



## Instructions for using the single-shot Coded Wire Tag injector

The single shot injector is designed as an inexpensive means of implanting small numbers of coded wire tags (CWTs) for trials of the system and for limited-scale experiments involving only tens or hundreds of animals. For larger-scale projects involving thousands of animals the Handheld Multishot Injector or MKIV injector will be more suitable. Following are brief discussions of issues relevant to use of pre-cut tags and a single-shot injector. More complete descriptions will be found on our website, [ww.nmt.us](http://ww.nmt.us). Search for “small-scale studies”.

The single-shot injector kit contains:

One injector

A wire with looped end for cleaning the needle

A stone for sharpening the needle

The single shot injector is used with pre-cut, pre-magnetized tags, which are ordered separately from the injector. The tags are supplied mounted under clear adhesive tape on sheets of waterproof paper. They are muzzle-loaded singly into the needle of the injector. This can be done by sliding the needle tip, beveled side down, over the tag while it is on the tape. Alternately, the tags can be picked up on a wetted fingertip, and loaded into the syringe from there. You may find it easiest if you use magnifying glasses or a magnifier headband to load the tags. Care must be taken, as the tags are very small and easily lost. It is a wise precaution to do the loading over a large clean tray so that the tag can be recovered if dropped. (If dropped, a magnet can be useful to recover the tag.)

The tag is injected into the animal by inserting the needle to the required depth and ejecting the tag by pushing forward on the knob projecting from the side of the injector. A wide range of tagging locations has been used in different species, and experimentation may be needed to find the optimal location. Permanent subdermal implants have been made into cartilage, muscle, adipose tissue and fins. When tagging salmonids in the snout using a Handheld Multishot or MKIV injector, a positioning jig (“headmold”) is usually used to align the fish relative to the needle and to control injection depth. Headmolds cannot be used with the single shot injector so care is needed for reliable snout tagging. A small piece of rubber, or perhaps some thread, can be positioned on the needle as a penetration depth guide. A guide to the optimal location of snout tags in salmonids can be found in the manual for the MKIV injector, which is available on our website. For other locations, applications, or assistance please contact our biology office at [biology@nmt.us](mailto:biology@nmt.us).

After each use, the injector should be cleaned. If allowed to dry before cleaning, the push rod can become stuck and will be damaged trying to move it. Dismantle the instrument by unscrewing both the needle and the injection knob. Wash all parts in detergent. Particulate material can be removed from the needle with the cleaning loop supplied. The parts should then be rinsed with water followed by alcohol, and dried. At the end of each experiment or when the apparatus is moved between locations, a dilute solution of bleach should be used following the detergent cleaning to disinfect the injector, then it should be rinsed and dried.

Inspect the beveled end of the needle for sharpness. The point can be restored using the sharpening hone included in the kit, plus oil. When finished, clean the needle as indicated above.