Wood-Mizer[®] Sharpener and Setter

Safety, Operation, Parts & Maintenance Manual

BMST50

Rev. A1.00

Safety is our #1 concern!

Form #2056



WARNING! Read and understand this manual before using this machine.

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SECTION 1 INTRODUCTION

1.1 About this manual

Congratulations on your purchase of a Wood-Mizer Sharpener & Setter! When properly maintained and operated, your Sharpener & Setter should give you many years of dependable service.

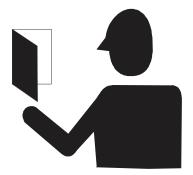
This manual does not cover every possible operation and safety issues that may occur while using this equipment. This manual covers some of the basic safety procedures relating to sawblade maintenance but common sense should take precedence over this manual. Operators should follow safety procedures at all times.

The information and instructions given in this manual do not amend or extend the limited warranties for the equipment given at the time of purchase.



CAUTION! Read this entire manual before operating the equipment. Take notice of all safety warnings throughout this manual and those posted on the equipment. Keep this manual with this equipment at all times, regardless of ownership.

Only persons who have read and understood the entire operator's manual should operate the Sharpener & Setter. The Sharpener & Setter is not intended for use by or around children.



1.2 Safety

The triangle symbol calls your attention to instructions concerning your personal safety.

Read and follow these instructions!



DANGER! Indicates an imminently hazardous situation which, if not avoided, will result in serious injury or death.



WARNING! Suggests a potentially hazardous situation which, if not avoided, may result in serious injury or death.



CAUTION!! Refers to potentially hazardous situations which, if not avoided, may result in minor or moderate injury to persons or equipment damage.

NOTE: Informs people of important installation, operation, or maintenance information that is not hazard related.

Read and observe all safety instructions before operating this equipment!

Always be sure that all safety decals are clean and readable. Replace all damaged safety decals to prevent personal injury or damage to the equipment. Contact your local distributor, or call your Customer Service Representative to order more decals.

Blade handling safety



WARNING! Always wear gloves and eye protection when handling bandsaw blades. Keep all persons away from area when coiling or carrying a blade.



WARNING! Before installing the blade, inspect it for damage and cracks. Always handle the blade with extreme care. Use suitable carrier equipment for transporting the blades.

Machine operation safety



DANGER! Make sure all guards and covers are in place and secured before operating this Machine. Failure to do so may result in serious injury.



DANGER! Keep all persons away from moving parts when operating this machine. Failure to do so will result in serious injury.

DANGER! Always keep hands away from moving bandsaw blade. Failure to do so will result in serious injury.



WARNING! Always wear eye protection when operating this machine. Failure to do so may result in serious injury.

WARNING! Secure all loose clothing and jewelry before operating this machine. Failure to do so may result in serious injury.

WARNING! This machine should be operated only by adults who have read and understood the entire operator's manuals.

WARNING! The illumination at the operator's position should be at least 300 lux. The light source may not cause stroboscopic effect.

Decal meaning

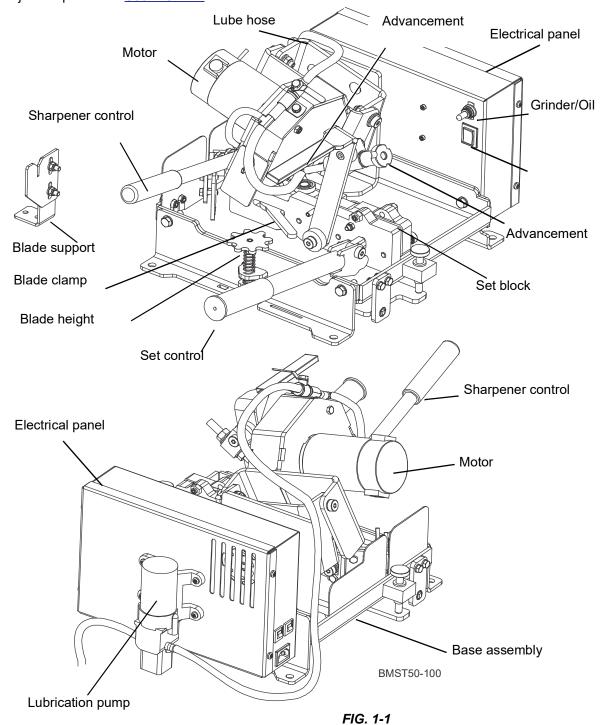
Decals View	Description		
096317	096317 Carefully read the operator's manual before operating the machine. Observe all safety instructions and rules when operating.		512107 Always wear safety gloves when operating this machine.
(C) (O) (0)99220	099220 Close all guards prior to operating the machine	550097	501467 Lubrication point

0 0 096316	096316 Opening of the electric box is possible only when the switch is in the "0" position.	S20097	S20097 Motor rotation direction
(3) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1	098177 Always disconnect the power cord before performing any service.		S12005G Always wear ear protection equipment when operating this machine.
0963	096321 Blade movement direction		501465 Always wear safety boots when operating this machine.
	S12004G Always wear eye protection equipment when operating this machine.		

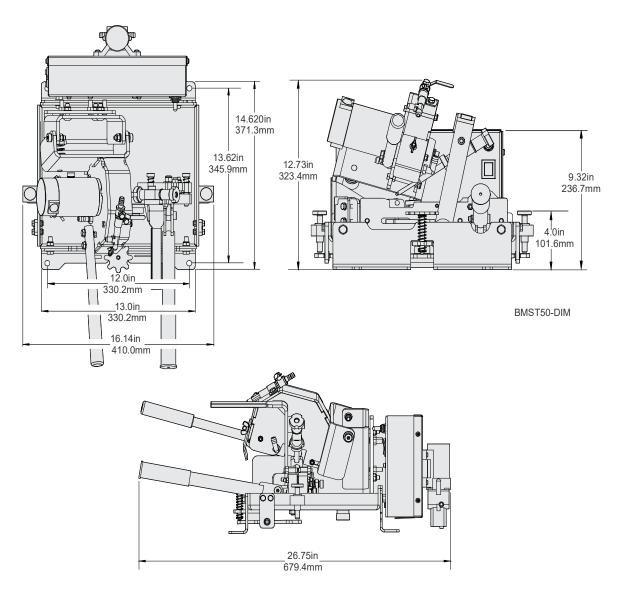


1.3 Major Components

This Sharpener & Setter should only be used with a 1" to 1-1/2" blades with a 7/8" tooth spacing. The figure below shows the major components of the Sharpener & Setter. These terms will be used throughout this manual to refer to these major components. See FIG. 1-1



1.4 Dimensions and Specifications



Grinding Motor: 1/7th HP Grinding Wheel: 5" CBN

Blade Capacity: 1-1/4" and 1-1/2" with 7/8 Pitch

Operation: Manual Production Capacity: Individual

Power: 100-240V AC, 50/60 Hz

SECTION 2 SET UP

2.1 Items required but NOT included

- Table
- Mounting screws
- Oil Bucket
- Sharpening Oil (Grinding oil CE-150)
- 5 inch grinding wheel

Tools:

- Drill
- Drill bits/hole saw up to 2 in (50mm)
- #2 Phillips screwdriver

You will need a sturdy table top on level surface on which to mount the Sharpener & Setter base unit and the blade supports.

The table must be large enough to hold a saw blade (a 4x8 ft (1200x 2400mm) sheet works well).

The illustration to the right shows approximate locations of the equipment's footprint on the 4x8 ft (1200x2400mm) table. FIG. 2-1

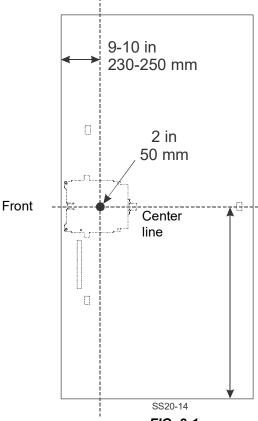


FIG. 2-1

Dimensions for drilling mounting holes are shown in Bottom View FIG. 2-2 .

A standard 5-gallon (or 20 I) bucket placed directly under the table can be used for oil recirculation.

The drain pipe should not extend so close to the bottom of the bucket that it inhibits drainage.

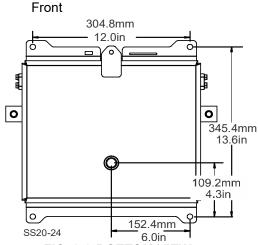


FIG. 2-2 BOTTOM VIEW

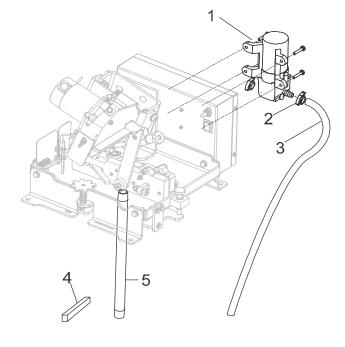
2.2 Items included

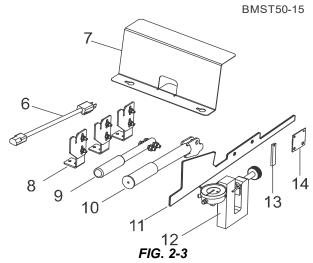
See FIG. 2-3

- 1. SS20-985 Pump Assembly with F05015-27 Screws (4 pcs):
- 2. 074368 Hose Clamp (2 pc):
- **3.** R01885 Tubing (4 ft included to be cut to length as needed)
- **4.** P31347 Magnet, Filter (1 pc)
- 5. SS20-968 Drain Pipe
- 6. 069666 Power Cord
- 7. SS20-964 Blade Guard
- 8. SS20-969 Blade Support Assemblies (3)
- 9. SS20-972 Sharpener Handle Assembly
- 10. SS20-200 Set Handle and 066111 Set Handle Grip
- 11. SS20-999 Angle Gauge
- **12.** 060490 Set Gauge
- 13. 004754 Set Correction Tool
- 14. SS20-331 Quick Set Check Tool

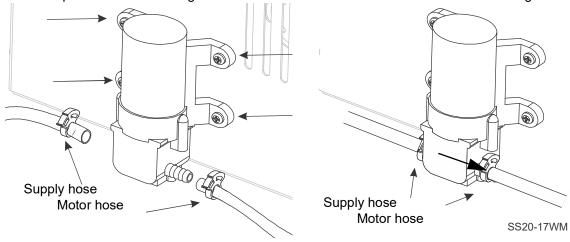
2.3 Install the lubrication pump

- 1. Use a Phillips head screwdriver to install the pump on the rear of the electrical panel with the 4 screws provided.
- 2. Slide the hose clamps over the lube hose. Leave enough room that the hose can seat itself all the ways on the pump fittings
- **3.** Push the lube hose onto the pump fittings on both sides of the pump. Secure the hoses on the fittings using the hose clamps provided. You may need plyers for this.
- **4.** Ensure that the hoses are well seated and secure on the fittings. See FIG. 2-4
- **5.** Route the supply hose into the oil bucket. With a cutting tool, cut the supply hose to slightly above the bottom of the bucket.



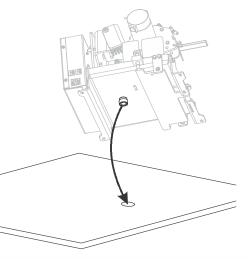


6. Connect the two power wires extending from the bottom center of the electrical box to the mating wires on the pump.



2.4 Mount the base unit

- Drill a 2 inch (50 mm) hole in the table to allow for an oil drain pipe to extend through it into a bucket placed under the machine.
- Drill an optional 1 inch (25 mm) hole for the oil supply hose, if desired.
- 3. Locate the drain hole where the operator feels most comfortable.
- Align the base unit so that the drain fitting sets into the hole in the table you have provided.
- 5. Bolt the base unit to the table with screws you provide. See FIG. 2-5



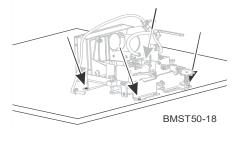
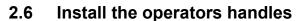


FIG. 2-5

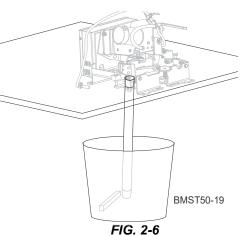
2.5 Install the drain pipe

- 1. Place the discharge end of the drain pipe into the oil bucket first.
- 2. Screw in the threaded pipe into the drain fitting at the bottom of the pan.
- Place the filter magnet into the bottom of the oil bucket near the drain output. See FIG. 2-6



- Rotate the set handle from the shipping position to the forward position. See FIG. 2-7
- Place the nuts and bolt of the sharpener handle in the position shown in FIG. 2-7. Two washers and the nuts go on the inside of the sharpener housing.





3. Tighten both nuts.

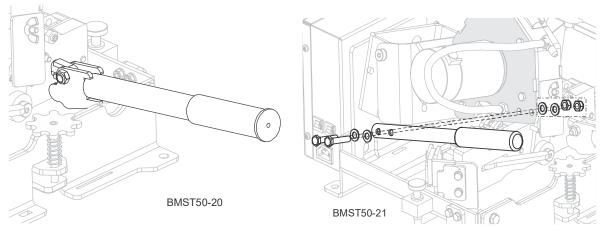


FIG. 2-7

2.7 Mount the blade supports

- 1. Place the first blade guide on the table in line with the back side of sharpener.
- 2. Locate it near the outside edge of the table.
- 3. Orient the groove so the blade slides through parallel to the sharpener. See step 1 in FIG. 2-8.
- Fasten the blade guide to the table with your own screws.



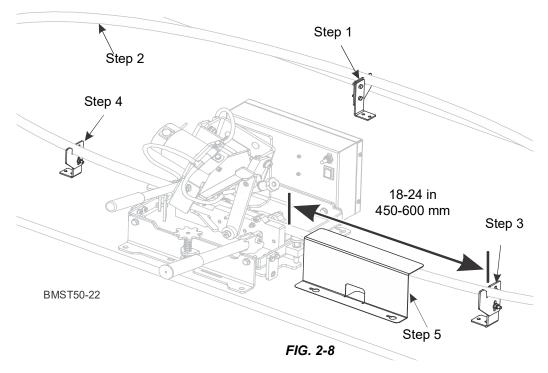
WARNING! Always wear gloves and eye protection when handling bandsaw blades.

WARNING! Changing blades is safest when done by one person!

WARNING! Keep all other persons away from area when coiling, carrying or changing a blade. Failure to do so may result in serious injury.

- 5. Install a blade in the sharpener and rear guide so that the blade forms an oval shape. See step 2 in FIG. 2-8.
- **6.** Adjust the height of the rear guide so the bottom of the blade is approximately level with the blade's bottom in the sharpener.





- 7. Place a second guide to the right side of the base unit, approximately 18 24 inches (450 600mm) away along the curvature of the blade.
- **8.** Orient the groove so the blade will slide through with minimal pressure against the sides.
- **9.** Adjust the height of the blade guide groove so that the blade does not touch the bottom of the groove. See FIG. 2-9 Side Supports.
- **10.** Fasten the blade guide to the table with your own screws. See step 3 in 2-8.
- 11. Repeat on left side. See step 4 in FIG. 2-8.
- **12.** Install the blade guard on the table to the right of the base unit.

The blade guard helps prevent inadvertent operator contact with the blade teeth during operation.

- **13.** Make sure that it is far enough away from the blade that it does not touch at any point. See step 5 in FIG. 2-8.
- **14.** Fasten the blade guide to the table with your own screws.

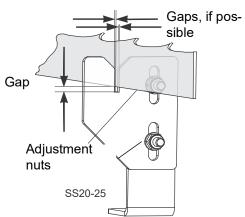
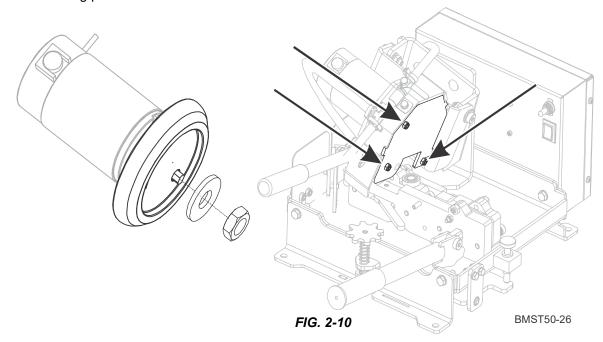


FIG. 2-9 SIDE SUPPORTS

2.8 Install grinding wheel

- 1. Loosen the three nuts on the grinder motor housing and remove the housing plate.
- 2. Loosen the nut on the grinder motor shaft and remove the washer.
- 3. Place the wheel on the shaft under the washer, then tighten the motor shaft nut.
- 4. Reinstall the housing plate. See FIG. 2-10.



2.9 Power cord

1. Insert the power cord into the power recepticle on the lower left side of the electrical panel.

The cord is keyed so that it will fit in only one orientation.

2. Plug the other end into a standard grounded outlet. See FIG. 2-11

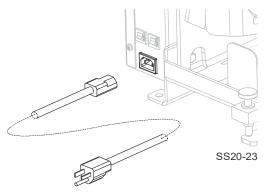


FIG. 2-11

2.10 Calibrate the set gauge

The tooth set gauge accurately measures the set of any blade tooth. The gauge needs to be assembled and calibrated before use.

Refer to FIG. 2-12.

- 1. Insert the dial gauge assembly into the hole in the block housing.
- 2. Clamp the calibrating pin in position at the center of the dial gauge foot. (See SIDE VIEW.)
- 3. Push the gauge assembly forward until the foot just touches the pin and dial needle moves .005 to .010.
- **4.** Tighten the locking screw with the provided hex wrench (*do not over-tighten*).
- 5. Loosen the dial lock on the gauge and rotate the dial face until the needle reads 0.00.
- 6. Tighten the dial lock.
- 7. Unclamp the calibrating pin from the set gauge clamp by turning the clamp knob counterclockwise.

NOTE: With the pin not clamped, the set gauge needle should read between -.005 and -.010. If not, reclamp the pin, loosen the locking screw and move the set gauge assembly back so the foot does not contact the pin.

8. Repeat the steps above until the dial needle reads zero with the calibrating pin clamped and between -.005 and -.010 without the pin clamped.

This ensures the dial foot extends beyond the clamp plate a small amount and will read zero when the foot is aligned with the clamp plate.

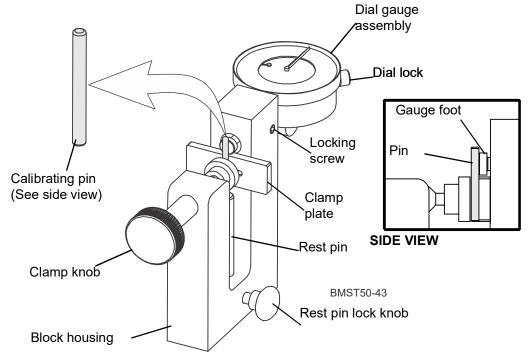


FIG. 2-12

SECTION 3 OPERATION

3.1 Blade introduction



Always wear gloves and eye protection when handling bandsaw blades.

Changing blades is safest when done by one person!

Keep all other persons away from area when coiling, carrying, or changing a blade. Failure to do so may result in serious injury.

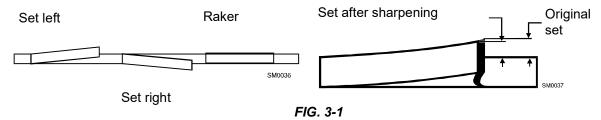
The blades supplied by Wood-Mizer have a raker-style set in the teeth. If you look at a blade from the top, you will see that the teeth are set (or bent out) in a repeating sequence; left, right, and straight. The teeth that are set left and right do the cutting. The straight teeth (rakers) clear the cut of sawdust. See FIG. 3-1



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. See FIG. 3-1

The Wood-Mizer Sharpener & Setter sharpens, then evenly sets the teeth of a bandsaw blade. The clamping mechanism positions a tooth in front of the grinding wheel and sharpens it to the correct profile. You can then measure the set. The tooth is bent by clamping the blade in the setter clamp.



3.2 Rejecting blades

Sometimes blades cannot be resharpened. Reasons to reject blades for resharpening include:

- the blade is coil set (the blade is over-stressed and will fold on itself),
- the blade is missing 2 or 3 teeth or more in a row,
- the blade band has been twisted,
- the blade band is too low for the grinder (the blade has been sharpened too many times/too much material has already been ground from the blade),
- the blade has no set on one of its sides
- severe rust is present,
- or the blade has tooth spacing uncommon to Wood-Mizer blades (i.e., a competitor's blade).

3.3 Install the grinding wheel

For grinding wheel set up, <u>See Section 2.8</u>.

3.4 Blade Sharpening Tips

Before removing a blade from the sawmill, clean the blade by running the waterlube on the blade for 15 seconds. This will remove most of the sap buildup that would otherwise have to be scraped off when it dries. Wipe with a clean dry rag.

Make sure the flow of oil through the assembly is strong.

Sharpen the blade when it first shows signs of dullness. If the blade is extremely dull, due to hitting a rock or some form of foreign matter, sharpen the blade twice lightly, instead of trying to remove too much in one grind. Grinding too much material at once may cause the circuit breaker in the control box to trip. If this happens, wait 15 seconds. Then turn it on (push circuit breaker down). See FIG. 3-2

3.5 Blade installation



CAUTION! Before you resharpen the blade, check it for cracks. Most cracks occur across the band of the blade at the lowest point of the gullet. If you find any cracks.

at the lowest point of the gullet. If you find any cracks, do not resharpen the blade.

Oil pump circuit Grinder motor circuit breaker circuit breaker

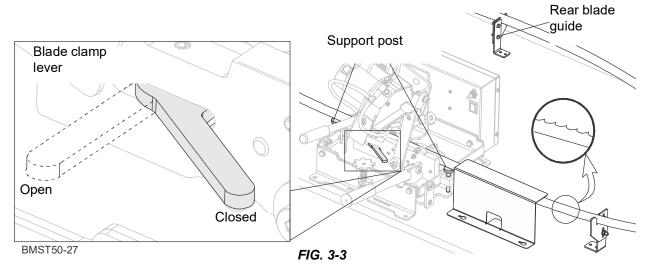
To reduce the risk of premature blade fatigue from hairline cracks, it is important to thoroughly clean the gullet of cracks during resharpening. It may be necessary to lightly grind the blade twice to thoroughly clear the gullet cracks.

1. Clean the blade **before** putting it in the Sharp 'n Set. Clean the blade **on the mill** by opening the water lube over the moving blade for at least 15 seconds. Sap buildup on the blade or tooth may not allow full sharpening.



WARNING! Use ONLY water or windshield washer fluid with the water lube accessory. **Never use flammable fuels or liquids** such as diesel fuel. If the flammable solvents are necessary to clean the blade, remove it from the mill and clean with a rag. Failure to do so can damage the equipment and may result in serious injury or death.

- 2. Mount the blade in the Sharp 'n Set.
- 3. Open the blade clamp and place blade between the clamping plates with the blade's bottom edge on the blade support posts. See Fig. 3-3.
- **4.** Adjust the height of the rear guide so the bottom of the blade is approximately level with the blade's bottom edge in the sharpener. **See Fig. 3-3.**



5. With (2) 10mm wrenches, adjust the height of the two side blade guides so that the blade does not touch the bottom of the groove in the guide, leaving a gap of about 3/8 inch (10mm) below the bottom of the blade.

6. Only the rear guide should have the blade touching the bottom edge. **See Fig. 3-4.**



CAUTION! The blade guide must not interfere with the blade height adjustment in the sharpener. Incorrect sharpening will result.

3.6 Sharpening

NOTE: Always sharpen the blade **before** adjusting the set. As the blade is sharpened, the tip of the tooth recedes and the set becomes smaller.

Tools needed:

- 4mm hex wrench
- 13mm open end wrench
- 17mm open end wrench

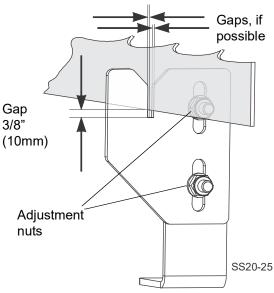
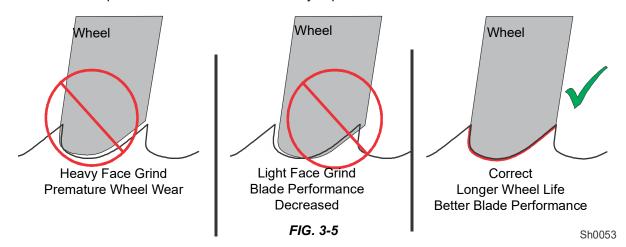


FIG. 3-4 SIDE BLADE GUIDES

- 1. Open the blade clamp and adjust the blade in the left-right orientation.
- 2. Lower the grinding wheel to align the blade in the gullet of the blade tooth. See FIG. 3-5
- 3. Close the blade clamp lever to hold the blade accurately in place. See FIG. 3-3



ADJUST THE BLADE HEIGHT FOR SHARPENING.

The blade should rest equally on the blade height posts.

Use the blade height adjustment wheel to raise or lower the blade support posts.

The posts will be adjusted in unison by the wheel.

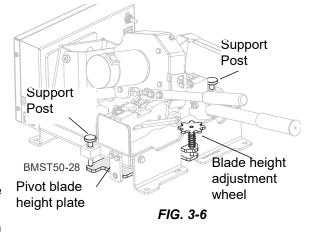
Fully lower the sharpener head to align the blade with the grinding wheel.

RECHECK THE BLADE

Lower the grinding wheel to align in the gullet of the blade tooth. See FIG. 3-5

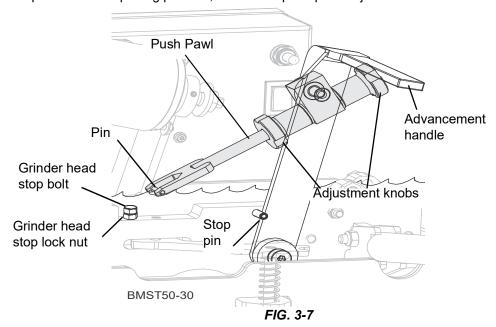
The grinder head stop bolt can be adjusted to raise or lower the grinding head to new position of the blade. See Fig. 3-7.

7. Close the blade clamp lever to hold the blade accurately in place. See FIG. 3-3.



SET THE ADVANCEMENT

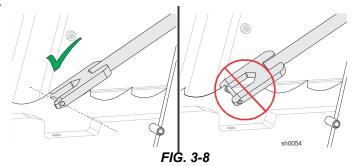
8. With the blade clamped in the sharpening position, loosen the push pawl adjustment knobs. See FIG. 3-7



9. Place the push pawl pin into the gullet of the tooth just before the tooth to be ground with the advancement handle against the stop pin. See FIG. 3-7

The advancement handle and pin should rest solidly, but not pushing the tooth.

- **10.** Make sure that the fork holding the pin remains perpendicular to the blade. See FIG. 3-8
- **11.** Tighten the adjustment knobs to hold the push pawl pin in this position.
- **12.** Advance one tooth by moving the push pawl handle left and right. See FIG. 3-9



13. Recheck the position with the grinding wheel. See FIG. 3-4

RECHECK ALIGNMENT.

14. Grind at least three teeth without oil to sample the positions for left set, right set and raker teeth.

NOTE: Excessive burning on the tip is a sure sign that the wheel is starting the grind at the tip of the tooth, as opposed to the full "plunge" profile grind.

- 15. Re-check the alignment, and make any new adjustments.
- 16. Repeat the adjustments until no more adjustment is necessary.

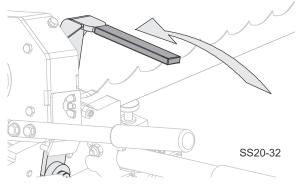


FIG. 3-9

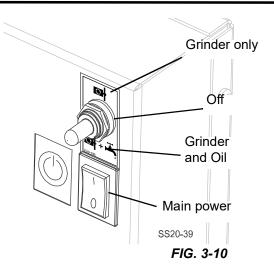
When the position and advancement are correct, turn on the oil lubrication and grind each tooth. See FIG. 3-10

3.7 Deburr the blade after sharpening

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 toothset gauge to give false readings.

- 1. Drag a stick of hardwood across the blade in the opposite direction that the teeth cut.
- 2. Repeat on the other face of the blade. (Use the weld in the blade as a reference point for starting and stopping.)

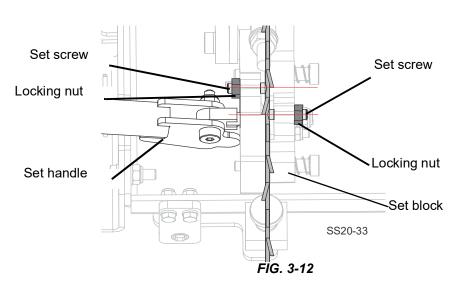
Cutting with the blade also removes burrs. If the blade you are about to set has been used after sharpening, you will not need to deburr it, but clean the blade before removing from the mill by running the water lube for 15 seconds. Remove the blade and wipe dry with a rag to prevent rusting.



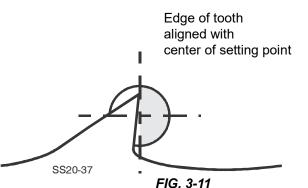
3.8 Setting the blade

Tools needed:

- 4mm hex wrench
- 13mm open end wrench
- 1. Adjust the blade in the Sharpener & Setter in the same manner as you would do for sharpening (See 3.6 Sharpening), aligning the blade on the set screws. See FIG. 3-11
- Advance the blade until there is a left set tooth aligned with the left set screw as shown in See FIG. 3-11 and See FIG. 3-12.
- **3.** Align a right set tooth on the right set screw.

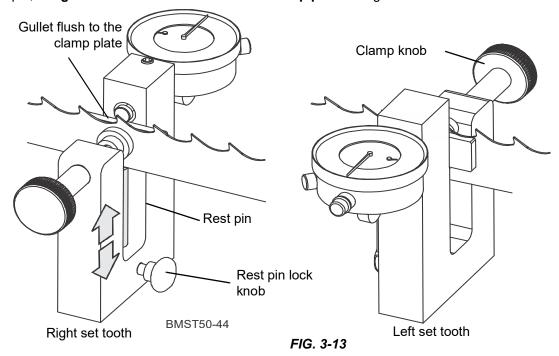


- **4.** Adjust the desired depth of the set on both left and right with a 4mm hex wrench. When the depth is set, tighten the locking nut with a 13mm open end wrench.
- 5. When left and right tooth settings are at the desired set, lower the set handle until the set block is tight against the blade.
- **6.** Advance the blade **three** teeth and repeat until the entire blade is set.



3.9 Checking the set

- 1. Use a marker to mark two adjacent teeth to be checked; set the marked teeth.
- 2. Unclamp the blade and move it to a position where you can check the tooth set.
- 3. Place the set gauge around the blade to measure tooth set. Adjust the blade height position in the gauge by turning the lock knob counterclockwise to loosen and adjust the rest pin up or down. Adjust it such that when the blade rests on the rest pin, the gullet of the blade is flush to the clamp plate. Retighten the lock knob.



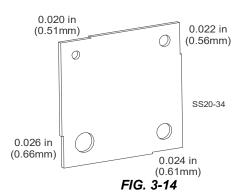
- 4. Slide the set gauge assembly over the blade and clamp on the right marked tooth. Turn the clamp knob clockwise to securely clamp the blade and read the set measurement displayed by the set gauge. Note the tooth set measurement. Loosen the clamp knob and remove the set gauge assembly from the blade.
- Rotate the set gauge 180 degrees to measure tooth set in the opposite direction. Note the tooth set measurement.
- 6. Loosen the clamp knob and remove the set gauge assembly from the blade.
- Readjust the set block set screws, if necessary. Repeat this check process until the noted measurements are acceptable.

3.10 Quick check of the set

The set gauge that comes with your Sharp 'n Set has four standard set markings. Smallest to largest are:

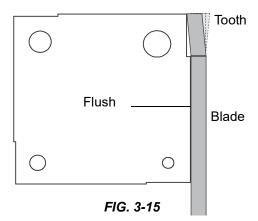
- 0.020 in (0.51mm)
- 0.022 in (0.56mm)
- 0.024 in (0.61mm)
- 0.026 in (0.66mm)

They are denoted on the gauge by the small-to-large holes next to the appropriate corner.



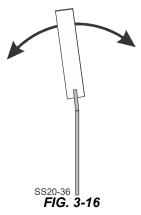
8. Place the gauge flush to the blade. See FIG. 3-15

The set is correct when the tip of the tooth makes contact with the appropriate depth mark.



If the set is not correct, it can be manually changed by using the set correction tool 004754 included with your Sharp 'n Set.

- 9. Place the tooth tip into the tool slot and bend the tooth until it reaches the proper set. See Fig. 3-16.
- 10. Readjust the set screws as described above, if necessary.





SECTION 4 MAINTENANCE

4.1 Maintaining your Sharpener & Setter

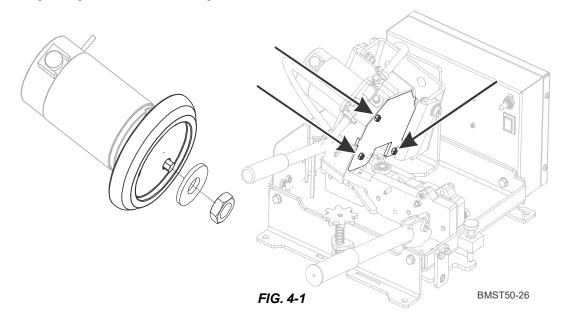
Proper maintenance of your Sharpener & Setter will result in years of good blade sharpening and setting. Maintenance is simple and easy.

4.2 Grinding wheel replacement

Check the grinding wheel often and change as necessary.

The grinding wheel should be in good condition. Replace if worn, the edges look shiny, and/or the wheel is "burning" the blades.

- **1.** To replace, shut down and lock out all power to the machine.
- 2. Remove the grinding wheel cover.
- 3. Remove the grinding wheel nut, washer plate and grinding wheel.
- 4. Install the new grinding wheel. Reinstall the washer plate and nut.
- 5. Reinstall the grinding wheel cover. See Fig. 4-1.



4.3 Grinding Oil

Use a grinding oil CE-150. You can order a 5 gallon bucket of this oil with part # 010740.

Periodically check the oil level and refill with oil as necessary.

Clean the metal shavings from the magnetic filters after every use.

4.4 Periodic maintenance

Daily (8 Operating hours):

- Wipe the Sharpener & Setter dry, remove the blade, lower the head, and unplug the machine after each day's use.
- Keep clean of dirt, rust, and metal filings.
- Check the blade clamp regularly and clean out any buildup that might cause it to not clamp the blade firmly.

Weekly (40 Operating hours):

Clean sediment from the oil pan and filter magnets as needed.



- Keep the oil at such a level that the pump intake hose is completely covered with the oil.
- Replace the oil completely every six months. Dispose of worn-out oil in compliance with applicable regulations.

Monthly (160 Operating hours):

- Check motor and indexer brushes.
- Check plugs and switches.

4.5 Adjusting the grinding angle

The Sharpener & Setter is set at the factory to the proper cutting angle. If, for any reason, the angle becomes misaligned, it can be reset using the angle gauge plate SS20-999 provided. See Fig. 4-2.

- **1.** Place the angle gauge in the blade slot.
- 2. Press the angle gauge flat against the main block.
- **3.** With the blade height adjustment knob in front, raise the angle gauge until the reference holes just clear the main block.
- **4.** Lower the grinder to the lowest position, touching the main block.
- Fit the angle gauge in until it makes contact with the motor and motor housing. See Fig. 4-2.

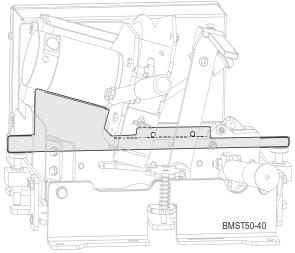


FIG. 4-2

- **6.** If the motor and hosing does not align properly, then loosen the two upper carriage bolt nuts where the motor housing bracket attaches to the base. See FIG. 4-3
- 7. Pivot motor housing until it aligns with the angle gauge.
- **8.** If adjustments front-to-back are needed, the set screws may be adjusted by loosing the lock nut and finger-tightening them into the proper position.
- 9. Re-tighten the lock nuts.
- 10. Re-check the alignment and repeat this procedure as necessary.

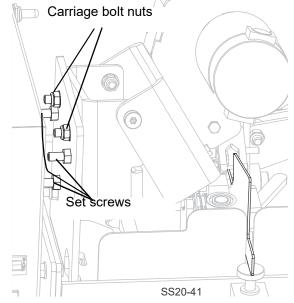


FIG. 4-3

SECTION 5 REPLACEMENT PARTS

5.1 How To Use The Parts List

- Use the table of contents 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.

To Order Parts

- From the continental US, call **1-800-525-8100** to order parts. 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.

5.2 Sample Assembly

REF	PART #	DESCRIPTION	COMMENTS	QTY.
	012345	SAMPLE ASSEMBLY, COMPLETE	INCLUDES ITEMS 1-6	1
1	F02222-22	Sample Part		1
2	F03333-33	Sample Part		2
	098765	Sample Subassembly	Includes items 3-6	1
3	S04444-44	Subassembly Sample Part		1
4	K55555	Subassembly Sample Part		1
	054321	Sample Sub-Subassembly	Includes items 5-6	2
5	022222	Sub-Subassembly Sample Part		1
6	F10234-56	Sub-Subassembly Sample Part		1

The Sample Assembly, Complete, part number 02345 (top level assembly) includes two parts (F0222-22 and F0333-33) and the 098765 subassembly.

Subassembly 098765 contains two parts(S04444-44 and K55555) and two copies of sub-subassembly 054321.

Each sub-subassembly 054321 contains two parts (022222 and F10234-56).

5.3 Torque Values

Grade		Units	SAE 5	SAE 8
Grade Mark				
Bolt Dia.	Threads. Per In.	Units	SAE 5	SAE 8
6	32	in-lbs (Nm)	20 (2.3)	-
8	32	in-lbs (Nm)	24 (2.7)	30 (3.4)
10	24	in-lbs (Nm)	35 (4.0)	45 (5.1)
10	32	in-lbs (Nm)	40 (4.5)	50 (5.7)
12	24	in-lbs (Nm)	50 (5.7)	65 (7.3)
1/4	20	in-lbs (Nm)	95 (10.7)	125 (14.1)
1/4	28	in-lbs (Nm)	95 (10.7)	150 (17.0)
5/16	18	ft-lbs (Nm)	17 (22.6)	23 (31.2)
5/16	24	ft-lbs (Nm)	20 (27.1)	25 (33.8)
3/8	16	ft-lbs (Nm)	30 (40.7)	40 (54.2)
3/8	24	ft-lbs (Nm)	35 (47.5)	45 (61.0)
7/16	14	ft-lbs (Nm)	50 (67.8)	65 (88.1)
7/16	20	ft-lbs (Nm)	55 (74.6)	70 (94.9)
1/2	13	ft-lbs (Nm)	75 (101.7)	100 (135.6)
1/2	20	ft-lbs (Nm)	85 (115.3)	110 (149.2)
9/16	12	ft-lbs (Nm)	105 (142.4)	135 (183.1)
9/16	18	ft-lbs (Nm)	115 (155.9)	150 (203.4)
5/8	11	ft-lbs (Nm)	150 (203.4)	195 (264.4)
5/8	18	ft-lbs (Nm)	160 (217.0)	210 (284.8)
3/4	10	ft-lbs (Nm)	170 (230.5)	220 (298.3)
3/4	16	ft-lbs (Nm)	175 (237.3)	225 (305.1)
7/8	9	ft-lbs (Nm)	302 (409.5)	473 (640.9)
7/8	14	ft-lbs (Nm)	300 (406.8)	400 (542.4)
1	8	ft-lbs (Nm)	466 (631.8)	714 (967.4)



Metric Bolt Head Identification



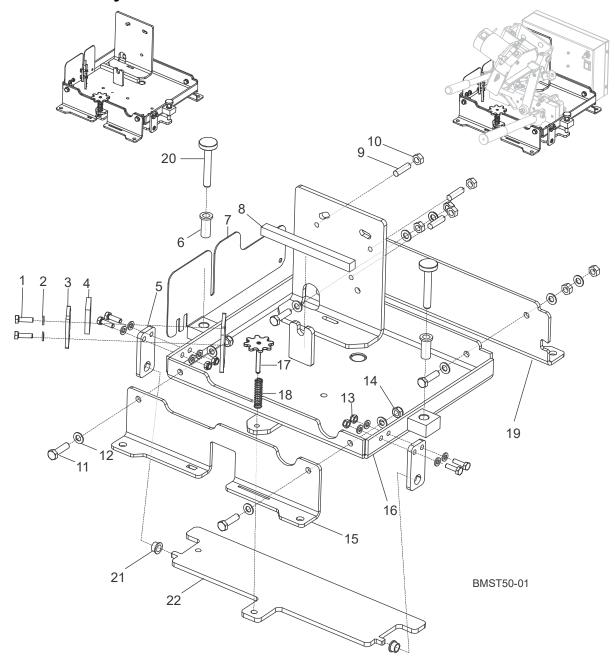
Metric Grade 8.8



Metric Grade 10.9

	COA	RSE THRE	AD		FINE THREAD					
Diameter & Thread	Metric 8.8		Metric 10.9		Diameter & Thread	Metric 8.8		Metric 10.9		Wrench Size
Pitch	N-m	lbs-ft	N-m	lbs-ft	Pitch	N-m	lbs-ft	N-m	lbs-ft	
6 x 1.0	8	6	11	8						10 mm
8 x 1.25	20	15	27	20	8 x 1.0	21	16	29	22	13 mm
10 x 1.5	39	29	54	40	10 x 1.25	41	30	57	42	16 mm
12 x 1.75	68	50	94	70	12 x 1.25	75	55	103	76	18 mm
14 x 2.0	109	80	151	111	14 x 1.5	118	87	163	120	21 mm
16 x 2.0	169	125	234	173	16 x 1.5	181	133	250	184	24 mm
18 x 2.5	234	172	323	239	18 x 1.5	263	194	363	268	27 mm
20 x 2.5	330	244	457	337	20 x 1.5	367	270	507	374	30 mm
22 x 2.5	451	332	623	460	22 x 1.5	495	365	684	505	34 mm
24 x 3.0	571	421	790	583	24 x 2.0	623	459	861	635	36 mm
30 x 3.0	1175	867	1626	1199	30 x 2.0	1258	928	1740	1283	46 mm

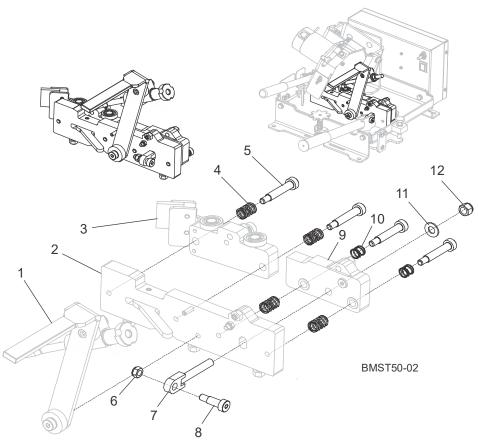
5.4 Base Assembly



REF	PART #	DESCRIPTION	COMMENTS	QTY.
	074438	Assembly, Base		1
1	F05020-6	Bolt, M6-1 x 20 Class 8 HH		6
2	F05026-1	Washer, M6 Flat Class 4		10
3	SS20-311	Retainer, Sweeper		1
4	SS20-900	Sweeper, Oil		1
5	SS20-926	Plate, Pivot Support		2
6	SS20-921	Bushing, 3/8ID x 1/2OD x 1-1/4 Bronze		2
7	SS20-1000	Plate, Oil Guard Lrg		1
8	P31347	Magnet, Filter		1
9	F05021-22	Screw, M8-1.25x30mm SH Flat Pnt Set		3
10	F05010-162	Nut, M8-1.25 Free Zinc Plate		7

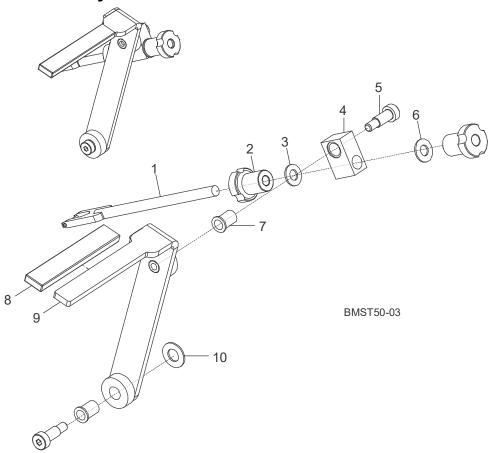
REF	PART #	DESCRIPTION	COMMENTS	QTY.
11	F05021-11	Screw, M8-1.25x30 HHC		4
12	F05026-4	Washer, M8 Flat		10
13	F05010-200	Nut, M6-1.0 Nylon Lock		4
14	F05010-132	Nut, M8-1.25 Hex Nylock		2
15	SS20-316	Panel, Tub Front		1
16	SS20-201	Weldment, Base		1
17	074435	Weldment, Height Adjuster		1
18	066816	Spring, .60 ODx2-1/2x.098 Wire		1
19	SS20-317	Panel, Tub Rear		1
20	SS20-966	Blade Height Post		2
21	SS20-923	Bushing, 10mmlDx13mmODx8mm		2
22	SS20-925	Plate, Pivot Blade Height		1

5.5 Sharp/Set Block Assemblies



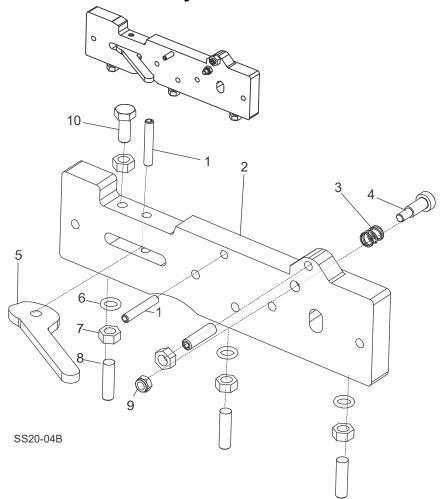
REF	PART#	DESCRIPTION	COMMENTS	QTY.
	SS20-942	Assembly, Sharp/Set Block		1
1		Assembly, Push Pawl	See 5.6 Push Pawl Assembly	1
2		Assembly, Main Block	See 5.6 Main Block Assembly	1
3		Assembly, Sharpener Plate	See 5.8 Sharpener Plate	1
4	SS20-936	Spring, 14mmOD x 24mm L x 1.6mm Wire		4
5	F05022-30	Bolt, Shoulder 10mmDia x 45mmL Plain		4
6	F05010-132	Nut, M8-1.25 Hex Nylock		1
7	SS20-948	Weldment, Rod End M10 x 75mm L		1
8	F05022-27	Bolt, Shoulder 10mmDia x 20mmL Plain		1
9		Assembly, Setter Clamp	See 5.9 Setter Clamp Assembly	1
10	SS20-943	Spring, 13.7mmODx12.7mmLx1mm Wire		2
11	F05011-134	Washer, M10 Flat SAE		1
12	F05004-270	Nut, M10-1.50 Hex Nyl Lock		1

5.6 Push Pawl Assembly



REF	PART #	DESCRIPTION	COMMENTS	QTY.
	074437	Push pawl	See Section 5.5 Sharp/Set Block Assemblies for location overview	1
1	SS20-976	Weldment, Push Pawl		1
2	074436	Knob, Push Pawl		2
3	F05011-134	Washer, M10 Flat SAE		1
4	SS20-928	Block, Push Pawl		1
5	F05022-27	Bolt, Shoulder 10mmDia x 20mmL Plain		2
6	F05011-139	Washer, Belleville .4IDx.875ODx.075H		1
7	SS20-922	Bushing, 10mmID x 13mm OD x 20mmL Bronze		2
8	049008	Grip, Foam Flat 1/4x3/4		1
9	SS20-981	Weldment, Push Pawl Handle		1
10	SS20-983	Washer, Thrust Bushing .51x1x.06Thk		1

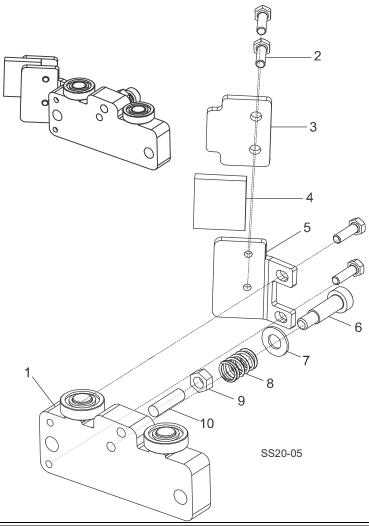
5.7 After 6/28/2015 Main Block Assembly



REF	PART #	DESCRIPTION	COMMENTS	QTY.
	SS20-204	Main Block	See Section 5.5 Sharp/Set Block Assemblies for location overview	1
1	SS20-934	Pin, Spring Roll 6mm x 35mm, Steel		2
2	SS20-305	Plate, Main		1
3	049365	Spring, 10.67mmOD x 12.7mm Lx.89mm Wire	Was SS20-937; changed 9/13/2019.	1
4	F05021-25	Bolt, Shoulder 8mmDia x 16mmL Plain		1
5	SS20-308	Lever, Blade Clamp		1
6	SS20-909	O-Ring, -110, 70 Duro Buna-N		3
7	F05010-162	Nut, M8-1.25 Free Zinc Plate		5
8	F05021-22	Screw, M8-1.25x30mm SH Flat Pnt Set		4
9	F05010-200	Nut, M6-1.0 Nylon Lock		1
10	F05021-2	Bolt, M8-1.25x20 Class 8 HH		1

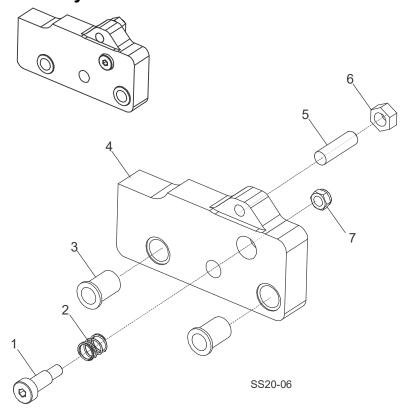


5.8 Sharpener Plate



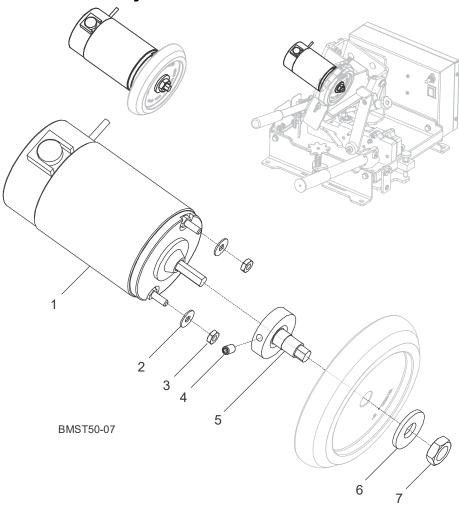
REF	PART #	DESCRIPTION	COMMENTS	QTY.
	SS20-919	Sharpener Plate	See Section 5.5 Sharp/Set Block Assemblies for location overview	1
1	SS20-918	Plate, Sharpener Clamp		1
2	F05020-6	Bolt, M6-1 x 20 Class 8 HH		4
3	SS20-311	Retainer, Sweeper		1
4	SS20-900	Sweeper, Oil		1
5	SS20-932	Plate, Wiper Bracket Rear		1
6	F05022-29	Bolt, Shoulder 10mmDia x 25mmL Plain		1
7	F05011-134	Washer, M10 Flat SAE		1
8	SS20-936	Spring, 14mmOD x 24mm L x 1.6mm Wire		1
9	F05010-162	Nut, M8-1.25 Free Zinc Plate		1
10	F05021-22	Screw, M8-1.25x30mm SH Flat Pnt Set		1

5.9 Setter Clamp Assembly



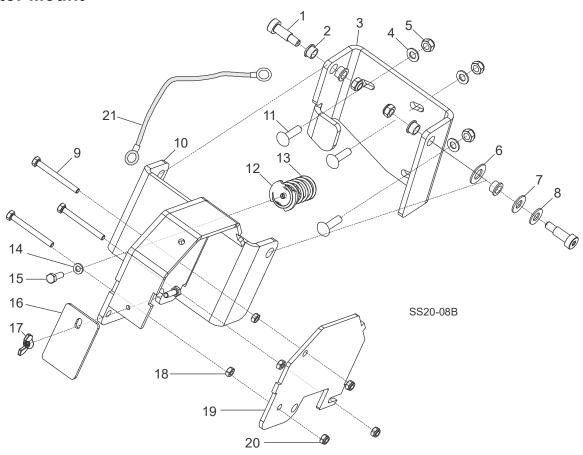
REF	PART #	DESCRIPTION	COMMENTS	QTY.
	SS20-941	Setter Clamp	See Section 5.5 Sharp/Set Block Assemblies for location overview	1
1	F05021-25	Bolt, Shoulder 8mmDia x 16mmL Plain		1
2	049365	Spring, 10.67mmOD x 12.7mm Lx.89mm Wire	Was SS20-937; changed 9/13/2019.	1
3	SS20-922	Bushing, 10mmID x 13mm OD x 20mmL Bronze		2
4	SS20-307	Plate, Setter		1
5	F05021-22	Screw, M8-1.25x30mm SH Flat Pnt Set		1
6	F05010-162	Nut, M8-1.25 Free Zinc Plate		1
7	F05010-200	Nut, M6-1.0 Nylon Lock		1

5.10 Sharpener Motor Assembly



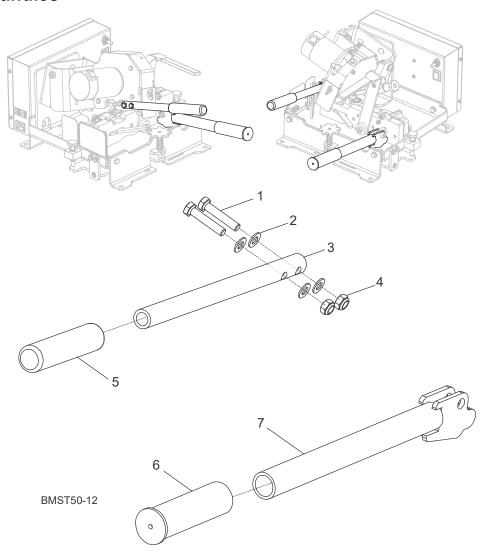
REF	PART #	DESCRIPTION COMMENTS	QTY.
	SS20-952	Assembly, Motor 12V DC	1
1	SS20-984	Assembly, Motor and Cable	1
2	F05010-27	Nut, #10-32 Hex	2
3	F05011-18	Washer, #10 SAE Flat	2
4	F05020-16	Screw, M6-1 x 10 SH Cup Pt Set	1
5	SS20-917	Adaptor, Wheel 12V Motor	1
6	SS20-986	Washer, .51 IDx1 1/4ODx1/8	1
7	F05027-19	Nut, M12-1.75 Zinc Jam	1

5.11 Motor Mount



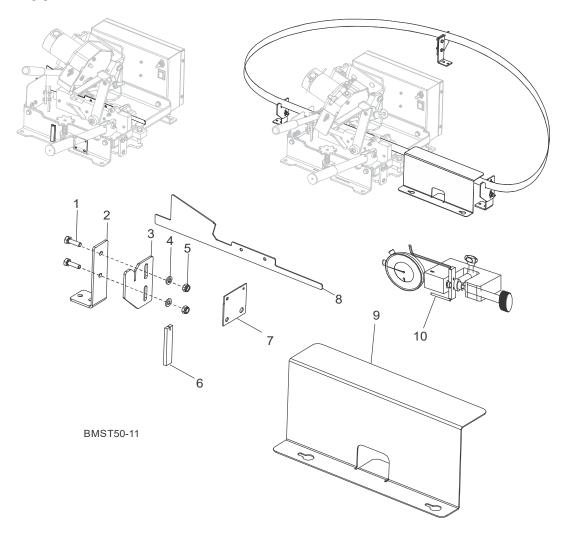
REF	PART #	DESCRIPTION	COMMENTS	QTY.
1	F05022-27	Bolt, Shoulder 10mmDia x 20mmL Plain		2
2	SS20-923	Bushing, 10mmID x 13mmODx8mmL Bronze		4
3	SS20-991	Plate, Sharpen Angle		1
4	F05026-4	Washer, M8 Flat		4
5	F05010-132	Nut, M8-1.25 Hex Nylock		5
6	SS20-983	Washer, Thrust Bushing .51x1x.06Thk		1
7	F05011-139	Washer, Belleville .40IDx7/8ODx.075H		1
8	F05011-134	Washer, M10 Flat SAE		1
9	F05020-43	Bolt, M6-1x60mm Class 8.8 HH Full Thrd		3
10	SS20-998	Weldment, Motor Mount		1
11	F05021-28	Bolt, M8 x 30 Carriage		3
	SS20-973	Assembly, Lift Spring		1
12	SS20-335	Clamp, Lift Spring Hold Down		1
13	SS20-938	Spring, 1.1OD x 2 L x .112 Wire		1
14	F05026-1	Washer, M6 Flat Class 4		1
15	F05020-6	Bolt, M6-1 x 20 Class 8 HH		1
16	SS20-965	Plate, Oil Guard		1
17	F05027-27	Nut, Wing M6x1 Zinc		1
18	F81031-1	Nut, M6-1.0 Free Nut Zinc		3
19	SS20-323	Cover, Wheel		1
20	F05010-200	Nut, M6-1.0 Nylon Lock		3
21	073808	Wire Assembly, 16AWG Yel/Grn GND	Added after 10/3/2017.	1

5.12 Control Handles



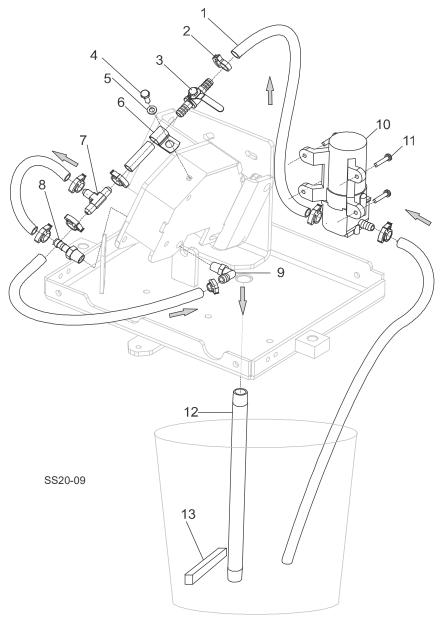
REF	PART #	DESCRIPTION	COMMENTS	QTY.
	SS20-972	Assembly, Sharpener Handle		1
1	F81002-15	Bolt, M8-1.25x40 HH Zinc Class 8.8		2
2	F05026-4	Washer, M8 Flat		4
3	SS20-924	Tubing, Grinder Handle		1
4	F05010-132	Nut, M8-1.25 Hex Nylock		2
5	049031	Grip, Handle 3/4 Dia IDx4 1/2		1
6	066111	Grip, 1" Handle Rubber		1
7	SS20-200	Weldment, Set Lever		1

5.13 Blade Support



REF	PART #	DESCRIPTION	COMMENTS	QTY.
	SS20-969	Assembly, Blade Support		3
1	F05020-6	Bolt, M6-1 x 20 Class 8 HH		6
2	SS20-329	Base, Blade Stand		3
3	SS20-330	Plate, Blade Stand		3
4	F05026-1	Washer, M6 Flat Class 4		6
5	F05010-200	Nut, M6-1.0 Nylon Lock		6
6	004754	Tool, Set Correction		1
7	SS20-331	Gauge, Set		1
8	SS20-999	Plate, Angle Gauge		1
9	SS20-964	Plate, Blade Guard		1
10	060490	Gauge, Assy, Toothset		1

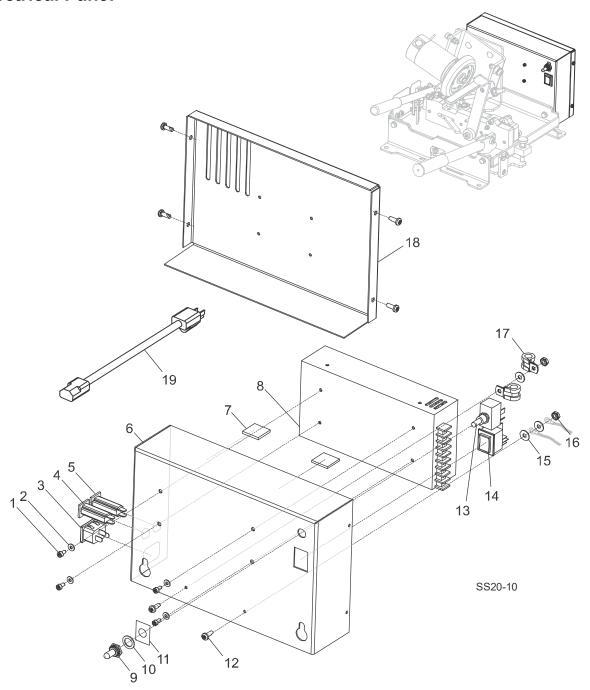
5.14 Lube System



REF	PART #	DESCRIPTION	COMMENTS	QTY.
1	R01885	Tubing, Lube	N OTE: Oil not included. Purchase separately by ordering 010740 Oil, 5 Gal #Grindeze 150C w/Label.	8.1 ft
2	074368	Hose Clamp, Single Snap Grip		8
3	065635	Valve, 1/4 Turn Ball 3/8 Hose Barbs		1
4	F05020-6	Bolt, M6-1 x 20 Class 8 HH		1
5	F05026-1	Washer, M6 Flat Class 4		1
6	P07584	Clamp, 1/2EMT Coated		1
7	015485	Fitting, 3/8 Barb Tee		1
8	P04682	Fitting, 3/8Barb 1/4NPT Male, Nylon		1
9	P04730	Barb, 3/8IN. Hose X 1/4 NPT NylElbow		1
10	SS20-985	Pump Assembly, Sharp &Set		1

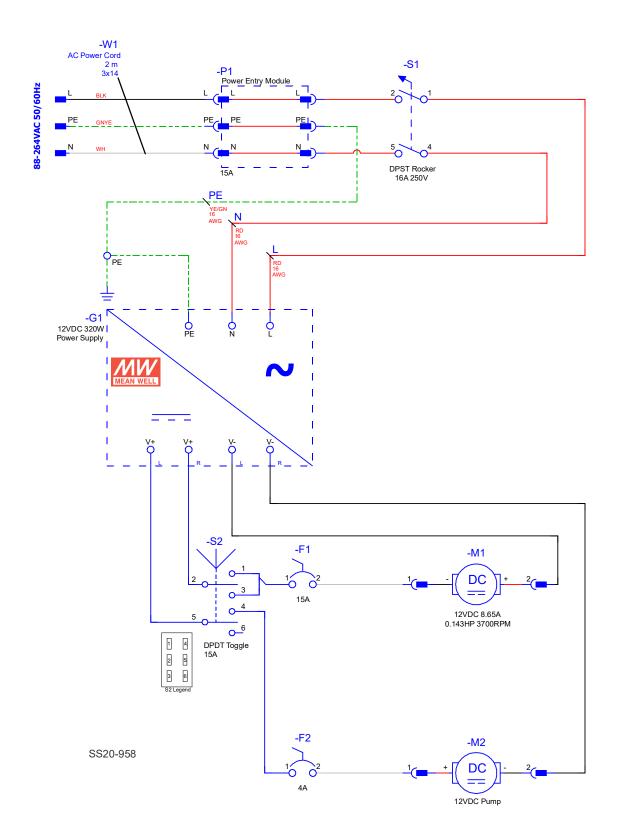
REF	PART #	DESCRIPTION	COMMENTS	QTY.
	074750	Fitting, Pump 12VDC Feed	Fitting comes with the pump, but can be ordered separately.	1
11	F05015-27	Screw, #10-24x1 Phl PH Typ23		4
12	SS20-968	Pipe, 1/2 x 22 Sch 40		1
13	P31347	Magnet, Filter		1

5.15 Electrical Panel

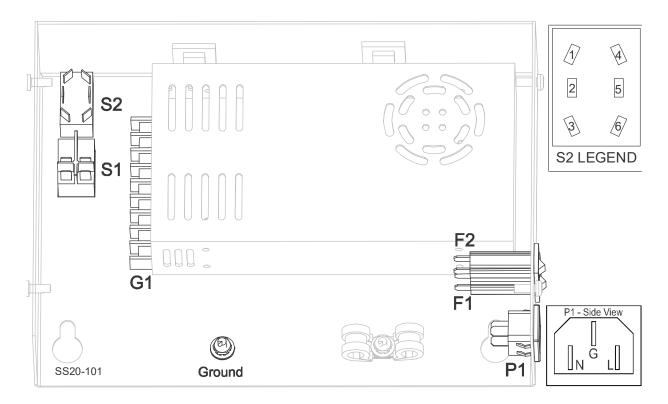


REF	PART #	DESCRIPTION	COMMENTS	QTY.
	SS20-958	Panel Assembly, Electrical		1
1	F05004-255	Screw, M47 x 8 SHC Zinc		4
2	F05011-56	Washer, #06 SAE Flat		4
3	060216	Receptacle, Power Entry		1
4	E10698	Breaker, 15A Panel Mount		1
5	068334	Circuit Breaker, 4A Pnl Mnt Man. Reset		1
6	SS20-957	Plate, Electrical Panel		1
7	F05089-4	Anchor, Tie wrap Adhesive backed		2
8	053592	Power Supply, 12VDC 320W Chassis-Mount		1
9	024589	Boot, Switch Sealing		1

REF	PART #	DESCRIPTION	COMMENTS	QTY.
10	P05251-1	Washer, 1/2x3/4x1/16 Nylon		2
11	SS20-1001	Decal, Motors Ctrl		1
12	F05015-17	Bolt, #10-24x1/2 Ph Pan Hd, Type 23		6
13	024588	Switch, DPDT ON/OFF/ON 15A Toggle		1
14	060515	Switch, On/Off Rocker		1
15	F05011-18	Washer, #10 SAE Flat		3
16	F05010-14	Nut, #10-24 Keps->		2
17	050329	Clamp, 3/8 Vinyl Coated Cable		2
18	SS20-959	Plate, Electrical Cover		1
19	069666	Power Cord, 5-15P To IEC C-13 15A		1



5.16 Component Layout



COMPONENT LIST

ID	WOOD-MIZER PART NUMBER	DESCRIPTION
F1	E10698	Breaker, 15A Panel Mount
F2	068334	Circuit Breaker, 4A Pnl Mnt Man. Reset
G1	053592	Power Supply, 12VDC 320W Chassis-Mount
M1	SS20-952	Assembly, Motor 12V DC
M2	033491	Pump, 12VDC Feed
P1	060216	Receptacle, Power Entry
S1	024588	Switch, DPDT ON/OFF/ON 15A Toggle
S2	060515	Switch, On/Off Rocker
W1	069666	Power Cord, 5-15P to IEC C-13 15A