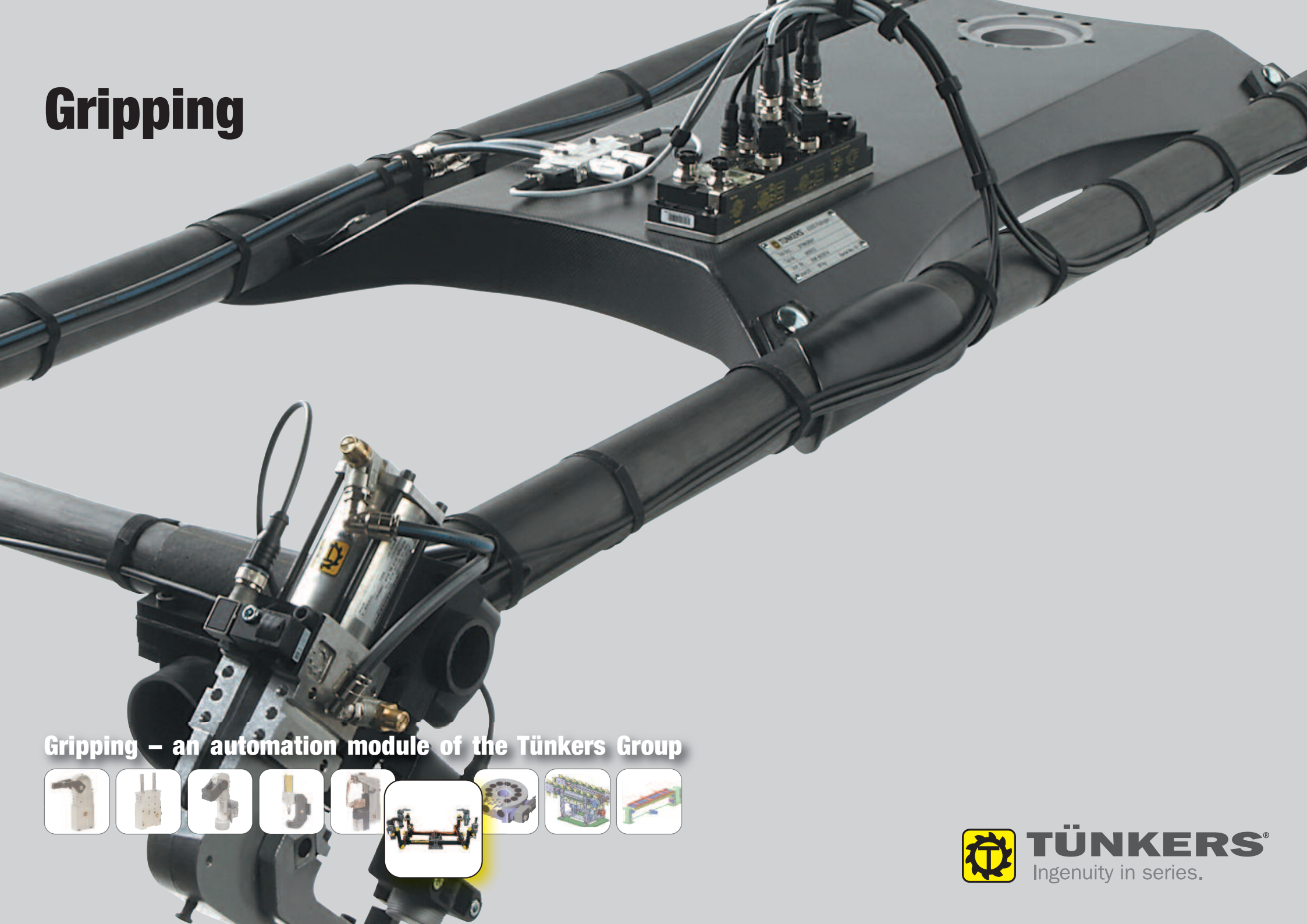


Gripping



Gripping – an automation module of the TüNKERS Group



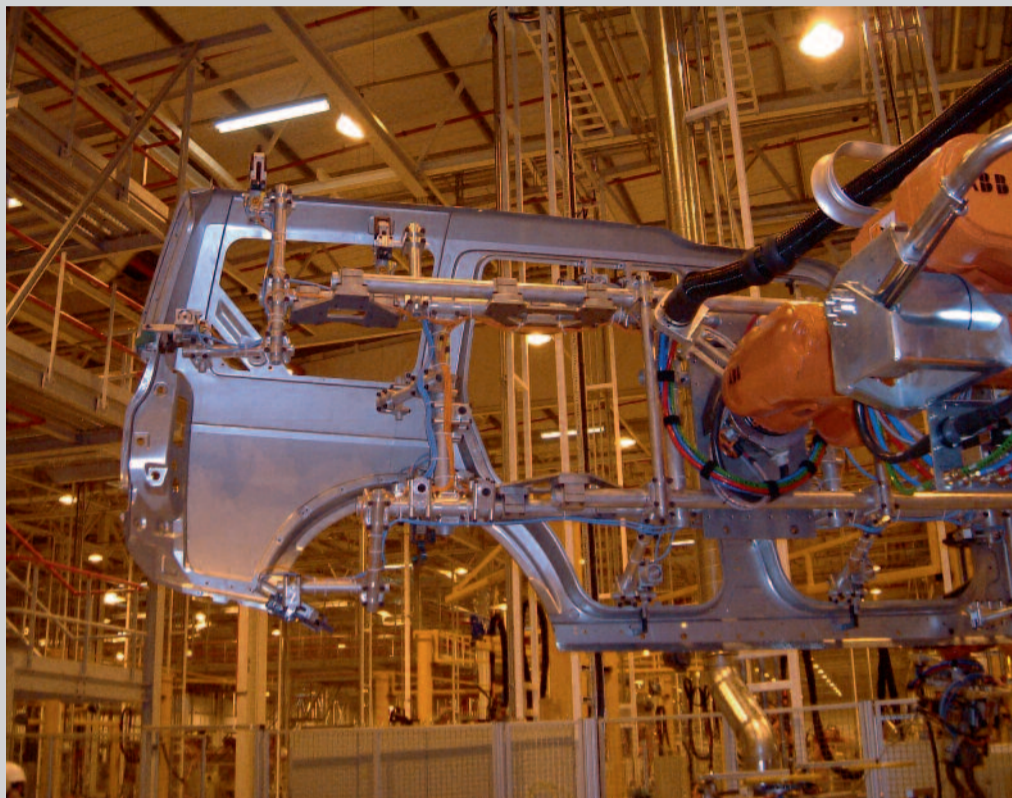
Gripper systems – the arms and hands of the industrial robot

Robotic gripper systems have become a standard in today's automotive body assembly lines. With increased performance, robotic handling has replaced conventional transport systems like shuttle and conveyor systems.

They do not only move small and add-on parts, but also side panels, complete underbody groups and - for the first time now - even entire car bodies.

In special designs, robotic grippers are now also used for processes including handling procedures using welding guns, glueing or clinching units and in some cases, they even have geometric functions.

While until a couple of years ago, steel welding frames used to be the backbone of robotic grippers, modular systems are the state of the art now.



Why modular gripper systems?

Maintenance:

- No need for replacement systems as those commonly used for welded gripper systems
- Quick replacement of components

Weight:

- Lightweight precision circular tubes made from aluminium, thin-walled steel semi-finished products or carbon
- Gripper weight optimised with a view to the robot class

Flexibility:

- Quick adaptation of component modifications at short notice
- Combination of the various circular tube gripper systems possible → same tube diameter and offsets of the clips

Delivery times:

- Worldwide availability
- Low number of parts

Optimisation:

- Weight optimisation thanks to carbon components
- Braces and supplements may be retrofitted easily

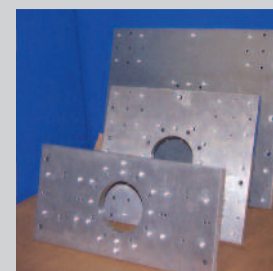
Costs:

- Standardised 3D-CAD libraries - design is merely a «composition»
- Low number of special parts required
- Series production with a high number of items at low prices

Assemblies in modular gripper systems

1. Robot adapter plate

Aluminium or composite plate in various material thicknesses and dimensions, adapted to the gripper size



2. Modular base frame

Responsible for the overall rigidity of the system. Available as circular tube, square tube or profile system



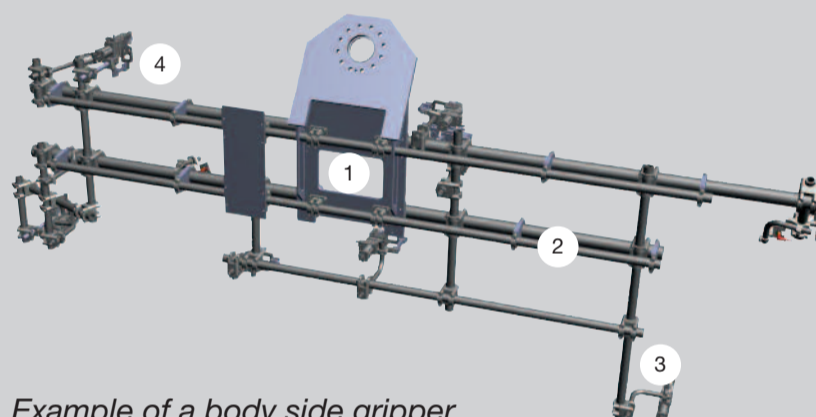
3. Connections

Extensions / gripper arms for connecting actors and pins to the base frame



4. Functional assemblies

Lightweight Tünkers actuators provide for a dynamic approach



Example of a body side gripper

Why modular gripper systems from Tünkers?

With a total of five production plants for grippers worldwide and about 14,000 gripper systems produced so far, TÜNKERS is a strong partner!

Service offer

- We support you in the implementation of your projects
- Consulting with regard to choosing the right gripper system
- Constructive support for new grippers or with regard to an optimised structure
- Development of gripper components

For an initial contact, please send an e-mail to :

gripper@tuenkers.de

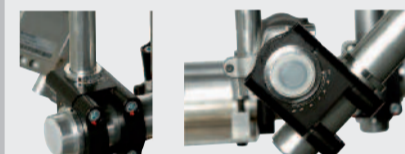
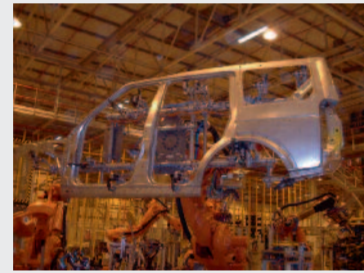
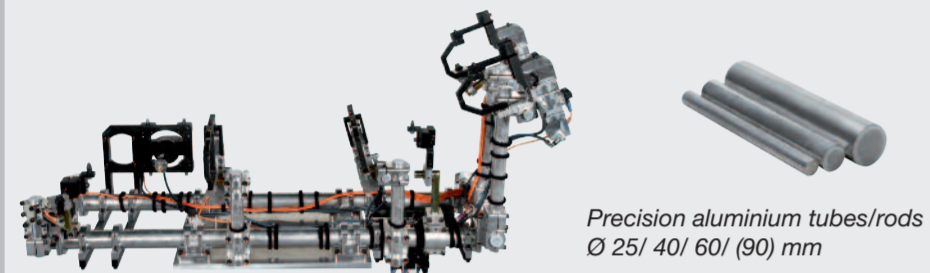
Gripping

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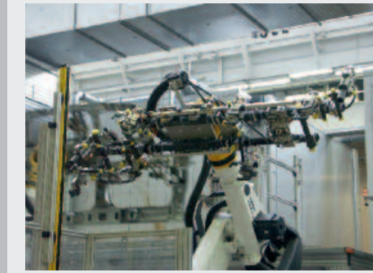
Modular circular tube system

- Basic system is composed of precision aluminium tubes/rods with diameters of 25/ 40/ 60/ (90) mm
- High geometric flexibility → Optimum accessibility of components → Positioning in all directions possible
- Same offset between aluminium and carbon clips
- Safety in case of a crash → Twisting of clips without destruction of the individual elements
- Reproducibility → Scale on GSK clips or optional reference borings



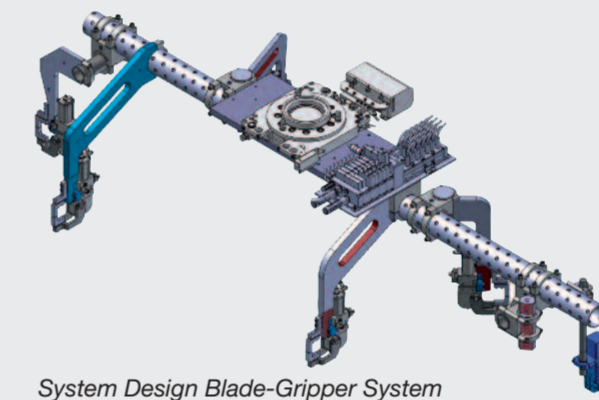
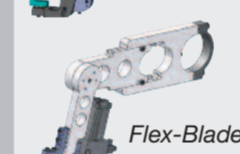
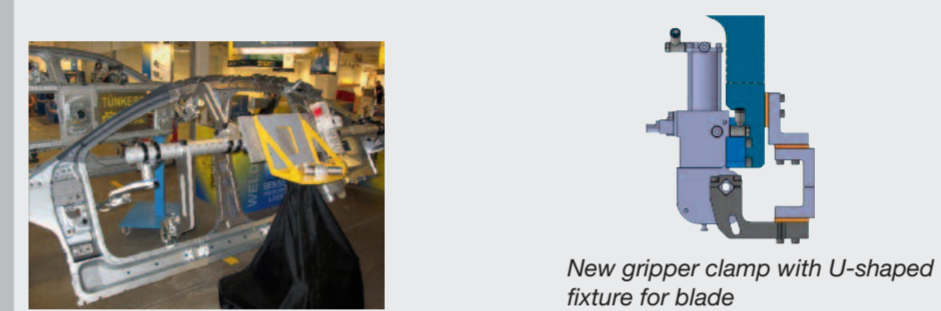
Modular carbon tube system

- System is based on precision carbon tubes with diameters of 25/ 40/ 60 mm
- Combination with and integration into existing gripper systems possible → identical offset between aluminium and carbon clips
- Saves weight → Utilisation of a lower robot class
- Compared to the aluminium system: weight reduction -40%, price difference +30%



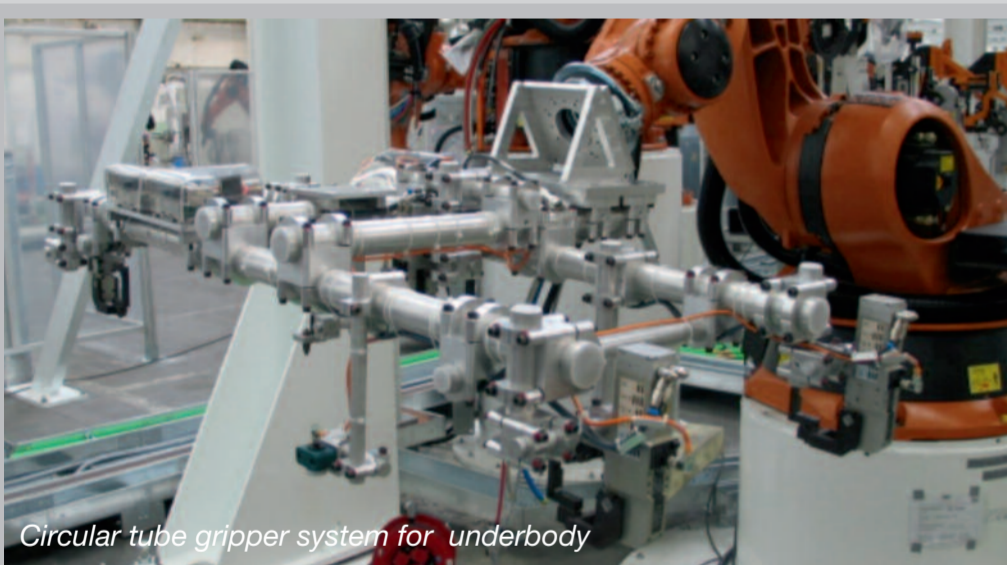
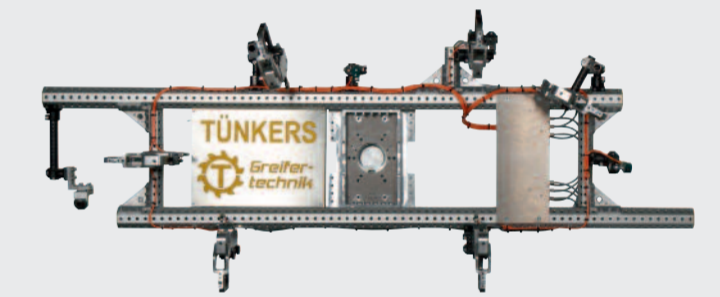
Blade gripper system

- Based on a grid aluminium tube Ø 90 mm
- Integrated hole pattern for reproducible position
- Narrow "blade" connections for clamps



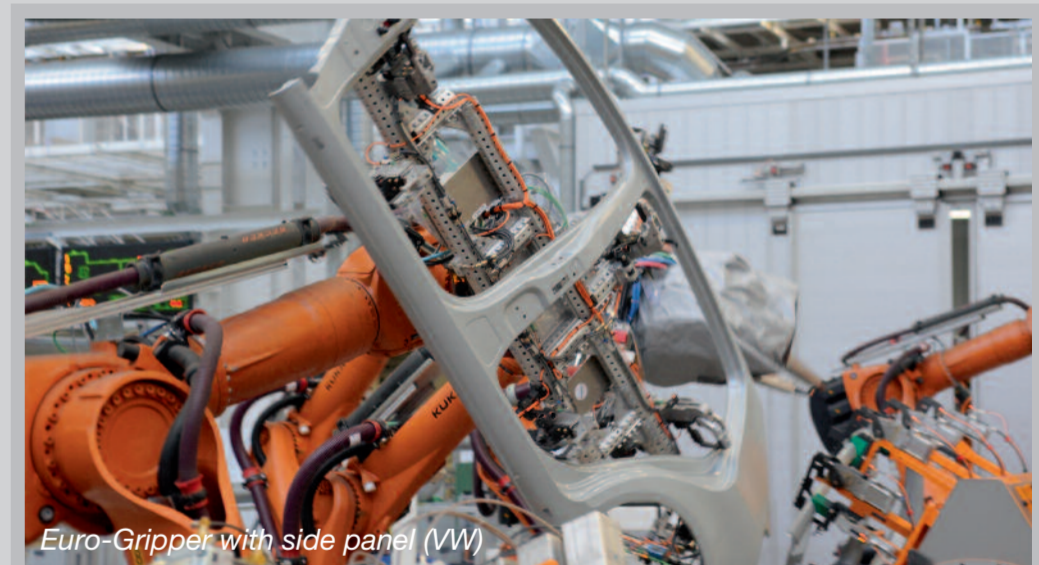
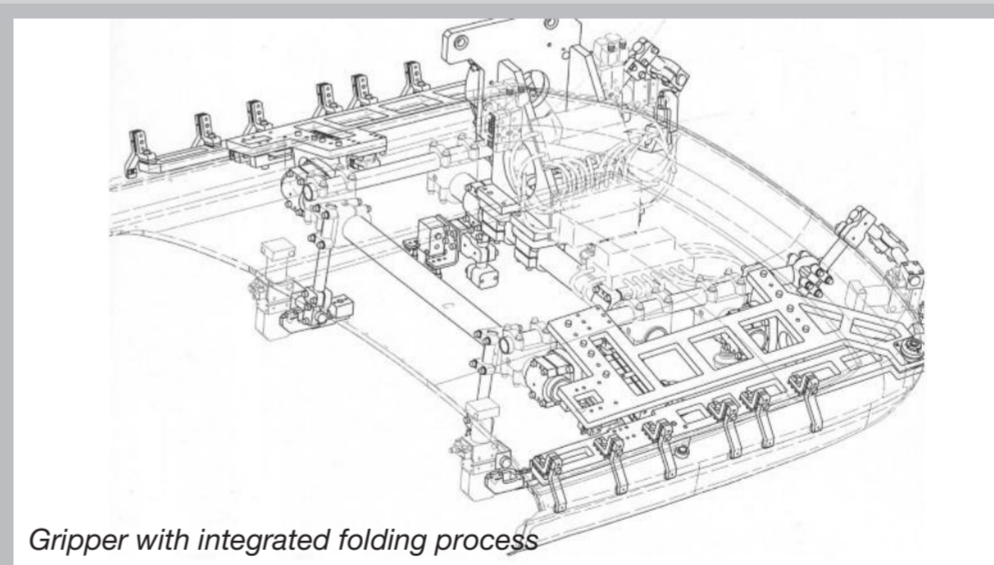
EURO gripper system

- TÜNKERS is a licensed supplier of EGT components and manufacturer of complete EGT gripper systems.
- The system is based on octagonal aluminium profiles SW 80/50 with hole pattern
- The connections are fixed using blind rivet nuts and screws
- Reproducibility in case of a crash thanks to locator pin borings



Mini gripper system

- For small and lightweight components in the field of electronics and plastics
- Based on a precision aluminium tube Ø10 mm
- Design optimised to reduce disrupting edges
- Ball head connection for easy alignment of clamping technology and vacuum exhausters
- Numerous connection options with low number of components



Square profile gripper system

- Base frame consisting of a square steel profile □ 50 mm
- Integrated hole pattern for defined locating
- High rigidity in the base frame (Level 1)
- To be combined with Tünkers circular tube system using clips
- Numerous connection options

