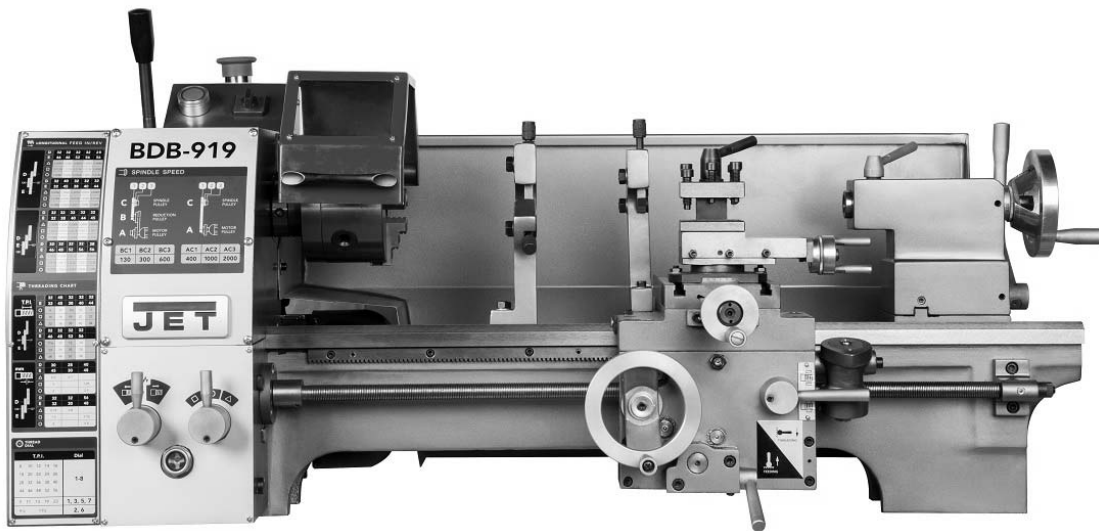




Operating Instructions and Parts Manual

9x19, 9x29-inch Belt Drive Bench Lathes

Models BDB-919, -929





1.0 IMPORTANT SAFETY INSTRUCTIONS

1.1 GROUNDING INSTRUCTIONS

1. All grounded, cord-connected tools:

In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.

Do not modify the plug provided - if it will not fit the outlet, have the proper outlet installed by a qualified electrician.

Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.

Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded.

Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the tool's plug.

Repair or replace damaged or worn cord immediately.

2. Grounded, cord-connected tools intended for use on a supply circuit having a nominal rating less than 150 volts:

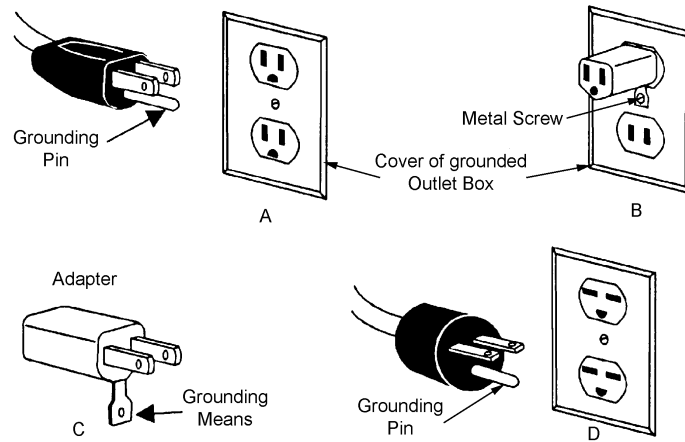
This tool is intended for use on a circuit that has an outlet that looks like the one illustrated in Sketch A. The tool has a grounding plug that looks like the plug illustrated in Sketch A. A temporary adapter, which looks like the adapter illustrated in Sketches B and C, may be used to connect this plug to a 2-pole receptacle as shown in Sketch B if a properly grounded outlet is not available. The temporary adapter should be used only until a properly grounded outlet can be installed by a qualified electrician. (This adapter is not permitted in Canada) The green-colored rigid ear, lug, and the like, extending from the adapter must be connected to a permanent ground such as a properly grounded outlet box.

3. Grounded, cord-connected tools intended for use on a supply circuit having a nominal rating between 150 - 250 volts, inclusive:

This tool is intended for use on a circuit that has an outlet that looks like the one illustrated in Sketch D. The tool has a grounding plug that looks like the plug illustrated in Sketch D. Make sure the tool is connected to an outlet having the same configuration as the plug. No adapter is available or should be used with this tool. If the tool must be reconnected for use on a different type of electric circuit, the reconnection should be made by qualified service personnel; and after reconnection, the tool should comply with all local codes and ordinances.

4. Permanently connected tools:

This tool should be connected to a grounded metal permanent wiring system; or to a system having an equipment-grounding conductor.



1.2 For all tools as applicable

1. READ AND UNDERSTAND the warnings posted on the machine and in this manual. Failure to comply with all of these warnings may cause serious injury.
2. Replace the warning labels if they become obscured or removed.
3. This lathe is designed and intended for use by properly trained and experienced personnel only. If you are not familiar with the proper and safe operation of a lathe, do not use until proper training and knowledge have been obtained.
4. Do not use this lathe for other than its intended use. If used for other purposes, JET disclaims any real or implied warranty and holds itself harmless from any injury that may result from that use.
5. KEEP GUARDS IN PLACE and in working order.
6. REMOVE ADJUSTING KEYS AND WRENCHES. Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
7. KEEP WORK AREA CLEAN. Cluttered areas and benches invite accidents.
8. DON'T USE IN DANGEROUS ENVIRONMENT. Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well lighted.
9. KEEP CHILDREN AWAY. All visitors should be kept safe distance from work area.
10. MAKE WORKSHOP KID PROOF with padlocks, master switches, or by removing starter keys.
11. DON'T FORCE TOOL. It will do the job better and safer at the rate for which it was designed.
12. USE RIGHT TOOL. Don't force tool or attachment to do a job for which it was not designed.
13. WEAR PROPER APPAREL. Do not wear loose clothing, gloves, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. Nonslip footwear is recommended. Wear protective hair covering to contain long hair.
14. ALWAYS USE SAFETY GLASSES. Always wear ANSI Z87.1 approved safety glasses or face shield while using this lathe. (Everyday eyeglasses only have impact resistant lenses; they are not safety glasses.)
15. SECURE WORK. Use clamps or a vise to hold work when practical. It's safer than using your hand and it frees both hands to operate tool.
16. DON'T OVERREACH. Keep proper footing and balance at all times.
17. MAINTAIN TOOLS WITH CARE. Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
18. Give your work undivided attention. Looking around, carrying on a conversation and "horse-play" are careless acts that can result in serious injury.
19. DISCONNECT TOOLS before servicing; when changing accessories, such as blades, bits, cutters, and the like.
20. REDUCE THE RISK OF UNINTENTIONAL STARTING. Make sure switch is in off position before plugging in.
21. USE RECOMMENDED ACCESSORIES. Consult the owner's manual for recommended accessories. The use of improper accessories may cause risk of injury to persons.

22. NEVER STAND ON TOOL. Serious injury could occur if the tool is tipped or if the cutting tool is unintentionally contacted.
23. 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.
24. DIRECTION OF FEED. Feed work into a blade or cutter against the direction of rotation of the blade or cutter only.
25. NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF. Don't leave tool until it comes to a complete stop.
26. CALIFORNIA PROPOSITION 65 WARNING: This product contains chemicals known to the State of California to cause cancer, or birth defects or other reproductive harm.
27. This product, when used for welding, cutting, or working with metal, produces fumes, gases, or dusts which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California Health and Safety Code Section 25249.5 et seq.)
28. Do not operate this machine while tired or under the influence of drugs, alcohol or any medication.
29. Tighten all locks before operating.
30. USE PROPER EXTENSION CORD. Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. Table 1 shows the correct size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gage. The smaller the gage number, the heavier the cord.

Ampere Rating		Volts	Total length of cord in feet			
		120 V	25 ft.	50 ft.	100 ft.	150 ft.
		240 V	50 ft.	100 ft.	200 ft.	300 ft.
More than	Not more than	AWG				
0	6		18	16	16	14
6	10		18	16	14	12
10	12		16	16	14	12
12	16		14	12	Not recommended	
Only the applicable parts of the Table need to be included. For instance, a 120-volt product need not include the 240-volt heading.						

*Table 1
Minimum Gage for Cord*

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3.0 Introduction

This manual is provided by JET covering the safe operation and maintenance procedures for a JET Model BDB-919/929 Bench Lathe. This manual contains instructions on installation, safety precautions, general operating procedures, maintenance instructions and parts breakdown. This machine has been designed and constructed to provide consistent, long-term operation if used in accordance with instructions set forth in this manual. If there are any questions or comments, please contact either your local supplier or JET.

This manual is not intended to be a training guide for lathe operations, or tool and workpiece selection. Consult a machinery handbook or shop supervisor for information on proper speed and feed rates for specific materials, or type of cutter suitable for a particular operation. Whatever accepted methods or materials are used, always make personal safety a priority.

If there are questions or comments, please contact your local supplier or JET.

Retain this manual for future reference. If the machine transfers ownership, the manual should accompany it.

⚠WARNING Read and understand the entire contents of this manual before attempting assembly or operation! Failure to comply may cause serious injury!

Register your product using the mail-in card provided, or register online: <http://www.jettools.com/us/en/service-and-support/warranty/registration/>

4.0 Specifications

Model number	BDB-919	BDB-929
Stock number	321378	321379
Motor and Electricals		
Motor type	TEFC induction	
Horsepower	3/4 HP (550W)	
Phase	single	
Voltage	115 V	
Cycle	60 Hz	
Listed FLA (full load amps)	8.5 A	
Motor speed	1720 RPM	
Power cord	3 x 1.31 mm ²	
Power plug installed	15A	
Recommended circuit size ¹	15A	
Sound emission without load ²	88 db	
Capacities		
Swing over bed	8-3/4 in.	
Swing over cross slide	5 in.	
Distance between centers	18 in.	27-1/2 in.
Steady rest capacity	1/4 – 1-3/4 in.	
Follow rest capacity	1-3/4 in.	
Headstock		
Hole through spindle	3/4 in.	
Spindle Nose	1-1/2 in. x 8 TPI	
Taper in spindle	MT-3	
Spindle bearing type	Tapered roller	
Number of spindle speeds	6	
Range of spindle speeds	130 – 2000 RPM	

	BDB-919	BDB-929
Gearbox		
Number of longitudinal feeds	60	
Range of longitudinal feeds	0.0006 – 0.037 in.	
Number of inch threads	27	
Range of inch threads	8 – 56 TPI	
Number of metric threads	12	
Range of metric threads	0.5 – 3.5 mm	
Compound and Carriage		
Tool post type	Single and 4-way	
Maximum tool size	1/2 x 1/2 in.	
Maximum compound slide travel	1-7/8 in.	
Maximum cross slide travel	4-1/4 in.	
Maximum carriage travel	17-1/2 in.	26-1/2 in.
Tailstock		
Tailstock spindle travel	1-9/16 in.	
Diameter of tailstock spindle	1-1/6 in.	
Taper in tailstock spindle	MT-2	
Main materials		
Headstock	Cast iron	
Bed	Cast iron	
Apron/Saddle	Cast iron	
Tailstock	Cast iron	
Splash guard	Steel	
Dimensions		
Bed width	4-1/2 in.	
Overall dimensions (LxWxH)	41 x 22 x 20 in.	51 x 22 x 20 in.
Shipping dimensions (LxWxH)	41 x 22 x 22 in.	51 x 22 x 22 in.
Weights		
Net weight (approx.)	250 lbs	287 lbs
Shipping weight (approx.)	293 lbs	344 lbs

¹ subject to local and national electrical codes.

² The specified values are emission levels and are not necessarily to be seen as safe operating levels. As workplace conditions vary, this information is intended to allow the user to make a better estimation of the hazards and risks involved only.

L = length, W = width, H = height, TPI = threads per inch

n/a = not applicable

The specifications in this manual were current at time of publication, but because of our policy of continuous improvement, JET reserves the right to change specifications at any time and without prior notice, without incurring obligations.

5.0 Unpacking

Open shipping container and check for shipping damage; report any damage immediately to your distributor and shipping agent. Do not discard any shipping material until the Lathe is assembled and running properly. Compare the contents of your container with the following parts list to make sure all parts are intact. Missing parts, if any, should be reported to your distributor. Read the instruction manual thoroughly for assembly, maintenance and safety instructions.

5.1 Contents of shipping container

Referring to Figure 1:

- 1 Lathe (not shown)
- 1 7-1/4" Four-Jaw Independent Chuck (A)
- 1 Faceplate (B)
- 1 4" Three-Jaw Universal Chuck (pre-mounted)
- 1 Four Way Tool Post (pre-mounted)
- 1 Steady Rest (pre-mounted)
- 1 Follow Rest (pre-mounted)
- 1 Operator's Manual (not shown)
- 1 Product Registration Card (not shown)
- 2 Chuck Reversing Jaws, Set of 3 (F)
- 1 MT-2 Center* (H)
- 1 MT-3 Center* (I)
- 1 56T Gear (pre-mounted)
- 1 52T Gear* (J)
- 1 48T Gear* (K)
- 1 46T Gear* (L)
- 1 45T Gear* (M)
- 1 44T Gear* (N)
- 1 40T Gear* (O)
- 1 38T Gear* (P)
- 2 32T Gear* (Q)
- 1 30T Gear* (R)
- 1 28T Gear (pre-mounted)
- 1 Tension Roller Lever (S)
- 1 Handle (T)
- 1 Female Chuck Key* (U)
- 2 Male Chuck Keys (V)
- 1 #1 Cross Point Screwdriver* (W)
- 1 #1 Flat Blade Screwdriver* (X)
- 1 5pc Hex Wrench Set (Y)*
- 1 4mm T-Handle Hex Wrench* (not shown)
- 2 Open End Wrenches – 8/10mm, 12/14mm* (Z)

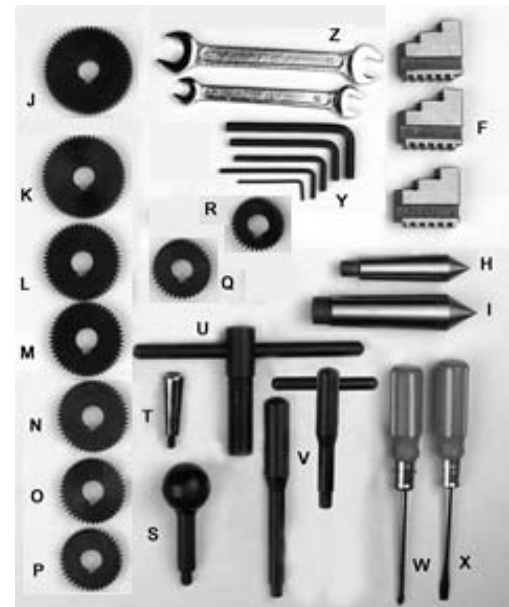
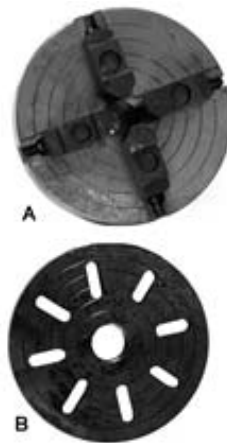


Figure 1

* parts marked with an asterisk are included in the tool box, stock no. BDB919-TBC

CAUTION

The three jaw chuck and the face plate have a set screw on their flanges that secures them to the threaded spindle. Before removing the three jaw chuck or the faceplate, remove the set screw completely from the flange. Failure to remove the set screw may cause damage to the threads on the spindle. When installing either the jaw chuck or the faceplate, tighten the set screw firmly to prevent the chuck or the faceplate from coming off the spindle during operation.

WARNING

Read and understand the entire contents of this manual before attempting set-up or operation! Failure to comply may cause serious injury.

6.0 Setup and preparation for operation

To avoid twisting the bed, make sure the location to which the lathe will be moved is absolutely flat and level. Place a machinist's level on the bed ways and check for level side-to-side and front to rear. If stand mounted, the stand must be fastened to the floor. (An optional JET stand is available for the lathe BDB-919, order stock no. 321375)

Remove rust protectant from all surfaces with a soft rag and kerosene, diesel oil, or a mild solvent. Do not use gasoline, paint thinner, or lacquer thinner, as these may damage painted surfaces. After cleaning, wipe with a clean, dry cloth and cover all machined surfaces with a light film of machine oil.

Carefully read the grounding instructions on pages 2 and 3. It is recommended that the BDB-919 and BDB-929 Lathes be connected to a dedicated, minimum 25 amp circuit with a circuit breaker or time delay fuse. **Local codes take precedence over recommendations.**

7.0 General description

7.1 Lathe bed

The Lathe bed is made of high-grade iron. By combining high cheeks with strong cross ribs, a bed of low vibration and rigidity is produced. The main motor is mounted to the rear of the bed (Figure 2).

7.2 Headstock

The headstock (Figure 3) is cast from high grade, low vibration cast iron. It is bolted to the bed with four screws and uses four adjusting screws for alignment. In the head the large main spindle is mounted on two precision taper roller bearings. The hollow spindle is a Morse taper No.3 with a 3/4" bore

A quick change of the belt can be accomplished by easing the tension on the idler (Figure 4).

To protect the machine against accidental damage, a clutch is fitted to the reduction pulley at the 130 R.P.M. speed.

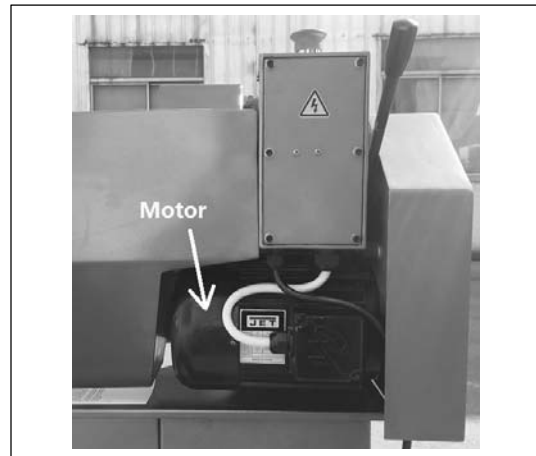


Figure 2



Figure 3

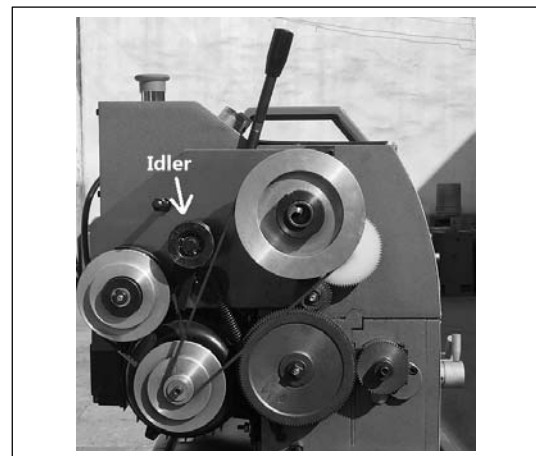


Figure 4

7.3 Carriage

The carriage (Figure 5) is made from high-grade cast iron. The sliding parts are smooth ground. They fit the V on the bed without play. The lower sliding parts can be easily and simply adjusted. The cross slide is mounted on the carriage and moves on a dovetail. Play in the cross slide may be adjusted with the gibs.

Move the cross slide using the small handwheel (Figure 5). There is a graduated collar on the handwheel. One graduated mark equals 0.0254 millimeters or 0.001 inches.

The top slide, mounted on the cross slide, can be rotated 360°. The top slide and the cross slide travel in dovetailed slides and have gibs, adjustable nuts, and graduated collars.

A four-way tool post is fitted on the top slide (Figure 6). The four-way tool post can be converted to a single tool holder with parts enclosed in the toolbox. See sect. 13.11.1 for assembly of tool holder.

For accurate facing operations, the carriage can be locked by tightening the hex socket cap screw (A, Figure 7).

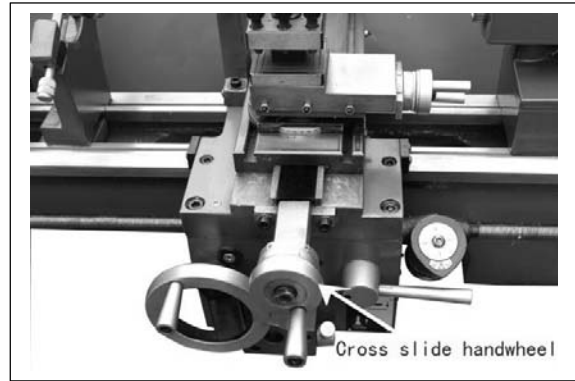


Figure 5

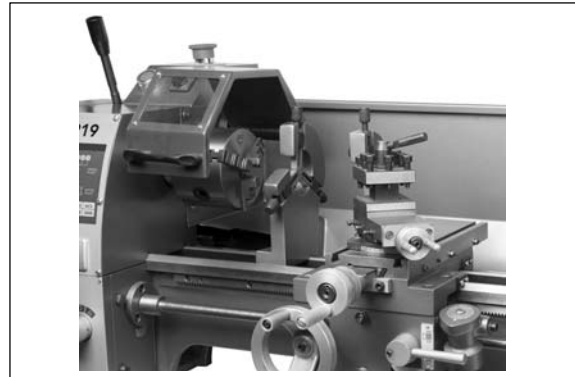


Figure 6

7.4 Apron

The apron (Figure 8) is mounted on the bed. A half nut is fitted to the apron. The half nut gibs can be adjusted from the outside.

The half nut is engaged by the half nut lever.

The rack mounted on the bed, and a pinion operated by the large handwheel on the carriage, allow for quick travel of the apron.

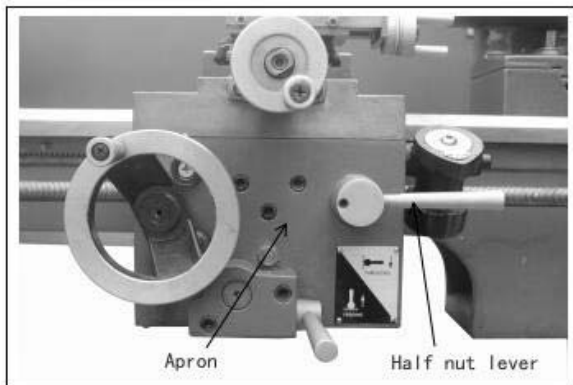


Figure 8

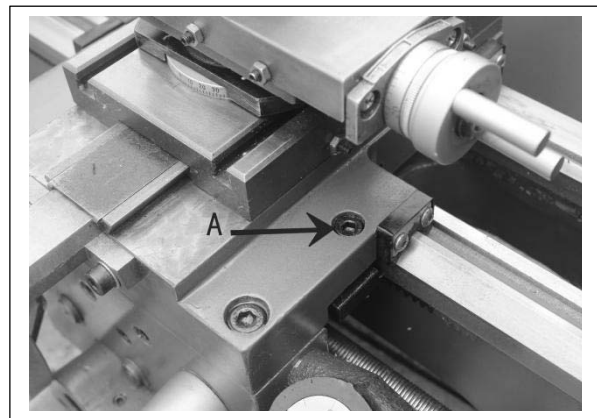


Figure 7

7.5 Tailstock

The tailstock (Figure 9) slides on a V-way and can be clamped at any location. The tailstock has a heavy duty spindle with a Morse taper No.2 socket and a graduated scale. The spindle can be clamped at any location with a clamping lever. The spindle is moved with a handwheel at the end of the tailstock.

7.6 Lead screw

The lead screw (Figure 10) is mounted on the front of the machine bed. It is connected to the gearbox at the left for automatic feed and is supported by a bearing on both ends. The nut and setscrew on the right end are designed to take up play on the leadscrew.

7.7 Gear box

The gearbox (Figure 11) is made from high quality cast iron and is mounted on the left side of the machine bed. The motor drives through handle changeable speeds. Always raise idler (Figure 4) to the disengaged position when changing speeds.

7.8 Drive and electrical equipment

The main drive is provided by a single phase, A.C. motor mounted on the rear of the lathe bed.

The forward-reverse switch, emergency stop switch and power light (A, Figure 11) are mounted on the front of the electrical box. The motor condenser is also contained in this box.

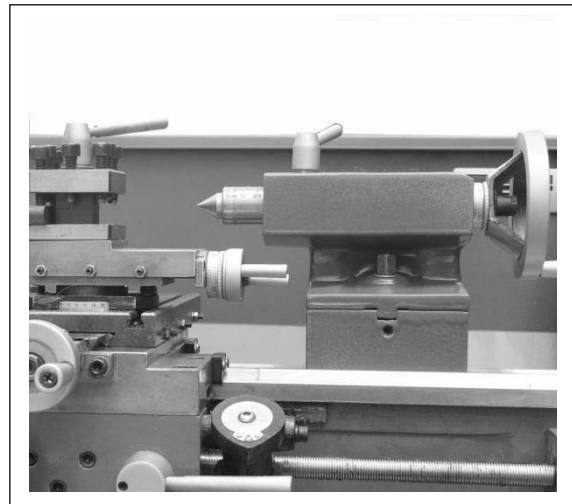


Figure 9

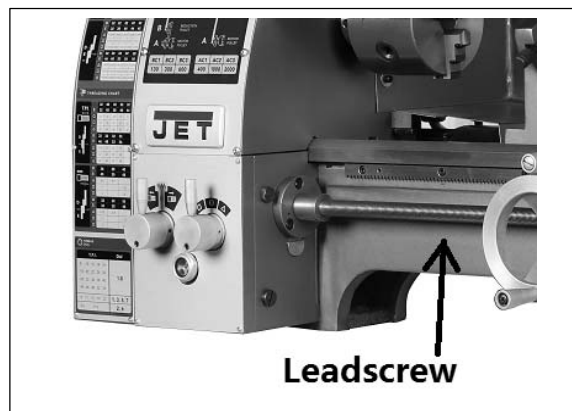


Figure 10

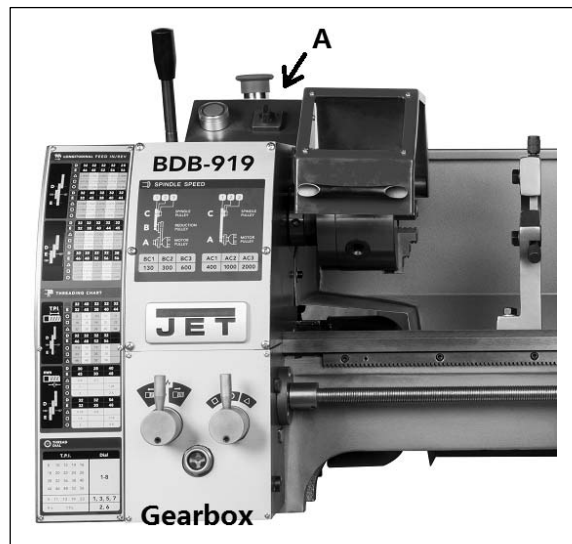


Figure 11

8.0 Controls

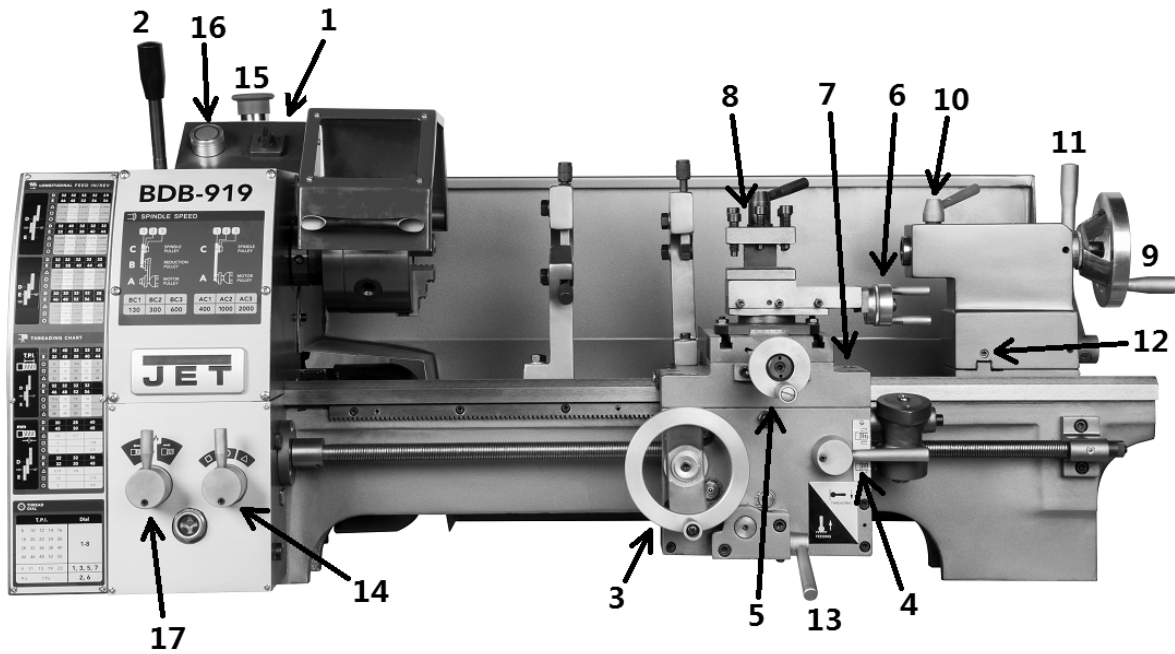


Figure 12

1. Forward/Reverse Switch
2. V-Belt Tension Lever
3. Longitudinal Travel Handwheel
4. Half-Nut Lever
5. Cross Slide Handwheel
6. Top Slide Handwheel
7. Longitudinal Lock Screw
8. Tool Post
9. Tailstock Spindle Handwheel
10. Tailstock Spindle Clamping Lever
11. Tailstock Locking Lever
12. Tailstock Off-Set Adjustment
13. Automatic Feed Lever
14. Gear Box Quick Change Lever
15. Emergency switch
16. Power Button/Light
17. Left/Right Screw Lever

9.0 Operation

9.1 Tool set-up

The cutting angle is correct when the cutting edge is in line with the center axis of the work piece. The correct height of the tool can be achieved by comparing the tool point with the point of the center mounted in the tailstock. The correct tool height can be obtained by using shims under the tool (Figure 13).

When turning, the tool has a tendency to bend under pressure. For best results, tool overhang should be kept to a minimum of 3/8" or less.

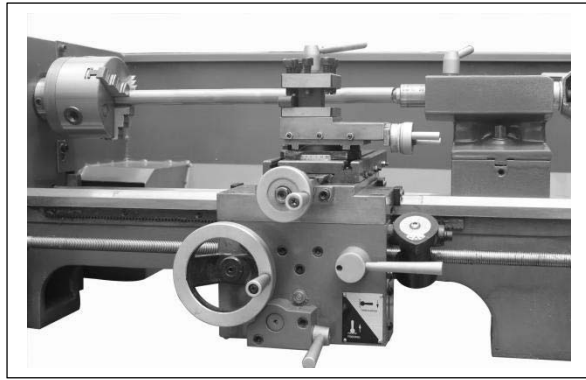


Figure 13

9.2 Manual turning

Apron travel, cross travel, and top slide handwheels can be operated for longitudinal or cross feeding (Figure 14).

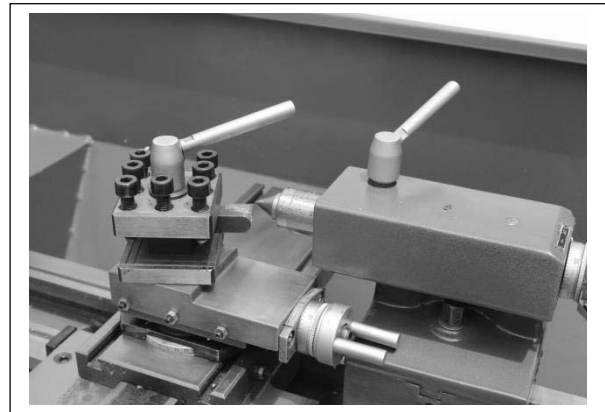


Figure 14

9.3 Longitudinal turning with auto-feed

To use automatic feed, establish the gear combinations as needed, then move lever (A, Figure 15) to engage feed.

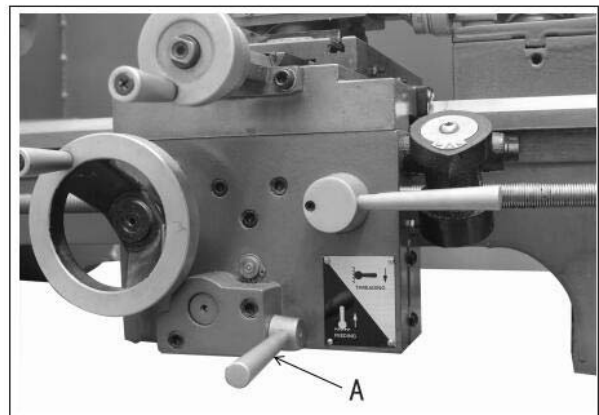


Figure 15

9.4 Taper turning using tailstock off-set

Offsetting the tailstock can turn work to side angle of 5° . The angle depends on the length of the workpiece.

To off-set the tailstock, loosen locking lever (1, Figure 16), then loosen the front adjusting screw (2) and take up the same amount by tightening the opposite rear adjusting screw until the desired taper has been reached. Tighten the front screw to lock the tailstock in position. The workpiece must be held between two centers and driven by a faceplate and driver dog.

After taper turning, the tailstock should be returned to its original position. Turning a test piece with constant adjustment until the piece is absolutely true checks the zero position of the tailstock.

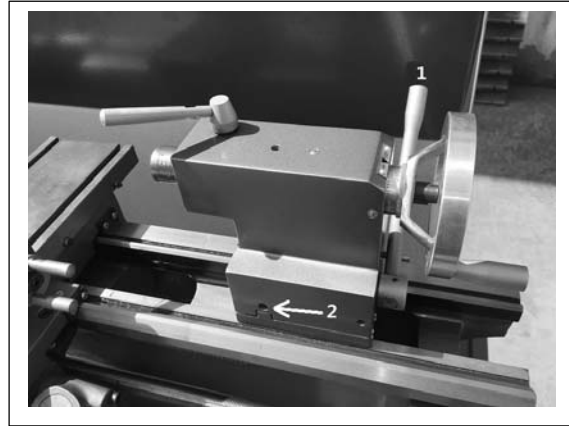


Figure 16

9.5 Taper turning by setting the top slide

By angling the top slide, tapers may be turned (Figure 17).

Loosen two screws (1, Figure 17); top slide can then be rotated. A graduated scale permits accurate adjustment of the top slide. This method can only be used for short tapers.

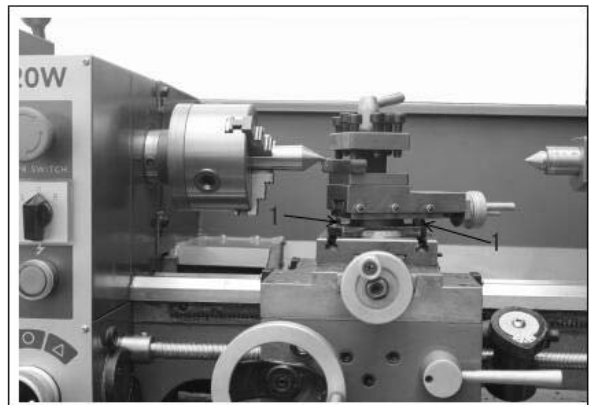


Figure 17

9.6 Turning Between Centers

For turning between centers, it is necessary to remove the chuck from the spindle. Fit the MT-3 center into the spindle nose and the MT-2 center into the tailstock.

Mount the workpiece fitted with the driver dog between the centers. The driver is driven by a catch plate or face plate (Figure 18).

Note: Always use a small amount of grease on the tailstock center to prevent center tip from overheating.

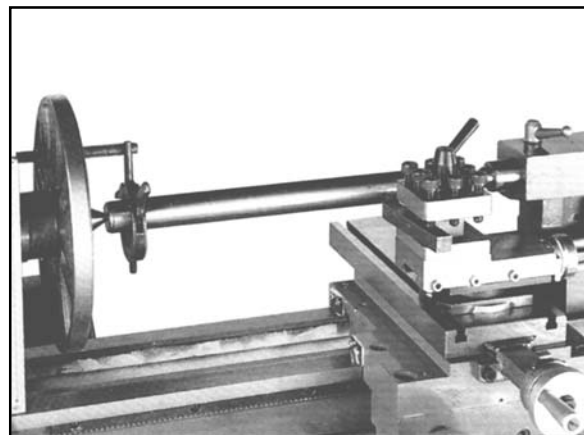


Figure 18

9.7 Thread Cutting

As indicated on the threading charts (see sect. 15.0), several different threads can be cut using the proper combination of gears and settings. When cutting inch threads, the half nut and threading dial (Figure 19) are used to thread in a conventional manner. The thread dial charts specify at which point a thread can be entered using the threading dial.

9.8 Metric Thread Cutting

The only difference in metric thread cutting is the half nut must be engaged during the entire threading process. The thread dial cannot be used.

Set the machine up for the desired thread pitch (according to the metric threading chart on the machine, also shown in *sect. 15.0*). Start the machine and engage the half nut. When the tool reaches the part, 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 part 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.

Example of Gear Set-up to Cut 10 T.P.I. (Figure 20)

1. Loosen bolt (1, Figure 20).
2. Loosen bolt (2). Remove washers (3) and gear (4).
3. Loosen bolt (5) to allow movement in the center gear position.
4. Loosen nuts (6). Remove washer (7) and gear (8).

Re-assemble as follows:

1. Install 40-tooth gear in position (4) with washers and bolt.
2. Install 32-tooth gear in position (8).
3. The center 127-tooth gear remains in place.
4. Adjust gear to mesh with upper and lower gear and tighten bolt (1).

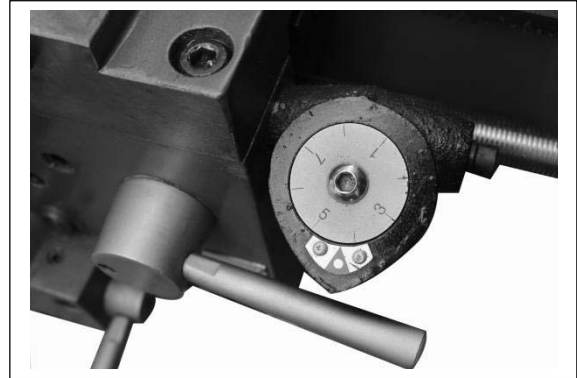


Figure 19

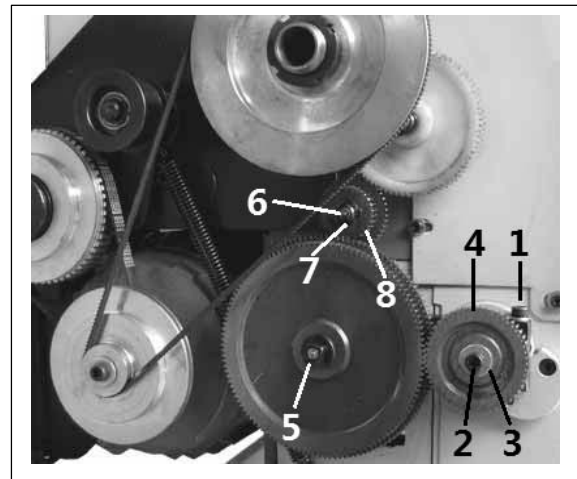


Figure 20

10.0 Lathe Accessories

10.1 Three jaw universal lathe chuck

Using this universal chuck (Figure 21), round, triangular, square, hexagonal, octagonal, and twelve-cornered stock may be clamped.

Note: New lathes have very tight fitting jaws. This is necessary to ensure accurate clamping and long service life. With repeated opening and closing, the jaws adjust automatically and their operation becomes progressively smoother.

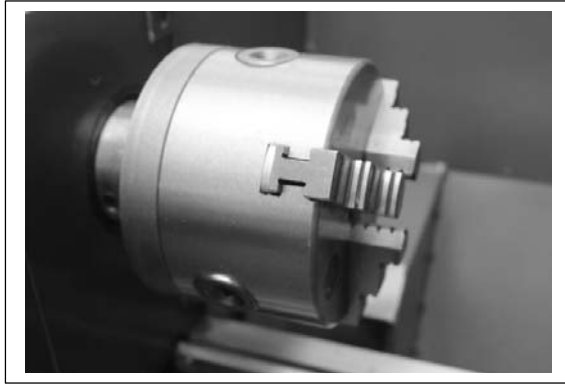


Figure 21

10.2 Four jaw independent lathe chuck

This special chuck (Figure 22) has four independently adjustable chuck jaws. These permit the holding of asymmetrical pieces and enable the accurate set-up of cylindrical pieces.

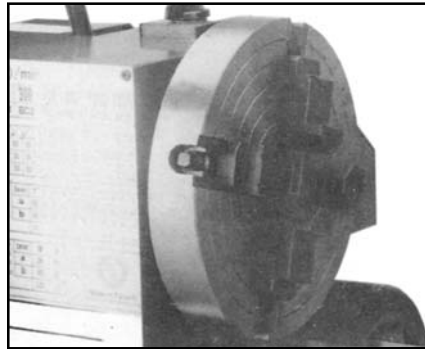


Figure 22

10.3 Drill chuck (optional)

Use the drill chuck to hold centering drills and twist drills in the tailstock (Figure 23).

10.4 Morse taper arbor (optional)

An arbor is necessary for mounting the drill chuck in the tailstock. It has a No. 2 Morse Taper (Figure 23).

10.5 Live center (optional)

The live center is mounted in ball bearings (Figure 24). Its use is highly recommended for turning at speeds in excess of 600 RPM.

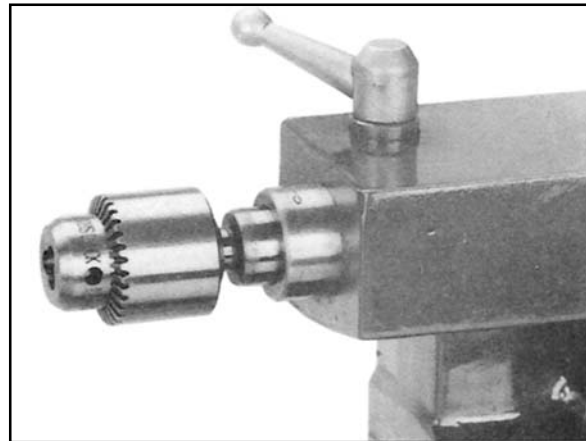


Figure 23

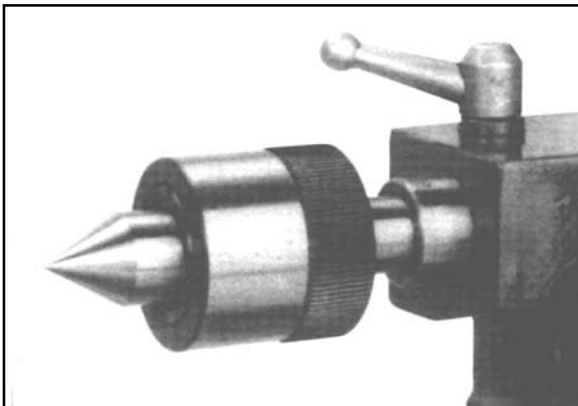


Figure 24

10.6 Steady rest

The steady rest (Figure 25) serves as a support for shafts on the free tailstock end. For many operations, the tailstock cannot be used as it obstructs the turning tool or drilling tool, and therefore, must be removed from the machine.

The steady rest, which functions as an end support, ensures chatter-free operation. The steady rest is mounted on the bedways and is secured from below with a locking plate. The sliding fingers require continuous lubrication at the contact points to prevent premature wear.

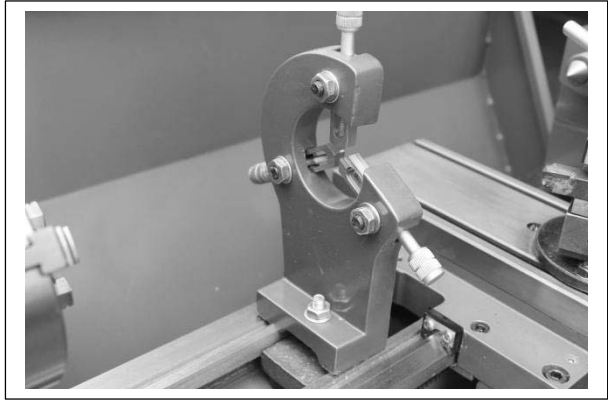


Figure 25

10.7 Setting the steady rest

1. Loosen three hex nuts (1, Figure 26).
2. Loosen knurled screw (3, Figure 26) and open the sliding fingers (2, Figure 26) until the steady rest can be moved with its fingers around the workpiece. Secure the steady rest in position.
3. Tighten knurled screws so that fingers are snug but not tight against the workpiece. Tighten three nuts (1, Figure 26). Lubricate the sliding points with machine oil.
4. When, after prolonged operation, the jaws show wear, the tips of the fingers may be filed or re-milled.

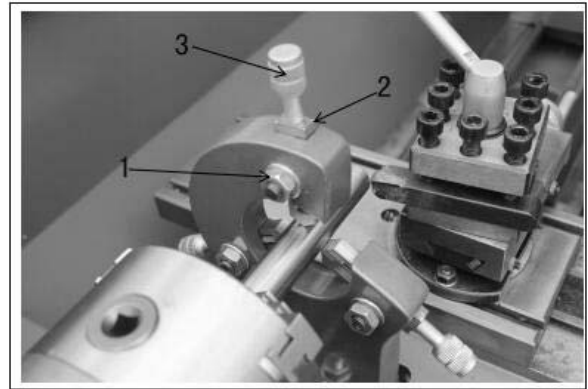


Figure 26

10.8 Follow rest

The follow rest (Figure 27) is mounted on the saddle and follows the movement of the turning tool. Only two sliding fingers are required. The place of the third finger is taken by the turning tool. The follow rest is used for turning operations on long, slender workpieces. It prevents flexing of the workpiece under pressure from the turning tool.

Set the fingers snug to the workpiece but not overly tight. Lubricate the fingers during operation to prevent premature wear.



Figure 27

10.9 Stand (optional)

A steel stand specially designed for this lathe is available from JET (Figure 28). Contact your distributor or JET to order.

Stand # 321375 for BDB-919 Lathe.

Stand # 321377 for BDB-929 Lathe.



Figure 28

10.10 Four-way tool post

The four-way tool post is mounted on the top slide and allows for tools to be clamped. Loosen the center clamp handle to rotate any of the four tools into position (Figure 29).

Use a minimum of two clamping screws when installing a cutting tool.

10.11 Change Gears

There are eleven gears (Figure 30, 2 pre-mounted already) with different numbers of teeth (28, 30, 32, 38, 40, 44, 45, 46, 48, 52 and 56). They can be combined for different speeds and feeds as required. See chart on headstock.

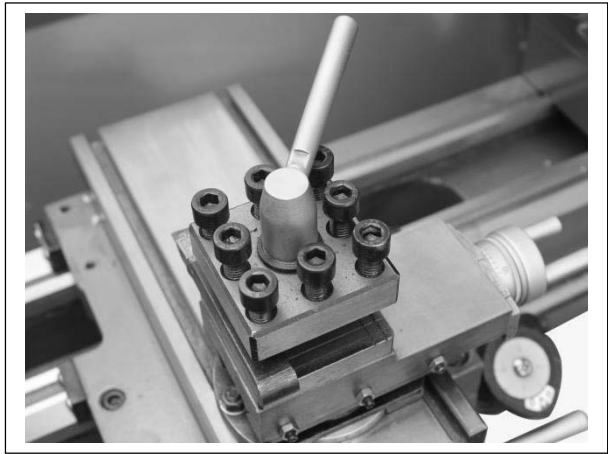


Figure 29

11.0 Adjustment/replacement

11.1 Adjustment of main spindle bearings

The main spindle bearings are adjusted at the factory. If end play becomes evident after considerable use, the bearings may be adjusted.

Loosen setscrew (1, Figure 31) in the slotted nut (2, Figure 31) on the back of the spindle. Tighten slotted nut until all end play is taken up. The spindle should still revolve freely. **Caution:** Excessive tightening or preloading will damage the bearing. Re-tighten set screw (1, Figure 31).



Figure 30

11.2 Adjustment of cross and top slide

Each slide is fitted with a gib strip and can be adjusted with screw (1, Figure 32) fitted with lock nut (2, Figure 32). Loosen the lock nuts to adjust the screws, and re-tighten lock nuts to secure the setting.

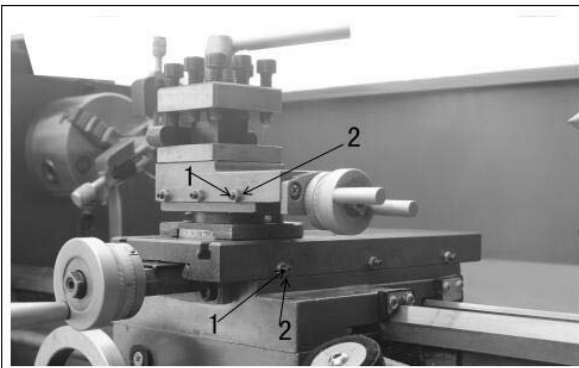


Figure 32

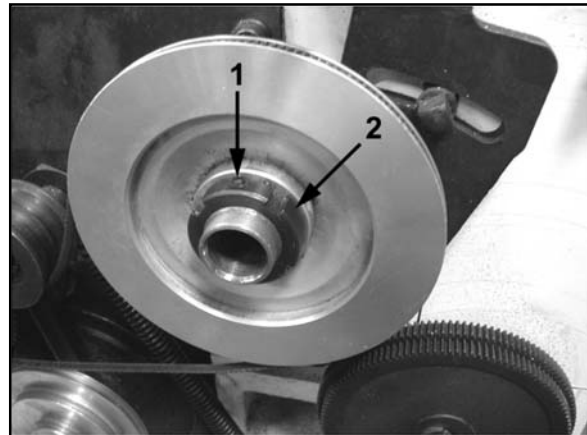


Figure 31

11.3 Adjustment of compound feed screw and float

To adjust the slides on the saddle:

1. Loosen screw (1, Figure 33) and lock nut (2, Figure 33).
2. Adjust the nut until all play has been taken up. Lock the nut (2) with the screw (1).

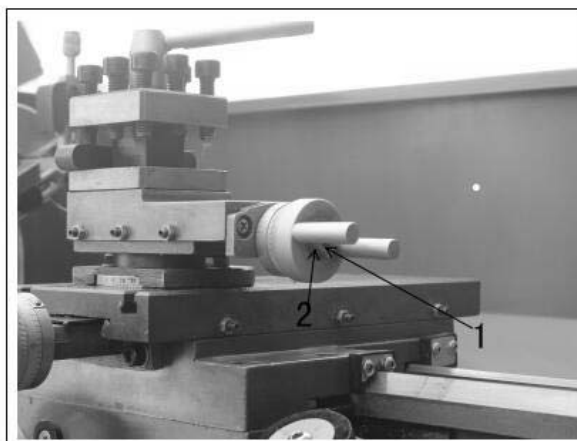


Figure 33

11.4 Cross slide screw

Remove the compound slide and adjust screw (1, Figure 34) until the backlash between the spindle and the nut is eliminated.

For operator convenience, the compound may be located in two positions on the cross slide.

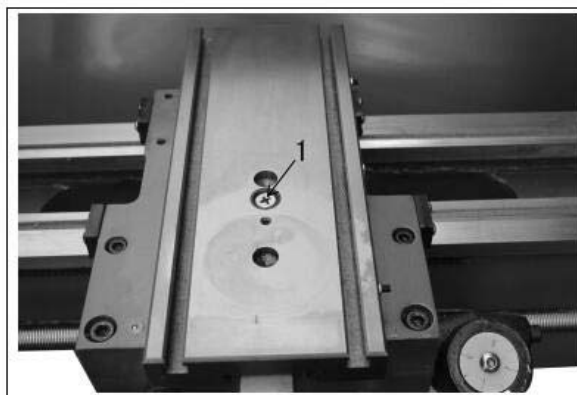


Figure 34

11.5 Compound slide spindle backlash adjustment

Remove two screws holding the spindle bracket in position and unscrew the spindle. Adjust the screw ring (1, Figure 35) until all backlash has been eliminated.

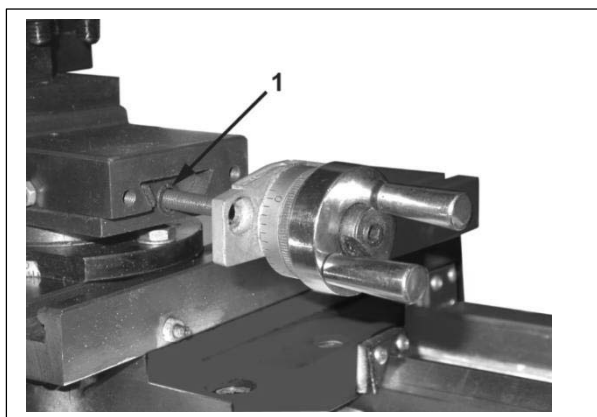


Figure 35

11.6 Adjustment of half-nut guide

Loosen two nuts (1, Figure 36) on the right side of the apron and adjust the set screws (2, Figure 36) until both half nuts move freely without play. Tighten both nuts.

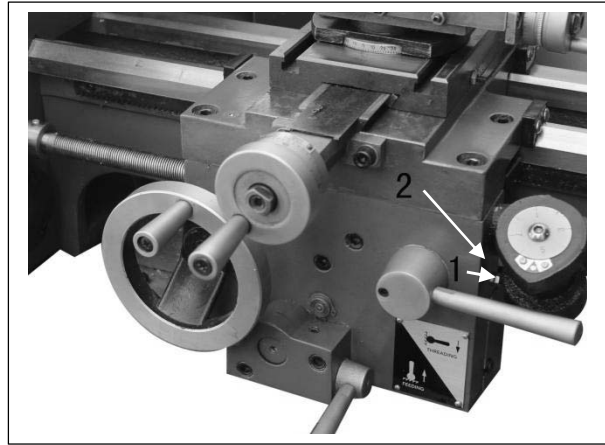


Figure 36

11.7 Replacing the V-belt

Remove tension on the V-belt by pulling lever toward front of the machine (Figure 37).

Remove belt from the pulley and replace with new belt. Move lever toward motor to tension belt. Close the cover.

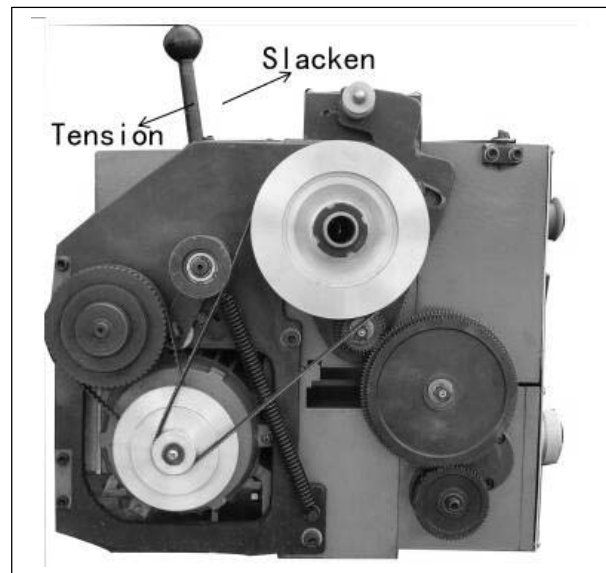


Figure 37

Caution: To avoid breaking the belt, move the tension lever towards the front of the machine before starting (Figure 38).

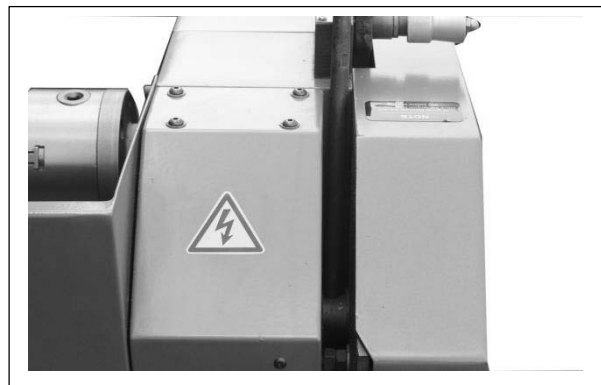


Figure 38

12.0 Lubrication Schedule

(Figures 39 and 40)

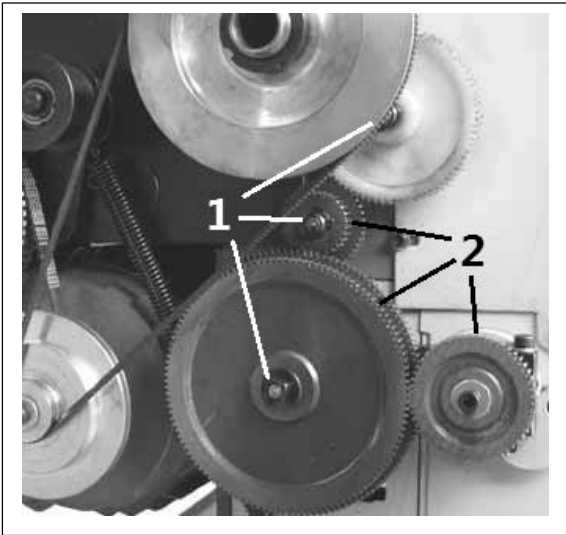


Figure 39

Note: Lubricate all locations daily.
Grease refers to #2 tube grease.
Oil refers to 20W machine oil.

- 1 – 1 to 2 squirts of oil into oil ball on gear hub.
- 2 – Grease teeth of feed and change gears.
- 3 – Wipe bedways clean and coat lightly with oil.
- 4 – Grease rack over complete length.
- 5 – Clean and oil leadscrew over complete length.
- 6 – 1 to 2 squirts of oil into oil ball on leadscrew bracket.
- 7 – Lightly coat screw and guides of top slide with oil.
- 8 – 1 to 2 squirts of oil into oil ball on top of tailstock body.
- 9 – Lightly coat guides of carriage with oil.
- 10 – 1 to 2 squirts of oil into hub for feed lever.
- 11 – 1 to 2 squirts of oil into two oil balls on top of apron and front of it.

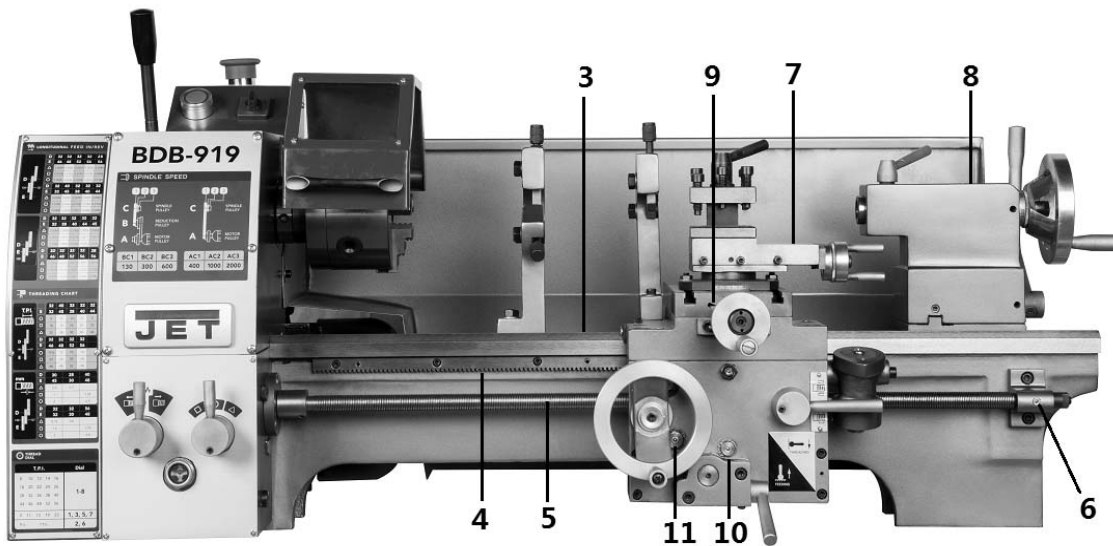


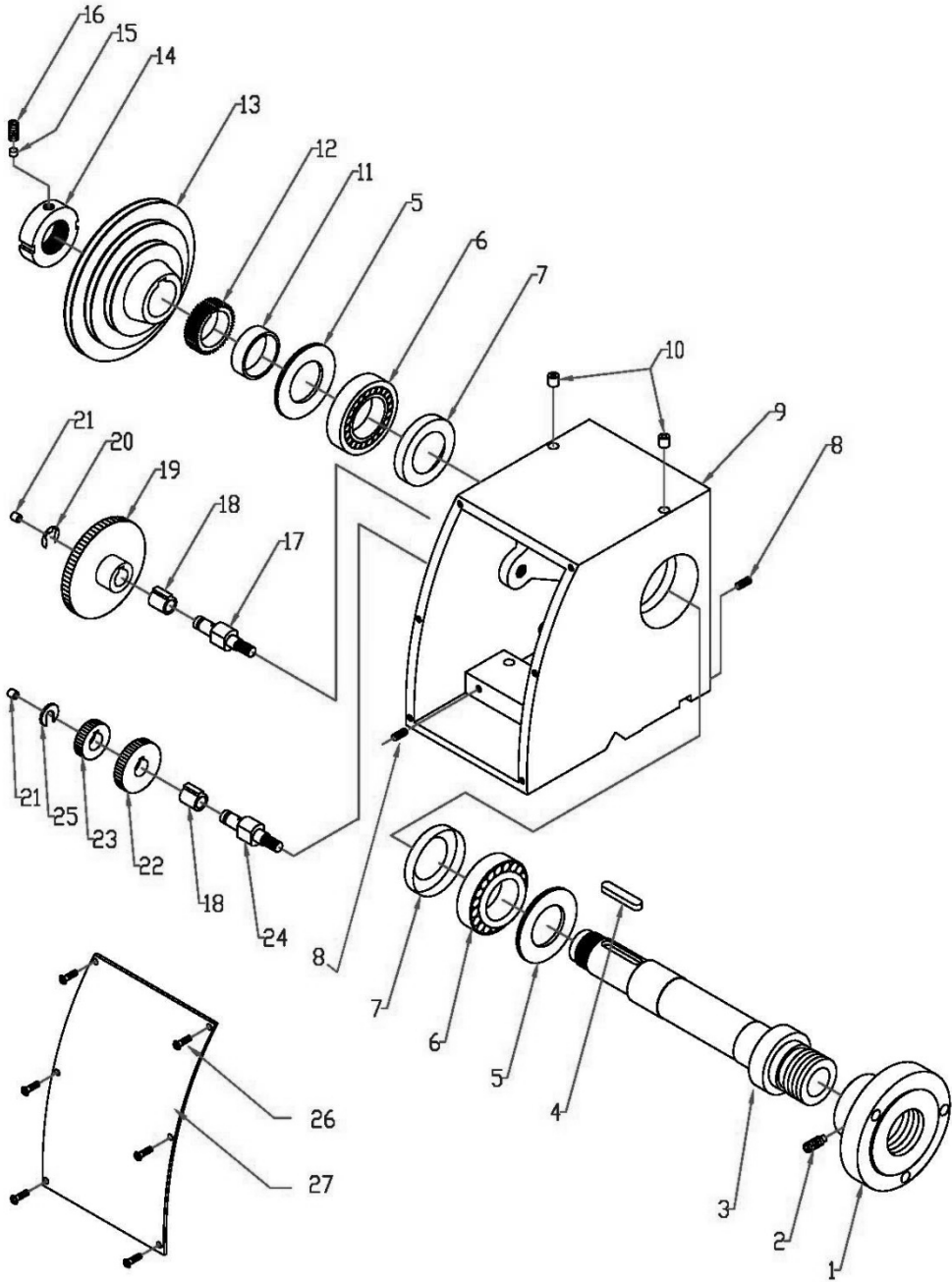
Figure 40

13.0 Replacement Parts

Replacement parts are listed on the following pages. Having the Model Number and Serial Number of your machine available when you call will allow us to serve you quickly and accurately.

Non-proprietary parts, such as fasteners, can be found at local hardware stores, or may be ordered from JET. Some parts are shown for reference only, and may not be available individually.

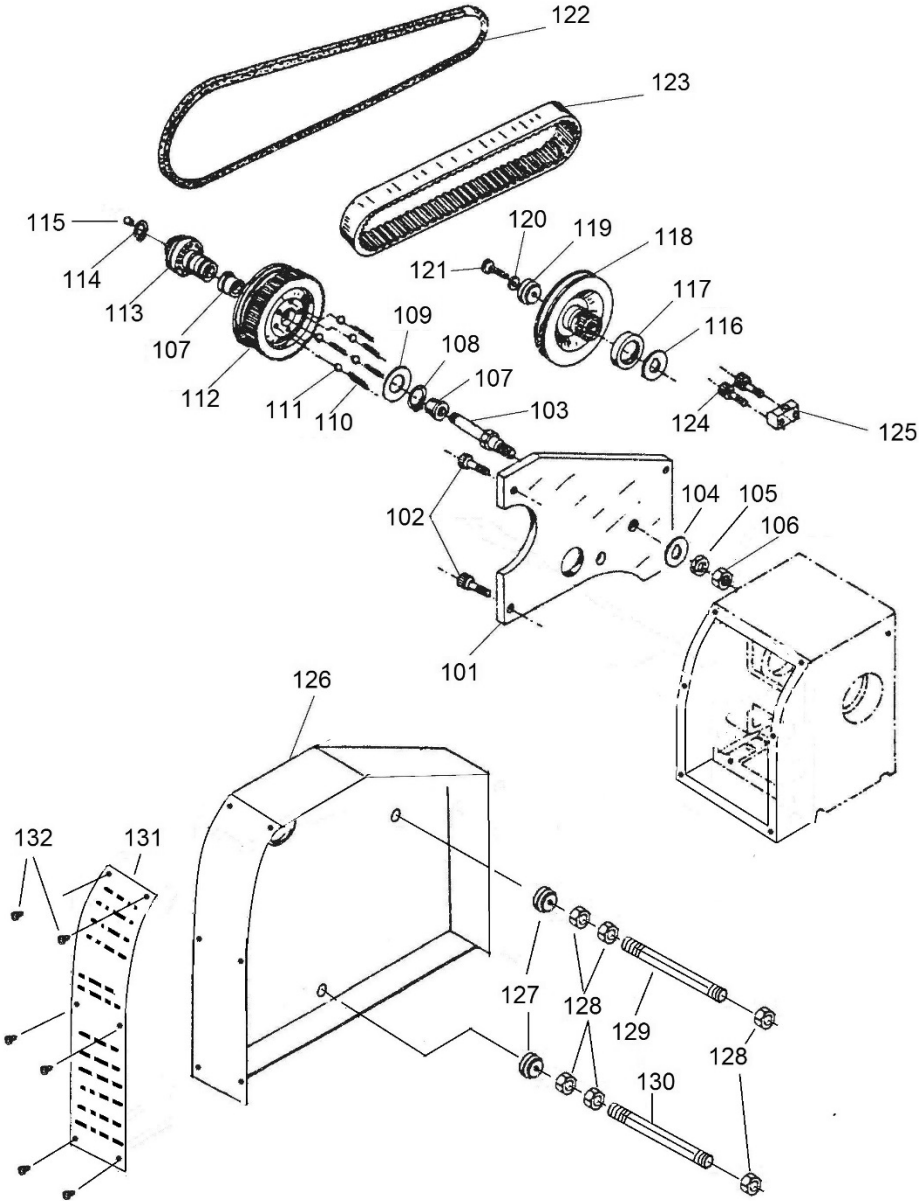
13.1.1 Headstock Assembly – Exploded View



13.1.2 Headstock Assembly – Parts List

Index No.	Part No.	Description	Size	Qty
1	BDB919-001	Flange Joint		1
2	F010435	Socket Set Screw BO DP	M8-1.25X8	3
3	BDB919-003	Spindle		1
4	BDB919-004	Key, Double Rd Hd	A8x5x40	1
5	BDB919-005	Gasket		2
6	BB-32007	Tapered Roller Bearing	E2007107E	2
7	BDB919-007	Cover		2
8	TS-1522011	Socket Set Screw	M5-0.8X6	4
9	BDB919-009	Headstock Casting		1
10	BDB919-010	Ball Oiler	8mm	2
11	BDB919-011	Spacing Ring		1
12	BDB919-012	Gear	40T	1
13	BDB919-013	Pulley		1
14	BDB919-014	Nut	M28X1	1
15	BDB919-015	Bushing		1
16	TS-1524011	Socket Set Screw	M8-1.25X8	1
17	BDB919-017	Shaft		1
18	BDB919-018	Bushing		2
19	BDB919-019	Gear	80T	1
20	F006080	E-Retaining Ring, Ext	9mm	1
21	BDB919-021	Ball Oiler	6mm	2
22	BDB919-022	Gear	40T	1
23	BDB919-023	Gear	28T	1
24	BDB919-024	Shaft		1
25	BDB919-025	C-Washer	20mm	1
26	F009921	Socket Hd Button Screw	M3-0.5X5	6
27	BDB919-027	Name Plate w/ speed chart (BDB-919)		1
	BDB929-027	Name Plate w/ speed chart (BDB-929)		1
	LM000290	ID/Warning Label, BDB-919 (not shown)		1
	LM000291	ID/Warning Label, BDB-929 (not shown)		1
	JET-92	JET Logo (not shown)	92x38mm	1

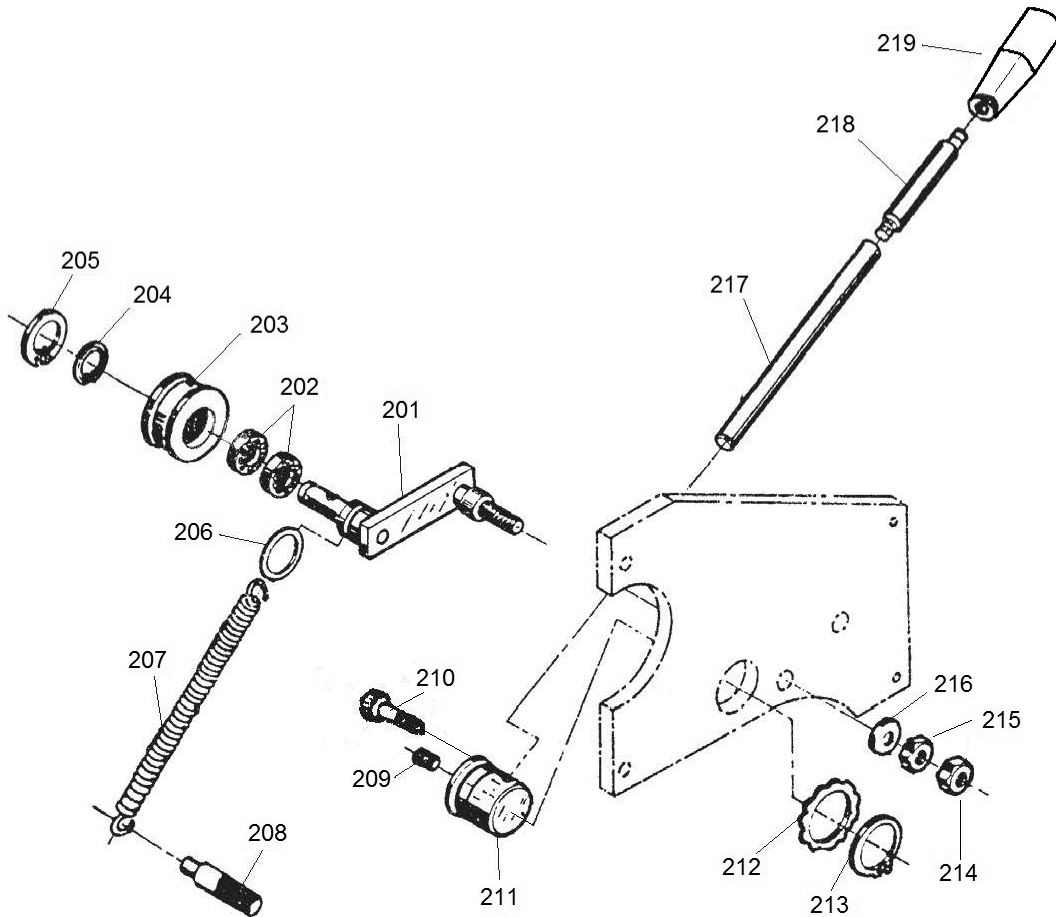
13.2.1 Drive Belt Assembly – Exploded View



13.2.2 Drive Belt Assembly – Parts List

Index No.	Part No.	Description	Size	Qty
101	BDB919-101	Bracket Plate		1
102	TS-1504041	Hex Socket Hd Cap Screw	M8-1.25X20	2
103	BDB919-103	Belt Pulley Shaft		1
104	TS-1550071	Flat Washer	10mm	1
105	TS-1540071	Hex Nut	M10	1
106	TS-1540071	Hex Nut	M10	1
107	BDB919-107	Bushing		2
108	F006050	C-Retaining Ring, Ext	25mm	1
109	BDB919-109	Washer		1
110	BDB919-110	Spring	0.7X4.5X24mm	5
111	SB-5MM	Steel Ball	5mm	5
112	BDB919-112	Pulley		1
113	BDB919-113	Pulley		1
114	F006041	C-Retaining Ring, Ext	12mm	1
115	BDB919-021	Ball Oiler	6mm	1
116	BDB919-116	Spacer		1
117	BDB919-117	Collar		1
118	BDB919-118	Pulley		1
119	BDB919-119	Large Flat Washer	14mm	1
120	TS-1550041	Flat Washer	6mm	1
121	TS-1503011	Hex Socket Hd Cap Screw	M6-1.0X8	1
122	VB-5M710	V-Belt	5M710	1
123	BDB919-123	Cog Belt	160XL050	1
124	TS-1503051	Hex Socket Hd Cap Screw	M6-1.0X20	2
125	BDB919-125	Clamp Block		1
126	BDB919-126	End Cover		1
127	BDB919-127	Nut		2
128	TS-1540061	Hex Nut	M8	6
129	BDB919-129	Stud	M8-1.25X90	1
130	BDB919-130	Stud	M8-1.25X100	1
131	BDB919-131	Graphic Plate – Feed and Thread	76x348mm	1
132	F009921	Socket Hd Button Screw	M3-0.5X5	6

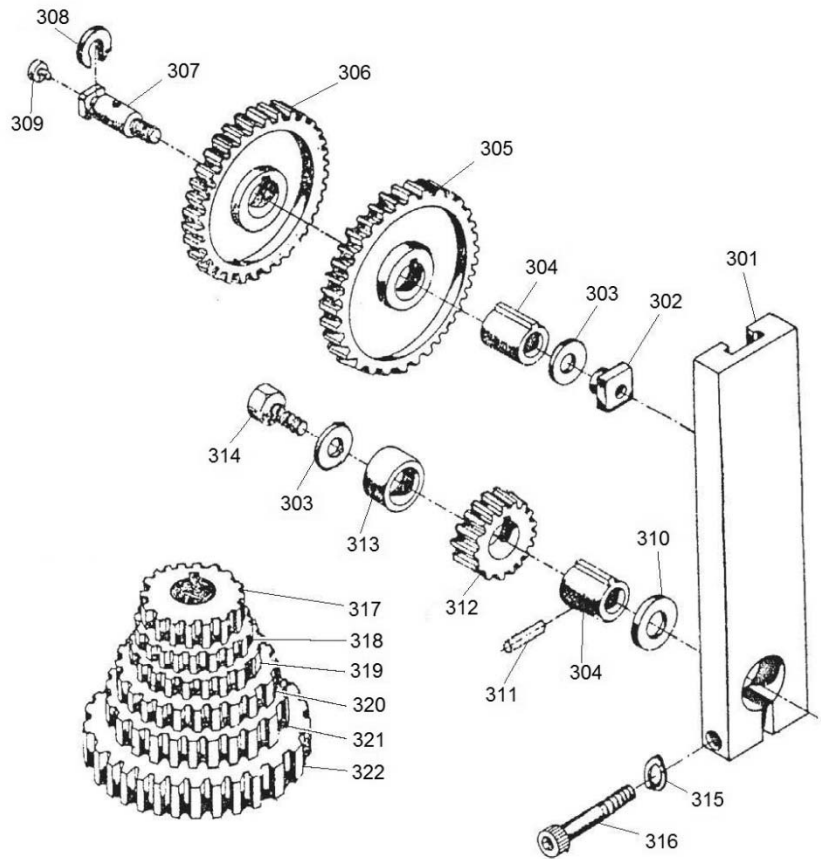
13.3.1 Belt Tension Lever – Exploded View



13.3.2 Belt Tension Lever – Parts List

Index No.	Part No.	Description	Size	Qty
201	BDB919-201	Lever Bracket Assembly		1
202	BB-6001ZZ	Ball Bearing	6001ZZ	2
203	BDB919-203	Roller		1
204	F006041	C-Retaining Ring, Ext	12mm	1
205	F006029	C-Retaining Ring, Int	28mm	1
206	BDB919-206	Washer		1
207	BDB919-207	Spring		1
208	BDB919-208	Stud Bolt		1
209	TS-1524011	Socket Set Screw	M8-1.25X8	1
210	TS-1503031	Hex Socket Hd Cap Screw	M6-1.0X12	1
211	BDB919-211	Pivot		1
212	BDB919-212	Wave Washer	34mm	1
213	F006079	C-Retaining Ring, Ext	34mm	1
214	JSS16-062	Hex Thin Nut	M10	1
215	TS-2311101	Hex Nut	M10	1
216	BDB919-216	Washer	10mm	1
217	BDB919-217	Shaft	102mm	1
218	BDB919-218	Threaded Shaft	180mm	1
219	BDB919-219	Taper Knob	M10X50	1

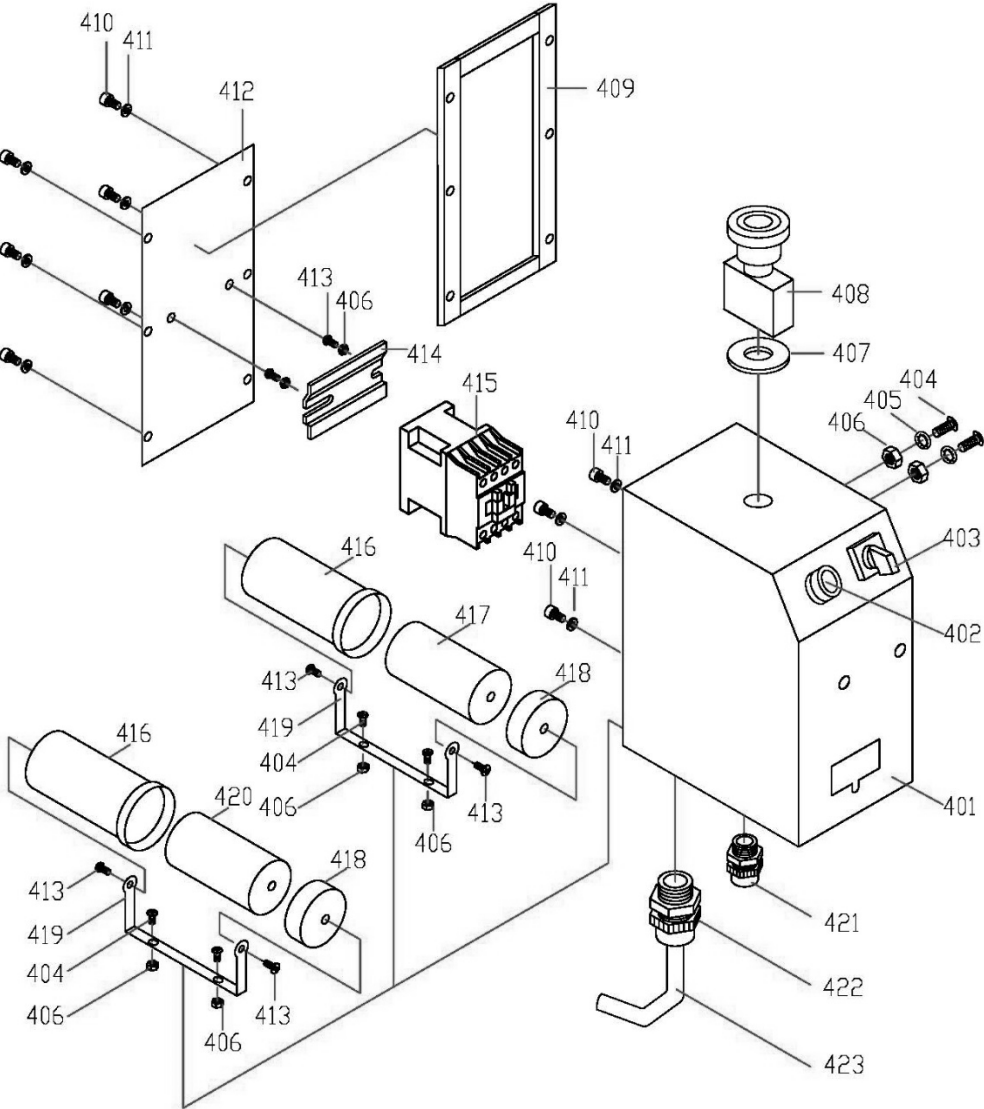
13.4.1 Change Gears – Exploded View



13.4.2 Change Gears – Parts List

Index No.	Part No.	Description	Size	Qty
301	BDB919-301	Bracket		1
302	BDB919-302	T-Nut		1
303	BDB919-303	Flat Washer, spcl		2
304	BDB919-304	Keyed Bushing		2
305	BDB919-305	Gear	127T	1
306	BDB919-306	Gear	120T	1
307	BDB919-307	Shaft		1
308	BDB919-025	C-Washer	20mm	1
309	BDB919-021	Ball Oiler	6mm	1
310	BDB919-310	Washer		1
311	F012070	Roll Pin	4x12mm	1
312	BDB919-312	Gear	56T	1
313	BDB919-313	Spacing Ring		1
314	TS-1503011	Hex Socket Hd Cap Screw	M6-1.0X8	1
315	TS-2361061	Lock Washer	6mm	1
316	TS-1503081	Hex Socket Hd Cap Screw	M6-1.0X35	1
317	BDB919-317	Gear	30T	1
318	BDB919-318	Gear	32T	2
319	BDB919-319	Gear	38T	1
320	BDB919-320	Gear	40T	1
321	BDB919-321	Gear	44T	1
322	BDB919-322	Gear	45T	1
323	BDB919-323	Gear	46T	1
324	BDB919-324	Gear	48T	1
325	BDB919-325	Gear	52T	1

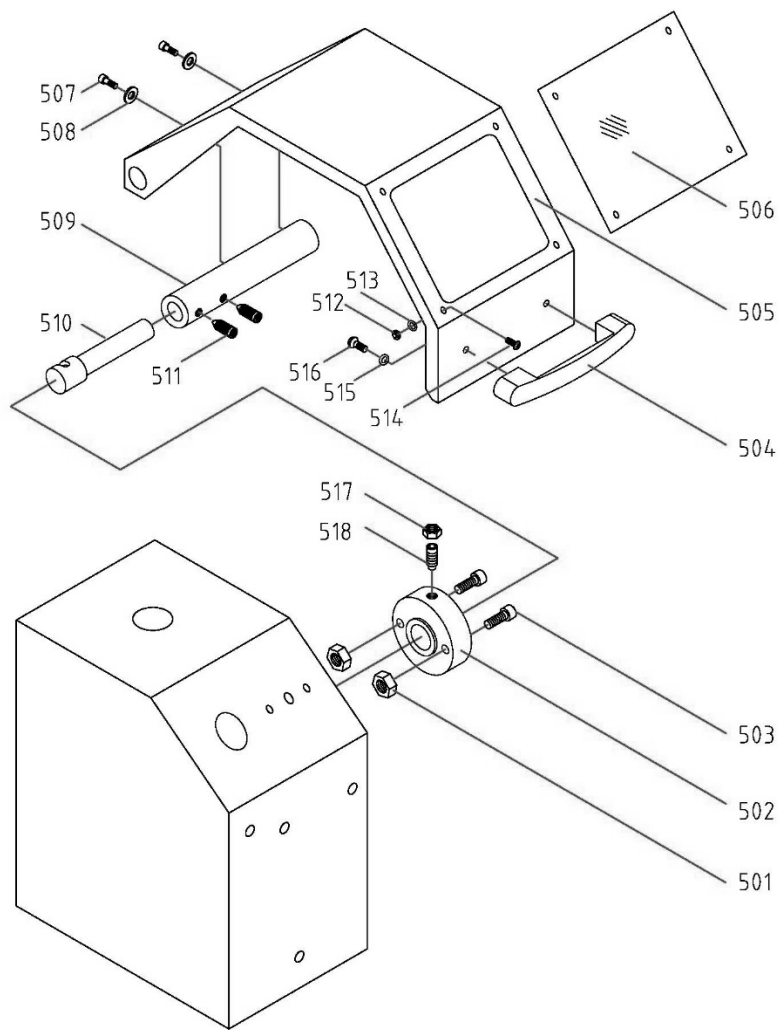
13.5.1 Electrical – Exploded View



13.5.2 Electrical – Parts List

Index No.	Part No.	Description	Size	Qty
401	BDB919-401	Electrical Box		1
402	BDB919-402	Button LAY37(PBC)-C		1
403	BDB919-403	Switch ZH-A		1
404	TS-2244122	Socket Hd Button Screw	M4-0.7X12	6
405	BDB919-405	Dentiform Gasket	4mm	2
406	TS-1540021	Hex Nut	M4	8
407	BDB919-407	Washer		1
408	BDB919-408	E-Stop Button LA125H	BE102C	1
409	BDB919-409	Rubber Gasket	2X15mm	1
410	TS-1502011	Hex Socket Hd Cap Screw	M5-0.8x8	9
411	TS-1550031	Flat Washer	5mm	9
412	BDB919-412	Electrical Box Cover		1
413	F009875	Socket Hd Button Screw	M4-0.7X8	6
414	BDB919-414	DIN Rail Upper		1
415	BDB919-415	Contactora Delixi	CJX21210-110V	1
416	BDB919-416	Capacitor Cover		2
417	BDB919-417	Capacitor	20 mF	1
418	BDB919-418	Cap		2
419	BDB919-419	Clip		2
420	BDB919-420	Capacitor	100 mF	1
421	SR-PG9	Strain Relief	PG 9	1
422	SR-PG16	Strain Relief	PG16	1
423	BDB919-423	Power Cord	3X1.31mm ²	1

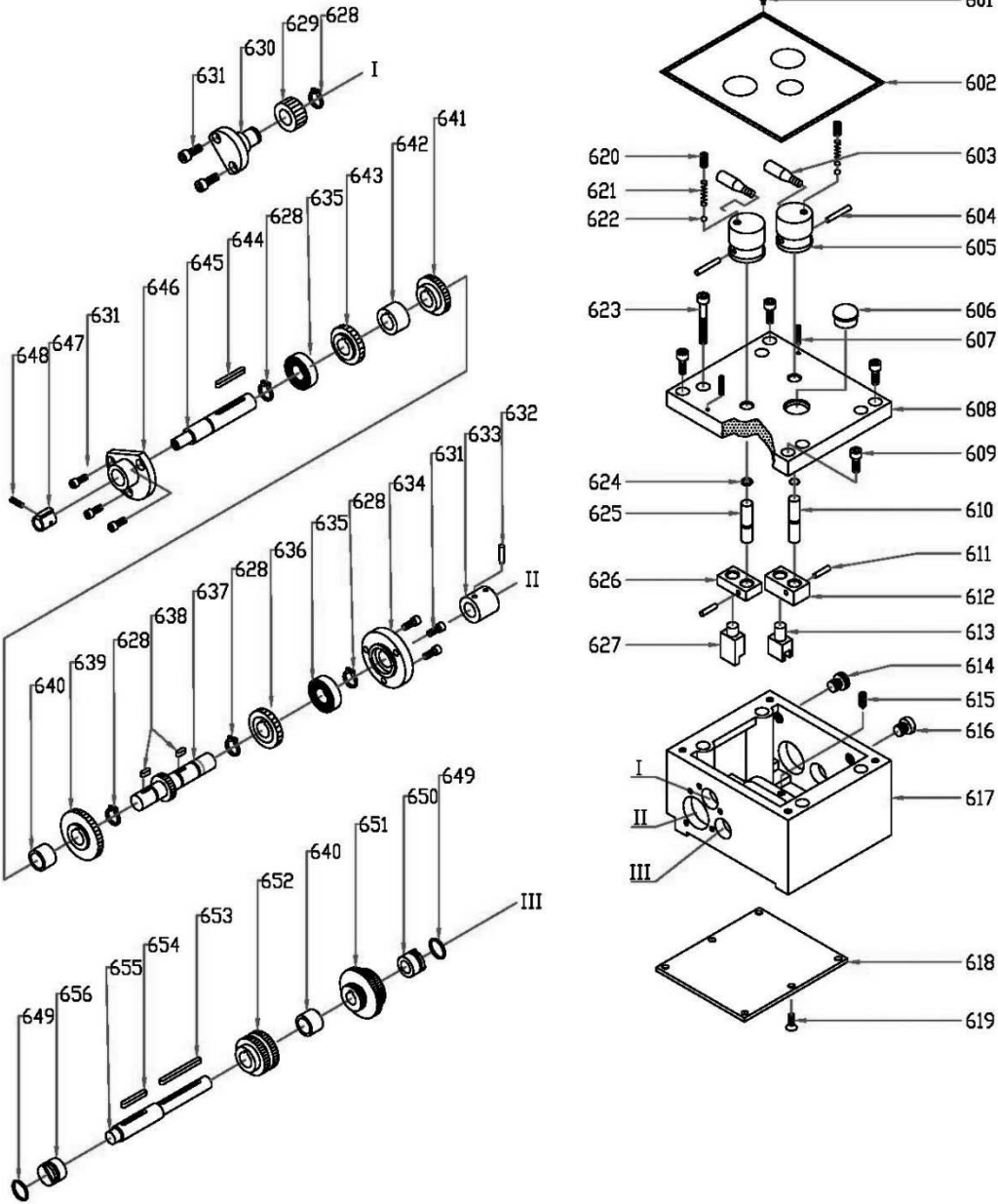
13.6.1 Chuck Guard – Exploded View



13.6.2 Chuck Guard – Parts List

Index No.	Part No.	Description	Size	Qty
501	TS-1540031	Hex Nut	M5	2
502	BDB919-502	Bracket		1
503	TS-1502021	Hex Socket Hd Cap Screw	M5-0.8x20	2
504	BDB919-504	U-Handle		1
505	BDB919-505	Chuck Cover		1
506	BDB919-506	Acrylic Sheet		1
507	TS-1502021	Hex Socket Hd Cap Screw	M5-0.8x10	2
508	TS-1550031	Flat Washer	5mm	2
509	BDB919-509	Tube		1
510	BDB919-510	Shaft		1
511	TS-1522011	Socket Set Screw	M5-0.8X6	2
512	TS-1540011	Hex Nut	M3	4
513	TS-1550011	Flat Washer	3mm	4
514	F009922	Socket Hd Button Screw	M3-0.5X6	4
515	TS-1550021	Flat Washer	4mm	2
516	F009923	Socket Hd Button Screw	M4-0.7X6	2
517	TS-1540041	Hex Nut	M6	1
518	TS-1523071	Socket Set Screw	M6-1.0X25	1

13.7.1 Gear Box – Exploded View

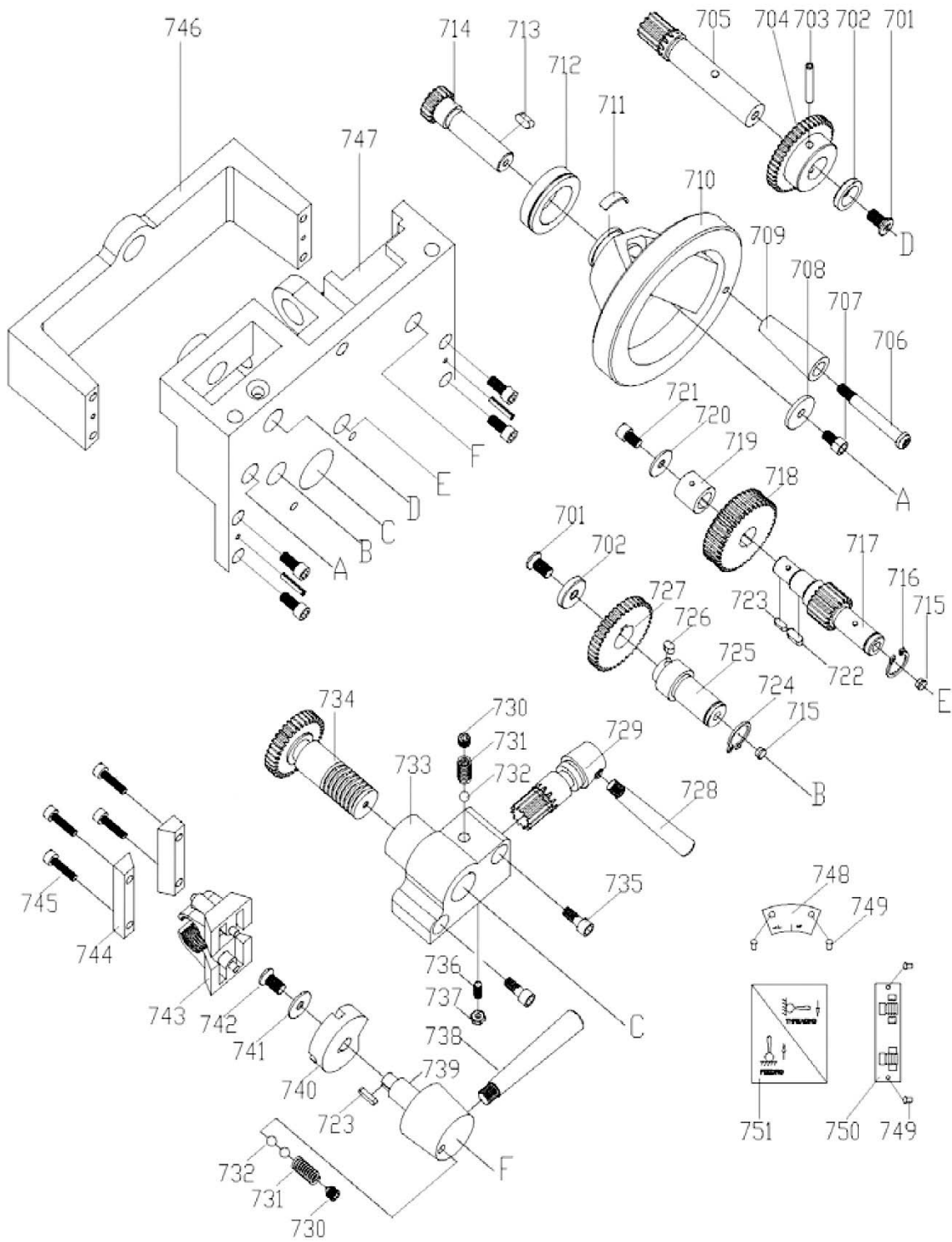


13.7.2 Gear Box – Parts List

Index No.	Part No.	Description	Size	Qty
601	F005338	Hex Socket Hd Cap Screw	M3-0.5x5	4
602	BDB919-602	Graphic Plate		1
603	BDB919-603	Lever		2
604	F012088	Roll Pin	3X30mm	2
605	BDB919-605	Handle		2
606	BDB919-606	Oil Sight Glass	M22X1.5	1
607	F012092	Roll Pin	3X18mm	2
608	BDB919-608	Panel		1
609	TS-1503041	Hex Socket Hd Cap Screw	M6-1.0X16	4
610	BDB919-610	Shaft		1
611	TS-209203	Roll Pin	3X20mm	2
612	BDB919-612	Shift Lever		1
613	BDB919-613	Fork		1
614	BDB919-614	Bolt	M10X1	1
615	TS-1522011	Set Screw	M5-0.8X6	1
616	BDB919-616	Bolt	M10X1	1
617	BDB919-617	Gear Box Casting		1
618	BDB919-618	Back Cover		1
619	TS-1513011	Socket Hd Flat Screw	M5-0.8X10	6
620	TS-1523011	Set Screw	M6-1.0X6	2
621	BDB919-621	Spring		2
622	SB-5MM	Steel Ball	5MM	2
623	TS-1503101	Hex Socket Hd Cap Screw	M6-1.0X45	4
624	BDB919-624	O-Ring	10X1.8mm	2
625	BDB919-625	Shaft		1
626	BDB919-626	Shift Lever		1
627	BDB919-627	Fork		1
628	F006043	"C-Retaining Ring, Ext"	15mm	5
629	BDB919-629	Gear	20T-1.25	1
630	BDB919-630	Bracket		1
631	TS-1502031	Hex Socket Hd Cap Screw	M5-0.8X12	8
632	F012093	Roll Pin	4X26	1
633	BDB919-633	Collar		1
634	BDB919-634	Flange		1
635	BB-6002RZ	Bearing	6002RZ	2
636	BDB919-636	Gear	27T-1.25	1
637	BDB919-637	Gear Shaft	18T-1.25	1
638	JWDP12-128	"Key, Double Rd Hd"	A4X4X8	2
639	BDB919-639	Gear	36T-1.25	1
640	BDB919-640	Collar		2
641	BDB919-641	Gear	27T-1.25	1
642	BDB919-642	Collar		1
643	BDB919-643	Gear	27T-1.25	1
644	13-2014-001	"Key, Double Rd Hd"	A4X4X35	1
645	BDB919-645	Shaft		1
646	BDB919-646	Bracket		1
647	BDB919-647	Collar		1
648	Y31124210	Roll Pin	4X12mm	1
649	BDB919-649	O-Ring	20X2.4mm	2
650	BDB919-650	Collar		1
651	BDB919-651	Compound Gear	18-36-27T	1
652	BDB919-652	Compound Gear	27-27T	1
653	KF2R4445	"Key, Double Rd Hd"	A4X4X45	1
654	5304421	"Key, Double Rd Hd"	A4X4X30	1
655	BDB919-655	Shaft		1
656	BDB919-656	Collar		1
701	F010960	Socket Hd Flat Screw	M6-1.0X8	2
702	BDB919-702	Washer		2
703	AH25C-060	Spring Pin	4X30mm	1
704	BDB919-704	Gear	43T-1M	1

Index No.	Part No.	Description	Size	Qty
705	BDB919-705	Gear	12T-1.25M	1
706	BDB919-706	Screw		1
707	TS-1502021	Hex Socket Hd Cap Screw	M5-0.8X10	1
708	BDB919-708	Washer		1
709	BDB919-709	Handle		1

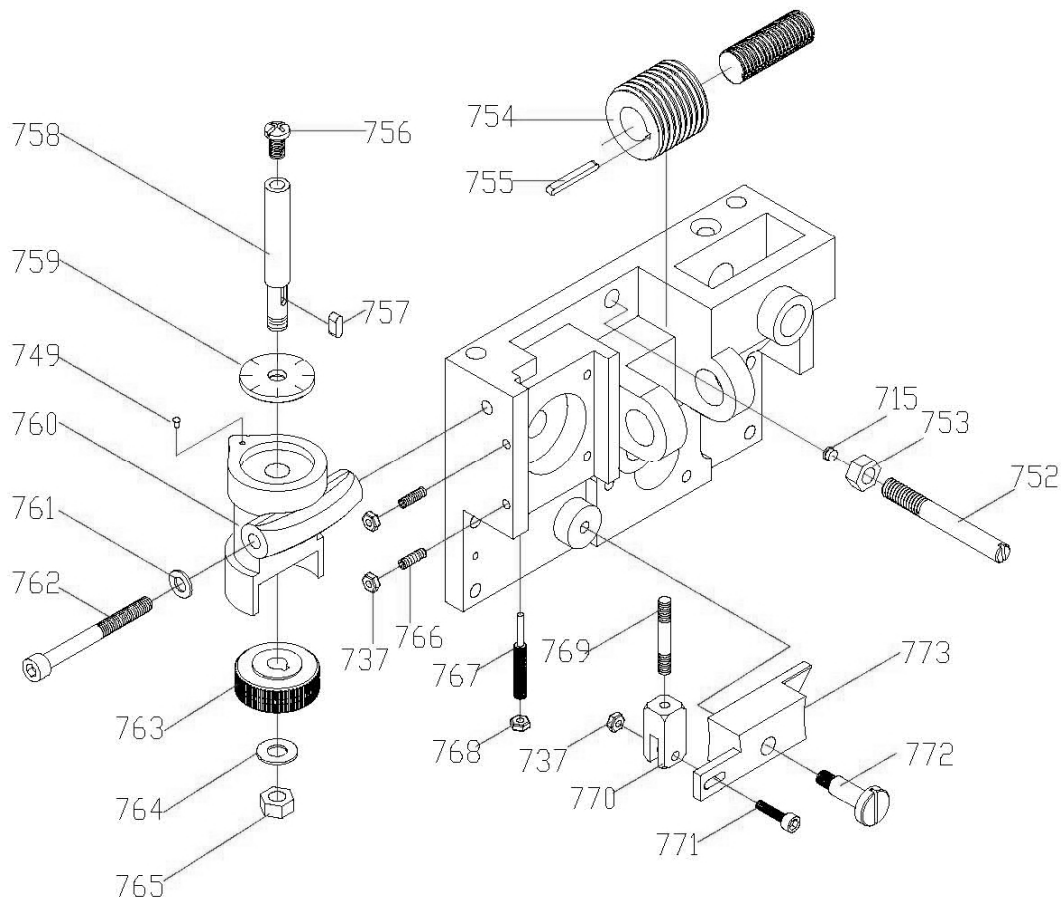
13.8.1 Apron I – Exploded View



13.8.2 Apron I – Parts List

Index No.	Part No.	Description	Size	Qty
701	F010960	Socket Hd Flat Screw	M6-1.0X8	2
702	BDB919-702	Washer		2
703	AH25C-060	Spring Pin	4X30mm	1
704	BDB919-704	Gear	43T-1M	1
705	BDB919-705	Gear	12T-1.25M	1
706	BDB919-706	Screw		1
707	TS-1502021	Hex Socket Hd Cap Screw	M5-0.8X10	1
708	BDB919-708	Washer		1
709	BDB919-709	Handle		1
710	BDB919-710	Handwheel		1
711	BDB919-711	Leaf Spring		1
712	BDB919-712	Graduated Dial		1
713	GA7X-861	Key, Double Rd Hd	A4x4x10	1
714	BDB919-714	Gear	17T-1M	1
715	BDB919-021	Ball Oiler	6mm	3
716	F006041	C-Retaining Ring, Ext	12mm	1
717	BDB919-717	Gear	18T-1M	1
718	BDB919-718	Worm Gear	42T-1Mn	1
719	BDB919-719	Bushing		1
720	TS-1550031	Flat Washer	5mm	1
721	TS-1502021	Hex Socket Hd Cap Screw	M5-0.8x10	1
722	GA7X-861	Key, Double Rd Hd	A4X4x10	1
723	KEY3308	Key, Double Rd Hd	A3X3X8	2
724	AHJ12-25	C-Retaining Ring, Ext	14mm	1
725	BDB919-725	Shaft		1
726	JWDP12-078	Key, Double Rd Hd	A4X4X6	1
727	BDB919-727	Gear	41T-1M	1
728	BDB919-728	Handle		1
729	BDB919-729	Gear	13T-1M	1
730	TS-1523011	Socket Set Screw	M6X6	2
731	BDB919-731	Spring		2
732	SB-5MM	Steel Ball	5mm	3
733	BDB919-733	Bracket		1
734	BDB919-734	Gear	36T-1M	1
735	TS-1503071	Hex Socket Hd Cap Screw	M6-1.0X30	2
736	TS-1521041	Socket Set Screw	M4-0.7X10	1
737	TS-1540021	Hex Nut	M4	5
738	BDB919-738	Lever		1
739	BDB919-739	Handle		1
740	BDB919-740	Locking Cam		1
741	TS-1550021	Flat Washer	4mm	1
742	F009923	Socket Hd Button Screw	M4-0.7X6	4
743	BDB919-743	Half Nut		1
744	BDB919-744	Guide Bar		2
745	TS-1501051	Hex Socket Hd Cap Screw	M4-0.7X16	4
746	BDB919-746	Apron Cover		1
747	BDB919-747	Apron Casting		1
748	BDB919-748	Graphic Plate - Lever Direction		1
749	GB867-2X4	Rivet	2X4mm	4
750	BDB919-750	Graphic Plate - Half Nut	50x14mm	1
751	BDB919-751	Graphic Plate - Lever Position	50x40mm	1

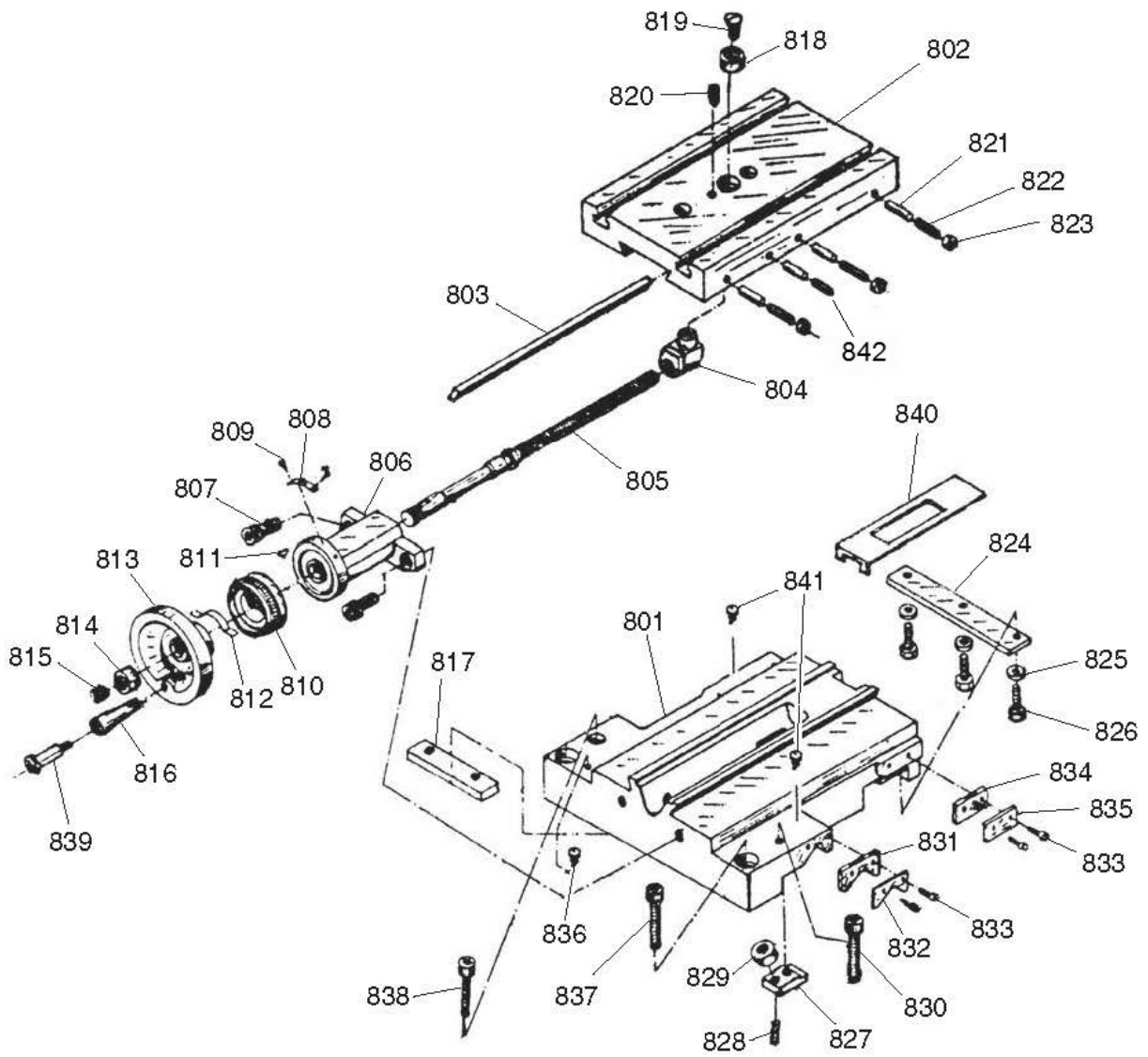
13.9.1 Apron II – Exploded View



13.9.2 Apron II – Parts List

Index No.	Part No.	Description	Size	Qty
752	BDB919-752	Screw		1
753	TS-1540061	Hex Nut	M8X1	1
754	BDB919-754	Worm		1
755	KF2R3325	Key, Double Rd Hd	A3X3X25	1
756	TS-1534032	Phillips Pan Hd Mach Screw	M6X10	1
757	KEY3310	Key, Double Rd Hd	A3X3X10	1
758	BDB919-758	Shaft		1
759	BDB919-759	Thread Dial		1
760	BDB919-760	Thread Dial Body		1
761	TS-1550041	Flat Washer	6mm	1
762	TS-1503131	Hex Socket Hd Cap Screw	M6-1.0X60	1
763	BDB919-763	Worm Gear	64T-0.5Mn	1
764	TS-2361081	Lock Washer	8mm	1
765	TS-1540061	Hex Nut	M8	1
766	TS-1521051	Socket Set Screw	M4-0.7X12	2
767	BDB919-767	Set Screw, Spcl	M5-0.8X25	1
768	TS-1540031	Hex Nut	M5	1
769	BDB919-769	Double End Stud		1
770	BDB919-770	Control Block		1
771	TS-1501061	Hex Socket Hd Cap Screw	M4-0.7X20	1
772	BDB919-772	Screw		1
773	BDB919-773	Joint Plate		1

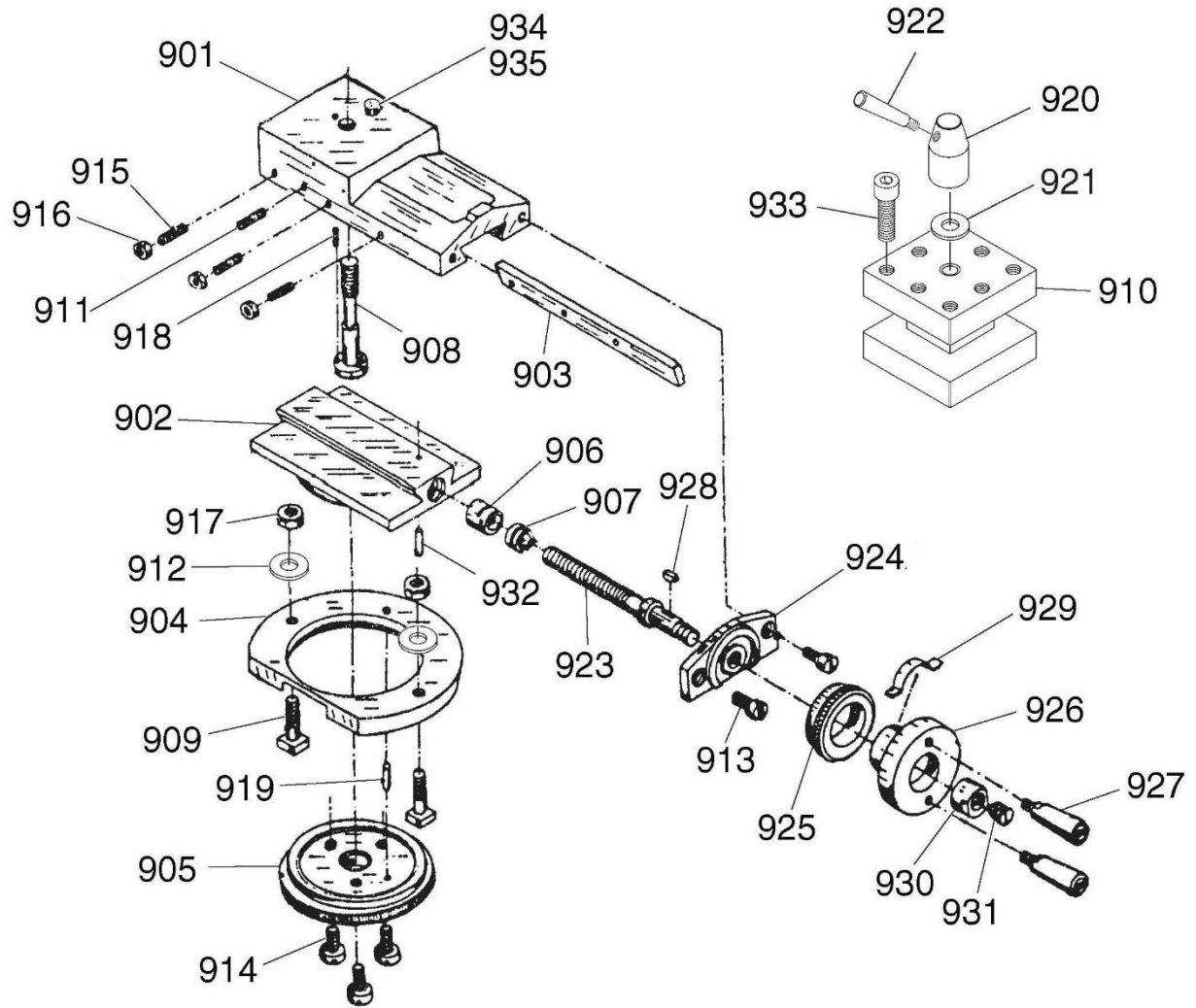
13.10.2 Saddle and Cross Slide – Exploded View



13.10.2 Saddle and Cross Slide – Parts List

Index No.	Part No.	Description	Size	Qty
801	BDB919-801	Saddle		1
802	BDB919-802	Cross Slide		1
803	BDB919-803	Gib		1
804	BDB919-804	Nut		1
805	BDB919-805	Lead Screw		1
806	BDB919-806	Bracket		1
807	TS-1502041	Hex Socket Hd Cap Screw	M5-0.8X16	2
808	BDB919-808	Index Plate		1
809	GB867-2X4	Rivet	2X4mm	2
810	BDB919-810	Graduated Ring		1
811	F014002	Woodruff Key	3X5X13mm	1
812	BDB919-711	Leaf Spring		1
813	BDB919-813	Handwheel		1
814	BDB919-814	Nut		1
815	TS-1524011	Socket Set Screw	M8-1.25X8	1
816	BDB919-816	Handle		1
817	BDB919-817	Slide Block		1
818	BDB919-818	Bushing		1
819	TS-2246101	Socket Hd Flat Screw	M6-1.0X10	1
820	TS-1523031	Socket Set Screw	M6-1.0X10	1
821	F004021	Dowel Pin	3X24mm	4
822	TS-1521041	Socket Set Screw	M4-0.7X10	3
823	BDB919-823	Hex Nut	M4	3
824	BDB919-824	Slide Block		1
825	TS-1550041	Flat Washer	6mm	3
826	TS-1503041	Hex Socket Hd Cap Screw	M6-1.0X16	3
827	BDB919-827	Clip		1
828	TS-1523061	Socket Set Screw	M6-1.0X20	1
829	TS-2311061	Hex Nut	M6	1
830	TS-1503061	Hex Socket Hd Cap Screw	M6-1.0X25	1
831	BDB919-831	Way Cover		2
832	BDB919-832	Cover Mount		2
833	TS-2284081	Phillips Pan Hd Mach Screw	M4-0.7X8	8
834	BDB919-834	Way Cover		2
835	BDB919-835	Cover Mount		2
836	BDB919-010	Ball Oiler	8mm	1
837	TS-1504061	Hex Socket Hd Cap Screw	M8-1.25X30	2
838	TS-1503071	Hex Socket Hd Cap Screw	M6-1.0X30	2
839	BDB919-839	Handle Screw		1
840	BDB919-840	Cover Mount		1
841	BDB919-021	Ball Oiler	6mm	2
842	TS-1521021	Socket Set Screw	M4-0.7X6	1

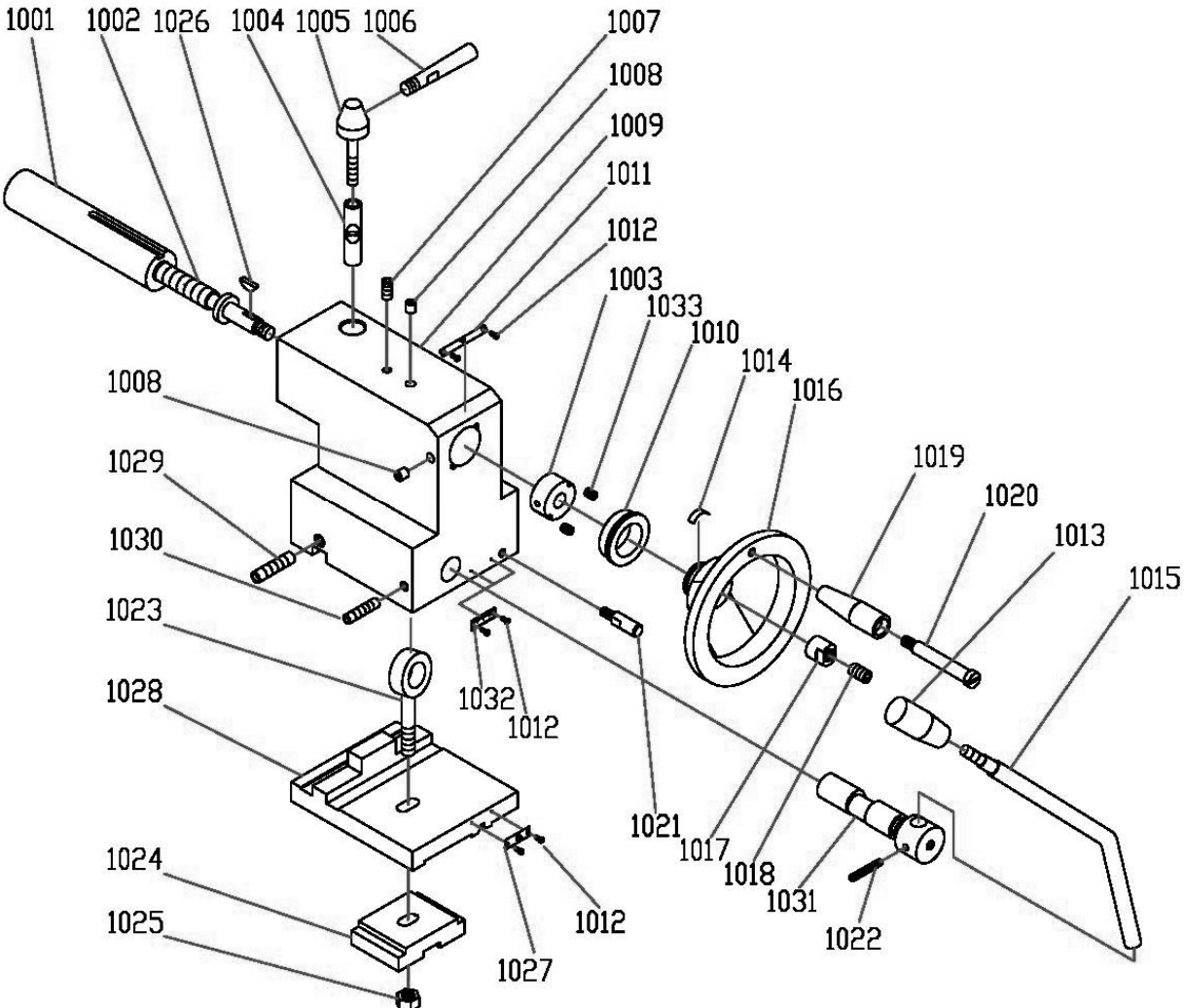
13.11.1 Compound Slide – Exploded View



13.11.2 Compound Slide – Parts List

Index No.	Part No.	Description	Size	Qty
901	BDB919-901	Longitudinal Slide		1
902	BDB919-902	Swivel Base		1
903	BDB919-903	Gib		1
904	BDB919-904	Clamping Ring		1
905	BDB919-905	Micrometer Pan		1
906	BDB919-906	Lead Screw Nut		1
907	BDB919-907	Adjusting Screw		1
908	BDB919-908	Screw		1
909	BDB919-909	T-Screw		2
910	BDB919-910	Tool Post		1
911	F010436	Socket Set Screw	M4-0.7X14	1
912	TS-1550041	Flat Washer	6mm	2
913	TS-1502021	Hex Socket Hd Cap Screw	M5-0.8X10	2
914	TS-1503021	Hex Socket Hd Cap Screw	M6-1.0X10	3
915	TS-1521071	Socket Set Screw	M4-0.7X20	3
916	TS-1540021	Hex Nut	M4	3
917	TS-1540041	Hex Nut	M6	2
918	5783461	Roll Pin	3X8mm	1
919	130603018	Roll Pin	3X14mm	1
920	BDB919-920	Lock Nut		1
921	BDB919-921	Washer	8mm	1
922	BDB919-922	Lock Handle		1
923	BDB919-923	Lead Screw		1
924	BDB919-924	Lead Screw Mount		1
925	BDB919-925	Graduated Ring		1
926	BDB919-926	Handwheel		1
927	BDB919-927	Handle		2
928	F014002	Woodruff Key	3X5X13mm	1
929	BDB919-711	Leaf Spring		1
930	BDB919-930	Nut		1
931	5302731	Socket Set Screw	M8-1.25X6	1
932	40317-13	Roll Pin	3X12mm	1
933	TS-1504061	Hex Socket Hd Cap Screw	M8-1.25X30	8
934	BDB919-934	Pin		1
935	BDB919-935	Spring	0.7x5x15mm	1

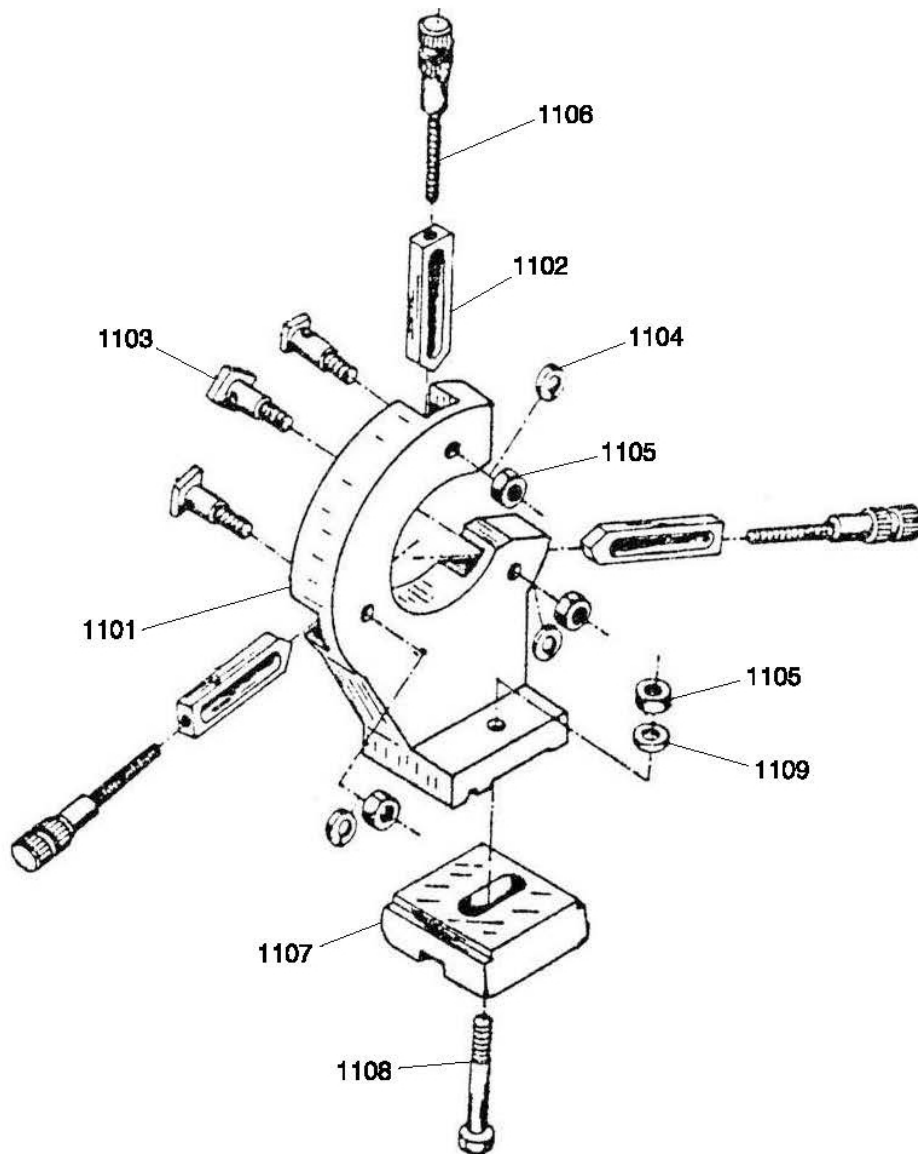
13.12.1 Tailstock – Exploded View



13.12.2 Tailstock – Parts List

Index No.	Part No.	Description	Size	Qty
1001	BDB919-1001	Tailstock Ram		1
1002	BDB919-1002	Lead Screw		1
1003	BDB919-1003	Bushing		1
1004	BDB919-1004	Clamp		1
1005	BDB919-1005	Screw		1
1006	BDB919-1006	Lever		1
1007	TS-1522041	Set Screw	M5X12	1
1008	BDB919-021	Ball Oiler	6mm	2
1009	BDB919-1009	Tailstock Body		1
1010	BDB919-1010	Graduated Dial		1
1011	BDB919-1011	Indicator Plate		1
1012	GHW-TD-10	Rivet	2X4mm	6
1013	BDB919-1013	Handle		1
1014	BDB919-711	Leaf Spring		1
1015	BDB919-1015	Lever		1
1016	BDB919-1016	Handwheel		1
1017	BDB919-1017	Nut		1
1018	BDB919-1018	Set Screw	M8X8	1
1019	BDB919-1019	Handle		1
1020	BDB919-1020	Handle Screw		1
1021	BDB919-1021	Pin		1
1022	Y31126180	Roll Pin	4X28mm	1
1023	BDB919-1023	Screw		1
1024	BDB919-1024	Clamping Plate		1
1025	TS-1541031	Nylon Lock Hex Nut	M8	1
1026	F014002	Woodruff Key	3X5X13mm	1
1027	BDB919-1027	Offset Scale, Upper		1
1028	BDB919-1028	Tailstock Base		1
1029	TS-1524061	Socket Set Screw	M8X25	2
1030	F010437	Socket Set Screw BO HD	M6X25	1
1031	BDB919-1031	Shaft		1
1032	BDB919-1032	Offset Scale, Lower		1
1033	TS-1522011	Socket Set Screw	M5X6	2

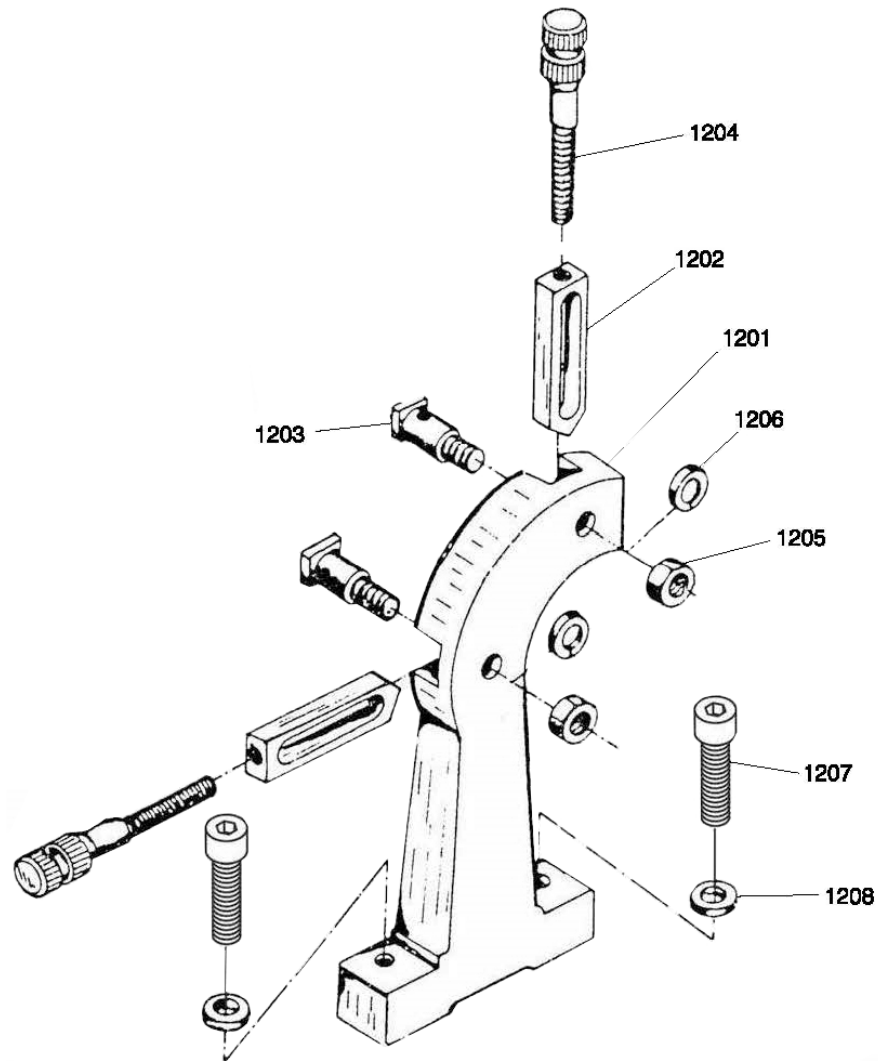
13.13.1 Steady Rest – Exploded View



13.13.2 Steady Rest – Parts List

Index No.	Part No.	Description	Size	Qty
1101	BDB919-1101	Rest Casting		1
1102	BDB919-1102	Jaw		3
1103	BDB919-1103	Screw		3
1104	TS-2361081	Lock Washer	8mm	3
1105	TS-1541031	Hex Nut	M8	4
1106	BDB919-1106	Adjusting Screw		3
1107	BDB919-1107	Clamping Plate		1
1108	TS-1490091	Hex Cap Bolt	M8X50	1
1109	TS-2361081	Lock Washer	8mm	1

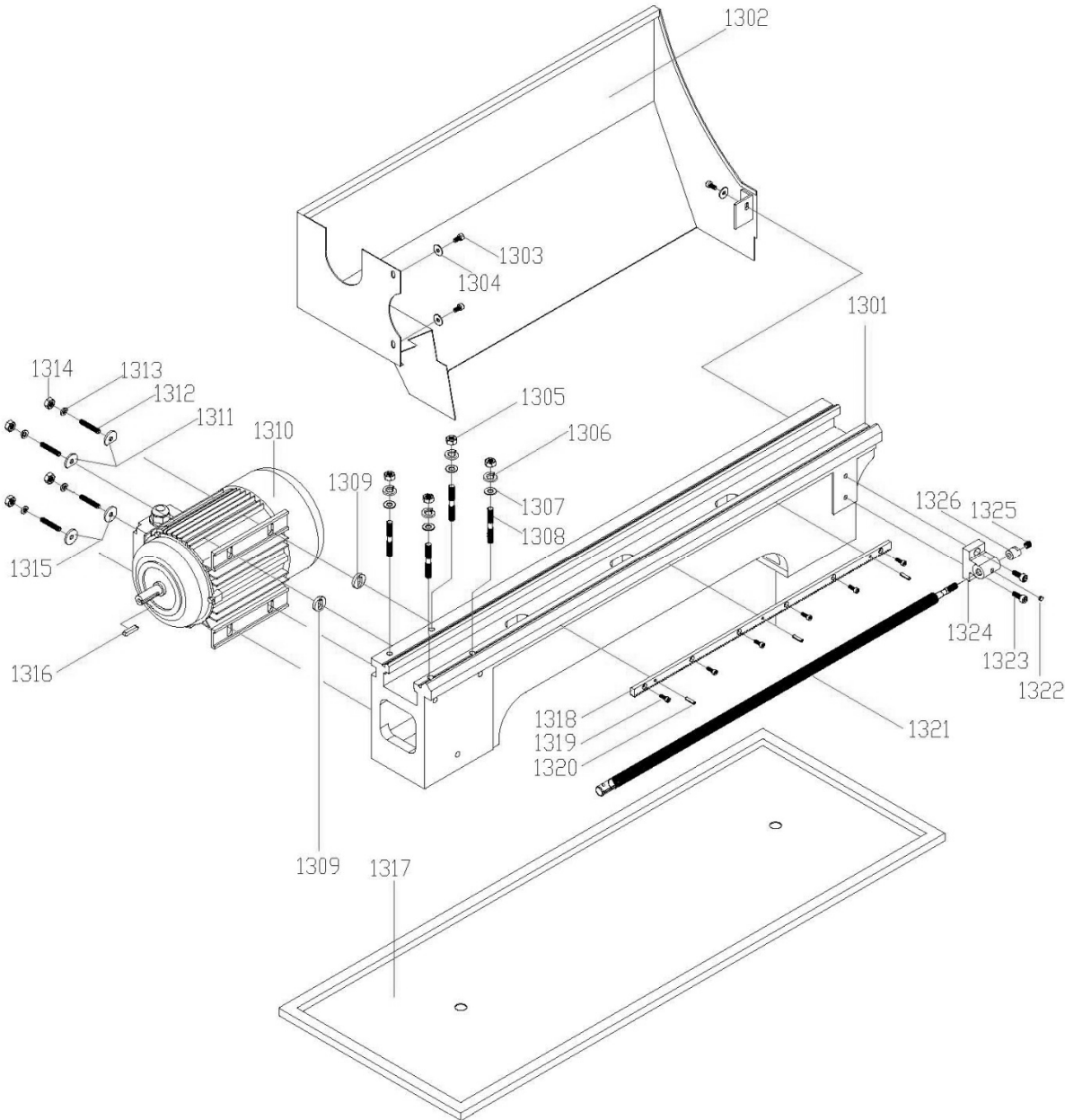
13.14.1 Follow Rest – Exploded View



13.14.2 Follow Rest – Parts List

Index No.	Part No.	Description	Size	Qty
1201	BDB919-1201	Follow Rest Casting		1
1202	BDB919-1202	Jaw		2
1203	BDB919-1203	Screw		2
1204	BDB919-1204	Adjusting Screw		2
1205	TS-1541031	Hex Nut	M8	2
1206	TS-2361081	Lock Washer	8mm	2
1207	TS-1503071	Hex Socket Hd Cap Screw	M6X30	2
1208	TS-2361061	Lock Washer	6mm	2

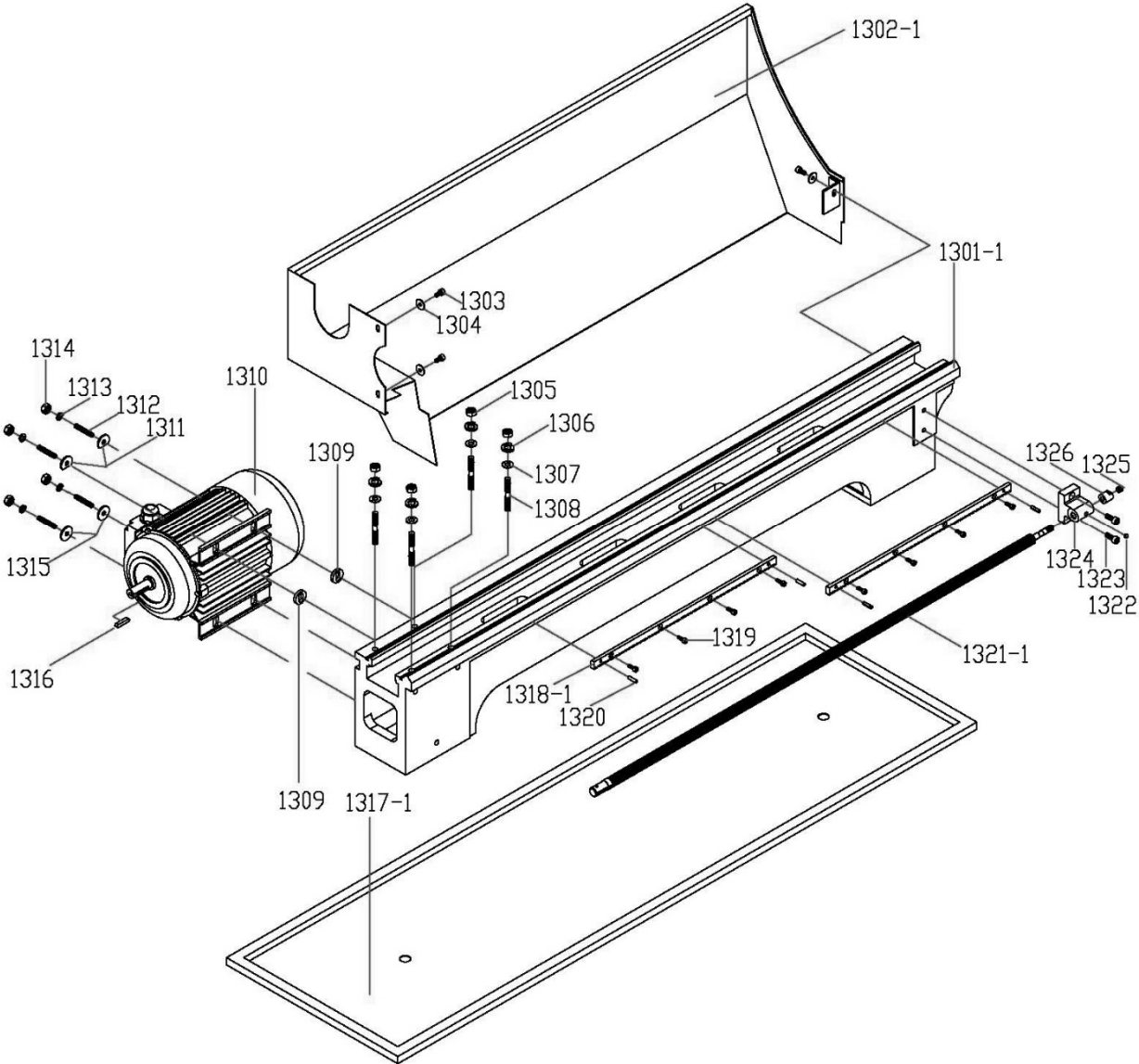
13.15.1 BD-919 Bed Assembly – Exploded View



13.15.2 BDB-919 Bed Assembly – Parts List

Index No.	Part No.	Description	Size	Qty
1301	BDB919-1301	Bed		1
1302	BDB919-1302	Splash Guard		1
1303	TS-1502021	Hex Socket Hd Cap Screw	M5X10	3
1304	TS-1550031	Flat Washer	5mm	3
1305	TS-1540061	Hex Nut	M8	4
1306	TS-2361081	Lock Washer	8mm	4
1307	TS-1550061	Flat Washer	8mm	4
1308	BDB919-1308	Stud	M8X50	4
1309	BDB919-1309	C-Washer	21mm	2
1310	BDB919-1310	Motor	3/4HP (550w) 1PH	1
1311	BDB919-1311	Washer		2
1312	PM1000-188	Socket Set Screw	M6X35	4
1313	TS-2361061	Lock Washer	6mm	4
1314	TS-1540041	Hex Nut	M6	4
1315	BDB919-1315	Large Washer	6mm	2
1316	KF2R5525	Key, Double Rd Hd	A5X5X25	1
1317	BDB919-1317	Chip Pan		1
1318	BDB919-1318	Rack		1
1319	TS-1501031	Hex Socket Hd Cap Screw	M4X10	6
1320	BDB919-1320	Taper Pin	6x16mm	3
1321	BDB919-1321	Leadscrew		1
1322	BDB919-021	Ball Oiler	6mm	1
1323	TS-1503041	Hex Socket Hd Cap Screw	M6X16	2
1324	BDB919-1324	Bracket		1
1325	TS-1524011	Set Screw	M8X8	1
1326	BDB919-1326	Nut		1

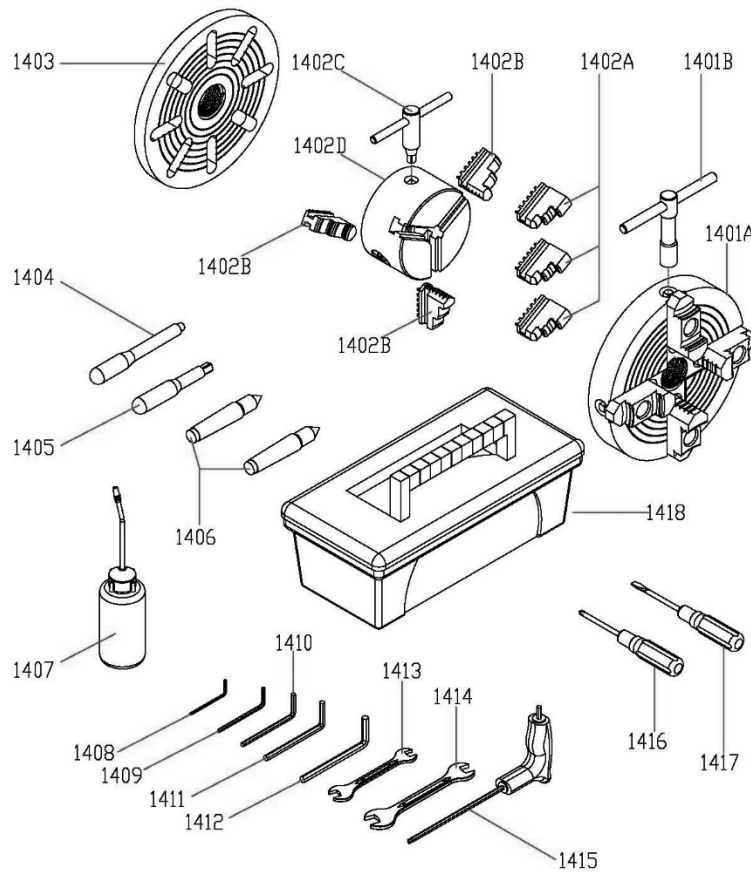
13.16.1 BDB-929 Bed Assembly – Exploded View



13.16.2 BDB-929 Bed Assembly – Parts List

Index No.	Part No.	Description	Size	Qty
1301-1	BDB929-1301	Bed		1
1302-1	BDB929-1302	Splash Guard		1
1303	TS-1502021	Hex Socket Hd Cap Screw	M5X10	3
1304	TS-1550031	Flat Washer	5mm	3
1305	TS-1540061	Hex Nut	M8	4
1306	TS-2361081	Lock Washer	8mm	4
1307	TS-1550061	Flat Washer	8mm	4
1308	BDB919-1308	Stud	M8X50	4
1309	BDB919-1309	C-Washer	21mm	2
1310	BDB919-1310	Motor	3/4HP (550w) 1PH	1
1311	BDB919-1311	Washer		2
1312	PM1000-188	Socket Set Screw	M6X35	4
1313	TS-2361061	Lock Washer	6mm	4
1314	TS-1540041	Hex Nut	M6	4
1315	BDB919-1315	Large Washer	6mm	2
1316	KF2R5525	Key, Double Rd Hd	A5X5X25	1
1317-1	BDB929-1317	Chip Pan		1
1318-1	BDB929-1318	Rack		2
1319	TS-1501031	Hex Socket Hd Cap Screw	M4X10	8
1320	BDB919-1320	Taper Pin	6x16	4
1321-1	BDB929-1321	Leadscrew		1
1322	BDB919-021	Ball Oiler	6mm	1
1323	TS-1503041	Hex Socket Hd Cap Screw	M6X16	2
1324	BDB919-1324	Bracket		1
1325	TS-1524011	Set Screw	M8X8	1
1326	BDB919-1326	Nut		1

13.17.1 Accessories – Exploded View

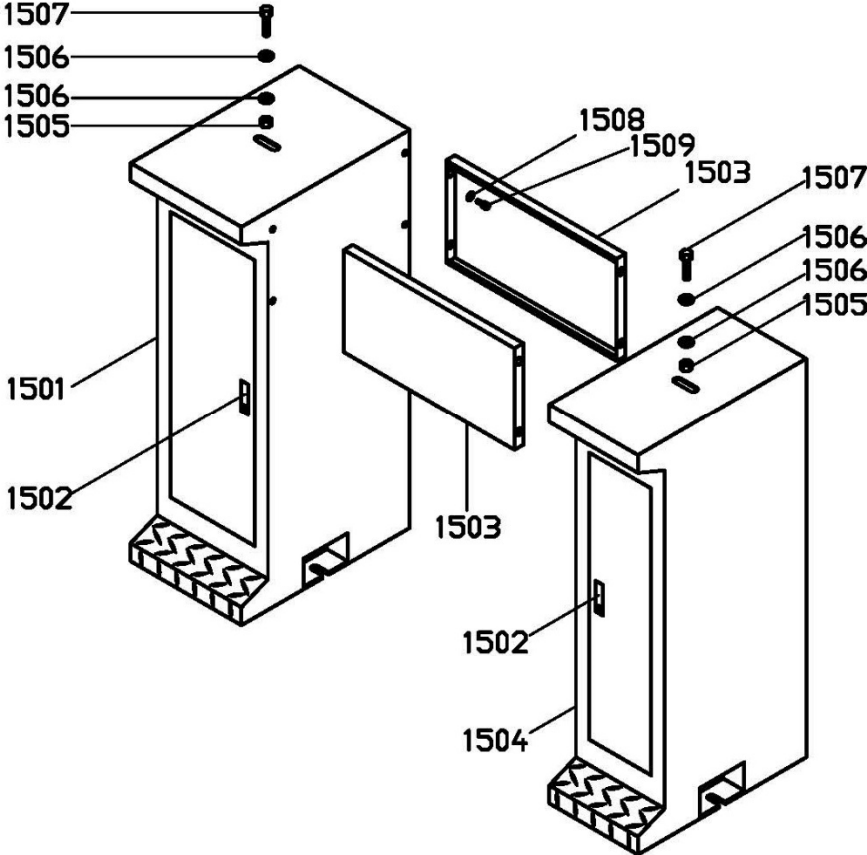


13.17.2 Accessories – Parts List

Index No.	Part No.	Description	Size	Qty
1401	BDB919-1401	4-Jaw Chuck Kit	187mm	1
1401A	BDB919-1401A	4-Jaw Chuck Body		1
1401B	BDB919-1401B	4-Jaw Chuck Key		1
1402	BDB919-1402	3-Jaw Chuck Kit	100mm	1
1402A	BDB919-1402A	Reverse Jaws Set (3 pcs)		1
1402B	BDB919-1402B	Internal Jaws Set (3 pcs)		1
1402C	BDB919-1402C	3-Jaw Chuck Key		1
1402D	BDB919-1402D	3-Jaw Chuck Body		1
1403	BDB919-1403	Face Plate	190mm	1
1404	BDB919-1404	Spindle Bar		1
1405	BDB919-1405	Chuck Bar		1
1406	BDB919-1406	Dead Center MT2 *	MT2	2
1407	BDB919-1407	Oil Bottle *		1
1408	JHL610-901	Hex Wrench 2mm *	2mm	1
1409	TS-152704	Hex Wrench 3mm *	3mm	1
1410	TS-152705	Hex Wrench 4mm *	4mm	1
1411	TS-152706	Hex Wrench 5mm *	5mm	1
1412	TS-152707	Hex Wrench 6mm *	6mm	1
1413	WB25-1010	Wrench 8/10mm *	8/10mm	1
1414	WB25-1011	Wrench 12/14mm *	12/14mm	1
1415	JJ6CSDX-326A	T-Hex Wrench 4mm *	4mm	1
1416	ZX-OP-15	Screwdriver, Phillips *		1
1417	ZX-OP-14	Screwdriver, Flat Blade *		1
1418	BDB919-TBC	Tool Box Complete		1

* included in Tool Box

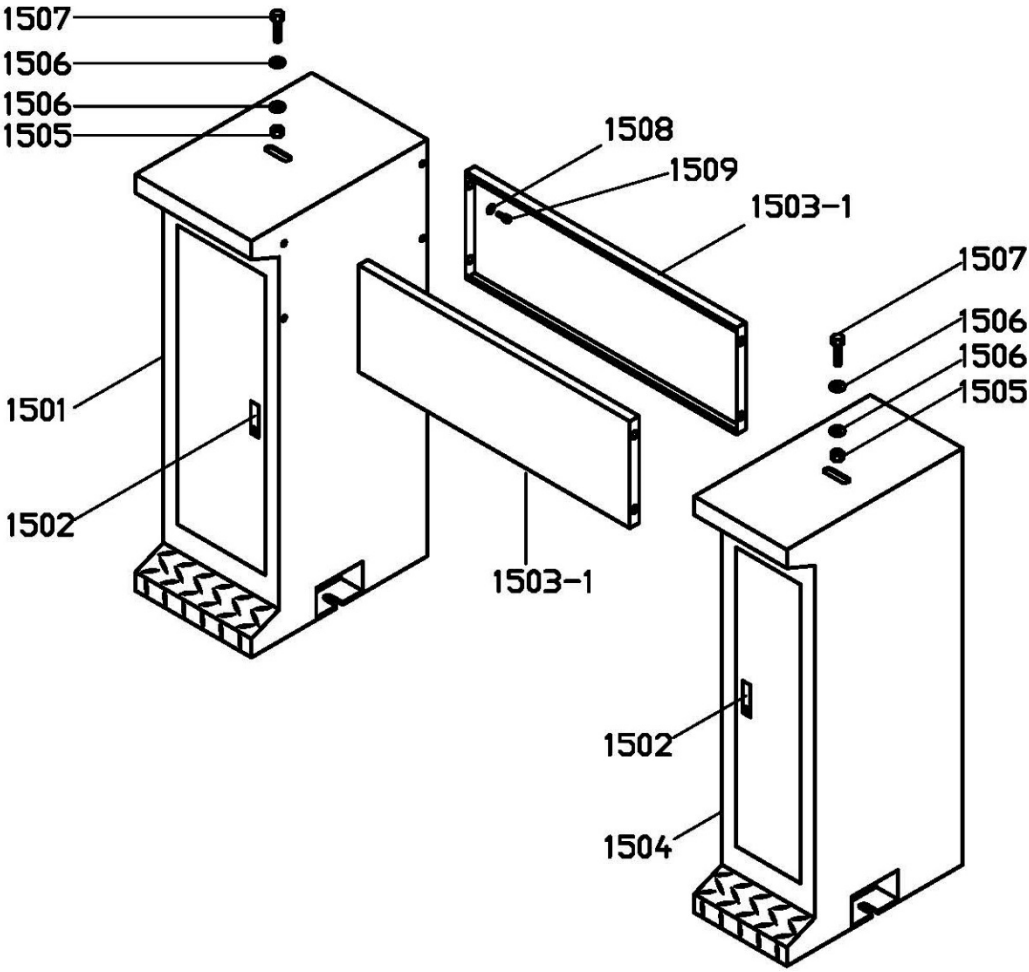
13.18.1 BDB-919 Stand #321375 (Optional Accessory) – Exploded View



13.18.2 BDB-919 Stand #321375 (Optional Accessory) – Parts List

Index No.	Part No.	Description	Size	Qty
.....	321375	BDB-919 Stand (#1501 thru 1510)		1
1501	BDB919-1501	Left Stand	H:760mm	1
1502	BDB919-1502	Door Latch Assembly		2
1503	BDB919-1503	Stand Plate	L:385mm	2
1504	BDB919-1504	Right Stand	H:760mm	1
1505	TS-1540071	Hex Nut	M10	4
1506	TS-1550071	Flat Washer	10mm	4
1507	TS-149105	Hex Cap Screw	M10x35	2
1508	TS-1550041	Flat Washer	6mm	8
1509	TS-1503021	Hex Socket Hd Cap Screw	M6X10	8
1510	JET-92	JET Logo (not shown)	92x38mm	1

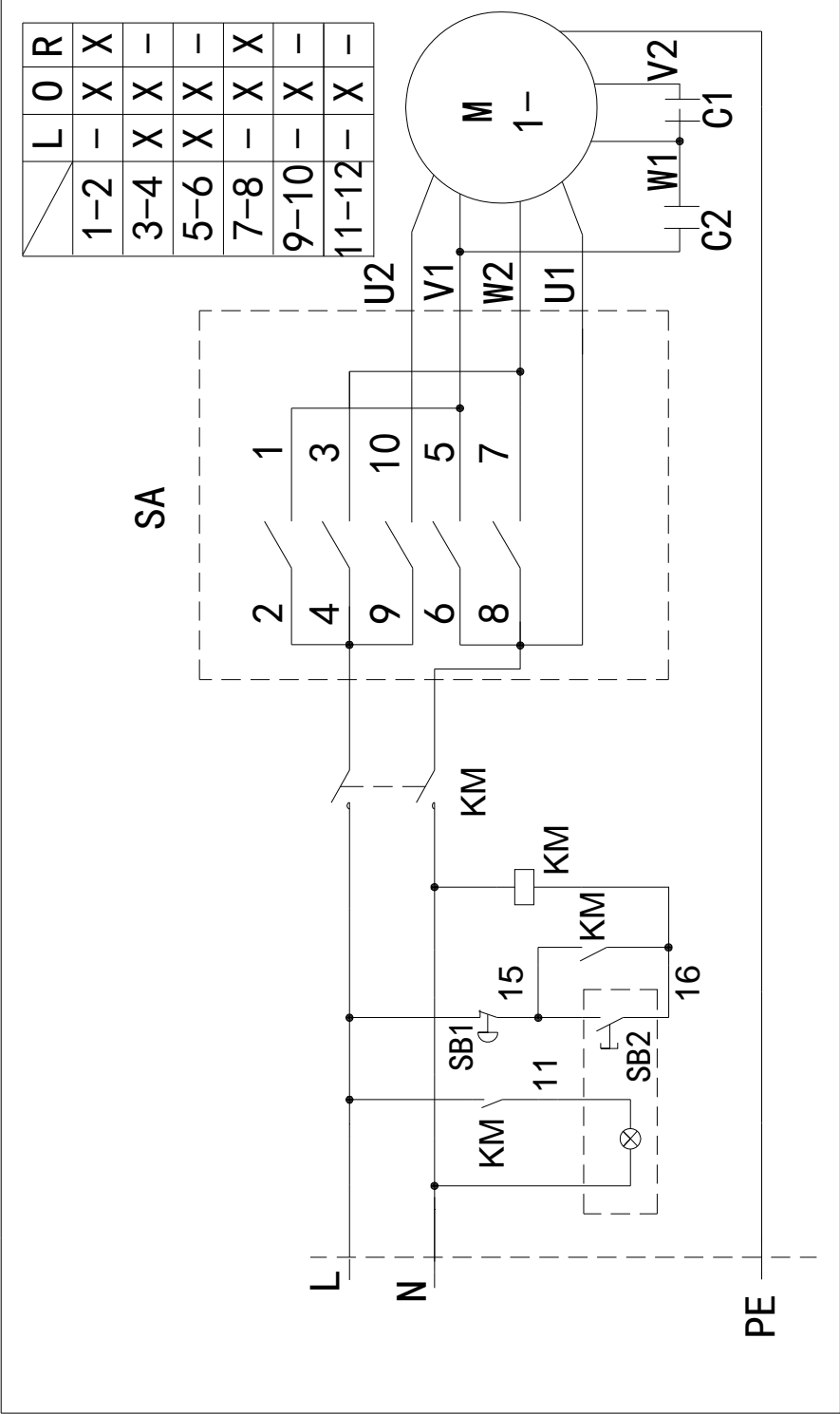
13.19.2 BDB-929 Stand #321377 (Optional Accessory) – Exploded View



13.19.2 BDB-929 Stand #321377 (Optional Accessory) – Parts List

Index No.	Part No.	Description	Size	Qty
.....	321377	BDB-929 Stand (#1501 thru 1510)		1
1501	BDB919-1501	Left Stand	H:760mm	1
1502	BDB919-1502	Door Latch Assembly		2
1503-1	BDB929-1503-1	Stand Plate	L:645mm	2
1504	BDB919-1504	Right Stand	H:760mm	1
1505	TS-1540071	Hex Nut	M10	4
1506	TS-1550071	Flat Washer	10mm	4
1507	TS-149105	Hex Cap Screw	M10x35	2
1508	TS-1550041	Flat Washer	6mm	8
1509	TS-1503021	Hex Socket Hd Cap Screw	M6X10	8
1510	JET-92	JET Logo (not shown)	92x38mm	1

14.0 Wiring diagram for BDB-919,929 Lathes



15.0 Speed and threading charts

BDB-919

SPINDLE SPEED/RPM

BC1	BC2	BC3	AC1	AC2	AC3
130	300	600	400	1000	2000

BDB-929

SPINDLE SPEED/RPM

BC1	BC2	BC3	AC1	AC2	AC3
130	300	600	400	1000	2000

LONGITUDINAL FEED IN/REV

D	32	32	32	32	28
E	46	48	52	56	56
△	0.0064	0.0062	0.0057	0.0053	0.0046
□	0.0128	0.0124	0.0114	0.0106	0.0092
○	0.0256	0.0248	0.0228	0.0212	0.0184
D	32	40	32	32	32
E	32	45	38	40	44
△	0.0092	0.0082	0.0078	0.0074	0.0067
□	0.0184	0.0164	0.0156	0.0148	0.0134
○	0.0368	0.0328	0.0312	0.0296	0.0268
D	32	32	32	32	32
E	32	38	40	44	45
△	0.0006	0.0008	0.0008	0.0009	0.0009
□	0.0012	0.0015	0.0016	0.0017	0.0017
○	0.0024	0.0030	0.0032	0.0034	0.0035
D	32	32	32	32	38
E	46	48	52	56	56
△	0.0009	0.0009	0.0010	0.0011	0.0013
□	0.0018	0.0019	0.0020	0.0022	0.0026
○	0.0036	0.0038	0.0040	0.0044	0.0052

THREADING CHART

T.P.I.	D	32	40	32	32	32
	E	32	45	38	40	44
○		8	9	9½	10	11
□		16	18	19	20	22
△		32	36	38	40	44
D	D	32	32	32	32	
	E	46	48	52	56	
○		11½	12	13	14	
□		23	24	26	28	
△		46	48	52	56	
mm	D	30	28	40		
	E	45	30	48		
△		0.5	0.7			
□		1		1.25		
○		2		2.5		
D	D	32	32	56		
	E	32	30	48		
△		0.75	0.8			
□		1.5		1.75		
○		3		3.5		

THREAD DIAL

T.P.I.	Dial
8 10 12 14 16	1-8
18 20 22 24 26	
28 32 36 38 40	
44 46 48 52 56	
9 11 13 19 23	1, 3, 5, 7
9½ 11½	2, 6