MD Engineering’s Planer Active Control System is an advanced motion control system designed to improve planer and bridge feed performance. Hydraulic tempsonic cylinders are used in conjunction with a position / force control system that allows positive, high speed feeding of the planer machine without using excessive force. This results in reduced planer jam ups and minimizes board breakage through the planer.

MD Engineering can provide an active control system for many different styles of planers and infeed systems. Robust construction ensures mechanical reliability and performance. Modern technology and a well thought out control platform, result in a highly accurate system that is reliable and easy to use.

In the last few years, wood quality issues are becoming more challenging for planer mills. This has resulted in lower planer mill throughput due to planer jams, broken wood, and feeding issues. This system is ideal for mills that require additional performance for their high speed planer systems. Retrofits are relatively inexpensive and can typically be completed over a weekend, Startup and tuning of the system can be accomplished in only a few hours.

KEY BENEFITS

- Smooth, consistent roll force on the wood.
- Automatic adjustment for thick and thin boards
- Reduction of broken boards
- Improved feeding ability of boards with warp and twist
- Reduced planer jams
- Complete elimination of roll hammering
- Improved reliability
- Simple user interface
- Easy tuning and troubleshooting
- Clear, concise user manual
SYSTEM FEATURES

ADVANCED MOTION CONTROL AND TECHNOLOGY

- Our system utilizes the newest Delta motion controllers to provide advanced position and force control for our system. Motion and force parameters are tuned using Delta’s latest RMC Tools software.
- Scan times in the motion controller are now at 1 ms, providing very quick reaction times and provides very smooth transitions from position movement to force control.

TRUE FORCE CONTROL

- Two pressure transducers are used on each cylinder in order to accurately measure the true differential force generated by the cylinder. This allows very accurate force regulation and minimizes the working pressure required by the rolls.
- Force is accurately controlled and constantly adjusted by the Delta controller. As rough board thickness changes, the system maintains a constant pressure on the board.

TIMING AND ADJUSTMENT

- Calibration and proper tuning is paramount to a well performing system. Our control system uses dynamic timing formulas in order to constantly adjust roll timing. This results in an extremely smooth running system.
- The system communicates with the mill’s PLC in order to determine the current feed speed, and then changes system timing based on this data. Encoder synchronization is also possible.
- Gap is calculated continuously and is used to adjust the timing parameters.
- Small gap detection systems are present to eliminate unnecessary roll movement.
- Valve response is accounted for in order to advance or delay roll reaction times.

PERFORMANCE MONITORING

- A unique feature standard in our Active Control System. The system monitors its own performance and will send out an alarm if a parameter has been changed that adversely affects system performance.

SECURITY

- We have included multi level security access in our system in order to control changes to the system parameters. Parameter files can be saved and reloaded at any time.
The user interface is designed for easy monitoring and tuning of the Active Control System.
The main screen shows an overview of the two control systems (planer infeed and planer).
Windows based system allows for easy navigation between pages.
The 19" HMI uses touch screen technology.

### PLANER

<table>
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<tr>
<th>OUTFEED ROLL</th>
<th>INFEED ROLL #2</th>
<th>INFEED ROLL #1</th>
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**PHOTOEYE STATUS**
- Planer Infeed PER1
- Planer Outfeed PER2

**RMC CONTROLLER STATUS**
- Controller Mode: RUN
- Heartbeat Monitor: OK

### INFEED BRIDGE

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**PHOTOEYE STATUS**
- Infeed Bridge PER1
- Infeed Bridge PER2

**RMC CONTROLLER STATUS**
- Controller Mode: RUN
- Heartbeat Monitor: OK

### SETWORKS

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<th>BOARD WIDTH TARGET</th>
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