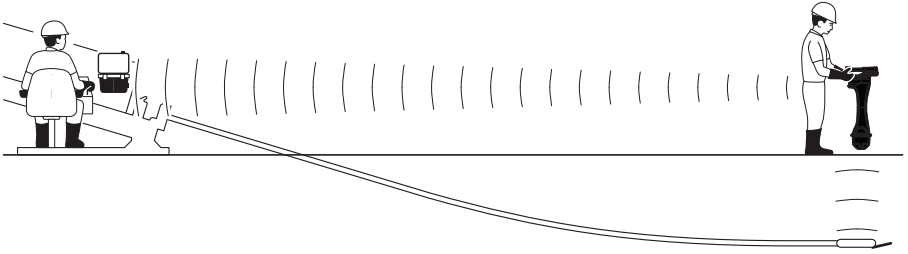


Marksman Series Beacons

Intended Use



The Subsite® Electronics Marksman Series beacons are designed to function as one part of a guidance system for horizontal directional drills. These beacons transmit roll, temperature, battery status, and pitch information and perform best in Subsite Electronics approved downhole tool housings.

This system is intended for operation only according to the instructions in this manual. Operate equipment in temperatures from -4°F to 221°F (-20°C to 105°C). Contact your Subsite Electronics dealer for provisions required for operating in extreme temperatures. Use in any other way is considered contrary to the intended use.

NOTICE: High temperature is the primary cause of beacon failure. Monitor beacon carefully. See “Communication Features” on page 7.



SUBSITE
ELECTRONICS

Subsite and Ditch Witch are registered trademarks of Charles Machine Works, Inc.

This product and its use may be covered by one or more patents at <http://charlesmachine.works/patents/>.



790-1238

Rev A - 04/21

ORIGINAL INSTRUCTION

Foreword

This manual is an important part of your equipment. It provides safety information and operation instructions to help maintain your Subsite Electronics equipment.

Read this manual before using your equipment. Keep it with the equipment at all times for future reference. If you sell your equipment, be sure to give this manual to the new owner.

If you need a replacement copy, contact your Ditch Witch dealer. If you need assistance in locating a dealer, visit our website at www.subsite.com or write to the following address:

Subsite Electronics
ATTN: Product Support
1950 W. Fir
Perry, OK 73077-0066
USA

The descriptions and specifications in this manual are subject to change without notice. The Charles Machine Works, Inc. reserves the right to improve equipment. Some product improvements may have taken place after this manual was published. For the latest information on Ditch Witch equipment, see your Ditch Witch dealer.

Thank you for buying and using Subsite Electronics equipment.

Regulatory Notices

United States

This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not expressly approved by **The Charles Machine Works, Inc.** could void the user's authority to operate the equipment.

This machine has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and, if not installed and used in accordance with the instructions, can cause harmful interference to radio communications. Operation of this equipment in a residential area could cause harmful interference which the user will be required to correct at his own expense. Changes or modifications not expressly approved by The Charles Machine Works, Inc. could void the user's authority to operate the equipment.

Contains FCC ID: QOQBT121

Canada

CAN ICES-003(A)/NMB-3(A)

This device complies with Industry Canada *license-exempt* RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Contains IC ID: 5123A-BGTBT121

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Contient IC ID: 5123A-BGTBT121

EU Declaration of Conformity

Hereby, Charles Machine Works declares that the radio equipment type *Marksman Series HDD tracking and guidance equipment* is in compliance with Directive 2014/53/EU. The full extent of the EU declaration of conformity is available by visiting <https://subsite.com/about-us/contact-us> or by emailing a request to service@subsite.com.

Equipment Modification

This equipment was designed and built in accordance with applicable standards and regulations. Modification of equipment could mean that it will no longer meet regulations and may not function properly or in accordance with the operating instructions. Modification of equipment should only be made at authorized repair centers.

Safety

Safety Alert Classifications

These classifications and the icons defined on the following pages work together to alert you to situations which could be harmful to you, jobsite bystanders, or your equipment. When you see these words and icons in the book or on the machine, carefully read and follow all instructions. **YOUR SAFETY IS AT STAKE.**



When you see this safety alert sign, carefully read and follow all instructions.

YOUR SAFETY IS AT STAKE. Read this entire section before using your equipment.

Watch for the three safety alert levels: **DANGER**, **WARNING**, and **CAUTION**. Learn what each level means.



DANGER indicates a hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations.



WARNING indicates a hazardous situation that, if not avoided, could result in death or serious injury.



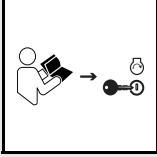
CAUTION indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

Watch for two other words: **NOTICE** and **IMPORTANT**.

NOTICE indicates information considered important, but not hazard-related (e.g., messages relating to property damage).

IMPORTANT can help you do a better job or make your job easier in some way.

Guidelines



WARNING

Misuse of machine can cause death or serious injury. Read and understand operator's manual and all other safety instructions before use. Know how to use all controls.

Follow these guidelines before operating any jobsite equipment:

- Complete proper training.
- Read and understand operator's manual before using equipment.
- Wear personal protective equipment.
- Mark proposed path with white paint and have underground utilities located before working. In the US or Canada, call 811 (US) or 888-258-0808 (US and Canada). Also contact any local utilities that do not participate in the One-Call service. In countries that do not have a One-Call service, contact all local utility companies to have underground utilities located.
- Classify jobsite based on its hazards and use correct tools and machinery, safety equipment, and work methods for jobsite.
- Mark jobsite clearly and keep spectators away.
- Review jobsite hazards, safety and emergency procedures, and individual responsibilities with all personnel before work begins.
- Fully inspect equipment before operating. Repair or replace any worn or damaged parts. Replace missing or damaged safety shields and safety alert signs. Contact your Ditch Witch dealer for assistance.
- Replace missing or damaged safety signs.
- Use equipment carefully per the instructions in this manual. Stop operation and investigate anything that does not look or feel right.
- Contact your equipment dealer if you have any questions about operation, maintenance, or equipment use.

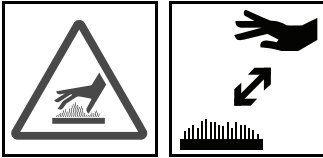
Safety Alerts



⚠ WARNING Lithium cell batteries. Fire or explosion can cause death or serious injury. Follow proper care, handling, and charging precautions. See operator's manual.

To help avoid injury:

- Turn off equipment and remove accessories before opening battery compartment.
- Only charge with approved battery charger.
- Do not crush, heat or incinerate, short circuit, dismantle, or immerse in fluid.
- Use proper disposal.
- Follow proper shipping procedures for Class 9 batteries.



⚠ CAUTION Hot batteries. Contact can cause injury. Only touch when cool or wear gloves.

Communication Features

IMPORTANT:

- Beacon will sleep after ten minutes of inactivity. To wake, roll slowly.
- Beacon operating time is counted while beacon is awake. Remove battery when not in use.

Roll angle transmission: 24 positions

Pitch: sent in 0.1% increments from -100% (45° down) to +100% (45° up)

Battery: sent in 5% increments

Beacon temperature: sent in 5°C increments

NOTICE: Monitor beacon temperature carefully.

- Operating beacon at temperatures above 221°F (105°C) will cause beacon to overheat and will void beacon warranty.
- If temperature goes above 161°F (72°C), tracker alarm will sound. Stop drilling, pull back 3' (1m) and pump drilling fluid downhole until beacon cools.

Install Battery



⚠ DANGER

Explosive hydrogen gas. Fire or explosion can cause death or serious injury. Keep heat flames, sparks, and other sources of ignition away.

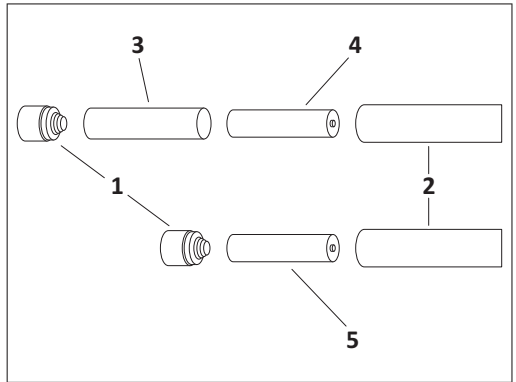
To help avoid injury:

- Not all batteries perform in the same environmental conditions. See “Specifications” on page 9 for battery operating temperatures.
- Refer to Safety Data Sheet (SDS) for additional information regarding battery.

NOTICE: Check condition and function of threads, foam washers, springs, and o-rings. Replace if needed.

IMPORTANT: For maximum performance, use only an approved battery. Use of non-approved battery will limit power level options and reduce battery life. See “Specifications” on page 9.

1. Unscrew battery cap (1) from beacon housing (2).
2. Insert battery (4, 5) as shown.
3. If needed, insert adapter (3) as shown.
4. Reinstall battery cap.
5. Check beacon function. See tracker operator’s manual for more information.



e26om027w21.eps

IMPORTANT: When flat top on front isolator is at 12 o’clock, tracker should display 3 o’clock roll.

Specifications

| Dimensions | US | Metric |
|-----------------------|----------------|--------------|
| Size | 17.8in x 1.5in | 452mm x 38mm |
| Weight (with battery) | 2.3lb | 1.04kg |

| Environmental | US | Metric |
|-----------------------|--------------|---------------|
| IP Rating | IP67 | |
| Operating temperature | -4° to 221°F | -20° to 105°C |
| Storage temperature | -4° to 221°F | -20° to 105°C |

Operation

Product contains Bluetooth® radio

| Battery | US | Metric |
|---------|----|--------|
|---------|----|--------|

Electrochem CC 3.67V lithium thionyl chloride

| | | |
|-------------------------------|---------------|---------------|
| Battery operating temperature | -40° to 302°F | -40° to 150°C |
| Battery life | 70 hours | |
| Battery life (H) | 30 hours | |
| Battery rating | 15Ah | |

Klarus 21GT-50 5000mAh lithium-ion (with adapter)

| | | |
|-------------------------------|--------------|--------------|
| Battery operating temperature | -4° to 140°F | -20° to 60°C |
| Battery charging temperature | 32° to 113°F | 0° to 45°C |
| Battery life | 23 hours | |
| Battery life (H) | 10 hours | |
| Battery rating | 5Ah | |

Support

Procedure

Notify your dealer immediately of any malfunction or failure of Subsite Electronics equipment.

Always give model, serial number, and approximate date of your equipment purchase. This information should be recorded and placed on file by the owner at the time of purchase.

Return damaged parts to dealer for inspection and warranty consideration if in warranty time frame.

All repairs must be done by an authorized Subsite Electronics repair facility. Repairs done elsewhere will void warranty.

Resources

Publications

Contact your dealer for publications and videos covering safety, operation, maintenance, and repair of your equipment.

Training

For information about on-site individualized training, contact your dealer.

Warranty

Electronics Limited Warranty Policy

Subject to the limitation and exclusions herein, free replacement parts and labor will be provided when a unit fails due to a defect in material or workmanship within one (1) year of first commercial use. (See exceptions below for specific products.) Defects shall be determined through inspection by Manufacturer or authorized repair centers. An inspection must occur within thirty (30) days of the date of failure of the product or part by Manufacturer or its authorized repair facility. Manufacturer will provide the location of its inspection facilities or its nearest authorized dealer upon inquiry. Manufacturer reserves the right to supply remanufactured replacement parts under this warranty as it deems appropriate. Each warranty repair carries the remainder of the factory warranty or ninety (90) days, whichever is longer, for all repaired components and labor.

Product Warranty Exceptions:

- HDD guidance beacons, Locate Beacons and Accessories, carry a six (6) month warranty.
- HDD guidance beacons, M-Series and T-Series, carry a three (3) year 750 hour warranty.
- All Used (Cosmetic) Electronics products sold from Manufacturer carry a six (6) month warranty from date of sale to dealer

Exclusions from Product Warranty

- All defects or damages caused by misuse, abuse, improper installation, alteration, neglect, modification, lack of maintenance, or uses
- All defects or damages caused by misuse, abuse, improper installation, alteration, neglect, modification, lack of maintenance, or uses other than those for which the products were intended.
- All defects, damages, or injuries caused by improper training, operation, or servicing of products in a manner inconsistent with manufacturer's recommendations.
- All batteries, which are considered consumable and therefore not covered under this warranty.
- All damaged plastics are considered to be the result of misuse or neglect unless Manufacturer has determined otherwise.
- All repairs or attempted repairs by non-certified repair facilities or personnel will void the warranty.
- All incoming duties and freight charges.
- Manufacturer reserves the right to make changes in design and/or improvements to products from time to time, and user understands that Manufacturer shall have no obligation to upgrade any previously manufactured product to include any such changes.
- In no event shall Manufacturer or its agents, assigns, or parent company be liable for any indirect, special, incidental, or consequential damages or for any cover, loss of information, profit, revenue, or use based upon any claim by user for breach of warranty, breach of contract, negligence, strict liability or any other legal theory. In no event shall Manufacturer liability exceed the amount user has paid for the Manufacturer product.
- Manufacturer will not be responsible for loss of accessories or loss or erasure of data storage media.

- Should it be determined that applicable law prohibits enforcement of any provision of this Warranty Policy, then to the extent it is necessary to comply with the applicable law, this Warranty Policy shall be deemed amended.
- This Warranty Policy shall be the entire agreement between Manufacturer and the Purchaser. Any statements that purport to be different than or modify or expand the terms set forth in this written policy are not effective for any purpose. ANY IMPLIED WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE ARE EXPRESSLY DISCLAIMED. IN NO EVENT SHALL SUBSITE ELECTRONICS, THE CHARLES MACHINE WORKS, INC., OR ANY AUTHORIZED SERVICING AUTHORITY BE RESPONSIBLE FOR ANY LOSSES, INCLUDING CONSEQUENTIAL AND INCIDENTAL DAMAGES, EXCEPT AS EXPRESSLY PROVIDED HEREIN.

Service and Repair

Units repaired at Manufacturer's location or an authorized service center will carry a 90-day warranty on all replaced components/parts and labor commencing on the date of repair.

HDD guidance beacons, M-Series and T-Series repairs: If a lower assembly is replaced on any T-Series beacons, the 750-hour count will start over at zero (0) hours. The warranty years will continue from date of product registration.

M-Series beacons: M-Series beacons are not repairable. Warranty assessments can only be done at an authorized Subsite Electronics repair center. If found to be defective, Authorized Service Center may replace with new beacon.

M-Series and T-Series beacons that are past the three (3) year warranty will have a 90-day repair warranty.

Extended Warranty

Consult your local Subsite dealer for extended warranty options.

Warranty Details

For information regarding this warranty policy, contact Subsite Product Support at (800)846-2713 ext. 1; mail us at 1950 W. Fir, Perry, OK 73077; or contact your local dealer.

April 2021



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