Using the Panther Gage with a CNC Coiler

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The Panther Gage can be used with a CNC coiler in two different ways. The primary issue is triggering the gage and reading the adjustment output from the gage. Two methods are available for this communication:

- Serial communication (9600 baud)
- CNC Connector (digital control signals)

With a standard mechanical coiler, the Panther gage turns a motor to adjust the pitch. For this reason, all the adjustment information from the gage is scaled in units of time, usually mS. These values must be rescaled as pitch table multipliers or offsets by the CNC software.

Using Serial Communication

Many serial commands can be issued to the Panther through the serial connector as documented in the Panther manual (consult the manual for details on serial protocols and interface details).

Typical Operating Sequence:

1. Stop wire feed
2. Send "@@@" to the Panther
3. The Panther reads the spring and calculates an adjustment time (about 5mS elapsed time)
4. The adjustment time (in mS) is returned through the serial interface
5. Begin next spring

Using the Panther CNC Connector

The Panther CNC connector is a female DB9 connector on the rear of the Panther gage. The inputs and outputs provide access to internal signals that can be used for operation with a CNC based coiler.

Typical Operating Sequence:

1. Stop wire feed
2. Trigger gage through pin 9 with a TTL 0, or ground, or low active open collector output
3. The Panther reads the spring and calculates an adjustment time (about 5mS elapsed time)
4. The motor activation signal is read through pins 6 and 7. The longer the time of activation, the more adjustment required. To prevent slowed production, this time can be captured by a timer on a data acquisition board while production continues. Some CNC manufacturers use the signals only to determine if an adjustment is requested and the direction of adjustment, and ignore the time parameter.
5. Begin next spring

Panther CNC Connector Pinout Specifications

Pin	Signal	Description
1	Probe voltage	±4V Analog voltage proportional to spring length.
2	Over Sort	TTL 0 during Over (Long) side chute activation.
3	Under Sort	TTL 0 during Under (Short) side chute activation.
4	Shutdown	TTL 0 during shutdown condition (shutdown relay activated).
5	Ground	
6	Long Adjust	TTL 0 during "too long" motor activation (10-2000mS).
7	Short Adjust	TTL 0 during "too short" motor activation (10-2000mS).
8	Good Pulse	TTL 0 pulse (2mS) at each "good" spring.
9	Read In	TTL 0 input will initiate a read cycle of the gage (internal pullup).