

- Protection for columns from 1.0 - 30mm i.d.
- No loss in column performance or selectivity
- Significantly extends column lifetime
- Packed with the same high performance silica used in main column
- Stand alone or integral design
- Tested to ensure consistent high level performance
- Readily disposable and cost effective

Introduction

Guard cartridges are designed to protect valuable analytical and preparative HPLC columns from contamination with impurity particles and irreversibly adsorbed solutes. By placing a guard cartridge between the column and the injector valve, contaminants which would otherwise damage the column are trapped on the disposable cartridge. This procedure significantly extends column lifetime without affecting performance or selectivity (see Figure 1). Without column protection, column fouling can lead to increased back pressure and peak splitting and/or severe peak tailing.

Silica

It is recommended that guard cartridges are packed with the same silica and bonded phase as used in the HPLC column to be protected (this eliminates the possibility of any loss of performance or selectivity). All Hichrom cartridges conform to this requirement. As Hichrom is able to supply cartridges packed with any commercially available silica, virtually all analytical and preparative columns can be suitably protected.

Guard Cartridge Holder System

For traditional analytical columns (with compression end fittings) a fingertight column coupler (HI-081) is required to connect the stand alone holder (HI-161) to the column (see Figure 2). Similar arrangements are available for semi-preparative (7.75 - 21.2mm i.d.) and preparative (30mm i.d.) columns, as detailed on the following page.

Guard Cartridge Replacement

It is generally recommended that for effective column protection, guard cartridges should be replaced when the column back pressure increases by 10% or column efficiency or resolution decreases by 10%.

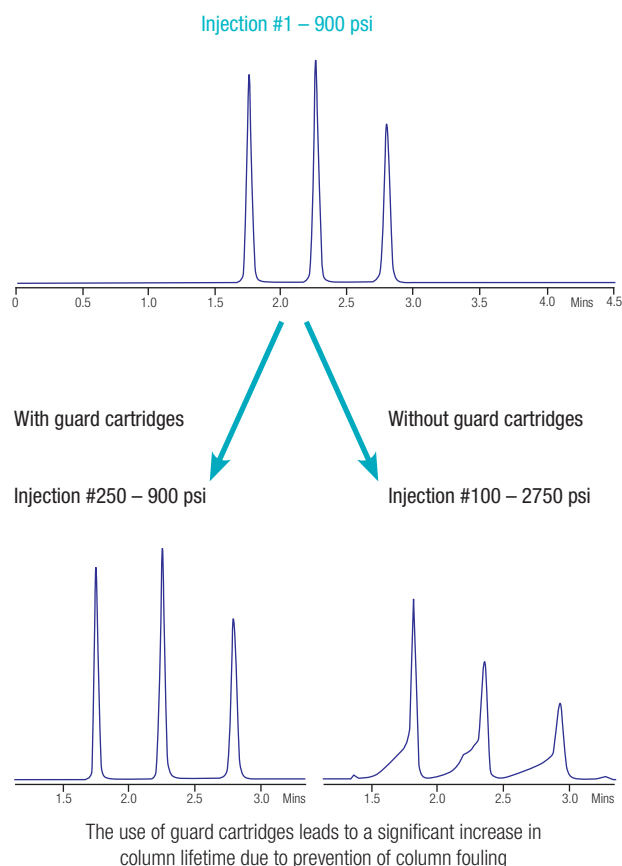


Figure 1. Increased column lifetime

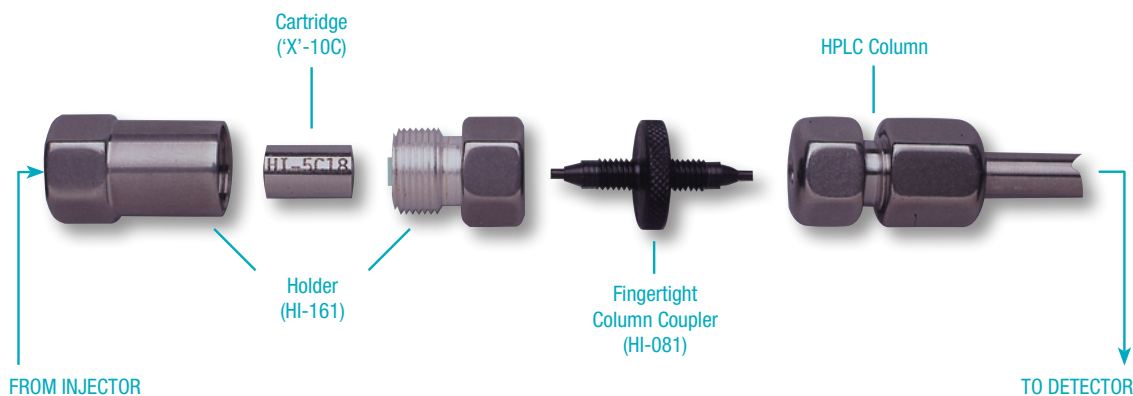


Figure 2. Stand alone guard cartridge system for traditional analytical columns

HICHROM GUARD CARTRIDGES (continued)

Ordering Information - Hichrom Manufactured Guard Cartridges

Guard Cartridge ³	Catalogue No. ¹	Pack Quantity	Holder	Coupler
For 1.0mm i.d. columns	X-10CE5	5	HI-161	HI-081
For 2.1mm i.d. columns	X-10CM5	5	HI-161	HI-081
For 3.2 - 4.6mm i.d. columns	X-10C5	5	HI-161	HI-081
For 7.75 - 21.2mm i.d. columns	X-10CP3	3	HI-150	HI-081
For 30mm i.d. columns	X-20CP	1	HI-183 ²	HI-083

¹ When ordering replace 'X' with the appropriate silica code - see column listings or contact Hichrom for details.

Example: For a 5 pack of Hichrom 5 C18 guard cartridges for 3.2 - 4.6mm i.d. columns, Catalogue No. = HI-5C18-10C5

² A new improved holder HI-655 for use with new guards X-10CB3 (3/pk) is now available

³ Guard cartridges for 50mm i.d. columns are also available – please enquire

Starter Kits

Starter kits (see Figure 3) contain five guard cartridges packed with any chosen silica, a free-standing holder (HI-161) and a fingertight column coupler (HI-081).

Starter Kit	Catalogue No. ¹
For 1.0mm i.d. columns	X-10CE5-SK
For 2.1mm i.d. columns	X-10CM5-SK
For 3.2 - 4.6mm i.d. columns	X-10C5-SK

¹ When ordering replace 'X' with the appropriate silica code - see column listings or contact Hichrom for details.

Example: For a Hichrom 5 C18 starter kit for 3.2 - 4.6mm i.d. columns,

Catalogue No. = HI-5C18-10C5-SK

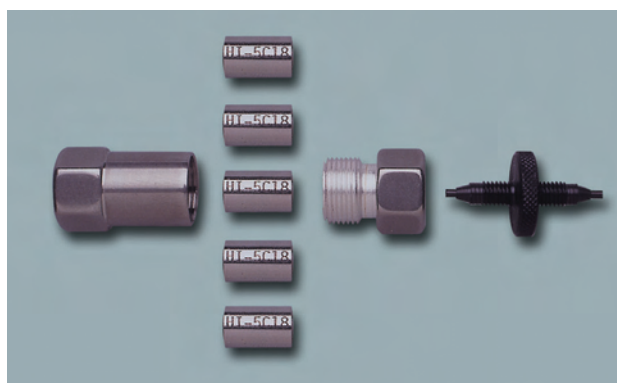


Figure 3. Guard cartridge starter kit

ColumnSaver Pre-Column Filters

- Economical column protection
- Protect columns from particulates
- Compatible with all HPLC columns
- Ultra-low dead volume

Placed immediately before the column, pre-column filters trap sample particulates and provide a convenient, lower cost solution than the use of guard cartridges (see p.20/21). However, for samples that may irreversibly adsorb onto the column, guard cartridges remain the preferred choice for maximum column protection.

The ColumnSaver pre-column filter is simply hand tightened into the column inlet (no tools are required), and is leak-proof to over 5000psi. Both 2µm and 0.5µm versions are available, for protection of 5µm and 3µm columns respectively.

ColumnSaver pre-column filters are universally compatible with all column manufacturers' end fittings, and may be used with either stainless steel or PEEK tubing and nuts (see Figure 4). It is recommended that pre-column filters are replaced when a 10-20% increase in back pressure is detected.

Please see page 194 for column filter protection for UHPLC and superficially porous columns.



Figure 4. Column with pre-column filter

Description	Catalogue No.
2µm ColumnSaver (10/pk)	HI-685
0.5µm ColumnSaver (10/pk)	HI-686