easy**Spiral** Dilute®

The world's first automatic diluter & plater

A revolution
in serial dilutions!

interscience

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 130 countries

- Made in France

interscience
R&D center and manufacturing plant
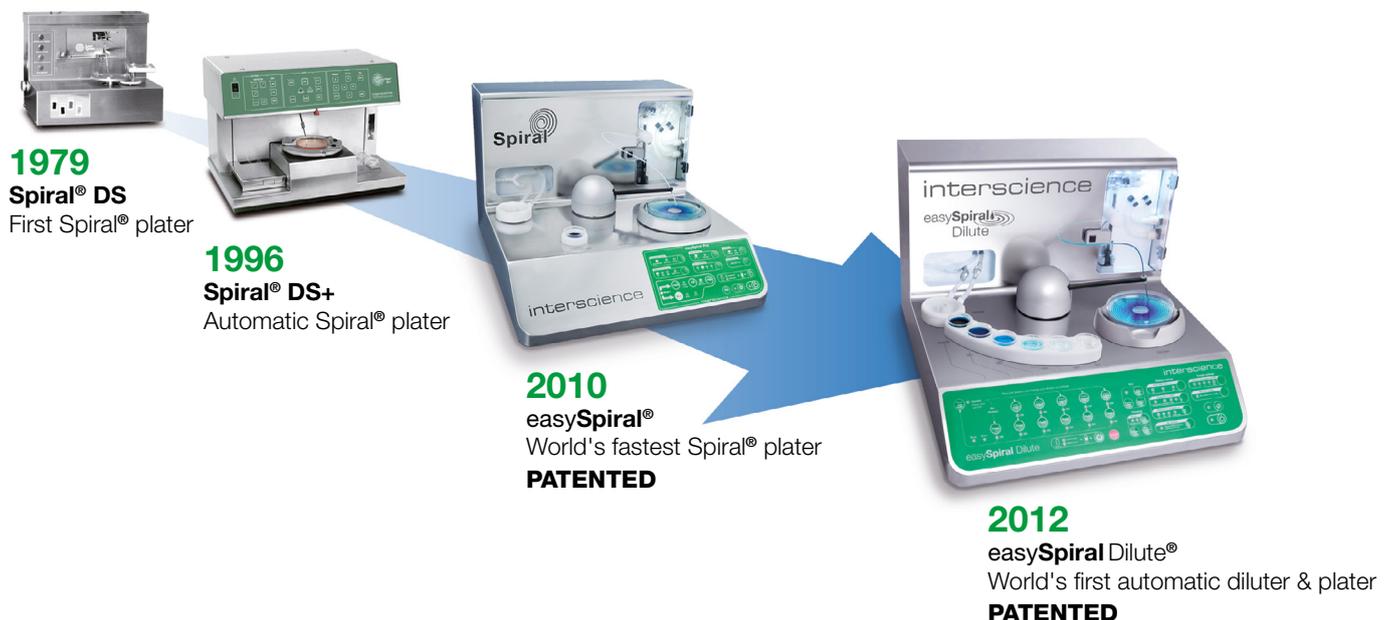Mourjou FRANCE

Spiral® method: 35 years experience

The Spiral® 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® automatic platers have been a reference for applications in food microbiology, medical bacteriology, research on food preservatives or cosmetological factors in compliance with the, ISO 7218, ISO 4833-2, FDA BAM and AOAC 977.27 standards.

Today interscience is proud to launch the 4th generation of Spiral® platers with easy**Spiral** Dilute®: the world's first automatic diluter & plater.

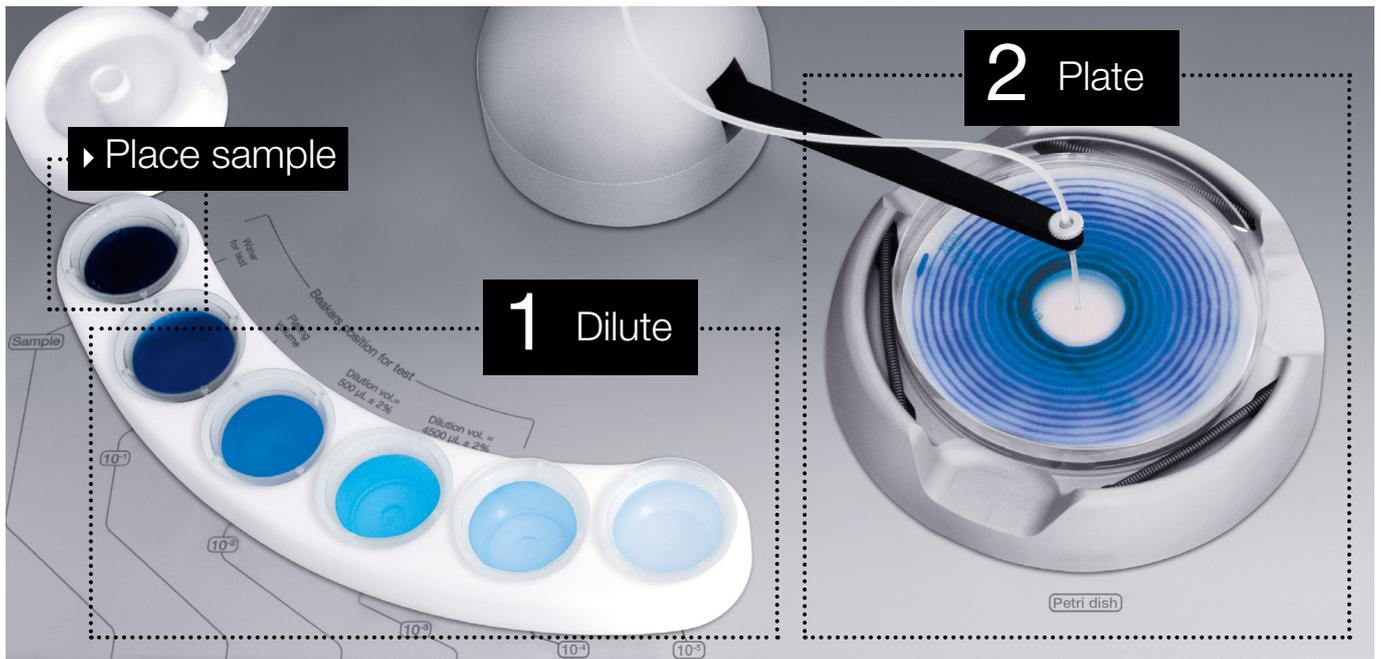F. Jalenques & Dr. Ed Campbell

1979
Spiral® DS
First Spiral® plater

1996
Spiral® DS+
Automatic Spiral® plater

2010
easySpiral®
World's fastest Spiral® plater
PATENTED

2012
easy**Spiral** Dilute®
World's first automatic diluter & plater
PATENTED

interscience is proud to introduce easy**Spiral** Dilute®, a **2-in-1 automatic diluter and plater**, which allows you to do **5 x 1/10th serial dilutions**. It will then automatically plate on 1 single Petri dish, with a countable range from **30 to 1 x 10^{12} 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^{12} 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^{-7}
Plating: 10^{-5}, 10^{-6} and 10^{-7}

⊖ 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

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
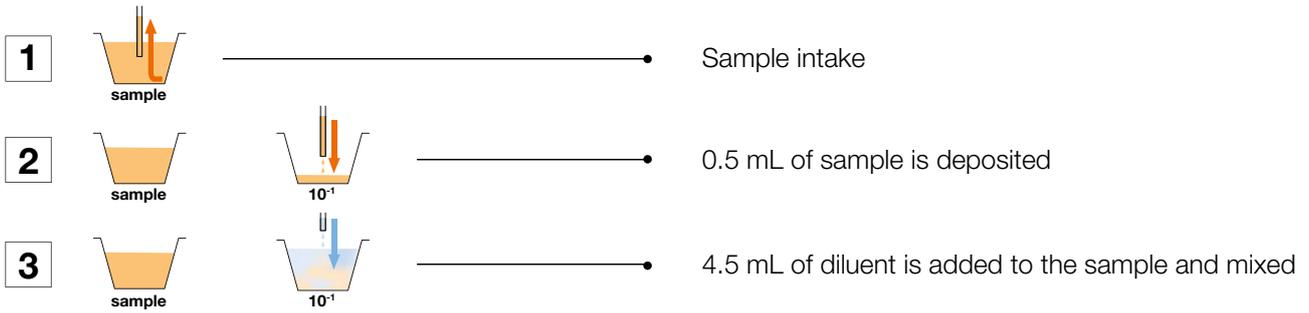Plate on 55, 90 and 150 mm Petri dishes

Easy serial dilutions

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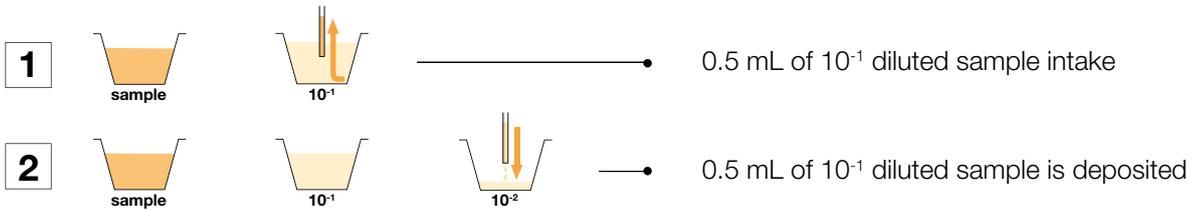No more 9 mL tube preparation
PATENTED

Cleaning autonomy

2 fully autoclavable bottles
(disinfectant & diluent) and connectors

How does it work?

1. Dilution cycle

1 sample — Sample intake

2 sample / 10^{-1} — 0.5 mL of sample is deposited

3 sample / 10^{-1} — 4.5 mL of diluent is added to the sample and mixed

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

1 sample / 10^{-1} — 0.5 mL of 10^{-1} diluted sample intake

2 sample / 10^{-1} / 10^{-2} — 0.5 mL of 10^{-1} diluted sample is deposited

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	Decreasing surface concentration	3 or 6 surface dilutions on 1 Petri dish	Homogenous deposition* in pour plate mode
50 µL, 100 µL, 200 µL and USB programmable	50 µL, 100 µL, 200 µL and USB programmable	10 µL inner circle, 16 µL middle circle and 25 µL outer circle	50 µL, 100 µL, 200 µL and USB programmable

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 Petri dish** | **Counting on Petri dish from 30 to 1×10^{12} CFU/mL** | **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.
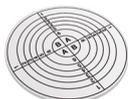
How to count?

Manual colony counting
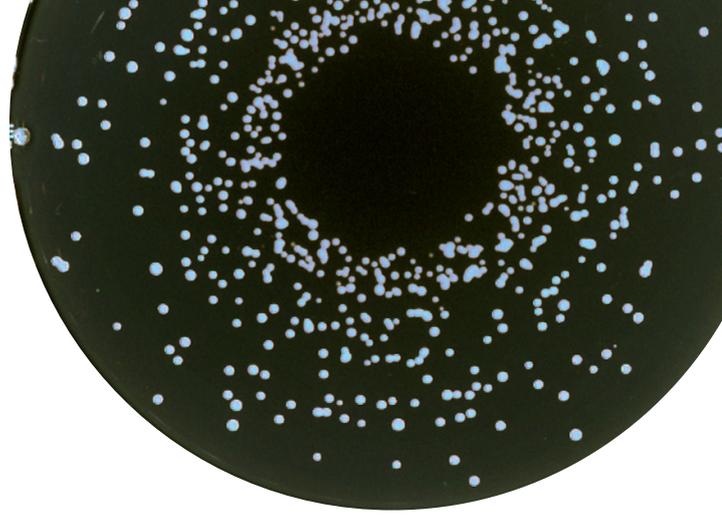
Scan® 100

with Spiral® counting grid

or

Automatic colony counting

Scan® 300
Scan® 500
Scan® 1200
Scan® 4000

Questions

What is special about the easy**Spiral** Dilute®?

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

The accuracy of easy**Spiral** 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 2nd one with 4.5 mL. Weigh the distributed volumes to check the results.

I usually dilute 1 mL to 1/10 and the easy**Spiral** Dilute® uses 0.5 mL to 1/10. Is easy**Spiral** 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.

easy**Spiral** 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!

Which diluents can I use?

easy**Spiral** 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 need to make a 10^{-7} dilution. How can I do it?

The easy Spiral** Dilute® can do as many dilutions as you wish.**

Do a 10^{-5} 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™

Petri dish labeling solution

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

easy**Spiral** Dilute® is delivered with 1 plateau pour boites de Petri Ø 90 mm (monté par défaut sur l'appareil), 1 flacon de colorant bleu, 1 seringue avec tube silicone, 1 plateau pour boites de Petri (60-70 mm), 1 plateau pour boites de Petri Ø 150 mm, 1 grille de comptage Spiral pour boite de Petri Ø 90 mm, 1 grille de comptage Spiral pour boite de Petri Ø 150 mm, 1 grille de comptage cercle pour boite de Petri Ø 90 mm, 1 grille de comptage cercle pour boite de Petri Ø 150 mm, 1 lot de 2 filtres, 1 logiciel de supervision, 1 câble USB A/B, 1 000 godets DB50, 1 pot de détergent EnzyClear, 4 kits de raccordement pour bouteille GL45, 1 kit de raccordement double sortie pour bouteille GL45, 1 stylet, 1 câble d'alimentation, 1 manuel d'utilisation, 1 notice simplifiée EnzyClear, 1 certificat de conformité/carte de garantie

		easy**Spiral** Dilute®
	Reference	**414 000**
OVERVIEW	Controlled by a microprocessor	✓
	All stainless steel	✓
	Disinfection process	✓
	Filling time and volume programmable via USB	✓
	Sampling from beakers (DB50)	✓
	My diluent key	✓
	Sample mixing before dilution/plating	✓
SPECIFICATIONS	Number of dilutions at 1/10th for 1 cycle	5
	Syringe capacity	1000 µL
	Preset dispensed volumes	50 µL, 100 µL and 200 µL
	Counting range	30 CFU/mL to 1x10^{12} CFU/mL
	Time for 1 sample intake + 1 disinfection + 1 plating	25 s
	Time for 1 disinfection + 5 dilutions + 1 plating of 1 dilution	134 s
	Time for 1 disinfection + 5 dilutions + 1 plating of each dilution	234 s
	Pressure in the stylus	Up to 8 bars
	Autonomy in disinfection (in normal mode)	1000 cycles (2 L bottles)
	Autonomy in diluents	63 cycles (2 L bottles)
	Approved diluents	Saline water, Ringer solution
	Successive plating capacity with the same sample	Up to 20 Petri dishes (50 µL)
	Exponential plating mode (Spiral mode): Petri dish diameters Ø available	90 mm and 150 mm
	Circle plating mode: Petri dish diameters Ø available	3 dilutions on a 90 mm and 6 dilutions on a 150 mm
	Constant plating mode: Petri dish diameters Ø available	55 mm, 90 mm and 150 mm
	Pour plating mode: Petri dish diameters Ø available	55 mm, 90 mm and 150 mm
	Programmable dispensed volume (via USB)	10 µL to 1000 µL
	Voltage - Frequencies	100-240 V~ 50-60 Hz
	Warranty	1 year
	Spare parts availability	10 years
	In compliance with	ISO 7218, ISO 4833-2, FDA BAM (Bacteriological Analytical Manual) and AOAC 977.27
	Traceability	Excel™, LIMS, dataLink®

ISO 7218 | ISO 4833-2 | FDA BAM Bacteriological Analytical Manual | AOAC 977.27 | WEEE 2002/96/EC | RoHS 2002/95/EC | MADE IN FRANCE | CE

Product made for INTERSCIENCE by Interlab, an ISO 9001 certified company.

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