

Re: DC Motor power rating vs AC

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- *From:* "JimInsolo" <Jinsolo@xxxxxxxxxxxx>
 - *Date:* Fri, 17 Feb 2006 14:05:47 GMT
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Using the standard formula and allowing 1.5 times peak torque at any given RPM, if you put that motor on your grinder and then reduce the speed to 1725 RPM, your rating would be about 1/3 HP. Most DC motors are rated at a higher RPM, about 5–6000, so to get the same belt speeds you will need to keep the motor at about 30% of its rated speed. If you want higher belt speeds, then you can crank it up and have almost the same power as your AC motor, but if you want lower speeds, your best bet is to simply invest a few dollars and hours into a Jack shaft setup to reduce the speed of your existing motor.

"Don Foreman" <dforeman@xxxxxxxxxxxxxxxxxxxxxxxx> wrote in message news:oon9v19h3a9r3nu0lrmcap2017rangdg37@xxxxxxxxxxxx

On 16 Feb 2006 10:44:28 -0800, "Alex" <alexkuzn@xxxxxxxxxxxx> wrote:

I am running my belt grinder on 1.5 HP AC motor and can hardly stall it
I want to upgrade to variable speed motor and wonder if 3/4 HP Baldor
DC motor 90v
will give me the same performance?

BTW

Speed control is Speed-a-matic PN2400-8000 (1/4 to 1HP for 115VAC and
1/2 to 2 HP for 230 VAC) Input 14.5 A max Outpt 10 A max
Motor Baldor# CD3475, 3/4 HP, volts 90A/100/50F, amp 7.8/.6/1.2F, RPM
1750

It will obviously only have about half as much torque (and power)
running at full speed as your 1.5 HP motor does. However, if the
field current is kept constant it will be able to deliver the same
amount of torque at reduced speeds because torque is proportional to
current and the current rating of the motor doesn't change with speed.
The 10 amp limit on the controller will limit maximum torque to about
1.5 X rated torque.

Your present 1.5 HP motor can probably deliver at least 2X it's rated
torque for short periods, and it's rated torque is 2X that of the DC
motor since both deliver rated power at 1725 RPM.

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