

# Tower Technical Bulletin

## Tray Design Features that Reduce Turnaround Maintenance Time

### Background

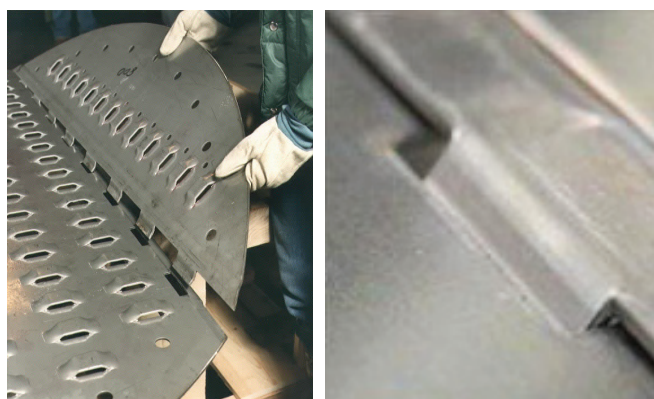
Column shutdowns can be costly. Production is halted and maintenance expenses accumulate without any offsetting revenue. Maintenance crews need to isolate, open, inspect, modify, repair, and close columns, all under pressure to complete work as expeditiously as possible.

Minimization of shutdown costs begins during the equipment design phase. Sulzer incorporates several features into our tray designs that can reduce column shutdown time.

### Tray Replacement and Installation

Tray removal and replacement can take a significant amount of time; the larger the tray diameter, the longer the time. This is not only due to the handling the physical size of the components, but also to all the many hardware connections associated with the various tray panels.

For more than 40 years, Sulzer has offered a boltless panel to panel connection called Lip-Slot™. This interlocking tray panel design decreases installation time by as much as 50% (two Lip-Slot trays installed in the time it normally takes to install one conventional tray).



Lip-Slot™ Connection

The Lip-Slot design is used for panel to panel connection allowing adjacent panels to be quickly secured to each other. This design is typically employed on trays with diameters greater than 72 inches, where installation times can be significant.

Lip-Slot design has been successfully utilized in heavy duty applications, including high uplift (2.0 PSI) internals designs.

### Tray Manway Design

During column openings, it is always important to have quick

access for work and inspection and then to be able to close the tray manway panels as quickly as possible. Sulzer can provide quick opening manways that allow access to the tray below in less than 10 seconds.

These quick opening manways come with handles and special locks that allow opening and closure without losing tightness between manway panels. This design allows the panels to be opened or closed either from top or bottom of the tray. The handle position indicates if it is locked or unlocked.

Some customers prefer using slide fasteners on manway panels. In these cases, an easy opening manway design has been developed with slide fasteners. This design takes somewhat longer to open and close compared with the quick opening design, but clearly less time than conventional manways.



Quick Opening



Easy Opening

### The Sulzer Process Applications Group

Sulzer Chemtech has over 50 years of operating and design experience in refinery, oil & gas, and chemical applications. We understand your process and your economic drivers. Sulzer has the know-how and the technology to provide internals designs with reliable, high performance.

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