



## Moulder Machining Defects

### Bobby Ammerman - Extension Specialist

#### Chip Bruising

Characterized:

By shallow dents in the surface of the stock. Caused from chips that are lying on the end of the knife tip being embedded in the finished surface of the stock by the rotating cutterhead, resulting in a dent.

Corrections:

Move knives further down in the cutterhead pockets. Knives should not stick out more than ¼” past the circumference of the cutterhead. Increase draw from the dust extraction system.

#### Chatter

Characterized:

By inconsistent knife marks caused from the stock not being held properly as it is fed through the machine; however, it can also be due to spindle bearing wear, loose dovetail slides, or unbalanced cutting tools.

Corrections:

Double check that all chip breakers and pressure shoes are in the proper location and performing the way they were designed to, also check that tools are balanced, bearings are working properly, fences and bedplates are aligned properly, and the dovetail slides are tight.

#### Snipe

Characterized:

By a deep cut a few inches from the end of the stock on the top, bottom, or edges of the part.

Corrections:

“Front end right side” -The cutterhead is setting back past the right side outfeed fence. Adjust the right side cutterhead tangent to the outfeed fence.

“Tail end right side”- The cutterhead is setting in front of the right side outfeed fence. Adjust the right side cutterhead tangent to the outfeed fence.

“Front end left side”- The chip breaker is too far away from the left side cutterhead or the left side chip breaker is not pushing the stock firmly against fence as the components are being machined. Re-adjust the chipbreaker.

“Tail end left side” -The left side auxiliary/hold over fence is not holding the stock properly against the opposing fence or the left side chipbreaker is setting to far away from the left side cutterhead. Re-adjust the chipbreaker.

“Front end top surface”- The top head chipbreaker is not applying pressure on the stock or the pressure shoe is not close enough to the top cutterhead. Adjust the pressure closer to the top cutterhead or lower the chipbreaker.

“Tail end top surface: -The top head chip breaker is applying too much pressure or the pressure shoe is too far away from the top cutterhead. Determine if the chipbreaker is in correct location and adjust if necessary; also determine if the pressure can be adjusted closer to the top head and if so, re-adjust the pressure closer.

## **Burning**

Characterized:

By an extreme case of glazing where there is so much heat generated by the knives that it actually burns the fibers on the surface of the material. This is normally caused from the stock not being fed continually through the machine, dull tools, or improper grinding practices.

Corrections:

Feed the stock continually through the machine and sharpen the knives using the proper grinding practices.

## **Double cut**

Characterized:

By many little inconsistent knife marks. Usually the result of getting more than one knife in the finish cut.

Corrections:

Resharpen the knives.

## **Raised grain**

Characterized:

By a roughened surface where the harder summerwood is raised above the softer springwood, but not torn from it. This happens when the knives are too dull to properly cut the fibers.

Corrections:

Resharpen the knives.

## **Fuzzy grain**

Characterized:

Loosened ends of fibers that are raised above the surface of the stock after machining. This generally happens when running wet wood.

Corrections:

Test the material for proper moisture content using the oven dry method to determine if the moisture content is correct. Resharpening, proper knife extension, and hook angle could help if moisture content is correct.

## **Tearout/Chipout**

Characterized:

By pits or voids below the plane of the cut, resulting from the fibers being pulled from the wood instead of being cut. Occurs more frequently around knots, grain swirls, and stock where the average moisture content is below seven percent (over dried lumber).

Corrections:

Test the material for proper moisture content using the oven dry method to determine if the moisture content is correct. If moisture content is correct, reshape knives using the correct hook angle for the given species.

---

(B. Ammerman, 6-02)

Educational programs of the Kentucky Cooperative Extension Service serve all people regardless of race, color, age, sex, religion, disability, or national origin. Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, M. Scott Smith, Director of Cooperative Extension Service, University of Kentucky College of Agriculture, Lexington, and Kentucky State University, Frankfort. Copyright © 2002 for materials developed by the University of Kentucky Cooperative Extension Service. This publication may be reproduced in portions or its entirety for educational or nonprofit purposes only. Permitted users shall give credit to the author(s) and include this copyright notice.