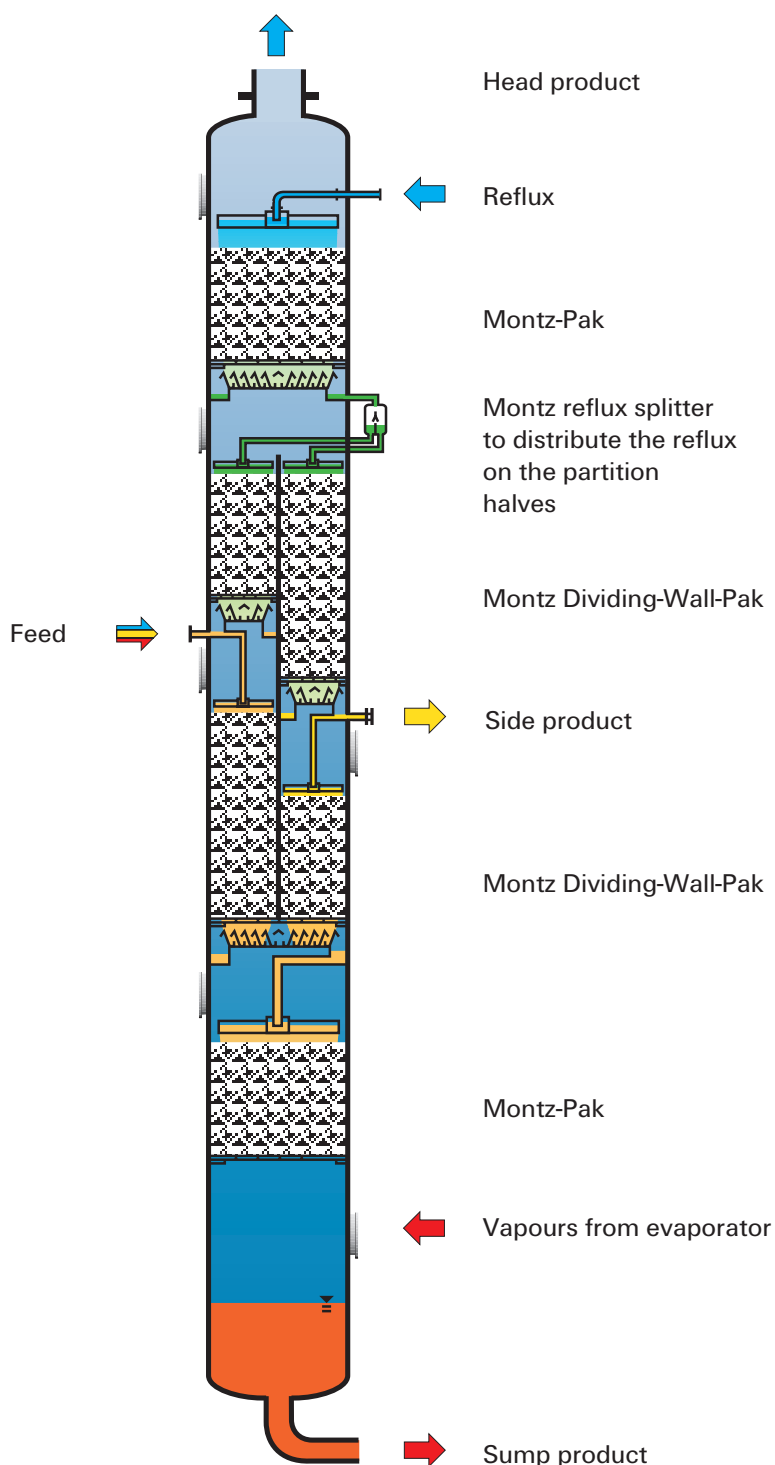


# Montz dividing wall columns

## Separation technology takes off

**Dividing wall columns have been in use in production of chemical industry for the past 18 years. Montz were the first to supply columns of this type and since then have constantly championed the development of this technology. With over 60 dividing wall columns, Montz is the world's leading equipment supplier for this column system.**



### Dividing wall columns

Dividing wall columns can be used wherever multicomponent mixtures have to be separated into pure fractions. They are particularly suited to obtain pure medium boiling fractions. The separation of a three-component mixture into its pure fractions in conventional systems requires a sequential system with at least two columns or main columns with side columns. With a dividing wall column this task can be solved in only one apparatus.

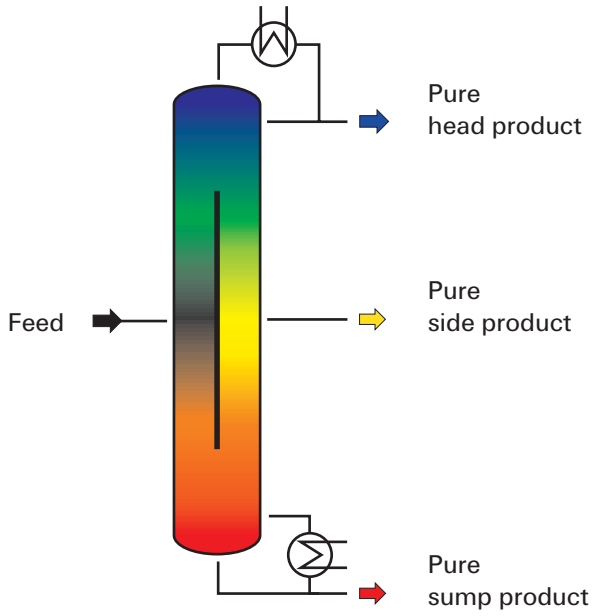
A vertical wall is introduced in the middle part of the column, creating a feed and draw-off section in this part of the column. The dividing wall, which is designed to be gas and liquid-sealed, permits the low-energy separation of the low and high boiling fractions in the feed section. The medium boiling fraction is concentrated in the draw-off part of the dividing wall column.

This arrangement saves a second column. The column shell, internals, evaporator and condenser for a second column are not needed. Control and maintenance work is significantly reduced.

Dividing wall columns are an alternative to multi-column systems that can help to save investment and operating costs. Investment costs are cut by 20 - 30%, operating costs by around 25%.

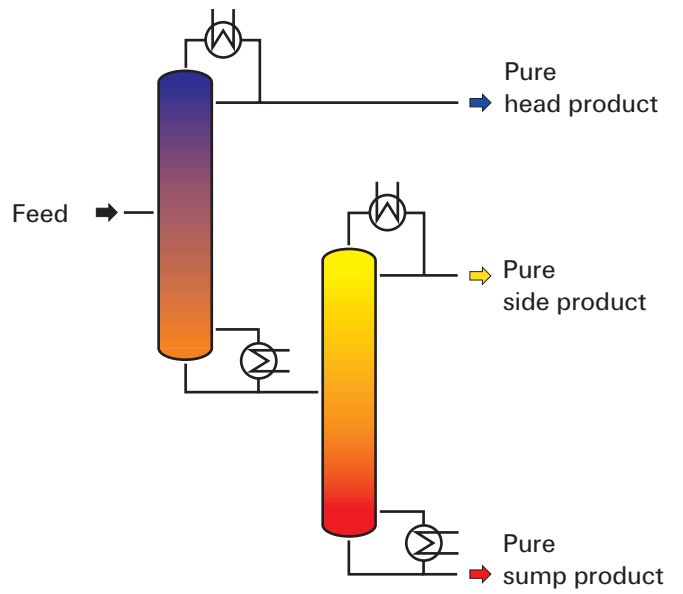
## Comparison of two column systems for three pure products

### ▶ Dividing wall column



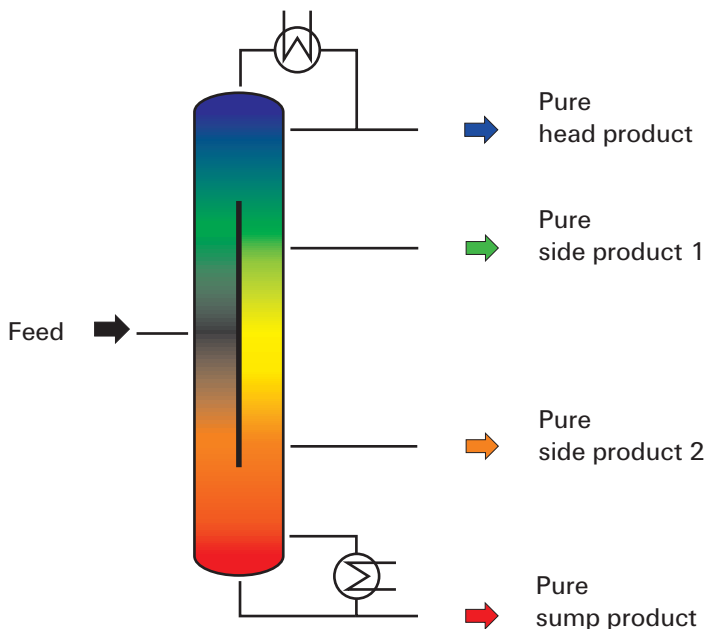
- Equipment needed
- ▶ One column
  - ▶ One condenser
  - ▶ One evaporator
  - ▶ One reflux splitter

### ▶ Conventional column system



- Equipment needed
- ▶ Two columns
  - ▶ Two condensers
  - ▶ Two evaporators

### ▶ 4-component mixtures can also be separated into pure fractions in a single dividing wall column.



### ▶ Design of a redistribution section in the dividing wall section DN800



# Dividing wall columns

## Separation technology takes off

**The unfixed dividing wall has proved to be very advantageous and versatile. The patent pending design (cooperation agreement with BASF AG) offers significant advantages over fixed, welded-in walls.**

### Advantages of the unfixed dividing wall

- Insensitive to poor manufacturing tolerances of the column shell
- Fewer manholes and lower weight
- Faster and more precise assembly and installation of internals
- Minimised welding
- Simple and low-cost revamping of conventional columns to dividing wall technology
- The dividing wall can be removed during revamping and inspections

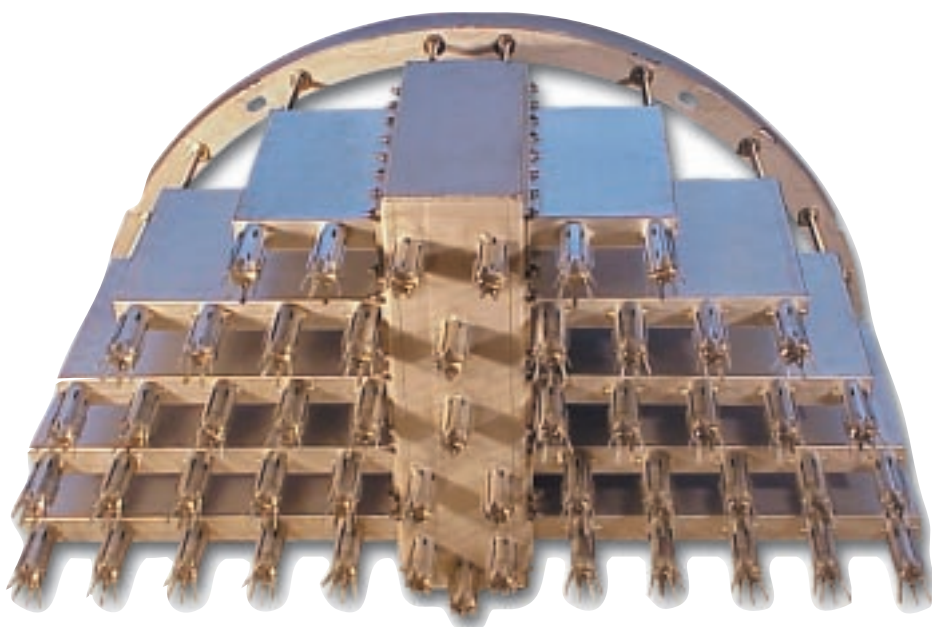
Possible problems such as eccentric arrangement of the dividing wall during welding, irregularities in the wall after welding, liquid wall bypass and installation difficulties, are avoided.

### Internals for the dividing wall column

Montz have significantly improved the planning and operational reliability of the columns, particularly in the field of the internals for the dividing wall sections, by adapting the proven

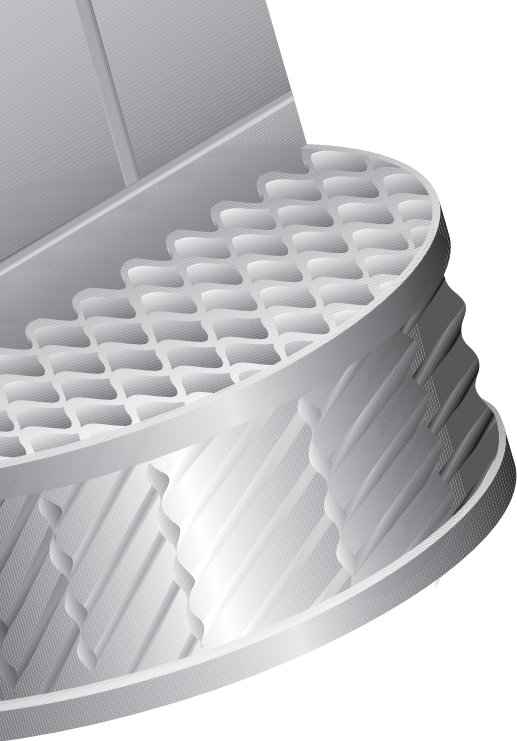
delivery program of structured packings over the past years. Thus, all Montz packings have a patented wall wiper system that offer a self-adjusting and centering of the

packing layers, minimised liquid wall bypass and thus an improved separation efficiency in conjunction with the unfixed dividing wall. Wire mesh packings of the type A3-500 and metal sheet packings in a standard design as well as Type M high-performance packings are in successful operation. Adapted liquid collection and distribution systems completes off the range of internals.



◀ Type S liquid distributor for dividing wall columns





▲  
Montz wall wiper system  
and Montz connector system  
for unfixed dividing wall

**Competence**

The dividing wall column concept is used today as a standard tool in thermal separation technology. Dividing wall columns are in successful use in the field of fine vacuum through to pressure distillation. Working head pressures of 2 mbar to 10 bar have been realised. Column dimensions for pilot columns achieve a diameter of 40 millimetres with overall heights of 6 metres and more.



Montz Process Engineering provides the necessary expertise in this innovative technology and also helps you to design your dividing wall columns with the engineering of column components through to the planning of the overall distillation system.



**Control**

The correct operation of dividing wall columns requires a control of the liquid distribution ratio between the halves of the dividing wall. Montz reflux splitters offer the necessary flexibility and operational reliability, enable small overall heights and work much more precisely than valve and orifice plate control systems.

Production columns are built with diameters of 4 metres and column heights of 70 metres. Dividing wall columns are used to distil various product classes, from normal purity requirements through to E-grade chemicals.

▼  
Dividing wall column DN 3600

