

## PREPARATIVE LIQUID CHROMATOGRAPHY COLUMNS

### SEPARCHROM PC 02 – PC 08

Preparative liquid chromatography has a lot of faces. Not in all cases is necessary to use high pressure column as they have a high efficiency, but not a low price. Medium pressure stainless steel made columns PC 02 or PC 06 fill all requirements of modern preparative liquid chromatography. And more... They have excellent price - performance ratio.

Nevertheless there is still a lot of applications where glass columns, an evergreen of liquid chromatography are requested. Separlab offers glass columns with or without pistons (PC 03 + PC 07) starting a diameter of 25 mm upto 500 mm. Columns provided by pistons are made of precise KPG tubes.

Flash chromatography is a popular method mainly due low cost plastic cartridge columns. Separlab does not manufacture cartridges, but offers simple and efficient plastic (polypropylene) columns in the price level of cartridges.

**SEPARCHROM PC 02 columns are made of** thinner wall (in comparison with PC 01 columns) cutted and polished stainless steel tubes with screwed flanges. The whole is polished and equipped with identical pistons on input and output. Pistons are provided by stainless steel (PTFE or polypropylene on the request) frits with a minimum hydraulic resistance and a patented liquid distributing system. Its design guarantees perfect piston flow. Reliable PTFE made piston sealing is similar to the top PC 01 high pressure HPLC units.

PC 02 pistons are usually moved by a force generated in hydraulic cylinder (only a few customers nowadays use columns flange bolts to move the piston). Single hydraulic cylinders fitted on upper flange are recommended, but fully automated stands for columns' packing, unpacking and use are offered too.

The basis of preparative column's good features is a perfect fluid distribution. The liquid comes into the column and leaves it in a narrow pipe to be distributed around the entire diameter of the column cylinder and again collected.

In PC 02 columns frit discs are combined with an original distributor comprising of several stainless steel net layers of the same diameter located under the porous frit disc. There are radial channels cut in these nets. Properly orientated they create a labyrinth-like system, which distributes the liquid to column edges. Liquid flow is not limited to the channels. Restricted liquid streams over the net itself too. The result is fast and complete mobile phase distribution in a small volume. Net layers have a function of frit support as well and prevent its deformation under the pressure.

Columns are completed by a broad scale of accessories - available are filling adapters, column stands, slurry mixing vessels, slurry transporting pumps etc.

PC 02 columns delivered in diameters 25 mm to 600 mm are available in a wide variety of modifications:



- PC 02M in the basic design with flanges pulled together by screws (designed for axial compression) and may be accompanied by a simple circular stand made of a combination of stainless steel and polypropylene; stand legs are connected to column tube and bottom flange can be released easily without stand disassembling
- The most popular PC 02M columns are supplemented with a hydraulic cylinder of small dimensions (for oil pressure up to 700 bar) with a stroke of 100-200 mm and a hand oil pump. They are supplied either with single-acting cylinder with spring return (MH1), or - for larger diameter cylinders - with double acting cylinder (MH2).
- PC 02AH are designed for mounting in an automatic stands with a hydraulic cylinder, which are equipped with motor oil pump and control electronics to be able to keep preset oil pressure.

Adapters that extend the length of the column are supplied for a packing procedure without pressure. May be made of plastic or stainless steel (non-explosive environment) and are equipped with flanges. Flanges are sealed to the columns by an expanded PTFE gaskets. Longer SEPARCHROM PC 02 columns are offered to be packed by dynamic slurry method. Dynamic slurry units can be equipped with mixed slurry reservoir and slurry transport pump.

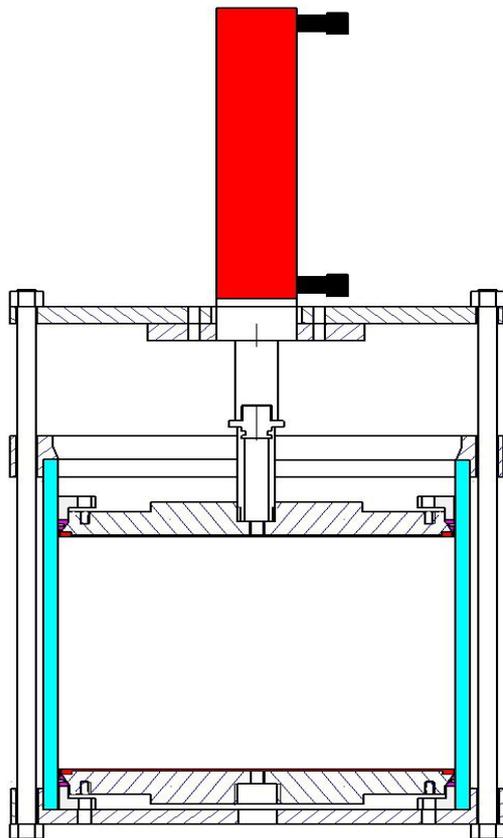
**COLUMNS SEPARCHROM PC 06** are simply and efficiently columns designed for medium pressure chromatography and all applications where sorbent does not change the volume during the use. Polished column tube is provided by flanges shaped conically in order to insert smoothly the piston inside the tube. Connecting bolts are used to fasten input and output piston flanges (lids). Columns are equipped with identical fixed pistons on input and output. Pistons can be moved only few centimeters immediately after packing to press the sorbent.

Pistons are provided by Poremet® frits with a minimum hydraulic resistance. Separlab patented liquid distributors are used – the same as described for PC 02 columns.

<i>TYPE SEPARCHROM</i>	<i>I.D. (mm)</i>	<i>Length (mm)</i>	<i>Max. pressure (bar)</i>
<i>PC 02 - PC 06 - 50/250</i>	<i>50</i>	<i>250</i>	<i>50</i>
<i>PC 02 - PC 06 - 50/500</i>	<i>50</i>	<i>500</i>	<i>50</i>
<i>PC 02 - PC 06 - 100/250</i>	<i>100</i>	<i>250</i>	<i>45</i>
<i>PC 02 - PC 06 - 100/500</i>	<i>100</i>	<i>500</i>	<i>45</i>
<i>PC 02 - PC 06 - 150/500</i>	<i>150</i>	<i>500</i>	<i>40</i>
<i>PC 02 - PC 06 - 150/1000</i>	<i>150</i>	<i>1000</i>	<i>40</i>
<i>PC 02 - PC 06 - 200/250</i>	<i>200</i>	<i>250</i>	<i>35</i>
<i>PC 02 - PC 06 - 200/500</i>	<i>200</i>	<i>500</i>	<i>35</i>
<i>PC 02 - PC 06 - 200/1000</i>	<i>200</i>	<i>1000</i>	<i>35</i>
<i>PC 02 - PC 06 - 300/250</i>	<i>300</i>	<i>250</i>	<i>30</i>
<i>PC 02 - PC 06 - 300/500</i>	<i>300</i>	<i>500</i>	<i>30</i>
<i>PC 02 - PC 06 - 300/1000</i>	<i>300</i>	<i>1000</i>	<i>30</i>
<i>PC 02 - PC 06 - 400/500</i>	<i>400</i>	<i>500</i>	<i>25</i>
<i>PC 02 - PC 06 - 400/1000</i>	<i>400</i>	<i>1000</i>	<i>25</i>
<i>PC 02 - PC 06 - 500/500</i>	<i>500</i>	<i>500</i>	<i>20</i>
<i>PC 02 - PC 06 - 500/1000</i>	<i>500</i>	<i>1000</i>	<i>20</i>
<i>PC 02 - PC 06 - 600/500</i>	<i>600</i>	<i>500</i>	<i>20</i>
<i>PC 02 - PC 06 - 600/1000</i>	<i>600</i>	<i>1000</i>	<i>20</i>

**SEPARCHROM PC 03 COLUMNS ARE MADE** of highest quality DURAN® borosilicate glass.

The same design is but offered in acrylic glass for water mobile phases. Wall thickness is enough to withstand a pressure of couple bars. Columns are equipped with identical pistons on input and output. Pistons are made of polypropylene and provided by a polypropylene frits with efficient Separlab flow distributors. PTFE pistons with PTFE frits are offered on the request as well as stainless steel pistons equipped by Poremet® frits. Piston seals are made of PTFE in all cases.



PC 03 upper pistons are usually moved by a force generated by a central screw, but hydraulic cylinders are more often used for higher diameters. Hydraulic cylinders fitted on upper flange are recommended not only for applications where column is often refilled. Columns are completed by a broad scale of accessories - available are filling adapters, column stands, slurry mixing vessels, slurry transporting pumps etc. Special

stands for columns for often packed columns which allow simple unpacking (as shown on the picture) are offered too.

**SEPARCHROM PC 07 COLUMNS ARE ALSO** made of highest quality DURAN® borosilicate glass (nevertheless the same design is offered in acrylic glass for water mobile phases). Wall thickness is enough to withstand a pressure of couple bars. Columns are equipped with identical fix pistons on input and output. Pistons are made of polypropylene and provided by a polypropylene frits with efficient flow distributors. PTFE pistons with PTFE frits are offered on the request as well as stainless steel pistons equipped by Poremet® frits. Piston seals are made of PTFE in all cases.

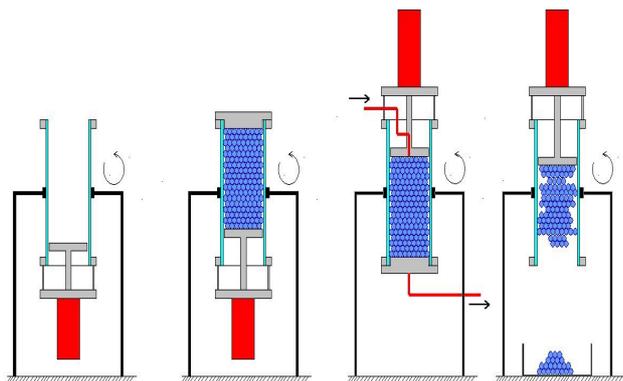
PC 07 columns are completed by a broad scale of accessories - available are filling adapters, column stands, slurry mixing vessels, slurry transporting pumps etc.

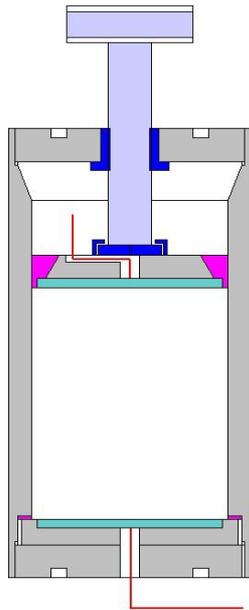
TYPE SEPARCHROM	I.D.	LENGTH	PRESSURE bar
PC 03 - PC 07 25/150	25	200	10
PC 03 - PC 07 50/300	25	300	6
PC 03 - PC 07 110/400	50	400	5
PC 03 - PC 07 220/500	50	500	4
PC 03 - PC 07 290/600	50	600	3

**SEPARCHROM PC 04 PREPARATIVE LIQUID** chromatography columns are here to replace cartridge columns in flash chromatography applications. High user value is given by advantageous price, possibility to compensate sorbent bed compression and to ability of the column to be refilled.

PC 04 columns are made of polypropylene and are compatible with most of organic solvents and with all water solutions. They are equipped with piston on the input to compensate sorbent bed volume change. The piston is moved either by a central screw or by hydraulic power (for column diameters exceeded 200 mm). Columns have on both sides efficient flow distributors to reach a perfect piston flow of the sample zone. Sorbent is held inside the column by a multilayer polypropylene frit. Piston seal is made of soft expanded PTFE.

Columns PC 04 are designated for low pressure and medium pressure liquid chromatography. They are delivered packed with a sorbent according user's wish and delivered ready to be used. They can be simply repacked by sorbents having particle size in the range 20 - 80 µm using either sedimentation process or dry packing method.





Moving piston of PC 04 columns increases their efficiency due an elimination of free space between upper sorbent layer and flow distributor. Columns thus offer perfect separation and in some cases are able to replace high pressure stainless steel columns..

**SEPARCHROM PC 08 PLC COLUMNS ARE** made of polypropylene and are compatible with most of organic solvents and with all water solutions. They are equipped with fix

pistons on both ends which can slightly press (few centimeters) column bed after packing. Columns have on both sides efficient flow distributors to reach a perfect piston flow of the sample zone. Sorbent is held inside the column by a multilayer polypropylene frit. Piston seal is made of soft expanded PTFE. Columns PC 08 are designated for low pressure and medium pressure liquid chromatography. They are delivered packed with a sorbent according user's wish ready to be used. They can be simply repacked by sorbents having particle size in the range 20 - 80 µm using either sedimentation process or dry packing method.

TYPE SEPARCHROM	I.D.	LENGTH	PRESSURE bar
PC 04 - PC 08 150/300	150	300	8
PC 04 - PC 08 150/600	150	600	8
PC 04 - PC 08 200/400	200	400	6
PC 04 - PC 08 200/800	200	800	6
PC 04 - PC 08 400/400	400	400	5
PC 04 - PC 08 400/800	400	800	5
PC 04 - PC 08 500/400	600	600	4
PC 04 - PC 08 600/1000	600	1000	4

**POREMET** is a trademark of G.Bopp + Co. AG

**Manufacturer reserves the privilege to change design and parameters of the product.**

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TYPE SEPARCHROM	I.D.	LENGTH	PRESSURE bar
PC 04 - PC 08 25/150	25	150	20
PC 04 - PC 08 25/250	25	250	20
PC 04 - PC 08 25/500	25	500	20
PC 04 - PC 08 50/150	50	150	16
PC 04 - PC 08 50/250	50	250	16
PC 04 - PC 08 50/500	50	500	16
PC 04 - PC 08 100/250	100	250	10
PC 04 - PC 08 100/500	100	500	10

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