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So You Think You're Green, Do You?

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Of course you do! It hardly matters what your motive is, but few persons in this era have no motivation whatsoever when it comes to being green. By green of course, I'm referring to people whom care about the environment. If you're a manufacturing or hydraulic OEM business owner – and even if you may be a classic tree hugger - your inspiration may be that of positioning your company as a leader in the modern world of environmental awareness.

I'm here to tell you your plant is *not green* (maybe you should water it...Ha!), and if you have hydraulic equipment, you're not even close. How can I say this with such confidence?

Firstly, no manufacturing facility I've been in has had a machine in it with Mother Nature put at the top of the family tree. The usual matriarch and patriarch of design are cost and productivity. After that, the first born son is efficiency. To be honest, the family friend of nature is, at best, the kid down the street that shows up at your house selling chocolate bars.

Secondly, never has any original equipment manufacturer asked me to design a hydraulic system to be environmentally friendly. The top pick in this draft is Cost, the All American out of Profit Margin State, who majored in As Long As It Works with a minor in How Fast Can I Get It. On the other hand, Green is a non-drafted bench-warmer who attended MIT, has a doctorate in Environmental Policy and Planning, but isn't liked by his teammates because he is the Coach's pet even though he doesn't contribute anything out on the floor.

The extent in which I see environmental policies executed is at best a recycling program and high-efficiency light-bulbs. When it comes down to it, I really don't blame anyone. If you factor all the facetiously communicated reasons I listed above, it simply comes down to market demand. Most end-

users of hydraulic machinery wouldn't know a green machine if it hit them in the face, so there is no demand put upon the manufacturers to create them.

How about I get to the nuts and bolts to fill you in on what I think a green-machine looks like? I'll start with the prime mover; electric to be specific, because internal combustion engines would require three months worth of the Higginson Circuit to describe how they can be made efficient. A *premium efficiency* electric motor is usually around 5% more efficient than a *standard efficiency* electric motor.

You can go out in the plant right now and look on the motor name plate. If it's not a NEMA Premium Efficiency motor, you should consider getting one installed. Depending on the size of the motor, you can save thousands of kilowatt hours, hundreds of dollars and a couple tons of CO2 per year.

Next up are pumps: in rank of least efficient to most efficient are gear, vane and piston pumps. Gear pumps are cheap, vane pumps are quiet and piston pumps are the high pressure guys. With any pump design, there are particular conditions in which the pump is most efficient, factoring such things as RPM, oil viscosity and pressure. This is where advanced fluid power knowledge and experience comes into play to ensure components and circuits work well together to use the least amount of energy.

But anyway, if a piston pump is 10-15% more efficient than a gear pump, why don't all machines have them? Mostly because a gear pump can be had for \$300 and a similarly sized piston pump would be \$1300. I don't think I'll ever see a horsepower limiting variable piston pump on a logsplitter, although it would make those two stage gear pumps look bush league.

Contact us today to speak with one of our professionals!

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