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_2 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

* For a TSQ Series mass spectrometer, the allowable range for the auxiliary gas flow is 0 to 60 units.
For an LTQ Series mass spectrometer controlled from LTQ 2.5.0 or lower, the allowable range for the auxiliary gas flow is 5 to 60 units.
For LTQ 2.5.5 or higher, the allowable range for the auxiliary gas flow is 0 to 60 units for vaporizer temperatures up to 100.00 °C and 5 to 60 units for vaporizer temperatures above 100.00 °C.

** Negative ion mode

Adjusting the Probe Position

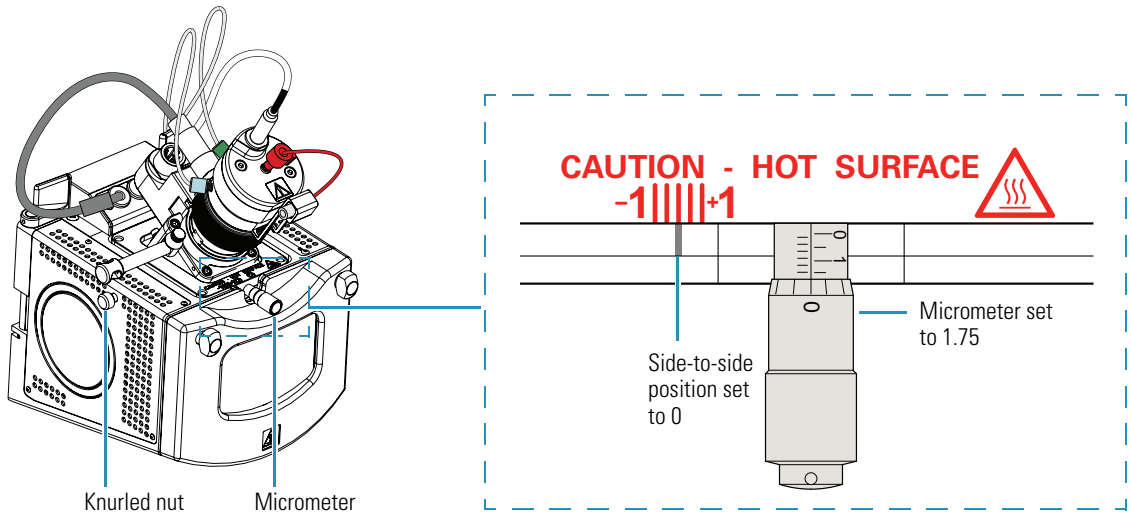
Because the probe position can affect sensitivity, follow these guidelines as a starting point.

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.



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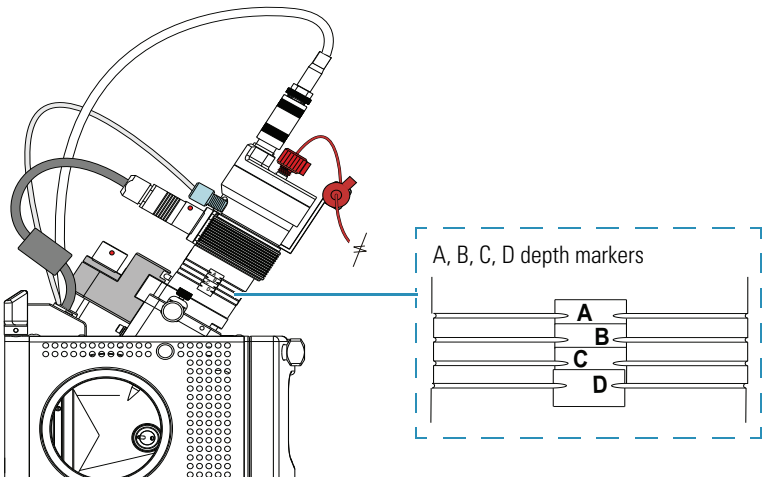
- Using the A, B, C, and D markers on the probe as a guide, adjust the probe depth.



Replacing the Needle Insert

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

1. Remove the HESI-II probe from the Ion Max API source housing.
2. Unscrew the fingertight fitting from the sample inlet port.
3. Remove the metal needle insert from the probe:
   a. 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.
   b. Unscrew the needle insert, and then pull it out of the probe body.
4. 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

5. Hand tighten the adjustable union fitting (of the needle insert) until the needle insert tip protrudes from the probe nozzle by 1.5 mm.
6. Position the end cover on the probe body.
7. 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.
8. Reconnect the fingertight fitting to the sample inlet port.
9. 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.