

Disclosed is a precision-positioning drive end pre-tightening device, which comprises a positioning platform (6), an actuator (14), a capacitive sensor (4), a capacitive sensor bracket (3), a pre-tightening block (12) and a film force sensor (13), wherein a sliding groove is provided in the middle of the positioning platform (6), and said pre-tightening block (12), said film force sensor (13) and said actuator (14) are provided in the sliding groove in sequence; the capacitive sensor bracket (3) is fixed on the positioning platform (6), and three connecting rods (3-1) which are connected in sequence via compliant hinges are axially provided at one end of the bracket body of the capacitive sensor bracket (3); an end surface of the capacitive sensor (4) and an upper side surface of the pre-tightening block (12) are parallel to each other, and a gap exists therebetween; and a two-stage pre-tightening device for pre-tightening the pre-tightening block (12) are also provided on the positioning platform (6). The technical means of the device is simple and easy, and the device can satisfy the requirements in related fields of precision positioning, precision and ultra-precision machining, precision operating, precision measurement, micro-electro-mechanical system, etc. for the precision-locating drive end pre-tightening device.