

Darting Device Control

Handout Document

DARTING DEVICE CONTROL

MOTION
DETECT

LINK
ERROR

POWER

POINTER
BRIGHTNESS

DART
TRIGGER

MOTION DETECT
AUDIO ON

EXTERNAL
SPOT ON

INTERNAL
SPOT ON

POINTER
ON

DART
UNLOCKED

OFF

OFF

OFF

OFF

SECURED

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Introduction

The conservation of endangered species can often require the immobilisation and capture of animals. The trapping and darting procedure can result in significant stress for the animal. We have designed and constructed a minimally invasive capture system, based around a remote-controlled blowgun, which helps to reduce the level of stress involved.

It is important that the device only be used by a competent and trained team and that it is always handled with care. When transporting the device, the protective caps must be in place to protect the sensitive electronic and mechanical components.

Features

The device may be operated from a distance of about 100 metres. High accuracy shots are possible up to 25 metres. The DDC is rain-proof and can be operated in ambient temperatures from -20°C to +50°C. An automatic heating system keeps the narcotics in the dart above +5° C.

The device is fitted with a highly light-sensitive camera and an infrared spotlight allowing monitoring at night. A PIR (passive infrared) Sensor detects movement and alerts the capture team through the control box, by light and/or sound.

A laser pointer and a red crosshair on the control box screen are used to calibrate and aim the device. A monometer gauge is used to achieve the appropriate pressure.

The device can be adjusted both horizontally and vertically from the control box in order to position the target animal on the screen. The control box can be up to 100m from the device, connected via a cable reel.

Features options

The device also features two spare jacks, number 1 and 2, so an additional spotlights and PIR Sensor can be attached. These additional items of equipment are not included in the package.

Tip:

- The infrared spotlight may be switched on and off, to save battery.

Set up

Allow approximately 1 hour for complete set up.

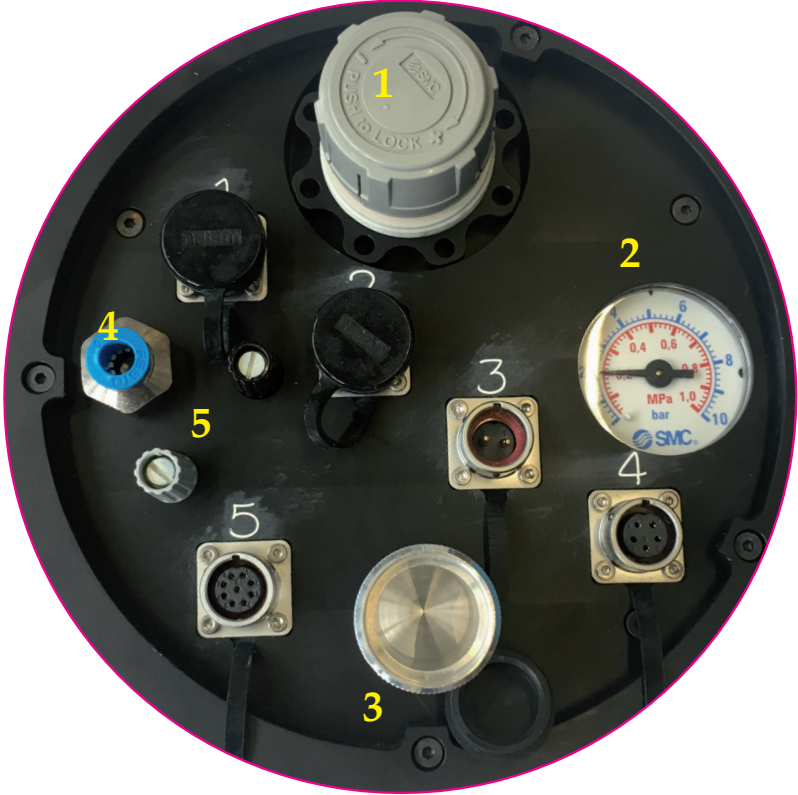
1. Set up the tree mount or tripod in your desired location for darting.
 2. Remove the protective covers from the DDC, one from each end, and attach to the pan-tilt head mounting box. NB make sure it is the right way up, using the TOP as guidance.
 3. Insert the 11mm carbon barrel into the Barrel Insert tube until it reaches the end, there will be a click. Then turn the barrel, you will feel fix points every 90°, ensure the barrel is clicked into one of these fix points with the barrel sight a the top.
 4. Attach the device onto the tree mount or tripod and secure tightly. Then connect the pan-tilt head mount to the device using the short grey cable and plug socket 4 on the device.
- NB. Each power connection has a different pin configuration so you cannot connect the cables incorrectly.
5. Position the 12-volt 40ah battery under the device, there is a platform provided on the tree mount, however if using a tripod the battery will have to be attached or hung in another way.(NB Any 12-volt battery can be used, for example a car battery.)
 6. Connect the black power cable from the battery to plug socket 3 on the device.
- NB Any 12-volt battery can be used, for example a car bettery.
7. Finally connect in the long end of the cable reel to plug socket 5 on the device and the short end of cable reel to the control box. The system is now running.

8. Pull the Pressure Gauge knob out until it clicks, then turn it clockwise to open the valve.
9. Attach the white hosepipe and bicycle pump to the Air Connection socket, and pump to the desired pressure, as indicated on the Manometer. The pressure you need will be dependent on the distance to the target and the species / size of the animal darting, but will normally be between 2 – 4 bars.
 - You may have to keep opening the Pressure Gauge (by turning it clockwise) to reach the desired pressure. It is preferable to go slightly over your desired pressure and then adjust back down once you have removed the bicycle pump hose again. To remove the bicycle pump and hosepipe, press the blue ring around the Air Connection, and pull the hosepipe out. You will hear a small release of air pressure. Then adjust the pressure back down to the precise pressure you need by turning the Pressure Gauge anti-clockwise again. Once at the desired pressure, push the Pressure Gauge in to close again.
10. Remove the dart cover, and insert the 3ml practice dart syringe (e.g. Dan-Inject or Telinject) at the rear end of the barrel tube, screw back on the dart cover.
11. The pressure and the laser pointer must now be calibrated using a practice dart.
 - Turn the laser pointer on at the control box, you should now be able to see the laser on the target site. Adjust the laser pointer position using the left-right and up-down buttons on the control box until the laser is pointing at your target bullseye. Once positioned, release the safety switch and hold it in position, if you now press the Red Button, it will fire the dart.
 - Repeat steps 9-11 twice more.
 - You should now have a cluster of three shots where the darts have hit the target. If the darts are not falling precisely on the bullseye (for example a triangle), you must make adjustments to the laser pointer using the two Laser Knobs on the device: grey for up/down, black for right/left. In case of a triangle cluster on the

bullseye, adjust the laser pointer to the middle of this triangle, you will now have centered your system.

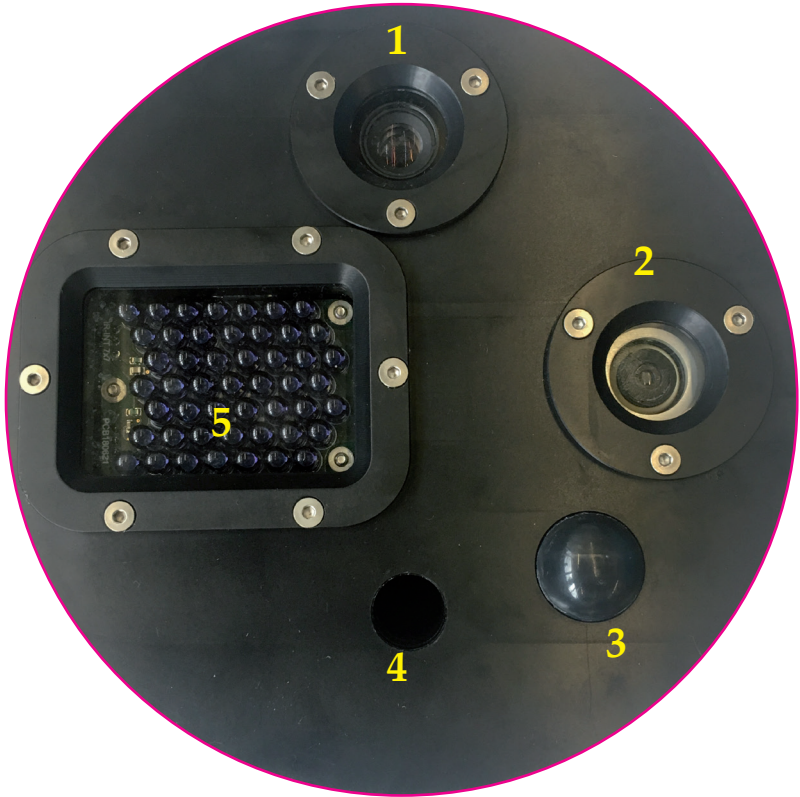
- The control box also has the option of using the crosshairs to take aim. This is slightly less accurate than the laser pointer, however may be easier to use in some situations, for example during bright daylight when the laser pointer is more difficult to see.
 - The crosshairs also need to be calibrated using for that buttons on the screen. The crosshair can be switched on and off over the screenmenu. It is the same procedure as with the laser pointer.
12. The device is now calibrated and ready for use.
 13. The target site may be monitored visually on the screen of the control box or with the PIR-Sensor. When the PIR-Sensor is triggered by motion at the target site, the orange LED light on the control box flashes. There is also the option to switch on the alarm sound, a headphone output is provided to allow this alarm to be discreet.
 14. When the target animal is visible on the screen, precision aim is taken using the left-right and up-down buttons on the control box to adjust the laser pointer. When the animal is in an appropriate position the dart can be triggered from the control box, by disarming the safety switch and pressing the Red Button to fire.
 15. Small dart transmitters from Telinject may be used to follow a darted animal in case it moves away.

Backside



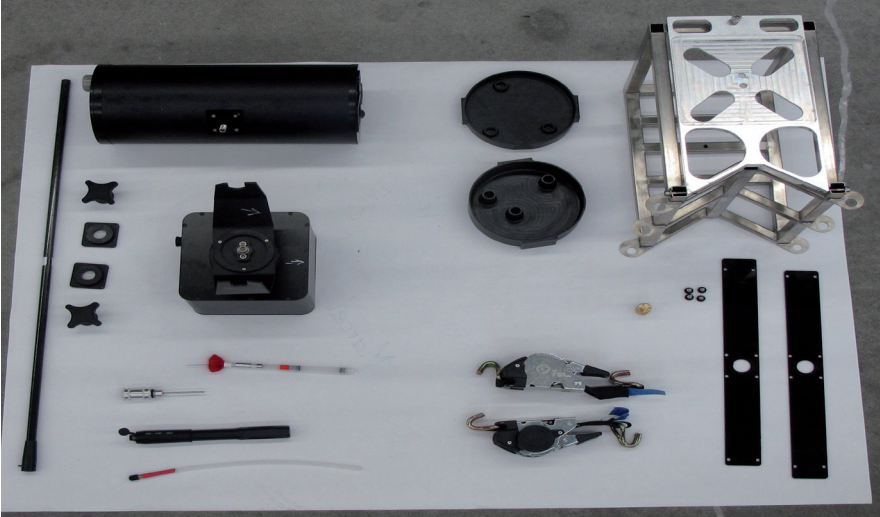
- 1. Pressure Gauge
- 2. Manometer
- 3. Dart Insert
- 4. Hose Insert
- 5. Laser Knobs

Frontside



1. Kamera
2. Laser Pointer
3. Motion Detector
4. Barrel Insert
5. Infrared Source

Equipment





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