APPLICATION BRIEF 21954

Establishing a stable spray on EASY-Spray columns

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Keywords: EASY-Spray, Nanospray, nanoViper, proteomics, peptides, peptide mapping, maintenance, best practices

Materials

- EASY-Spray emitter positioning tool (P/N ES232)
- EASY-Spray source (P/N ES081, ES082)
- EASY-Spray column
- Mass spectrometer

Introduction

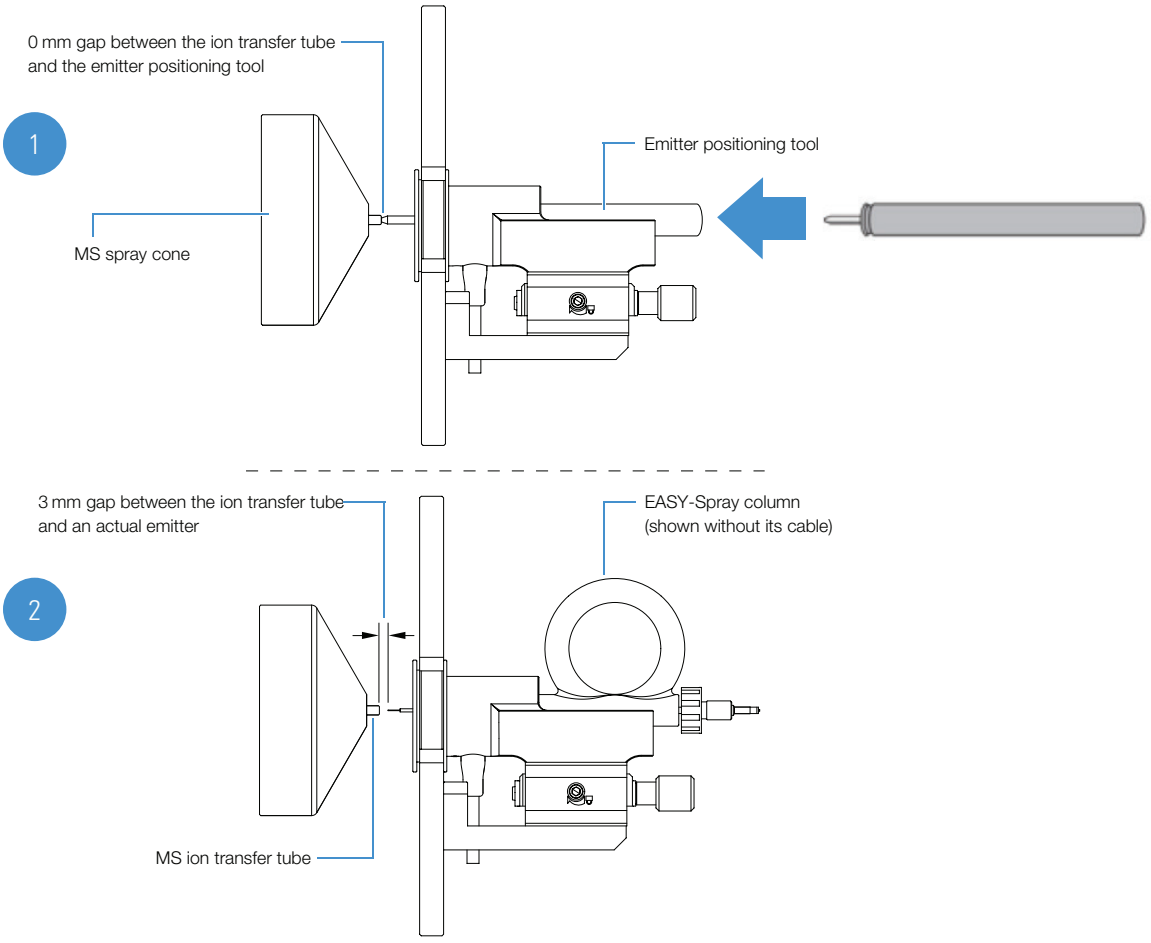
Thermo Scientific™ EASY-Spray™ Nanospray columns provide superior peak shape due to their zero dead volume Thermo Scientific™ nanoViper™ unions, integrated heater and integrated emitter. Introducing voltage gradually to the emitter can help extend column lifetimes and reduce the risk of voltage induced damage. Voltage should be applied at a low intensity, followed by establishing solvent flow. Once solvent flow has been introduced, voltage should be slowly ramped up to the desired operating voltage gradually over the course of a few minutes. This protects the column from potential damage and promotes a longer column lifetime.

Important notes

- Prior to turning the mass spectrometer (MS) on from rest, check that the instrument is set to the appropriate low starting voltage
  - This practice should be conducted each time voltage is introduced to the column (i.e., each time MS is brought to on from standby mode)
  - This practice need only be conducted when initially establishing spray
- **When analysis is completed and MS is set to standby, decrease the voltage to initial condition to prevent turning on to high voltage inadvertently when resuming work**
- This practice can be used to protect against voltage induced damage in EASY-Spray columns while promoting a stable spray

Protocol

1. Ensure MS is in standby mode.
2. Use the EASY-Spray emitter positioning tool to position source stage such that the EASY-Spray emitter will lie at least 3.0 mm from ion transfer tube (see Figure 1).
3. Set MS voltage to 1.2 kV.
4. Turn on MS.
5. Initiate solvent flow and run the column conditioning protocol specific to the EASY-Spray column installed to establish solvent flow.



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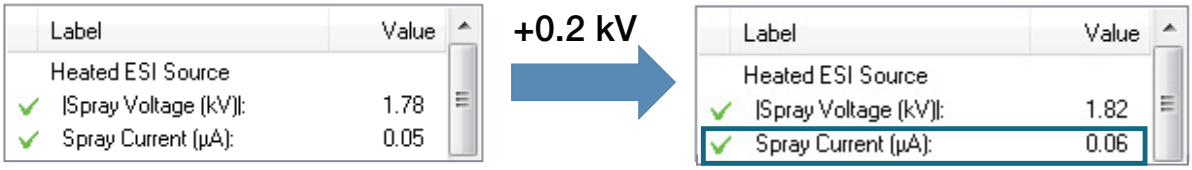
6. Increase the spray voltage by increments of 0.2 kV, increasing once the spray current has stabilized (approximately 30 seconds per increase, see Figure 2) to a maximum suggested voltage of 2.5 kV.

7. After data acquisition has been completed, set voltage back to 1.2 kV prior to placing the MS into standby mode (this will prevent turning the MS on at too high a voltage upon next use).



Spray current will stabilize within 30 seconds (blue box). Once spray current is stable, increase voltage another +0.2 kV, waiting for current to stabilize between steps, until desired voltage reached.

Related Thermo Scientific products

Part Number	Description
ES900 through ES912	Thermo Scientific™ EASY-Spray™ columns
ES901, ES902	Thermo Sci entific™ EASY-Spray™ sources

Current versions of product instructions are available at separatedbyexperience.com/chromexpert.

Find out more at **thermofisher.com/EASYspray**

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