

ASXPRESS[®] PLUS



Rapid Sample Introduction

The ASXPRESS PLUS Rapid Sample Introduction Accessory reduces time required for autosampler movement, sample uptake, stabilization, and rinse operations, thereby reducing sample run times significantly.

The result: More sample throughput in less time. The accessory's design allows multiple functions to occur simultaneously. A high speed vacuum pump loads sample and flushes the sample uptake path substantially faster than a conventional peristaltic pump.



Increase Throughput

- More sample throughput in less time by optimizing sample introduction
- Virtually eliminates stabilization time by removing the need for “fast pumping,” improving plasma stability

Reduce Maintenance

- Extend the service life of ICP-AES/ICP-MS components such as nebulizers, spray chambers, and sample cones by reducing their exposure to the sample matrix

Cost Effective

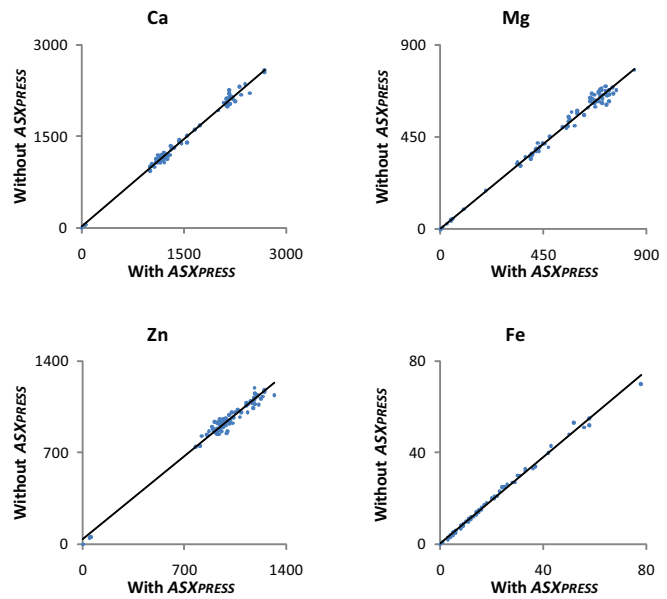
- Minimize sample consumption
- Reduce laboratory costs associated with argon and power consumption, peristaltic pump tubing replacement, and maintenance

Simple Operation

- Easy set-up with minimal modification to the analysis method
- No additional complex software required; all system parameters are stored in the system’s on-board processor

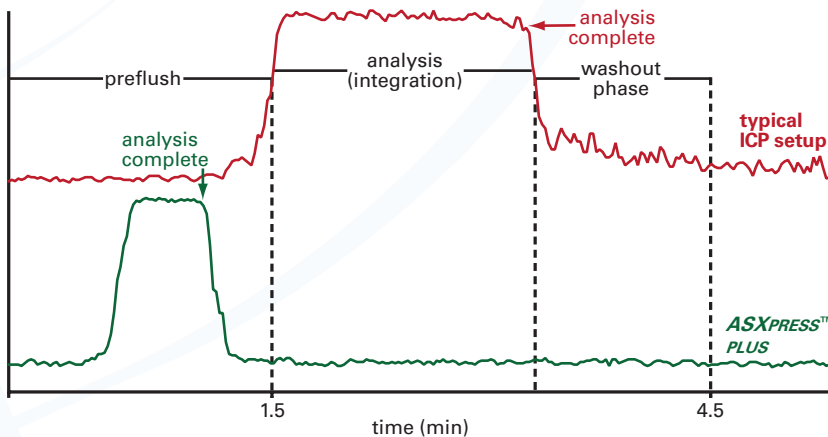
Data Quality

ICP data before and after *ASXPRESS PLUS*. The only difference between the runs is that half the time was saved using the *ASXPRESS PLUS*. Typical carryover has been measured at less than 0.1%.



Data generated from oil sample analysis.

Timing



The *ASXPRESS PLUS* increases ICP-AES/ICP-MS analysis throughput by reducing sample delivery/rinse times without affecting measurement time. Multiple sample introduction steps occur simultaneously, resulting in virtual elimination of stabilization and rinse times.

Typical Analysis Setup

Sample Introduction Step	Time Required
1. Autosampler Movement	5 sec.
2. Sample Uptake	15 sec.
3. Stabilization	20 sec.
4. Measurement	10 sec.
5. Rinse	30 sec.
Total Time	80 sec.

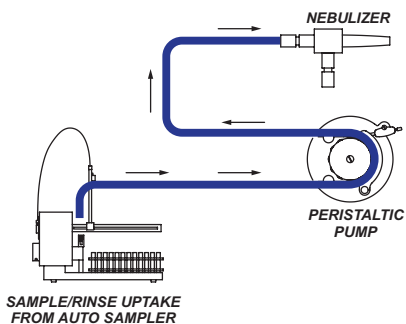
ASXPRESS PLUS Analysis Setup

Sample Introduction Step	Time Required
1. Autosampler Movement, Sample Uptake, Stabilization, and Rinse	20 sec.
2. Measurement	10 sec.
Total Time	30 sec.



ASXPRESS PLUS Technology Description

The ASXPRESS PLUS Rapid Sample Introduction Accessory increases sample throughput for ICP-AES and ICP-MS analysis by reducing sample loading, signal stabilization and washout times. Using proven technology, the ASXPRESS PLUS combines a metal-free, 6-port injection valve and inert, high-speed vacuum pump to rapidly load the sample loop for introduction to the nebulizer. The design of the ASXPRESS PLUS facilitates quickly rinsing the sample loop while simultaneously injecting sample into the ICP-AES or ICP-MS nebulizer for analysis. The segmented stream washout technology effectively cleans liquid flow paths more completely and in less time. The result is additional time dedicated to sample analysis, more effective flow path rinse, and reduced time between samples.



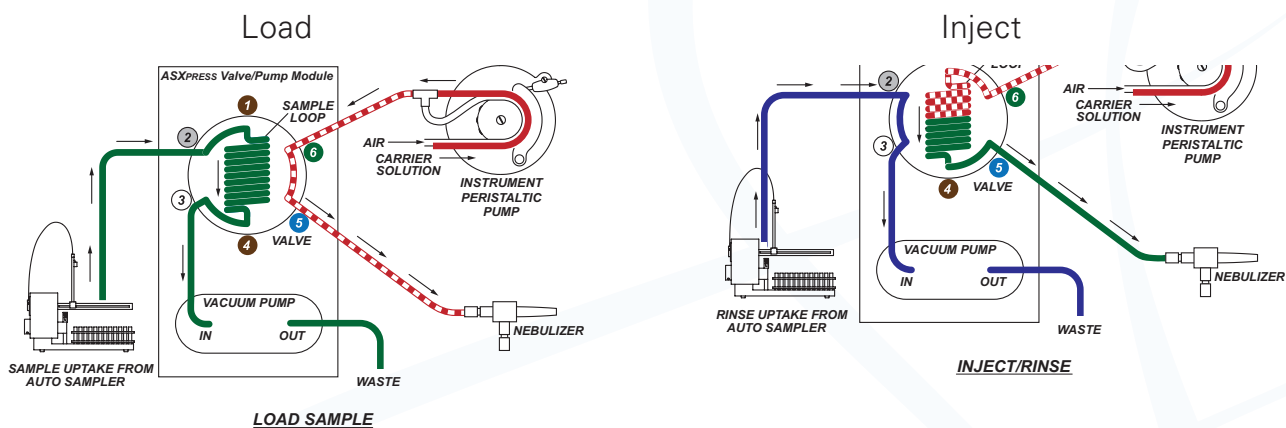
Typical ICP sample introduction configuration

Analysis with Typical Setup

A standard analysis system relies upon a single peristaltic pump to both deliver samples to the nebulizer, and rinse the sample flow path between sample deliveries.

Analysis with ASXPRESS PLUS Technology

The ASXPRESS PLUS utilizes a high speed vacuum pump in addition to the ICP/ICP-MS peristaltic pump. The 6-port valve allows the use of both pumps simultaneously, as is illustrated below, reducing total sample analysis time significantly.



Load Position

The vacuum pump rapidly fills the sample loop (green path), while the ICP-AES or ICP-MS peristaltic pump simultaneously transports carrier solution, keeping the plasma stable (red path).

Inject/Rinse Position

The loaded sample is then pushed into the nebulizer for analysis via the carrier solution flowing through the ICP-AES or ICP-MS peristaltic pump (red/green path). Simultaneously, the autosampler probe is moved to the rinse station and the uptake flow path is flushed with rinse solution via the vacuum pump.

Technical Specifications

Valve/Pump Module Dimensions

Height: 12.8 cm (5.0")
 Width: 5.8 cm (2.3")
 Depth: 21.7 cm (8.5")
 Weight: 1.30 kg (2.8 lb)

Electronics Module Dimensions:

Height: 25.4 cm (10.0")
 Width: 8.3 cm (3.3")
 Depth: 20.0 cm (7.9")

Hardware Interfaces

RS-232 to autosampler
 RS-232 and/or USB to host PC
 External pump connector

Sample Load Loops

Sample load loops are available in multiple sizes for varying applications. Available sizes range from 0.5 mL to 5.25 mL. Please contact CETAC about additional sample load loop sizes.

Power

100-240 VAC ~ 47-63 Hz 1.9A

Warranty

2 year limited

Autosampler Compatibility

ASX-260	XLR-8
ASX-500	XLR-8HS
ASX-510	ASX-1400
ASX-520	ASX-1600
ASX-520HS	Non-CETAC autosamplers*
ASX-560	

The *ASXPRESS PLUS* may be purchased as a complete system along with choice of autosampler or as an upgrade to autosamplers already in operation.

*Please contact CETAC for more information on the above listed autosamplers or in regards to operating an *ASXPRESS PLUS* system on non-CETAC autosamplers.

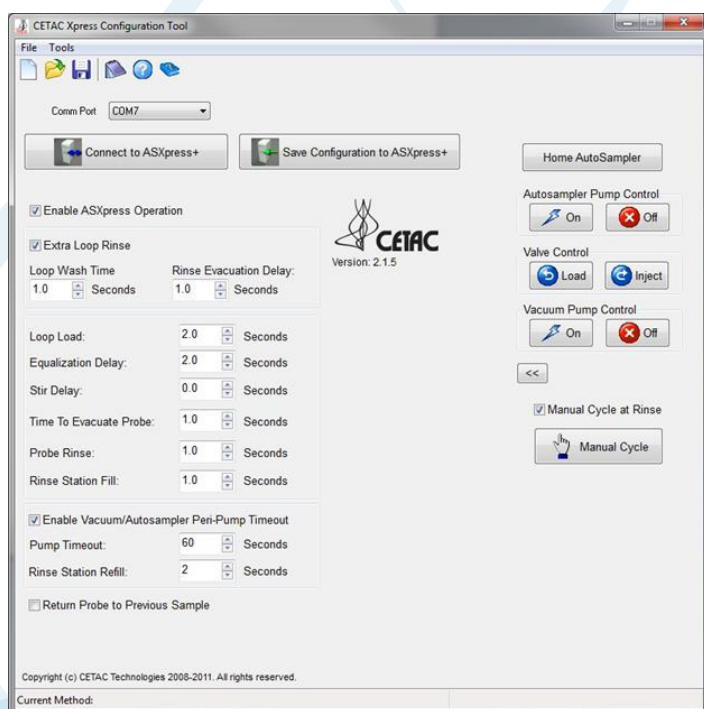
Minimum Computer Requirements

Configuration tool requires Microsoft Windows Vista or later release. No software is required for system operation.

ASXPRESS PLUS requires any combination of two RS-232 and/or USB communication ports.

Xpress Configuration Tool

The Xpress Configuration Tool is a simple, one-screen interface to configure the *ASXPRESS PLUS* accessory and autosampler, as well as providing access to manual functions of the *ASXPRESS PLUS* and autosampler.



Xpress Configuration Tool for *ASXPRESS PLUS*