

The Atlas Copco logo is displayed in white, italicized serif font within a teal rectangular box. The background of the entire image is a vibrant blue with abstract circular patterns and technical drawings. A large industrial robot arm is the central focus, with a yellow section at its base and a grey section above. To the left, a control panel with a laptop is visible. In the bottom right, two grey control cabinets are shown, one labeled 'HENROB'. The overall aesthetic is modern and industrial.

# Unity platform

Increased efficiency and functionality  
for joining with your Henrob  
self-pierce riveting systems



# Unity

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# Unity platform

With Atlas Copco equipment and rivets, the self-pierce riveting (SPR) process combines high joint integrity with rapid assembly time for advanced and lightweight materials.

Unity is the improved Henrob product line that ensures reliable and flexible production, fulfilling high quality demands while reducing cycle times and maintenance.

Compatible with Industry 4.0 and data-driven services, Unity enables an integrated SPR system that can be relied on, both today and for the future.



## Improved efficiency

Repeatable high productivity and quality while improving rivet cycle time



## Enhanced user experience

Superior design and accessibility of system components for easy and quick usability & serviceability



## Reduced total cost of ownership

Error elimination and reduced downtimes combined with energy efficiency improves the bottom line



*Your globalized  
self-pierce riveting solution*





Ideal flexibility for global platform commonizing strategies across vehicle lines



Advanced rivet design for joining new materials with increased strength and lighter weight



Factory data collection and analysis to improve productivity, quality and reduce costs

Full adoption of Atlas Copco branding for physical equipment and software interfaces

Magazine with 30% faster cycle time and lower, cost-saving air requirements

New setter reduces life cycle costs by 35%, doubling the life between major cycles

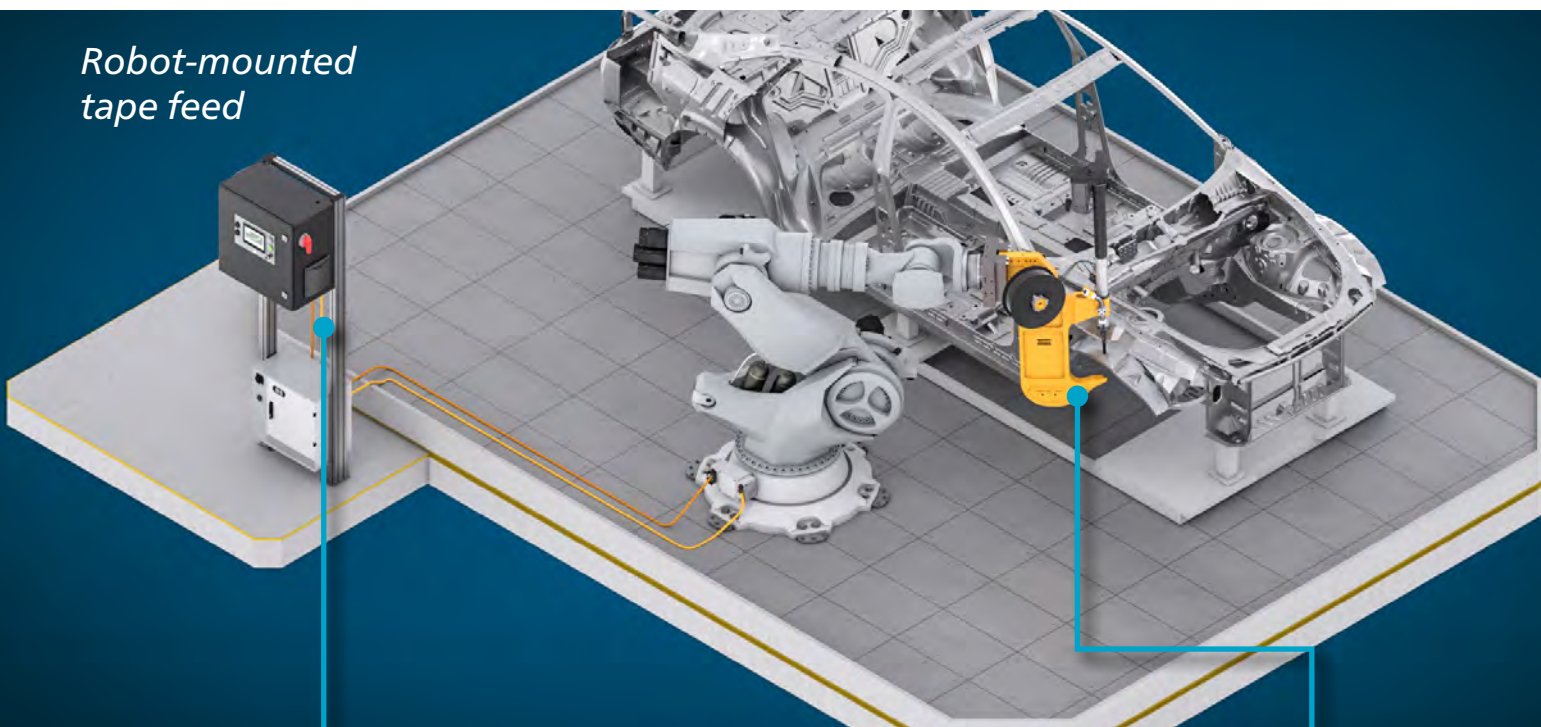
Controller HMI with multiple languages including Asian for global continuity

Scalable data architecture for flexibility in all manufacturing environments

# Unity platform system arrangements

## Automated tape feed systems

*Robot-mounted  
tape feed*

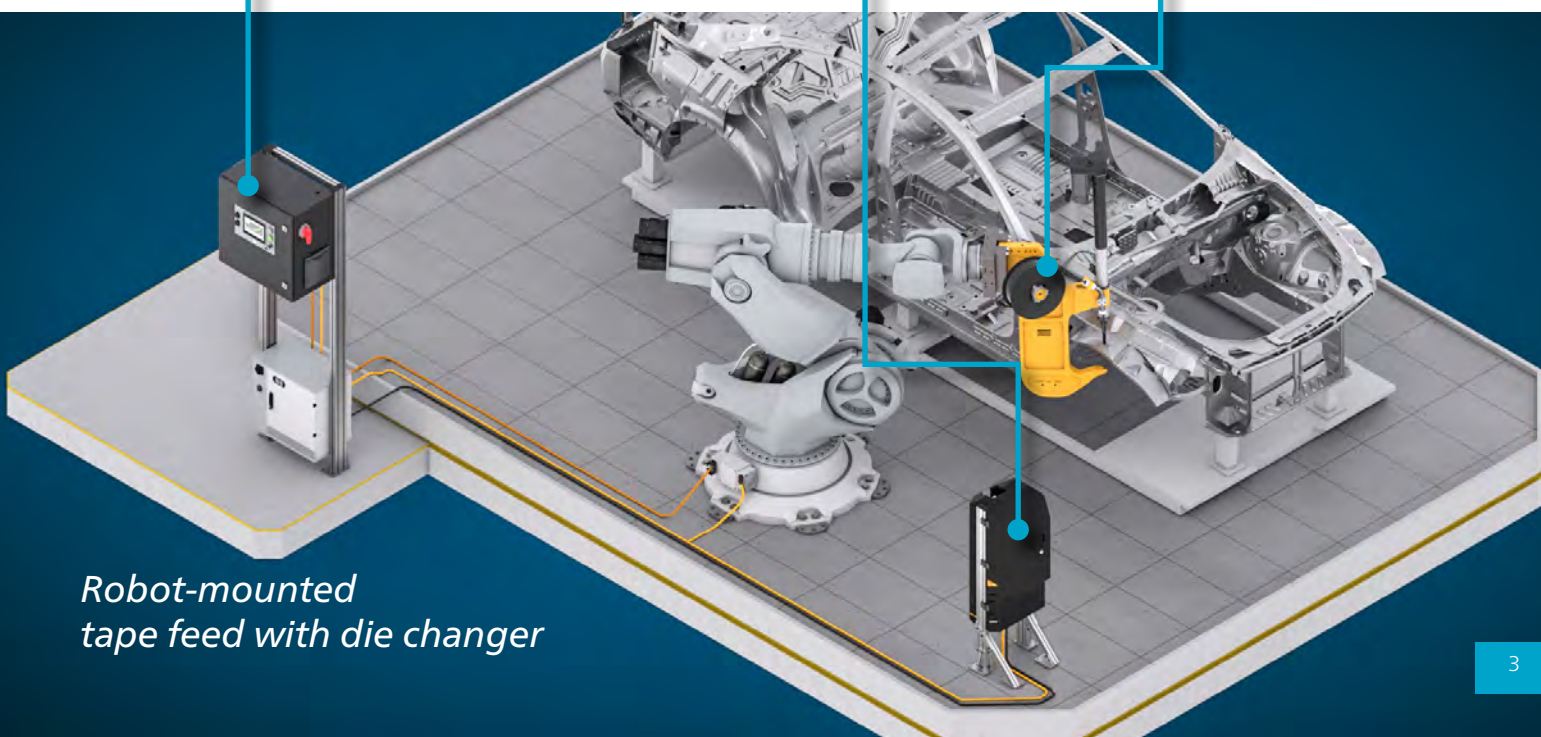


Control  
panel

Die  
changer

Tape feed rivet  
setting system on robot

*Robot-mounted  
tape feed with die changer*

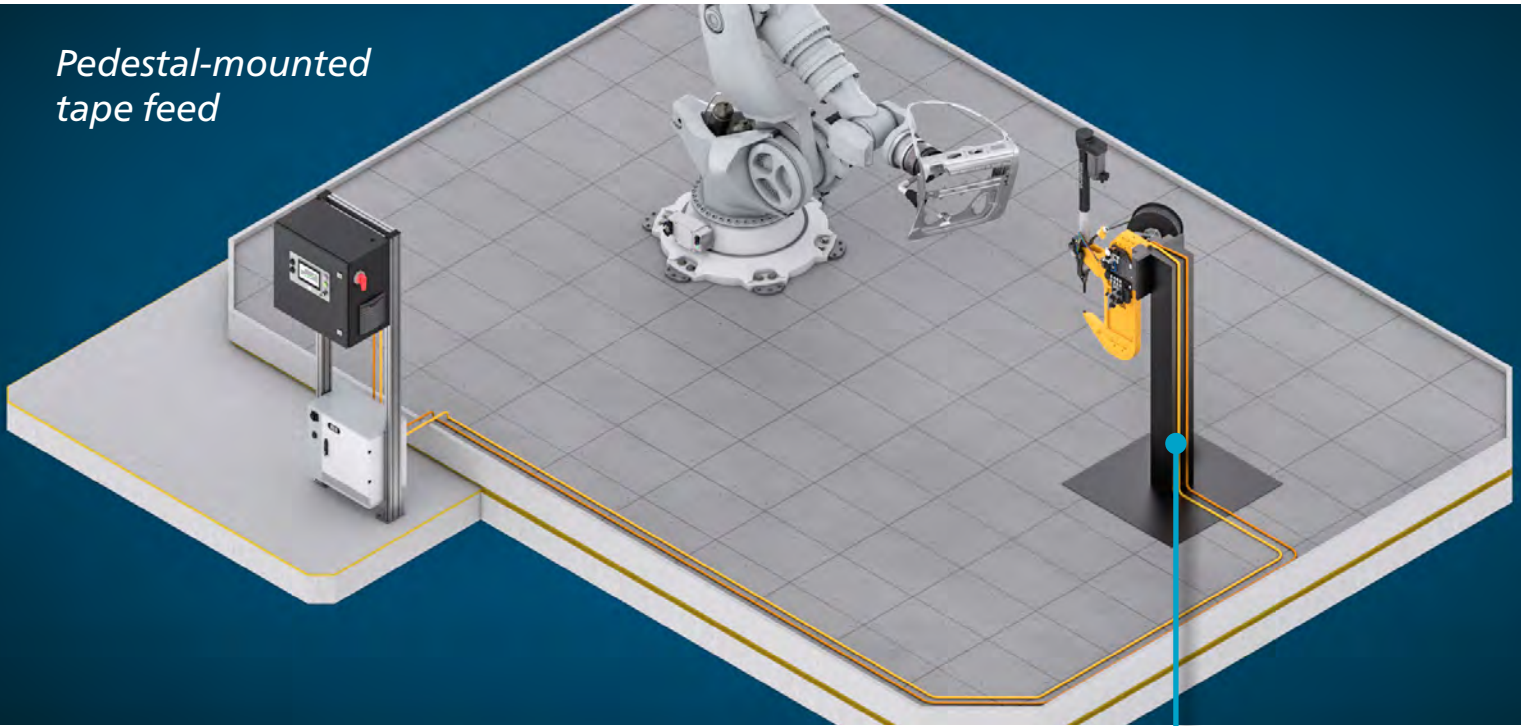




# Unity platform system arrangements

## Automated feed systems

*Pedestal-mounted  
tape feed*



Tape feed rivet setting system on pedestal

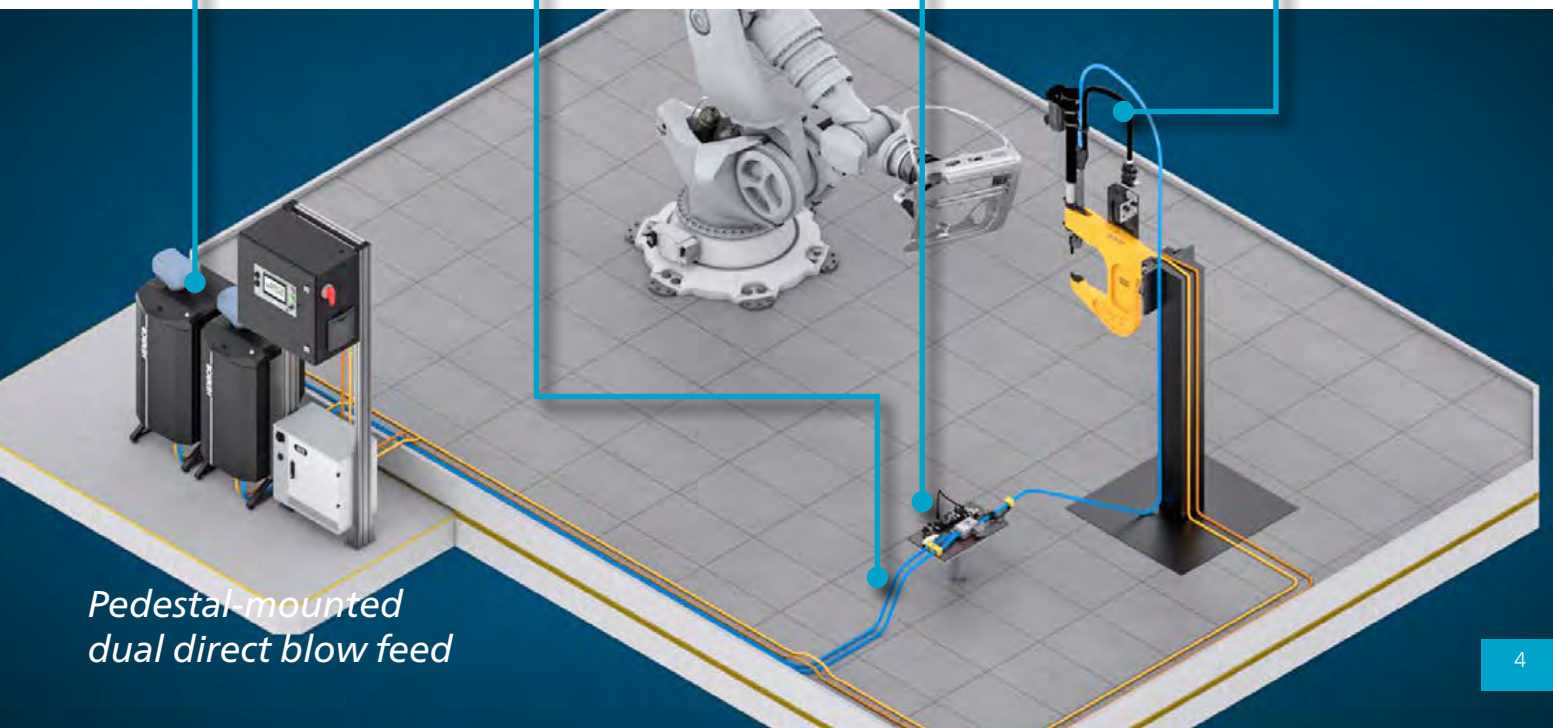
Poka-yoke rivet feeders

T-tube

Rivet shuttle

Direct blow feed rivet setting system on pedestal

*Pedestal-mounted  
dual direct blow feed*

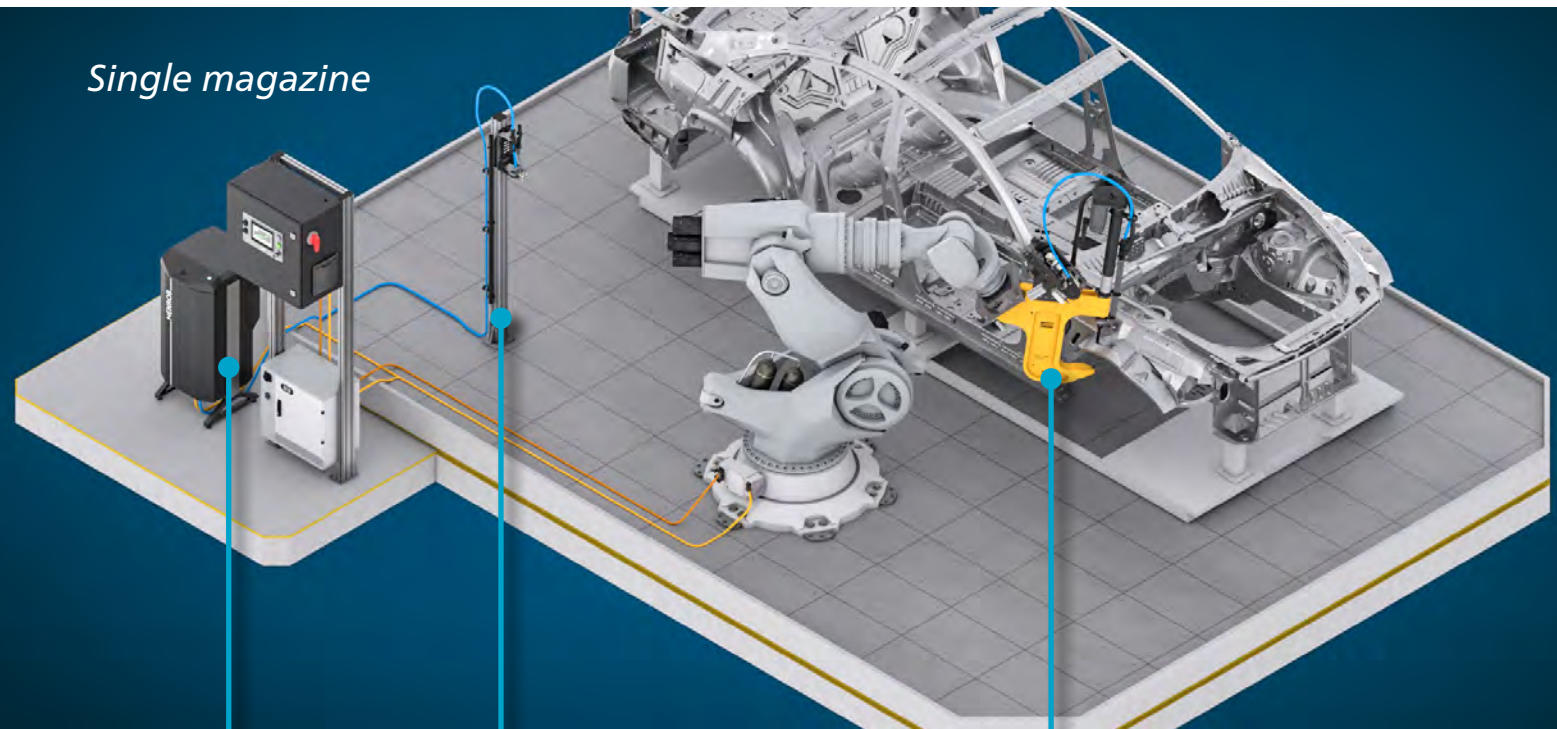




# Unity platform system arrangements

## Automated magazine feed systems

*Single magazine*



Rivet feeder with RLC

Rivet fill stand

Single magazine rivet setting system on robot

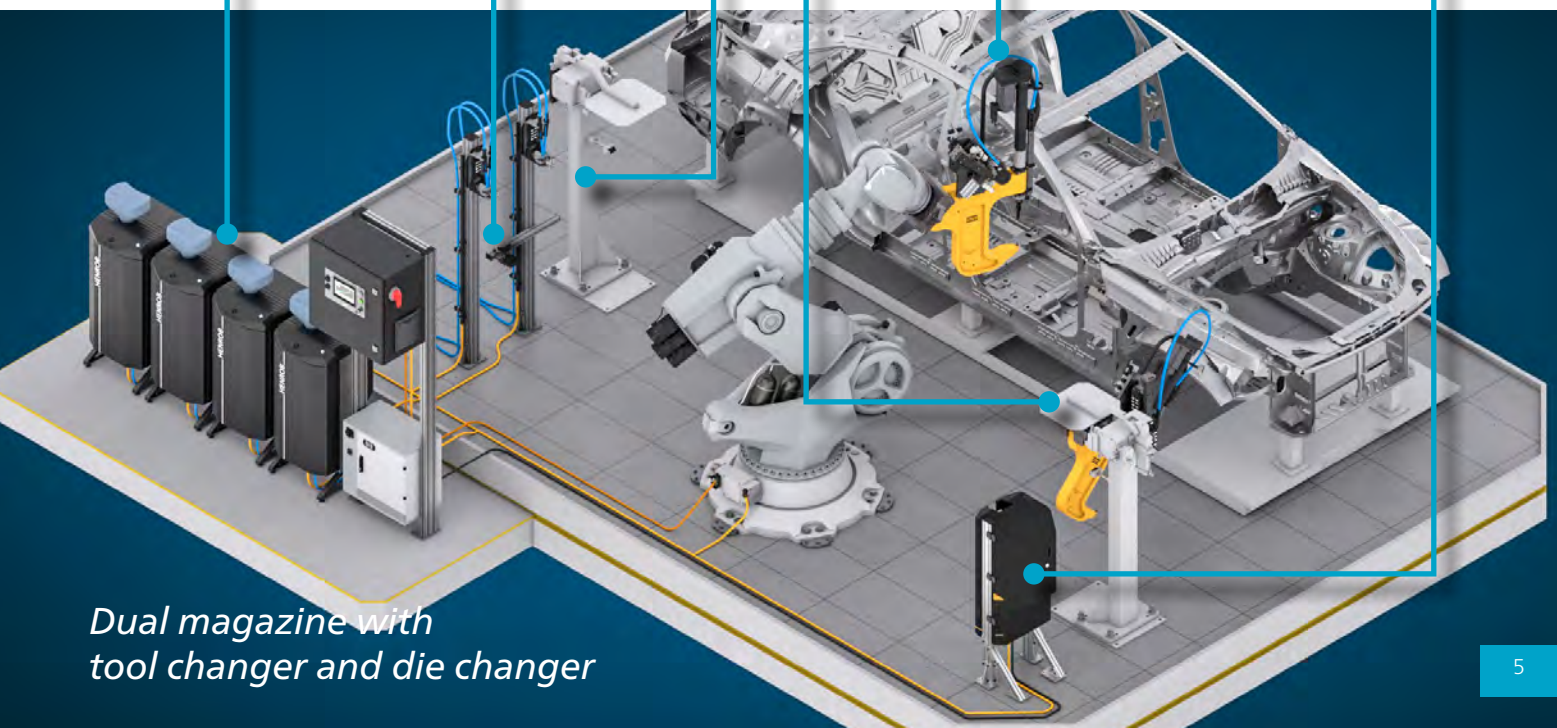
Poka-yoke rivet feeders

Die check camera

Tool changer

Dual magazine rivet setting system on robot

Die changer



*Dual magazine with tool changer and die changer*

# Rivet setting system modules

## Tool layout and modules

### Magazine assembly

Dual tracks: 30 rivets per track = 60 rivets per magazine

Suitable for full range of typical automotive rivets

Reduced compressed air supply needs of only 4 bar (60 psi)

### Mounting bracket

Safe loading

Adaptors for all major robot manufacturers

Can be mounted at rear, top, front, or angled

Standard pedestal pattern

### C-frame

Designed to accept the loads of the setter

No orientation limits

Standard library tools available as well as custom designed products

### Feeder assembly

Stores the rivet just before it is inserted

Quick change out reduces production line downtime during maintenance

Probes and sensors detect rivet presence and correct positioning

### Die post

Houses the upsetting die

Modular design for lengths required

L-shaped and rocket-shaped posts according to system needs

### G1.6 servo setter

Doubles the life between major services (4 million cycles)

Higher productivity energy-based systems mean more rivets per cycle time

Setting force up to 85kN









# Rivet feeding: Loose feed systems

Robot and pedestal mounted direct blow and magazine feed systems

Rivets are supplied loose in bags or in poka-yoke bottles and are fed into the rivet setter down a T-tube from the bulk rivet feeder using compressed air. This avoids having to manage waste tape in high volume automated applications as well as the downtime from replenishing rivets.

Magazine feed systems offer quick continuous operation with up to two different rivet types. Each magazine has two tracks that can hold 30 rivets each, for a total of 60 rivets per load. This flexibility allows for the most efficient use of floor space and cycle times.





## Bulk rivet feeder with rivet length checker

The standard rivet feeder includes a rivet length checker (RLC). In the unlikely event that the wrong rivet is loaded, the RLC detects and disposes of the wrong rivet before it reaches the setter.

Capacity of up to 10,000 rivets



3mm



5mm

4

bar system  
60 psi

## Poka-yoke bulk rivet feeder

This configuration includes a bowl, hopper, and a RFID tagged poka-yoke bottle, which provides error-proofing and continuous production.

Capacity of up to 80,000 rivets



# Loose feed bulk feeders

Scan here for a  
brief animation  
on PY feeder



# Loose rivet feed equipment



## Rivet fill stands

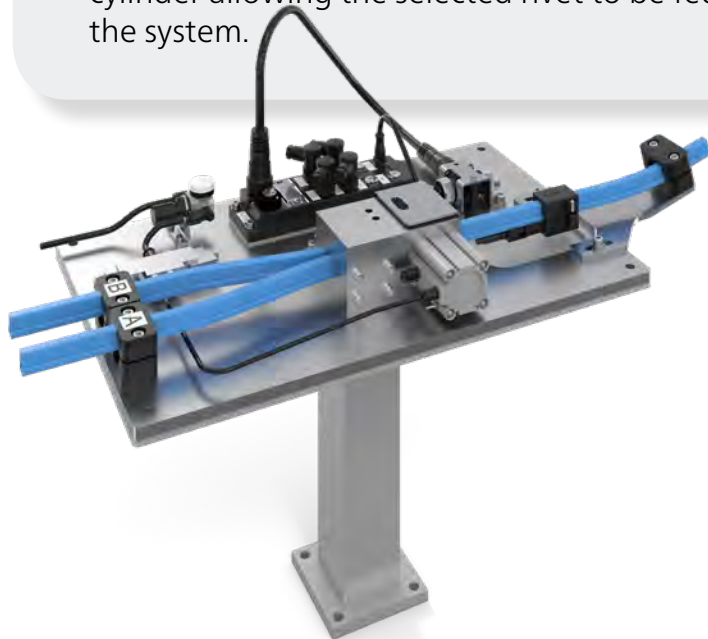
The rivet fill stand facilitates the transfer of rivets from the bulk feeder to the magazine assembly mounted on the riveting system. It is comprised of the *rivet fill support stand*, bolted to the floor, and the *rivet fill docking station*, which allows the rivets to pass through.

Rivets are blown with compressed air from the T-tube, through the rivet fill stand into the magazine assembly. Two different rivets of the same nominal diameter can be blown through the assembly.

## Rivet shuttles

Rivet shuttle plates allow two different rivet types of the same diameter to be fed to a pedestal mounted riveting system.

In this 2-to-1 option, two bulk feeders supply rivets when requested. A gate is actuated by a pneumatic cylinder allowing the selected rivet to be fed into the system.



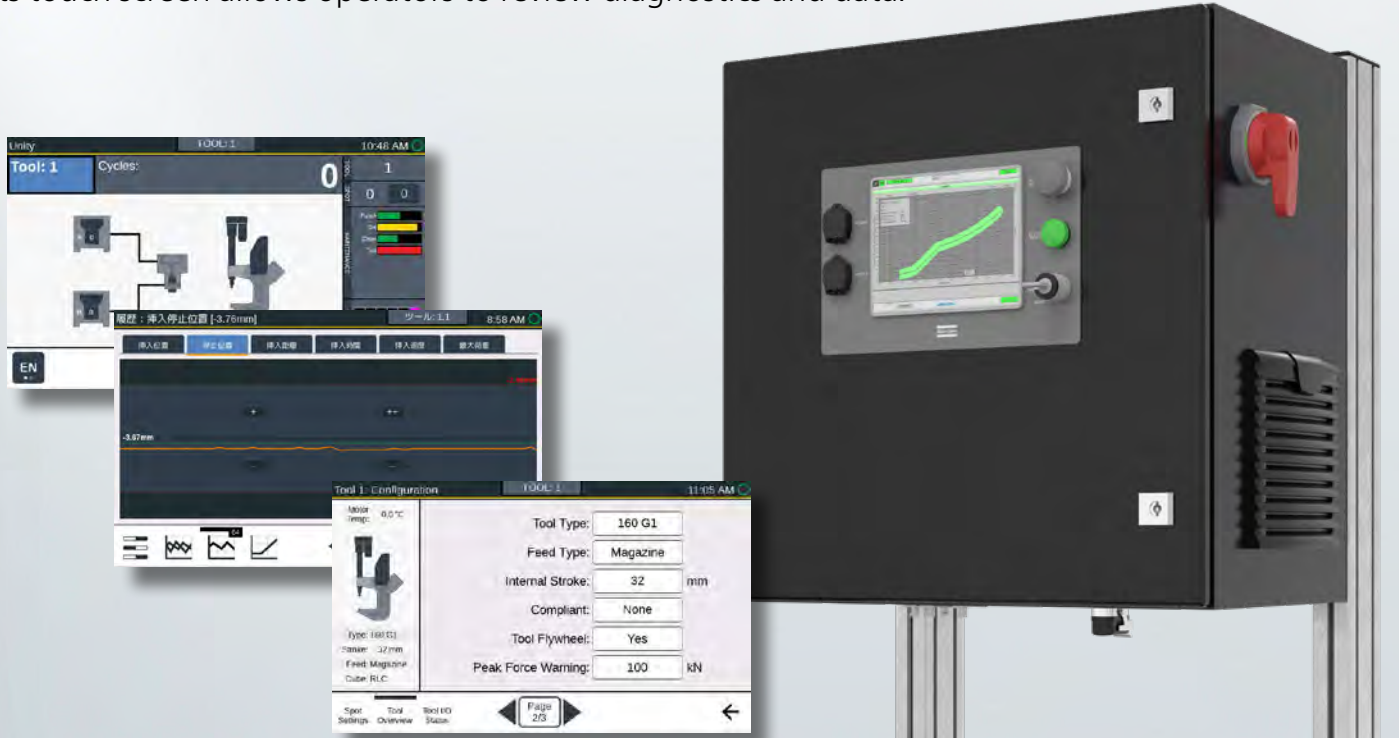


# Control panel with Unity Data Point

The control panel is the electronic interface between customer robots or production cell controller. It also communicates with other ancillary devices as well as providing the signal to control the rivet insertion process.

Designed for all standard system layouts and multi-communication protocols, the Unity control panel reduces complexity and offers a solution that fits a complete production line.

The improved HMI with multi-language, including Asian languages, enhances the global usability. Its touch screen allows operators to review diagnostics and data.



## Energy retrieving

The panel can be fitted with a capacitive module that recovers electrical energy during the riveting cycle. This offers a reduction of 25% in electrical consumption during the riveting cycle.

Depending on the application, electrical consumption can decrease from 0.85Wh per rivet to .68Wh with this feature.

### Input power

380-480 VAC  
50/60Hz  
13A

### Comm

DeviceNet control signals  
24VDC supply

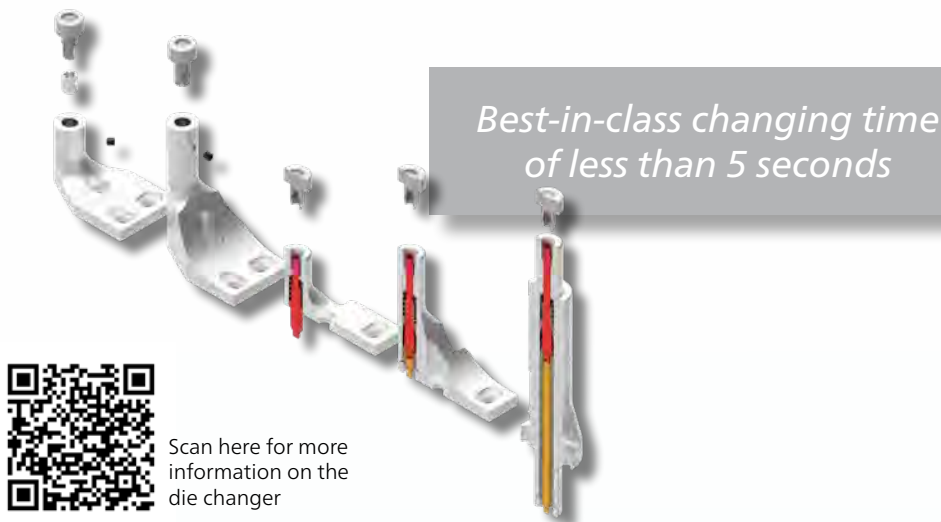
Ethernet IP /  
Profinet

## Ancillaries

### Die changer

The automatic die changer has been developed to allow a rivet setting system to change to an alternative to improve the riveting process.

The 1-for-7 system has a rotating carousel with capacity for 7 different dies and up to 5 spare dies per each type. A 1-for-1 version is available to give a low-investment, process change opportunity.



Scan here for more information on the die changer



### Die check camera



*Used between cycles, this 0.5 second check gives you assurance the die will be secure the next time you use the setting equipment*

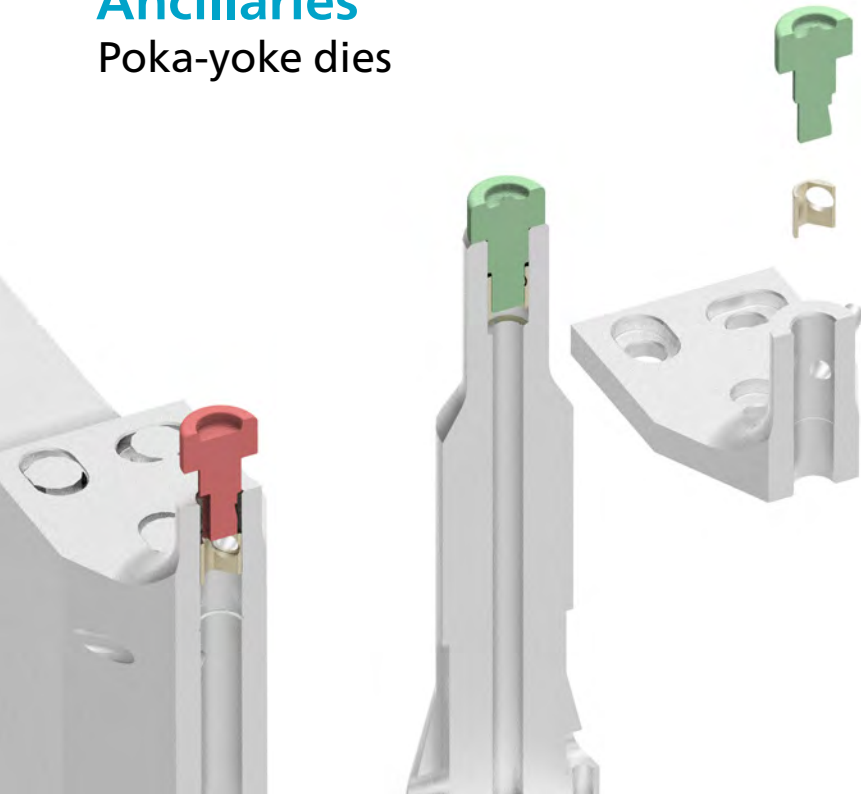
The Die check camera reliably and automatically detects broken dies to insure your riveting assembly continues producing quality joints. The image sensor takes a snapshot of the upsetting die currently in use and compares its integrity to a previously taught good condition.

Compatible with the latest Unity platform as well as most previous platforms, it allows flexibility and forward functionality of your current and future SPR systems.



## Ancillaries

### Poka-yoke dies



Prevents an incorrect die being fitted to the rivet setting system

3-digit code on sleeve and die

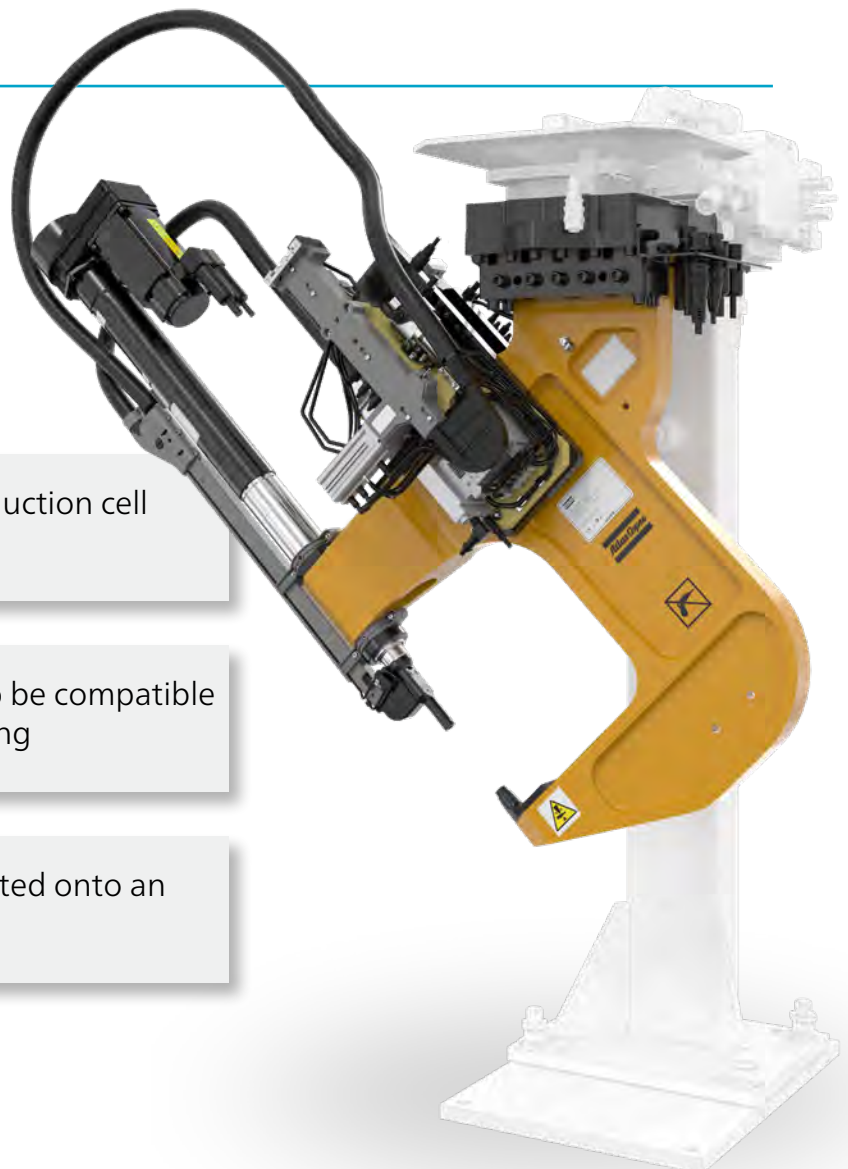
Sleeve with a unique key configuration is bonded into C-frame / die post. Corresponding keyway machined into the correct die shank

## Tool changer

Increases flexibility within the production cell

Varying adaptor plates available to be compatible with market leaders in tool changing

Tool changers can often be retrofitted onto an existing application



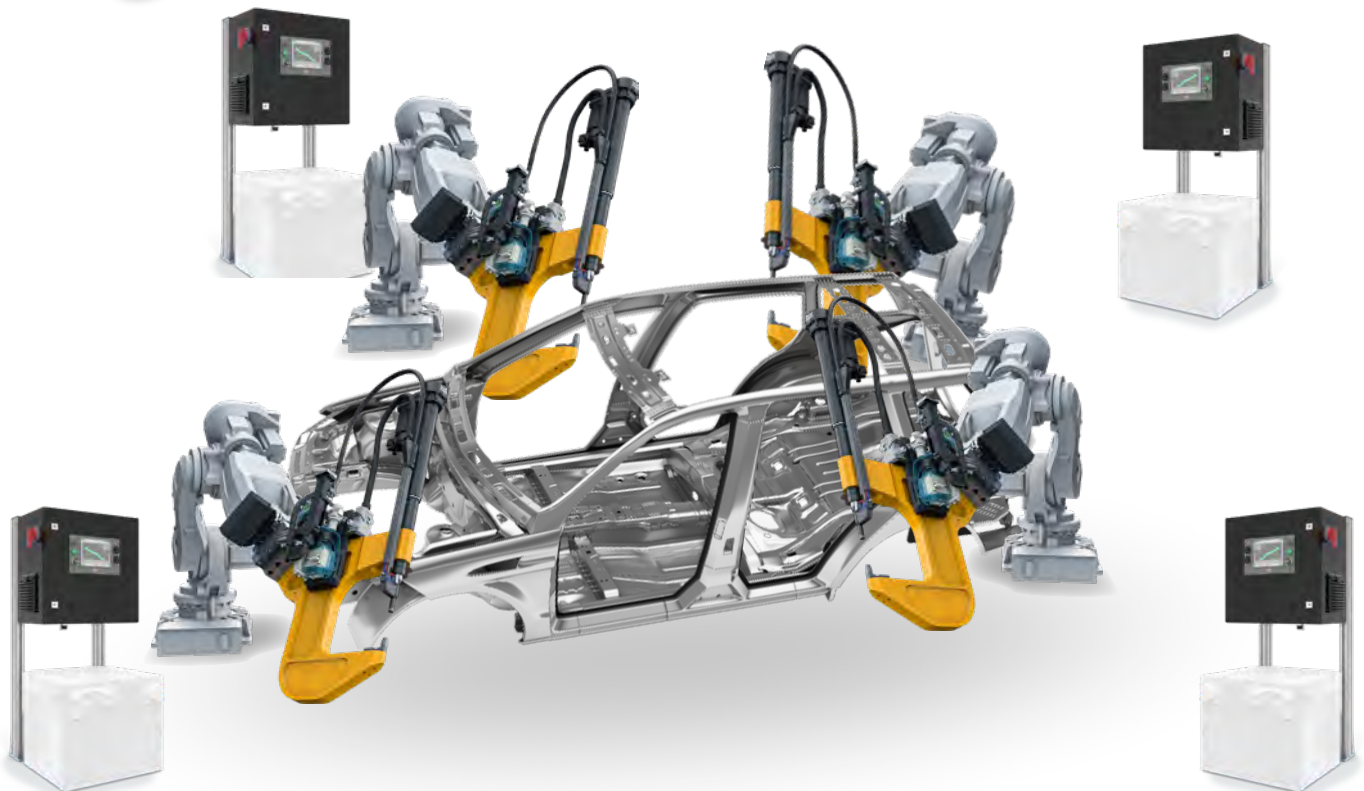
# Unity platform remote data

*Designed with data-driven service packages in mind*

Data collection and analysis by Unity remote data software improves uptime and allows for scalable architecture. Unity will continue to develop to fully support DDS packages including:

- Remote Expert
- Data Driven Maintenance
- Data Driven Efficiency Optimization

We can optimize your processes and settings to ensure secure system connections and to interpret or evaluate collected data. Root causes can be identified and improvement actions can be indicated through interfaces that monitor your success.





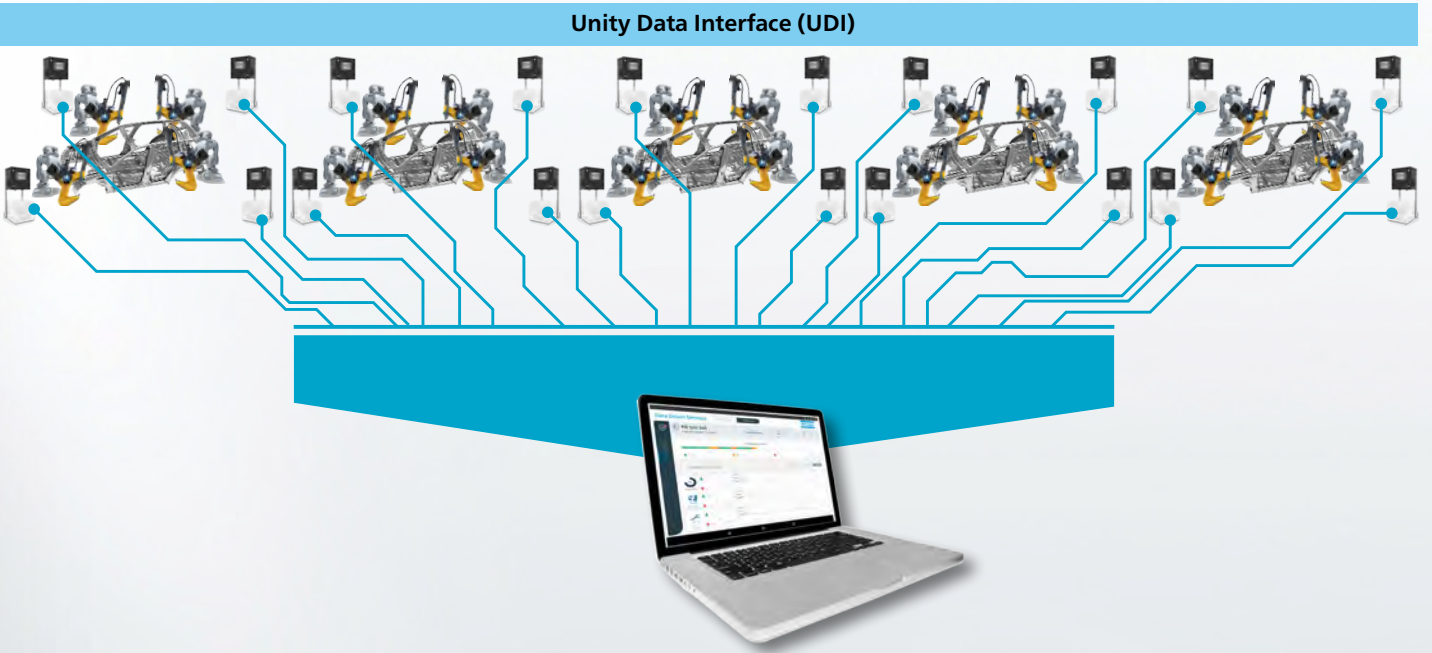
Data-driven services optimize your processes by tracking each riveted joint and data-logging process and equipment diagnostics. It provides detailed performance data on how the production line is running and where to focus maintenance resources.

System back-up features allow a rapid upload of system data to support emergencies on the production line. Implemented changes can be tracked.



# Scalable architecture

Scalable architecture



Data collection and analysis from the Unity Data Interface is facilitated via:



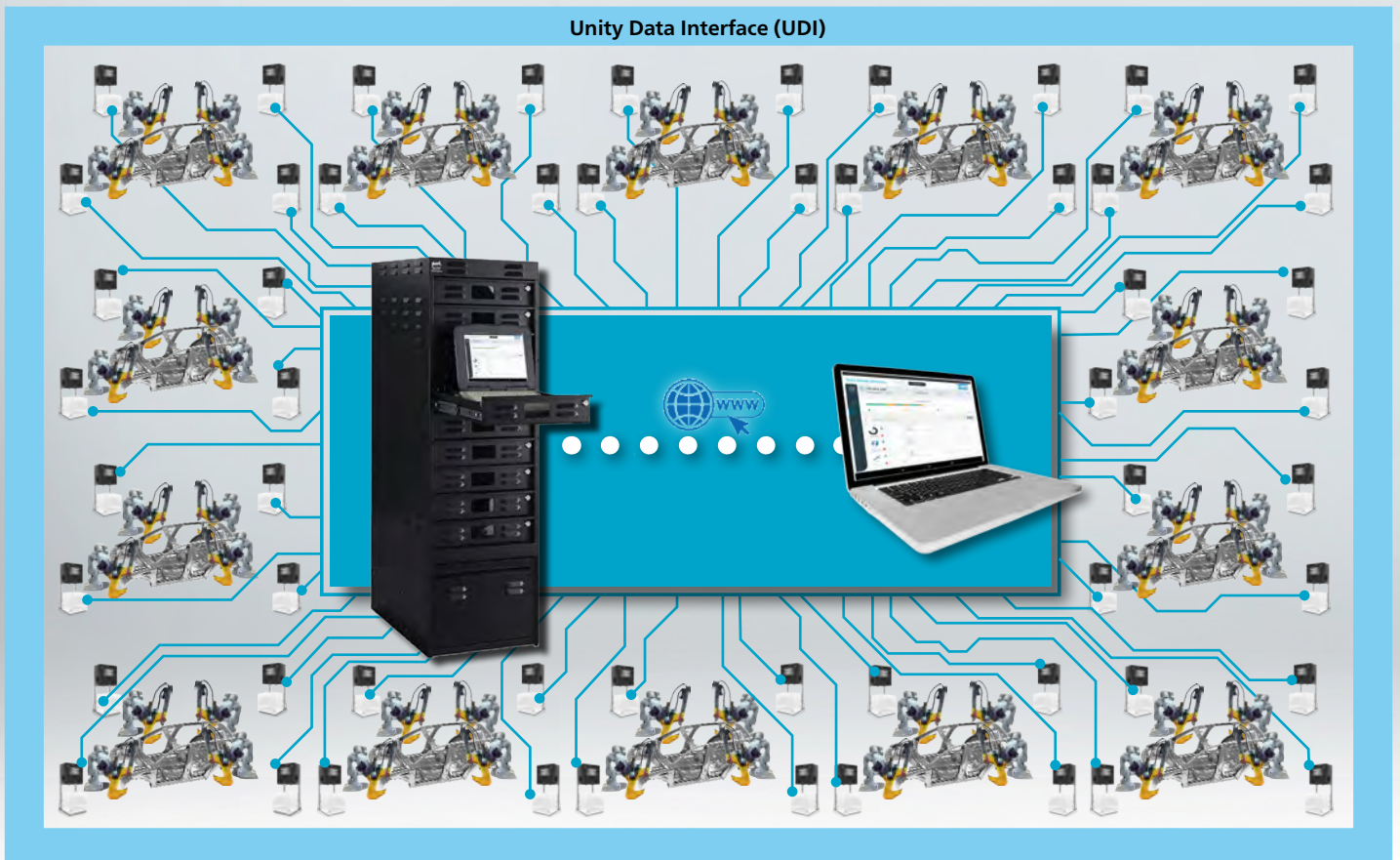
ToolsNet 8



Data Collection Tool



Atlas Copco Service Portal





# Unity



*Your globalized  
self-pierce riveting solution*



Improved efficiency



Enhanced user  
experience



Reduced total cost of  
ownership

## *Industrial Assembly Solutions Customer Centers:*

Argentina  
Brazil  
Central Southwest Europe  
China  
Eastern Europe  
India  
Japan  
Mexico

Russia  
South Korea  
Southeast Asia  
Spain  
Sweden  
Turkey  
United Kingdom  
United States

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