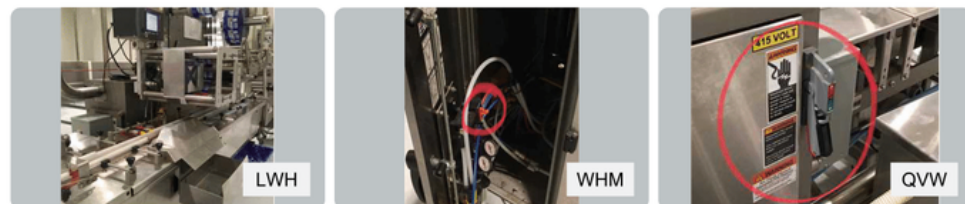


# Sample Machine Risk Assessment Report Output

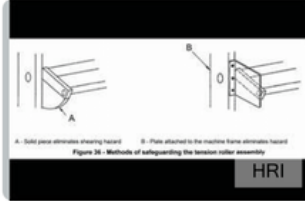
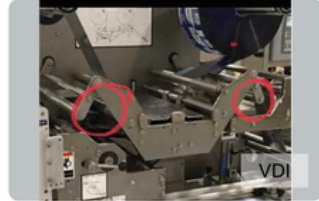


Machine & Assessment Details									
Machine Description	Flow Wrapper					Photo Ref	LWH	Inspection Date	10/07/2019
Department	Bar Line	Area	Packing					Asset Code	
Author	Risk Assessor			Completed With (Personnel Name)		John Jones			
Physical Limits of the Machine Risk Assessment	As per the physical limits of the flow wrapper			Scope & Limits of the Machine Risk Assessment		The equipment itself and significant hazards directly related to it but not the environment or surrounding activities. Hazards being assessed do not include manual handling related hazards, insignificant hazards or slip and trip hazards. Only operational life cycle is evaluated.			
Operating Lifecycle Information									
General Equipment & Process Desc	Standard Campbell flow wrapper used to wrap, seal and cut plastic film around bars. A series of in-feed belt conveyors transport bars from the accumulator, rotate them 90°, then accumulate and queue them for the flow wrapper stage.								
Start Up	Film is loaded onto an overhead mandrel and threaded around rollers into the sealing section. Product is loaded onto the feed conveyor and the machine is turned on			Cleaning		Manually wiped down			
Normal Operation	Runs continuously providing product is available. If product flow stops, the wrapper process stops.			Trouble Shooting		No specific problems noted however access into the sealing section of the machine to clear mis-fed product and to clean the sealing/cutting bars is likely to be required			
End of Run	No special activities - product is run out and machine is turned off			Maintenance		Periodic checking of drive chains and sprocket condition as well as lubrication is required			
General Comments	Type C standard EN 415-3 and AS/NZS 4024 has been used as the main reference document for this MRA								
Existing Controls									
Fixed Guards	The flow wrapper is fitted with a combination of fixed and interlocked guards (not compliant).			Interlocks/Safety Functions		An interlock is fitted to the guard over the metering unit, the side wrap unit, and the guard over the rotary end sealer.			
Warning Signs/Indication	Stickers positioned on fixed guards indicate that guarding must be in place before operating the machine. A sticker positioned at the entry point into wrapping indicates to keep hands clear of pushers.			E-Stops		One chest-height (~1.4m) Emergency Stop pull wire running the length of the in-feed/rotation/metering stage, up to the flow wrapper unwinding section. One Emergency Stop button at the operator control panel within reach of the rotary end sealer.			
Energy Source	Description	Photo	Significant Hazard?	Isolation Device	Designation Coding	Lockable	Required Isolation Method (Current Isolation Devices)		Suitably Identifiable
Electricity	Powers conveyors, fin sealing wheels, rotary end sealer, and heaters.	QVW	Yes	Electrical isolation switch		Yes	Padlock through lockable device		Intuitively easy to identify, but not labelled
	Remedial Work / Comments	Voltage and hazard labels, but nothing to indicate this is the main isolator. Meaningful "main isolator" labelling is required.							
Pneumatic	Powers pneumatic parts e.g. splicers, brakes, sealing pressure, printer head	WHM	Yes	Exhausting Isolation Valve		Yes	Padlock through lockable device		Not easy to identify
	Remedial Work / Comments	Lockable exhausting isolation valve is fitted to the inside of a cabinet door. No labelling or indication was given for the location of the isolator. Meaningful labelling is required for pneumatic isolator, and additional air line/s appear to be tee'd off before the isolator - these require further investigation.							
Machine Overview Photos									


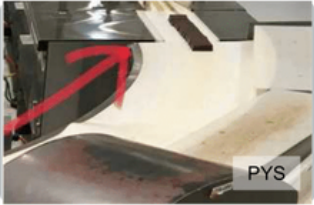











Hazards, Risks and Controls Assessment					
Hazard Assessment	Description		Consequence	Source	Photo Ref
	Broken/dislocated finger due to action of pneumatic components such as the tension roller assembly shearing past the machine frame or fixed objects, caused by accidental contact during daily operation.		Broken or Dislocated Bones	Tools/Machinery	
Raw Risk Assessment	Raw Risk Estimation (Risk Matrix)		Performance Level Assessment (NZS4024.1503)		
	Consequence Rating	Likelihood of Occurrence	Risk Score	Frequency of Exposure (more freq. than)	Possibility of Avoidance
	Moderate (3)	Unlikely (2)	Moderate (6)	Daily	Possible
Hazard and Control Photos					



Controls	Description	Status	Photo Ref	Control Type	Relevant Standard	Budget Cost	Risk Reduction
	Emergency Stop fitted to operator control panel.	Existing		Engineering	EN 415-3		
	Local electrical isolation	Existing		N/A			
	Lockable exhausting isolation valve (not compliant since hose/s have been tee'd off prior to the point of isolation.)	Existing		Engineering			
	Pneumatic components are enclosed within fixed guards (the tension roller arm is not compliant as it is external, and pneumatically driven from within the guards)	Existing		Engineering	AS/NZS 4024.1601		
	Guarding required on each arm to prevent access to the hazard zone - refer to EN 415-3 for detail	Required	HRI, VDI	Engineering	EN 415-3	700	
	Meaningful isolator labelling is required.	Required		Signs, Labels, Markings	AS/NZS 4024	150	
	Site to investigate tee'd off air lines/hoses. All distribution should be after the isolation point. Any distribution prior to the isolation must be justified and isolated. Labelling must be clear and unambiguous as to respective isolator functions.	Required		Audit			
Current & Future RA	Current Risk Estimation (Risk Matrix)			Future Risk Estimation (Risk Matrix)			
	Consequence Rating	Likelihood of Occurrence	Risk Score	Consequence Rating	Likelihood of Occurrence	Risk Score	
	Moderate (3)	Unlikely (2)	Moderate (6)	Moderate (3)	Rare (1)	Low (3)	

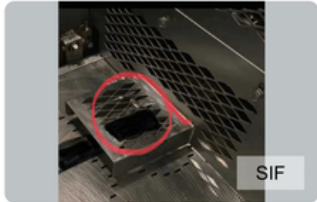
Hazards, Risks and Controls Assessment								
Hazard Assessment	Description			Consequence	Source	Photo Ref		
	Conveyor: Broken finger due to draw-in between belt and rollers/fixed objects caused by accidental start during cleaning/maintenance.			Broken or Dislocated Bones	Tools/Machinery			
Raw Risk Assessment	Raw Risk Estimation (Risk Matrix)			Performance Level Assessment (NZS4024.1503)				
	Consequence Rating	Likelihood of Occurrence	Risk Score	Frequency of Exposure (more freq. than)	Possibility of Avoidance	PL Required		
	Moderate (3)	Possible (3)	Moderate (9)	Daily	Possible	c		
Hazard and Control Photos								
<div></div>								
Controls	Description		Status	Photo Ref	Control Type	Relevant Standard	Budget Cost	Risk Reduction
	Covers enclose the outer radius and ends of the belt path, mitigating entry (not compliant since reach is possible into nip points and PBC created by guards).		Existing	JIU, PYS, JLM	Engineering	AS/NZS 4024.1601		
	Local electrical isolation		Existing		Engineering	AS/NZS 4024		
	Prevent contact with in-running pulley nips by closing residual guarding gaps to within 5mm in accordance with AS/NZS 4024.3610 as suitable risk reduction controls.		Required		Engineering - Mechanical	AS/NZS 4024.1601	1000	
	Conveyor: Install additional Emergency Stop coverage for the ends and drive section of the 90° conveyor in accordance with AS/NZS 4024.3610. Coverage might be achieved simply by extending the non-switch end of the existing flow wrapper pull-wire (budgeted).		Cross Reference		Engineering - Functional Safety	AS/NZS 4024.1604		
Current & Future RA	Current Risk Estimation (Risk Matrix)			Future Risk Estimation (Risk Matrix)				
	Consequence Rating	Likelihood of Occurrence	Risk Score	Consequence Rating	Likelihood of Occurrence	Risk Score		
	Moderate (3)	Unlikely (2)	Moderate (6)	Moderate (3)	Rare (1)	Low (3)		

Hazards, Risks and Controls Assessment						
Hazard Assessment	Description			Consequence		Photo Ref
	Conveyor: Broken finger due to draw-in points along the belt path where belt passes fixed objects (e.g. supports, guards, belt transitions), caused by accidental start during operation/cleaning.			Broken or Dislocated Bones		Tools/Machinery
Raw Risk Assessment	Raw Risk Estimation (Risk Matrix)			Performance Level Assessment (NZS4024.1503)		
	Consequence Rating	Likelihood of Occurrence	Risk Score	Frequency of Exposure (more freq. than)	Possibility of Avoidance	PL Required
	Moderate (3)	Possible (3)	Moderate (9)	Daily	Possible	c
Hazard and Control Photos						
Controls	Description	Status	Photo Ref	Control Type	Relevant Standard	Risk Reduction
	Belt has greater than 60mm deflection above support rollers.	Existing		Engineering		
	Belt surfaces are smooth, reducing the risk of drawing in.	Existing		Engineering		
	Conveyor is synchronised with the wrapper conveyor, providing a suitable risk reduction control measure.	Existing		Engineering		
	Local electrical isolation	Existing		Engineering - Electrical	AS/NZS 3000	
	Prevent arm drawing in/crushing by increase the gap between the aligner and conveyor to be greater than 120mm in accordance with AS/NZS 4024.3610. Alternatively, install a tunnel guard in accordance with AS/NZS 4024.1801 over the transition to prevent contact.	Required		Engineering - Mechanical	AS/NZS 4024	1500
Current & Future RA	Install additional Emergency Stop coverage for the ends and drive section of the 90° conveyor in accordance with AS/NZS 4024.3610. Coverage might be achieved simply by extending the non-switch end of the existing flow wrapper pull-wire (budgeted).	Cross Reference		Engineering - Functional Safety	AS/NZS 4024.1604	
	Current Risk Estimation (Risk Matrix)			Future Risk Estimation (Risk Matrix)		
Current & Future RA	Consequence Rating	Likelihood of Occurrence	Risk Score	Consequence Rating	Likelihood of Occurrence	Risk Score
	Moderate (3)	Unlikely (2)	Moderate (6)	Moderate (3)	Rare (1)	Low (3)


Hazards, Risks and Controls Assessment							
Hazard Assessment	Description			Consequence	Source	Photo Ref	
	Finger amputation due to chain/belt/transmission nip and shearing points caused by unexpected startup during cleaning or maintenance.			Amputation	Tools/Machinery		
Raw Risk Assessment	Raw Risk Estimation (Risk Matrix)			Performance Level Assessment (NZS4024.1503)			
	Consequence Rating	Likelihood of Occurrence	Risk Score	Frequency of Exposure (more freq. than)	Possibility of Avoidance	PL Required	
	Major (4)	Possible (3)	High (12)	Monthly	Possible	c	
Hazard and Control Photos							
<div><div><div>SGM</div></div><div><div>YYN</div></div><div><div>IWO</div></div><div><div>PGM</div></div><div><div>QVP</div></div><div><div>GMI</div></div></div>							
Controls	Description	Status	Photo Ref	Control Type	Relevant Standard	Budget Cost	Risk Reduction
	Conveyor: A fixed guard is fitted over the output shaft to prevent accidental contact (marginally non-compliant since contact is still possible).	Existing	SGM	Engineering	AS/NZS 4024.1601		
	Emergency Stop pull wire installed along the length of the in-feed section of the flow wrapper (not compliant as coverage is insufficient for the 90° conveyor)	Existing		Engineering	EN 415-3		
	Fixed guards are fitted along the front of the machine and locally around certain hazards (not compliant as access is possible through gaps underneath guards - e.g. by reaching through the machine, or through holes in fixed guards).	Existing	GMI, QVP, PGM, IWO, YYN	Engineering			
	Local electrical isolation	Existing		Engineering			
	Conveyor: Improve fixed guarding in accordance with AS/NZS 4024.1801 prevent contact with output shaft.	Required		Engineering - Mechanical	AS/NZS 4024.1801	500	
	Conveyor: Install additional Emergency Stop coverage for the ends and drive section of the 90° conveyor in accordance with AS/NZS 4024.3610. Coverage might be achieved simply by extending the non-switch end of the existing flow wrapper pull-wire (budgeted).	Required		Engineering - Functional Safety	AS/NZS 4024.1604	500	
	Meaningful isolator labelling is required.	Required		Signs, Labels, Markings	AS/NZS 4024	150	
	Prevent contact with transmission/belt/chain hazards by installing additional guarding in accordance with AS/NZS 4024.1801. Up to 30x30mm square mesh or 20mm slots may be suitable if they are at least 120mm away from hazards.	Required		Engineering - Mechanical	EN 415-3	2400	Medium
Current & Future RA	Current Risk Estimation (Risk Matrix)			Future Risk Estimation (Risk Matrix)			
	Consequence Rating	Likelihood of Occurrence	Risk Score	Consequence Rating	Likelihood of Occurrence	Risk Score	
	Major (4)	Unlikely (2)	Moderate (8)	Major (4)	Rare (1)	Moderate (4)	



Hazards, Risks and Controls Assessment					
Hazard Assessment	Description		Consequence	Source	Photo Ref
	Finger amputation due to sealing/cutting jaws crushing shearing hazard to hands/fingers due to the closing action of the film cutting and sealing jaws		Amputation e.g. Fingers, Hand, Foot, Arm, Leg	Tools/Machinery	
Raw Risk Assessment	Raw Risk Estimation (Risk Matrix)		Performance Level Assessment (NZS4024.1503)		
	Consequence Rating	Likelihood of Occurrence	Risk Score	Frequency of Exposure (more freq. than)	Possibility of Avoidance
	Major (4)	Possible (3)	High (12)	Daily	Possible
Hazard and Control Photos					



Controls	Description	Status	Photo Ref	Control Type	Relevant Standard	Budget Cost	Risk Reduction
	Emergency Stop within 2m of the sealing head.	Existing		Engineering	EN 415-3		
	Existing locked interlocked guarding design largely reduces contact to the hazard zone (not compliant as it does not prevent contact - both sides). If the machine is powered down the lock is released. The safety system cannot reset until the guard is replaced.	Existing	SIF	Engineering	EN 415-3		
	Local electrical isolation	Existing		Engineering			
	Prevent contact with the sealing jaws from either side and all residual apertures. Install additional fixed guarding in accordance with AS/NZS 4024.1801 to both in- and out-feed apertures. An aperture height of up to 20mm may be suitable. A reach distance of at least 850mm will be required if this is not achievable. Residual apertures must be closed up with fixed guarding in accordance with AS/NZS 4024.1801.	Required		Engineering	EN 415-3	500	
Current & Future RA	Current Risk Estimation (Risk Matrix)			Future Risk Estimation (Risk Matrix)			
	Consequence Rating	Likelihood of Occurrence	Risk Score	Consequence Rating	Likelihood of Occurrence	Risk Score	
	Major (4)	Unlikely (2)	Moderate (8)	Major (4)	Rare (1)	Moderate (4)	

Hazards, Risks and Controls Assessment						
Hazard Assessment	Description			Consequence		Source
	Fingertip amputation due to crushing/shearing as feed chain lugs pass fixed objects (e.g. guards/apertures), caused by unexpected startup during maintenance.			Amputation - Fingertip (no bone)		Tools/Machinery
Raw Risk Assessment	Raw Risk Estimation (Risk Matrix)			Performance Level Assessment (NZS4024.1503)		
	Consequence Rating	Likelihood of Occurrence	Risk Score	Frequency of Exposure (more freq. than)	Possibility of Avoidance	PL Required
	Moderate (3)	Possible (3)	Moderate (9)	Daily	Possible	c
Hazard and Control Photos						
						
Controls	Description	Status	Photo Ref	Control Type	Relevant Standard	Budget Cost
	Emergency Stop pull wire installed along the length of the in-feed section.	Existing		Engineering	EN 415-3	
	Existing guarding design reduces the risk of reaching into the hazard zone (not compliant as reach is generally not prevented from below or through aperture)	Existing	HGB, GJP, DHD	Engineering	EN 415-3	
	Local electrical isolation	Existing		Engineering		
	Prevent lugs shearing fingers if they are inserted through the head aperture - install an internal tunnel guard. A cheek plate on each side of the lug path within 5mm in accordance with AS/NZS 4024.1801 and AS/NZS 4024.3610 is likely suitable.	Required		Engineering - Mechanical	AS/NZS 4024.1801	500
	Prevent contact with transmission/belt/chain hazards by installing additional guarding in accordance with AS/NZS 4024.1801. Up to 30x30mm square mesh or 20mm slots may be suitable.	Cross Reference		Engineering - Mechanical	EN 415-3	
Current & Future RA	Current Risk Estimation (Risk Matrix)			Future Risk Estimation (Risk Matrix)		
	Consequence Rating	Likelihood of Occurrence	Risk Score	Consequence Rating	Likelihood of Occurrence	Risk Score
	Moderate (3)	Unlikely (2)	Moderate (6)	Moderate (3)	Rare (1)	Low (3)



# Contact Us



## About The MinRisk App

**The MinRisk App is built by Safety Engineers, for Health and Safety teams.**

Focusing on the specific issue of machine safety assessment, the team at TEG Risk has a deep understanding of machine safety and risk assessment through its consulting and project management businesses. The TEG Risk team created The MinRisk App to support their inhouse consulting team, and after 6 years of research and development, are bringing it to market, to better serve Health and Safety and Engineering teams, in the manufacturing sector.

## Pricing and contact



### The MinRisk App Licence Fees

We charge depending on the number of sites, machines and users you have. Our flexible pricing allows for read-only access for senior management and multiple administrators if needed.



0800 625 582

**CONTACT US**

