

# Varian P2P Load & Lock™ Process Columns

MORE CONVENIENT SAMPLE PROCESSING



## Pilot / Process Scale Load & Lock™ Columns

*With a complete line of Load & Lock Dynamic/Static Axial Compression (DAC/SAC) columns, from 1 in. to 24 in. ID\*, in low, medium, and high-pressure models, Varian delivers versatile column solutions for high performance, high throughput, and high yield preparative and process purifications.*

*Our Load & Lock columns are designed to get you up and running quickly when you need to pack your own high performance liquid chromatography columns. They combine excellent packed bed stability with enhanced flow distribution to deliver the highest quality purification with maximum speed, flexibility, and ease-of-use. Sample loading is 25% greater than most other DAC type columns, saving time and reducing operating costs, because more material can be purified per unit time or smaller inner diameter columns can be used due to higher loadability.*

*Varian Load & Lock DAC/SAC columns are very user friendly and allow the chromatographer and chemical engineer to pack any media easily.*

## Key Benefits

- ▶ Highest performance – Unique fluid/sample distribution system maximizes productivity and achieves superior results
  - ▶ Maximum flexibility – Perform both Dynamic or Static "locked" Axial Compression (DAC/SAC)
  - ▶ Greater convenience – Designed/manufactured for easy operation, to fit your production facility space, and for mobility within the facility
  - ▶ More than 25 years' experience in pilot and production scale column design with low pressure (Bio LC) and medium/high pressure applications (HPLC)
  - ▶ The mobile integrated stainless steel stand houses the column and hydraulic compression system as one self-contained unit and provides unrivalled maneuverability
  - ▶ A 90 degree tilting mechanism allows the column to be positioned horizontally to facilitate the removal of the media by plunger extension, to ease the unpacking process, and minimize handling of media or solvents
  - ▶ Customized column sizes are also available. Optional column water jacket promotes separations at elevated temperatures, improving resolution by enhancing the mass transfer of large solutes.
- \* Scalable as standard designs up to 24 in. ID in a variety of column lengths. Custom designs by request.

NOTICE: This document contains references to Varian. Please note that Varian, Inc. is now part of Agilent Technologies. For more information, go to [www.agilent.com/chem](http://www.agilent.com/chem).

# Varian P2P Load & Lock™ Process Columns

## Specifications

Pilot / Process Scale Load & Lock™																
Internal Diameter (in./cm)		4 / 10			6 / 15			8 / 20			10 / 25					
Length (cm) (Standard=80 cm)		50	80	100	50	80	100	50	80	100	50	80	100	50		
Min. Bed length (cm)		10	10	10	10	10	10	10	10	10	10	10	10	10		
Max. Bed length (cm)		45	72	90	45	72	90	45	72	90	45	72	90	45		
Total Volume (L)		3.9	6.3	7.9	8.8	14.1	17.7	15.7	25.1	31.4	24.5	39.3	49.1	50.3		
Media capacity	Maximum (Kg)	2.1	3.4	4.2	4.8	7.6	9.5	8.5	13.6	17.0	13.3	21.2	26.5	19.1		
	At 60% (Kg)	1.4	2.3	2.8	3.2	5.0	6.4	5.7	9.0	11.3	8.8	14.1	17.7	12.7		
Column plunger compression		Bottom-up														
Max. Working pressure (psi/bar) (Standard=1,500 psi)																
Utilities Required to Operate L&L column																
Dimension	Width (in./cm)	36/91.4	36/91.4	36/91.4	36/91.4	36/91.4	36/91.4	48/122	48/122	48/122	52/132	52/132	52/132	52/132		
	Height (in./cm)	76/193	95/241.3	104/264	84/213	106.5/270.5	124/315	86/218.5	108/275	128/325	106/270	126/320	134/340	106/270		
	Depth (in./cm)	36/91.4	36/91.4	36/91.4	37/94	37/94	37/94	48/122	48/122	48/122	52/132	52/132	52/132	52/132		
Weights (lbs. / kg)		400/182			750/341			1,200/546			1,400/636					

## Additional Features

Construction	Load & Lock	Standard hydraulic locking mechanism												
	Rack	304 Stainless Steel with 316L stainless steel components												
	Wetted Parts include	316L Stainless Steel All wetted parts are 316L stainless steel												
Certification / Qualification	Materials of construction													
	Column Qualification	Optional Qualification												



Pilot scale L&L columns  
- 6 in. ID



12 / 30			14 / 35			16 / 40			18 / 45			20 / 50			24 / 60		
0	80	100	50	80	100	50	80	100	50	80	100	50	80	100	50	80	100
0	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
5	72	90	45	72	90	45	72	90	45	72	90	45	72	90	45	72	90
0.3	56.5	70.7	48.1	77.0	96.2	62.8	100.5	125.7	79.5	127.2	159.0	98.2	157.1	196.3	141.4	226.2	282.7
0.1	30.5	38.2	26.0	41.6	52.0	33.9	54.3	67.9	42.9	68.7	85.9	53.0	84.8	106.0	76.3	122.1	152.7
2.7	20.4	25.4	17.3	27.7	34.6	22.6	36.2	45.2	28.6	45.8	57.3	35.3	56.5	70.7	51.0	81.4	101.8
Top-down																	
100/6.7 500/34 1,000/67 1,500/100 2,000/133																	
90 psi clean air																	
132	52/132	52/132	52/132	52/132	52/132	52/132	52/132	52/132	52/132	52/132	52/132	52/132	52/132	52/132	108/274	108/274	108/274
270	126/320	134/340	106/270	126/320	134/340	108/362	130/330	140/356	108/362	130/330	140/356	108/362	130/330	140/356	198/503	198/503	198/503
132	52/132	52/132	52/132	52/132	52/132	59/150	59/150	59/150	59/150	59/150	59/150	59/150	59/150	59/150	108/274	108/274	108/274
1,600/727			1,800/818			2,000/909			2,200/1,000			2,400/1,091			1,600/727		
316L Stainless Steel																	
Packing mechanism for columns up to 12 in. ID to maintain bed compression																	
Steel with rotation capability to ease packing and unpacking operations																	
316 Stainless Steel rack optional upon request																	
316L Stainless Steel, PEEK, TFE, EPDM and Polypropylene																	
Sealed parts have a 20RA or better finish and are electropolished																	
CE and pressure testing will be supplied																	
ASME Code Stamped optional																	
Final Qualification DQ/IQ/OQ for the empty tube is available																	



Process scale L&L columns  
- 12 in. ID



Process scale L&L columns  
- 24 in. ID

# Varian P2P Load & Lock™ Process Columns

## Standard configurations

The Varian Load & Lock Process columns are available in inner diameters from 4 in. (10 cm) to 24 in. (60 cm), in a variety of three (3) basic lengths and five (5) different pressure ranges. The columns can be supplied with stainless steel water jackets, which allow column temperature control.

Pilot / Small Production Scale Load & Lock Columns - 4 in. up to 12 in. ID

- A mobile stand (304 SS) provides a fully integrated Load & Lock Column, hydraulic compression and column tilting system
- Delivered with the standard DAC and SAC hydraulic feature

Production Scale Load & Lock Columns - 14 in. up to 24 in. ID

- A mobile stand (304 SS) provides a fully integrated Load & Lock Column, hydraulic compression and column tilting system
- Hydraulic SAC feature is optional

Please contact your local Varian, Inc. office or distributor directly for technical assistance and price information.



**VARIAN**

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