

Exoskeleton Range



hapo
effortless

www.hapo.eu

Our solutions, our expertise.



Hapo
on video

HAPO

The **HAPO** is designed to support people who work in standing positions where postural or joint constraints contribute to onerous working conditions. It relieves the back and helps maintain good posture, whether in full flexion or when standing. By partially redirecting strain from the upper trunk, i.e. pectoral support, to the thighs using springs, and by passively holding the lumbar spine through the belt, the **HAPO** device can help significantly reduce the occurrence of musculoskeletal disorders (MSDs). The belt allows the lumbar spine to be held passively.

Features

Relieves the back:

Restrictive postures involving partial (Hapo) or full (Hapo SD) trunk flexion

Special feature:

Possible to disengage (Hapo), not possible to disengage (Hapo SD)

Range of motion with support:

Partial flexion (0° to 90°), with or without load, static or moving

Full flexion (>90°), with or without load, static or moving

Support:

-20% back muscle stress (Hapo)

-11% back muscle stress (Hapo SD)

Sizes: three sizes (Hapo); four sizes (Hapo SD)

Mass: 1.1 kg (Hapo S2); 0.95 kg (Hapo SD S2)

User height: 1.6 m to >2 m (Hapo); 1.5 m to >2 m (Hapo SD)

Waist min/max: 68/140 cm

Colour: textile: black and grey; spring: black

Adaptability: suitable for both men and women

Set-up time: 45 seconds

Removal time: 20 seconds

Textile cleaning: by hand or machine; no tools needed for disassembly

Options: custom embroidery, spring protection sheath, comfort pack

Materials: composite springs

Type: passive exoskeleton

Manufacture: French



Imagine technology that draws inspiration from nature to create sustainable innovation. Using a honeycomb structure, the **HAPO UP** exoskeleton is designed to offer maximum resistance using minimal materials.

Lightweight, powerful and naturally intuitive, the **HAPO UP** is designed to relieve the upper limbs of workers who wish to limit muscular stress and the occurrence of MSDs from repetitive activities.

It provides protection to the shoulders and arms when in restrictive and prolonged raised-arm postures or when handling loads involving upward flexion.

Features

Relieves upper limbs:

When in restrictive and prolonged raised-arm postures or when handling loads involving upward flexion

Range of motion with support:

60° to 180° vertically

Up to 180° horizontally

Support: up to -40% shoulder muscle strain

Power: adjustable between 4 and 9.5 N.m, passive and automatic disengagement

Size: one size

Mass: 1.67 kg

Colour: textile: black; spring: black

Adaptability: suitable for both men and women

Set-up time: 50 seconds

Removal time: 20 seconds

Textile cleaning: by hand or machine;

no tools needed for disassembly

Options: custom embroidery, interchangeability of Up & Front modules

Materials: carbon arm, composite spring blade

Type: passive exoskeleton

Manufacture: French

HAPO UP



Hapo Up
on video

HAPO KIT UP&FRONT



Change modules in
less than 2 minutes!



HAPO FRONT

The **HAPO FRONT** (formerly MS) is a lightweight exoskeleton, intuitive to use and designed to relieve the upper limbs, shoulders and elbows. It is a particularly suitable solution for all work requiring frontal arm support from 0° to 135° and up to 180° horizontally, with the aim of reducing the impact from strenuous activities and improving working conditions. The user retains great freedom of movement; they are not hindered in performing tasks that do not require mechanical assistance. This exoskeleton is a logical solution combining continuous efficacy and freedom of movement. It is thanks to this balance that the **HAPO FRONT** allows the user to perform their tasks while experiencing less strain from their working posture.

Features

Relieves upper limbs:

Restrictive and prolonged postures or repetitive frontal arm movements

Range of motion with support:

Up to 135° vertically

Up to 180° horizontally

Support: up to 6 kg

Size: one size

Mass: 1.3 kg

Colour: textile: black;

spring: blue or yellow

Adaptability: suitable for both men and women

Set-up time: 50 seconds

Removal time: 40 seconds

Textile cleaning: by hand or machine; no tools needed for disassembly

Options: custom embroidery,

spring protection sheath, pads,

interchangeability of Up & Front modules

Materials: composite springs

Type: passive exoskeleton

Manufacture: French



Hapo front
on video



LEA

LEA is a free ergonomic assessment tool developed by ErgoSanté for occupational health professionals or ergonomists wishing to analyse the risk of exposure to Musculoskeletal Disorders (MSDs).

Definitively, the LEA application makes it possible to:

- Measure the angles of the neck, arms, forearms and trunk in real time.
- Calculate the biomechanical RULA score for each joint in real time.



HAPO NECK

The HAPO NECK is a passive physical assistance device that operates using composite material spring rods. This equipment supports the user's head to relieve the neck muscles during strenuous tasks.

The aim is to relieve the neck, particularly for:

- Dynamic tasks requiring neck flexion-extension (e.g., screwing on an overhead structure, or more generally, working with arms overhead)
- Sustained postures with cervical extension (e.g., inventory on high racks, ceiling painting...)



**HAVE ANY QUESTIONS?
GET IN TOUCH!**

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