

# Vantage™ A2 Chromatography Process Columns

Sanitary, Axial Compression, for Development, Pilot, or Production

Vantage™ A2 columns are ideal for development, pilot, or production purification in the pharmaceutical biotechnology industry. Sanitary design, ease of assembly and operation, pneumatically assisted axial compression, and up to 7 bar (100 psi) pressure rating make Vantage™ A2 columns especially applicable for use with rigid, higher resolution chromatographic media.

## Easy to Clean

The Vantage™ A2 column's sanitary design offers zero dead-space seals eliminating unswept volume within the column. The column features a hygienic surface finish and all of the process wetted components are nonmetallic and meet regulatory requirements.

## Simple Column Assembly

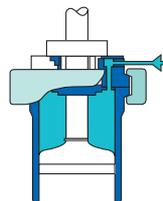
The Vantage™ A2 column design minimizes the number of components. The tube and flanges are a single unit. Flow cells and seals are assembled in minutes without tools. All wetted components can be easily and cost effectively replaced, letting the column be refurbished when changing applications. The stand is fitted with a level indicator, leveling studs as well as fixing points for a bubble trap and other accessories. For easy moving of large columns, casters are available.



## Benefits

- Pneumatic assisted axial compression allows use of high resolution chromatography media
- Available in a wide range of sizes meeting development, pilot, and production needs
- Sanitary design meets regulatory requirements
- Easy to pack, convenient unpacking requires no reslurrying

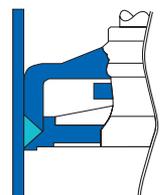
## Simple Column Assembly



Pneumatically assisted axial displacement technology ensures fast, efficient, and homogeneous bed packing.



Integral mesh bed support and flow cell optimizes sample distribution.



Zero dead space seal eliminates unswept volume.

## Axial Packing Technology

The pneumatically assisted axial compression system provided on Vantage™ A columns allows faster and more efficient packing. This assures a homogeneous bed, without channeling, void formation, instability, or particle size segregation. Operator independent packing protocols can standardize packing methods and eliminate variability. This provides maximum product resolution and run-to-run reproducibility. Axial compression packing is especially beneficial with the newer, more rigid, smaller particle packings.

## Adjuster Cell Lock

Following packing, pneumatic axial compression may be maintained or more conventionally the adjuster cell may be locked in place using the single action friction lock. The pneumatic pressure can be released while firmly securing the adjuster cell. The friction lock assembly can also be used to achieve a 'fine adjust' of the flow cell position during the run, if required.

## Pressure and Solvent Resistance

The 7 bar (100 psi) pressure rating matches the performance characteristics of current media. Higher flow rates can be attained with smaller particle sizes, offering potential reduction in system size and associated costs. High solvent resistance allows the columns to be used for a wide range of applications, including ion exchange, hydrophobic interaction, affinity, gel permeation, and reversed phase chromatography.

## Fast, Easy Packing

With pneumatically assisted axial compression, Vantage™ A columns can be packed in less than two minutes. For this, we recommend the Air Packing Controller (APC). It lets you adjust and control the pneumatic pressure to match the media being packed. Pneumatic pressure is cleaner than hydraulic equivalents. An air pressure relief valve fitted to the APC assures safe operation.



Tube and flanges form single integral unit to minimize components.



Single action friction lock and fine adjustment assembly.

## Convenient Unpacking

The column can be unpacked in less than a minute by simply removing the bottom flow cell and expelling the packing with air pressure regulated by the Air Controller Pack (APC). This gentle process avoids the generation of fines normally associated with conventional unpacking techniques.

## Extension Tubes

Column bed length can be increased by a column extension tube (See table for achievable bed heights and volumes).

## Operating Procedures

### Fill

1. With the upper flow cell removed, the slurry is poured into the column.
2. The flow cell assembly is introduced into the tube and clamped in place.



### Pack

3. With the outlet valve open, the upper flow cell is moved down the tube with fine control of packing speed and pressure, provided by the APC.
4. With maximum pressure for the media set on the APC, the procedure is continued until the cell stops moving. The column is now ready for use and the cell can be locked in position.



### Unpack

5. Ensure the adjuster chamber is decompressed, release the seal, then remove the lower clamp and cell and under the control of the APC, eject the media into a suitable container.



## Comprehensive Range of Services and Support

### Qualification Services

Our qualification services are designed to make the integration of our system into your process as seamless as possible and ensure your equipment is properly installed and functioning per your pre-defined requirements.

### Preventive Maintenance (PM)

With our PM service, your equipment will be maintained and verified using established protocols to ensure documented compliance with quality requirements. Spare parts, which must be purchased separately, will be replaced as needed. Maintenance recommendations and a full report of the services performed will also be provided to ensure that the validated state of the equipment is maintained.

### Corrective Maintenance (CM)

In the unlikely case your system does experience a problem, our engineers will provide on-site technical support to get you back up and running as quickly as possible.

### Spare Parts

Purchasing spare parts directly from us is the only way we can guarantee that you get the right parts every time, with the same level of performance as the original.

Cat. No.	Description	Comment
SSVIOQVAC	Vantage® SAT & IQ/OQ execution including protocol and travel	
SSVPRMVAC	Vantage® Preventive Maintenance execution including protocol and travel	Spare part kit to be ordered separately

### Specifications

	VA60 x 500 mm	VA90 x 500 mm	VA130 x 500 mm	VA180 x 500 mm	VA250 x 500 mm
Tube internal diameter (mm)	62	89	127	178	252
Cross-sectional area (cm <sup>2</sup> )	31	62	125	250	500
Adjustable bed height (mm)	0–475	0–465	0–460	0–500	0–475
Adjustable capacity (L)	0–1.5	0–2.9	0–5.8	0–12.5	0–23.8
Adjustable bed height with extension tube (mm)	545–1030	525–1005	545–1025	590–1110	580–1085
Adjustable capacity with extension tube (L)	1.7–3.2	3.3–6.2	6.8–12.8	14.8–27.8	29.0–54.3
Pressure rating	2–20 °C, 7 bar; 25 °C, 6.2 bar; 30 °C, 5.5 bar 2–20 °C, 100 psi; 25 °C, 90 psi; 30 °C, 80 psi				
Operating temperature	2–30 °C				
<b>Wetted Surfaces</b>					
Column tube:	TPX® (Polymethylpentene)				
Flow cell:	TPX®				
Support mesh:	Polypropylene 12 µm				
Flow tube:	Polypropylene				
Zero dead space adjuster seal:	EPDM				
Ladish®/flow tube seal:	Santoprene® Thermoplastic Elastomer				
<b>External Surfaces</b>	316 Stainless steel Aluminum bronze Polypropylene Acetal				

### Chemical Resistance

Substance	Concentration	Vantage™ A2
Acetic acid	<25%	✓
Acetone	100%	●
Acetonitrile	100%	●
Ethanol	<20%	✓
Ethanol	100%	✓
Hydrochloric acid	1M	✓
Isopropanol	<20%	✓
Isopropanol	100%	✓
Methanol	<10%	✓
Methanol	100%	✓
Dichloromethane	100%	■
Peracetic acid	300 ppm	✓

Substance	Concentration	Vantage™ A2
Phosphate buffer	2M	✓
Potassium hydroxide	2M	✓
Sodium chloride	4M	✓
Sodium hydroxide	2M	✓
Sodium hypochlorite	200 ppm	✓
Sulfuric acid	1M	✓
Tributyl-n-phosphate	5%	✓
Triton® X100 Surfactant	100%	✓
Urea	6M	✓

✓ = Resistant  
● = Limited resistance (dependent on contact temperature and time)  
■ = Non resistant

## Ordering Information

Model	Cat. No.
<b>Vantage™ Column (500 mm adjustable)</b>	
VA 60 x 500 x 500	87006001
VA 90 x 500 x 500	87009001
VA 130 x 500 x 500	87013001
VA 180 x 500 x 500	87018001
VA 250 x 500 x 500	87025001
<b>Column Tube Extension Kit</b>	
VTK 60 x 500	87006005
VTK 90 x 500	87009005
VTK 130 x 500	87013005
VTK 180 x 500	87018005
VTK 250 x 500	87025005
Model VTK includes column tube, seal and clamp, also for use as a filler tube.	
<b>Column Stand</b>	
FCS80	87006013
FCS90	87009013
FCS130	87013013
FCS180	87018013
FCS250	87025013
<b>Casters for Stand</b>	
Casters FCS180	87018025
Casters FCS250	87025025
<b>Air Pack Controller</b>	
APC	87000001
<b>Bubble Trap Assembly</b>	
BT 44 x 250	87004599
<b>Bubble Trap Connection Kit</b>	
PCKBT	87004597
Includes 4 SPV, 4 Ladish® adapters, 12 Ladish® clamps, seals and tubing.	
Gauge Kit GK	87000007
Includes T Connector, gauge, 3 clamps & seals.	
<b>Sanitary Pinch Valve</b>	
SPV 2-Way 6 mm	87000003
<b>Flow Cell Kit</b>	
DFC60	87006015
DFC90	87009015
DFC130	87013015
DFC180	87018015
DFC250	87025015
DFC kit includes 2 integrated flow cells with mesh support.	

For additional information, please visit [www.EMDMillipore.com](http://www.EMDMillipore.com)

To place an order or receive technical assistance, please visit [www.EMDMillipore.com/contactPS](http://www.EMDMillipore.com/contactPS)

## Ordering Information (cont.)

Model	Cat. No.
<b>Ladish® Seal and Clamp Kit (6/Pack)</b>	
LCK	87000006
<b>Connector Kit (3/Pack)</b>	
CK3 for 60, 90, 130	87000004
CK6 for 180, 250	87000005
<b>Adjustable Seal Kit (2/Pack)</b>	
ASV60	87006022
ASV90	87009022
ASV130	87013022
ASV180	87018022
ASV250	87025022
<b>Routine Maintenance Kit</b>	
RMKV60	87006019
RMKV90	87009019
RMKV130	87013019
RMKV180	87018019
RMKV250	87025019
<b>12 Month Service Kit</b>	
SKV60	87006023
SKV90	87009023
SKV130	87013023
SKV180	87018023
SKV250	87025023
The Service Kit includes DFC, AS, RMK Kits and additional seals and spare parts.	
<b>Flexible Tube with Molded Ladish® Ends</b>	
FT (1 meter)	87000008
FT (3 meter)	87000009
Starter Kit STK	87000012
Includes 2 SPV, 2 flexible tubes, 6 clamps and seals.	

MilliporeSigma  
400 Summit Drive  
Burlington, MA 01803

