



הכנס השנתי ה-41 של האיגוד הישראלי לאיכות

26-27 בפברואר 2025 | מלון דיוויד אינטרקונטיננטל, תל אביב

קובוט או רובוט

והאם זה משנה

רוזנוב דני



Industrial Robot



Cobot

Advantages

Cobots



- Safety
- Easy Programming
- Flexibility and Adaptability
- Cost-Effective Automation
- Compact Size and Easy Integration

Vs.

Industrial Robots



- Complex Tasks
- Heavy Payload
- 24/7 Operation
- High Speed and Efficiency
- Precision and Consistency
- Integration with Advanced Technologies
- Cost Efficiency in High-Volume Production

Safety

Really?...



ISO/TS 15066 – is the leading standard

Force, speed, and pressure limits

- Limited Speed – up to **20 cm/s**.
- Force and pressure limits.
- Safety certification - **Cobot arm only**
No Grippers Included
- Unseen Risks: Human error in programming, Maintenance-related hazards, Operational risks and etc...

•EISO 10218-1 & ISO 10218-2 – General safety for **industrial robots & systems**.
•N/ISO 13849-1 (PL d / PL e, Cat. 3) – Safety performance level for robot systems.
•IEC 62061 (SIL 2 / SIL 3) – Functional safety for industrial automation.

Lifetime

The real one



Factor	Cobots	Industrial Robots
Lighter Build Quality 🛠️	Lighter materials (aluminum, plastic parts) for safety around humans .	Heavier, stronger components (steel, reinforced gears) for durability .
Lower-Duty Cycle ⚙️	Designed for low-speed, intermittent use (e.g., 8-hour shifts, not 24/7).	Designed for continuous operation (24/7 in high-speed environments).
Gear and Motor Wear 🔩	Uses harmonic drives (flexible metal components) that wear out faster .	Uses heavier-duty motors & gearboxes that last much longer .
More Frequent Force Feedback Movements 🤖	Uses torque sensors & force-limiting systems , causing faster mechanical wear .	Moves with fixed, rigid paths , reducing stress on components.

The truth

What we should know...



Vs.



- Safety – **up to 20 cm/sec. and more limitations**
- Easy Programming – **lower possibilities**
- Flexibility and Adaptability - **lower possibilities**
- Cost-Effective Automation – **not for the project**
- Compact Size and Easy Integration – **lower payload, lower possibilities**
- **Shorter lifetime 7-8 years**

- High Speed and Efficiency – **Dedicated safety equipment**
- Small to Heavy Payload – **All applications**
- Precision and Consistency – **Go beyond**
- 24/7 Operation – **For 15 years and more**
- High-Volume Production – **Effectiveness**
- Integration with Advanced Technologies – **Beyond the limits**
- Complex Tasks – **Production and Start-Ups next step**

Airskin

Combination of both

Safety

Capabilities



EN/ISO 13849-1 (PL e / Cat. 3) and EN/IEC 62061 (SIL 3) represent **higher levels of safety performance** compared to what is typically implemented in most cobots.

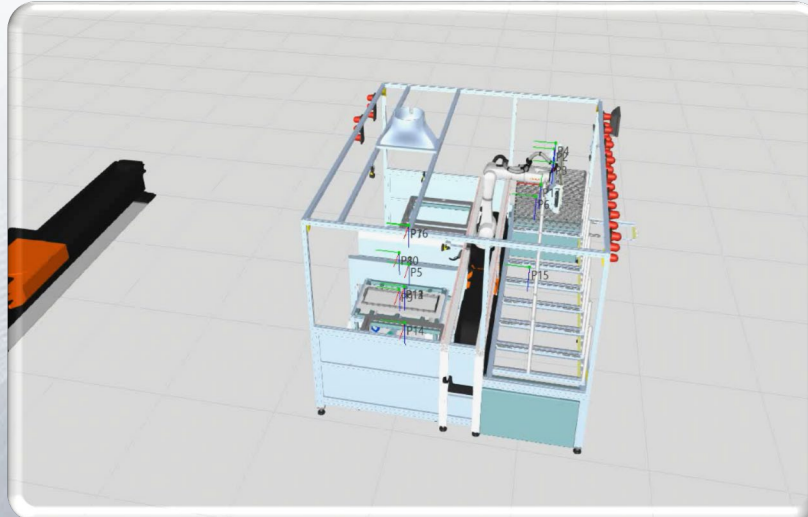
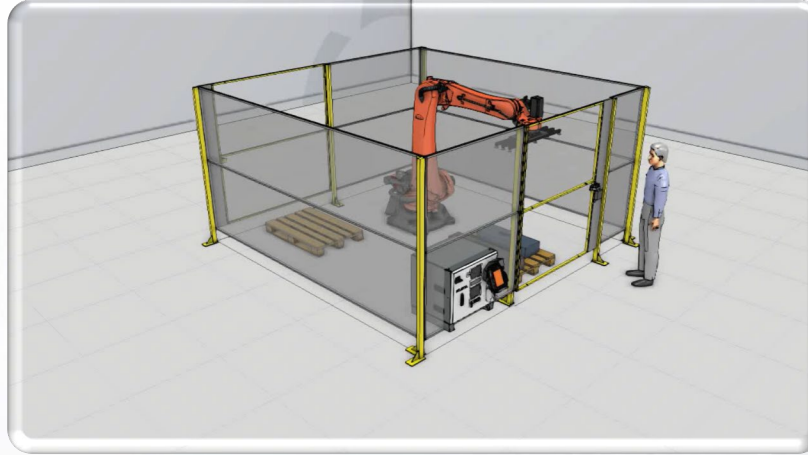
- Safety – **up to 1.3 m/sec.**
- Industrial Robot **possibilities**
- High Speed and Efficiency – **keeps the Safety**
- Heavy Payload – **keeps the Safety**
- Precision and Consistency
- 24/7 Operation
- High-Volume Production
- Integration with Advanced Technologies
- Complex Tasks

So, what to choose



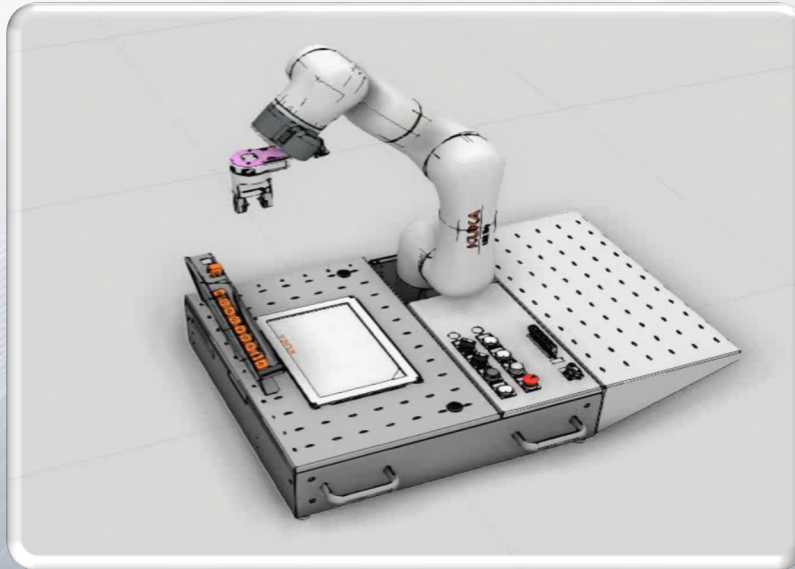
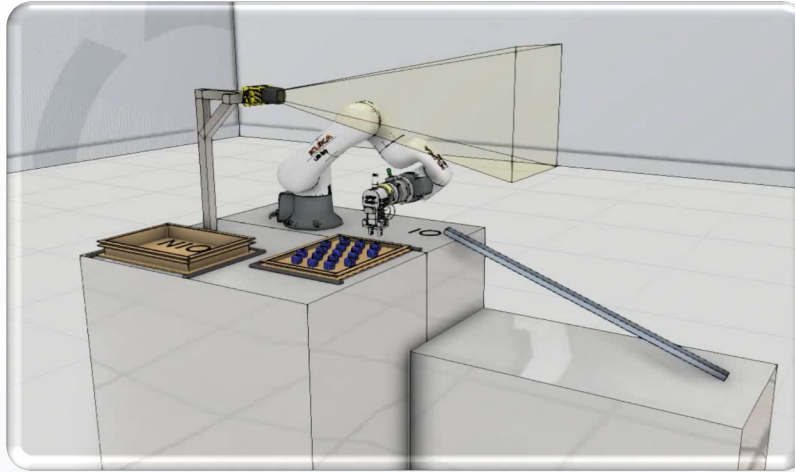
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- Depends on **application**
 - Depends on **how long** do you want your system
 - Depends on your **really needs**
 - Depends on **productivity**
 - Depends on **hours per day**
 - Depends on **budget**
 - Depends on **Safety factors – Real Ones.**
 - **Based on Supplier Transparency**
-

Applications



- High Speed and Efficiency
- Small to Heavy Payload
- Precision and Consistency
- 24/7 Operation
- High-Volume Production
- Integrations
- Complex Tasks

Applications



- Safety
- Easy Programming
- Flexibility and Adaptability
- Cost-Effective Automation
- Compact Size and Easy Integration
- Shorter lifetime 7-8 years





STXiMotion **KUKA**

Thank You!

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