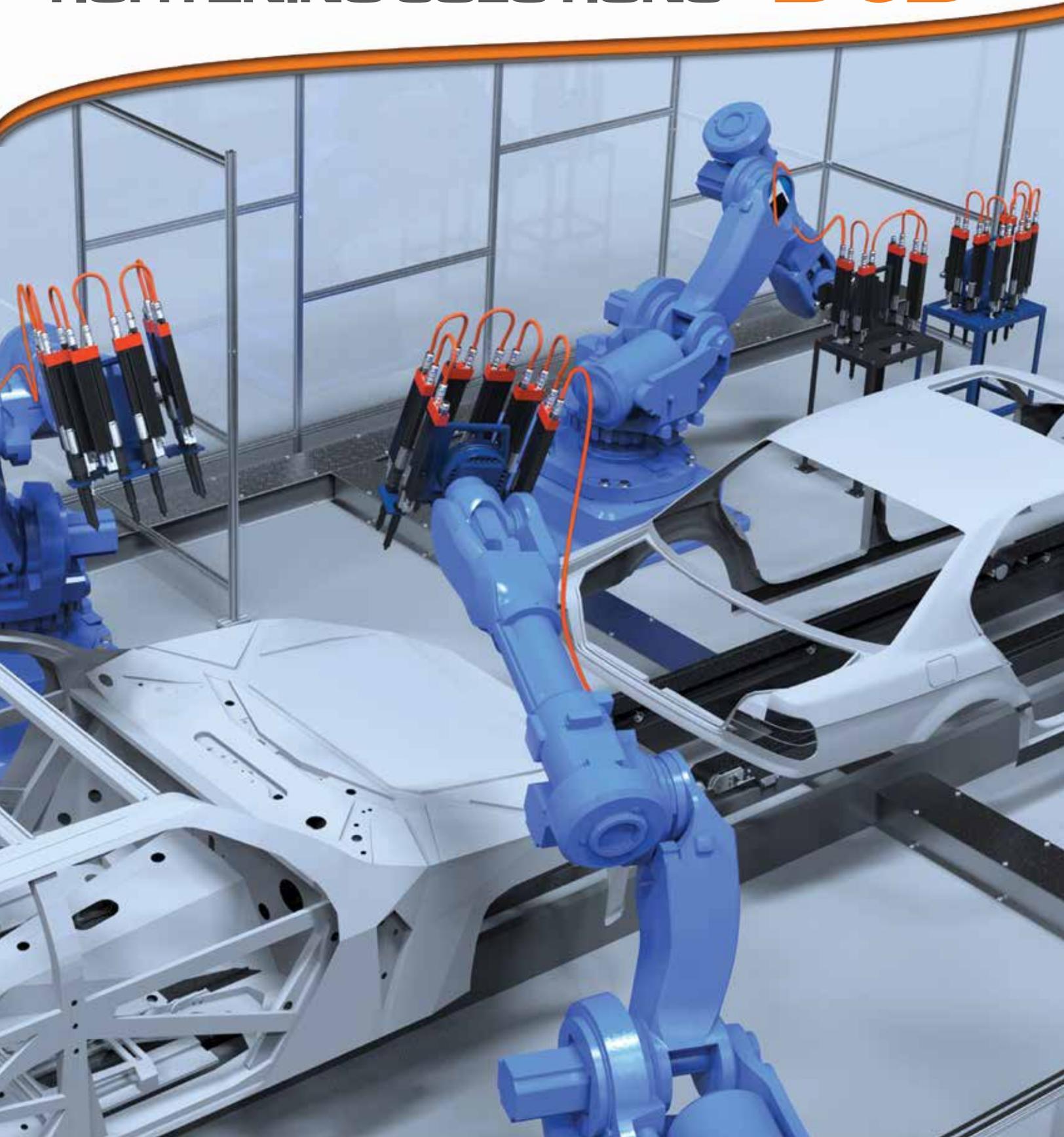


# ULTIMATE ROBOT TIGHTENING SOLUTIONS



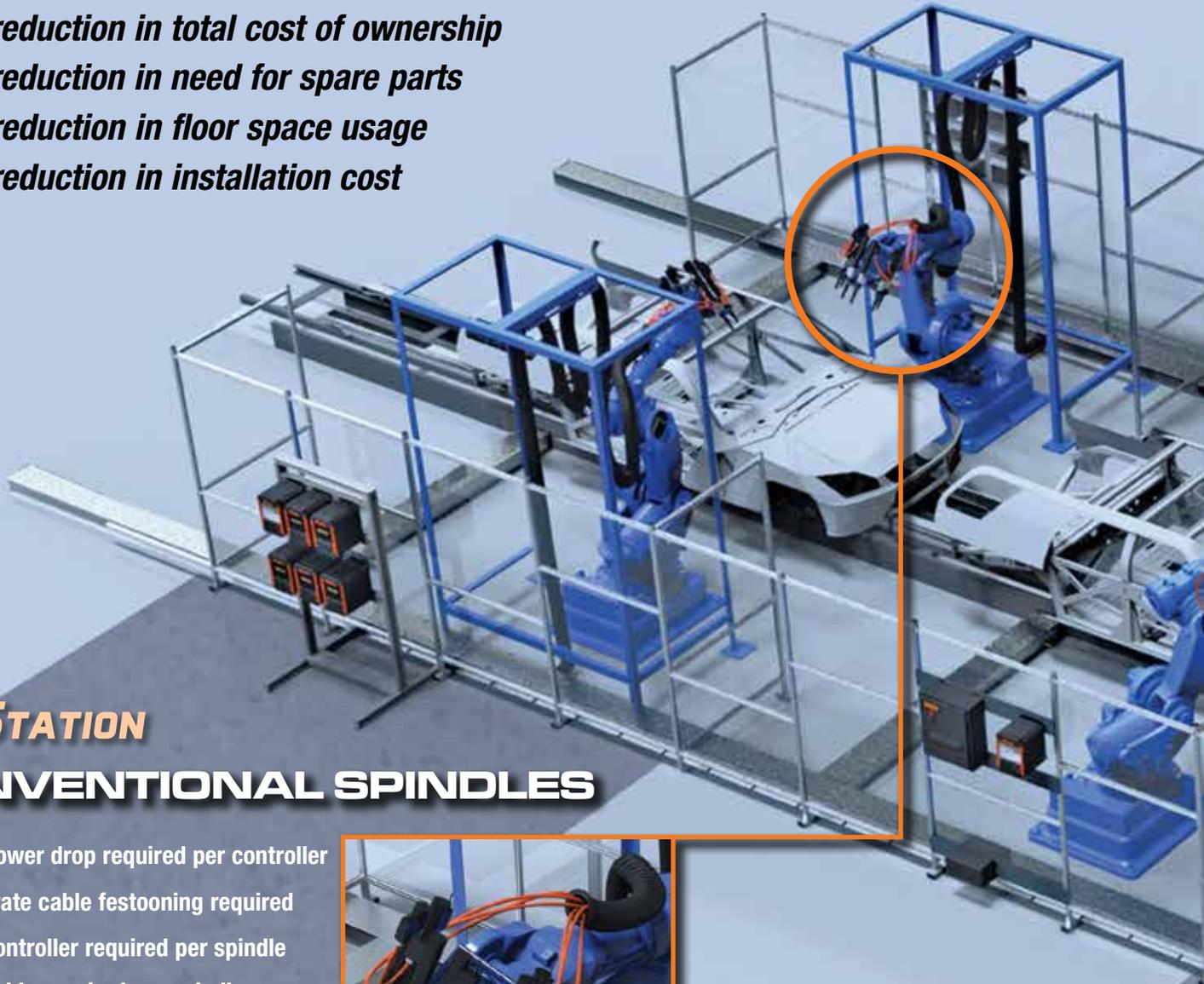
INTELLIGENT SPINDLE SOLUTIONS  
ENABLE HIGHER PRODUCTIVITY

# ULTIMATE ROBOT TIGHTENING SOLUTIONS

## THE VALUE OF INTELLIGENT SPINDLE:

Increase your productivity and reduce your ROI time which provide the following advantages of up to:

- **25% reduction in total cost of ownership**
- **25% reduction in need for spare parts**
- **50% reduction in floor space usage**
- **50% reduction in installation cost**



## 1<sup>ST</sup> STATION CONVENTIONAL SPINDLES

- One power drop required per controller
- Elaborate cable festooning required
- One controller required per spindle
- One cable required per spindle
- Higher total cost of ownership over intelligent spindles



## 2<sup>ND</sup> STATION

### HIGH-PERFORMANCE INTELLIGENT SPINDLE ADVANTAGE



- Single cable for a group of spindles: *Apex Tool Group is the only supplier of this technology*
- One controller for multiple group of spindles
- Simple cable management
- Industry-leading speed
- Simple integration

#### INTEGRATOR BENEFITS

- Quick integration and start-up
- Reduced system complexity
- Simple cable management
- Use robots with smaller pay load capacity



## 3<sup>RD</sup> STATION

### INTELI-SWAP: AN INDUSTRY FIRST

- One controller for multiple groups of spindles
- High flexibility and ease of reuse
- Rapid plug-and-play
- Reduced floor space



**INTELLIGENT SPINDLE SOLUTIONS ENABLE HIGHER PRODUCTIVITY.**

# ULTIMATE ROBOT TIGHTENING SOLUTIONS



## INTELI-SWAP AN INDUSTRY FIRST:

Our patented technology in conjunction with an automatic tool changer enables rapid changing from one group of spindles to another using a common controller.

This results in:

- *minimal floor space consumption*
- *reduced capital equipment cost*
- *lower total cost of ownership*
- *improved productivity*
- *increased flexibility*

## SYSTEM STRUCTURE

### WORLD-CLASS FIXTURED SPINDLES

TORQUE RANGE FROM 5-2800 NM

We offer a complete portfolio of wireless, conventional, and intelligent spindles, that are controlled by the Cleco® mPro400 global controller.



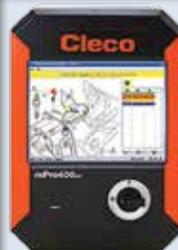
Mini intelligent spindle

Intelligent spindles with simple cable management

### CABLES:



- ◆ Patented architecture allows a group of spindles to be controlled by a single cable
- ◆ Super high-flex field cables have been tested to **7 million cycles** without failure
- ◆ Can easily be used on robots with hollow or solid wrist to the EOAT



### mPRO400 CONTROLLER:

- ◆ The mPRO400 global controller is able to control all of our tools, spindles, and torque wrenches
- ◆ mPRO400 can handle up to 32 spindles from a single controller
- ◆ Compact foot print that saves on floor space