USER

MANUAL



BLINKTROLL | MOVING TARGET SYSTEM

BLINKTROLL MK V

BLINK TROLL
ROBOTIC SYSTEMS

TABLE OF CONTENT

BLINKTROLL MK V USER MANUAL

OPTIMAL PERFORMANCE

SETUP SCENARIOS

EXAMPLE OF STANDARD SETUP: ROPE/WIRE

EXAMPLE OF TARGET SETUP

MOUNTING THE BLINKTROLL

ATTACH TARGET SETUP

GETTING STARTED

RUNNING THE BLINKTROLL

RANGE SETUPS

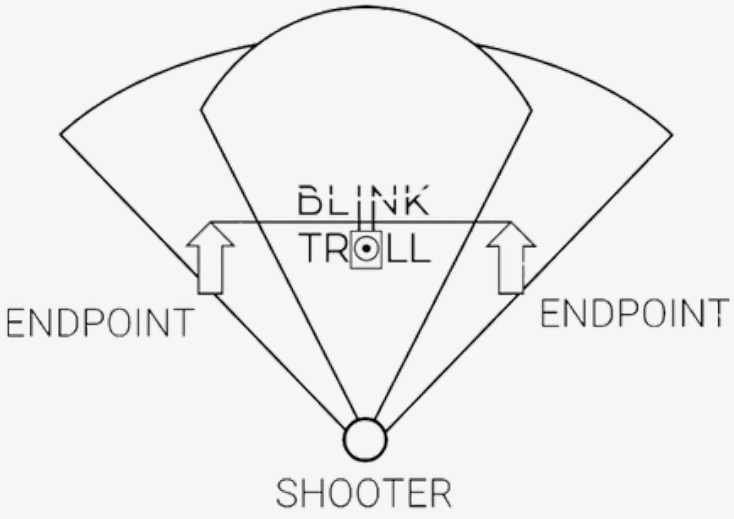
Digital manuals and video setup guides on Blinktroll.com

BLINKTROLL MK V
USER MANUAL

When setting up your target, make sure that you are firing against a safe background. Be aware of your field of fire! Consider your firing zone from all angles and firing positions. You are covering a much larger area than with stationary targets and shots can easily miss by a much wider margin.



BLINKTROLL MK V



OPTIMAL PERFORMANCE

Non-coated steel wire or static climbing rope with a textured surface is required for good performance of the system.

8 mm static rope is the most flexible to work with, light weight and easy to bring along. It is approximately 4x as costly as wire. 6 mm non-coated galvanized steel wire is more commonly available but is heavier. We do not guarantee the system's functionality if it is not run on a proper wire. BlinkTroll Systems work with professional wire supplies and supply the correct wires. We have experienced that complete package supplied by BlinkTroll will get you up and running quickly. We do not make business on charging you for wire, we supply it at a reasonable price.

Our packages are what you need to get running and trying to save a few % on getting the wire yourself will often cause delays and a poor setup. 8 mm static rope is the most flexible to work with, light weight and easy to bring along. You can not use a dynamic climbing rope. If you use a dynamic rope with 10% flex, that amounts to 10m at 100m. With 500kg tension you have made a bungeeline, not a BlinkTroll line. Your line should be very tight and level for optimal performance in terms of speed, stability, and battery life. The BlinkTroll will have optimal responsiveness and accuracy when there is enough tension on the line to keep the line absolutely level even when weighed down by the BlinkTroll and the target. This may mean a force on the wire of between 50 and 600kg depending on wire length. This is the single most important part of the setup.

SETUP
SCENARIOS

SETUP THE LINE BETWEEN

- Fixed poles / tripods
- Trees
- Rock anchors
- Walls

Make sure to use ratchet straps, chain hoist or wire tensioner to apply enough tension. Use padding around trees to prevent the line from cutting into the bark. Make sure to effectively block the line at your desired end points e.g. using available end-stoppers secured with wireclamps or zipties. This is needed for the calibration.

EXAMPLES ON NEXT PAGE

TRIPODS

Tripods are great when setting up in terrain with no trees or other fixed points.

Using double metal rods hammered into the ground allows for anchoring even in sand.

On the next page you see the container was to low, so the wire was lifted to approx 3m above the ground.

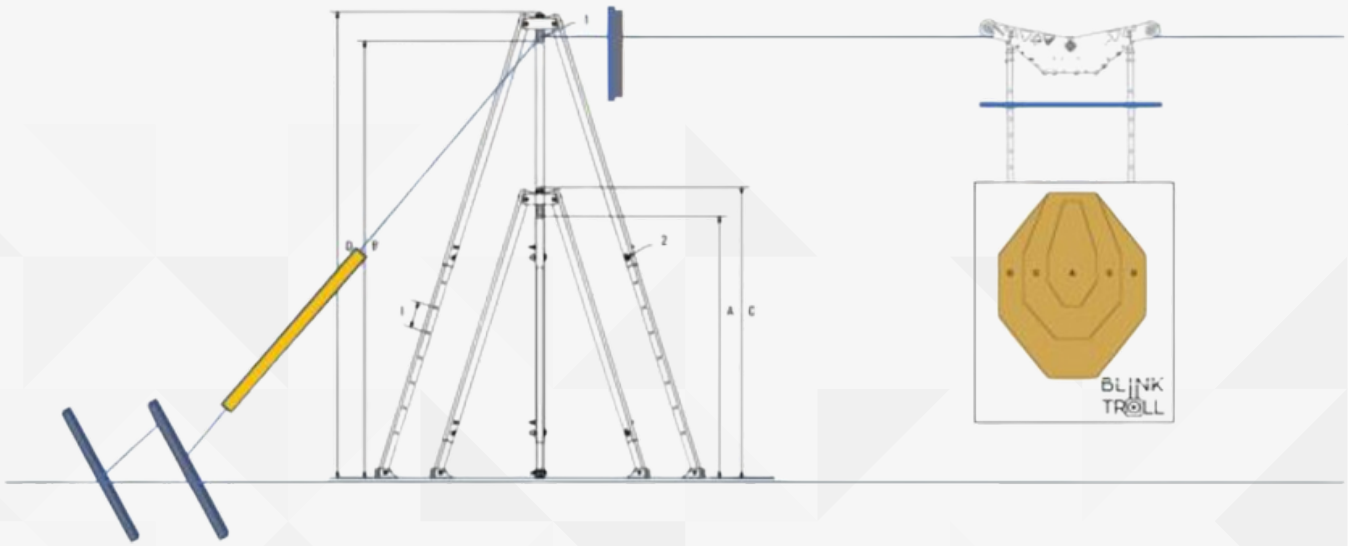
When using tripods on soft ground, anchoring the ground points become very important.

Make sure the Tripod is positioned so that it will not tip over when tightening the wire.

Place one leg facing the ground anchors, and two perpendicular to the wire.






BLINK
TROLL

EXAMPLE OF STANDARD SETUP

ROPE/WIRE

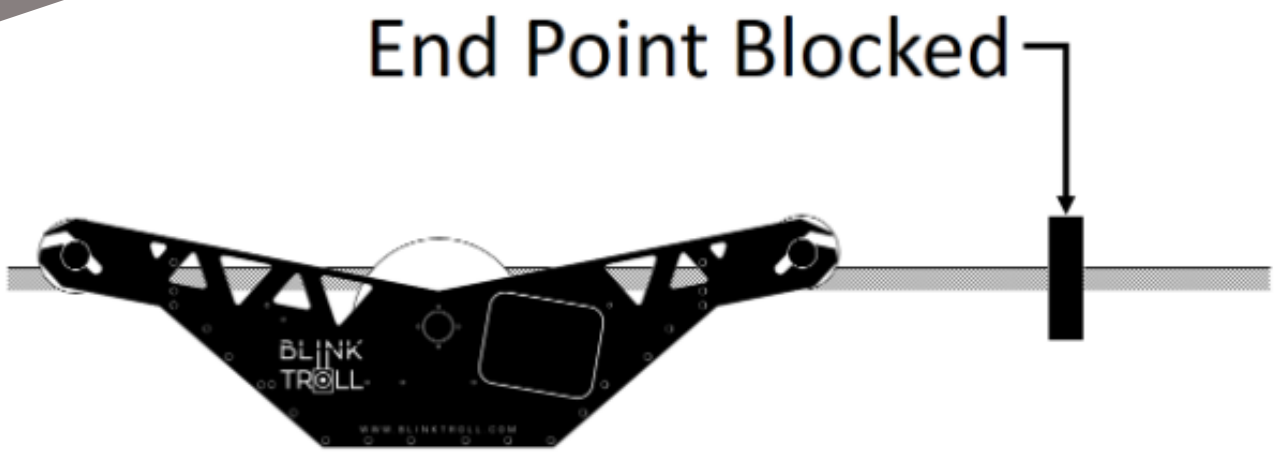


On the example ratchet straps are attached to a tree, then the Chain Hoist is attached to the rope/wire. This way the slack in the rope/wire can be collected with the ratchet straps, then the wire is made tight with the Chain Hoist. We supply a 500kg Chain Hoist with 1,5m chain, well suited to the job.



Wire end stoppers are made to jam on the wire or rope but may be fixed to the wire with Zip ties, clamps, or duct tape.
End stops must be placed to physically limit the rope / wire length and to make a definitive starting and calibration point for the BlinkTroll.

Tighten the wire as hard as you can manage with the 500kg Chain Hoist, and the resulting wire should be so tight that you can make it snap when you hit it with a stick, or similar.
Pulling it down with your hand should result in very little deflection.



SETUP OF ASSEMBLY ON ROPE / WIRE





Rubber mat holding the steel target with 16mm Hard metal bolts. Note the hard-plastic shrapnel shield above the Rubber mat. DO NOT run the BlinkTroll without a Shrapnel shield.

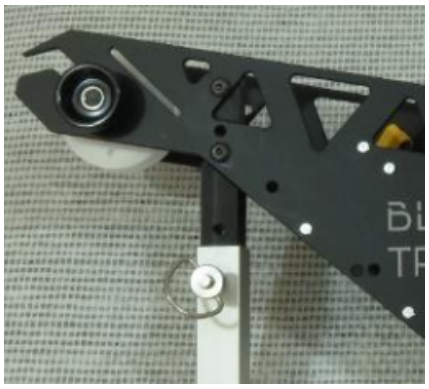


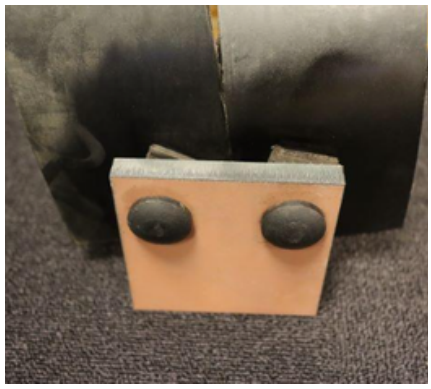
EXAMPLE OF TARGET
SETUP

Rubber mat stacked out from rods. Do the same with steel target.

Notice how the target is in front of the rubber mat.



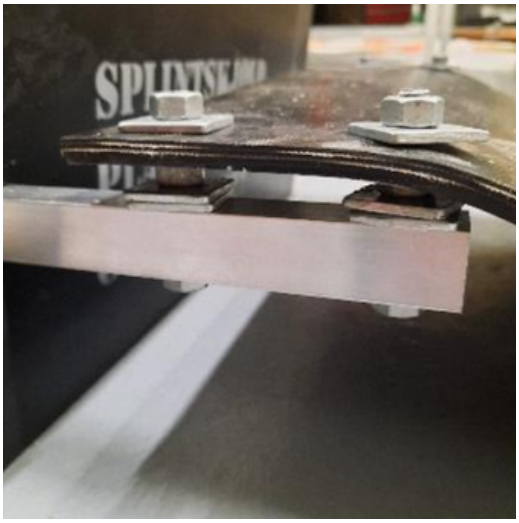




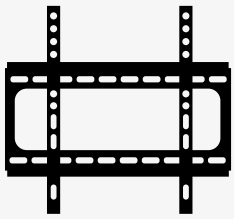


Rubber mat, Target. All parts “stacked” so the target is as far forward as possible. For steel target, use our 12.8 bolts if possible, to avoid having them shot off.

Target Alu rods are secured with lock pins.



MOUNTING THE BLINKTROLL



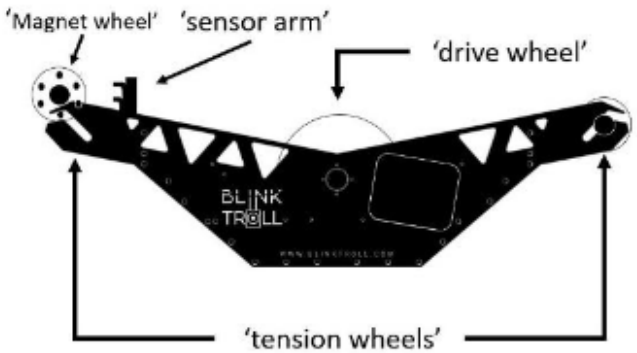
The BlinkTroll is mounted on the tight line with the antenna facing the shooter.

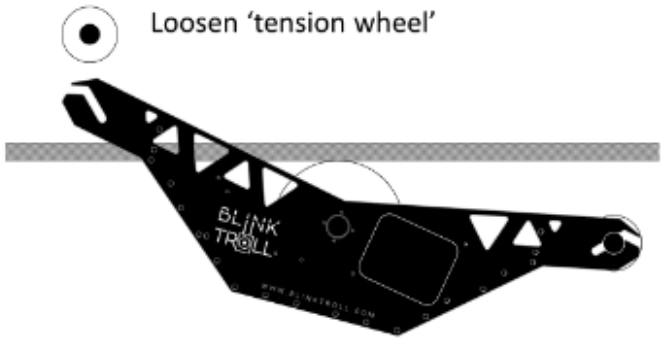
Loosen the two tension wheels. Take the left wheel and place it above the wire. Slide it into the slot in the BlinkTroll frame. Fasten temporarily.

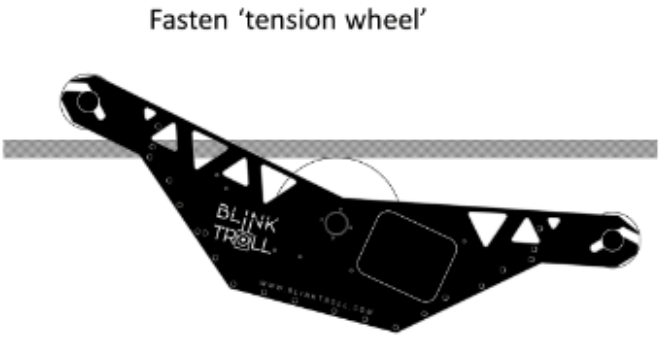
Take the right-hand wheel, raise it above the wire, slide it into the BlinkTroll frame, and tighten temporarily.

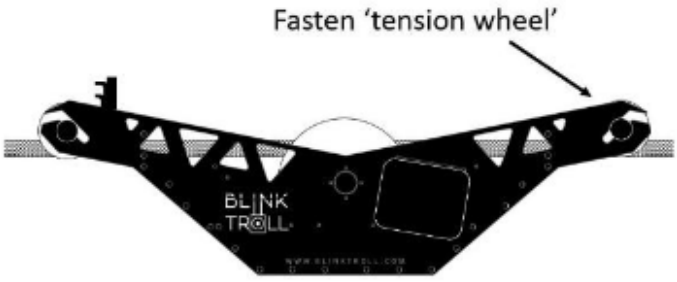
By the **Left-hand** tension wheel, you will see the sensor arm. Once the BlinkTroll is mounted, the sensor arm must be pressed down, so it is grabbing the axle of the tension wheel. **The magnets must be facing the sensor!**

Proper tension is achieved when the BlinkTroll is moved with some resistance on the wire. When given a firm push the Blinktroll should stop within 50-100cm. Too much tension may cause unwanted friction in the drivetrain and diminished effect. Too little tension will cause sliding and positional errors.













1

CHECK MAGNETS ON WHEELS FACING THE SENSOR.

2

CHECK SENSOR ARM CLICKED IN PLACE

3

CHECK FRICTION ON BLINKTROLL ASSEMBLY

ATTACH TARGET SETUP



TARGET

Targets should be fastened to the Rubber mat.

The Rubber mat gets fastened to the Alu rods.

The Alu rods gets clipped onto the Blinktrol frame my meanss of quick lock pins.

The Shrapnell shield is placed above the rubber mat. The reason for doing this last is that it may force the rods slightly out, and therefore complicate fixing the alu rods to the Blinktroll.

Make sure everything is placed as layers on top of eachother, building forward from the Blinktroll body.

GETTING STARTED

The BlinkTroll has different versions of the control software, referred to as “App”. The user should refer to the latest guideline accompanying the setup delivered. BlinkTroll Wifi code is default **987654321**

Having set up your wire and mounted the BlinkTroll follow these steps:

1. TURN ON THE TABLET. IT IS A GOOD IDEA TO “FORGET” OR DELETE ALL OTHER WIFI’S, OR THE UNIT MAY DISCONNECT FROM THE BLINKTROLL DURING OPERATION, CHOOSING THE STRONGEST WIFI AVAILABLE.
2. TURN ON THE BLINKTROLL BY CONNECTING THE BATTERY WITH THE XT60 PLUG. THE UNIT WILL PLAY A BEEPING SOUND.
3. ALLOW FOR 30 SECONDS STARTUP, THEN CONNECT TO THE BLINKTROLL WIFI ON YOUR TABLET. ENTER THE PROVIDED SECURITY CODE. **987654321**
4. START THE BLINKTROLL APP
5. HIT ”CONNECT” IN THE APP
6. SELECT SETUP, SELECT CORRECT WEIGHT, BATTERY TYPE (4 CELL STANDARD)
7. START ”SEARCH MODE” THE UNIT WILL RUN TO THE RIGHT, TOUCH BASE AT THE ENDSTOPPER, THEN RUN LEFT, TOUCH BASE BEFORE RETURNING TO BASE AT THE RIGHT HAND SIDE.
8. IF THIS FAILS, CHECK IF THE MAGNET WHEEL IS FACING THE SENSOR, AND THE SENSOR BEING SNAPPED INTO PLACE ON THE AXLE.
9. CHOOSE SEQUENCES, SELECT A SUITABLE SPEED, LOAD THE SEQUENCE.
10. PRESS ’RUN SEQUENCE’

RUNNING THE BLINKTROLL

The BlinkTroll will run continuously for 2-9 hours on one battery depending on type and use.

The running time will depend on the program chosen and the weight carried under the unit. The unit will stop when the battery is has 1/3’rd capacity left. The battery should then be charged immediately. Do not leave the battery connected in the unit when it is not in use, it will destroy the battery. A battery that is “puffed” out is to be considered damaged. Storage of a lipo battery is best done at 50-60% capacity. Storage voltage is 3,85v per cell, 15,4 volts for a standard 4 cell battery.

The supplied charger will charge a battery in approx. 3 hours depending on size. Max charge current on charger is 3A, a 4000mah battery will thus charge in approx. 1,5hours, a 10000mah battery in 4-5 hours. **Never leave a LIPO battery unattended while charging.**



CHANGING THE BATTERY

The battery can be changed by unplugging the stainless-steel safety pins, lowering the battery box, and disconnecting the yellow XT60 connection. Replace with a fully charged battery, resume operations.



STANDARD BATTERIES

Two 10.000Mah 4 cell batteries with protection circuits are supplied with each unit. This is usually enough for one day of operation.

REPLACING THE FRICTION RINGS

The Blinktroll has sacrificial O-rings on the drive wheel to provide traction on the wire. This will be worn out and needs to be replaced after 30-50 hours running time or more, depending on load and use.

The unit has spare O-rings in place inside the chassis ready to be pulled over the drive wheel in a few seconds.

OPEN BEARING HOUSING

O ring replenishment

If the O-rings stored on the inside must be replaced from the outside, the procedure is to remove the front bearing surface, unscrew the 8mm nut, exposing the hole from the side. The O-rings can then be inserted into the chassi, replacing the one on the wheel by pulling it over, and ziptie spares to the chassi frame.

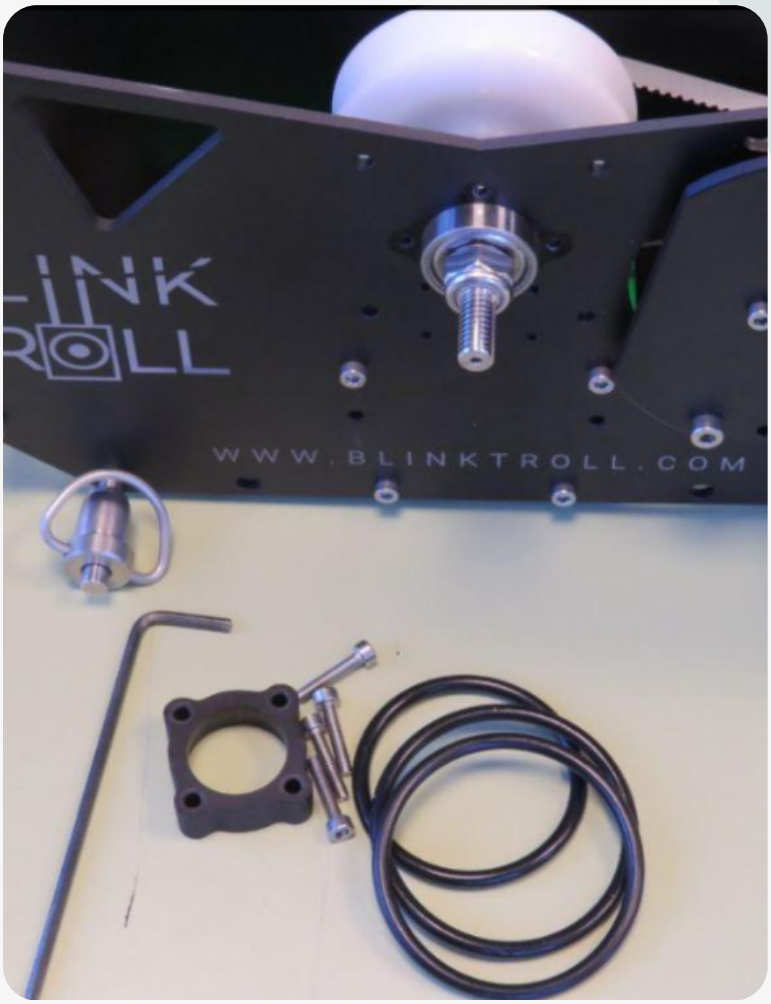
O ring replenishment
Remove the bearing housing by unscrewing the 4 bolts.
Remove the bearing by unscrewing the 8mm nut and slide the bearing off.



REMOVE BEARING



REMOVE HOUSING

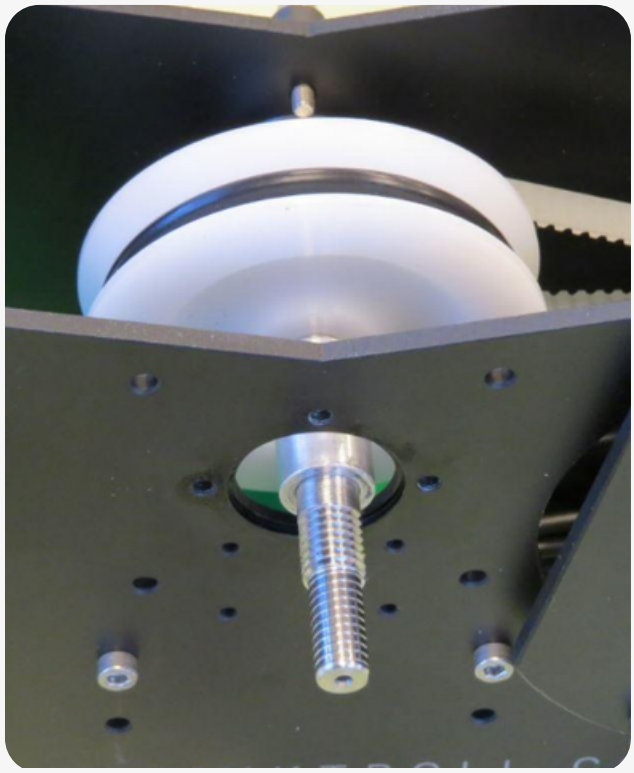


O ring replenishment
Push the O-rings through the bearing hole, there will be room for approx. 3 when secured with zipties. If you have a model equipped with a plastic holder, you will have room for 5 o-rings. Use a Ziptie or a rope to pull the O-ring over the drive wheel.

INSERT O-RINGS

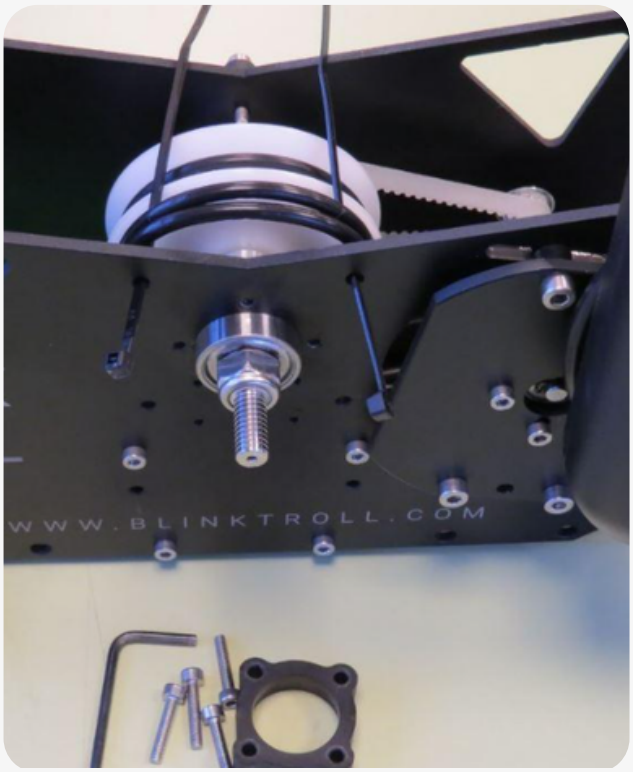


PULL O-RING OVER THE WHEEL



O ring replenishment
Zip-tie spares to the chassi frame. Place the bearing in the slot, retighten the nut and place the bearing housing over the bearing. Fasten the 4 screws. Check that the assembly has free rotation.

SECURE SPARES WITH ZIP-TIES



MEASUREMENT WHEEL FRICTION RING



Replacing the magnet wheel o-ring

The measurement wheel, also known as the “magnet wheel” has a square friction O-ring to improve wheel traction and give accurate readings.

Remove the old o-ring off with a small screwdriver or a scalpel style knife. Replace by pulling the new one over the wheel with a ziptie, making sure to drag the ziptie along the cut path to make sure it falls into the grove. Re-assemble the Wheel.

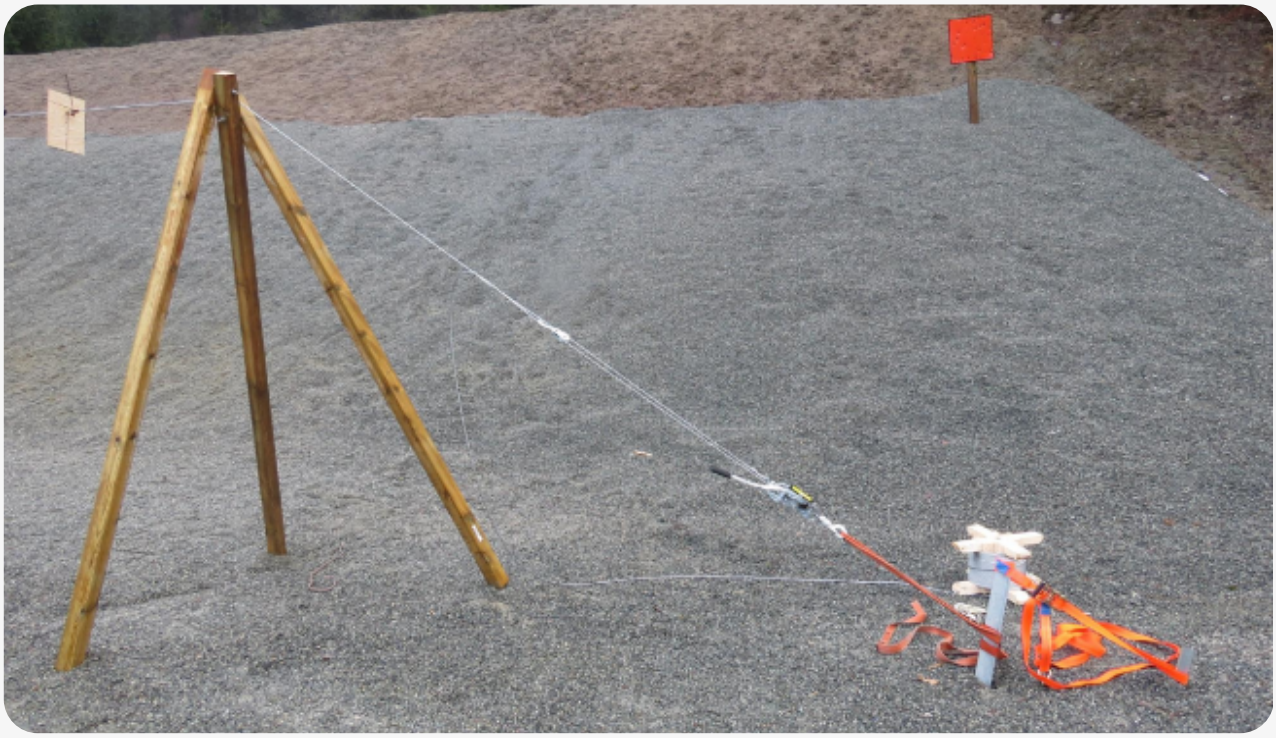


BLINKTROLL RANGE SETUP



BLINKTROLL MKII WITH 1M TARGET HOLDERS, ARMOURED RUBBER TARGET HOLDER 8KG 40X40CM HARDOX TARGET.

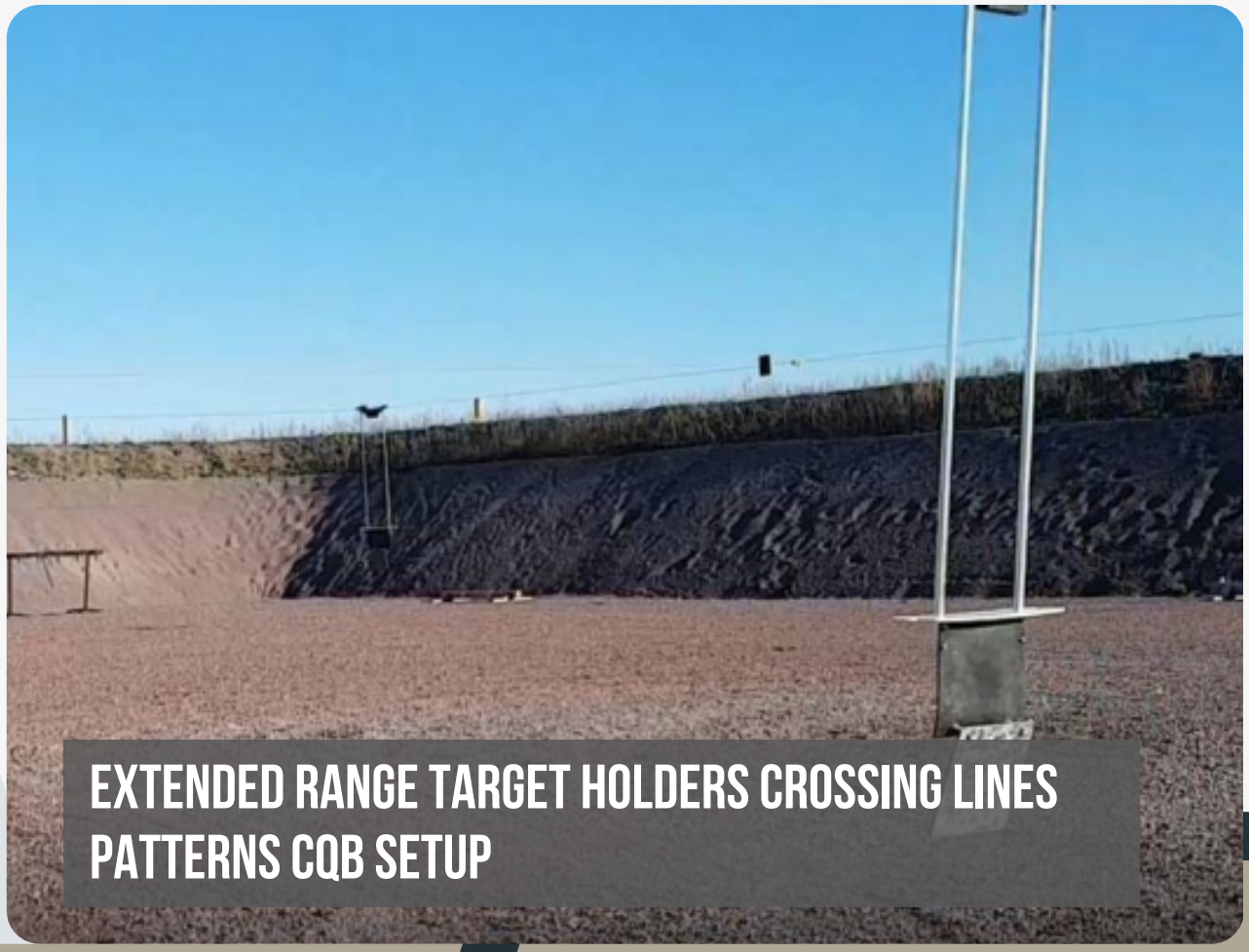




DUAL SAND ANCHORS AND 3X3IN TRIPODS. WIREPATH APPROX 3M ABOVE GROUND



CONTAINER ANCHOR TRIPOD FOR ADJUSTING HEIGHT AND FOR DISPLAY PURPOSES



EXTENDED RANGE TARGET HOLDERS CROSSING LINES PATTERNS CQB SETUP





STEEL TARGETS INSIDE CAR / TRUCK TIRES WILL COLLECT MOST OF THE SHRAPNELL FROM THE BROKEN BULLETS ON RANGES WHERE THIS IS CONSIDERED NECCESARY. (ESTIMATED 98% COLLECTION) YOU WILL STILL GET THE STEEL SIGNATURE.

BLINK TROLL

ROBOTIC SYSTEMS

VISIT BLINKTROLL.COM FOR DIGITAL MANUALS AND VIDEO SETUP GUIDES

BLINKTROLL ROBOTICS APS
CVR NR. 44599198
ADRESS: DRONNINGENSGADE 40, 5000 ODENSE C, DENMARK
CONTACT: HELLO@BLINKTROLL.COM