

Pilot Columns

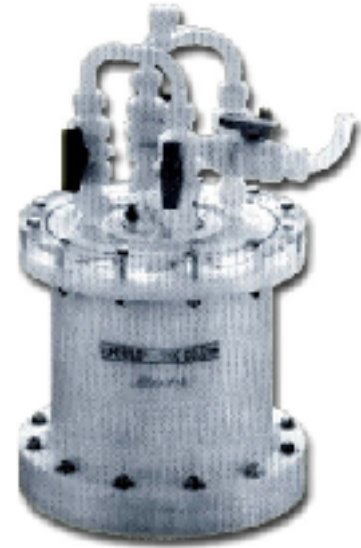
5L to 10L - 5.0 cm depth

- Sanitary Fittings Available
- Linear Scale Up from Lab Radial or Axial Columns
- Plastic or Stainless Steel

Superflo® Pilot columns are available in sizes of 5 L to 10 L with an effective bed depth of 5.0 cm. They are suitable for pilot scale separations, process development, or small-scale product applications. Plastic or stainless steel columns are available.

Sanitary Fittings

Stainless steel columns are supplied with sanitary end fittings and sanitary accessory sets are available.



Superflo® 5L equipped with sanitary fittings

How to Scale Up - Calculating the Scale Up Parameters

Scaling up with radial flow columns is a simple matter, whether you are scaling up from a smaller radial flow column or from a conventional column.

Radial flow columns are recommended for ion exchange, affinity, hydrophobic, reverse phase and other types of adsorption-desorption separations.* The sample is bound to the column with one buffer and eluted under different buffer conditions. With this type of separation, the most critical parameter is residence time, or the time in which the sample is in contact with the packing material. This can also be thought of in terms of column volumes of flow per unit time.**

Scaling up, from a small radial flow column to a larger one is linear. For example suppose you are currently running 3.5 mL sample on a 50 mL column at 5 mL/min. To scale up 400 X, simply multiply the column volume, sample size, and flow rate by 400. Therefore, a 1.4 L sample run on a 20 L column at 2 L/min will give the same separation.

To scale up from a conventional column to a radial flow column, first calculate the flow rate in terms of column volumes per minute. For example, a flow rate of 25 mL/min through a 100 mL column is equal to 0.25 column volumes per minute. To scale up from 1 L column, the appropriate flow rate would remain a 0.25 column volumes per minute, or 250 mL per minute. Similarly, sample size should be thought of in terms of percentage of column volume.

Since the bed depth of radial flow columns increases from 3.5 cm on the small columns to 10 cm on the large columns, a 3-fold pressure increase can result. Process development on the small columns should be done at pressures under 8 psi. This will result in operating pressures below 25 psi on a large scale.

*Isocratic separations that are dependent upon the length of column, such as size exclusion chromatography, are not recommended with radial flow columns.

**Because the design of radial flow columns is significantly different from conventional columns, the use of "linear velocity" (cm/hr) is not appropriate for calculating scale up parameters from Superflo® Columns.

Pilot Column Ordering Information

ACRYLIC COLUMNS

(Includes column and port plugs. Requires one accessory set.)

Product Description	Part Number
Superflo®-5L Column	11-005K-00
Superflo®-10L Column	11-010K-00

Accessory Sets

Product Description	Part Number
Complete Plastic Accessory Set for 5L Column	11-005K-30
Complete Plastic Accessory Set for 10L Column	11-010K-30

Spare Parts for Acrylic Columns

Product Description	Part Number
Superflo® Column Stand (anodized aluminum)	11-010K-10
Pressure Gauge with Polypropylene Guard	11-010K-15
Packing Port Plugs (8)	10-010K-12
250ml Bubble Trap	11-010K-17
O-ring Set (9)	11-005K-13
Polyethylene Inlet Head	12-005K-04
Plastic Ball Valve (set of 6)	11-005K-22

SANITARY STAINLESS STEEL COLUMNS

(Includes sanitary ends and port plugs. Requires one accessory set)

Product Description	Part Number
Superflo®-5L Column	13-005K-00
Superflo®-10L Column	13-010K-00

Accessory Sets

Product Description	Part Number
Complete Accessory Set for 5L SS Column	13-005K-30
Complete Accessory Set for 10L SS Column	13-010K-30

Spare Parts for Stainless Steel Columns

Product Description	Part Number
Superflo® Column Stand (anodized aluminum)	10-005K-10
250ml Bubble Trap	13-005K-17
Pressure Gauge with Guard	13-010K-15
SS Ball Valves	13-005K-22
Packing Port Plugs (8)	13-005K-12
O-ring Set (6)	13-005K-13



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30689 HUNTWOOD AVE., HAYWARD, CA 94544 • PHONE 510-476-0650 • FAX 510-476-0655 • TOLL FREE 800-466-0737 • HTTP://WWW.SEPRAGEN.COM • INFO@SEPRAGEN.COM