



# Block Control System (BCS)

Maximize safety and operations through precise closed-loop control of block speed and position.

NOV engineers combined our proven M/D Totco™ instrumentation and sensor technologies with the powerful Baylor 2025B eddy brake controller to create a closed-loop block control system (BCS) that overcomes the inherent deficiencies of traditional crown/rig floor savers and kinetic energy devices. The closed-loop control technology allows our system to constantly calculate when to apply the eddy current brake, while continuously measuring the effect of the brake's application and adjusting the force accordingly. The result is smooth, proportional control of traveling block movement.

With our BCS, absolute control of the brake is always available to the driller. The eddy current brake will instantly respond to the greater braking command—either from the driller's control or the BCS. In the event of an auxiliary braking failure, the system actuates the manual band or disc brake as soon as insufficient braking is detected. This occurs long before the desired operating limits are exceeded.

The system is constantly monitoring the hookload and block velocity to calculate the optimum level of braking necessary to bring the block to a smooth stop as driller-programmed limits for floor, crown, and monkeyboard are approached. Necessary friction braking is applied long before eddy current braking can become inadequate. For block positioning, the system can easily be preset by the driller to stop the block smoothly at any position along its range of travel.

## Features and Benefits

### Closed-loop control and passive operation

- Provides positive block control over the entire range of travel
- Operates in the background, only providing control when necessary
- Internal diagnostics and redundant sensors alert the driller of any issues with the system health.
- Audible and visual alarms alert the driller on the system status and alarm level.

### Crown/rig floor saver

- Driller establishes upper and lower limits
- Helps eliminate unplanned events and costly consequences

### Monkeyboard protection

- Avoids collisions by stopping the blocks with link tilt extended beyond a desired range when approaching the monkeyboard
- Works in both downward and upward movements to ensure a safety barrier around the derrickman

### Requirements:

- Eddy current auxiliary brake with Baylor 2025B controller
  - Rigs with existing 2025 controller can be upgraded to the 2025B with a different panel, sold as an upgrade.
- Functioning crown-o-matic device to provide control of primary friction brake