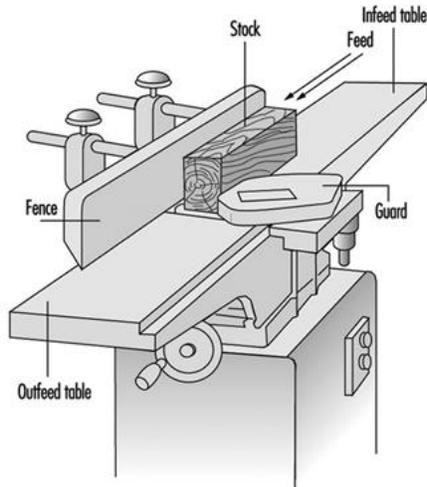
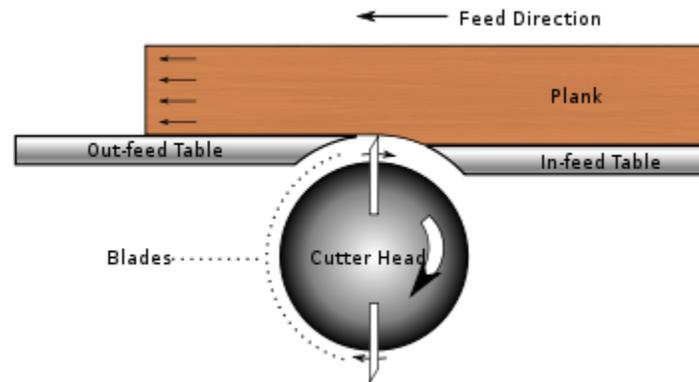


Jointer alignment and knife setting

Grant Smith



Terms: The diagrams at left and below detail the basic terms we will use in this discussion.



Jointers are used for three main tasks: Creating a flat surface on a board, creating a second surface at (usually) a 90 degree angle to the first, and finally basic milling operations such as chamfering, rabbeting, and beveling. Jointers are best accompanied by a planer when used to prepare lumber. A jointer allows the user to enjoy flat, square stock when building. Main benefit is more accurate joinery and less trouble fitting parts.

Since there are many styles of jointers, and types of knife fixing methods, we will simply acknowledge this diversity before focusing primarily on the key alignment steps. The following checklist assumes assembly has been completed per the appropriate manual, and that the user is familiar with the adjustments of his or her particular machine.

1. Check that the infeed and outfeed tables are coplanar, make adjustments as needed
2. Check that the fence can be set at a 90 degree angle to the tables
3. Check that knives are parallel with the outfeed table and that each are equal in height
 - a. Many methods and jigs work, ruler drag method simple and low tech
 - b. Adjustments necessary to knives per manufacturer's instructions
 - c. Double check as knives are tightened
4. Recommend newly installed knives are set slightly higher than outfeed table, something like 2-5 thousandths, depending on the user's technique and preference.
5. Make test cuts, checking technique first, then adjusting outfeed table (or knives if outfeed table is fixed) as follows:
 - a. Stock surface is concave: ensure board is not being flexed as it is being run through jointer, adjust knives lower/outfeed table higher
 - b. Stock surface is convex: adjust knives higher/outfeed table lower

- c. Tapered left to right: check that even pressure is applied. Taper can be normal on badly warped stock. In rare cases table misalignment can be cause.
- d. Tapered along the length of board: Usually nothing wrong. Taking many cuts can contribute to this issue. Try fewer deeper cuts on next board. In rare cases can be cause by tables out of plane.
- e. Stock catches on edge of outfeed table: Outfeed too high or stock is longer than infeed and warped.
- f. Snipe at trailing end of board. Usually caused by outfeed table being too low/knives too high. Watch to ensure board is kept in contact with outfeed table to ensure technique is not to blame.
- g. Inconsistency in results; concave or convex randomly: User technique. Using a single steady feed rate is best. Varying feed rate can cause results to be less than flat. Can also be caused by stock that is too long. Check cutter marks for consistent spacing, adjust technique until they are consistent.

6. Resources:

- a. Owner and service manual for your particular jointer. Available from dealers and often online.
- b. Jointer Causes, Problems, and fixes at NewWoodworker.com. Aimed at novice jointer users. <http://www.newwoodworker.com/jintrprobfxs.html>
- c. Wood whisperer video on alignment of parallelogram jointers, also reviews some knife setting jigs for hyper accuracy: <https://www.youtube.com/watch?v=gO746cuRqV4>
- d. Aligning tables on worn jointers: <https://www.youtube.com/watch?v=OQIcLWPtFcw>
- e. Jointer technique with a discussion of how to best orient stock when jointing: <https://www.youtube.com/watch?v=M-ZZ0dhdJYY>