

SLOT MACHINE™

Motorized Hinge Slotting Tool

INSTRUCTION MANUAL



Congratulations on your purchase of the Great Planes SLOT MACHINE™, the first truly easy way to cut hinge slots in your model airplanes.

The Slot Machine you have purchased is equipped with blades, each having a thickness of .008" [0.2mm], which cut slots that are ideal for today's "CA hinges." If you need to cut thicker slots for pinned hinges or tailgear brackets, etc., you may want to purchase the .012" [0.3mm] blades, which have larger teeth and more "set" in the teeth, which produce an ideal slot for a .040" [1mm] hinge. You will find the instructions for blade replacement in this pamphlet.

Please read all the instructions and safety precautions before cutting your first slot, and be sure to practice on balsa scraps to learn good technique before cutting slots in your model airplane.



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www.greatplanes.com

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SAFETY PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN The exposed blades can inflict severe injury, so keep this tool out of the reach of children, and never allow the blades to contact any body part except when changing blades.

DO NOT DISASSEMBLE. No part of the Slot Machine should be disassembled, except for servicing the blades through the blade access hatch only.

ALWAYS UNPLUG. Always unplug the unit before servicing the blades, and whenever the unit is not in use. A shock hazard may exist if the unit is wet. Never use near water, in the rain, or while standing on a wet surface. Never carry the Slot Machine by the cord or yank it from the receptacle.

FOR HOBBY USE ONLY. The slot machine is made for normal, intermittent personal hobby use. It is not designed for continuous use, such as in a manufacturing operation. Do not press hard. When operating the slot machine, apply just enough force to keep the blades cutting at a steady rate.

USE SAFETY GLASSES AND OTHER SAFETY EQUIPMENT. Use safety goggles or safety glasses with side shields, complying with applicable safety standards and, when needed, a face shield. This applies to all persons in the work area. Do not wear loose clothing or jewelry. They can be caught in moving parts. Wear protective hair covering to contain long hair.

SECURE THE WORK. Use clamps to hold your work. It's safer than using your hands and it frees both hands to operate the tool.

AVOID UNINTENTIONAL STARTING. When positioning the unit, do not hold your finger over the switch.

CAUTION: If the Slot Machine is dropped, the saw blades may be bent. Remove the blades from the unit and insure the blades lie flat against a flat surface. If the blades are bent replace them. Even one bent blade may cause the unit to bind or cause the blades to wander from the intended cut area. **NEVER STRAIGHTEN BENT BLADES.**

DANGER: KEEP FINGERS AWAY FROM CUTTING AREA. Keep fingers away from blades. Never hold the part being cut around the area the blades are cutting the slot.

USE ONLY GENUINE GPM BLADES

Never substitute any blades for the GPM saw blades. Never use defective or incorrect blade bolts. Follow blade assembly procedures. Select the proper blade for the Hinge you intend to install. Improper blades will cause the slot to be either too tight or too loose.

IF BLADES BIND OR MOTOR STALLS, RELEASE SWITCH IMMEDIATELY

SPECIFICATIONS

North American Model (110/120 volts 60 Hz AC)

European Model (220/230 volts 50 Hz AC)

Your Slot Machine is designed to be operated on the standard household power specified on the name plate. Lower voltage may cause loss of power and can result in overheating or reduced cutting effectiveness. Higher voltage may cause the unit to overheat and pose a fire hazard.

OPERATION

The Slot Machine produces hinge slots in balsa wood by means of two thin saw blades that reciprocate in opposite directions, similar to an electric carving knife. The force caused by one blade is offset by the other blade, so the effect is a straight-in cut with minimal effort. If this is your first time using the Slot Machine, practice cutting slots in scraps of 3/8" or 1/4" balsa sheet until you are able to make consistently good slots that are in correct alignment on the hinge line. The tool may seem a bit awkward at first, because you've never used anything like it; but with a little practice you'll soon be wondering how you ever got along without it. If you have a lot of difficulty making good slots, read the "Troubleshooting" section and look for problems in technique or blade alignment that may be causing the problem.

Note: *The Slot Machine is designed to cut hinge slots in balsa wood. Using it in "soft hardwood" such as basswood may be successful if care is used. Do not attempt to use it in very hard wood such as birch, maple or oak.*

Mark accurate hinge lines on your control surfaces and the structures to which they will be attached. Using the Great Planes Precision Hinge Marking Tool™ (GPMR4005) is recommended.



This photo shows the proper grip to use when operating the Slot Machine.

Notice the position of the index finger and thumb. The switch is operated by the middle finger.

Before pressing the switch, carefully align the Slot Machine blades on the hinge line and apply slight pressure to start the teeth into the wood. When first pressing the switch, the start-up torque of the electric motor will cause a slight sideways movement of the blades, and this will result in misalignment unless the blades are in firm contact with the wood when pressing the button. Holding the unit as shown in the above photo, will minimize this movement.

Continue pressing the button and applying slight pressure to keep the blades cutting at a constant rate until the housing bottoms out against the balsa. It is important that you do not apply an up-down or sideways force, as this will bend the blades and result in a slot that does not go straight in. Remove the blades from the slot and test fit the hinge.

Components of The Slot Machine could be damaged by continuous use under strenuous cutting conditions. It should be allowed to cool for a few minutes after cutting 6 slots in hard balsa, especially if the thicker blades are being used.

MAINTENANCE

Unplug the power cord from the power source before cleaning or opening the unit.

The motor and electronics are not user serviceable. Opening the unit other than at the blade access hatch may result in operational problems if not properly reassembled. If you do open the housing around the motor, do not under any circumstances plug in the power cord, as this would be a dangerous shock and fire hazard.

The internal fan creates a positive pressure inside the housing in the blade area to prevent excessive sawdust from entering the unit. But, after cutting approximately 200 hinge slots, it is advised to blow compressed air into the unit (through the louvers and the blade access opening) to dislodge sawdust from the electric motor.

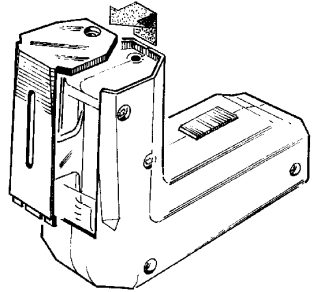
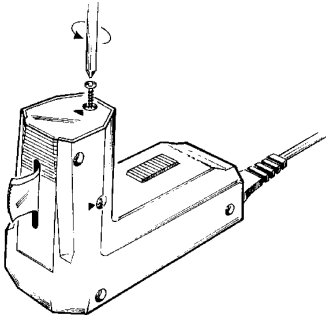
Wipe the outside of the unit clean with a soft dry cloth. Do not use water or any solvents or cleaning sprays.

HOW TO CHANGE BLADES

It may be necessary to access the blades periodically, to change or replace them, or if the blade attachment screws loosen. Use the following sequence:

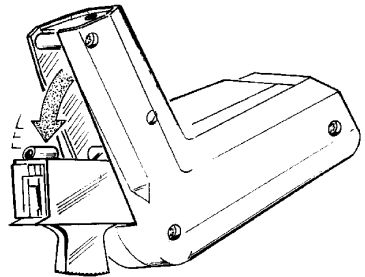
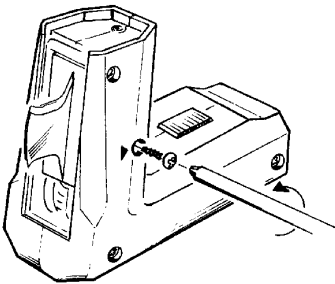
1. Momentarily press the start switch until the blades are approximately even with each other.

2. **Unplug the power cord!**



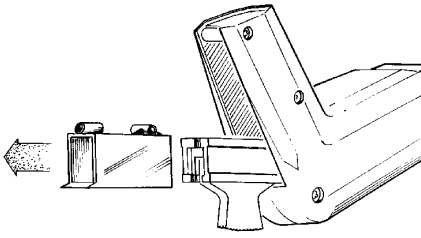
3. Remove the front Phillips head screw on the end of the housing.

4. Remove the blade access hatch by sliding it forward and down.

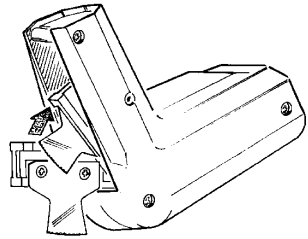


5. Remove the rear Phillips head screw (above and slightly to the rear of the blades).

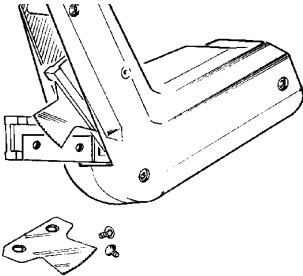
6. Pivot the blades and blade holders down and out of the housing.



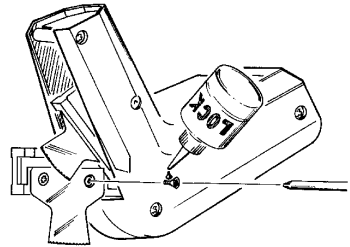
7. Slide the blade holder guide off of the blade holders.



8. Pivot one of the blade holders up and out of the way, exposing the blade attachment screws.



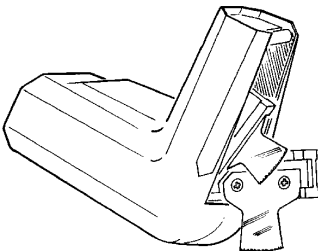
9. Remove the blade attachment screws and remove the blade. Notice that one corner of the blade has a 45-degree angle, and note the direction of that angled corner.



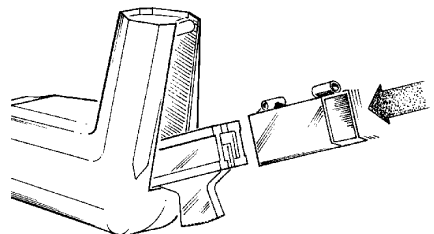
10. Insert a new blade into the blade holder with the 45-degree angled corner matching that of the pocket in the blade holder.

Tip: These are special blades in which every other tooth is set outward in one direction only. The alternate teeth have no set. This allows the two blades to press against each other without locking up. The 45-degree corner ensures that the blades can only be installed in the correct orientation. The teeth with set must point away from each other.

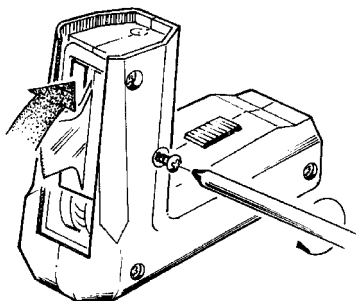
11. Place a drop of thread locking compound on the threads of each screw, and install the screws tightly.



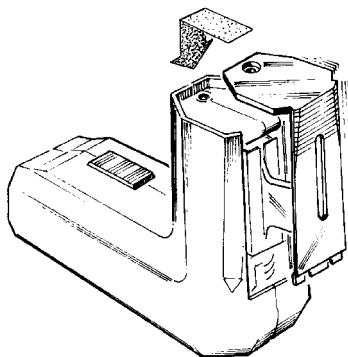
12. Repeat steps 8 - 11 to replace the other blade.



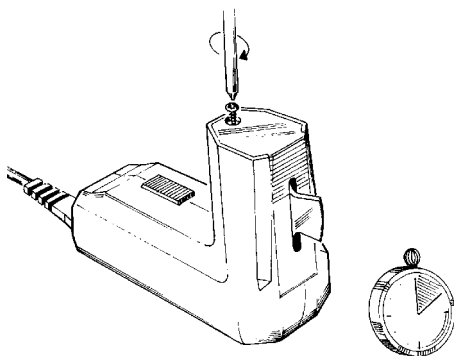
13. Slide the blade holder guide back over the blade holders.



14. Pivot the blade assembly up into the housing. Reinstall the rear Phillips head screw through the housing and through the dog on the top of the rear blade holder guide. Tighten snugly, but do not over tighten.



15. Insert the blades through the slot in the blade access hatch and snap the hatch into place.



16. Reinstall the front Phillips head screw. This screw must engage the dog on the top of the blade holder guide. Tighten securely, but do not over tighten. After installing new blades, we recommend that you allow 2 hours or more for the thread locking compound to set before using the unit to cut slots.

TROUBLESHOOTING GUIDE

Problem: The unit fails to operate when plugged into an outlet and the start button is pressed.

Action: Plug some other appliance into the same outlet to see if there is power. If there is power, but the unit fails to operate, unplug immediately and call Hobby Services at (217) 398-8970 to arrange for a replacement. Do not attempt to service the electrical portion of the unit yourself.

Problem: The slot is too small for the hinge.

Reason: You may be using the wrong blades.

Action: If using .040" [1mm] thick pinned hinges, it will be necessary to purchase and install the optional thicker blades. See *Purchasing Replacement Blades*.

Problem: When attempting to cut a slot, the unit jumps and shakes, but does not cut unless excessive pressure is applied.

Reason #1: One or both of the blades may be loose.

Action: Inspect the blades to determine if either of them are loose. If so, following the steps of *How to Change Blades*, access and tighten the blade attachment screws. Use a thread locking compound on the screw threads.

Reason #2: The blades may be out of alignment with each other.

Action: Attempt to realign the blades by loosening and retightening the blade attachment screws.

Problem: Slots do not go straight in.

Reason: If sideways pressure is applied while cutting, the blades will bend and go in at an angle.

Action: Practice on scraps of 1/4" balsa sheet, cutting the slots open afterward to inspect the slot angle. A slot that angles upward may be the result of a downward force being applied while cutting. Practice makes perfect!

Problem: Cutting is slow and difficult.

Reason #1: One or both of the blades may be loose.

Action: Inspect the blades to determine if either of them are loose. If so, following the steps of *How to Change Blades*, access and tighten the blade attachment screws. Use a thread locking compound on the screw threads.

Reason #2: The blade teeth may be getting dull. The blades are made of hard steel and the teeth should remain sharp for many cuts, but they will eventually become dull, especially if used in hardwood.

Action: Purchase and install new blades.

Problem: A thin tab of balsa remains in the hinge slot.

Reason: This is the result of the blades wandering apart as the cut is being made.

Action: This can be caused by applying too much force, rather than letting the teeth do the cutting. It may also be an indication that the teeth are becoming dull. Try relaxing the pressure early in the cut. Inspect the blade alignment and realign if needed. If these don't solve the problem, purchase and install new blades.

Problem: The unit gives off the odor of wood smoke.

Reason: There may be an excessive amount of sawdust inside the motor, and this may be smoldering.

Action: This is a potential fire hazard! Unplug the unit and take it outdoors immediately. Stay outside with the unit until there is no more odor. Remove the blade access hatch and use compressed air to blow out all sawdust.

Problem: The motor runs, but the blades do not cut when pressed into balsa.

Reason #1: One or both of the blades may be loose.

Action: Inspect the blades to determine if either of them are loose. If so, following the steps of *How to Change Blades*, access and tighten the blade attachment screws. Use a thread locking compound on the screw threads.

Reason #2: This may be an internal problem that is not user serviceable.

Action: Call Hobby Services to arrange for repairs. (217) 398-8970

2-YEAR LIMITED WARRANTY - *U.S.A and Canada Only

Great Planes warrants this product to be free from defects in materials and workmanship for a period of two (2) years from the date of purchase. During that period, Great Planes will, at its option, repair or replace without service charge any product deemed defective due to those causes. You will be required to provide proof of purchase (invoice or receipt). This warranty does not cover damage caused by abuse, misuse, alteration or accident. If there is damage stemming from these causes within the stated warranty period, Great Planes will, at its option, repair or replace it for a service charge not greater than 50% of its then current retail list price. Be sure to include your daytime telephone number in case we need to contact you about your repair. This warranty gives you specific rights. You may also have other rights, which vary from state to state.

*For warranty and service information if purchased outside the USA or Canada, see the additional warranty information insert (if applicable) or ask your retailer for more information.

PURCHASING REPLACEMENT BLADES

GPMR4015	Blades for use with CA hinges
GPMR4016	Blades for use with nylon hinges and tail gear bracket

CONTACTING GREAT PLANES

If you have any questions regarding the Great Planes SLOT MACHINE, please call us at (217) 398-8970 or e-mail us at productsupport@greatplanes.com and we'll be glad to help.

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