

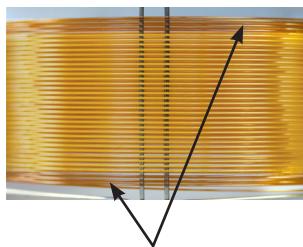
# AGILENT J&W GS-PLOT PT & HP-PLOT PT GC COLUMNS WITH INTEGRATED PARTICLE TRAPS

The Measure of Confidence

## Installation and User Guide

Thank you for purchasing this Agilent J&W PLOT PT column with built-in particle traps. These columns represent the latest innovation from Agilent Technologies, designed to provide you with the same high performance you have come to expect from the leader in capillary PLOT column manufacturing, without the worry of particles fouling the detectors or valves that may be installed in your GC system.

Before proceeding, please take a moment to read and understand the information in this Installation and User Guide.



2 x 2.5 m particle traps indicated by dark colored tubing

### What is different about Agilent J&W PLOT PT columns?

Through our innovative coating technology, your PLOT PT column has a coating of stationary phase between particle traps on both the front and the end of a single length of capillary column. With the inclusion of these built-in particle traps, under normal use\*, you can confidently connect these PLOT columns to backflush valves, heart-cut valves, capillary flow technology (CFT) devices, and any of your GC detectors without concern of stationary phase particles causing valve failures or chromatographic anomalies that you can experience with a standard PLOT column. PLOT PT columns are even suitable for use in GC/MS applications and because they are one continuous length of capillary tubing, there are no unions attaching the particle traps, and therefore are leak-free. The direction of carrier gas flow through the column is unrestricted, so feel free to connect your column "backwards" and do not worry about reverse gas flow applications causing problems with particle spiking or valve damage.

There are some other functional differences that you need to be aware of as you get ready to install your new column and set up your GC system. There are sections on the bottom and the top of the column that will have a different appearance (see photo); these are the particle trap sections of your PLOT PT column. There are approximately 5 coils (ca. 2.5 meters) for each of the particle traps. You may also notice that there appear to be voids or particles inside the column at the interface where the particle trap and the stationary phase coating meet – *this is normal for this type of column*. The column you received has been individually inspected to a visual cosmetic standard and has been individually tested to verify the highest chromatographic performance available in any PLOT column. You need to also be aware that the stated length of the column represents the length of the stationary phase coated section of the column. When your PLOT PT column is new, there will be an additional 5 meters of uncoated column length. So, a 30 m PLOT PT column will have a total length of 35 m. Likewise, a 15 m PLOT PT column will have a total length of 20 m. In either case, the total length will be the value you should apply if your GC has electronic pressure control (EPC) for the carrier gas. The total column length should also be considered when setting the carrier gas average linear velocity.

PLOT PT columns are coated to have the same phase ratio ( $\beta$ ), that is, the same stationary phase film thickness through the coated section of the column, as their standard PLOT column counterpart. This means that your new PLOT PT column will have the same chromatographic characteristics as the standard column of that nominal coated length.

\* See back for footnote.



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## Installing an Agilent J&W PLOT PT column

PLOT columns are highly retentive. Trace amounts of water, oxygen, and light hydrocarbon contaminants in your carrier gas stream can adversely affect chromatography. The use of traps or high quality filters from Agilent's Gas Clean portfolio to eliminate these impurities from your carrier gas line is highly recommended.

- 1 Choose the column orientation best suited for your hardware application and install the PLOT PT column according to the instructions found enclosed in the column box.
- 2 After installing the column into the inlet, set the carrier gas flow rate. Slow pressure ramping is not required for PLOT PT columns. These columns can be brought to pressure as needed due to their unique particle bonding and integrated particle trapping technology.
- 3 Let the carrier gas purge for 3 to 5 minutes before connecting the column to the detector.
- 4 Condition the column per these guidelines:

<b>GS-Alumina PT</b>	200 °C	8 hours
<b>GS-Q PT</b>	250 °C	8-10 hours
<b>HP-PLOT Al<sub>2</sub>O<sub>3</sub> PT</b>	200 °C	8 hours
<b>HP-PLOT Q PT</b>	270 °C	3-6 hours
<b>HP-PLOT U PT</b>	190 °C	3-6 hours

*\*Please note that under extreme conditions of excessive carrier gas pressure, damage to the stationary phase can occur. Under such conditions, it is possible that stationary phase particles may break through the particle traps. This table provides guidelines for the upper maximum flow based on inside diameter.*

0.32 mm PLOT PT	5 mL/minute
0.53 mm PLOT PT	10 mL/minute

## Column maintenance

PLOT columns can become contaminated by water, polar compounds, and/or hydrocarbons in sample or carrier gas streams. When contamination is suspected, bake the column at its conditioning temperature for several hours, or until the baseline is stable.

To maintain the installed column between uses, hold the oven temperature at 100 °C to 150 °C with continuous carrier gas flow. This helps to avoid problems associated with accumulation of water, CO<sub>2</sub>, or other carrier gas impurities.

## Agilent J&W PLOT PT columns

Agilent offers a comprehensive line of PLOT columns for analysis of fixed gases, low molecular weight hydrocarbon isomers, volatile polar compounds, and reactive analytes such as sulfur gases, amines, and hydrides. Many of our PLOT phases are offered in dimensions from 0.25 to 0.53 mm id, allowing for easy column selection for various detector and system requirements. For GC/MS systems, we offer several small diameter columns with truly bonded and immobilized stationary phases, eliminating potential detector fouling due to particle elution.



### Speed up GC column selection with the Agilent J&W GC Column Selection Guide

Make it easier to choose the right GC column for all your applications. Order your free copy at [www.agilent.com/chem/getguides](http://www.agilent.com/chem/getguides)

This information is subject to change without notice.

