

Cleaning & Lubricating

Conveyor Belts are to be cleaned and sanitized using the following 7-Step Process.

Step 1: Dry Wipedown

Clean the conveyor belt and related equipment by removing large pieces of soil and food from the belt's surfaces. Also make sure compacted debris is removed from the sprockets, idler wheels and support rails (heretofore referred to as the belt's support system).

When cleaning the conveyor belt, work in a top-down, inside-edge-of-belt to outside-edge-of-belt pattern. All subsequent cleaning and sanitizing steps of this procedure are to be completed using this same pattern.

Step 2: Pre-Rinse

Pre-rinse the belt and support system with hot water heated to a temperature of 125°–130°F (52–54°C) and at a pressure of 150–300 psi (10–20 bar). Care is to be taken that floor drains are kept clear of debris to avoid pooling of water.

Step 3: Apply Detergent

Apply an appropriate foaming detergent mixture to the belt and support system at 150 psi (10 bar). The detergent foam can be allowed to remain on the belt for 10–15 minutes, but should not be allowed to dry, as dried chemical is often more difficult to completely remove and may support the growth of biofilms.

Step 4: Rinse & Inspect

Flood rinse the belt and support system with 40–60 psi (2.8–4.1 bar) water at 125°–130°F (52°–54°C). After the rinse, inspect the belt and support system components to ensure it is free of soils, water beads, hazes, films, and other residue. This inspection should be conducted using sight, touch, and smell.

Step 5: Pre-Op the Belt

Verify that all cleaning chemical is removed from the conveyor belt, sprockets, idlers, and support rails. It's recommended that pH testing be used as an aid in determining that the belt is free of the detergent. Run the conveyor belt slowly to help dry it and its supports, and remove any pooled water from the floor.

Step 6: Inspect & Release for Sanitizing

Re-inspect the belt and support system using sensory analysis to detect the presence of bacteria. It's recommended that adenosine triphosphate (ATP) testing be used to verify absence of bacteria. ATP is present in all animal, vegetable, yeast, and mold cells. Detection of ATP indicates contamination by at least one of these sources. Correct any noted deficiencies detected by ATP testing and re-lubricate the belt and support rails. Release the belt for sanitizing.

Step 7: Sanitize the Belt

Apply the appropriate sanitizers at "no rinse" concentrations, following the manufacturer's recommendations. Run the belt as the sanitizer is applied in order to ensure that all parts of the belt and support system have been completely exposed to the chemical. Squeegee any sanitizer that has pooled on the floor into floor drains.



Important Cautionary Notes

1. It's recommended that water pressure not exceed 300 psi (20.7 bar) at any stage of the cleaning process to avoid contamination resulting from overspray of water and chemicals.
2. A caustic wash may be necessary due to health or other safety requirements. We recommend that caustic solutions not be left on the belt or used in any stronger concentrations than necessary to meet local regulations. Use of these products must strictly follow the manufacturer's directions. Of special concern is the use of caustic or harsh chemicals on plastic belts, support rails, and cage bar caps. These chemicals can soften plastic materials which can lead to damage or failure of the belt and other components. Food processors should likewise be aware that chlorine-based cleaning products can also affect stainless steel and rubber components that are common to food processing equipment.
3. Conveyors and equipment that operate conveyor belts can be large and often have exposed moving parts. When working around operating conveying equipment, workers must be aware of possible safety hazards and work within their company's safety guidelines to prevent personal injury.
4. It is sound practice to alternate appropriate sanitizers to prevent development of bacteria resistance to any one sanitizing agent and to prevent overgrowth by certain bacteria strains.

Clean the Support Rails

Cleaning support rails is important for two reasons: First, food debris and other soil do become entrapped between the closed contact area of the conveyor belt and the support rails. Second, cleaning the support rails reduces friction between the rails and the belt and, therefore, reduces system tension.

Because the support rails are not adequately cleaned by typical Clean-In-Place (CIP) methodology and because complete removal of the belt from the rails is usually not part of routine CIP procedures, alternative methods must sometimes be employed.

One such method is to attach clean, non-abrasive cleaning pads to the underside of the belt and then energize the system to pull the pads along the entire length of the support rails. Pads should be visually checked and replaced when they become ineffective at cleaning. Remove the pads before they reach drive sprockets. It should be noted that this method may not work in every application, and that it is not a substitute for removing the belt and thoroughly cleaning and sanitizing the support rails using the methodology presented in the previous section.

Lubricate the Belt

Stainless Steel Belts:

A light application of silicon or other food grade lubricant should be applied to the belt. This allows the belt to polish the wear surfaces and prevent galling. The lubricant also acts as a film to separate metal contact surfaces and minimize wear. On spiral systems, never lubricate the inside belt edge (where it contacts the cage) in order to maintain proper friction and drive.

Advantage™ Belts:

Lubrication is not required under normal operating conditions. However, lubrication will enhance belt performance, particularly at higher belt speeds or when conveying heavy product loads. Make sure any lubricant used is compatible with the belt material and the product. On spiral systems, never lubricate the inside belt edge (where it contacts the cage) in order to maintain proper friction and drive.



Lubricate the Belt (Cont.)

Suggested lubricants for both stainless steel and plastic belts:

- General Electric GE-SF-18-350
 - Dow Corning 200 Fluid
 - CLEARCO-SFG-350 Silicon Concentrate
- All are acceptable to -60°F (-51°C) and are FDA compliant.

Application Method:

- The lubricant is generally fed from a drip reservoir onto a brush which contacts the belt's underside in the return path.
- Install and activate the lubricator for either a predetermined application interval or when the drive motor's current consumption indicates excessive belt tension.

Run-in the Belt

Steel Belts:

Just like a new car's engine that requires a break-in period to allow moving metallic parts to "wear-in," new steel conveyor belts also require a break-in period. During this process, microscopic peaks and valleys of the new belt's wear surfaces are gently abraded and filed to form a smooth, polished surface. A by-product of this process is the formation of small black particles, so-called "black specks," that look like household pepper. These can collect on the belt or conveyor surfaces and can fall on transported product.

For most steel belts, the optimal run-in period is 150–200 hours which varies somewhat based on belt type and its application. Typically, Omni-Flex® belts require a slightly longer run-in period and Omni-Grid® and Omni-Pro® belts require slightly less. During run-in, wash new belts with a mild dishwashing mixture and re-lubricate every 48 hours. After a successful run-in, the possibility of black speck generation is negligible.

Advantage™ Belts:

A run-in period is not normally required for Advantage™ belts. However, a thorough cleaning is recommended prior to beginning production.

The following measures will aid in the removal of any debris that is created during run-in:

- Install strong bar magnets at the terminal rolls or at the take-up. The addition of an air knife will assist in blowing the debris off the belt and onto the magnets.
- Ensure the belt is electrically grounded. The belt will carry a small static electrical charge generated from the friction between the belt and wear strips. This is particularly true for Advantage™ belts. If this charge is not dissipated, it will tend to hold the debris to the belt surface.
- Periodically wash the walls, floor and ceiling and other surrounding equipment to help eliminate the possibility of air born contamination of the belt and associated surfaces.
- Periodically measure and adjust belt tension to specified levels. Excess tension accelerates belt wear and increases the amount of contaminants on the belt and support rails, increasing friction. System tension may be reduced by increasing overdrive or by cleaning and lubricating the support rails (never lubricate the cage or the inside edge of the belt).