

2007 CMDC

Dorn

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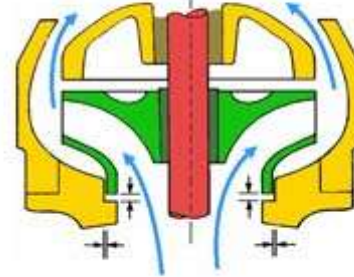
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Pumping Plant Performance Testing

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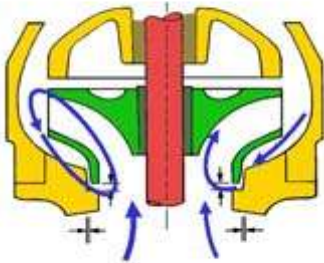
New pump - no wear



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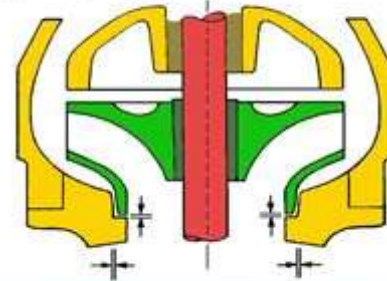
Pump with worn seal.

Some water leaks through seal and is re-pumped



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Impellers adjusted so they are as low as possible within the bowl (when pumping).



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Measurements needed for a short-term test

- **Pumping water level**
- **System pressure**
- **Flow rate (GPM)**
- **Energy consumption**

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Performance

- **Performance is the useful work performed by a pumping plant divided by the energy consumed (whp-hours/energy)**

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Performance Rating

- **The performance rating is calculated by dividing the performance by the Nebraska Performance Criteria (NPC).**
- **The performance rating is expressed as % of the NPC.**

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Potential Savings

- **Potential savings can be calculated from the rate of energy consumption and the computed performance rating**
- **(1-rating) x energy consumed**

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Feasibility of repair or replacement

- **Potential annual energy savings x price of energy = potential \$ savings.**
- **Potential \$ savings/ capital recovery factor = up front repair expense which can be paid off with energy savings.**

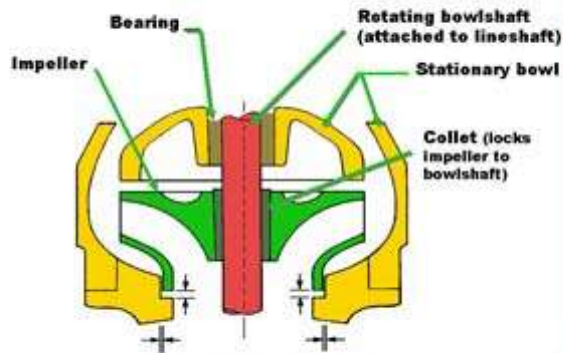
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Enclosed impeller pump & bowl



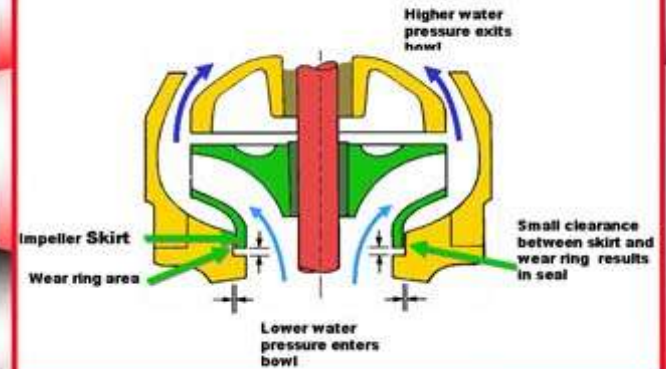
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Enclosed Impeller and Bowl Assembly



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New pump – no wear



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