



MODEL T25937 5" ROTARY TABLE OWNER'S MANUAL

(For models manufactured since 03/16)



COPYRIGHT © JULY, 2016 BY GRIZZLY INDUSTRIAL, INC.
**WARNING: NO PORTION OF THIS MANUAL MAY BE REPRODUCED IN ANY SHAPE
OR FORM WITHOUT THE WRITTEN APPROVAL OF GRIZZLY INDUSTRIAL, INC.**

#JH18243 PRINTED IN INDIA

V1.07.16



WARNING!

This manual provides critical safety instructions on the proper setup, operation, maintenance, and service of this machine/tool. Save this document, refer to it often, and use it to instruct other operators.

Failure to read, understand and follow the instructions in this manual may result in fire or serious personal injury—including amputation, electrocution, or death.

The owner of this machine/tool is solely responsible for its safe use. This responsibility includes but is not limited to proper installation in a safe environment, personnel training and usage authorization, proper inspection and maintenance, manual availability and comprehension, application of safety devices, cutting/sanding/grinding tool integrity, and the usage of personal protective equipment.

The manufacturer will not be held liable for injury or property damage from negligence, improper training, machine modifications or misuse.



WARNING!

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- **Lead from lead-based paints.**
- **Crystalline silica from bricks, cement and other masonry products.**
- **Arsenic and chromium from chemically-treated lumber.**

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: Work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

Table of Contents

| | |
|---|-----------|
| INTRODUCTION..... | 2 |
| Manual Accuracy..... | 2 |
| Machine Data Sheet..... | 2 |
| Contact Info..... | 2 |
| Identification..... | 3 |
| Controls & Components..... | 4 |
| SECTION 1: SAFETY..... | 5 |
| Safety Instructions for Machinery..... | 5 |
| SECTION 2: SETUP..... | 7 |
| Unpacking..... | 7 |
| Needed for Setup..... | 7 |
| Inventory..... | 7 |
| SECTION 3: OPERATIONS..... | 8 |
| Operation Overview..... | 8 |
| Table Movement & Lock Lever..... | 8 |
| Adjusting Handwheel Scale..... | 9 |
| Adjusting Indexing Scale..... | 9 |
| Adjusting Vernier Scale..... | 9 |
| Mounting Rotary Table..... | 10 |
| Mounting Chuck on Rotary Table..... | 12 |
| Aligning Workpiece with Mill Spindle..... | 13 |
| Aligning Table with Mill X-Axis..... | 14 |
| Adjusting Vernier Scale..... | 15 |
| Angular Indexing..... | 17 |
| Installing Dividing Plates..... | 17 |
| Simple Indexing..... | 18 |
| Mounting Tailstock..... | 21 |
| SECTION 4: ACCESSORIES..... | 22 |
| SECTION 5: MAINTENANCE..... | 24 |
| Schedule..... | 24 |
| Cleaning & Protecting..... | 24 |
| Lubrication..... | 24 |
| SECTION 6: PARTS..... | 25 |
| Main Parts Breakdown..... | 25 |
| WARRANTY & RETURNS..... | 29 |

INTRODUCTION

Manual Accuracy

We are proud to offer this document with your new machine! We've made every effort to be exact with the instructions, specifications, drawings, and photographs of the machine we used when writing this manual. However, sometimes we still make an occasional mistake.

Also, owing to our policy of continuous improvement, **your machine may not exactly match the manual**. If you find this to be the case, and the difference between the manual and machine leaves you in doubt, immediately call our technical support for updates or clarification.

For your convenience, we post all available documentation on our website at **www.grizzly.com**. Any updates to this document will be reflected on our website as soon as complete.

Contact Info

We stand behind our machines! If you have questions or need help, contact us with the information below. Before contacting, make sure you get the **serial number** and **manufacture date** from the machine ID label. This will help us help you faster.

Grizzly Technical Support
1815 W. Battlefield
Springfield, MO 65807
Phone: (570) 546-9663
Email: techsupport@grizzly.com

We want your feedback on this manual. What did you like about it? Where could it be improved? Please take a few minutes to give us feedback.

Grizzly Documentation Manager
P.O. Box 2069
Bellingham, WA 98227-2069
Email: manuals@grizzly.com



MACHINE DATA SHEET

Customer Service #: (570) 546-9663 • To Order Call: (800) 523-4777 • Fax #: (800) 438-5901

MODEL T25937 5" ROTARY TABLE

Worm Gear Ratio..... 90:1
Table Diameter 4.88"
Table Height 3.93"
Base Dimensions W 5" x L 7"
Vertical Base Holes 1/2" @ 3 1/2" Centers
Center Sleeve..... MT#2
Weight 35 lbs.

Identification

Become familiar with the names and locations of the controls and features shown below to better understand the instructions in this manual.

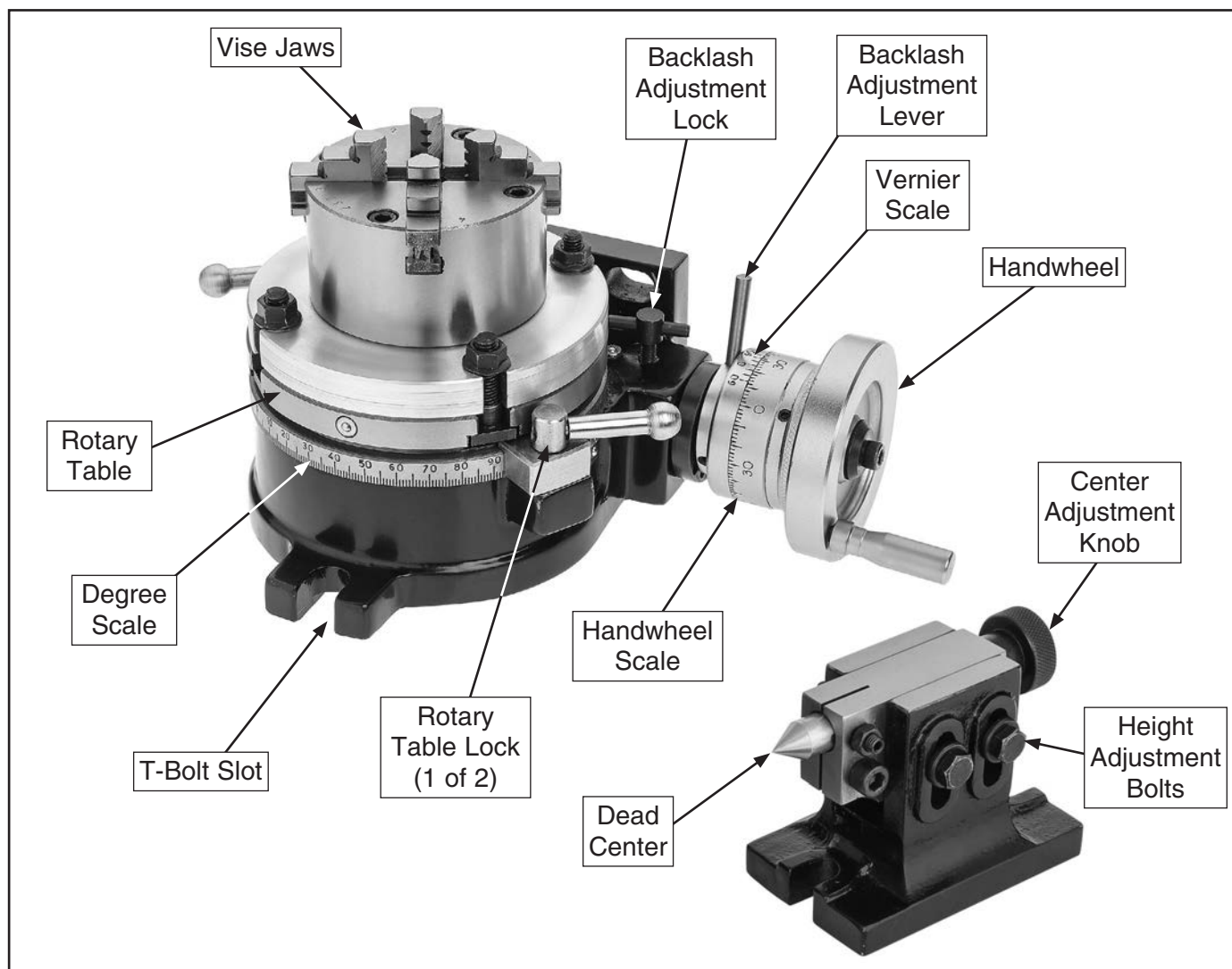


Figure 1. Model T25937 identification.

| | |
|---|--|
|  | <p>! WARNING</p> <p>To reduce your risk of serious injury, read this entire manual BEFORE using machine.</p> |
|---|--|



Controls & Components



Refer to **Figures 2–3** and the following descriptions to become familiar with the basic controls and components of this machine. Understanding these items and how they work will help you understand the rest of the manual and stay safe when operating this machine.

Table Controls and Components

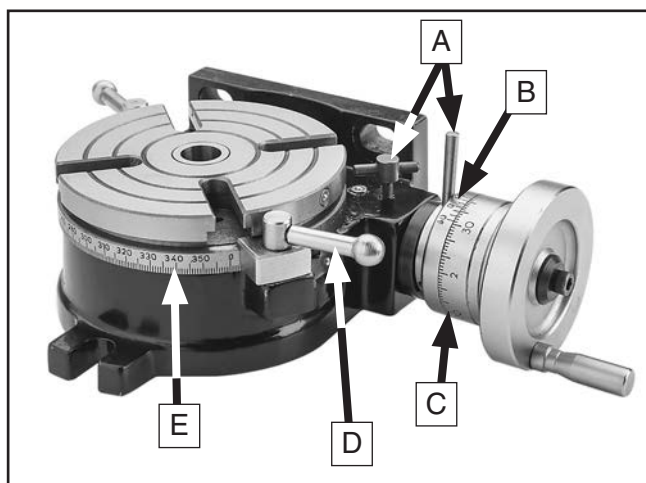


Figure 2. Table controls and components.

- A. Backlash Adjustment Lever & Lock:** When the worm gear and handwheel are disengaged, these allow the operator to turn the table by hand without using the handwheel. The backlash lever also allows adjustment of the backlash between the worm gear and worm wheel. Loosen the lock, then rotate the lever to adjust the backlash. To disengage the gear and wheel, rotate the lever clockwise until they disengage.

Note: Backlash lever features a set screw that controls backlash adjustment.

- B. Vernier Scale:** Has graduations that derive 20" (20 arc seconds).

- C. Handwheel Scale:** Has a resolution of 2' (2 arc minutes) and displays whole degree marks. A full rotation of the handwheel turns the rotary table 4°.

- D. Rotary Table Locks (1 of 2):** Lock the table/chuck in place. This reduces the stress on the worm and worm gear interface, and helps ensure the table does not change position during heavy machining operations. When cutting circular slots, a slight drag can be applied with the table lock to increase preload and prevent chatter caused by any backlash in the worm gear.

- E. Degree Scale:** Displays a quick reference for table positioning. It is graduated in whole degrees.

Tailstock Controls and Components

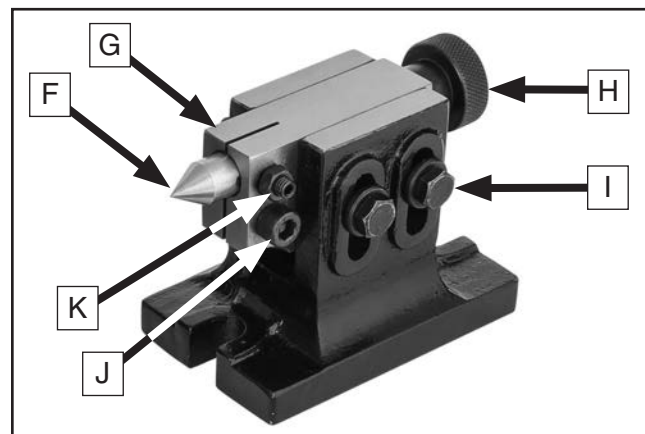


Figure 3. Tailstock controls and components.

- F. Dead Center:** Used in combination with rotary table and chuck to support long, slender workpieces.
- G. Tailstock Body:** Houses dead center. Mounts to mill table using T-bolts.
- H. Adjustment Knob:** Moves dead center forward and backward in tailstock body.
- I. Height Adjustment Bolts:** Allow tailstock body to be adjusted vertically.
- J. Dead Center Lock Screw:** Secures position of dead center.
- K. Dead Center Guide Screw:** Prevents dead center from spinning inside tailstock. Also, helps secure adjustment knob setting.



SECTION 1: SAFETY

For Your Own Safety, Read Instruction Manual Before Operating This Machine

The purpose of safety symbols is to attract your attention to possible hazardous conditions. This manual uses a series of symbols and signal words intended to convey the level of importance of the safety messages. The progression of symbols is described below. Remember that safety messages by themselves do not eliminate danger and are not a substitute for proper accident prevention measures. Always use common sense and good judgment.



Indicates an imminently hazardous situation which, if not avoided, **WILL** result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, **MAY** result in minor or moderate injury. It may also be used to alert against unsafe practices.

NOTICE

This symbol is used to alert the user to useful information about proper operation of the machine.

Safety Instructions for Machinery



OWNER'S MANUAL. Read and understand this owner's manual **BEFORE** using machine.

TRAINED OPERATORS ONLY. Untrained operators have a higher risk of being hurt or killed. Only allow trained/supervised people to use this machine. When machine is not being used, disconnect power, remove switch keys, or lock-out machine to prevent unauthorized use—especially around children. Make workshop kid proof!

DANGEROUS ENVIRONMENTS. Do not use machinery in areas that are wet, cluttered, or have poor lighting. Operating machinery in these areas greatly increases the risk of accidents and injury.

MENTAL ALERTNESS REQUIRED. Full mental alertness is required for safe operation of machinery. Never operate under the influence of drugs or alcohol, when tired, or when distracted.

ELECTRICAL EQUIPMENT INJURY RISKS. You can be shocked, burned, or killed by touching live electrical components or improperly grounded machinery. To reduce this risk, only allow qualified service personnel to do electrical installation or repair work, and always disconnect power before accessing or exposing electrical equipment.

DISCONNECT POWER FIRST. Always disconnect machine from power supply **BEFORE** making adjustments, changing tooling, or servicing machine. This prevents an injury risk from unintended startup or contact with live electrical components.

EYE PROTECTION. Always wear ANSI-approved safety glasses or a face shield when operating or observing machinery to reduce the risk of eye injury or blindness from flying particles. Everyday eyeglasses are **NOT** approved safety glasses.



WARNING

WEARING PROPER APPAREL. Do not wear clothing, apparel or jewelry that can become entangled in moving parts. Always tie back or cover long hair. Wear non-slip footwear to reduce risk of slipping and losing control or accidentally contacting cutting tool or moving parts.

HAZARDOUS DUST. Dust created by machinery operations may cause cancer, birth defects, or long-term respiratory damage. Be aware of dust hazards associated with each workpiece material. Always wear a NIOSH-approved respirator to reduce your risk.

HEARING PROTECTION. Always wear hearing protection when operating or observing loud machinery. Extended exposure to this noise without hearing protection can cause permanent hearing loss.

REMOVE ADJUSTING TOOLS. Tools left on machinery can become dangerous projectiles upon startup. Never leave chuck keys, wrenches, or any other tools on machine. Always verify removal before starting!

USE CORRECT TOOL FOR THE JOB. Only use this tool for its intended purpose—do not force it or an attachment to do a job for which it was not designed. Never make unapproved modifications—modifying tool or using it differently than intended may result in malfunction or mechanical failure that can lead to personal injury or death!

AWKWARD POSITIONS. Keep proper footing and balance at all times when operating machine. Do not overreach! Avoid awkward hand positions that make workpiece control difficult or increase the risk of accidental injury.

CHILDREN & BYSTANDERS. Keep children and bystanders at a safe distance from the work area. Stop using machine if they become a distraction.

GUARDS & COVERS. Guards and covers reduce accidental contact with moving parts or flying debris. Make sure they are properly installed, undamaged, and working correctly **BEFORE** operating machine.

FORCING MACHINERY. Do not force machine. It will do the job safer and better at the rate for which it was designed.

NEVER STAND ON MACHINE. Serious injury may occur if machine is tipped or if the cutting tool is unintentionally contacted.

STABLE MACHINE. Unexpected movement during operation greatly increases risk of injury or loss of control. Before starting, verify machine is stable and mobile base (if used) is locked.

USE RECOMMENDED ACCESSORIES. Consult this owner's manual or the manufacturer for recommended accessories. Using improper accessories will increase the risk of serious injury.

UNATTENDED OPERATION. To reduce the risk of accidental injury, turn machine **OFF** and ensure all moving parts completely stop before walking away. Never leave machine running while unattended.

MAINTAIN WITH CARE. Follow all maintenance instructions and lubrication schedules to keep machine in good working condition. A machine that is improperly maintained could malfunction, leading to serious personal injury or death.

DAMAGED PARTS. Regularly inspect machine for damaged, loose, or mis-adjusted parts—or any condition that could affect safe operation. Immediately repair/replace **BEFORE** operating machine. For your own safety, **DO NOT** operate machine with damaged parts!

MAINTAIN POWER CORDS. When disconnecting cord-connected machines from power, grab and pull the plug—**NOT** the cord. Pulling the cord may damage the wires inside. Do not handle cord/plug with wet hands. Avoid cord damage by keeping it away from heated surfaces, high traffic areas, harsh chemicals, and wet/damp locations.

EXPERIENCING DIFFICULTIES. If at any time you experience difficulties performing the intended operation, stop using the machine! Contact our Technical Support at (570) 546-9663.



SECTION 2: SETUP

Unpacking

This machine was carefully packaged for safe transport. When unpacking, separate all enclosed items from packaging materials and inspect them for shipping damage. ***If items are damaged, please call us immediately at (570) 546-9663.***

IMPORTANT: Save all packaging materials until you are completely satisfied with the machine and have resolved any issues between Grizzly or the shipping agent. ***You MUST have the original packaging to file a freight claim. It is also extremely helpful if you need to return your machine later.***



Needed for Setup

The following items are needed, but not included, for the setup/assembly of this machine.

| Description | Qty |
|---------------------------------------|-----|
| • Hex Wrench 5mm..... | 1 |
| • Hex Wrench 2.5mm..... | 1 |
| • Open-End Wrench 15mm..... | 1 |
| • T-Bolts, Studs & Hex Nuts 1/2"..... | 2 |
| • Open End Wrench or Socket 3/4"..... | 1 |
| • C-Clamp Set (optional)..... | 1 |

Inventory

The following is a list of items shipped with your machine. Before beginning setup, lay these items out and inventory them.

If any non-proprietary parts are missing (e.g. a nut or a washer), we will gladly replace them; or for the sake of expediency, replacements can be obtained at your local hardware store.

| Box 1 (Figure 4): | Qty |
|---|--------|
| A. Rotary Table & Vise | 1 |
| B. Dividing Plates..... | 3 |
| C. Vise Jaws | 4 |
| D. Collet Wrench..... | 1 |
| E. Step Clamps..... | 2 Pair |
| F. Step Blocks | 2 Pair |
| G. Crank Handle w/Pin..... | 1 |
| H. T-Slot Bolt Assemblies | |
| —Threaded Studs M8-1.25 x 80 | 4 |
| —T-Nuts 8mm | 4 |
| —Flange Nuts 8mm | 4 |
| I. Tailstock..... | 1 |
| J. Phillips Head Screws M5-.8 x 12..... | 3 |
| K. Sector Arm | 1 |
| L. Sector Arm Spring Clip..... | 1 |

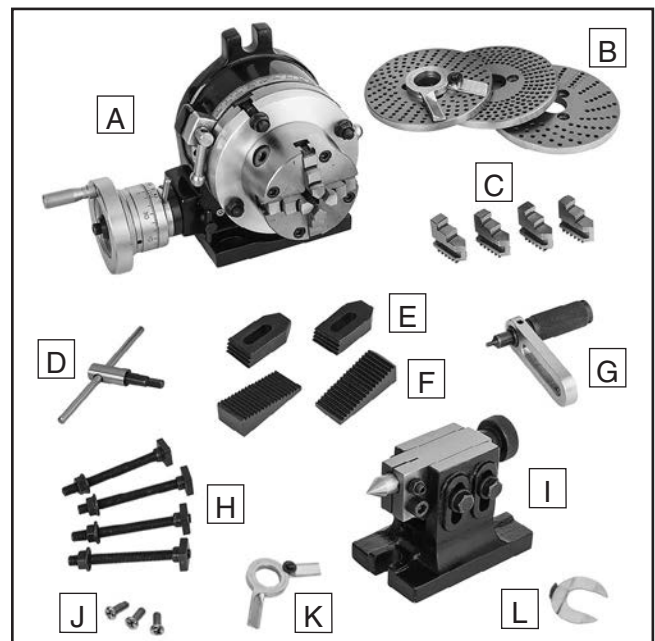


Figure 4. Box inventory.

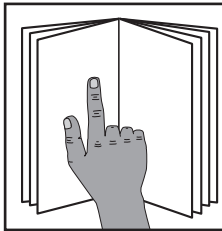


SECTION 3: OPERATIONS

Operation Overview

The purpose of this overview is to provide the novice machine operator with a basic understanding of how the machine is used during operation, so the machine controls/components discussed later in this manual are easier to understand.

Due to the generic nature of this overview, it is **not** intended to be an instructional guide. To learn more about specific operations, read this entire manual and seek additional training from experienced machine operators, and do additional research outside of this manual by reading "how-to" books, trade magazines, or websites.



WARNING
To reduce your risk of serious injury, read this entire manual **BEFORE** using machine.



WARNING
Eye injury hazard! Always wear safety glasses when using this machine.

NOTICE

If you are not experienced with this type of machine, **WE STRONGLY RECOMMEND** that you seek additional training outside of this manual. Read books/magazines or get formal training before beginning any projects. Regardless of the content in this section, Grizzly Industrial will not be held liable for accidents caused by lack of training.

Table Movement & Lock Lever

The rotary table rotates by turning the handwheel, which is attached to a precision worm gear engaged with a worm wheel. The ratio between these gears is 1:90, which means one complete turn of the handwheel rotates the table 4°.

Besides rotating the table in precise increments, the worm gear and wheel can be disengaged and the table can be rotated by hand. To do this, loosen the backlash adjustment lock and rotate the backlash adjustment lever clockwise (see **Figure 5**). This is the quickest way to use the dividing plates provided with the rotary table when speed of operation is important (refer to **Page 16** for more information).

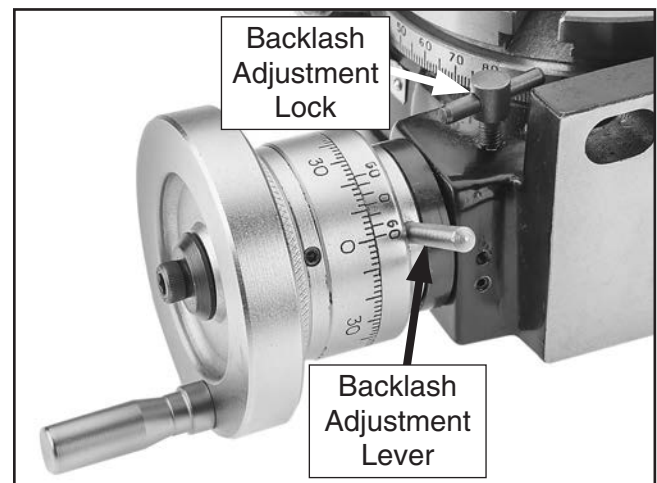


Figure 5. Worm gear controls.

To help maximize rigidity during operation, the rotary table has two table lock levers. Tightening the levers locks the table in place.

To minimize finish problems associated with gear backlash when cutting circular slots, lightly tighten the lock levers to create extra drag.



Adjusting Handwheel Scale

The handwheel scale (see **Figure 6**) can be repositioned without rotating the handwheel. This helps when aligning all of the zeros at the beginning of the job.



Figure 6. Adjusting the handwheel scale.

The scale collar is marked in whole degrees and has a resolution of 2' (2 arc minutes). For every full rotation of the handwheel, the indexing scale on the rotary table moves 4°.

To adjust the collar, loosen the set screw (see **Figure 7**) securing the collar to the handwheel, then rotate the collar to the desired alignment.

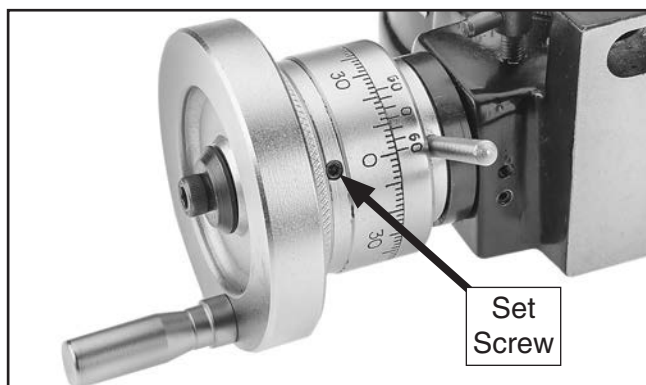


Figure 7. Location of collar set screw.

Adjusting Indexing Scale

The degree scale is marked on the edge of the rotary head in 1° increments (see **Figure 8**). The zero point can be synchronized with the handwheel to start the table indexing at 0° by using the index marker as a starting point.

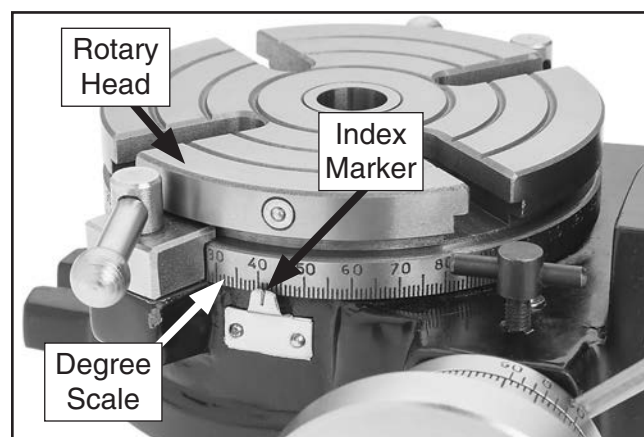


Figure 8. Location of degree scale.

Adjusting Vernier Scale

The handwheel dial is marked in degrees with divisions in 2 minutes (2'). The vernier scale is marked with graduations of 20 seconds (20") (see **Figure 9**). The scale is attached to the backlash adjustment lever collar and is positioned according to the backlash setting.

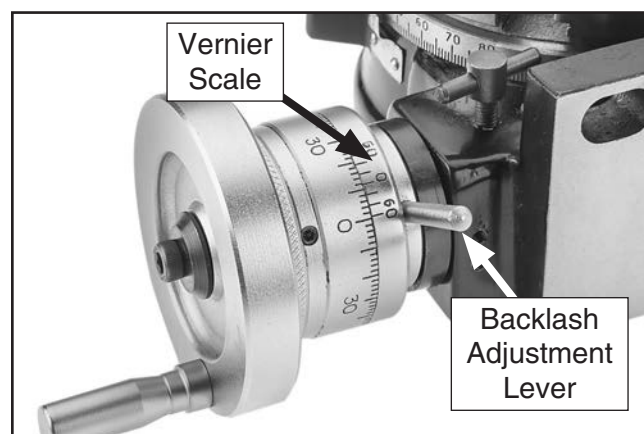


Figure 9. Location of vernier scale.



Mounting Rotary Table

Before mounting the Model T25937 Rotary Table to your mill table, make sure your mill table and mill spindle are correctly aligned with each other. Refer to your mill manual for this procedure.

The Model T25937 comes with (4) 80mm T-slot bolt assemblies, (2) step blocks, and (2) step clamps for mounting the rotary table.

Use shop rags and mineral spirits to thoroughly clean the mating surfaces of the rotary table and the mill table, including the boss and socket.

| Components and Hardware Needed: | Qty |
|---|-----|
| T-Slot Bolt Assemblies M8-1.25 x 80mm | 2 |
| Step Blocks | 2 |
| Step Clamps | 2 |

| Tools Needed: | Qty |
|----------------------------|-----|
| Open-End Wrench 12mm | 1 |

⚠ CAUTION

Make sure rotary table is secured to milling table. Check T-slot bolts and step clamps before each cutting operation. If rotary table is not secured, serious personal injury and damage to your mill and rotary table could result.

To mount rotary table in horizontal position:

1. DISCONNECT MACHINE FROM POWER!
2. Position ½" T-bolt slots on rotary table over T-slots in milling table (see **Figure 10**).
3. Insert (1) T-slot nut into each milling table T-slot, then install step clamp onto each T-slot bolt (see **Figure 10**).
4. Install step blocks on milling table T-slots (see **Figure 10**).
5. Secure rotary table using flange nuts. Ensure rotary table is rigid to increase accuracy, efficiency, and safety (see **Figure 10**).

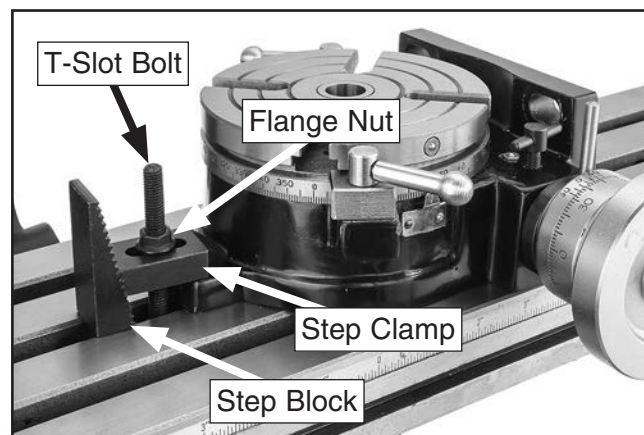


Figure 10. Rotary table mounted using T-slot bolt assemblies, step blocks, and step clamps.

Note: Rotary table may also be installed using T-bolts, washers, and hex nuts (not included), as shown in **Figure 11**.

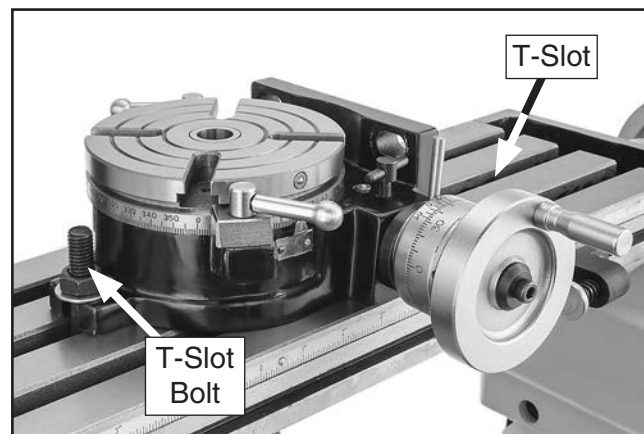


Figure 11. Rotary table mounted using T-bolts, washers, and hex nuts.



The T-slots for the vertical setup of the rotary table are 3⁵/₈" between centers. You will need to have the same distance between centers on your milling table to use T-bolts. If your milling table has different T-slot centers, you will need to use step blocks and clamps to secure the rotary table. See **Figure 10** for an example of this type of setup.

The Model T25937 does not include fasteners to secure the rotary table to a milling table in the vertical position. The instructions below are included to provide an example of how the table can be mounted.

| Components and Hardware Needed: | | Qty |
|--|---|------------|
| T-Bolts M12-1.75 x 40 | 2 | 2 |
| Hex Nuts M12-1.75..... | 2 | 2 |
| Flat Washers 12mm..... | 2 | 2 |

To mount rotary table in vertical position:

1. DISCONNECT MACHINE FROM POWER!
2. Insert T-bolts in milling table T-slots.

3. Install rotary table in vertical position on (2) T-bolts (see **Figure 12**).
4. Install (1) flat washer and (1) hex nut on each T-bolt (see **Figure 12**), then tighten securely. Holding table rigid will help with accuracy, efficiency, and general safety.

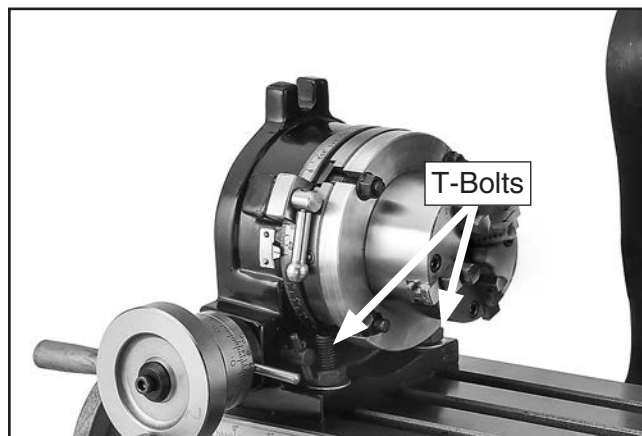


Figure 12. Example of rotary table mounted in vertical position using T-bolts, flat washers, and hex nuts.

! CAUTION

Make sure rotary table is secured to milling table. Check T-slot bolts and step clamps before each cutting operation. If rotary table is not secured, serious personal injury and damage to your mill and rotary table could result.



Mounting Chuck on Rotary Table

The chuck will need to be centered each time it is mounted on the rotary table. This ensures the highest degree of precision during milling operations.

| Tools Needed: | Qty |
|--------------------------------------|-----|
| Dial Indicator w/Magnetic Base | 1 |
| Dead-Blow Hammer | 1 |
| Open-End Wrench 12mm | 1 |

To center chuck on rotary table:

1. Place chuck on rotary table and attach with (4) M8-1.25 x 40 T-slot bolt assemblies (see **Figure 13**).

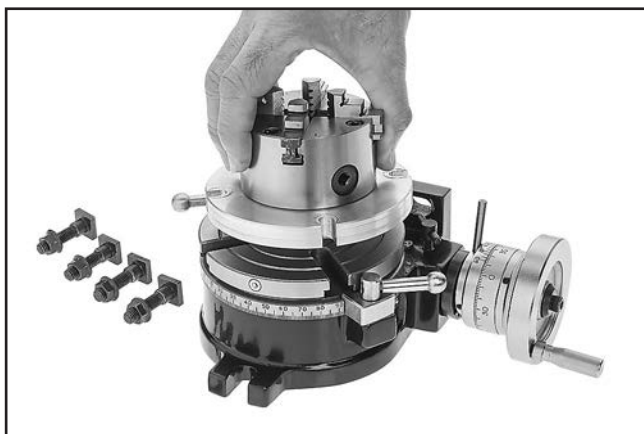


Figure 13. Mounting chuck to rotary table.

2. Insert piece of straight round stock into chuck jaws to act as indexing point (see **Figure 14**).

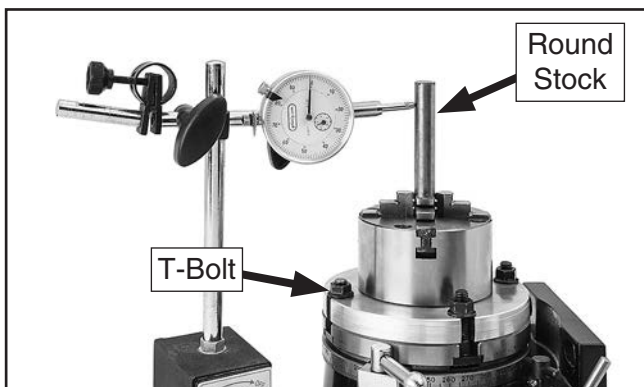


Figure 14. Magnetic base dial indicator placed next to rotary table.

Note: Indicator needle should be perpendicular to rotary table and touching outside edge of round stock in chuck jaws (see **Figure 14**).

3. Position dial indicator with magnetic base next to rotary table.
4. Loosen four hex nuts securing chuck T-slot bolts to rotary table head (see **Figure 15**). Make sure there is a little tension on the T-bolts so chuck cannot shift on its own.



Figure 15. Loosening hex nuts securing T-slot bolts.

5. Loosen rotary table locks (if engaged) and rotate handwheel clockwise. Take note of total runout indicated on dial, and stop at the low side of measured runout.
6. Use dead-blow hammer to lightly tap on edge of chuck opposite from indicator until $\frac{1}{2}$ of indicated runout is corrected.
7. Repeat **Steps 3–6** until runout is adjusted to your satisfaction.
8. Tighten all T-slot bolts completely, then check runout again. If necessary, repeat **Steps 2–6**, then tighten hex nuts.



Aligning Workpiece with Mill Spindle

There are many ways to align the mounted workpiece with the mill spindle. Review the suggestions below, then use your best judgement based on your experience and skills to select the correct method for your operation.

Workpiece Mounted to T-Slot Table in Horizontal Position

1. Position a test indicator with magnetic base beside rotary table, as shown in **Figure 16**.

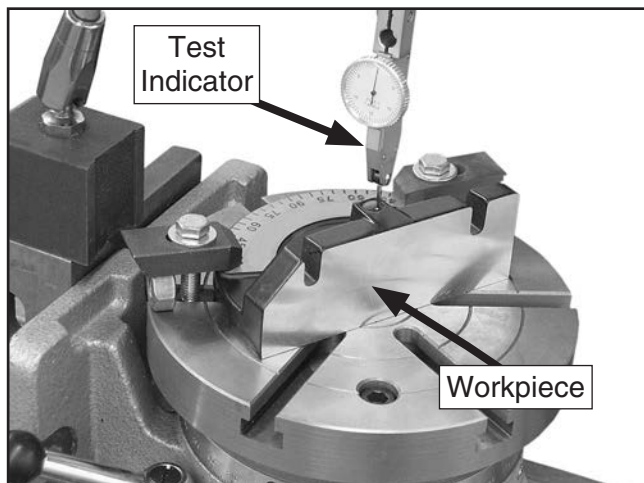


Figure 16. Example of aligning workpiece using a test indicator.

2. Indicate inside or outside of workpiece, then rotate rotary table handwheel while watching indicator dial.

Note: For accurate indicator results, rotate rotary table handwheel in just one direction to eliminate any pinion backlash.

3. Adjust workpiece on rotary table until there is zero runout when table and workpiece are rotated, then securely clamp workpiece to T-slot table.

4. Mount test indicator in mill spindle using a collet or chuck.
5. Indicate workpiece key feature, then rotate mill spindle by hand in just one direction while watching indicator dial.

Tip: Use a mirror to aid in reading test indicator as it rotates away from you.

6. Adjust mill table until indicator dial reads zero runout throughout rotation of spindle.

Note: If your workpiece is large enough, it may be easier to use an edge finder instead of a test indicator.

Workpiece Mounted with Chuck in Horizontal Position

1. Mount a precision mandrel or quality drill rod in chuck, as shown in **Figure 17**.

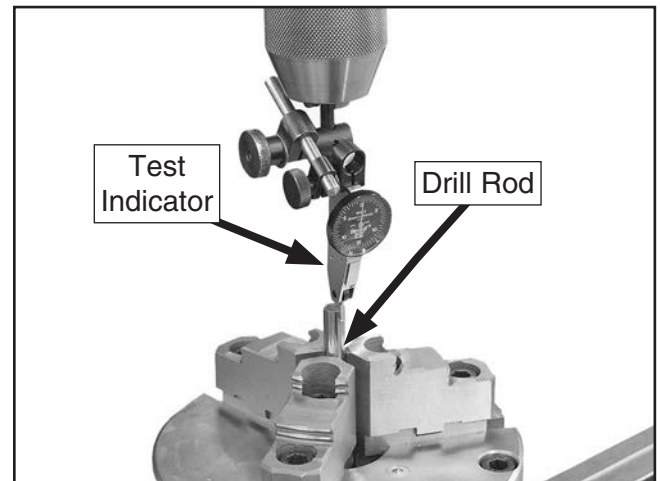


Figure 17. Example of horizontally aligning chuck.

2. Mount test indicator in mill spindle, then indicate outside of precision mandrel or drill rod, as shown in **Figure 17**.
3. Rotate mill spindle by hand in just one direction while watching indicator dial.
4. Adjust mill table position until indicator dial reads zero deviation.



Workpiece Mounted with Chuck in Vertical Position

1. Mount an edge finder in mill spindle (see **Figure 18**).
2. Accurately measure workpiece diameter, then mount it in chuck, as shown in **Figure 18**.

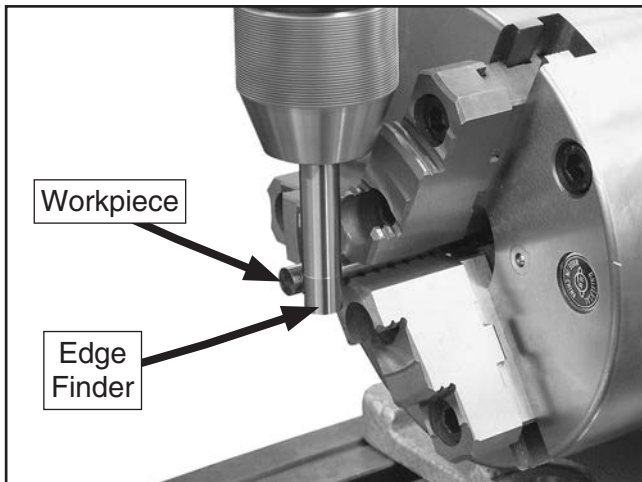


Figure 18. Example of using an edge finder to align workpiece.

3. Find one side of workpiece with edge finder, then note Y-axis position of mill table.
4. Remove edge finder from mill spindle, then move mill table $\frac{1}{2}$ the diameter of workpiece plus $\frac{1}{2}$ the diameter of edge finder.

Note: Make sure you account for any backlash when moving mill table.

Aligning Table with Mill X-Axis

The rotary table should be aligned with the X-axis of the mill. The rotary table can be mounted to the mill table using the supplied T-slot bolt assemblies or step clamps.

To align rotary table with mill X-axis:

1. Place rotary table with chuck on mill table.
2. Position a precision square across front edge of mill table and adjust rotary table flat against square, as shown in **Figure 19**, then clamp rotary table in place.

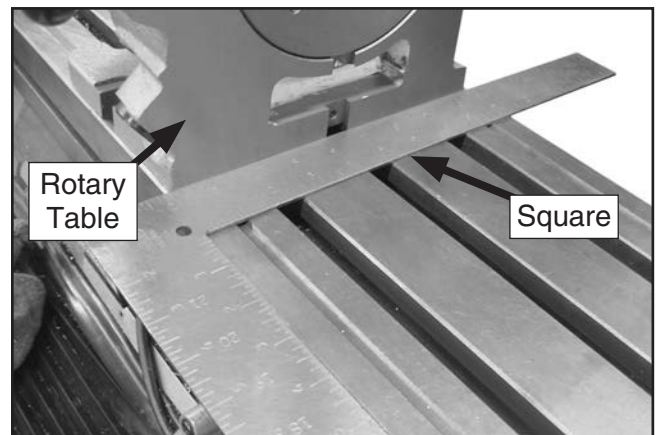


Figure 19. Using a precision square to align with X-axis.

3. Use a test indicator mounted in mill spindle to indicate one side of face or back of a workpiece mounted in chuck jaws.
4. Move mill table in and out to indicate across full width of rotary table.
5. If necessary, loosen clamps and lightly tap rotary table into position so indicator reads zero deviation across full width of rotary table, then reclamp it.



Adjusting Vernier Scale

A vernier scale is used to improve the precision of reading an instrument scale for more accurate milling operations.

The handwheel dial is marked in degrees with divisions in 2 minutes (2'). The vernier scale graduations are represented in 20 seconds (20") (see **Figure 20A**).

When the handwheel is rotated clockwise, graduations to the left of the "0" on the vernier scale are used. When the handwheel is rotated counterclockwise, graduations on the right hand side are used.

We will be setting the table to $16^{\circ} 10' 40''$ in the first example below. This exercise assumes the table position starts at 0° , as read on the angle scale on the edge of table, and that "0" on the handwheel dial and "0" on the vernier scale are aligned. For these instructions, refer to **Figure 20**.

Example 1:

1. Rotate handwheel clockwise 4 times. Watch for "0" marker on handwheel dial and slow down rotation as "0" comes into view for 4th time. Stop on the "0" when "0" on handwheel dial aligns with "0" on vernier. You are at 16° (see **Figure 20A**).
2. Now rotate handwheel clockwise 5 graduations to align with "0" on vernier scale. You are now at $16^{\circ} 10'$ (see **Figure 20B**).
3. Two graduations to left of zero on vernier scale is the 40" mark, as highlighted in **Figure 20B**. Rotate handwheel clockwise slightly to align first graduation on handwheel dial on left side of 40" mark with 40" on vernier, as shown in **Figure 20C**. You are now at $16^{\circ} 10' 40''$.

Note: The handwheel should not be rotated past this point. If it is, rotate it counterclockwise one full turn and "sneak" up on mark again. Once you are satisfied with table position, lock it in place with table locks.

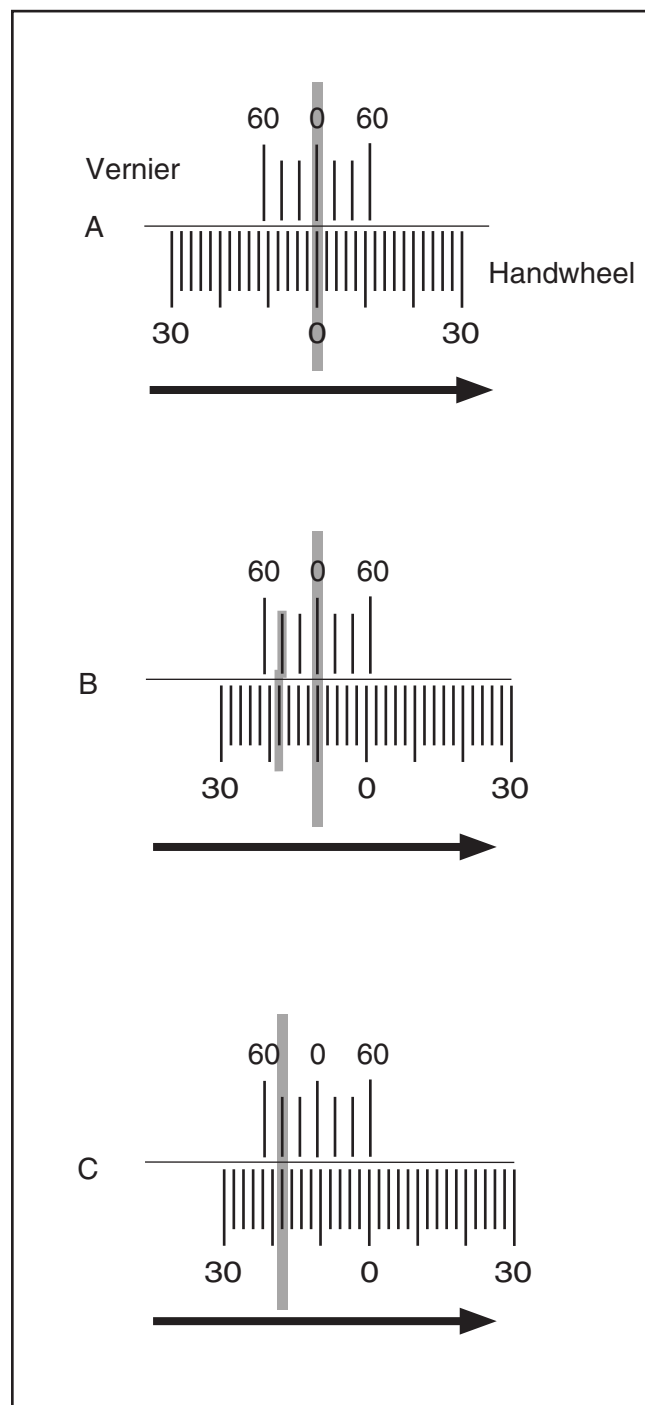


Figure 20. Vernier scale adjustments.

Continued on next page 



Example 2:

For this example we will use a measurement of $17^{\circ} 11' 20''$. Since the handwheel dial has 2' divisions, one extra step is needed to arrive at the odd number minute. We will need to add sixty seconds on the vernier to make one additional minute on the handwheel dial.

Again, this exercise assumes the table position starts at 0° , as read on the edge scale on the edge of the table, and that the "0" on the handwheel dial and the vernier scale are aligned. For these instructions, refer to **Figure 21**.

1. As in the previous example on **Page 14**, rotate the handwheel clockwise 4 times. Continue rotating until "1" on the handwheel dial aligns with "0" on the vernier. You are now at 17° (see **Figure 21A**).
2. Find the 60" vernier mark highlighted in **Figure 21B**, and align nearest handwheel graduation dial mark left of the 60" mark with 60" mark on vernier scale. You are now at $17^{\circ} 11'$. We just added the sixty seconds we needed to make the odd numbered minute (from 10' to 11').
3. **Figure 21C** highlights the 20" mark on the vernier. The nearest graduation on the handwheel dial to the left of the 20" mark needs to be aligned with the 20" mark on the vernier. You are now at $17^{\circ} 11' 20''$ (see **Figure 21D**).

Note: The handwheel should not be rotated past this point. If it is, rotate it counterclockwise one full turn and "sneak" up on the mark again. Once you are satisfied with the table position, lock it in place with the table locks.

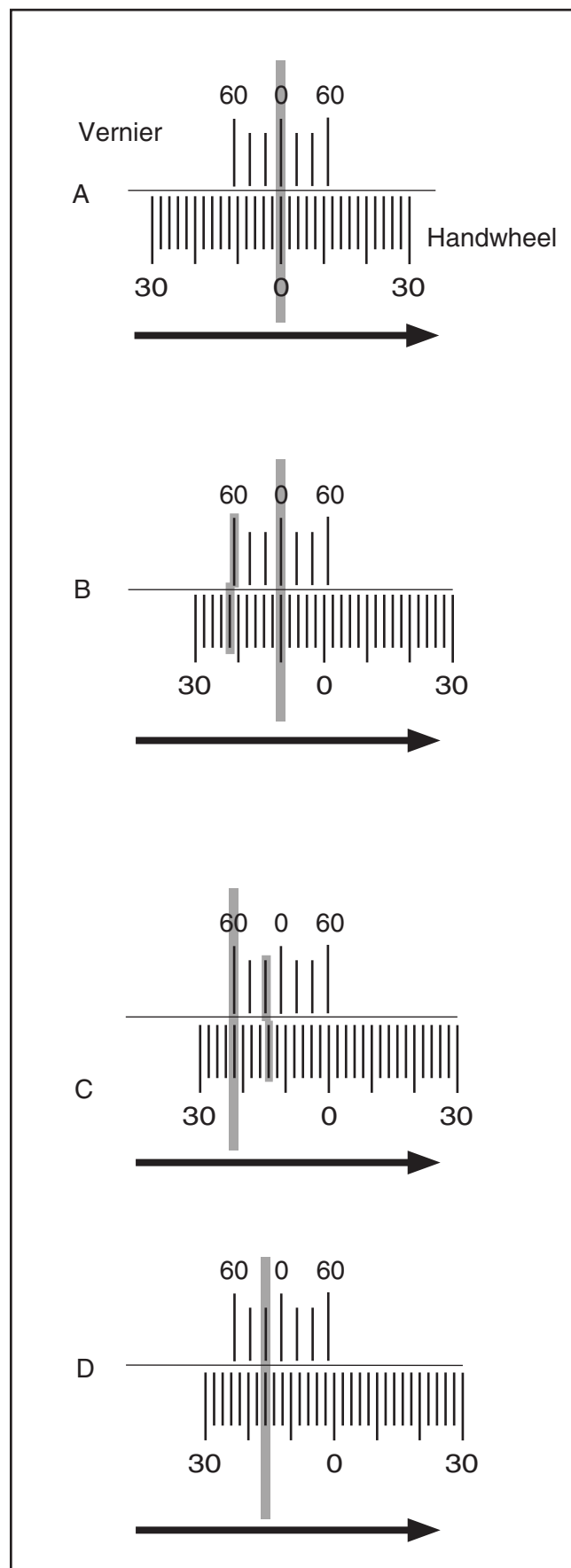


Figure 21. More vernier scale adjustments.



Angular Indexing

Angular indexing is the process used to create evenly spaced holes in a round workpiece. Always ensure your rotary table is properly aligned on the X-axis of the mill before beginning angular indexing.

Basic Example:

You are making a flange and need to place six holes 60° apart for the bolt pattern in **Figure 22**.

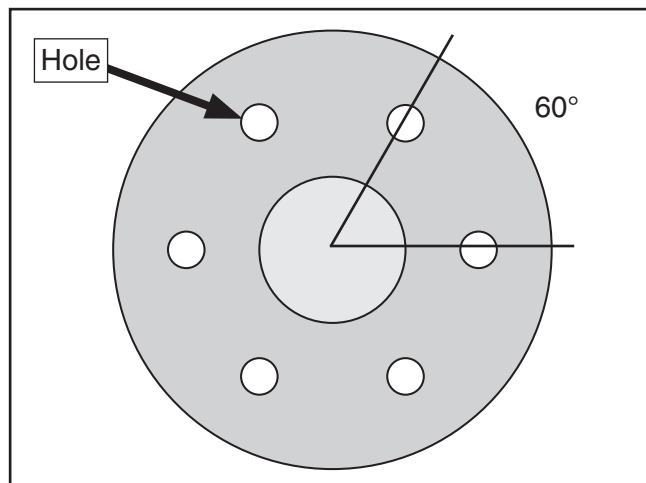


Figure 22. Example of flange layout.

Handwheel Rotations = $\frac{90}{N}$
N = the desired division number (6).
 $\frac{90}{6} = 15$ full handwheel turns
15 turns = 60°

1. Rotate handwheel before making first hole to take up any play in worm gear.
2. Make your first hole, then rotate handwheel 15 times.

Note: If you rotate handwheel too far, do not back up to the number. You must back up one revolution and dial back to the desired number, then lock table in place to locate the second hole. This procedure eliminates errors due to backlash in worm gear.

Installing Dividing Plates

The dividing plates divide a round surface into even parts. Three dividing plates are included with the Model T25937.

| Components and Hardware Needed: | Qty |
|---|-----|
| Dividing Plate 15, 16, 17, 18, 19 & 20 Hole | 1 |
| Dividing Plate 21, 23, 27, 29, 31 & 33 Hole | 1 |
| Dividing Plate 37, 39, 41, 43, 47 & 49 Hole | 1 |
| Sector Arm | 1 |
| Sector Arm Spring | 1 |
| Crank Handle w/Indexing Pin | 1 |
| Phillips Head Screws M5-.8 x 10..... | 3 |

| Tools Needed: | Qty |
|--------------------------------|-----|
| Hex Wrench 5mm..... | 1 |
| Phillips Head Screwdriver..... | 1 |
| Flat Head Screwdriver | 1 |

To install dividing plate:

1. Remove handwheel cap screw and washer.
2. Remove handwheel and key from shaft. Tape metal indexing key to handwheel for safe keeping.
3. Insert dividing plate with counter bores facing out, and secure plate with (3) M5-.8 x 12 Phillips head screws, as shown in **Figure 23**.
4. Place sector arm assembly over the shaft, as shown in **Figure 23**.

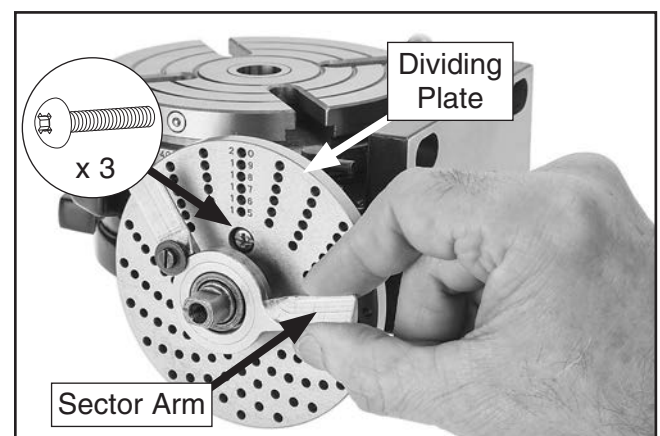


Figure 23. Installing dividing plate and placing sector arm assembly.



- Slide sector arm spring clip into slot on shaft to hold sector arms tight against dividing plate (see **Figure 24**).

Note: Loosen sector arm set screw to adjust arm placement during indexing operation.

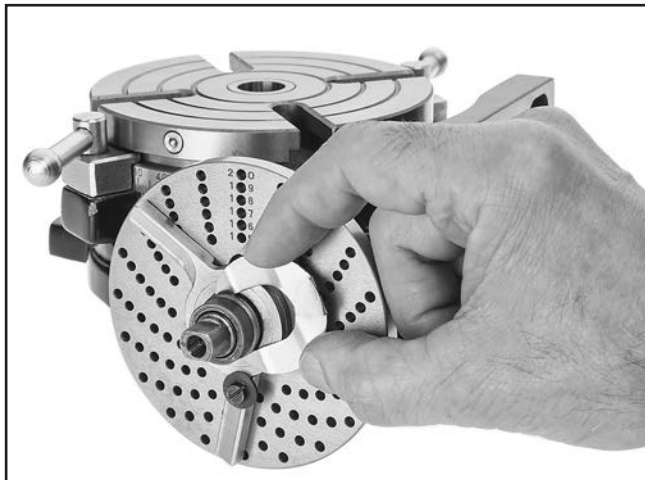


Figure 24. Inserting sector arm spring.

- Install crank handle with indexing pin and secure it with washer and cap screw removed in **Step 1** (see **Figure 25**).

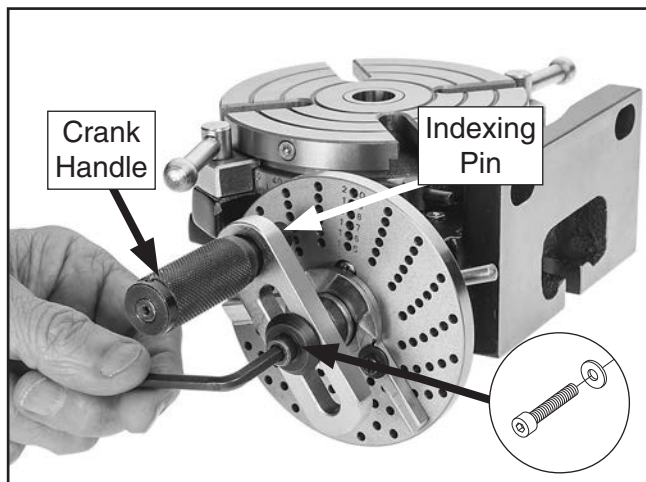


Figure 25. Tightening cap screw that secures crank handle.

Note: The crank handle slot adjusts so indexing pin sits directly above hole circle chosen. To ease installation, place pin in desired hole circle, then tighten cap screw.

Simple Indexing

Simple or plain indexing is the most common form of indexing used because of the large number of divisions available with the speed, repeatability, and precision attained. Simple indexing is used when milling multiple, even surfaces on a round workpiece.

The Model T25937 has three dividing plates with the following hole circles:

Plate: 15, 16, 17, 18, 19, 20.

Plate: 21, 23, 27, 29, 31, 33.

Plate: 37, 39, 41, 43, 47, 49.

Basic Example:

You are now making a flange with a hole pattern that has 17 holes.

$$\text{Crank rotations} = \frac{90}{N}$$

N = the desired division number (17).

$$\frac{90}{17} = 5 \frac{5}{17}$$

- On index table on **Page 20**, look up 17 in *number of divisions* column to find the correct index circle plus required number of turns. The number of rotations required in this case is $5 \frac{5}{17}$ rotations. The 17-hole circle dividing plate is needed for $\frac{5}{17}$ of a rotation.
- Install 17-hole circle dividing plate onto rotary table, as described earlier. Set crank handle and indexing pin to index 17-hole circle (see **Figure 26**).

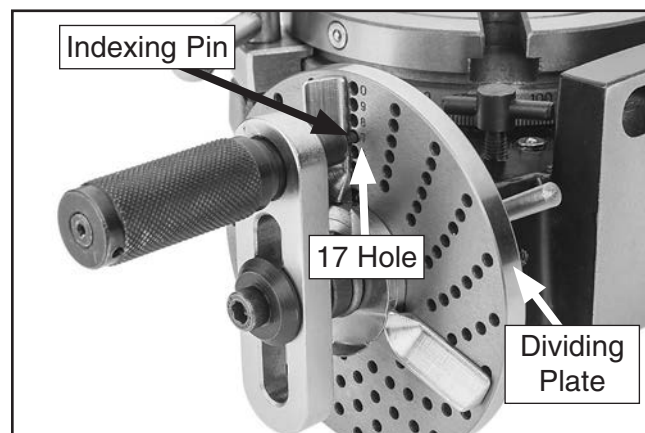


Figure 26. Indexing pin placement.



3. Check to see that worm gear is engaged and locked into position—chuck should rotate smoothly when crank is turned.
4. Rotate crank to take up any play in worm gear and zero table. Set crank arm pin into one of the 17-hole circle holes (see **Figure 27**).

Note: *It is important to always turn handle in the same direction to avoid backlash and maintain accuracy.*

5. Set sector arms so there are five holes *plus* the hole the indexing pin is located in between the arms.

Note: *What is being measured is space between holes. Five spaces need to be on 17th hole circle (which is imprinted on chosen dividing plate) between sector arms (see **Figure 27**).*

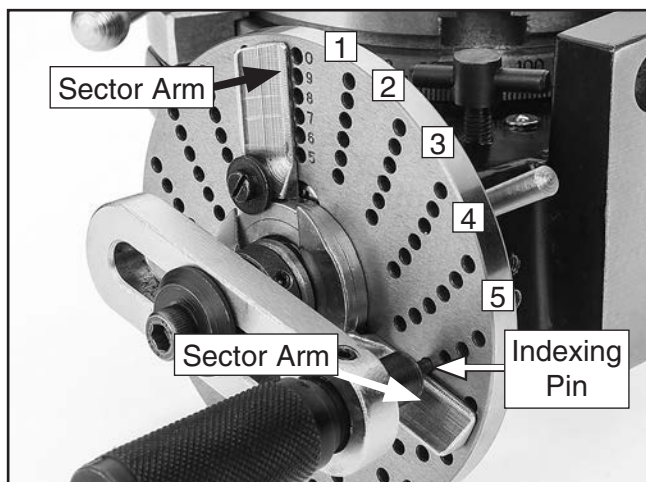


Figure 27. Example of hole spacing.

6. Tighten set screw on sector arms to secure setting.
7. Move sector arm so it rests against indexing pin, as shown in **Figure 27**.
8. Machine your first hole.
9. Pull back on crank handle spring-loaded pin to remove pin from dividing plate hole. Pull pin out far enough to clear tops of sector arms while you crank, so you won't bump sector arms and lose your position.

10. Rotate crank five full rotations.
11. After completing five full rotations, continue cranking past five holes on 17-hole circle to rotate exactly $\frac{5}{17}$ of a rotation. Set indexing pin in 5th (last) hole of sector (see **Figure 28**).

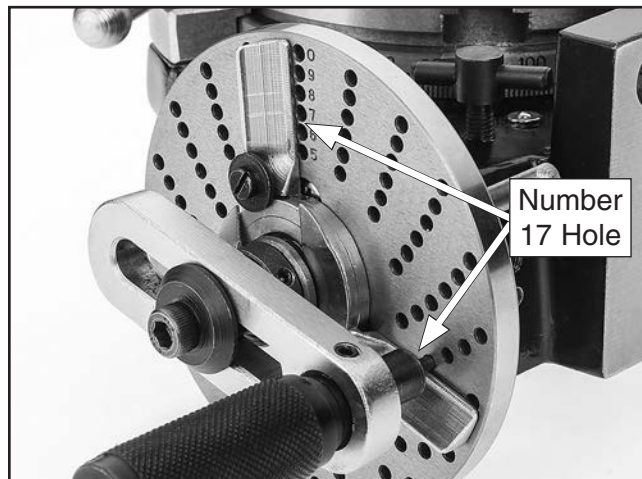


Figure 28. Pin set in last hole.

12. Rotate sector arm so arm rests on pin once again (see **Figure 29**).

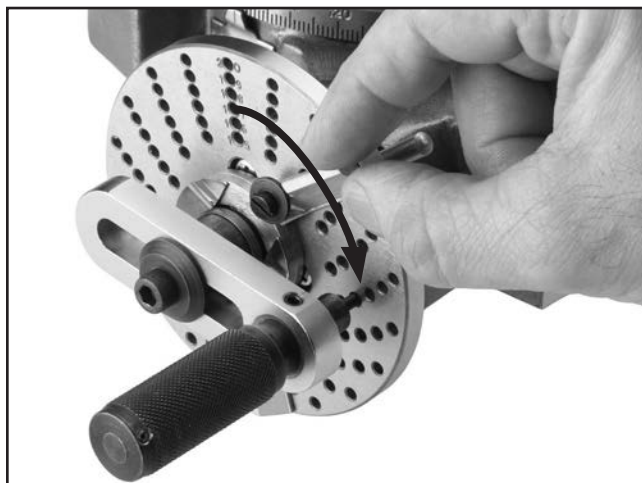


Figure 29. Rotating sector arm to rest against new position.

13. From this new starting point, repeat **Steps 8–12** for the remaining holes.

| Number of Divisions | Index Circle | Number of Rotations on Crank | Number of Divisions | Index Circle | Number of Turns on Crank | Number of Divisions | Index Circle | Number of Turns on Crank |
|---------------------|--------------|------------------------------|---------------------|--------------|--------------------------|---------------------|--------------|--------------------------|
| 1 | ANY | 90 | 34 | 17 | 2 11/17 | 67 | N/A | |
| 2 | ANY | 45 | 35 | 21 | 2 12/21 | 68 | N/A | |
| 3 | ANY | 30 | 36 | 20 | 2 10/20 | 69 | 23 | 1 7/23 |
| 4 | 20 | 22 10/20 | 37 | 37 | 2 16/37 | 70 | 21 | 1 6/21 |
| 5 | ANY | 18 | 38 | 19 | 2 7/19 | 71 | N/A | |
| 6 | ANY | 15 | 39 | 39 | 2 12/39 | 72 | 20 | 1 5/20 |
| 7 | 21 | 12 18/21 | 40 | 20 | 2 5/20 | 73 | N/A | |
| 8 | 20 | 11 5/20 | 41 | 41 | 2 8/41 | 74 | 37 | 1 8/37 |
| 9 | ANY | 10 | 42 | 21 | 2 3/21 | 75 | 20 | 1 4/20 |
| 10 | ANY | 9 | 43 | 43 | 2 4/43 | 76 | N/A | |
| 11 | 33 | 8 6/33 | 44 | N/A | | 77 | N/A | |
| 12 | 20 | 7 10/20 | 45 | ANY | 2 | 78 | 39 | 1 6/39 |
| 13 | 39 | 6 36/39 | 46 | 23 | 1 22/23 | 79 | N/A | |
| 14 | 21 | 6 9/21 | 47 | 47 | 1 43/47 | 80 | 16 | 1 2/16 |
| 15 | ANY | 6 | 48 | 16 | 1 14/16 | 81 | 18 | 1 2/18 |
| 16 | 16 | 5 10/16 | 49 | 49 | 1 41/49 | 82 | 41 | 1 4/41 |
| 17 | 17 | 5 5/17 | 50 | 20 | 1 16/20 | 83 | N/A | |
| 18 | ANY | 5 | 51 | N/A | | 84 | N/A | |
| 19 | 19 | 4 14/19 | 52 | N/A | | 85 | N/A | |
| 20 | 20 | 4 10/20 | 53 | N/A | | 86 | 43 | 1 2/43 |
| 21 | 21 | 4 6/21 | 54 | 18 | 1 12/18 | 87 | 29 | 1 1/29 |
| 22 | 33 | 4 3/33 | 55 | 33 | 1 21/33 | 88 | N/A | |
| 23 | 23 | 3 21/23 | 56 | N/A | | 89 | N/A | |
| 24 | 20 | 3 15/20 | 57 | 19 | 1 11/19 | 90 | ANY | |
| 25 | 20 | 3 12/20 | 58 | 29 | 1 16/29 | 91 | N/A | |
| 26 | 39 | 3 18/39 | 59 | N/A | | 92 | N/A | |
| 27 | 18 | 3 6/18 | 60 | 20 | 1 10/20 | 93 | 31 | 30/31 |
| 28 | N/A | | 61 | N/A | | 94 | 47 | 45/47 |
| 29 | 29 | 3 3/29 | 62 | 31 | 1 14/31 | 95 | 19 | 18/19 |
| 30 | ANY | 3 | 63 | 21 | 1 9/21 | 96 | 16 | 15/16 |
| 31 | 31 | 2 28/31 | 64 | N/A | | 97 | N/A | |
| 32 | 16 | 2 13/16 | 65 | 39 | 1 15/39 | 98 | 49 | 45/49 |
| 33 | 33 | 2 24/33 | 66 | 33 | 1 12/33 | 99 | 33 | 30/33 |
| | | | | | | 100 | 20 | 18/20 |

Figure 30. Index table.



Mounting Tailstock

The Model T25937 comes with a tailstock for the rotary table. The tailstock supports larger workpieces when the rotary table is in the vertical position, while maintaining a high level of accuracy.

To install tailstock onto mill table:

1. Ensure chuck is installed on rotary table, then secure rotary table to mill table in vertical position.
2. Install tailstock on mill table so dead center of tailstock is roughly in line with center of rotary table.
3. Mount center-drilled, parallel workpiece between chuck and tailstock (see **Figure 31**).
Note: *Workpiece should be checked for parallelism and concentricity.*
4. Mount a dial indicator in mill spindle and indicate off of a horizontal center line of workpiece near tailstock (see **Figure 31**).

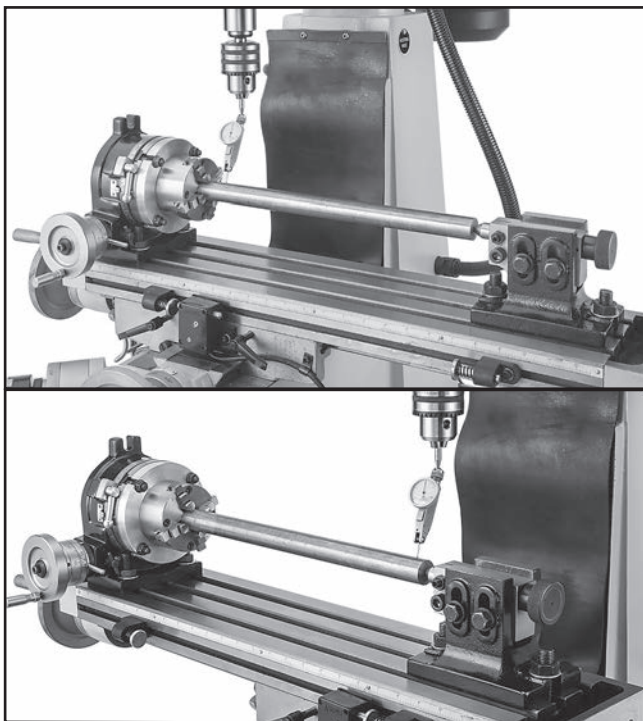


Figure 31. Determining offset of surface.

5. Move table along X-axis and indicate horizontal centerline of workpiece near rotary table. If there is an offset, adjust position of tailstock half the distance of the offset and recheck (see **Figure 32**).

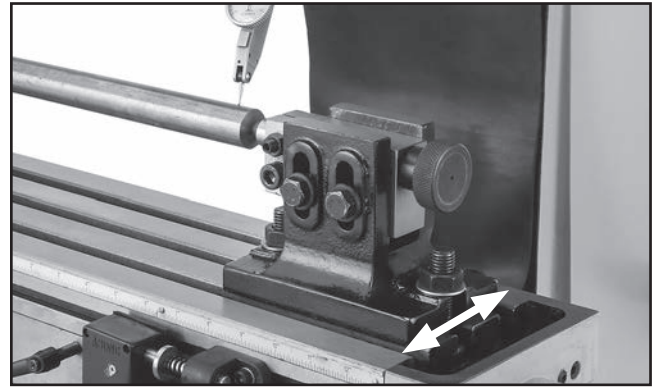


Figure 32. Adjusting tailstock for offset.

6. Continue to make this adjustment until zero movement is indicated all along the travel.
7. Tighten tailstock mounting bolts and recheck.

To align Z axis:

1. Repeat **Steps 5–7** from above, only this time indicate off vertical center line of workpiece.
2. Make your adjustments by slightly loosening adjustment bolts and raising or lowering tailstock dead center in appropriate direction (see **Figure 33**).

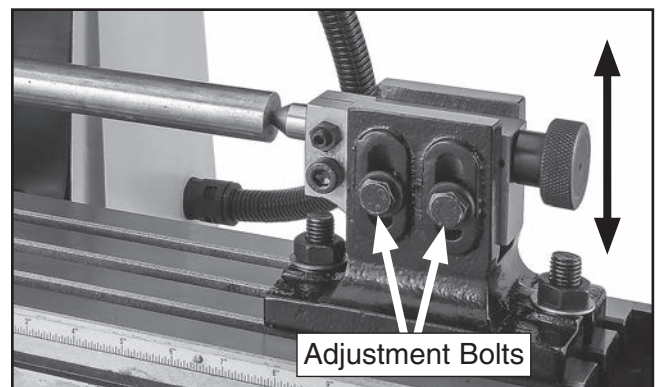


Figure 33. Vertical tailstock adjustment.

3. Tighten bolts and recheck.



SECTION 4: ACCESSORIES

! WARNING

Installing unapproved accessories may cause machine to malfunction, resulting in serious personal injury or machine damage. To reduce this risk, only install accessories recommended for this machine by Grizzly.

NOTICE

Refer to our website or latest catalog for additional recommended accessories.

T24804—1" Universal Dial with Magnetic Base

Includes iGaging dial indicator, fine adjustment magnetic base, and a protective case. Dial indicator has a range of 0-1", with an accuracy of within 0.001". Fine adjustment magnetic base is a strong magnet with 85 lbs. of pull power and a V-shaped bottom so the base can be mounted at any angle.



Figure 34. T24804 Universal Dial with Magnetic Base.

G9640— 90° Wide Base Square 3" x 5"

G9641— 90° Wide Base Square 4" x 6"

G9642— 90° Wide Base Square 5" x 8"

Grade 0, heavy-duty stainless steel 90° precision squares feature wide bases for stability. Perfect for all setup and inspection work.



Figure 35. 90° Precision wide-base squares.

H7975—6" Digital Caliper w/ABS

This Digital Caliper features absolute and relative measurements, hardened stainless steel construction, inch/metric conversion, lock knob, zero reset, data port and battery life indicator. Inch and metric resolution is 0.005mm/0.0002". Comes in a fitted foam-lined plastic case and includes a spare battery.

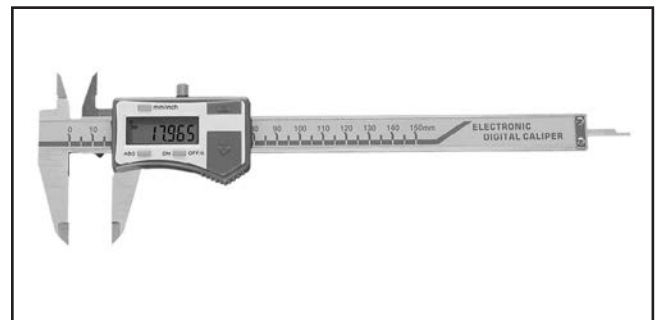


Figure 36. H7975 6" Digital Caliper.

order online at www.grizzly.com or call 1-800-523-4777



G1075—58-Pc. Clamping Kit 1/2" T-Nut**G1076—58-Pc. Clamping Kit 5/8" T-Nut**

This clamping kit includes 24 studs, 6 step block pairs, 6 T-nuts, 6 flange nuts, 4 coupling nuts, and 6 end hold-downs. The rack is slotted so it can be mounted close to the machine for easy access.

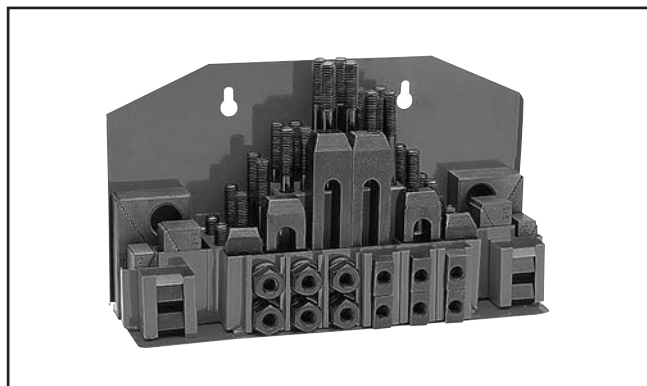


Figure 37. 58-Pc. clamping kits.

H2939—4-Pc. Edge Finder Set

This is a must have set for any shop. 4 different styles to cover any setup problem! Set includes 1 each: 3/8" diameter with point, 3/8" dia. combination with a point and .200" shoulder, 1/2" dia. with a point and 1/2" dia. with .200" shoulder.

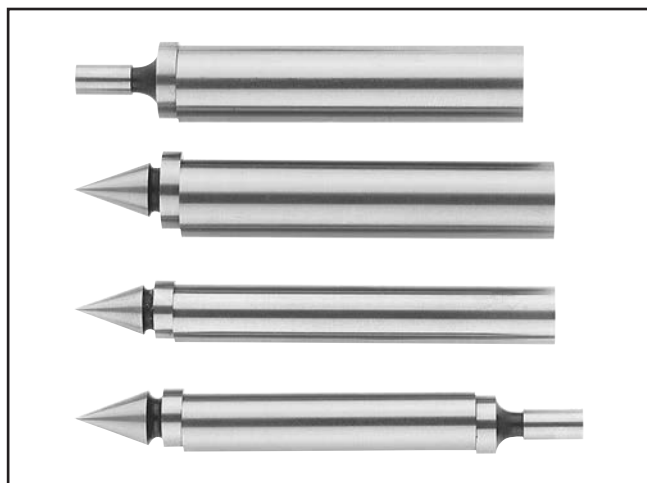


Figure 38. H2939 4-Pc. Edge Finder Set.

G9629—Universal Indicator Holder

Mount your test indicator right on your mill for guaranteed accurate readings. C-frame holder mounts with a single screw directly on the quill and does not interfere with the cutting tool. Clamping diameter is 1 7/8". The length from the clamping bracket to the indicator is 4 1/2". Suitable for all popular indicators with a 5/32" shank.



Figure 39. G9629 Universal Indicator Holder.

G9610—Test Indicator

0.03" Range/0.001" Resolution

G9611—Test Indicator

0.008" Range/0.0001" Resolution

G9612—Test Indicator

0.030" Range/0.0005" Resolution

These test indicators have an easy to read dial and a pivoting stylus that moves at right angles to the dial face.

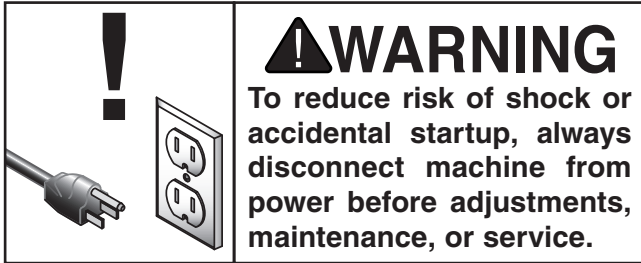


Figure 40. Test Indicator.

order online at www.grizzly.com or call 1-800-523-4777



SECTION 5: MAINTENANCE



Schedule

For optimum performance from your rotary table, follow this maintenance schedule and refer to any specific instructions given in this section.

Daily:

- Clean and lubricate the rotary table.
- Dress the machined surfaces.
- Check/resolve any unsafe condition.

Monthly:

- Disassemble and clean the rotary table.

Cleaning & Protecting

It is essential that the rotary table be cleaned after every use, and the surfaces oiled with a light machine oil to prevent corrosion.

DO NOT use compressed air to clean your rotary table. Chips or debris may become lodged between the moving parts, reducing the life and accuracy of the device. Instead, use a stiff-bristled brush to remove the chips and swarf, then wipe down the surfaces with a clean shop rag.

Every 80 hours of use, completely disassemble the rotary table, then thoroughly clean each part and relubricate.

Lubrication

Ball Oilers

Oil Type Grizzly T23963 or ISO 32 Equivalent
Oil Amount.....1 or 2 Squirts
Lubrication Frequency..... Daily

This rotary vise has 2 ball oilers that should be oiled on a daily basis before beginning operation. Refer to **Figure 41** for their locations.



Figure 41. Location of ball oilers.

Ball Oilers

Proper lubrication of ball oilers is done with a pump-type oil can that has a plastic or rubberized cone tip. We do not recommend using metal needle or lance tips, as they can push the ball too far into the oiler, break the spring seat, and lodge the ball in the oil galley.

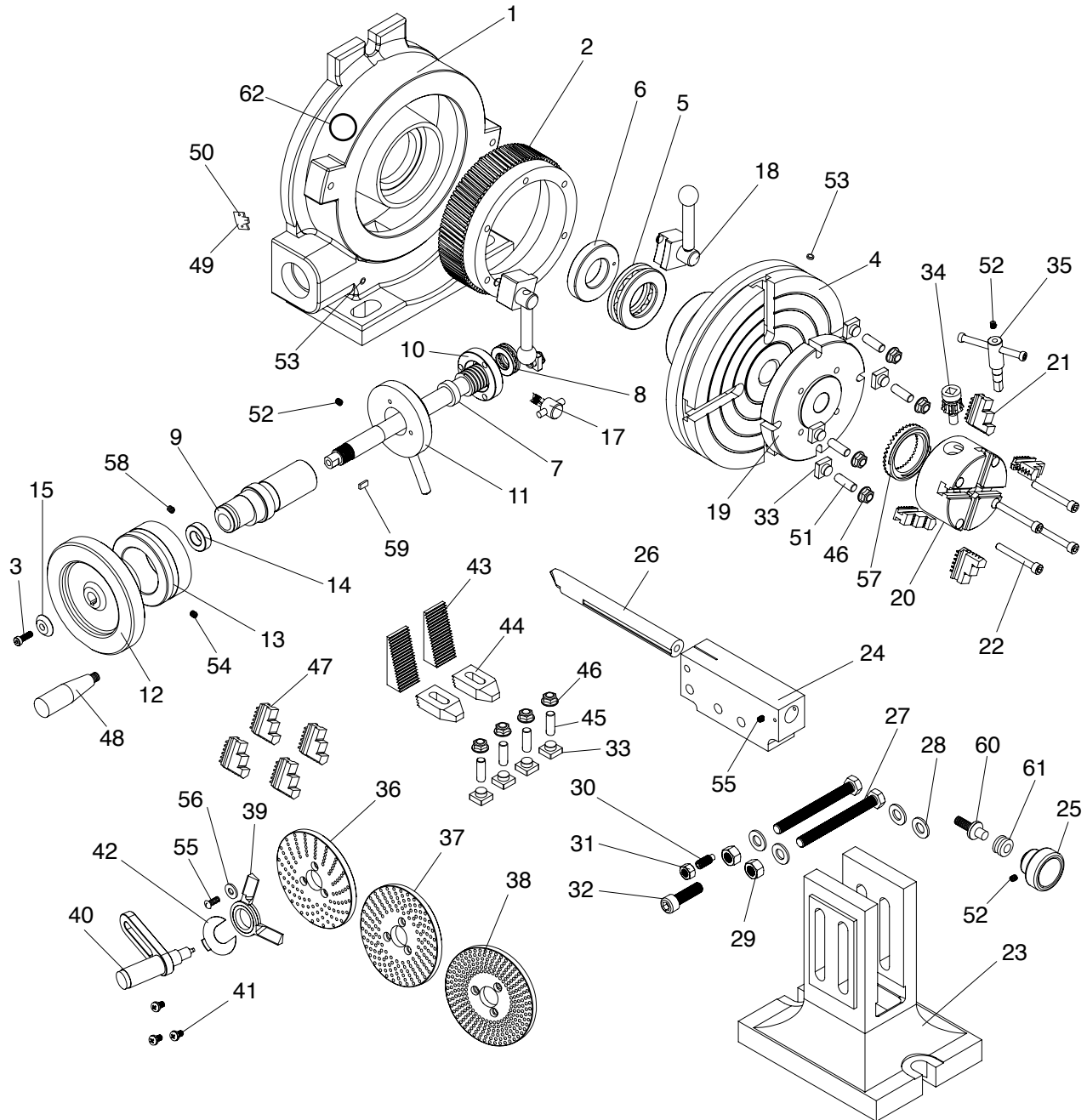
Lubricate the ball oilers before and after machine use, and more frequently under heavy use. When lubricating ball oilers, first clean the outside surface to remove any dust or grime. Push the rubber or plastic tip of the oil can nozzle against the ball oiler to create a hydraulic seal, then pump the oil can once or twice. If you see sludge and contaminants coming out of the lubrication area, keep pumping the oil can until the oil runs clear. When finished, wipe away any excess oil.



SECTION 6: PARTS

We do our best to stock replacement parts when possible, but we cannot guarantee that all parts shown are available for purchase. Call (800) 523-4777 or visit www.grizzly.com/parts to check for availability.

Main Parts Breakdown



Parts List

| REF PART # | DESCRIPTION |
|------------|--|
| 1 | PT25937001 BASE |
| 2 | PT25937002 WORM WHEEL |
| 3 | PT25937003 CAP SCREW M6-1 X 16 |
| 4 | PT25937004 ROTARY TABLE |
| 5 | PT25937005 THRUST BEARING 51207 |
| 6 | PT25937006 THREADED COLLAR |
| 7 | PT25937007 WORM SHAFT |
| 8 | PT25937008 THRUST BEARING 51103 |
| 9 | PT25937009 HANDWHEEL SHAFT |
| 10 | PT25937010 WORM SHAFT COLLAR |
| 11 | PT25937011 VERNIER RING |
| 12 | PT25937012 HANDWHEEL TYPE-8 80D X 12B-K X M6-1 |
| 13 | PT25937013 GRADUATED RING |
| 14 | PT25937014 SHAFT SPACER |
| 15 | PT25937015 BEVELED WASHER 6 X 22 X 5MM |
| 17 | PT25937017 BACKLASH ADJ LOCK M6-1 X 16 |
| 18 | PT25937018 ROTARY TABLE LOCK |
| 19 | PT25937019 CHUCK BASE PLATE, ALUMINUM |
| 20 | PT25937020 4-JAW CHUCK 80MM |
| 21 | PT25937021 4-JAW CHUCK INTERNAL JAW SET |
| 22 | PT25937022 CAP SCREW M6-1 X 50 |
| 23 | PT25937023 TAILSTOCK BASE |
| 24 | PT25937024 TAILSTOCK BODY |
| 25 | PT25937025 KNURLED KNOB 40MM |
| 26 | PT25937026 DEAD CENTER |
| 27 | PT25937027 HEX BOLT M10-1.5 X 90 |
| 28 | PT25937028 FLAT WASHER 10MM |
| 29 | PT25937029 HEX NUT M10-1.5 |
| 30 | PT25937030 SET SCREW M8-1.25 X 20 DOG-PT |
| 31 | PT25937031 HEX NUT M8-1.25 |
| 32 | PT25937032 CAP SCREW M10-1.5 X 25 |

| REF PART # | DESCRIPTION |
|------------|--|
| 33 | PT25937033 T-NUT M8-1.25 |
| 34 | PT25937034 PINION |
| 35 | PT25937035 TABLE CHUCK KEY 6MM AH |
| 36 | PT25937036 DIVIDING PLATE 15-20 |
| 37 | PT25937037 DIVIDING PLATE 21-33 |
| 38 | PT25937038 DIVIDING PLATE 37-49 |
| 39 | PT25937039 SECTOR ARM |
| 40 | PT25937040 INDEXING PIN ASSEMBLY |
| 41 | PT25937041 PHLP HD SCR M5-.8 X 12 |
| 42 | PT25937042 SECTOR ARM SPRING CLIP |
| 43 | PT25937043 STEP BLOCK |
| 44 | PT25937044 STEP CLAMP |
| 45 | PT25937045 STUD-FT M8-1.25 X 80 |
| 46 | PT25937046 FLANGE NUT M8-1.25 |
| 47 | PT25937047 4-JAW CHUCK EXTERNAL JAW SET |
| 48 | PT25937048 HANDWHEEL HANDLE M6-1 X 10, 12 X 40MM |
| 49 | PT25937049 DEGREE INDICATOR |
| 50 | PT25937050 RIVET 4 X 10MM |
| 51 | PT25937051 STUD-FT M8-1.25 X 40 |
| 52 | PT25937052 SET SCREW M6-1 X 6 |
| 53 | PT25937053 BALL OILER 7MM PRESS-IN |
| 54 | PT25937054 SET SCREW M5-.8 X 4 |
| 55 | PT25937055 FLAT HD SCR M4-.7 X 8 |
| 56 | PT25937056 FLAT WASHER 4MM |
| 57 | PT25937057 CHUCK WORM WHEEL |
| 58 | PT25937058 SET SCREW M4-.7 X 3 |
| 59 | PT25937059 KEY 4 X 4 X 8 |
| 60 | PT25937060 CENTER PIN ADJ M8-1.25 X 36, 63L |
| 61 | PT25937061 GROOVED BUSHING 18 X 10 X 10 SLOTTED |
| 62 | PT25937062 TOUCH-UP PAINT, GLOSSY BLACK |

Please Note: We do our best to stock replacement parts whenever possible, but we cannot guarantee that all parts shown here are available for purchase. Call (800) 523-4777 or visit our online parts store at www.grizzly.com to check for availability.





WARRANTY CARD

Name _____
Street _____
City _____ State _____ Zip _____
Phone # _____ Email _____
Model # _____ Order # _____ Serial # _____

The following information is given on a voluntary basis. It will be used for marketing purposes to help us develop better products and services. **Of course, all information is strictly confidential.**

1. How did you learn about us?

_____ Advertisement _____ Friend _____ Catalog
_____ Card Deck _____ Website _____ Other: _____

2. Which of the following magazines do you subscribe to?

| | | |
|------------------------------|---------------------------|----------------------------|
| _____ Cabinetmaker & FDM | _____ Popular Science | _____ Wooden Boat |
| _____ Family Handyman | _____ Popular Woodworking | _____ Woodshop News |
| _____ Hand Loader | _____ Precision Shooter | _____ Woodsmith |
| _____ Handy | _____ Projects in Metal | _____ Woodwork |
| _____ Home Shop Machinist | _____ RC Modeler | _____ Woodworker West |
| _____ Journal of Light Cont. | _____ Rifle | _____ Woodworker's Journal |
| _____ Live Steam | _____ Shop Notes | _____ Other: _____ |
| _____ Model Airplane News | _____ Shotgun News | |
| _____ Old House Journal | _____ Today's Homeowner | |
| _____ Popular Mechanics | _____ Wood | |

3. What is your annual household income?

_____ \$20,000-\$29,000 _____ \$30,000-\$39,000 _____ \$40,000-\$49,000
_____ \$50,000-\$59,000 _____ \$60,000-\$69,000 _____ \$70,000+

4. What is your age group?

_____ 20-29 _____ 30-39 _____ 40-49
_____ 50-59 _____ 60-69 _____ 70+

5. How long have you been a woodworker/metalworker?

_____ 0-2 Years _____ 2-8 Years _____ 8-20 Years _____ 20+ Years

6. How many of your machines or tools are Grizzly?

_____ 0-2 _____ 3-5 _____ 6-9 _____ 10+

7. Do you think your machine represents a good value?

_____ Yes _____ No

8. Would you recommend Grizzly Industrial to a friend?

_____ Yes _____ No

9. Would you allow us to use your name as a reference for Grizzly customers in your area?

Note: We never use names more than 3 times.

_____ Yes _____ No

10. Comments: _____

FOLD ALONG DOTTED LINE



Place
Stamp
Here



GRIZZLY INDUSTRIAL, INC.
P.O. BOX 2069
BELLINGHAM, WA 98227-2069



FOLD ALONG DOTTED LINE

Send a Grizzly Catalog to a friend:

| | |
|--------|-------|
| Name | _____ |
| Street | _____ |
| City | _____ |
| State | _____ |
| Zip | _____ |

TAPE ALONG EDGES--PLEASE DO NOT STAPLE

WARRANTY & RETURNS

Grizzly Industrial, Inc. warrants every product it sells for a period of **1 year** to the original purchaser from the date of purchase. This warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence, accidents, repairs or alterations or lack of maintenance. This is Grizzly's sole written warranty and any and all warranties that may be implied by law, including any merchantability or fitness, for any particular purpose, are hereby limited to the duration of this written warranty. We do not warrant or represent that the merchandise complies with the provisions of any law or acts unless the manufacturer so warrants. In no event shall Grizzly's liability under this warranty exceed the purchase price paid for the product and any legal actions brought against Grizzly shall be tried in the State of Washington, County of Whatcom.

We shall in no event be liable for death, injuries to persons or property or for incidental, contingent, special, or consequential damages arising from the use of our products.

To take advantage of this warranty, contact us by mail or phone and give us all the details. We will then issue you a "Return Number," which must be clearly posted on the outside as well as the inside of the carton. We will not accept any item back without this number. Proof of purchase must accompany the merchandise.

The manufacturers reserve the right to change specifications at any time because they constantly strive to achieve better quality equipment. We make every effort to ensure that our products meet high quality and durability standards and we hope you never need to use this warranty.

Please feel free to write or call us if you have any questions about the machine or the manual.

Thank you again for your business and continued support. We hope to serve you again soon.



Buy Direct and Save with Grizzly® – Trusted, Proven and a Great Value!
~Since 1983~

*Visit Our Website Today For
Current Specials!*

**ORDER
24 HOURS A DAY!
1-800-523-4777**

