

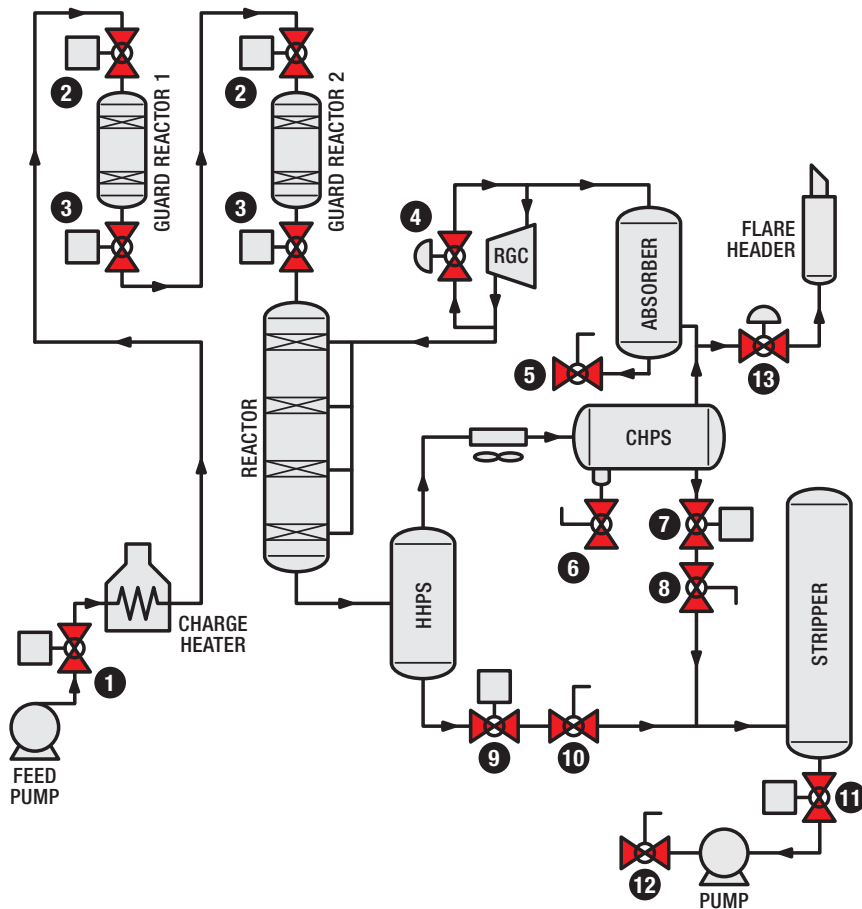
Fixed Bed Hydrotreating

Valve Number	Valve Description	Design Temperature Range		Design Pressure Range		Pipe Size		Recommended Valve ¹		
		deg F	deg C	psig	bar g	inches	dn	C-Series	ISOLATOR 2.0	FlexStream®
1	Chopper Valve	400 – 600	204 – 316	500 – 3500	34 – 241	8 – 12	200 – 300	●		
2	Guard Reactor Isolation / Catalyst Addition	800 – 1000	427 – 538	500 – 3500	34 – 241	4 – 12	100 – 300	●		
3	Guard Reactor Isolation / Catalyst Withdrawal	800 – 1000	427 – 538	500 – 3500	34 – 241	4 – 12	100 – 300	●		
4	Recycle Gas Compressor Surge	150 – 200	66 – 93	500 – 3500	34 – 241	4 – 8	100 – 200			●
5	Rich Amine Isolation	100 – 200	38 – 93	500 – 3500	34 – 241	4 – 10	100 – 250		●	
6	Sour Water Isolation	100 – 200	38 – 93	500 – 3500	34 – 241	2 – 6	50 – 150		●	
7	Cold High Pressure Separator Automated LCV Isolation	100 – 200	38 – 93	500 – 3500	34 – 241	6 – 10	150 – 250		●	
8	Cold High Pressure Separator Manual LCV Isolation	100 – 200	38 – 93	500 – 3500	34 – 241	6 – 10	150 – 250		●	
9	Hot High Pressure Separator Automated LCV Isolation	800 – 900	427 – 482	500 – 3500	34 – 241	8 – 12	200 – 300	●		
10	Hot High Pressure Separator Manual LCV Isolation	800 – 900	427 – 482	500 – 3500	34 – 241	8 – 12	200 – 300	●		
11	Stripper Bottoms EBV	500 – 850	260 – 454	150	10	8 – 12	200 – 300	●		
12	Stripper Bottoms Pump Isolation	500 – 850	260 – 454	150	10	6 – 10	150 – 250	●		
13	Unit Depressurization	100 – 200	38 – 93	500 – 3500	34 – 241	6 – 10	150 – 250	●		

¹ Recommend ISOLATOR 2.0 if size, pressure and temperature conditions are met.

Hydrotreating

Fixed Bed Hydrotreating



Typical operating conditions are:

- High temperature
100 – 1000° F (38 – 538° C)
- High pressure
500 – 3500 psig (34 – 241 bar g)
- High pressure / temperature hydrogen
- Coking service
- Asphaltene formation
- Ammonium bisulfide corrosion
- Viscous sludge
- Hydrogen sulfide corrosion
- High pressure / temperature catalyst handling
- Polythionic acid corrosion