MAINTENANCE

Maintain the fans in your setters and hatchers

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Incubators sold by the various manufacturers have a range of fan designs. However, the fans all have the same function, which is to move fresh air into the cabinet, and to provide an airflow pattern within the filled cabinet which is balanced and of sufficient airspeed over all of the eggs or chicks to keep them at their optimal temperature. Regular and effective maintenance is crucial if the fans are to deliver the right amount of air in the right places and at the right speed. There are several aspects of fan set up, wear and (lack of) maintenance which will cause the fans to need attention. Fan blade damage – if the fans are bent or dented, they will not deliver optimal airflow. Damaged blades should be replaced as soon as possible.

Fan positioning is important, and problems can be seen after a fan has been replaced if it is not positioned correctly. This is especially important when the fan needs to be mounted in a fan housing. The fan must be mounted at the correct height within the housing, so that the air can only move in the desired direction. If the fan is mounted slightly above the housing, air will tend to escape to the sides. The fan must always be mounted centrally within the housing – if it is offset then a 'blow-by' effect can be caused, where some air is sucked back away from the desired airflow. Make sure that the fan is pushing the air in the correct direction. Fan speeds need to be checked regularly using a suitable tachometer.

Figure 1 *Clean fan blades, well centered fan and correct height.*

Regular maintenance should be set up to check:

1. **Belt tension – too loose and the rubber belt will slip on the metal pulley – listen for a squeal on start up. This can cause the fan to slow down. If the belt is too tight it will grind into the pulley and wear out more quickly.**
2. **Pulley size, condition and alignment – a worn pulley should be replaced using one of the same size. Once in place, the fan belt should sit in the pulley groove, with its top surface level with the edge. If the belt sits proud or inset, either it is worn, or the wrong belt is being used. Make sure that the pulleys are in a straight line.**
3. **Belt worn out – fan belts tend to become brittle, glazed or cracked. Belts are relatively cheap, so replace them regularly as part of a preventative maintenance program.**
4. **The rating of the fan motor – when replacing a failed or failing motor, make sure that it has the correct specification to be an exact replacement. Check that the voltage supplied to the new fan is correct.**

Fan cleanliness – especially in multistage machines and hatchers dust, dirt and chick fluff can settle on and stick to the fan blade edges, making them less efficient. This should be cleaned off regularly. If the water used for humidification has a high mineral content, a hard residue can form on the fan blades, again making them less efficient. The residue should be removed carefully, making sure that the blade is not deformed in the process.

Figure 2 *Incorrect fan belt sitting low in the pulley.*

Figure 3 *Worn fan belt.*