



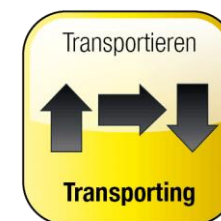
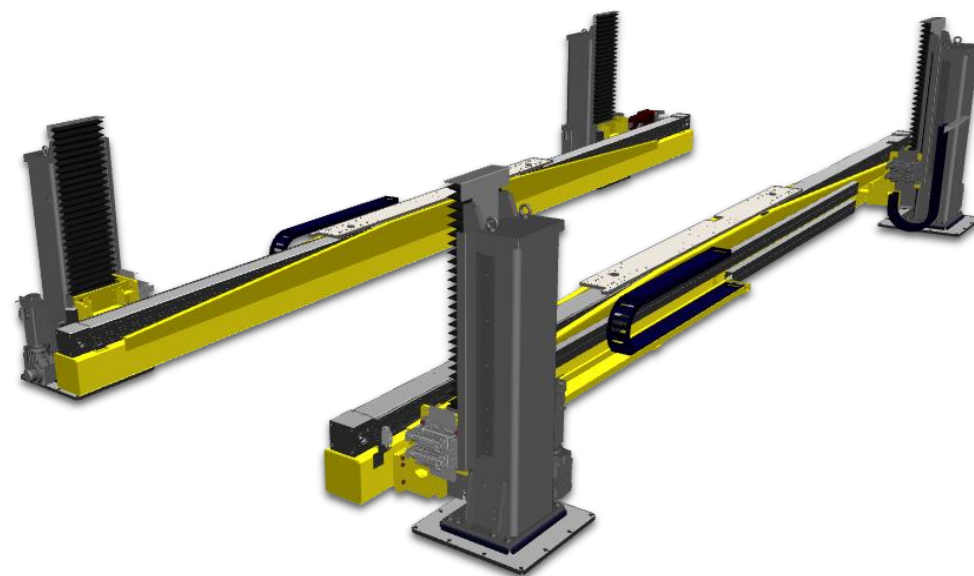
FLYING CARPET

EDHM

HEAVY DUTY TWO AXIS MANIPULATOR

FOR LARGE ASSEMBLIES
CONCEPT FOR COMPACT AND FLEXIBLE PRODUCTION

VB13 | EDHM | DRS | OCT 2023



Background

Flexible Production and Low Volume Production of cars

For flexible or/and low volume production of cars, there is the demand to integrate most of the workload in only a few production stations.

In these complex stations accessibility with robots and tools to the structure of the car is crucial.

Consequently, a high-density of robots is needed, mostly moved on a RTU (7th- Axis) or/and different height levels.

An alternative concept is to move the car body instead of the robots with a **heavy duty two-axis manipulator!**

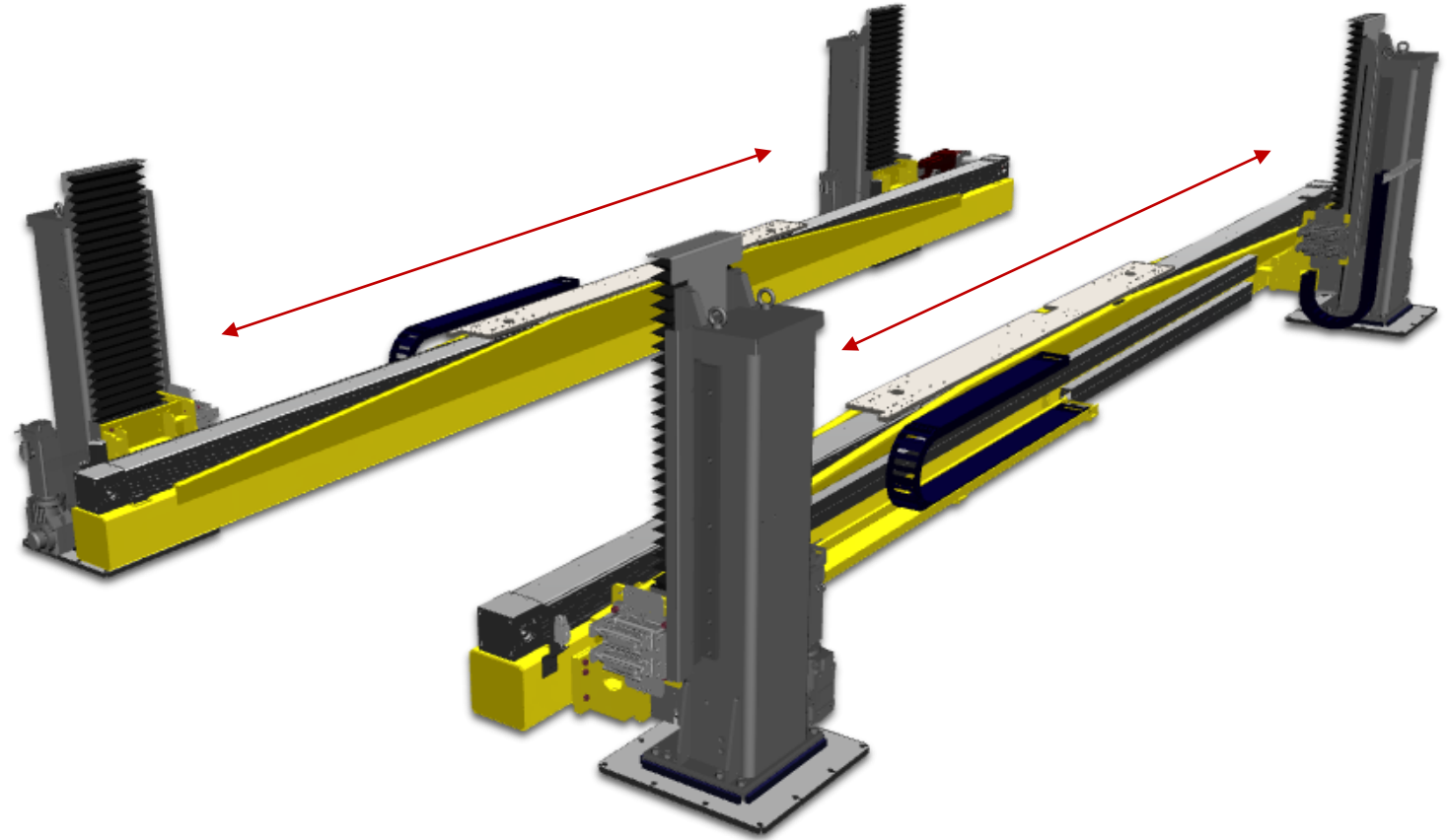
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Components of the Heavy-Duty Two-Axis Manipulator

1. The Horizontal Drive

Master-slave synchronized duorail systems, with a resulting travel of up to 7.500 mm to position the part / assembly within the working station.

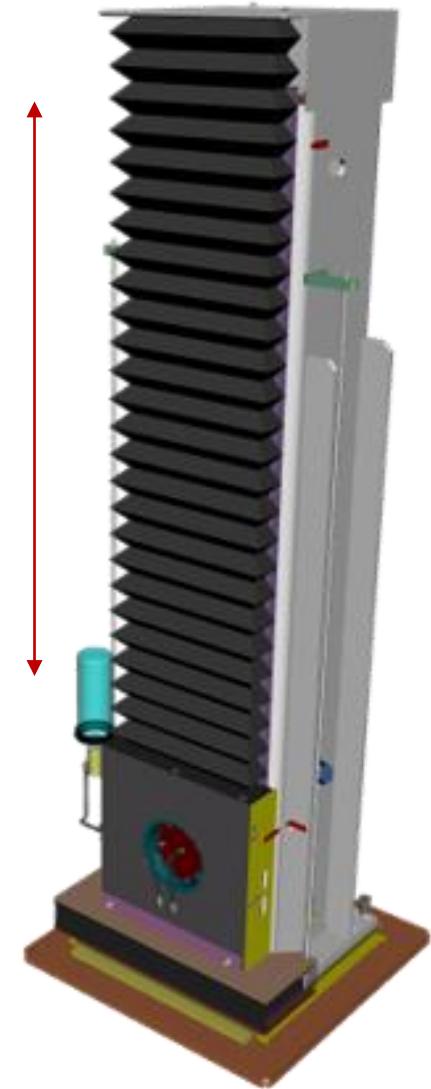


Components of the Heavy-Duty Two-Axis Manipulator

2. The Vertical Drive

Master-slave synchronized four EH18 Lifting Columns, with a resulting stroke of up to 1.800 mm to lift the part/ assembly within the working station. Up to 2-ton payload per lifter.

[See datasheet](#)

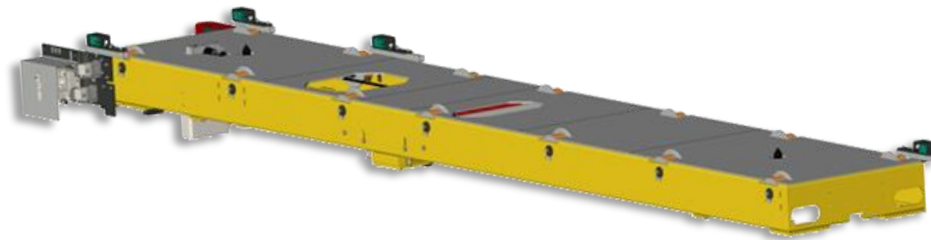


Flying Carpet Typical Process

The **EHDM** is used for a complete car body allowing the spot welding or in this case the riveting of the whole structure in only one station.

Other TÜNKERS-Group products can be used:

- EXPERT Rollerbeds can be used to bring the part to the manipulator.
- TÜNKERS AGVs can be used to bring the part to the EHDM.

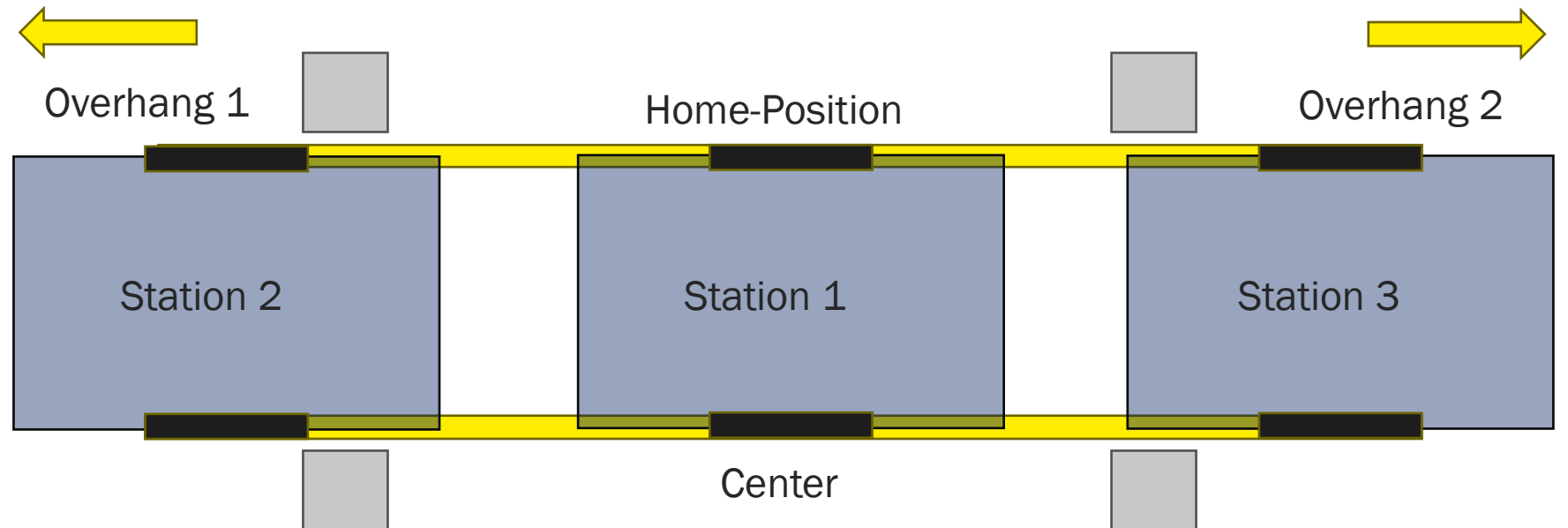


Flying Carpet Technical specifications

With the **EHDM** it is possible to extend the cell workspace by nearly 300%.

Workload can be – split into 3 Stations with base process others (geometry) in the center and in Station 2 + 3.

Further configurations possible (other loads/times possible/ using other hardware).



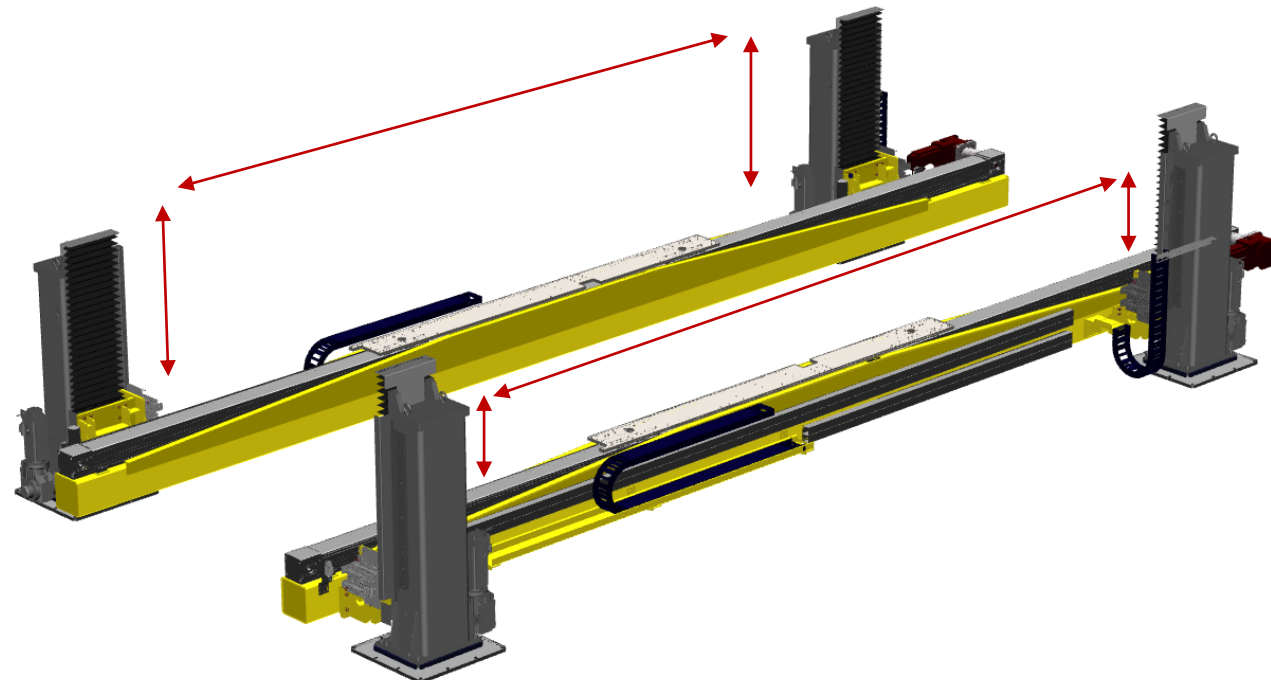
Flying Carpet Technical specifications

2 monorails in master-slave
synchronic mode.

Workspace extends beyond
physical station boundaries:

- 2.000 kg customer load
- Vertical stroke = up to 1.800 mm
- Vertical stroke time = 3.0 sec
- Horizontal travel = up to 5.500 mm
- Horizontal transfer time = 6 sec
- Total length = up to 9.250 mm

Further configurations possible
(other loads/times possible/
using other hardware).



**Thank you
for your attention!**

Contact:

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