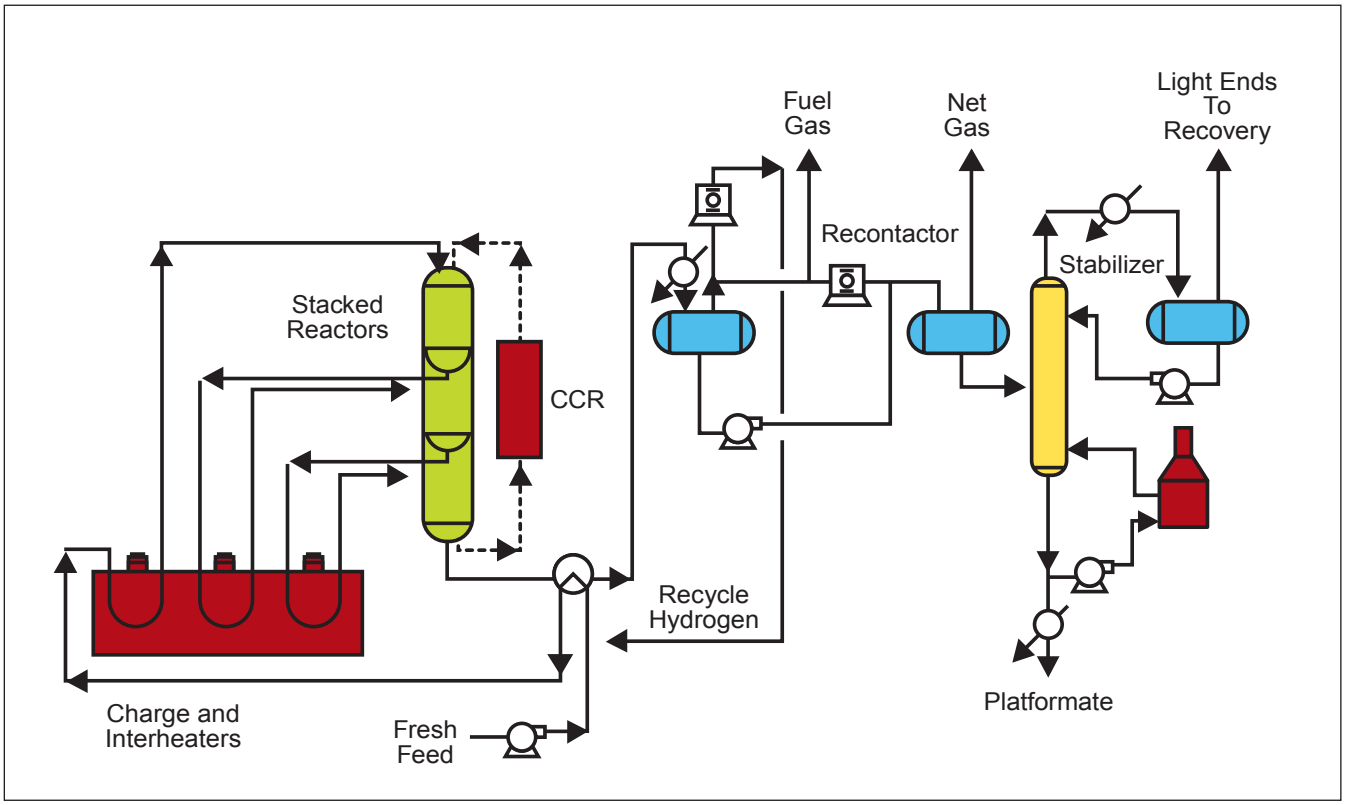
CATALYST ADDITIONS AND FINES COLLECTION SYSTEM



Catalytic reformer

The Process

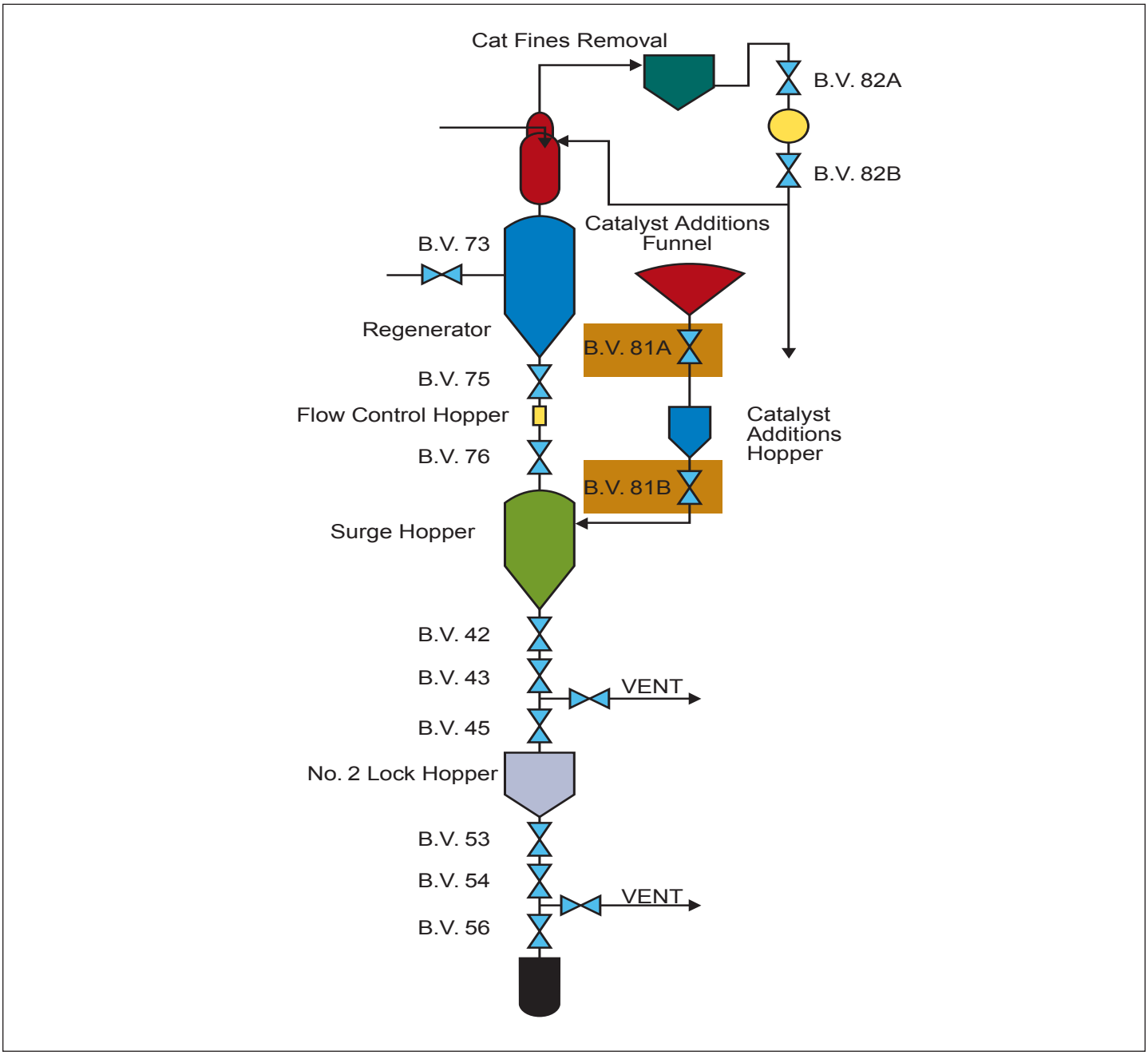
This process can be regarded as the refiner's main tool to control gasoline octane level. The purpose of this process is to produce gasoline-blending stock. The improvement is achieved by converting paraffin and naphthenes into aromatics and isomers. Simply put, the catalytic reformer takes low octane value feedstock and converts it into relatively stabile high octane value gasoline blending components.

In the process, hydrogen gas is produced as byproduct. The excess hydrogen produced by this process is a valuable feedstock to other refinery processes that require additional hydrogen.

The reforming process operates at high temperature levels up to 550°C (1025°F). Over a period of time, the catalyst becomes coated with coke, a natural byproduct of the reforming process, and requires regeneration.

Old reformer units use fixed bed reactors in series. Typically, three to four reactor beds are used in a cascade arrangement. These units are referred to as semi-regenerative catalytic reformers. Removing one bed at a time from service and physically opening the reactor and removing and replacing the catalyst achieve regeneration of this type of process.

metso automation



UOP spec. 671 continuous catalytic reformer

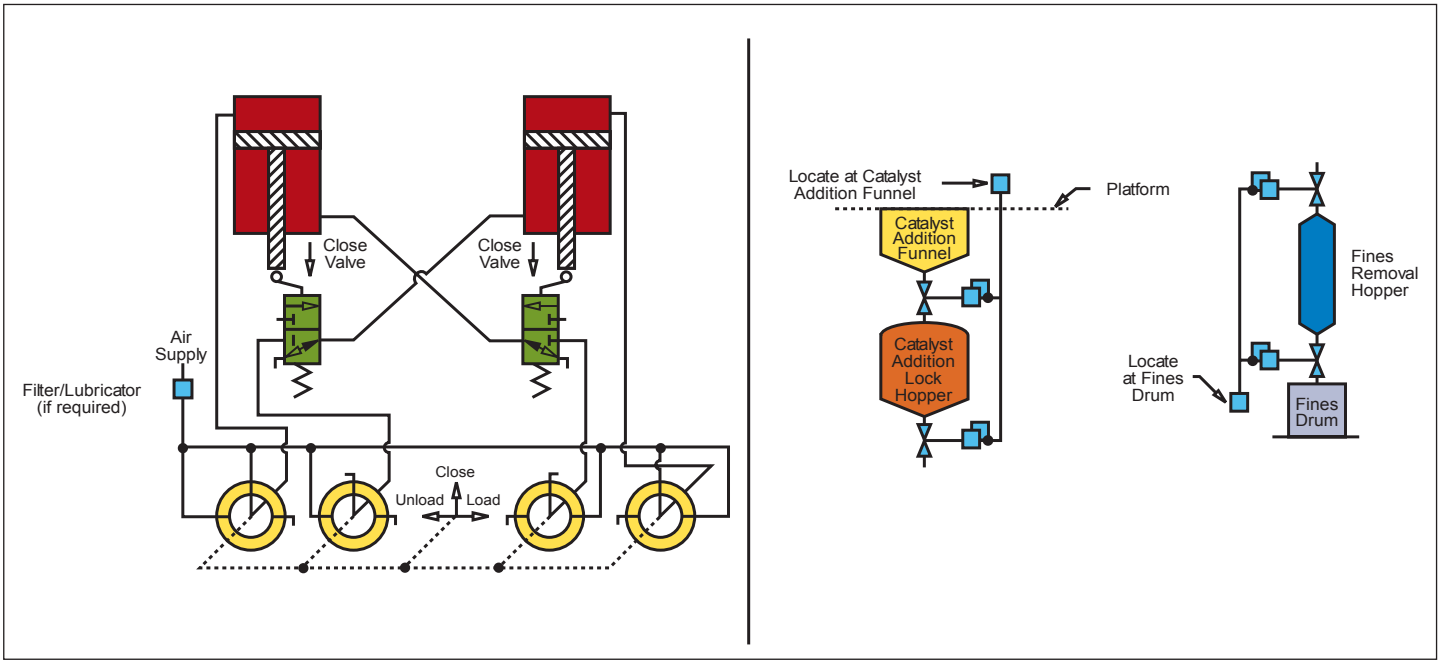
The Catalyst Addition and Removal System

The catalyst addition system is the point in process where new catalyst is added to replace the quantity of catalyst that is withdrawn and discarded from the system after it can no longer be regenerated. The n ew catalyst flows by gravity into the system through a catalyst addition hopper at ambient temperature. The new catalyst passes through the first addition valve and into the addition lock hopper. The first valve, above the lock hopper, is then closed and the second valve, below the lock hopper, is opened admitting the new catalyst into the process.

Metso Automation provides, as a part of the catalyst addition system, a safety interlock system. This safety system is a series of airlocks that prevent both the valve above and below the lock hopper from opening at the same time.

Valve Requirements

- Tight shut-off
- Catalyst friendly design
- Safety interlock instrumentation



Interlock system

Metso Automation Solution

The JAMESBURY® 9150 series soft-seated ball valve with filled Teflon seat and pneumatic actuator has proved to be the right choice by many refineries using the UOP continuous reforming process.

The Metso Automation solution complies with all the design standards and test procedures of UOP Specification 671.

Model Number and Description

9150 31 3600MTT

9150	Full Bore ANSI Class 150 ball valve
31	Raised face flange, Fire Tite, seat supported
3600	Stainless steel construction
MTT	Filled Teflon seat

The information provided in this bulletin is advisory in nature, and is intended as a guideline only.
For specific circumstances and more detailed information, please consult with Metso Automation.

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