

Re: I need someone's brain juice here?

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Source: <http://sci.tech--archive.net/Archive/sci.physics.relativity/2005-12/msg02624.html>

- *From:* guskz@xxxxxxxxxxxx
 - *Date:* 30 Dec 2005 17:56:44 -0800
-

OK PD but:

Bernoulli without any fluid velocities ($v=0$ for " $\frac{1}{2} \cdot \text{density} \cdot v^2$ "):

$$P_1 + \text{density } g \text{ h}_1 = P_2 + \text{density } g \text{ h}_2$$

#1: thus $P_1 = P_2 + \text{density } g (h_2 - h_1)$ (same as $P_1 = P_2 + \text{density } g \text{ h}$)

$$\#2: \text{Work}_1 = \text{Work}_2 \text{ thus } F_1 \cdot D_1 = F_2 \cdot D_2 \text{ thus } P_1 \cdot A_1 \cdot D_1 = P_2 \cdot A_2 \cdot D_2$$

>>From the models in the web links given:

In #1 $h = h_2 - h_1$ in #2 $h = D_1 + D_2$

Still the equations don't match???

PD wrote:

> guskz@xxxxxxxxxxxx wrote:

>> Slightly off topic but the other newsgroups aren't as read....

>>

>> Here's two web links on two widely understood fluid pressure models:

>>

>> <http://hyperphysics.phy-astr.gsu.edu/hbase/pman.html#meac>

>>

>> <http://hyperphysics.phy-astr.gsu.edu/hbase/pasc.html#hpress>

>>

>>

>> Both are related to vertical pressure (or Force / Area = pressure) on a

>> fluid, yet both use 2 completely different equations to calculate the

>> fluid's vertical travel distance.

>>

>> One use's the fluid's density the other simply says $\text{Work}_1 = \text{Work}_2$ thus

$$\text{F}_1 \cdot D_1 = \text{F}_2 \cdot D_2$$

>> (or $P_1 \cdot A_1 \cdot D_1 = P_2 \cdot A_2 \cdot D_2$) where as the other says $P_1 = \text{density} \cdot H \cdot$

>> gravity + P_2

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>>
>> If you look at both models you'll notice that $H = D1+D2$
>>
>>
>> Anyone with enough brain juice to tell me why the difference, I can't
>> figure it out since both models simply practically the same????
>
> The $F1*D1 = F2*D2$ assumes no height difference in the two ends of the
> pipe and doesn't take into account the work done to lift the fluid,
> which is precisely what the other one does.
> Use Bernoulli's equation. It contains both.
>
> PD

• **References:**

◆ ***I need someone's brain juice here?***

◇ *From:* guskz

◆ ***Re: I need someone's brain juice here?***

◇ *From:* PD

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