

Vertical Install of Quencher

The best installation for a Quencher spark arrestor is in a horizontal duct run. Ask for our bulletin on "straight duct required". However, it may be necessary to install it in a vertical duct run. This can be done with the precautions stated below.

If the air flow is vertical down, there is no issue.

There can be a problem if the flow is vertical up.

No problem with extinguishing the sparks that go through the cell.

The issue is that dust hits the blades and some of it will bounce off and drop back down in the upstream flow below the Quencher cell. This dust combines with new oncoming dust in the air stream. You could then have a situation where the dust concentration just under the cell, on the inlet, lies between the LEL (lower explosive limit) and the UEL (upper explosive limit). A spark entering this mixture could set it off as a fire or an explosion. Different dusts have different LEL & UEL and this is what determines if you have a hazard or not. We would insist on the "**booster-cleaner option**", for these applications, to blow the dust accumulation through the cell and up on its way. The booster is a good safety factor but no guarantee.

Most spark arrestor suppliers ignore this issue and/or don't have a means to deal with it. One supplier did offer a mechano set to install a booster in the duct, they don't have an integral booster or know how to design one. It would appear they don't offer it anymore, probably because you must install it at a critical distance and design the orifices just right for it to work at all. There were probably problems with the field installed boosters and it was discontinued.

Another issue clients weren't too happy with their dust collector suppliers who supplied spark arrestors, as part of the dust collection system, was that they did not inform the client of the booster option.