

ROSS MACKAY ASSOCIATES LTD

Pump Reliability Audit

What do you need to know to improve the life and reliability of your pumps?

- _____1. Gain a better understanding of the use of the various parts of the pump.
- _____2. Be aware of the functional differences in impeller types.
- _____3. Know why there are one, two or four wear rings.
- _____4. Understand the difference between pressure and head.
- _____5. Understand the role of the pump curve in trouble-shooting.
- _____6. Be aware of the use of the Affinity Laws.
- _____7. Know how to maintain pump efficiency and reduce power draw.
- _____8. Appreciate the effect of viscosity on pump performance.
- _____9. Realize the effect of paper stock dryness on pump performance.
- _____10. Understand the effect of speed on pump performance.
- _____11. Understand the key hydraulic factors in a pumping system.
- _____12. Know how to use the system curve in trouble-shooting.
- _____13. Understand parallel pumping.
- _____14. Understand series pumping.
- _____15. Know how to better analyze the pumping system.
- _____16. Know the difference between cavitation, recirculation and air entrainment.
- _____17. Understand how to trouble-shoot cavitation.
- _____18. Understand how to work better with net positive suction head (NPSH)
- _____19. Realize the importance of pump priming.
- _____20. Know how to minimize vertical pump submergence.
- _____21. Understand low flow recirculation.
- _____22. Realize the importance of suction and discharge piping requirements.
- _____23. Be aware of the best pump operating procedures.
- _____24. Understand how piping can improve the pump performance.
- _____25. Understand radial loads and shaft deflection.
- _____26. Gain a better understanding of pump packing.
- _____27. Learn how to select the right mechanical seal for your service.
- _____28. Understand the difference between single vs. double seals.
- _____29. Learn why mechanical seals fail.
- _____30. Appreciate the importance of auxiliary piping systems.
- _____31. Know how to better trouble-shoot seal and bearing problems.
- _____32. Understand the various bearing styles and why they're used.
- _____33. Know the benefits of the different oil lubrication methods.
- _____34. Understand grease lubrication.
- _____35. Understand how to better protect your bearings.
- _____36. Appreciate the importance of shaft alignment.
- _____37. Know how to correct the mechanical causes of pump vibration.
- _____38. Other _____

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Page 2 - Pump Style

In order to help us tailor an in-house school to your specific needs, please tell us what styles of pumps you have in your plant by ticking off the appropriate items.

Centrifugal _____	Horizontal _____
Progressive Cavity _____	Vertical _____
Gear _____	In-line _____
Piston _____	Submersible _____
Diaphragm _____	Single Stage _____
Screw _____	Multi-stage _____
Other (specify) _____	Single Suction _____
_____	Double Suction _____

Standards Used:

ANSI _____ API _____ Corporate Specs. _____

Other information we should know: _____

*Internationally recognized as a Specialist in Pumping Reliability,
Ross Mackay helps companies reduce their cost of pump operation and maintenance.*