

## 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]	10, 15, 25, 50, 70, 80
Bed lengths [mm]	120, 200, 450, 750, 1000
Pressure range* [bar]	30–5
Temperature range [°C]	4–40

Versions	AB (Aqueous Buffer)
	SR (Solvent Resistant)
Combinations of pistons	Two adjustable pistons: Multivario
	One adjustable piston: Vario

Wetted parts	AB: POM pistons, glass or PE frits, FKM or EPDM O-ring, borosilicate glass 3.3 column body
	SR: PVDF pistons, glass or stainless steel frits, FFKM O-ring, borosilicate glass 3.3 column body

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

## Chemical Resistance

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

	PVDF	Stainless steel	EPDM	FFKM	PE	FEP	POM	FKM	Sintered glass
Acetone	–	+	+	+	+	+	+	–	+
Acetonitrile	•	+	•	+	+	+	•	+	+
Ammonium dihydrogen phosphate	+	•	+	+	+	+	•	+	+
Cyclohexane	+	+	–	+	•	+	+	+	+
Dichloromethane	•	+	–	+	–	+	•	+	+
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

# ECO



## Intended use

The laboratory scale ECO 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.eu](http://www.ymc.eu) 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

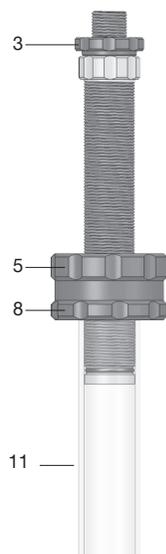
Schöttmannshof 19  
D-46539 Dinslaken  
Germany  
Phone +49 2064 427-0, FAX +49 2064 427-222  
[www.ymc.eu](http://www.ymc.eu)

## YMC Schweiz GmbH

Im Wasenboden 8  
4056 Basel  
Switzerland  
Phone +41 61 56180-50, Fax +41 61 56180-59  
[www.ymc-schweiz.ch](http://www.ymc-schweiz.ch)

## YMC CO., LTD.

YMC Karasuma-Gojo Bld. 284 Daigo-cho,  
Karasuma Nishiiru Gojo-dori Shimogyo-ku,  
Kyoto 600-8106 Japan  
Phone +81 75 34245-15, FAX +81 75 34245-50  
[www.ymc.co.jp](http://www.ymc.co.jp)



## Opening the column

To open the column, proceed as follows:

1. Loosen the screw nut (3) by turning it anti-clock-wise.  
Hold the outer spindle during loosening.  
✓ The O-ring is loosened.
2. Fix the counter screw (8) and turn the counter nut (5) anti-clock-wise.  
✓ The end piece can be removed now from the glass body.

## Closing the column

To close the column, proceed as follows:

1. Insert the endpiece with loosened O-ring.
2. Tighten the counter nut (5) and counter screw (8).
3. Tighten the screw nut (3) by turning it clock-wise.  
Hold the outer spindle during tightening.  
✓ The O-ring is now sealed.

## Piston adjustment

The piston of the ECO columns moves linearly up and down.  
The end piece is inserted and the counter screw connection is closed.

The piston is adjusted as follows:

1. O-ring seals by turning the counter screw clockwise.  
✓ O-ring is sealed if a constant black line appears in the glass body.
2. Hold the closed counter screw connection.
3. By turning the counter screw connection clockwise, the piston moves up. By turning the counter screw connection anti-clockwise, the piston moves down.

## Connection to the system

ECO 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



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



Connection to System M6



## Accessories ECO columns 25–80 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



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

