Three Phase Oil–Water–Gas Separators The term separator in oil field terminology designates a pressure vessel used for separating well fluids produced from oil and gas wells into gaseous and liquid components.Separators work on the principle that the three components have different densities, which allows them to stratify when moving slowly with gas on top, water on bottom of the separator.When there is a large volume of gas to be separated from the liquid (oil and water), the vessel is called a three–phase separator and either the gas capacity requirements or the water–oil separation constraints may govern the vessel design.Three–phase separators may be either horizontal or vertical pressure vessels similar to the two–phase separators described above.Generally, water produced with the oil exists partly as free water and partly as water–in–oil emulsion.The volume of gas depends largely on the producing and separation conditions.However, three–phase separators will have additional control devices and may have additional internal components.