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# MATE

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Muscular Aiding Tech Exoskeleton





## Comau HUMANufacturing: Industry, Worker, Tools 4.0

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As a world leader in advanced automation solutions, Comau has always improved manufacturing scenarios through up-to-date and human-centric technologies, capable of enhancing the social and environmental sustainability of the workplaces.

MATE has been conceived with the goal to always put at the center the worker, contributing at the development of more modern and efficient factory.

MATE is the new Comau tool that valorizes the human potential by lifting the people from excessive effort during the work and by facilitating his everyday life giving him the most efficient and bespoke wearable solution.

## How it works

### **MATE has three main components:**

Garment interfaces are all parts in direct contact with the user's body.

Mechanical shoulder chain to facilitate the user's free movement, such as sliding and rotational joints.

Torque generator box stores and transforms potential mechanical energy in order to create an adjustable assistive torque (7 levels).

### **MATE:**

Provides strength, control and balance while the exoskeleton transfers much of the burden away from the arms to the pelvis.

Increases work quality and efficiency by providing consistent movement assistance during manual and repetitive tasks.

## Like you do

**MATE** allows replication of the dynamic movements of the shoulder while enwrapping the body like a second skin.



# Why is MATE unique?

**MATE** properly reproduces shoulder movement with joint axes parallel to user's shoulders axes.

**MATE** is proportionally adjustable to the user: 2 sizes, S/M and L/XL, with a 5 regulation mechanism.

**MATE** has 7 assistance levels that can be modified directly by the operator.

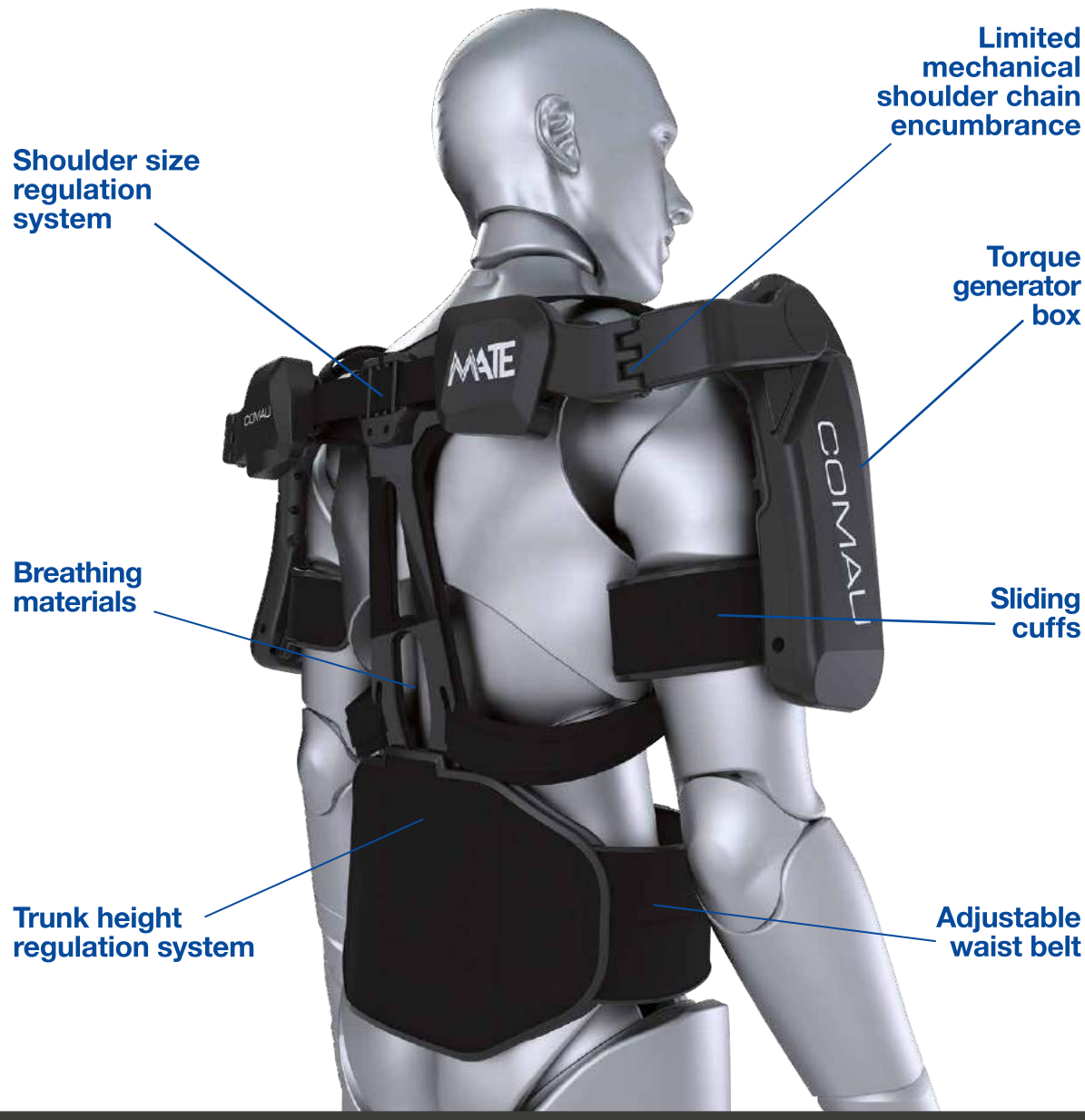
**MATE** provides a significant muscular reduction of the shoulder chain, tested during functional activities. In particular, there is an average 30% reduction of muscular fatigue during the extension movement.



## Benefits

- Reduced muscular and cardiac fatigue
- Improved posture and reduced likelihood for occupational diseases
- Improved job quality and work excellence
- Naturally comfortable and highly breathable
- Follows physiological movements without resistance or misalignment
- Improved precision of repetitive tasks





## Features

- Ergonomic design with joint axes parallel to user's shoulders axes
- Easy to wear
- Compact structure
- Passive spring-based mechanism
- 2 sizes: S/M, L/XL
- 7 assistance levels
- Lightweight: 4.0 kg

**All the parts in contact with the body are adjustable to the user's anthropometry**

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