Steam Explosion Sample Conditioners - 5404

Bulletin

230

Operating temperature:
253 ° C

Maximum temperature:
300 ° C

Operating pressure:
725 psi
49 bar

Maximum pressure:
1000 psi
68 bar

In Recent years we have received a number of inquiries for reactors to work with biomass of one type or another. Some of our first of these were for use with wood pulp. More recently these have included wood chips, corn stover (stalks and cobs) and other cellulosic materials. While the moisture contents may be high by weight percentage, these materials cannot be agitated in a conventional vertical stirred reactor. Rather, we have found that vapor explosion can be a great option to perform fiber cracking. These reactors can be manufactured in volumes ranging from two liters to 5 gallons (18.5 liters). The most popular sizes have been two liters. These vessels are build with three basic sub-systems: 1- A High pressure Steam Generator; 2- The explosion Reactor; 3-, The Expansion Cyclone Chamber. All these systems are connected together by a central control system which monitors and controls the working parameters. A special fast actuated ball valve is used to open the main sample vessel to expand the biomass to the cyclone chamber and thus cracking the biomass fibers.

Specifications

Steam Generator:

The steam generation system includes:

- One 304 stainless steel vessel with thermal insulation
- Heating system (electric resistances) for steam generation
- Maximum temperature of 300 ° C
- Maximum pressure of 610 psi / 41 Bar
- High pressure water supply pump
- Indication and control of temperature and pressure, level indication and low level alarm, safety system (relief valve / rupture disc)

Steam Explosion Sample Conditioner and Reactor (Model 5404)

- Vertical cylindrical vessel made of 316L stainless steel. Other materials under request.
- 2L or 20L Volume
- Operating temperature: 253 ° C
- Maximum temperature: 300 ° C
- Operating pressure: 725psi / 49bar
- Maximum pressure: 1000 psi / 68bar
- The vessel includes, safety devices such as relief valve and rupture disk, heating system, automatic quick opening bottom valve, thermal insulation, funnel for loading lignocellulosic material.
- Monitoring and control of temperature and pressure

Cyclone:

- Maximum operating temperature: 300 ° C
- Maximum operating pressure: 65psi / 4,4bar, 316L stainless steel,
- System for collecting decontaminated material
- Thermal insulation

System Control

Touchscreen panel with real-time monitoring and control of process conditions with graphs and friendly interface.