

**Automatic Depth Control for Existing Backhoe Excavators**

DepthMaster-Auto is a robust automatic depth control system that can be fitted to existing backhoe excavators in the field or shop. The system links three strong and reliable measuring encoders located at the bucket, dipper arm and boom pins with the cab-mounted control panel where elevation and slope controls are set. Once set and switched to automatic, the control panel's computer calculates the exact elevation position of the cutting edge of the bucket in relation to the elevation or slope. Switching to automatic enables the hydraulic control valve assembly, and when the cutting edge gets within the adjustable automatic operating band, the system quickly and smoothly adjusts the boom cylinder to maintain the cutting edge on the desired elevation or slope. The operator finishes a digging cycle by pulling-in the dipper arm and adjusting the bucket position as required. The system then automatically adjusts the boom to keep the cutting edge at the entered elevation. At any time the operator can take control of the machine and override the automatic control for maximum safety. Additionally, the operator can enter a maximum height alarm into the control panel to help avoid overhead obstructions.

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