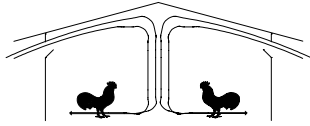




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# *Poultry Housing Tips*

## *Are Your Fan Pulleys Properly Aligned?*

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One aspect of fan maintenance that is often overlooked is fan pulley alignment. In order to maximize belt life and fan performance it is important that the motor and fan hub pulley are in line with one another. If the motor pulley and fan hub pulleys are not in perfect alignment the belt will twist which causes the belt to wear unevenly. The accelerated belt wear not only leads to reduced air moving capacity but also increases maintenance costs due to the fact that a belt that might have lasted well over a year may need replacing in as little as a few months.

There are primarily two different fan pulley alignment problems: pulleys not being in line with one another and motor pulley being twisted out of alignment. When a motor is installed on either a new or existing fan it is important to check that the fan motor is mounted correctly and the motor pulley is set on the motor shaft so that it is directly in line with the fan blade hub pulley (Figure 1). One way to check to see if the motor pulley is in the proper position is to simply place a long straight edge, i.e., ruler, piece of angle iron, across the fan hub pulley so that it extends down to the motor pulley (Figure 2). Position the motor pulley until the outside edges of both pulleys are in line.

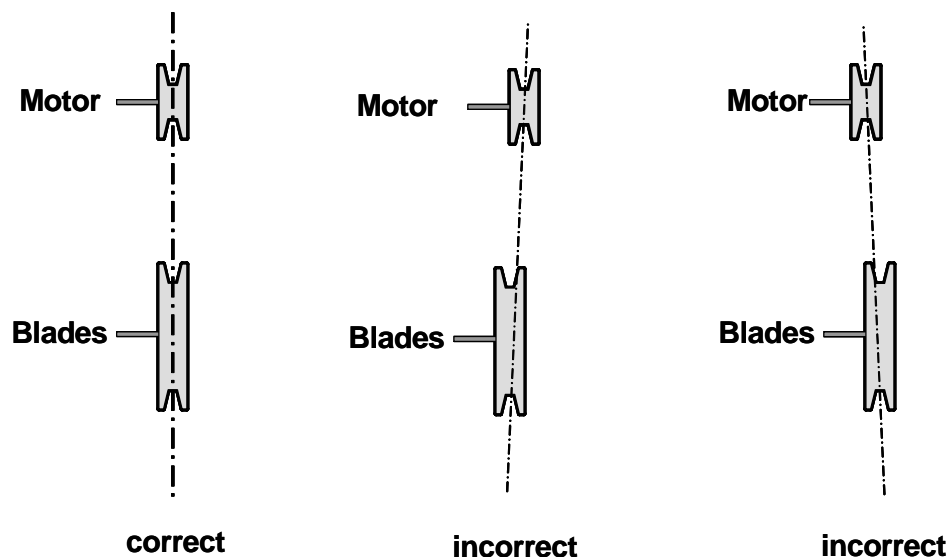


Figure 1. Fan pulley alignment.

## PUTTING KNOWLEDGE TO WORK

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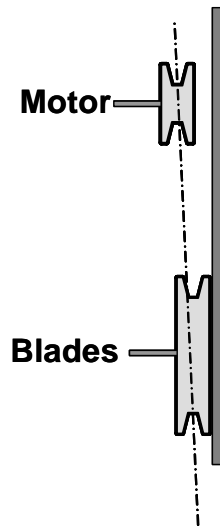


Figure 2. Using a straight edge to check pulley alignment

The second type of alignment problem typically occurs as the result of improper fan motor mounting and/or excessive belt tensioning. If a fan motor is not firmly affixed to the fan supports, excessive belt tensioning can cause the fan motor to be lifted/pulled down out of its proper orientation (Figures 3 and 4). So even though the pulleys may be in line with one another the fan motor pulley may be twisted five degrees or more out of alignment. It is important to keep in mind that over-tensioning doesn't only lead to reduced fan belt life but also places excessive strain on fan bearings reducing their life as well.

It is important to realize that it should not take a lot of tension to keep belts from slipping. In fact, it typically requires only about five pounds of tension to keep a fan belt from slipping. If you find that it takes a lot of tension to keep your belts from slipping take a look at your belts and make sure that they are not "glazed" or "thinning", both of which increases the likelihood of slippage. Don't forget to examine your fan motor pulley while you are checking your belts. Over time fan a motor pulley can become polished and/or the "V" shape can turn into a "U" shape due to wear which would also increase the amount of tension required to keep a belt from slipping.



Figure 3. Improper alignment.

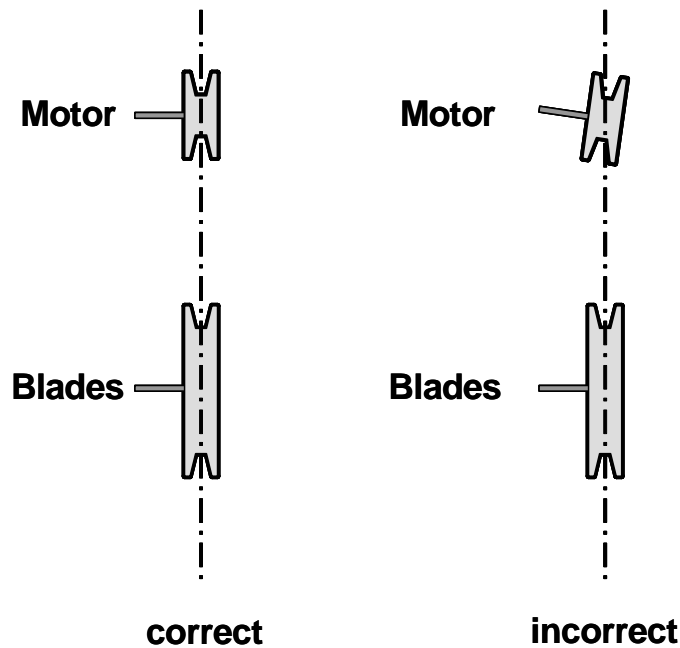


Figure 4. Fan motor pulley twisting.

One of the best ways to avoid belt over-tensioning as well as maximizing belt life is to install an automatic belt tensioner. Belt tensioning devices are available for most fan models and help to insure that the proper belt tension is maintained at all times. Belt life is maximized due to the fact that fan belt slippage is eliminated. As a fan belt wears it becomes thinner causing it to ride lower and lower in the fan pulleys. If the belt is not retensioned the belt will begin to slip a little increasing the rate at which it wears. The more it wears the more slippage takes place and the faster the belt wears out. A belt tensioner, by maintaining proper belt tension, eliminates the problem of accelerated belt wear. Keep in mind that even though a fan belt is kept tight, if it is riding low in the motor pulley it likely needs replacing.

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