

Gasification System: Gas Flow System

Associated Procedures

- Gasifier System
- Feeding System
- Gasifier Reactor
- Gas Flow System
- Gasifier Control Unit
- Gasifier Process Flow

Description

The cyclone below the drying bucket, also known as the “hot gas cyclone separator” cools gas and removes solid particles larger than 10 μ m as a prefilter. When the syn-gas flows through the cyclone, the particles and ash moving with the syn-gas gravitationally drop down to the jar attached to the bottom of the cyclone. The syn-gas then flows through a multi-layer filter after the cyclone.

This is a filter packed with oiled fine foam filter disks, charcoal and sawdust for sifting out the tar and moisture content from the Syn-gas. A flare stack with an automatic igniter is attached to the exhaust for syn-gas test burning.

The gas flow of the gasification system is driven by the function of an ejector venturi. The venturi provides the negative air pressure required through the gasification system, and also mixes the air with syn-gas for the flare stack. The venturi system can be adjusted through a needle valve in order to control the pressure in the reactor. The reaction temperature increases along with the increase of gas flow that is proportional to the measured pressure. Thus, this needle valve is also a primary way to indirectly control the temperature.