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Mechatronic Direct Drive *is the label endorsing the application of direct drive in automated machinery. MD" is an innovative approach to the concept of motion: eliminating the usual kinematic chains in favour of direct drive products capable of better performance and greater precision. The result is enhanced efficiency of the production system and greater reliability.*

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GALILEO SPHERE

MECHATRONICS

Galileo Sphere the first robot based on Mechatronic Direct Drive technology

The direct connection of motors on robot axes enhances precision,mechanical efficiency and the system MTBF.

5 Degree-of-freedom robot

Galileo Sphere is based on a combination of circular and linear motion and manufactured with two iron core arc linear motors assemblies and two linear axes.

The first arc linear motor assembly (Theta1) enables a 360 ° rotation of the robot with a moving magnets movement, it carries three coils set at 120°, with the possibility of adding more coils to enhance the thrust force.

The second arc linear group (Theta 2) - with its moving coil motion - allows up to 106° rotation of the gripper assembly.

The third assembly (Z1, Z2) comprises of two linear axes which operate on two carbon shanks holding a mechanical joint which carries the gripper (Theta 3). The interpolated motion of these linear axes enables the grip system to move with 5 degrees of freedom.

High precision and repetability

Direct drive motion ensures highest precision in either absolute static positioning and on the repetability of follower and dynamic positioning.

Cycle	Accuracy	Payload
25/300/25	75	1
25/700/25	80	1
25/850/25	100	1

Items manipulation

The combined motion of axes Z1 and Z2 allows the wrist lifting at different inclinations, up to 90°. At the same time the gripper can rotate all around the Theta 3 for over 360°.

Wide working range

Galileo Sphere combines high dynamics typical of parallel robots with the large motion volumes distinctive of anthropomorphic robots.

DIMENSIONS OF CYLINDER ENCLOSED IN WORKING RANGE
DIAMETER 1900mm
VERTICAL REACH 400mm
OPERATION ON 3800 litres TOTAL VOLUME

The motion space of the Galileo Sphere Robot has been designed to distribute the product processing areas onto multiple levels all the way along the edge of the working volume. This enables a complete production unit to be achieved with a limited footprint.

High working frequency with payloads up to 30 Kgs*

Excellent throughputs (either working frequency and payloads shifted) are possible because of dynamic torques up to 4752Nm (Theta 1) and 2510Nm (Theta 2), combined with the peak force of the linear assembly 10200N (Z1, Z2) of the gripper *(GSR 1320E)*.

Models	Cycle	Cycle	Payload
GSR 306 - GSR 306 E	25/300/25	120	6.7
GSR 330 - GSR 330 E	25/300/25	100	2
GSR 330 - GSR 330 E	25/300/25	75	3
GSR 1320	25/300/25	80	6
GSR 1320E	20/400/20	50	30

*Product and gripper