

## Studies on Design of Cyclone Separator with Tri-Chambered Filter Unit for Dust Removal in Rice Mills

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**Abstract :** Cyclone separators are normally used for dust collection in rice mills for a long time. However, their dust collection efficiency is lower and is influenced by factors like geometry, exit pipe dimensions and length, humidity, and temperature at dust generation place. The design of cyclone has been slightly altered, and the new design has proven to be successful in collecting the dust particles of size up to 10 microns, the major modification was to change the height of exit pipe of the cyclone chamber to have optimum dust collection. The cyclone is coupled with a tri-chambered filter unit with three geo text materials filters of different mesh size to capture the dust less than 10 micron.

**Keywords :** cyclone-separator, rice mill, tri chambered filter, dust removal

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