

# HESI-II Probe Quick Reference Guide

For a system with a HESI-II probe, use the recommendations below to optimize performance and the instructions on the back of this guide to replace the HESI-II probe needle insert.

## Initial Settings

These initial tune settings are based on a 50 percent aqueous solution.

Liquid flow rate (µL/min)	Ion transfer tube temp (°C)	Vaporizer temp (°C)	Sheath gas pressure (psi)	Auxiliary gas flow (arbitrary units)	Spray voltage (V)	Typical N <sub>2</sub> gas consumption (L/min)
5	240	Off to 50	5	0	+3000 (-2500)*	<1
200	350	250 to 350	35	10	+3000 (-2500)	8
500	380	300 to 500	60	20	+3000 (-2500)	13
1000	400	500	75	20	+3000 (-2500)	17

\* Negative ion mode

## Adjusting the Probe Position

Because the probe position can affect sensitivity, follow these guidelines as a starting point.

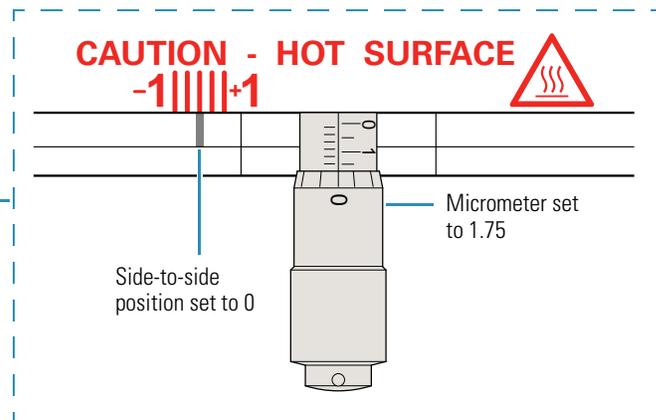
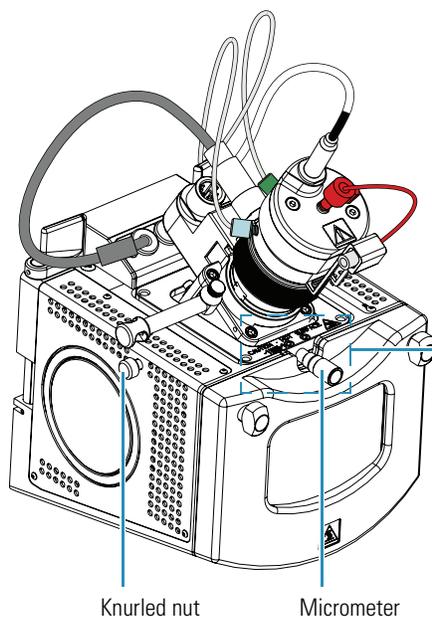
Liquid flow rate range (µL/min)	Front-to-back position (micrometer lines)	Probe depth (probe depth line)	Side-to-side position (+1 to -1 marks)
1 to 50	1.75	B	0
50 to 2000	1.75	D	0

### ❖ To adjust the probe position



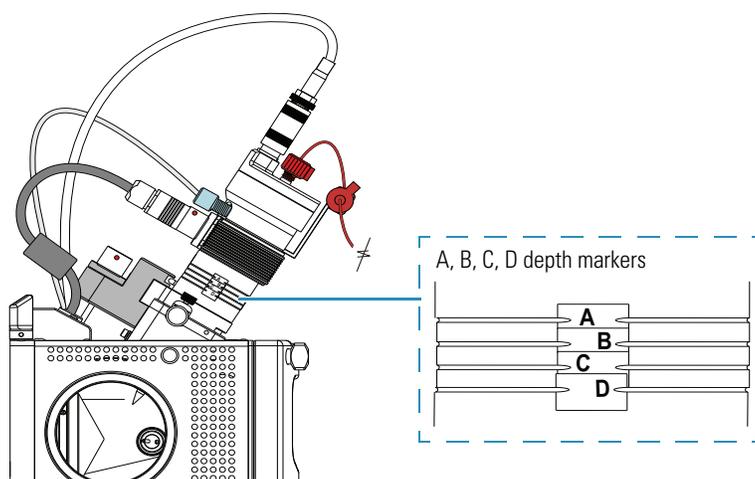
**CAUTION** Because the surface of the Ion Max source housing is hot during high temperature operation, take care when adjusting the probe position.

- Using the micrometer, adjust the front-to-back probe position.
- Using the knurled nut on the left side and the +1 to -1 markers on the top front of the Ion Max source housing, adjust the side-to-side probe position.



## Replacing the Needle Insert

- Using the A, B, C, and D markers on the probe as a guide, adjust the probe depth.



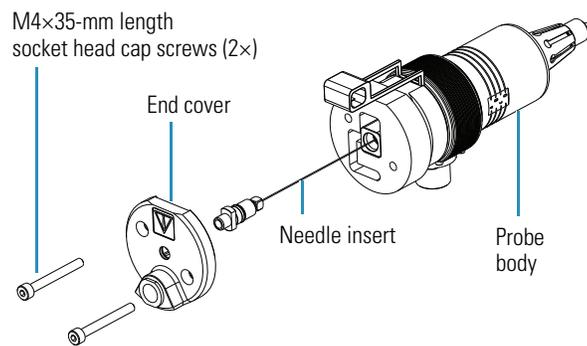
The factory-assembled needle insert consists of an adjustable union, a needle guide fitting, a ferrule, an O-ring, an ESI needle, and a metal needle. Because the needle insert is factory-adjusted, do not disassemble it.

**IMPORTANT** Take care to avoid operating the HESI-II probe at elevated temperatures without solvent flow from the LC system or the syringe pump. Allowing the HESI-II probe to run dry at elevated temperatures for extended time periods can cause blockage of the replaceable metal needle.

Replacing the metal needle insert requires a 3-mm (7/64-in.) hex wrench or ball driver.

### ❖ To replace the needle insert

- Remove the HESI-II probe from the Ion Max API source housing.
- Unscrew the fingertight fitting from the sample inlet port.
- Remove the metal needle insert from the probe:
  - Using a 3-mm (7/64-in.) hex wrench or ball driver, remove the two M4×35-mm length, socket head cap screws. Pull the end cover off of the probe.
  - Unscrew the needle insert, and then pull it out of the probe body.
- Insert a new needle insert into the probe body.



Description	Part number
Needle insert for high-flow applications	OPTON-53010
Needle insert for low-flow applications	OPTON-53011

- Hand tighten the adjustable union fitting until the needle insert tip protrudes from the probe nozzle by 1.5 mm.
- Position the end cover on the probe body.
- Insert the two M4×35-mm length, socket head cap screws into the end cover, and then tighten them with a 3-mm (7/64-in.) hex wrench or ball driver.
- Reconnect the fingertight fitting to the sample inlet port.
- Seat the HESI-II probe in the probe port of the Ion Max API source housing and reconnect the vaporizer cable, 8 kV cable, and nitrogen lines.

