

## Personnel protective equipment

In order to reduce the risks during working with the column, always use the recommended personnel protective equipment. The following protective equipment is required:

Symbol	PPE	Phase of Life	Action
	Protective gloves	Operation	Column packing Column unpacking
		Initiation	Cleaning
	Safety goggles	Operation	All actions
		Initiation	Cleaning Pressure testing
	Protective clothing	Operation	All actions
		Initiation	Cleaning Pressure testing

## Delivery inspection

YMC recommends retaining and storing the original packaging and the foam cushion so that the column can always be shipped safely.

Delivery inspection is performed as follows:

1. Check the delivery for visible transport damage.
2. Check the delivery for the completeness of parts.
3. Compare the column description on the glass body with the data of the delivery note.

## Transport damage

Procedure, if you observe any visible transport damage:

1. Refuse or reserve acceptance of the delivery.
2. Record the transport damage on the delivery note of the transporter or in the transport documents.
3. Inform YMC Europe GmbH and/or the responsible supplying agent.

## Specifications

Parameter	Standard Columns
Inner diameters [mm]	5, 10, 15, 25, 35, 50
Bed lengths [mm]	125, 250, 500
Pressure range* [bar]	15-80
Temperature range [°C]	AB: 4-40, SR: 16-40
Versions	AB (Aqueous Buffer)
	SR (Solvent Resistant)
Combinations of pistons	Short (Two short pistons)
	Short/long (One short and one long piston)
	Long (Two long pistons)
Wetted parts	AB: PE pistons, PE frits, EPDM O-ring, KPG borosilicate glass 3.3 column body
	SR: PTFE pistons, glass or stainless steel frits, PTFE chevrons or Kalrez® O-ring, KPG borosilicate glass body

\* Pressure range depends on the inner diameter of the column.

## Chemische Beständigkeit

The resistance of the column is based on the resistance of the each wetted parts.

	Stainless steel	EPDM	Kalrez	PE	FEP	Sintered glass
Acetone	+	+	+	+	+	+
Acetonitrile	+	•	+	+	+	+
Ammonium dihydrogen phosphate	•	+	+	+	+	+
Cyclohexane	+	-	+	•	+	+
Dichlormethane	+	-	+	-	+	+
EDTA (3%)	+	+	+	+	+	+
Acetic acid (6%)	•	+	+	+	+	+
Ethanol	+	+	+	+	+	+
Ethyl acetate	+	•	+	+	+	+
n-hexane	+	-	+	•	+	+
Isopropanol	+	+	+	+	+	+
Methanol	+	+	+	+	+	+
NaOH (2 M)	•	+	+	+	+	+
HCl (1 M)	-	+	+	+	+	+
Urea (8 M)	+	+	+	+	+	+
NaCl (1 M)	•	+	+	+	+	+
Na <sub>2</sub> SO <sub>4</sub> (0.5 M)	•	+	+	+	+	+

+ = Resistant • = Limited resistant - = Not resistant

If your solvent is not listed, please contact us for a chemical resistance check.

# Quick Guide

## YMC Glass Columns for Laboratory Scale

### ECOPLUS



## Intended use

The laboratory scale ECO<sup>PLUS</sup> glass columns are only to be used for the separation of substances via chromatographic techniques. The product is only for the use with liquids that have a pressure <0.5 bar above the atmospheric pressure at the intended maximum temperature (40 °C). Every use which is outside these specifications is defined as not intended use. The intended use includes the compliance with the advice and terms in the manual. You can find the detailed manual on the website [www.ymc.de](http://www.ymc.de) for download.

## General safety instructions

In order to avoid accidents and injuries,

- operate the glass column only within its intended use.
- follow all general and special safety instructions as well as all warnings in the manual.
- follow danger signs and sign giving instructions.
- follow the rules and regulations for prevention of accidents at the site of operation.
- comply with all inspection and maintenance intervals.

## Personnel requirements

The various tasks described in the manual make different demands on the qualifications and training of the persons carrying them out.

The user must:

- have competent and proficient training.
- be trained in dealing with pressure devices.
- read and fully understand the manual before using this ECO column.

## YMC Europe GmbH

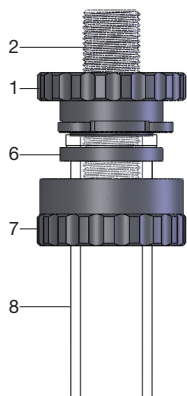
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## Opening the column

To open the column, proceed as follows:

1. Hold the black counter screw connection and turn it in Up-direction, until the piston has moved a little bit.  
✓ Disconnect the counter screw (1) and counter nut (7) slightly this way.
2. Fix the counter nut (7) and press the counter screw (1) slightly towards the counter nut.
3. Turn the counter nut clockwise and open the counter screw connection.
4. The end piece can be removed from the glass body.

## Closing the column

To close the column, perform as follows:

1. Insert the endpiece in the glass body.
2. Bring the counter screw and counter nut together and turn the counter screw anti-clockwise until the bayonet system snaps.  
✓ The column is closed now.

## Piston adjustment

The piston of the ECO<sup>PLUS</sup> columns is moves linearly up and down. The end piece is inserted and the bayonet system is closed.

The piston is adjusted as follows:

1. Hold the counter screw.  
**Attention:** Do not turn the counter nut as this will open the column.
2. By turning the counter screw connection clockwise, the piston is moves up. By turning the counter screw connection anti-clockwise, the piston moves down.

## Connection to the system

ECO<sup>PLUS</sup> glass columns are shipped with an accessory bag containing different fittings for connecting the column to the system. The tubing is connected to the piston outlet using a ferrule and a nut. For connecting the tubing to the system, 10-32 or M6 fittings are included depending on the column inner diameter. The size of the tubing is also dependent on the column dimension.

## Accessories ECO columns 10–15 mm ID

### Connection Principle



Piston Thread: 1/4"-28G Ferrule Nut Tubing 1/16" (0.8 x 1.6)

Connection to Column 1/4"-28G



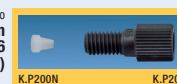
Connection to System 10-32 HPLC (ÄKTA)



Connection to Column/System 1/4"-28G



Connection to System M6 (ÄKTA)



## Accessories ECO columns 25–50 mm ID

### Connection Principle



Piston Thread: 1/4"-28G Ferrule Nut Tubing 1/8" (1.6 x 3.2)

Connection to Column 1/4"-28G



Connection to System M6 (ÄKTA)



Connection to Column/System 1/4"-28G

