Nitek Products overview

Nitek Linear motors offers a complete range of linear motor technologies: Tubular Ironless and Flat ironcore and it is able to supply custom solution for specific application areas like packaging machines and food machines.

ISO Green Drive

Standard Green Drive

Hygienic Green Drive

Integrated Green Drive

Rotolinear Green Drive

L series Flat Ironcore

Green Drive Stage

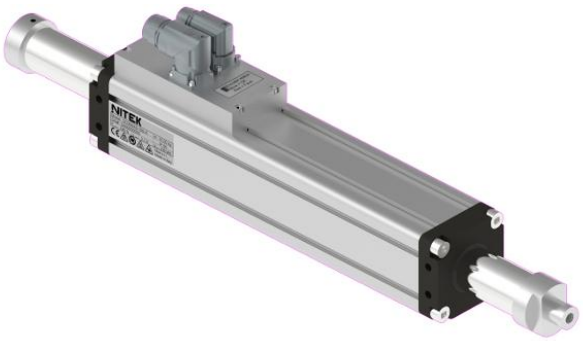
Green Drive N series

Green Drive Tubular linear motor

Overview

The Green Drive tubular linear motor is a direct drive actuator. The linear motion is generated without ballscrews, belt and gear reducers.
The GD is composed of two parts: the stainless steel slider (AISI304) with holes for payload fixing and the IP65 motor body that contains the coils
and the feedback electronics. The slider is guided by high performance sliding bearings.
Feedback electronics contains position sensors, temperature sensors, interpolation electronics and motor parameters as electronic data sheet (EDS). GD standard version is available in 7 sizes to reach 800 N of peak force.
All models are available with different strokes and feedback options. Additionally, special model for hygienic application is available on request.

ISO Green Drive Tubular linear motor



Overview

The ISO Green Drive is the DIN ISO 15552 version of Green Drive tubular linear motors. Fixing method are based on threaded holes in the flange instead of T-slot reducing the space consumption at the minimum level. All standard version with this motor body are available as GD16,GD25 and it extend the product range to GD35 to reach 250 N of rated force with 2000 N of peak force for 1 sec.

Tubular Linear motor
Hygienic Green Drive

Overview

Green Drive tubular linear motor is the correct solution for food and pharmaceutical application. Motor body and slider are in stainless steel material AISI 304/316 in order to guarantee high protection level IP69K.

The motor body surface are without holes and cavities to be simply cleaned and the sliding bearing used are food grade and FDA certified.

tubular Linear motor
Integrated Green Drive

Overview

Integrated tubular Linear motor Green Drive is a complete plug & play solution with integrated servo drive. The integrated servo drive is high performance servo to be controlled by EtherCAT fieldbus (COE) with I/O on motor side too.

This solution drastically reduce the connection inside the cabinet thanks to hybrid cable where DC Bus, 24 VDC and fieldbus are present.
This approach creates a bus like connection between motors using In / Out cable connections.

Tubular Rotolinear motor

Overview

Rotolinear tubular motor sare composed by brushless rotative motor with rotary ball-spline connected to Green Drive tubular linear motor. With this mechanical configuration are possible independent rotary and linear motion. Space consumption is a flange dimension of 66x66 and 88x88 mm excluding the connectors on just one side. Mechanics guarantees high level of rigidity thanks to double row contact ball bearings. High static torque upto 45 Nm are achievable with rotational speed upto 4000 rpm thanks to high performance bearing. Rotation position feedback is created by resolver and linear position feedback is created by integrated Green Drive encoder. The motors are three-phase brushless standard controllable by standard servo drives. Two different rotary motor sizes are available as well as two tubular linear motor sizes to achieve rated force upto 51 N and rated torque upto 2.4 Nm. Maximum stroke of the motor is 200 mm.

Green Drive Stage

Overview

NITEK Green Drive linear tubular motor can be used in the Module version with moving carriage (also with multicarriage configuration) GDM. This linear motor version using integrated linear guide system and integrated low cost magnet type encoder. This assembly is useful in application where the payload is out of axis or in the multi-axis systems. Maximum stroke is 2000 mm.

N series
Green Drive

Overview

The N series of the Green Drive tubular linear motor is the version without integrated encoder and linear bearings expecially suggested for moving forcer linear stage with external linear encoder, precision linear guides and stroke more than 1 meter.

The overall dimension of the motor is reduced to the minimum thanks to aluminium rectangular profile that integrates just the motor winding. Two aluminium profile are available 40x40 mm or 50x50 mm that integrates the motor sizes upto 250XS model.

Two basic parts:

One coil encapsuled in an aluminium body (FORCER)

A shaft with integrated permanent magnet (ROD)

L series flat ironcore
Linear motor

Overview

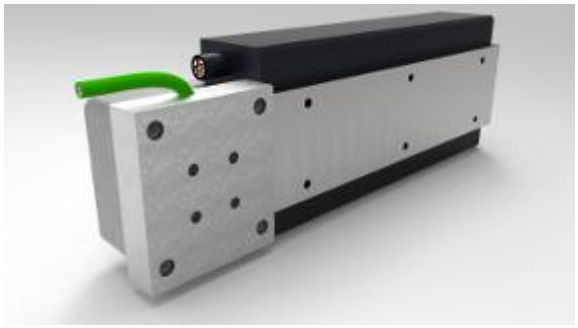
Ironcore fl atbed linear motor L series offer highest dynamic performances of synchronous direct drive technology. Linear motion is realised without contact, wear and without additional elements. L series linear motor are composed by primary part with iron and winding and secondary part with high performance Neodymium magnets. 15,7 KN of peak force is reachable with this technology with 900 m/min of peak speed. Current and Voltage specifi cation can be customized. 7 sizes are available with 5 different lengths for the secondary parts. Each motor components are encapsuled and they can be supplied in stainless steel material too. Water cooling option is available on request.

Li series hygienic flat ironcore Linear motor

Overview

The Li series of synchronous linear motors is characterized with an increased degree of protection IP67. The increased degree of protection is ensured by encapsulating the active part of the motor with winding (primary part)into a metal frame.
The primary part of the linear motor with a vacuum poured winding is located in a stainless sheet metal housing.
The advantage of this design is strengthening the motor against splashed liquids and long service life of the drive.
The Li series can be equipped alternatively with integrated water cooling which ensures more efficient removal of losses and guarantees a considerable improvement in the motor parameters.

HSB feedback box for L series motors



Overview

The external hall sensor box for L series flat ironcore linear motor is able to reduce installation and additional cost due to magnetic or optical scale when the application doesn't need high position accuracy.

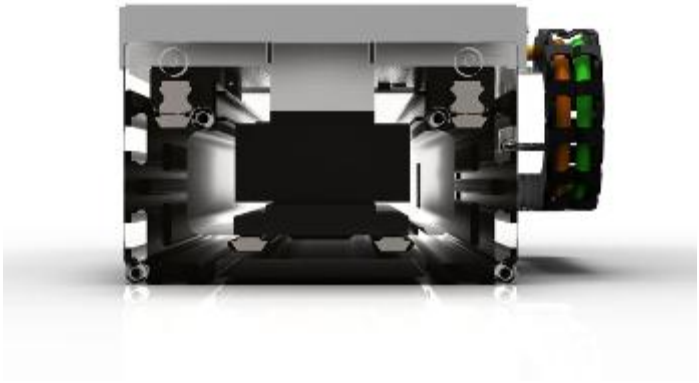
HSB is supply with mechanical flange for connection on motor carriage and It can supplied with Left or Right cable direction.

HSB is available also with circular connector on board.

Nitek linear guides

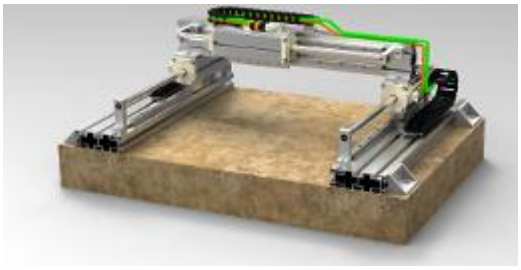
Overview

In order to design the linear system NITEK Linear motor company, manufacturer of linear guides, can provide the correct linear guide type to meet the requirements of ironcore linear motors. In standard mechanical confi guration, the linear system is composed by two rail and at least 4 carriage connected to the axis.



Available size are from 15 to 45 in different version as standard, compact and flanged carriage.

2 axis Gantry
Green Drive



Overview

In order to handle payload upto 10 kg the Green Drive gantry represents the best performance/cost ratio. Working area upto 1500 x 1500 mm are available.
Green Drive Gantry is a unique solution because the two motors on the lower axis are drive with just one servo drive with the motor phase in parallel. This approach reduce the cost of the system due to the absence of virtual axis composed by two servo drives and two encoders.

Green Picker
Linear Delta Robot

Overview

Green Picker is parallel kinematics robots that are driven by Green Drive linear direct drives. Thanks to the use of standard modules results in a highly cost-effective overall package that implements a similar dynamic in comparison to Delta robots which are equipped with rotary actuators! Due to the “tripod” parallel array confi guration of 3 Green Drive linear motors, Green picker robot is relatively easy to algorithmically describe and the controller power required is relatively low. The Green picker performance are comparable to Standard Delta Robot and it has value of about 200 cycle min-1. The system cost of the Green picker robot is about 30-40% less than comparable competitive products.

green Picker 2D

Overview

In order to handle lightweight payload (upto 1 kg) on the XZ space, the most effective solution is the Green Picker 2D robot.
This robot is composed by two Green drive tubular linear motor combined using parallel kinematic.
Using this mechanical configuration is possible to reach the highest dynamic possible with low payload, in the smallest space possibile without moving cables in the cablechain. The frontal flange is with threated holes to fix gripper or sucks.

The typical working area is 200 x 110 mm, but more working area are possible on request thanks to robot construction. The motion can be on frontal direction, upper direction or
lower direction by the kinematics programming. The robot is available with servo drives compatible with standard PLC.