USER MANUAL FOR MICRO LINEAR SERVO ACTUATOR OF BLA SERIES (MECHANICAL)

Beijing Inspire-Robots Technology Co., Ltd. | January 2024

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Micro Linear Servo Actuator

User Manual for BLA Series (Mechanical)

1 Mechanical installation structure

Note: BLAC30 is taken as an example in the figure, and the installation requirements of BLAS10 is consistent with it.

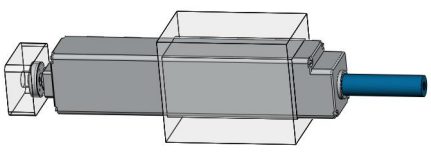
1.1 Precautions

- During the installation of the motor, the handling and assembly process should avoid violent impact;
- the shell should avoid contact with sharp objects and scratch the surface;
- the ball shaft part (as shown below) can not be disassembled without permission, if it is necessary to disassemble, please contact the relevant technical personnel of the company;

- the motor body screws, under any circumstances, can not be disassembled by themselves.
- The working environment of the motor can not exceed 50°C.

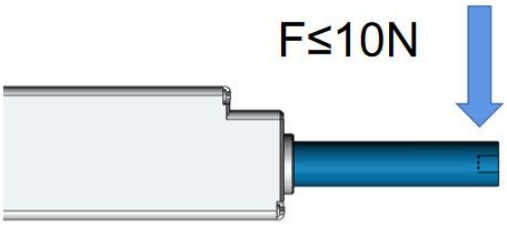
1.2 Assembly specifications

As shown below, multiple fixtures are used to fix the motor, and the motor should be guaranteed to be without abnormal strength as a whole (i.e. not to bear the torque and bending moment generated by the structural installation). Additional bending moment will lead to the motor movement stuck, and even damage the accuracy of the force sensor.

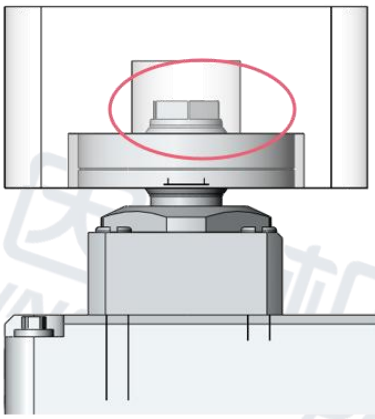


The fixture and the motor should try to reduce the matching clearance, between 0.1~0.5mm on each side is recommended.

The push rod part of the motor should bear the lateral force less than 10N.



The fixture for fixing the ball shaft needs to make way for the bulge of the ball screw nut.



1. Electrical precautions

(1) It is prohibited to plug and unplug while powered on.

(2) The wiring must be defined according to the following figure, and any wiring error may damage the actuator.

No.	Colour	Definition
1	Black	GND
2	Red	DC12V
3	Yellow	A（485）
4	Blue	B（485）

(3) The power supply voltage of the actuator is DC 10V~14V. If the power supply voltage is lower than 10V, the actuator cannot operate normally. If the power s upply voltage is more than 14V, the internal circuit of the actuator will be dam aged.

(4) There shall be no strong magnetic field within 0.5m around the actuator, otherwi se it will cause irreversible damage to the internal high-precision sensor.

(5) Before the structural assembly, the important parameters of the actuator (ID, bau d rate, etc.) shall be confirmed by BLA debugging software and the following t ests shall be carried out:

- whether there is a fault alarm;
- whether the force sensor value is within the range of ± 4N under the condition of no force;
- whether the position mode can operate normally;
- whether the force control mode and soft contact mode can work normally.