Monument Pins Overview

640 Beth Bartel February 19, 2010 Antenna Masts and Monument Pins 2183

Monument Pins

Back to comparison table	Mount Commonly Used	Stabi lity	Cost	Install Time	Labor	Substrate	
TO SECOND	campaign GPS/GNSS antenna mount	med- high	\$15-50	<1 hr	1	BR, R	





Danish geodetic marker near Kangerlussuaq, Greenland (left); simple stainless steel pin at site DOIW in Afar, Ethiopia (right).

Pros

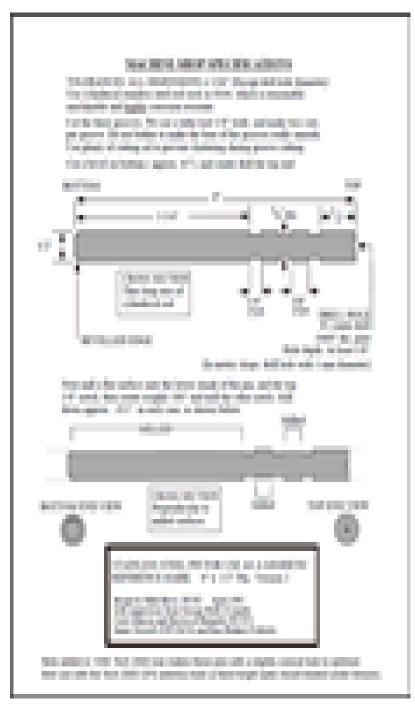
- Inexpensive (e.g. \$15-50, depending on marker design)
- Can be installed with a battery-powered drill
- Small footprint, low profile
- Short installation time (<1 hr, can be as little as 15 minutes)
- Materials and machining are available in most cities
- Can be installed on a rooftop or other stone or cement structure
- Can be occupied with a wide variety of antenna mounts

Cons

- Can only be installed in solid material
- Must be occupied with a temporary antenna mount

Design and Construction

There are a variety of marker designs. In general, markers consist of a post with a 1 mm dimple or intersecting crosshairs on top. The marker most commonly used by UNAVCO is the dimpled monument pin, or "Bevis pin." The Bevis pin is a 6-inch long, 1/2-inch diameter stainless steel pin machined with notches on the sides to prohibit rotation and a 1 mm dimple on the top. Machine and installation instructions are given below.



Bevis pin machining instructions (.pdf)



Bevis pin installation instructions (.pdf)

Approximate Cost

\$15-50; varies depending on marker design.

Materials

- pin
- epoxy or quick-setting, expansive concrete and water

Tools

- battery-powered drill
- tube to blow rock flour out of the hole
- level (optional but preferable)
- needle-nosed pliers for rescuing pins from over-drilled holes (recommended)

Mount Commonly Used







Many mounts can be used with a monument pin, including the Tech 2000 mast, UNAVCO fixed-height spike mount, standard, short, or fixed-height tripod, or bipod. See the <u>UNAVCO Resources: GNSS Antenna Mounts</u> page.

Send questions or comments about this page to Support (support@unavco.org).

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