

# DAD-450



## Dynamic Axial Compression Column for Pharmaceuticals, Fine Chemicals, and Food Ingredients Purification

### Preparative HPLC Columns

Model DAD-450 is an automatic packing column developed for high-pressure preparation. Constant pressurization of the packed bed enables self-packing of a high-durability column without creating voids. The slurry port enables operation from supplying of gel to pressurized packing with ease.

Higher sealing performance is achieved by a unique, patented sealing structure. It can be used in a packing cycle for long periods. This column is entirely free from electric parts and therefore, safety use in explosion-proof area is possible. The column corresponds to IQ/OQ validation. We ensure a thorough support system for the maintenance and supply of consumables.

It is possible to select from various packing materials depending on the preparative object. Together with a group of products designed exclusively by YMC, preparation and purification will be achieved to meet your precise requirements. YMC America DAC Columns are ASME-U stamped pressure vessels, manufactured and tested in accordance with ASME Section VIII, Division 1.

### Specifications

Product number	DAD-450-700
Inner diameter	450 mm
Packed bed length	100 - 400 mm
Maximum pressure	7 MPa
Compression	Constant pressurization (DAC)
Driving direction	Downward <sup>*1</sup>
Temperature	10 - 40 °C, below 50% RH
Installation height	Over 4.5 m (hoist is required)
Dimensions	1500(W) × 1200(D) × 3200(H) mm <sup>*2</sup>
Weight	About 2500 kg <sup>*2</sup>
Utility	0.5 MPa dry air
Maximum Packing material	45 kg



### Notes

- Recommended packing material: Silica, Organic/inorganic hybrid silica 20 µm and larger
- Resistance to solvent: Ordinary solvents used in reversed-phase and normal-phase HPLC

<sup>\*1</sup> It is easy to unpack and collect gels from the bottom of the column by moving the cylinder down

<sup>\*2</sup> The hydraulic unit is a separate unit and not included in the dimensions and weight

## Specifications

Name		Preparative Dynamic Axial Compression Column DAD-450
Product Number		DAD-450-700
Body	Size	Inner diameter = 450 mm, Length = 700 mm, Column volume = 111 L
	Inner Finish	Electropolished after honing process
	Roughness	Ra ≤ 0.5
Filter	Material	SUS316L (sintered wire-mesh filter)
	Frit Size	2 µm
Seal	Material	PTFE
	Type	Uniquely developed sealing structure
	Feature	Packing seals effectively in response to inner pressure of column. Easy replacement.
Cylinder	Feature	Stainless steel rod, oil cylinder (anti-rust coating on surface)
Oil Pump	Source	Air-driven hydraulic pump
	Air Consumption	MAX 1600 L/min (ANR)
Operation	Switching Valve	Change orientation of cylinder alignment (UP, DOWN, HOLD)
	Pressure Regulator	Adjust pressure of oil pump
	Pressure Meter	Monitoring air operation and oil pressure
Safety Device	Relief Valve	Limit hydraulic pressure
	Emergency Stop	Stop supplied air
Cart	Assembly Support	Lift table cart made of stainless steel
Jig	Assembly Support	Support jig made of resin
Wetted Material		SUS316, SUS316L, PTFE, PCTFE
Non-wetted Material		SUS304, Brass, Steel (hydraulic equipment parts)
Connection	Inlet/Outlet	1/2" Swagelok tube fitting
	Slurry Port	ISO 1S sanitary ferrule
	Air	Ø12 one-touch fitting

## Options

It is recommended to use a slurry container at the time of pouring slurry.

Slurry Container	Feature	Slurry can be carried easily
	Product Number	SC-140-45
	Pump	Air-driven diaphragm pump maximum flow rate 45 L/min
	Air Consumption	MAX 300 L/min (ANR)
	Wetted Material	SUS316, SUS316L, PTFE, PFA, FEP, SCS14
	Slurry Hopper Inner Finish	Electropolished
	Connection	Column connection: ISO 1S sanitary ferrule Air connection: Ø12 one-touch fitting
	Air-driven Agitator	Air consumption: MAX 275 L/min (ANR)
	Washing Pump	Air consumption: MAX 200 L/min (ANR)
Flow Path Switching Panel	Feature	3 three-way valves enable the flow path to be switched easily
Cylinder Oil		NSF H1 approved oil is available

YMC America designs its DAC columns in accordance with ASME Section VIII, Division 1 and manufactures them under an active ASME Certificate of Authorization (U-Stamp and R-Stamp). Each column is assembled, inspected, pressure-tested, and U-stamped at our Devens, Massachusetts facility in the United States under YMC's ASME-approved quality control program, with full U-1A documentation and National Board registration. While key components are sourced globally, all ASME-required pressure-boundary fabrication, inspection, and certification are performed in our United States facility. This makes YMC America the only provider offering US-stamped DAC columns built for the demands of peptide, oligonucleotide, and small-molecule API production.