

4 Tips for Using an Electric Motor During the Winter Months

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As temperatures drop well below freezing in many parts of the country and snow continues to fall, winter equipment gets more and more use. For salt spreaders, pumps and other applications using electric motors in the winter weather, making sure the motor is equipped to perform in cold and wet conditions is essential for lengthening the life of the product. Below are 4 factors that can limit a motor's ability to run properly in the harsh winter weather:

1. OVERHEATING

While this may not seem like an issue for products running in the winter, motors can still overheat. If the motor is run more frequently than it is supposed to (above its rated duty cycle), the motor will become increasingly hotter with each cycle, eventually overheating the motor. Blocked ventilation holes can also cause issues, even in the winter, because airflow is not able to get to the motor to successfully cool it down. Additional information can be found on Groschopp's 6 Reasons Your Motor is Overheating.

2. DEMAGNETIZATION

Permanent Magnet DC brush type motors use electrical current moving through magnets to run the motor, but really cold temperatures can decrease the magnetization level of the magnets. This effect on motor performance needs to be reviewed, especially in low voltage, high amperage applications. For equipment that regularly runs in cold weather, alterations can be made to the motor design to improve performance when temperatures dip well below freezing.

3. IP RATING

Winter weather often creates additional challenges for motor operation beyond cold temperatures. With dirt, snow and salt, conditions can be less than ideal for motors that aren't rated to work in such harsh conditions. Ingress Protection (IP) rating scales are used to determine levels of protection against the elements for different motors. An IP rating chart can be found under the resources section of our website.

4. INCORRECT DUTY CYCLE

Understanding a product's duty cycle is essential for getting the most life and best value out of the motor. While this factor doesn't apply specifically to the winter, it's an important consideration for getting the most out of an electric motor or gear motor. Motors that are being run continuously, but are only rated for intermittent duty, will have a dramatically shortened life. On the other hand, a motor that is rated for continuous duty, but only run at short bursts, will have a longer life but the motor is likely bigger and more expensive than it needs to be. Groschopp's Tech Tips: Duty Cycle video provides additional information about intermittent and continuous duty applications.

When planning to use electric motors throughout the winter months, make sure to ask the manufacturer if the motor has been designed with the correct capabilities for harsh operation.

