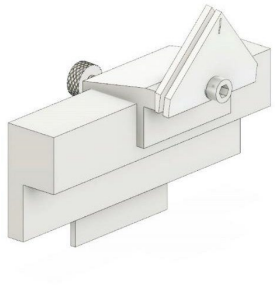
SQUAREJIG

INSTRUCTION MANUAL

MODEL: SJ-7



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THE SQUAREJIG IS DESIGNED FOR USE WITH THE TECOMEC JOLLY EVO GRINDER. IT MAY BE COMPATIBLE WITH CERTAIN OTHER GRINDERS THAT USE A SIMILAR SLIDE-AND-TILT PLATFORM, BUT COMPATIBILITY HAS NOT BEEN VERIFIED FOR ALL MODELS. SOME GRINDERS, INCLUDING THE STIHL USG, REQUIRE MODIFICATION AND ARE NOT STANDARD FIT APPLICATIONS.

THE SQUAREJIG HOLDERS ARE OFFERED IN .050" AND .063" DRIVELINK SIZES. (USE .063" HOLDERS FOR .058" DRIVELINKS)

Safety

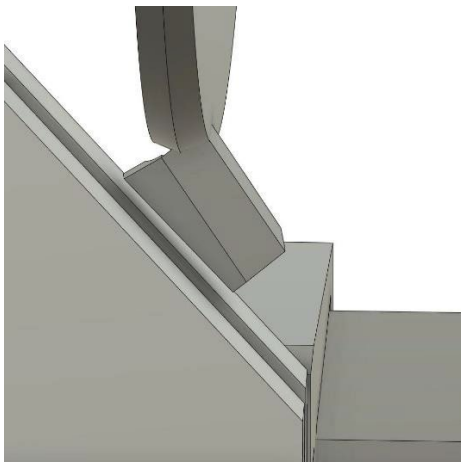
Use of proper personal protective equipment (PPE) while operating is required. Use safety glasses in case of wheel fragmentation with aluminum oxide wheels. Also be aware of metal and or aluminum oxide dust. Use in a well-ventilated area and wear respiratory protection.

Basic Quick Setup: Setup the grinder and mount grinder to a work bench, or stand. Install the wheel and set the grinder head to 90 degrees with the wheel straight up and down. Profile an aluminum oxide wheel with the diamond file provided. Or use a profiled SQUAREJIG CBN wheel. Clamp SQUAREJIG into chain vice.

Shaping aluminum oxide grinding wheels

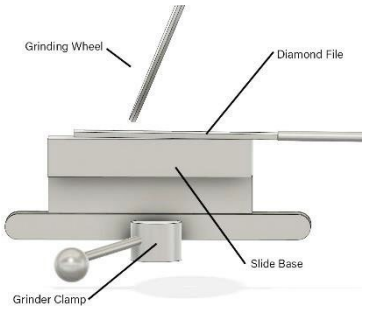
With a diamond file, shape the 1/8th inch aluminum oxide wheel to a point. (See examples to the right) This angle adjusts the outside side-plate angle. Somewhere between these two angles is ideal depending on preference of side plate angle and Squarejig holder. Sharper angles create a more aggressive or forward angled side plate. A vertical or 2-5 degree forward side plate is ideal.

A quick tip: The sharper the point on the wheel, the more aggressive or forward the outside side plate angle. A less steep angle will produce a less aggressive side plate. Notice how the wheel shape affects the side plate angles in the pictures below.



Methods for dressing aluminum oxide wheels:

The Tilt Method



Tilting the wheel can be used for initial setup. This method can help provide an accurate reference but requires flipping the wheel to profile the other side of the wheel. Make sure to put a paper or cotton towel between the diamond file and slide base to prevent scratching the slide base.

Approximate Starting points:

40 degree holder = set to 65 on grinder.
45 degree holder = set to 60 on grinder.
50 degree holder = set to 55 on grinder.

The Manual Method

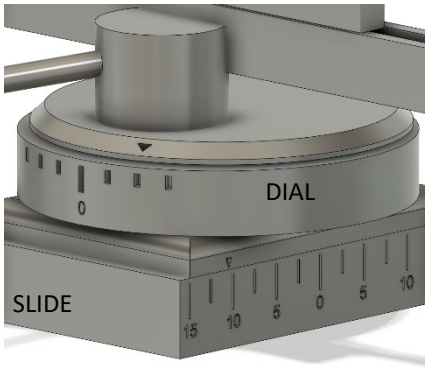
This method requires a steady hand. Make the wheel to a point and then cut a tooth. To adjust side plate angle, change how sharp the point is. If it is too forward or aggressive use a less steep angle. This is the fastest and easiest way to dress the wheel.

(Tips & Tricks) Use a filing motion to ensure single diamonds won't make a groove in the surface of the wheel. Hold both ends of the file and very lightly touch the wheel.

Grinder Settings

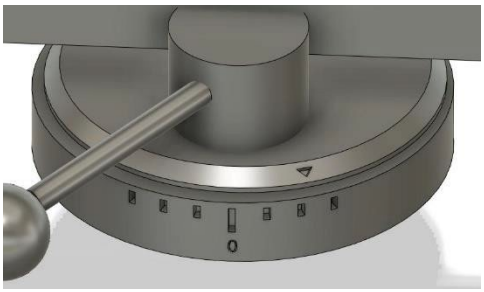
Dial: 9-12 degrees on the dial is good place to start.

Slide: Start with the slide on the far side of zero and move in incrementally toward the operator. Cut a tooth, check and move forward one degree at a time. Be careful not to cut into the tie straps. Use the same procedure for different pitch chain. 7 degrees toward the operator works great for 3/8ths pitch chain.



Top Plate Angle

Outside top plates are easily adjusted with the dial at the base of the grinder these numbers do not correspond with the actual angle of the top plate.



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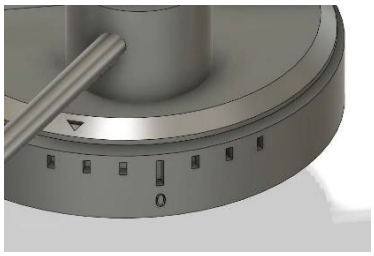
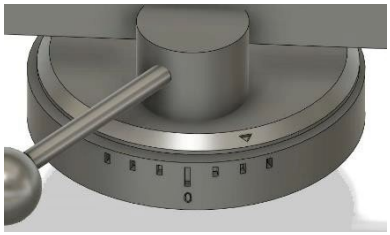
Note: These are approximate dial settings for top plate angles.

Once one side of the chain is sharpened, adjust the dial to the opposite side of the zero or equidistant to the zero on the other side and flip the chain over with the tooth on the other side of the jig.





It helps to remember that chain and machine are opposite when adjusting settings. For example, left-hand cutters go on the right side of the jig and right-hand cutters go on the left-side of the jig.

Right-hand cutter

Left-hand cutter

Important: To achieve even length on cutters, center the two rivets on the chain between the witness mark. It may be easier to make the rivets level on the holder. Make sure to hold this in place so that the chain does not move. Use the thumb screw on the back of the clamp to hold the jig from moving left to right.

GRINDING WHEEL CHOICE (Very important for effective sharpening)

Fine grit wheels should be used for finishing or sharpening undamaged or wood dull cutters. Tecomec makes a level 1 or white wheel that is very fine grit for finishing. These wheels are only ideal for race chain where time is not limited. The Tecomec level 2 pink wheels are general purpose wheels for sharpening wood dull chain and lightly deformed cutters. These are slow cutting and time is needed to mitigate heat effectively. Oregon, Tecomec and Molemab make a pink wheel that fit this description. Level 3 and 4 or coarse grit wheels should be used for repairing heavily damaged cutters or converting round ground to square. Tecomec has a green wheel and a light pink corundum vitrified wheel that fit this description. CBN wheels are also a versatile option that cut faster because of better heat mitigation.

Tips and Tricks Removing oil from the chain before sharpening can help with wheel load up. Loaded wheels won't cut well and put more heat into the tooth. For lowering heat input try a fast tapping technique. This especially helps with fine grit or finishing wheels. Any discoloration of the metal may indicate high temperatures. This can harden the tooth and hand filing will be very difficult. Note: Chain cutter hardness can be different between manufacturers. For example: Oregon and Husqvarna chain are generally softer than Stihl.

MAINTAINING THE WHEEL

Spark volume can be a good indicator of wheel performance. If there are less sparks than usual it could be an indicator that the wheel is loading up with metal and needs dressing. Dressing the wheel will remove oil and metal built up on the wheel and will allow effective grinding again. (This process can burn up pink wheels quickly for heavily damaged chain.) Softer wheels deform faster than harder wheels and need dressed to reform the corner of the wheel. (Green Tecomec wheel) Fine wheels tend to require more dressing because of load up. **Remember to never dress the side of the wheel unless creating a custom profile.** All of the grinding should be done from the outer dressed edge of the wheel. The side of the wheel should be left to load up and be only a finishing or polishing surface for the inside top plate.

PRE SHAPED CBN WHEELS FOR THE SQUAREJIG

Pre shaped cubic boron nitride wheels are available for the Squarejig. CBN wheels are a great option for work chain. They cut fast and mitigate heat better. They are ideal for fixing heavily damaged cutters or converting round ground chain to square or every day grinding. CBN wheels can also create a nice finish. A slow constant cut is possible vs the light tapping that is ideal with aluminum oxide. CBN is different in that it often requires lightly touching the tooth for an extended period to remove any burrs. The longevity and consistency can be worth the added cost. We highly recommend them.

TOOTH LENGTH

Once all the teeth are sharpened on one side of the chain, use a tooth from the already sharpened side of the chain as a reference to measure the length of the other side of the chain cutters. Note: tooth length is important but not near as important as the consistency of all of the other angles. Ideally they should all be the same length.

Putting left and right-hand cutters side plate to side plate is an effective way to check for tooth length.

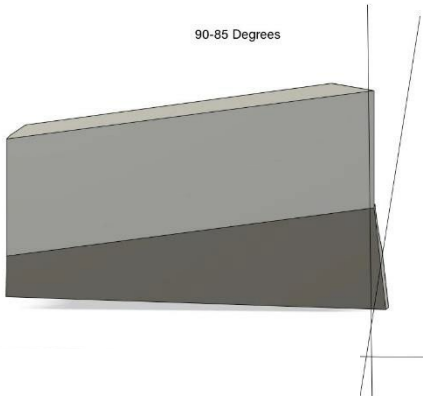
Cutters Side plate to Side Plate:

An easy way to put teeth side plate to side plate is to find a cutter far enough away from the cutter on the chain so the chain can fold up.

MACHINE CALIBRATION (ADVANCED)

Not all machines are perfect from the factory, if creating perfect teeth is wanted or required, use a protractor to make sure the wheel is 90 degrees in relation to the slide base. Use a fine point marker to make dots on each side of the tilt toward the back of the grinder. If the dial indicator is off, it may require loosening the screws on the dial indicator and moving it back to zero and tightening it back down.

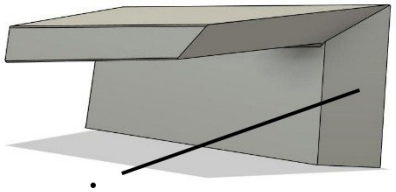
Quick Guide

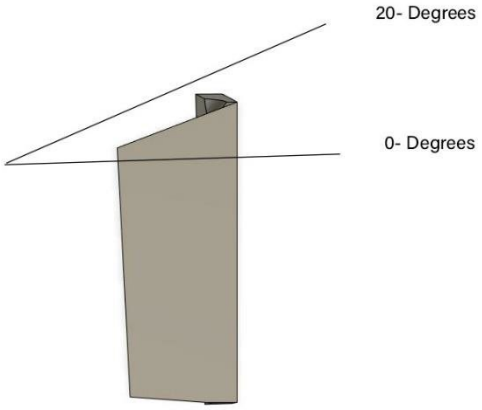


OUTSIDE SIDE PLATE ANGLE is adjusted by the point on the grinding wheel. A sharper point on the wheel creates a more aggressive side plate angle. A 2-5 degree forward side plate is ideal for a good work chain.

INSIDE SIDE PLATE ANGLE The slide or tilt and adjust how sharp the side plate is.

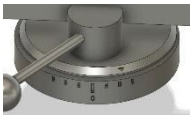
Moving the jig toward the operator creates a sharper side plate. Be careful not to cut too far into the tie strap or rivets.





OUTSIDE TOP PLATE ANGLE is adjusted by the dial at the base of the machine.

Angles from 0-35 are easily adjustable.

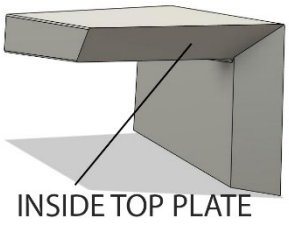


INSIDE TOP PLATE ANGLE

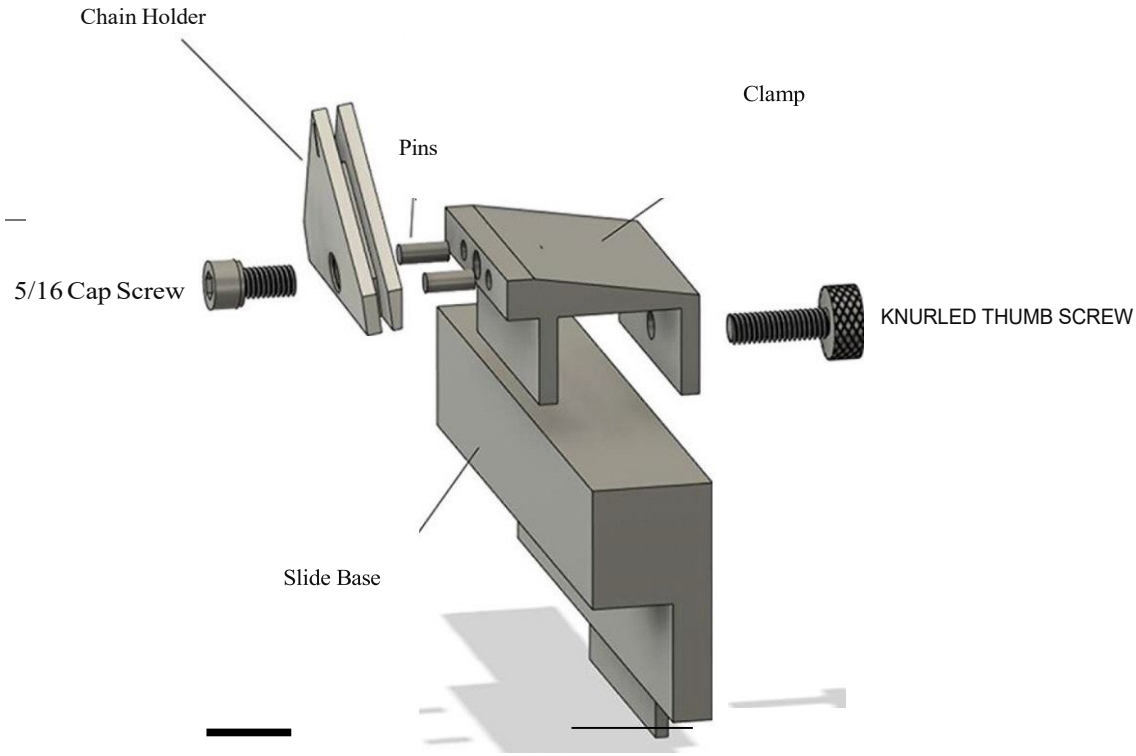
The holder determines top plate sharpness.

A 40 degree Holder will create a more thinned out top plate or

a sharper inside top plate. A 50 degree jig holder will make a stronger top plate angle which can create more durability.



SQUAREJIG PARTS DIAGRAM



FOR ANY QUESTIONS ABOUT HOW TO ACHIEVE THE IDEAL CUTTER FOR YOUR WORK, FEEL FREE TO REACH OUT TO US

PHONE/TEXT: +1 206 850 2700
EMAIL: ED@SQUAREJIG.COM

IF THE CHAIN IS NOT CUTTING SMOOTHLY AND EFFICIENT, FEEL FREE TO SEND A PICTURE OF THE TOOTH. WE CAN HELP WITH GRINDER SETTINGS AND WHEEL ADJUSTMENT RECOMMENDATIONS.

THANK YOU FOR THE OPPORTUNITY TO HELP.

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