

General information:

The content of this handbook is based on the authors own experience gathered in:

- Thermal power plants,
- Centrifugal pumps in systems of the hydrocarbon-pumping industry,
- Plants with large fluid-transport systems.

Additional recommendations are taken from published literature, again based on experience.

This handbook is divided into five main chapters:

Part 1: (covered by Section 1 and 2) Describing the most important areas of malfunction for single- and multi-stage centrifugal pumps.

Part 2: (covered partially by Section 2 and by Section 3) Giving physical explanations for the troubles observed during the operation of the pumps and measured with the help of well-defined, and usually portable, field instruments.

Part 3: Results of the diagnoses based on measurements of the pumps. These measurements, compared with existing standards, and with the recommended limiting values, help us to find the most probable cause of the malfunction.

Part 4: Recommendations for the necessary alterations to the hydraulic as well as to the mechanical parts of the centrifugal pumps presented in order to obtain satisfactory behaviour for all the parts of the centrifugal pump.

Part 5: Suggestions for major alterations and modifications, primarily to multi-stage pumps, by updating the hydraulic – as well as the mechanical – parts of the pumps, or even the auxiliary elements of the pumps, by introducing the latest developments in the field of centrifugal pumps.