# Stripping Column

## For deodorization and physical refining of fats and oils

### Application

This high-performance packed stripping column is specially designed for deacidification and deodorization of fats and oils in refining plants. The stripping column is a part of the Alfa Laval SoftColumn™ deodorizing concept, but can also be offered as a retrofit component for other deodorizers – irrespective of make.

### Operating principles

The pre-treated and heated oil flows either by gravity or under pressure from the final heater to the distributor on the top of the column. The distributor spreads the oil evenly over the cross-section of the column. This oil then trickles down the structured packing, flowing as a thin layer on this extended surface until it reaches the bottom of the column. It then continues to the next process step. The counter-current flow of the steam is achieved via a steam distributor installed in the bottom of the column or from another source. The oil in the column meets the stripping steam in a counter-current flow. The column is under vacuum, so exposing the oil to the vacuum at a high temperature removes volatile substances and the steam carries them out to the vacuum outlet at the top of the column. The height of the column is a function of the number of desired distillation steps.

### Design features

Volatile compounds, such as fatty acids and various odour causing compounds, are distilled off by the joint action of the vacuum and the stripping steam. The extensive surface area created by the structured packing and the counter-current flow regime in the column significantly reduces the amount of stripping steam needed, compared with the traditional tray system. The short retention time inside the column and the reduced amount of steam means the oil is treated gently. Due to low retention time at high temperature, low amount of steam and fast distillation effect, unwanted or side reactions are reduced to a minimum. The packing is specially designed with a low static hold-up and rapid draining properties. This keeps the level of contamination during stock changes within the desired limits.

Due to the special design of the packing, which creates turbulence between the plates, and the fact that there are no stagnant zones, a self-cleaning effect ensures continuous operation.

Installed stripping column

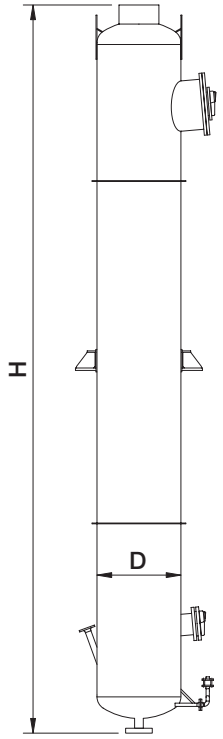
The flexibility of the system keeps the formation of trans-isomers within acceptable limits, and allows for the removal or retention, of natural antioxidants, while maintaining high quality of the oil.

The stripping section allows for the independent operation of distillation, so that process conditions can be modified for different oil stocks and quality requirements without compromising other important factors.

In order to simplify service and maintenance, if the column is supplied with the sparge steam tubes, they can be removed from outside for manual cleaning. The inside of the column is accessible for assembling the packing and for maintenance. The column can be supplied with two manholes, one at the top and one at the bottom, with illuminated sight glasses with double O-rings on the flanges.

**Technical specifications**
Capacity: up to 1500 tons/day (Higher capacities available)
Operating temperature: up to 275°C, (530°F)
Sparge steam consumption for deodorization: 0.5% of oil flow
Material
Shell: AISI 304
Packing: AISI 316L

**Options:**
With a scrubber incorporated in the top
Sparge steam injection
Vapour inlet connection from other sources




**Dimensions and weights, approximate:**

| D, mm | (inches) | Height mm | (inches) | Net weight, kg | (lb) |
|---|---|---|---|---|---|
| 850 | (34) | 8500 | (335) | 1300 | (2865) |
| 1000 | (39) | 8500 | (335) | 1525 | (3360) |
| 1200 | (47) | 8500 | (335) | 1825 | (4025) |
| 1450 | (57) | 8500 | (335) | 2200 | (4850) |
| 1600 | (63) | 8500 | (335) | 2450 | (5400) |
| 1850 | (73) | 8500 | (335) | 2825 | (6230) |
| 2000 | (79) | 8500 | (335) | 4075 | (8985) |
| 2100 | (83) | 8500 | (335) | 4275 | (9425) |
| 2300 | (91) | 8500 | (335) | 4675 | (10305) |
| 2500 | (98) | 8500 | (335) | 5075 | (11190) |
| 2800 | (110) | 8500 | (335) | 5700 | (12565) |
| 3200 | (126) | 8500 | (335) | 6500 | (14330) |
| 3400 | (134) | 8500 | (335) | 6900 | (15210) |