



Refinery applications with advanced mass transfer technology



Excellence in refining technology

Expertise and experience

Sulzer Chemtech is the process engineering and equipment manufacturing division of the international Sulzer Corporation, with its headquarters in Winterthur, Switzerland.

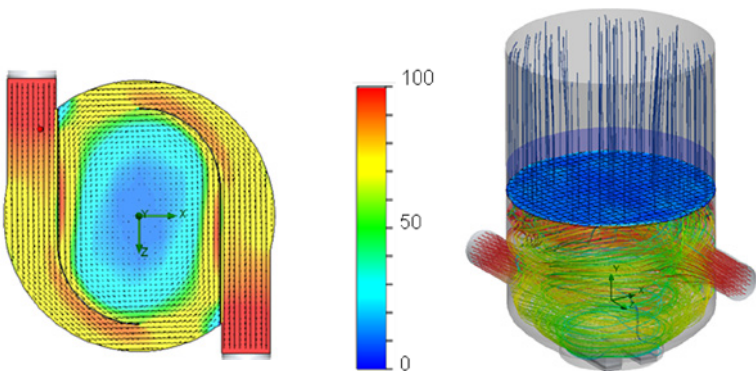
Areas of expertise include equipment and application know-how in separation and mixing technology. Products include trays, structured packing, and random packing for separation columns, internals for separators, fractional crystallization systems, and equipment for mixing and reaction processes.

Leading in research and development

With tried-and-tested design procedures and innovative engineering solutions, Sulzer can meet the most challenging refinery objectives. Sulzer has the requisite personnel, experience and engineering capability to model and analyze mass and heat transfer phenomena in distillation, absorption, extraction, mixing, gas-liquid, and liquid-liquid separation. Our large test and pilot facilities have the capability to extensively test trays, packings, separators and tower internals to maximize performance and reliability.

Computational Fluid Dynamics (CFD)

At Sulzer, CFD is extensively used for developing new products and optimizing the performance of the equipment being delivered (e.g. flash zones and wash sections).



Flow distribution in the flash zone and below the wash bed of a vacuum column 15300 mm ID

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Three-phase separator test facility



Pilot plant at Sulzer Chemtech

Engineering services

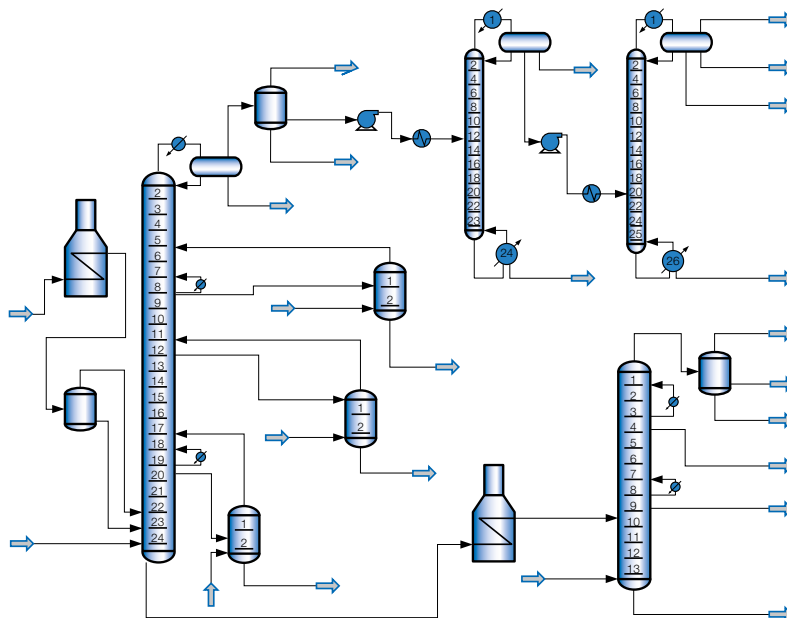
- Process simulation
- CFD study
- Feasibility study
- Basic engineering
- Detailed engineering
- Equipment design
- Installation at site
- Commissioning
- Start-up assistance
- Troubleshooting

Products

- Fractionation trays
- Structured packing
- Random packing
- Grids
- Distributors
- Static mixers
- Mist eliminators
- Coalescers

FOR

- Crude oil distillation
- Vacuum distillation
- Lube oil fractionation
- Hydrotreating
- Fluid catalytic cracking
- Hydrocracking
- Coking
- Visbreaking
- Reforming
- Isomerization
- Alkylation
- Aromatics recovery
- Gas concentration
- Gas sweetening
- Liquid-liquid contactor
- Solvent deasphalting



Process simulation

Sulzer Chemtech makes use of state-of-the-art simulation software. Process simulation experts can model new or revamped plant equipment, such as distillation columns, pumps, exchangers, valves, flash drums, fired heaters, piping, and fittings. Third-party thermodynamic packages are fine tuned for specific applications based on decades of experience at Sulzer Chemtech.

Process simulation model of a heat integrated crude and vacuum distillation unit



Engineering services and products

For more than 50 years Sulzer Chemtech has provided innovative mass transfer components to the oil and gas, and petrochemical industries. Our company offers a wide range of products and engineering services.

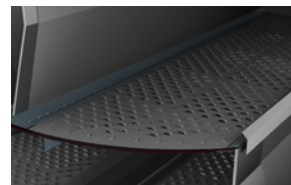


Our team of experts optimizing the mass transfer components for a revamp of a crude and vacuum distillation unit to provide customers with maximum benefits while minimizing investment costs

Innovative components

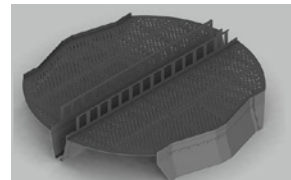
VG AF™ Tray

High performance fractionation tray featuring enhanced fouling resistance and hydraulic capacity.



UFMPlus™ VGPlus™ Tray

High performance fractionation tray featuring enhanced hydraulic capacity and separation efficiency.



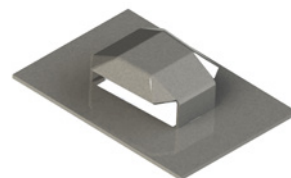
UFM™ Valve

Movable mini-valve featuring an innovative shape for maximum hydraulic capacity, separation efficiency, and the widest operating range.



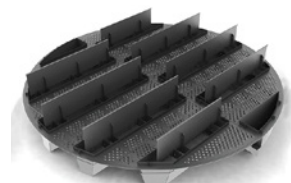
UFM™ AF XVG™ SVG™ Valve

High-performance fixed valves featuring a large opening and high lift for maximum fouling resistance.



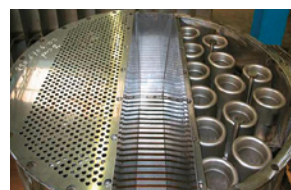
Shell HiFi™ Plus Tray

Multiple downcomer high performance fractionation tray suitable for high liquid loading applications.



Shell ConSep™ Tray

Ultra system limit high performance fractionation tray suitable for debottlenecking columns which otherwise would require a larger vessel diameter.



Shell Schoepentoeter Plus™

High-performance feed inlet distributor for mixed phases featuring devices that enhance bulk separation efficiency even at the highest feed inlet momentum.



SMV™ Static Mixer

High-performance mixer that enables maximum homogeneous mixing with minimum pressure drop and robust design with no moving parts.



VEP Liquid Distributor

State-of-the-art trough type distributor with the highest drip point density for the maximum number of fractionation stages per unit of bed height.



Mellapak™

High-performance structured packing that is particularly suitable for vacuum distillation and selective absorption.



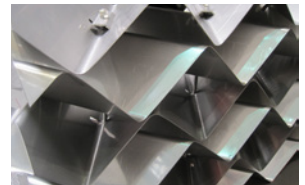
MellapakPlus™

The second generation of structured packing, featuring a geometric shape which drastically enhances the performance over standard Mellapak producing the highest number of theoretical stages per unit of pressure drop.



MG40 AF Mellagrid™

High-performance grid featuring structured geometry for superior mechanical robustness and smooth surface for fouling resistance. High sheet thickness is used in corrosive environments.



F-Grid™

Conventional type of grid suitable for fouling applications.



NeXRing™ Nutter Ring™ I-Ring™

High-performance random packing suitable for sponge absorbers, amine contactors, and lube cuts aromatic extraction.



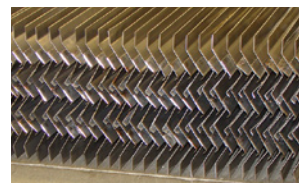
SMV, SMVP Extraction Packing

High-performance structured packing suitable for liquid-liquid amine contactors and lube cuts aromatic extraction.



Mellachevron™

High-performance mist eliminator suitable for heavy-duty applications.



Enhanced mass transfer technology for heavy duty and fouling services in refinery

Anti-fouling fractionation trays

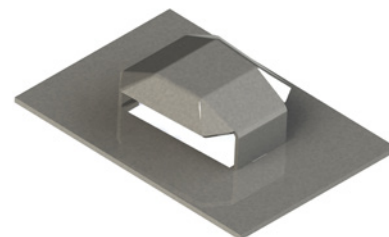
UFM™ AF

UFM AF is the latest addition to our fixed valve portfolio. This enhanced valve is part of the UFMPlus tray family, developed specifically for fouling services.

UFM AF is a large valve with an umbrella shape which provides excellent fouling resistance especially in combination with the following anti-fouling features:

- Stepped outlet weirs
- Sloped outlet weirs
- Push valves

UFM AF is a premium anti-fouling valve with high hydraulic capacity and superior fractionation efficiency. It can be combined with enhanced downcomers to maximize capacity for a given tower diameter.



VG AF™

VG AF trays are part of the VGPlus tray family and are particularly suitable for fouling applications.

Tray decks can be equipped with either SVG, our standard fouling resistant valve, or XVG, our extra large fixed valve developed particularly for severe fouling services. Push valves and enhanced outlet weirs are usually applied to minimize the fouling accumulation on the tray decks.

To maximize the mechanical resistance, even up to 14000 N/m² (2 psi), these trays can be equipped with the following features:

- Shear clips
- Through bolting panel connections
- Downcomer spreaders
- Explosion doors



2 Pass VG AF trays equipped with XVG valves, and push valves for an upgrader main fractionator



Extra large XVG valve

Anti-fouling structured and random grids

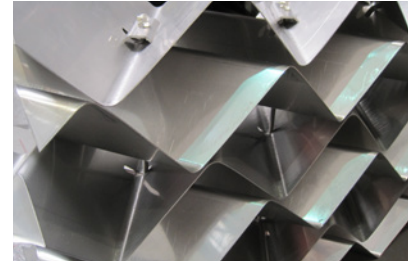
Mellagrid and MG40 AF™

Mellagrid is a high performance grid featuring:

- Structured geometry for
 - the highest de-entrainment efficiency
 - superior mechanical strength
 - good mass and heat transfer efficiency
- Smooth surface for
 - the highest fouling resistance
 - minimum residence time
- Mellagrid can be manufactured with thick metal sheets when used in corrosive environments.
- Mellagrid is suitable for cleaning via water and or steam jetting.

MG40 AF is an evolution of standard Mellagrid, specifically developed to maximize the hydraulic capacity, fouling resistance and the mechanical robustness without compromising the de-entrainment efficiency.

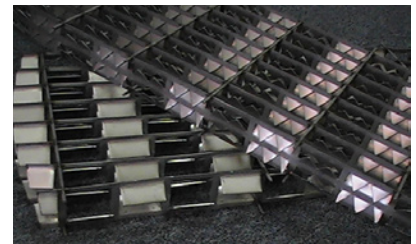
These grids can be delivered with tailor made support & hold down grids, and tie rods to further boost the mechanical resistance up to 14000 N/m² (2 psi).



MG40 AF™ high performance anti-fouling grids

Nutter Grid and F-Grid

Nutter Grid and F-Grid are the conventional type of grids extensively used before the launch of the Structured Grids. They are mainly available upon customer request.



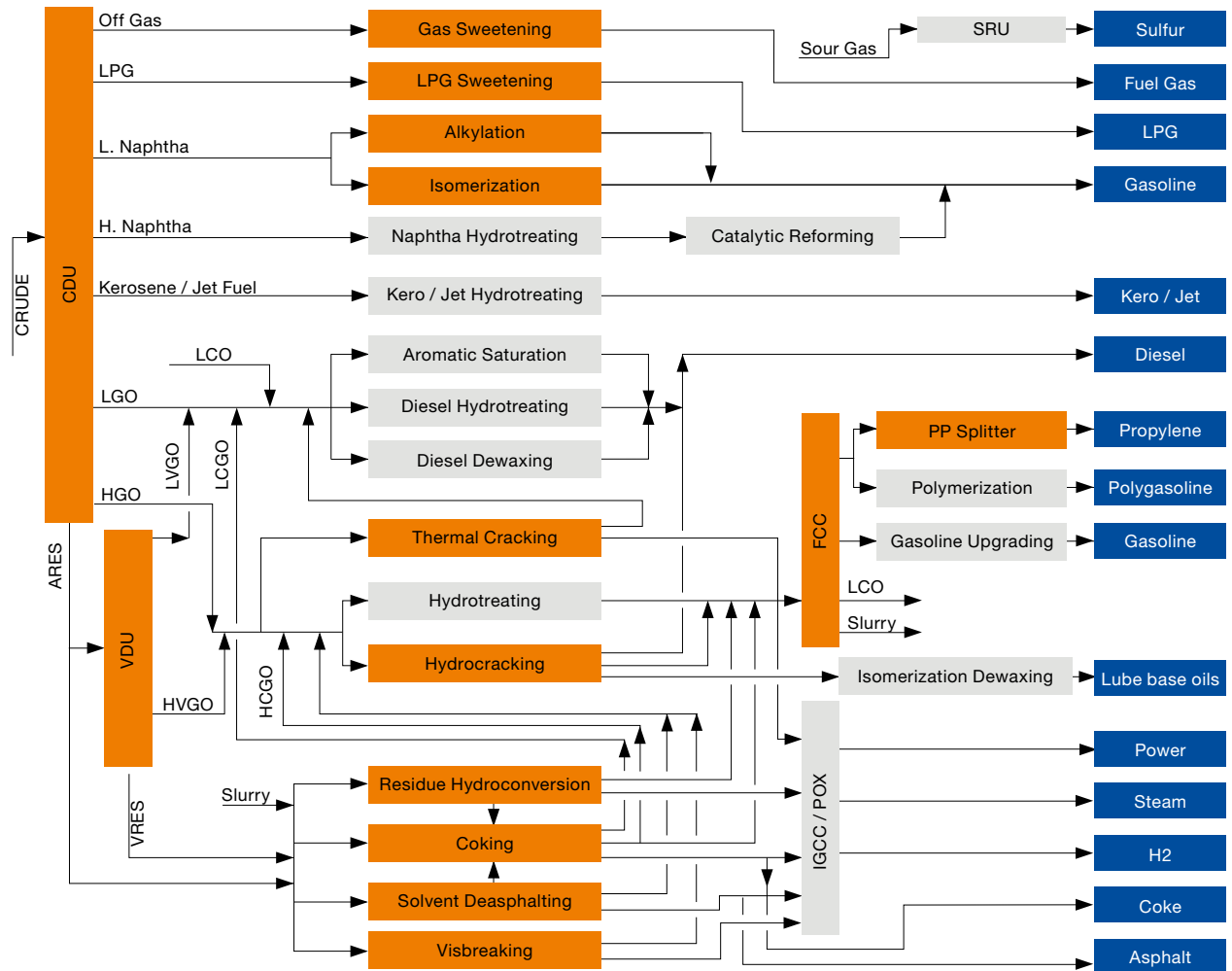
VES liquid distributor

State-of-the-art trough type distributor suitable for high liquid loadings in fouling applications. It can handle solid particles without compromising the drip point density for a good distribution efficiency.

F-Grid

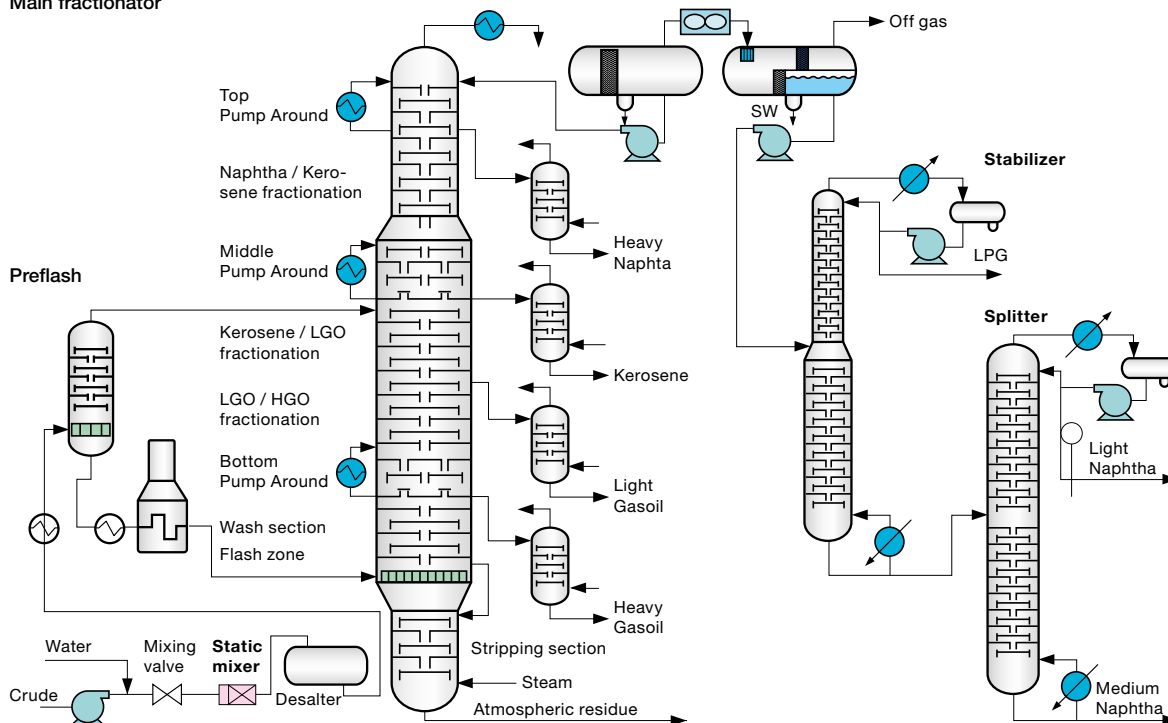


Refinery flow chart



Crude distillation unit

Main fractionator



CDU typical upgrading targets

Up to 30% additional capacity

- Up to 20% additional fractionation efficiency
- Up to 10% energy saving

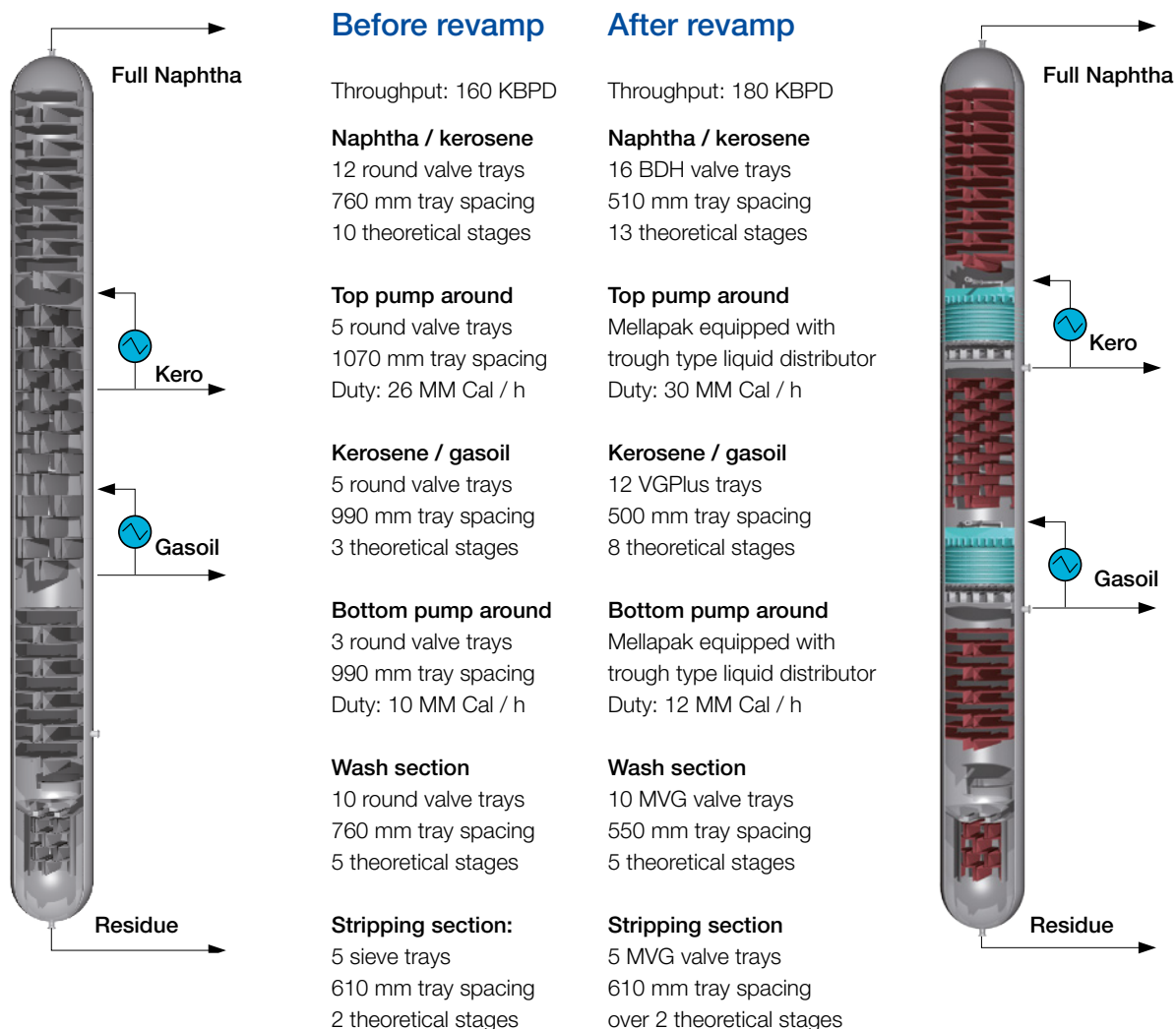


Shell Schoepentoeter Plus™: the advanced radial feed inlet vane device for the flash zone

Mass transfer components best fit

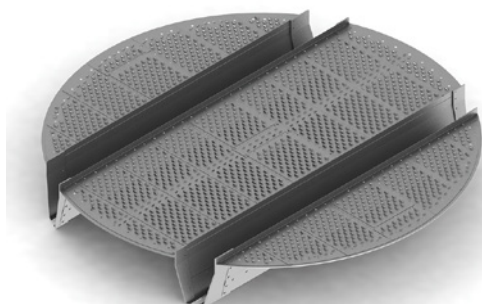
| | |
|---|--|
| Top section | VG AF trays, Mellagrid |
| Naphtha / Kero Kero / LGO LGO / HGO | VGPlus, UFMPlus trays |
| Middle PA Bottom PA | VG AF, VGPlus trays, Mellapak, MellapakPlus |
| Wash section | MellapakPlus, Mellapak VG AF, VGPlus trays |
| Flash zone | Shell Schoepentoeter Plus |
| Stripping section | VG AF, VGPlus trays, Shell HiFi Plus trays |
| Top receiver | Mellaplate coalescer, Mellachevron mist eliminator |
| Side strippers Preflash | VG AF, VGPlus trays |
| Stabilizer Splitte | VGPlus, UFMPlus trays Shell HiFi Plus trays |

CDU main fractionator upgrading

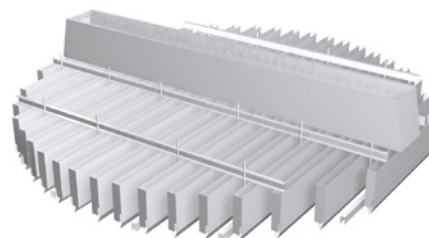


Achievements

- 10% additional capacity
- Sharper separation naphtha / kerosene
- Sharper separation kerosene / gasoil
- Gasoil suitable for low sulfur diesel production
- Less residue

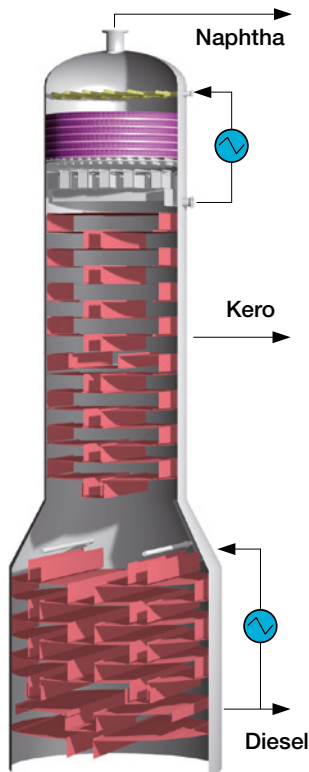


4-pass VGPlus high performance trays equipped with truncated downcomer, MVG, and push valves



VEH high-performance liquid distributor suitable for pump around sections

CDU main fractionator upgrading



Top pump around

4 conventional trays replaced with Mellagrid in Alloy 59 to maximize capacity and improve corrosion resistance

Naphtha / kerosene section

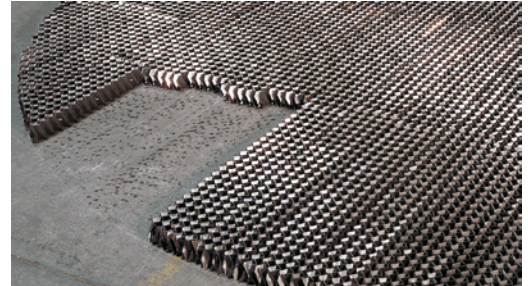
8 VGPlus trays retrofitting conventional trays to maximize capacity and improve the quality of the naphtha

Kerosene / diesel section

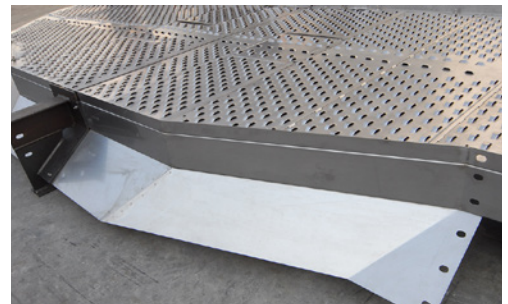
8 MVG trays retrofitting conventional trays to debottleneck the section

Middle pump around

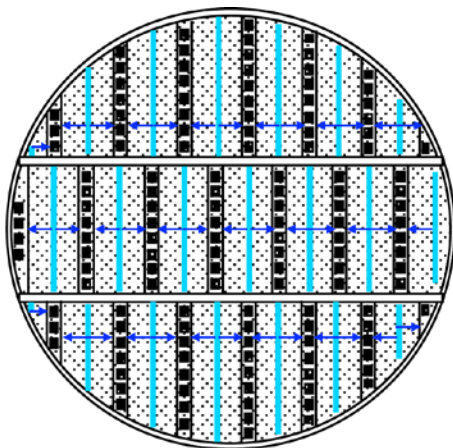
4 MVG trays retrofitting conventional trays to debottleneck the section



Mellagrid: the high-performance structured grid at the top pump around



VGPlus high performance trays equipped with ModArc downcomer, MVG, and push valves



13-pass Shell HiFi Plus trays at the top pump around

Top pump around

13 pass HiFi Plus retrofitting 4 pass conventional trays

Bottom pump around

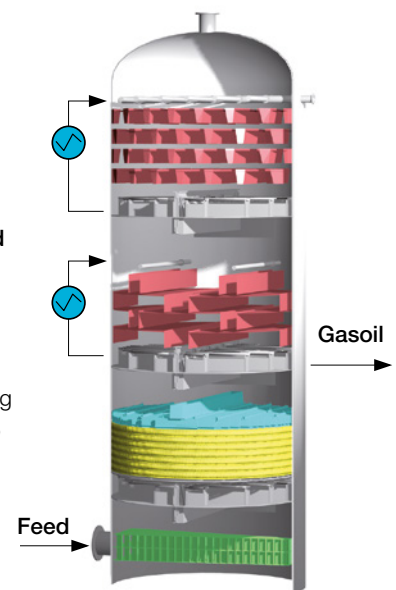
4 pass conventional trays

Wash section

MellapakPlus retrofitting 5 conventional trays to maximize gasoil yield and quality

Flash zone

Schoepentoeter



Upgrading a 400 KBPD CDU main fractionator

Vacuum distillation unit

Typical deep cut operating data

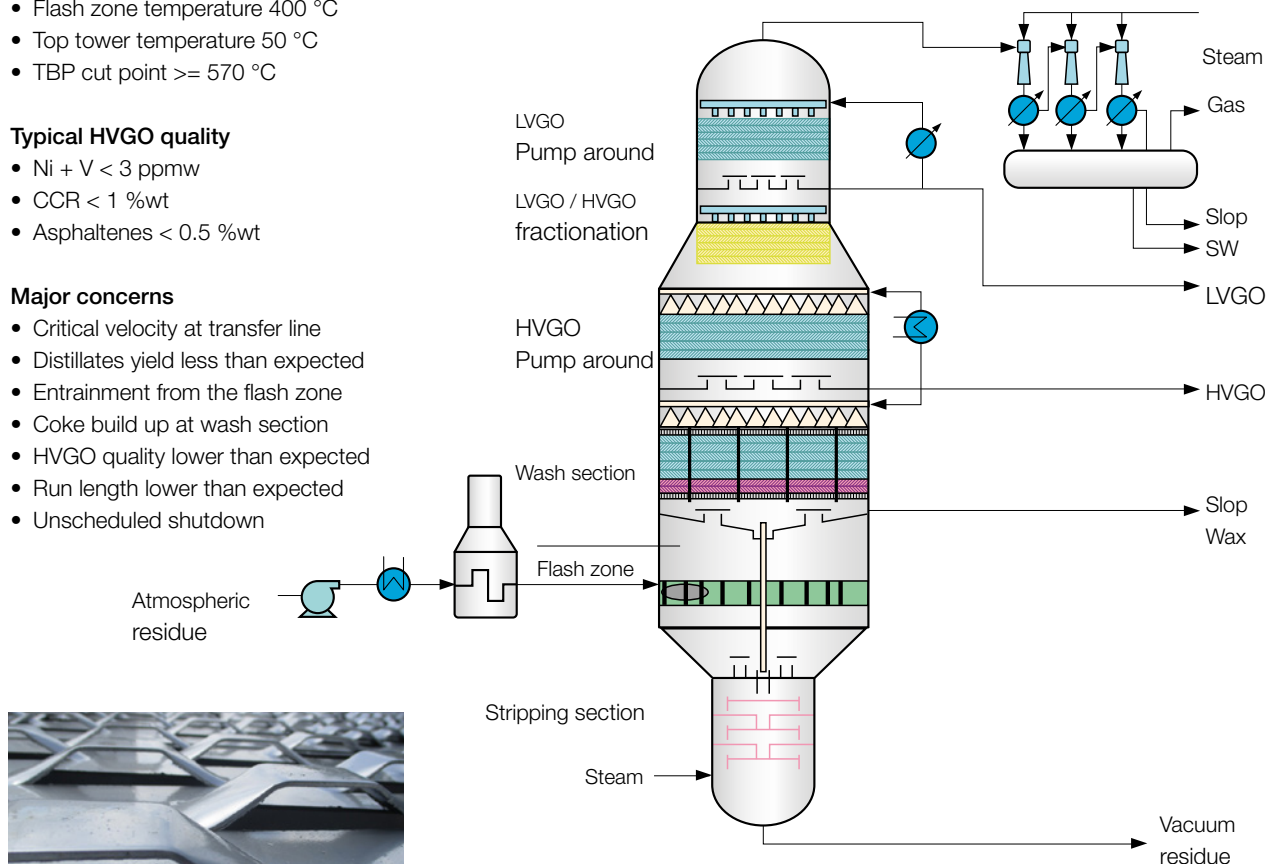
- Flash zone pressure 30 mmHg
- Top tower pressure 15 mmHg
- Coil outlet temperature 420 °C
- Flash zone temperature 400 °C
- Top tower temperature 50 °C
- TBP cut point ≥ 570 °C

Typical HVGO quality

- Ni + V < 3 ppmw
- CCR < 1 %wt
- Asphaltenes < 0.5 %wt

Major concerns

- Critical velocity at transfer line
- Distillates yield less than expected
- Entrainment from the flash zone
- Coke build up at wash section
- HVGO quality lower than expected
- Run length lower than expected
- Unscheduled shutdown



VG AF trays equipped with XVG valves for the stripping section

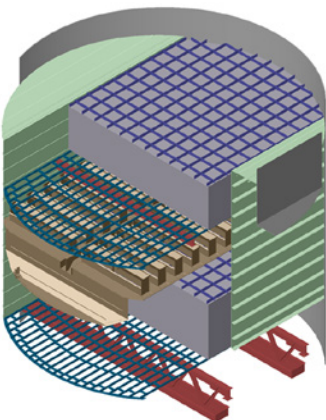
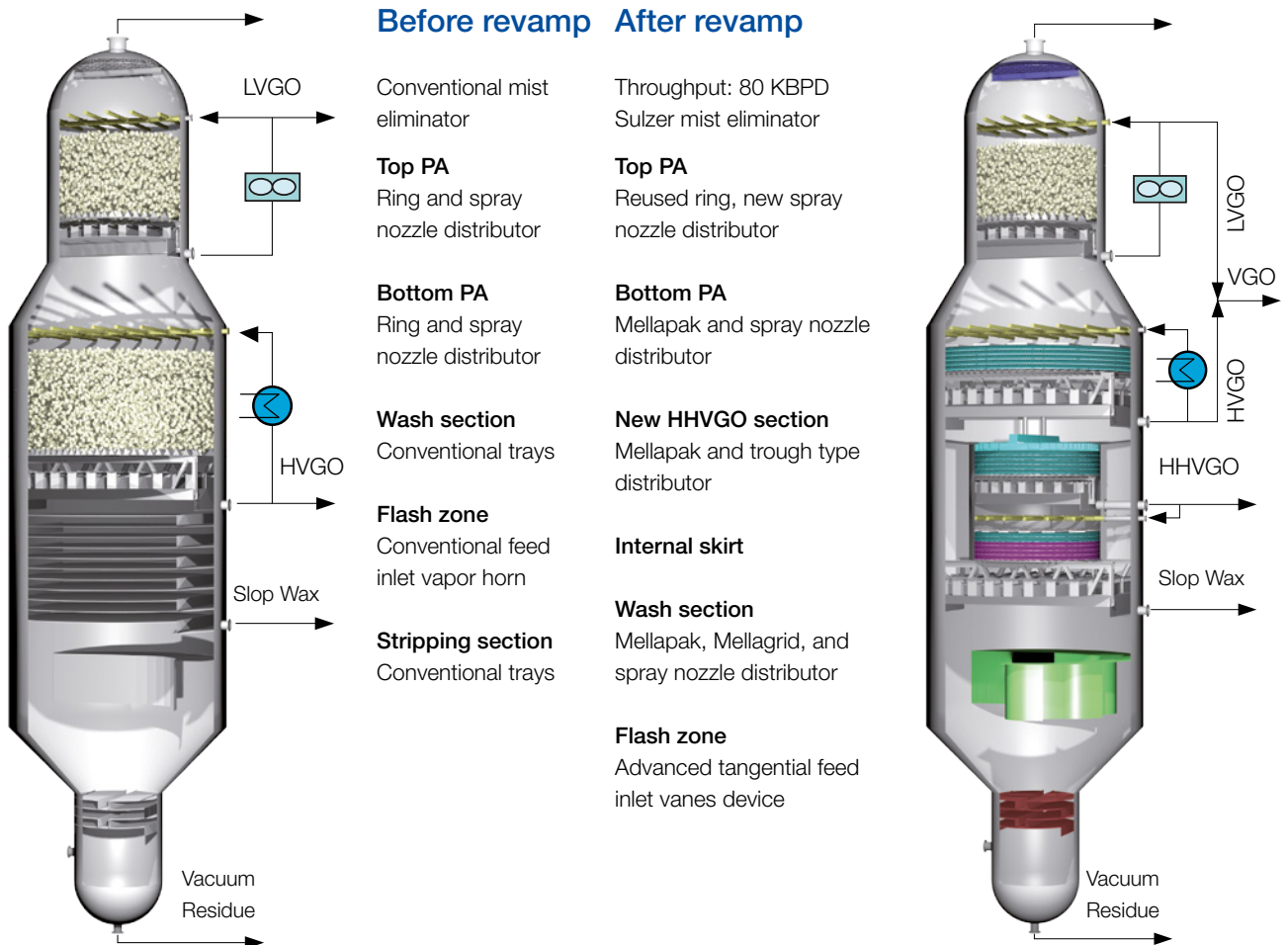


Mellagrid: high-performance structured grids for the wash section

Mass transfer components best fit

| | |
|-------------------|---|
| LVGO PA | Mellapak, MellapakPlus, VEH gravity distributor |
| LVGO / HVGO | MellapakPlus, Mellapak, VEP gravity distributor |
| HVGO PA | Mellapak, MellapakPlus, VRD spray nozzles distributor |
| Wash section | Mellapak, MellapakPlus, MG40 AF, Mellagrid, F-Grid, VRD spray nozzles distributor, support system to withstand uplift mechanical loadings |
| Flash zone | Advanced feed inlet vane device |
| Stripping section | AF trays |

Vacuum tower upgrading



Internal skirt used to fit the required mass transfer components while minimizing the need for new manways and/or process nozzles



SVG valves

Stripping section
SVG trays

Achievements

- Over 10% additional capacity
- Premium VGO quality to hydrocracker:
CCR < 0.01 %wt
- Additional HHVGO side cut to FCC:
Ni + V < 2 ppmw; CCR < 0.7 %wt
- Deeper cut point: 3 %wt on feed basis additional distillates recovery
- Heavier vacuum residue resulting in higher liquid yields at the coker plant

Upgrading a vacuum tower and the heater's transfer line (after revamp)

Sulzer serving as a single contractor from feasibility study to commissioning, start up, and witness of the revamping targets, all within 9 months.

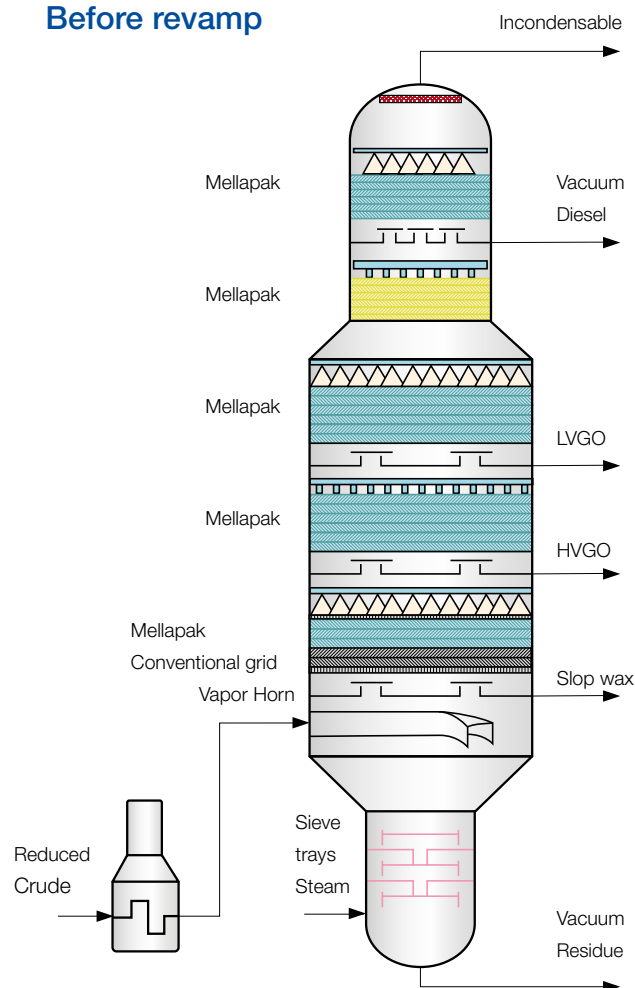
Scope of the revamp

- Increase the robustness of the tower internals
- Increase the capacity by 11%
- Maximize the distillates yield
- Keep the products on spec:
 - 95 %Vol boiling point of vacuum diesel $\leq 360^{\circ}\text{C}$
 - Ni + V in the VGO ≤ 2 ppmw
 - CCR in the VGO ≤ 0.7 % wt
- Stable and reliable operation for at least 5 years

Scope of the study

- Process simulation
- Heat and material balance
- Preheat train and pump around circuits
- Fired heater
- Transfer line
- Vacuum column

Before revamp



Tangential feed inlet nozzle before revamp



Radial feed inlet nozzle after revamp

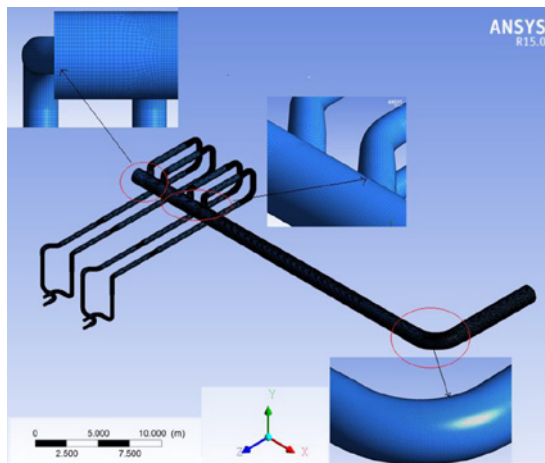
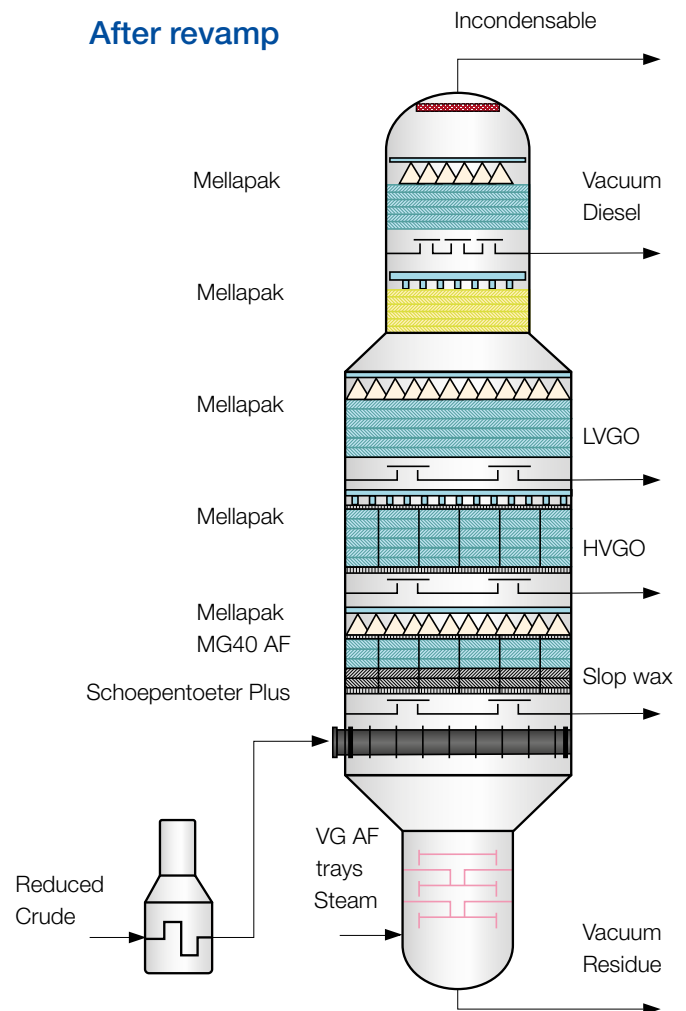
Scope of the supply

- New feed inlet nozzle
- Relocation of the feed nozzle from tangential to radial
- Partial re-routing of the transfer line
- HVGO section, wash section, Schoepentoeter Plus, and stripping section designed for 2 PSI uplift
- Construction
- Commissioning
- Start up assistance

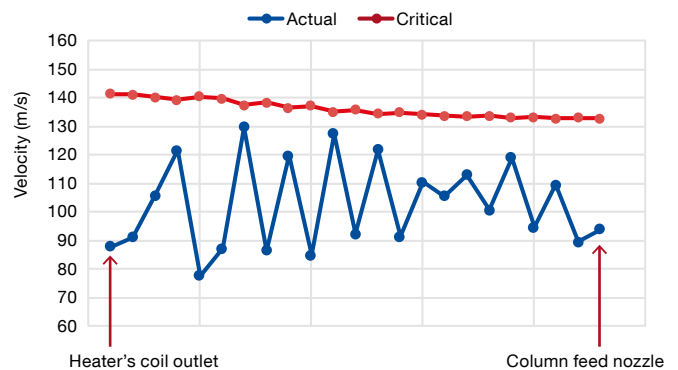
Achievements

- Throughput > 15 % wt
- Distillates yield > 0.5 % wt on feed bases
- Vacuum diesel on spec
- VGO on spec
- Minimized vacuum residue
- Run length significantly increased

After revamp



CFD model of the heater's transfer line



Velocity profile along with the heater's transfer line

Lube oil plant

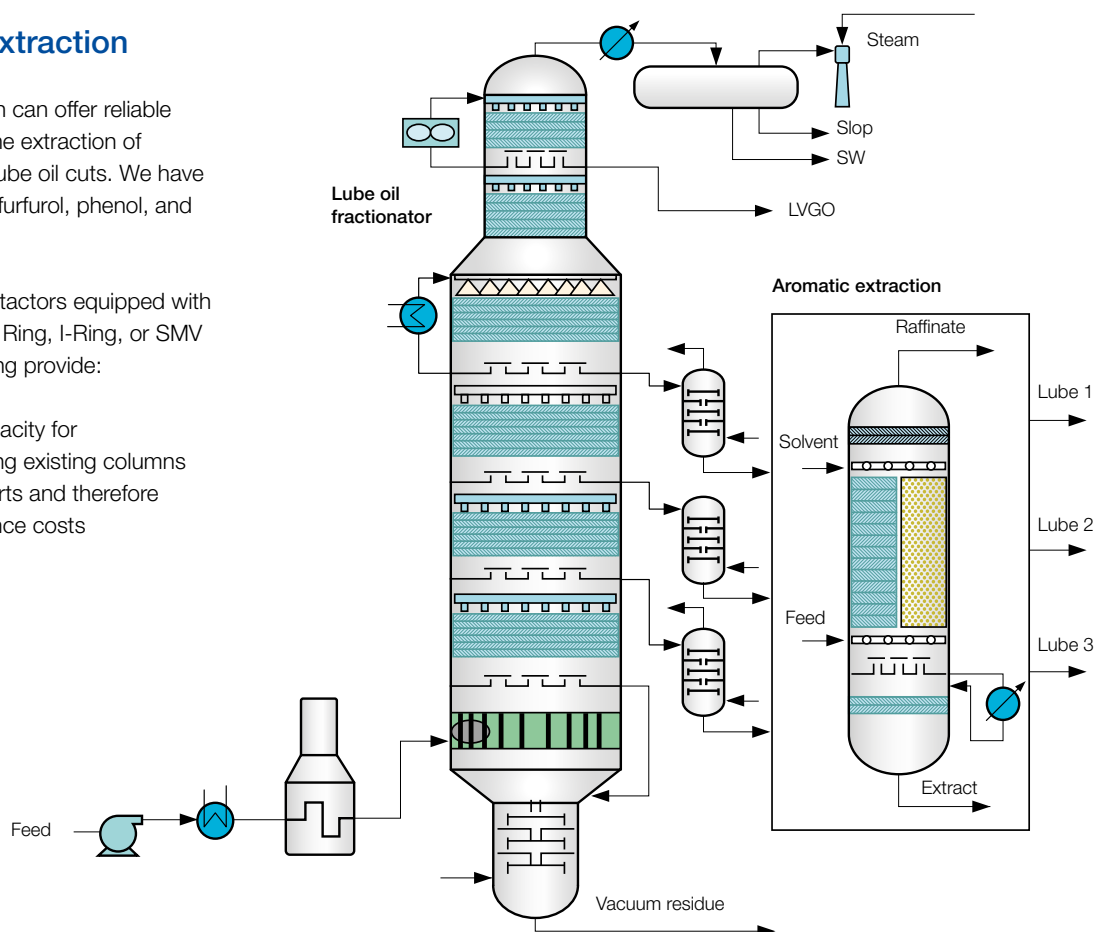
New product requirements in the lube oil market mean new challenges to refineries. Sulzer Chemtech has extensive lube oil experience with solutions for achieving specifications with more than 60 reference columns worldwide.

Aromatic extraction

Sulzer Chemtech can offer reliable technology for the extraction of aromatics from lube oil cuts. We have experience with furfural, phenol, and NMP solvents.

Liquid-liquid contactors equipped with NeXRing, Nutter Ring, I-Ring, or SMV extraction packing provide:

- Additional capacity for debottlenecking existing columns
- No moving parts and therefore low maintenance costs



High-efficiency Mellapak for lube vacuum tower

Features of Mellapak and MellapakPlus

Low pressure drop

High separation efficiency

Several types of packing with high hydraulic flexibility

Mechanical robustness

Easy and fast installation

Compact internals

Achievements

Maximum throughput and distillate recovery

Sharp fractionation with minimum operating cost

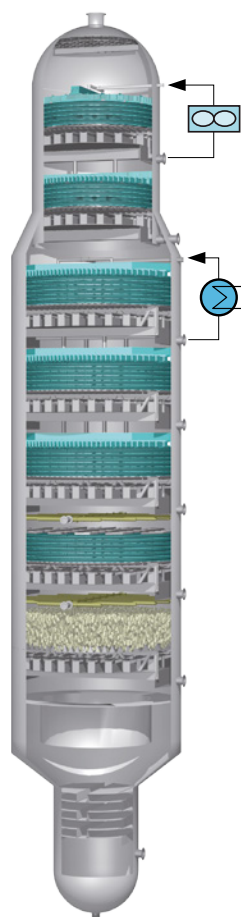
Wide operating range

Reliable operation

Low installation cost

Reduced tower dimensions

Lube tower upgrading



Before revamp

Throughput: 30 KBPD

Conventional mist eliminator

LVGO pump around
Mellapak
VEP distributor

LVGO / lube 1
Mellapak
VEP distributor

HVGO pump around
Mellapak
VEP distributor

Lube 1 / lube 2
Mellapak
VEP distributor

Lube 2 / lube 3
Mellapak
VEP distributor

Lube 3 / lube 4
Mellapak
Spray nozzle distributor

Wash section
Ring
Spray nozzle distributor

Flash zone
Annular feed inlet device

Stripping section
Conventional sieve trays

After revamp

Throughput: 39 KBPD

Sulzer V-MISTER

LVGO pump around
High-capacity Mellapak
VEP distributor

LVGO / lube 1
Same arrangement

HVGO pump around
High-capacity Mellapak
VEP distributor

Lube 1 / lube 2
MellapakPlus
VEP distributor

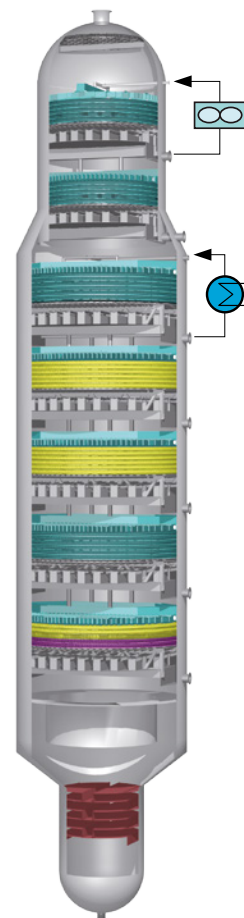
Lube 2 / lube 3
MellapakPlus
VEP distributor

Lube 3 / lube 4
Same Mellapak, new
VEP distributor

Wash section
MellapakPlus, Mellagrid
VEP distributor

Flash zone
Reinforced annular feed inlet
device

Stripping section
SVG fixed valve trays



MellapakPlus for debottlenecking lube oil fractionator

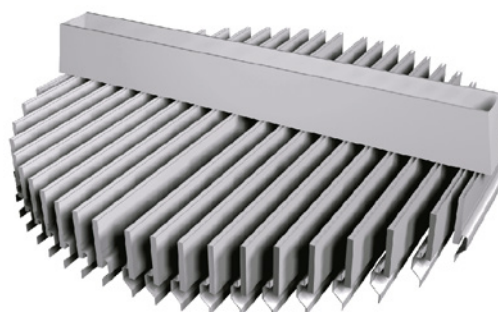


Light Medium Heavy

Lube oil samples after revamp

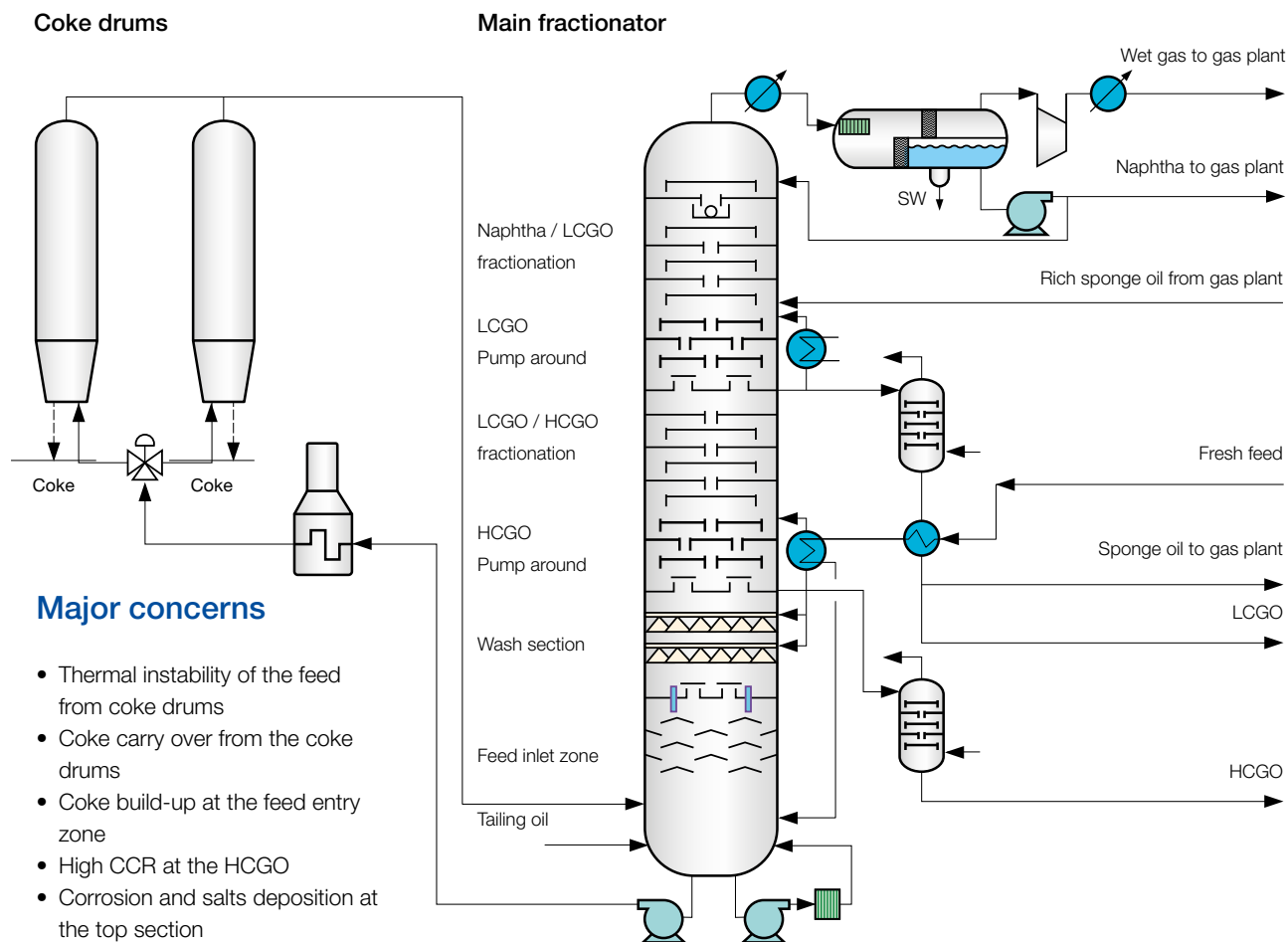
Achievements

- Additional capacity: over 30%
- Additional lube yield: 0.5 %wt on feed base
- Premium quality lube cuts



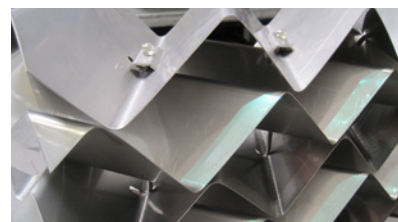
VEP high-performance liquid distributor suitable for fractionation sections

Coking unit

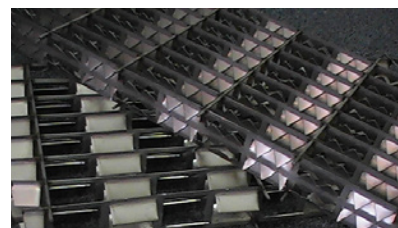


Mass transfer components best fit

| | |
|-----------------|--|
| Top section | VG AF trays |
| Naph / LCGO | VG AF, VGPlus trays, MellapakPlus |
| LCGO PA | VG AF trays, MellapakPlus |
| LCGO / HCGO | VG AF, VGPlus trays |
| HCGO PA | VG AF trays, MG40 AF, Mellagrid |
| Wash section | MG40 AF, Mellagrid, F-Grid |
| Feed inlet zone | Baffle trays |
| Top receiver | Mellaplate coalescer Mellachevron mist eliminator |

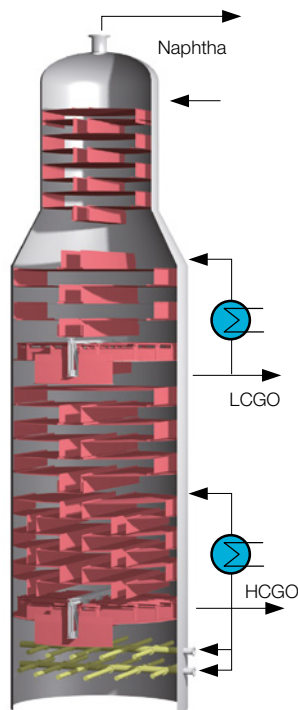


MG40 AF



F-Grid

Coker main fractionator upgrading



Naphtha / LCGO

8 VG AF trays retrofitting conventional valve trays

LCGO pump around

4 VG AF trays retrofitting conventional valve trays

LCGO / HCGO

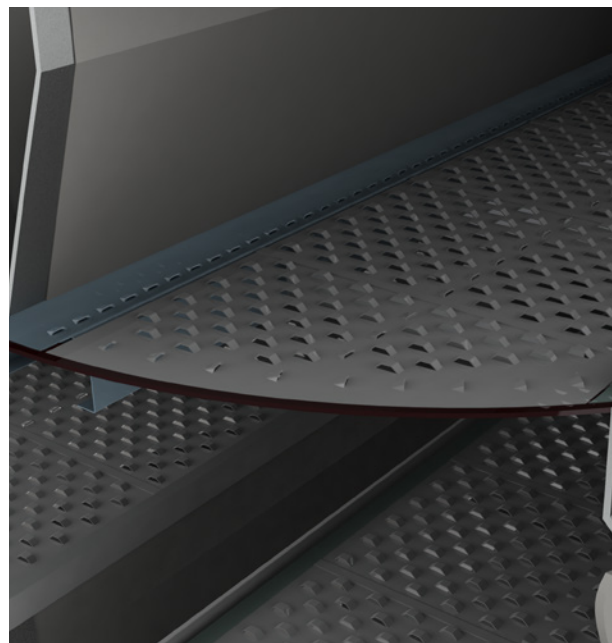
6 VG AF trays retrofitting conventional trays

HCGO pump around

4VG AF trays retrofitting conventional trays

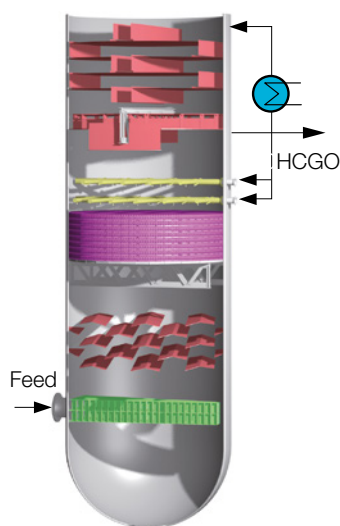
Wash section

New spray nozzle distributor



Upgrading a coker main fractionator to boost the capacity from 140 to 180 KBPD and increase the run length up to 5 years

2-pass VG AF high-performance anti fouling trays equipped with MVG fixed valves, push valves, and stepped outlet weir



HCGO pump around

4 MVG trays retrofitting conventional trays

Wash section

New spray nozzles distributor
Mellagrid retrofitting 5 fixed valves trays

Feed inlet zone

New 6 pass baffle trays

Existing Schoepentoeter cleaned and reused



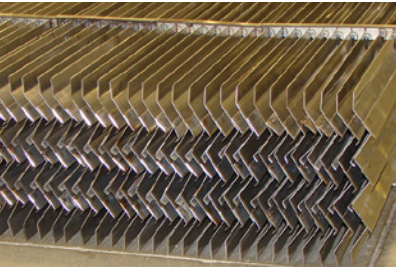
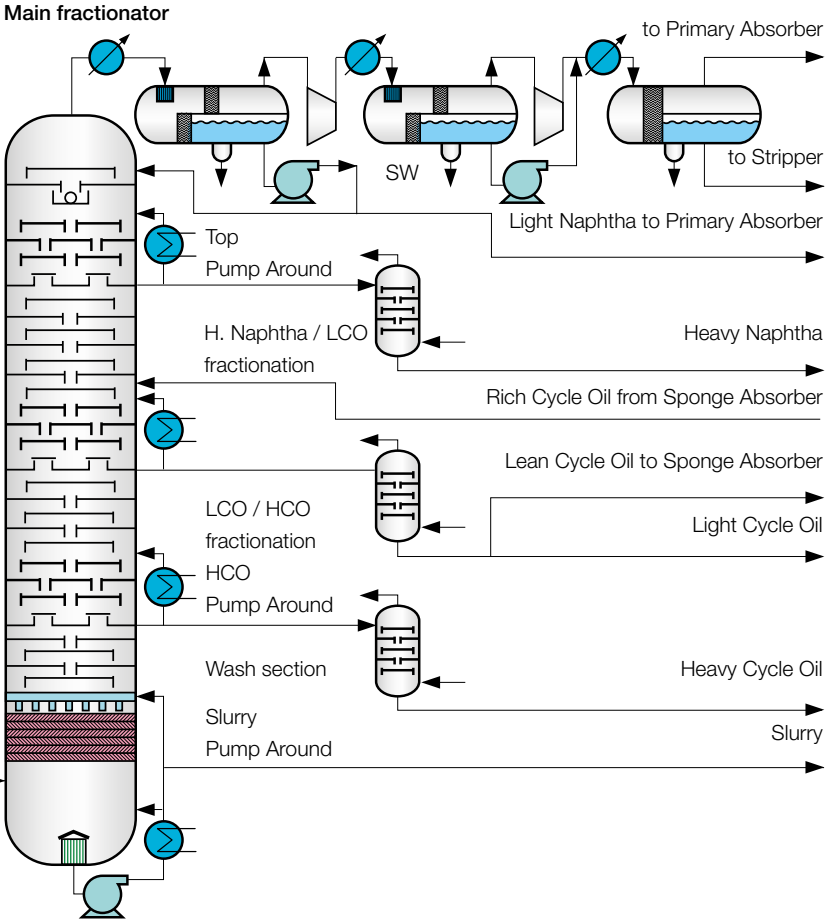
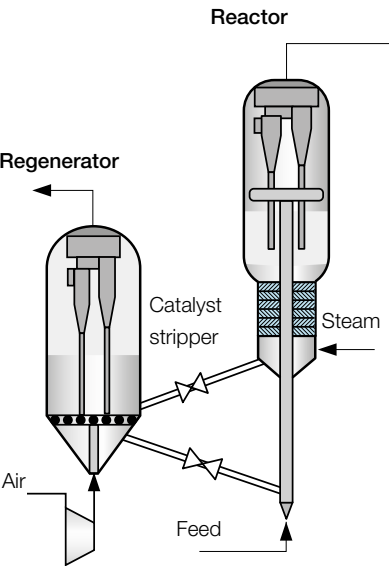
Upgrading a coker main fractionator to double the capacity, increase the liquid yield, and reduce the CCR of the HCGO from 0.4 to 0.3 %wt

Mellagrid high-performance structured grid after 3 years operation, only small amount of coke at the bottom of the bed, washed in place and reused

Fluid catalytic cracking



SMV packing for the catalyst stripper



Mellachevron mist eliminator for the top receiver

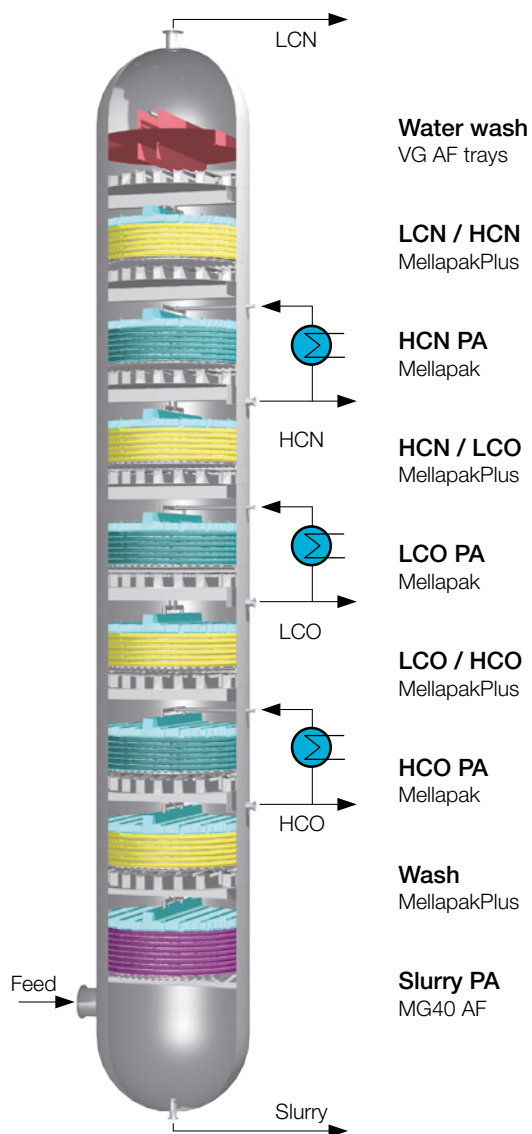


Mellaplate coalescer for the top receiver

Mass transfer components best fit

| | |
|----------------------------|--|
| Top section | VG AF trays, Mellagrid |
| Naph / LCO LCO / HCO | VGPlus, UFMPlus trays MellapakPlus, Mellapak |
| Top PA LCO PA HCO PA | VG AF, VGPlus trays MellapakPlus, Mellapak |
| Wash section | MellapakPlus, Mellapak VG AF trays |
| Slurry PA | MG40 AF, Mellagrid, F-Grid |
| Catalyst stripper | SMV packing |
| Top receiver | Mellaplate coalescer Mellachevron mist eliminator |
| Top receiver | Mellaplate coalescer |

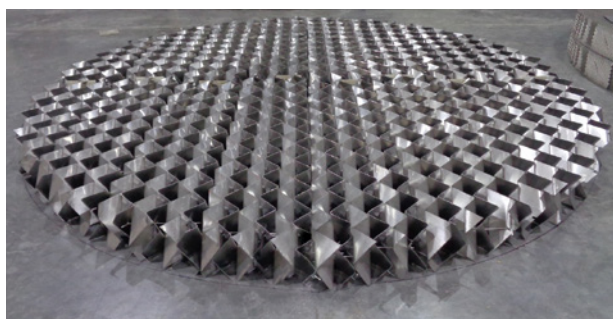
State-of-the-art FCC main fractionator



For large main fractionators, **structured packing** becomes a very attractive solution when compared to fractionation trays.

The low pressure drop across the tower allows the reactor to operate at minimum pressure with the highest conversion rate and distillates yield, while keeping the wet gas compressor and the air blower within a reasonable size.

- **MellapakPlus** in the fractionation sections further reduces the pressure drop while maintaining high separation efficiency. The top water wash section of the tower is often subject to corrosion and salt deposition.
- **VG AF trays** equipped with anti-fouling features and a properly designed draw-off tray are recommended. The high operating temperature and consequent-mechanical instability, the risk of coke build-up, and the catalyst debris carry-over, make the slurry pump around the most critical section of the tower. Mass transfer components that are specifically developed for this section are essential:
- **VES**, the liquid distributor suitable for handling solid debris and coke particles.
- **MG40 AF**, the high performance grid that features structured geometry for superior mechanical robustness, and smooth surface for fouling resistance. It can often be cleaned with jet washing. Alternatively, a conventional type **F-grid** can be used.
- **Support and hold down grids** equipped with features to withstand uplift loadings.

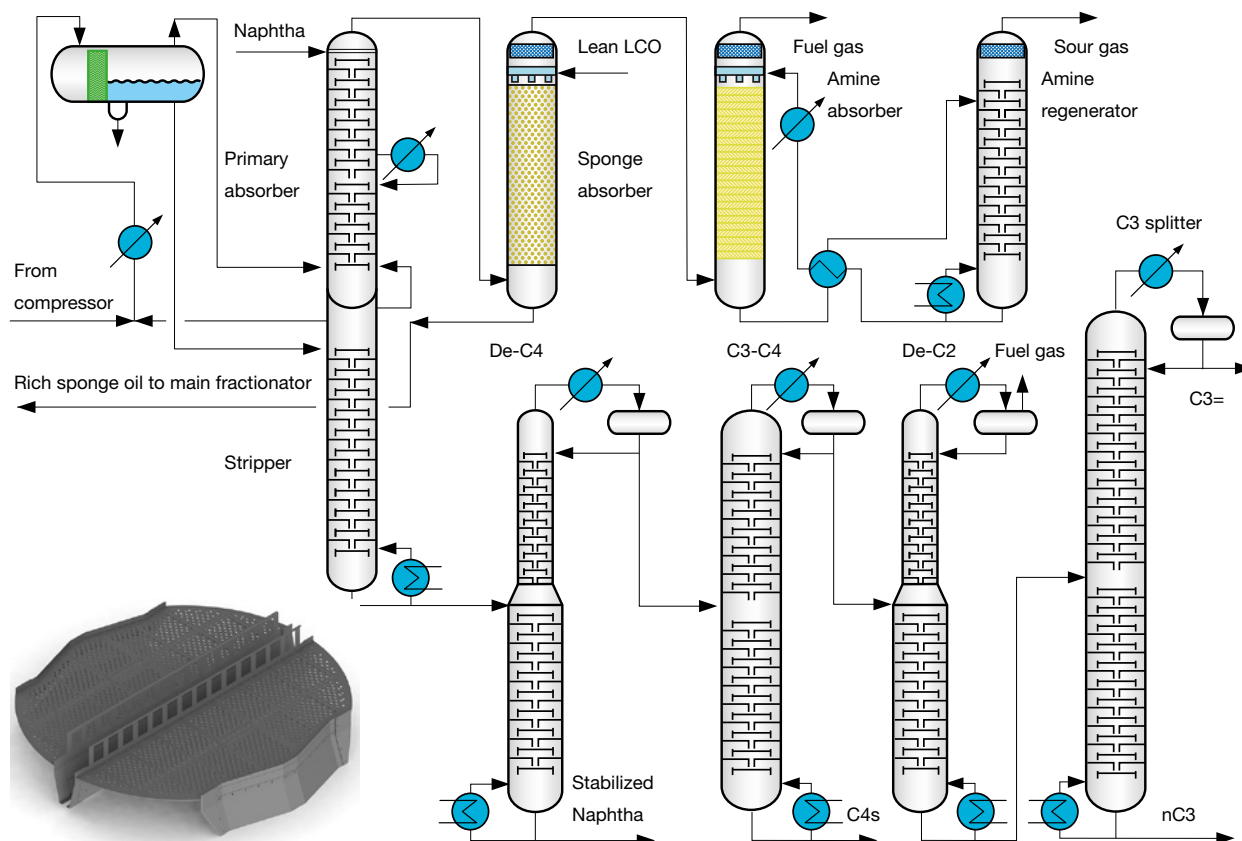


MG40 AF for the slurry pump around



VES distributor for the slurry pump around

FCC gas concentration unit



4-pass VGPlus tray



NeXRing

Sulzer
Knitmesh™
V-MISTER
enhanced
performance
mist eliminator

Mass transfer components best fit

Sulzer Chemtech provides the widest range of high-performance mass transfer components to maximize LPG recovery, energy saving and throughput, while minimizing investment cost.

| | |
|-----------------------------------|---|
| C3 splitter | VGPlus, UFMPlus trays Shell HiFi Plus trays |
| De-C4, C3/C4, De-C2 | VGPlus, UFMPlus trays Shell HiFi Plus, ConSep trays |
| Primary and sponge absorbers | VG AF trays, NeXRing Nutter Ring, I-Ring |
| Stripper | VG AF trays, NeXRing Nutter Ring, I-Ring |
| Amine absorber and regenerator | VG AF, HiFi Plus trays MellapakPlus, Mellapak, NeXRing, Nutter Ring, I-Ring |

LPG and gas sweetening

Sulzer Chemtech has extensive experience in designing amine absorbers and regenerators equipped with:

- Conventional trays featuring BDH movable valves or V-Grid fixed valves
- VGPlus and VG AF high performance trays
- Mellapak or MellapakPlus structured packing
- NeXRing, Nutter Ring, I-Ring random packing
- Mist eliminators

Selective absorption

Mellapak or MellapakPlus is recommended for selective absorption of sour gas systems contaminated with CO_2 .

The advantages are:

- High selectivity due to short residence time
- Minimum solvent requirement
- Minimum solvent regeneration cost
- Minimum investment cost
- Low pressure drop

Tail gas treatment

For these units, operating at atmospheric pressure, Mellapak or MellapakPlus is strongly recommended for the quench tower and the H_2S absorber to minimize pressure drop and energy consumption

LPG sweetening

Liquid-liquid amine contactors incorporate the following customized internals:

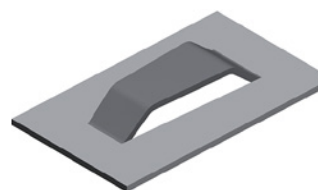
- SMV and SMVP extraction packing
- Coalescer packing
- NeXRing, Nutter Ring, I-Ring random packing
- VRXK distributor for the continuous phase
- VRXD distributor for the dispersed phase
- VSX disperser / support plate
- Shell HiFi extraction trays
- Sieve trays



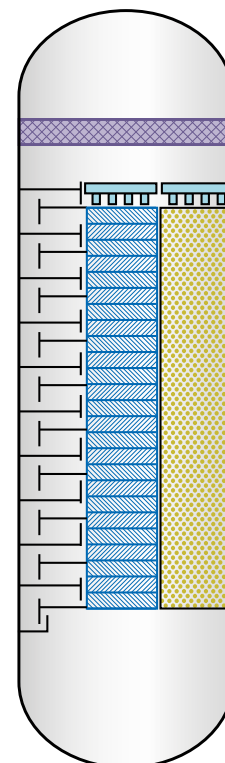
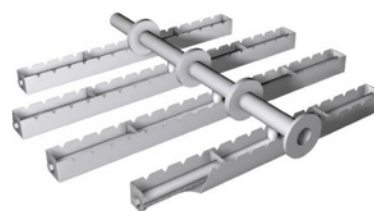
V-MISTER mist eliminator



NeXRing

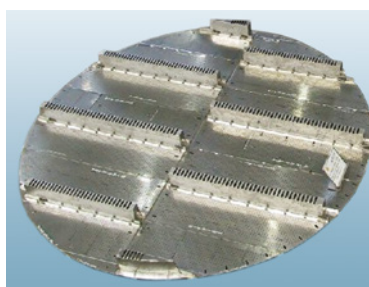


V-Grid fixed valve



Amine absorbers and regenerators can be equipped with trays, structured or random packings

VRXK high-performance distributor for the continuous phase

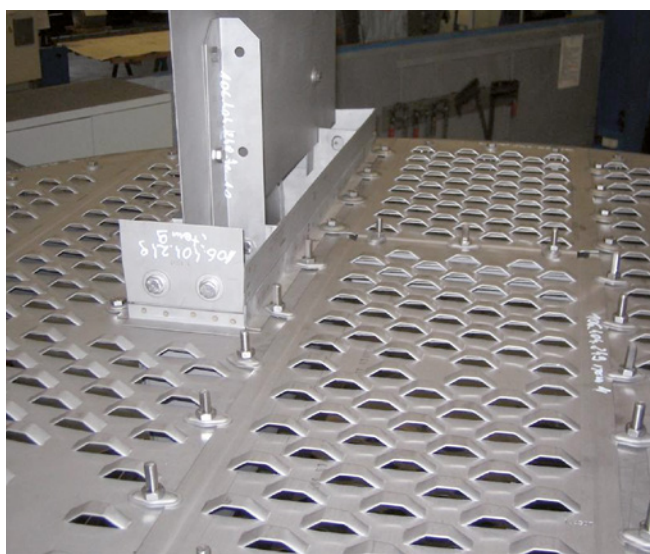
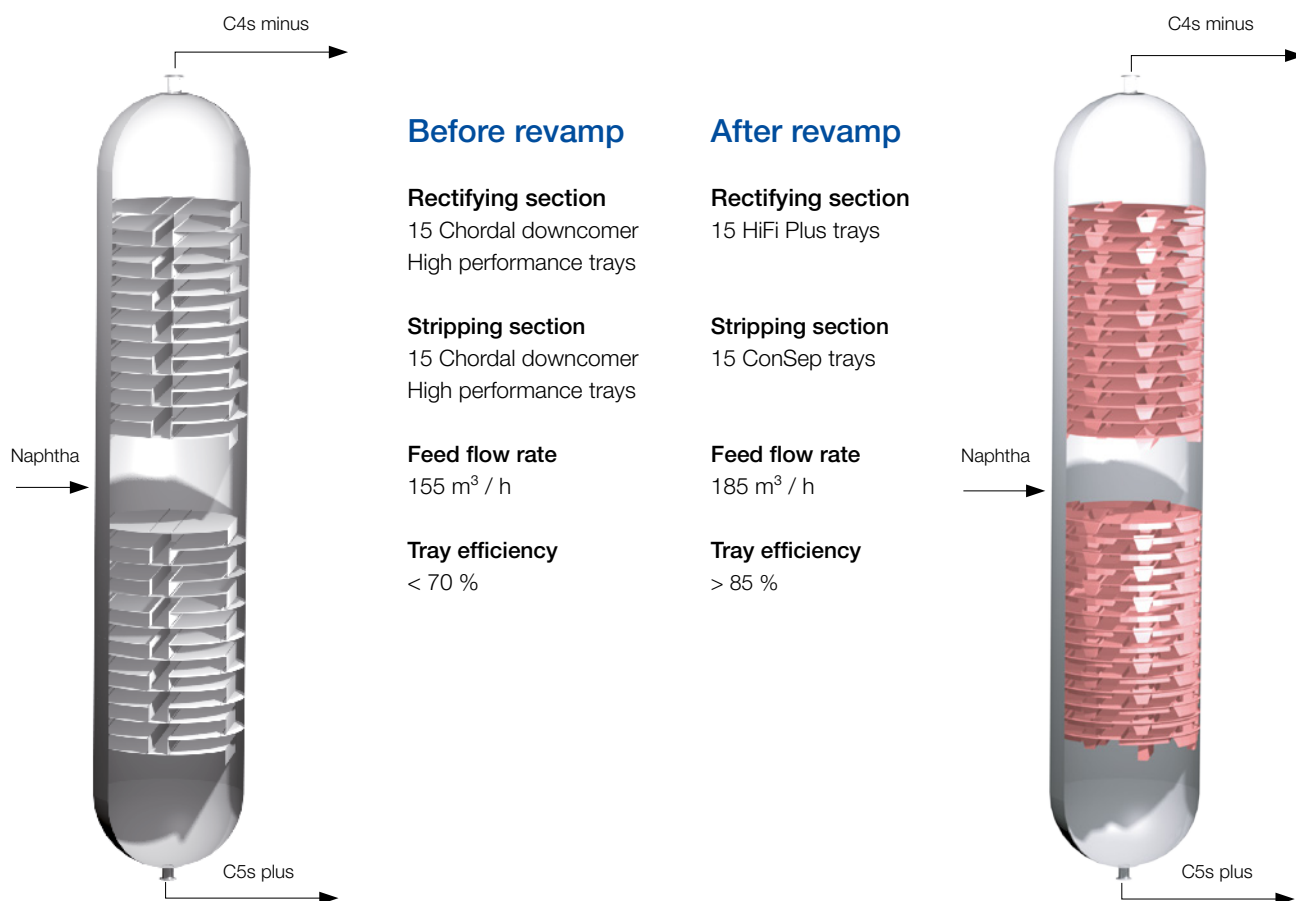


Shell HiFi extraction trays



SMV extraction packing

Debutanizer upgrading



Shell HiFi Plus high-capacity tray equipped with MVG valves

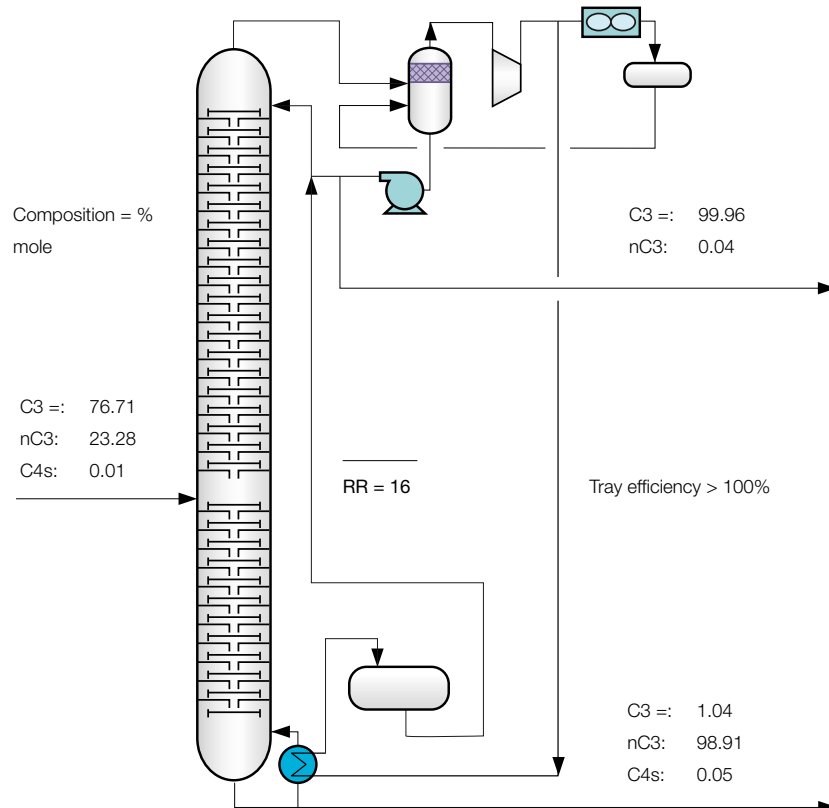
Achievements

- 20% additional capacity
- 20% additional separation efficiency
- Naphtha and LPG on spec

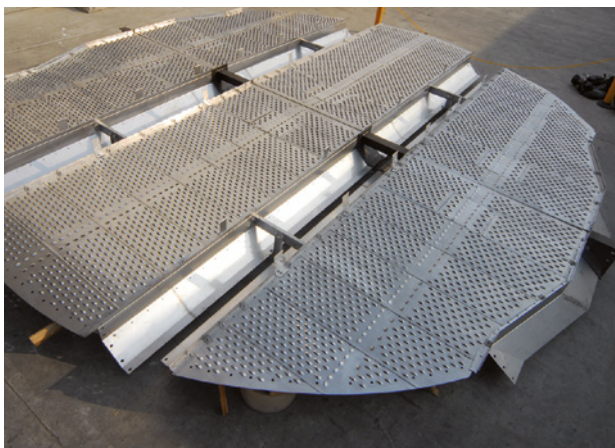


Shell ConSep tray: the ultra system limit high-capacity tray

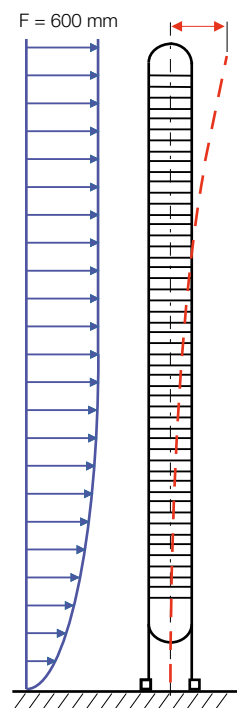
State-of-the-art propylene-propane splitter



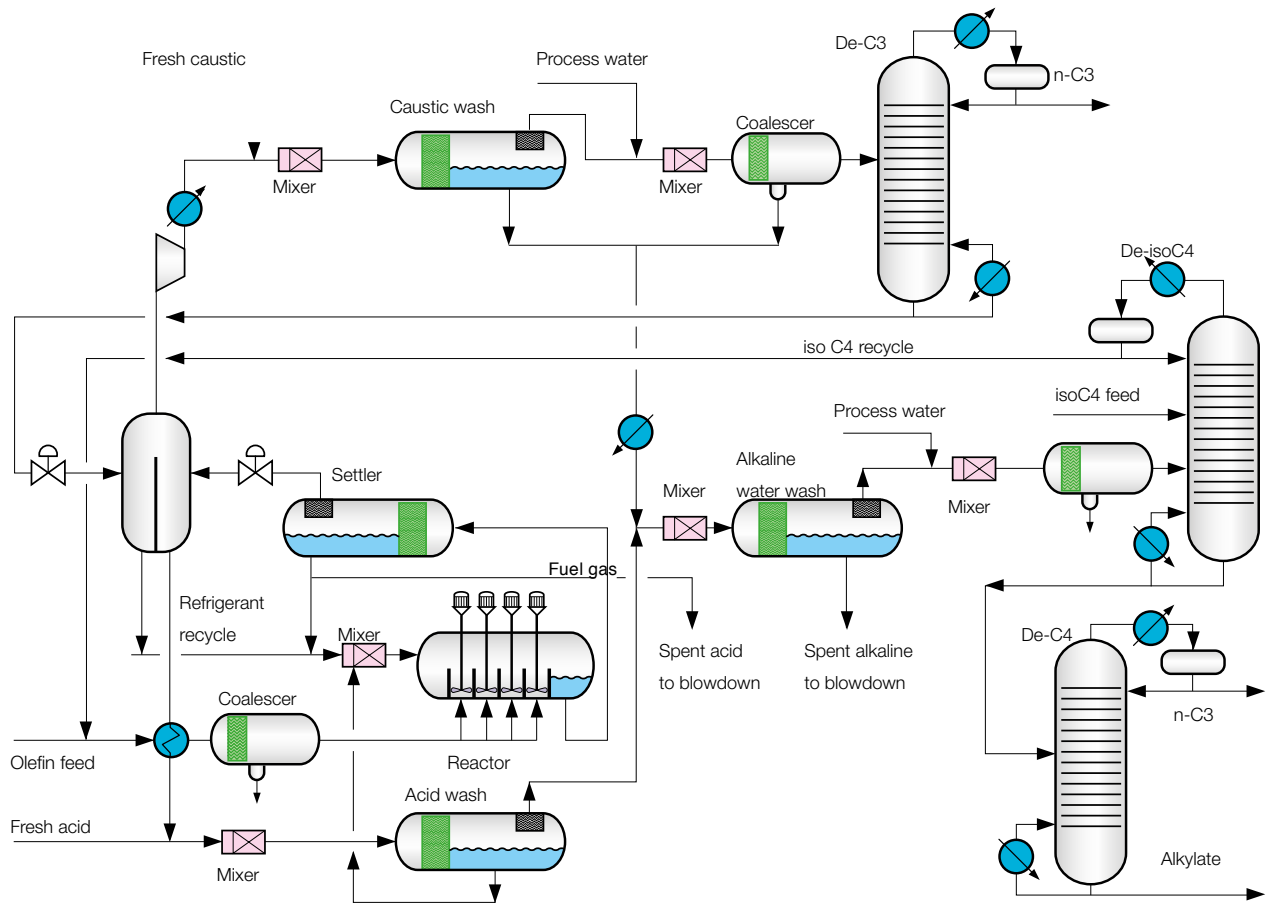
In a superfractionator, the wind deflection at the top section of the vessel is of great concern. This deflection can significantly impact the levelness of the trays, causing maldistribution with consequent loss of the separation efficiency. Sulzer Chemtech can provide tailor-made devices to prevent maldistribution, and enable maximum mass transfer efficiency.



6-pass VGPlus high performance trays equipped with ModArc downcomer, MVG, and push valves, for a 8000 mm diameter PP splitter

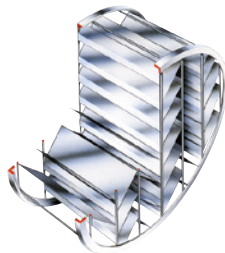


Alkylation



Sulzer separators

Sulzer DC Coalescer and Sulzer Mellaplate are the coalescers used in the acid settler, acid wash tank, alkaline wash tank, and in the caustic wash tank, to drastically reduce the required residence time for phase separation. This technology provides significant savings for new units and higher performance when debottlenecking existing units.



Mellaplate™ coalescer

Sulzer static mixers

Sulzer SMV static mixers are used to improve the performance of the following equipment:

Reactor: to minimize the formation of undesired products.

Acid wash tank: to maximize the extraction of the free acid and the alkyl / di-alkyl sulfates from the net effluent.

Caustic wash tank: to improve the removal of any traces of acidic components and protect the De-C3 from corrosion.

Alkaline wash tank: to improve the removal of any residual free acid and alkyl / di-alkyl sulfates and protect the De-isoC4 & De-C4 from corrosion.



SMV static mixer



DC Coalescer™

Additional capabilities

Turnaround services

The Sulzer Chemtech turnaround services (TAS) team is known for its fast delivery and quality of the goods, its reliability, and customer oriented approach.

TAS is available 24 hours a day, 7 days a week, to provide customers with the best response time and premium quality service.

Our team can provide complete, around-the-clock support for your planned or emergency turnarounds. We offer material replacements with our complete line of products regardless of the original equipment manufacturer.

Our global manufacturing network allows us to bring our service and goods to you, day or night, in almost every country of the world.

Tower field service

Sulzer Chemtech's tower field service has the expertise and experience to ensure that projects are executed with the highest standards of safety, quality, and efficiency. Our extensive depth of technical strength and project and construction management skills assist the client in obtaining the process goals they desire, within the constraints of a shutdown or construction environment.

The challenge to complete multiple tower revamps and retrofits safely and on time is what tower field service most prides itself on.

For tower revamps and retrofits, tower field service can provide a streamlined solution to ensure minimal downtime. A systematic, practical approach for tower revamping projects is essential in obtaining a successful outcome.

These capabilities have been tested and proven in thousands of projects around the world.

Sulzer Flow

Sulzer Pumps equipment is a leading global supplier of reliable products and innovative pumping solutions for all industrial applications, including crude oil refining.

Sulzer Pumps equipment combines more than 135 years of experience in pump research, development and manufacturing with a commitment to fully understand the needs of our customers. Our detailed process and application knowledge, combined with an in-depth understanding of market demand, keeps us consistently at the leading edge of technical development.

Some refining processes produce coke particles and chunks. If these particles are too large, they are trapped between impeller vanes and may reduce or stall flow.

The coke crusher breaks up coke particles, while maintaining pumping output. It is available for all refining pumps operating in severe fouling environments.



BBS: Single stage between bearing, typically used at high temperature, high flow and high head, that is typically found in residue and the bottom pump around of main fractionators

The Chemtech division is the global market leader in innovative mass transfer, static mixing and polymer solutions for petrochemicals, refining and LNG.

Chemtech is also leading the way in ecological solutions such as biopolymers as well as textile and plastic recycling, contributing to a circular economy. Our product offering ranges from technology licensing to process components all the way to complete separation process plants. Customer support ranges from engineering and field services to tray and packing installation, tower maintenance, welding and plant turnaround projects – ensuring minimal downtime.

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