

# autosamplers

## AS-DV Autosampler



*The AS-DV autosampler provides high-performance, automated sample processing for ion chromatography applications. The random access and sample preparation capabilities provide easily automated sample introduction to the chromatograph. The Chromeleon® Chromatography Data System control provides high flexibility to select the optimum injection parameters for filling injection loops or loading concentrator columns. Interactive software panels help to visualize advanced sample preparation methods, such as matrix elimination and analyte concentration.*

### **Versatile and Economical**

With dedicated full-loop and optional concentrator loading, the AS-DV autosampler is the optimum device for standard IC analysis. Chromeleon software control, random access, and optional automated sample preparation capabilities make routine IC analysis a breeze.

### **High Flexibility**

The AS-DV autosampler uses very precise mechanics to accurately control dispense speed and volume, resulting in highly reproducible results. Users can control speed from 0.1 to 5.0 mL/min in 0.1 mL/min increments. Variable volume can be controlled also from 0.1 mL to 5.0 mL in 0.1 mL increments. Thus, multiple injections per vial can be programmed.

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## Automated Sample Preparation

The AS-DV provides automated sample solutions with optional filters in cap in different dimensions and optional 6-port or 10-port valves.

### Variable Filter Options

Each sample can be automatically filtered during loading by an optional 20 µm filter in the vial cap, so that particulates can be removed during sampling. The tedious task of prefiltering samples is eliminated, resulting in significant savings in time and cost. The filter also acts as a seal to minimize contamination and evaporation of samples before analysis. Caps without filters are also available for ultrapure water analysis.

### Optional 6-Port and 10-Port Valves

A high-pressure switching valve can be installed in the AS-DV Automated Sampler. Two models are available: 6-port and 10-port. The valves can perform the following functions:

- Bleed Valve
- Injection Valve
- Matrix Elimination
- Concentration
- Large Loop/Small Loop Reinjection

## Sampling Mechanism

The AS-DV sampling mechanism consists of a sampling carousel and a sampling head. The carousel holds up to 50 PolyVials containing sample or rinse solution. The sampling head delivers sample from the vials to the Sample Out line. The sampling carousel holds up to fifty 0.5 mL or 5.0 mL PolyVials or a combination of the two. 0.5 mL vials must be placed in vial adapters before they are loaded into the carousel. The vials can be placed in any order. All sequencing is controlled through the Chromeleon software.

## Chromeleon Control

Chromeleon software and random access provide high flexibility to select the optimum injection parameters. Panels and reporting capabilities in audit trails provide reliability and less labor to users. Time savings are achieved by utilizing the sample overlap capability of the AS-DV and Chromeleon software.

## Positive Displacement Sampling

The AS-DV Autosampler is based on a positive displacement sampling technique. A cap is pressed into a vial containing the sample. The moving cap acts as a piston to force the liquid from the vial. The cap itself is then pushed down into the vial, displacing the vial contents. The sample is transferred through the probe tip to the injection valve. This method allows samples to be loaded without the use of an external sampling pump. Positive displacement provides reliable and efficient transfer of the sample from the vial to the injection valve. Because the sample is displaced mechanically, there is no viscosity dependence in the sample transfer from vial to valve. Due to its simple design, the AS-DV can be quickly serviced through the interchange of components.

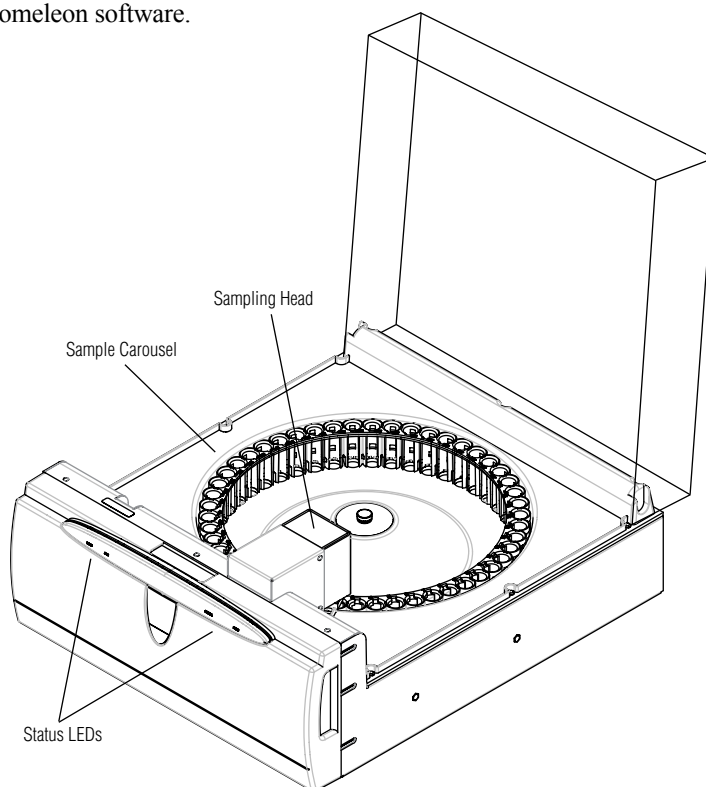


Figure 1. AS-DV sampling mechanism.

### Concentrates Samples Automatically

The AS-DV's unique positive displacement piston delivers sample to a concentrator column against backpressures of up to 690 kPa (100 psi), without the need for an external sampling pump. For sample preconcentration, volumes of up to 5.0 mL can be loaded onto an IonPac® concentrator column. The AS-DV can deliver up to 5.0 mL of sample through a precolumn to remove interfering components prior to introducing the sample to the analytical column.

### Chemically Inert Fluid Paths and Vials

The AS-DV utilizes nonmetallic fluid-path components to reduce potential sources of contamination and eliminate corrosion. The disposable PolyVial™ sample vials (available in both 0.5 mL and 5 mL sizes) are compatible with a variety of samples.

### Rinses or Regenerates Between Samples

Intermix sample vials and rinse vials in any order in the carousel and define them using the Chromeleon software.

### Connectivity with Dionex Systems

The AS-DV is connected via a USB port. It has added flexibility for automation control with ICS-900, ICS-1100, ICS-1600, ICS-2100, and ICS-3000 systems. It is also compatible with the older Dionex IC systems, including the DX-500 and DX-600, using either Chromeleon software or TTL control.

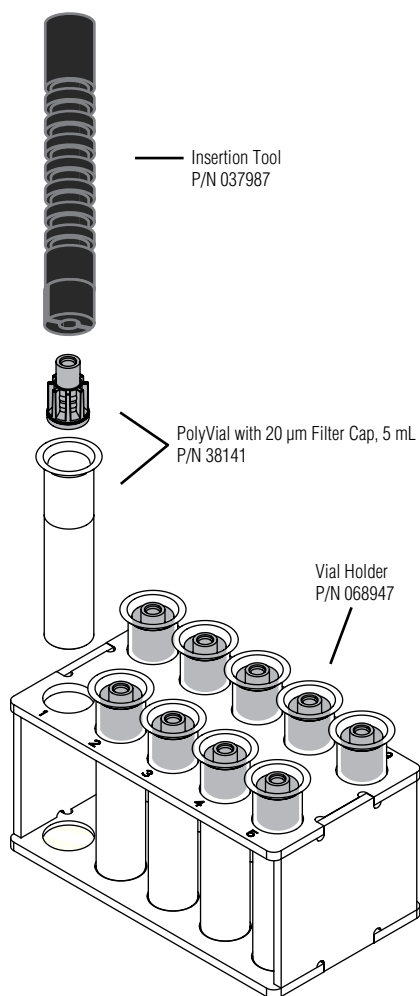


Figure 2. 5 mL sample vial holder for PolyVials.

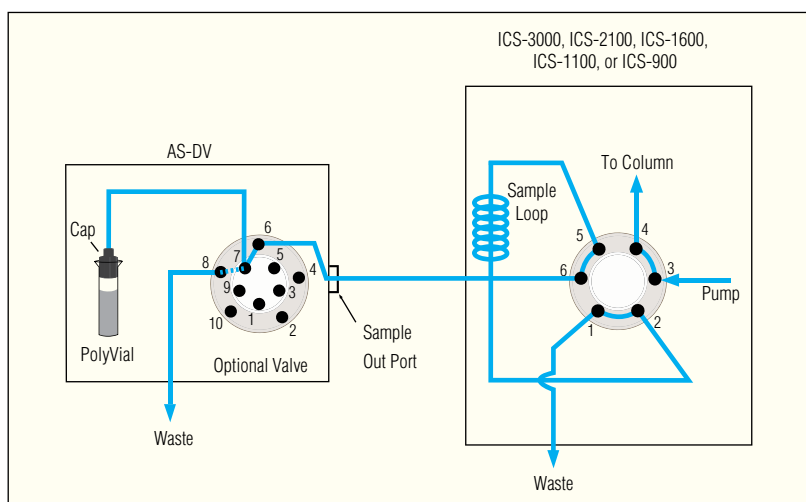


Figure 3. AS-DV fluid path with optional bleed valve and injector valve in load position.

## SPECIFICATIONS

### Sample Delivery Method:

Positive displacement against backpressure  
of up to 690 kPa (100 psi)

### Capacity:

50 PolyVials: 5 mL, 0.5 mL, or combination

### Vial Size:

0.5 or 5 mL

### Filter Pore Size:

20 µm

### Volume Delivered:

0.1 mL to 5.0 mL in 0.1 mL increments

### Speed Control:

0.1 mL/min to 5.0 mL/min in

0.1 mL/min increments

### Injections Per Vial:

Multiple injections

### Valves (optional):

High-pressure switching valve: 6- or 10-port

Bleed valve

Injection valve

Matrix elimination

Concentration

### Concentrator (optional):

Delivers sample against backpressure of up to  
690 kPa (100 psi). Recommended values are  
~0.4 mL/min (0.5 mL vials) or  
1 mL/min (5 mL vials)

### Software Control:

Chromeleon and random access

### External Control:

USB and TTL relay

### Power Supply:

100 to 240 V ac, 50 to 60 Hz, 45 W

(auto-sensing power supply; no manual voltage or  
frequency adjustments required)

### Dimensions (h × w × d):

23 × 44.5 × 56 cm

(9 × 17.5 × 22 in.)

### Weight:

8.9 kg (19.5 lb)

## ORDERING INFORMATION

In the U.S., call 1-800-346-6390 or contact the Dionex regional office nearest you. Outside the U.S., order through your local Dionex office or distributor. Refer to the following part numbers.

Description	Part Number
AS-DV Autosampler.....	068907
AS-DV with 0.5 mL adaptors.....	068908
Optional 6-port valve kit.....	068920
Optional 10-port valve kit.....	068921
PolyVials and 20 µm filter caps, 250 each, for 5 mL vials.....	038141
for 0.5 mL vials.....	038142
PolyVials and plain caps, 250 each, for 5 mL vials.....	038008
PolyVials and plain caps, 250 each, for 0.5 mL vials.....	038010
Vial holder for 5.0 mL vials.....	068947
Vial holder for 0.5 mL vials.....	068948
Sample tip replacement kit.....	040835
Peak Performance kit (preventative maintenance).....	055647
Cap removal tool.....	068925

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