

Type: **MSS Trench** - SuperSharp on NCHR

**SuperSharp, high aspect ratio probe for very fine features such as divots, 10 nm holes etc.**

Multipurpose high resolution probe with excellent lifetime and reliability.

The **nanotools® MSS\_NCHR\_13/3** tip is designed for non-contact / high frequency mode. It delivers outstanding resolution in critical AFM applications even on hard, tip eating samples like ceramics, silicon oxide/nitride or polysilicon to name a few.

**EBD Material**

The high aspect ratio part of the probe is made of HIGH-DENSITY, DIAMOND LIKE CARBON (**HDC/DLC**). The tips show superior properties over integrated tips, such as high aspect ratio, hydrophobic surface properties, high stiffness / elastic modulus (8x of that of silicon), low thermal mass as well as abrasion resistance. Our HDC dissipates static charge.

This leads to probes offering the extreme durability of diamond together with high resolution imaging capability. Applying our patented **EBD** (electron beam deposition) technique we ensure a stiff and rigid high aspect ratio probe of superior symmetry and nanometer precision.

**Technical Data**

Tip dimensions	Shape:	conical
	Length:	400 nm (+/- 100 nm)
	Diameter*:	40 nm (+/-10 nm)
	Radius:	<5 nm, typically 2-3 nm
	Tilt compensation:	3 or 13 deg (+/- 1 deg)

Cantilever	l: 125 µm	w: 30 µm	t: 4 µm
	k: 42 N/m f: 320 kHz		

Coating	Tip side: none
	Back side: 30 nm Al reflex
	<small>*measured at 300 nm from tip end</small>

**First in Quality**

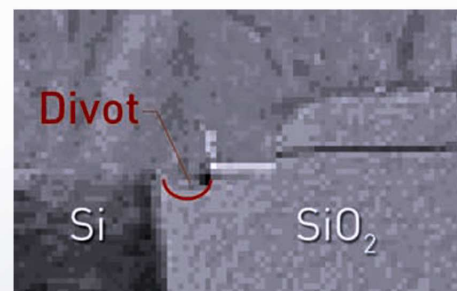
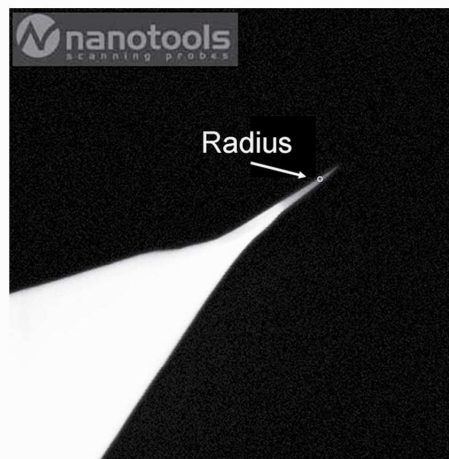
A 100% quality check by SEM for every tip, high scan speeds, flexibility in combination with stiffness, tilt compensation and optimized cost per scan are key parameters. The **nanotools® MSS\_NCHR\_13/3** is used by leading fabs worldwide for several AFM in-line monitoring tasks such as depth control or STI.

Datasheet for every tip with precise tip dimensions provided.

nanotools is the first and only probe manufacturer being quality certified to ISO 9001.

For more information please contact: [info@nano-tools.com](mailto:info@nano-tools.com)  
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\*\* Source: [www.veeco.com](http://www.veeco.com)



SEM of a divot at the STI level \*\*



AFM scan profile showing divots\*\*