

Design and Engineering of Two Phase Separator

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Abstract: *A two-phase separator pressure vessel is a critical component in process industries, used to separate gas and liquid phases from a two-phase mixture. The two-phase separator is essential for separating gas (vapor) and liquid phases in various industrial processes. It ensures efficient operation by preventing liquid carryover into downstream equipment (such as compressors or pipelines). The design involves selecting the appropriate vessel orientation (vertical or horizontal) based on the vapour-to-liquid volume ratio. Material selection, pressure, temperature, and corrosion allowance are critical parameters. Mechanical design includes analyzing the skirt, shell, nozzles, dish ends, and flanges. The primary goal of this project is to create a highly efficient and cost-effective system applicable for petrochemical industries, oil and gas industries, and refineries. This involves designing a process that adheres to environmental standards, as the removal of various contaminants is crucial to comply with environmental regulations.*

Keywords: Two-Phase Separator, Pressure Vessel, Vapour to Liquid Volume Ratio, Mechanical Design