

## Kontes® CHROMAFLEX® Chromatography Columns

Kontes® Article Nos. 420830 (Unjacketed), 420870 (Jacketed)

These columns are for use in aqueous and organic chromatography. Unique PTFE shielded o-ring end fittings provide leak-free seals without solvents contacting the o-ring (see Fig. 1). Threaded shafts and screw caps prevent any movement under pressure.

CHROMAFLEX® columns are ideal for:

- Preparative scale up—by bulk packing a column similarly to packing an analytical HPLC column.
- Use with aqueous and organic mobile phases (certain organic mobile phases require installation of optional PTFE bed supports for columns and flow adapters and optional FFKM o-rings for flow adapters).
- Small particle size packings with either a 5 or 10 micron bed support.
- Pressures up to 100 psi (depending on column diameter).

CHROMAFLEX® Columns include replaceable polyethylene bed supports at both top and bottom ends. Samples and eluant are diffused by the bed support at the inlet end of the column, protecting the column packing from “bombing.”

Optional accessories and replacement parts are available including:

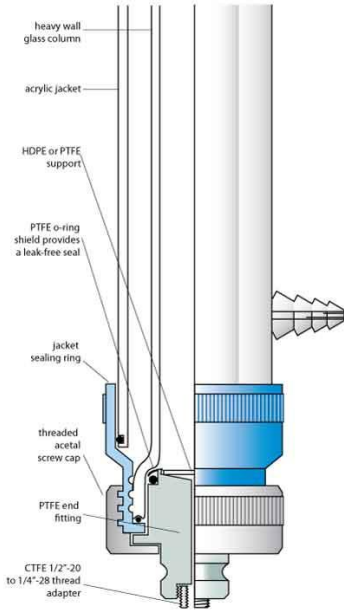
- Flow adapters for 1.0, 2.5, and 4.8 cm I.D. columns (see Table 1).
- FFKM o-rings for resistance to organic mobile phases (see Table 2).
- Packing reservoirs with capacities matched to take the amount of gel slurry required to pack the longest available column. Reservoirs have ¼”-28 fittings for easy connection to pumps.

All CHROMAFLEX® column connections are made with easy-to-use, flangeless, ¼”-28 fittings and 1/16” O.D. or 1/8” O.D. PTFE tubing. Assemble with nuts and ferrules.

See our website ([www.kimble-chase.com](http://www.kimble-chase.com)) for details on ordering replacement and accessory parts.



Fig. 1 Jacketed Columns  
(420870 Series)



**CAUTION:** Pressurized glassware should always be used with adequate safety shielding.

## Assembly / Disassembly of Jacketed CHROMAFLEX® Columns (420870 Series, Fig. 1)

### Easy Assembly

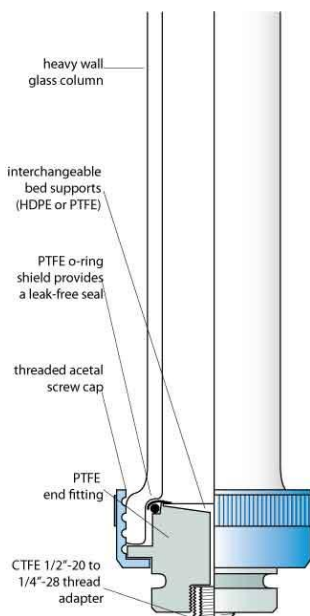
1. Screw a jacket cap onto one end of the column. Be sure the jacket cap o-ring is seated in the groove at the base of the cap.
2. Slide the jacket over the column and snugly into the jacket cap that is already screwed onto the column.
3. Ensure there is an o-ring in the base of the other jacket cap. Screw this jacket cap onto the column so that the jacket slips inside it. Tighten both jacket caps.
4. Push an end fitting into each column end and secure with end caps.

### Removing Parts and Replacing Bed Supports

- To remove end fitting for column packing or sample introduction, hold jacket cap and unscrew end cap. Pull out end fitting.
- To remove safety / water jacket, hold one jacket cap while unscrewing the opposite jacket cap and then slide jacket off.
- To replace the polyethylene bed support that is supplied as standard with all complete columns, push a small metal rod (for example, a straightened paper clip) up through the hole in the end fitting until it pushes the bed support out of the end fitting, then press a new bed support into place until it slips into its retaining groove.

NOTE: PTFE bed supports are also available as replacements for the HDPE bed supports. To install these bed supports first place the coarse mesh PTFE screen into the end fitting. Then lay the new bed support down on the PTFE screen and secure the bed support with the PTFE retainer ring that is supplied with the replacement bed supports.

Fig. 2 Standard Columns  
(420830 Series)



## Assembly / Disassembly of Standard CHROMAFLEX® Columns (420830 Series, Fig. 2)

### Easy Assembly

To assemble the column, push both end fittings into the column ends and secure by screwing the end caps onto the column.

### Removing Parts and Replacing Bed Supports

To remove the end fitting for column packing or sample introduction, simply unscrew the end cap and remove the end fitting.

To replace the polyethylene bed support that is supplied as standard with all complete columns, push a small metal rod (for example, a straightened paper clip) up through the hole in the end fitting until it pushes the bed support out of the end fitting, then press a new polyethylene bed support into place until it slips into its retaining groove.

Nylon, polypropylene and PTFE bed supports are available as replacements for the polyethylene bed support. To install these bed supports, first place the coarse mesh PTFE screen into the end fitting. Then lay the new bed support down on the PTFE screen and secure the bed support with the PTFE retainer ring that is supplied with the replacement bed supports.

## Assembly / Disassembly of Flow Adapters for CHROMAFLEX® Columns 420836 and 420876 Series

Fig. 3 Flow Adapter for Standard Columns



If necessary, these flow adapters can be disassembled and reassembled. This should only be done if problems (leaks, etc.) occur.

To replace the HDPE bed support that is supplied as standard with all flow adapters, slip a pointed object between the edge of the bed support and the flow adapter PTFE base. Be careful not to damage the PTFE base. Remove the bed support from its retaining groove. Place the coarse mesh PTFE screen back into the flow adapter PTFE base and press a new polyethylene bed support into place until it slips into its retaining groove.

PTFE bed supports are also available as replacements for the HDPE bed supports and are installed as previously described.

### Using Flow Adapters for 1.0 cm I.D. Columns

1. Insert flow adapter into column and tighten the end cap onto the column.
2. Adjust the height of the flow adapter in the column by turning the top knob clockwise or counterclockwise to lower or raise the flow adapter in the column. Be sure the top knob lock nut is secure during this step.
3. When at the desired height, secure the locking ring against the end cap.
4. This flow adapter is designed to make an o-ring seal against the inside glass of the column without adjustment.
5. Remove the flow adapter by loosening the locking ring against the end cap and unscrewing the end cap.

### Using Flow Adapters for 2.5 and 4.8 cm I.D. Columns (Refer to Figure 3)

1. Insert flow adapter into column and tighten end cap onto the column.
2. Adjust the height of the flow adapter in the column by holding the top knob and turning the knob clamp clockwise or counterclockwise to lower or raise the flow adapter in the column.
3. When at the desired height, secure the locking ring against the end cap.
4. Seal the flow adapter o-ring against the inside of the column by holding the knob clamp stationary and turning the top knob clockwise. Do not overtighten.
5. Remove the flow adapter by turning the top knob counterclockwise, loosening the locking ring, and unscrewing the end cap.

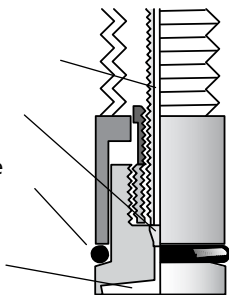
### Flow Adapter Detail

FEP Teflon® tubing

polypropylene or ETFE ferrule

TFE / propylene or FFKM o-ring

HDPE or PTFE bed support



## Specifications

### Materials

#### Column Barrels:

Type I, Class A Borosilicate Glass

#### End Fitting:

Polytetrafluoroethylene (PTFE)

#### Bed Support:

High Density Polyethylene (HDPE)

#### Water/Safety Jacket:

Acrylic (jacketed columns only)

#### Jacket Sealing Rings:

Polypropylene (jacketed columns only)

#### Bed Support Porosity:

20 micron nominal  
(for standard bed support)

#### Maximum Pressure\*:

1.0 cm ID Columns - 100 psi (6.9 bar)

2.5 cm ID Columns - 75 psi (5.2 bar)

4.8 cm ID Columns - 50 psi (3.4 bar)

#### Temperature Range:

0 to 50 °C

#### Tubing Connections:

1/4-28 flangeless fittings

#### Sterilization:

Ethylene Oxide, 2N NaOH or 100% Ethanol (autoclaving is not recommended)

Table 1.

### CHROMAFLEX® Column Volumes

Column bed height and approximate volume data.

Without Adapters			With One Adapter		With Two Adapters		Max. Pressure (psi) Safety jacket required.
ID (cm)	Length (cm)	Volume (mL)	Bed Height (cm)	Volume (mL)	Bed Height (cm)	Volume (mL)	
1	15	12	1-13	1-10	0-11	0-8	100
1	30	24	16-28	12-22	2-26	2-20	
1	60	47	46-58	36-46	32-56	25-44	
1	100	78	86-98	67-77	72-96	56-75	
1	120	94	106-118	83-93	92-116	72-91	
2.5	15	74	1-13	5-64	0-11	0-54	75
2.5	30	147	16-28	78-137	2-26	10-128	
2.5	60	294	46-58	226-285	32-56	157-275	
2.5	100	490	86-98	421-480	72-96	352-470	
2.5	120	589	106-118	520-579	92-116	451-569	
4.8	15	271	1-13	18-235	0-11	0-199	50
4.8	30	543	16-28	289-506	2-26	36-470	
4.8	60	1085	46-58	832-1049	32-56	579-1013	
4.8	100	1808	86-98	1555-1772	72-96	1302-1736	
4.8	120	2170	106-118	1917-2134	92-116	1664-2098	
10	15	1000					not rated (No safety jacket available)
10	30	2000					
10	60	5000					
10	100	7670					
10	120	9000					

### \*CAUTION

Adequate safety shielding must be used with pressurized glassware.

Table 2.

### Solvent Compatibilities of PTFE / propylene and FFKM O-rings.

R = Recommended NR = Not Recommended

Solvent	PTFE / propylene O-rings	FFKM O-rings
Acetic Anhydride	NR	R
Acetone	NR	R
Acetonitrile	R	R
Chloroform	NR	R
Ethyl Acetate	NR	R
Isopropanol	R	R
Methanol	R	R
Methyl Chloride	NR	R
Tetrahydrofuran	NR	R
Water	R	R