The main difference between reciprocating and centrifugal pump is, In a reciprocating pump, the discharge is fluctuating and pulsating whereas the discharge is smooth and continuous in the centrifugal pump.

This will be the most comprehensive article on the Difference Between Reciprocating Pump and Centrifugal Pump.

Here I have listed more than 20 points to understand you in every detail manner.

Best Part? I will understand you in simple and understandable words.

If you understand these 20 plus points of Difference Between Reciprocating Pump and Centrifugal Pump.

You can easily score maximum marks in your exam or in an interview.

Let’s start:

Table of Contents

- **Pump:**
- **Reciprocating Pump:**
- **Centrifugal Pump:**
- **Difference Between Reciprocating Pump and Centrifugal Pump:**
Pump:
When we talk about pump first definition comes in mind that it delivers water or other liquid from one place to another place.

A pump is a device that is used for lifting the liquid from the ground surface and delivers to the topmost upper surface.

The pump converts mechanical energy into hydraulic energy.

*Pump basically divided into two types:*

- Positive displacement type Pump and
- Dynamic Pump

Further classification will be discussed in detail in another article.

Now let’s move on to Overview on Reciprocating and Centrifugal Pump.
Reciprocating Pump:
It is a positive displacement type pump where a certain volume of liquid is entered in closed volume and it discharged using pressure to the required application.

It is generally suitable for a low volume of flow at high pressure. This is basically divided into several categories that will be discussed in another article.

Centrifugal Pump:
Centrifugal Pump is the most common type of pump in which the impeller is there. When fluid
comes into it, the impeller rotates.

Here Mechanical energy converts into hydraulic energy by the use of centrifugal force acting on the fluid.

Centrifugal pumps are used to transport fluids by the conversion of rotational kinetic energy to the hydrodynamic energy of the fluid flow.

**Difference Between Reciprocating Pump and Centrifugal Pump:**
I have listed around 20 plus points on the Difference Between Reciprocating Pump and Centrifugal Pump.
## Difference Between Reciprocating Pump and Centrifugal Pump

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Reciprocating Pump</th>
<th>Centrifugal Pump</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>The discharge is fluctuating and pulsating.</td>
<td>Here, The discharge is continuous and smooth.</td>
</tr>
<tr>
<td>2.</td>
<td>Reciprocating pump handles a small quantity of liquids but whereas</td>
<td>The centrifugal pump handles large quantity of liquids or fluids.</td>
</tr>
<tr>
<td>3.</td>
<td>It is used for only pure water or less viscous fluid.</td>
<td>This can be used for lifting highly viscous fluid.</td>
</tr>
<tr>
<td>4.</td>
<td>This is used for small discharge and high heads. But Reciprocating Pump</td>
<td>Used for large discharge through smaller heads.</td>
</tr>
<tr>
<td>6.</td>
<td>The installation cost is more.</td>
<td>The installation cost is less.</td>
</tr>
<tr>
<td>7.</td>
<td>The maintenance cost is also more.</td>
<td>The maintenance cost is also less.</td>
</tr>
<tr>
<td>8.</td>
<td>This one needs a larger floor area.</td>
<td>This one needs a smaller floor area.</td>
</tr>
</tbody>
</table>
9. The reciprocating pump is complicated in operation and with much noise. The centrifugal pump is smooth in operation and without much noise.

10. This pump runs at a low speed because of cavitation and separation. This pump runs at a high speed.

   Reciprocating Pump cost is more. Centrifugal Pump cost is less.

11. It cost us around 3 to 4 times of centrifugal pump cost.

12. Torque is not uniform here. In this Torque is uniform.


14. Here belt drive is necessary. This centrifugal pump can be directly coupled with electric motor.

15. An air vessel is required. No air vessel is required.

16. It does not need priming. It needs priming.

17. It cannot handle dirty water. Centrifugal Pump can handle dirty water.

18. Heavy foundation requires The simple foundation is enough.

19. (The weight)/(Discharge) ratio is more. (The weight)/(Discharge) ratio is less.

20. The flow rate is constant with a change in pressure. The flow rate varies with a change in pressure.

21. This is an example of positive displacement pump. This is an example of Dynamic Pump.

I think these 21 Points help you to understand on Difference Between Reciprocating Pump and Centrifugal Pump.

If you want PDF? you can easily download PDF from here just scroll down and Download PDF.
Let me know if you understand or not? with the use of a comment box.

If you reading these line then I must sure you have understood and liked the articles. Thank you so much. Keep visiting for another great post.
Questions and Answer:
Which is a more efficient centrifugal pump or reciprocating pump?
In terms of efficiency centrifugal pump has good efficiency.

What are the advantages of a centrifugal pump over a reciprocating pump?
1. In domestic purpose centrifugal pumps are used.
2. The discharge of this pump is continuous.
3. It required a small floor area comparatively Reciprocating pump.

What is a reciprocating pump used for?
It is used for supplying water at high heads.

Why the speed of the reciprocating pump is lower than the centrifugal pump?
Centrifugal pump is a dynamic pump that increases the fluid speed and gives kinetic energy to the fluid and then into pressure energy.