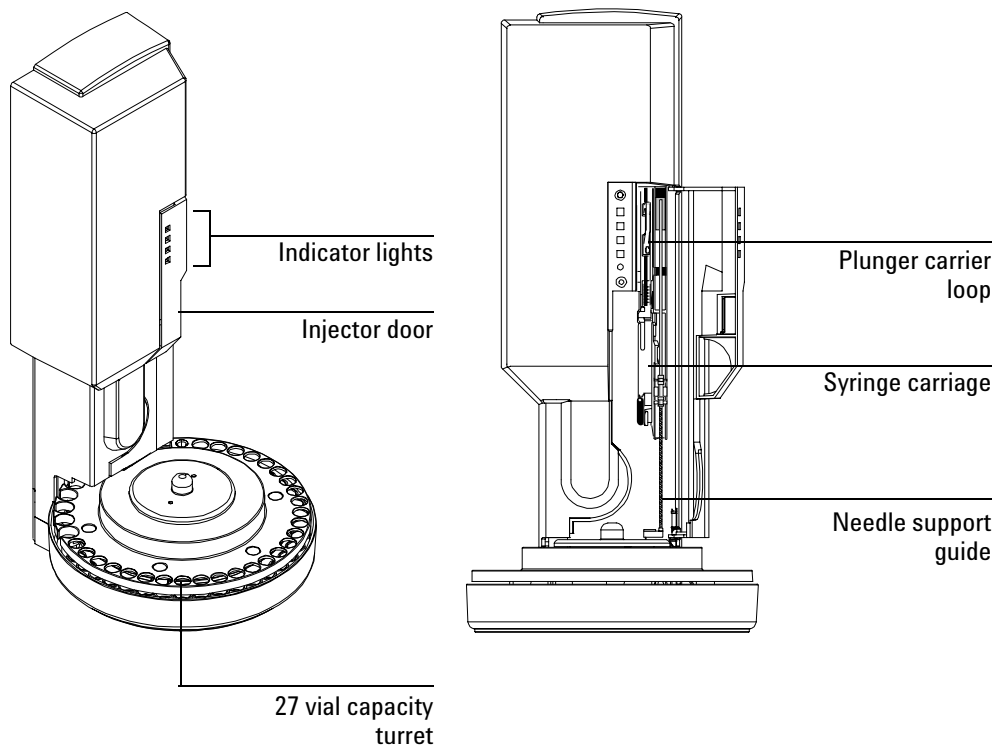




Agilent 6850 Automatic Liquid Sampler G2880

6850 Automatic Liquid Sampler

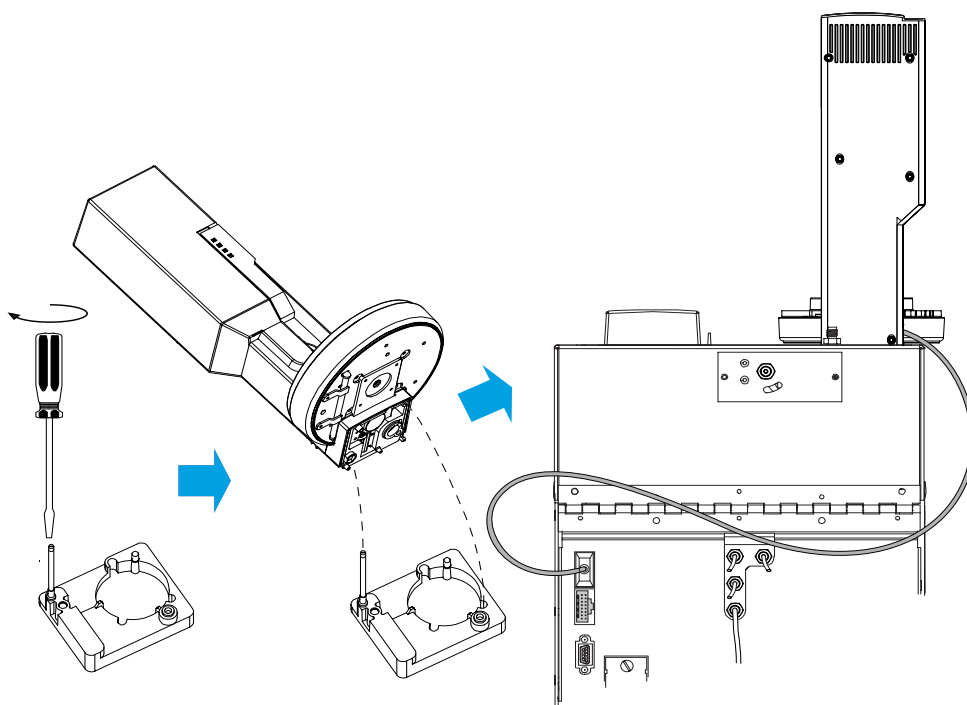
The Agilent Technologies 6850 Automatic Liquid Sampler (ALS) is specifically designed for use with your 6850 Gas Chromatograph (GC). The sampler consists of an injector module with a high sample vial capacity turret. It mounts directly onto your 6850 GC and is controlled by your Agilent G2629A Control Module, Agilent Cerity NDS system, or Agilent ChemStation.

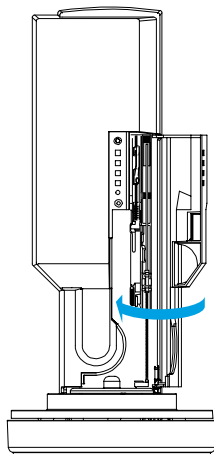
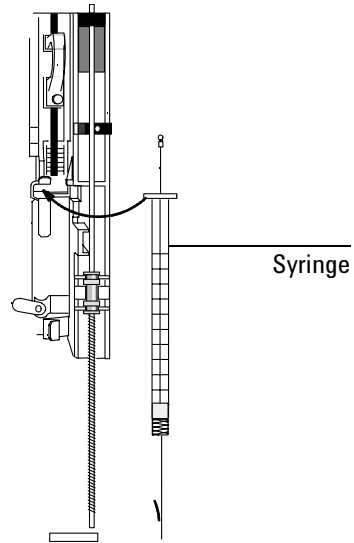
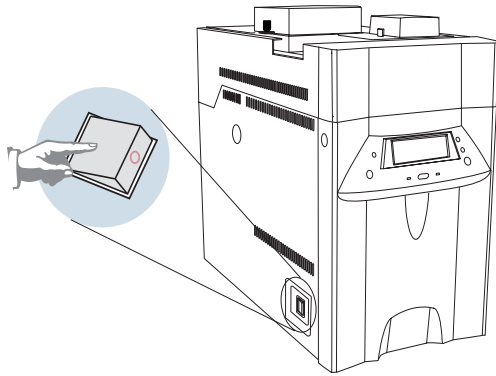


Installation of your Agilent 6850

Requirements

The 6850 ALS requires a 6850 GC with firmware revision A.03.xx or higher. Check the GC serial number next to the on/off switch. If your GC serial number is \geq US00001500, you have the correct firmware installed. If you are unsure, please check it by using a **G2629A Control Module**.





Using your 6850 ALS

6850 ALS Capabilities

Your 6850 ALS comes with a turret that holds up to 27 2-mL sample vials. Also available is an optional turret holding up to 22 4-mL sample vials. With either turret, the 6850 ALS can use up to two bottles each of two solvent types, and uses three bottles for waste collection.

The features and general capabilities of your 6850 ALS are listed in Table 1, along with an explanation of the benefits of each.

Table 1. 6850 Automatic Liquid Sampler Capabilities

General Options		
Syringe size	5, 10, 25, 50, and 100 μ L	
Injection volumes	2%, 10%, 20%, 30%, 40%, or 50% of syringe volume	
Syringe rinse solvents	Solvent A: two 4 mL bottles Solvent B: two 4 mL bottles	

Injection Parameter Control		
Parameter	Range	Benefits
Variable sampling depth	-2 to +30 mm above default position	Accesses very small sample volumes Accesses a specific layer in a two-phase sample Avoids aspirating sample particulates
Pre-injection syringe rinsing and post-injection syringe rinsing	0-15 rinses using solvent A and/or solvent B	Minimizes sample carryover A pre-injection rinse wets the syringe without consuming sample
Sample prewashes	0-15 prewashes	An additional way to minimize sample carryover

Injection Parameter Control

Parameter	Range	Benefits
Viscosity delay, top of plunger stroke	0–7 seconds	Improves sampling accuracy of viscous samples
Pre-injection sample pumps	0–15 pumps	Ensures accurate and reproducible sample volume Removes bubbles
Minimum sample injection volume (single injection)	0.1 μL (5- μL syringe)	Prevents overloading the column when using concentrated samples, on-column injections, or small-diameter columns
Maximum sample injection volume	50 μL (100- μL syringe)	Supports ambient headspace analysis using gas-tight syringe
Injection plunger speed	Fast/Slow	Fast plunger minimizes needle discrimination (see injection flow in vaporizing inlets rate table) Slow plunger mimics manual techniques
Pre-injection dwell time	0–1 minute	Automatically fills needle with 1 μL of air after sampling Automates “hot needle” injection technique
Post-injection dwell time	0–1 minute	Mimics manual injection
Injections per vial	1–99 injections	For replicating sample analysis

Injection Flow Rates

Syringe Size (μL)	Plunger Parameter ($\mu\text{L}/\text{min}$)	
	Fast	Slow
5	3,000	150
10	6,000	300
25	15,000	750
50	30,000	1,500
100	60,000	3,000

The sample turret

Sample vials

The sample turret contains positions for 27 2-mL vials. The optional 4-mL sample vial turret has a capacity of 22 vials. See Figure 2. When used with Agilent Cerity NDS or ChemStation control software, the sample vials can be analyzed in random order. If controlled using a G2629A Control Module, you must load your sample vials in the order you want them run.

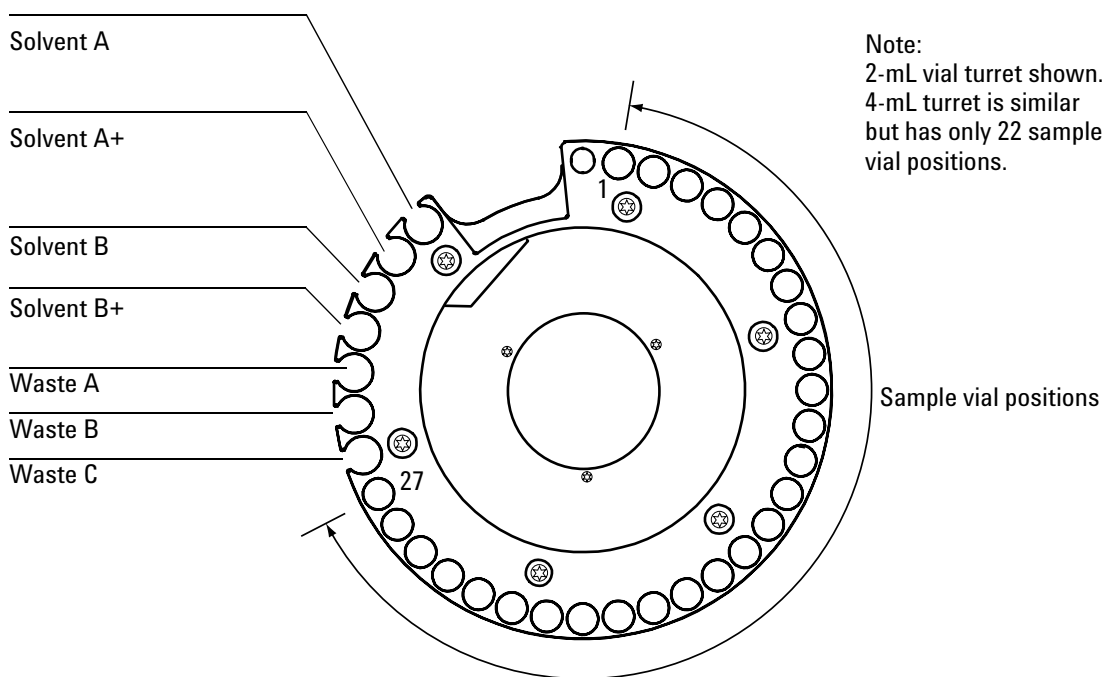


Figure 2. The 6850 ALS turret (2-mL version shown)

Solvent and waste bottle usage

When a syringe is washed (both pre- and post-injection washes), it is filled to 80% of its full volume and then emptied into a waste bottle. Sufficient solvent must be available for the washes, and waste bottles must be present to receive the used solvent.

With either turret type, you can use one, two or four solvent bottles for pre- and post-injection rinses. The choice depends on whether you want to use different solvents for the two kinds of wash and on the amount of solvent needed for the samples you intend to run.

Bottle	Use
Solvent A	Can be the only solvent bottle if usage is less than 2 mL. Either Solvent A or Solvent B must be present.
Solvent A+	Additional Solvent A when usage exceeds 2 mL.
Solvent B	Can be the only solvent bottle if usage is less than 2 mL. Either Solvent A or Solvent B must be present
Solvent B+	Additional Solvent B when usage exceeds 2 mL.
Waste A	Empty. Receives waste from Solvent A and A+ washes. Required if Solvent A is used.
Waste B	Empty. Receives waste from Solvent B and B+ washes. Required if Solvent B is used.
Waste C	Empty. Receives waste from sample washes. Always required.

How many bottles do I need?

Bottles	When to use
0	You are not using pre- or post-injection washes
1	Your solvent need is less than 2 mL and You want to use the same solvent for both pre- and post-injection washes
2	Your solvent need is between 2 mL and 4 mL or You want to use different solvents for the pre- and post-injection washes
4	Your solvent need exceeds 4 mL

What does my solvent need?

See the *Sampling Techniques* section on your 6850 GC User Information CD-ROM for information on how to estimate the number of samples you can run using 2 mL of a solvent.

Good laboratory practice suggests that to reduce the possibility of contamination, only half the solvent in the 4-mL bottle be used. The injector will not access the last 2 mL in the bottle.

Solvent levels should always be maintained above the "min solvent level" marked on the solvent bottles.

Filling the turret for use

1. Load all samples to be run into the turret. Make sure that you place them in the turret positions that correspond to the sequence (Control Module or ChemStation control) or Work List (Cerity control). The vial positions are labeled.
2. Load clean, empty waste bottles into the appropriate waste locations. Always load a bottle in the Waste C location.
3. Load your solvent bottles into the solvent locations as needed.

