

B.2.5. Speed control

With speed control, the main disadvantage of throttling control, energy losses, is eliminated or at least reduced. Speed control can be effected by additional equipment or a different drive motor. The most frequent applications are: variable speed electric motors, variable speed gears, hydraulic couplings, internal combustion engines, and steam or gas turbines. In small and middle size pumps the combination of a standard low-voltage squirrel cage motor and a frequency converter represents an efficient and also economical solution. Although speed control is accompanied by more expensive equipment and increased space requirements, this is in most cases balanced by reduced energy consumption (see also the chapter Life Cycle Cost – LCC).

The advantages of speed control are highest when the system characteristic is composed completely of the dynamic head, and the operating point is in the region of maximum efficiency (curve 1 in diagram Fig.B.2.9.).

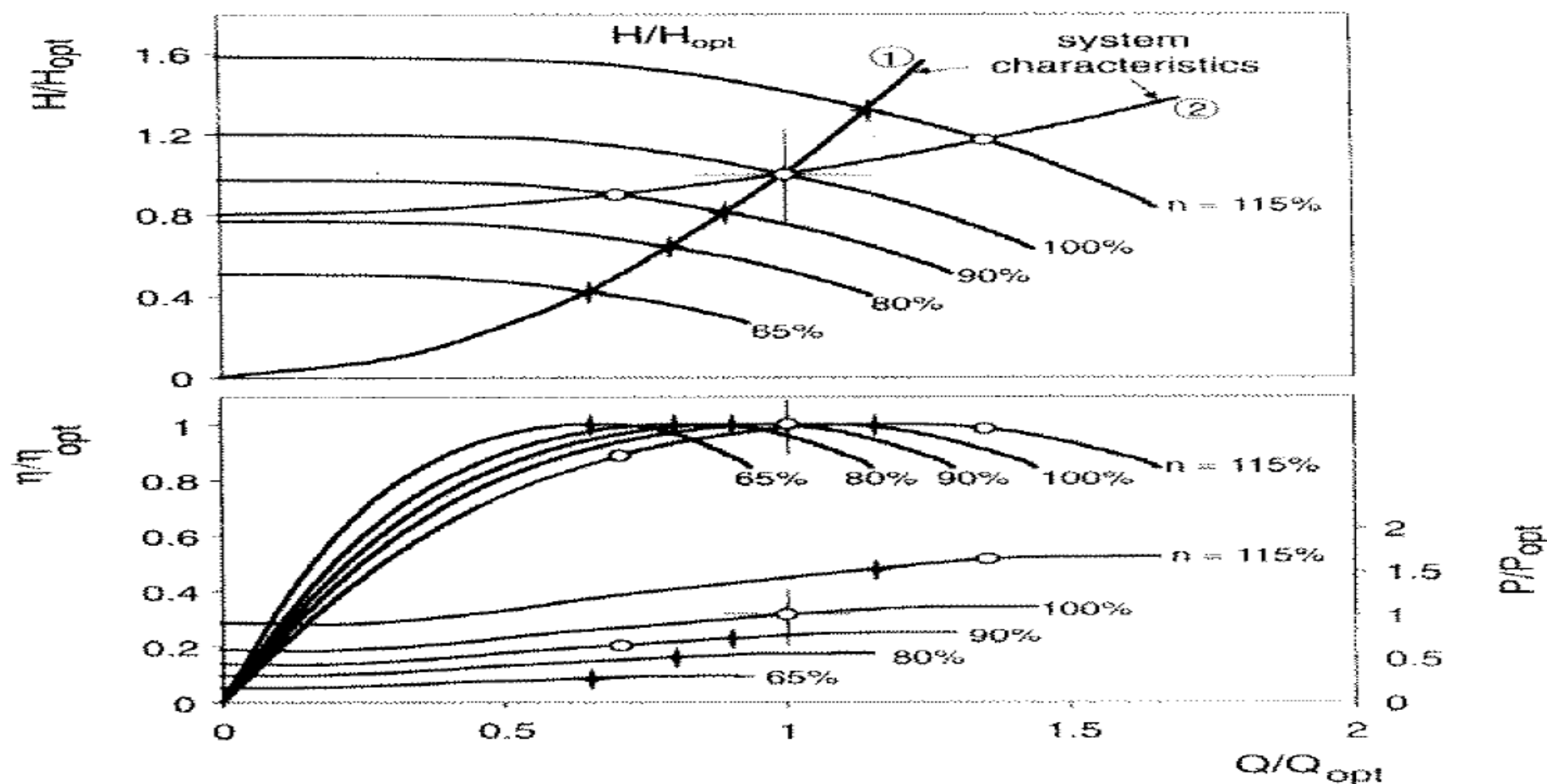


Fig.B.2.9 Speed control: pump and system characteristics