

Lathe-Mizer Tenon Kit

Safety, Operation, Maintenance, & Parts Manual

LMTKIT

rev. A1.00



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

March 2007

Form #1308

California

Proposition 65 Warning



WARNING: Breathing gas/diesel engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Always start and operate the engine in a well-ventilated area.
If in an enclosed area, vent the exhaust to the outside.
Do not modify or tamper with the exhaust system.
Do not idle the engine except as necessary.

For more information go to **www.P65warnings.ca.gov**.



WARNING: Drilling, sawing, sanding or machining wood products can expose you to wood dust, a substance known to the State of California to cause cancer. Avoid inhaling wood dust or use a dust mask or other safeguards for personal protection.

For more information go to **www.P65Warnings.ca.gov/wood**.

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Table of Contents

Section-Page

SECTION 1	SAFETY	1-1
SECTION 2	SETUP & OPERATION	2-1
2.1	Tenon Kit Installation.....	2-1
2.2	Operation	2-11
SECTION 3	REPLACEMENT PARTS	3-1
3.1	Tenon Kit.....	3-1
3.2	Cutter Head Assembly.....	3-2
3.3	Carriage Assembly	3-3
3.4	1 1/2" Tenon Assembly.....	3-5
	INDEX	I

SECTION 1 SAFETY

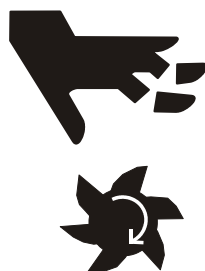


IMPORTANT! Read the entire Operator's Manual before operating the tenon option. Take notice of all safety warnings throughout this manual and those posted on the machine. Keep this manual with this machine at all times, regardless of ownership.

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



WARNING! Clean sawdust from all guards, vents, control boxes, or any area where sawdust may gather **after every shift**. Failure to do so may result in fire, causing death or serious injury.



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



WARNING! Always be aware of and take proper protective measures against rotating shafts, pulleys, fans, etc. Always stay a safe distance from rotating members and make sure that loose clothing or long hair does not engage rotating members resulting in possible injury.

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

WARNING! K Keep all persons out of the path of moving equipment and logs when operating sawmill or loading and turning logs. Failure to do so will result in serious injury.

WARNING! Hazardous voltage at the motor and inside the on/off control box can cause shock, burns, or death. Turn off and unplug the lathe before servicing! Keep all electrical component covers closed and securely fastened during operation.

WARNING! Maintain a clean and clear path for all necessary movement around the machine. Failure to do so will result in serious injury.



WARNING! Provide a safe environment for operating the lathe. The area should be well lit, dry and free of flammable liquids or gases.

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

WARNING! Use of this machine can generate and disburse dust and other airborne particles including wood, crystalline silica and asbestos. Use a dust collection system wherever possible. Avoid breathing dust and/or prolonged contact with dust. Wear appropriate respiratory protection during operation and wash exposed skin with soap and water. Exposure to dust may cause serious and permanent respiratory damage including lung disease, cancer and death.

WARNING! Inspect the material to be worked for splits, defects and/or foreign materials. Such materials could fly apart when spinning, possibly causing injury or death.

WARNING! Secure all loose clothing, jewelry and long hair before operating the sawmill and lathe. Failure to do so may result in serious injury or death.

WARNING! Always make sure log is clamped securely before sawing. Failure to do so may result in serious injury or death.

WARNING! Before connecting the lathe to the electrical power supply, make sure the motor switch is in the OFF position. Failure to do so may result in serious injury.

WARNING! Only use the lathe as described in this manual. Do not attempt to use any additional tooling with this option. Serious injury may result.

WARNING! To avoid possible injury from flying debris, keep all persons clear of the area during operation.

WARNING! Use caution when handling tenon knives and/or cutter head. Failure to do so may result in serious injury.

SECTION 2 SETUP & OPERATION

2.1 Tenon Kit Installation

These instructions assume the LatheMizer option is completely and properly installed prior to installation of the Tenon Kit option. See the LatheMizer option manual for installation instructions.



DANGER! Unplug the LatheMizer before performing installation or service of the tenon kit option. Failure to do so may result in serious injury or death.



WARNING! Use caution when handling tenon knives and/or cutter head. Failure to do so may result in serious injury.

See **Figure 2-1**. Remove the dog bracket from the drive end spindle, if necessary.

Install the tenon cutter head to the drive end spindle. Be sure the cross pin of the cutter head completely engages the slot in the spindle. Tighten the two locking set screws to secure the cutter head to the spindle. Carefully remove the warning decals covering the tenon blades.

Check that the LatheMizer drive assembly is properly positioned so the guard plate is aligned with the end of the table. Adjust if necessary.

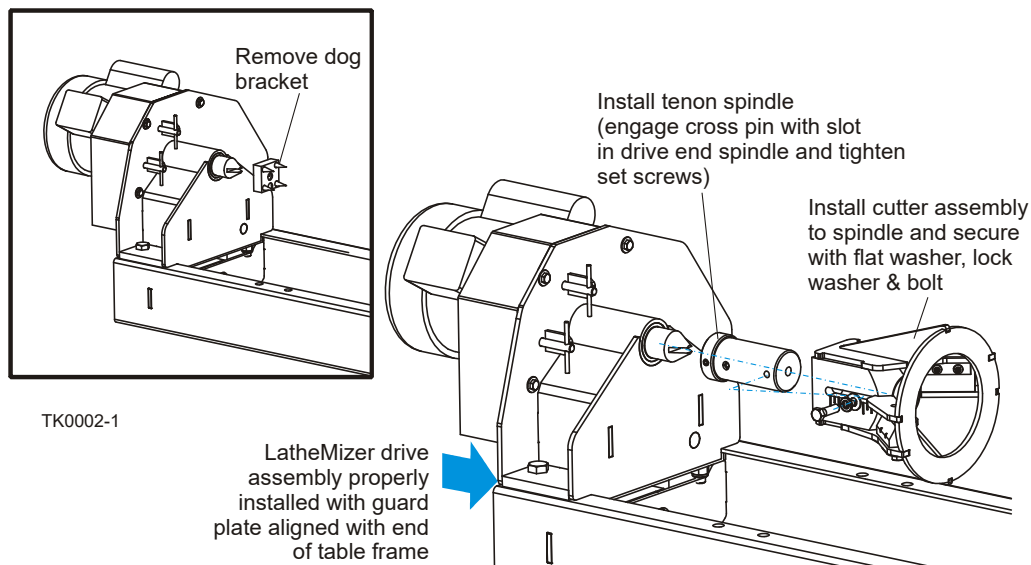


FIG. 2-1

See Figure 2-2. Assemble the slide pads, height adjustment star knobs and feed handle to the carriage assembly:

- Install four slide pads and spacer plates to the bottom of the carriage frame. Secure with two 5/16-18 x 2" hex head bolts, flat washers and hex nuts per pad.
- Install two star knobs to the carriage assembly using a 3/8-16 x 4" bolt and two jam nuts per knob. Insert the bolt up through the bottom of the carriage frame and install the knob and one jam nut. Continue the bolt up through the angled carriage plate and install the second jam nut. Be sure both knob bolts are adjusted equally to ensure the carriage height will be level.
- Install the feed handle to the threaded receiver on the carriage frame. Secure with a 3/8-16 x 1" bolt, two flat washers and one jam nut. Install the link plate to the feed handle with a 3/8" shoulder bolt and one flat washer between the handle and link plate.

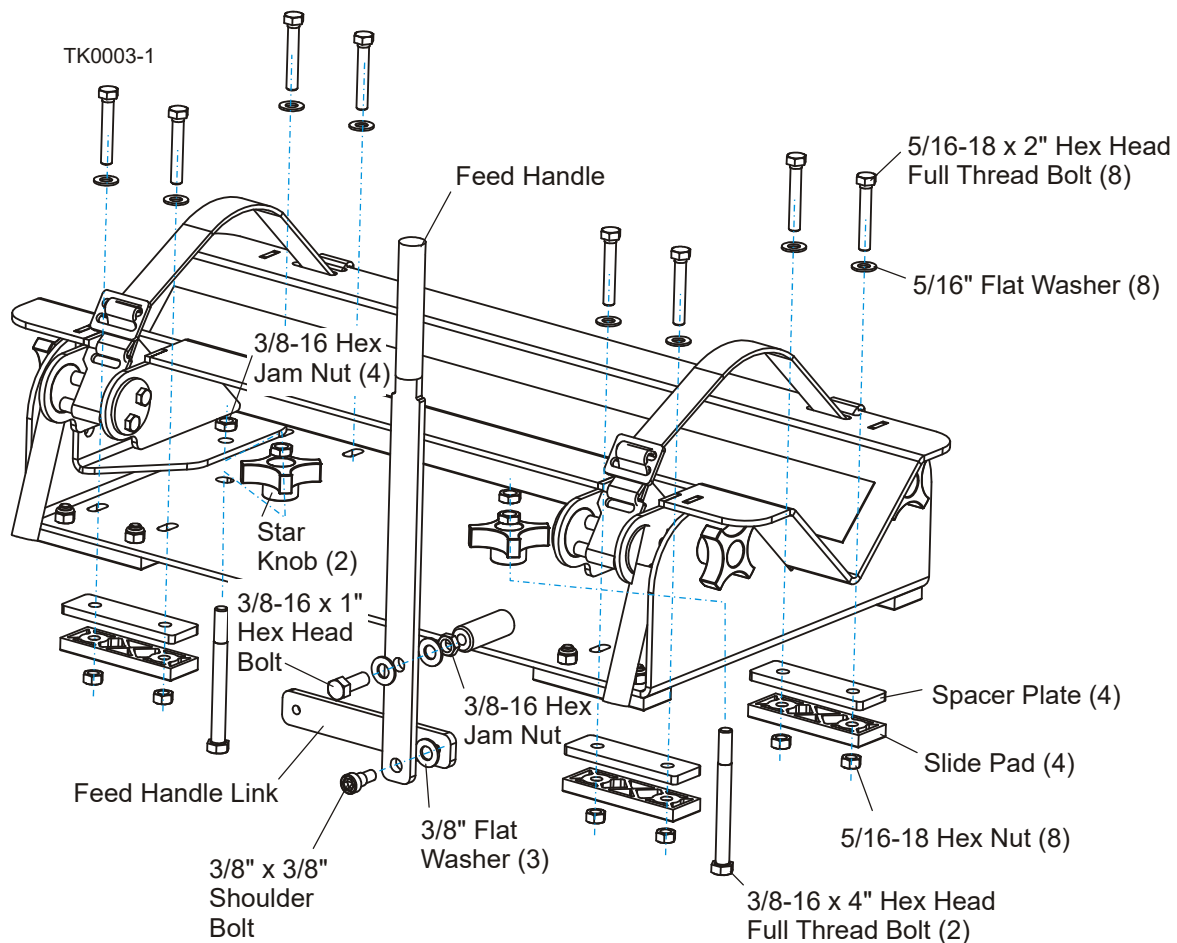


FIG. 2-2

See Figure 2-3. Position the tenon carriage assembly on the LatheMizer frame and secure the feed handle to the lathe frame using the provided shoulder bolt and 3/8" flat washers. Use as many washers as necessary to eliminate slop between the feed handle linkage and lathe frame.

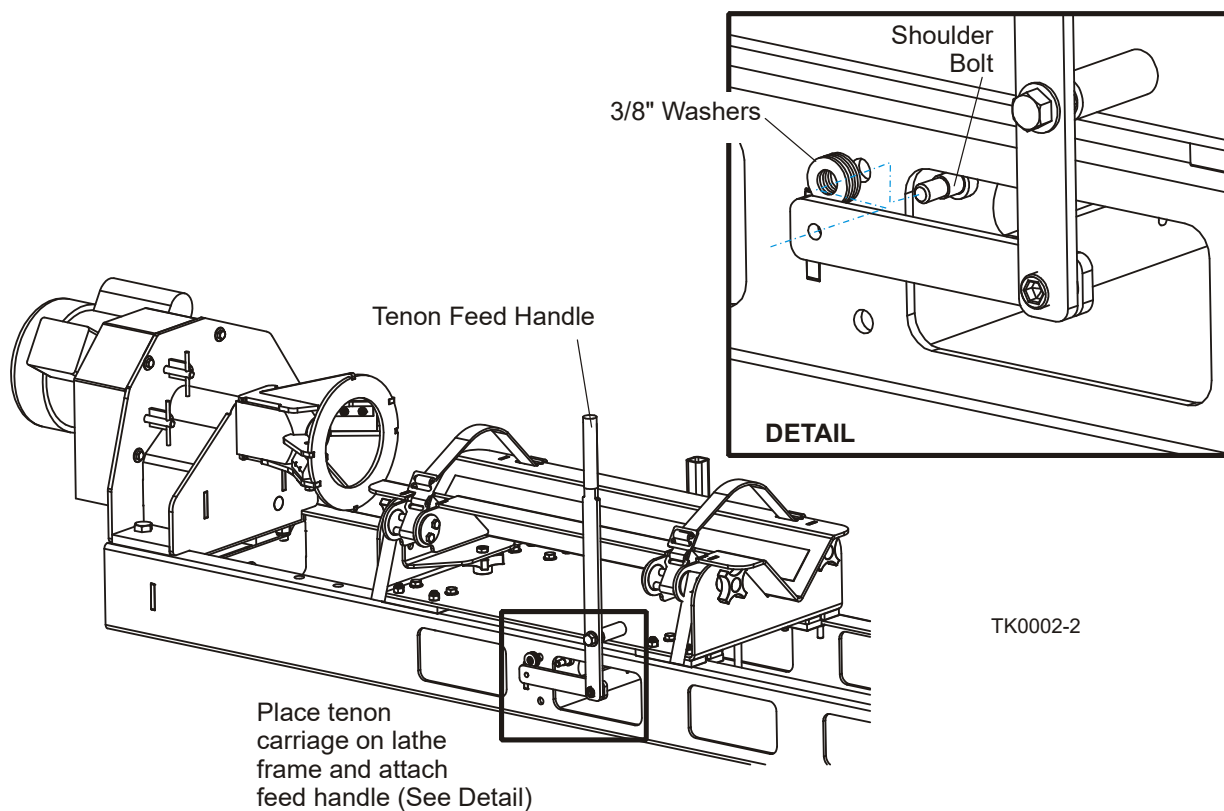


FIG. 2-3

See Figure 2-4. The four inner slide pads should touch the lathe frame, but not be so tight that the carriage will be difficult to move back and forth. To adjust the inner pads, loosen the mounting bolts and reposition the pads. Be sure the bottom of the carriage 'V' is centered with the cutter head and retighten the inner pad mounting bolts.

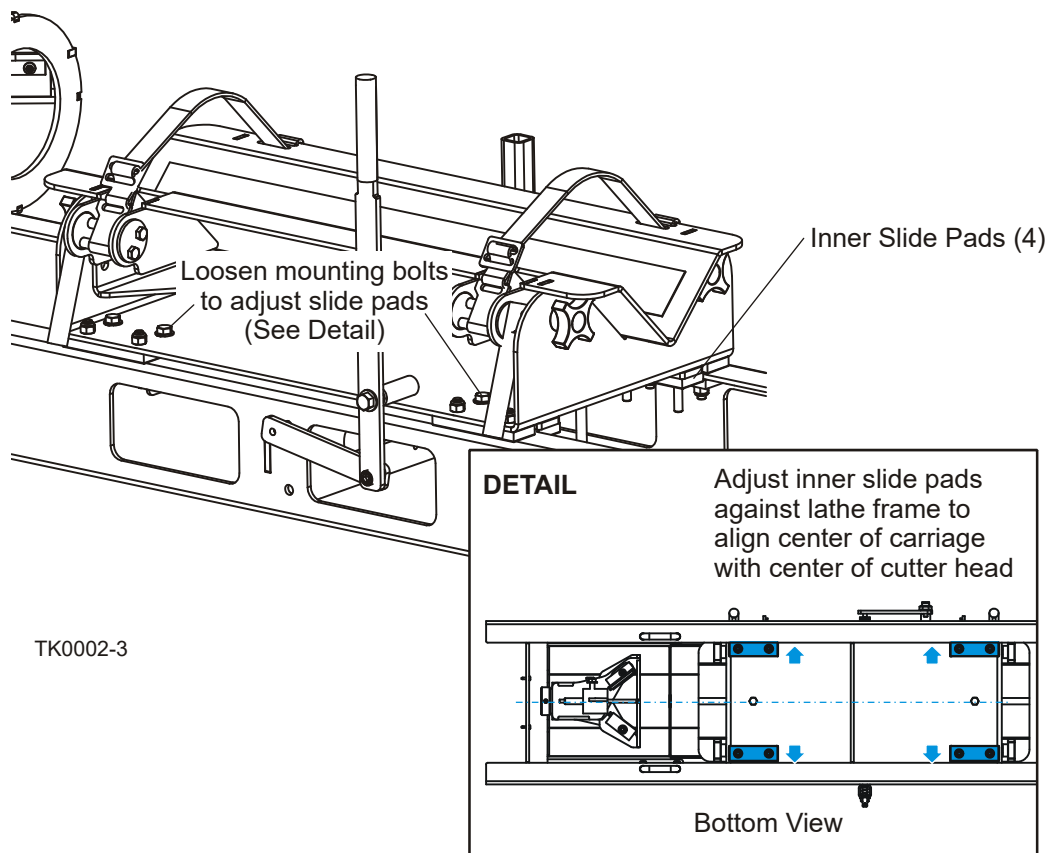


FIG. 2-4

See Figure 2-5. Install the carriage lower clamping plates to secure the carriage to the lathe frame. Use four 5/16" flat washers and lock nuts per clamp plate. Tighten the nuts just so the carriage is snug as possible, but still slides back and forth using the feed handle.

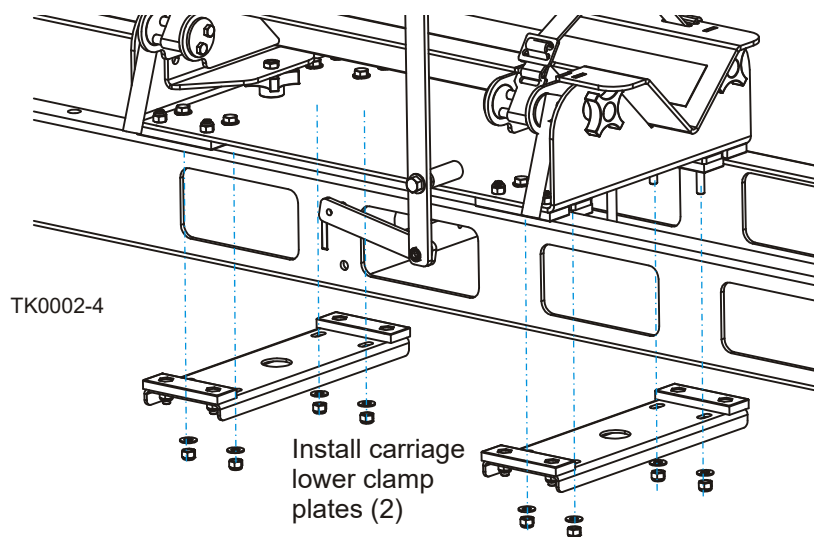


FIG. 2-5

Check and adjust the tenon knives. The tenon kit is supplied with the 2" tenon knives installed. If you want to create 2" tenons, skip to "To Adjust Tenon Knives" ([See Page 2-8](#)). If you want to create 1 1/2" tenons, install the adaptor kit as described below.



WARNING! Use caution when handling tenon knives and/or cutter head. Failure to do so may result in serious injury.

To install 1 1/2" tenon adaptor kit:

- Remove the knife mounting bolts, washers, mounting block and knives from the cutter head. Loosen the clamping bolt securing the cutter head housing to the spindle.

See Figure 2-6.

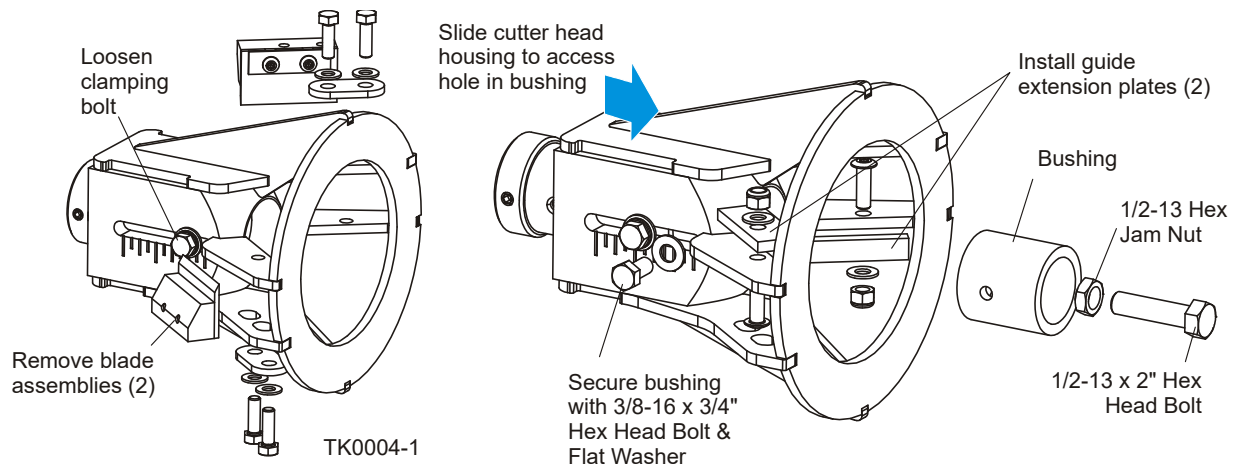


FIG. 2-6

- Install the 1 1/2" tenon bushing into the housing, against the end of the spindle. Be sure the bushing is oriented with the threaded hole toward the cutter head as shown. Slide the cutter head housing forward until you can access the bushing hole and secure with the 3/8-16 x 3/4" hex head bolt and flat washer.
- If tenons shorter than 2" are desired, install the 1/2-13 hex jam nut and 2" hex head bolt to the threaded hole in the end of the tenon spindle. This bolt is used as a stop when creating 1 1/2" tenons less than 2" long and will be adjusted later.
- Install two guide extension plates to the cutter head housing using one 5/16-18 x 1" button head screw, flat washer and nylon lock nut per plate.

- Disassemble the tenon knives from the mounting blocks. Place one thin and one thick spacer plate between the knife and block and reinstall the washer plate and screws. Reassemble the knife assemblies to the cutter head.

See Figure 2-7.

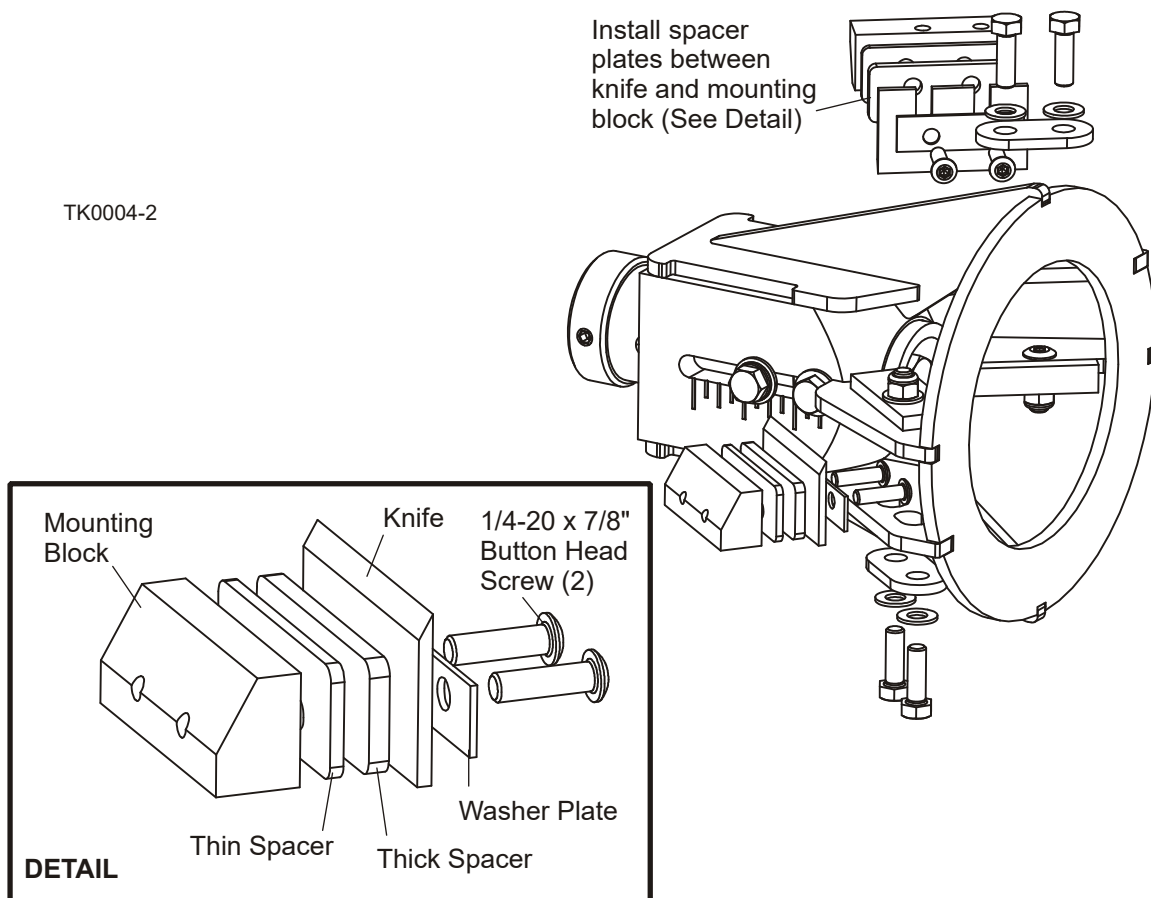


FIG. 2-7

To Adjust Tenon Knives:

WARNING! Use caution when handling tenon knives and/or cutter head. Failure to do so may result in serious injury.

Adjust the tenon knives as necessary. Each knife should extend slightly past the guide plate (or guide extension plate for 1 1/2" tenon). The knives should extend no more than .010" when working with hardwoods and .020" when working with softwoods.

See Figure 2-8. A template is provided to help you adjust the knives. Place the raised portion of the template flat against the guide plate with the desired .010" or .020" end of the template over the knife. Loosen the knife mounting bolts and adjust the knife until it touches the template. Retighten the mounting bolts and repeat for the other knife.

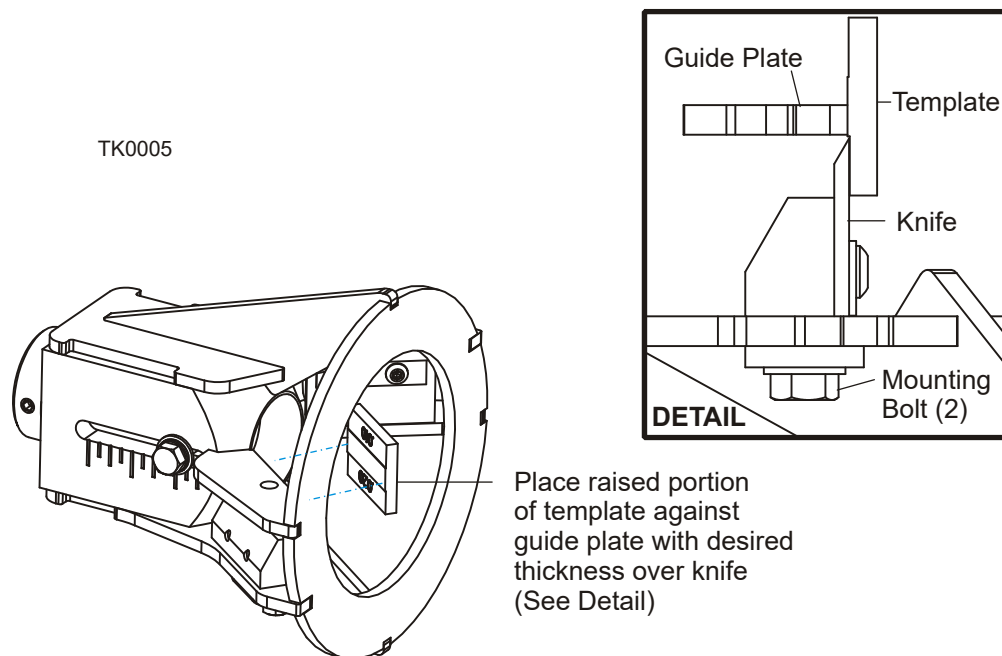


FIG. 2-8

To adjust the cutter head depth:

2" tenon only: Loosen the depth adjustment bolt and adjust the cutter head housing so the end of the spindle is aligned at the desired tenon depth indicator (each mark represents 1/4"). Tighten the adjustment bolt.

1 1/2" tenon only: When using the 1 1/2" tenon kit for 2" or longer tenons, loosen the depth adjustment bolt and measure the distance from the end of the bushing to the spindle. Adjust the cutter housing until the desired depth is achieved and tighten the adjustment bolt. If tenons shorter than 2" are desired, install and adjust the depth stop bolt and jam nut. Loosen the depth adjustment bolt and move the housing all the way forward against the bushing. Tighten the adjustment bolt and measure from the end of the bushing to the head of the stop bolt. Loosen the jam nut and adjust the stop bolt for the desired depth.

See Figure 2-9.

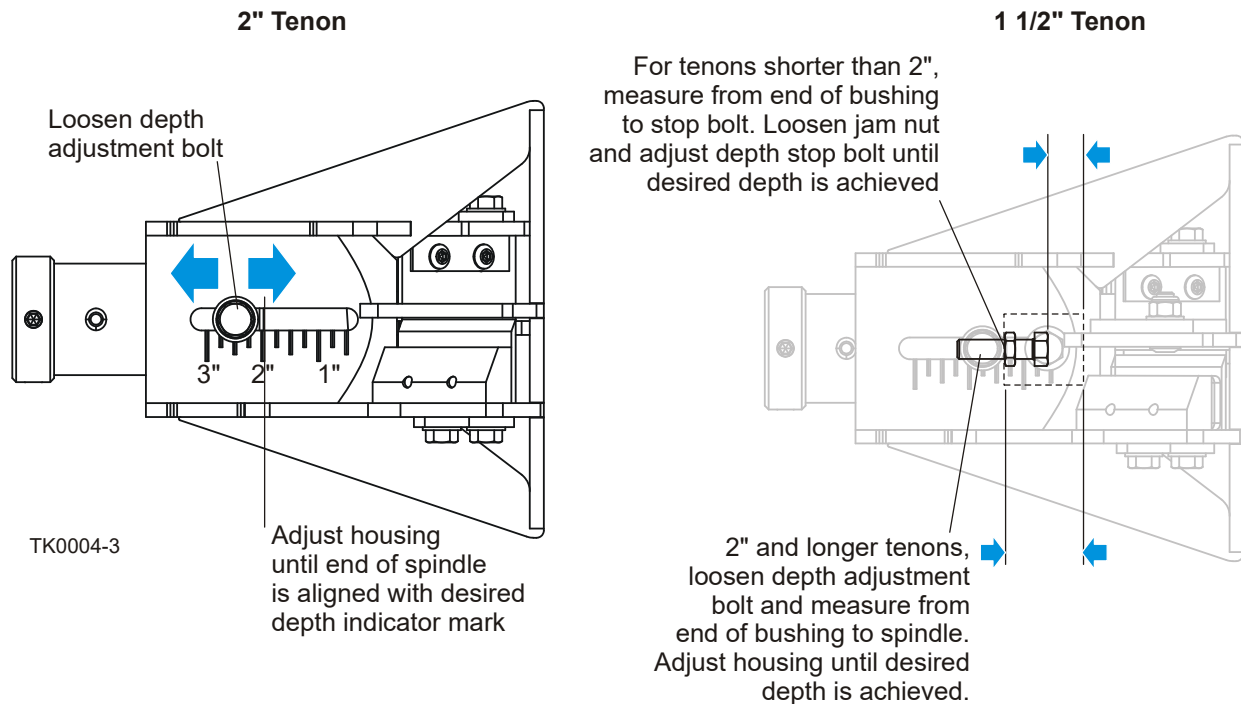


FIG. 2-9

See Figure 2-10. Install the tenon guard to the lathe frame using four 1/2-13 x 1" hex head bolts, flat washers and nylon lock nuts.

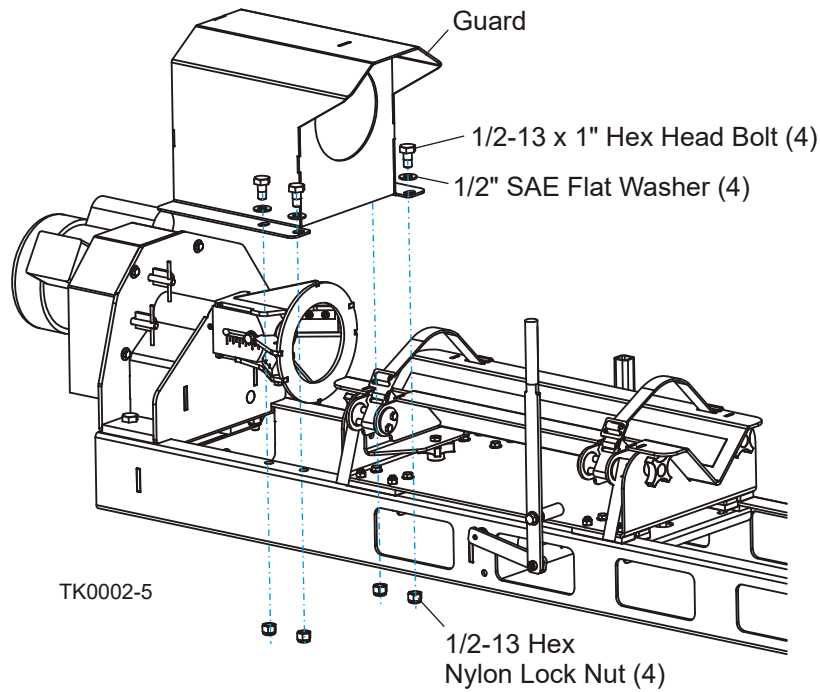


FIG. 2-10

2.2 Operation



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

DANGER! Always be aware of and take proper protective measures against rotating shafts, pulleys, fans, etc. Always stay a safe distance from rotating members and make sure that loose clothing or long hair does not engage rotating members resulting in possible injury.

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.

See Figure 2-11. Pull the feed handle to move the tenon carriage away from the cutter head. Load the workpiece onto the tenon carriage (up to 5" diameter maximum for 2" tenons; 4 1/2" for 1 1/2" tenons) and position so the front end extends past the carriage about six inches. Secure the workpiece to the carriage with the carriage straps. Adjust the straps if necessary to hold the workpiece securely on the carriage.

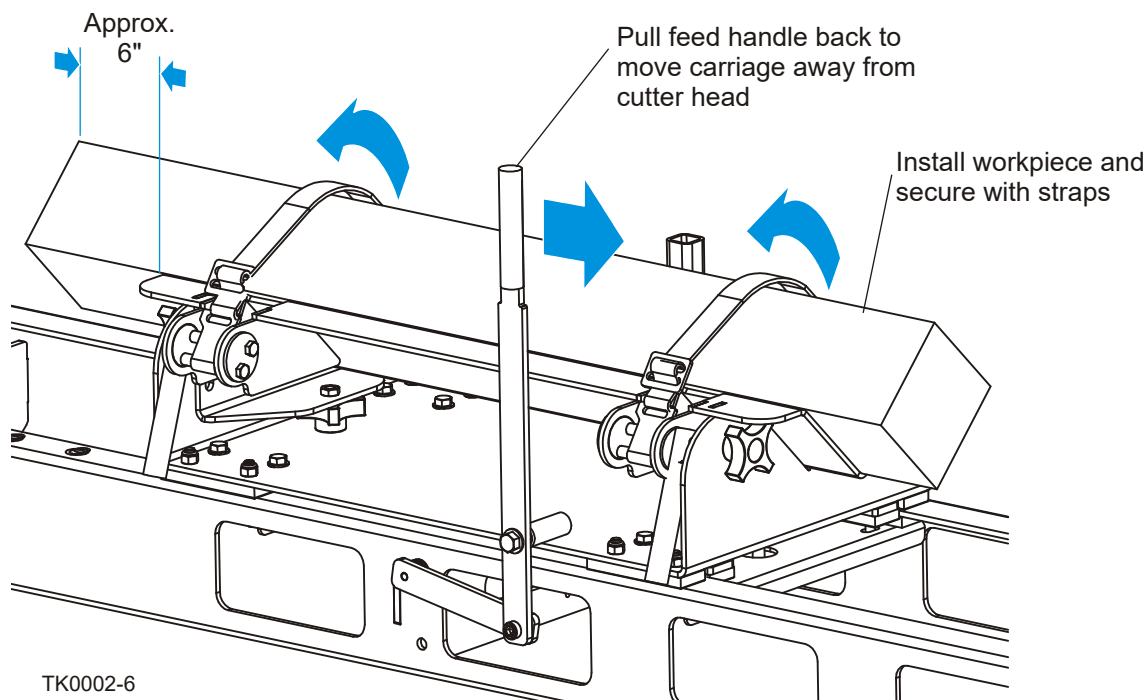


FIG. 2-11

See Figure 2-12. Loosen the four locking knobs and adjust the carriage height so the workpiece is centered with the cutter head. Turn the height adjustment knobs evenly to raise or lower the workpiece. Tighten the locking knobs.

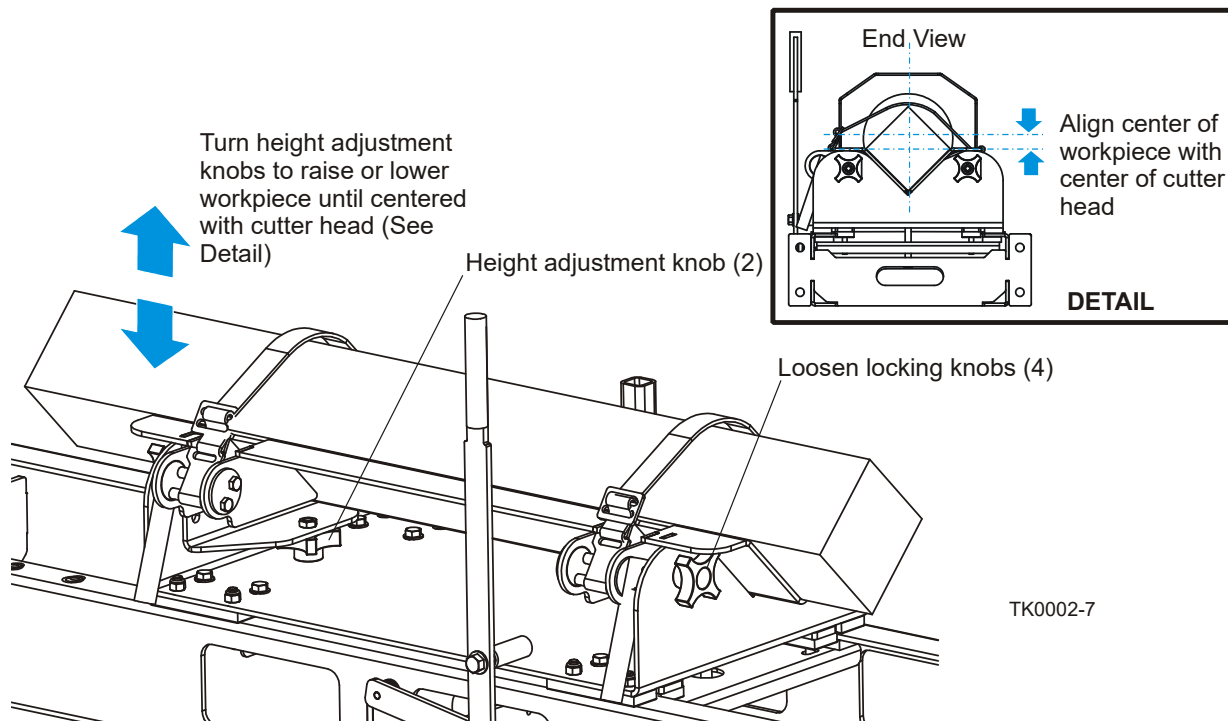


FIG. 2-12

Be sure both LatheMizer locking pins are disengaged so the spindle spins freely. Plug the LatheMizer in and turn the power on to start the cutter head spinning. Slowly push the feed handle forward until the knives just make contact with the end of the workpiece.

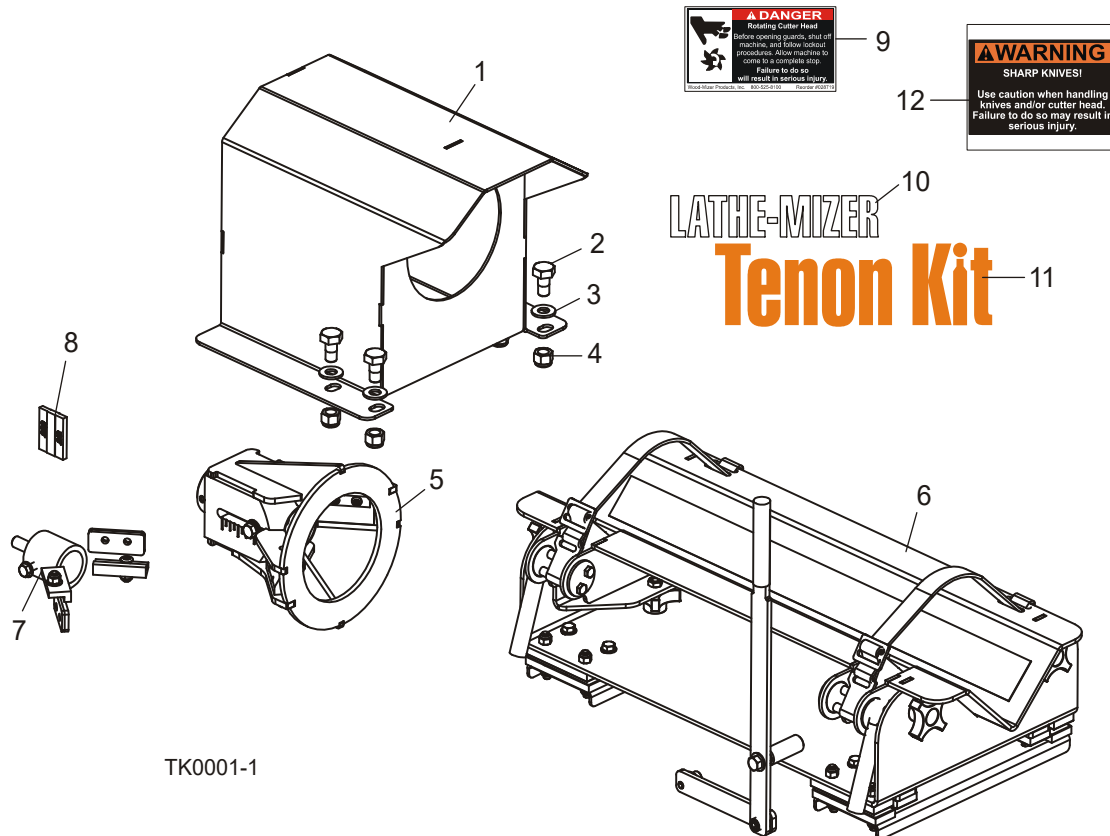
Turn the LatheMizer off and inspect the end of the workpiece. Make sure the knives have contacted the workpiece evenly around the workpiece. Adjust the carriage horizontally or vertically if necessary to center the workpiece with the cutter head. Loosen the inner slide pads to adjust the carriage horizontally. Loosen the locking knobs and turn the height adjustment knobs to raise or lower the carriage vertically. Retighten the inner pads and/or locking knobs.

Turn the LatheMizer on and start the workpiece into the cutter head. Recheck the evenness of the cut. Repeat horizontal and vertical adjustments until the knives contact the workpiece evenly.

Once adjustments are complete, feed the workpiece slowly into the cutter head. Continue feeding until the depth stop is reached. If excessive vibration occurs, stop and unplug the LatheMizer and adjust the knives to cut less material ([See Page 2-8](#)).

SECTION 3 REPLACEMENT PARTS

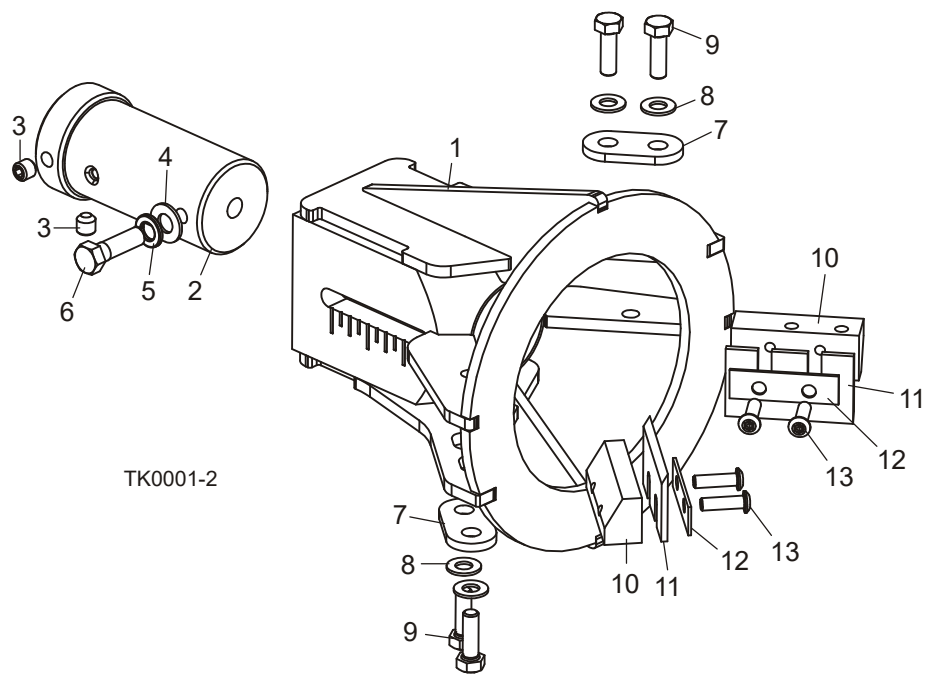
3.1 Tenon Kit



REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
	TENON KIT, LATHE-MIZER	LMTKIT	1	
1	Guard Weldment, Tenon	055990	1	
2	Bolt, 1/2-13 x 1" Hex Head	F05008-50	4	
3	Washer, 1/2" SAE flat	F05011-2	4	
4	Nut, 1/2-13 Hex Nylon Lock	F05010-8	4	
5	Cutter Head Parts (See Section 3.2)			
6	Carriage Parts (See Section 3.3)			
7	1 1/2" Tenon Parts (See Section 3.4)			
8	Gauge, Tenon Knife	056363	1	
9	Decal, Cutter Head Danger	028719	1	
10	Decal, Lathe-Mizer Logo Small	003336	2	
11	Decal, Tenon Kit Logo	003335	2	
12	Decal, Tenon Knife Warning	003665	2	
	Manual, Tenon Kit Option	LMTKIT-1308	1	

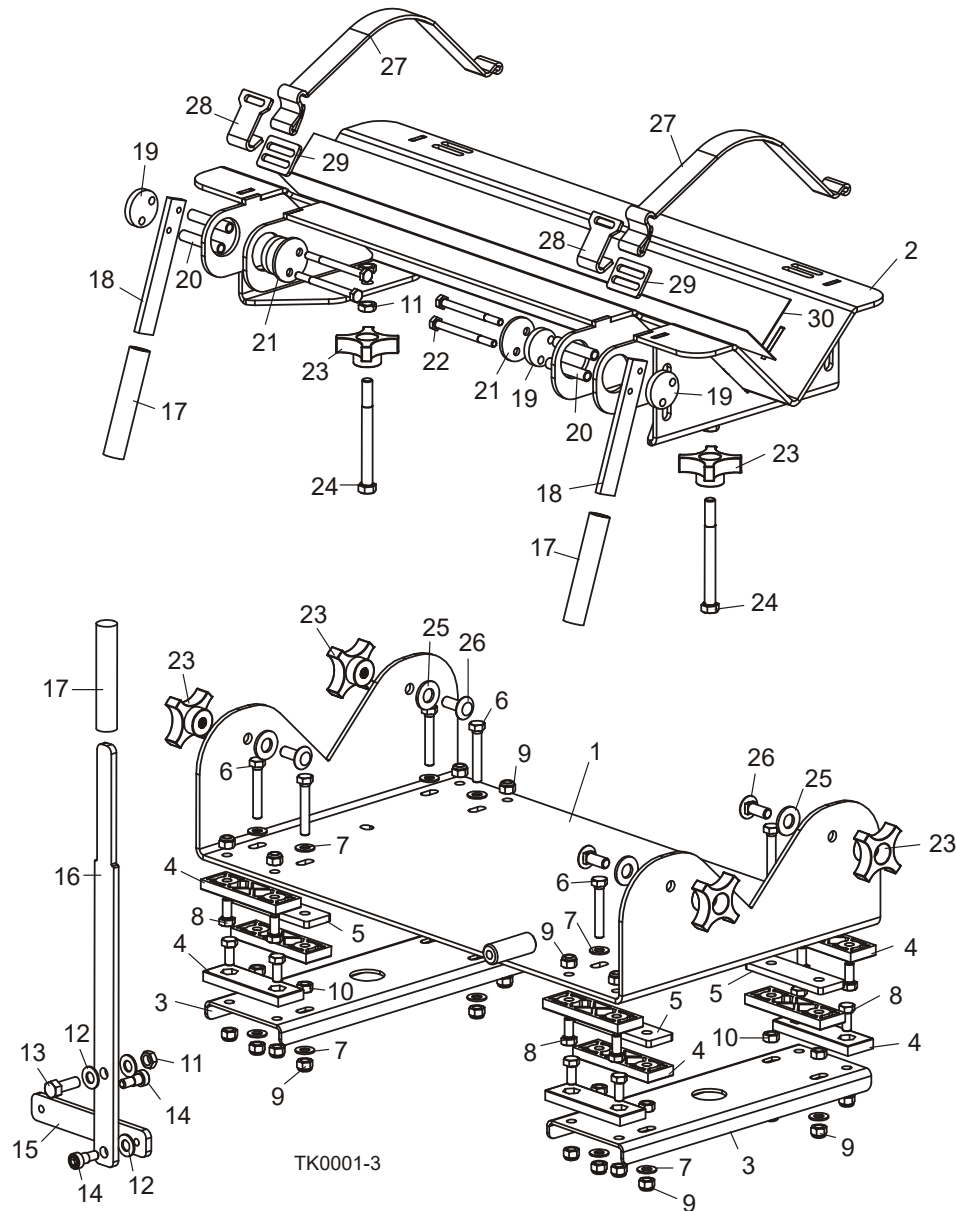
3 **Replacement Parts** *Cutter Head Assembly*

3.2 Cutter Head Assembly



REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
	HEAD ASSEMBLY, TENON CUTTER	056288	1	
1	Head Weldment, Tenon Cutter	055996	1	
2	Shaft Weldment, Tenon Cutter	056285	1	
3	Screw, 3/8-16 x 3/8" Socket Head Cup Point Set	F05007-68	2	
4	Washer, 3/8" SAE Flat	F05011-3	1	
5	Washer, 3/8" Split Lock	F05011-4	1	
6	Bolt, 3/8-16 x 1 1/4" Hex Head Grade 5	F05007-123	1	
7	Plate, Tenon Knife Mount Washer	055989	2	
8	Washer, 5/16" SAE Flat	F05011-17	4	
9	Bolt, 5/16-18 x 1" Hex Head Grade 5	F05006-27	4	
10	Block, Tenon Knife Mount	055951	2	
11	Knife, Tenon Cutter	055950	2	
12	Plate, Tenon Knife Clamp	055952	2	
13	Screw, 1/4-20 x 7/8" Button Socket Head	F05005-142	4	

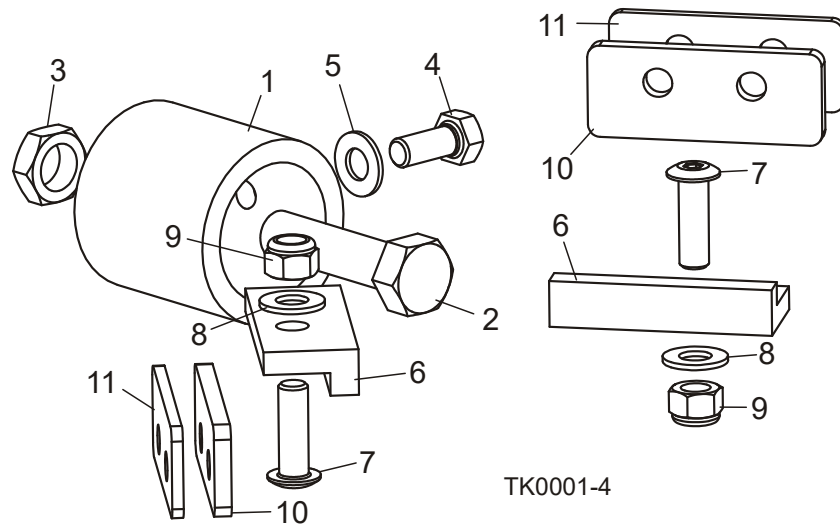
3.3 Carriage Assembly



REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
	CARRIAGE ASSEMBLY, TENON OPTION	056284	1	
1	Carriage Weldment, Tenon Option	056286	1	
2	Tray Weldment, Tenon Option	056287	1	
3	Plate, Lower Tenon Mount	055345	2	
4	Pad, Delrin Slide	M04096	12	
5	Plate, Slide Pad Spacer	056290	4	
6	Bolt, 5/16-18 x 2" Hex Head Full Thread	F05006-13	8	

7	Washer, 5/16" SAE Flat	F05011-17	16	
8	Bolt, 5/16-18 x 3/4" Hex Head Grade 5	F05006-102	16	
9	Nut, 5/16-18 Hex Nylon Lock	F05010-58	24	
10	Nut, 5/16-18 Hex	F05010-17	8	
11	Nut, 3/8-16 Hex Jam	F05010-29	5	
12	Washer, 3/8" SAE Flat	F05011-3	7	
13	Bolt, 3/8-16 x 1" Hex Head	F05007-7	1	
14	Bolt, 3/8" x 3/8" Socket Shoulder	F05007-159	2	
15	Plate, Tenon Feed Link	055346	1	
16	Plate, Tenon Feed Handle	055925	1	
17	Grip, 5/8" ID Hand	004742	3	
18	Plate, Pivot Lock Handle	055997	2	
19	Bushing, Pivot Lock	055991	4	
20	Tube, Pivot Lock Spacer	055995	4	
21	Washer, Pivot Lock	055994	2	
22	Bolt, 1/4-20 x 3" Hex Head Grade 5	F05005-127	4	
23	Knob, 2 1/4" OD Star	056294	6	
24	Bolt, 3/8-16 x 4" Hex Head Full Thread Grade 5	F05007-92	2	
25	Washer, 1/2" SAE Flat	F05011-2	4	
26	Bolt, 3/8-16 x 1" Carriage Head Grade 5	F05007-165	4	
27	Strap, 17" Tenon Tie-Down	056298	2	
28	Plate, Strap Adjustment	046297	2	
29	Plate, Strap Hook	046296	2	
30	Tape, 2" x 25" Anti-Slip	046295	2	

3.4 1 1/2" Tenon Assembly



REF	DESCRIPTION (◆ Indicates Parts Available In Assemblies Only)	PART #	QTY.	
	TENON ASSEMBLY, 1 1/2"	056321	1	
1	Bushing, 1 1/2" Tenon	056302	1	
2	Bolt, 1/2-13 x 2" Hex Head Full Thread	F05008-8	1	
3	Nut, 1/2-13 Hex Jam	F05010-31	1	
4	Bolt, 3/8-16 x 3/4" Hex Head	F05007-27	1	
5	Washer, 3/8" SAE Flat	F05011-3	1	
6	Plate, 1 1/2" Tenon Guide	056301	2	
7	Bolt, 5/16-18 x 1" Button Socket Head	F05006-12	2	
8	Washer, 5/16" SAE Flat	F05011-17	2	
9	Nut, 5/16-18 Hex Nylon Lock	F05010-58	2	
10	Plate, 7 Ga. Knife Spacer	056300	2	
11	Plate, 11 Ga. Knife Spacer	056299	2	

INDEX

O

operation
safety 1-1, 2-1

R

replacement parts
1 1/2" tenon assembly 3-5
carriage assembly 3-3
cutter head assembly 3-2
tenon kit 3-1

S

setup
installation 2-1, 2-11