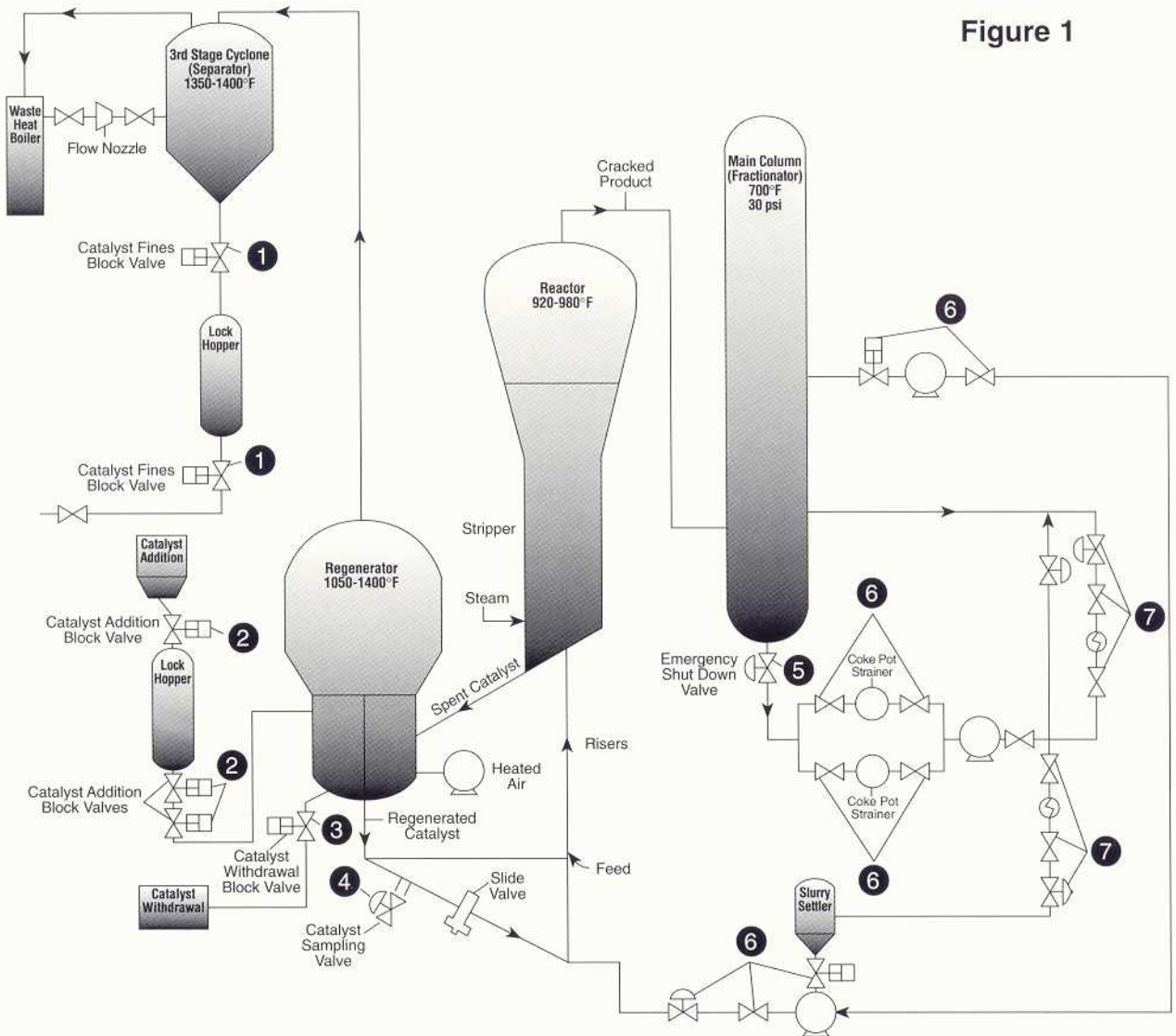


Application Data

Figure 1



FCC Units Valvtron Metal-Seated Ball Valves

Chart below lists typical applications, with the schematic above identifying valve positions.

Location	Application	Conditions	Valve Size	Body Material
1	Catalyst Block	700°F @ 35 psi	6-8 inch	9 Chrome
2	Catalyst Addition	700°F @ 35 psi	2-4 inch	9 Chrome
3	Catalyst Withdrawal	1400°F @ 35 psi	4-8 inch	347 SS
4	Catalyst Sampling	1000°F @ 20 psi	2-3 inch	347 SS or 9 Chrome
5	Emergency Shut Down	700°F @ 30 psi	10-14 inch	9 Chrome
6	Pump/Strainer Isolation	700°F @ 30 psi	8-14 inch	9 Chrome
7	Catalyst Slurry	700°F @ 35 psi	6-8 inch	9 Chrome

*Note: The application, conditions and sizes of the valve are typical and can vary with each system. Valvtron has also been used on bypass lines for warmup. Application #6 can be double block and bleed.

FCC Units - Continued

Developed to combat increasing gasoline prices, the cat cracker unit processes cheaper, heavier gas oils into a lighter, viable product or gasoline. The heavy oils fed into these units are subjected to heat and pressure. Catalyst is then injected to cause a chemical reaction that promotes cracking.

Normally, either a bead or particle type catalyst is used. The most popular is a particle catalyst that resembles baby powder in consistency. It reacts like a fluid when shaken, hence the term Fluidized Cat Cracker Unit or 'FCCU.' Refiners can experience substantial yield gains due to the volume increases cracking creates based on density. By pumping the used catalyst through a regenerator, the inactive or 'spent' catalyst is heated to burn off carbon and coke particles, recycled through the system and reused. Figure 1 (schematic on front) shows a typical FCC unit. Valvtron valves have many isolation, block and other valve applications.

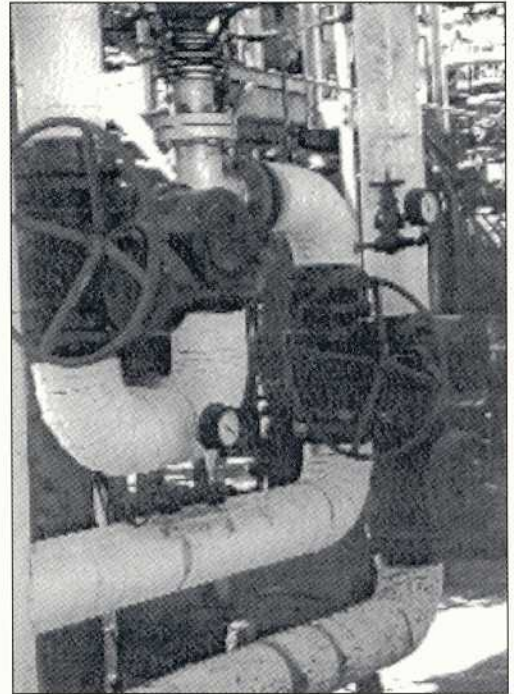
Valvtron in FCC Units

To obtain maximum efficiency from the process, the quality of feed, flow rates and reactor temperature must be closely monitored. Furthermore, the isolation and block valves must perform trouble-free. This is where Valvtron metal-seated ball valves have excelled time after time over the competition. In addition to the abrasive

catalyst fines, corrosive flue gases, and high temperatures, these valves must operate quickly and maintain tight shut-off. Although pressures are normally under 50 psi, temperatures can exceed 1400°F in certain applications. Valvtron incorporates the latest technology in coating methods, material selection, and design features to ensure longer service life is achieved.

Why Other Valves Don't Work

Special attention must be given to valve component materials and coatings in severe service applications. Many valve designs such as plug and gate valves fail to prevent buildup of particulate between sealing surfaces. With each cycle, trapped particulate is crushed between the seating surfaces resulting in damage and ultimate failure of the valve. Another concern is thermal expansion. This occurs when the plug temperature increases once it is seated. Incidentally, the valve could become lodged, preventing the valve from opening. Most ball valve designs have separate seat configurations that allow solids to become trapped behind the seating areas. Valvtron's integral seat design eliminates this problem.



Valvtron valve

Various valve designs can be sold to work in FCC service—the question is, For how long? Valvtron can provide you with references from customers who have already been through the learning curve and have found Valvtron valves to be the solution to their problems.

Valvtron valve applications can also be found throughout the refinery in numerous coking, heavy oils, CCR units, and other applications.

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