The Motion Tech News

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Another Solution Found!

Guilotine back stop gauge can be affordable

Automated backstop gauge

An Australian manufacturer of Guilotines for cutting steel sheeting, instigated Motion Technologies to construct a CNC back gauge. A CNC back gauge, which is in essence a positioning actuator being controlled normally via a numerically controlled computer.

The purpose is to type a number in the user interface and the backstop moves to that position. The metal to be cut is placed against the backstop and the guilotine cuts the sheet material. The criteria was it had to be of quality and affordable.

To have both these criteria's, the scope of build had to be clever. The decision was made to use a ballscrew liner stages as opposed to timing betl stages. The reasoning is that a ballscrew stage is firm when held in position, whereas a timing belt stage deflects, though does cost less. Then a planetary gearbox and servo motor was used. Again most people would question why not use a closed loop stepper motor. Unforunately the axis would be very slow in operation using a stepper motor as by design these motors make torque at slow speeds. The decision to use servo motors with resolver feedback allowed for good position accuracy e.g. 4096 counts per rev with 5mm lead ballscrew equals a positioning resolution of 0.001mm

Supply right

It is quite humbling seeing our projects become reality for our customers. This supply is considered one of the simplist we have done, though they are all different. What has not been stated in the article to the left is how Motion Technologies engineers made it affordable. So far it seems quite expensive, so allow me to ellaborate.

Conventional supply is to use a dedicated CNC control system. These are quite expensive and normally require external feedback. The decision was made to use a HMI touch screen without a PLC to control the motors directly via the servo drives. Experience accounts for a lot with Motin Technologies being in the motion control business for more than 30 years. A operator interface was loaded onto the HMI and in the background a text string was forming based on the position that the operator typed in. This test string was sent over serial communication to the servo drives to go to the position requested. Normal convention is to use a PLC, though by sending the text string backwards, a PLC is no longer required.