

Filtration Applications for Delayed Coking



The key benefit of delayed coking is full conversion of heavy residual oils, such as vacuum resid, to lighter products. This allows refiners to increase profit margins by processing lower-cost, heavier crude slates. Light products from the delayed coker are further treated in other process units to produce transportation fuels, such as gasoline and diesel. Petroleum coke is produced as a by-product and has uses in the electric power and industrial sectors as fuel inputs or manufacturing raw material used to produce electrodes for the steel and aluminum industries.

The delayed coking process consists of furnaces, coke drums and a main fractionator. The cracking and coking reactions are initiated in the furnaces under

controlled time-temperature-pressure conditions. High velocities are maintained in the furnaces in order to prevent significant coke formation. The reactions continue as the process stream moves to the coke drums. The coking reaction rate drops dramatically as coke-drum temperature decreases and coke is deposited in the drums to be collected and sold. The vapor is routed to the fractionator, where it is condensed and fractionated into product streams – typically fuel gas, LPG, naphtha, distillate, and gas oil.

Solid and liquid contaminants will enter the fractionated products as coke fines and injected steam. The removal of both particulates and water is required to meet final product specifications and feedstock requirements.

The Benefits of an Optimum Filtration System include:

- Lower maintenance costs
- Maintain product quality
- Protection of downstream equipment
- Ability to meet final product and feedstock specifications
- Improved operation and process efficiency

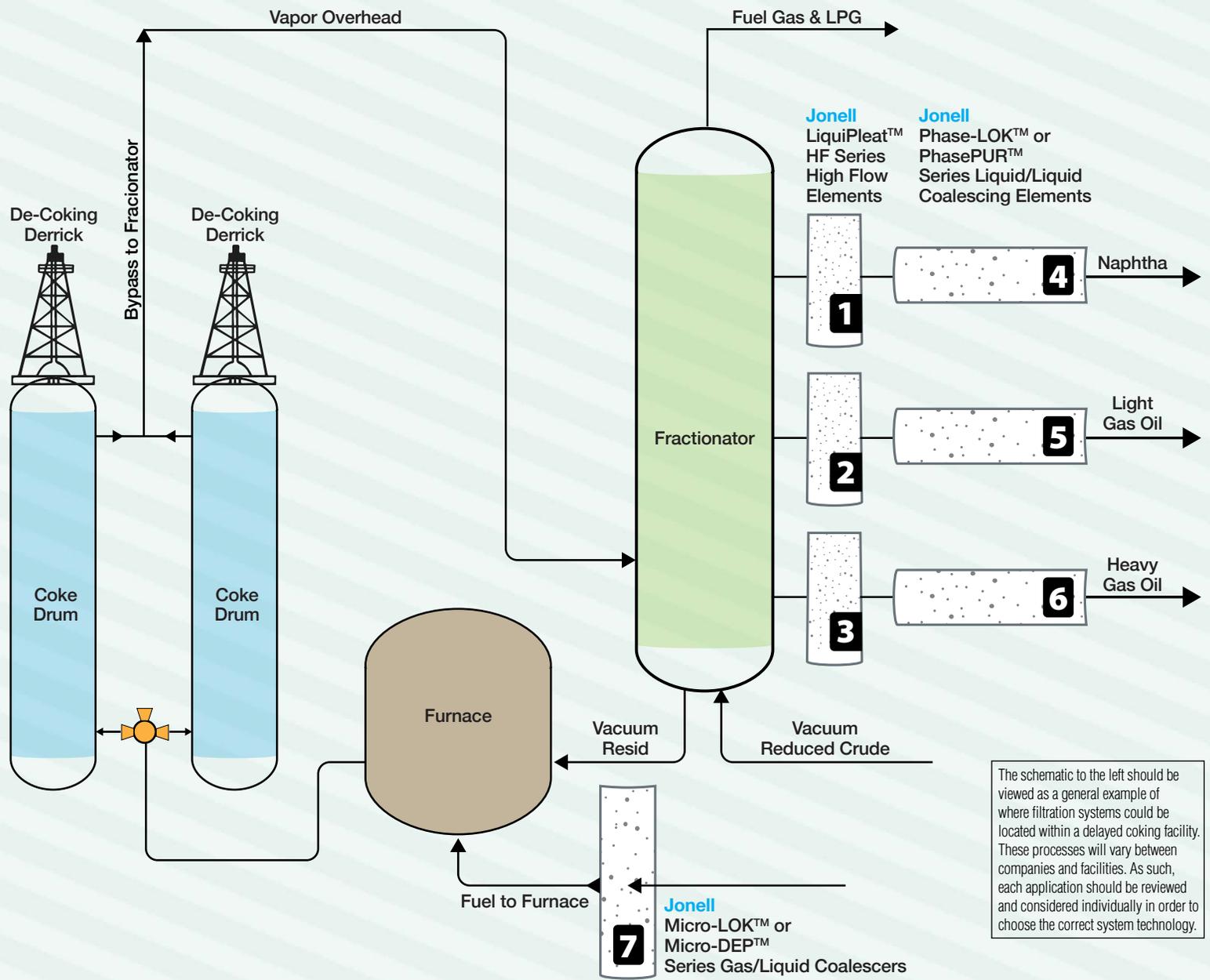


JONELL[™]
Filtration Group®

www.jonellinc.com | sales@jonellinc.com

254.559.7591

Jonell Filtration Solutions for Delayed Coking



The schematic to the left should be viewed as a general example of where filtration systems could be located within a delayed coking facility. These processes will vary between companies and facilities. As such, each application should be reviewed and considered individually in order to choose the correct system technology.

Location	Jonell Filter Solution	Filter Purpose	Filter Benefit
1', 2', 3'	LiquiPleat™ HF Series High-Flow Elements	Removal of coke fines and solid contaminants	Protect liquid coalescers and downstream equipment. Maintain final product and feedstock specifications.
4, 5, 6	Phase-LOK™ or Phase-PUR™ Series Liquid/Liquid Coalescers	Removal of liquid contaminants from the final product	Protection of downstream equipment. Maintain final product and feedstock specifications.
7	Micro-LOK™ or Micro-DEP™ Series Gas/Liquid Coalescers	Removal of liquid and solid contaminants from fuel gas	Improved burner efficiency, longer service life, and reduced maintenance costs.

*A wide range of absolute and nominal pre-filters and filters are available to meet specific process applications. To answer more questions about filtration applications, replacement needs, or help troubleshooting process issues, contact an approved Jonell representative or Jonell direct.