

# easySpiral Dilute<sup>®</sup>

The world's first automatic diluter & plater

A revolution  
in serial dilutions!



interscience

## Our quality for your lab

- Designer and manufacturer for microbiology
- R&D leadership for innovative and reliable products
- Worldwide distribution network in more than 80 countries
- Made in France



interscience  
R&D center and manufacturing plant  
Mourjou FRANCE

## Spiral<sup>®</sup> method: 35 years experience

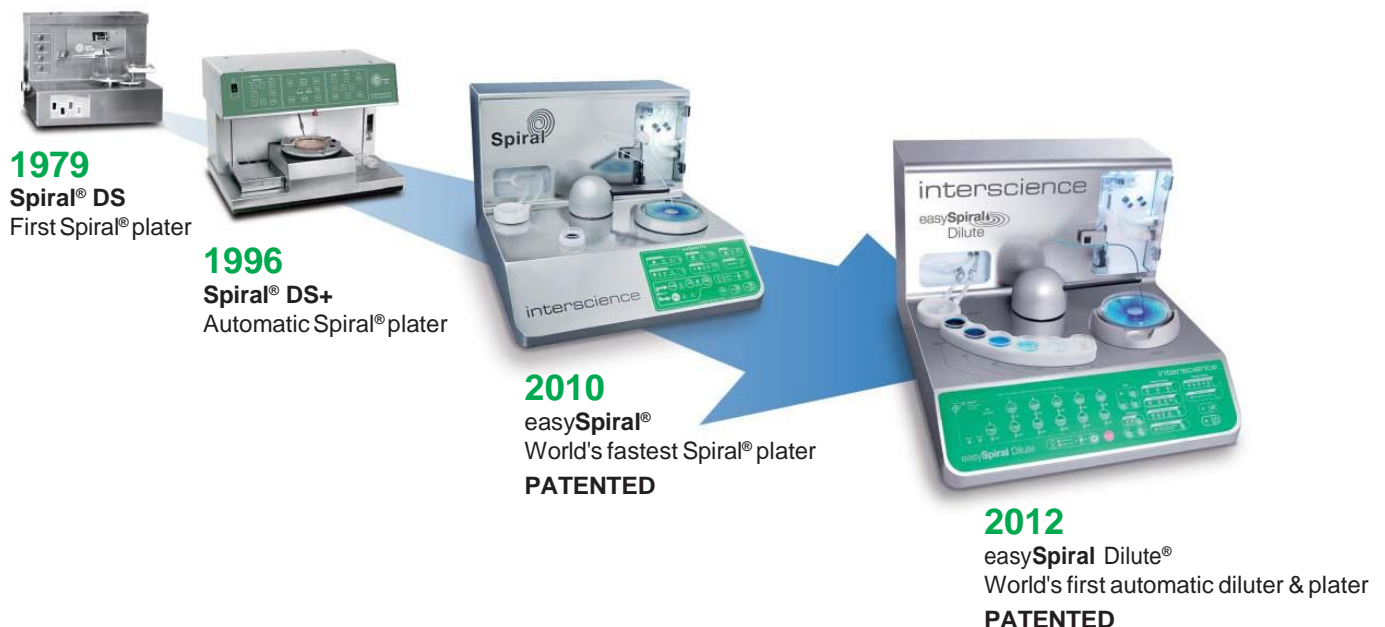
The Spiral<sup>®</sup> method was designed in 1973 to automate the routine work of bacterial enumeration by Dr. Ed Campbell, researcher at the FDA (Food & Drug Administration). With François Jalenques, friend and founder of interscience, they patented an updated method in 1992.

Since then Spiral<sup>®</sup> automatic platers have been a reference for applications in food microbiology, medical bacteriology, research on food preservatives or cosmetological factors in compliance with the AFNOR V08-100 and ISO 7218 standards.

Today interscience is proud to launch the 4<sup>th</sup> generation of Spiral<sup>®</sup> platers with easySpiral Dilute<sup>®</sup>: the world's first automatic diluter & plater.

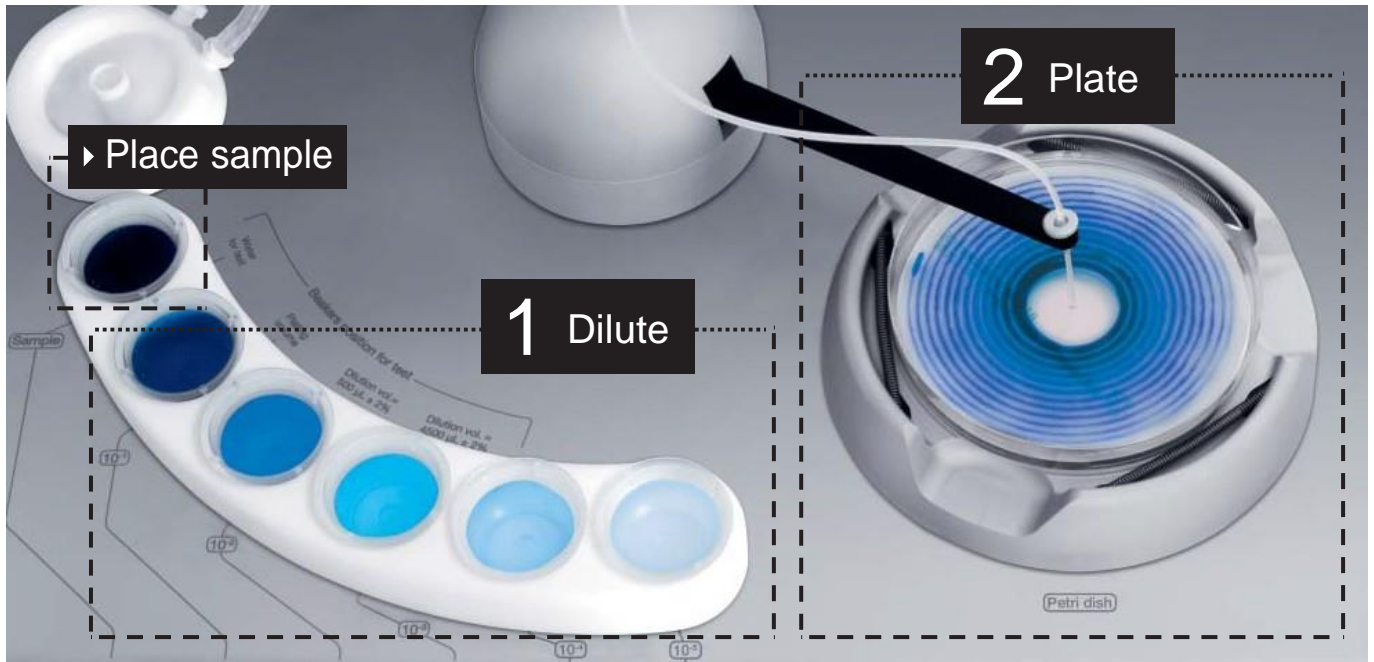


F. Jalenques & Dr. Ed Campbell



**interscience** is proud to introduce easySpiral Dilute®, a 2-in-1 automatic diluter and plater, which allows you to do **5 x 1/10<sup>th</sup> serial dilutions**. It will then automatically plate on 1 single Petri dish, with a countable range of **30 to 1 trillion countable CFU/mL**.

As a result, for a sample with 30 to 1 x 10<sup>12</sup> bacteria, no more manual dilutions and plating is automatic!



- ▶ Place your sample in the beaker
- 1. The easySpiral Dilute® will automatically dilute the sample up to 5 times
- 2. The easySpiral Dilute® will automatically plate the sample on a Petri dish up to 1 trillion countable CFU/mL

## Why use an automatic diluter & plater?

easySpiral Dilute® allows you to **save 50 % on consumables and 50% on your time.**

Comparison between manual and automatic method below.

Example of 50 samples: Dilution: 10<sup>-7</sup>

Plating: 10<sup>-5</sup>, 10<sup>-6</sup> and 10<sup>-7</sup>

**Manual method**

**CONSUMABLES**

Dilution

- 400 tubes
- 350 pipet tips

Plating

- 450 Petri dishes

**TIME** **10h10**

**Automatic method**

**CONSUMABLES**

Dilution

- 350 beakers

Plating

- 150 Petri dishes

**TIME** **5h50**

# Key features

## Compact

38 cm wide, can be used inside and outside a laminar flow  
Stainless steel housing

## High precision glass syringe

Typical accuracy of 0.5 %  
4x more precise than a basic pipet  
No more pipet calibration

## High speed automation

Fast rotating arm  
1 disinfection, 5 dilutions and 1 plating  $10^{-5}$  in 2 min. 13 sec.  
**PATENTED**



## Automatic disinfection

Overflow technology cleaning system  
No cross contamination  
**PATENTED**

## One-touch plating

Choose from 4 plating modes  
Plate on 55, 90 and 150 mm Petri dishes

## Easy serial dilutions

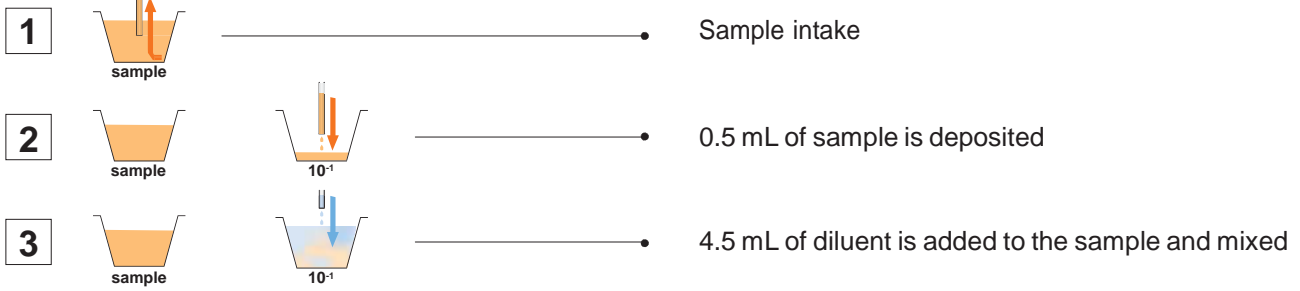
Choose your dilution factor  
No more 9 mL tube preparation  
Do  $10^{-5}$  dilution or more automatically  
**PATENTED**

## High capacity

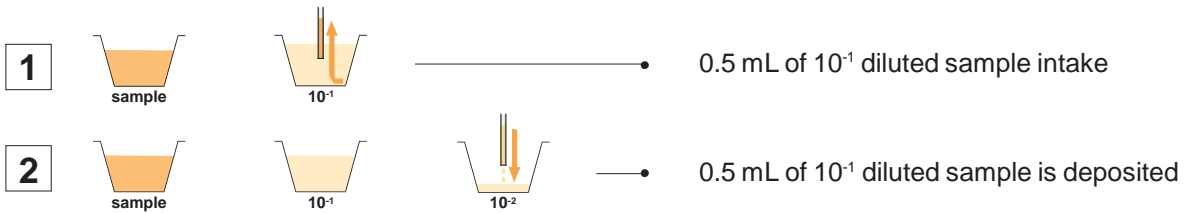
2 fully autoclavable bottles  
(disinfectant & diluent) and connectors

# How does it work?

## 1. Dilution cycle



The above dilution cycle is repeated for the next serial dilution.



Dilution cycle can be repeated as many times as you wish.

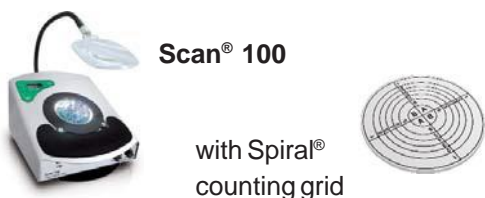
## 2. Plating cycle

	Constant mode	Exponential mode	Circle mode	Pour mode
	Homogenous surface deposition From 10 $\mu$ L to 1000 $\mu$ L	Decreasing concentration From 10 $\mu$ L to 1000 $\mu$ L	3 dilutions on 1 Petri dish 10 $\mu$ L inner circle, 16 $\mu$ L middle circle and 25 $\mu$ L outer circle	Homogenous deposition* From 10 $\mu$ L to 1000 $\mu$ L
Examples:				
Before incubation				
	Homogenous surface deposition	+ concentrated - concentrated	$10^{-1}$ $10^{-2}$ $10^{-3}$	Homogenous deposition in pour plate mode*
After incubation				
	Easy colony counting: No colonies on the edge of the dish	30 à $1.10^7$ CFU/mL on 1 dish	Savings on Petri dishes	Easy colony counting for invasive colonies. Pharmacopoeia compliant

\* In pour mode, easySpiral Dilute® deposits one sample drop at the bottom of an empty Petri dish. Then, the user adds the molten agar on top and homogenizes it with the sample.

# How to count?

## Manual colony counting

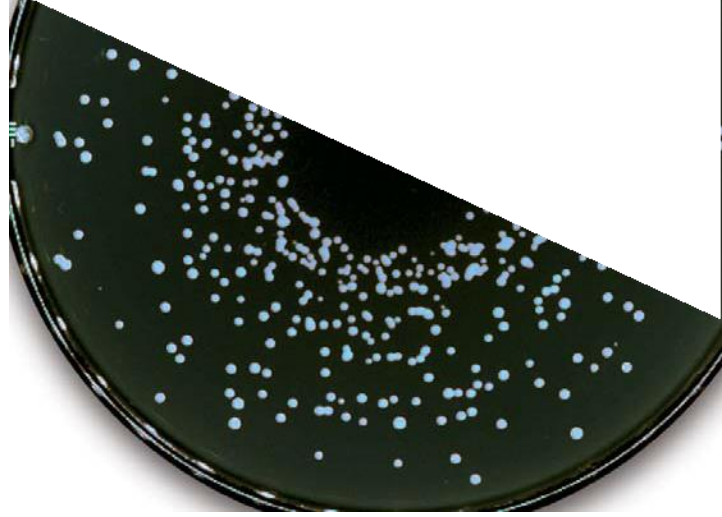


or

## Automatic colony counting



# Questions



## What is special about the easySpiral Dilute®?

easySpiral Dilute® is the only 2-in-1 equipment on the market making automatic serial dilutions and standardized plating.

## The accuracy of easySpiral Dilute® is high: 0.5%. How can I check it?

It is easy and automatic.

Test of the deposited volume during plating:  
Press on the plating volume test button. This function will fill a previously weighed beaker with 500 µL. Weigh the distributed volume to check the results.

Test of the volume of the dilutions:  
Press on the dilution volumes test button. This function will fill 2 previously weighed beakers: one with 0.5 mL and the 2<sup>nd</sup> one with 4.5 mL. Weigh the distributed volumes to check the results.

## Which diluents can I use?

easySpiral Dilute® works with saline solutions (e.g.: Ringer's solution, physiological saline).

Avoid using diluents with nutrients as they may cause contaminations. Bacteria only remain a few seconds in the beakers before being deposited on the Petri dish so using a saline diluent has no effect on the final enumeration.

It is however possible to use nutrient solutions as diluent in the semi-automatic "My Diluent" mode. In that case, fill in the beakers with 4.5 mL diluent before processing.

## I usually dilute 1 mL to 1/10 and the easySpiral Dilute® uses 0.5 mL to 1/10. Is easySpiral Dilute® as precise with a volume divided by 2?

Usually the average accuracy for the 9 mL tubes filling and 1 mL pipetting is 2% with the need to calibrate and regularly check the pipets you are using.

easySpiral Dilute® has an average accuracy of 0.5% on 0.5 mL and 4.5 mL volumes because it works with a high precision Hamilton™ glass syringe in a liquid displacement circuit.

With volumes divided by 2, precision and repeatability are then much higher!

## I need to make a 10<sup>-7</sup> dilution. How can I do it?

The easySpiral Dilute® can do as many dilutions as you wish.

Do a 10<sup>-5</sup> dilution, take the last beaker and place it as the mother sample and then proceed with a new automatic dilution sequence.

# Accessories & technical specifications



## Housing protection

Transparent housing for working outside laminar flow

Ref 413 001

## Beakers DB 50

1 000 sterile beakers for Spiral® platers (5 mL)

Ref 415 100

## Barcode reader

barcode reader for traceability

Ref 522 000

## 2 L bottle

2 L GL45 glass bottle

Ref 413 002

easySpiral Dilute® is delivered with 1 000 sterile beakers, 1 blue dye for tests, 1 detergent liquid, 3 sets of GL 45 bottle connectors, Petri dish ring: 55, 90 mm & 150 mm, Spiral® counting grids: 90 mm & 150 mm, circle mode counting grids: 90 mm & 150 mm, power cord, user's manual, monitoring CD-ROM software, USB cable.

	easySpiral Dilute®
<b>Reference</b>	<b>414 000</b>
Petri dish diameter	55 mm, 90 mm and 150 mm
Syringe capacity	1 000 µL
Programmable dispensed volume (via USB)	from 10 µL to 1 000 µL
Preset dispensed volume	50 µL, 100 µL and 200 µL
Detection in CFU/mL of Spiral® plating	30 to 1 trillion CFU/mL
Plating modes	55 mm: constant, pour plate 90 mm: exponential (10 <sup>-5</sup> ), constant, circle (3 dilutions), pour plate 150 mm: exponential (10 <sup>-7</sup> ), constant, circle (6 dilutions), pour plate
Number of dilutions at 1/10 <sup>th</sup> for 1 cycle	5
1 disinfection + 5 dilutions + 1 plating 10 <sup>-5</sup>	2 min. 13 sec.
1 disinfection + 5 dilutions + 6 plating of each dilution	4 min. 4 sec.
Disinfectant autonomy	1000 (with 2 L bottles)
Diluent autonomy	63 cycles (with 2 L bottles)
Circle mode (patented)	3 dilutions on a 90 mm Petri dish 6 dilutions on a 150 mm Petri dish
Stylus disinfection system (patented)	inside and outside by Overflow technology
Pressure in the stylus	8 bars
Successive plating capacity with the same sample	Up to 20 Petri dishes (50 µL)
Traceability	excel™, Data Matrix labels
Monthly cleaning program	<input checked="" type="checkbox"/>
Filling time programmable via USB	<input checked="" type="checkbox"/>
My Diluent key	<input checked="" type="checkbox"/>
Sample mixing before dilution/plating	<input checked="" type="checkbox"/>
Controlled by microprocessor	<input checked="" type="checkbox"/>
Dimensions (w x d x h)	39 x 42 x 29 cm
Weight	15.6 kg
Power supply	100-240 V~ / 50 Hz to 60 Hz
Power	65 W
1 year guarantee (after registration)	<input checked="" type="checkbox"/>
All stainless steel	<input checked="" type="checkbox"/>
Made in France	<input checked="" type="checkbox"/>





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