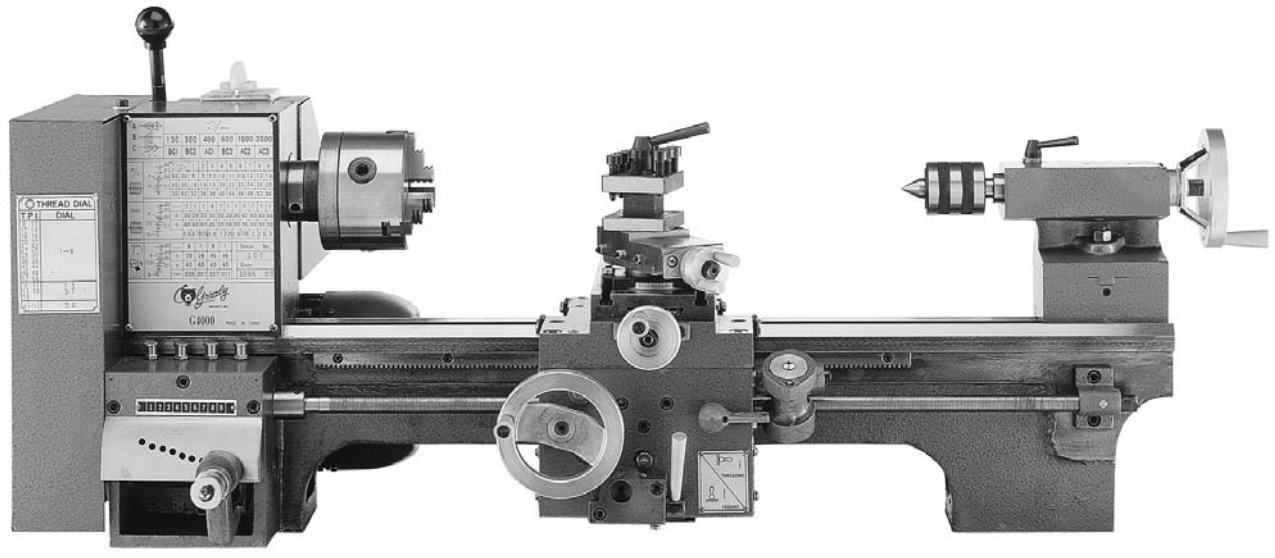
Grizzly Industrial, Inc.®

9" X 19" METAL LATHE

MODEL G4000

INSTRUCTION MANUAL



REVISED OCTOBER, 1999 PRINTED IN U.S.A.

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SECTION 1: SAFETY

⚠WARNING

For Your Own Safety Read Instruction Manual Before Operating This Equipment

The purpose of safety symbols is to attract your attention to possible hazardous conditions. This manual uses a series of symbols and signal words which are 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.

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

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

⚠CAUTION **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 equipment.**

⚠WARNING

Safety Instructions For Power Tools

1. **KEEP GUARDS IN PLACE** and in working order.
2. **REMOVE ADJUSTING KEYS AND WRENCHES**. Develop a habit of checking to see that keys and adjusting wrenches are removed from tool before turning on**.**
3. **KEEP WORK AREA CLEAN**. Cluttered areas and benches invite accidents.
4. **DON'T USE IN DANGEROUS ENVIRONMENT**. Don't use power tools in damp or wet locations, or where any flammable or noxious fumes may exist. Keep work area well lighted.
5. **KEEP CHILDREN AND VISITORS AWAY**. All children and visitors should be kept a safe distance from work area.
6. **MAKE WORK SHOP CHILD PROOF** with padlocks, master switches, or by removing starter keys.
7. **DON'T FORCE TOOL**. It will do the job better and safer at the rate for which it was designed.
8. **USE RIGHT TOOL.** Don't force tool or attachment to do a job for which it was not designed.

⚠WARNING

Safety Instructions For Power Tools

9. **USE PROPER EXTENSION CORD**. Make sure your extension cord is in good condition. Conductor size should be in accordance with the chart below. The amperage rating should be listed on the motor or tool nameplate. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. Your extension cord must also contain a ground wire and plug pin. Always repair or replace extension cords if they become damaged.

Minimum Gauge for Extension Cords

	LENGTH		
AMP RATING	**25ft**	**50ft**	**100ft**
0-6	18	16	16
7-10	18	16	14
11-12	16	16	14
13-16	14	12	12
17-20	12	12	10
21-30	10	10	No

10. **WEAR PROPER APPAREL.** Do not wear loose clothing, gloves, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair.

11. **ALWAYS USE SAFETY GLASSES.** Also use face or dust mask if cutting operation is dusty. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.

12. **SECURE WORK.** Use clamps or a vise to hold work when practical. It's safer than using your hand and frees both hands to operate tool.

13. **DON'T OVERREACH.** Keep proper footing and balance at all times.

14. **MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.

15. **DISCONNECT TOOLS** before servicing and changing accessories, such as blades, bits, cutters, and the like.

16. **REDUCE THE RISK OF UNINTENTIONAL STARTING.** Make sure switch is in off position before plugging in.

17. **USE RECOMMENDED ACCESSORIES.** Consult the owner's manual for recommended accessories. The use of improper accessories may cause risk of injury.

18. **CHECK DAMAGED PARTS.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.

19. **NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF.** Don't leave tool until it comes to a complete stop.

⚠WARNING

Additional Safety Instructions For The Lathe

1. **MAKE SURE ALL GUARDS** are in place and that the lathe sits on a flat, stable surface.

2. **BEFORE STARTING THE MACHINE** be certain the workpiece has been properly engaged in the chuck and tailstock center (if in use) and that there is adequate clearance for full rotation.

3. **ADJUST TOOL HOLDER** to provide proper support for the turning tool you will be using. Test tool holder clearance by rotating workpiece by hand before turning lathe on.

4. **SELECT THE TURNING SPEED** which is appropriate for the type of work and the type of material. Allow the lathe to gain its full speed before beginning turning.

5. **NEVER CHANGE FEED RATE** or spindle speeds while the lathe is turning.

6. **NEVER REVERSE MOTOR DIRECTION** while the lathe is running.

7. **DO NOT STOP LATHE USING YOUR HAND** against the workpiece.

8. **DO NOT LEAVE LATHE RUNNING UNATTENDED** for any reason.

9. **NEVER OPERATE THE LATHE WITH DAMAGED OR WORN PARTS.** Maintain your lathe in proper working condition. Perform routine inspections and maintenance promptly when called for. Put away adjustment tools after use.

10. **MAKE SURE YOUR METAL LATHE IS TURNED OFF**, disconnected from its power source and all moving parts have come to a complete stop before starting any inspection, adjustment, or maintenance procedure.

11. **KEEP LOOSE CLOTHING ARTICLES** such as sleeves, belts or jewelry items away from the lathe spindle.

12. **ALWAYS USE THE PROPER CUTTING TOOLS** for the material you are turning, make certain they are sharp and that they are held firmly in the tool holder.

13. **ALWAYS PLACE A BOARD OR PIECE OF PLYWOOD ACROSS THE BEDWAY** when removing or installing chucks to avoid the possibility of a finger pinch point occurring between a loose chuck and the edges of the bedway.

⚠CAUTION

No list of safety guidelines can be complete. Every shop environment is different. Always consider safety first, as it applies to your individual working conditions. Use this and other machinery with caution and respect. Failure to do so could result in serious personal injury, damage to equipment or poor work results.

⚠WARNING

Like all power tools, there is danger associated with the Model G4000 Metal Lathe. Accidents are frequently caused by lack of familiarity or failure to pay attention. Use this tool with respect and caution to lessen the possibility of operator injury. If normal safety precautions are overlooked or ignored serious personal injury may occur.

SECTION 2: CIRCUIT REQUIREMENTS

110V Operation

The Model G4000 is wired for 110 volt, single phase operation only. The ¾ HP motor will safely draw 12 amps at 110V. A 15-amp fuse or circuit breaker should be used when connecting this metal lathe. Circuits rated any higher are not adequate to protect the motor.

If you operate this lathe on any circuit that is already close to its capacity, it might blow a fuse or trip a circuit breaker. However, if an unusual load does not exist and a power failure still occurs, contact a qualified electrician or our service department.

Equipment returned to us for service that shows evidence of being over-fused will be repaired or replaced totally at the customer's expense, regardless of the present warranty status.

Extension Cords

If you find it necessary to use an extension cord with the Model G4000, make sure the cord is rated Hard Service (grade S) or better. Refer to the chart in the standard safety instructions to determine the minimum gauge for the extension cord. The extension cord must also contain a ground wire and plug pin. Always repair or replace extension cords when they become worn or damaged.

Grounding

In the event of an electrical short, grounding reduces the risk of electric shock by providing a path of least resistance to disperse electric current. This tool is equipped with a power cord having an equipment-grounding conductor. **See Figure 1.** The outlet must be properly installed and grounded in accordance with all local codes and ordinances.

⚠WARNING

This equipment must be grounded. Verify that any existing electrical outlet and circuit you intend to plug into is actually grounded. If it is not, it will be necessary to run a separate 12 A.W.G. copper grounding wire from the outlet to a known ground. Under no circumstances should the grounding pin from any three-pronged plug be removed. Serious injury may occur.

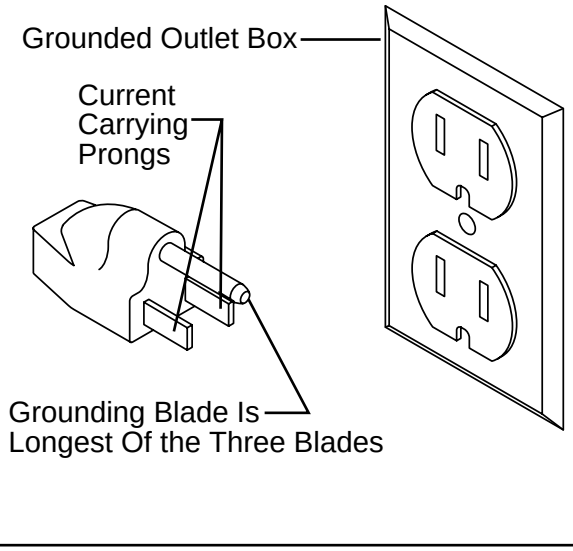

Figure 1. Typical 110V plug and outlet.

SECTION 3: INTRODUCTION

Commentary

We are proud to offer the Grizzly Model G4000 9" x 19" Metal Lathe. The Model G4000 is part of a growing Grizzly family of fine metalworking machinery. When used according to the guidelines set forth in this manual, you can expect years of trouble-free, enjoyable operation and proof of Grizzly's commitment to customer satisfaction.

The Model G4000 is a precision metalworking lathe. It features cast iron construction, 19" V-bed, a speed range of 130-2,000 RPM, 6-speed gearbox and a complete electrical package. The electrical package consists of a, ¾ H.P., 110V motor, mechanical forward and reverse switch and cord set. We also offer many accessories for this lathe. Please refer to the latest Grizzly catalog for prices and information.

We are also pleased to provide this instructional manual with the Model G4000 Lathe. This manual was written to guide you through assembly, review safety considerations and cover basic operating procedures. It represents our latest effort to produce the best documentation possible. If you have any constructive criticisms or comments you feel we should include in our next printing, please write us at the address below.

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C/O Technical Documentation
P.O. Box 2069
Bellingham, WA 98227-2069

Most importantly, we stand behind our machines. If you have any service questions or parts requests, please call or write us at the location listed below.

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E-Mail: techsupport@grizzlyindustrial.com
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The specifications, drawings, and photographs illustrated in this manual represent the Model G4000 as supplied when the manual was prepared. However, owing to Grizzly's policy of continuous improvement, changes may be made at any time with no obligation on the part of Grizzly. Whenever possible, though, we send manual updates to all owners of a particular tool or machine. Should you receive one, we urge you to insert the new information with the old and keep it for reference.

⚠ CAUTION

To operate this, or any power tool, safely and efficiently, it is essential to become as familiar with its characteristics as possible. The time you invest before you begin to use your Model G4000 will be time well spent. DO NOT operate this machine until you are completely familiar with the contents of this manual. Make sure you read and understand all of the safety procedures. If you do not understand something, DO NOT operate the machine.

Unpacking

This Metal Lathe is shipped from the manufacturer in a carefully packed carton. If you discover the machine is damaged after you've signed for delivery, and the truck and driver are gone, you will need to file a freight claim with the carrier. Save the containers and all packing materials for possible inspection by the carrier or its agent. Without the packing materials, filing a freight claim can be difficult. If you need assistance determining whether you need to file a freight claim, or with the procedure to file one, please contact our Customer Service.

⚠WARNING

The G4000 is a heavy machine (300 lbs. shipping weight). DO NOT over-exert yourself while unpacking or moving your machine – get assistance. In the event that your Metal Lathe must be moved up or down a flight of stairs, be sure that the stairs are capable of supporting the combined weight of people and the machine. **Serious personal injury may occur.**

When you are completely satisfied with the condition of your shipment, you should inventory its parts.

Piece Inventory

The Model G4000 is, for the most part, pre-assembled at the factory. Inside the crate you'll find:

- The Model G4000 Metal Lathe
- 4" 3-jaw Chuck
- 7" 4-jaw Chuck
- Face Plate
- Steady Rest
- Following Rest
- 4-Way Tool Post
- C-Type Tool Post
- Toolbox
- Metric Allen® Wrenches
- 8-10mm Combination wrench
- Regular Screwdriver
- Phillips® Screwdriver
- Oil can
- 30T Gear (2)
- 36T Gear
- 42T Gear
- 45T Gear
- 80T Gear (2)
- Chuck wrenches (2)
- Chuck Removal Bars (2)
- Reverse Jaws for the 3-Jaw Chuck
- Dead Centers - MT #2, MT #3
- Live Center - MT #3

In the event that any non-proprietary parts are missing (e.g. a nut or a washer), we would be glad to replace them, or, for the sake of expediency, replacements can be obtained at your local hardware store.

Clean Up

The unpainted surfaces are coated with a waxy oil to protect them from corrosion during shipment. Remove this protective coating with a solvent cleaner or citrus-based degreaser. Avoid chlorine-based solvents as they may damage painted surfaces should they come in contact. Always follow the usage instructions on the product you choose for clean up.

⚠CAUTION

Many of the solvents commonly used to clean machinery can be highly flammable, and toxic when inhaled or ingested. Always work in well-ventilated areas far from potential ignition sources when dealing with solvents. Use care when disposing of waste rags and towels to be sure they do not create fire or environmental hazards. Keep children and animals safely away when cleaning and assembling this machine.

⚠WARNING

Do not use gasoline or other petroleum-based solvents to remove this protective coating. These products generally have low flash points which makes them extremely flammable. A risk of explosion and burning exists if these products are used. Serious personal injury may occur.

⚠CAUTION

All die-cut metal parts have a sharp edge (called "flashing") on them after they are formed. This is generally removed at the factory. Sometimes a bit of flashing might escape inspection, and the sharp edge may cause cuts or lacerations when handled. Please examine the edges of all die-cut metal parts and file or sand the edge to remove the flashing before handling.

Site Considerations

1. **Floor Load:** The Model G4000 can be mounted on your existing workbench or on an optional cabinet stand which is listed in our current Grizzly catalog. If you choose to use the stand, you will find the holes for bolting the G4000 to the stand are already in place. If you are using your own bench, ensure that it is strong enough to handle the G4000 lathe. Keep in mind, whichever way you choose to mount the lathe, it's essential that the mounting surface be perfectly flat. Use an accurate carpenter's level to ensure that your bench is properly leveled.

2. **Working Clearances:** Consider existing and anticipated needs, size of material to be processed through each machine, and space for auxiliary stands, work tables or other machinery when establishing a location for your lathe.

3. **Lighting and Outlets:** Lighting should be bright enough to eliminate shadow and prevent eye strain. Electrical circuits should be dedicated or large enough to handle amperage requirements. Outlets should be located near each machine so power or extension cords are clear of high-traffic areas. Observe local electrical codes for proper installation of new lighting, outlets, or circuits.

⚠CAUTION

Make your shop "child safe". Ensure that your workplace is inaccessible to youngsters by closing and locking all entrances when you are away. Never allow visitors in your shop when assembling, adjusting or operating equipment.

SECTION 4: ASSEMBLY & SETUP

Mounting

This lathe model should be securely mounted to a stand or benchtop. An accessory stand is available from Grizzly, please see our current catalog for pricing. There are two holes at each end of the lathe base which can be used to secure machine to the base.

The lathe does not require a great deal of assembly. This section details the installation of the various accessory holding devices. The following section will familiarize you with the controls for your new lathe. After you have completed both of these sections we will do a test run of the machine. Do not attempt a test run until you have become familiar with both of these sections.

⚠WARNING

DO NOT attempt to start this machine until you have completed all of the assembly and control familiarization steps. When performing the assembly steps, ensure that the switch is off and the power is disconnected. Failure to comply with this could cause inadvertent starting of the machine which can result in serious operator injury.

Lubrication

The G4000 is shipped from the factory pre-lubricated. However, it is recommended that you go through the entire lubrication sequence before operating the machine. Review **Section 7: Maintenance** for lubrication instructions. **Lubrication must be completed before you start your new lathe.**

Chucks

The Model G4000 Metal Lathe comes equipped with a 4" 3-jaw chuck (already installed), a 7" 4-jaw chuck and a face plate.

The 3-jaw chuck is a scroll-type chuck, meaning that all three jaws move in unison when adjustments are made. The 4-jaw chuck, on the other hand, features independent jaws. The 4-jaw chuck is used for square or unevenly-shaped stock.

The 3 and 4-jaw chucks have a setscrew in the hub of the back plate. **Figure 2.** This setscrew prevents the chucks from unscrewing when rotating the lathe in the reverse direction. Prior to removing the chuck, loosen the setscrew in the hub of the back plate.

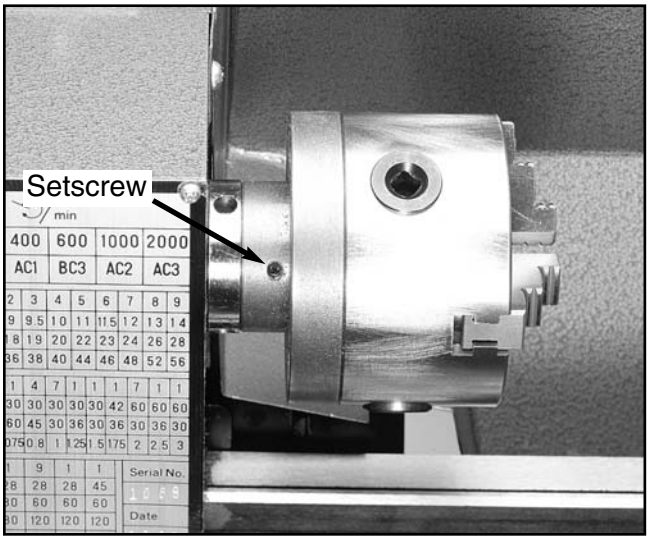


Figure 2. Typical chuck mounting.

⚠CAUTION

ALWAYS place a piece of plywood over the ways of the lathe before removing or installing a chuck. This helps in providing a flat surface for the chuck to land on, thereby avoiding a potential finger pinch situation.

Use the chuck removal bars supplied to remove the 3 or 4-jaw chucks. **Figure 3.** Use one bar to hold the spindle stationary, the other to unscrew the chuck. Turn the chuck counter-clockwise to remove.

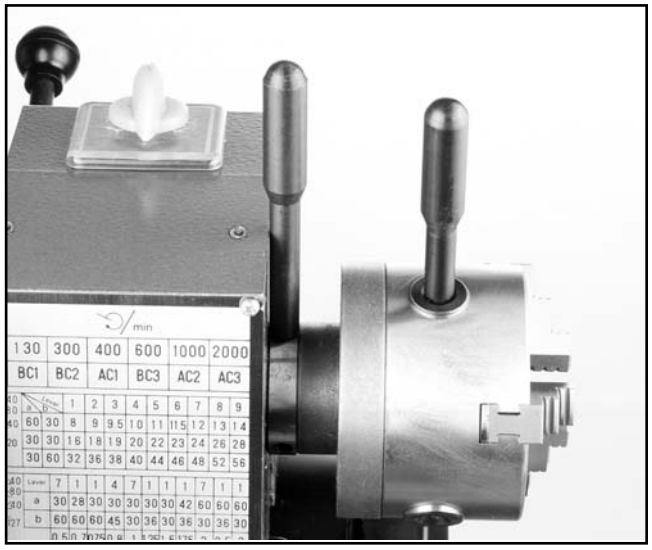


Figure 3. Chuck removal bars in place.

To mount one of the standard chucks, line up the desired chuck (or face plate) with the threaded spindle. Thread the chuck in place. Take care to ensure that the threads on both the headstock and the chuck are clean and free of obstructions before mounting.

⚠WARNING

Never leave a chuck key or chuck removal bar in the chuck or spindle when they are not in use. If the machine is accidentally started with these in place, they can become projectiles and cause serious injury.

Live Center

The live center is used to support stock which is too long to be supported by the chuck alone. Stock protruding more than three times its diameter should be supported by the live center.

The tailstock barrel and live center have a Morse taper #2. Before assembling these, insure that the mating surfaces are “white glove” clean. These parts will last longer and remain accurate when properly maintained. Insert the end of the live center into the tailstock bore until it seats. The force of a mounted workpiece will fully seat the taper.

When using a live center, the tailstock barrel should protrude about ½" and not more than 3". **See Figure 4.**

To remove the live center, back the tailstock barrel all the way into the tailstock casting. The live center will pop out. Be sure to catch it when it comes out to avoid damaging the tip.

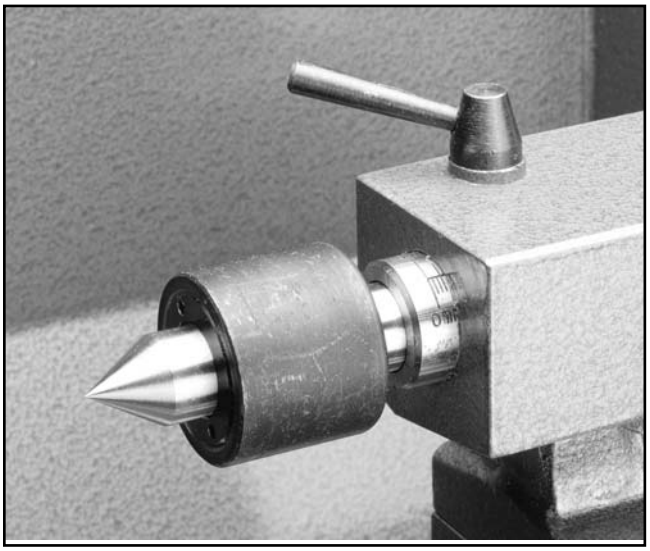


Figure 4. Live center installed in tailstock.

Steady Rest

The steady rest supports long, small diameter stock that otherwise could not be turned. The steady rest can also replace the tailstock to allow for cutting tool access at the outboard end of your workpiece.

To mount the steady rest :

1. Secure to bedway from below with the locking plate.

2. A single M8-1.25 x 55mm cap screw, along with a nut and washer, holds the steady rest in place. **See Figure 5.**

3. The sliding fingers on the center steady rest should receive periodic lubrication while in use to prevent premature wear.

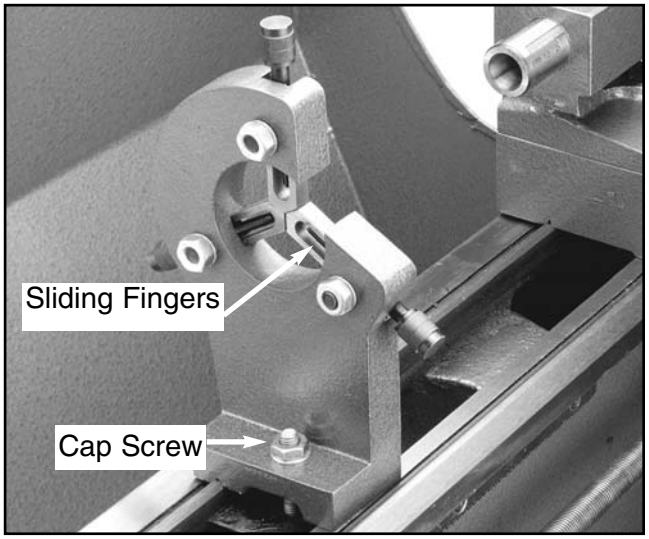


Figure 5. Steady rest in place.

Follow Rest

The follow rest is normally used with small diameter stock to prevent the workpiece from "springing" under pressure from the turning tool. To install the follow rest:

1. The follow rest is secured to the saddle with two cap screws. **See Figure 6.**

2. The sliding fingers on the follow rest are similar to those on the steady rest, and should be lubricated to prevent premature wear.

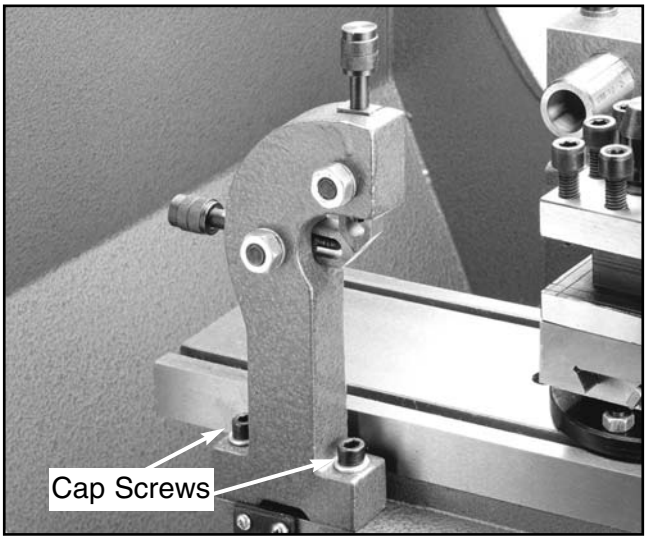


Figure 6. Follow rest secured to saddle.

SECTION 5: CONTROLS

Spindle Speeds

The rotating speed of the headstock is controlled by the positioning of the belts on the pulleys. **See Figure 7.** These are accessed by removing the cover on the end of the headstock. Refer to the chart at the end of this manual or the plate on the headstock (**Figure 8)** to determine which belt combinations produce what speeds. The speed settings available on this machine are 130, 300, 400, 600, 1000 and 2000 RPM.

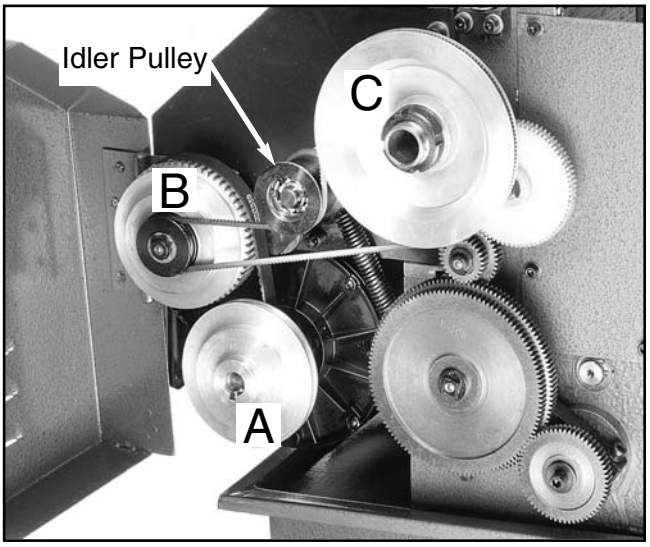


Figure 7. Pulley positions in headstock.

A / B / C Pos 1 2 3	min					
	130	300	400	600	1000	2000
	BC1	BC2	AC1	BC3	AC2	AC3

Figure 8. Spindle speed portion of machine plate.

This belt tensioning lever on the top of the headstock loosens the drive belt to enable the operator to change speeds. **See Figure 9.** The tension release lever can also be used as a clutch while the machine is in operation.

⚠WARNING

NEVER reach across a rotating chuck or plate. The use of the Belt Tension Release Lever as a clutch should be restricted to those times when starting a heavier part turning and then at very low speed.

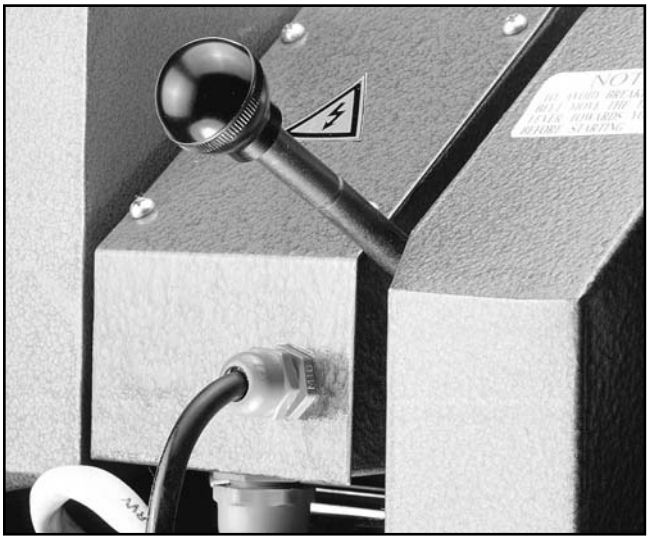


Figure 9. Belt tensioning lever.

Feed Rate

The lever at the bottom of the headstock changes the feed rate, or the number of threads-per-inch. **See Figure 9.** The lever can be engaged in any of nine different positions. When used in conjunction with the interchangeable gears supplied it is possible to achieve a wide variety of feed or threading rates.

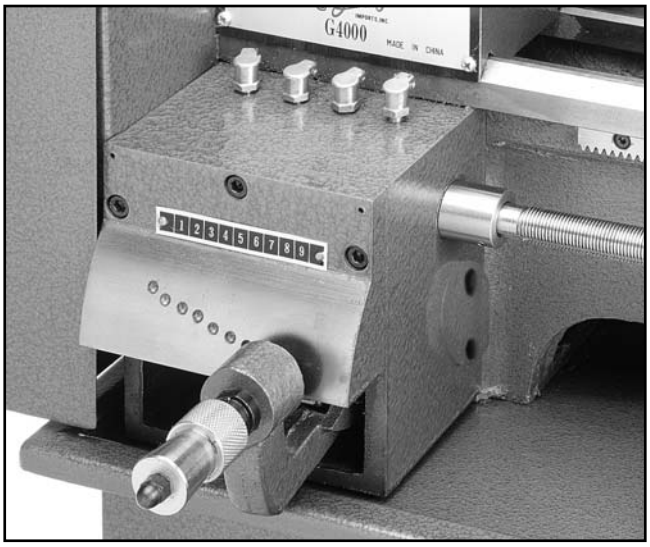
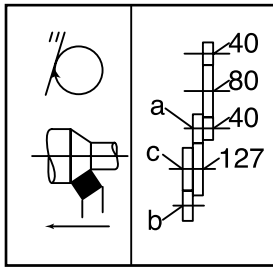


Figure 10. Feed rate selector lever.

The machine plate describes some of the more typical settings which might be used. **Figure 11** shows the feed rate portion of the machine plate. Looking at the first column, this means that a feed rate of .0023" can be achieved by putting the feed lever in position 9 with a 28 tooth gear installed at A, and 80 tooth gears at B and C.

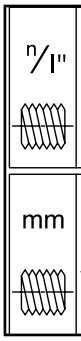
Threading feed rates are described in **Figures 12 and 13.** An 8 thread per inch feed is the result of having a 60 tooth gear at A, a 30 tooth gear at B, and the lever in position 1.

A metric 2mm pitch requires the lever to be in position 7 and would use the same A and B gears installed above. However the gear between them changes from a 120 tooth to a 127 tooth. Also note that the alignment of gears A and B are off-set so that A now engages the 127 tooth gear and B engages the 120 tooth gear. The shaft for position B is provided with a spacer which can be installed behind the gear to change its position.



Lever	9	1	9	1	1
a	28	28	28	28	45
b	80	80	60	60	60
c	80	80	120	120	120
Feed	0.0023	0.004	0.005	0.008	0.013

Figure 11. Feed rates portion of machine plate.



a \ Lever	1	2	3	4	5	6	7	8	9
60	30	8	9	9.5	10	11	11.5	12	13	14
30	30	16	18	19	20	22	23	24	26	28
30	60	32	36	38	40	44	46	48	52	56

Lever	7	1	1	4	7	1	1	1	7	1	1
a	30	28	30	30	30	30	30	42	60	60	60
b	60	60	60	45	30	36	30	36	30	36	30
	0.5	0.7	0.75	0.8	1	1.25	1.5	1.75	2	2.5	3

Figure 12. Threading rates portion of machine plate.

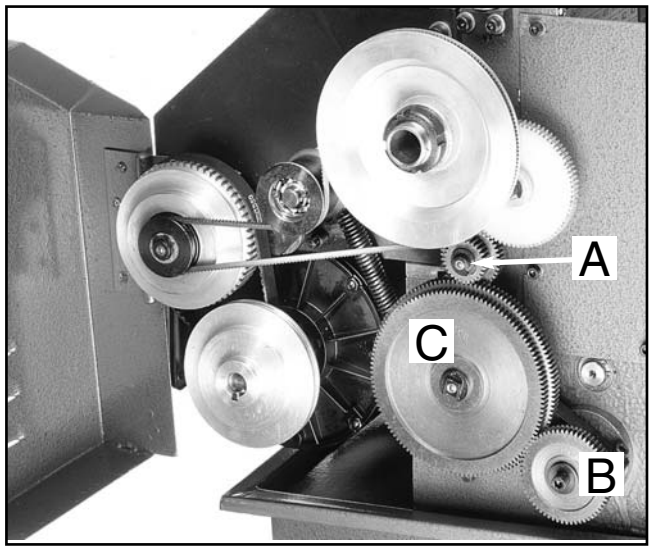


Figure 13. Interchangeable gear positions.

Carriage Controls

The carriage allows the cutting tool to move along the length of the lathe bed. The cross slide allows the cutting tool to travel perpendicular to the bed. The carriage features a top slide which allows linear movement of the cutting tool at any preset angle. This section will review the individual controls on the carriage and provide descriptions of their uses.

Longitudinal Handwheel - The Longitudinal Handwheel moves the carriage left or right along the bed. The control is helpful when setting up the machine for turning or when manual movement is desired during turning operations. **Figure 14.**

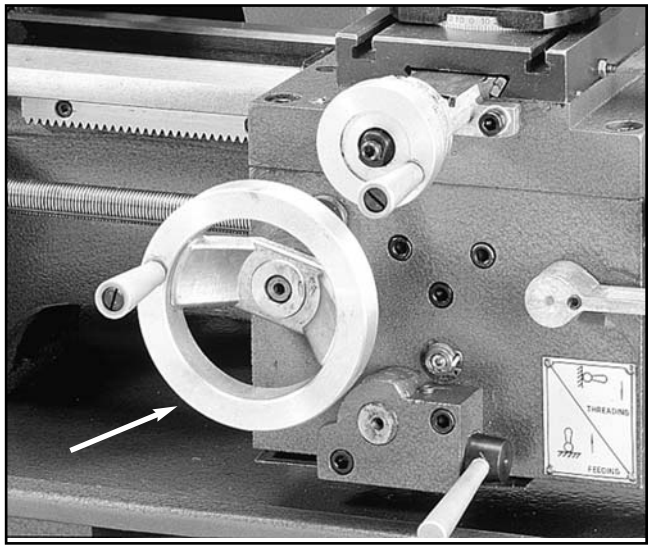


Figure 14. Longitudinal handwheel.

Cross Slide Handwheel - The Cross Slide Handwheel moves the top slide toward and away from the work. Turning the dial clockwise moves the slide toward the workpiece. The graduated scale can be adjusted using the same method as the longitudinal scale. **Figure 15.**

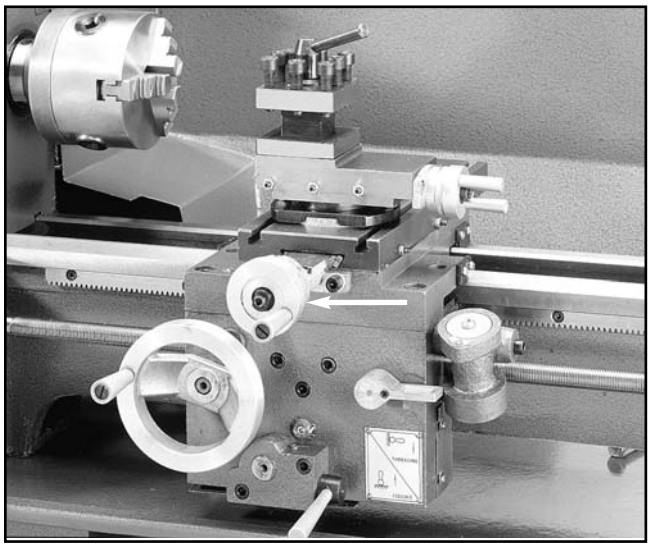


Figure 15. Cross slide handwheel.

Top Slide Handwheel - The Top Slide Handwheel controls the position of the cutting tool relative to the workpiece. The top slide is adjustable for angle as well as longitudinal travel. It can be adjusted a full 360°, if needed. The graduated scale is adjustable using the same method as the other handwheels. Angle adjustment is controlled by cap screws in the base of the top slide. **Figure 16.**

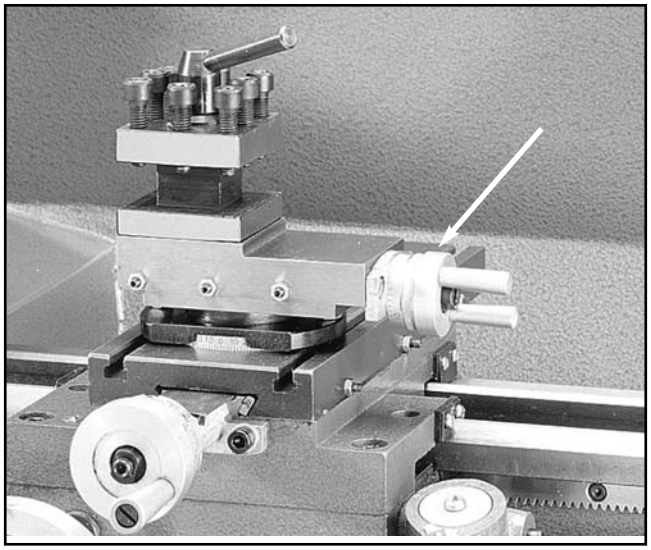


Figure 16. Top slide handwheel.

Feed Selector - Moving this lever upward engages the automatic longitudinal feed. **Figure 17.**

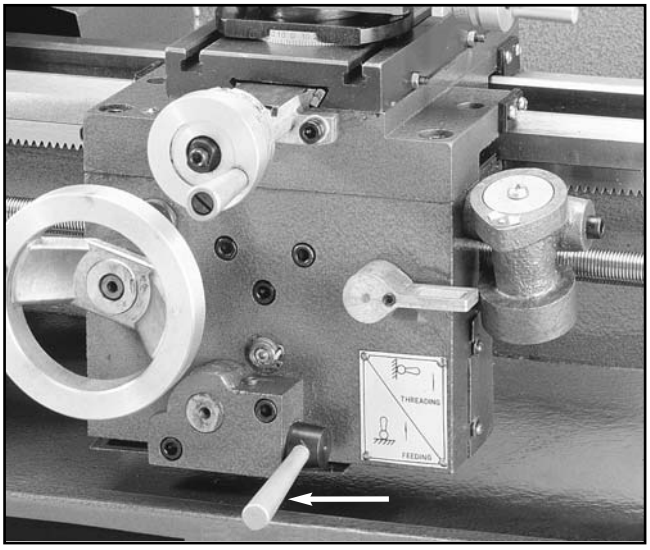


Figure 17. Longitudinal feed lever.

NOTICE

Do not simultaneously engage the feed lever and the threading lever. Doing so will damage the lathe.

Half Nut Lever - This lever compresses and releases the half nut that engages the leadscrew. The lever is only engaged while turning threads in stock. A lockout device featured in the lever mechanism engages when the feed selector is used. **Figure 18.**

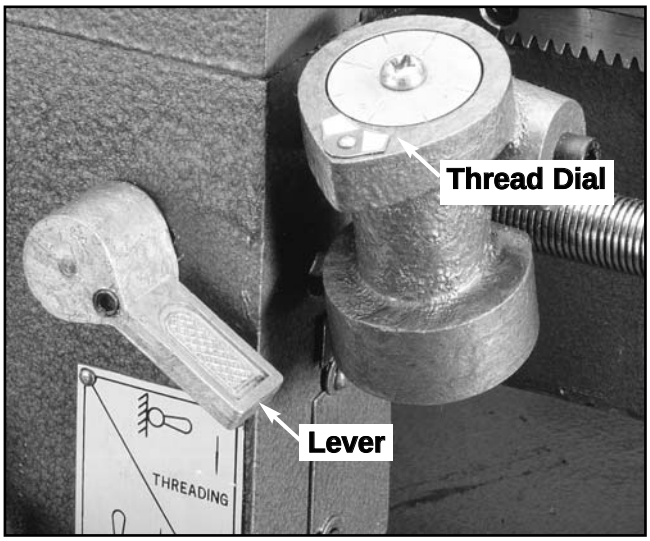


Figure 18. Threading dial and half nut lever.

Threading Dial Indicator - The indicator tells you when to engage the half nut to begin the threading process. **Figure 18.**

Tool post - A four-way tool post is supplied with the Model G4000. Cutting tools can be attached and removed by tightening or loosening the clamping bolt. **Figure 19.**

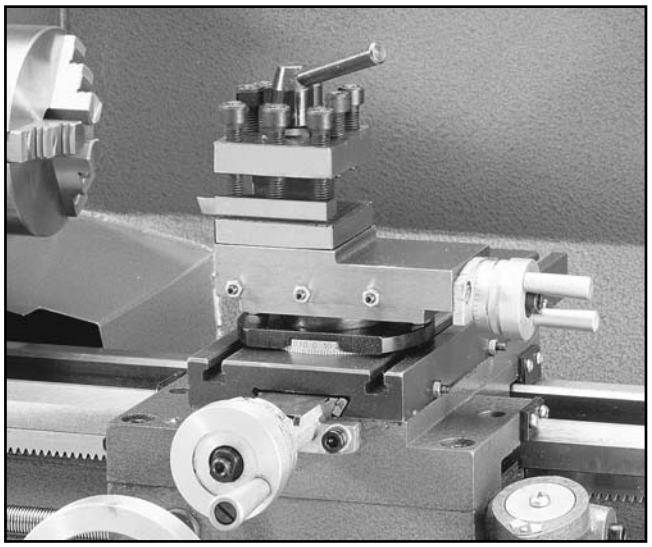


Figure 19. Four-way tool post.

Single Tool Holder - A single-tool tool holder is supplied with the Model G4000. A cutting tool can be installed by tightening or loosening the clamping bolt. **Figure 20.**

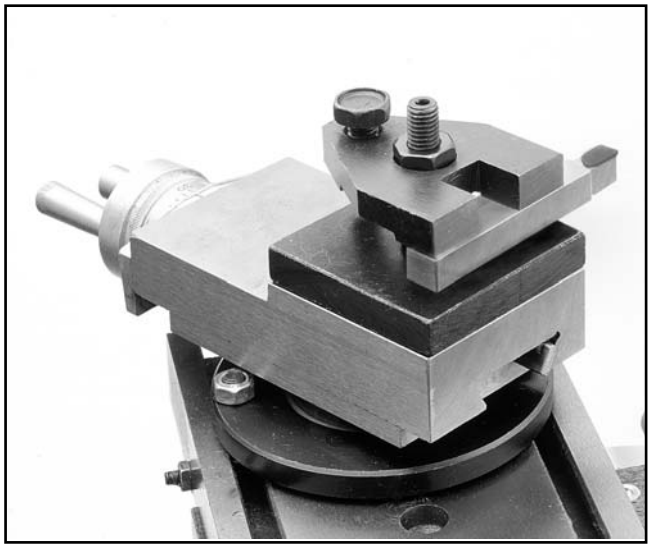


Figure 20. Single tool holder.

Tailstock Controls

Tailstock Handwheel - Turning the handwheel advances or retracts the barrel in the tailstock. The graduated scale on the handwheel is adjustable.

Lock Lever - This lever locks the tailstock barrel in place.

Clamping Nut - The clamping nut locks the tailstock in place on the lathe bed.

Adjustment Setscrews - These setscrews are used for aligning the tailstock to the spindle. This is covered in the next section.

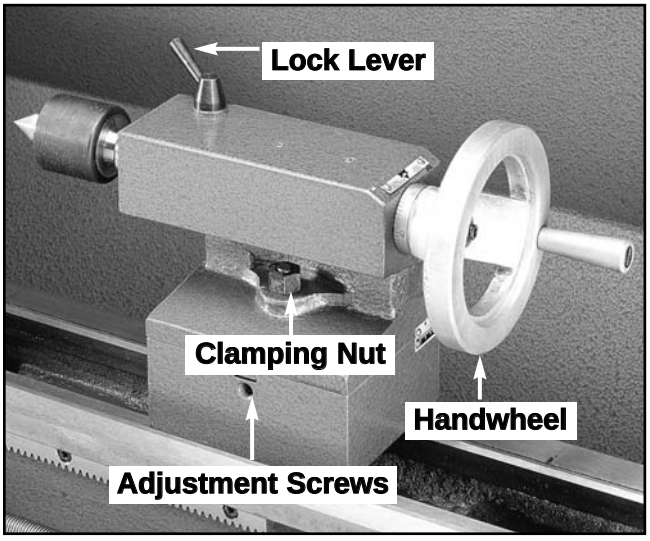


Figure 21. Detail of tailstock controls.

Test Run

Now that the lathe is securely in place and you've read the safety guidelines, it's time to give the machine a test run.

Before starting the machine, make sure the machine is properly grounded and the Power and Directional Switch is in the "OFF" position. **Figure 22.**

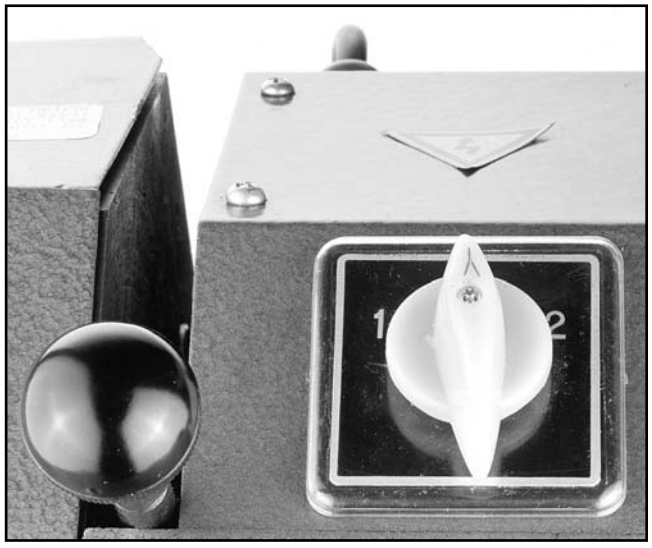


Figure 22. Power and directional switch.

Inspect the machine to ensure that all hand tools are out of the way, guards are in place and nothing is impeding the movement of the chuck.

Set the switch to position 2. The chuck should be turning in a counterclockwise direction. If the direction is reversed, contact our service department for further instruction. If the lathe is running correctly, take some time to become familiar with the various controls on the Model G4000. The controls will be reviewed by location on the machine, in **Section 5.**

Notes

SECTION 6: ADJUSTMENTS

Spindle RPM

Spindle R.P.M. - Spindle RPM's are controlled through a series of pulleys. To adjust the speed on the Model G4000, shut the machine off and unplug it, open the side-cover on the headstock. **Figure 23.** Release pressure with the belt tension lever and attach the drive belt to the pulley combination desired. There is a belt position diagram and a RPM chart on **page 28 and 29.**

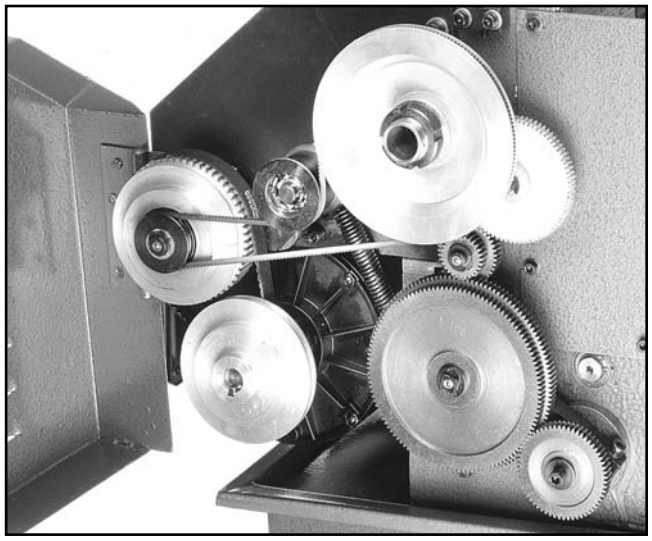


Figure 23. Pulley and gear box.

Gibs

There are two main gib adjustments for the Model G4000. They are: the cross-slide gib and the compound slide gib.

Cross-slide Gib - The gib on the cross slide is adjusted by the setscrews at the side of the cross slide. To adjust, loosen the check nuts holding the setscrews in place, tighten the setscrews until excess movement is eliminated and tighten the check nuts. **Figure 24.**

NOTICE

When adjusting gibs, keep in mind that the goal of gib adjustment is to remove unnecessary sloppiness from the slide's movement without causing them to bind. Overtightening may cause premature wear.

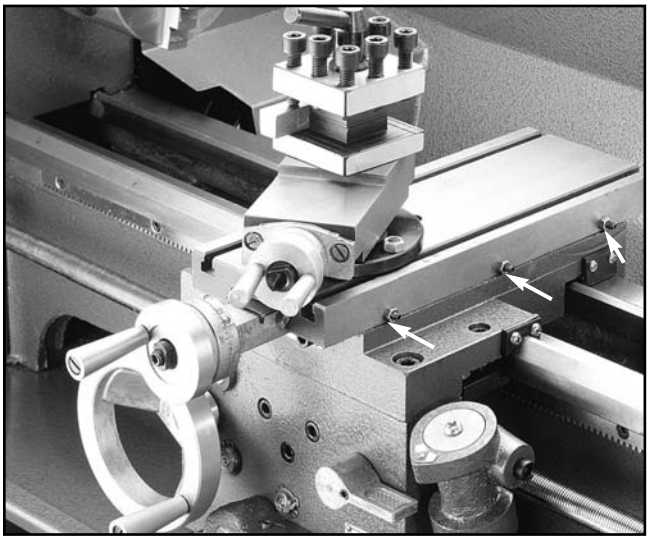


Figure 24. Cross slide gib adjustment.

Compound Gib - The gib on the top slide is adjusted by the setscrews at the side of the slide. As you did with the cross slide, loosen the check nuts holding the setscrews in place, tighten the setscrews until excess movement is eliminated and retighten the check nuts. **Figure 25.**

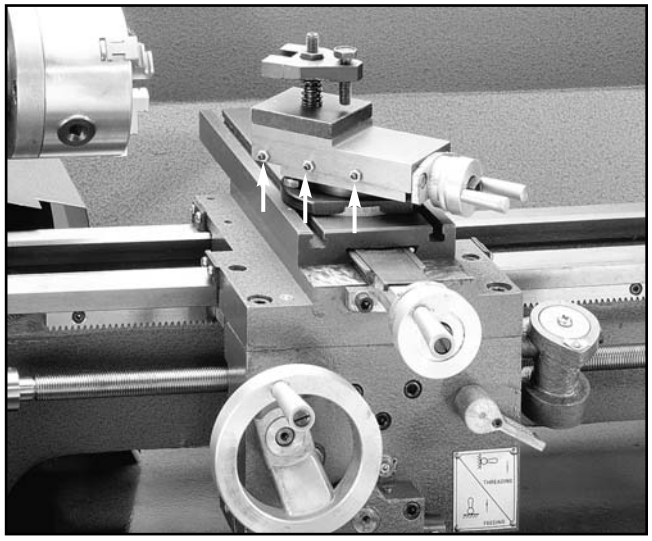


Figure 25. Top slide gib adjustment.

Steady/Follow Rest

To adjust the **Steady Rest**:

1. Loosen the lock nuts. **Figure 26.**
2. Open the sliding fingers by loosening the knurled screws far enough to fit around the workpiece. Secure the steady rest in position.
3. Tighten the knurled screws so that the fingers are snug but not tight against the workpiece. Tighten the lock nuts.
4. Lubricate the sliding points with machine oil.

The **Follow Rest** is setup in the same manner except that the place of the third finger is taken up by the tool bit. The follow rest prevents long, small diameter pieces from flexing under the cutting pressure from the tool bit.

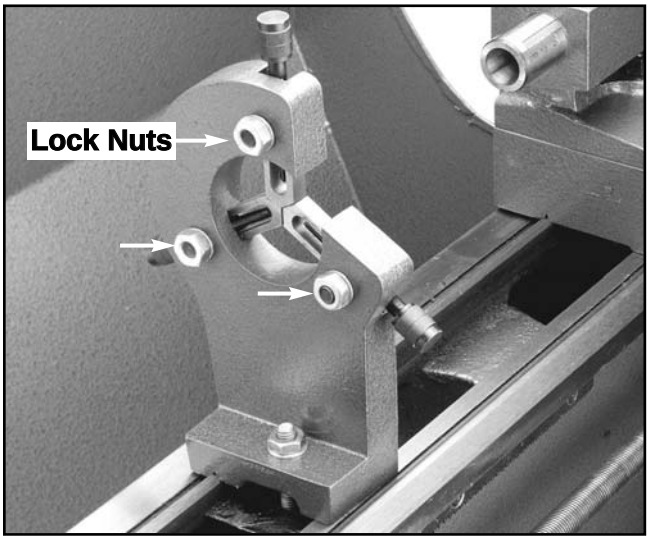


Figure 26. Steady rest lock nuts.

Chuck Runout

If your lathe use requires a higher level of accuracy, you may find it necessary to true-up the chuck to ensure minimal runout. To check and correct runout:

1. Mount a piece of bar stock in the chuck. The stock should protrude approximately 2".

2. Using a dial indicator, measure the run-out at the end of the bar. In most cases, the amount of runout will not exceed .005" over 2" which should be accurate enough for most applications. If the runout on the chuck is excessive (e.g., greater than .006"), the excess runout should be eliminated.

3. Start by removing the chuck.

4. Remove the mounting bolts that hold the back-plate to the chuck. Tap along the edge of the mounting shoulder until the chuck and back plate are free of each other.

5. Thread the back plate onto the spindle.

6. Remove about .005" of material from the surface that the chuck mounts to. Be careful not to remove any material from the diameter of the shoulder. **Figure 27.**

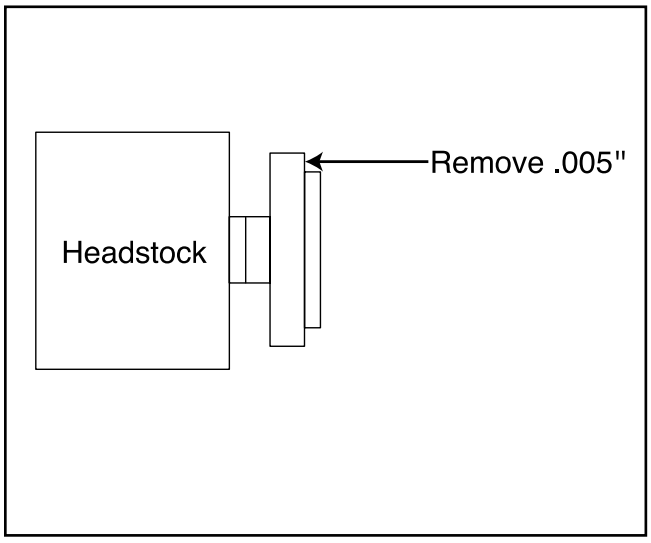


Figure 27. Truing the back plate.

7. Install the chuck onto the back plate and check the run-out. If the runout is not within an acceptable range, it may be necessary to turn a new shoulder on the back plate.

8. Before turning a new shoulder, accurately measure the diameter of the recess in the back of the chuck.

9. Remove approximately one half of the thickness of the shoulder (approximately 1/16"). Remove the same thickness off the face of the mounting surface. **Figure 28.**

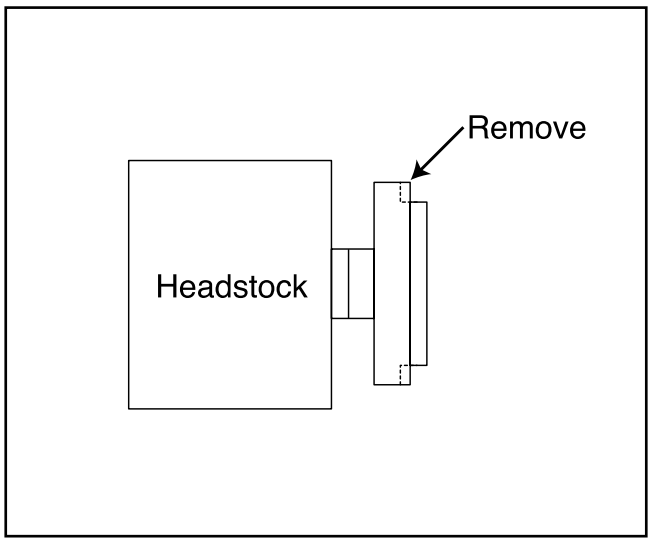


Figure 28. Turning new shoulder on back plate.

10. The finished diameter of the shoulder should be .001" larger than the diameter of the recess in the chuck. This is a critical step in minimizing chuck run-out.

11. Install the chuck and check for runout.

If the runout is still excessive, the back of the chuck will need to be resurfaced. To resurface the back of the chuck:

1. Using the 4-jaw chuck, mount a piece of bar stock approximately ¾" in dia. protruding about 2". Turn about .015" off the bar stock so it is true to the lathe's axis.

2. Clamp the 3-jaw to the stock you have just turned.

3. Remove approximately .005" from the mating surface on the back of the chuck.

4. Install the 3-jaw chuck and check for runout. Check with your dial indicator. If excessive runout still exists, call our service department for further instruction.

Tailstock

The tailstock on the Model G4000 is aligned at the factory with the headstock. You may want to take the time to ensure that the tailstock is aligned to your own desired tolerances. To align the tailstock:

1. Center drill a 6" piece of bar stock on both ends.

2. Make a dead center by turning a shoulder to make a shank. Flip the piece over in the chuck and turn a 60° point. **Figure 29.** As long as it remains in the chuck, the point of your center will be accurate to your spindle's axis. Keep in mind that the point will have to be re-turned whenever it is removed and returned to the chuck.

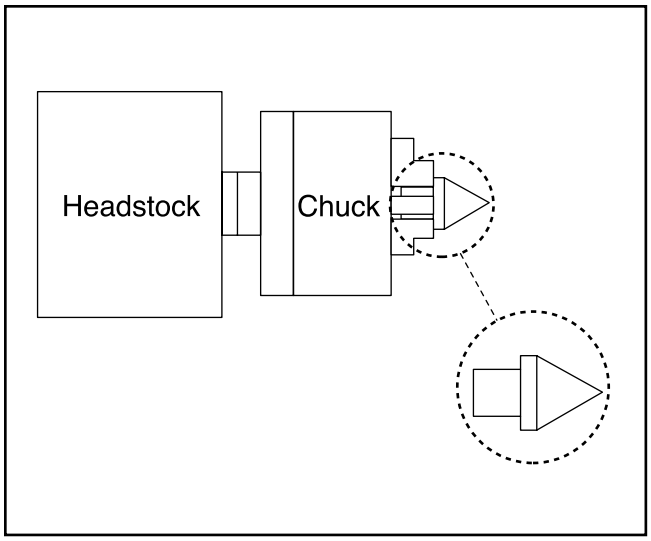


Figure 29. Making a dead center.

3. Place the live center in your tailstock.

4. Attach a lathe dog to the bar stock and mount it between the centers. **Figure 30**

5. Turn approximately .010" off the diameter.

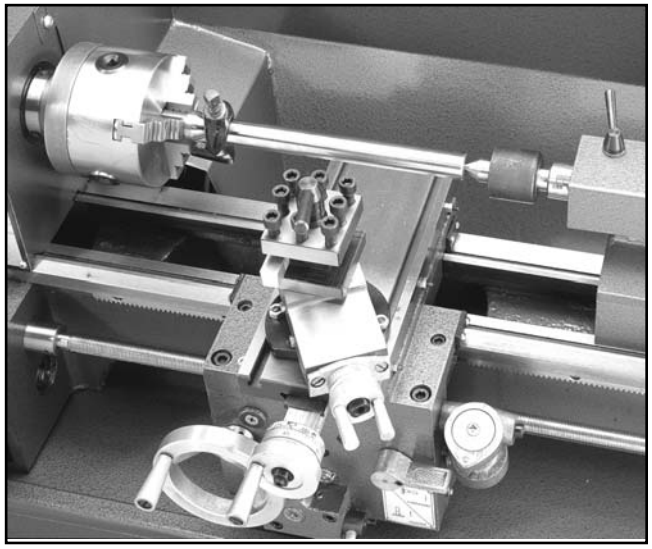


Figure 30. Bar stock mounted on centers.

TIP

Before making adjustments to the tailstock, mount a magnet dial indictor so that the dial's plunger is on the tailstock barrel.

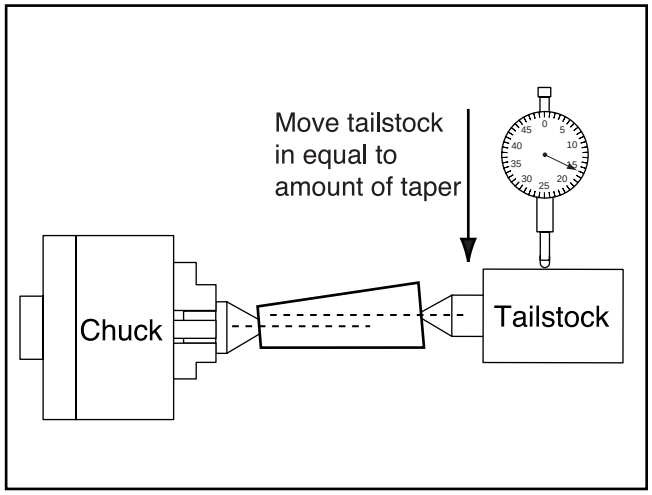


Figure 31. Adjusting for headstock end taper.

6. Measure the stock with a micrometer. If the stock is fat at the tailstock end, the tailstock needs to be moved toward you the amount of the taper. **Figure31.** If the stock is thinner at the tailstock end, the tailstock needs to be moved away from you the amount of the taper. **Figure 32.**

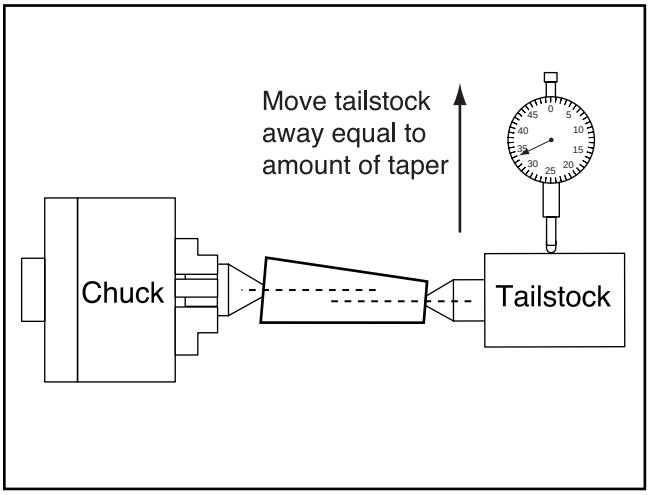


Figure 32. Adjusting for tailstock end taper.

7. Loosen the tailstock mounting bolt. Adjust the tailstock offset by the amount of the taper by turning the adjustment setscrews. **Figure 33.** Turn another .020" off the stock and check for taper. Repeat as necessary until the desired amount of accuracy is achieved.

NOTICE

Do Not forget to lock down the tailstock after each adjustment.

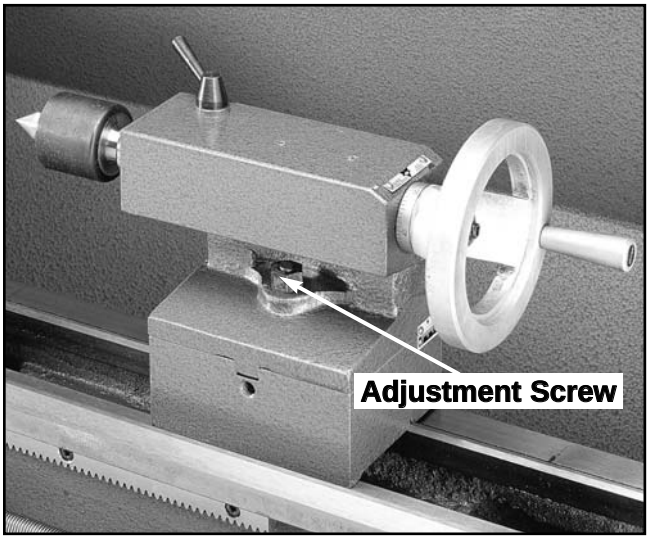


Figure 33. Tailstock offset adjustment screw.

Thread Cutting

Several different threads can be cut using the proper combination of gears and settings. When cutting inch threads, the half nut and threading dial are used to thread in a conventional manner. **Figure 34.** The thread dial chart specifies at which point a thread can be entered using the threading dial.

Metric Thread Cutting - The only difference in metric thread cutting is, **the half nut must remain engaged during the entire threading process.** The thread dial cannot be utilized.

Set the machine up for the desired thread pitch. Start the machine and engage the half nut. When the tool reaches the workpiece, it will cut the initial threading pass. When the tool reaches the end of the cut, stop the machine by turning the motor off and at the same time back the tool out of the workpiece so that it clears the thread. **Do not** disengage the half nut lever. Reverse the motor direction to allow the cutting tool to traverse back to the starting point. Repeat these steps until you have obtained the desired results.

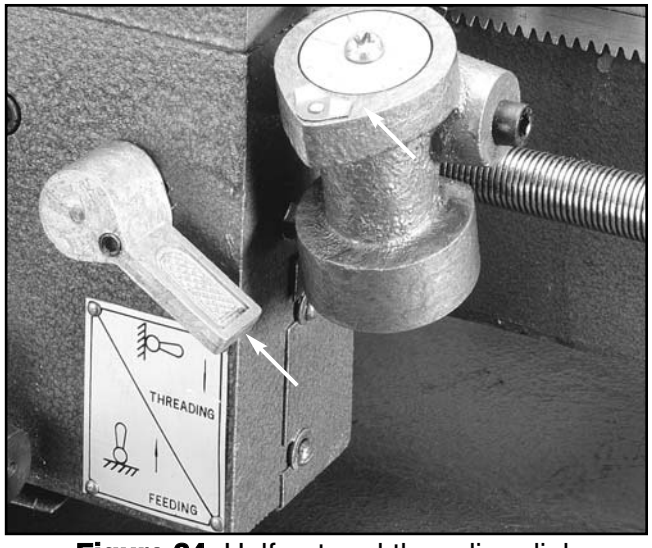


Figure 34. Half nut and threading dial.

Example of Gear Set-Up to Cut 10 T.P.I.:

1. Loosen cap screw **(1)**. **Figure 35.**
2. Loosen bolt **(2)**. Remove washers **(3)** and gear **(6).**
3. Loosen bolts **(7)** to allow movement in the center gear position.
4. Loosen nuts **(5).** Remove washer **(4)** and gear **(8).**

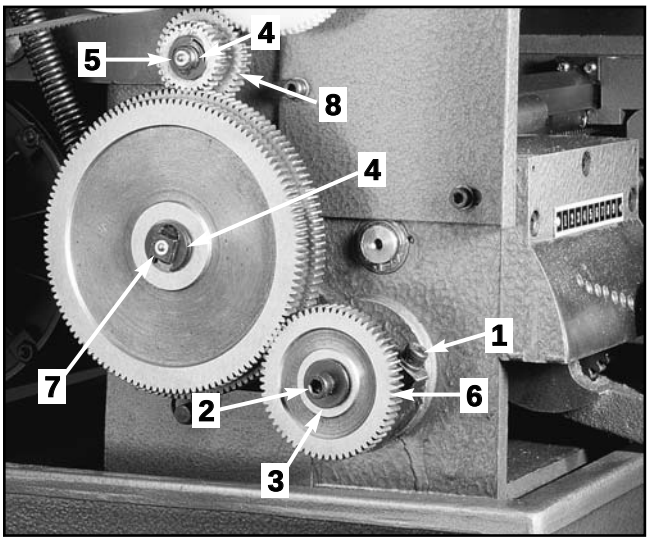


Figure 35. Gear train adjustment points.

Reassemble as follows:

1. Install 30 tooth gear in position **(6)** with bushings, washer, and bolt.
2. Install 60 tooth gear in position **(8).**
3. Center 127 tooth gear remains in place.
4. Adjust gear to mesh with upper and lower gear and tighten bolts **(7).**

NOTICE

Slip Clutch: To avoid overloading the drive, a safety slip clutch is fitted in the idler pulley. Overloading the drive at slower speeds (rattling noise) means the depth of cut is too deep and should be reduced.

SECTION 7: MAINTENANCE

⚠WARNING

ALWAYS disconnect the electric power to the machine before servicing. NEVER lubricate your lathe while it is running.

Lubrication

Your Model G4000 will function best when it is clean and well lubricated. Take the time to wipe down and oil the machine after use. We recommend using ISO 68 or SAE 20W non-detergent oil unless otherwise specified.

Apron - Apply lubrication to the apron through the ball fitting on the front face of the apron. **Figure 36.**

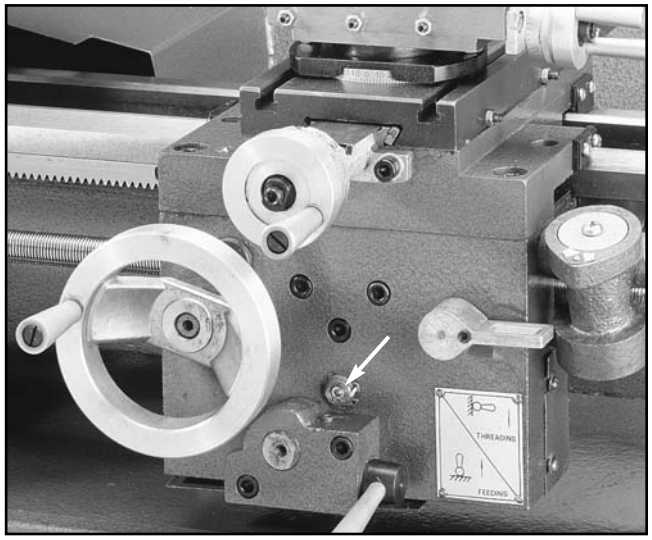


Figure 36. Apron lubrication point.

External Gearing - One-to-two squirts of oil into the oil ball on the gear hubs. **Figure 37.**

Apply only a minimal amount of oil to the teeth of the end gears. Avoid getting oil on the belt or pulleys when lubricating.

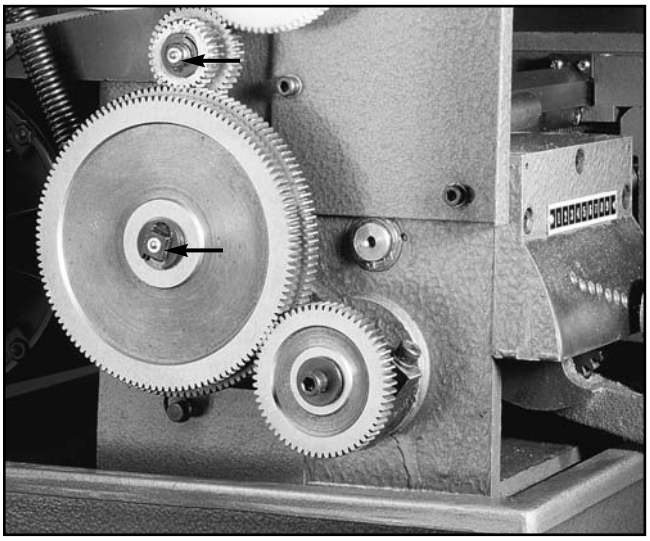


Figure 37. Oil ball on gear hubs.

Please note that the large toothed pulley that is to the left of the gears shown in **Figure 37** has an oil ball on the end of the shaft it is mounted to. Make sure to apply one-to-two squirts into the oil ball.

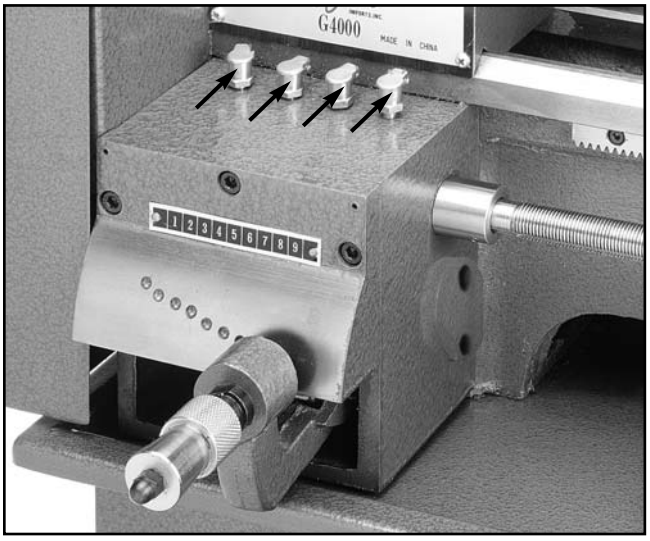


Figure 38. Gearbox lubrication caps.

Gearbox - Lubrication for the Gearbox is provided through 4 oil caps. Add a squirt or two of oil after every three-to-four hours of use. **Figure 38.**

Motor - The bearings used in the motor are shielded and lubricated for life.

Ways, Slides - Apply oil to the ways and slides after each use. Wipe the ways with a clean rag prior to lubrication to ensure that no grime is carried along with your lubricant into friction-sensitive areas. Applying oil to the bedways and other bare metal parts also protect the lathe from rust and pitting.

Lead Screw - Be sure to lubricate the leadscrew and the leadscrew bearing at the tailstock end of the lathe. **Figure 39.**

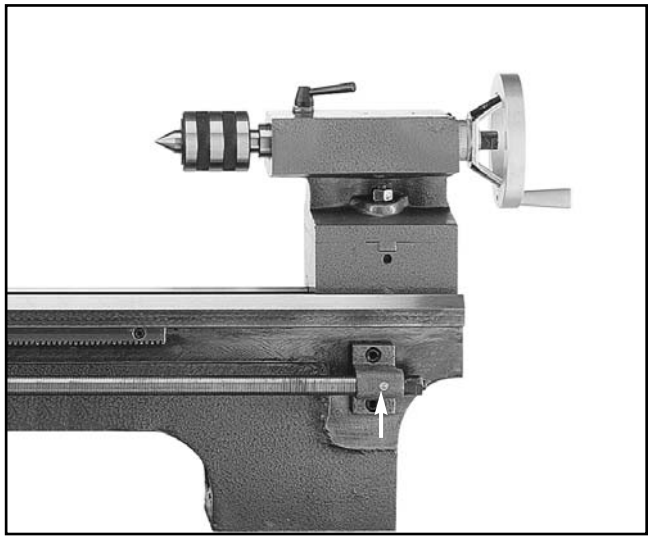


Figure 39. Leadscrew bearing lubrication point.

Tailstock - The tailstock is fitted with one oiling point. Apply oil each week, or after every five uses (depending on the frequency of operation). **Figure 40.**

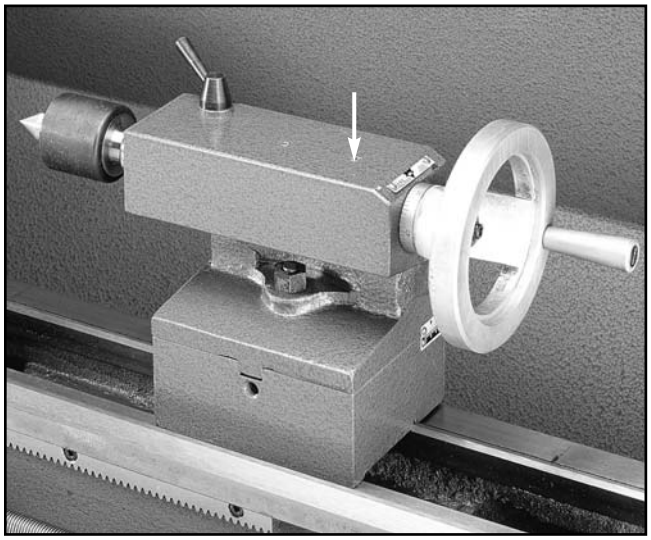


Figure 40. Tailstock oiling point.

Bearing Preload

This lathe is shipped from the factory with the bearing preload already set. If the preload requires resetting for whatever reason, please contact our service department for further instruction.

SECTION 8: CLOSURE

The following pages contain general machine data, parts diagram, parts lists and Warranty/Return information for your Model G4000.

If you need parts or help in assembling your machine, or if you need operational information, we encourage you to call our Service Department. Our trained service technicians will be glad to help you. If you have comments dealing specifically with this manual, please write to our Bellingham, Washington location using the address in the Introduction section of this manual.

The specifications, drawings, and photographs illustrated in this manual represent the Model G4000 as supplied when the manual was prepared. However, due to Grizzly's policy of continuous improvement, changes may be made at any time with no obligation on the part of Grizzly. Whenever possible, though, we send manual updates to all owners of a particular tool or machine. Should you receive one, add the new information to this manual and keep it for reference.

We have included some important safety measures that are essential to this machine's operation. While most safety measures are generally universal, Grizzly reminds you that each work shop is different and safety rules should be considered *as they apply to your specific situation.*

We recommend you keep a copy of our current catalog for complete information regarding Grizzly's warranty and return policy. If you need additional technical information relating to this machine, or if you need general assistance or replacement parts, please contact the Service Department listed in the General Information.

This machine is designed for highly-skilled individuals who have an understanding of metalworking. We realize there are numerous kinds of cutters and specialized techniques used to turn metals. To list all of the techniques necessary to operate a metal lathe correctly for specific applications would require many volumes. Additional information sources are necessary to realize the full potential of this machine. Trade journals, metalworking magazines, and your local library are good places to start.

⚠WARNING

As with all power tools, there is danger associated with the Model G4000. Use the tool with respect and caution to lessen the possibility of mechanical damage or operator injury. If normal safety precautions are overlooked or ignored, injury to the operator or others in the area is likely.

NOTICE

The Model G4000 was specifically designed for turning operations. **DO NOT MODIFY AND/OR USE THIS LATHE FOR ANY OTHER PURPOSE. Modifications or improper use of this tool will void the warranty.** If you are confused about any aspect of this machine, **DO NOT** use it until you have answered all your questions.

MACHINE DATA SHEET

Customer Service #: (570) 326-3806 • To Order Call: (800) 523-4777 • Fax #: (800) 438-5901

GRIZZLY MODEL G4000 9" X 19" BENCH LATHE

Design Type ..... Bench Model

Overall Dimensions:

- Overall Length ..... 36½"
- Overall Width ..... 22"
- Height ..... 15"
- Bed Width ..... 4½"
- Spindle Bore ..... ¾"
- Spindle Taper ..... # 3 Morse Taper
- Tailstock Taper ..... # 2 Morse Taper
- Weight (Net) ..... 250 lbs.
- Weight (Shipping) ..... 300 lbs.
- Crate Size ..... 41" L x 22" W x 19" H
- Footprint ..... 37" x 16"

Construction: ..... Cast Iron

Capacity:

- Swing Over Bed ..... 9"
- Swing Over Saddle ..... 5"
- Carriage Travel ..... 16"
- Max Tool Size ..... ½" x ½"
- Distance Between Centers ..... 19"
- Lead Screw ..... 9/16" - 16 TPI
- Spindle Thread ..... 39 mm X 4 mm
- Compound Travel ..... 1⅞"
- Cross Slide Travel ..... 4¼"
- Tailstock Barrel Travel ..... 1 9/16"
- Spindle Speeds ..... 130, 300, 400, 600, 1000, 2000 RPM
- Feed Rate Range ..... 18 @ .0023" - .013"
- Thread Range Inch ..... 27 @ 8 TPI - 56 TPI
- Thread Range Metric ..... 11 @ .5 - 3.0 mm

Motor:

- Type ..... TEFC Capacitor Start Induction
- Horsepower ..... ¾
- Phase / Hertz ..... Single Phase / 60Hz
- Voltage 110V
- Amps 11.6
- RPM 1725
- Bearings ..... Shielded And Lubricated For Life

Standard Accessories:

- ..... 4" 3-Jaw Chuck w / Two Sets of Jaws
- ..... 7¼"' 4-Jaw Chuck w / Reversible Jaws
- ..... 4-Way Tool Post / Face Plate
- ..... Follow Rest / Steady Rest
- ..... # 2 Morse Taper Dead Center
- ..... # 3 Morse Taper Dead Center
- ..... # 2 Morse Taper Live Center
- ..... Extra C-Type Tool Post
- ..... Tool Box & Tool Kit

Specifications, while deemed accurate, are not guaranteed.

AC1 - 400 RPM

AC3 - 2000 RPM

BC2 - 300 RPM

AC2 - 1000 RPM

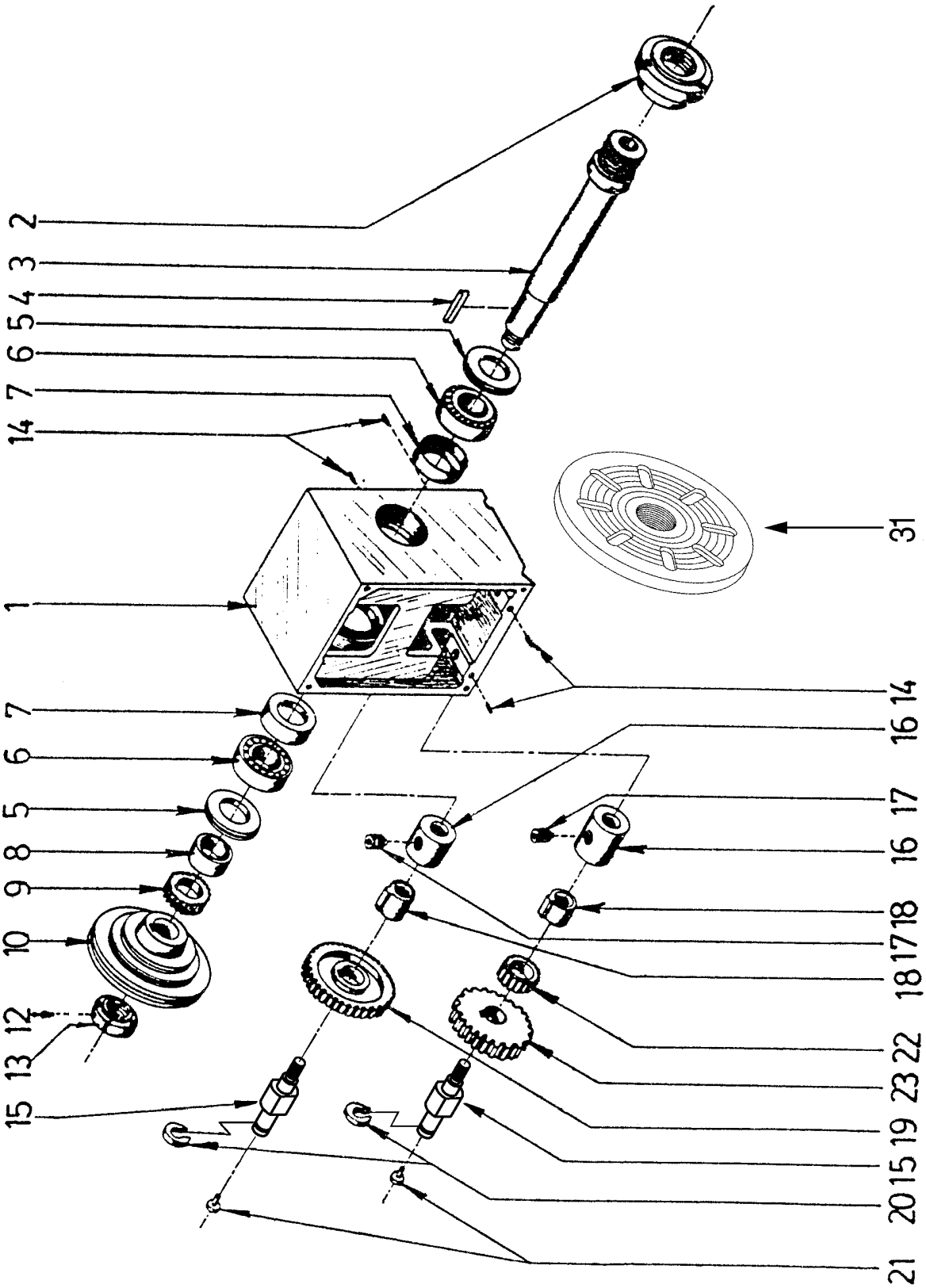
BC1 - 130 RPM

BC3 - 600 RPM

Calculating R.P.M.'s

Part Diameter	Cast Iron, Brass, Stainless			Steel			Aluminum		
S.F.P.M.⟶	40	50	60	70	80	90	100	110	120
0.016"	9779	12224	14669	17114	19558	22003	24448	26893	29338
0.031"	4890	6112	7334	8557	9779	11002	12224	13446	14669
0.062"	2445	3056	3667	4278	4889	5500	6112	6723	7333
0.125"	1222	1528	1833	2139	2445	2750	3056	3361	3667
0.187"	815	1019	1222	1426	1630	1833	2037	2241	2445
0.250"	611	764	917	1070	1222	1375	1528	1681	1833
0.312"	489	611	733	856	978	1100	1222	1345	1467
0.375"	407	509	611	713	815	917	1019	1120	1222
0.437"	349	437	524	611	698	786	876	960	1048
0.500"	306	382	458	535	611	688	764	840	917
0.625"	244	306	367	428	489	550	611	672	733
0.75"	204	255	306	357	407	458	509	560	611
0.875"	175	218	262	306	349	393	473	480	524
1.0"	153	191	229	267	306	344	382	420	458
1.125'	136	170	204	238	272	306	340	373	407
1.25"	122	153	183	214	244	275	306	336	367
1.375"	111	139	167	194	222	250	278	306	333
1.5"	102	127	153	178	204	229	255	2~0	306
1.625"	91	118	141	165	188	212	235	259	282
1.75"	87	109	131	153	175	196	218	246	262
1.875"	82	102	122	143	163	183	204	224	244
2.0"	76	96	115	134	153	172	191	210	229
2.25"	68	85	102	119	136	153	170	187	204
2.5"	61	76	92	107	122	138	153	168	183
2.75"	56	70	83	97	111	125	139	153	167
3.0"	51	64	76	89	102	115	127	140	153
3.25"	47	55	71	82	94	106	118	129	141
3.5"	44	59	66	76	87	98	109	126	131
3.75"	41	51	61	71	81	92	102	112	122
4.0"	38	48	57	67	76	86	96	105	115
4.5"	34	42	51	59	68	76	85	93	102
5.0"	31	38	46	54	61	69	76	84	92
5.5"	28	35	41	49	56	63	70	76	83
6.0"	26	32	38	45	51	57	64	70	76
6.5"	24	29	35	42	47	53	59	65	71
7.0"	22	27	33	38	44	49	55	60	66
7.5"	20	26	31	36	41	46	51	56	61
8.0"	19	24	29	33	38	43	48	53	57

Example: 1" diameter steel using 80 surface feet per minute should be run at 306 r.p.m. To calculate r.p.m.s for diameters not listed here; multiply the surface feet per minute by the diameter of the stock and divide by 4.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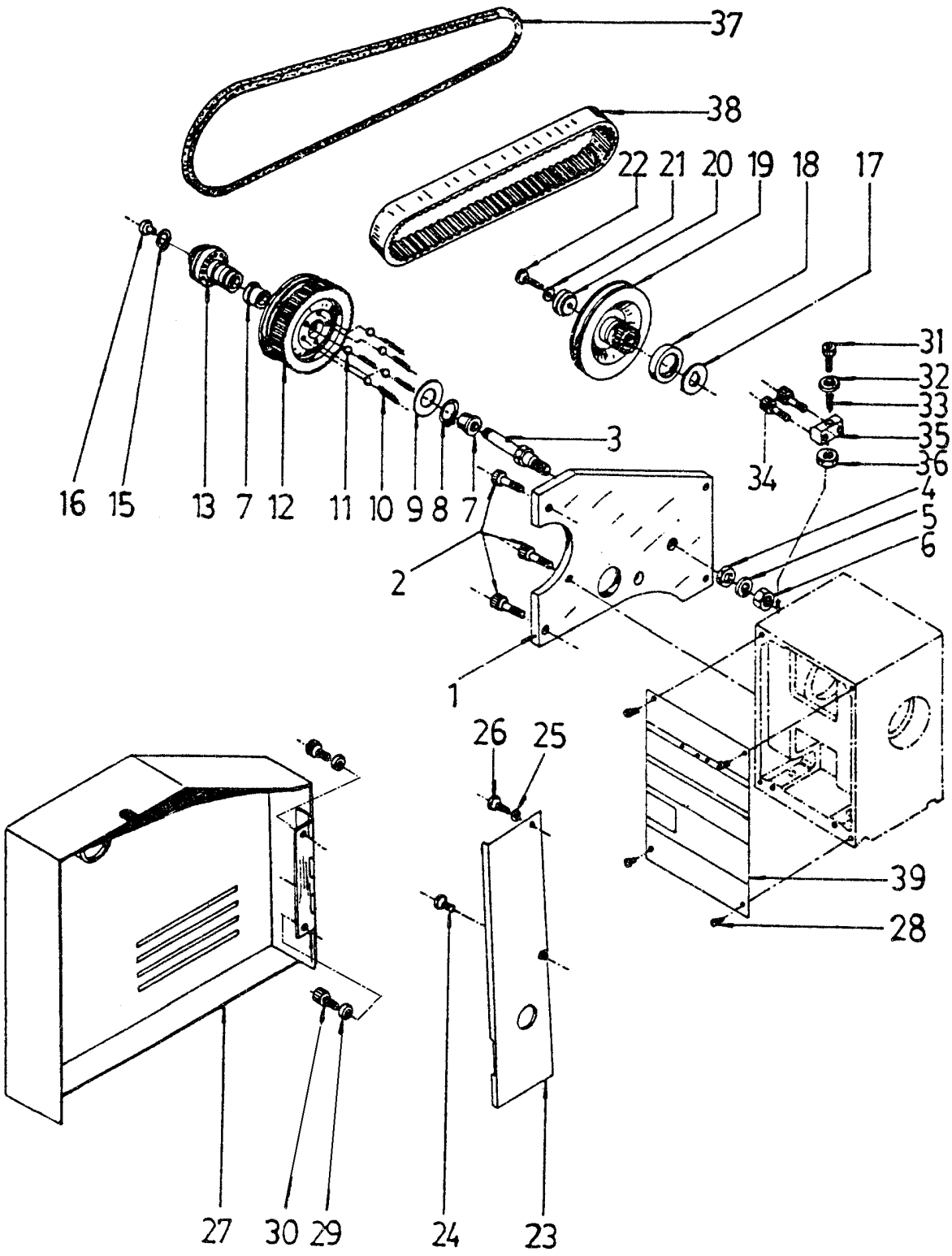
REF	PART #	DESCRIPTION
01	P4000101	HEADSTOCK CASTING
02	P4000102	BACK PLATE FOR 3-JAW
03	P4000103	SPINDLE
04	P4000104	KEY
05	P4000105	GASKET
06	P320007	BALL BEARING 320007
07	P4000107	COVER
08	P4000108	SPACING RING
09	P4000109	GEAR (40T)
10	P4000110	PULLEY
12	PSS08M	SET SCREW M4-0.7 x 5mm
13	P4000113	SPANNER NUT
14	PSS23M	SET SCREW M4-0.7 x 10mm
15	P4000115	SHAFT
16	P4000116	SPACING RING
17	PSS08M	SET SCREW M4-0.7 x 5mm
18	P4000405	BUSHING
19	P4000119A	GEAR 80T, METAL
20	P4000120	SPECIAL WASHER
21	P4000121	OIL PORT
22	P4000122	GEAR (40T)
23	P4000123	GEAR (28T)
24	PSB40	CAP SCREW M8-1.25 x 35
25	P4000125	BACK PLATE 6"
26	P4000126	4" 3-JAW CHUCK
26A	P4000126A	CHUCK KEY- 3 JAW
26B	P4000126B	REVERSE JAW
27	P4000127	6" 4-JAW CHUCK
27A	P4000127A	CHUCK KEY- 4 JAW
29	P4000129	DEAD CENTER MT2
30	P4000130	DEAD CENTER MT3
31	P4000131	FACE PLATE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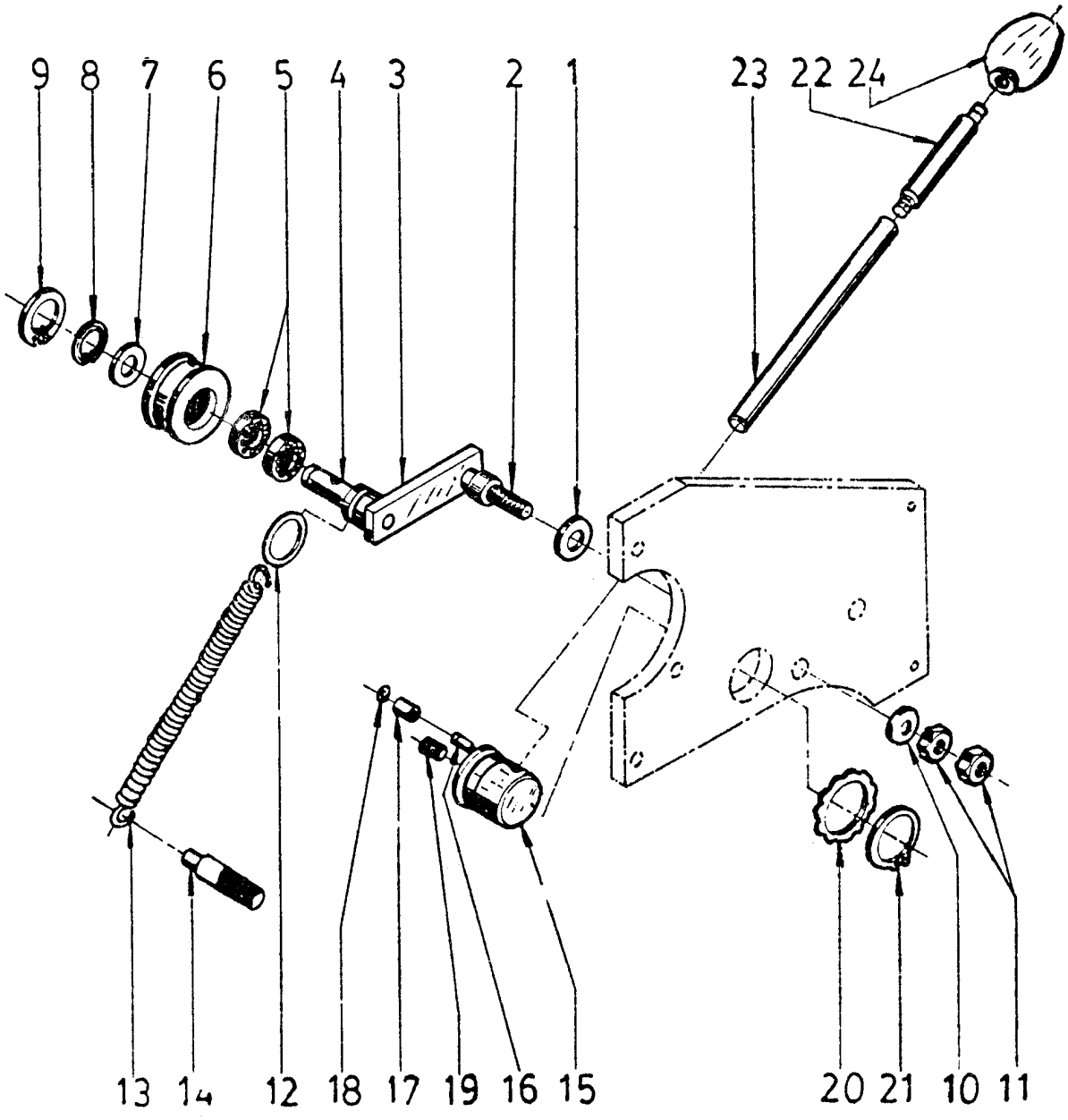
REF	PART #	DESCRIPTION
01	P4000201	BRACKET PLATE
02	PSB15M	CAP SCREW M5-.8 x 20
03	P4000203	BELT PULLEY SHAFT
04	PW05M	FLAT WASHER 4mm
05	PLW06M	LOCK WASHER 10mm
06	PN02M	HEX NUT M10-1.5
07	P4000207	BUSHING
08	PR11M	EXT. RETAINING RING 25mm
09	P4000209	SPECIAL WASHER
10	P4000210	SPRING
11	P4000211	BALL
12	P4000212	PULLEY
13	P4000213	CLUTCH HUB
15	PR03M	EXT. RETAINING RING 12mm
16	P4000216	OIL PORT
17B	P4000217B	SPACER
18B	P4000218B	COLLAR
19B	P4000219B	MOTOR PULLEY
20	P4000220	SPECIAL WASHER
21	PLW03M	LOCK WASHER 6mm
22	PSB06M	CAP SCREW
23	P4000223	COVER PLATE
24	PSB33M	CAP SCREW
25	PW02M	FLAT WASHER 5mm
26	PSB03M	CAP SCREW M5-0.8 x 8mm
27	P4000227	COVER W/ HINGE
28	PSB17M	CAP SCREW M4-0.7 x 10mm
29	PW03M	FLAT WASHER 6MM
30	PSB04M	CAP SCREW M6-1.0 x 10mm
31	PSB06M	CAP SCREW M6-1.0 x 25mm
32	PW03M	FLAT WASHER 6mm
33	P4000233	SPRING
34	PSB02M	CAP SCREW M6-1.0 x 20mm
35	P4000235	CLAMP BLOCK
36	PN01M	HEX NUT M6-1.0
37	P4000237A	V BELT M5 X 730
38	P4000238A	TOOTH BELT 160 X L 050
39	P4000239	PLATE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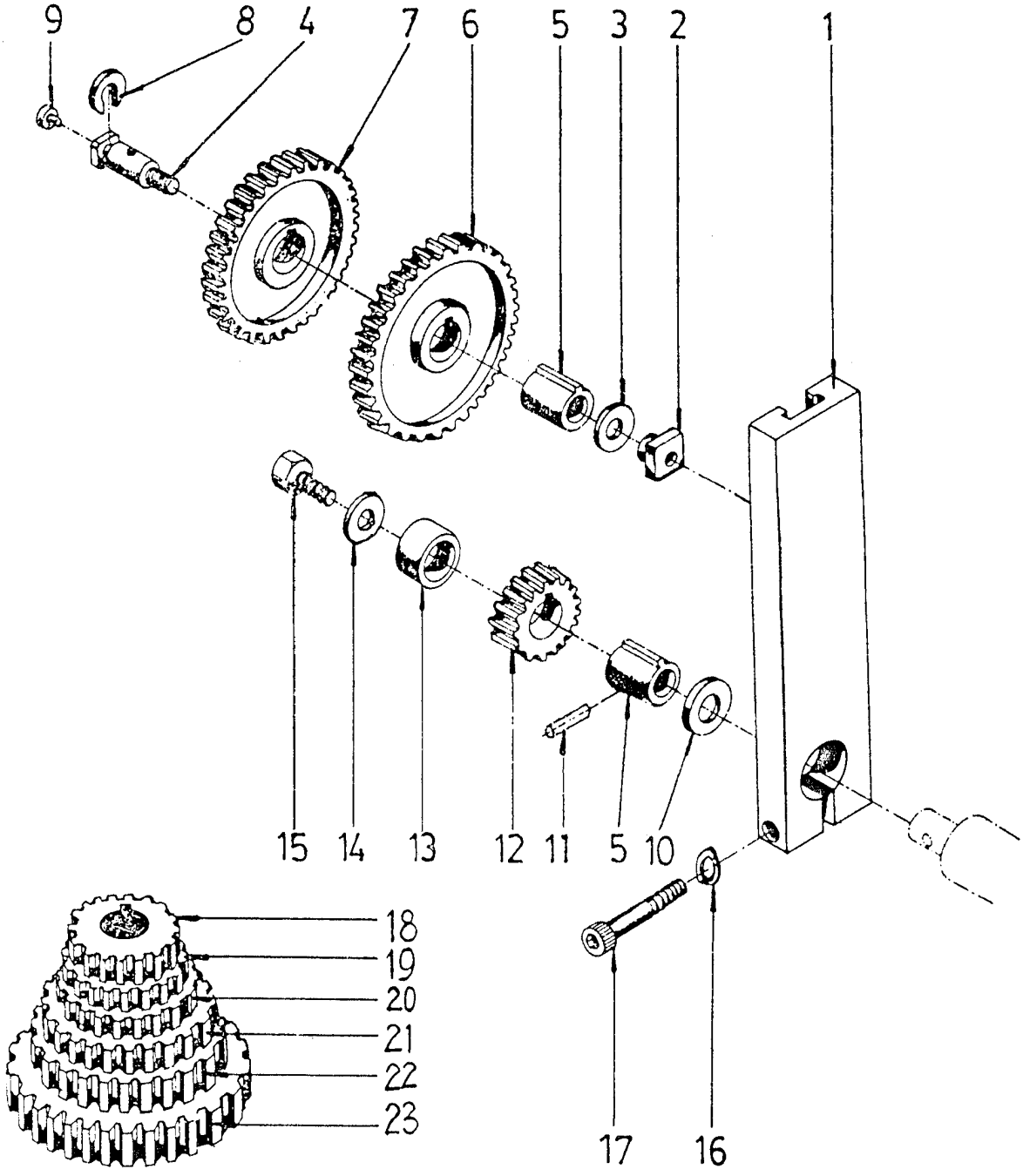
REF	PART #	DESCRIPTION
01	P4000301	SPECIAL WASHER
02	P4000302	STUD BOLT
03	P4000303	AXLE BRACKET
04	P4000304	AXLE
05	P6001	BEARING 6001-2RS
06	P4000306	ROLLER
07	P4000307	SPECIAL WASHER
08	PR03M	EXT RETAINING RING12mm
09	PR20M	INT RETAINING RING 28mm
10	PW04M	FLAT WASHER 10mm
11	PN02M	HEX NUT M10-1.5
12	P4000312	SPECIAL WASHER

REF	PART #	DESCRIPTION
13	P4000313	SPRING
14	P4000314	STUD BOLT
15	P4000315	TENSIONING CAM
16	P4000316	PIN
17	P4000317	SLEEVE
18	PR04M	EXT RETAINING RING 6mm
19	P4000319	SET SCREW
20	P4000320	WAVY WASHER
21	P4000321	SNAP RING
22	P4000322	LEVER EXTENSION
23	P4000323	LEVER
24	P4000324	KNOB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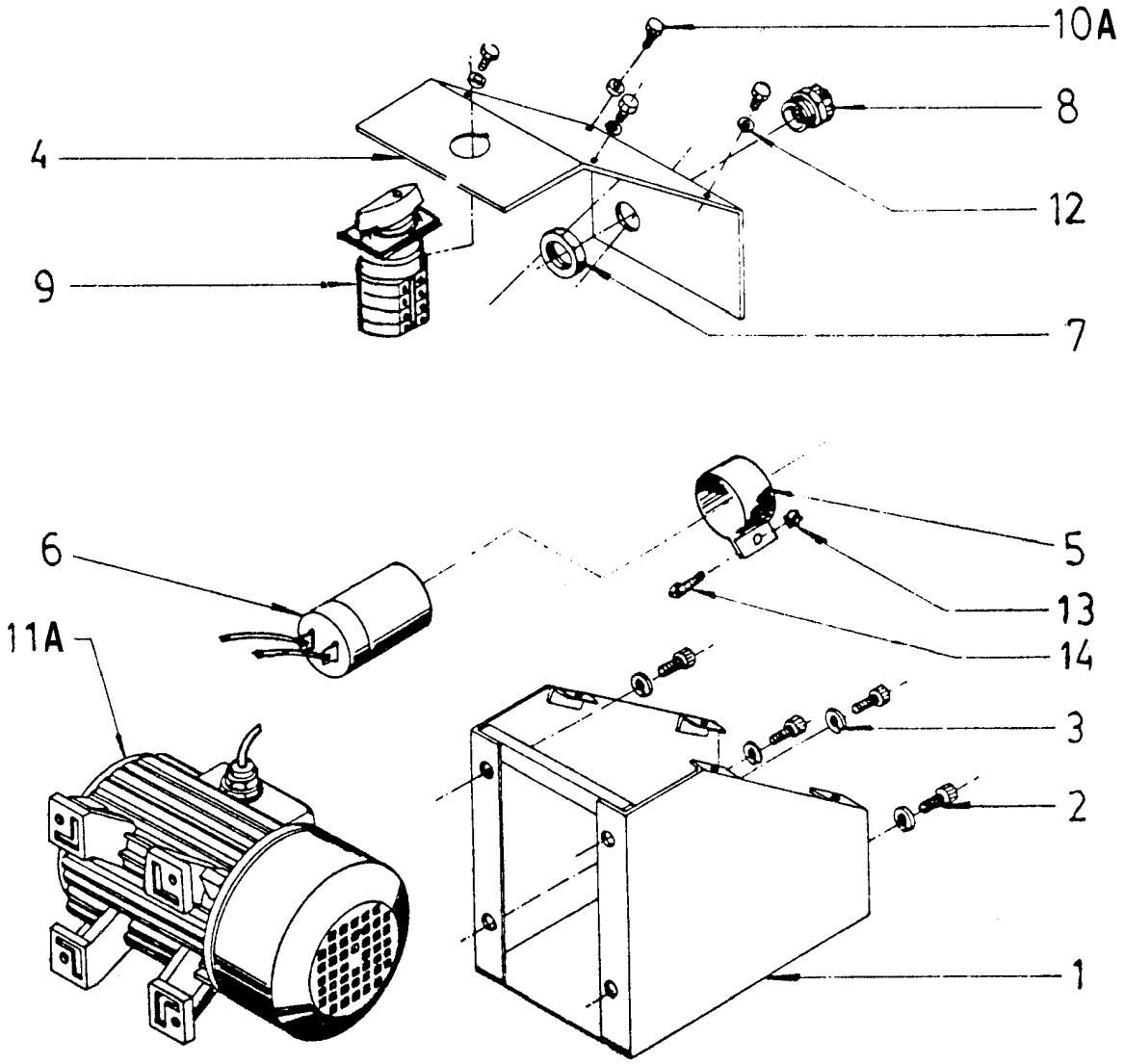
REF	PART #	DESCRIPTION
01	P4000401	BRACKET
02	P4000402	T-NUT
03	PW03M	FLAT WASHER 6mm
04	P4000404	SHAFT
05	P4000405	BUSHING
06	P4000406	GEAR 127T
07	P4000407	GEAR 120T
08	P4000408	SPECIAL WASHER
09	P4000409	OIL PORT
10	PW04M	FLAT WASHER
11	PRP19M	ROLL PIN 4 X 14mm
12	P4000412	GEAR 30T

REF	PART #	DESCRIPTION
13	P4000413	SPACING RING
14	PW03M	FLAT WASHER 6mm
15	PSB04M	CAP SCREW M6-1.0 x 10mm
16	PLW03M	LOCK WASHER 6mm
17	PSB48M	CAP SCREW M6-1.0 x 35mm
18	P4000418	GEAR 28T
19	P4000419	GEAR 36T
20	P4000420	GEAR 42T
21	P4000421	GEAR 45T
22	P4000422	GEAR 60T
23	P4000423	GEAR 80T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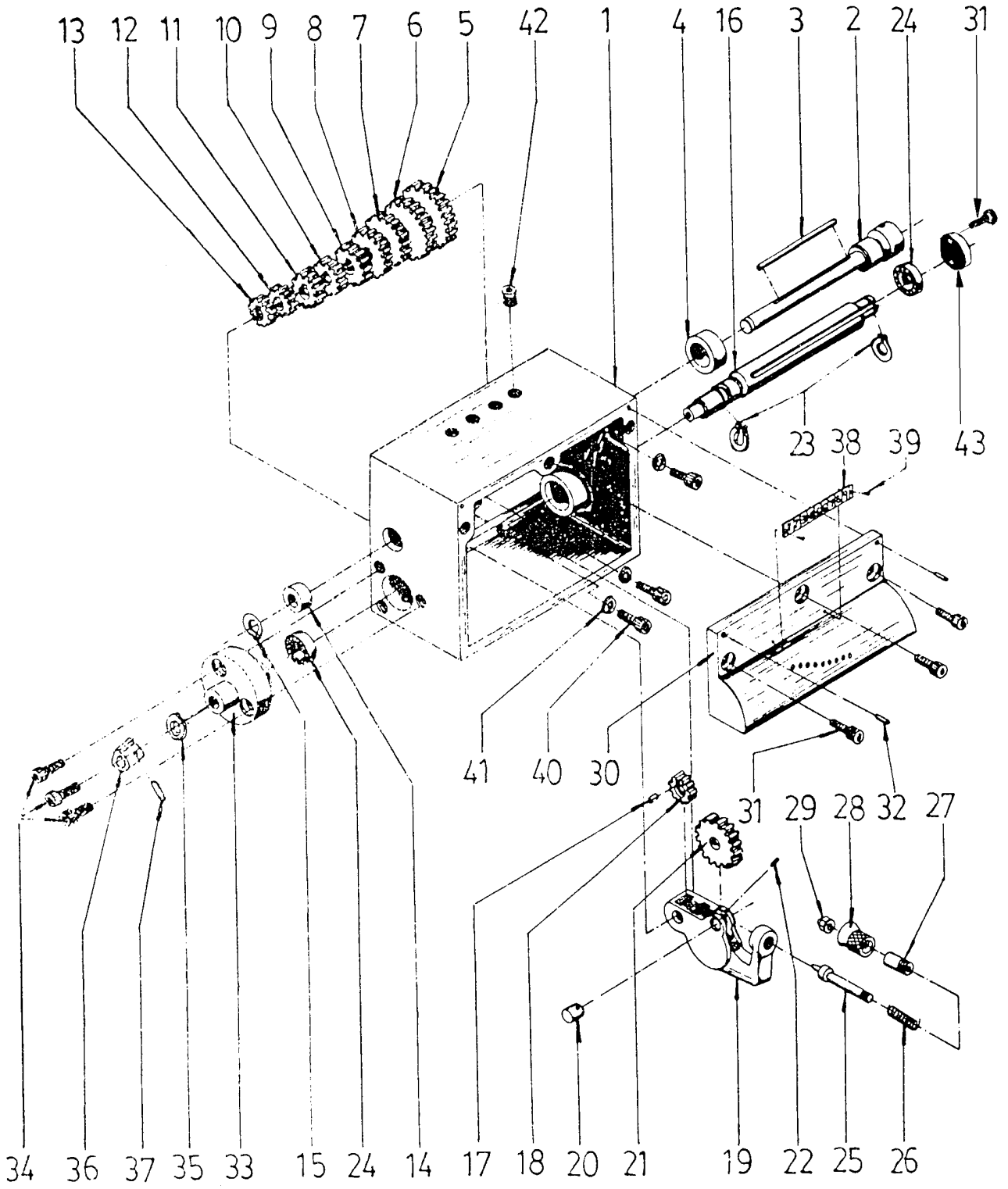
REF	PART #	DESCRIPTION
01	P4000501	HOUSING
02	PS09M	PHLP HD SCR M5-0.8 x 10mm
03	PLW01	LOCK WASHER 5mm
04	P4000504	COVER
05	P4000505	CAPACITOR COVER W/ CLIP
06	P4000506	CAPACITOR 60 MFD RED WIRE
06A	P4000506A	CAPACITOR 400 BROWN WIRE

REF	PART #	DESCRIPTION
07	P4000507	STRAIN RELIEF NUT
08	P4000508	STRAIN RELIEF
09	P4000509	SWITCH
10A	PS09M	PHLP HD SCR M5-0.8 x 10mm
11A	G5003	¾ HP MOTOR
12	PLW01M	LOCK WASHER 5mm
13	PN06M	HEX NUT M5-0.8
14	PSB50M	CAP SCREW M5-0.8 x 10mm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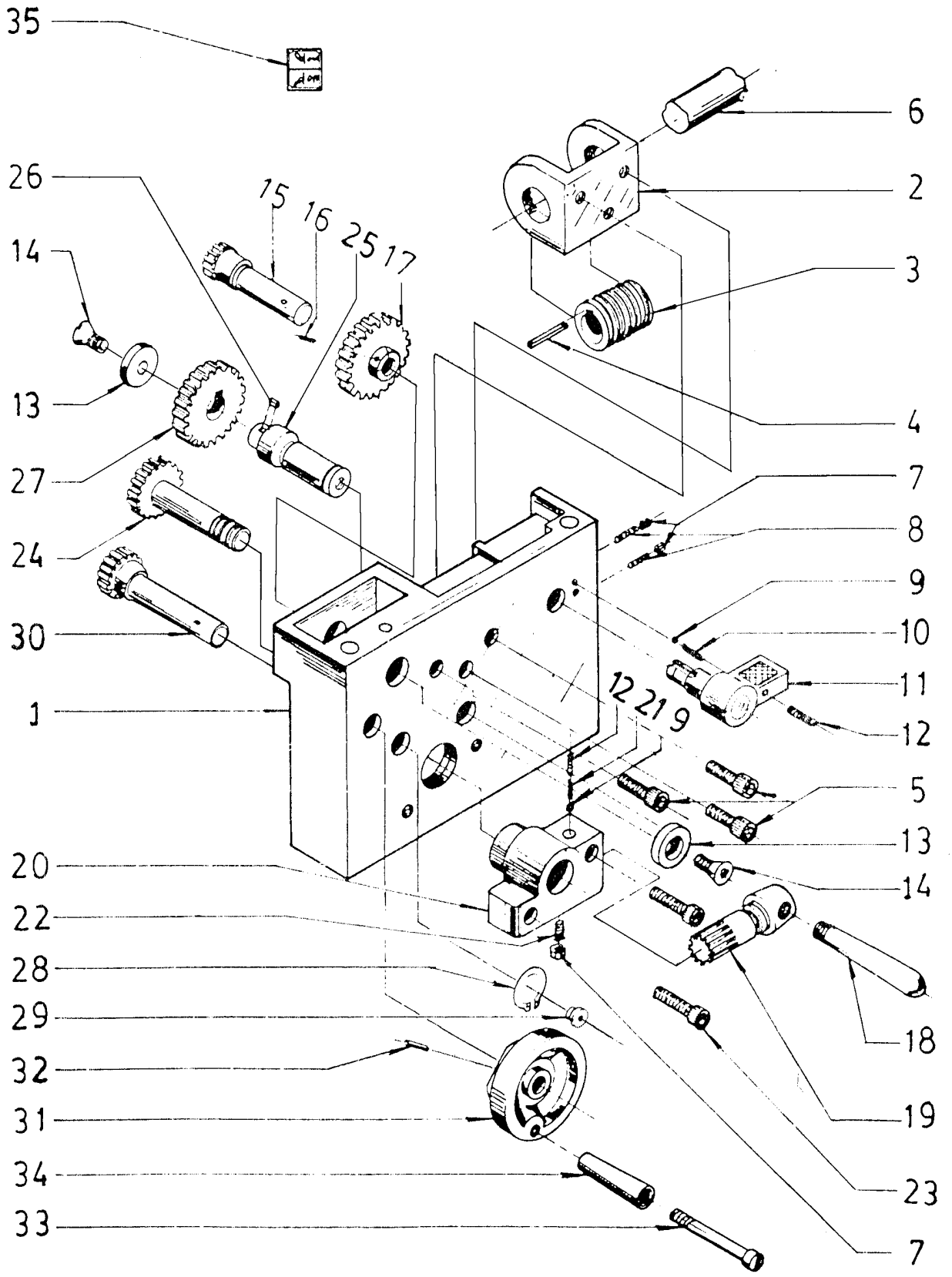
REF	PART #	DESCRIPTION
01	P4000601	GEAR BOX CASTING
02	P4000602	SHAFT
03	PK13M	KEY 5 x 5 x 70mm
04	P4000604	BUSHING
05	P4000605	GEAR 28T
06	P4000606	GEAR 26T
07	P4000607	GEAR 24T
08	P4000608	GEAR 23T
09	P4000609	GEAR 22T
10	P4000610	GEAR 20T
11	P4000611	GEAR 19T
12	P4000612	GEAR 18T
13	P4000613	GEAR 16T
14	P4000614	BUSHING
15	PR06M	EXT RETAINING RING 16mm
16	P4000616	SHAFT
17	PK10M	KEY 5 x 5 x 12mm
18	P4000618	GEAR 16T
19	P4000619	SHIFT ARM
20	P4000620	SHAFT
21	P4000621	GEAR 36T
22	PSS05M	SET SCREW M5-0.8 x 60mm
23	PR05M	EXT RETAINING RING 15mm
24	P6202	BEARING 6202-2RS
25	P4000625	LOCATING PIN
26	P4000626	SPRING
27	P4000627	BUSHING
28	P4000628	HANDLE
29	P4000629	CAP NUT
30	P4000630	FRONT COVER
31	PSB01M	CAP SCREW M6-1.0 x 16
32	P4000632	PIN
33	P4000633	BRACKET
34	PSB04M	CAP SCREW M6-1.0 x 10
35	PW04M	FLAT WASHER 10mm
36	P4000636	BUSHING
37	P4000637	PIN
38	P4000638	LABEL
39	P4000639	RIVET
40	PSB14M	CAP SCREW M8-1.25 x 20mm
41	PLW04M	LOCK WASHER
42	P4000642	OIL CUP
43	P4000643	BEARING CAP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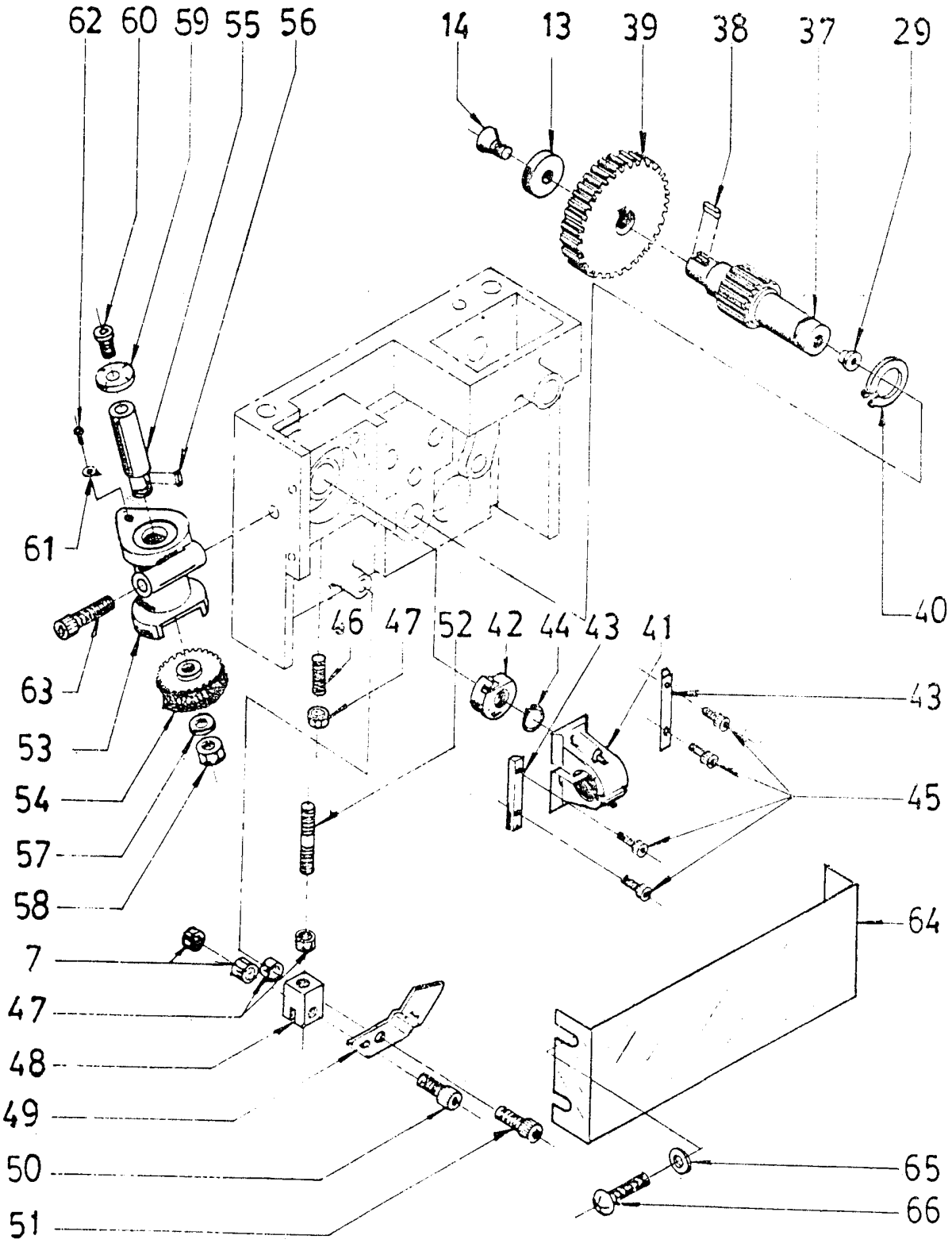
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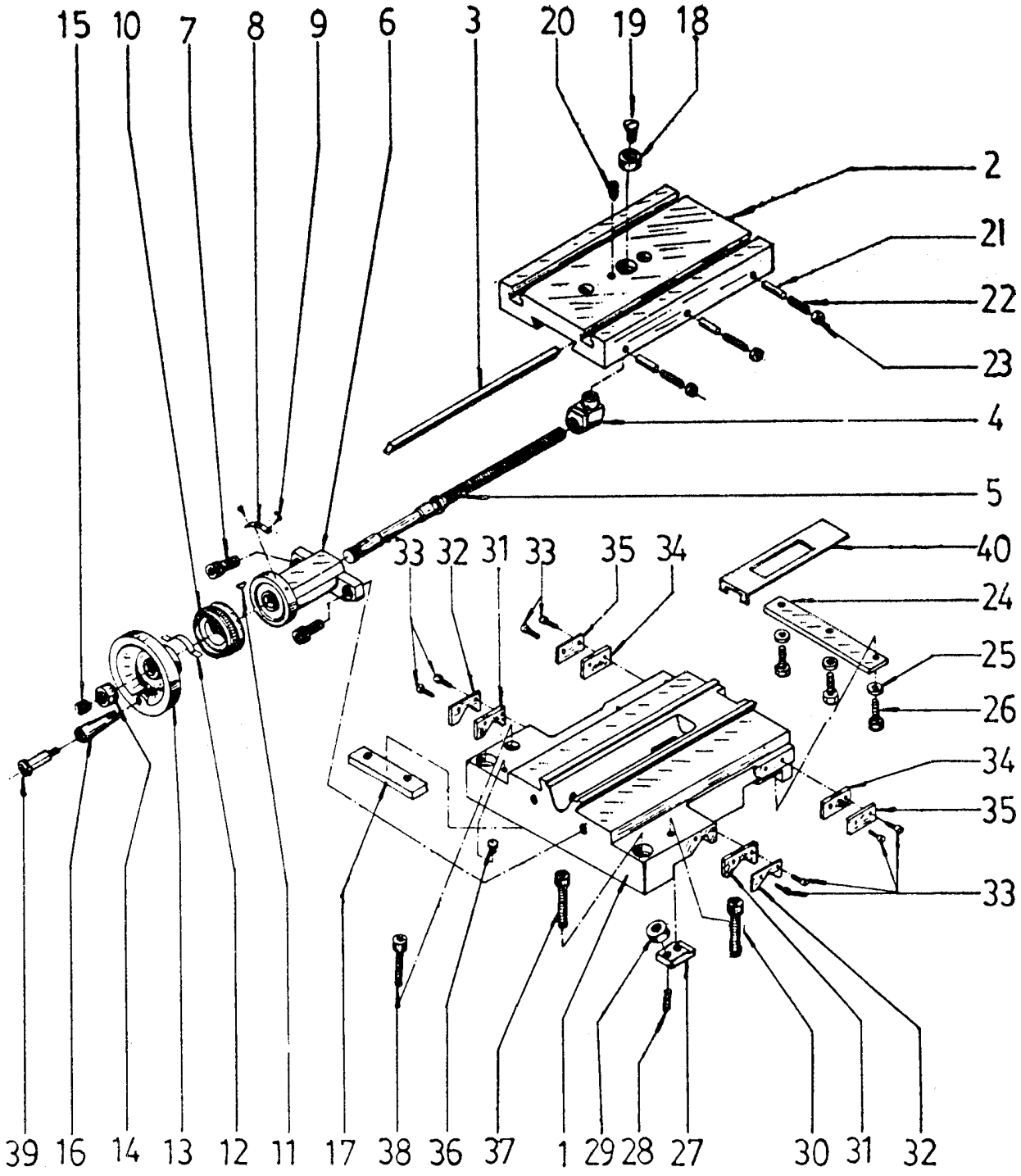
REF	PART #	DESCRIPTION
01	P4000701	APRON CASTING
02	P4000702	BRACKET
03	P4000703	WORM
04	PK52M	KEY 3 x 3 x 25mm
05	PSB06M	CAP SCREW M6-1.0 x 25
06	P4000706	FEED SCREW
07	P4000707	NUT M4-0.7
08	PSS22M	SET SCREW M4-.07 x 12
09	P4000709	STEEL BALL
10	P4000710	SPRING
11	P4000711	HANDLE
12	PSS02M	SET SCREW M6-1.0 x 16mm
13	P4000713	WASHER
14	PFH04M	FLAT HD SCR M6-1.0 x 8mm
15	P4000715	GEAR 12T
16	P4000716	SPRING
17	P4000717	GEAR 43T
18	P4000718	HANDLE
19	P4000719	GEAR 13T
20	P4000720	BRACKET
21	P4000721	SPRING
22	PSS23M	SET SCREW M4-0.7 x 10mm
23	PSB07M	CAP SCREW M6-1.0 x 30mm
24	P4000724	GEAR 43T
25	P4000725	SHAFT
26	P4000726	KEY
27	P4000727	GEAR 41T
28	PR02M	EXT RETAINING RING 14mm
29	P4000729	OIL PORT
30	P4000730	GEAR 17T
31	P4000731	HAND WHEEL
32	PRP04M	ROLL PIN 4 x 24mm
33	P4000733	HANDLE SCREW
34	P4000734	HANDLE
35	P4000735	LABEL

REF	PART #	DESCRIPTION
37	P4000737	GEAR 18T
38	PK05M	KEY 4 x 4 x 10mm
39	P4000739	GEAR 42T
40	P4000740	RING
41	P4000741	HALF NUT
42	P4000742	LOCKING CAM
43	P4000743	GUIDE
44	P4000744	EXTENSION RING
45	PSB16M	CAP SCREW M4-0.7 x 16mm
46	PSS24M	SET SCREW M5-0.8 x 25mm
47	PN06M	HEX NUT M4-0.7
48	P4000748	CONTROL BLOCK
49	P4000749	JOINT PLATE
50	PSB39M	CAP SCREW M4-0.7 x 20mm
51	PSB24M	CAP SCREW M5-0.8 x 16mm
52	P4000752	SCREW
53	P4000753	THREAD DIAL BODY
54	P4000754	WORM GEAR 64T
55	P4000755	SHAFT
56	PK39M	KEY 3 x 3 x 10mm
57	PLW04M	LOCK WASHER 8mm
58	PN03M	HEX NUT M8-1.25
59	P4000759	DIAL
60	P4000760	SCREW
61	P4000761	POINTER
62	P4000762	RIVET
63	PSB49M	CAP SCREW M6-1.0 x 60mm
64	P4000764	APRON COVER
65	PW05M	FLAT WASHER 4mm
66	PS07M	PHLP HD SCR M4-0.7 x 8mm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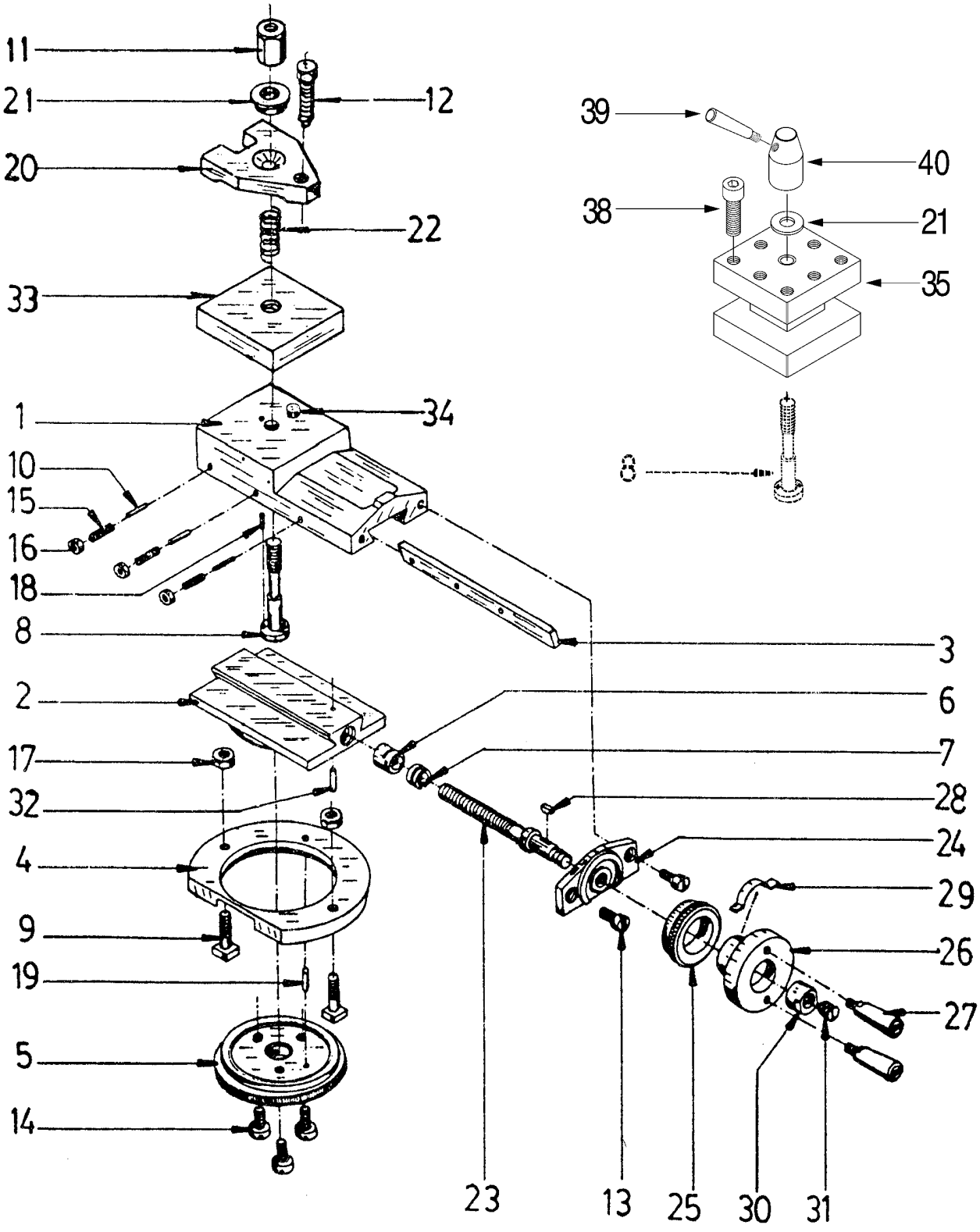
REF	PART #	DESCRIPTION
01	P4000801	SADDLE
02	P4000802	CROSS SLIDE
03	P4000803	GIB
04	P4000804	CROSS SLIDE NUT
05	P4000805	LEAD SCREW
06	P4000806	BRACKET
07	PSB24M	CAP SCREW M5-0.8 x 16mm
08	P4000808	PLATE
09	P4000809	RIVET 2 X 5
10	P4000810	GRADUATED DIAL
11	P4000811	KEY 3X13
12	P4000812	SPRING
13	P4000731	HANDWHEEL
14	P4000814	SPECIAL HEX NUT
15	PSS17M	SET SCREW M8-1.25 x 6mm
16	P4000734	HANDLE
17	P4000817	SLIDE BLOCK
18	P4000818	BUSHING
19	PFH02M	FLAT HD SCR M6-1.0 x
12mm		
20	PSS04M	SET SCREW M6-1.0 x 12mm
21	P4000821	PIN
22	PSS22M	SET SCREW M4-0.7 x 12mm
23	PN04M	HEX NUT M4-0.7
24	P4000824	APRON TENSION BAR
25	PW03M	FLAT WASHER M6
26	PSB01M	CAP SCREW M6-1.0 x 16mm
27	P4000827	CLIP
28	PSS25M	SET SCREW M6-1.0 x 20mm
29	PN01M	HEX NUT M6-1.0
30	PSB06M	CAP SCREW M6-1.0 x 25mm
31	P4000831	WAY WIPER
32	P4000832	WIPER CLAMP
33	PS17M	PHLP HD SCR M4-0.7 x 6mm
34	P4000834	WAY COVER
35	P4000835	COVER MOUNT
36	P4000836	OIL PORT
37	PSB13M	CAP SCR M8-1.25 x 30mm
38	PSB06M	CAP SCR M6-1.0 x 25mm
39	P1550633	SPECIAL BOLT
40	P4000840	CHIP GUARD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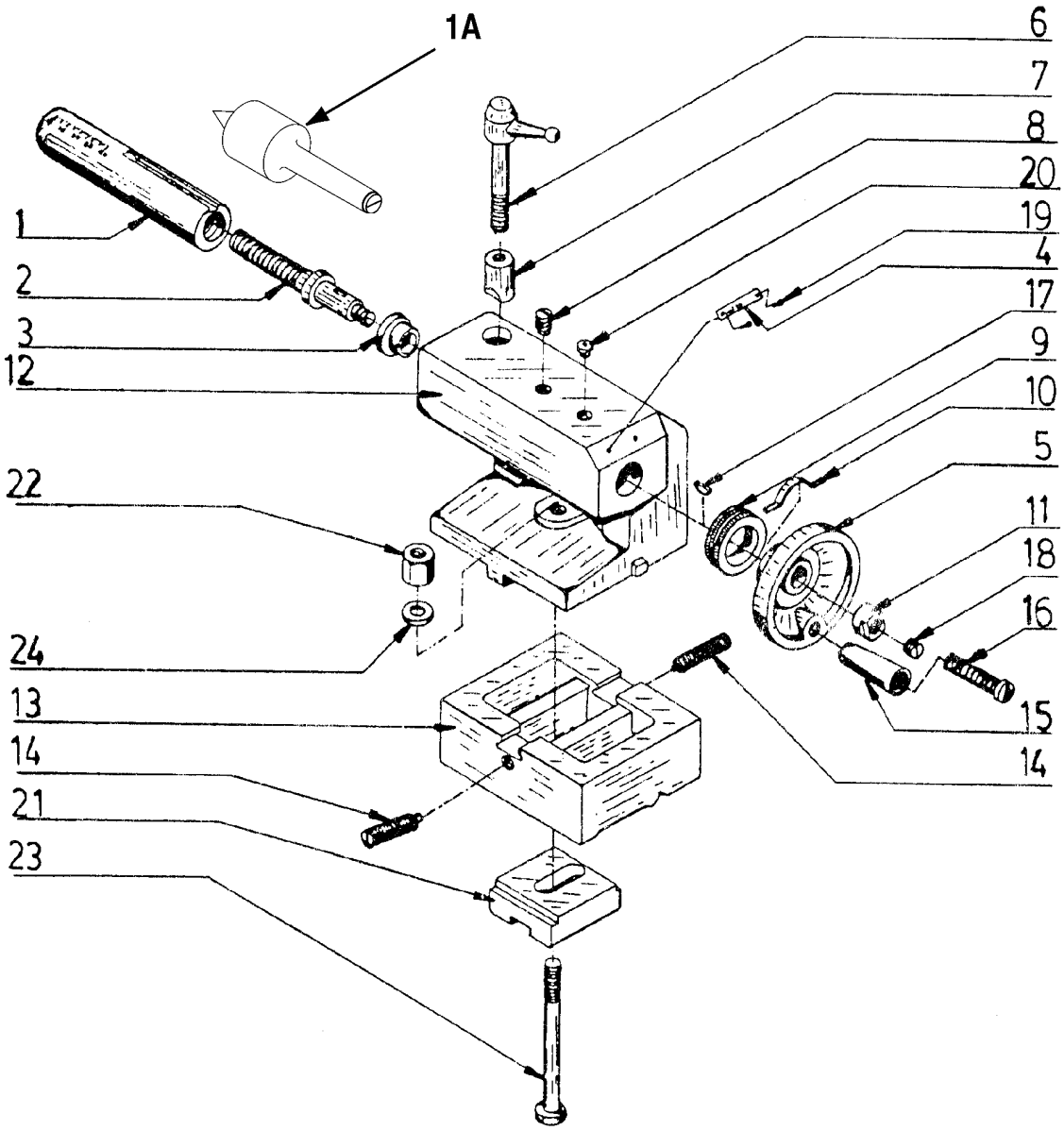
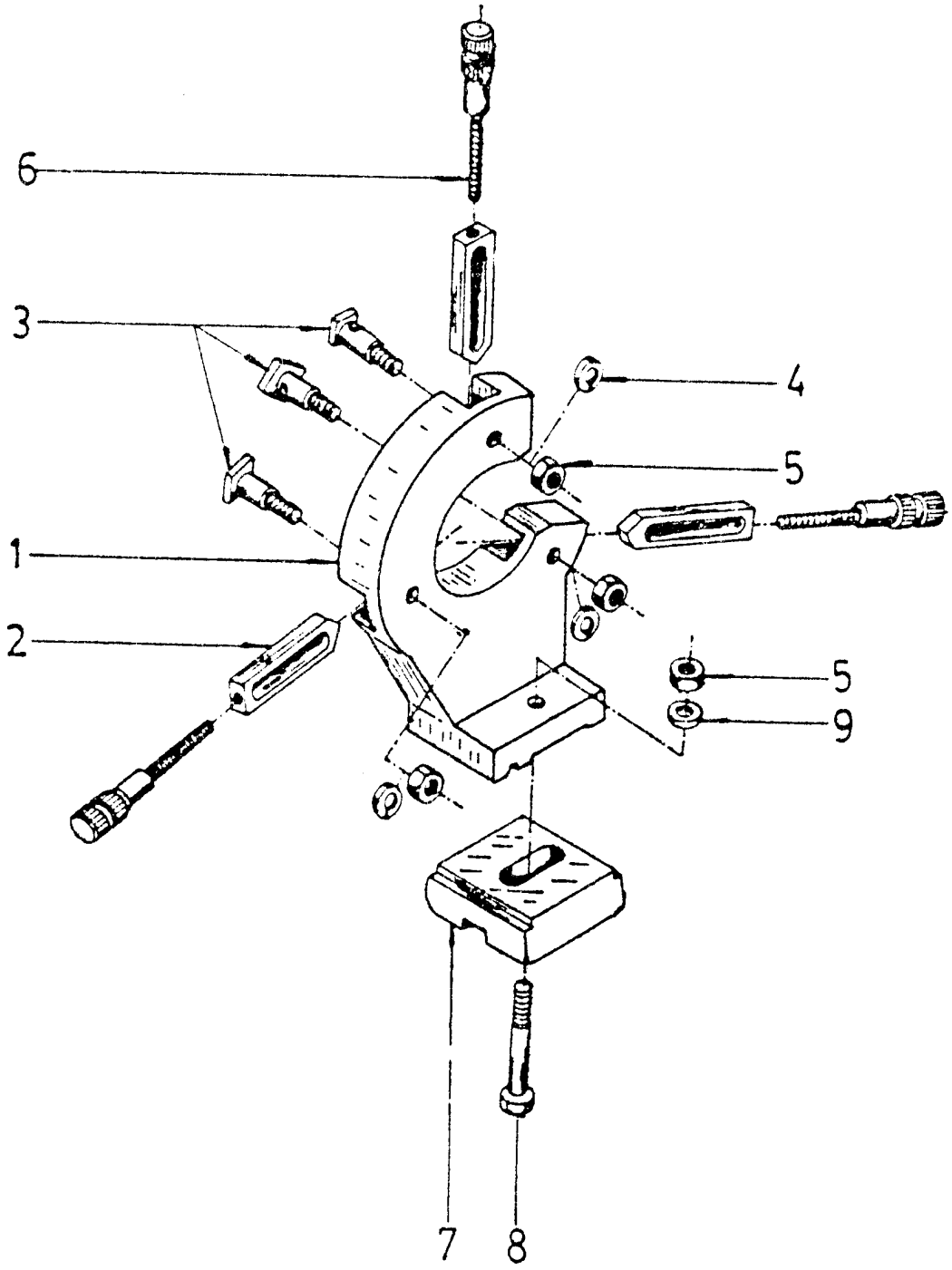
REF	PART #	DESCRIPTION
01	P4000901	COMPOUND SLIDE
02	P4000902	SWIVEL BASE
03	P4000903	GIB
04	P4000904	CLAMPING RING
05	P4000905	GRADUATED DIAL
06	P4000906	SLIDE NUT
07	P4000907	ADJUSTING SCREW
08	P4000908	TOOL POST STUD
09	P4000909	T-SCREW
10	P4000910	PIN
11	P4000911	TOOL POST NUT
12	PB26M	HEX BOLT M8-1.25 x 30mm
13	PSB50M	CAP SCREW M5-0.8 x 10mm
14	PFH02M	FLAT HD SCR M6-1.0 x 12mm
15	PSS23M	SET SCREW M4-0.7 x 10mm
16	PN04M	HEX NUT M4-0.7
17	PN01M	HEX NUT M6-1.0
18	P4000918	LOCK PIN 3 X 8
19	P4000919	LOCK PIN 3 X 14
20	P4000920	TOOL CLAMP
21	PW01M	FLAT WASHER 8mm
22	P4000922	SPRING
23	P4000923	LEAD SCREW
24	P4000924	LEAD SCREW MOUNT
25	P4000925	GRADUATED DIAL
26	P4000926	HANDWHEEL
27	P4000927	HANDLE
28	PK39M	KEY 3 x 3 x 10mm
29	P4000929	CURSOR
30	P4000930	THREADED COLLAR
31	PSS17M	SET SCREW M8-1.25 x 6mm
32	P4000932	LOCK PIN 3X12
33	P4000933	PLATE
34	P4000934	PIN
35	P4000935	TOOL REST
38	PSB13M	CAP SCREW M8-1.25 x 30mm
39	P4000939	LOCK HANDLE
40	P4000940	LOCK NUT

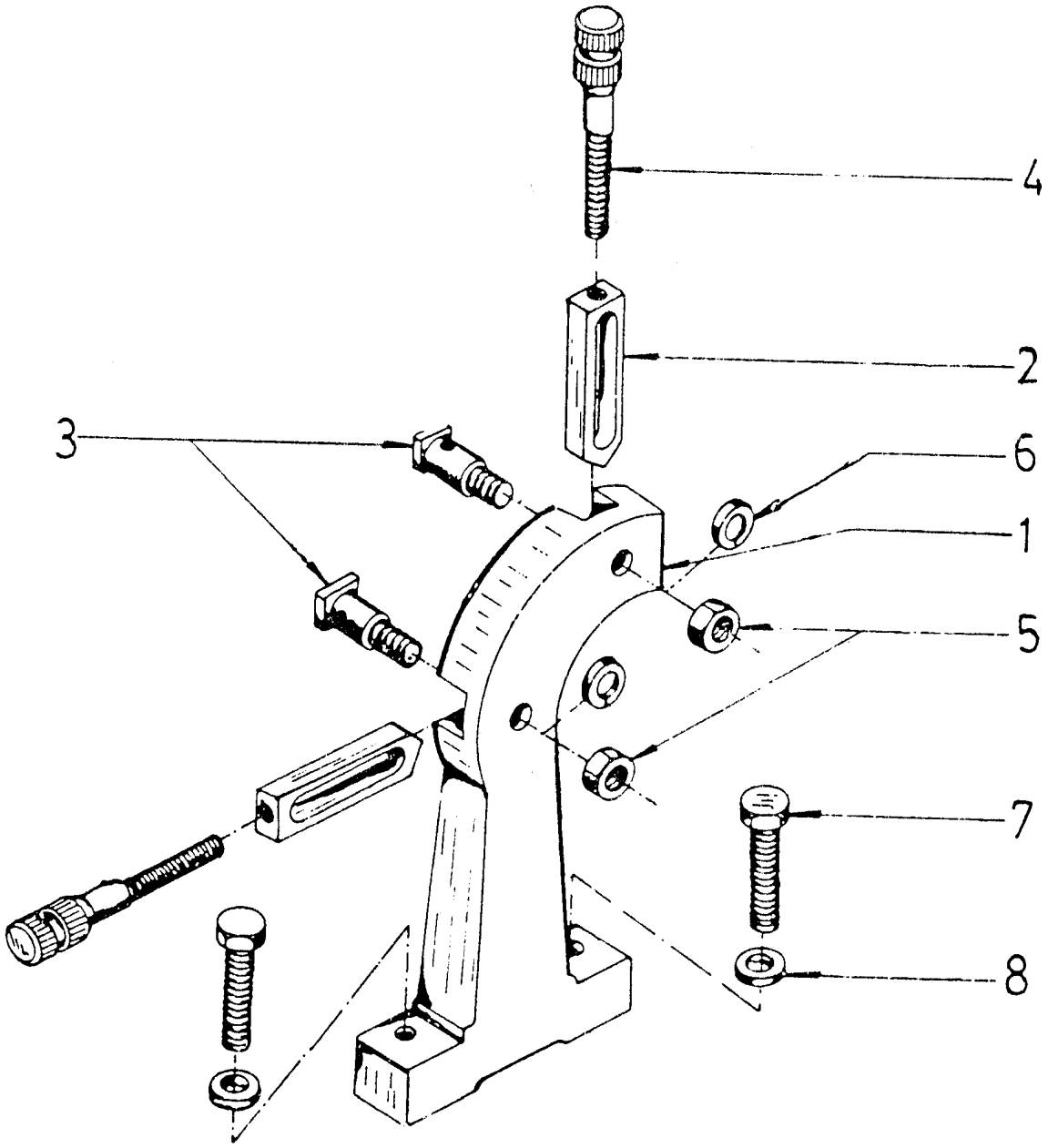


REF	PART #	DESCRIPTION
01	P40001001	TAILSTOCK RAM
1A	P40001001A	LIVE CENTER MT #2
02	P40001002	LEAD SCREW
03	P40001003	BUSHING
04	P40001004	OFF SET INDICATOR PLATE
05	P40001005	HAND WHEEL
06	P40001006	LEVER
07	P40001007	CLAMP
08	PSS05M	SET SCREW M5-0.8 x 10mm
09	P40001009	GRADUATED DIAL
10	P40001010	CURSOR
11	P40001011	NUT
12	P40001012	TAILSTOCK BODY
13	P40001013	TAILSTOCK BASE
14	PSS21M	SET SCR M8-1.25 x 25mm
15	P40001015	HANDLE

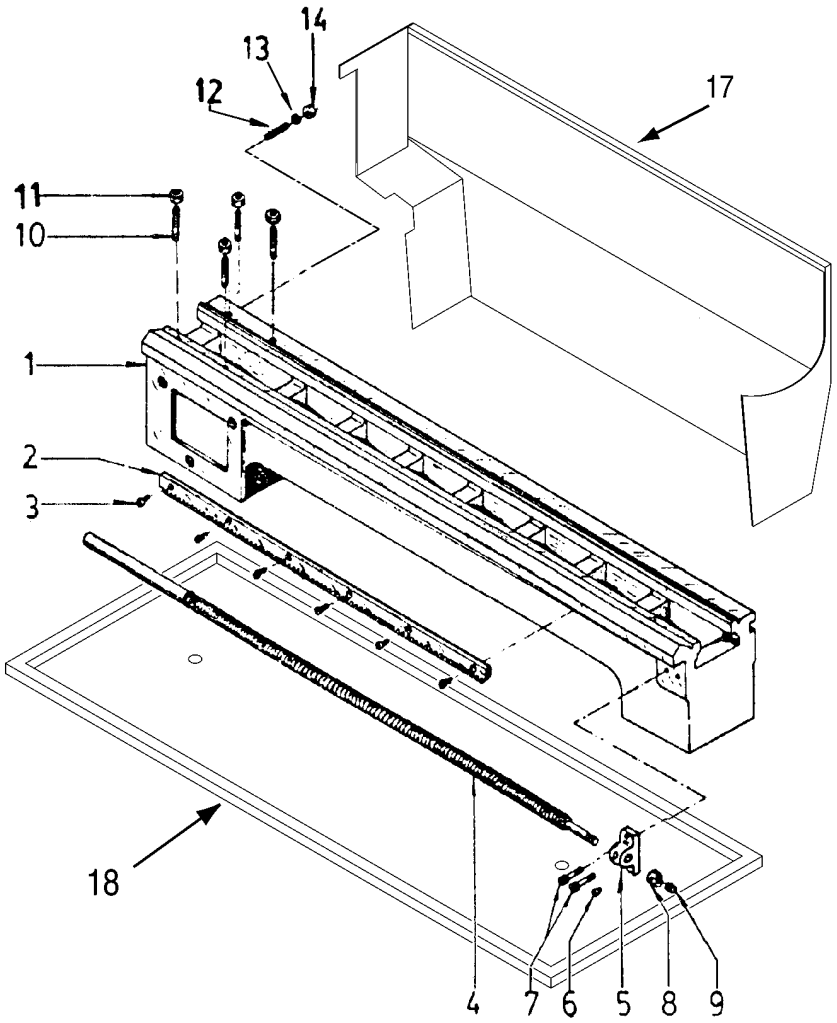
REF	PART #	DESCRIPTION
16	P40001016	HANDLE SCREW
17	PK39M	KEY 3 x 3 x 10mm
18	PSS20M	SET SCREW M8-1.25 x 8mm
19	P40001019	RIVET
20	P40001020	OIL PORT
21	P40001021	CLAMPING PLATE
22	PN03M	HEX NUT M8-1.25
23	P40001023	SCREW
24	PW01M	FLAT WASHER 8mm



REF	PART #	DESCRIPTION
01	P40001101	REST CASTING
02	P40001102	JAW
03	P40001103	SPECIAL SCREW
04	PLW04M	LOCK WASHER 8mm
05	PN03M	HEX NUT M8-1.25
06	P40001106	ADJUSTING SCREW
07	P40001107	CLAMPING PLATE
08	PB28M	HEX BOLT M8-1.25 x 6mm
09	PW01M	FLAT WASHER 8mm



REF	PART #	DESCRIPTION
01	P40001201	REST CASTING
02	P40001202	JAW
03	P40001203	SPECIAL SCREW
04	P40001204	ADJUSTING SCREW
05	PN03M	HEX NUT M8-1.25
06	PW01M	FLAT WASHER 8mm
07	PSB07M	CAP SCREW M6-1.0 x 30mm
08	PW03M	FLAT WASHER 6mm



REF	PART #	DESCRIPTION
01	P40001301	BED
02	P40001302	RACK
03	PSB18M	CAP SCREW M4-0.7 x 8mm
04	P4000706	FEED SCREW
05	P40001305	BRACKET
06	P40001306	OIL PORT
07	PSB02M	CAP SCR M6-1.0 x 20mm
08	P40001308	NUT
09	PSS17M	SET SCREW
10	P40001310	STUD M8-1.25 X 28
11	PN03M	HEX NUT
12	PSS12M	SET SCR M8-1.25 x 6mm
13	PW03M	FLAT WASHER 6mm
14	PN01M	HEX NUT M6-1.0
15	PB01M	HEX BOLT M10-1.5 x 30mm
16	P40001316	TOOL BOX
17	P40001317	CHIP SHIELD
18	P40001318	CHIP PAN

WARRANTY AND RETURNS

Grizzly Imports, 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.

WARRANTY CARD

NAME_____ PHONE NUMBER_____
STREET_____
CITY_____STATE_____ZIP _____
MODEL# G4000 9" x 19" Lathe PURCHASED FROM GRIZZLY, BELLINGHAM, WA ☐
OR WILLIAMSPORT, PA ☐
INVOICE#_____

The following information is given on a voluntary basis. This information will be used for marketing purposes to help Grizzly develop better products. Your name will be included in our mailing **list** only. It will not be sold to other companies. of course, all information is strictly confidential.

1. How did you find out about us?

__Advertisement __Friend __Other_____
__Catalog __Card deck

2. Do you think your machine represents good value? __YES __NO

3. Would you allow us to use your name as a reference for Grizzly customers in your area? __YES __NO
(Note: Your **name** will be used a maximum of three **times.)**

4. To which of the following publications do you subscribe? Check all that apply.

__Home Shop Machinist __Rifle Magazine Other _____
__Projects in Metal __Hand Loader Magazine
__Modeltec __Precision Shooter
__Live Steam __RC Modeler
__Shotgun News __Model Airplane News

5. What is your annual household income?

__$20,000-$30,000 __$50,001-$60,000 __$80,000-$90,000
__$30,001-$40,000 __$60,001-$70,000 __+$90,000
__$40,001-$50,000 __$70,001-$80,000

6. To which age group do you belong?

__20-30 __41-50 __61-70
__31-40 __51-60 __+70

7. Which of the following machines or accessories do you own? Check all that apply.

__Engine Lathe __Abrasive Cutoff __Sheet Metal Machine
__Band Saw (Metal) __Arc Welder __Other _____
__Band Saw (Wood) __Oxy/Ac. Outfit
__Milling Machine __Air Compressor
__Bench Grinder __Drill Press

8. How many of the machines you checked in Question 7 are Grizzly machines? _____

9. Which of the following tooling and accessories do you own? Check all that apply.

__Milling Vises __Collet Closer __Digital Readout
__Indexing Head __Taper Attachment __Tool Post Grinder
__Rotary Table __Boring Head __Other _____

10. In the space below, list three tools you would like Grizzly to carry.

11. Of all the mail order metalworking company's you have purchased from, how do you rate Grizzly in terms of overall customer satisfaction?

__The best __Above average __Average
__Below average __The worst

12. Comments_____

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P.O. BOX 2069
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