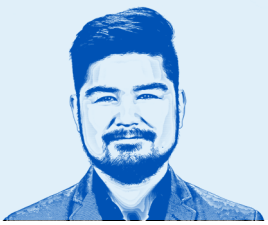
AsahiKASEI BIOPROCESS



Swifter, Safer DAC Column Turnover

Routine column maintenance can be performed by one operator in as little as 15 minutes

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As a means for separating mixtures, liquid chromatography is a tried-and-true – yet very versatile – process that has been relied upon for more than a century. A chromatography column, such as a solid stainless-steel DAC (Dynamic Axial Compression) column, is an excellent choice to perform such a task.
These columns offer the ability to pack any bed height required with a variety of different media types and sizes. The design of these columns allows for a quick, easy and homogeneous packed bed as well as an even distribution for plug flow of liquid to achieve better peak resolution.

One of the trade-offs that comes with using a robust DAC column is the amount of time required for maintenance and turnover between different packs. When the media is packed into a cake, the easiest way to unpack is by removing the bottom plate and pushing the cake out. This allows for easy clean up and maintenance of the high wear seals in the bottom plate and the piston head. This process, however, can get more complicated, and require more labor, as the column gets larger.

With this complexity in mind, Asahi Kasei Bioprocess America set out to design an easy-to-implement system that would increase both efficiency and safety during the turnover process. That system is the DAC ERGO column.

The ERGO option on an AKBA DAC column is an innovative way to unpack and perform maintenance on the column while keeping the simple operations of the standard column intact. The new design replaces the bolts on the bottom plate with novel I-bars, removing the need for tools while increasing speed since there are no bolts to unthread.

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This system also addresses the need to evenly remove the bottom plate while simultaneously providing it enough support during detachment. To solve this, we have integrated hydraulics into the column frame to raise and lower it on demand. The bottom plate pivots around the back leg and can then be swung out from underneath the column for maintenance. In addition, an optional slurry tub can be attached to swing underneath the column as the bottom plate swings out, dramatically reducing the cleanup needed for any media falling from the tube. At this point, maintenance can be performed on the ware parts (scraper seal and frits) and the bottom plate can then be swung back in as the tube is lowered again – achieving perfect reassembly every time.

On large stainless-steel columns, disassembly could take four people upwards of a few hours to correctly – and safely – accomplish their task. With the DAC ERGO feature from Asahi Kasei Bioprocess, routine column maintenance can be performed by one operator in as little as 15 minutes – effectively mitigating safety concerns while enhancing productivity.

Questions?

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