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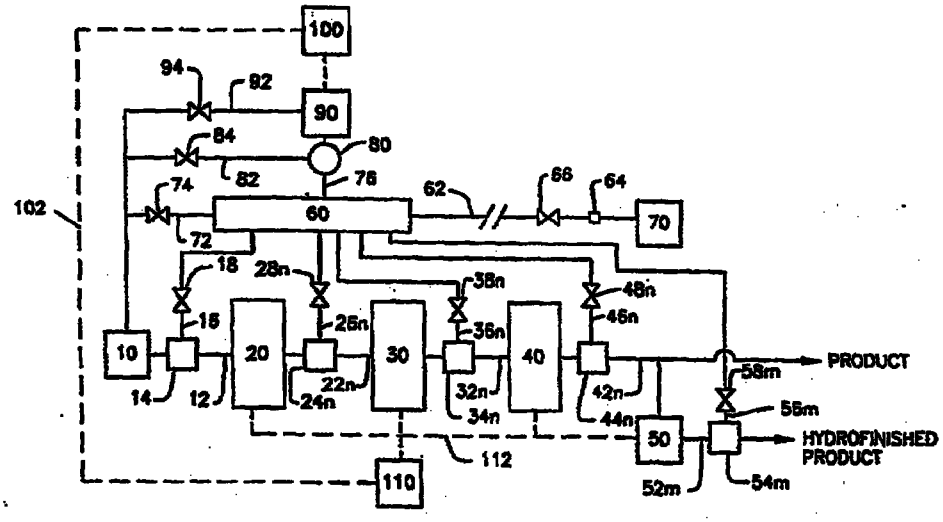

(57) Abstract

A method for controlling the manufacture of lubricating oils involving the steps of distillation, extracting, dewaxing and optionally hydrofining; or for controlling operating units associated with refinery or chemical processes with feed stocks and products boiling above 350 °C. The method comprises selecting one or more chemical or perceptual or physical or performance properties of the lubricating oil or the feedstock, distillate or raffinate used in the manufacturing process; or of the refinery or chemical process feedstocks or products; creating a training set from reference samples which contain characteristic molecular species present in the lubricating oil, feedstock, distillate or raffinate used in the manufacturing process or from the refining or chemical operations. The reference samples are subjected to GC/MS analysis wherein the often collinear data generated is treated by multivariate correlation methods. The training set produces coefficients which are multiplied by the matrix generated from a GC/MS analysis of an unknown sample to produce a predicted value of the chemical, performance, perceptual or physical property or groups of properties selected.