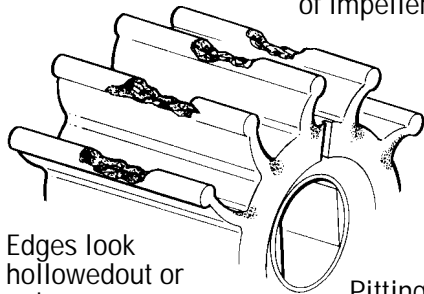


Impeller Trouble Shooting Guide

This guide is designed to help spot typical application problems that show up in flexible impellers during normal use.

Problem 1

Pieces missing from blades tips especially in center of impeller.



Edges look hollowed out or eaten away.

Pitting on ends of impeller.

Causes:

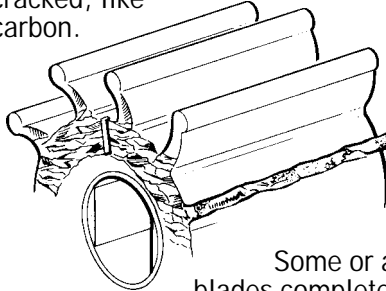
- Cavitation, i.e. too much vacuum at pump inlet, fluid boils locally.

Remedies:

- Reduce pump speed.
- Increase inlet pipe diameter.
- Reduce inlet pipe length and restrictions.

Problem 2

End faces hard, polished, cracked, like carbon.



Some or all blades completely missing in severe cases.

Causes:

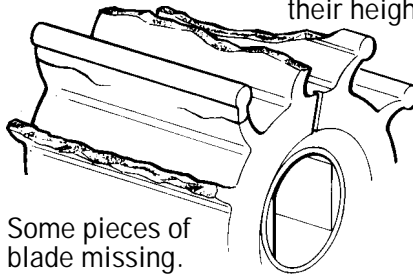
- Dry running.

Remedies:

- Do not run more than 30 seconds without liquid in pump.
- Stop pump as soon as liquid is exhausted.
- Arrange pipe work to trap liquid in pump on discharge side. Prevents dry running for several minutes.

Problem 3

Blades cracked about 1/2 way up their height.



Some pieces of blade missing.

Causes:

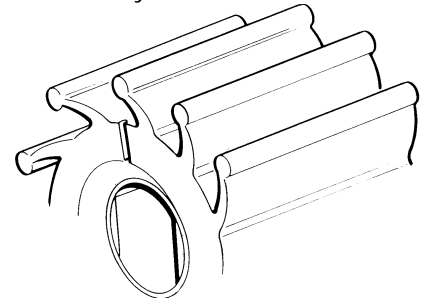
- Normal end of useful life.
- Excessive outlet pressure reduces impeller life.
- A crease on trailing side of each blade can also indicate excessive pressure.

Remedies:

- Reduce pressure and/or pump speed.
- Increase outlet pipe diameter.
- Reduce outlet pipe length and restrictions.
- Can also be due to dry running.

Problem 4

Blades permanently and excessively curved.



Causes:

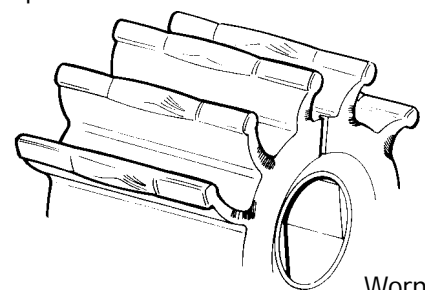
- Long term storage in pump.
- Normal end of useful life (especially nitrile impellers).

Remedies:

- Remove impeller for long term storage.
- Refit impeller to rotate in opposite direction.

Problem 5

Worn blade tips and faces.



Worn impeller drive.

Causes:

- Abrasive wear from pump or fluid.
- Worn impeller drive can also be due to excessive pressure or dry running.

Remedies:

- Pump should continue to operate satisfactorily in worn condition.
- Replace severely worn pump parts.