

9. RUNNING MAINTENANCE

The pump should run without vibration. The suction lift and head condition should not be disturbed due to changes in the level of liquid of the suction vessel. Don't overload the motor above it's rated power.

Excessive leakage through the stuffing box during early period of operation stops itself after the running time. If necessary, tighten the gland nuts. Avoid excessive tightening. There should be a slight leak at the stuffing box to carry away the frictional heat generated at the packing.

If the leakage is excessive and tightening does not help, the packings should be replaced because they might have lost their elasticity. Also check the outside diameter of the sleeve for it's wear and smoothness.

Pumps for handling volatile fluids should have cooled stuffing boxes so that the packings do not run dry due to vaporisation of the liquid.

10. MECHANICAL SEAL

The life of mechanical seal depends upon many factors including the purity and lubricating quality of the pump liquid. In view of the various operating conditions, it is not possible to specify the life of mechanical seals.

Dry running of the mechanical seal, even momentarily should be avoided.

PRIMING

All centrifugal pump, except self priming type, must be primed before starting. The pump must not be run unless it is completely filled with fluid, as there is danger of injuring some of the parts of the pump which depend upon the fluid for their lubrication.

11. TROUBLE SHOOTING

The most common causes of service interruptions or deficiencies and the way they may be detected are as follows :

11. 1 No Discharge/Insufficient Discharge :

Lack of adequate flow from a pump may be caused by any of the following conditions :

- ⇒ Pump not primed.
- ⇒ Speed too low.
- ⇒ System head too high.
- ⇒ Suction lift higher than that for which pump is designed.
- ⇒ Impeller completely clogged.
- ⇒ Wrong direction of rotation.
- ⇒ Air leak in suction line.
- ⇒ Air leak through stuffing box.
- ⇒ Suction or discharge lines are clogged.
- ⇒ Insufficient NPSHA.
- Suction lift too high. Check with gauges. Check also for clogged suction line or screen.
- Not enough suction head for hot or volatile liquids.
- Foot valve too small.
- Foot valve or suction opening not submerged enough.

11. 2 Insufficient Pressure :

Insufficient pressure from a pump may be caused by any of the following conditions :

- ⇒ Speed too low.
- ⇒ System head less than anticipated.
- ⇒ Air or gas in the liquid.
- ⇒ Impeller damaged.
- ⇒ Impeller diameter too small.
- ⇒ Wrong direction of rotation.