



emmegi

Aluminium

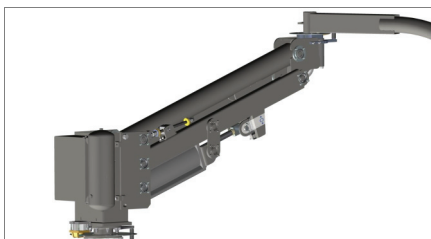
S

Steel

P

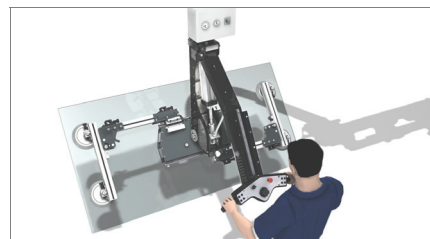
Pvc

en #1



Balancing system

01

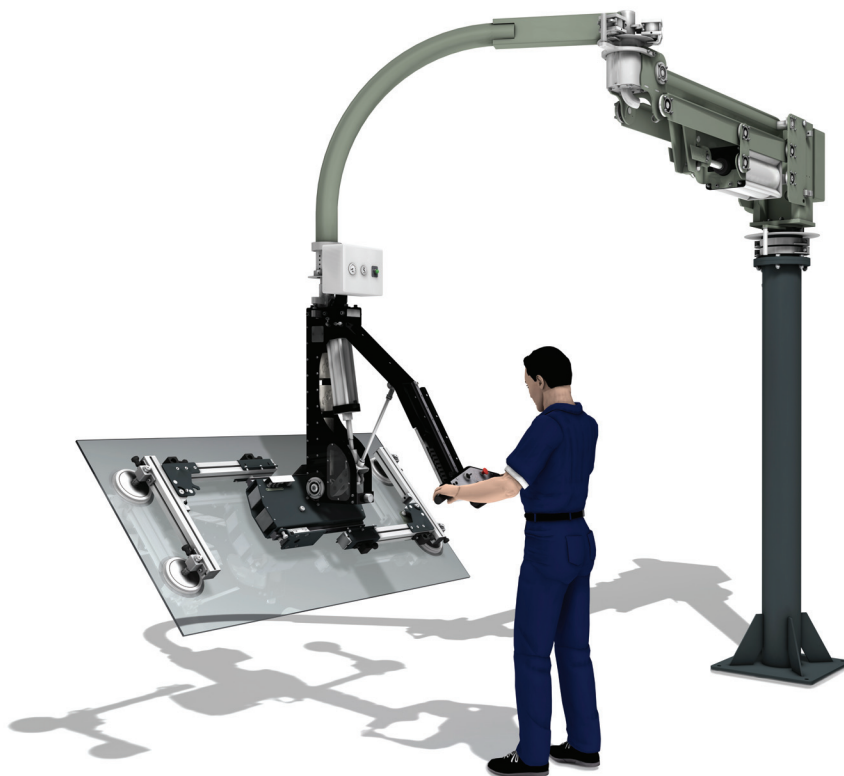


Product gripping

02

## Zero-G

Glass manipulator



ZERO-G is an exclusively pneumatic manipulator for handling flat glazing and windows in absolute safety. By means of the load gripping equipment the spatial positioning of the object handled can be monitored constantly across an extensive working area. Its ergonomic design allows for tilt and rotation movements that ensure high speed and flexibility throughout the entire work process. The suction cup gripping system in conjunction with the weight balancing system enable movements to be made along two axes throughout a working area having a diameter of up to 6000 mm. The configuration on a free-standing base allows maximum freedom of movement within the production facility.

Pneumatic functions

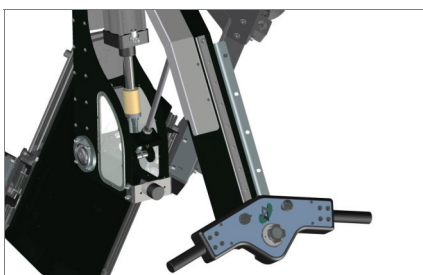
03

Ergonomics

04

Free-standing base

05



# Zero-G

## Glass manipulator

### 01 Balancing system

A driver system mounted on bearings and recirculating ball linear ways enables the balancing system to ensure perfect compensation of vertical loads in all positions and along the entire travel. The weight of the product is balanced by means of a hand-adjusted preselector or the (optional) pushbutton activated balancing system. Movement is continuous and extremely smooth so, once the weight of the object is balanced, the operator can move it effortlessly. The manipulators are equipped with parking brakes on all three axes. Once the operator has activated the brakes by means of a specific console control the machine will remain in the position reached.

### 02 Product gripping

The product is engaged easily and swiftly by means of suction cups connected to a highly efficient vacuum system. As the position of the suction cups can be adjusted, ZERO G can handle a variety of product shapes. The release operation is always performed in conditions of maximum safety due to a special device that accompanies the product to its rest position before releasing it completely, thus avoiding accidents caused by incorrect or inadvertent manoeuvres.

### 03 Pneumatic functions

ZERO-G allows the operator to tilt the product by 180° and to rotate it by 90° in independent pneumatically driven movements. Both functions are controlled directly from the console and are performed proportionally, thus allowing the product to be lifted from racks or inclined supports. Apart from the adjustments of individual suction cups, the ZERO-G 250 manipulator offers the facility to inhibit two of the four suction cups by means of a console selector, thus allowing narrow elongated products to be gripped correctly. In order to ensure that loads are always lifted in conditions of safety the machine is equipped with an automatic capacity reduction system that cuts in when two suction cups are excluded, thus preventing the operator from attempting to handle excessively heavy loads. An air storage system provides extra air to enable the load bearing operations to be completed safely, even in the case of a sudden drop in the pressure of the air supply system.

### 04 Ergonomics

The ergonomic and easy to use control console is the only one of its kind. All controls are laid out in a rational and intuitive manner, ensuring that the operator feels completely at ease from the very first movements performed and enabling him to take full advantage of Zero-G, guiding products safely and effortlessly in any direction. The console is slideably mounted to the support arm so it can be positioned correctly in relation to the conditions imposed by the work cycle, in line with the preferences of the operator and in compliance with the axioms of occupational ergonomics. The console is equipped with controls for load engagement and release, product weight compensation adjustment, pneumatic tilt and rotation functions and the brakes selector.

### 05 Free-standing base

As an alternative to the floor-mounted column, Emmegi offers a new version with a free-standing base. Once installed, the manipulator-base system can be moved across the company's premises with ease and used in any working area with a connection to the air supply system. The free-standing base has slots for lifting forks, to enable it to be moved using a forklift truck.

FUNCTIONAL DESCRIPTION	ZERO-G 150	ZERO-G 250
Supporting column fixed to floor	•	•
Supporting column fixed to free-standing base	optional	optional
Balancing system with preselector	•	•
Pushbutton-activated balancing system	optional	optional
Pneumatic tilt movement for shifting loads between the horizontal and vertical planes	0 + 90°	0 + 90°
Pneumatic product rotation	0 + 180°	0 + 180°
<b>CHARACTERISTICS</b>		
Load capacity [kg]	150	250
Maximum working radius (mm)	3000	2750
Gripping / release height (mm)	0 + 1500	0 + 1500
N° of suction cups, gripping system	2	4
N° of individually selectable suction cups	-	2
Inlet air pressure required [bar]	7	7
Minimum window size [mm]	1200 x 400	1200 x 800
Maximum window size [mm]	2200 x 1000	2500 x 2000