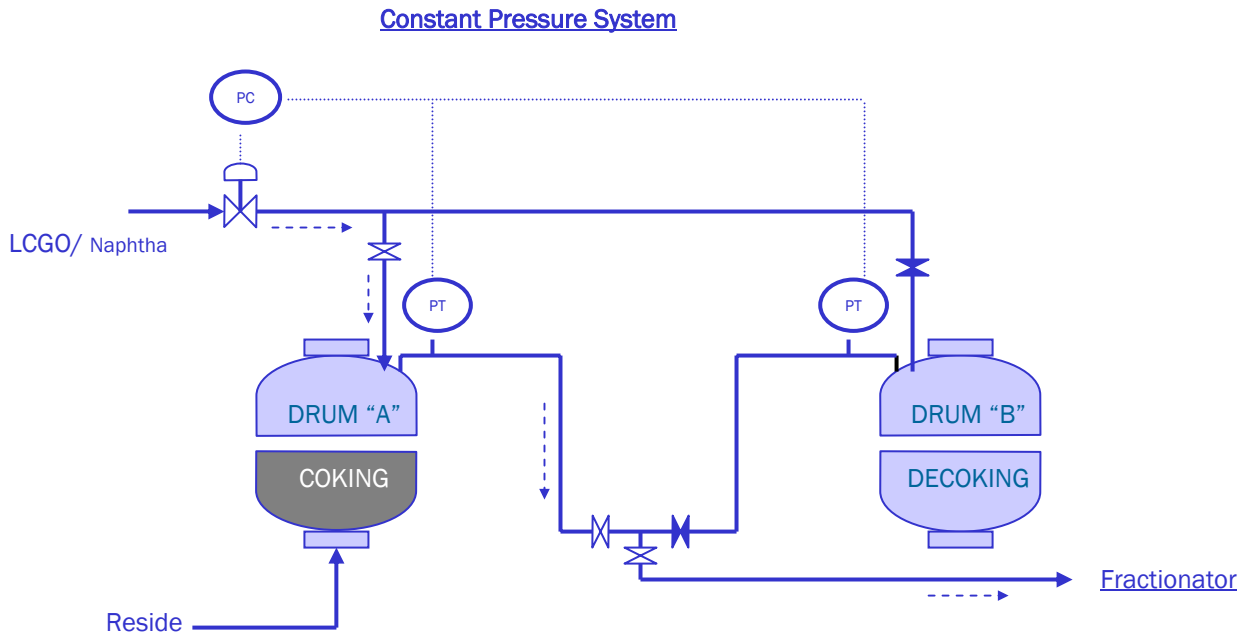


MaxiCoking Technology

Breakthrough Technology for Improved Existing Delayed Coker Performance

Foam Reduction in petroleum Cokers, US Patent 6,117,308:

A method of producing petroleum coke in a petroleum coking system comprising the steps of (a) adding a fluid to live coking drum while warming a second drum so that additional vapor is provided in the live drum and (b) reducing pressure loss in the live drum by regulating the addition of the fluid based upon a target pressure for the live drum and by regulating the flow of warm-up vapor from the live drum to the second drum based upon a target pressure for second drum.



MaxiCoking Technology Provides:

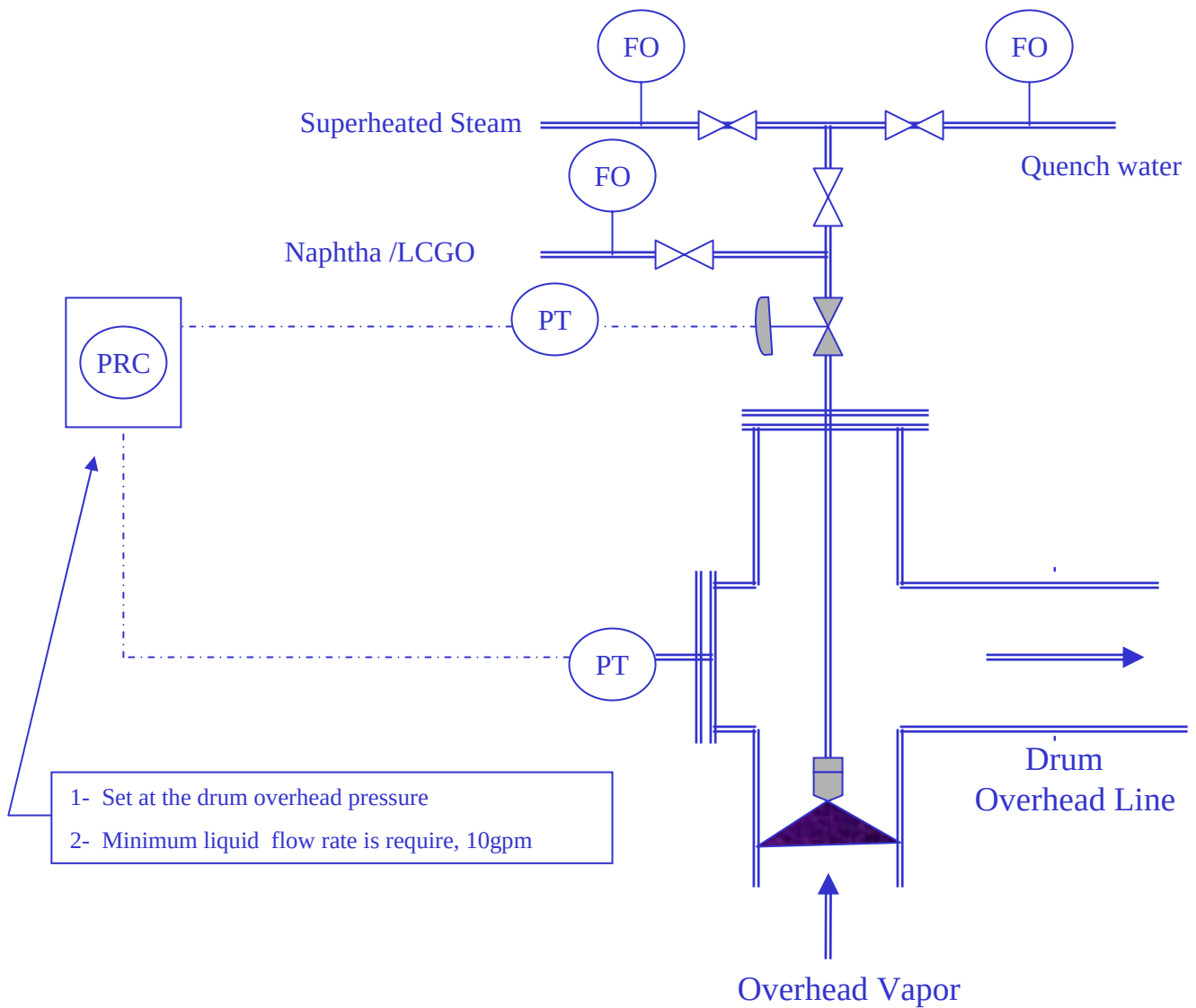
Constant coking drum pressure operation.

Constant drum vapor velocity; eliminates foam formation & foam expansion in drum during coking operation.

Provides additional vapor for drum warm up process.

Constant Pressure System

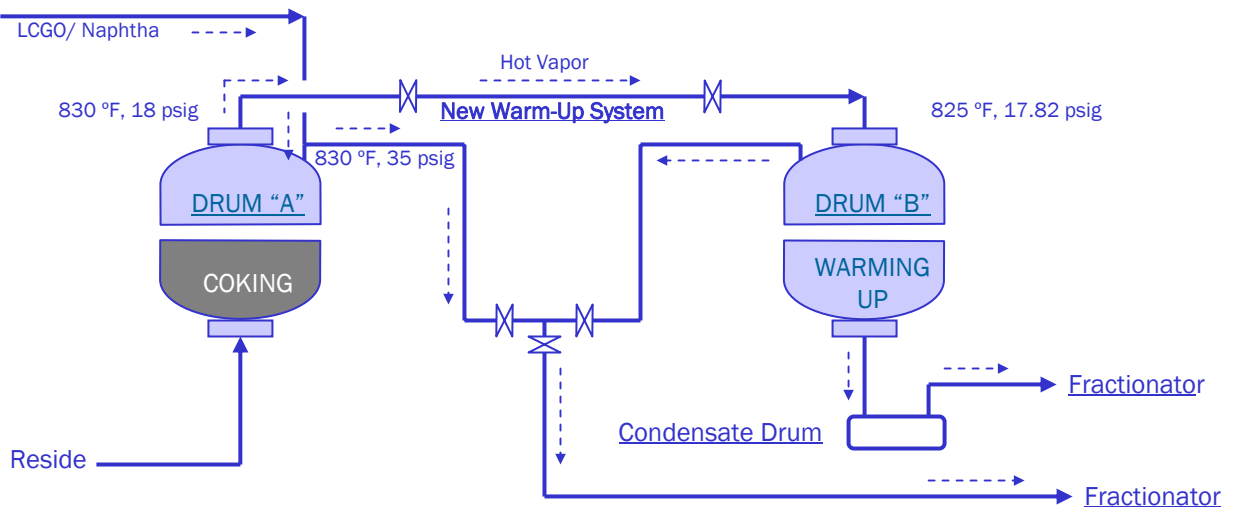
“ Detail Drawing”



Drum Warming in Petroleum Cokers, Patent No. 6,764,593B1:

The new warm-up system operates to provide additional hot vapor material for warming the empty drum. Further, the new warm up system operates to more effectively preserve the temperature and motive pressure of the warm-up vapor. Thus, a drum switchover temperature of 700+ °F can be consistently achieved. Moreover, the desired warm-up temperature is achieved in a shorter period of time.

Constant Pressure System



MaxiCoking Technology Provides:

Faster warm-ups. Drum warm up time is measurably reduced to provide additional "on-stream" time.

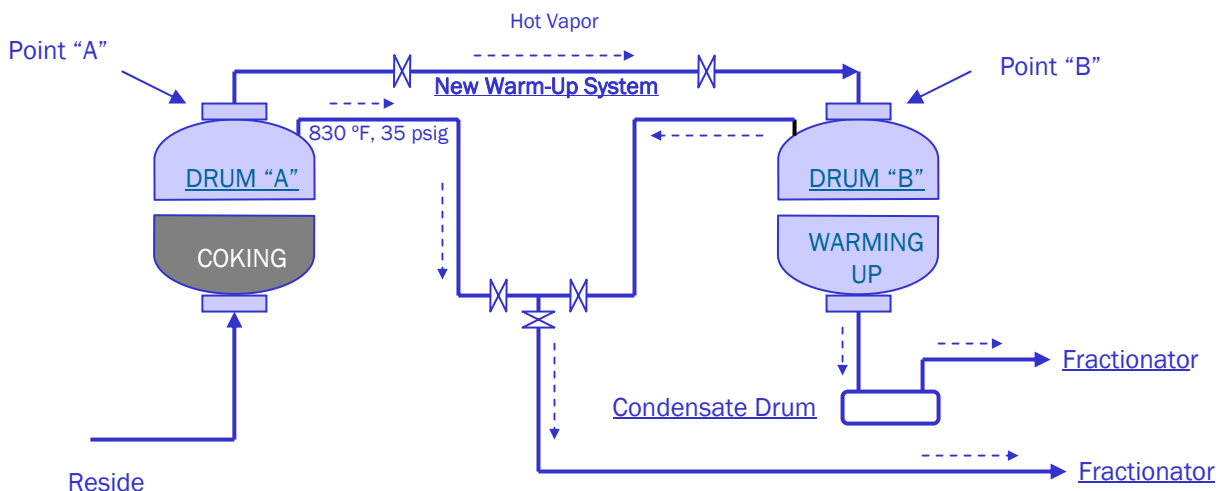
Reduction of foam & condensate formation during drum warm-up as "slop production", poor fractionator performance as "recycle production" and after drum switching as "front foam production"

Eliminate Antifoam Silicon usage.

New Drum Warm Up System “Detail Drawing”

Drums warm up line connection options:

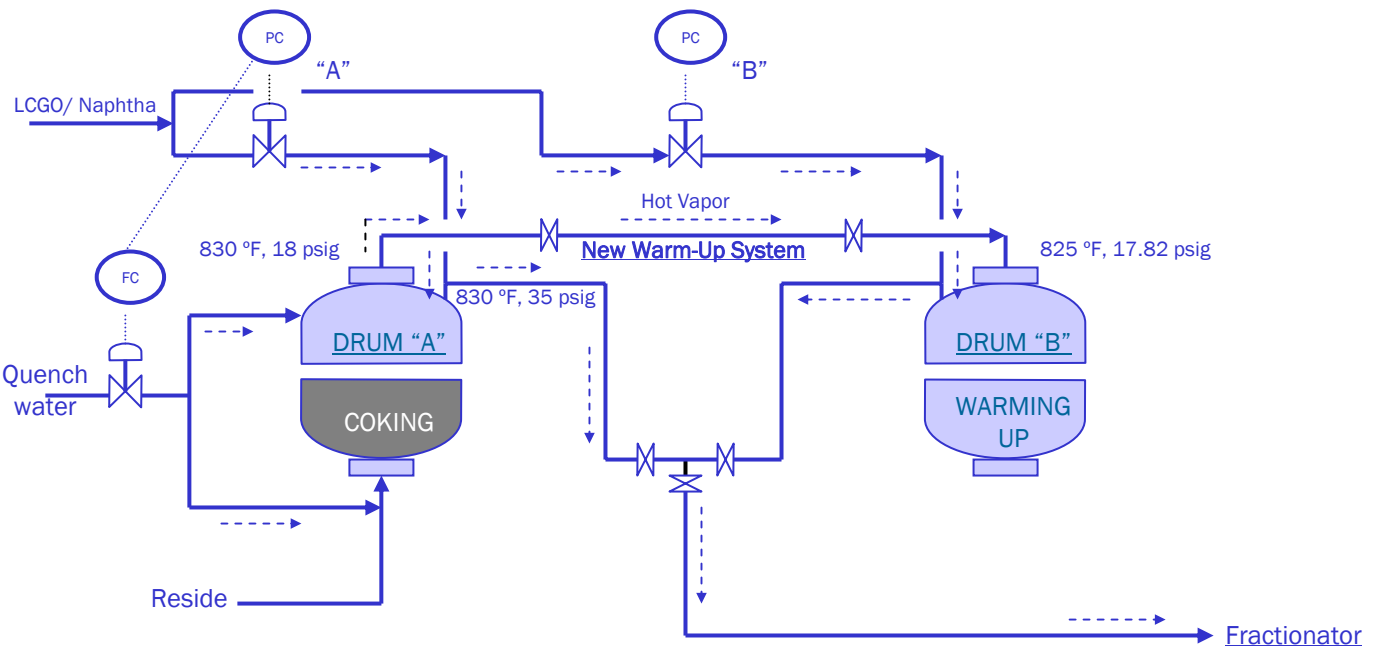
	<u>Point “A”</u>		<u>Point “B”</u>
Option 1	Top Collar	TO	Top Collar
Option	Drum top head Flange	TO	Drum top head flange
Option 3	PSV Header	TO	PSV Header



Alternative Foam Carry Over Option :

The new warm-up system operates to provide an alternative foam carry over place during warm up and quenching process, which saves the Fractionator or Blowdown Systems.

During the warm up of drum "B" and steam purging process of drum "A", if the foam expansion level be noticed, we will increase the set pressure of PC "A" by 10-20 psig more than operation pressure, so the foams/fines will be pushed into the empty drum "B" via the new warm up live which is already open. During water quenching, the PC "A" will controls the quench water flow.



MaxiCoking Technology Provides:

Empty drum will become an alternative option for foam carrying over during warm up process and quenching instead Fractionator System or Blowdown System.

Shorter coking cycle will reduces the Blowdown system loading:

A coker unit of 21,300 BPSD vacuum bottom feed rate at 32 psig coking drum pressure and 925 °F heater outlet has produced 836 short tons of coke per drum in 16 hour coking cycle.

Comparison of Blowdown vapor feed rate at shorter cycle of 12 and 10 hour will indicate the less Blowdown vapor feed rate loading (assuming the coker feed properties and operation conditions are the same); please refer to below chart.

		Coking Cycle	Coking Cycle	Coking Cycle
		16 hour	12 hour	10 hour
Coker Feed Rate, BPSD		21,500	21,500	23,000
Coke Product, Shot tons per drum		836	627	523
Quench cycle, hour		6	6	6
		Lb/hr	Lb/hr	Lb/hr
Steam		100,320	75,240	62,760
Wax Tailings		10,032	7,524	6,276
Non condensibles		334	251	209
Lt. Slop		7,524	5,643	4,707
Total Blowdown Vapor Feed		118,210	88,658	73,952
OVHD Cooler, BTU/hr		1,529,880	1,147,410	957,090
Bottom Reboiler, BTU/hr		145,069,207	108,801,905	90,755,018

MaxiCoking Technology Provides:

Reduces the Blowdown loading rate by 33% at same current coker throughput
OR

Increases the coker throughput by 33% at the same current Blowdown load

US CokerTech engineers and management have more than 35 years Delayed Coker operation and design experience.

Our services include the following:

- We access the latest Delayed Coker equipment specification and simulation programs to evaluate the pumps, compressor, vessels, heat exchangers, fractionator, heaters, and PSVs, etc.
- We are implementing our own latest patented technologies.
- We are capable to evaluate your coker system and make recommendations for modification; and to apply the latest patented technology. This would allow to increased capacity, liquid recovery and to operate more efficiently and reliably over time.

Our competitive fees are lump sum; including use of our technologies.

