

# easySpiral Dilute<sup>®</sup>

The world's first automatic diluter & plater

A revolution  
in serial dilutions!



ambifood<sup>®</sup>

# 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 90 countries
- Made in France



interscience  
R&D center and manufacturing plant  
Mourjou FRANCE

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

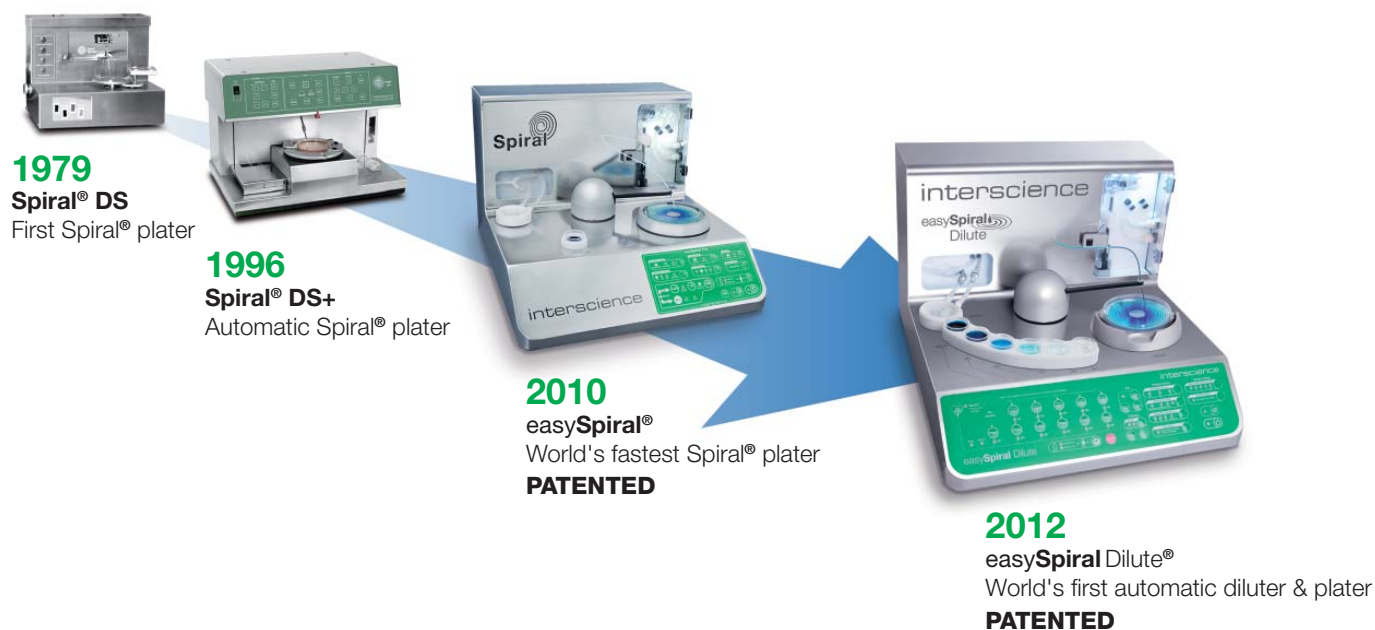
The Spiral<sup>®</sup> method was designed in 1973 to automate the routine work of bacterial enumeration by Dr. Ed Campbell, researcher at the FDA (Food & Drug Administration). With François Jalenques, friend and founder of interscience, they patented an updated method in 1992.

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 NF V08-050, NF V08-034, ISO 7218, ISO 4833-2, ISO 15189, FDA BAM and AOAC 977.27 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.

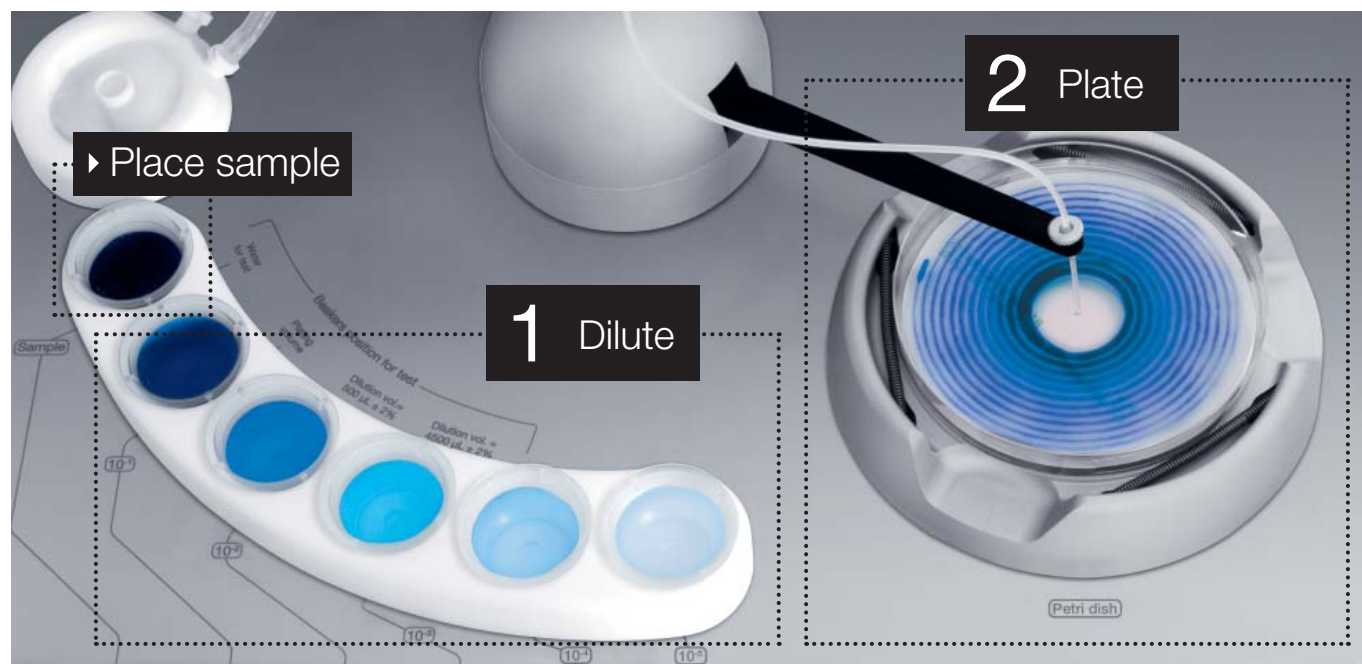


F. Jalenques & Dr. Ed Campbell



interscience is proud to introduce easy**Spiral** 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 from **30 to 1 x 10<sup>12</sup> countable CFU/mL**.

**No more manual dilutions and plating is automatic!**



► Place your sample in the beaker

1. The easy**Spiral** Dilute® will automatically dilute the sample up to 5 times

2. The easy**Spiral** Dilute® will automatically plate the sample on a Petri dish up to 1 x 10<sup>12</sup> countable CFU/mL

## Why use an automatic diluter & plater?

easy**Spiral** 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	Automatic method
<b>CONSUMABLES</b> Dilution • 400 tubes • 350 pipet tips Plating • 450 Petri dishes <b>TIME</b> <b>10h10</b>	<b>CONSUMABLES</b> Dilution • 350 beakers Plating • 150 Petri dishes <b>TIME</b> <b>5h50</b>



# Key features

## Compact

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

## High precision

Glass syringe typical accuracy of 0.5 %  
No more pipet calibration

## High speed automation

Fast rotating arm  
1 disinfection, 5 dilutions and 1 plating in 134 s  
**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

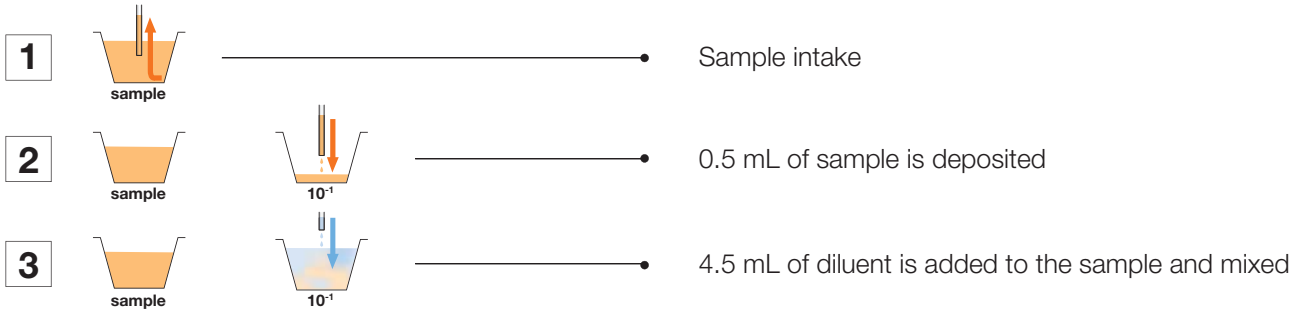
Choose your dilution factor  
Do  $10^{-5}$  dilution or more automatically  
No more 9 mL tube preparation  
**PATENTED**

## Cleaning autonomy

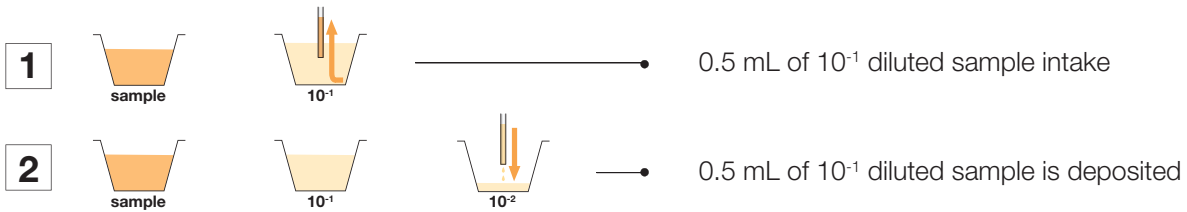
2 fully autoclavable bottles  
(disinfectant & diluent) and connectors

# How does it work?

## 1. Dilution cycle

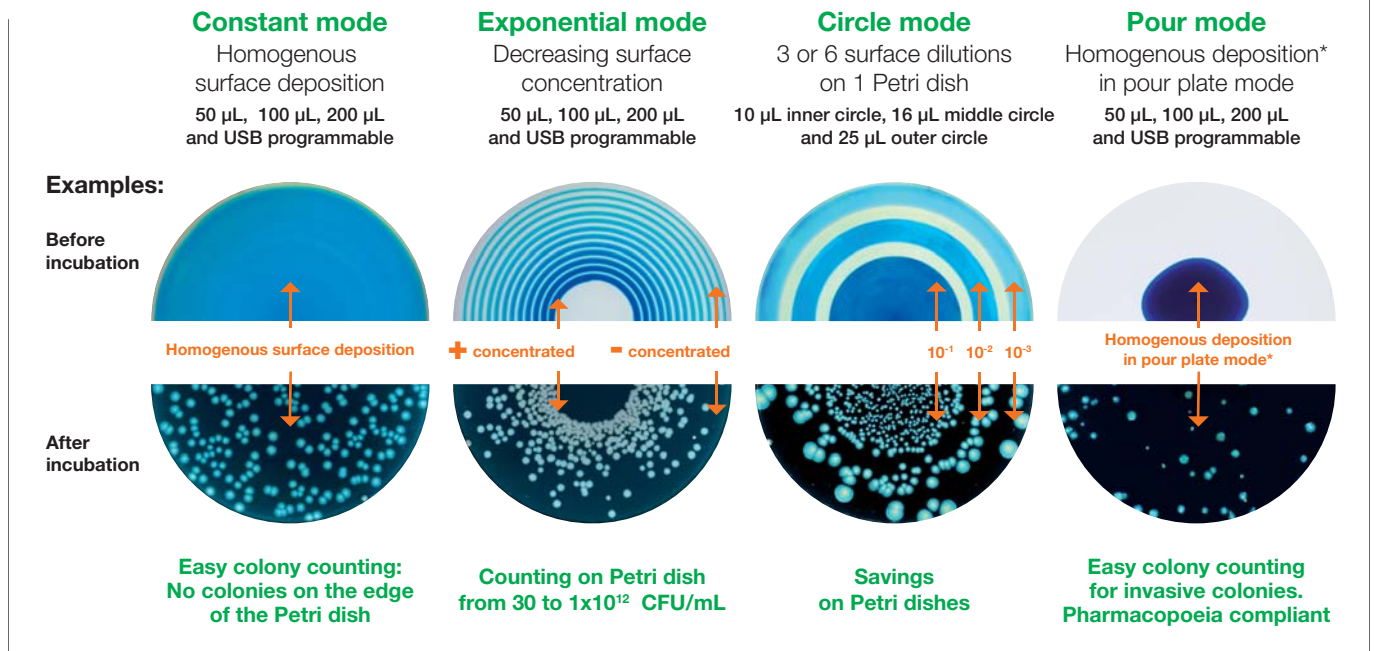


The above dilution cycle is repeated for the next serial dilution.



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

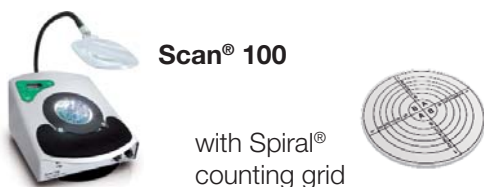
## 2. Plating cycle



\* 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.

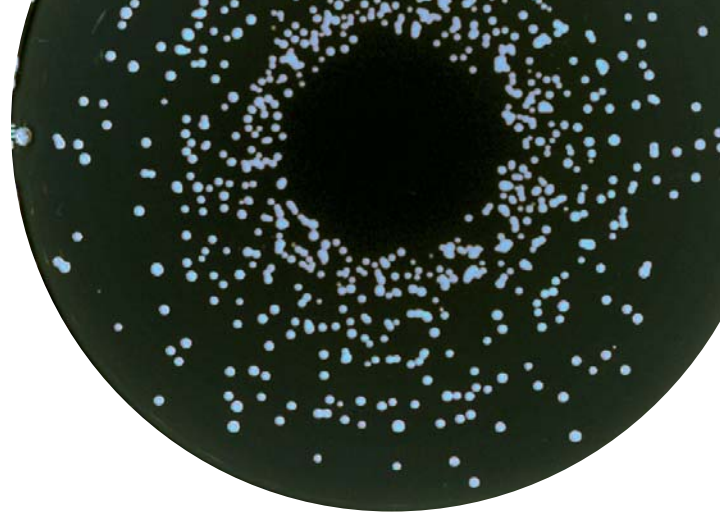
easySpiral Dilute® has an average accuracy of 0.5% on 0.5 mL and 4.5 mL volumes because it works with a high precision Hamilton™ glass syringe in a liquid displacement circuit.

**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**



## dataLink™

Traceability system

**Ref. 410 100**



## DB50 Beakers

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

**Ref. 415 100**



## Barcode reader

Barcode reader for traceability

**Ref. 522 000**

easySpiral Dilute® is delivered with 1 000 DB50 beakers, 1 blue dye for tests, 1 EnzyClear® liquid detergent, 1 syringe, 2 filters, 1 stylus, 4 connection kit for GL 45 bottle, 1 double connection kit for GL 45 bottle, Petri dish rings: 55, 90 & 150 mm, Spiral® counting grids: 90 & 150 mm, circle counting grids: 90 & 150 mm, power cord, user's manual, monitoring CD-ROM software, USB cable.

Reference	easySpiral Dilute®
	<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
Counting range	from 30 to 1x10 <sup>12</sup> 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 of 1 dilution	134 s
1 disinfection + 5 dilutions + 1 plating of each dilution	234 s
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	jusqu'à 8 bars
Successive plating capacity with the same sample	up to 20 Petri dishes (50 µL)
Traceability	excel™, datamatrix labels
Disinfection process	✓
Filling time and volume programmable via USB	✓
My Diluent key	✓
Sample mixing before dilution/plating	✓
Controlled by microprocessor	✓
Dimensions (w x d x h)	40 x 41.5 x 29 cm
Weight	16.4 kg
Power supply	100-240 V~ / 50 Hz to 60 Hz
Power	65 W
1 year guarantee (after registration)	✓
All stainless steel	✓
Made in France	✓





Rua Dominguez Alvarez, 44, 4.16 . 4150-801 Porto . Portugal  
+ 351 229 962 069 . geral@ambifood.com . www.ambifood.com

