



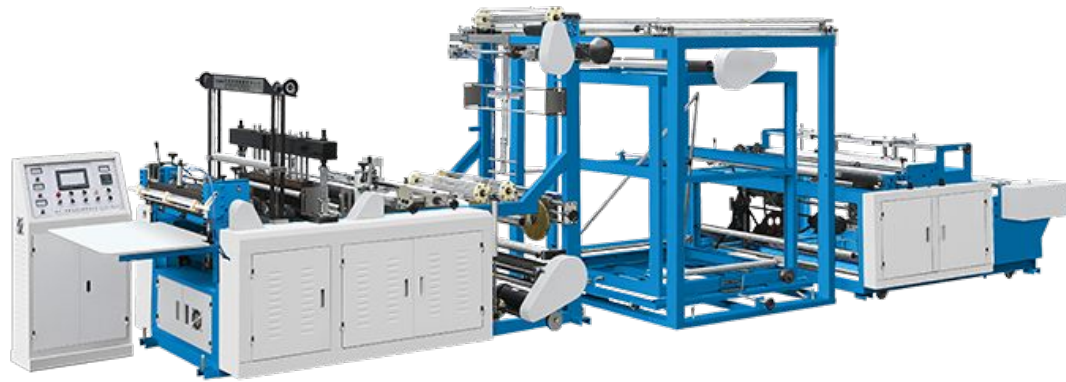
# Risk Assessments

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# Background

- What is a Risk Assessment?
- A safety risk assessment is a **systematic procedure for identifying and managing hazards**. It encompasses thorough examination of the entire work environment, processes and equipment to determine any hazard to the health of the employees in the short or long term and implementing remedies
- Its proactive vs “chasing the recordable”
- “Entire Work Environment”- Both for regular operations, tooling and maintenance.
- Step by Step review of the “line” or “machine”.
- Rank by hazard, but also tracking improvements. Organizational piece.
- Quantitative, as it will give us true data.

# Step by Step Review- Visual



**-Work front to back**

**-Operations**

**-Maintenance**

**-Tooling**

**-Sanitation**

**Different disciplines have different interactions with machinery.**

# Data: Qualitative vs Quantitative

- Qualitative: Going off personal accounts, experiences and general knowledge.
- Example: Changing out the blades on a grinder is dangerous, I heard someone got cut doing it before and received several stitches, plus, just look at how sharp those blades are.
- Quantitative: Relying on real data. Assigning numbers to frequency, severity and probability.
- Example: Changing out the blades on a grinder is dangerous, that task scores about 300, which is considered high risk.

# Data: Qualitative vs Quantitative

- Both types of Risk Assessments exist. Lots of similarities as they break the job or process and identify risk. **Rotating parts with easy access by hand?** Could be scored high, could be scored low, but either way, it would make an assessment.
- The Quantitative version (the form we will review) will give us data to determine which tasks pose the highest risk.
- There are many advantages to putting a number or score associated with risks identified.

# Quantitative Advantage

- If you were to assess 20 processes at your site, and come up with 1,000 items that are of risk, where do you start?
- It often costs money to change a process, add engineering controls or upgrade guards with lights curtains, etc. Where do we spend the money?
- Once we make an improvement to a process or task, how do we know if we reduced the risk? Or by how much?

# Risk Assessment- section 1

Title	Husky Injection Molding Machine	Version	1	Site		Reference		Date	
<b>Activity</b>		Husky Injection Molding Machine Line #1							
<b>Persons at Risk</b>		Operator and Packer- Tooling- Maintenance							
<b>Cell / Area</b>		#1							
<b>Assessment Date</b>		<b>Review Date</b>		<b>Associated SOP(s)</b>	Packing Cups				
<b>Identified Hazards</b>	0	<b>Risk Rating</b>	0	<b>Residual Risk Rating</b>	0				
<b>Assessed By</b>		Josh Allen		<b>Signature</b>					
<b>In Conjunction With</b>		Operations		<b>Signature</b>					
<b>In Conjunction With</b>		Maintenance		<b>Signature</b>					
<b>In Conjunction With</b>		Third Party employee		<b>Signature</b>					
<b>In Conjunction With</b>		EHS		<b>Signature</b>					
<b>In Conjunction With</b>		Other		<b>Signature</b>					

# Risk Assessment- section 2

- Review potential hazards to be identified on form.
- Besides training potential assessors, review guide that acts as a cheat sheet to help determine if certain hazards exist.
- Not everyone involved is a safety professional, but their knowledge of the machine and process is just as important.
- Depending on the equipment or process, some sections may not apply, so time can be saved by crossing them out.



# Hazard list filled out

NUMBER	HAZARD	HAZARD OUTCOME / POTENTIAL CONSEQUENCES	PRESENT CONTROLS	WITH PRESENT CONTROLS				CORRECTIVE ACTION IF REQUIRED
				Severity	Exposure	Prob.	Total and Risk Class	
1	Sharp edges on bottom of machine	Cut on hand or arm	Nothing					
2	Space in guarding where employee hand can touch rotating part	Possible amputation of hand	Some guarding					

As a team, list identified hazards, outcomes and what is currently there for controls.

The present controls will put a dent in the total risk score, especially if the control is sufficient.

With no controls, you have a better chance of a higher risk score.

# How to score



- Severity x Exposure x Probability = total risk
- Next few slides will show definitions, and scoring numbers associated with those definitions
- These definitions and number can be customized to meet your type of industry or site.
- Typically filled out in a conf room.

# Scoring- Severity

GRADE OF CONSEQUENCE SEVERITY		VALUE
a	Catastrophic; FATALITY	40
b	Disastrous; PERM DISABILITY	15
c	Very Serious; LTA	7
d	Serious; RECORDABLE	3
e	Important; FIRST AID	1

Values and definitions can be tweaked to fit your company. Top severity can be “multiple fatalities”.

Can even trim down to 4 grades (this is true with Frequency and Probability).

# Scoring- Frequency of exposure

FREQUENCY OF EXPOSURE		VALUE
a	Continuous (Many Times per Day)	10
b	Frequent (Approximately Once per Day)	6
c	Occasional (Once per Week)	3
d	Unusual (Monthly)	2
e	Rare (A few times per year)	1
f	Very Rare (Annually)	0.5
g	The Hazard Never Occurs	0

This is where the team approach is helpful- operators, packers would be able to determine how frequently they are exposed to the areas.

This isn't an exact science, but having the group agree and be consistent is key.

# Scoring- Probability

PROBABILITY		VALUE
a	Almost Certain (Probable and Expected)	10
b	Highly Possible (it is entirely possible, would not be surprising, it has a probability of 50%)	6
c	Possible (A 'rare' occurrence but possible, and known to have happened)	3
d	Maybe Possible (would be a very strange coincidence but is known to have occurred)	1
e	Remote (Extremely rare. It has not happened so far)	0.5
f	Very Remote (Practically Impossible, 'one in a million' occurrence)	0.2
g	Almost impossible (Virtually impossible, close to impossible)	0.1

Not an exact science, but having the team agree on the scoring and consistency is key.

This is all part of the discussion, can revisit out in the work area if torn between two grades.

# Internal action plan

MAGNITUDE OF RISK	CLASSIFICATION OF THE RISK	URGENCY OF CORRECTIVE MEASURES
Greater than 400	Very high risk	Cease the activity immediately and apply corrective actions immediately
Between 201 and 400	High risk	Apply corrective actions immediately
Between 71 and 200	Substantial risk	Urgent correction necessary
Between 20 and 70	Possible risk	No emergency but the risk must be corrected
Less than 20	Acceptable risk	Likely that not further corrective actions are required

These numbers would dictate due dates on your internal action plans, or immediate actions you may need to take.

Even interim actions to knock the risk down a little bit.

# Hazard list with scoring

NUMBER	HAZARD	HAZARD OUTCOME / POTENTIAL CONSEQUENCES	PRESENT CONTROLS	WITH PRESENT CONTROLS				CORRECTIVE ACTION IF REQUIRED	WITH PROPOSED CONTROLS			
				Severity	Exposure	Prob.	Total and Risk Class		Severity	Exposure	Prob.	Total and Risk Class
1	Sharp edges on bottom of machine	Cut on hand or arm	Nothing	3	10	6	180	Smooth out edges or guard with foam	1	10	6	60
2	Space in guarding where employee hand can touch rotating part	Possible amputation of hand	Some guarding	15	3	6	270	Fabricate new guard or add to existing	15	3	0.2	9

Total risk and Class score is calculated.

Corrective actions added if no present controls or added if the score with the present controls are too high.

Talk about how score is reduced with CRAT.

# Action Plan- the follow up

ACTION PLAN									
ATTENDEES		ACTIVITY		DATE					
APOLOGIES		CELL / AREA		NEXT MEETING					
ACTIONS IDENTIFIED		ACTIONS STARTED		TOTAL COMPLETED ACTIONS					
		Husky Injection Molding Machine Line #1							
		#1							
2		0		0					
NUMBER	HAZARD	CONSEQUENCE	ISSUE	ACTION	WHEN	WHO	STATUS	WEEK No.	
1	Sharp edges on bottom of machine	Employee can get cut on hand or arm.	Sharp edges exist on the machine.	Smooth out edges, guard with foam.	1-Oct	Bob- Maint	Closed		
2	Space in guarding where employee hand can touch rotating part	Possible amputation of hand	Guard is inadequate, it doesn't prevent employee from coming in contact with moving parts.	Fabricate new guard, or add to existing.	22-Oct	Bob- Maint	Open		



# Repeat same process for Tooling & Maintenance

- We talked about the “3 pronged” approach. Tooling replaces the mold in the machine. Maintenance repairs all hoses, lines, changes oils, and any other repairs that are needed.
- Different hazards operating the machine vs repairs and tooling.
- Take the same form and review Tooling change process with Tooling department. They use equipment such as forklifts and cranes, that operations wouldn't use.
- Maintenance may have to weld, or use other tools not used by Operations or Tooling.

# Review

- Its important that the Action plan is reviewed on a regular basis. This is what closes the loop. We want to identify the risk, then mitigate the risk.
- If multiple risk assessments are being worked on at the same time, we can take the highest risk line items and prioritize those.
- The EHS professional is usually the point person to drive the process, with support of upper management. Set up Action Plan review meetings, organize the line items by hazard, rescore after completion of line items, schedule annual review of lines or processes, review risk assessments after injuries or near misses.

## Real life scenario



To buy a home security system?

Severity?

Frequency?

Probability?

# Final Thoughts

- Injury trends can tell some of the story as far as where risks may be.
- Catastrophic or costly injuries could be few and far between but having that exposure present in the workplace could set us up for failure at some point. It's just a matter of when.
- No matter how new or old the business is, it's worth performing these assessments to help identify the top risks.
- If an injury occurs, pull up the Risk Assessment and reassess if needed.

# Questions?

