

No.	Assembly	Machine Location	Type of Hazard	Potential consequences	Comments	Initial assessment				Action required
						LO	FE	HRN	Risk level	
1	Infeed Conveyor Assembly	1.Pusher assembly 2.Toothpaste bundle tilting Platform	1.The toothpaste bundles are pushed onto the tilting platform at the same time the tilting cylinders are operating. 2.After tilting, the toothpaste bundles sometimes fall in the wrong orientation, either immediately or during movement on the infeed conveyor. 3.Bundles topple	1. Toothpaste bundles might be damaged. 2. The bundle rows not formed also matrix not formed properly.	Hazards -Bundles Topple Why is the hazard there - Conveyor running at linear speed >200mm/s. What drives the hazard -Electric Motor How could harm be caused - The Bottles Guides may not Adjust according to the Bottle sizes. Why would the hazard occur - The Back Pressure not maintained Potential occurrence of hazard - Possible Possible harm -The Matrix is not formed properly and Cans might be damaged	2.00	1.00	2.00	Low, significant	1.Providing a dual sensor on the infeed conveyor to check the bundles presence, if one of them sensor de-energized, the system generated alarm. 2.reed sensor provided for the cylinder's feedback.
2	Shipper Magazine Assembly	Shipper Magazine Assembly	1. Shipper stuck in the picture frame, hence no plucking operation possible. 2. Magazine chain stuck, due to which shipper will not pluck. 3. Wrong adjustment of the pointer can lead to damage of the shipper. 4. Sensor cable might be loose, no Shipper low level feedback	1.The Shipper will not formed properly 2.The shipper might be damaged	Hazards - The shipper was not picked or got stuck in the picture frame during the plucking process. Why is the hazard there - Improper feedback from the sensor or mechanical obstruction. What drives the hazard - Magazine chain / Sensor / Pointer mechanism. How could harm be caused - Magazine chain stuck or pointer not adjusted as per shipper requirement. Why would the hazard occur - Wrong mechanical adjustment or sensor malfunction. Potential occurrence of hazard - Possible Possible harm - The shipper will not be positioned correctly, leading to downstream process failure.	1.50	1	1.98	Low, significant	1.The feedback Sensor provided for shipper pluck confirmation & if shipper falls the alarm will be generated. 2.Reed sensors are provided for the cylinders. If the flap folding assembly is not ready, the plucker cylinder waits until the platform is ready. 3. A sensor is provided at the beginning of the taping unit. If the shipper gets stuck, an alarm will be generated.
3	Shipper Plucker Assembly	Shipper Plucker Assembly	1. Vacuum cup damaged, resulting in no plucking or improper plucking operation. 2. Dust or oil present on the vacuum cup, causing reduced suction. 3. Pneumatic pipe found loose, leading to vacuum leakage issues. 4. If the shipper surface is irregular or has inherent damage, it may cause vacuum leakage and improper plucking	1.The Shipper will not formed properly 2.The shipper might be damaged 3. Shipper wont be placed on the case erector assembly properly	Hazards - The shipper was not picked properly or fell during the plucking process. Why is the hazard there - Insufficient vacuum or vacuum leakage during plucking. What drives the hazard - Vacuum cup / Pneumatic pipe / Vacuum sensor. How could harm be caused - Vacuum cup damage, pneumatic pipe loose, or dust/oil present on the vacuum cup. Why would the hazard occur - Improper maintenance or incorrect shipper surface condition. Potential occurrence of hazard - Possible Possible harm - The matrix may not be placed properly into the shipper	1.50	1.00	1.50	Low, significant	1. Inspect and clean the picture frame area regularly to avoid shipper jamming. 2. Check magazine chain movement and lubricate as per maintenance schedule. 3. Verify correct pointer adjustment according to shipper dimensions. 3. Ensure feedback sensors are functioning and correctly aligned. 4. Perform trial runs after any mechanical adjustment before full production
4	Bottom Taping Assembly	Bottom Taping Assembly	1. Tape presence sensor deviated from its original position; machine may not receive feedback when the tape roll is empty. 2. Tape cutting blade damaged, due to which tape will not cut properly after application. 3. Tape roller knob adjusted too tight, creating excess resistance and improper tape application. 4. If tape is not applied properly, it may cause issues during matrix placing in subsequent processes.	1. The shipper to move ahead without sealing the bottom flap with tape 2. The Tape won't cut after being applied, stuck to the shipper and wont apply to the next shipper. 3. The Matrix might not be placed properly due to bottom not sealing properly, potential shipper and product damage.	Hazards - The shipper moves ahead without proper tape sealing Why is the hazard there - Tape presence sensor not detecting empty tape roll. What drives the hazard - Tape presence sensor / Tape cutting blade / Tape roller. How could harm be caused - Sensor deviated from position, damaged cutting blade, or tape roller knob too tight. Why would the hazard occur - Incorrect sensor setting or improper mechanical adjustment. Potential occurrence of hazard - Possible Possible harm - Improper sealing may cause issues during matrix placing in further operations.	1.00	1	1.98	Low, significant	1. Check tape presence sensor alignment and functionality at shift start. 2. Replace damaged or worn tape cutting blades immediately. 3. Adjust tape roller knob to the recommended tension setting. 4. Confirm proper tape application during trial sealing before production. 5. Stop the machine if tape is not applied to prevent downstream issues.
5	Coalition Assembly	Coalition Assembly	Toothpaste bundles may fall while doing a side shift.	Toothpaste bundle matrix not formed properly	Hazards -Toothpaste bundle may fall while doing a side shift. Why is the hazard there - While Side shifting the back support is missing for Bundles What drives the hazard - Electric Motor How could harm be caused - Not Maintain Back Support Why would the hazard occur While Side shifting the back support is missing for Bundles Potential occurrence of hazard - Possible Possible harm -matrix not formed properly	1.00	0.50	0.50	Low, significant	The Front and Back support plates are provided for Side shift and Support Plates are controlled by Servo Motor Mechanism.
6	Case Erector Assembly	1.Plucker Assembly 2.Case Transfer assembly	1.The shipper was not picked, or it fell during the plucking process. 2.The shipper not placed on the Flap folding Assembly 3.The Shipper get stucked while shipper pushing to bottom taping unit. 4.Bottom tape not applied on shipper 5.The pneumatic pipe is broken or loose	1.The Shipper will not formed properly 2.The shipper might be damaged	Hazards -The shipper was not picked, or it fell during the plucking process. Why is the hazard there -The feedback sensor breakdown What drives the hazard -Cylinder/Sensor. How could harm be caused - The air pipe not connected properly or The sensor is not set as per Shipper Parameters Why would the hazard occur -The air pipe not connected properly or The sensor is not set as per the Parameters Potential occurrence of hazard - Possible Possible harm -The Matrix not placed properly into the shipper.	1.00	1.00	1.98	Low, significant	1.The feedback Sensor provided for shipper pluck confirmation & if shipper falls the alarm will be generated. 2.Reed sensors are provided for the cylinders. If the flap folding assembly is not ready, the plucker cylinder waits until the platform is ready. 3. A sensor is provided at the beginning of the taping unit. If the shipper gets stuck, an alarm will be generated.
7	Main Drive Conveyor	Conveyor assembly	1.The pneumatic pipe is broken or loose	1.The shipper might be not stopped at placing station	Hazards - Human Errors & Power Fluctuation Why is the hazard there - Power Fluctuation. What drives the hazard - Utility How could harm be caused - Fluctuation of power Why would the hazard occur -Human Error Potential occurrence of hazard - Almost impossible Possible harm - The Equipment gets damaged	2.00	1.00	16.00	Low, significant	The Voltage Monitor relay provided for enclosure. It helps protect against potential electrical hazards, ensuring a safe operating environment
	Top Taping Assembly	Top Taping Assembly	1.Tape presence sensor deviation from correct position. 2. Tape cutting blade damaged, affecting proper tape cutting. 3. Tape roller knob too tight, causing resistance during tape application. 4. Improper or missing tape application leading to open top flaps	1. The shipper to move ahead without sealing the top flap with tape 2. The Tape won't cut after being applied, stuck to the shipper and wont apply to the next shipper.	Hazards - Tape not applied or not cut properly during sealing operation. Why is the hazard there - Feedback not received from tape presence sensor. What drives the hazard - Tape sensor / Cutting blade / Tape roller mechanism. How could harm be caused - Sensor misalignment, blade damage, or excessive roller resistance. Why would the hazard occur - Incorrect adjustment or wear and tear of components. Potential occurrence of hazard - Possible Possible harm - Improper sealing leading to incorrect matrix placement into the shipper.	1.50	1.00	2	Low, significant	1. Check tape presence sensor alignment and functionality at shift start. 2. Replace damaged or worn tape cutting blades immediately. 3. Adjust tape roller knob to the recommended tension setting. 4. Confirm proper tape application during trial sealing before production. 5. Stop the machine if tape is not applied to prevent
8	Pick Head Assembly	Pick Head Assembly	1.The bundle matrix are not picked properly 2.The Suction cups get spiked with oil and dust 3.Suction Cups are getting loosen after continuous operation 4.The pneumatic pipe is broken or loose	1.The robot not able to pick & place the matrix properly.	Hazards -The Suction cups get spiked with oil and dust Why is the hazard there - The alignment not done properly What drives the hazard -Suction Cups/Pneumatic Cylinder/Sensor. How could harm be caused - The Pneumatic fitting not done tightly Why would the hazard occur -The robot not able to pick & place the matrix properly. Potential occurrence of hazard - Possible Possible harm -robot not able to pick & place the matrix properly.	1.00	1.00	1.98	Low, significant	1.Daily/weekly Regular Maintenance 2.The Feedback sensor/Vacuum switch provided at pickhead
6	Robot Assembly	Robot Assembly	1.Control Errors 2.Mechanical Failures 3.Improper Installation 4.Human Errors	1.Robot failures can cause human injury or death and can also lead to expensive downtime	Hazards - Control Errors, Mechanical Failure, Improper Installation & Human Errors. Why is the hazard there - When the robot installation and Teaching not done properly, while programming it may cause. What drives the hazard - Robot/Robot How could harm be caused - The Robot/Cobot runs high speed. Why would the hazard occur - Installation and Teaching not done properly. Potential occurrence of hazard - Almost impossible Possible harm - The Robot may damage or Human injury or death	2.00	1.00	16.00	Low, significant	1.Operator / Maintenance Staff Awareness and Training 2.The Guard Doors are provided at Robots Operation range for the Human Safety.
7	Electrical	Electrical	Power Fluctuation	1.The Equipment gets damaged	Hazards - Human Errors & Power Fluctuation Why is the hazard there - Power Fluctuation. What drives the hazard - Utility How could harm be caused - Fluctuation of power Why would the hazard occur -Human Error Potential occurrence of hazard - Almost impossible Possible harm - The Equipment gets damaged	2.00	1.00	16.00	Low, significant	The Voltage Monitor relay provided for enclosure. It helps protect against potential electrical hazards, ensuring a safe operating environment

