

# MAG-DRO®

*The Mitre Slot Base works best with a digital calipers because of being able to set the zero at any place and adjust or check from there.*

## MITRE SLOT BASE TIPS AND TRICKS

Table Saw Tune-up	
Fence Alignment	This is the main use of this tool. Simply place the Mitre Slot Base with calipers in the miter slot at the front of the fence, extend the depth probe, zero the calipers, retract the depth probe. With the blade down, move the Mitre Slot Base to the back of the fence and extend the depth probe. The measurement is the amount that the fence is out of adjustment. While micro adjusting the fence, it is helpful to use painters tape to mark above the depth probe locations at the front and back of the fence.
Saw Blade Alignment	After unplugging the saw and with the saw blade raised to it's full height; place the Mitre Slot (with the calipers) in the miter slot and extend caliper depth probe to hit the front of the blade (a spacer may be needed) and set caliper zero on the digital calipers. Use tape or a permanent marker to mark the spot and rotate the blade to the back. Retract the depth probe, slide the Mitre Slot Base assembly to the back of the saw blade and using the depth probe check the blade alignment.
Blade run-out	After unplugging the saw, raise the blade to full height; place the caliper with Mitre Slot Base close to one end of the blade in the miter slot. Extend the depth probe and set zero on the calipers. If your miter slot is too far from the blade, use a spacer to extend the reach. Mark the place with tape just outside where the probe hits. Pull the depth probe away from the blade and rotate the blade in small increments; each time checking the distance by extending the depth probe to hit the saw blade. Determine the minimum and maximum caliper dimensions. Mark the minimum and maximum places radially onto the mandrel with painters tape. Change the blade and repeat the procedure to see if the minimum and maximum are the same, to determine if the blade runout is caused by the saw blade or mandrel.

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Table Saw Uses	
<p>Table Saw Blade Height</p>	<p>Option 1 - Make a height gauge (see plans on the MAG-DRO web site) Attach the calipers to the height gauge, bring depth probe to the table and set the zero on the digital calipers Lift depth probe, place over a tooth at the middle of the blade and watch the digital readout as you raise the saw blade.</p> <p>Option 2 - Make a cut a little bit lower than your final depth on a scrap piece. Measure the cut depth. Attach the calipers to a home made height gauge (see the MAG-DRO web site for plans) bring depth probe to the table and place over a tooth at the middle of the blade and lower the depth probe to hit the tooth. Set zero on the digital calipers and raise the saw blade the amount needed.</p>
<p>Tongue and groove it is very important to use a board of uniform thickness (use your calipers to be sure) because it will double the error on the tongue or groove that you cut</p>	<p><b>A. Cutting a tongue to fit a groove</b> - With the blade at the correct height (see tip on the <u>Table Saw Blade Height</u>), adjust the fence to cut the outside edge of the board on both sides (cut the side that is away from the fence, standing up the board so that the edge of the board is on the table). Measure the groove with the calipers and set the zero at that dimension. Put the caliper jaws across the just cut tongue (it will be wider than needed to fit groove) and record the caliper display. Divide the display distance in half and move the fence that distance in the correct direction. Re-cut both sides of the board and check for fit. (A spacer piece may be necessary to allow the depth probe to reach the fence.)</p> <p><b>B. Cutting a groove to fit a tongue</b> - With the blade at the correct height (see tip on the <u>Table Saw Blade Height</u>), adjust the fence so that the blade cuts out a narrower groove than needed in the middle of the board, when it is cut on both sides. Measure the tongue with the calipers and set the zero at that dimension. Put the caliper jaws in the narrower groove and record the caliper display. Divide the display distance in half and move the fence that distance in the correct direction. Re-cut both sides of the board and check for fit. (A spacer piece may be necessary to allow the depth probe to reach the fence.)</p>
<p>Cutting an exact width board</p>	<p>Determine the width needed. Set the table saw fence a little wider than is needed, make a slight cut in the board and measure the cut width with the calipers. Set the Caliper Base (with calipers) on the table saw close to the fence (<b>towards the front if it's a cam lock fence</b>) and project the depth probe to the fence and set the zero on the digital calipers. Move the fence over the difference and make the cut. (A spacer piece may be necessary to allow the depth probe to reach the fence.)</p>

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Other Uses	
Router Bit Adjustment	Attach the caliper with Mitre Slot Base vertically to the router table fence or a height gauge per the instructions on the web site. If you have a router table with a fence, just clamp the Mitre Slot Base to the fence. Next, extend the depth probe to the base, set the zero on the calipers, and raise the depth probe. Slide the height gauge or fence with clamped Mitre Slot Base so that the depth probe is right over the bit. Lower the depth probe to touch the router bit. Raise or lower the bit to the desired height.
Planer	Attach the caliper with Mitre Slot Base to the adjustable portion of the planer by either clamps or screws (if screws are used, make sure it does not cause damage to the planer) making sure depth probe can touch the planer bed. Lower the depth probe to touch the bed surface and set the zero. Watching the readout on the caliper raise the bed appropriately.
Part Inspection	Attach the caliper with Mitre Slot Base on the homemade jig. Place on a flat surface. Extend the depth probe to the surface and set the zero. Use probe and caliper display as a height gauge for pieces being inspected.
Making a digital readout router table	Attach Mitre Slot Base on the backside of the router table fence with the 2 screws, so that the depth probe of the calipers in the Mitre Slot Base can touch the back of the router fence for the whole length of adjustment desired. Screw one of the cup hooks in line with and a little higher than the locking screw on the caliper. With the needle nose pliers, expand one end of the extension spring so that it can slip over the locking screw head on the calipers. Put that end over the locking screw head and with the caliper depth probe away from the router fence pull on the other end of the spring until the caliper starts to move. Stretch the spring a little farther and cut to that length with the wire cutters. Re-bend the end spring coil from the cut side for a new extension spring end. Attach that end to the cup hook, set the zero on the calipers loosen the fence and move the fence back and forth to see the readout on the calipers show the fence position. Take off the calipers; use the second cup hook to hold the spring end that hooks on to the calipers when not in use.
Mitre Slot Base Advantage	To use a miter slot as a base for measurement and adjustments. Also it can be permanently attached to various tools and jigs so that when it's needed simply attached the calipers and make the adjustment.