Fogman World Cup Edge Grinder

www.fogmanusa.com

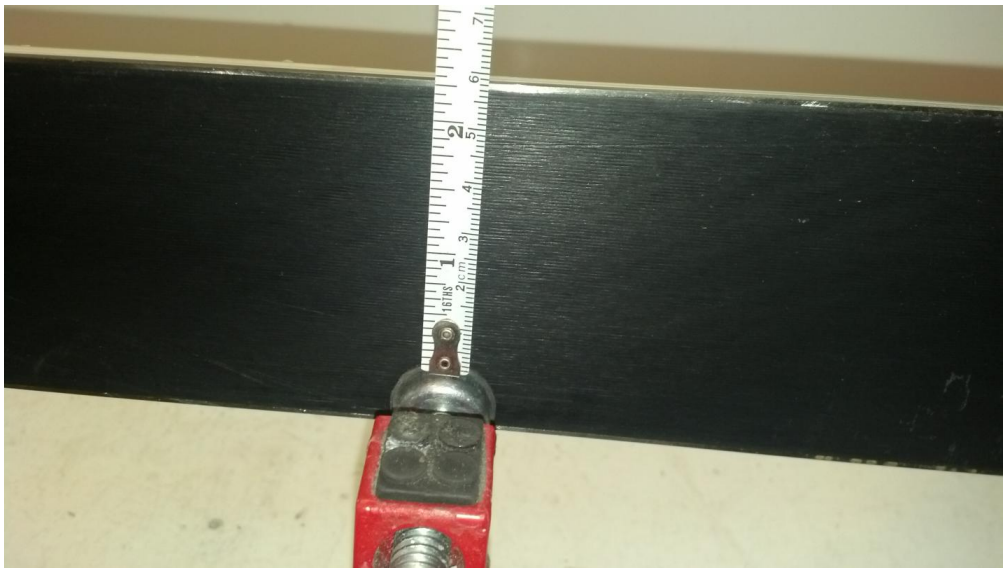
Thank you for purchasing the Fogman World Cup Edge Grinder

Please use the following instructions for operating your grinder:

The first time you use the grinder, it would be smart to use a junk pair of skis to learn on. You will likely damage the edge of the ski during the learning process. It does not take long to become an expert with the tool, but the first try usually does not produce ideal results.

1) Prepare the ski for finish tuning.
    a. Rip Sidewalls
    b. With a Panzar file, rough set the edge angle using a higher angle than will be used to finish grind the edge. For example, if a 3 degree angle guide is to be used on the grinder, use a 5 degree angle guide for setting the rough edge. This back cuts the edge and sidewall so that the grinder is only grinding on the outer most part of the edge and is not hitting any plastic. This will make for a cleaner edge and more efficient grinding. The grinding wheel really doesn't "like" grinding plastic and the plastic can make a bit of a mess of the edge as well. Doing the rough work with a Panzar file will also add to the life of the more expensive super abrasive grinding wheel.

2) Place the ski in a standard set of ski vises with the base of the ski facing the operator. Be sure to leave is at least 1.75" of distance from the vise to the edge. This is done so that the angle guide on the grinder will not be obstructed by the vise.



3) Check Tool for Obstructions
    a. Unclamp the motor, raise it up in the housing and reclamp it.

b. With the motor raised up and the power switched off, make a dry run on the ski to insure there are no obstructions and to practice the motion used when grinding.

4) Set the motor height for Grinding
   a. Unclamp the motor and gently lower it all the way down in the housing. Take care not to drop the motor and grinding wheel onto the ski edge. This will damage the grinding wheel.
   b. Tighten the motor clamp slightly so that there is some drag on the motor, but it can still move. It should be able to move, but it should not be sloppy in the housing.
   c. Place the tool on the ski about 1/3 of the way from either the tip or tail, so that the grinder rests on a relatively straight part of the ski. The bearings of the tool rest on the side edge and the angle guide touches the base of the ski. Cradle the unit with your hands under the angle guide and put light pressure on the angle guide towards the base of the ski. Let the weight of the tool push the motor back up into the housing. Close the clamp on the motor completely.

5) Prepair yourself with proper safety equipment
    a. Put on a Respirator that is suitable to protect your lungs from the fine metal particles that are generated when grinding.
    b. Safety glasses and hearing protection should also be worn when using the tool.
    c. Take care not to cut yourself on the ground edge. The skis can become extremely sharp with this tool with very little effort. The use of light Kevlar gloves is recommended.

6) Grind the edge of the ski

    a. Plug the grinder into a 110 Volt power source in a position such that the cord will not impede your use of the grinder.
    b. Start at one end or the other of the ski just in from where the tip or tail curves
    c. Turn on the grinder.
    d. Cradle the tool as described above and place it on the ski at a 30 degree angle with the right bearing touching the edge as well as the angle guide touching the base of the ski.

e. Start moving with the tool along the ski and lower the left side of the grinder until the grinding wheel touches the edge. Take care to always keep the tool moving while grinding otherwise the metal on the edge of the ski can be burned and damaged.
f. Once the grinding wheel contacts the ski, it is normal to see light grinding sparks.
g. While grinding, cradle the tool using the index fingers to apply pressure on the angle guide towards the base of the ski. This will stabilize the unit and provide a very precise edge.
h. Apply light pressure with the right thumb on top of the unit.
i. The left thumb should not touch the tool at all. Use the left hand only to cradle the tool and apply pressure towards the base.

j. If done correctly, the tool should ride on the right bearing and the right side of the grinding wheel only. If both bearings are touching the edge and turning the height of the motor needs to be reset. Only reset the grinding wheel when both bearings start turning and the grinding wheel is missing the edge of the ski. If it is done more often than this, the wheel will prematurely wear.

k. The grinder should be run at a rate of roughly 15 cm/second. Ideally the tool should be moved as slowly as possible to obtain the best surface finish without burning the edge. The slower the tool is moved, the smoother the edge is, but more heat that is put into the edge. Too much heat will burn the edge.

l. To complete a pass on an edge, run the grinder off the end of the ski, either tip or tail. Approaching the tip or tail, the grinder should be lifted slightly. Take care not to allow the grinder to drop over the curve of the ski so that it hits on both sides of the grinding wheel simultaneously. This can damage the grinding wheel. The grinder is run off the ski in order to get the ski sharp the full length of the ski, but lifting it slightly will insure that it is operated with very light pressure.

m. The first time the ski is ground, it may take quite a few passes to "true" the edge. This tool is very accurate, and skis that have been hand tuned extensively, may take some work to get them back to a precise edge angle. Once the edge has been made consistently sharp, it normally takes 2 to 4 passes to sharpen depending on usage between tunes.

n. No matter what direction the ski is sitting in the vise, the final pass on the ski should be from left to right. The finish produced in this direction is better due to the orientation and rotation of the grinding wheel with respect to the edge.

o. The grinding process will produce a very minor "hanger" or fine lip on the edge. In most snow conditions this does not need to be removed. In very aggressive snow or "grabby" snow, it may be necessary to remove. This is done with a single pass with a fine diamond stone first on the base edge, then on the side edge. Personal preference and ski feel will dictate when and how much of this is process is necessary to perform.

p. Take care not to cut yourself on the ground edge. The skis can become extremely sharp with this tool with very little effort.

7) Clean the tool
   a. Clean the tool with air after each use with compressed air or a "Shop Vac". Make sure to clean the vents on the motor as excessive grinding dust build up in this area can affect the performance of the tool.

   b. Take care to keep the angle guide and bearings clean and free of grinding debris and wax build up transferred from the ski. This can be done with traditional wax remover.

7) Grinding Wheel Replacement

   a. It may be necessary to replace the grinding wheel for one of two reasons.
      i. Breakage: The grinding wheel is somewhat fragile and if used or handled improperly, it can break. Take care in handling, height setting, and grinding to be a gentle as possible with this expensive part of the tool.
      ii. Wear: The grinding wheel is designed to be hard enough to produce good surface finish as well as provide adequate wheel life. It is also designed to be soft enough to grind freely and prevent burning of the edge. We have done extensive testing to develop a balance between these desired results. With that said, the grinding wheel will wear as it is used and will periodically need to be replaced.

   b. Remove the old grinding wheel by loosening the collet nut.
      i. Press red button on side of motor to lock the rotation of the motor.
      ii. Loosen the nut with a 17mm wrench.

c. Install the new wheel and tighten using the following spacing:
    i. 1/4” between the aluminum part of the wheel and the top of the nut

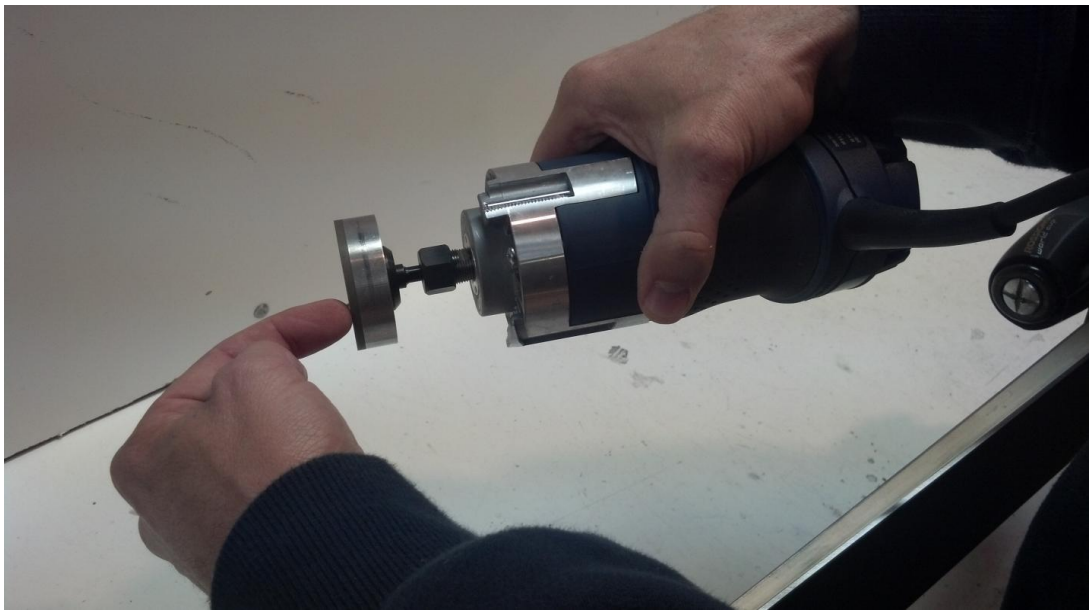
b. Balance grinding wheel
    i. Put on Safety Glasses or face protection and Respirator.
    ii. Start Grinder Motor.
    iii. Lightly touch rotating wheel on side with tip of finger and sense vibration.

    iv. Watch for run out of grinding wheel on start up and shut down.
    v. Loosen grinding wheel nut, rotate grinding wheel 20 degrees and retighten nut.
    vi. Recheck vibration and run out.
    vii. Repeat steps i. through vi. until there is minimal vibration in grinding the system.

c. Dress the face of the grinding wheel
    i. Put on Safety Glasses or face protection and Respirator
    ii. Start Grinder Motor
    iii. Move dressing stick provided with replacement wheel across the face of the rotating grinding wheel.

iv. Grind away the dressing stick until the vibration felt in the dressing stick is minimal.

v. With the grinding motor on, carefully touch the face of the rotating grinding wheel with finger and feel for vibration. If the wheel is properly dressed no vibration whatsoever should be felt.



8) Resources
   a. There are a couple of raw video clips of the operation of the Fogman World Cup Edge Grinder on Youtube. Search on Fogman World Cup Edge Grinder or go the links below.
   b. http://youtu.be/vugPksZOckw
   c. http://youtu.be/rzd5qAQeejk

9) Contact us at fogmanbindings@hotmail.com with questions and feedback, or contact the retailer where the unit was purchased.

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