

# BI ROBOTICS

Robotic cask unloading system to reduce risk of musculoskeletal injuries

December 2025



Irish Distillers  
Pernod Ricard



### At Irish Distillers we.....



Always Think  
Safety First



Fully adhere to  
the Safety Rules  
at all locations



Stop and call  
out unsafe  
behaviours



Report and learn  
from hazards, near  
misses & accidents

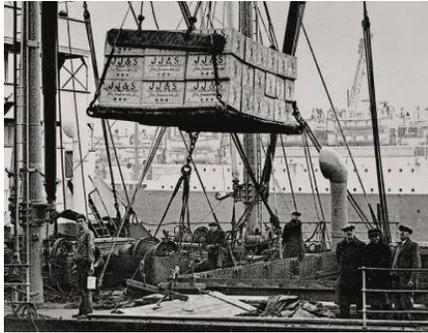


Always look  
out for each  
other

# IRISH DISTILLERS: A BRIEF HISTORY

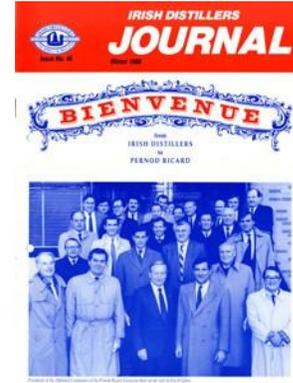
After decades of industry decline, three families came together to form Irish Distillers in 1966, before joining the Pernod Ricard family in 1988. Then the Jameson global growth story truly began.

John Jameson & Son  
founded in Dublin.  
John Power & Son  
founded in Dublin in  
1791.  
Midleton Distillery  
founded in 1825.



1900-1960s

Irish Distillers formed in 1966  
with the merger between the  
last three remaining Irish  
distilleries: Jameson, Powers &  
Cork.



Jameson growth story begins -  
Jameson reaches 1 million case  
milestone in 1996. Launch of the  
Jameson International Graduate  
Programme in 1991. Jameson  
Brand Homes open in Midleton &  
Bow St.



1700-1800s



From the Irish War of  
Independence to a crippling  
era of prohibition in the US,  
Irish whiskey was on the  
brink of extinction after  
decades of decline.

1966



As Irish whiskey exports  
struggle, Irish  
Distillers becomes a takeover  
target. Pernod Ricard acquires  
Irish Distillers. The Irish  
whiskey renaissance begins in  
earnest, with Jameson  
prioritised as a key accelerator  
brand.

1988

1990s



Double digit growth for Jameson.  
Expansion of Midleton Distillery and Fox  
& Geese bottling plant. 5 million cases of  
Jameson sold in 2015.  
Jameson surpasses 10 million cases in  
2022.

2000s



Irish Distillers  
Pernod Ricard

## WHO WE ARE

We are producers of some of the world's most well-known and successful Irish whiskeys and one of Ireland's leading suppliers of spirits and wines.



# B1 BARRELS

ARE AMERICAN  
BARRELS USED  
IN MIDLETON FOR  
WHISKEY  
MATURATION

AMERICAN  
BARREL

- Quercus Alba  
(White Oak)
- 200 Litres

# HEALTH AND SAFETY CHALLENGES ASSOCIATED WITH UNLOADING BARRELS

Delivered in  
**40-foot**  
containers

**206**  
barrels per  
container

Barrels  
are stacked  
**3** high

Each barrel  
weighs up to  
**60kg**

During transport,  
the **barrels** can  
become dislodged  
and unstable

Manually  
unloaded by **two**  
**operators**

Up to **1,000**  
containers per  
annum =  
206,000 barrels



A man wearing a high-visibility yellow vest and dark clothing is working with large wooden barrels in a warehouse. He is leaning over a barrel in the foreground, which is being supported by a layer of plywood. The background shows many more barrels stacked in rows.

## **VARIOUS MEASURES HAD BEEN PREVIOUSLY INTRODUCED TO MITIGATE THE RISKS**

**Rotation of  
operational  
teams**

**Additional  
PPE**

**A layer of  
plywood on the  
bottom row  
(for operators  
to walk on)**

**Increased  
manual  
handling  
training**

# ORIGINAL MANUAL PROCESS



# EXPLORING AUTOMATION SOLUTIONS

- Midleton Distillery partnered with Pilz in 2017 to explore automation options.
- A multi-disciplined project team was established to ensure the optimum result:
  - *Health and Safety,*
  - *Engineering*
  - *Operations*
  - *Pilz*
- The primary objective was to automate the unloading of 40 foot containers filled with empty barrels.
- The project team worked together from concept through design, commissioning and operational stages.



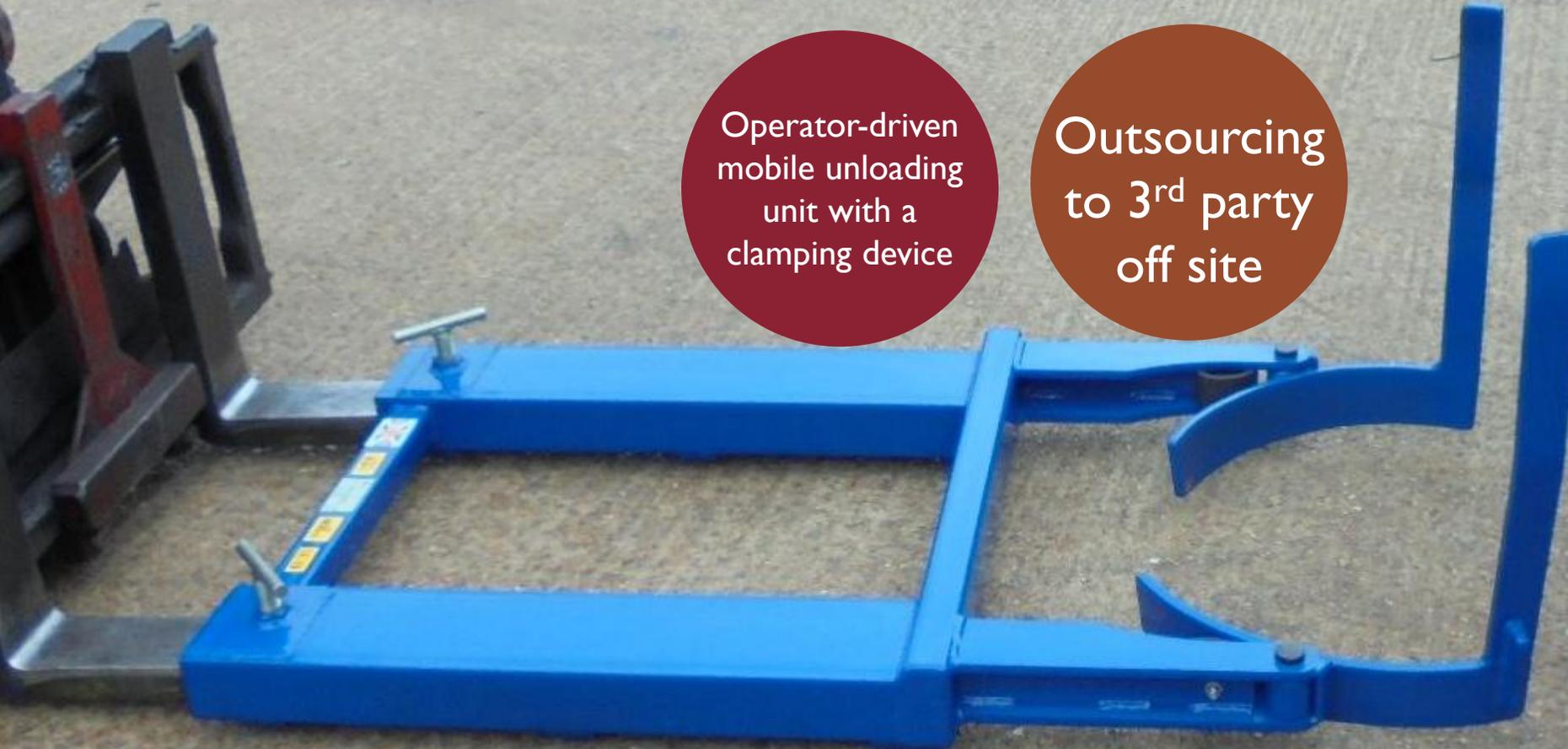
# OTHER OPTIONS EXPLORED

Reducing  
barrel layers  
to one

Semi-automated  
fork truck (AGV)  
concept involving  
clamping devices

Operator-driven  
mobile unloading  
unit with a  
clamping device

Outsourcing  
to 3<sup>rd</sup> party  
off site



# CHALLENGES TO AUTOMATION

- Could not rely on barrels being neatly stacked in each container.
- All barrels are slightly different in shape and size and loads can be packed into containers in different patterns.
- Maintain the operational output of 650 to 800 casks per shift.
- Unload full containers stacked 3 rows high.



# AUTOMATED SYSTEM SOLUTION

- Was achieved through the deployment of a bespoke autonomous **Automated Mobile Robot (AMR)** guided by a **vision system** with the **AI** to traverse through a container and row by row select which barrel to safely grip and unload from the container.
- The system at its heart is a mobile 6-Axis Robot mounted on an **Autonomous Guided Vehicle (AGV)**.
- CE compliance was core throughout out the design process.



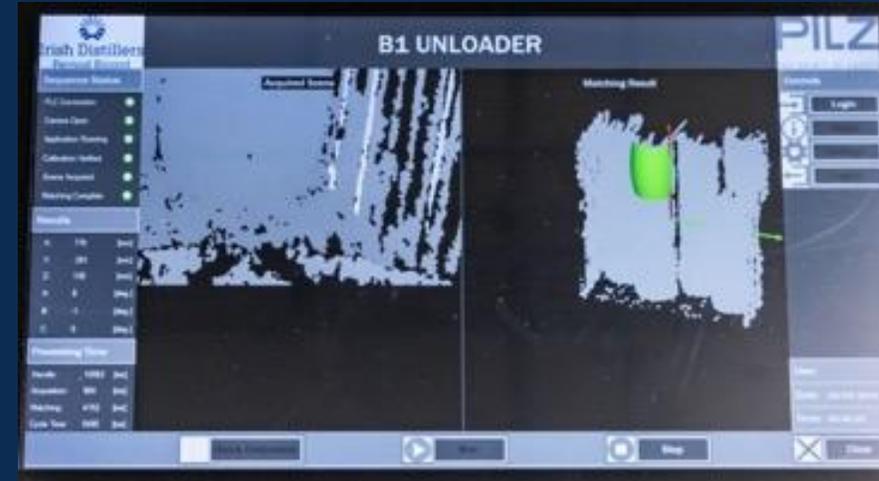
# SYSTEM COMPONENTS

- **Vehicle restraint and docking system** ensures secure positioning of containers.
- **Automated Guided Vehicle (AGV).**
- **Robot Arm:** 250 kg payload robot arm mounted on the AGV featuring 360-degree flexibility and bespoke end of arm tooling (patent pending) for handling barrels.
- **Vision System** which is capable of safely and accurately identifying the cask profile and location.
- **Telescopic Conveyor System** extends to follow the robot into the container and transport barrels onto the conveyor.
- **Process Control and Safety Control Systems:** CE Marked
- **New loading bay** equipped with automatic doors and dock levellers



# VISION SYSTEM

Is capable of safely and accurately identifying the cask profile and location



# B1 ROBOT IN OPERATION



# ENHANCED SAFETY SOLUTION



Unauthorised  
entry  
prohibited

Light  
Curtains

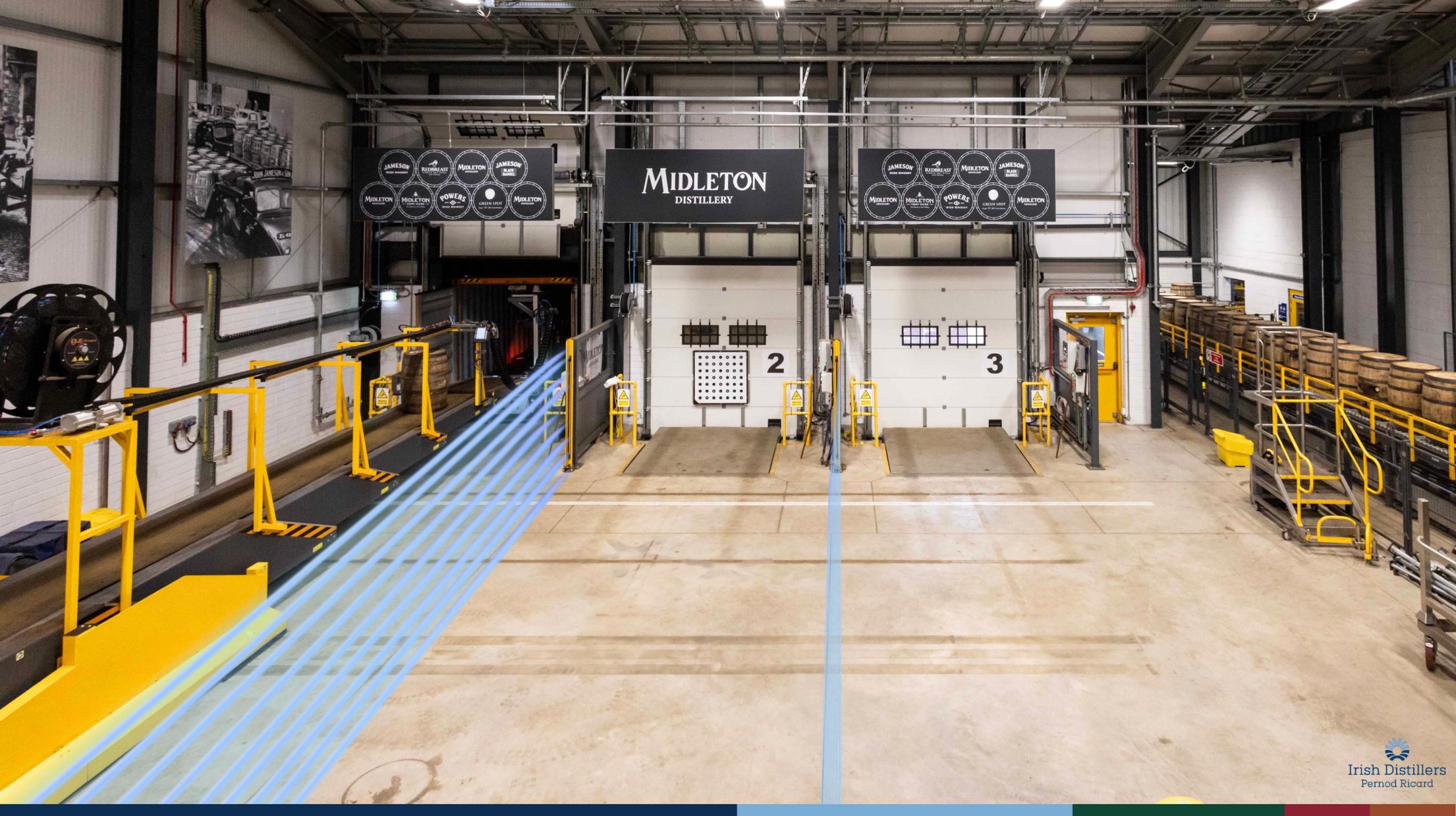
Trailer  
Restraint  
System

E-Stops

2-D Floor  
Scanners  
(AGV)

Safety  
Gates

Trapped  
Key  
Interlock  
System



MIDLETON  
DISTILLERY

JAMESON  
REDBREAST  
MIDLETON  
JAMESON  
BLACK  
RABBIT  
MIDLETON  
MIDLETON  
POWERS  
GREEN SPOT  
MIDLETON

JAMESON  
REDBREAST  
MIDLETON  
JAMESON  
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RABBIT  
MIDLETON  
MIDLETON  
POWERS  
GREEN SPOT  
MIDLETON

2

3



## ENHANCED SAFETY SOLUTION – GUARDING & ACCESS



**ENHANCED  
SAFETY  
SOLUTION –  
TRAILER  
RESTRAINTS**



# RESULTS ACHIEVED/ SUCCESS FACTORS

The BI robotics system was successfully installed and commissioned, going live in January 2024.

So far we have achieved:

- Significant risk reduction
- Container Capacity - unchanged
- Cask size variability: The system can effectively manage variations in cask sizes
- Minimal manual intervention
- Operators oversee the process from a safe zone
- Compliance with safety standards: CE and Pernod-Ricard safety standards.





**EU GOOD  
PRACTICE  
AWARD  
2025**

**WINNER**

**2025**

Healthy Workplaces

**GOOD PRACTICE AWARDS**



**Midleton Distillery**

**Robotic barrel unloading system  
to reduce risk  
of musculoskeletal injuries**





**THANK YOU**



Irish Distillers  
Pernod Ricard