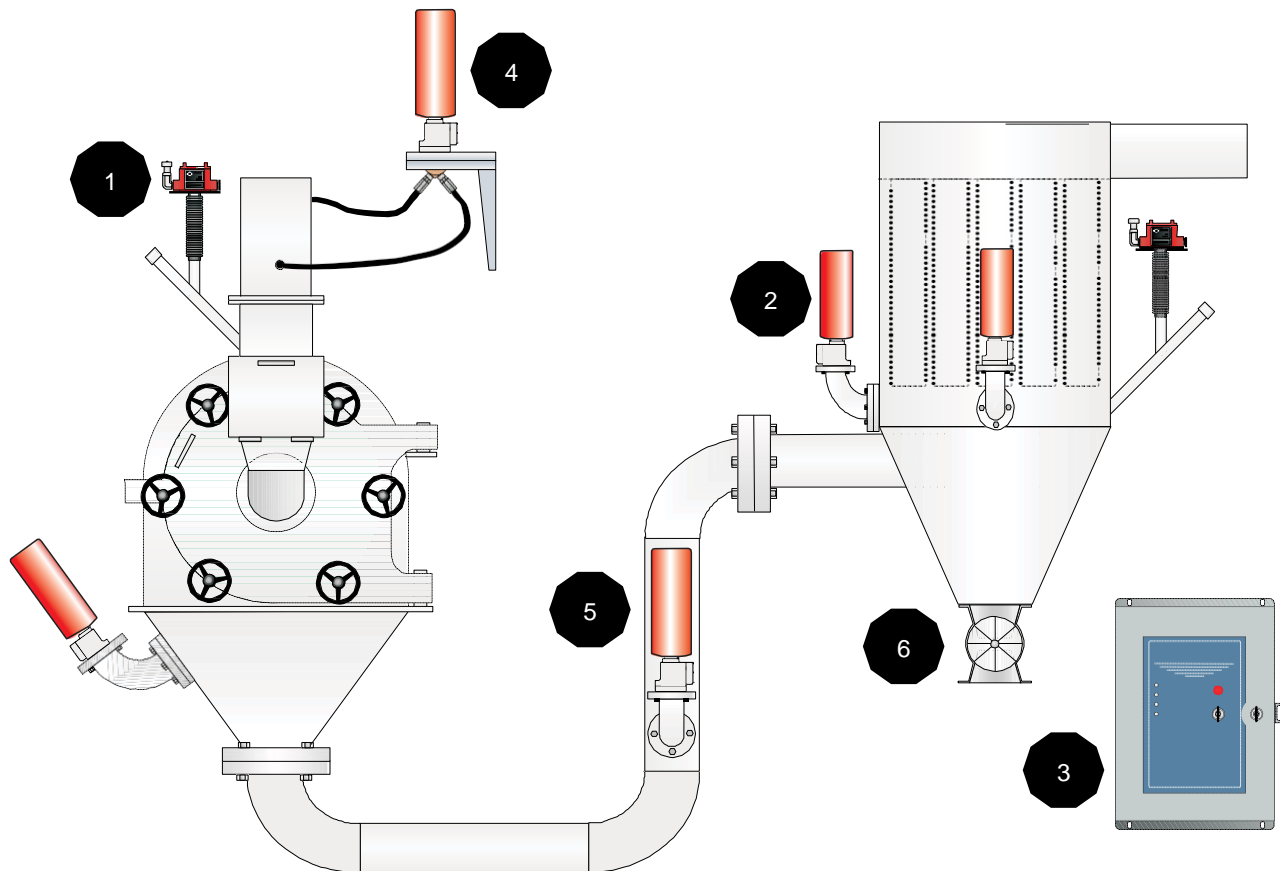


Milling Systems

Explosion Suppression Systems



Application

Milling applications cover a broad range of equipment types. The illustration shows a pin mill. Material passes down an inlet duct to the center of the mill from where it is thrown outwards to impact opposing sets of overlapping pins. One set of pins stands upon a fixed plate, the other set stands upon a rapidly spinning disk. Collisions between particles, and between particles and pins, creates a very fine material which is conveyed into an adjacent collector.

System Components

1. Pressure Detector
2. HRD Suppressor
3. Control Panel
4. Isolation Suppressor with Hose Assembly
5. Isolation Suppressor with Spreader Nozzle
6. Rotary Gate Valve (by others)

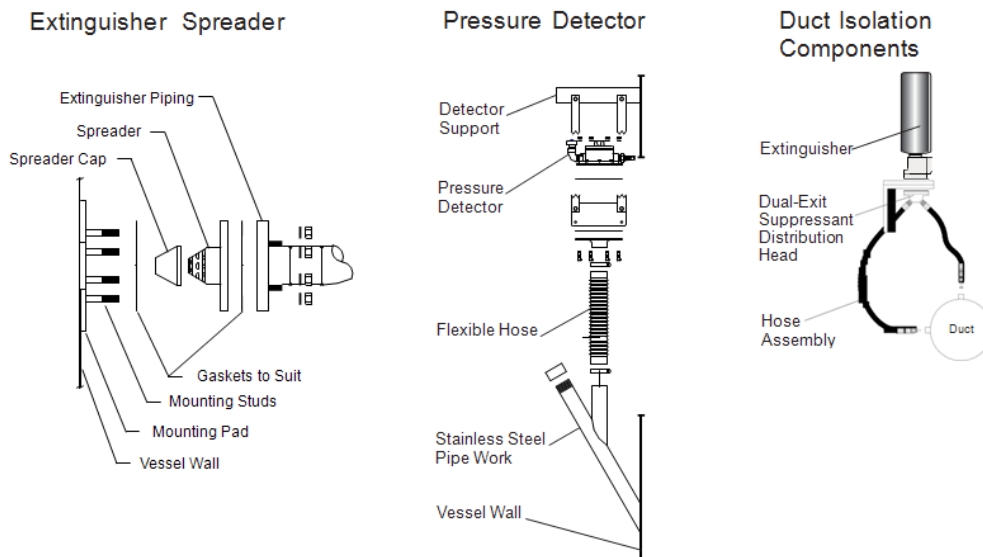
Hazard

Milling systems present a special hazard. The combination of fine materials and high speed, moving parts increases the probability of an ignition occurrence. In addition to internally created ignition sources, foreign materials in the feed stream can cause impact sparks. Only some of these foreign materials, such as tramp metal, are removed by the magnetic separators commonly installed on mills. Although many mills are designed to withstand the dynamic pressures of an internal explosion, adjacent equipment and duct work may be vulnerable to the violent effects of explosion propagation.

Protection System Description

In the example shown, the close proximity of the mill and collector make it practical to include them in a single protected zone. Larger systems may be divided into several zones which initiate explosion suppression independently of each other. Explosion pressure detectors are mounted both on the mill and the dust collector. They detect the pressure excursion from an impending explosion. The detectors transmit a signal to a control panel, which triggers high rate discharge suppressors while simultaneously shutting down the process. The suppressors mounted on the mill hopper and collector body are designed to quench the fireball before maximum explosion pressures are reached. The isolation suppressor with hose assembly on the mill feed duct, and isolation suppressor with spreader nozzle on the conveying duct disperse suppressant to mitigate the passage of flame. An explosion-proof rotary gate valve mounted on the collector hopper reduces the likelihood of burning materials passing downstream.

Typical Installation Details



Contact Information

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