

# Thermal Cracking

## Delayed Coking

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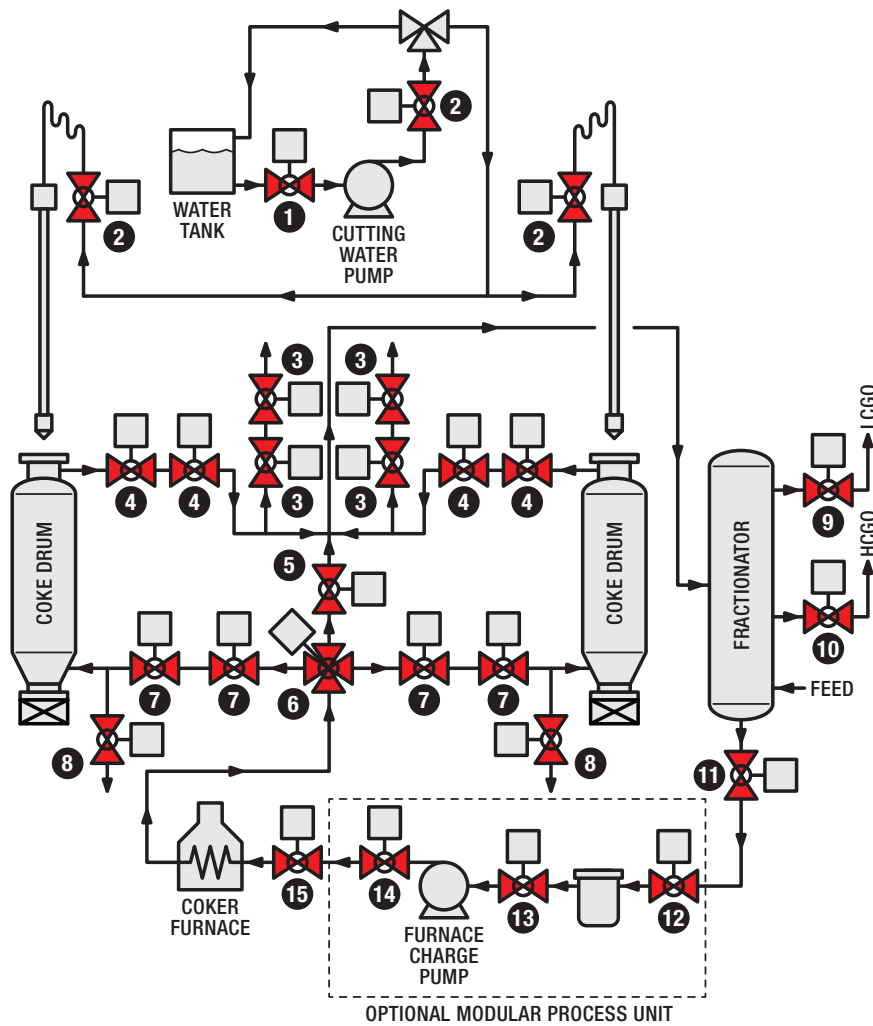
Valve Number	Valve Description	Design Temperature Range		Design Pressure Range		Pipe Size		Recommended Valve <sup>1</sup>		
		deg F	deg C	psig	bar g	inches	dn	C-Series	ISOLATOR 2.0	T-Series
1	HP Pump Inlet Isolation	100 – 200	38 – 93	50	3.5	3 – 6	80 – 150		●	●
2	Cutting Water Pump Isolation	100 – 200	38 – 93	2000 – 3000	138 – 207	3 – 6	80 – 150	●		●
3	Quench Extraction	800 – 900	427 – 482	200	14	8 – 14	200 – 350	●		
4	Overhead Vapor Isolation	800 – 900	427 – 482	30	2	16 – 36	400 – 900	●		
5	Coke Drum Bypass Isolation	800 – 900	427 – 482	550	38	8 – 14	200 – 350	●		
6	Coke Drum Switching	800 – 900	427 – 482	550	38	8 – 16	200 – 400	●		
7	Coke Drum Feed Isolation	800 – 900	427 – 482	550	38	8 – 16	200 – 400	●		
8	Quench Extraction Isolation	800 – 900	427 – 482	550	38	3 – 6	80 – 150	●		
9	Light Coker Gas Oil Pump EBV	300 – 600	149 – 316	50	3.5	4 – 10	100 – 250		●	
10	Heavy Coker Gas Oil Pump EBV	300 – 600	149 – 316	50	3.5	4 – 10	100 – 250		●	
11	Frac Bottoms EBV	500 – 850	260 – 455	50	3.5	8 – 16	200 – 400	●		
12	Coke Filter Isolation	500 – 850	260 – 455	50	3.5	4 – 10	100 – 250	●		
13	Furnace Charge Pump Inlet Isolation	500 – 600	260 – 316	50	3.5	4 – 10	100 – 250	●		
14	Furnace Charge Pump Discharge Isolation	500 – 600	260 – 316	550	38	10 – 16	100 – 400	●		
15	Furnace Feed Isolation	100 – 300	38 – 149	80	5.5	4 – 10	100 – 250	●		
16	General Utility Valves (Steam, Water, Condensation) <sup>2</sup>	100 – 300	38 – 149	200 – 300	14 – 20.5	1 – 4	25 – 100		●	
17	Drain Valves <sup>2</sup>	100 – 300	38 – 149	200 – 300	14 – 20.5	1 – 4	25 – 100		●	

<sup>1</sup> Recommend ISOLATOR 2.0 or T-Series if size, pressure and temperature conditions are met.

<sup>2</sup> Valves 16 and 17 are not represented on PFD.

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**Typical operating conditions are:**

- High temperature  
(500 – 900° F / 260 – 482° C)
- Coking service
- High cycle
- Erosive conditions
- Temperature cycling
- High pressure water service
- High pressure steam blowdown