Class 3B lasers may cause skin irritation.*
  - *Do not aim lasers at personnel or mirrored surfaces.*
  - *Do not look at a laser through telescopes, binoculars, scopes, image intensifiers, etc.*
  - *Direct eye exposure to a laser may cause permanent eye damage, including blindness. Special glasses for filtering laser light must be used if protection from laser radiation is required.*
- *Visible and infrared laser beams are more visible when used in smoke, fog and rain, making them more easily detectable by onlookers or observers. When used in these environments, prolonged activation of the lasers should be avoided.*
- *Do not operate the device if laser covers are missing, if the unit is defective, or if the laser port cover or seal is damaged.*
- *Caution - Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.*
- *Removing the Blue Lock Out Screw from the Mode Selection Switch may allow accidental exposure to high powered lasers. When high power operation is not intended, always keep the Lock Out Screw in place.*

**▲ WARNING ▲**

- *This device may emit laser radiation when the product body is opened. Do not open product body.*
- *Ensure that the weapon is CLEAR and on SAFE before installing this device and accessories on a weapon, in accordance with the weapon's Operator's Manual, and that the device is powered off, lens cap on prior to installation. Failure to do so can result in property damage, injury, and/or death.*
- *For guidance on the proper use of lasers, refer to ANSI Z136.1, "Standard for Safe Use of Lasers", American National Standards Institute.*
- *The product is not to be opened (except for battery change and o-ring visual inspection) or modified. Do not modify the unit. Do not remove protective covers or housings.*
- *Service is only to be handled by Wilcox Industries. This device contains no user serviceable parts.*
- *The operator should perform regular maintenance as outlined in this manual. Any procedures not specifically outlined in this manual shall be performed only by a Wilcox certified maintenance technician. Performance of procedures outside of those specified in this manual may cause injury and will invalidate the product warranty.*
- *ALWAYS ensure that primary (CR123A) battery is removed prior to mounting this device to, or dismounting it from the primary weapon or when performing maintenance.*
- *Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.*

## **▲ WARNING ▲**

- ***Laser covers are intended to be removed from the laser port (aperture) when in use.***
- ***Follow all instructions in accordance with the weapon's operator's manual. Ensure that the device is powered off with the lens cap on when performing any maintenance. Failure to do so can result in property damage, injury, and/or death.***
- ***Lasers are activated during the BOSS Xe system test. Follow safety precautions for laser eye safety and operational cover.***

### **Usage Safety**

- ***You are required to thoroughly review and understand the operational and maintenance procedures outlined in this manual prior to operating the device.***
- ***This device contains a Bluetooth interface which transmits radio frequencies that may be discoverable by enemy forces. See your unit armorer when it is desirable to turn off the Bluetooth transmitter.***
- ***Mounting of this device should always be performed by the unit armorer and followed with weapon boresighting. Failure to properly boresight can cause inaccurate firing, which may lead to property damage and injury or death.***
- ***Wilcox strongly recommends reviewing the operational and maintenance procedures outlined in this manual prior to operating the device.***
- ***When mounting the BOSS Xe to a weapon, it is necessary to properly boresight the BOSS Xe to the weapon to ensure aiming accuracy.***

## **▲ WARNING ▲**

- *When handling a primary weapon fitted with a BOSS Xe, ALWAYS keep the muzzle pointed down range and clear of all personnel.*
- *In the event of a detected built-in test failure, contact Wilcox Industries at 603-431-1331 and do not use this product.*
- *Do not fire the weapon if the BOSS Xe displays a left or right cant indicator, as this is an indication that the BOSS Xe is canted left or right. Firing the weapon when the BOSS Xe is canted can cause unintended damage to surrounding targets and may result in injury or death.*
- *Failure to maintain the battery compartment o-ring may affect product performance.*

## **Maintenance Safety**

- *Failure to maintain the o-ring may affect product performance.*
- *ALWAYS ensure that primary (CR123A) battery is removed prior to mounting the BOSS Xe to, or dismounting it from the primary weapon or when performing maintenance.*
- *This device may emit laser radiation when the product body is opened. Do not open product body.*
- *The operator should perform regular maintenance as outlined in this manual. Any procedures not specifically outlined in this manual shall be performed only by a Wilcox certified maintenance technician. Performance of procedures outside of those specified in this manual may cause injury will invalidate the product warranty.*

## **▲ WARNING ▲**

- ***Service is only to be handled by Wilcox Industries. There are no user serviceable parts.***

### **Battery Safety**

- ***Refer to battery manufacturer's instructions for safety warnings.***
- ***If the battery compartment becomes hot to touch and you hear a hissing sound (i.e., battery venting) or smell irritating sulfur dioxide gas, IMMEDIATELY turn off the equipment. Wait until battery has cooled before removing it, then replace with a fresh battery.***
- ***To avoid injury, DO NOT use water to extinguish a lithium battery fire.***

## **■ CAUTION ■**

### **Laser Safety**

- ***Caution - Laser light is bright and blinding. Do not shine on aircraft or vehicles at any distance.***
- ***To ensure proper targeting, it is recommended that the Visible Laser be used for boresighting this device to the target.***

### **Battery Safety**

- ***Do not store this device with primary (CR123A) battery installed.***
- ***When opening or closing either of the battery compartments, ensure that moisture is not allowed into the compartment.***

## ■ CAUTION ■

- *It is recommended that the batteries be replaced and that activation procedures for the BOSS Xe be conducted prior to operation to ensure proper operation prior to use (see Section 4.2).*

## NOTE

### Usage Safety

- *This Operator's and Maintainer's Manual should always accompany the product and be transferred with it upon change of ownership.*
- *Ensure that the Mode Selection Knob is set to the 'OFF' position when not in use to avoid inadvertent battery drain.*
- *Always ensure that the primary battery is removed prior to mounting the BOSS Xe to, or dismounting it from the primary weapon or when performing service.*
- *It is recommended that the Visible Laser be used for boresighting the BOSS Xe to the target.*
- *The BOSS Xe features a cant indicator that faces the operator when in a firing position. The position of the cant indicator allows the operator to focus on the intended target downrange during operation. The cant indicator produces measurable increases in hit probability when properly used.*

### Maintenance Safety

- *Do not use harsh abrasives or chemicals such as acetone to clean this device. Any questions about appropriate chemicals should be directed to Wilcox Customer Service.*

**NOTE**

**Battery Safety**

- *This device contains no serviceable internal parts. Adjustments or attempted repairs to the device other than those expressly described in this Operator's Manual will void the warranty.*
- *Periodically inspect the o-ring on the primary (CR123A) Battery Compartment. Inspect the o-ring on the Processor Clock Battery Compartment when the battery requires replacement. If a Battery Compartment Cap o-ring becomes cut, nicked or torn, notify unit armorer.*
- *Periodically inspect the Battery Compartment o-ring. If a Battery Compartment Cap o-ring becomes cut, nicked or torn, notify unit armorer.*

## S1. Laser Radiation Output Parameters

**Table S1-1. BOSS Xe Worst Case Laser Safety Parameters (Green Laser) \*\***

FDA Compliance Maximum						
BOSS Xe (G11 - Green Laser) Worst Case	VIS Aim		IR Aim		IR Illuminator	
	Low	High	Low	High	Low	High
Wavelength [nm]	520		850		840	
Divergence [1/e] (mrad)	0.1		0.28		21	
Maximum Output Power [mW]	<0.7	18	<0.7	36	<0.7	36
NSHD [m]	0	0	0	0	0	0
NOHD [m]	0	260	0	169	0	2
OD	0	1.3	0	1.7	0	1.7
NOHDe* [m]	0	1747	0	995	0	14
ODe*	0	1.3	0	1.6	0	1.6
Diode Power [mW]	100	100	50	50	100	100

\*NOHDe and ODe are calculated using standard 7x50 Binoculars as the aided viewing optics.

\*\*This table is intended for laser safety guidance. Values in table exceed the set nominal values of the laser product.

\*\*\* Green laser calculated as a rectangular beam.



**Table S1-2. BOSS Xe Worst Case Laser Safety Parameters (Red Laser) \*\***

FDA Compliance Maximum						
BOSS Xe (G10 - Red Laser) Worst Case	VIS Aim		IR Aim		IR Illuminator	
	Low	High	Low	High	Low	High
Wavelength [nm]	640		850		840	
Divergence [1/e] (mrad)	0.28		0.28		21	
Maximum Output Power (mW)	<0.7	18	<0.7	36	<0.7	36
NSHD [m]	0	0	0	0	0	0
NOHD [m]	0	103	0	169	0	2
OD	0	1.3	0	1.7	0	1.7
NOHDe* [m]	0	693	0	995	0	14
ODE*	0	1.3	0	1.6	0	1.6
Diode Power [mW]	30	30	50	50	100	100

\*NOHDe and ODe are calculated using standard 7x50 Binoculars as the aided viewing optics.

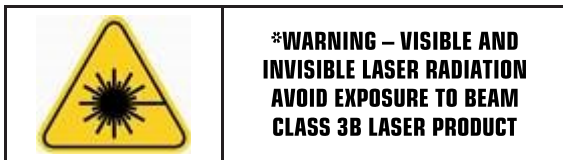
\*\*This table is intended for laser safety guidance. Values in table exceed the set nominal values of the laser product.

**Table S1-3. BOSS Xe Product Performance Specifications Models G10 (Red Laser) and G11 (Green Laser)**

Product Performance Specifications								
BOSS Xe (G10 - Red Laser) and (G11 - Green Laser)	VIS Aiming (G10)		VIS Aiming (G11)		IR Aiming		IR Illuminator	
	Low	High	Low	High	Low	High	Low	High
Wavelength [nm]	640		520		850		840	
Divergence [1/e] (mrad)	0.28		0.1		0.28		21	
Nominal Output Power (mW)*	<0.7	15	<0.7	15	<0.7	30	<0.7	30

\*Nominal Output Power is subject to +/-10% tolerance.

## **S2. Symbols**



**Figure S2-1. BOSS Xe Product Symbols**

---

## SECTION 1

### OVERVIEW

---

#### 1.1 GENERAL SAFETY WARNINGS

The *BOSS Xe* should not be used by anyone unfamiliar with its operation. This manual contains specific operating and maintenance instructions which the operator should become familiar with before actual field usage.

The Safety Warnings in this manual are intended to point out the dangers that are common in handling this type of equipment. **Failure to observe any of the safety information may result in serious physical injury, blindness, or death.** You must familiarize yourself with the entire contents of this Operator's Manual before using the *BOSS Xe*. All general text, WARNINGS, CAUTIONS and NOTES should be strictly followed.

**This manual is intended to provide information relevant to the operation of the *BOSS Xe* and is not a substitute for the information contained in the Operator's Manual issued by the manufacturer of the primary weapon to which it is attached.** It is the responsibility of the operator to read and thoroughly understand the handling and operating procedures for both the *BOSS Xe* and the primary weapon to which it is installed.

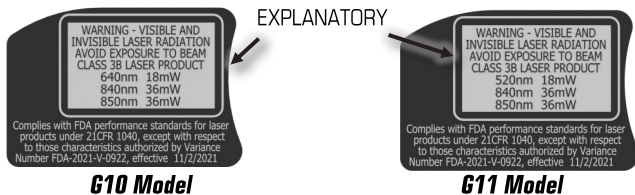
## Laser Radiation Danger

Lasers built into the *BOSS Xe* emit visible and/or infrared laser radiation from the front end of the device (see Sections S1, "Laser Radiation Output Parameters" and 2.6 "Technical Data" for technical data). Both visible and infrared laser light can be dangerous if misused. **Direct eye exposure may cause permanent eye damage, including blindness.** Laser light reflected or refracted off mirrored surfaces may be equally harmful.

- Never stare into a laser beam.
- Never point a laser beam at someone's eyes.
- Do not point a laser beam at mirrored surfaces.
- Do not look at a laser beam through telescopes, binoculars, scopes, etc.

Note the laser radiation warning as displayed on the Laser Safety Label:

### **WARNING - VISIBLE AND INVISIBLE LASER RADIATION AVOID EXPOSURE TO BEAM CLASS 3B LASER PRODUCT**



**Figure 1.1–1 BOSS Xe Laser Safety Label**



**Figure 1.1–2 BOSS X<sub>6</sub> Laser Aperture Label**



**Figure 1.1–3 BOSS X<sub>6</sub> Product Identification Labels**

## **First Aid**

Administer first aid in accordance with local procedures.

## **1.2 MODEL NUMBER AND EQUIPMENT NAME**

<b>PN</b>	<b>Laser Power, Laser Color, Cable Style, Pouch Style</b>
<b>64000610-01-B</b>	<b>High Power, Red, Single, Berry</b>
<b>64000610-02-B</b>	<b>High Power, Red, Single, Non-Berry</b>
<b>64000610-03-B</b>	<b>High Power, Red, Dual, Berry</b>
<b>64000610-04-B</b>	<b>High Power, Red, Dual, Non-Berry</b>
<b>64000611-01-B</b>	<b>High Power, Green, Single, Berry</b>
<b>64000611-02-B</b>	<b>High Power, Green, Single, Non-Berry</b>
<b>64000611-03-B</b>	<b>High Power, Green, Dual, Berry</b>
<b>64000611-04-B</b>	<b>High Power, Green, Dual, Non-Berry</b>

## **1.3 MANUFACTURER**

Wilcox Industries Corp  
25 Piscataqua Drive  
Newington, NH 03801 USA

## **1.4 PURPOSE OF EQUIPMENT**

The *BOSS Xe* is a class high power laser aiming device that mounts to a Picatinny style 1913 rail. It features a fully integrated, environmentally stable bench that houses a reflex sight, red or green visible laser, near infrared (NIR) laser, fixed NIR illuminator and iron sight, all co-aligned to one another. The fixed NIR illuminator and room illuminator feature the best in class overall effective tactical solution in any low light combat situation. A single adjustment to the elevation and windage knobs adjusts all co-aligned lasers and illuminators. Real-time data is shared with the depot's armorer between the *BTAC User App* and *BlueforceCOMMAND* Armorer's App to enhance the maintenance of the weapon.

---

## **SECTION 2**

### **INTRODUCTION**

---

#### **2.1 PRODUCT DESCRIPTION**

The Wilcox Ballistically Optimized Sighting System - Enhanced (*BOSS Xe*) Fire Control System provides repeatable accuracy that cannot be found with any other fire control system. It features a fully integrated Reflex Sight, Visible Aiming Laser (Red - G10 Model or Green - G11 Model), IR Aiming Laser, IR Illuminating Laser and Fixed IR LED Room Illuminator. It allows the user to interchangeably utilize supersonic or subsonic ammunition by the flip of a single trajectory switch, without having to re-zero the weapon. The Reflex Sight, Lasers and Illuminator are co-aligned on one optical bench, and travel on an adjustable trajectory switch. A single CR123A battery powers the system.

## 2.2 LIST OF **BOSS Xe** MAJOR COMPONENTS

ITEM	DESCRIPTION
1.	<b>BOSS Xe</b>
2.	Carrying Pouch
3.	<b>BOSS Xe</b> Operator's and Maintainer's Manual (Download Only)
4.	<b>BOSS Xe</b> Quick Reference (Download Only)
5.	Boresight Chart (Download Only)
6.	<b>ERGOCTO™</b> Activation Control KeyPad, 12", Single Cable
7.	<b>ERGOCTO™</b> Activation Control KeyPad, 12", Dual Cable (Optional)

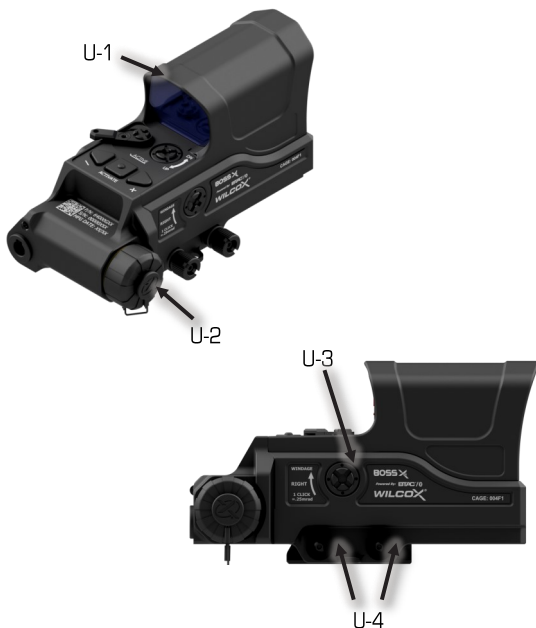


**Figure 2.2-1 Major Component Identification**



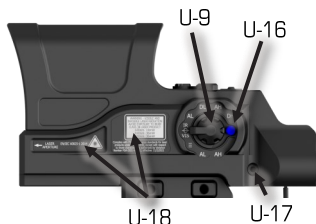
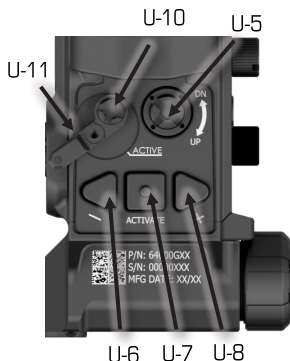
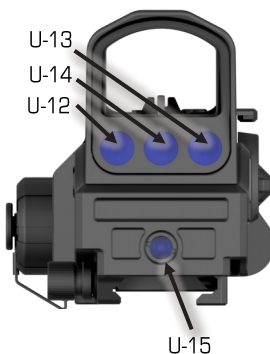
## 2.3 LIST OF *BOSS X* SUBCOMPONENTS AND FEATURES

ITEM	DESCRIPTION
U-1.	Optic Sight
U-2.	Main Battery Compartment
U-3.	Windage Adjustor
U-4.	Thumb Nuts (2)



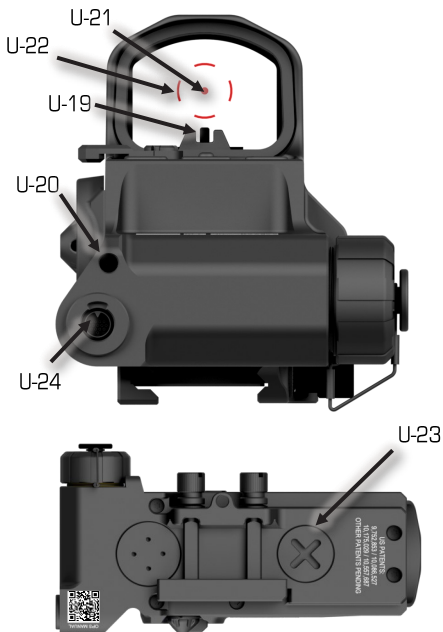
**Figure 2.3–1 Subcomponent Identification - *BOSS X* (1 of 4)**

ITEM	DESCRIPTION
U-5.	Elevation Adjustor
U-6.	"-" Button
U-7.	Activate Button
U-8.	"+" Button
U-9.	Mode Selection Knob
U-10.	Elevation Adjustment Knob
U-11.	Trajectory Switch
U-12.	IR Aiming Laser Port (Aperture)
U-13.	Visible Aiming Laser Port (Aperture)
U-14.	IR Illuminating Laser Port (Aperture)
U-15.	IR LED Room Illuminator Port (Aperture)
U-16.	Lock-Out Screw
U-17.	Lock-Out Screw Retention Hole
U-18.	Laser Warning Labels



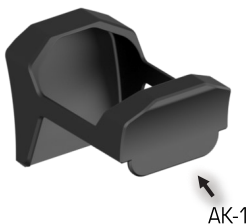
**Figure 2.3-2 Subcomponent Identification - BOSS Xe (2 of 4)**

ITEM	DESCRIPTION
U-19.	Iron Sights
U-20.	LED Indicator
U-21.	Red Dot Sight
U-22.	Cant Indicators
U-23.	Processor Clock Battery Compartment
U-24.	Control Activation Keypad Port

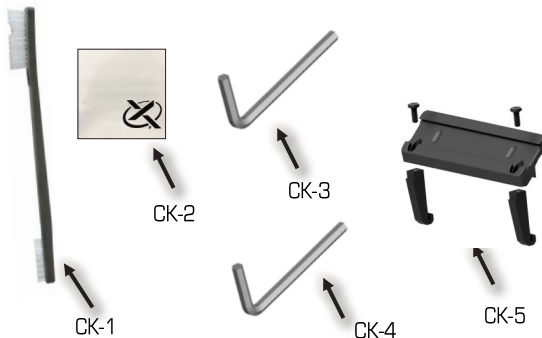


**Figure 2.3–3 Subcomponent Identification - BOSS Xe (3 of 4)**

ITEM	DESCRIPTION
AK-1.	Lens Cover
CK-1.	Cleaning Brush
CK-2.	Cleaning Cloth
CK-3.	5/64 Hex Key
CK-4.	.050 Hex Key
CK-5.	ERGOCTO™ Rail Clamp



**Figure 2.3-4 Subcomponent Identification - BOSS Xe (4 of 4)**



**Figure 2.3-5 Cleaning Kit Identification - BOSS Xe**

## **2.4 DESCRIPTION OF *BOSS Xe* MAJOR COMPONENTS**

**1. BOSS Xe.** The *BOSS Xe* features a fully integrated optic Sight, Visible Red or Green Aiming Laser, NIR Aiming Laser, NIR Laser Illuminator and Fixed NIR LED Room Illuminator. It allows the user to interchangeably utilize supersonic and subsonic ammunition by the flip of a single trajectory switch. The Reflex Sight, Lasers and Illuminator are co-aligned on one optical bench. One (1) commercial CR123A lithium battery (sold separately) powers the *BOSS Xe* (Surefire™ brand recommended).

**2. Carrying Pouch.** A Carrying Pouch is provided for stowing the *BOSS Xe* when not in use.

**3. Operator's and Maintainer's Manual for the *BOSS Xe* (Download Only).** A *BOSS Xe* Operator's and Maintainer's Manual outlines the use and maintenance of the *BOSS Xe*. This Manual is available for download on the Wilcox website by scanning the QR code on the *BOSS Xe*.

**4. Quick Reference for the *BOSS Xe* (Download Only).** The *BOSS Xe* Quick Reference summarizes *BOSS Xe* operation and is designed to be taken out into the field for quick reference. The Quick Reference is available for download from the Wilcox website by scanning the QR Code on the *BOSS Xe*. The Quick Reference shall not be considered a replacement to the safety information in this Operator's Manual.

**5. Boresight Chart (Download Only).** A Boresight Chart is available for performing Boresight of the *BOSS Xe* according to the procedures outlined in this manual. The Boresight Chart is

available for download on the Wilcox Website by scanning the QR code on the *BOSS Xe*.

**6. *ERGOCTO™* Control Activation Keypad, 12", Single Cable.** A 3-button *ERGOCTO™* Control Activation Keypad provides control of the Low Power IR Aiming Laser and IR Room Illuminator (See Table 2.4-1 and Figure 3.3-1 for operation). The Keypad includes a 12" single cable for connection to the *BOSS Xe*.

**Table 2.4-1. Control Activation Keypad Functions**

	Button #1	Button #2	Button #3
Single Cable Keypad	Room Illuminator	Mirror Rotary Switch Position	Dual Low (IR Room Illuminator + Low Power IR Aiming Laser)
Dual Cable Keypad	Flashlight	Mirror Rotary Switch Position	Dual Low (IR Room Illuminator + Low Power IR Aiming Laser)

**7. *ERGOCTO™* Control Activation Keypad, 12", Dual Cable (Optional).**

An optional 3-button *ERGOCTO™* Control Activation Keypad provides control of the Low Power IR Aiming Laser and IR Room Illuminator (See Table 2.4-1 and Figure 3.3-1 for operation). The Keypad includes a 12" single cable for connection to the *BOSS Xe* and another for connection to a flashlight. For purchase information, contact Wilcox Customer Service at 603-431-1331.

## **2.5 DESCRIPTION OF *BOSS Xe* SUB-COMPONENTS**

**U-1. Optic Sight.** The integrated Optic Sight is a red dot sight that provides the sighting and targeting capability for the *BOSS Xe* and features multiple reticle segments which allow for shape selection. It features an IR Aiming Laser, IR Illuminator Laser and red (G10 model) or green (G11 model) Visible Aiming Laser that provide improved targeting, day and night. The Red Dot Sight allows for daytime target acquisition. A control pad located on the optic sight allows for control of the laser, which can also be activated with the Remote Activation Keypad.

**U-2. Main Battery Compartment.** The Main Battery Compartment houses one (1) CR123A battery to operate the device. A 1/4 turn Battery Compartment Cap features an o-ring to prevent debris and moisture entry. Refer to Section 4.2 "Battery Replacement" for battery installation instructions.

**U-3. Windage Adjustor.** A Windage Adjustor allows for easy windage adjustment when boresighting or Zeroing the *BOSS Xe* to the weapon and maintains its setting until reset by the operator. All Lasers and the Red Dot Sight move together when adjusting Windage. For information on adjusting Windage, refer to the Boresighting Procedure in Section 3.5 "Boresight Procedure".

**U-4. Thumb Nuts.** When the Rail Mount Assembly is attached to the *BOSS Xe*, Thumb Nuts allow for hand adjustment of the rail mount to eliminate the use of tools while mounting. When in position, torque to 30 inch pounds.

**Table 2.5-1. Button Operations (by Mode)**

	Down (–) Button	Activate Button	Up (+) Button
	<i>BOSS X</i> Only	<i>BOSS X</i> & Remote	<i>BOSS X</i> Only
<b>Laser Modes:</b> IR DH IR AH VIS AH IR DL IR AL VIS AL	Lasers Active: Decreases aiming laser power when laser is active. Lasers Inactive: Decreases reticle brightness. ***	Turns Operational Mode Laser On/Off. Aiming Lasers are activated in the last selected power level for the power mode position. *, **	Lasers Active: Increases aiming laser power when laser is active. Lasers Inactive: Increases reticle brightness. ***
<b>Reticle Shape Menu:</b> =	<b>Single Press:</b> Scroll down through available options.	<b>Single Press:</b> Turn Reticle On/Off.	<b>Single Press:</b> Scroll up through available options.

\* Single Press temporarily activates until the button is released, while rapid double press activates until pressed once again to turn off.

\*\* Active lasers will time out after 5 minutes of continuous non-use.

\*\*\* Changes are retained when power cycling.



**BOSS X Control Pad**

**Figure 2.5–1 Control Pad Functionality**



**U-5. Elevation Adjustor.** An Elevation Adjustor allows for easy elevation adjustment for one of two elevations depending upon the position of the Trajectory Switch. It facilitates boresighting or Zeroing the *BOSS Xe* to the weapon and maintains its setting until reset by the operator. All Lasers and the Red Dot Sight move together when adjusting elevation. For information on adjusting Elevation, refer to the Boresighting Procedure in Section 3.5 "Boresight Procedure".

**U-6 - U-8. + / Activate / - Buttons.** The "+", Activate and "-" Buttons on the Control Pad are multipurpose buttons that operate differently depending on the selected mode of operation. See Table 2.5-1 and Figure 2.5-1 for individual mode operation and Figure 2.5-2 for Mode Options.

**U-9. Mode Selection Knob.** A Mode Selection Knob allows the Operator to select from available functional modes (see Figure 2.5-2). In the event that the Mode Selection Knob position is changed when a laser mode is active, lasers turn off. When the Mode Selection Knob is in a new laser position, the operator will need to activate the newly selected lasers.

**U-10. Elevation Adjustment Knob.** The Elevation Adjustment Knob allows the operator to adjust at what distance the laser intersects the bullets trajectory for the switch position opposite that adjusted by the Elevation Adjustor. All Lasers and the Red Dot Sight move together when adjusting elevation. For information on adjusting Elevation, refer to the Boresight Procedure in Section 3.5, "Boresight Procedure".

**U-11. Trajectory Switch.** The Trajectory Switch mechanically changes the trajectory of the *BOSS Xe* Optic Sight by enabling one

of the two elevation adjustors for all co-aligned lasers and the red dot, between two pre-set points of aim (e.g., less drop trajectory vs more drop trajectory) by simply switching from one to the other. When the switch is in the "Active" position, the Left Elevation Adjustment Knob (U-10) is enabled and the Elevation Adjustor (U-5) is disabled. When the switch is in the "Inactive" position, the Right Elevation Adjustor (U-5) is enabled and the Elevation Adjustment Knob is disabled. The systems' two trajectories are set by preforming the boresighting and zeroing procedures as described in Section 3.5.

**Table 2.5-2. Mode Options Tree**

KNOB POSITION	MODE / FUNCTION DESCRIPTION
<b>IR DH*</b>	Dual IR Aiming Laser and Long Range IR Illuminator- High Power <b>(Can Be Locked Out with Lockout Screw)</b>
<b>IR AH*</b>	IR Aiming Laser - High Power <b>(Can Be Locked Out with Lockout Screw)</b>
<b>IR DL</b>	Dual IR Aiming Laser and IR LED Room Illuminator LED - Low Power
<b>IR AL</b>	IR Aiming Laser - Low Power
<b>OFF</b>	Mechanical Power Off
<b>==</b>	Reticle Configuration **
<b>VIS AL</b>	Visible Aiming Laser - Low Power
<b>VIS AH*</b>	Visible Aiming Laser - High Power <b>(Can Be Locked Out with Lockout Screw)</b>

\* High power switch positions are locked out to the user when Mode Selection Switch is placed in a non-high power position and the lock-out screw is in place (see description of lockout screw, later in this section).

\*\* Selection persists after power cycling.

**U-12. IR Aiming Laser Port (Aperture).** The *BOSS Xe* Optic Sight features a 850nm Infrared Aiming Laser that can be used as a covert target designator for Operators while wearing NVGs. Refer to Sections S1, "Laser Radiation Output Parameters" and 2.6 "Technical Data" for laser specifications. When activated, the laser will automatically turn off after 5 minutes of continuous non-use.

**U-13. Visible Aiming Laser Port (Aperture).** The *BOSS Xe* Optic Sight features a 640nm Visible Red Aiming Laser (G10 Model) or 520nm Visible Green Aiming Laser (G11 Model) that is used as a target designator and boresighting aid. Refer to Sections S1, "Laser Radiation Output Parameters" and 2.6 "Technical Data" for laser specifications. When activated, the laser will automatically turn off after 5 minutes of continuous non-use.

**U-14. IR Illuminating Laser Port (Aperture).** The *BOSS Xe* Optic Sight features a 840nm Infrared Fixed Flood Laser that can be used as a long range covert target illuminator for operators while wearing NVGs. Refer to Sections S1, "Laser Radiation Output Parameters" and 2.6 "Technical Data" for laser specifications.

**U-15. IR LED Room Illuminator Port (Aperture).** The *BOSS Xe* Optic Sight features a 870nm Infrared Fixed Flood LED that can be used as a room flood illuminator for operators while wearing NVGs. Refer to Sections S1, "Laser Radiation Output Parameters" and 2.6 "Technical Data" for laser specifications.

**U-16. Lock-Out Screw.** A removable Lock-Out Screw prevents the Mode Selection Knob from rotating to the High Power Laser modes when it is desired to prevent high power mode access.

When the screw is not in use, it can be stored in the Lock-Out Screw Retention Hole to prevent loss of the screw.

**U-17. Lock-Out Screw Retention Hole.** A threaded hole is located on the left-hand side of the *BOSS Xe* for storing the Lock-Out Screw. This prevents loss of the screw when not in use.

**U-18. Laser Warning Label.** A warning label identifies the laser specifications and precautions for using the *BOSS Xe*.

**U-19. Iron Sights.** The iron sights provide the operator with a backup aiming option.

**U-20. LED Indicator.** The Battery Indicator displays approximate battery life.

**Table 2.5-3. LED Indicator Operational States**

Operational State	LED State
Any Laser Active	On Green
Low Battery	On Red
Both Low Battery and Any Laser Active	Blink Red and Green

**U-21. Red Dot Sight.** The *BOSS Xe* features a Red Dot Sight with an expanded reticle design which simplifies finding the reticle and can be used for scaling objects to approximate target distances. The outer ring of the reticle is 34 MOA, which when filled corresponds to a man at 200 meters. The sight features sixteen (16) available brightness settings that can be manually adjusted by pressing the “-

" or "+" Buttons when the laser is powered off. Reticle operation is independent of lasers and will be on whether lasers are activated or deactivated.

**U-22. Cant Indicators.** Two Cant indicators are located on either side of the Display to warn the operator that the *BOSS Xe* is canted left or right and should be brought back to level. One side arc appears to the left of the reticle, informing the operator that the system is canted too far left. The other appears on the right of the reticle, informing the operator that the system is canted too far right. The blinking reticle indicates that the weapon needs to be rotated to the side opposite the blinking light to return the *BOSS Xe* to a level orientation.

**U-23. Processor Clock Battery Compartment.** The Processor Clock Battery Compartment is located on the bottom of the *BOSS Xe* and houses one CR1220 coin battery for powering the main system clock when the *BOSS Xe* is turned off. The estimated life of this battery is 3-5 years following replacement. A threaded Battery Compartment Cap features an o-ring to prevent debris and moisture entry. Refer to Section 4.2 "Battery Replacement" for battery installation instructions.

**U-24. Control Activation Keypad Port.** The Control Activation Keypad Port accepts the connector of an optional Control Activation Keypad. The port is conveniently located at the back of the *BOSS Xe*. Contact Wilcox at 603-431-1331 for information on purchasing this optional device.

**AK-1. Lens Cover.** One Lens Cover is included with the *BOSS Xe*, which covers the device to prevent emission of laser output should the lasers on the device be left on. The cover is completely

removeable. Prior to removing the cover, always check to ensure that the device is turned off in the event that lasers have been accidentally left on. *BOSS Xe* lasers will power off automatically after 5 minutes for safety and to prevent accidental battery drain.

**CK-1. Cleaning Brush.** A cleaning brush is provided for removing loose dirt and debris from the mechanical components of the *BOSS Xe*. DO NOT use the brush for cleaning the lenses as this may scratch the lens surface. For cleaning instructions, refer to Section 4.1, "Care of the *BOSS Xe*".

**CK-2. Cleaning Cloth.** A cleaning cloth is provided for removing any remaining residue from the lenses after they have been blown clean of dirt and dust. For cleaning instructions, refer to Section 4.1, "Care of the *BOSS Xe*".

**CK-3. 5/64 Hex Key** One 5/64 Hex Key is provided for installing and removing the blue Lockout Screw.

**CK-4. .050 Hex Key** One .050 Hex Key is provided for installing and removing the *ERGOCTO™* Rail Clamp.

**CK-5. ERGOCTO™ Rail Clamp.** A Rail Clamp is provided to secure the Control Activation Keypad to the side rail for ease of access to the Keypad in operation.

## 2.6 TECHNICAL DATA

**Table 2.6-1. BOSS Xe Technical Data**

WEIGHT AND DIMENSIONS	
Operational Weight:	Less than 0.55 Lb ( Less than 250 G )
Operational Dimensions:	2.40" W x 4.78" D x 2.67" H (6.09 cm W x 12.14 cm D x 6.78 cm H)
LASER SPECIFICATIONS	
VIS Aiming Laser LO (G10 Model)	Visible Red Laser, <0.7 mW Max Output 640 nm Collimated to 0.28 mrad (1/e)
VIS Aiming Laser HI (G10 Model)	Visible Red Laser, 18 mW Max Output 640nm Collimated to 0.28 mrad (1/e)
VIS Aiming Laser LO (G11 Model)	Visible Green Laser, <0.7 mW Max Output 520 nm Collimated to 0.28 mrad (1/e)
VIS Aiming Laser HI (G11 Model)	Visible Green Laser, 18 mW Max Output 520 nm Collimated to 0.28 mrad (1/e)
IR Aiming Laser LO	Infrared Laser, <0.7 mW Max Output 850 nm Collimated to 0.28 mrad (1/e)
IR Aiming Laser HI	Infrared Lasers, 36 mW Max Output 850 nm Collimated to 0.28 mrad (1/e)
IR Illuminator Laser LO	Infrared Laser, <0.7 mW Max Output 840 nm Collimated to 21 mrad (1/e)
IR Illuminator Laser HI	Infrared Lasers, 36 mW Max Output 840 nm Collimated to 21 mrad (1/e)
ADDITIONAL SPECIFICATIONS	
Power Source	Lasers powered with One (1) CR123A Battery.  Additionally, one (1) CR1220 coin cell maintains the processor clock when the system is powered off. The estimated life of this battery is 3-5 years.
Color	Black
Water Resistance	Waterproof to 1 Meter for 30 Minutes

---

## **SECTION 3**

### **OPERATION**

---

#### **3.1 MOUNTING AND DISMOUNTING THE *BOSS Xe***

The *BOSS Xe* attaches to the 12:00 position of the weapon upper receiver utilizing a rail grabber, clamp and drawbar system. The process for mounting the *BOSS Xe* to the primary weapon should always be performed by a qualified unit armorer.

#### **▲ WARNING ▲**

Ensure that the weapon is CLEAR and on SAFE before making any changes to the configuration of the *BOSS Xe* on a weapon. Follow all instructions in accordance with the weapon's Operator's Manual, ensuring that the *BOSS Xe* is powered off with the lens cap on when performing any maintenance. Failure to do so can result in property damage, injury, and/or death.



**To Mount the BOSS Xe to the Primary Weapon:**

LOOSEN THE RAIL  
GRABBER BY TURNING  
THE THUMB NUTS CCW

POSITION THE MOUNT  
ON THE RAIL, ENSURING  
THAT THE RAIL GRABBER  
ENGAGES ON BOTH  
SIDES.



SECURE THE THUMB  
NUTS BY TURNING  
CW AND TORQUING  
TO 30 IN/LBS.

GENTLY PULL ON  
THE MOUNT TO  
ENSURE THAT IT IS  
SECURE.

**Figure 3.1–1 Mounting the BOSS Xe to the Primary Weapon**

**To Dismount the BOSS Xe from the Primary Weapon:**

Follow mounting steps in reverse.

### **3.2 INSTALLING THE HIGH POWER LOCK OUT SCREW ON THE *BOSS X<sub>6</sub>***

The blue colored High Power Lock Out Screw prevents accidental operation of High Power Lasers when Low Power operation is intended when positioned in the Mode Selection Switch. To prevent accidental discharge of high power lasers, install the High Power Lock Out Screw.

(1) PLACE THE MODE  
SELECTION SWITCH IN  
THE "OFF" POSITION.

(2) INSTALL THE BLUE  
HIGH POWER LOCKOUT  
SCREW.

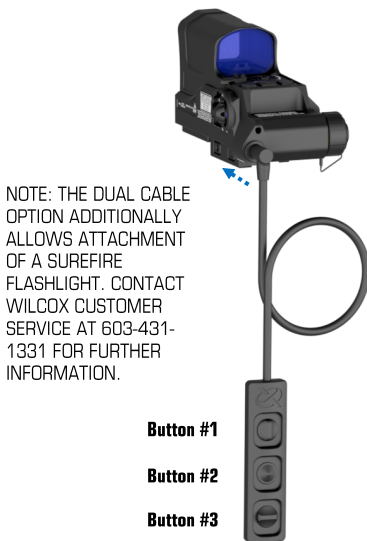


WHEN NOT IN  
USE, THREAD  
SCREW IN PLACE  
HERE TO  
PREVENT LOSS  
OF THE SCREW.

**Figure 3.2-1 Installing the High Power Lock Out Screw  
on the *BOSS X<sub>6</sub>***

### 3.3 ATTACHING THE CONTROL ACTIVATION KEYPAD TO THE *BOSS Xe*

The *BOSS Xe* is provided with a single Control Activation KeyPad in either single or dual cable configuration as ordered, which allows operation of the selected laser(s). It attaches to the Control Activation Keypad Port on the *BOSS Xe* when in use.



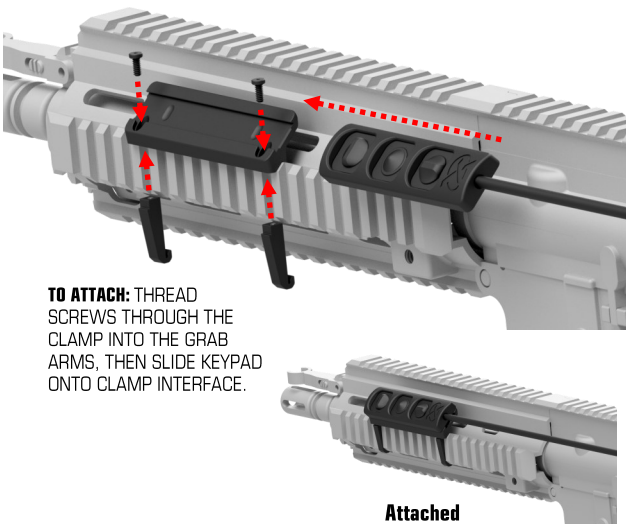
**TO ATTACH:** ENSURE THE CONTROL ACTIVATION KEYPAD CONNECTOR IS CLOCKED CORRECTLY. INSERT THE CONNECTOR INTO THE REMOTE CONNECTOR PORT AND PRESS UNTIL IT CLICKS.

**TO DETACH:** GRASP THE HEAD OF THE CONNECTOR AND PULL OUTWARD. DO NOT PULL ON WIRES. DO NOT TWIST.

**Figure 3.3–1 Attaching the Control Activation Keypad to the *BOSS Xe***

### **3.4 ATTACHING THE RAIL CLAMP TO THE WEAPON RAIL**

A Rail Clamp is provided to secure the Control Activation Keypad to the side rail for ease of access in operation. The clamp attaches to the rail for use in any of 8 orientations on the rail.



**Figure 3.4–1 Attaching the Rail Clamp to the Weapon Rail**

### **3.5 BORESIGHT PROCEDURE (ESTABLISHING THEORETICAL ZERO WITH A LASER BORESIGHT KIT)**

The *BOSS Xe* allows for up to two possible trajectories. Therefore, a laser boresight procedure is required for the shorter of the two distances, using a weapon borelight to determine the theoretical centerline of the primary weapon bore. The lasers and the Red Dot Sight are co-aligned at the factory and are all adjusted simultaneously. Whenever possible, follow with live fire to verify aiming accuracy.

To align the lasers to target at greater distances, a Zeroing procedure consisting of live fire is used.

#### **▲ WARNING ▲**

***Mounting of the BOSS Xe should always be performed by the unit armorer and followed with weapon boresighting. Failure to properly boresight can cause inaccurate firing, which may lead to injury or death.***

#### **CAUTION**

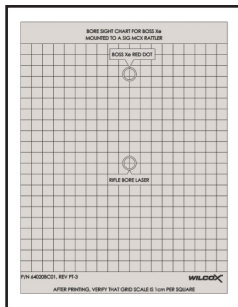
***The illuminating beam of the laser emitting from the BOSS Xe indicates the area of round impact, provided the boresighting procedures have been properly followed. Be aware of the direction in which the primary weapon is pointed, as well as the direction of the intended target, prior to firing a round.***

**NOTE**

***It is recommended that the Visible Laser be used for boresighting the BOSS Xe to the target.***

**Boresighting with a Laser Boresight Kit:**

- Step 1.)** Place the bore sight chart at 10 meters. Ensure it is level.
- Step 2.)** Raise the right-hand elevation adjustor all the way up by turning it clockwise. **Do not use excessive force on the hard stop.**
- Step 3.)** Activate the left-hand elevation adjustor by pulling the trajectory switch arm back towards the shooter.
- Step 4.)** Position the bore sight laser in the gun.
- Step 5.)** Turn on the bore sight laser and aim at the rifle bore target.
- Step 6.)** Using the left-hand elevation adjustor dial in the elevation until the red dot reticle is on the red dot target.
- Step 7.)** Use the windage adjustor to dial in the red dot reticle to the red dot target.



**Figure 3.5-1. Boresight Chart for the  
BOSS Xe Mounted to  
a SIG MCX Rattler**

**Zeroing with Subsonic and Supersonic Ammo and Live Fire:**

- Step 1.)** First conduct the bore sight procedure.
- Step 2.)** Ensure the right-hand elevation adjustor is backed all the way up by turning it clockwise. ***Do not use excessive force on the hard stop.***
- Step 3.)** Using a ballistics calculator, estimate the additional drop of the sub sonic round, compared to the supersonic round, for the distance you are zeroing to.
- Step 4.)** Place a second mark on the target vertically below the center mark of the target. The distance between the center of the target and the second mark should be the additional drop the subsonic bullet is expected to have at that range. This will be used to sighting in the subsonic adjustor later.
- Step 5.)** Activate the left-hand adjustor by pulling the trajectory switch arm back towards the shooter.
- Step 6.)** Load supersonic ammo.
- Step 7.)** Shoot the rifle and correct windage and elevation errors by adjusting the left-hand elevation adjustor and the windage adjustor.
- Step 8.)** Repeat until groupings are centered on the target center.
- Step 9.)** Using a steady rest or vice, align the red dot reticle with the center of the target. Ensure the gun does not move.

- Step 10.)** Rotate the trajectory switch off to the inactive position by pushing the trajectory switch arm away from the shooter. The right-hand elevation adjustor is now active.
- Step 11.)** Using the right-hand elevation adjustor move the red dot reticle to the secondary lower mark. Do not adjust windage or the left-hand elevation adjustor.
- Step 12.)** Check to see if the rifle moved during this process. Pull the trajectory switch arm back towards the shooter activating the left-hand elevation adjustor. If the process was successful, the red dot reticle should return to the center of the target. If not, recenter the red dot reticle on the center of the target and repeat step 11 and 12 until the red dot returns to the center of the target. You now have a rough setting for the sub sonic ammo to begin the zero process.
- Step 13.)** Push the trajectory switch arm away from the shooter making the left-hand elevation adjustor inactive. The right-hand adjustor is now active.
- Step 14.)** Load sub sonic ammo into the rifle.
- Step 15.)** Aim for the center of the target and correct for any elevation error by adjusting the right-hand elevation adjustor only. Do not adjust the left-hand elevation adjustor or the windage adjustor.



## **3.6 RESTORING FACTORY DEFAULTS**

Restoring Factory Defaults allows the operator to restore any original factory settings that have been modified during previous operations. This option resets the Reticle Shape, Reticle Brightness and all Laser Steps, but does NOT reset Bluetooth On/Off settings.

### **To Restore Factory Defaults:**

**Step 1.)** Simultaneously press and hold the Center and Down Buttons while turning the device on, then release once the device is turned on.

### **3.7 OPERATING THE BOSS Xe**

To quickly fire the weapon, align to the target using the BOSS Xe laser or the Red Dot Sight, verify that no cant indicators are displayed, and fire.

#### **▲ WARNING ▲**

*Do not fire the weapon if the BOSS Xe displays a left or right cant indicator. Firing the weapon when the BOSS Xe is canted can cause unintended damage to surrounding targets and may result in injury or death.*

#### **■ CAUTION ■**

*It is recommended that the battery be replaced and that activation procedures for the BOSS Xe be conducted prior to operation to ensure proper operation prior to going on patrol (see Section 4.2).*

#### **NOTE**

*After 5 minutes of inactivity, the BOSS Xe will go into sleep mode. The lasers will be deactivated when sleeping and will stay off after waking. Pressing any button will awaken the BOSS Xe.*

### **3.7.1 Performing Daytime Engagement with the *BOSS Xe***

#### **To Perform Daytime Engagement with the *BOSS Xe***

- Step 1.)** Remove the Lens Cover.
- Step 2.)** Rotate the Mode Selection Knob to a daytime operational position (refer to Table 2.5-2, "Mode Options Tree").
- Step 3.)** Acquire the target using the Sight.
- Step 4.)** Verify that the weapon is level to the horizon (not canted) by checking for cant indication. If the *BOSS Xe* is not level, cant indication is provided on the reticle by blinking one of the side arcs. The blinking arc indicates the low side. Tilt the weapon in the direction opposite of the cant to adjust.

To minimize time to acquire the reticle, align the iron sights as described in the following section: "To Perform Engagements with the *BOSS Xe* Powered Off", and the reticle will come into view.



- Step 5.)** Fire the weapon.

### 3.7.2 Performing Nighttime Engagement with the **BOSS Xe**

#### To Perform Nighttime Engagement with the **BOSS Xe**

- Step 1.)** Remove the Lens Cover.
- Step 2.)** Rotate the Mode Selection Knob to the appropriate nighttime operational mode position.
- Step 3.)** Press the Center Button to activate the selected laser(s).
- Step 4.)** Verify that the weapon is level to the horizon (not canted) by checking for cant indication. If the **BOSS Xe** is not level, cant indication is provided via blinking of the reticle arc on the canted side in all nighttime operational modes so the operator can engage without taking their eyes off of the target. Tilt the weapon in the direction opposite of the cant to adjust.

**Table 3.7-1 IR Aiming Laser Cant Indication**

CANT INDICATION	CAUSE
<b>Left Reticle Blinks</b> 	Unit Canted Left - <b>Do not Fire</b>
<b>Right Reticle Blinks</b> 	Unit Canted Right - <b>Do not Fire</b>

- Step 5.)** Fire the weapon.






### 3.7.3 Changing **BOSS Xe** Reticle Configuration

The Reticle Configuration option on the BOSS Xe menu allows the operator to control reticle brightness and shape.

#### **To Change the Reticle Configuration:**

- Step 1.)** Place the Mode Selection Switch in the “==” (Reticle Configuration) position.
- Step 2.)** **To change reticle brightness**, press the Up Button to increase or the Down Button to decrease.
- Step 3.)** **To change reticle shape**, press the Center Button to scroll through the list of available reticle shapes (See Table 3.7-2).
- Step 4.)** **To toggle cant indication ON or OFF**, press and hold the Center and Up Buttons together until the Cant Indicator changes to the desired state (e.g., if the unit has Cant Indication enabled, holding the two buttons will disable).

**Table 3.7-2. Reticle Shape Options**

Description	Reticle Shape Options	Default
Reticle Configuration	Dot & Circle, Dot & Sides, Dot only, Circle only    	Dot & Circle 

### **3.7.4 Performing Engagements with the *BOSS Xe* Powered Off**

The *BOSS Xe* can still be used to accurately engage targets without being powered on through the use of the iron sights.

#### **To Perform Engagements with the *BOSS Xe* Powered Off:**

- Step 1.)** Remove the Lens Cover.
- Step 2.)** Look through the window and align the iron sights so that the front pin located on the optic window is centered between the two rear pins. Align all pins so that their heights match.
- Step 3.)** While maintaining the alignment of the Iron Sights, as described above, aim so that the top of the center pin is aimed at the target (see Figure 3.7-1).
- Step 4.)** Ensure that the weapon is as level to the horizon as you can estimate.
- Step 5.)** Fire the weapon.



**Figure 3.7-1 Iron Sights (Rear View)**

### **3.7.5 Activating the Panic Alert**

A panic alert functionality is available for the *BOSS Xe* System when Bluetooth is turned on and the system is connected to a device supporting the *BOSS Xe* protocols.

#### **To Activate the Panic Alert:**

**Step 1.)** Simultaneously press the Up and Down Buttons and hold for roughly three (3) seconds.

- ♦ If a Bluetooth device is connected, a Panic Alert message will be sent to it.
- ♦ To repeat the message at roughly two-second intervals, continue to hold the button.

### **3.7.6 Enabling or Disabling Bluetooth**

The *BOSS Xe* system can toggle the Bluetooth state by the device directly. You will be notified of what state Bluetooth is entering by the notification LED on the back of the unit.

#### **To Enable or Disable Bluetooth**

**Step 1.)** With the *BOSS Xe* powered off, press and hold the center button while rotating the selection knob to the reticle configuration position.

- ♦ An LED notification will indicate the configured Bluetooth State (see table 3.7-3).

**Table 3.7-3 Bluetooth Configuration Notifications**

<b>Bluetooth State</b>	<b>LED Notification</b>
<b>Bluetooth Enabled</b>	3 Green Flashes
<b>Bluetooth Disabled</b>	3 Red Flashes

If Bluetooth is enabled, the LED indicator will flash green once on power up.

Note: Bluetooth is disabled by default and is not affected when using the “Set Defaults” menu option. Although the default is “disabled”, if Bluetooth is “enabled” it will still be enabled after running the “Set Defaults” option.



---

## SECTION 4

### MAINTENANCE

---

#### 4.1 CARE OF THE **BOSS Xe**

##### ▲ **WARNING** ▲

***ALWAYS ensure that primary (CR123A) battery is removed prior to mounting the BOSS Xe to, or dismounting it from the primary weapon or when performing maintenance.***

##### NOTE

***Do not use harsh abrasives or chemicals such as acetone to clean the BOSS Xe. Any questions about appropriate chemicals should be directed to Wilcox Customer Service. Periodically inspect the o-ring on the primary (CR123A) Battery Compartment. Inspect the o-ring. If a Battery Compartment Cap o-ring becomes cut, nicked or torn, notify unit armorer.***

##### NOTE

***The operator should perform regular maintenance as outlined in this manual. Any procedures not specifically outlined in this manual shall be performed only by a***

***Wilcox certified maintenance technician. Performance of procedures outside of those specified in this manual will invalidate the product warranty.***

Visually inspect the BOSS Xe for dirt, rust and corrosion. If the display or lenses are broken or cloudy, notify unit armorer.

Ensure that the Battery Compartment Cap and o-ring are tightly sealed and that the area is free of sand and dirt particles. If a Battery Compartment Cap o-ring becomes cut, nicked or torn, notify unit armorer.

Dirt and other residue, like exposure to salt water, may impede the mechanical operation of the *BOSS Xe*. Lightly flush with water to remove any debris. Blow any residual dirt or dust free from the lenses, then wipe with the Cleaning Cloth, provided. Do not use a cleaning brush for cleaning optic glass and laser port lenses. Using a soft bristled brush, remove dirt and debris from the mounting rails and controls. This should be done on a regular basis.

## 4.2 BATTERY REPLACEMENT

### ▲ **WARNING** ▲

***When handling a primary weapon fitted with a BOSS Xe, ALWAYS keep the muzzle pointed down range and clear of all personnel.***

The LED Indicator displays a solid red when the CR123A battery becomes low, and alternates red and green when the CR123A battery is low and any laser is active. When this occurs, performance of the *BOSS Xe* will be degraded and the battery should be replaced immediately.

Replace the CR123A battery when the Battery Indicator displays (see Figure 4.2-1). For best performance, always use Lithium batteries.

A CR1220 battery maintains the clock for the *BOSS Xe*, which is located on the bottom of the device (see Figure 4.2-2). Replace this battery every 3-5 years to ensure continuous clock operation.

**To Replace the Battery in the BOSS Xc:**



1. Remove old CR123A battery then inspect battery compartment and o-ring for residue or moisture. Replace o-ring if necessary.
2. Install a fresh battery, ensuring that the "+" side is inserted first.
3. Ensure that the LED Illuminator is not indicating a low battery condition.

**Figure 4.2-1 Replacing the Primary Battery in the BOSS Xc**

## **To Replace the Processor Clock Battery in the *BOSS Xe***



1. Remove the main battery, then inspect battery compartment and cover o-ring for residue or moisture. Replace o-ring if necessary.
2. Remove the old CR1220 coin cell battery, then inspect battery compartment and cover o-ring for residue or moisture. Replace o-ring if necessary.
3. Install a fresh battery, ensuring that the "+" side faces outward.
4. Reinstall the main battery, then check, both battery compartment caps to ensure they are secure to prevent water intrusion.

**Figure 4.2-2 Replacing the Clock Battery in the *BOSS Xe***

## **4.3 INSPECTING AND REPLACING O-RINGS**

### **■ CAUTION ■**

***Failure to maintain the o-ring may affect product performance.***

The primary and clock Battery Compartment are both o-ring sealed with Buna o-rings that prevent dirt and water intrusion to the Main Housing.

Age and temperature can wear Buna rubber, so o-rings should be inspected periodically to maintain proper operation of the system. o-rings are highly pliable and stretchable, and can be overstretched in the process of inspection. For this reason, it is strongly advised that they be replaced whenever they are removed, to ensure proper sealing of the compartment.

o-ring replacements are available through Wilcox and should be purchased in advance of need to ensure continued service.

**Step 1.)** Gently brush any debris away from the o-rings with the cleaning brush provided.

**Step 2.)** Inspect the o-rings for cracks, pinches, hardness, dryness, or tackiness of feel. If an o-ring exhibits any of these characteristics, replace it.

**Step 3a.)** If the o-ring does not need replacement, but requires lubrication, lubricate the exterior surface of the o-ring without removing it with a small amount of Silicone Grease.

**Step 3b.)** If replacement is required, gently remove the o-ring using a pick tool. Gently lubricate the o-ring on both sides, with the thumb and index finger, using Silicone Grease. Using the pick tool, gently replace the lubricated o-ring, using caution not to overstretch or damage.



**Figure 4.3-1 Inspecting and Replacing O-Rings**

## **4.4 STORAGE**

Ensure that cleaning instructions in Section 4.1 have been followed. When the *BOSS Xe* is dismounted for storage, place the Mode Selection Knob in the 'OFF' position. Reattach the laser cover to the *BOSS Xe* to prevent dust and dirt entry. Remove battery from the *BOSS Xe* and retain.

### **■ CAUTION ■**

***Do not store the BOSS Xe with the primary (CR123A) battery installed.***

## **4.5 SHIPPING**

Prior to shipping the *BOSS Xe*, follow cleaning and storage instructions as described in Sections 4.1 and 4.4. Package securely in a suitable shipping container.



---

## **APPENDIX A**

### **WARRANTY STATEMENT**

---

#### **A.1 STANDARD LIMITED WARRANTY**

Wilcox Industries Corp. ("WX") offers a limited warranty ("Limited Warranty") that its products will be free from defects in material and workmanship under proper usage for one (1) year from the date of original shipment from WX ("Warranty Period") if purchased through an authorized sale, provided that, the product and purchasing documents are returned to WX (at user's expense) and WX will have the option (in its sole discretion) to exchange or recondition the product (subject to WX's examination and confirmation that the product is defective), and return the product via preapproved carrier at user's expense. This Limited Warranty is void if the date of manufacture which is laser engraved on the product is defaced, modified or altered. This Limited Warranty is only for products purchased directly from WX or an authorized reseller. Items purchased via ecommerce such as Ebay, Craigslist, Amazon or any other online marketplaces are not eligible for the Limited Warranty.

The Limited Warranty does not include damage or defects arising from improper use, maintenance, repairs, installation or storage, abuse, misapplication, vandalism, negligence, neglect, normal wear and tear or any other circumstances over which WX has no control.

WX MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED. WX SPECIFICALLY DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR

IMPLIED, INCLUDING BUT NOT LIMITED TO, THE WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR PURPOSE.

THE LIMITED WARRANTY IS YOUR SOLE AND EXCLUSIVE REMEDY FOR WARRANTY COVERAGE, WX CONDUCT, OR FOR ANY OTHER CLAIM OR CAUSE OF ACTION AGAINST WX. WX SHALL NOT BE RESPONSIBLE FOR ANY DAMAGES WHETHER DIRECT, INCIDENTAL, CONSEQUENTIAL OR OTHERWISE, INCLUDING, BUT NOT LIMITED TO, LOST PROFITS, LABOR CHARGES, REPAIRING OTHER PRODUCTS, REPLACEMENTS, OR ANY DELAYS.

IN ADDITION, TO THE FULLEST EXTENT PERMISSIBLE BY LAW, WX SHALL NOT BE LIABLE FOR ANY INJURY OR DAMAGE TO PERSONS OR PROPERTY OF ANY KIND. IN NO EVENT SHALL WX BE LIABLE FOR DIRECT, SPECIAL, INDIRECT, PUNITIVE, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS, FUTURE REVENUE, DATA, OR ANY OTHER LOSS, REGARDLESS OF WHETHER A CLAIM OR ACTION IS ASSERTED IN CONTRACT OR TORT, WHETHER OR NOT THE POSSIBILITY OF SUCH DAMAGES HAS BEEN DISCLOSED IN ADVANCE OR COULD HAVE BEEN REASONABLY FORESEEN.

NOTWITHSTANDING ANY OTHER AGREEMENT OR UNDERSTANDING BETWEEN THE PARTIES, THE PARTIES AGREE THAT ALL LIABILITY WITH RESPECT TO A CLAIM AGAINST WX IN CONNECTION WITH OR RELATED TO ANY PRODUCT PROVIDED BY WX SHALL BE LIMITED IN DURATION TO THE WARRANTY PERIOD AND SOLELY TO DIRECT DAMAGES, AND MAY BE SATISFIED BY REPAIR OR REPLACEMENT OF NONCONFORMING PRODUCT (AS DETERMINED BY WX IN ITS SOLE AND ABSOLUTE DISCRETION), AND IN NO EVENT SHALL THE AGGREGATE RECOVERY OF ANY KIND AGAINST WX EXCEED THE LESSER OF TWENTY THOUSAND DOLLARS (\$20,000 USD) OR THE PURCHASE PRICE OF THE PRODUCT.

## **A.2 WARRANTY CLAIM AND SERVICE INFORMATION**

For warranty claim or service work, WX must be contacted in the United States at +1 603-431-1331 to assign a **Return Merchandise Authorization (RMA) / Service Call Number (SC)** prior to return shipment.

After an RMA/SC number is provided, WX will accept a package at the address below, clearly marked with the number assigned as follows:

**Wilcox Industries Corp.**  
**RMA # \_\_\_\_\_**  
**25 Piscataqua Drive**  
**Newington, NH 03801**

The *BOSS Xe* must be securely packaged, accompanied by purchasing information, a letter including sender's name, address, daytime phone number, date of manufacture, lot number and a description of the problem or work to be performed.

---

## **APPENDIX B**

### **ABBREVIATIONS**

---

#### **B.1 ABBREVIATIONS**

<b>BOSS</b>	Ballistically Optimized Sighting System
<b>BOSS Xe</b>	Ballistically Optimized Sighting System, Enhanced
<b>CCW</b>	Counter-Clockwise
<b>CU IN</b>	Cubic Inches
<b>CW</b>	Clockwise
<b>FWHM</b>	Full Width of Half Maximum
<b>In/lb</b>	Inch Pound
<b>ITAR</b>	International Trafficking in Arms Regulations
<b>lb</b>	Pound
<b>mm</b>	Millimeter
<b>mrad</b>	Milliradian
<b>nm</b>	Nanometer
<b>NOHD<sub>e</sub></b>	Extended Nominal Ocular Hazard Distance
<b>NVD</b>	Night Vision Device
<b>NVG</b>	Night Vision Goggle
<b>OD</b>	Optical Density
<b>OD<sub>e</sub></b>	Extended Optical Density
<b>oz</b>	Ounce

---

## **APPENDIX C**

### **SPARE AND OPTIONAL PARTS**

---

#### **C.1 SPARE AND OPTIONAL PARTS LISTS**

To order replacement and optional parts, contact the Wilcox marketing department at +1 603-431-1331. Please specify your product color when ordering.

#### **NOTE**

Wilcox supplies “Non-Berry” compliant tactical pouches unless specified prior to ordering.

Note the repair type specified for the following replacement parts is identified as follows:

- **Field** – Can be changed out at the field level.
- **Armorer** – Can be changed out by the unit armorer.
- **Factory** – A change that occurs at the factory level only.

**Table C-1. Spare Parts List**

#	PART NO	DESCRIPTION	REPAIR TYPE	REFERENCE
C.1.1	65301P14	STRAP - CR123 BATTERY TUBE	FIELD	PG. 7
C.1.2	65312G17	ASSY - BATTERY CAP - QUICK TURN	FIELD	PG. 7
C.1.3	F3019	BATTERY COMPARTMENT O-RING	FIELD	PG. 7
C.1.4	F1424	BRUSH, ALL PURPOSE	FIELD	PG. 10
C.1.5	F1808	HEX 5/64 HEX X 5/8 SHORT X 1-15/16 LONG STL BLACK	FIELD	PG. 8
C.1.6	F1968	CLOTH OPTICAL MICROFIBER	FIELD	PG. 10
C.1.7*	F2509	POUCH - 7 X 5 X 2.25 COYOTE NON-BERRY COMPLIANT	FIELD	PG. 6
	F2770	OR POUCH - 7 X 5 X 2.25 COYOTE BERRY COMPLIANT		
C.1.8	F2481	SCREW - SHC 2-56 UNC-3A X 1/8 ALUM BLUE ANODIZED	FIELD	PG. 8
C.9	68401G10	ERGOCTO Xe SINGLE 3 BUTTON ACTIVATION KEYPAD - 12" CABLE -	FIELD	PG. 6

\* For non-standard pouches, please specify when ordering.

**Table C-2. Optional Parts List**

PART NO	DESCRIPTION
68401G09	ERGOCTO Xe DUAL 3 BUTTON ACTIVATION KEYPAD - 12" CABLE - OMNETICS

**NOTES:**

[illegible]

**NOTES:**

[illegible]





***"Our Customer's Life Depends on It"™***



**Manufactured by:**

***WILCOX***®

**Wilcox Industries, Corp.  
25 Piscataqua Drive  
Newington, NH 03801-7816**

**Phone: +1 888-8WILCOX  
+1 603-431-1331  
Fax: +1 603-431-1221**



**Visit us at: [WWW.WILCOXIND.COM](http://WWW.WILCOXIND.COM)**

**For troubleshooting service questions,  
contact Wilcox between 8am and 5pm EST.**