



FERRY
INDUSTRIES, INC.



Engineering For Safety

2015 Fall ARM

Harry Covington - Ferry Industries, Inc.



Engineering For Safety

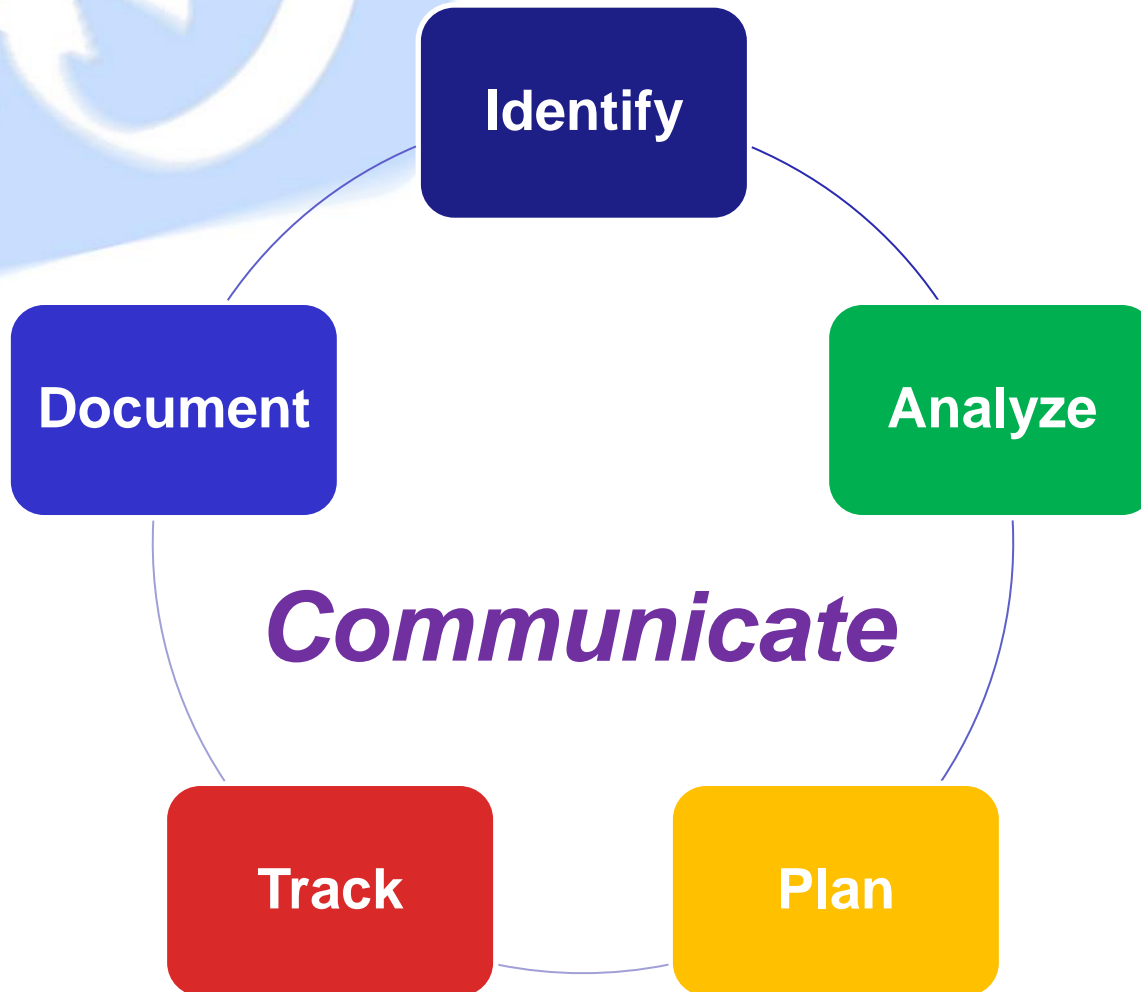
Rotational molding machine safety should focus on the prevention of entrapment & injury through:

Engineering For Safety

- **Company Specific Safety SOP**
- **Lock-Out / Tag-Out Procedures**
- **Visual & Audible Warnings**
- **Operator / Machine Interface**
- **Restricted Access, i.e. Safety Gates**
- **Safety-Rated Zone Sensors**
- **Work Platforms**

Company specific safety SOP

Develop a Risk Assessment

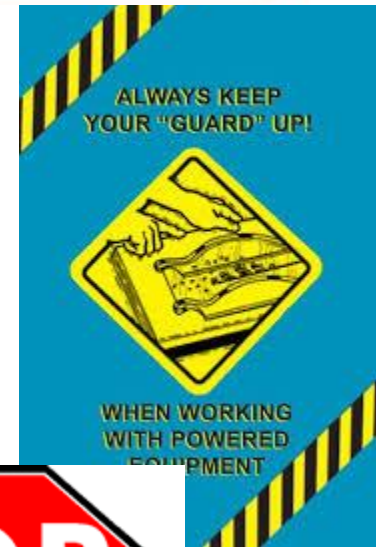


Company specific safety SOP

Develop a Risk Assessment

- **Identify the hazards**
- **Decide who might be harmed & how**
- **Evaluate risks & decide on precautions**
- **Record significant findings**
- **Review assessment & update**

Company specific safety SOP



- Signage
- Manuals
- Personnel Training
- PPE
- Logs

| Daily Maintenance Log & QC Checklist | | | | | | | | | | | | DATE: _____ | | |
|--------------------------------------|---|---|---|---|---|---|---|---|---|----|----|-------------|------|--|
| SHEET | | | | | | | | | | | | NOISE | TEMP | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | | | |
| NIGHTS | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| DAYS | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| EVENINGS | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| WEEKLY | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| NO RECORD | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |



Lock-Out/Tag-Out Procedures

- State & Federal OSHA requirements
- Workers comp advisors



Visual & Audible Warnings



Operator / Machine Interface

- **Flashing light to indicate door open/close on oven or cooler**
- **Simultaneous audible alarm for door open/close on oven & cooler**
- **Doors stagger open /closing**
- **Load / Unload Stations - Operator push-hold button on podium to index carriages from station to station**

Restricted Access with Safety Fence

- OSHA & CE Rated – chalice fastener
- Safety rated electrical interlock on gates

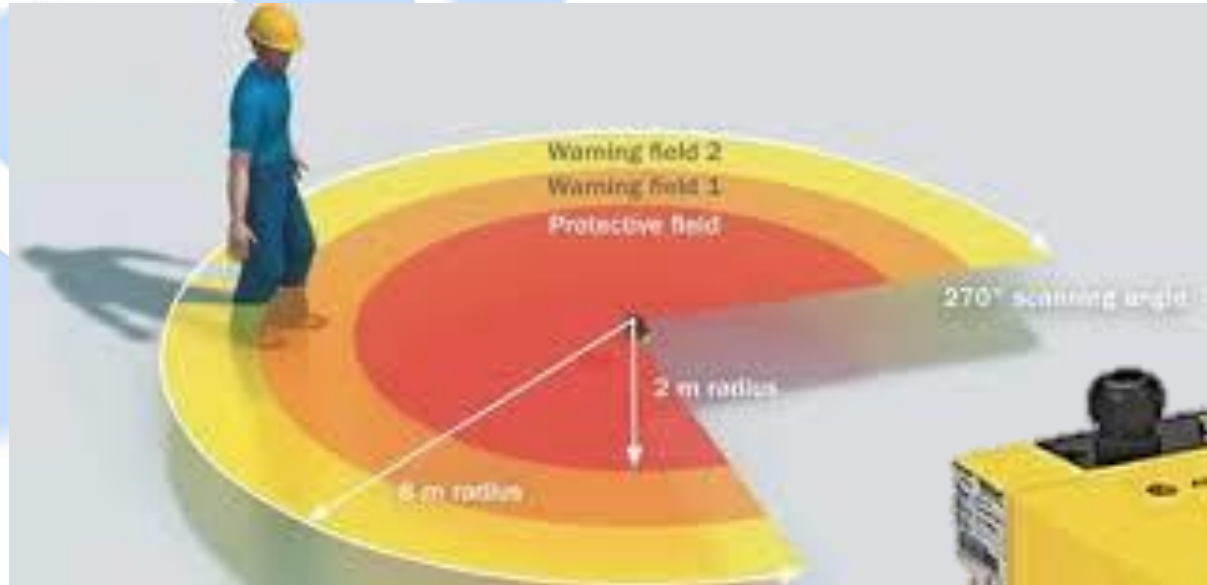


Restricted Access with Safety Fence

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Safety-Rated Zone Sensors

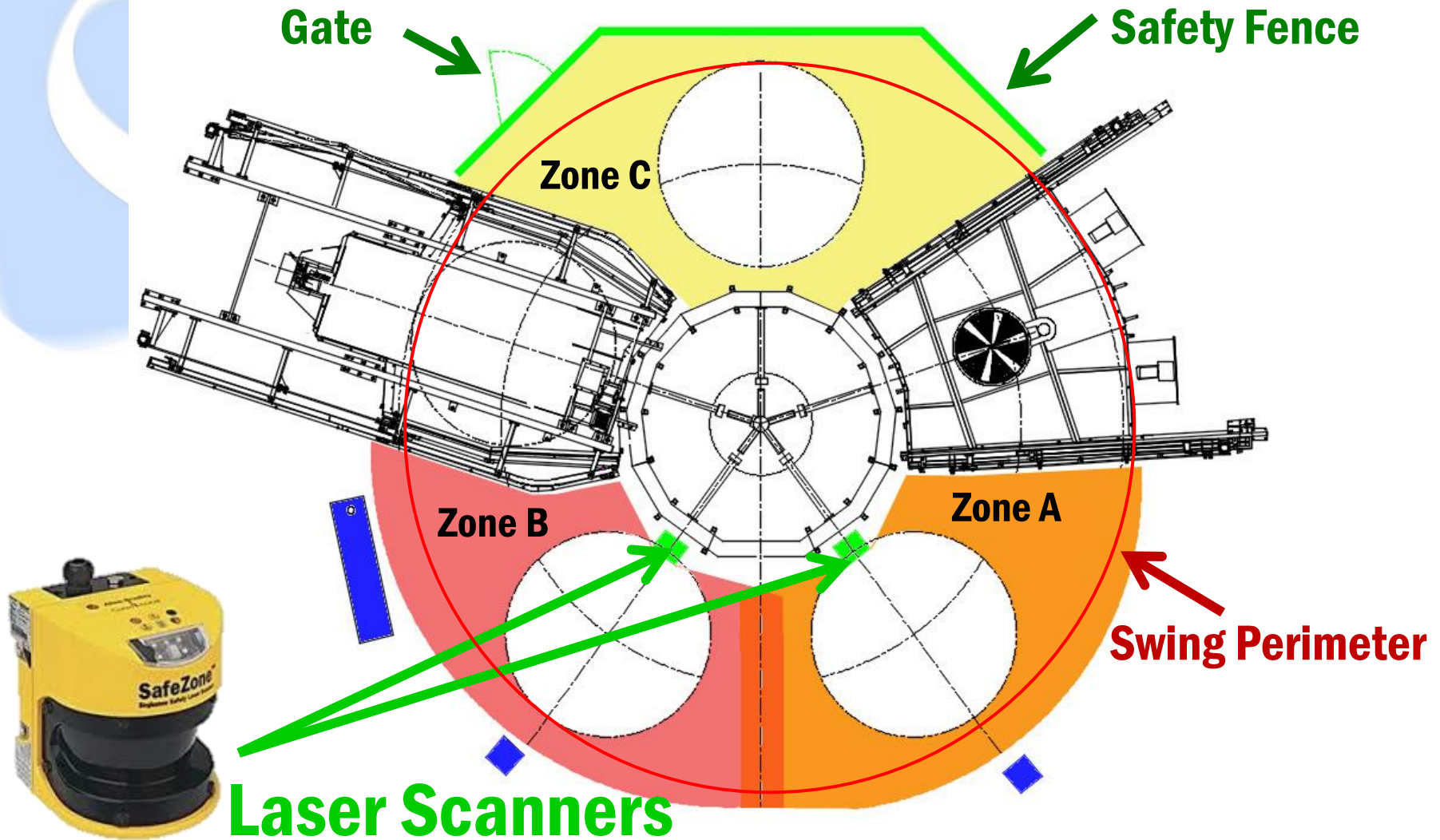


**Programmable Safety Rated
Laser Scanners**

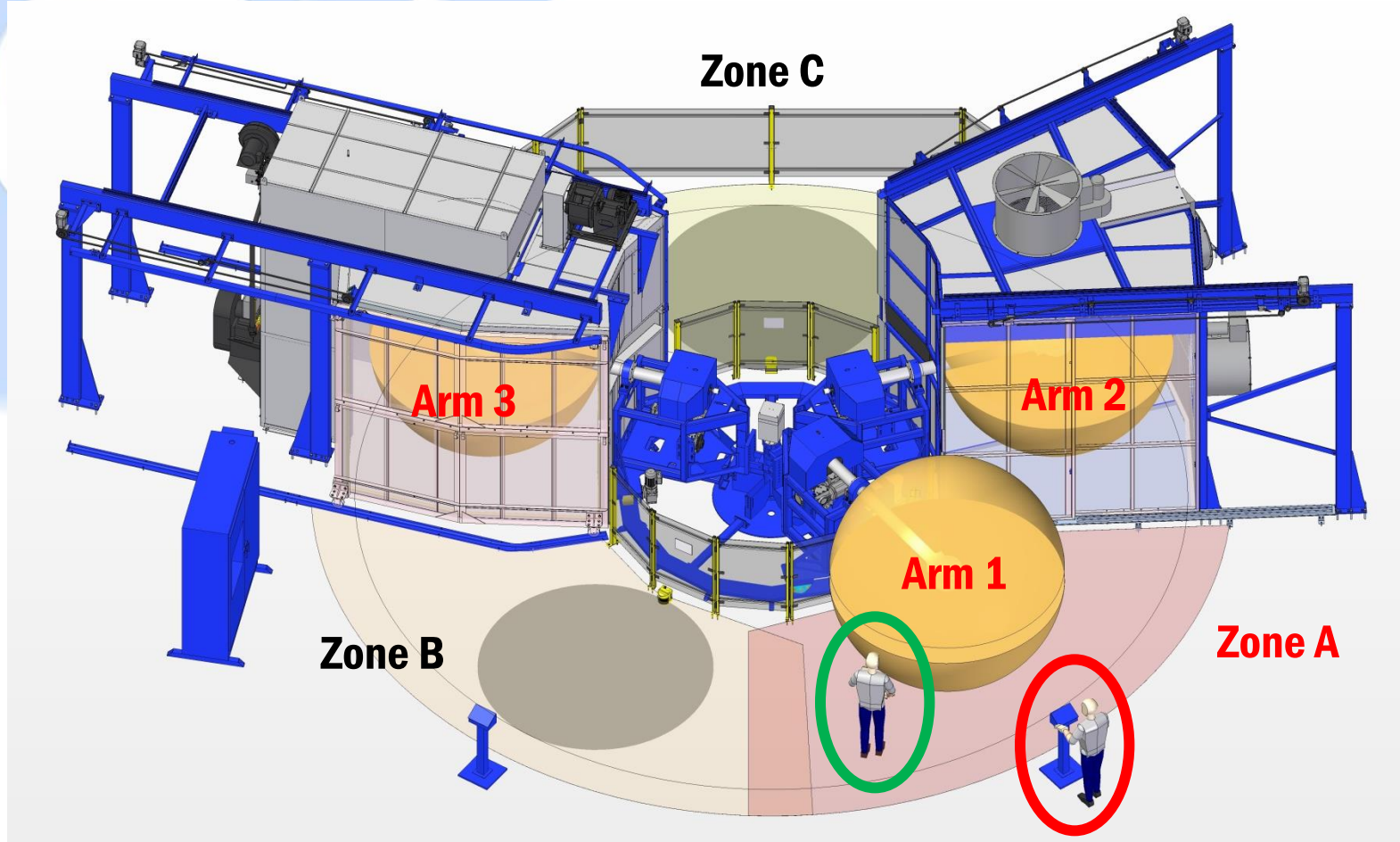
**Working Areas can be
Irregular Shapes**



Safety-Rated Zone Sensors

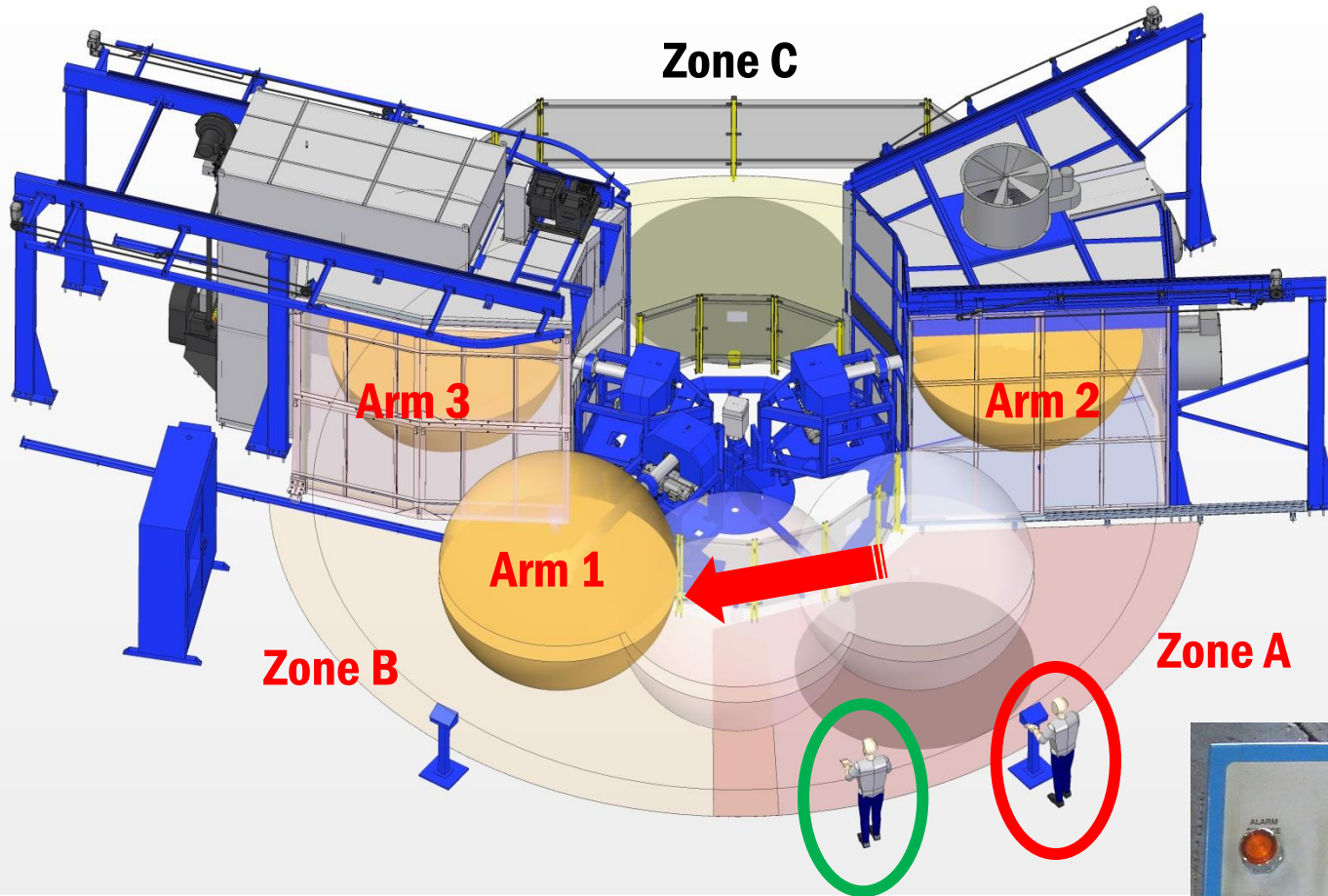


Safety-Rated Zone Sensors



Unload Station - Zone A Operation

Safety-Rated Zone Sensors

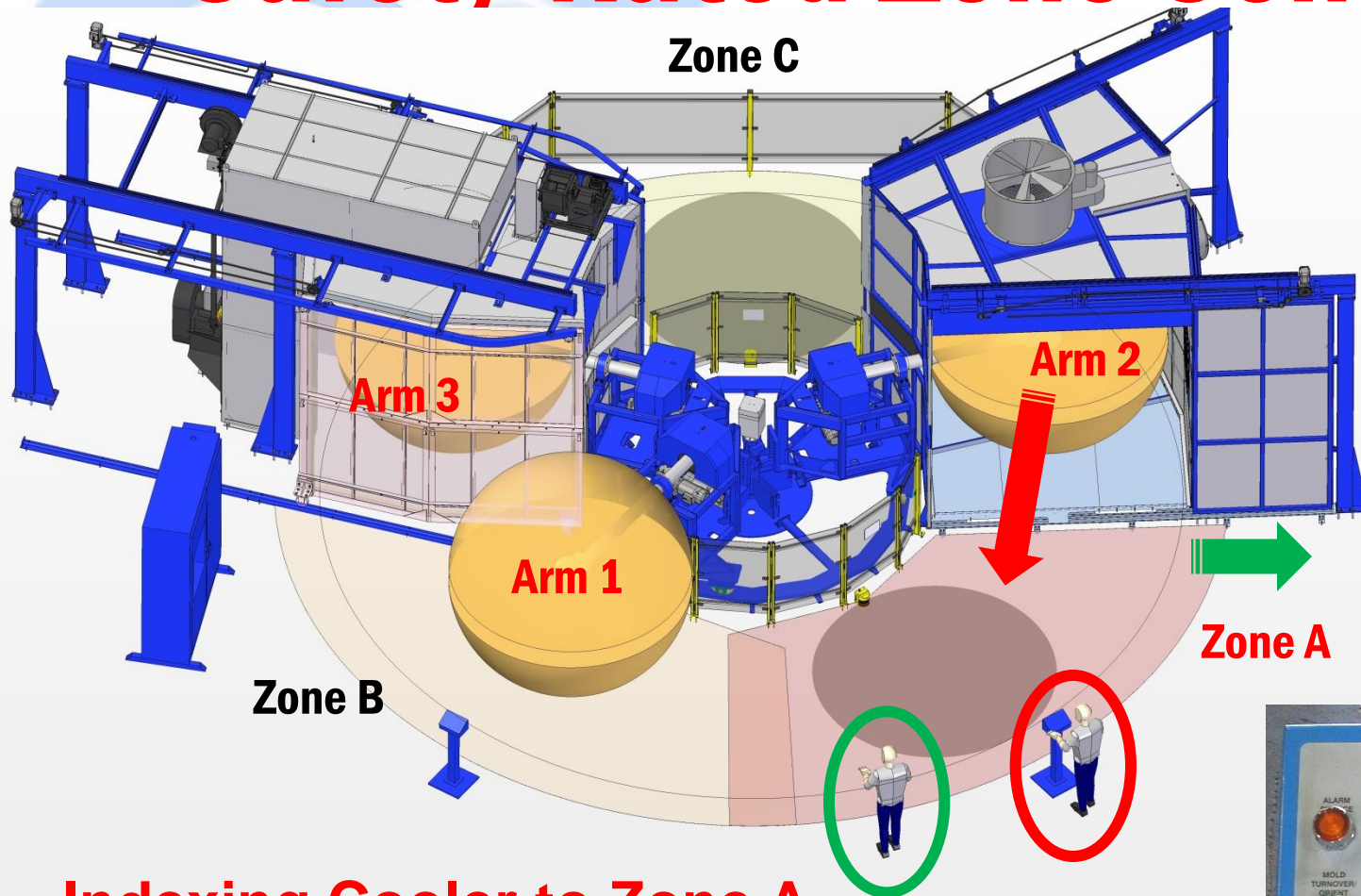


Indexing Zone A to Zone B

- 1) Scanner Reset
- 2) Arm Ready Button, push/hold



Safety-Rated Zone Sensors

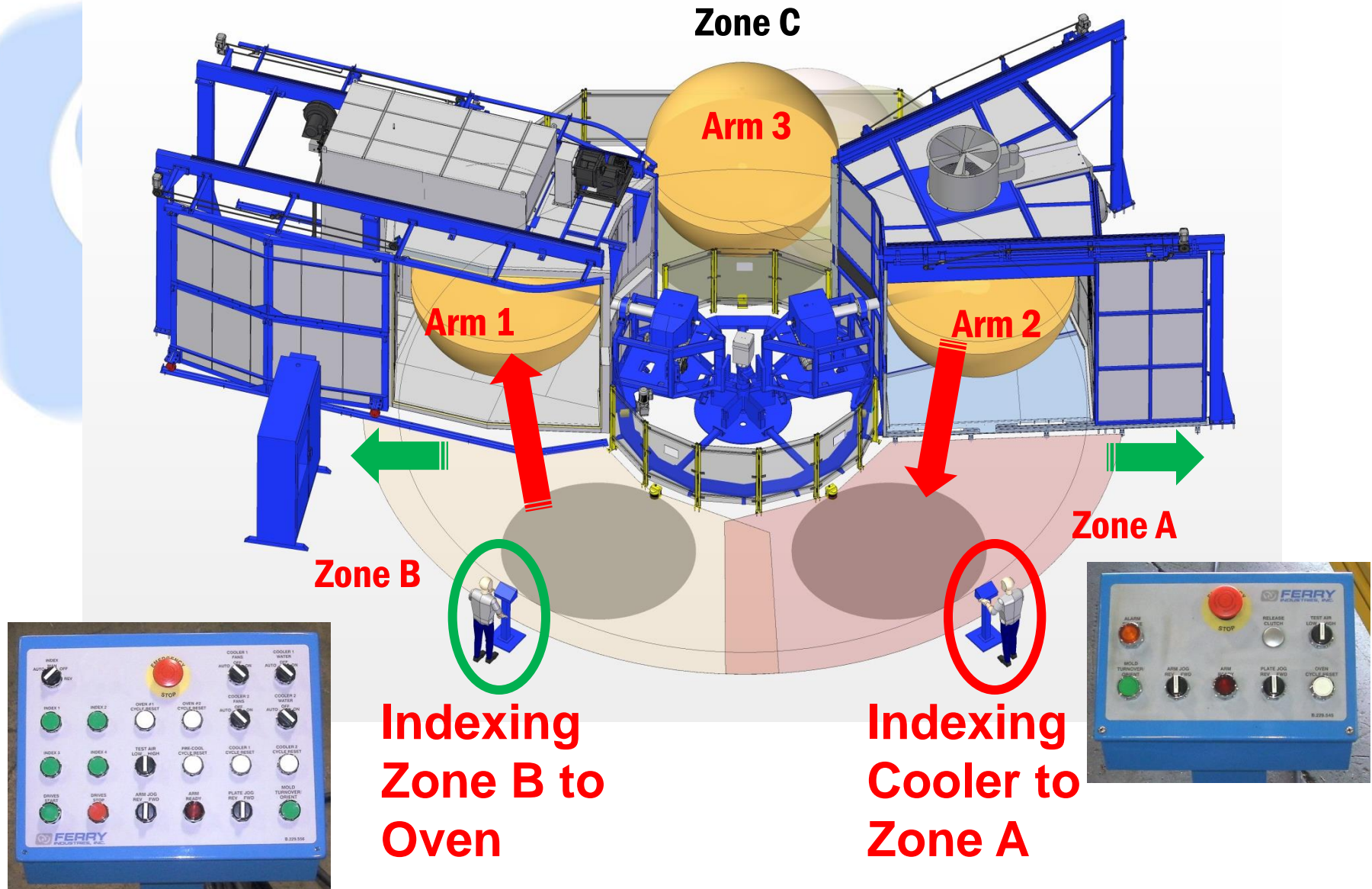


Indexing Cooler to Zone A

Arm Ready Button, push/hold



Safety-Rated Zone Sensors



Arm Ready Button, push/hold

Automated Operator Work Platforms



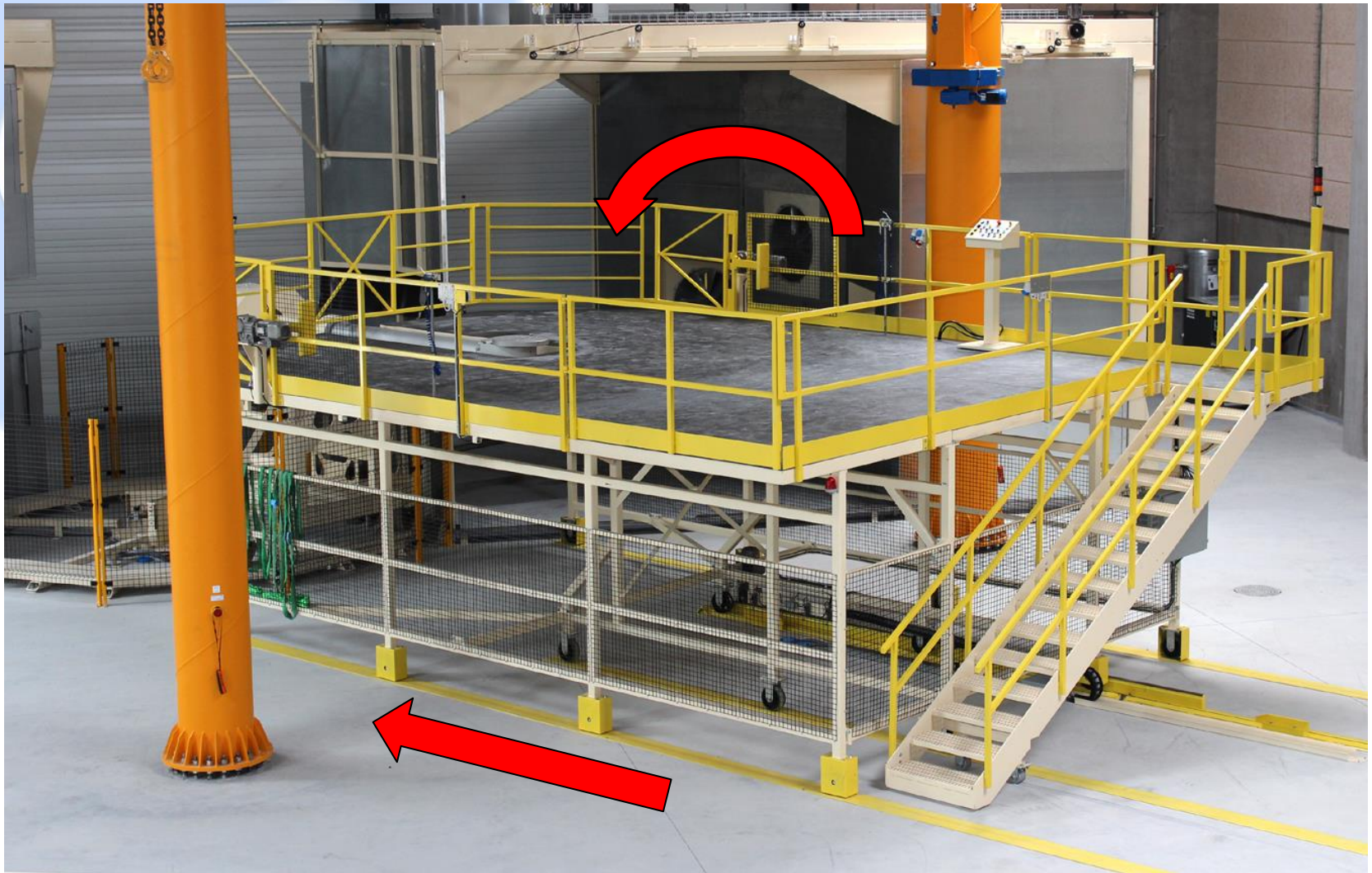
- **Provide safe work conditions – reduce injuries**
- **Improve productivity**
- **Improve ergonomics**

Platform with Roll-over Safety Gate



- Safety interlocked to the machine
- Prevents operators from stepping off platform

Platform with Roll-over Safety Gate



- Single push-button for gate activation
- Push-button for fore/aft movement

Platform with Roll-over Safety Gate



Platform allows access to spider for mold servicing

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A collage of industrial images including a factory floor, a large gear, a welding process, and technical diagrams, overlaid with a purple and blue color scheme.

Thank You

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