

# Model D1700/D1701

## Moulding Head

### Instruction Sheet



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## **!WARNING**

To reduce risk of serious personal injury when using moulding head:

- Always wear ANSI-approved eye and hearing protection when using moulding head.
- Never use on  $\frac{1}{2}$ " spindle.
- Never operate with only one knife installed.
- Always ensure BOTH knives are firmly secured in place BEFORE starting shaper.
- Never feed lumber *with* rotation of moulding head.
- Follow safety guidelines of shaper manufacturer.

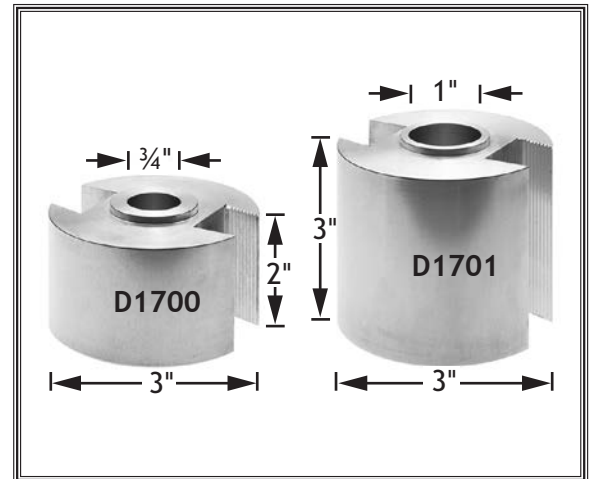


Figure 1. Moulding head dimensions.

## Introduction

The D1700/D1701 2-Knife Moulding Head (see Figure 1) is designed to be used on a vertical spindle shaper. It is made of the highest quality aircraft aluminum and machined to exact tolerances. The moulding head accepts matched pairs of interchangeable, corrugated-backed high-speed knives (not included). The moulding head will use either 60° or 90°-cut corrugations that are spaced  $\frac{1}{16}$ " apart. The knives lock into position by wedge-type gibs for maximum safety.

DO NOT use this moulding head on any machine other than one equipped with a  $\frac{3}{4}$ " spindle for the D1700, or 1" spindle for the D1701. The shaper should have at least a  $1\frac{1}{2}$  HP motor. We also recommend operating a power feeder when using the moulding head, as it helps feed the workpiece steadily and consistently for best cutting results, while at the same time helping you keep your hands a safe distance away from the cutter.

**Important:** *These instructions and drawings are intended for explanation and clarification purposes only as they pertain to the moulding head. You must apply all safety measures as they relate to shaping operations and your specific equipment. Review and apply all safety measures before you use this moulding head.*

## **!CAUTION**

Moulding knives have sharp edges. Use care while removing them from package. Remove oily film to help ensure knives securely mount in moulding head.

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## ! WARNING

- DISCONNECT SHAPER FROM POWER before installing or adjusting knife.
- Keep all guards and anti-kickback devices in place.
- Double-check moulding head to insure it is tight and secure in spindle.
- Always inspect lumber and other wood materials for cracks, knots, or other imperfections that could cause lumber to kick or shatter while shaping.

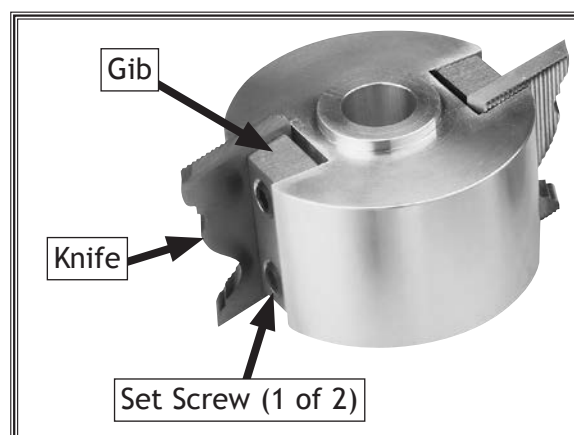


Figure 2. Knife installed in moulding head.

## Installing Knives

1. Thread (2) included  $\frac{3}{8}$ "-16 x  $\frac{1}{2}$ " set screws into gib (see Figure 2) so set ends of screws are flush with bottom of gib.
2. While holding gib in moulding head, slide knife corrugations into moulding head corrugations and center knives on moulding head body. Make sure all corrugations are engaged (see Figure 3).
3. Tighten set screws with a  $\frac{3}{16}$ " hex wrench, but DO NOT over-tighten. Use only enough force to secure knife snugly in position, so you can adjust knives in next section.
4. Repeat Steps 1-3 to insert second knife in moulding head. Make sure position of corrugations on first and second knives is the same (see Figure 4) so both knives are an equal height.

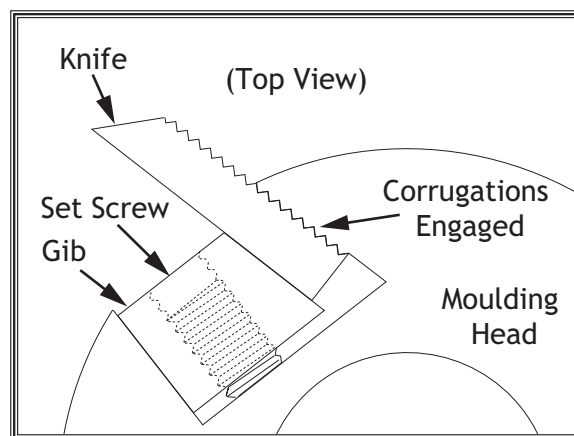


Figure 3. Moulding head corrugations engaged.

## ! WARNING

Improperly secured knives can fly out of moulding head and hit operator or bystanders, causing serious personal injury. Recheck all adjustments and tightening sequences, and ensure both knives are properly secured before installing moulding head.

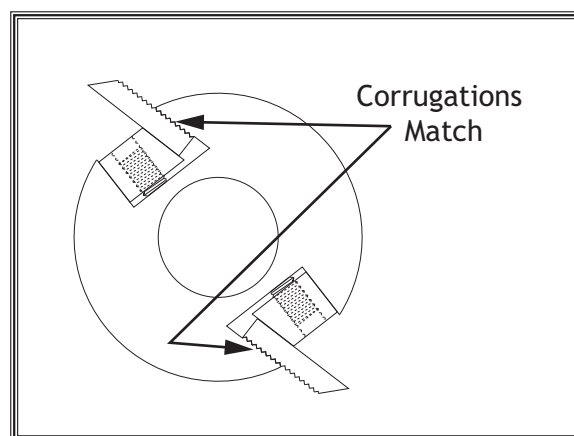
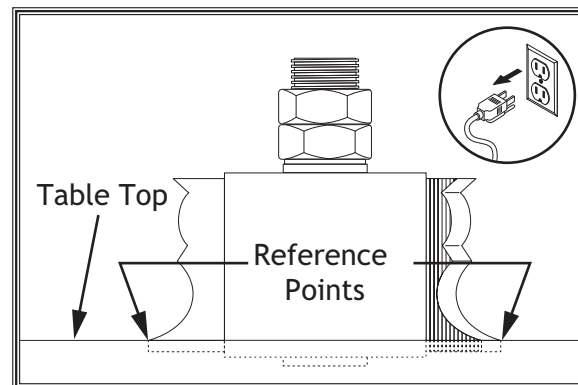


Figure 4. Position of knife corrugations match.

If you need help with your new moulding head, call our Technical Support at: (360) 734-3482.

## Adjusting Knives

1. DISCONNECT SHAPER FROM POWER!
2. Install moulding head onto spindle and secure as detailed in your shaper manual.
3. Choose a reference point on first knife you installed, and adjust spindle height until this point is even with table top, as shown in **Figure 5**. (The reference point can be the bottom corner of the knife or any feature that allows vertical alignment with table top).
4. Adjust second knife until corresponding point on it is same height as first one relative to table.
5. Tighten one set screw on a gib a small amount, then tighten nearby set screw same amount. Repeat until all set screws are tight on both gibs. **DO NOT** over-tighten set screws.



**Figure 5.** Reference points on knives aligned with table top.

## Spindle Mounting Tips

- Mount moulding head as low as possible on spindle.
- Add a spacer(s) on top of moulding head to ensure that spindle nut does not rest on moulding head shoulder.
- Secure the moulding head assembly with a locking washer and nut, or two nuts locked together.
- Ensure your shaper is in top running condition and all guards are in place.

## General Procedures

A wide selection of knife profiles make the moulding head a versatile addition to your shaper. The moulding head operates on the same principle as other shaper cutters and can be used for straight shaping, as well as irregular shaping. Since the moulding head is larger in diameter than most cutters, it must be operated at speeds ranging between 4,000 to 7,000 RPM. Please refer to your shaper manual if you are unsure about operating speeds.

**ALWAYS** feed stock against moulding head direction of rotation. The moulding head must come to a complete stop and **SHAPER MUST BE DISCONNECTED FROM POWER** before making any inspections or adjustments.

## Straight Shaping

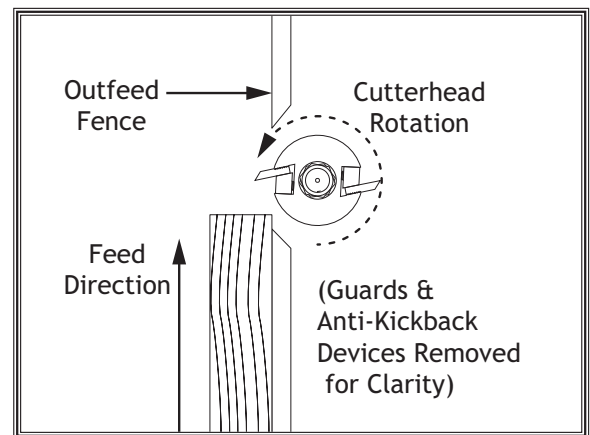
For straight shaping, use the fence assembly of your shaper. Refer to the fence adjustment section in your shaper manual for fence alignment instructions. Make sure all guards are in position and functioning correctly.

To perform straight shaping, do these steps:

1. DISCONNECT SHAPER FROM POWER!
2. Select appropriate knife profile and install it into moulding head (refer to **Installing Knives** on Page 2).
3. Secure moulding head onto spindle, then check that moulding head rotates in desired direction and knives are oriented correctly, as shown in **Figure 6**.
4. Adjust spindle height.
5. Position outfeed fence (see **Figure 6**) for depth of cut.
6. Use hold-downs, jigs or anti-kickback devices to secure workpiece during shaping operation. Refer to shaper manual for specific safety information about straight shaping operations.
7. Always make a sample cut on a piece of scrap wood before shaping workpiece. Readjust moulding knives if necessary.
8. Follow recommended operating procedures for shaping end of stock. Refer to shaper manual for specific safety information regarding this type of shaping operation.

## WARNING

To reduce operator exposure to knives and prevent laceration or amputation injuries, make sure moulding head comes to a complete stop and **POWER IS DISCONNECTED** before making any inspections or adjustments.



**Figure 6.** Moulding head set up correctly for straight shaping.

## Irregular Shaping

Irregular shaping (freehand) takes a high degree of skill and manual dexterity to perform. The fence assembly is not used in irregular shaping and should be removed. Rub collars must be used. Choose the correct diameter for the appropriate depth of cut. When doing freehand work, a starting pin must be used. The purpose of the starting pin is to support the workpiece. The starting pin acts as a pivot point and gives the operator more control during the beginning of the cut.

Rub collars can be positioned on top (see **Figure 7**) or below the moulding head, depending on the type of work. Plan ahead and determine which rub collar position will work best for your needs.

To perform irregular shaping, do these steps:

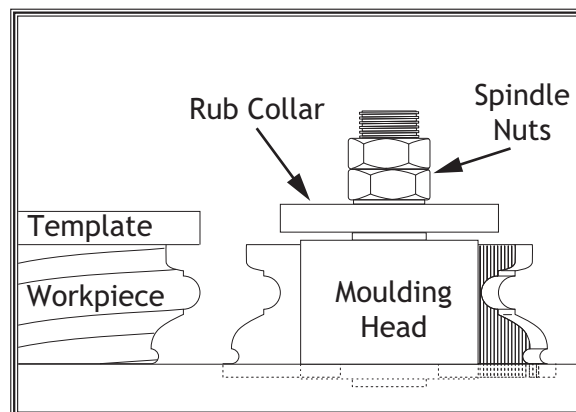
1. DISCONNECT SHAPER FROM POWER!
2. Remove fence assembly.
3. Choose appropriate moulding knives, secure in moulding head (refer to **Installing Knives** on **Page 2**), then install rub collar and spindle nuts (see **Figure 7**).
4. Check direction of moulding head rotation.
5. Lock spindle height after aligning knives to workpiece.
6. Insert starting pin into table surface; choose appropriate hole position. See owner's manual for location. If a starting pin is not available, use a starting block, as shown in **Figure 8**.
7. Inspect stock or pattern for any irregularities which may cause a miss-cut.
8. Use some type of hold-down(s), fixtures and guards when performing freehand work (see **Figure 8**).

## ! WARNING

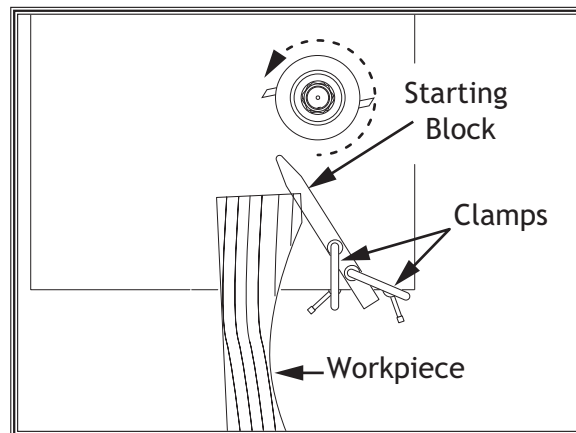
To reduce operator exposure to knives and prevent laceration or amputation injuries, make sure moulding head comes to a complete stop and **POWER IS DISCONNECTED** before making any inspections or adjustments.

## ! WARNING

- Always use starting pin/block and rub collar for freehand work.
- Use guards and hold-downs, and verify they function correctly.
- Follow all safety guidelines of shaper manufacturer for freehand work while operating shaper with moulding head.

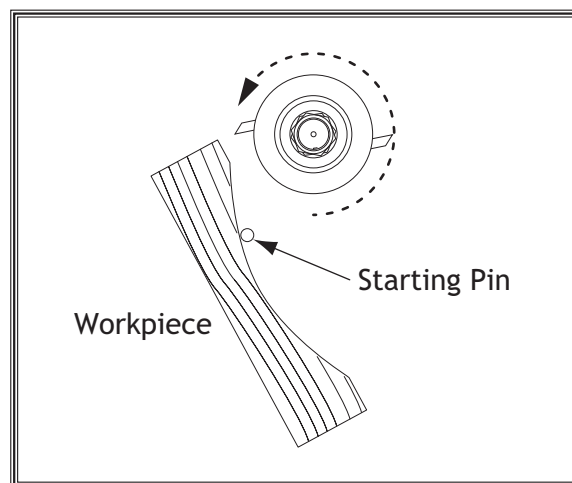


**Figure 7.** Rub collar positioned above moulding head.



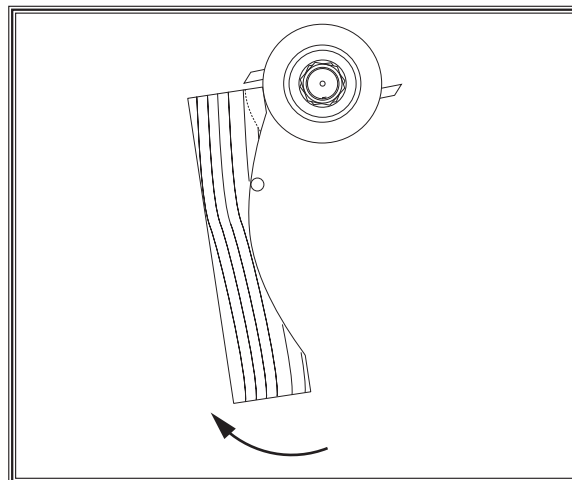
**Figure 8.** Typical setup for performing irregular shaping.

9. Place workpiece in starting position using starting pin for support (see **Figure 9**).



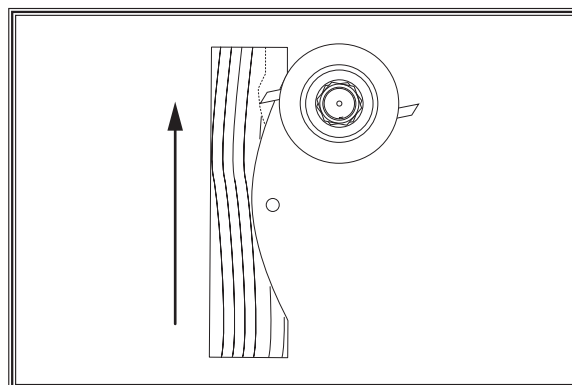
**Figure 9.** Workpiece in starting position (Guard removed for clarity).

10. Gradually swing work into moulding knives, keeping workpiece against starting pin (see **Figure 10**).



**Figure 10.** Swinging workpiece into knife and against pin.

11. After workpiece is supported by rub collar, swing workpiece free of starting pin (see **Figure 11**). Always feed against rotation of knives.
12. Always make a sample cut on a piece of scrap wood. Readjust moulding knives if necessary.



**Figure 11.** Feeding workpiece against moulding head knife.