

Introduction

Periodic Equipment Cleaning is necessary to prevent build-up of food and water in equipment harborage areas, which leads to growth of microorganisms and development of biofilms. Areas that are difficult to access may not be cleaned routinely and require disassembly at a frequency that allows for cleaning. A team of fruit and vegetable manufacturers that supply YUM and McDonald's discussed PEC in the spirit of promoting food safety across the industry through collaboration. The outcome of the discussion is in this guidance document.

Definition

PEC: Periodic Equipment Cleaning. Cleaning equipment beyond "routine" cleaning.

PEC Task: A task is set of combined cleaning activities on a single piece of equipment that is scheduled to be completed at a given time.

For example, if a PEC task for a spin dryer includes the following cleaning activities: removing/cleaning of the top spider wheel and bottom plate, cleaning of the spin plate, drive belt, etc., it is counted as one PEC task, if three dryers are cleaned then it would be three PEC tasks. The task must be completed after the equipment goes down and before it comes back up for production again.

Routine Cleaning: Cleaning completed after each production run.

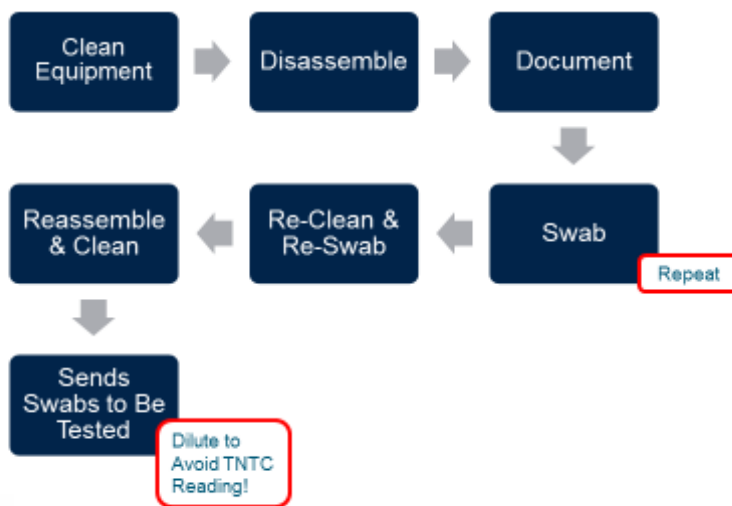
KPI: Key Performance Indicator. When reporting to CFS (Commercial Food Sanitation), KPIs include data across the plant where YUM or McDonald's product is manufactured. If there are rooms, physically separated by walls which do not manufacture product for YUM or McDonald's, these lines may be excluded from the data.

PEC Task Guidance

The following discussion provides guidance on tasks that should be considered when completing PEC. Note: The PEC tasks will vary due to the equipment manufacturer and any modifications that have been made to equipment.

The process to determine the extent of PEC and frequency for each equipment is described in the diagram:

Complete PEC Assessment



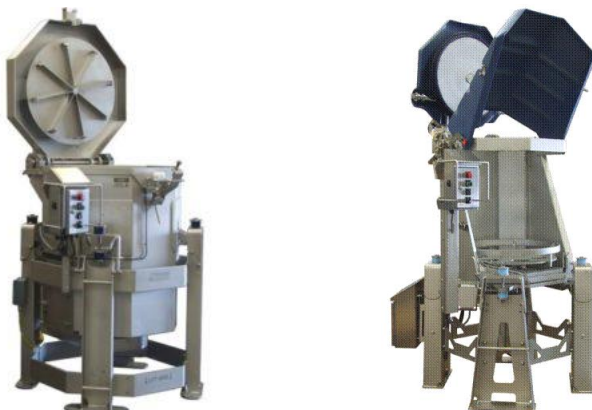
Overall, tear downs and frequency really depend on observations and data - are APC counts high or microbiology tests positive found? If there are high counts or positives before cleaning, continue to tear down equipment as much as possible. It can be surprising where growth can be found. If APC is being used as an indicator of hygienic conditions, the recommendation is that counts are less than 1000 cfu/g. If counts are greater than this, cleaning may not be completed frequently enough. The disassembled parts should also be swabbed after cleaning (before sanitizing) to verify the effectiveness of the cleaning method.

The remainder of the guidance will address specific equipment providing example of PEC activities/tasks. As mentioned earlier, the activities and frequencies will depend on a number of factors, such as type of products, routine cleaning, model, in-house modifications made to the equipment, etc.

Dryers

Dryers (all styles) are mounted in a variety of ways. Manufacturing plants are using build-ups, sealing to the floor, cementing to the floor, etc. Sealing them can be difficult to maintain as it can become a harborage point. Trying to minimize the contact points is a practice that could help.

HMI SD-300



Baseline frequency: every 6 months until a processing facility can establish its own frequency based on swab data and observations.

Parts to disassemble, inspect, clean & sanitize include:

1. Accessible bottom plate (including cavity beneath plate) and top plate/spider plate: detail scrubbing (PEC) Daily to Weekly
2. Remove the top spider wheel and bottom plate (e.g., PEC Monthly to Quarterly)
3. Jack up the unit to remove the isolators on the four corners. Bolts and isolators to be removed, inspected and cleaned or replaced. Can be combined with PEC task taking the bottom plate out. Frequency depends on design. (e.g., quarterly)
4. In the lower main bearing assembly remove the spin plate, drive belts, and lower belt cover (2). Remove the belt and inspect.
5. Clean the overhead hoist and chain control.
6. For hydraulic dryers the motor and hydraulic hoses should be degreased – see picture of the motor and hydraulic hoses (e.g., weekly) to prevent film formation, including biofilm protected by the lubricant. For electric dryers the bottom motor/serpentine belt guard should be removed (e.g., weekly to monthly).

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SUPERSEDES: New



Control panels should also be considered. Maintenance may be required for cleaning the interior of the panels, which should be captured on the MSS and inspected by Sanitation or Quality.

Additional guidance on PEC for HMI Dryers can be found on the Heizen website.
Link to Heizen Passport:

300 Old model: <https://www.heizen.com/files/Sanitation-Passport-SD300ESM-R03.pdf>

300 New model: <https://www.heizen.com/files/Sanitation-Passport-SD300OS-R06.pdf>

Leg extension disassembly for cleaning – frequency based on swab results or periodic frequency



HMI SD-50



A smaller dryer design, the SD-50 PEC tasks should include the following:

1. Basket removed.
2. Door opened for access.
 - Dryers are deep cleaned weekly (back cover opened and guard removed)
 - Some dryers are modified with back door that opens. In this case they are cleaned daily. (See picture below)
3. Control panel should be opened by maintenance for inspection and cleaning.
4. Unit may be lifted for access under the footings.

Link to Heizen Passport – Model 50:

<https://www.heizen.com/files/Sanitation-Passport-SD50LT-R03.pdf>



Backdoor modified so it can be opened daily for cleaning

Conveyors

Several styles of conveyors exist, and each one will have different challenges and considerations for PEC due to accessibility. The following is guidance across conveyors, and whether areas can be accessed routinely or require PEC, they should be built into the MSS.

Conveyors to be considered:

- Trim lines
- Conveyance after washing
- Inclines
- Packaging (including after the bagger)

Parts to disassemble, inspect, clean & sanitize should include the following:

- Safety guarding removed
- Catch pans removed, including any “splash” guards in place to protect the belt from the floor
- Belt, if style is removable (i.e. pull a pin) or frame design allows for removal
- Sprockets on drive and idle rollers should be removed from the shaft
- Wear strips and scrappers
- Rollers
- Bearings / bearing housings (Swab)
- Motor (Swab) / Motor mount
- Transition plate
- Limiter (e.g., ThermoDrive belts)

Tips for PEC cleaning:

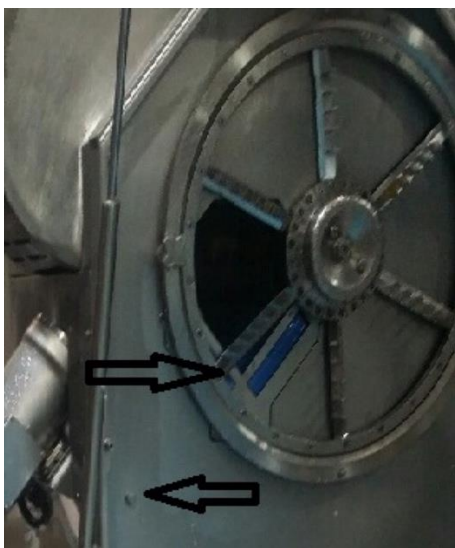
- If belts are not removable (i.e. seamless), tension should be released so interior parts can be accessed and removed as needed for cleaning.
- For removable belts, these may be placed in a bin for soaking. Contact your chemical representative and belt manufacturer to ensure chemical concentration will not accelerate degradation of the belt.

Slicer:

The activities mentioned below are for Urshel, Model 2500. Other brand/model may require different activities to be conducted.



Parts to disassemble, inspect, clean & sanitize should include the following:



Top arrow – v-plate to disassemble

Bottom arrow – all bolts around the housing to access framework for cleaning



Belts are removed periodically (e.g., quarterly for cleaning and inspection)



Disassembly of the rollers

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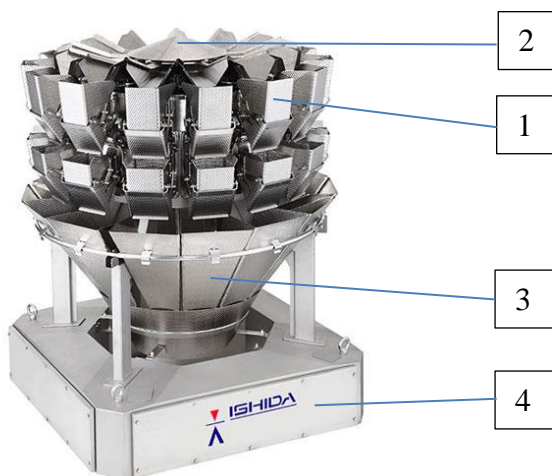
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SUPERSEDES: New



Complete disassembly of all sandwich surfaces

Feed hoppers (from the basket to the conveyor leading to the bucket scales) and the bucket scales.



Parts to disassemble, inspect, clean & sanitize should include the following:

1. Buckets, if not removed for cleaning routinely
2. Cone:
3. Chutes:
4. Electronic chamber:
5. Inside attachment and electronics (labor intensive; annual)

Bagger:

Type of baggers and Periodic Cleaning tasks



Parts to disassemble, inspect, clean & sanitize should include the following:

- Infeed cone
- Teflon tape
- Knife
- Sealing bars (slit for knife)
- Underside of equipment
- Hollow rollers for film (to be inspected for integrity)
- Pillow (expelling air from the bag before closing)

YUM and McDonald's Suppliers



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If you have comments please forward them to:

Cari Rasmussen at cari.rasmussen@cf-san.com

Or

Richard Brouillette at richard.brouillette@cf-san.com

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Date	Revision made	Comment
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