

Toothsetter/Guage

Safety, Operation, Limitations, Maintenance & Parts Manual

BMT100

rev. D.01



Safety is our #1 concern! Read and understand all safety information and instructions before operating, setting up or maintaining this machine.

March 1997

Form #219_en

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SECTION 1 OVERVIEW

1.1 Toothsetter/Gauge (LTTSG) Introduction

There are two steps to maintaining blades used on the Wood-Mizer sawmill. They should ALWAYS be followed in this order:

1. Blade Sharpening
2. Toothsetting

See Figure 1-1. The blades supplied by Wood-Mizer have a raker-style set in the teeth. If you look at a blade from the top, you will see that the teeth are set (or bent out) in a repeating sequence; straight, left and right. The teeth that are set left and right do the cutting. The straight teeth (rakers) clear the cut of sawdust.

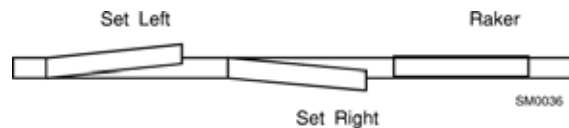


FIG. 1-1

See Figure 1-2. As the blade is sharpened, the tip of the tooth recedes and the set becomes smaller. Correct setting is one of the most important factors in the cutting ability of a blade. Check used blades regularly to see if they need resetting.

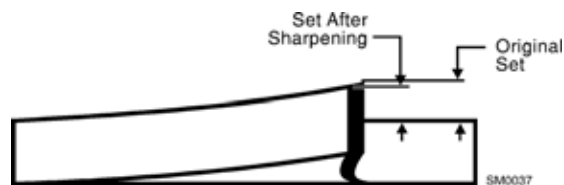


FIG. 1-2

The Toothsetter/Gauge (LTTSG) provided in the Blade Maintenance Package allows you to accurately and evenly set the teeth of a bandsaw blade. The spring-loaded clamping mechanism lets you position a tooth in front of the Gauge and clamp it in place. You can then measure the set. The tooth is bent by clamping the blade further. This chapter describes proper setup and operation of the toothsetter.

1.2 Deburring The Blade

Sharpening leaves tiny metal burrs on the back side of the teeth. New blades also have burrs. These burrs **MUST** be removed before the set is checked. If they are not removed, they may cause the toothsetter to give false readings.

To remove burrs, take the blade from the Sharpener. Invert it, so that the inside of the blade is facing out. Drag a stick of hardwood across the blade in the opposite direction that the teeth cut. (Use the weld in the blade as a reference point for starting and stopping.)

Cutting with the blade also removes burrs. If the blade you are about to set has been used after sharpening, you will not need to deburr it. Clean the blade before removing from the mill by running the Water Lube Option for 15 seconds. Remove the blade and wipe dry with a rag to prevent rusting.

SECTION 2 SETUP

Mount the toothsetter to the stand. Use the mounting holes found in the base plate of the setting fixture. Use the provided bolts (inserting the bolts down through the top of the mounting plate), wing nuts and washers. Setup the toothsetter so that there is at least 32" (81.0 cm) to the rear and to either side of the tool. This allows enough room for the blade supports.

See Figure 2-1. The main components of the toothsetter are shown below. These parts will be discussed in the following instructions.

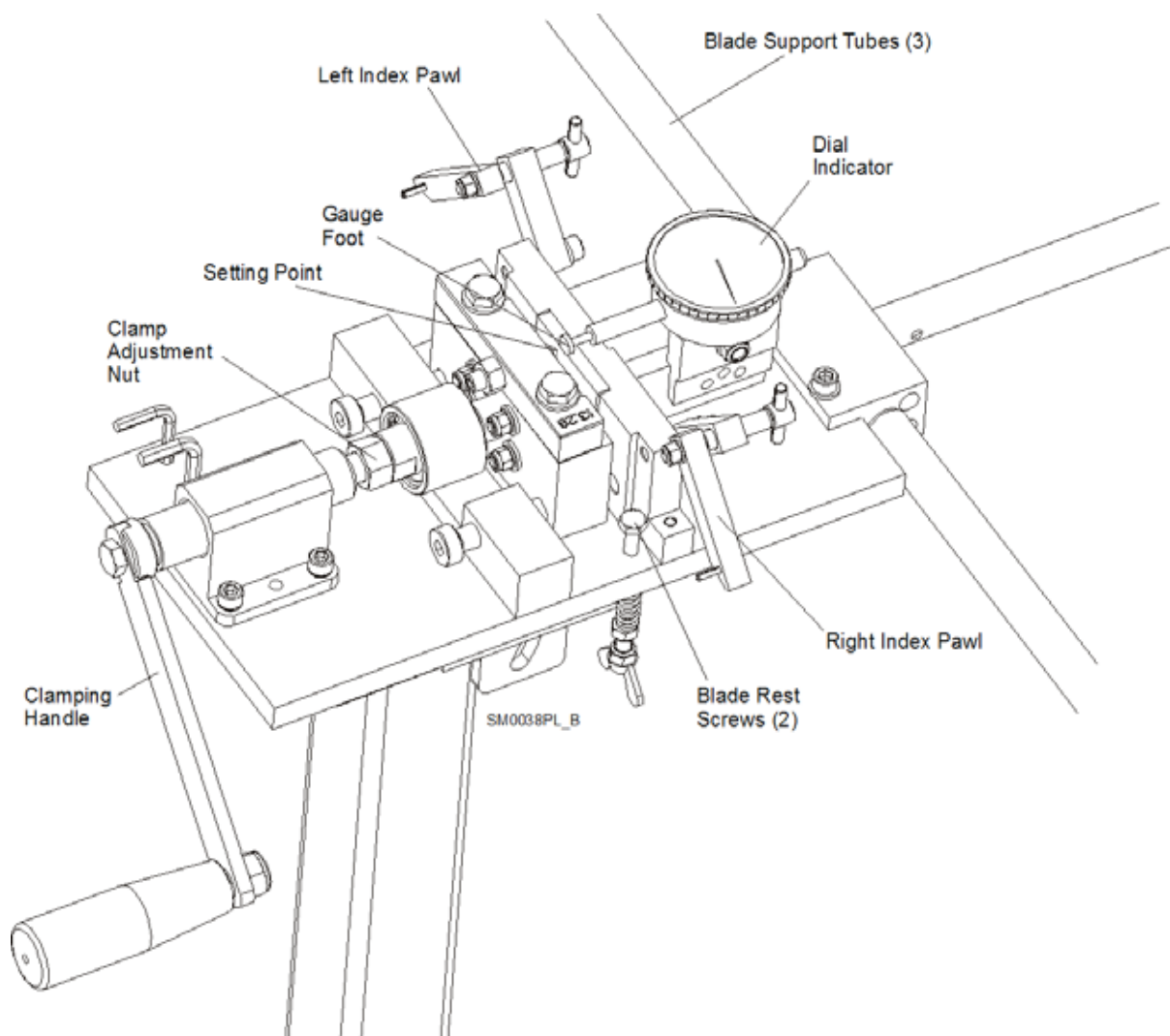


FIG. 2-1

2.1 Blade Support Installation

Attach the three blade support arms to the threaded mounting bar at the rear of the tooth-setter.

See Figure 2-2. Assemble a blade support guide onto the end of each blade support arm. Bolt from the hexed side of the guide assembly. Tighten the top bolts with the self-locking nuts. Tighten the bottom bolts with the wing nuts.

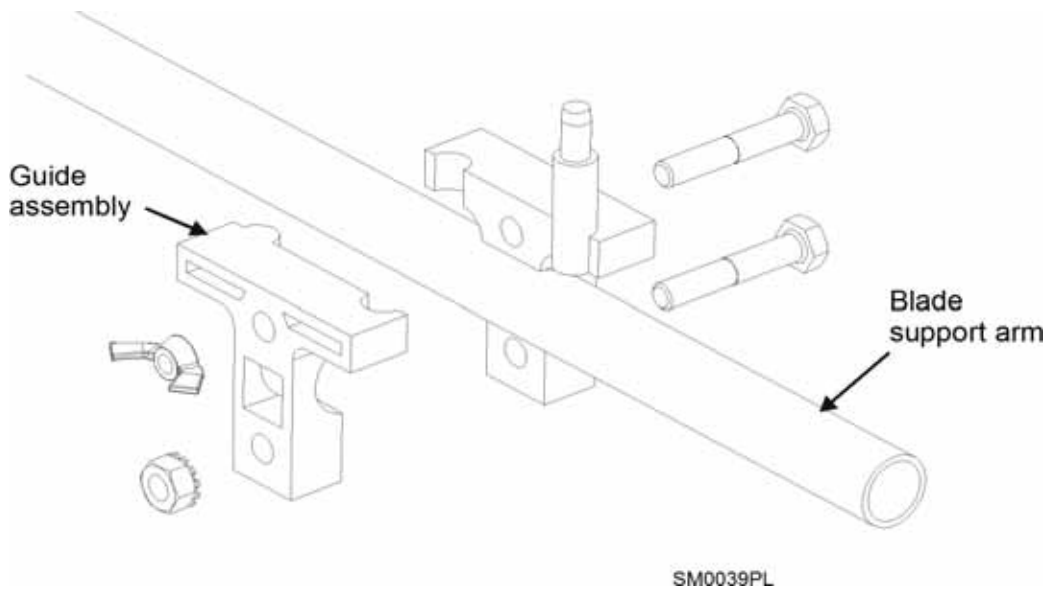


FIG. 2-2

The guides should be about 1" (2.5 cm) from the ends of the right and rear tubes and about 2.5" (6.0 cm) from the end of the left tube. Final adjustments will be made later.

2.2 Dial Indicator Setup

See Figure 2-3.

1. **Back the setting point out of the way.** Insert the hex key in the end of the setting contact point shaft and turn counterclockwise until the setting contact point is behind the front edge of the moving clamping plate.
2. **Adjust the Dial Indicator.** Clamp the gauge pin between the clamping plates. The pin should be touching the center of the gauge foot.

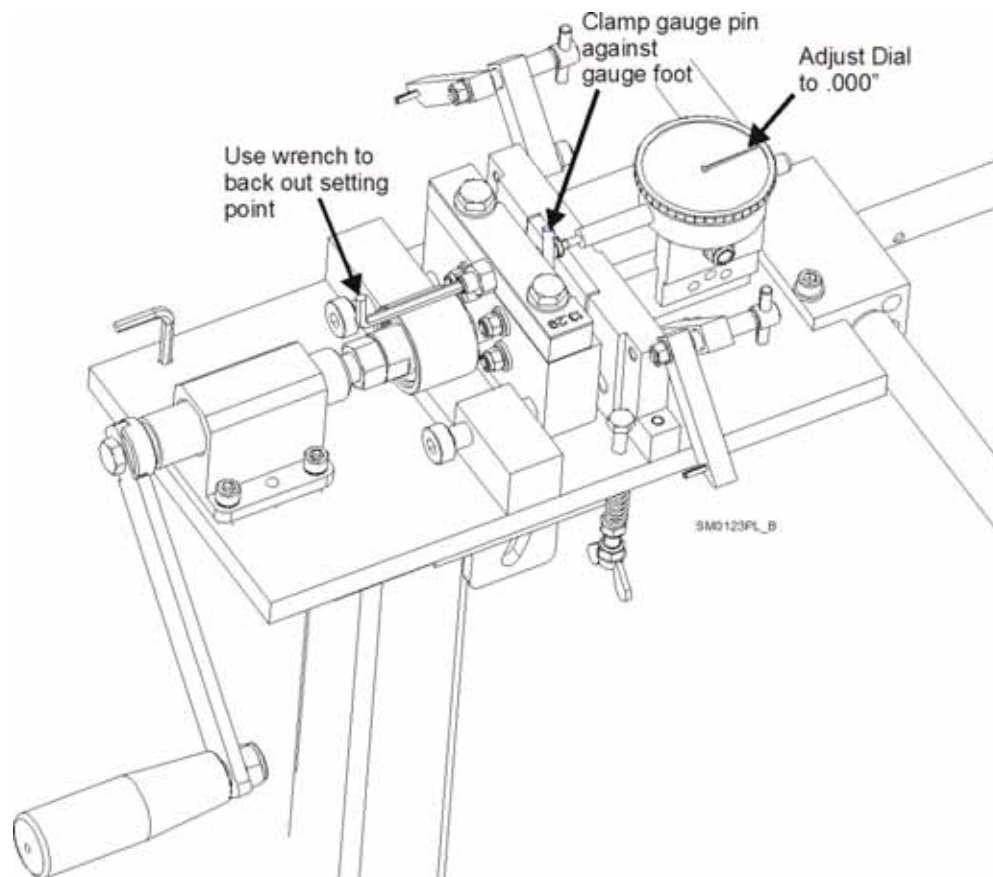


FIG. 2-3

The dial indicator should read 0. If the dial indicator does not show 0, loosen the dial lock on the upper right side of the dial indicator. Rotate the dial indicator to 0 and retighten the dial lock.

Now, remove the gauge pin from the toothsetter clamp. The dial indicator should now read between $-.001$ and $-.005$.

See **Figure 2-4**. If the dial indicator does not read between $-.001$ and $-.005$ with nothing clamped, you will need to adjust the indicator mounting block:

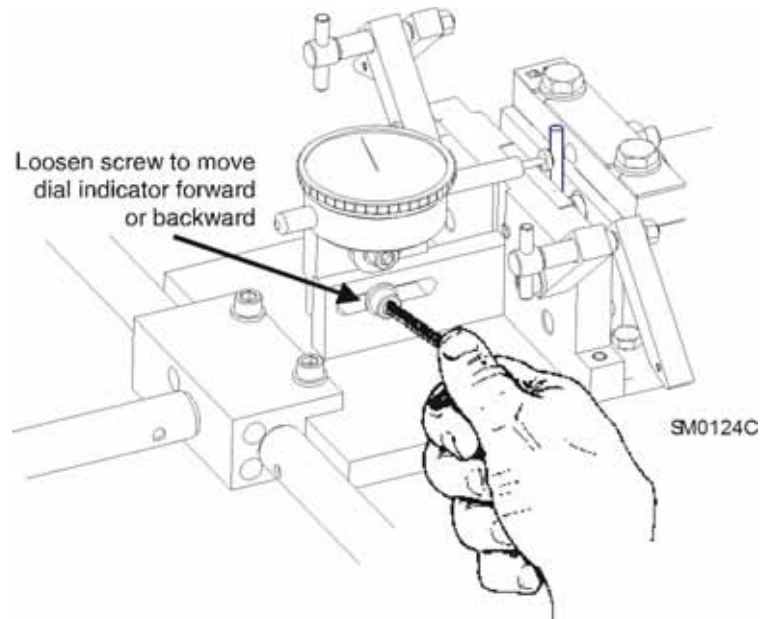


FIG. 2-4

3. Reclamp the gauge pin centered on the gauge foot.
4. Loosen the screw at the bottom of the indicator mounting block. Move the indicator assembly back until the gauge foot does not touch the gauge pin.
5. Move the indicator assembly forward so the gauge foot touches the gauge pin and the gauge needle moves $.001 - .005$. Retighten the mounting block screw. Make sure the mounting block remains flat against the toothsetter base plate.
6. Rotate the dial face until the gauge reads zero.
7. Unclamp the gauge pin. The indicator should now read $-.001$ to $-.005$. If not, repeat steps 3 - 6.

SECTION 3 OPERATION & MAINTENANCE

Once the toothsetter alignments have been checked and adjustments have been made, you are ready to measure and set blades.

Sharpening removes metal from the face of the tooth. This eventually reduces the set to a point where the blade will not cut very well. Set should not vary more than (\pm)0.001 from one tooth to the next.

The following steps will take you through operation of the toothsetter.

Note: Refer to the *Tru•Sharp™ Blade Handbook* for recommended set specifications for your sawing application.

3.1 Blade Installation

1. **Clean the blade and deburr before putting it in the toothsetter.** Otherwise, sap buildup on the blade or tooth will give false set readings. Metal burrs created by sharpening also will cause false readings.
2. **Mount the blade in the toothsetter.** Place blade between the clamping plates and on the three guide assemblies.

NOTE: You will need to move both the left and right index pawl assemblies down and out of the way. These will be adjusted later.

3. **Set the clamping assembly to hold the blade.** The clamp is set at the factory to lock the blade firmly as the handle throws over. If the handle is difficult to push forward or throws over before locking the blade, adjust the clamp nut.

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Operation & Maintenance

Toothsetter Adjustments

See **Figure 3-1**. Loosen the clamp adjustment nut. Turn the clamp nut and set the distance between the clamp plates. After the clamp is adjusted properly, tighten the clamp adjustment nut.

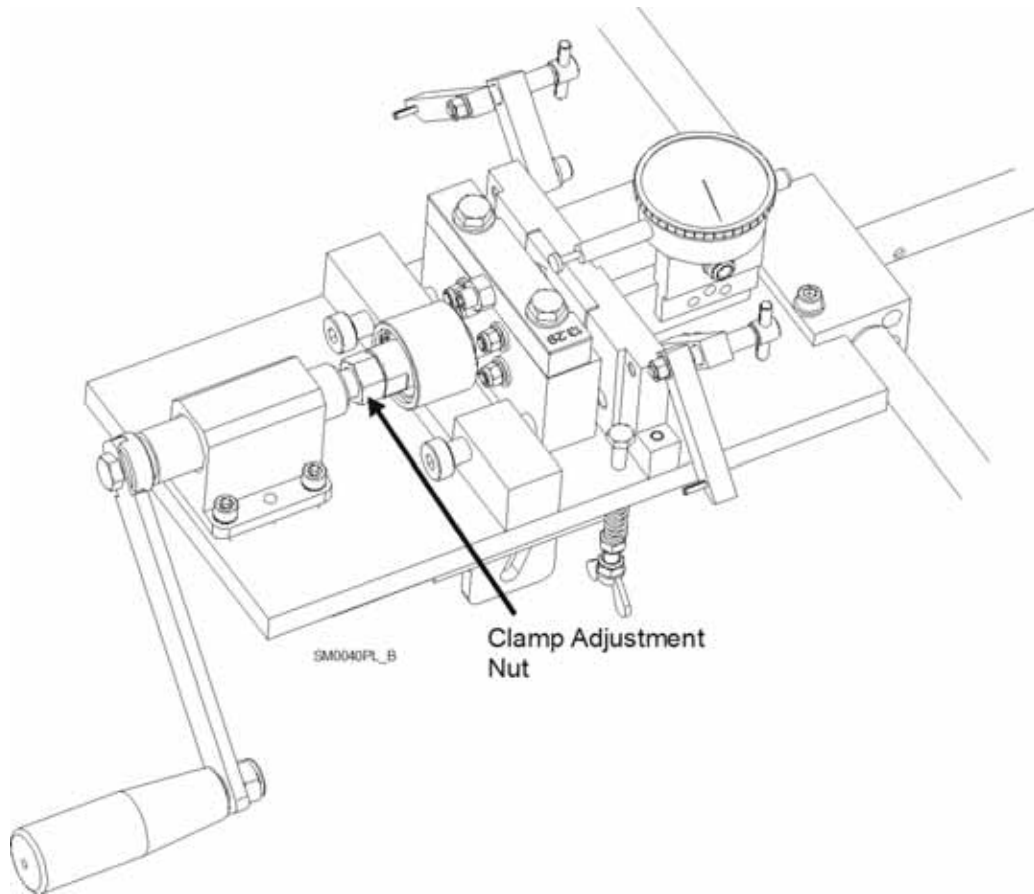


FIG. 3-1

3.2 Toothsetter Adjustments

See Figure 3-2.

1. **Adjust the blade rest screws.** Rest the blade evenly on the two blade rest bolts on each side of the clamp. Adjust the rest screws until the gullet of the blade lies just above the top of the clamp plates. (Deburring will remove burrs from the back side of the teeth, but may not remove burrs from the gullet area. Keeping the gullet out of the clamp assembly helps to assure accurate readings.)

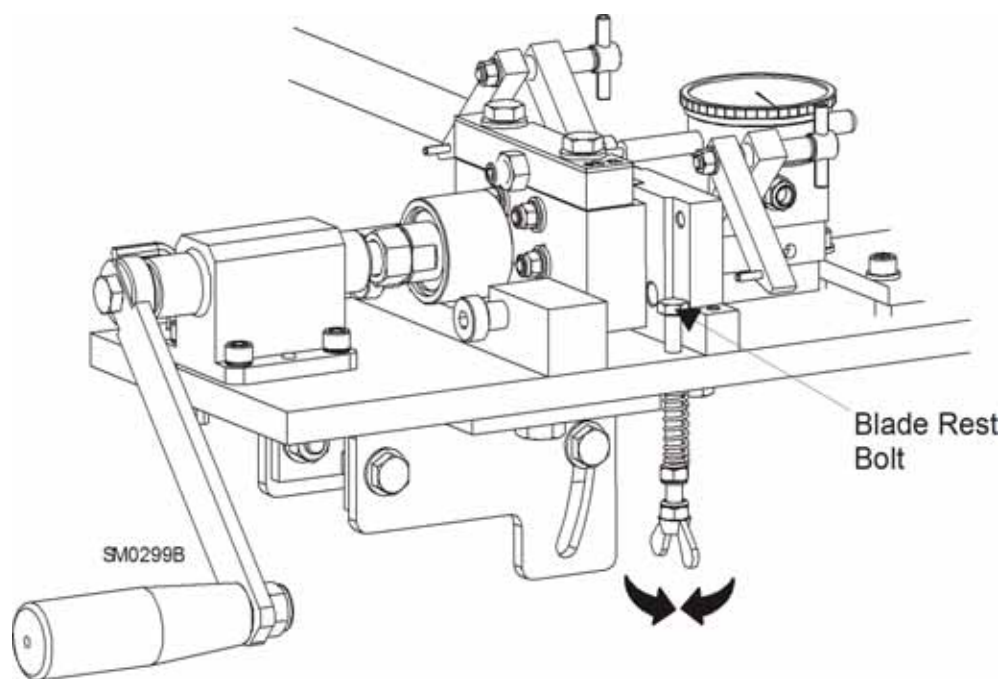


FIG. 3-2

2. **Make final adjustments to blade support arms and guide assemblies.** Adjust to assure the blade travels smoothly. Blade should rest on rear guide, but should not touch the bottom of either side guide assembly.
3. **Adjust the setting contact point.** Position the blade so the gauge foot is in between two teeth. Use the hex key to bring the setting contact point towards the gauge foot until the dial indicator reads 15-20 thousandths.

- 4. Position the blade.** Turn the blade to bring a weld into the clamping/setting assembly. Use the weld as a reference point for starting and stopping. Start with the first tooth to the right (See NOTE) of the weld that has been set back toward the dial indicator.

NOTE: The toothsetter sets and measures the teeth which are set away from the operator and towards the dial indicator. To measure teeth set in the opposite direction, invert the blade and insert it in the toothsetter.

See Figure 3-3. Position that tooth in front of the gauge foot so the its edge is aligned with the center of the setting point.

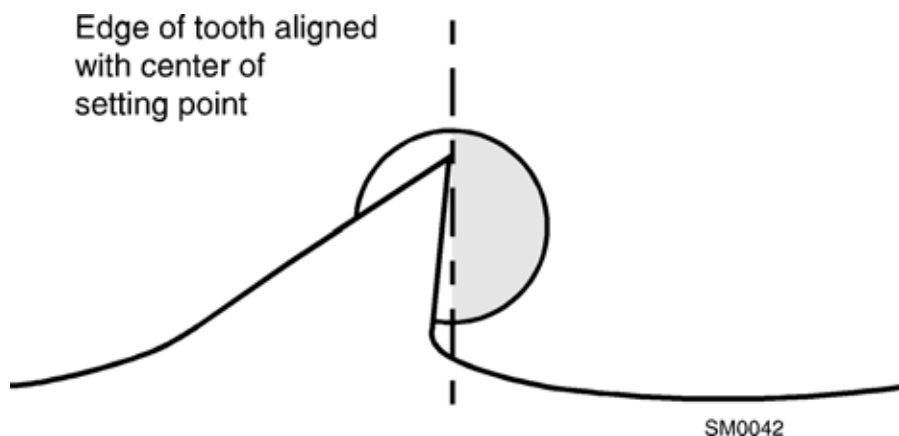


FIG. 3-3

5. The index pawls are factory-set for *Tru•Sharp*™ blades with 7/8" tooth spacing. Check the right (or left if the blade is inverted) side index pawl is firmly against the tooth two teeth to the right (or left) of the one being set. To adjust, loosen the index pawl screw with the hex key provided and move the pawl tight against the tooth. Retighten the screw.

3.3 Setting Point Adjustment

If you are setting a blade with a **10.30** or **13.29** profile, install an appropriate washer spacer to the moving blade clamp assembly before beginning the setting operation (see the figures below). It is not necessary to use a washer spacer when blades with 9.29 profiles are set. Each toothsetter is equipped with two washer spacers for adjusting the setting point: a washer marked "10.30" (part No. 094312) and a washer marked "13.29" (part No. 094313). Use the "10.30" washer for standard, 10.30 blade profiles and the "13.29" washer for 13.29 blade profiles. The "10.30" washers are factory-installed in the

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Setting Point Adjustment

machine.

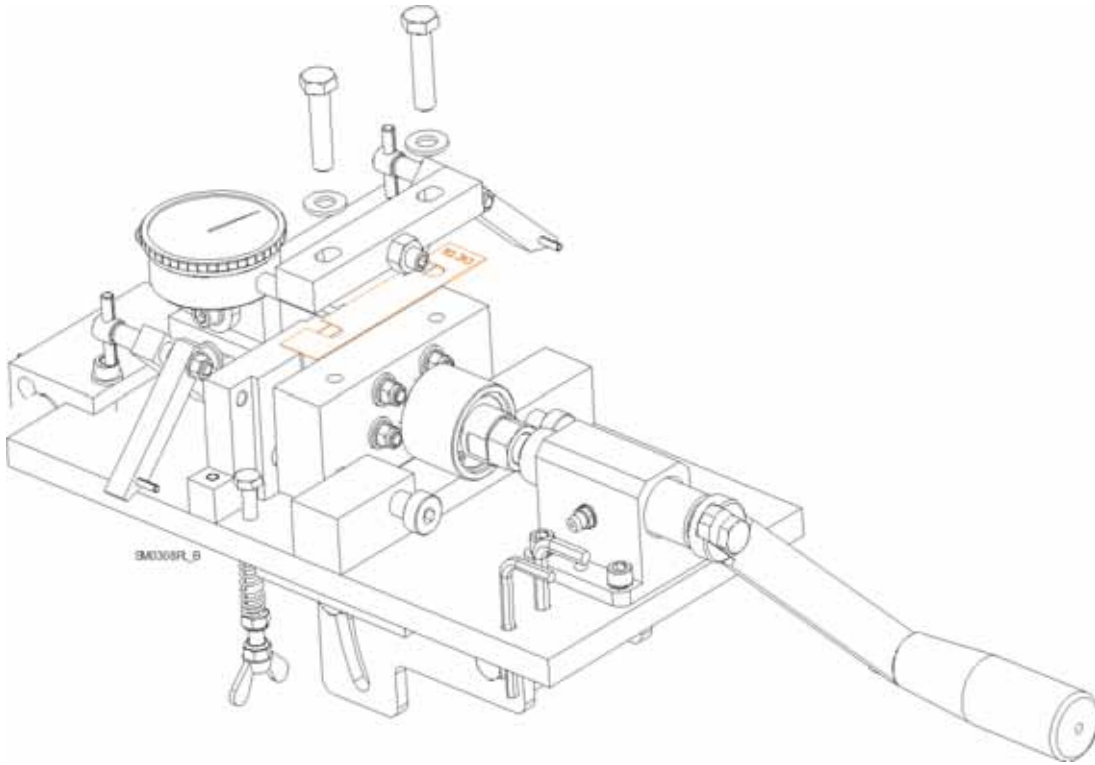


FIG. 3-4

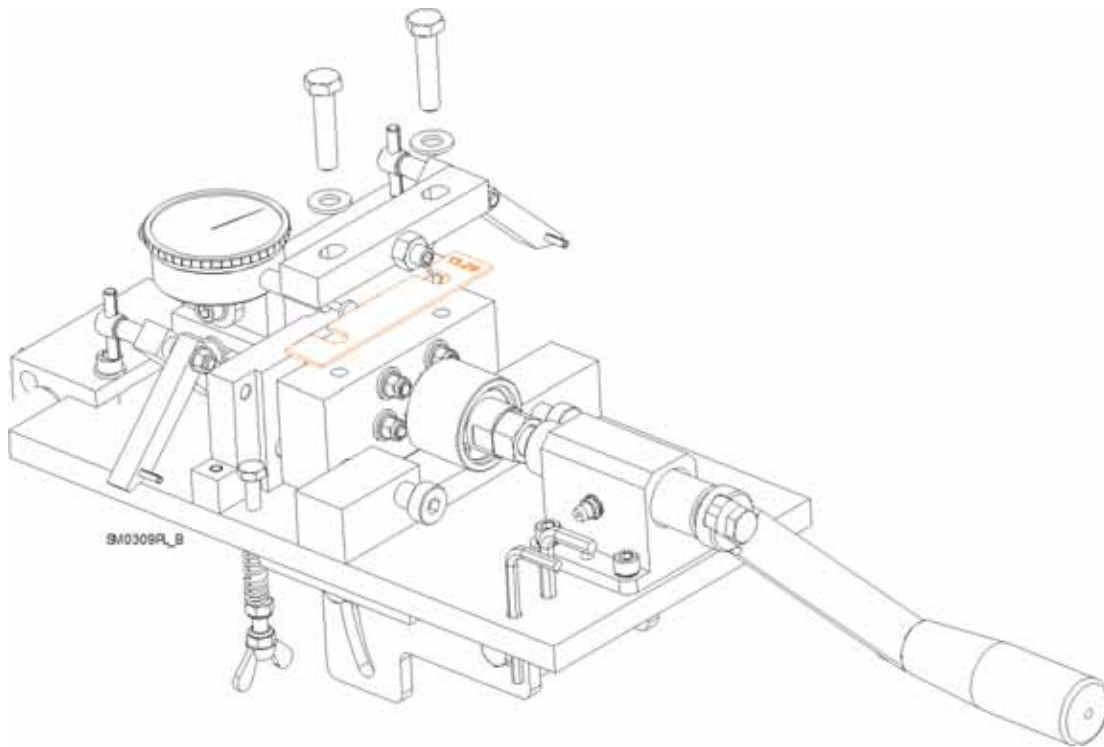


FIG. 3-5

3.4 Toothsetter Operation

1. **Set the blade.** Measure set by clamping the blade between the back clamping plate and the spring-loaded pins on the front clamping plate. Remember set should not vary more than $(\pm)0.001$ from one tooth to the next.

To add set, clamp in further on the blade. This brings the setting contact point against the tooth. The amount you will need to bend the tooth forward to get the desired set will vary. Recheck set and adjust as needed.

NOTE: If the clamp locks before you have added enough set, adjust the setting contact point in. **DO NOT** adjust the clamp nut.

To decrease set, bend the tooth back with the slot in the correction tool provided. Recheck set and adjust as needed.

Slide the blade to the right (or left) until the third tooth from the one just set comes in front

of the gauge foot. Push this tooth firmly against the index pawl. Check set by lightly pushing the handle until the spring-loaded pins in the clamping assembly push the blade against the back plate. Read the dial indicator. Adjust set as necessary (see above). Check every third tooth until you reach the weld.

2. **Set the opposite side of blade.** Remove the blade and invert it. Put the blade back in the toothsetter with the teeth pointing to the left. Repeat the above steps to set the teeth using the left side index pawl assembly. The amount that you must bend the teeth to end up with the same set as the first side of the blade probably will differ.
3. **Remove the blade.** Take the blade out of the toothsetter. Be sure the blade is turned to the correct side before putting it on the sawmill.

3.5 Toothsetter Maintenance

- Keep the toothsetter clean.
- Keep all moving parts lubricated with a light penetrating oil.
- Remove the clamping assembly occasionally and clean any debris that may have collected between the clamping plates.

SECTION 4 REPLACEMENT PARTS

4.1 How To Use The Parts List

- Use the index above to locate the assembly that contains the part you need.
- Go to the appropriate section and locate the part in the illustration.
- Use the number pointing to the part to locate the correct part number and description in the table.
- Parts shown indented under another part are included with that part.
- Parts marked with a diamond (◆) are only available in the assembly listed above the part.

See the sample table below. Sample Part #A01111 includes part F02222-2 and subassembly A03333. Subassembly A03333 includes part S04444-4 and subassembly K05555. The diamond (◆) indicates that S04444-4 is not available except in subassembly A03333. Subassembly K05555 includes parts M06666 and F07777-77. The diamond (◆) indicates M06666 is not available except in subassembly K05555.

| 4.2 Sample Assembly | | | | |
|----------------------------|---|-----------|------|---|
| REF | DESCRIPTION (◆ Indicates Parts Available In Assemblies Only) | PART # | QTY. | |
| | Sample Assembly, Complete (Includes All Indented Parts Below) | A01111 | 1 | |
| 4 | Sample Part | F02222-22 | 1 | |
| | Sample Subassembly (Includes All Indented Parts Below) | A03333 | 1 | |
| 5 | Sample Part (◆ Indicates Part Is Only Available With A03333) | S04444-4 | 1 | ◆ |
| | Sample Subassembly (Includes All Indented Parts Below) | K05555 | 1 | |
| 6 | Sample Part (◆ Indicates Part Is Only Available With K05555) | M06666 | 2 | ◆ |
| 7 | Sample Part | F07777-77 | 1 | |

To Order Parts:

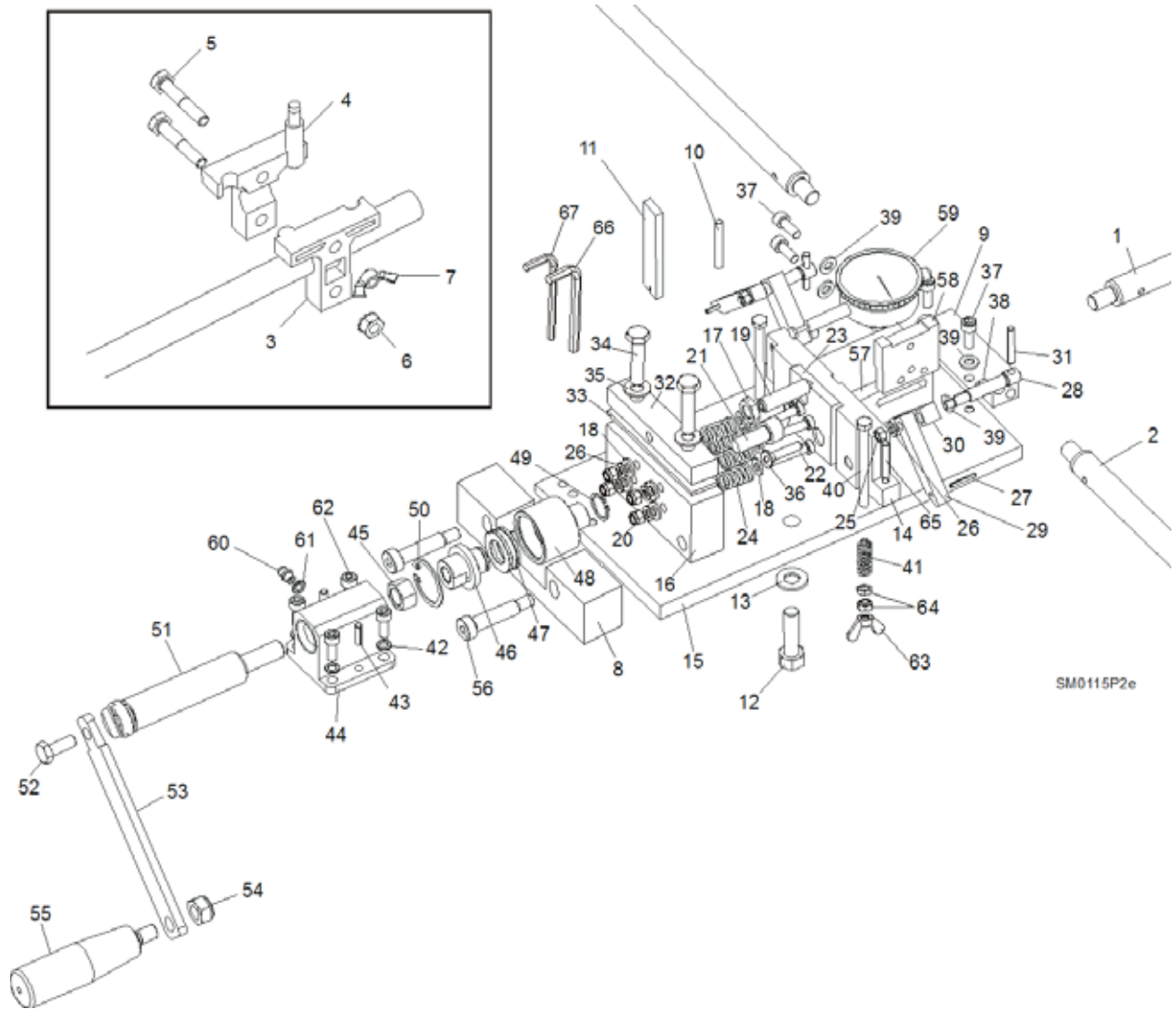
- From Europe call our European Headquarters and Manufacturing Facility in Kolo, Poland at **+48-63-2626000**. From the continental U.S., call our toll-free Parts hotline at **1-800-448-7881**. Have your customer number, vehicle identification number, and part numbers ready when you call.
- From other international locations, contact the Wood-Mizer distributor in your area for parts.

4.3 Toothsetter, Complete



| REF. | DESCRIPTION (◆ Indicates Parts Available In Assemblies Only) | PART NUMBER | QTY. | |
|------|--|-------------|------|--|
| 1 | BMT100 Toothsetter, Complete | BMT100 | | |
| 1 | Toothsetter Assembly, Boxed, w/o Stand & Arms | 087765 | 1 | |
| 2 | Arm Assembly, Blade Support | 087766 | 1 | |
| 3 | Stand Assembly, Toothsetter | 087767 | 1 | |

4.4 Toothsetter Parts List



| REF. | DESCRIPTION (◆ Indicates Parts Available In Assemblies Only) | PART NUMBER | QTY. |
|------|--|-------------|------|
| | Arm Assembly, Blade Support | 087766 | 1 |
| | Blade Support Assembly, Replacement | A10617 | 1 |
| 1 | Tube, Blade Support Long | 087519-1 | 1 |
| 2 | Tube, Blade Support Short | 087670-1 | 2 |
| 3 | Guide W/Post, Blade Support | S10611 | 3 |
| 4 | Guide W/Post, Blade Support | S10612 | 3 |
| 5 | Bolt, 1/4-20 X 1 1/2" Hex Head Grade 2 | F05005-5 | 6 |
| 6 | Nut, 1/4-20 Self-Locking | F05010-9 | 3 |
| 7 | Nut, 1/4-20 Wing | F05010-13 | 3 |
| | TOOTHSETTER ASSEMBLY, BOXED | 087765 | 1 |
| | TOOTHSETTER ASSEMBLY | 087502 | 1 |
| 8 | Bracket, moving clamp | 096863-1 | 1 |
| 9 | Bracket, Blade Support Tube | 092914-1 | 1 |

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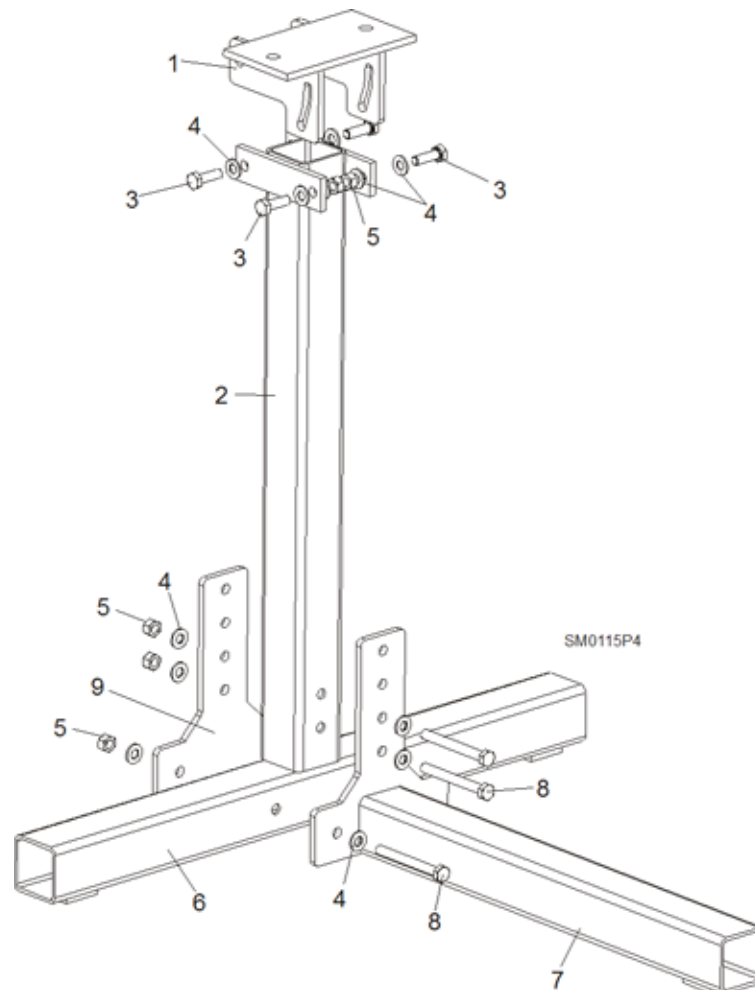
Replacement Parts

Toothsetter Parts List

| | | | | |
|----|--|-----------|---|--|
| 10 | Pin, Toothsetter Alignment | F05012-60 | 1 | |
| 11 | Tool, Set Correction | 087862-1 | 1 | |
| 12 | Bolt, M10 x 35 8.8 Hex Head Full Thread Zinc | F81003-17 | 2 | |
| 13 | Washer, 10.5 Flat Zinc | F81055-1 | 4 | |
| 14 | Plate, Toothsetter Fixed Clamp Zinc | 087503-1 | 1 | |
| 15 | Base Weldment | 087504-1 | 1 | |
| 16 | Plate, Moving Clamp | 096862-1 | 1 | |
| 17 | Nut, M8 Hexagon, Grade 5.8 Free Zinc | F81032-1 | 1 | |
| 18 | Washer, 6.4 Flat Zinc | F81053-1 | 8 | |
| 19 | Screw, M8x40-45H Hex Socket Head | F81002-52 | 1 | |
| 20 | Nut, M5-8 DIN985 Zinc | F81030-2 | 2 | |
| 21 | Screw, M10 x 25 8.8 Hex Socket Head Cap | F81003-32 | 1 | |
| 22 | Bolt, 6/M5x25 12.9 ISO7379 Shoulder | F81001-19 | 4 | |
| 23 | Plate, Clamp Wear | 087463 | 1 | |
| 24 | Spring, 1/2" x 1" Red Die | 004750 | 4 | |
| 25 | Nut, M5-8 Hex Zinc | F81030-1 | 2 | |
| 26 | Washer, 5.3 Flat | F81052-1 | 6 | |
| 27 | Pin, 3 x 20 Roll Zinc | F81044-5 | 2 | |
| | Bolt, Complete Special | 087513 | 2 | |
| 28 | Shaft, Pawl Adjustment | 087512-1 | 2 | |
| 29 | Block, Pawl Adjustment | 087509-1 | 2 | |
| 30 | Pawl, Index | 087510-1 | 2 | |
| 31 | Pin, 5 x 26 Roll Zinc | F81044-2 | 2 | |
| 32 | Block, Moving Blade Clamp Upper Zinc-plated | 092912-1 | 1 | |
| 33 | Washer, Zinc-plated Spacer "10.30" Profile | 094312 | 1 | |
| | Washer, Zinc-plated Spacer "13.29" Profile | 094313 | 1 | |
| 34 | Bolt, M8x35 -8.8 Hex Head Full Thread Zinc | F81002-13 | 2 | |
| 35 | Washer, 8.4 Flat Zinc | F81054-1 | 2 | |
| 36 | Screw, M6x20-10.9 Fe/Zn5 DIN-7991 | F81001-17 | 2 | |
| 37 | Screw, M6 x 16 8.8 Hex Socket Head Cap Zinc | F81001-21 | 2 | |
| 38 | Screw, M6 x 20 8.8 Hex Socket Head Cap Zinc | F81001-22 | 6 | |
| 39 | Washer, 6.4 Flat Zinc | F81053-1 | 4 | |
| 40 | Bolt, M6x80-8.8 Hex Head Full Thread Zinc | F81001-61 | 2 | |
| 41 | Spring, LC-045E-12 | P04734 | 2 | |
| | Clamp Assembly, Toothsetter | 087438 | | |
| 42 | Washer, Z 6.1 Split lock Zinc | F81053-3 | 4 | |
| 43 | Pin, 5 x 16 Roll Zinc | F81044-3 | 2 | |
| 44 | Bushing, Toothsetter | 087442-1 | 1 | |
| 45 | Nut, M12 x 1.25-8 Hex Zinc | F81034-8 | 1 | |
| 46 | Bushing, Zinc Toothsetter | 087440-1 | 1 | |
| 47 | Bearing, 51103 FLT Thrust Ball | 086675 | 1 | |
| 48 | Housing, Toothsetter Bearing | 087439-1 | 1 | |
| 49 | Ring, 17 Interior Retaining | F81090-21 | 1 | |
| 50 | Ring, 32W Interior Retaining | F81090-5 | 1 | |
| 51 | Bolt, Threaded Push Pull | 087441-1 | 1 | |
| 52 | Bolt, M8x20-5.8 Hex Head Full Thread Zinc | F81002-1 | 1 | |
| | Handle Assembly, Toothsetter Clamp | | | |

| | | | | |
|-----------|---|-----------|---|--|
| 53 | Bar, Toothsetter Grip | 087443-1 | 1 | |
| 54 | Nut, M10-8-B Hex Nylon Zinc Lock | F81033-1 | 1 | |
| 55 | Grip, Toothsetter Hand | 086338 | 1 | |
| 56 | Bolt, 10/M8 x 40 12.9 ISO7379 Shoulder | F81003-83 | 2 | |
| 57 | Block, Lower Toothsetter Gauge Mount | 087515-1 | 1 | |
| 58 | Block, Upper Toothsetter Gauge Mount | 087516-1 | 1 | |
| 59 | Gauge Dial, Indicator | 087843 | 1 | |
| 60 | Fitting, M6 Grease | 086280 | 1 | |
| 61 | Washer, Z 6.1 Spli Lock Zinc | F81053-3 | 1 | |
| 62 | Screw, M6 x 16 8.8 Hex Socket Head Cap Zinc | F81001-21 | 4 | |
| 63 | Nut, M6 Wing Zinc | F81032-3 | 2 | |
| 64 | Nut, M6-8-B Hex Nylon Zinc Lock | F81031-2 | 2 | |
| 65 | Pin, 5x26 Roll Zinc | F81044-2 | 2 | |
| 66 | Wrench, 5mm Hex | 092915 | 1 | |
| 67 | Wrench, 4mm Hex Zinc-plated | 093368 | 1 | |
| | Tool, Set Correction, Zinc-plated | 087862-1 | 1 | |
| | Wrench, 13MM Open Ended/Box Zinc-plated | 093369 | 1 | |

4.5 Toothsetter Stand Assembly



| REF. | DESCRIPTION (◆ Indicates Parts Available In Assemblies Only) | PART NUMBER | QTY. |
|------|--|---------------|----------|
| | TOOTHSETTER STAND ASSEMBLY, COMPLETE | 087767 | 1 |
| | Toothsetter Stand Assembly | 087555 | 1 |
| 1 | Base Weldment, Toothsetter | 087534-1 | 1 |
| 2 | Leg Weldment, Base | 087535-1 | 1 |
| 3 | Bolt, M8 x 25-8.8-B Hex Head Full Thread Zinc | F81002-5 | 4 |
| 4 | Washer, 8.4 Flat Zinc | F81054-1 | 16 |
| 5 | Nut, M8-8-B Hex Zinc | F81032-1 | 8 |
| 6 | Stand Weldment, Toothsetter Long | 087507-1 | 1 |
| 7 | Stand Weldment, Toothsetter Short | 087554-1 | 1 |
| 8 | Bolt, M8 x 75 8.8 Hex Head Zinc | F81002-91 | 4 |
| 9 | Mounting Plate Toothsetter Stand | 087694-1 | 1 |
| 10 | Bolt, M10X35-8.8 Hex Head Full Thread Zinc | F81003-17 | 2 |
| 11 | Nut, M10-8-B Hex Nylon Zinc Lock | F81033-1 | 2 |
| 12 | Washer, 10.5 Flat Zinc | F81055-1 | 4 |