

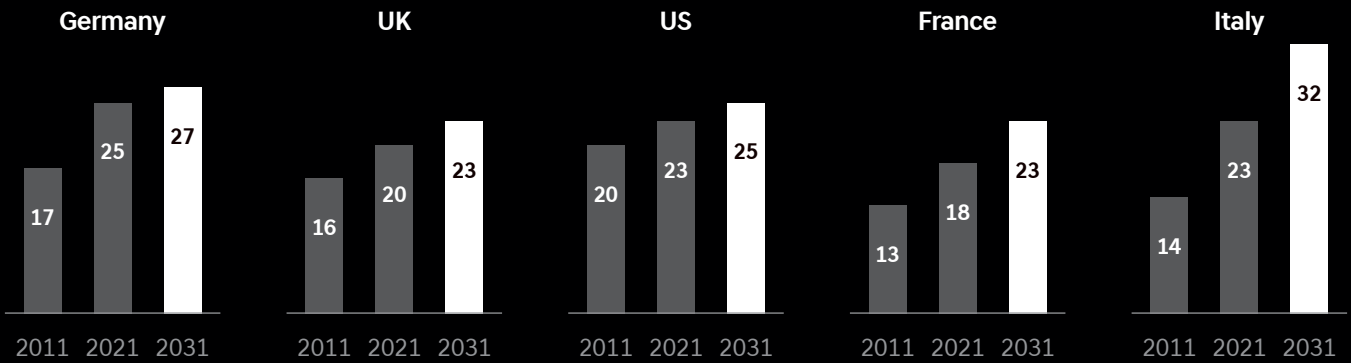
Shoulder Assist Wearable Robot

X-ble Shoulder

Continuously Increasing **Average Age of Workers**

Share of workers age 55 and older (2011, 2021, and 2031)

(Unit: %)



Source: US Bureau of Labor Statistics; OECD; Bain analysis

Rising Risk of **Worker's Physical Injuries**

Total Work Injury Costs in 2022

\$167 billion

Total Days Lost Due to Work-Related Injuries in 2022

108,000,000 days

Source: National Safety Council <Work Injury Costs and Time Lost>

X-ble Shoulder

Reduces musculoskeletal load
Improves work efficiency and wearability



01 High strength and light weight

Uses materials proven in automobiles, 700 g per side (1.9 kg total including the vest)

02 Detachable structure

Detachable mechanical parts and vest lining for easy washing

03 Wide range of joint motion

Flexible movement of ball joints support a wide range of motion

04 Non-powered torque generator

No charging required, easy to use for extended periods

X-ble Shoulder Key Features

Reduces load on shoulder joints by up to

60%

Reduces deltoid muscle activity by up to

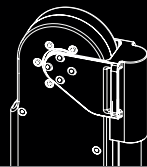
30%



2 product types

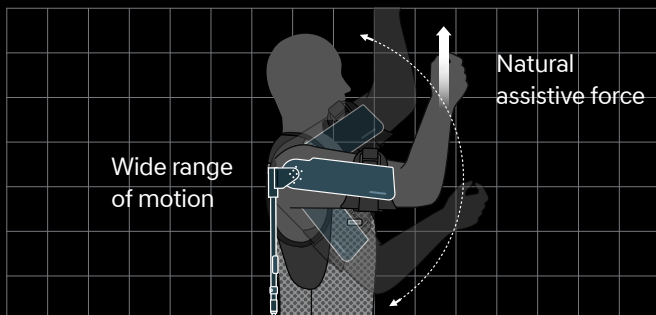
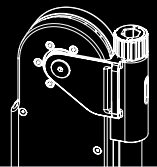
Basic

680 g per side



Adjustable

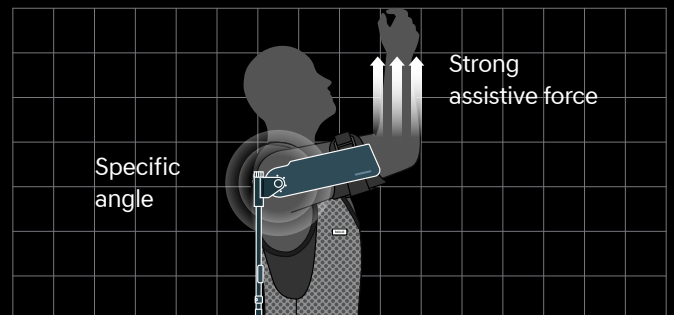
700 g per side
(Muscular strength support
angle adjustable)



Wide range of motion

Natural assistive force

Provides natural assistive force over a wide range of motion



Specific angle

Strong assistive force

Provides strong assistive force by selecting a specific angle



Light

Total weight of 1.9 kg or less reduces weight on the wearer.



Convenient

Magnetic attachment allows the wearer to put the vest on and take it off in under 20 seconds.



Durable

Uses proven automotive-grade material for high durability.



Unrestricted

Unrestricted wearer's movement and free to use anywhere as there's no need for charging.



Easy-to-clean

Vest and robot can be easily separated for easy washing and storage.



Versatile

Compatible with various workwear for use in various industries.

Various industrial sites including manufacturing, construction, shipbuilding/aerospace, and agriculture need

X-ble Shoulder



Manufacturing

Top bolting, assembly, wiring, inspection work, etc.



Construction

Ceiling nailing/finishing, wiring/lighting, plastering, painting, wallpapering, woodworking, etc.



Shipbuilding/Aerospace

Assembly (welding), painting, grinding, repair/cleaning, etc.



Agriculture and more

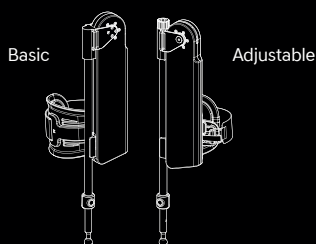
Farming/gardening, harvesting, facility inspection, wall/window cleaning, and all other tasks involving looking up

※ The effectiveness of wearing the product varies on the actual work performed. We recommend trying the product before purchase.

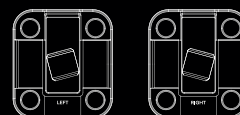
X-ble Shoulder Product Configuration and Specifications



Vest (wearing section)
*Size details below



Main unit of X-ble Shoulder
* Including arm support (one on each side)



Waist clip
(one on each side)

Specifications of X-ble Shoulder

Item	Basic		Adjustable	
Weight (kg)	1.4kg (680g each side)		1.4kg (700g each side)	
Length (mm)	406~446mm (5 level adjustment)			
Arm support size (arm circumference)	S	M	L	XL
	28cm	32cm	34cm	37cm

Vest (wearing section)

Size(cm)	XS(85)	S(90)	M(95)	L(100)	XL(105)	2XL(110)
Chest circumference	91	96	101	106	111	117
Hem circumference	92	97	102	107	112	117
Shoulder	32	34	36	38	40	42
Back length	55	57	59	61	63	65
Front-back deviation	3	3	3	3	3	3
Front neck length	12	12.5	13	13.5	14	14.5
Neck width	16	16.5	17	17.5	18	18.5
Sleeve opening	27	28	28	28	29	30

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