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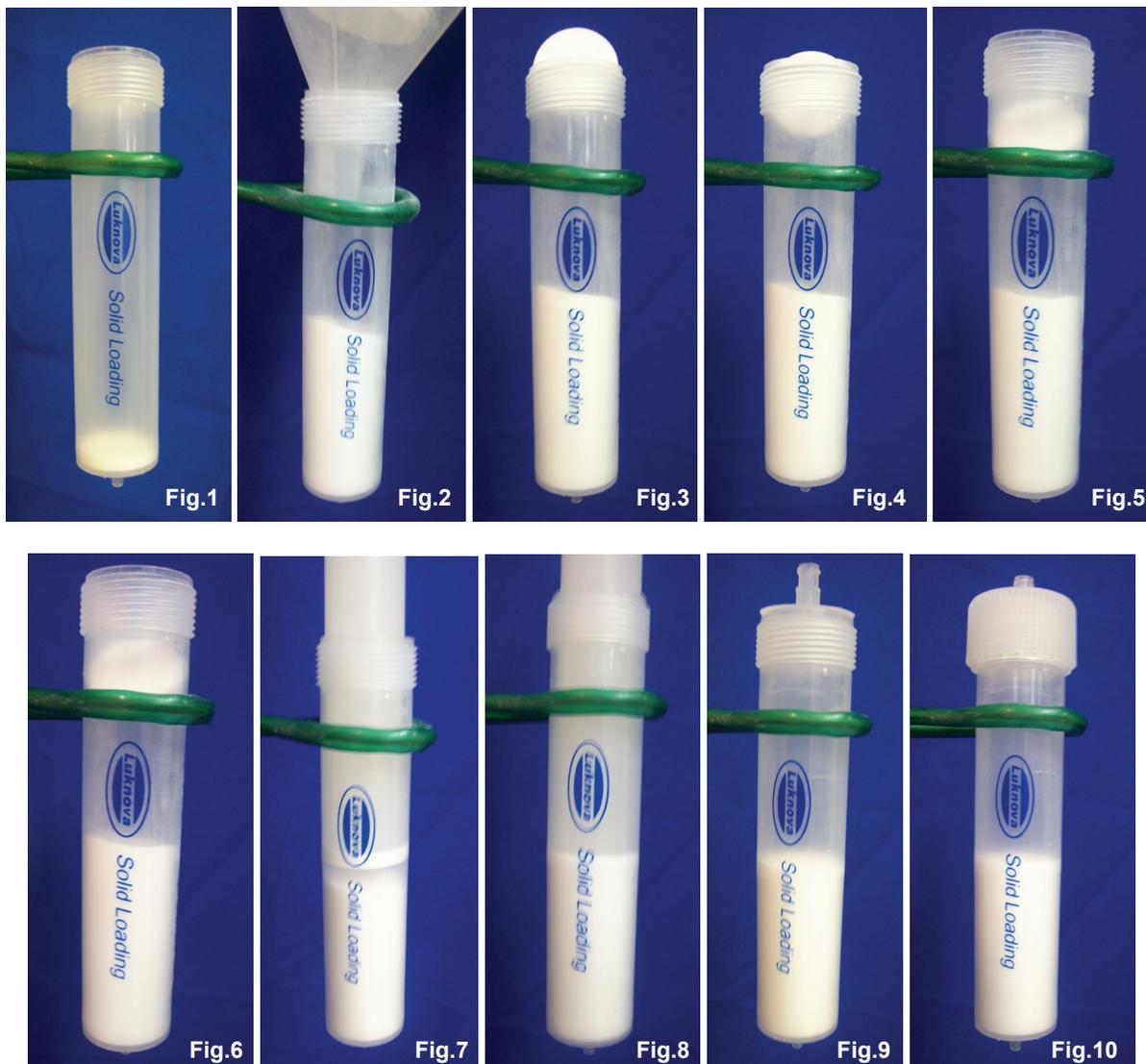
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Application Note: 1100

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How to dry-pack Luknova empty cartridges

1. **Figure illustration.** Figures 1-10 below illustrate how to dry pack empty cartridges.



2. **Add packing material, such as silica gel.** There are at least two ways to add dry sorbent, such as 230-400 mesh (50 μm and 60 \AA) silica gel to the empty cartridge.

[1] One easy way to fill the column is to just pour the silica into the column using a 10 ml or 50ml beaker as shown in **Figs.1-2**.

[2] Another way to fill the column is to invert it into the bottle of silica gel and scoop it out, and then tamp it down before scooping more out.

There are three approaches to reach better purification and separation performance:

- [1] Tamp the cartridge loaded with silica down on the bench top to pack more silica.
- [2] Connect the cartridge bottom to the vacuum to suck air through the packed column and pack more silica.
- [3] Use a pipet bulb to force air into the column and pack more silica.

No matter whichever method you use to fill the column, add more sorbent, if needed, to reduce the void space and improve column performance.

When properly packed, the silica gel fills the column to just below about 1 inch (2.5 cm) from the top of the empty column body container. This leaves a space to load top frit and sealing insert. The end-user can fill the column to the desired position. More space is allowed for dry loading if needed.

3. Vertically loading the top frit into the cartridge as described below.

- [1] **Vertically loading the top frit into the top open section of the cartridge as shown in Fig.3.** Please be noted that vertically loading the top frit could easily get the frit into the cartridge and avoid breaking the frit. The frit diameter is designed to prevent the packing material from leaking out of the packing bed through the wall.
- [2] Continuously vertically press the frit into the cartridge as shown in **Fig.4** until the entire frit gets into the cartridge.
- [3] Slant the frit as shown in **Figs.5-6** inside the empty cartridge.
- [4] Use the polymer rod to flatten the frit as shown in **Fig.7**.
- [5] Push the frit to the top of the preloaded packing material as shown in **Fig.8**. Press the frit down as deeply and evenly as possible. The frit should contact seamlessly the inside wall of the column body container to prevent silica leaking out. The cartridge is ready to fill dry-loading sorbent and proceed with sample purification.

4. Clean the sealing surface of the top inward taper on the column body container (be noted: Any dirt and scratch on the taper surface may lead column leak).

5. Mount the sealing insert onto the column body container as shown in Fig.9. The side surface of the sealing insert must be kept clean to reach leak-free connection.

6. Align the perforated cap onto the sealing insert as shown in Fig.10 and finally tighten the perforated cap as deeply as possible onto the column body container by matting threads with **hands, pliers and wrenches** as needed.

A variety of process and approaches can be employed to achieve the leak-free column assembly, such as clamping the filled column securely to a ring stand when mount the sealing insert, align the perforated cap, and tighten the perforated cap onto the column body container. To avoid any potential leaks, some tools are recommended in the empty cartridge packing.

Order Info

Size	P/N	Qty/PK	CV (mL)	Size	P/N	Qty/PK	CV (mL)
4g	FC003004-1	40	5	120g	FC003120-1	8	190
	FC003004-2	480			FC003120-2	64	
12g	FC003012-1	30	17	240g	FC003240-1	4	330
	FC003012-2	360			FC003240-2	32	
25g	FC003025-1	25	24	330g	FC003330-1	4	450
	FC003025-2	300			FC003330-2	32	
40g	FC003040-1	20	57	750g	FC003750-1	4	1500
	FC003040-2	240		1500g	FC0031500-1	3	2900
80g	FC003080-1	10	120	Each column comes with 1 cap, 1 sealing insert, 1 column body, 1 top frit, and 1 inserted bottom frit.			
	FC003080-2	80					



Any questions please contact your distributor or us directly. www.luknova.com contact/quote/order online