

Performance of a degassing hydrocyclone with main and subsidiary chambers

Xiao Xu¹, Junjie Wang², Lei Wang², LU Hao², and Qiang Yang¹

¹Affiliation not available

²East China University of Science and Technology

September 11, 2020

Abstract

Based on the premise that large bubbles are removed in larger cyclones and small bubbles are removed in smaller cyclones, a combined degassing hydrocyclone with main and subsidiary chambers was designed to enhance liquid degassing. The liquid feed volume flow rate ranged from 0.377 to 1.459 m³/h, and the gas feed volume flow rate ranged from 0.197 to 1.000 m³/h. The pressure loss, liquid flow rate at the gas outlet, split ratio, gas flow rate at the liquid outlet and degassing efficiency of the degassing hydrocyclone were measured and calculated. Correlative equations for pressure loss and degassing efficiency were established. The experimental results show that the degassing hydrocyclone can remove most of the gas and has good degassing performance in a large gas-liquid flow rate range. The parameter contours provide an effective foundation for the removal of gas from industrial fluids.

Hosted file

Performance of degassing hydrocyclone with main and subsidiary chambers-9.3v2.docx available at <https://authorea.com/users/358393/articles/480557-performance-of-a-degassing-hydrocyclone-with-main-and-subsidiary-chambers>