

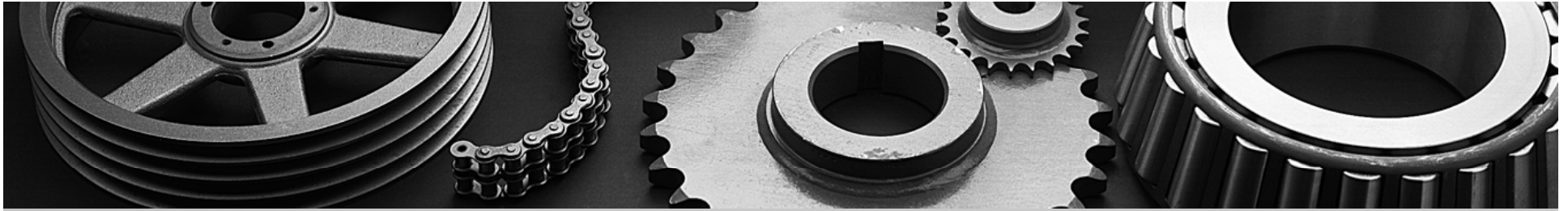
How Do VFD Drives Save Energy?



Teco VFD's

Lock AV hubs
and install
VFD's, this
saves energy
and gives you
more control.

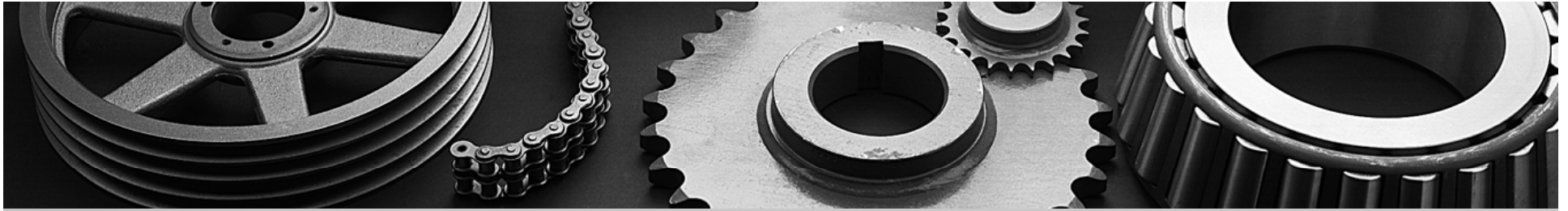




Power Factor Improvement

- Power factor, as it affects the utilities, is determined at plant peak operating load and you are penalized if it is too low.
- Power factor of an unloaded motor is lower than that of a loaded motor, but the total current is also much lower at no load.
- A VFD corrects for Power factor

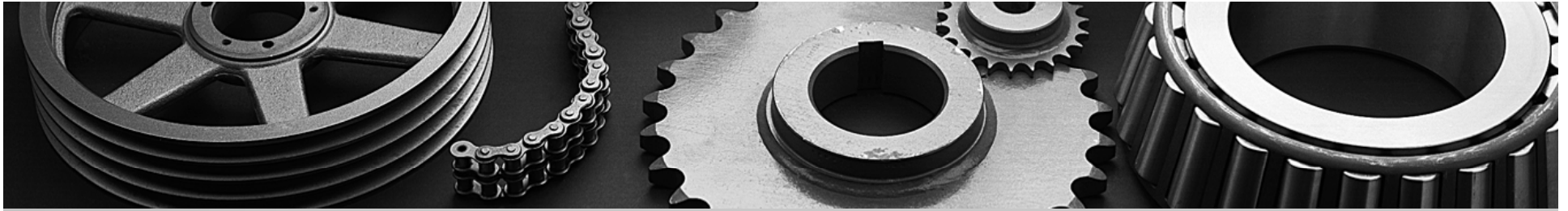




Affinity Laws – Centrifugal Loads

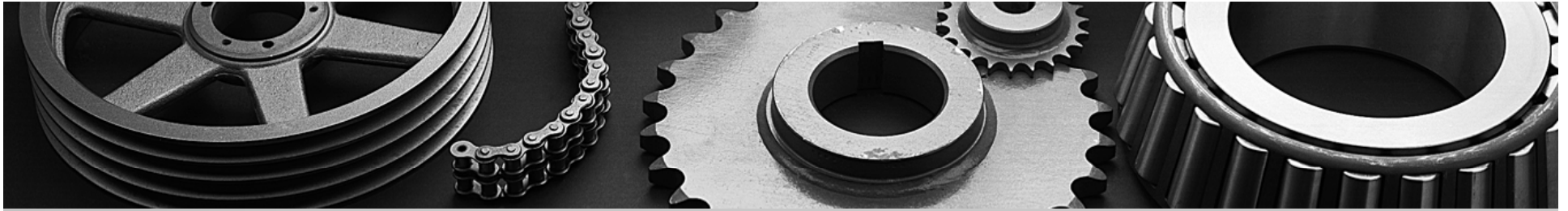
1. Airflow varies in direct proportion to Rpm
CFM=fan RPM
2. Pressure capacity varies with the square of the change in Rpm's
SP=fan RPM (squared)
3. Power required varies with the cube of the Rpm change.
HP= Fan Rpm (cubed)





Affinity Laws – Centrifugal Loads

%Speed	%Flow	%HP Required
100	100	100
90	90	73
80	80	51
70	70	34
60	60	21
50	50	13
40	40	6



Formula to calculate energy savings

HP x hours of operation x .746/motor eff = KWH x .0?
Cent per KW hour.

Example: 40HP ACHE running 80% all year is using only 1/2 the HP (so 20HP saved), here is the end result for .07cents per KW hour of power.

Result: 20 x 8736 x .746/.93=140,151KWH x .07 cent
= **\$9.810.00 saved/year/fan of power.**

