

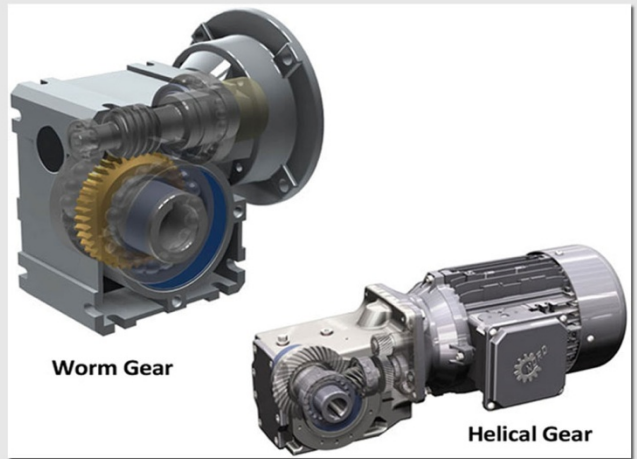
10 Tips for Establishing Efficient and Sustainable Conveyor Lines

The following is a list of energy and environmental recommendations from Nercon's design and controls engineers.

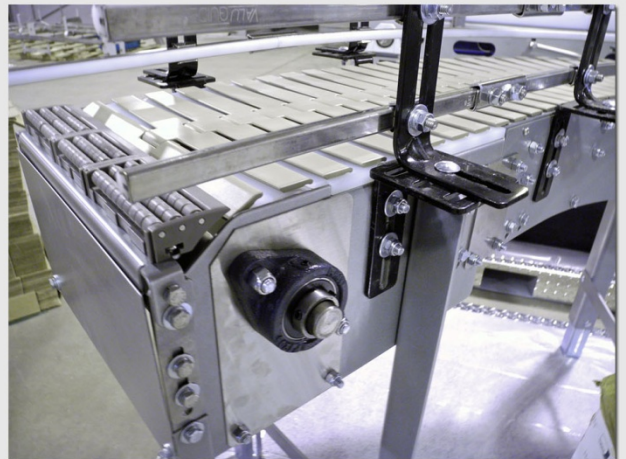
1. Select the right motors for the conveyor line. The motors should run at or near top capacity at all times. If load weights vary, use two-speed motors and adjustable drives to enable motors to run near top capacity. Motors that are not properly specified for the application will cause more stress in the conveyor line leading to more frequent breakage and more piles of broken parts



2. Examine the life cycle energy cost of the motors. Purchase high efficiency motors and gear boxes for all new installations and replace failed standard efficiency motors with high efficiency motors. Energy efficient motors by themselves provide 2% to 8% additional energy efficiency over standard motors.



3. Upgrade to helical drive design gear reducers to save additional energy costs. From an efficiency standpoint, the worm gear is less efficient than a helical bevel gear. In best practice applications, energy savings in a helical gear reducer will normally pay for the higher initial cost of the reducer.

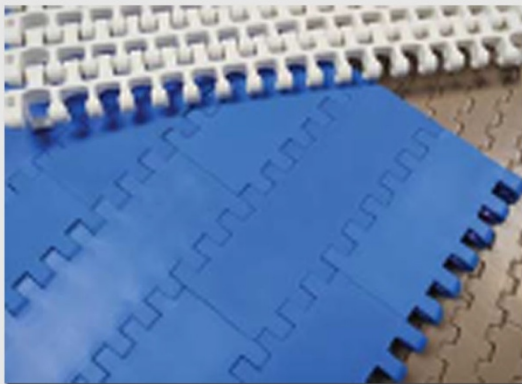


4. Use Powder Coat Finishes on equipment. Powder coat finishes have low VOC (volatile organic compounds) and produce less hazardous waste than conventional paint processes.

5. Make use of Modular Conveyors when layouts need to be adaptable to meet changing market demands. Nercon's Modular Conveyors are engineered to be completely interchangeable which means that conveyor components can be reused and reconfigured resulting in fewer conveyors in the "conveyor bone yard."



6. A continuation of the modular conversation, consider Armor Starts which are locally mounted drive packages that are well suited for reconfigurable conveyors. The control panel doesn't need to be restructured for additional power source controls. Armor Starts also reduce and/or eliminate the need for terminal boxes. Sensors are mounted directly into drives, thereby reducing wire usage.



7. Also, research the properties of the conveyor chain. The chain selection should accommodate the belt speeds, impact and application temperature to ensure durability of the chain. Modular plastic chain allows the worn area to be quickly replaced with minimal chain sections.



8. Follow a preventative maintenance plan. Regular maintenance for conveyors includes the re-lubrication of reducers and bearings, removing build-up of material around components and attention to chain. Preventive maintenance also includes the replacement of worn or damaged chain, tests of electrical components, and replacement of wear items. Improperly maintained systems may reduce the life cycle of chain, motors and other components as well as causing crisis maintenance disruptions in production. A well maintained conveyor system operates at the highest efficiency and helps to assure that all components last as long as possible.

9. Design the conveyor line with energy savings in mind. As previously mentioned, utilize high-efficiency motors. Turn your conveyor off when not in use, or utilize on-demand controls in your system. Some conveyor line layouts may only need a few more sensors to read upstream equipment, so that downstream conveyors can be automatically shut off when not needed. Certainly gravity chutes and straight running conveyors will reduce the energy usage on the line. Also, reduce friction where possible to increase efficiency of the entire line.

10. Best practices for energy management start with monitoring and reporting energy usage on a packaging conveyor line. The simplest method is to include power monitors upstream of electrical loads like motors. Collection of energy data and visualization of the data alone will promote awareness of energy usage. Having the knowledge of where the energy is being consumed is as important as when energy is not necessary and knowing your energy usage will drive savings.