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V-Belt Drive Loss

SALES BULLETIN

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Even with proper belt and sheave installation and maintenance, a certain amount of power transmission loss should be expected and taken into consideration when calculating fan performance in a belt drive system. This sales bulletin defines AMCA's standard of measurement concerning belt drive loss in light of new data recently provided by the drive manufacturers. AMCA has published a new drive loss chart (see below), estimating a slightly lower drive loss for small motors and a slightly higher loss for large motors than was previously reported.

Because **nyb** fans are occasionally supplied without drives and with a variety of drive and motor combinations, **nyb** cannot provide allowances for power transmission loss in its published fan performance ratings. This makes it important of consider belt drive losses when selecting a fan and drive package, especially if the motor is required to operate near its performance peak. When using the chart below, belt drive loss is expressed as a percentage of motor horsepower output. For example, if a belt drive system utilizes a 5 HP motor, but requires a motor power output of 3 HP, a drive loss of between 4.6% and 9.9% of motor power output (.138 to .297 horsepower) can be expected. The range of drive loss for a given horsepower motor is derived from the fact that belt drive loss varies proportionally to RPM for a given horsepower motor.

AMCA reports that this chart is based on experience and a limited amount of test data and some departure from the chart ranges should be expected. However, this information provides some guidance in calculating the sometimes elusive concept of belt drive loss.