Shell ConSep™ trays
Offering increased mass transfer capacity

Why use Shell ConSep technology?
- Very high capacity (30 to 100% higher than conventional technologies) and efficiency.
- Extensive experience with refinery and natural-gas liquids applications.
- Suitable for increasing existing plant capacity (revamps).
- Application at low tray spacing can provide lower reboiler and condenser duties.
- Proven technology. Excellent reliability based on actual operating experience and extensive research and development.

Shell Global Solutions can offer mass-transfer devices with a capacity 30 to 100% higher than most other trays – the Shell ConSep trays. They can be used reliably in refinery and offshore applications.

Description
ConSep trays utilise the principle of de-entrainment by centrifugal force to remove the gravitational limitation of jet flood. Separation of the entrained liquid before entering the next tray allows very high vapour velocities to be achieved in the column. The ConSep tray combines the features of a contacting tray and a centrifugal separator in a single stage (Figure 1). The trays have been successfully applied in systems with vapour to liquid ratios close to unity, such as main fractionators and debutanisers.

![Figure 1: Schematic of a ConSep tray.](image)

† Shell Group trademark
Experience

Shell Global Solutions’ staff have in-depth experience of designing and operating columns with ConSep trays. Several debutanisers and a hydrocracking unit main fractionator have been fitted with ConSep trays in recent years (see Table 1).

Table 1: ConSep tray applications designed and/or revamped by Shell Global Solutions.

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Duty</th>
<th>Diam., mm</th>
<th>Project type</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>1995</td>
<td>Debutaniser</td>
<td>1874</td>
<td>Revamp</td>
</tr>
<tr>
<td>Australia</td>
<td>1997</td>
<td>Debutaniser</td>
<td>1829</td>
<td>Revamp</td>
</tr>
<tr>
<td>Australia</td>
<td>1997</td>
<td>Debutaniser</td>
<td>1700</td>
<td>Revamp</td>
</tr>
<tr>
<td>Singapore</td>
<td>1998</td>
<td>Debutaniser</td>
<td>2100</td>
<td>Revamp</td>
</tr>
<tr>
<td>Germany</td>
<td>2000</td>
<td>Hydrocracker unit main fractionator</td>
<td>2200</td>
<td>Revamp</td>
</tr>
</tbody>
</table>

A ConSep tray for a debutaniser application.

Please contact Shell Global Solutions for further information

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