WBL290F
11-1/2" x 29" METAL LATHE with DRO
User Manual

TABLE OF CONTENTS

General Safety Instructions
For Machines

Extreme caution should be used when operating all power tools. Know your power tool, be familiar with its operation, read through the user manual and practice safe usage procedures at all times.

- **Always** read and understand the user manual before operating the machine.
- **Connect** your machine ONLY to the matched and specific power source.
- **Always** wear safety glasses respirators, hearing protection and safety shoes, when operating your machine.
- **Do not** wear loose clothing or jewelry when operating your machine.
- **A safe environment** is important. Keep the area free of dust, dirt and other debris in the immediate vicinity of your machine.
- **Be alert ! Do not** use prescription or other drugs that may affect your ability or judgment to safely operate your machine.
- **Disconnect** the power source when changing drill bits, hollow chisels, router bits, shaper heads, blades, knives, or making other adjustments or repairs.
- **Never** leave a tool unattended while it is in operation.
- **Never** reach over the machine when the tool is in operation.
- **Always** keep blades, knives and bits sharpened and properly aligned.
- **All operations must be** performed with the guards in place to ensure safety.
- **Always** use push sticks and feather boards to safety feed your work through the machine and clamp the work-piece (when necessary) to prevent the work-piece from any unexpected movement.
- **Always** make sure that any tools used for adjustments are removed before operating the machine.
- **Always** keep the bystanders safely away while the machine is in operation.
- **Never** attempt to remove jammed cutoff pieces until the saw blade has come to a full stop.

WBL290F - METAL LATHE
SPECIFIC SAFETY INSTRUCTIONS

- **This machine is designed and intended for use by properly trained and experienced personnel only**.If you are not familiar with the proper use of lathes, do not use this machine until proper training and knowledge has been obtained.
- **Keep guards in place.** Safety guards must be kept in place and in working order all the times to ensure safety.
- **Keep children and visitors away**. All children and visitors should be kept at a safe distance from the work area.
- **Wear proper apparel.** Loose clothing, gloves, neckties, rings, bracelets, or other jewelry may get caught in moving parts. Non-slip footwear is recommended. wear protective hair covering to contain long hair. Do not wear any type of gloves.
- **Always use safety glasses.** For the safety of your eyes, safety glasses should be used while operating the lathe.
- **Do not use the lathe in dangerous environments.** Do no expose the machine to rain. Do not use the machine in wet locations.
- **Check for damaged parts.** Check for proper alignment of moving broken parts, and any other conditions that may effect the tools operation.
- **Remove adjusting keys and wrenches.** Remove all the tools used for adjustment before turning the machine on.
- **Be careful.** Do not put your hand close to the cutter while the machine is running.
- **Never leave the lathe** unattended while it is running.
- **Do not over-reach.** Keep proper footing and balance at all times.
- **Maintain tools with care**. Keep tools sharp and clean for best and safest performance. Follow instructions given in the manual for lubrication and replacing accessories.
- **Turn the power OFF**. Before making any adjustments, make sure the switch is in the "OFF" position and the cord is un-plugged from the power
- Make sure you have read and understood all the safety instructions in the manual and you are familiar with your metal lathe, before operating it. If you fail to do so, serious injury could occur.

Warning

The safety instructions given above can not be complete because the environment in every shop is different. Always consider safety first as it applies to your individual working conditions.

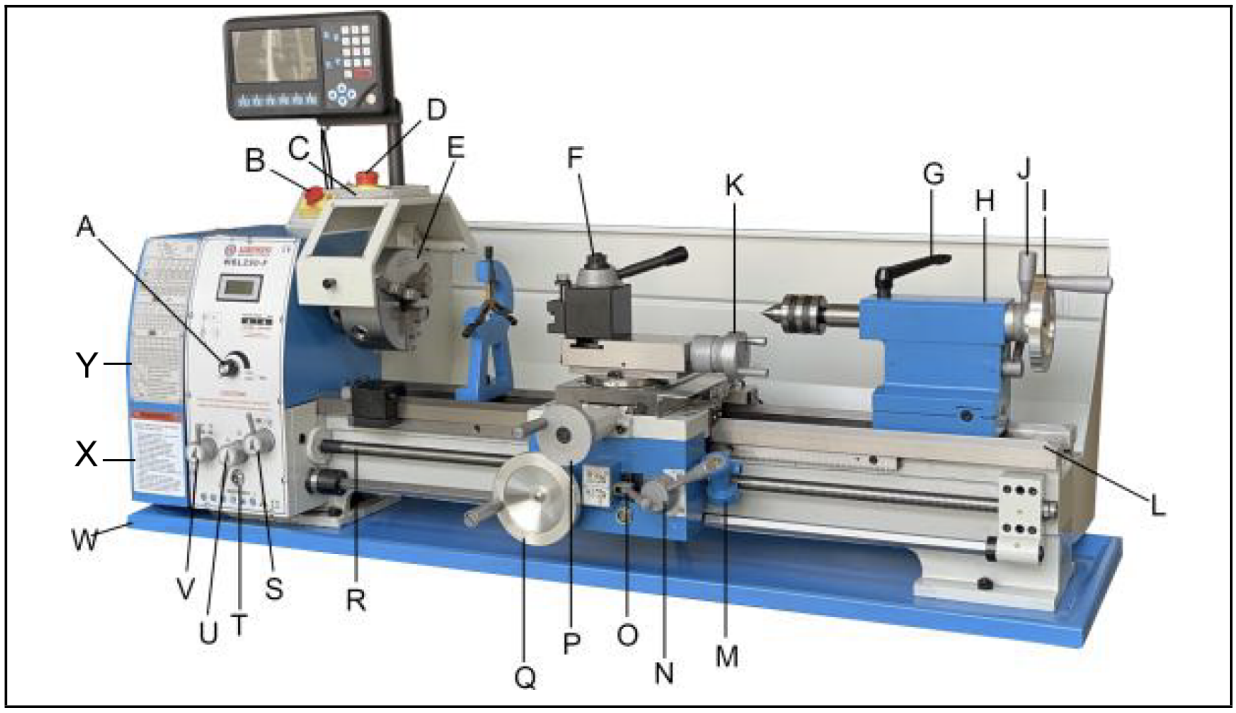
WBL290F - METAL LATHE FEATURES

"MODEL WBL290F - 11-1/2" x 29" METAL LATHE WITH VARIABLE SPEED.

As part of the growing Line of WEISS metalworking equipment, we are proud to offer the WBL290F a 11-1/2" x 29" Metal Lathe with Digital Readout. By following the instructions and procedures Laid out in this user manual, you will receive years of excellent service and satisfaction. The WBL290F is a professional tool and like all power tools, proper care and safety procedures should be adhered to.

Motor	2HP,1.5KW,5000r/min
Swing over bed	11-1/2”(290mm)
Swing over cross slide	6-3/4”(170mm)
Distance between center	29”(735mm)
Width of bed	7”(180mm)
Hole through spindle	1-1/2”(38mm)
Taper in spindle nose	MT5
Number of spindle speeds	Variable
Range of spindle speeds	50-900RPM and 100-1800RPM(Variable speeds）
Number of metric threads	12
Range of metric threads	0.4mm-3mm
Number of imperial threads	21
Range of imperial threads	8-56T.P.I
Range of cross feed	0.0015-0.0056”/Revolution
Range of longitudinal	0.0025-0.012”/Revolution
Tool post type	Wedge type quick change tool post
Max compound slide travel	3-3/4”(95mm)
Max cross slide travel	6-3/4”(170mm)
Maximum carriage travel	23”(580mm)
Tailstovk spindle travel	3-3/8”(85mm)
Taper in tailstock spindle	MT3
Overall dimension of the lathe	Length 60”x Width 27.5”x Height 21-1/16”
Weight	510 lbs
Warranty	1Years

WBL290F -METAL LATHE
PHYSICAL FEATURES



A. Variable Speed Switch
B. ON/OFF Switch
C. Forward/Reverse Switch
D. Emergency Stop Switch
E. 3-Jaw Chuck
F. American type QCTP
G. Tail Stock Quill Lock Lever
H. Tail Stock
I. Tail Stock Hand Wheel
J. Tail Stock Lock Nut
K. Compound Slide Traverse Lever
L. Lathe Bed
M. Thread Dial Indicator
N. Half Nut Lever
O. Auto Feed Lever
P. Cross Slide Hand Wheel
Q. Carriage Hand Wheel
R. Lead Screw
S. Feed/Thread Selector Knob
T. Oil Sight Glass
U. Feed Rate Selector Knob
V. Feed Direction Selector Knob
W. Chip Tray
X. Change Gear Protective Cover
Y. Threading/Feeding Table

SETUP

Before setting up your machine you must read and understand the instructions given in this manual.

The unpainted surfaces of this lathe are coated with a rust preventive waxy oil and you will want to remove this before starting assembly. Use a solvent cleaner that will not damage painted surfaces.

WARNING

WBL290F is a very heavy machine, do not over-exert yourself. Use fork truck or other mechanical devices for safe moving method

When setting up your machine, you will want to find an ideal spot where your metal lathe will most likely be positioned most of the time.

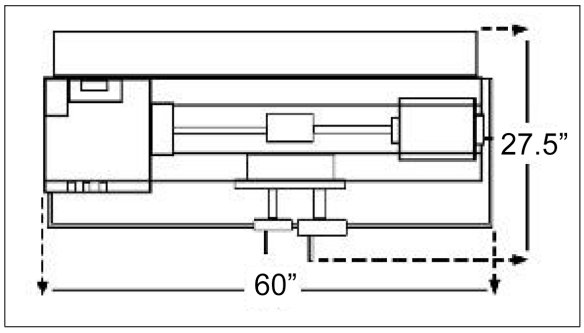


Figure-1 WBL290F Foot print

UNPACKING

To ensure safe transportation this machine is properly packaged and shipped completely in crates. When unpacking, carefully inspect the crates and ensure that nothing has been damaged during transit.Open the crates and check that the machine and the parts are in good condition.

LIST OF CONTENTS QTY	QTY
A. 3-Jaw Chuck	1
B. Change Gears	9
C. Live Center	1
D. Face Plate.	1
E. Steady Rest.	1
F. Follow Rest.	1
G. External Jaws for 3-Jaw Chuck	3
H. Dead Center MT3 (2)	1
I. Reduce Sleeve (No. 5/3).	1
J. Oil Gun	1
K. Toolbox	1
L. Wedge Type Quich Change Tool Post	1
M. Wrenches (8-10, 12-14, 17-19).	3
N. Hex Wrenches (3,4,5,6,8)	5
O. Chuck Keys.	3
P. Screw Drivers (Flat & Cross Head)	2
Q. Lathe with Chip Tray (Not Shown)	1

Figure-2 Inventory

While doing inventory, if you can not find any part, check if the part is already installed on the machine. Some of the parts come assembled with the machine because of shipping purposes.

PROPER GROUNDING

Grounding provides a path of least resistance for electric current to reduce the risk of electric shock.

WBL290F is equipped with a 110-V single phase motor.

To prevent electrical hazards, have a qualified electrician ensure that the line is properly wired.

This lathe is for use on a normal 110 volt circuit. Make sure that the appliance is connected to an outlet having the same configuration as the plug. If an adaptor plug is used, it must be attached to themetal screw of the receptacle.

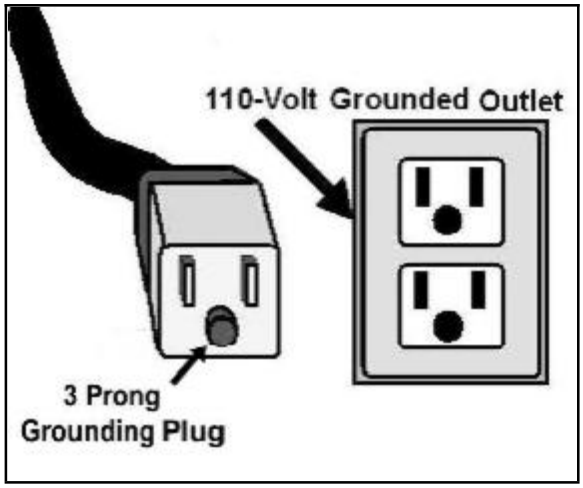


Figure-3 110-Volts Outlet for WBL290F

WARNING

Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded.

It is strongly recommended not to use extension cords with your WBL290F Always try to position your machine close to the power source so that you do not need to use extension cords. When it is necessary to use an extension cord, make sure the extension cord does not exceed 50-feet in length and the cord is 12-gauge to prevent motor damage. Y our WBL290F should be wired with a plug having 3-prongs to fit a 3 prong grounded receptacle as shown in figure-3. Do not remove the grounding prong to fit it into a 2-pronged outlet. Always check with a qualified electrician if you are in doubt.

CHUCK

WBL290F comes equipped with a 160mm, 3-jaw chuck, and a 270mm face plate.

The 3-jaw chuck is a scroll type chuck, meaning that all three jaws move in union when adjusted while the 4-jaw chuck features four independent jaws. The 4-jaw chuck is used to clamp square or unevenly shaped work-pieces.

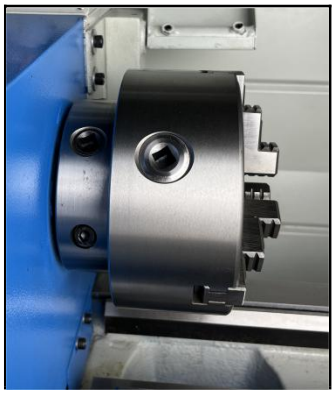


Figure-4 Chuck mounting screws and nuts

When removing the chuck,loosen the hex nuts,tum the washer counter-clockwise and pull out the chuck. See figure-4.

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 acces at the outboard end of your work-piece. To mount the steady rest:

Secure the steady rest to the lathe bed from below with a locking plate.

A single cap screw, along with a nut and washer hold the steady rest in place as shown in figure-5.

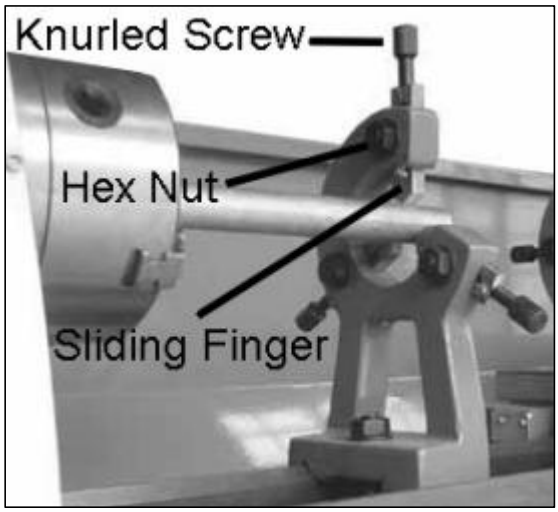


Figure-5 Steady rest

TO SET-UP THE STEADY REST:

Make sure the switch is in the OFF position and the cord is disconnected from the power source.
Loosen the hex nuts shown in figure-5.
Loosen knurled screw and open the sliding fingers until the steady rest can be moved with its finger around the work-piece.
Secure the steady rest in position. See figure-5.
Tighten the knurled screw so that the fingers are snug but not tight against the work-piece. Tighten three hex nuts shown in figure-5 and lubricate the sliding points with machine oil.

The sliding fingers of the steady rest shown in figure-5 should receive periodic lubrication when used, to prevent premature wear.

FOLLOW REST

The follow rest is mounted on the saddle with two cap screws shown in figure-6 and it follows the movement of the tuming tool.Only two sliding fingers are required. The place of the third finger is taken by turning tool. The follow rest is used for turning operations on long slender work-pieces. It prevents flexing of the work-piece under pressure from the turning tool.

Set the fingers snug to the work-piece and make sure not to over tighten. Lubricate the fingers during operation to prevent premature wear,

Figure-6 Follow rest installed

LATHE BED

The lathe bed is made of high quality iron and features high cheeks with strong cross ribs ensuring low vibration and rigidity.
It integrates the headstock and drive unit, for attaching the carriage and leads crews. The two precision ground V-side ways are re- enforced by heat hardening and grinding to guide the carriage and the tailstock accurately. The main motor is mounted to the rear of the left side of the bed.

Figure-7 Lathe bed

HEADSTOCK

Made from high quality, cast iron for low vibration, the headstock is bolted to the bed with four screws. The headstock houses the main spindle with two precision taper roller bearings and the drive unit.
The main spindle transmits the torque during the turning process and it also holds the work-piece and clamping devices.

Figure-8 Headstock

GEARBOX

The gearbox is located on the left side of the lathe and is mounted on the bed. It is used to select the feeds for straight turning
as well as for thread cutting. In order to achieve certain thread pitches, it is necessary to replace the change gears. The torque of the work spindle is transmitted to the feed gears and thus to the lead screw.

Figure-9 Gearbox

HEAD STOCK CONTROLS
EMERGENCY ON/OFF BUTTON: The On/Offbuttonallowstostartandstopthe machine.

Figure-10EmergencyON/OFFbutton

FORWARD / REVERSE SWITCH:
After the machine is switched ON, turn the switch to "F" position for counter-clockwise spindle rotation (forward).
Turn the switch to "R" position for clockwise spindle rotation (Reverse).
Turning the switch to "O" position the spindle remains idle.

Figure-11 Forward / Reverse switch

FEED RATE SELECTOR KNOB: Use the feedrateselectorknobtosetthedesired feedorthreadrates.Seefigure-12.

FEED THREAD SELECTOR KNOB: For threadselecting,shifttheknobtotheleft andforfeedselecting,shifttheknobto theright.Seefigure-12.

FEED DIRECTION SELECTOR KNOB: Selectthecarriagetraveldirectionwhenthe chuckisrotatingintheforwarddirection orcounter-clockwiseasviewedfromthe frontofthechuck.

Figure-12 Gearbox controls

VARIABLE SPEED CONTROL KNOB:
Tum the knob clockwise to increase the spindle speed and counter-clockwise to decrease the spindle speed. The possible speed range is dependent on the position of the drive belt. See figure-13.

Figure-13 Variable speed control knob

APRON

The apron is mounted to the saddle and to the front side of the bed and it houses the half nut with an engaging lever for activating the automatic feed. The half nut gibs can be adjusted from the outside.

SADDLE
The saddle is made from high quality cast iron and all sliding parts are smoothly ground to fit the V on the bed without play.

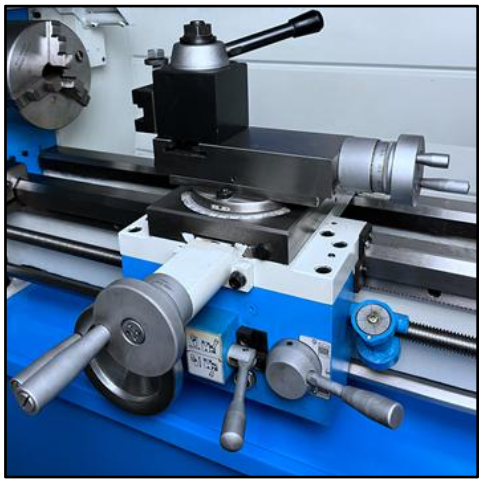


Figure-14 Saddle and apron

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 TRAVEL HAND WHEEL:
Tuning the longitudinal hand wheel, moves the carriage left or right along the bed .The control is helpful when setting up the machine for turning, when manual movement is desired during turning operations.
See figure-15.

CROSS SLIDE HAND WHEEL:
Turning the cross slide hand wheel, moves the cross slide towards or away from the work piece. The graduated scale can be adjusted

using the same method as the longitudinal scale. See figure-15.

Top slide hand wheel: The top slide hand wheel controls the position of the cutting tool relative to the work-piece .The top slide is adjustable for angle as well as longitudinal travel. It can be adjusted a full 360。if needed. See figure- 15.

Tool post: A wedge type quick change post is supplied with WBL290F. Cutting tooIs can be attached and removed by tightening or Ioosening the cIamping boIt. See figure- 15.

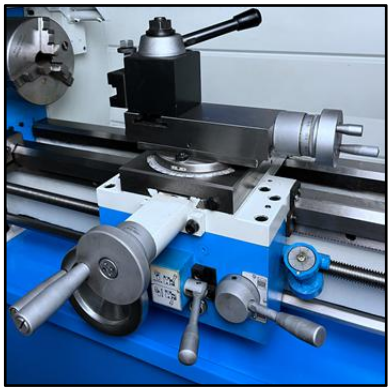


Figure-15 Carriage controIs

Auto feed selector lever: Moving this lever upward engages the automatic longitudinal feed. Moving this lever down engages the automatic traverse feed. See figure-16.

Warning

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

Half nut lever: This lever engages and disengages the half nut on the lead screw. The lever is only engaged while turning threads in stock. A lockout device feature in the lever mechanism engages when the feed selector is used.

Threading dial indicator: This indicator tells you when to engage the half nut for threading process. See figure-16.

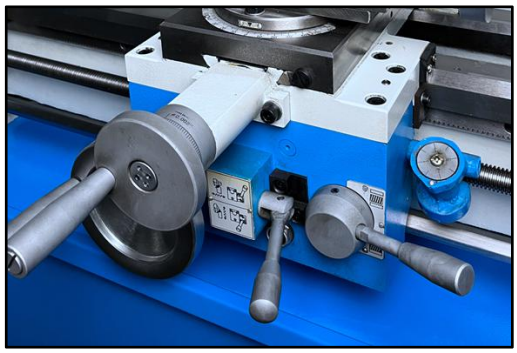


Figure-16 Carriage controIs

Lead screw and feed screw

The lead screw and feed screw are mounted on the front of the machine bed. It is connected to the gear box at the left for automatic feed and is supported by bearing on both ends.

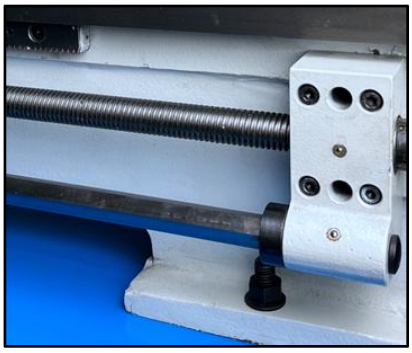


Figure-17 Lead screw and feed screw

Tailstock

The tailstock slides on a V-way and can be champed at any location. The tailstock has a heavy duty spindle and the spindle can be clamped at any location with a clamping lever. The spindle is moved with a hand wheel at the end of the tailstock.

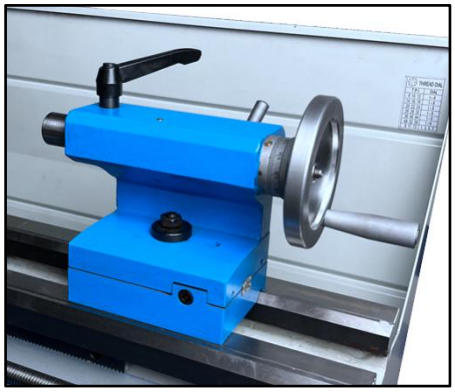


Figure-18 Tailstock

Make sure to install the securing screw at the end of the lathe as shown in figure-19 in order to prevent the tailstock from falling off the lathe bed.

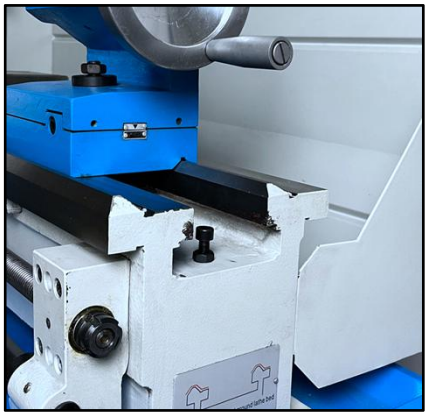


Figure-19 Installing the securing screw on the lathe bed

Tailstock Controls

Tailstock Hand Wheel: Turning the hand wheel advance or retracts the quill in the tailstock. The graduated scale on the hand wheel is adjustable. See figure-20.

Quill Lock Lever: This lock lever locks the qull in position when tightened. See figure-20.

Tailstock Lock Lever: Turn this lock lever up to lock and down to unlock the taillstock in position on the lathe bed. See figure-20.

Adjustment Screw: This set screw is used to align the tailstock with the headstock. See page-20 for details on Center Alignment.

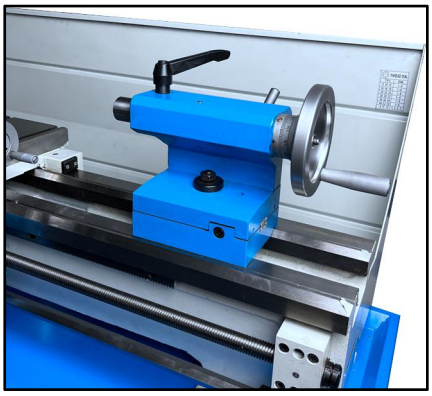


Figure-20 Tailstock controls

Test Run

Once you have assembled your lathe completely, it is then time for a test run to make sure that the lathe works properly and is ready for operation.

Remove all the tools used for assembling the machine and make sure all the guards are in place.

Waring

Before starting the lathe,make sure that you read and understood the manual and you are familiar with the function and safety features on this machine.Failure to do so may cause serious personal injury.

To ensure the carriage controls do not move unexpectedly when the lathe is started, rotate the feed direction selector knob so that the arrow is pointing to the middle (neutral) position as shown in figure-21.

Figure-21 Feed direction selector knob

Connect the cord to the power outlet and turn the machine ON.

while test running the machine, check the following:

The Emergency Stop & ON/OFF buttons are working properly.

The chuck and jaws are properly secured and working properly.

While the machine is running, turn the variable speed control knob clockwise to make sure it is working properly.

Let the machine run for 10 minutes at the Low Speed.

During the test run if there is any unusual noise coming from the lathe or it vibrates excessively, turn OFF the power switch immediately and disconnect from the power source Investigate if you can find out the problem with your machine. See page-28 for troubleshooting.

If the machine is running smoothly, proceed to the next step.

Change the belt for High Speed and let the machine run for another 10 minutes. See page-16 for details on speed change.

Turn the machine OFF and turn the Forward1Reverse switch to "R" position. Turn the machine back ON and make sure the spindle is rotating clockwise (reverse).

Waring

Do not make and adjustment while the machine it running. Failure to follow this warning can cause serious personal injuries to the operator and damage to the machine.

Speed change

The rotating speed of the headstock is controlled by the positioning of the belts on the pulleys. These are accessed by removing the protective cover on the end of the headstock.

Refer to the Threading & Feeding Table for Lathe on page-27 or the plate on the headstock to determine which belt combinations produce what speeds. The speed settings available on the WBL290F are 50 - 850 RPM and 110 - 1800 RPM.

To Change The Spindle Speed

Unscrew the two fastening knobs shown in figure-22 and remove the protective cover.

Figure-22 Removing the cover

Loosen the four nuts and screws shown in figure-23 and move the motor mounting pulley to release the tension on the belt.

Once the belt tension is released, reposition the belt on the pulleys grooves for high or low spindle speed.

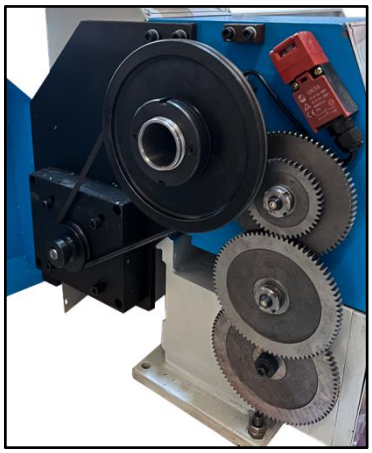


Figure-23 Screws and nuts securing the motor mounting plate

Position the belt on the pulleys for high and low speed according to figure-24.

The low spindle speed is 50 - 850 RPM while the high spindle speed is 110 - 1800 RPM.

Figure-24 Belt position on the pulleys

Once the belt is on the right grooves, move the motor pulley back to its position to tension the belt. Re-tighten the screws and nuts removed.

Important

we suggest selecting the low speed. It provides stronger torque while operation.

Longitudinal Truing With Auto.Feed

Set the feed direction selector knob and feed rate selector knob shown in figure-25 to select the feed direction and feed speed.

Figure-25 Feed rate selector knob, feed direction selector knob and chart

Use the chart on the lathe for selecting the feed speed or the thread pitch. Select the proper gear set if the required feed or thread pitch can not be obtained with the installed gear set. Automatic feed is accomplished by moving the auto feed lever up. See figure-26.

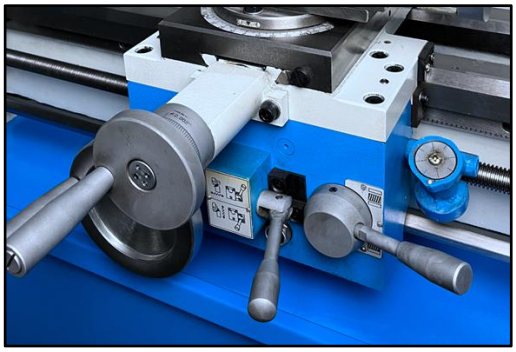


Figure-26 Auto feed selector lever

Manual Longitudinal Turning

In this turning operation, the tool feeds parallel to the axis of rotation (longitudinal) of the work-piece. Manual feed is accomplished by turning the carriage hand wheel on the lathe apron or the top slide. The cross feed for the depth of cut is achieved using the cross slide. See figure-27.

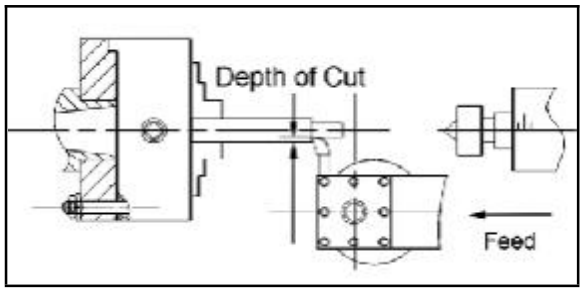


Figure-27 Straight turning

Facing And Recesses

In the facing operation, the tool feeds perpendicular to the axis of rotation of the work-piece. The feed is made manually with the cross slide hand wheel. The depth of cut is made with the top slide. See figure-28.

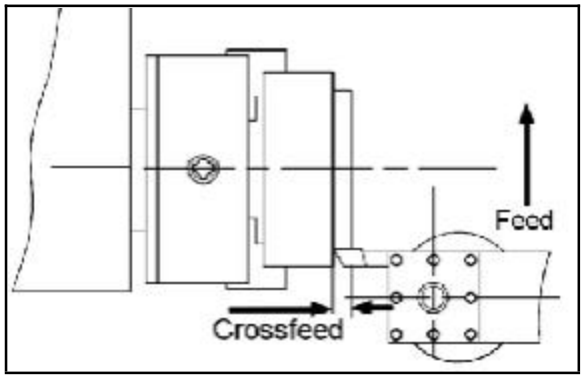


Figure-28 Facing & dressing

Turning Between Centers

For turning between centers, it is necessary to remove the chuck from the spindle. Fit the MT3 center into the 5/3 reducing sleeve (provided) and fit the reducing sleeve into the spindle taper.

Mount the work-piece fitted with the driver dog between the centers. The driver is driven by a catch or face plate. See figure-29.

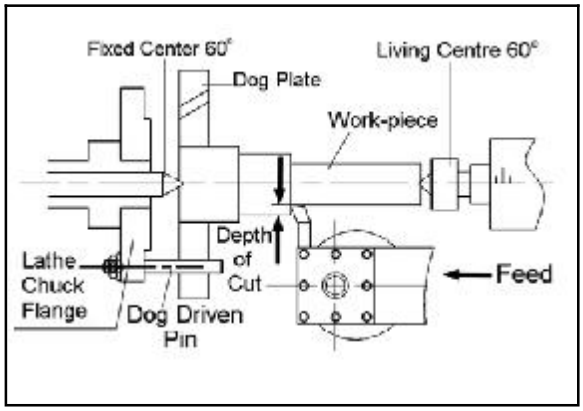


Figure-29 Turning between centers

Important

Always use a small amount of grease on the tailstock center to prevent center tip from over heating.

Thread Cutting

Several different threads can be cut using the proper combination of gears and settings.

Imperial Thread: when cutting inch threads, the half nut and threading dial are used to thread in a conventional manner. The threading and feeding table on page-27 or on the headstock, specifies at which point a thread can be entered using the threading dial.

Metric Thread: The only difference in metric thread cutting is that the half nut must remain engaged during the entire threading process. The thread dial can not be utilized.

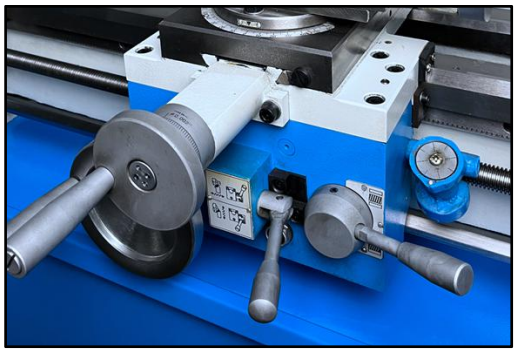


Figure-30 Half nut and threading dial

Set the machine up for the desired thread pitch.

Start the machine and engage the half nut. 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 off the work-piece so that it clears the thread.

Do not disengage the half nut lever.

Reverse the motor direction allowing the cutting tool to traverse back to the starting point.

Repeat these steps until you have obtained results.

Left And Right Thread Cutting: The left and right thread cutting is done using the feed direction selector knob. Turning the feed direction selector knob counter-clockwise, cuts left thread while turning it clockwise, cuts right thread.

Important

We suggest selecting the low speed. It provides stronger torque while operation.

Change gears replacement

To replace the change gears:

Make sure the switch is in the OFF position and the cord is unplugged from the power outlet.

Unscrew the two fastening knobs and remove the protective cover to access the change gears.

Unscrew the bolt from the lead screw and the square nuts shown in figure-31 from the quadrant bolts in order to remove the change gears.

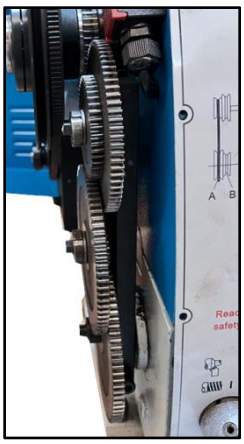


Figure-31 Change gears replacement

Select the proper gear set according to your requirements from the feed table given on the lathe (See page-27 Threading & Feeding Table for details) and install it onto the quadrant using nuts removed.

Re-install the protective cover.

Gibs Adjustment

There are two main gib screws adjustment for the machine; the cross slide gib screws and the top slide gib screws.

Warning

Make sure the switch is in the OFF position and the cord is disconnected from the power source before making any adjustments.Failure to do so can result serious personal injury

Cross Slide Gib Screws Adjustment

The adjustment gibs are located on the left side of the cross slide. To adjust gib, loosen the nuts holding the gibs. Tighten the gibs until excess movement is eliminated and retighten the nuts. See figure-32.

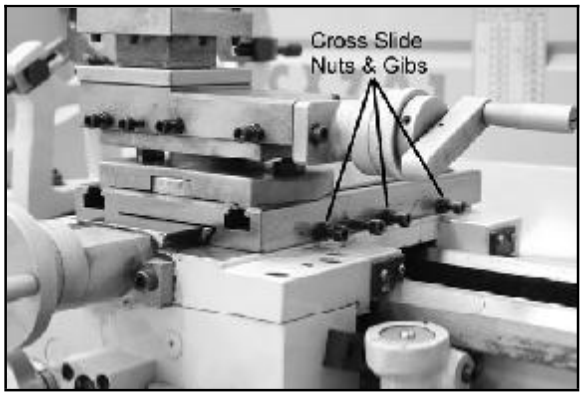


Figure-32 Cross slide adjustment gib screws

Top Slide Gibs Adjustment

Locate the adjustment gibs on the side of the top slide as shown in figure-36. Loosen the nuts holding the gibs and then tighten the gibs until excess movement is eliminated. Once all the gibs are tightened properly, re-tighten the nuts.

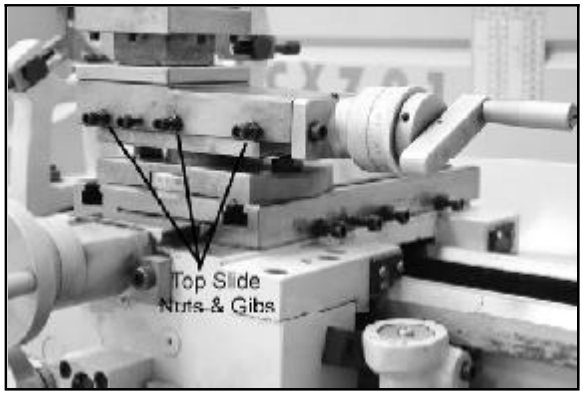


Figure-33 Top slide adjustment gibs screws

Chuck Run-Out

If your lathe requires a higher level of accuracy, you may find it necessary to true-up the chuck to ensure minimum run-out. To check and correct the chuck run-out: Mount a piece of bar stock in the chuck. The stock should protrude approximately 50mm.

Use a dial indicator and measure the run-out at the end of the bar. In most cases, the amount of run-out will not exceed 0.12mm over 50mm which should be accurate enough for most applications. If the run-out on the chuck is excessive (e.g. greater than 0.15mm), the excess run-out should be eliminated.

Start by removing the chuck.

Remove the bolts, securing 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 and thread back plate onto the spindle.

Remove about 0.12mm of material from the surface that the chuck mounts to. Be careful not to remove any material from the diameter of the shoulder. See figure-34.

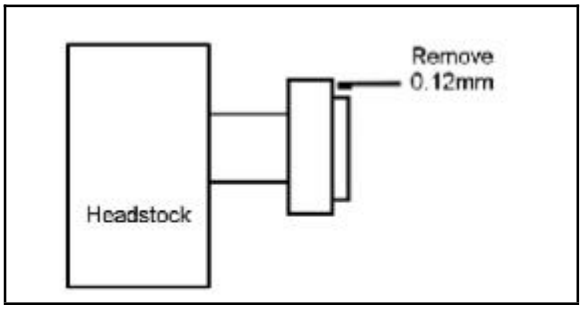


Figure-34 Turning the back plate

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

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

Remove approximately one half of the thickness of the shoulder (approximately 1.5mm). Remove the same thickness off the face of the mounting surface.

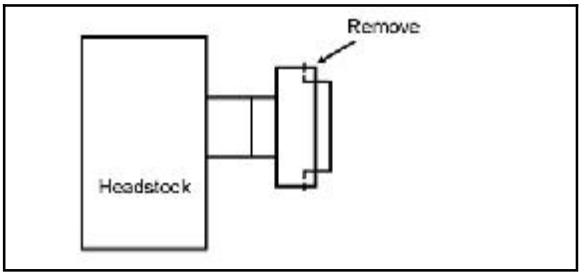


Figure-35 Turning new shoulder on back

The finished diameter of the shoulder should be 0.025mm larger than the diameter of the recess in the chuck. This is a critical step in minimizing chuck run-out.

Re-install the chuck and check for run-out.

Headstock & Tailstock Alignment

The headstock and tailstock alignment has been adjusted properly in the factory before the machine is shipped to you. However, after lengthy operation, the headstock and tailstock may be out of alignment.

To check the centers aignment:

Center drill a 150mm piece of bar stock on one end and position it between the headstock and tailstock as shown in figure-36.

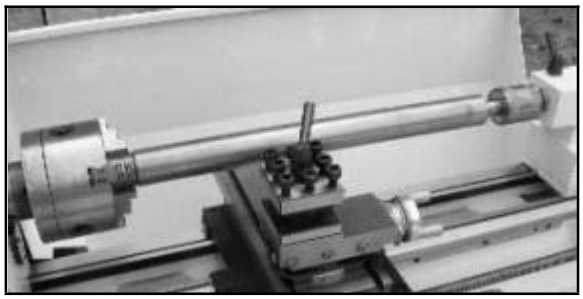


Figure-36 checking headstock and tailstock alignment

Turn approximately 0.025mm off diameter.

Measure the stock with a micrometer. If the stock is thicker at the tailstock end, the tailstock needs to be moved towards you to the amount of taper. See figure-37.

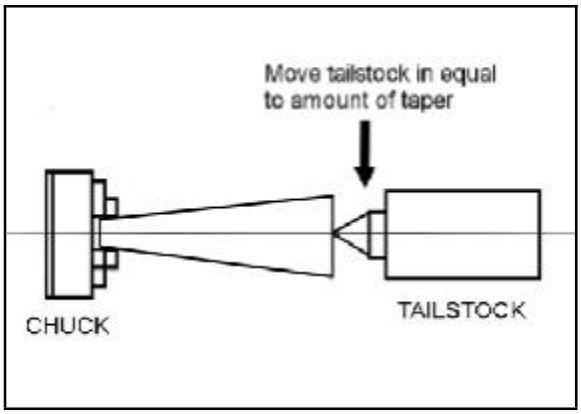


Figure-37 Stock thicker at the tailstock end

If the stock is thinner at the tailstock end, the tailstock needs to be moved away from you to the amount of taper. See figure-38.

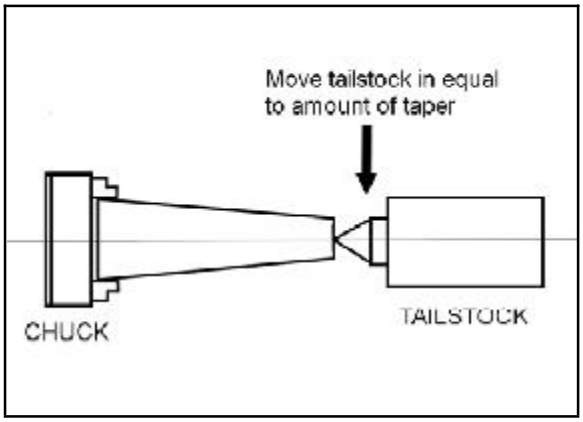


Figure-38 Stock thinner at the tailstock end

To Move the tailstock

Make sure the switch is in the OFF position and the cord is disconnected from the power outlet.

Adjust the tailstock offset to the amount by turning the adjustment screw shown in figure-39.

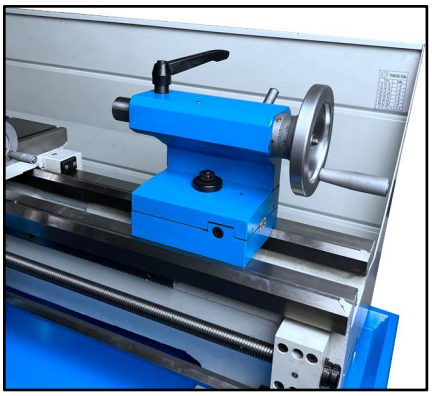


Figure-39 Tailstock offset adjustment screw

Turn another 0.5mm off the stock and check for taper. Repeat this procedure until the tailstock is aligned with the headstock.

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 two hex socket cap screws in the slotted nut shown in figure-40. Tighten slotted nut until all end play is taken up. The spindle should still revolve freely.

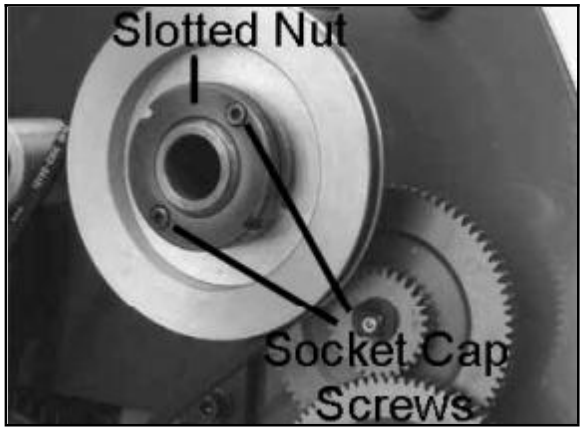


Figure-40 Main spindle bearing adjustment

Re-tighten the two hex socket cap screws.

CAUTION

Make sure not to tighten the hex socket cap screws excessively or it will damage the bearing.

Lubrication

Lubricate all slide-ways lightly before every use with 20w oil.

Warning

Lathe must be service at all lubrication points and all reservoirs filled to operating level, before the lathe is placed into service. Failure to comply may cause serious damage.

Gearbox

Oi must be up to the indicator mark in the oil sight glass as shown in figure-41. Top off with Mobil gear 627 or equivalent. Fill by pulling the plug shown in figure-41.

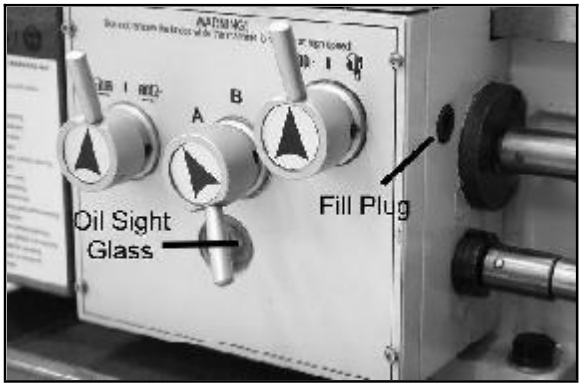


Figure-41 Gear box oil sight glass & fill plug

To drain the oil, remove the drain plug on the left side of headstock. See figure-45. Drain completely and refill after first three months of operation. Then, change oil in the headstock annually.

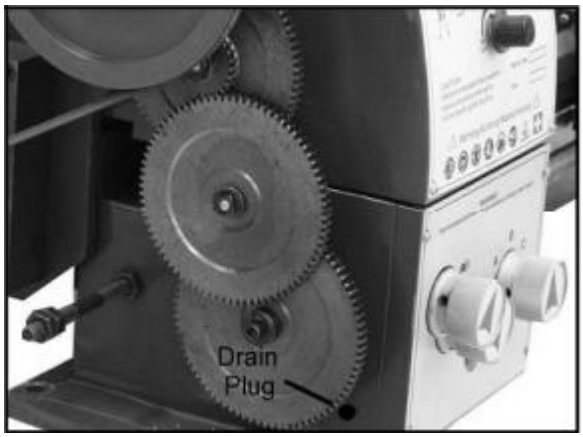


Figure-42 Gearbox oil drain plug

Change Gears

Apply a few drops of oil on the gears teeth and avoid getting oil on the pulleys and belt.

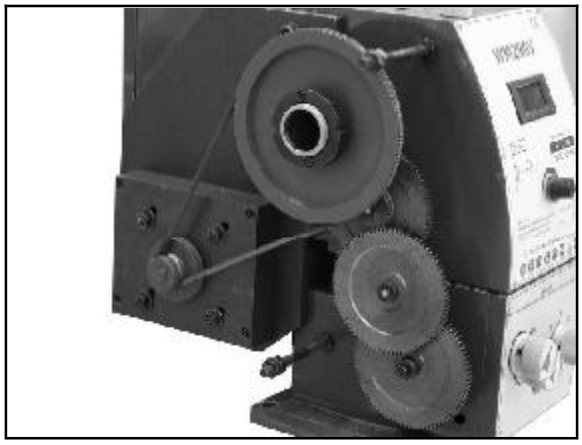


Figure-43 Change gears

Saddle

Lubricate the four oil ports (A) shown in figure-47 with 20w machine oi once daily.

Cross slide

Lubricate two oil ports (B) shown in figure-44 with 20w machine oil.

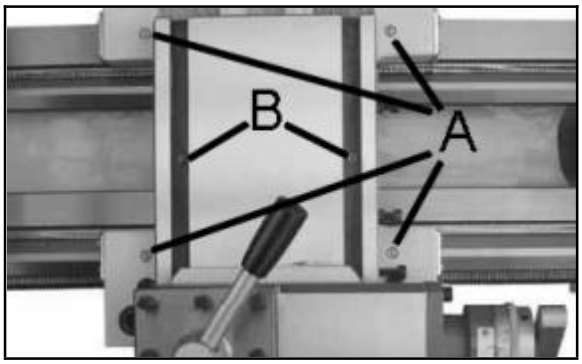


Figure-44 Carriage and cross slide oil fill ports

Cross slide hand wheel

Lubricate the oil port (C) on the cross slide hand wheel shown in figure-45 with 20w machine.

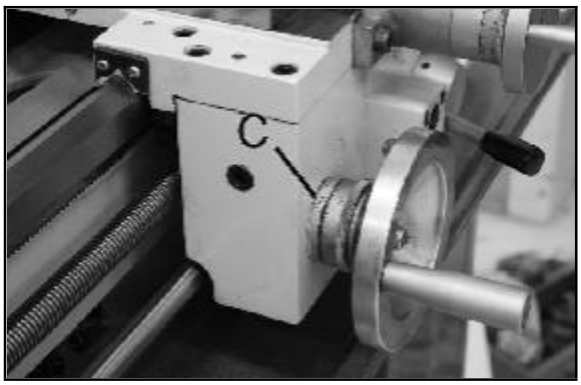


Figure-45 Cross slide hand wheel oil port

Lead screw

Lubricate the oil ports (D & E) shown in figure-46 with 20w machine oil once daily.

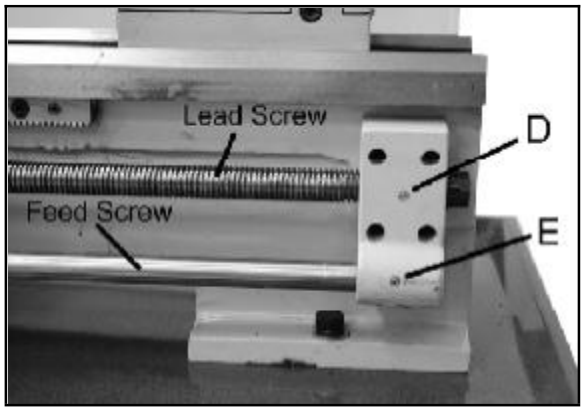


Figure-46 Lead screw and feed screw oil ports

Tailstock

Lubricate the two oil ports shown in figure-47 once daily.

Figure-47 Tailstock oil ports

Warning

Make sure the machine is turned off and the cord is disconnected from the power source before servicing and replacing and components on the machine.

Maintenance

During the life of your machine, you will need to practice some regular maintenance to keep your lathe in peak performance condition.

1. Treat the machine with care, keep it clean and grease and lubricate it regularly. Only through good care you can be sure that the working quality of the machine will remain constant.

2. Oil, grease and cleaning agents are pollutants and must not be disposed off through the drains or in normal garbage. Dispose of those agents in accordance with current local environmental regulations. Cleaning rags impregnated with oil, grease and cleaning wool in a suitable closed vessel and disposed of in an environmentally sound way. Do not put them with normal garbage.

3. Lubricate all slide ways lightly before every use. The change gears and the lead screw must also be lightly lubricated with lithium based grease.

4. During operation, the chips which fall onto the sliding surface should be cleaned in a timely fashion. Frequent inspections should be made to prevent chips from falling into the position between the carriage and bed way.

5. After the operation every day, eliminate all the chips and clean different parts of the machine tool and apply machine tool oil to prevent from rusting.

6. Good housekeeping practice should be followed on a daily basis keeping your lathe clean and well lubricated.

Optional Stand

The WBL290F features an optional stand Model WBL290FST which can be bought separately.

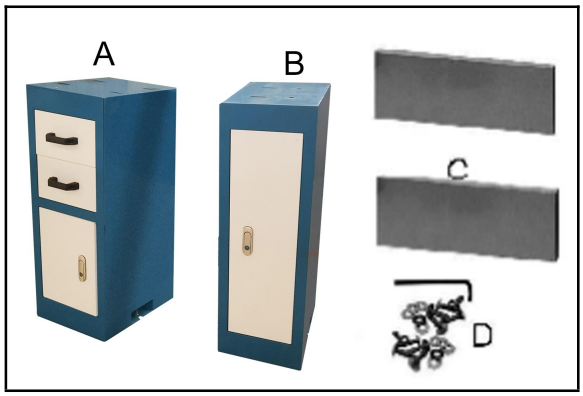


Figure-48 WBL290F Stand inventory

List Of Contents	QTY
A. Left Cabinet	1
B. Right Cabinet	1
C. Connecting Brackets	2
D. Mounting Hardware	1 Bag

Stand Assembly

Before attaching the brackets to the stands, thread the bolts into the holes to break the paint ensuring smooth threading after.

Connect the left and right cabinet by attaching the brackets to the cabinets and securing those using screws and washers provided.

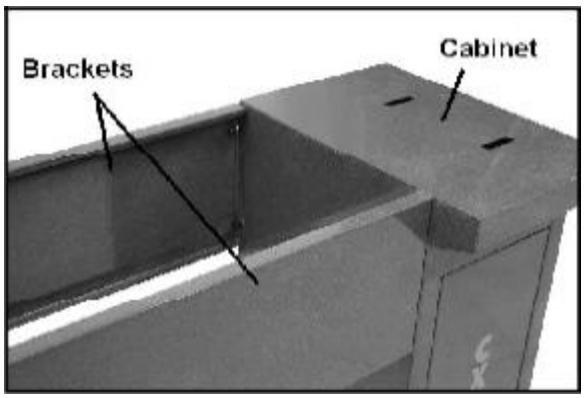


Figure-49 Mounting the lathe on the stand

Once both the brackets are properly secured to the cabinets, position the chip tray on the cabinets aligning the holes on the chip tray with the holes on the cabinet. Now, position the lathe on the stand using a fork truck. Align the holes on the machine with the holes on the chip tray and the cabinets.

Open the cabinets and insert the bolts and washers (provided with the stand) from the top and tighten the nuts, from inside cabinets.

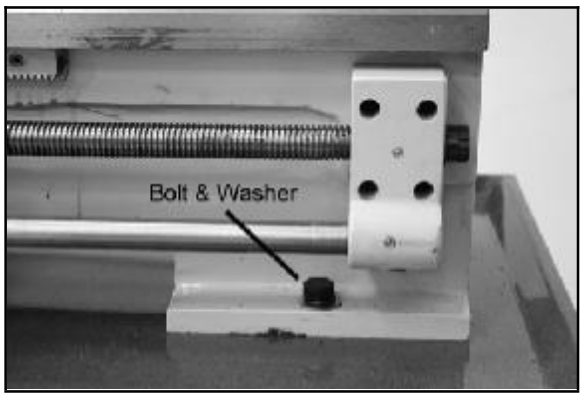


Figure-50 Lathe mounted on the stand

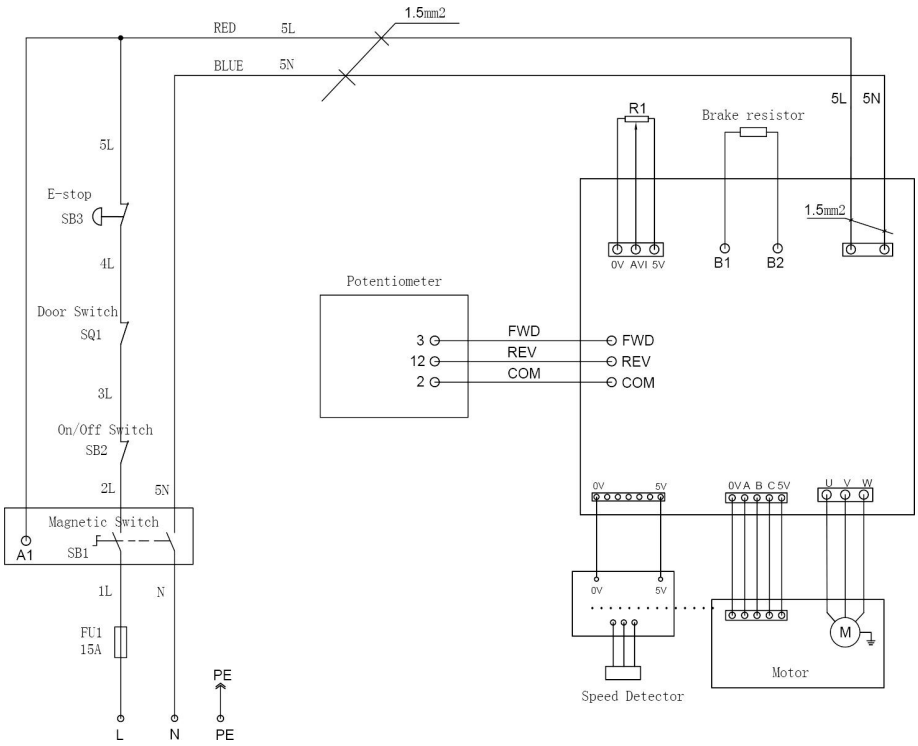
Electrical Connections

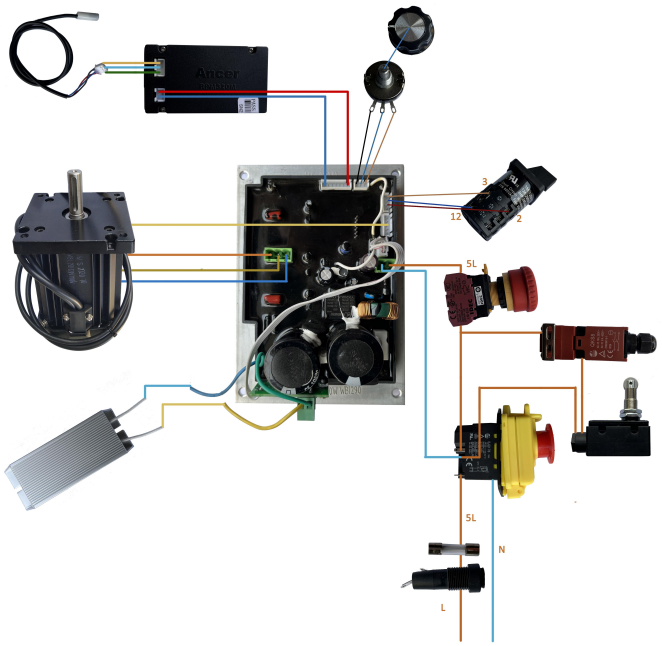
The WBL290F Variable speed lathe is rated at 2-Horse power, Single phase, 110V-Volt. Use the wring diagram for connecting the lathe to the main supply.

Make sure the lathe is properly grounded.See page-8 for details.

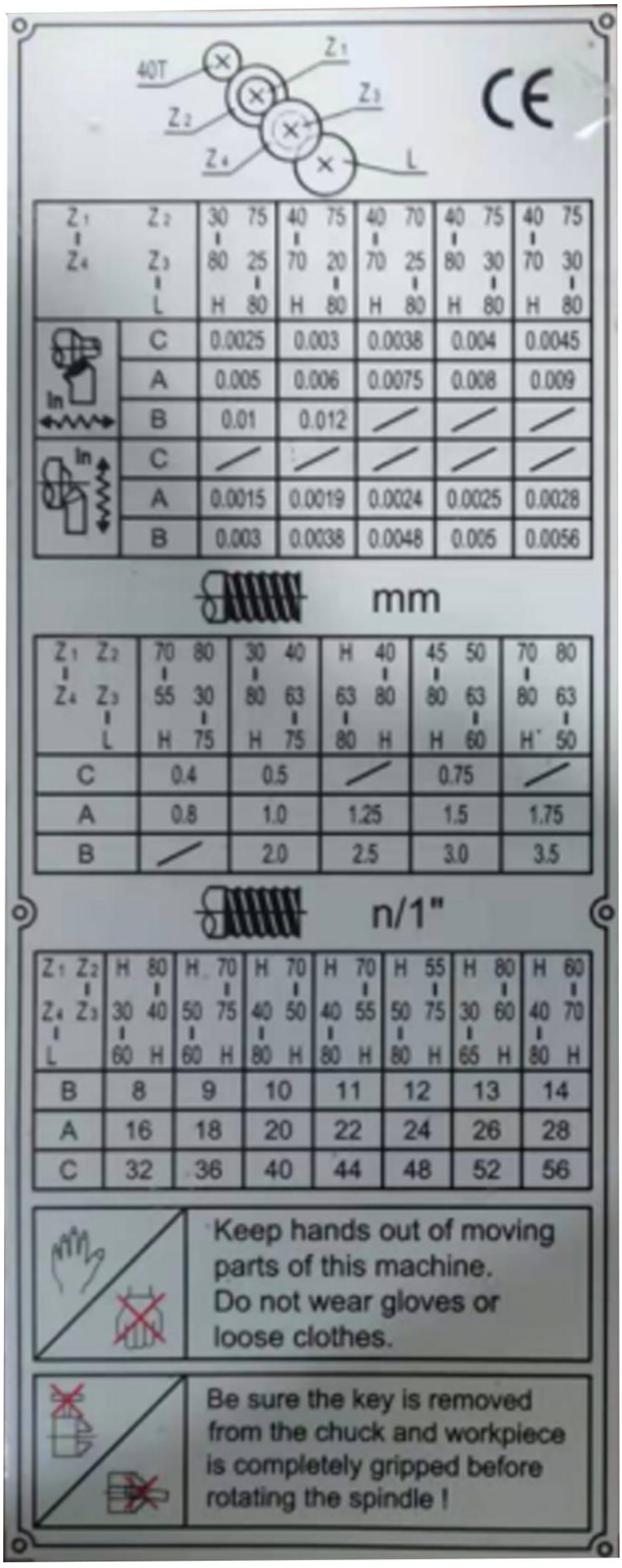
Warning

Connection of the lathe and all other electrical work may only be carrier out by an authorized electrician.Failure to comply may cause serious injury and damage to the machinery and surroundings





Threading & Feed Table



Z1 Z4	Z2 Z3 L	30 75 80 25 H 80	40 75 70 20 H 80	40 70 70 25 H 80	40 75 80 30 H 80	40 75 70 30 H 80
In	C	0.0025	0.003	0.0038	0.004	0.0045
	A	0.005	0.006	0.0075	0.008	0.009
	B	0.01	0.012	/	/	/
In	C	/	/	/	/	/
	A	0.0015	0.0019	0.0024	0.0025	0.0028
	B	0.003	0.0038	0.0048	0.005	0.0056

mm

Z1 Z2 Z4 Z3 L	70 80 55 30 H 75	30 40 80 63 H 75	H 40 63 80 80 H	45 50 80 63 H 60	70 80 80 63 H 50
C	0.4	0.5	/	0.75	/
A	0.8	1.0	1.25	1.5	1.75
B	/	2.0	2.5	3.0	3.5

n/1"

Z1 Z2 Z4 Z3 L	H 80 30 40 60 H	H 70 50 75 60 H	H 70 40 50 80 H	H 70 40 55 80 H	H 55 50 75 80 H	H 80 30 60 65 H	H 60 40 70 80 H
B	8	9	10	11	12	13	14
A	16	18	20	22	24	26	28
C	32	36	40	44	48	52	56

Keep hands out of moving parts of this machine. Do not wear gloves or loose clothes.

Be sure the key is removed from the chuck and workpiece is completely gripped before rotating the spindle !

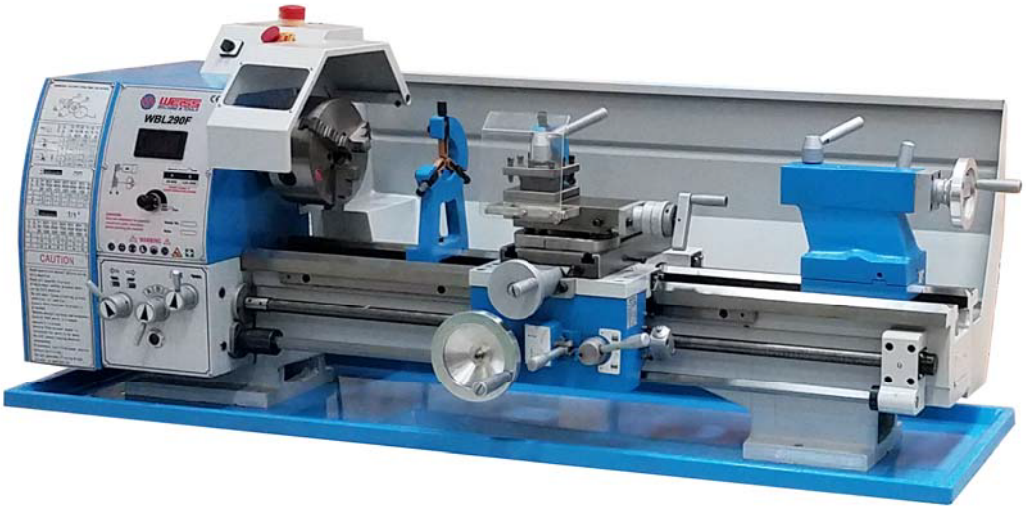
WBL290F Troubleshooting

Problem	Problem reason	Elimination
Surface of workpiece too rough	Tool blond Tool Springs Feed too high Radius all the tool lip too small	Resharpen tool Clamp tool with less overhang Reduce feed Increase radius
Workpiece becomes coned	Centers are not aligned(Tailstock Has offset) Top slide not aligned well(Cutting with the top slide)	Adjust tail stock to the center Aligen top slide well
Lathe is chattering	Feed too high Slack in main bearing	Reduce feed Adjust the main bearing
Center runs hot	Workpiece has expanded	Loosen tailstock center
Tool has a short edge life	Cutting seed too high Corssfeed too high Insufficient cooling	Reduce cutting speed Lower crossfeed(Finishing allowance should not exceed 0.5mm More coolant
Flank wear loo high	Clearance angle too small Tool tip not adjusted center high	Increase clearance angle Correct height adjustment of the tool
Cutting edge breaks off	Wedge angle too small(Heat build-up) Grinding crack due to wrong cooling Excessive slack in the spindle bearing Arrangement(vibrations)	Increase wedge angle Cool uniformly Adjust the slack in the spindle bearing Arrangement
Cut thread is wrong	Tools is clamped incorrectly or has Started grinding the wrong way Wrong pitch Wrong diameter	Adjust too to the center Grind angel correctly Adjust the right pitch Turn the workpiece to the correct diameter
Spindle does not activate	Emergency stop switch activated	Unlock emergency stop switch

WEISS MACHINE & TOOLS

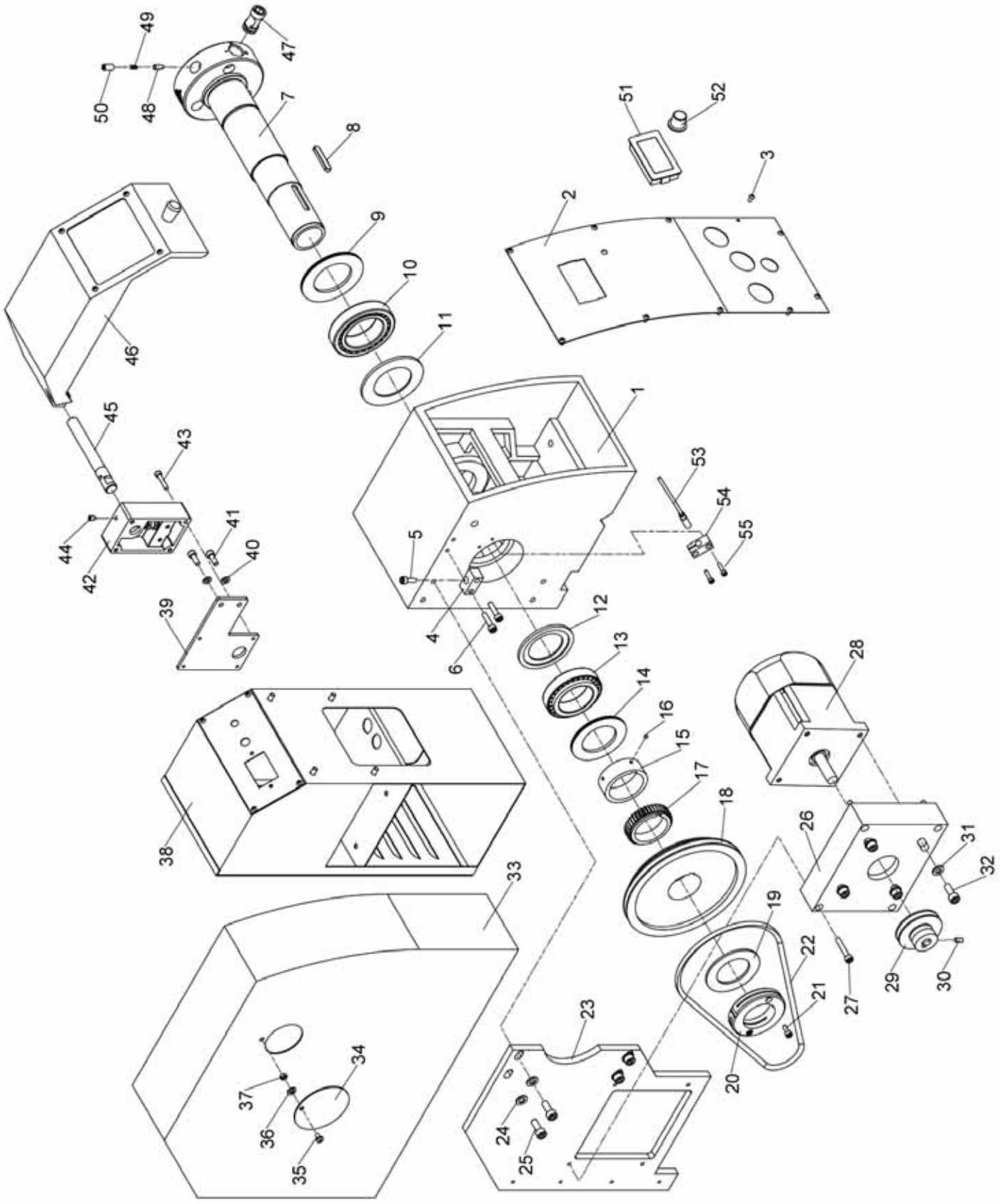
PARTS LISTS

WBL290F



Keep Read and Understand the Operation Manual and Safety Information Before Operated!

Headstock and Driving Assembly



Headstock and Driving Assembly(I)

Parts No.	***Description***	***Specification***	***Qty***
1	Headstock		1
2	Headstock panel		1
3	Screw	M4x8	4
4	Fixed block		1
5	Screw	M6x16	1
6	Screw	M6x20	2
7	Spindle		1
8	Thin flat key	8x45	1
9	Gasket		1
10	Bearing	32011/P5	1
11	Gasket		1
12	Gasket		1
13	Bearing	32010/P5	1
14	Gasket		1
15	Bead sleeve		1
16	Bead		4
17	Gear		1
18	Spindle pulley		1
19	Gasket		1
20	Spindle lock nut		2
21	Screw	M5x10	2
22	Belt	GATES-7M-825	1
23	Bracket plate		1
24	Washer	Φ8	4
25	Screw	M8x20	4
26	Motor mount		1
27	Screw	M6x35	4
28	Motor		1
29	Motor pulley		1
30	Screw	M6x10	1
31	Washer	Φ8	4
32	Screw	M8x30	4
33	Protection cover		1
34	Round cover		1
35	Screw	M5x10	1
36	Flat washer	Φ5	1
37	Nut	M5	1
38	Electrical box		1
39	Bearing plate		1
40	Washer	Φ6	2

Headstock and Driving Assembly (II)

Parts No.	*Description*	*Specification*	*Qty*
41	Screw	M6x16	2
42	Chuck cover bearing		1
43	Screw	M5x25	4
44	Screw	M6x5	1
45	Shaft		1
46	Chuck cover		1
47	Lock cam		3
48	Pin		3
49	Spring		3
50	Screw	M8x16	3
51	Speed display		4
52	Governor potentiometer		4
53	Velocity probe		1
54	Probe holder		1
55	Screw	M4x16	2
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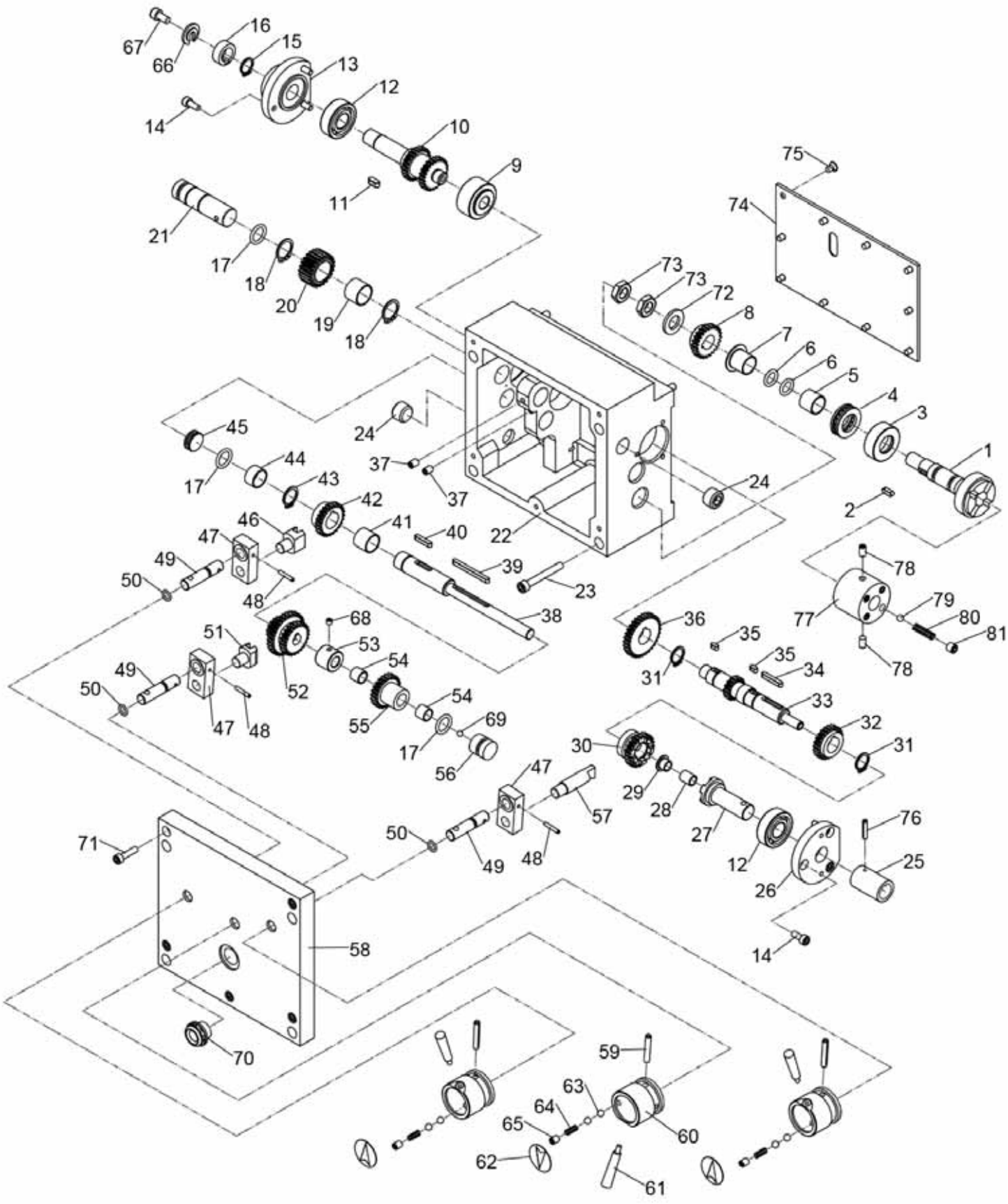
Gearbox Assembly

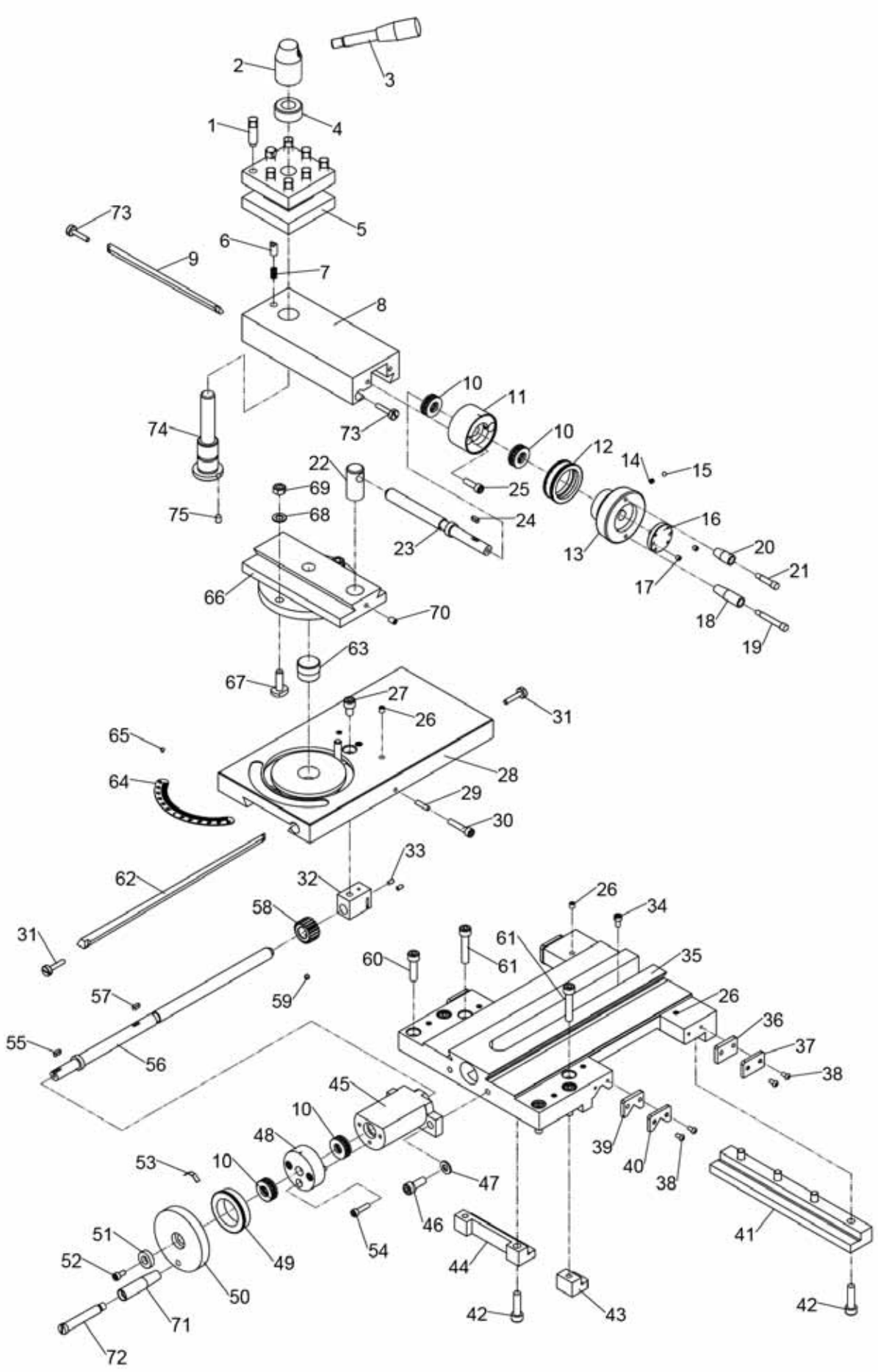


Gearbox Assembly (I)

Parts No.	*Description*	*Specification*	*Qty*
1	Output shaft		1
2	Key	4x12	1
3	Bearing sheath		1
4	Bearing	51103	1
5	Bearing	SF-1-1615	1
6	O-Ring	16x2.4	2
7	Bearing	SF-1F16170	1
8	Gear	T24	1
9	Collar		1
10	Gear Shaft	T24	1
11	Key	5x12	1
12	Bearing	6202	2
13	Left Plug		1
14	Hex Socket Cap Screw	M5x12	6
15	Snap Ring	Φ14	1
16	Collar		1
17	O-Ring	18x2.4	3
18	Snap Ring	Φ18	2
19	Bearing	SF-1-1815	1
20	Gear	T24	1
21	Shaft		1
22	Gearbox		1
23	Hex Socket Cap Screw	M6x50	4
24	Set Screw	M16x1.5x12	2
25	Collar		1
26	Right Plug		1
27	Shaft		1
28	Bearing	SF-1-0812	1
29	Bearing	SF-1F08075	1
30	Gear		1
31	Snap Ring	Φ15	2
32	Gear	T24	1
33	Shaft		1
34	Key	4x25	1
35	Key	4x8	2
36	Gear	T32	1
37	Set Screw	M6x10	2
38	Shaft	Φ6x18	1
39	Key	4x45	1
40	Key	4x20	1

Parts No.	*Description*	*Specification*	*Qty*
41	Bearing	SF-1-1615	1
42	Gear	T24	1
43	Snap Ring	Φ16	1
44	Bearing	1610	1
45	Left Plug		1
46	Fork		1
47	Bracket		3
48	Pin	Φ3X20	3
49	Shaft		3
50	O-Ring	6.7x1.8	3
51	Fork		1
52	Gear	T16 / T32 / T24	1
53	Collar		1
54	Bearing	SF-1-1210	2
55	Gear	T24	1
56	Right Plug		1
57	Dials Block		1
58	Gearbox Cover		1
59	Pin	Φ5x40	3
60	Knob Base		3
61	Knob		3
62	Label		3
63	Ball	Φ5	6
64	Spring	0.8x4x16	3
65	Screw	M6x12	3
66	Washer	Φ6	1
67	Hex Socket Cap Screw	M6x12	1
68	Set Screw	M5x5	1
69	Ball	Φ6.5	5
70	Oil Sight Glass	M18x1.5	1
71	Hex Socket Cap Screw	M5x16	4
72	washer	Φ12	1
73	hexagon thin nut	M12	2
74	Cover		1
75	Screw	M5x8	10
76	Pin	Φ5x20	1
77	Overload shaft sleeve		1
78	Set Screw	M6x12	2
79	Ball	Φ6	4
80	Spring	1.2x5x23	4
81	Screw	M8x8	4

Top slide Cross slide , Carriage Assembly



Top slide Cross slide , Carriage Assembly (**I**)

Parts No.	***Description***	***Specification***	***Qty***
1	Screw	M8x30	8
2	Handle base	CQ6230-07-20	1
3	Handle lever	CQ6230-07-21	1
4	washer	CQ6132GV-07-19	1
5	Tool slide	CQ6132GV-07-23	1
6	Stop	CQ6230-07-16	1
7	Spring	CQ6230-07-48.1	1
8	Top slide	CQ6230-07-24 (b)	1
9	Gib	CQ6230-07-38	1
10	Beadring	51101	4
11	Bracket	CQ6230-07-28c	1
12	Graduated dial	CQ6230C-07-29E	1
13	Handwheel	CQ6230-07-43C	1
14	Spring		1
15	Steel ball	4	1
16	Set screw	CQ6230-07-43C-1	1
17	Screw	M5x6	2
18	Handle sleeve	CL66132-07-50	1
19	Shoulder screw	CL6132-07-43a	1
20	Handle sleeve	CQ6230-07-51	1
21	Shoulder screw	CQ6230-07-44a	1
22	Leadscrew nut	CQ6230-07-26E	1
23	Leadscrew	CQ6230-07-25E	1
24	Key	4x10	1
25	Hex Socket Cap Screw	M6x25	2
26	Oil ball	6	6
27	Hex Socket Cap Screw	M8x20	1
28	Cross slide	CQ6132V-07-35R	1
29	Pin	CQ290V-07-37	4
30	Hex Socket Cap Screw	M6x20	4
31	Screw	CQ290V-07-54	2
32	Leadscrew nut	CQ290V-07d-31	1
33	Set screw	M4x8	2
34	Hex Socket Cap Screw	M5x10	1
35	Saddle	CQ290V-07-21	1
36	Oil scraper	CQ290V-07-41	2
37	Wool felt	CQ290V-07-42	
38	Screw	M4x10	8
39	Oil scraper	CQ290V-07-33	2
40	Wool felt	CQ290V-07-34	2

Top slide Cross slide , Carriage Assembly (II)

Parts No.	*Description*	*Specification*	*Qty*
41	Back clamp plate	CQ290V-07-22	1
42	Hex Socket Cap Screw	M8x30	6
43	Front right clamp plate	CQ290V-07-23	1
44	Front left clamp plate	CQ290V-07-24	1
45	Bracket	CQ6132V-07-26	1
46	Hex Socket Cap Screw	M8x20	2
47	Washer	8	2
48	Collar	CQ290V-07-25	1
49	Graduated dial	CQ290V-07-28	1
50	Handlewheel	CQ290V-07-27	1
51	Washer	CQ290V-07-29	1
52	Hex Socket Cap Screw	M5x10	1
53	Spring	CQ290V-07-32	1
54	Hex Socket Cap Screw	M5x20	3
55	Key	4x10	1
56	Leadscrew	CQ6132-07-30	1
57	Key	4x10	1
58	Gear	CQ290V-07-38	1
59	Set screw	M5x6	1
60	Hex Socket Cap Screw	M8x30	4
61	Hex Socket Cap Screw	M8x40	2
62	Gib	CQ6132V-07-35R.2	1
63	Rotary shaft	CQ290V-07-35.1	1
64	Graduated scale	CQ290V-07-35.3	1
65	Rivet	2.5x4	3
66	Rotary sliding seat	CQ6233-07-14A	1
67	T-blot	CQ290V-07-35C.4	2
68	Washer	Φ8	2
69	Nut	M8	2
70	Screw	M6x10	1
71	Handle sleeve	ZX30-01-10	1
72	Handle lever	ZX30-01-09	1
73	Screw	CQ6230-07-07	2
74	Shaft	CQ6230-WM290V-18	1
75	Pin	3x8	2
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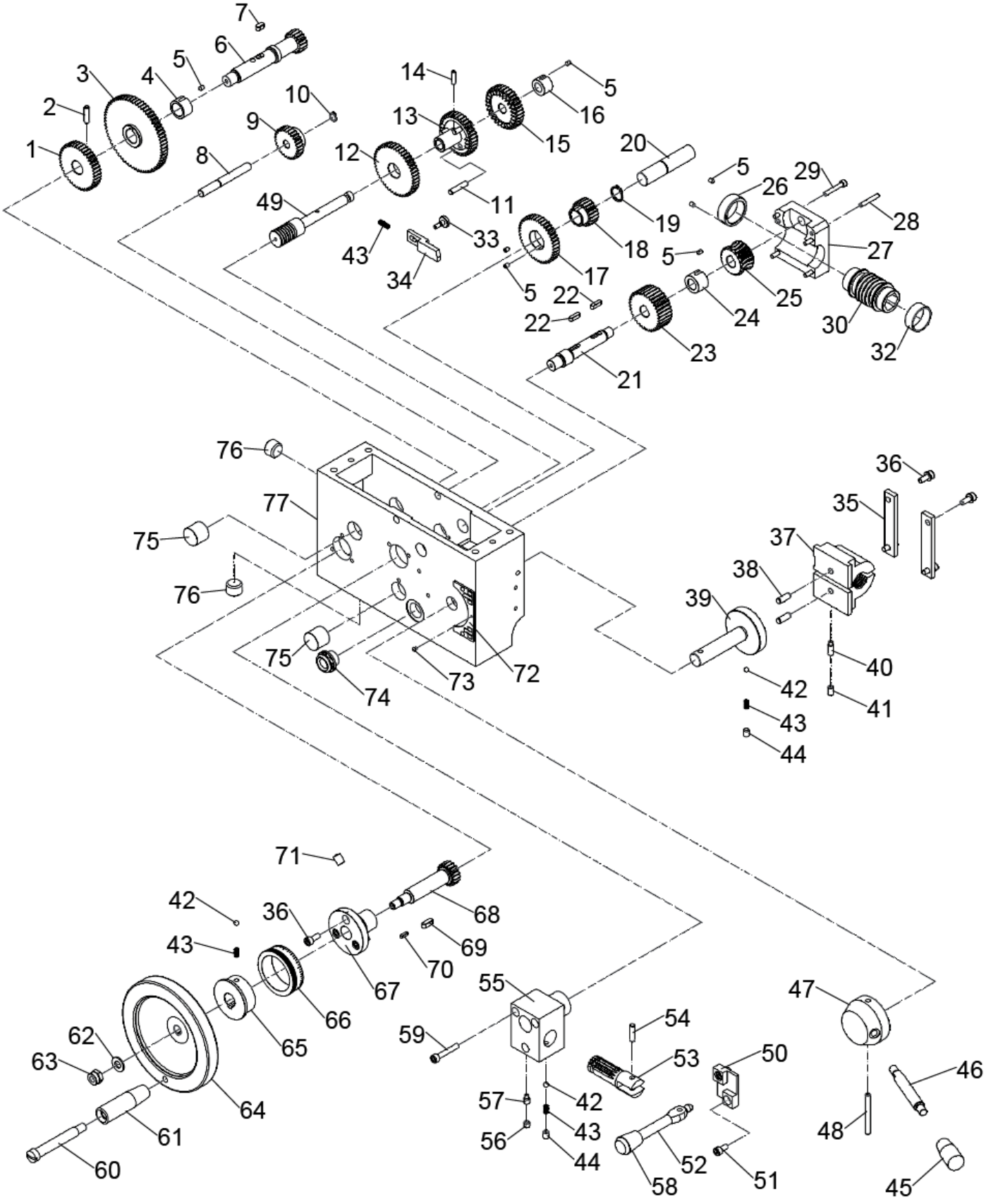
Apron Assembly



Apron Assembly (**I**)

Parts No.	Description	Specification	Qty
1	Gear		1
2	Pin	Φ5x24	1
3	Gear		1
4	Washer		1
5	Set Screw	M4x8	7
6	Gear Shaft		1
7	Key		1
8	Shaft		1
9	Snap Ring	Φ8	1
10	Gear		1
11	Shaft		3
12	Gear		1
13	Gear		1
14	Pin	Φ4x16	1
15	Gear		1
16	Washer		1
17	Gear		1
18	Gear		1
19	Snap Ring	Φ15	1
20	Shaft		1
21	Worm		1
22	Key	5x14	2
23	Gear		1
24	Washer		1
25	Worm		1
26	Bearing	2501	1
27	Worm Base		1
28	Pin	Φ4x20	2
29	Hex Socket Cap Screw	M4x30	4
30	Worm		1
31			1
32	Washer		1
33	Set Screw		1
34	Plate		1
35	Plate		2
36	Hex Socket Cap Screw	M5x12	7
37	Half Nut		1
38	Pin	Φ6x18	2
39	Cam Shaft		1
40	Hex Socket Cap Screw	M6x20	1

Apron Assembly (II)

Parts No.	Description	Specification	Qty
41	Hex Socket Cap Screw	M6x8	1
42	Ball	Φ5	3
43	Spring	0.7x4x10	3
44	Set Screw	M6x6	2
45	Knob		2
46	Handle		1
47	Handle Base		1
48	Pin	Φ5x45	1
49	Shaft		1
50	Base		1
51	Hex Socket Cap Screw	M5x10	6
52	Shaft Handle		1
53	Shaft Forx		1
54	Pin	Φ5x20	1
55	Base		1
56	Set Screw		1
57	Nut	M6	1
58	Knob		1
59	Hex Socket Cap Screw	M5x35	3
60	Shaft Handle		2
61	Knob		1
62	washer	Φ8	1
63	Nut	M8	1
64	Handwheel		1
65	Shaft		1
66	Graduated Collar		1
67	Bracket		1
68	Shaft		1
69	Key	5x14	1
70	Key	3x10	1
71	Oil Ball	Φ6	1
72	Plate		1
73	Rivet	Φ2.5x3	3
74	Oil Sight Glass	M18x1.5	1
75	Collar		2
76	Oil Drain Plug	ZG3/8”	2
77	Apron		1
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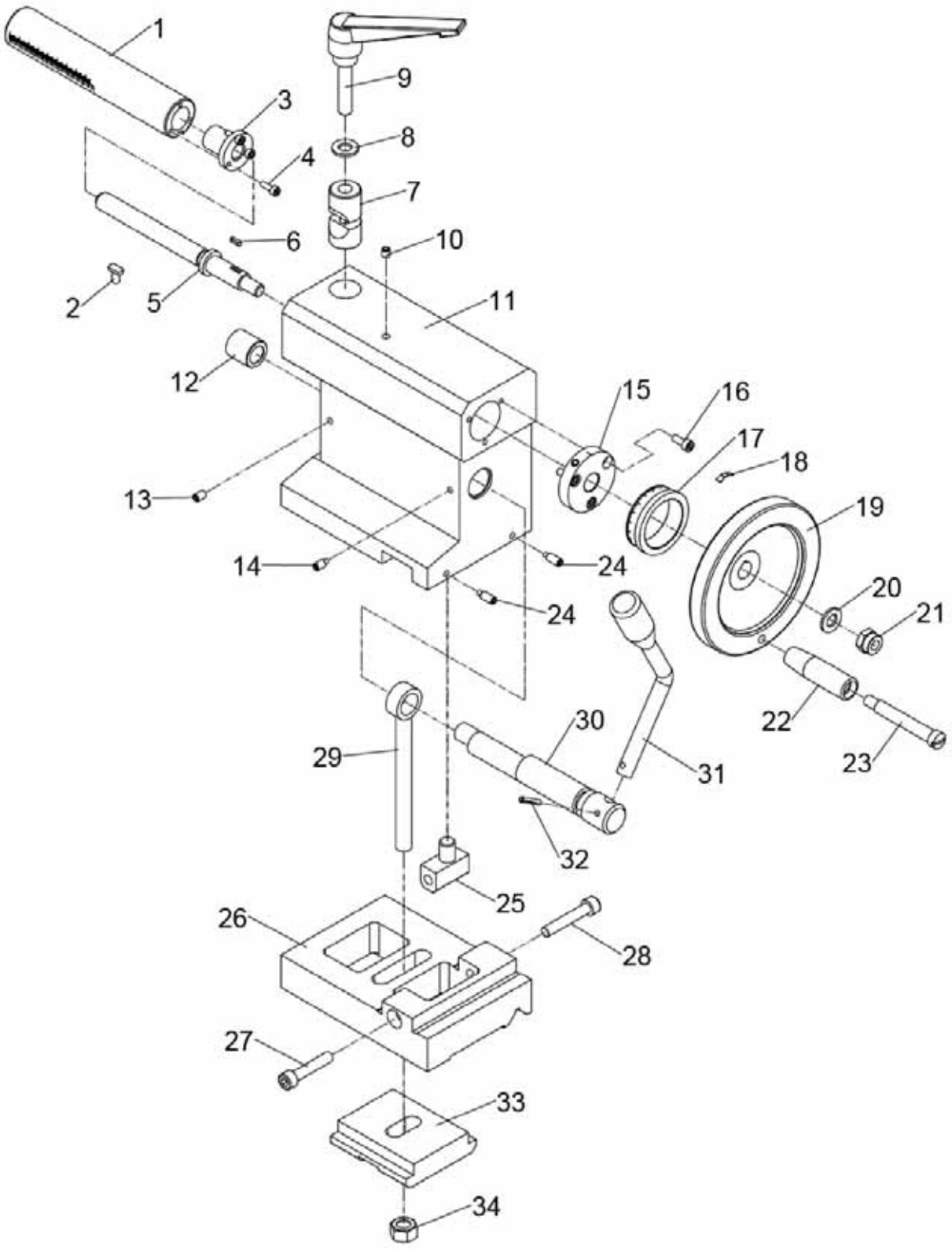
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Tailstock Assembly

Parts No.	Description	Specification	Qty
1	Tailstock quill		1
2	Key		1
3	Nut		1
4	Hex Socket Cap Screw	M4x10	3
5	Lead Screw		1
6	Key	3x10	1
7	Pivot Block		1
8	Washer	Φ10	1
9	Lever	M10-95x50	1
10	Oil Ball	Φ6	2
11	Tailstock body		1
12	Collar		1
13	Set Screw	M6x10	1
14	Limit Screw	M6x10	1
15	Flange Cover		1
16	Hex Socket Cap Screw	M5x12	3
17	Graduated Dial		1
18	Spring		1
19	Handwheel		1
20	Washer	Φ8	1
21	Nut	M8	1
22	Knob		1
23	Screw		1
24	Set Screw	M6x16	2
25	Adjust the block		1
26	Base		1
27	Hex Socket Cap Screw	M8x40	2
28	Hex Socket Cap Screw	M8x45	1
29	Lock screw	M12	1
30	Lock shaft		1
31	Handle		1
32	Pin	Φ4x24	1
33	Clamping Plate		1
34	Nut	M12	1
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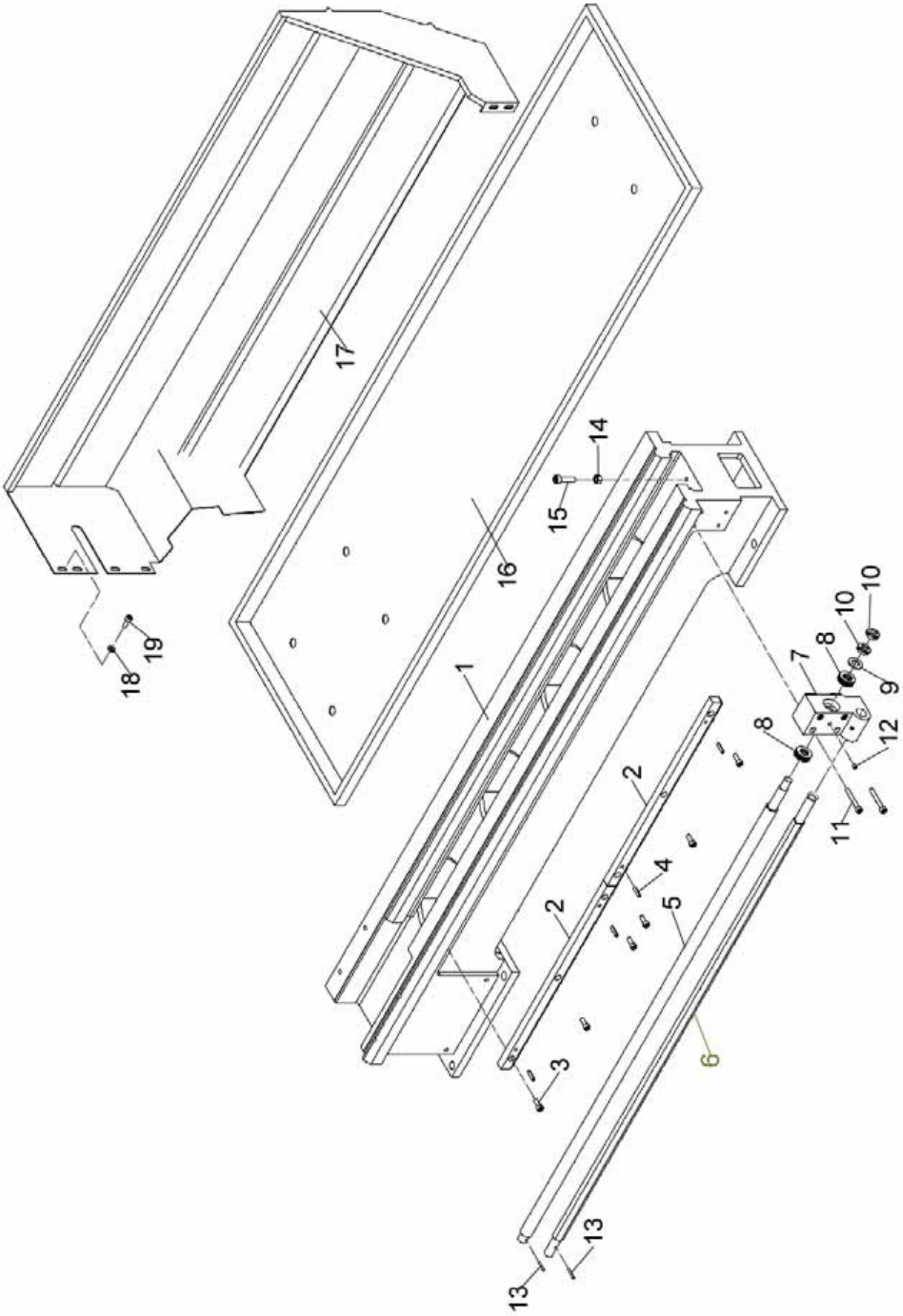
Bed Assembly



Parts No.	Description	Specification	Qty
1	Bed		1
2	Rack		2
3	Hex Socket Cap Screw	M6x16	6
4	Pin	Φ5x20	4
5	Feed Shaft		1
6	Shaft		1
7	Bracket		1
8	Bearing	51102	2
9	Washer	Φ12	1
10	Nut	M12x1.25	2
11	Hex Socket Cap Screw	M6x45	4
12	Oil Ball	Φ6	2
13	Pin	Φ3x20	2
14	Nut	M8	1
15	Hex Socket Cap Screw	M8x40	1
16	Chip Pan		1
17	Chip Shield		1
18	Washer	Φ6	4
19	Hex Socket Cap Screw	M6x16	4
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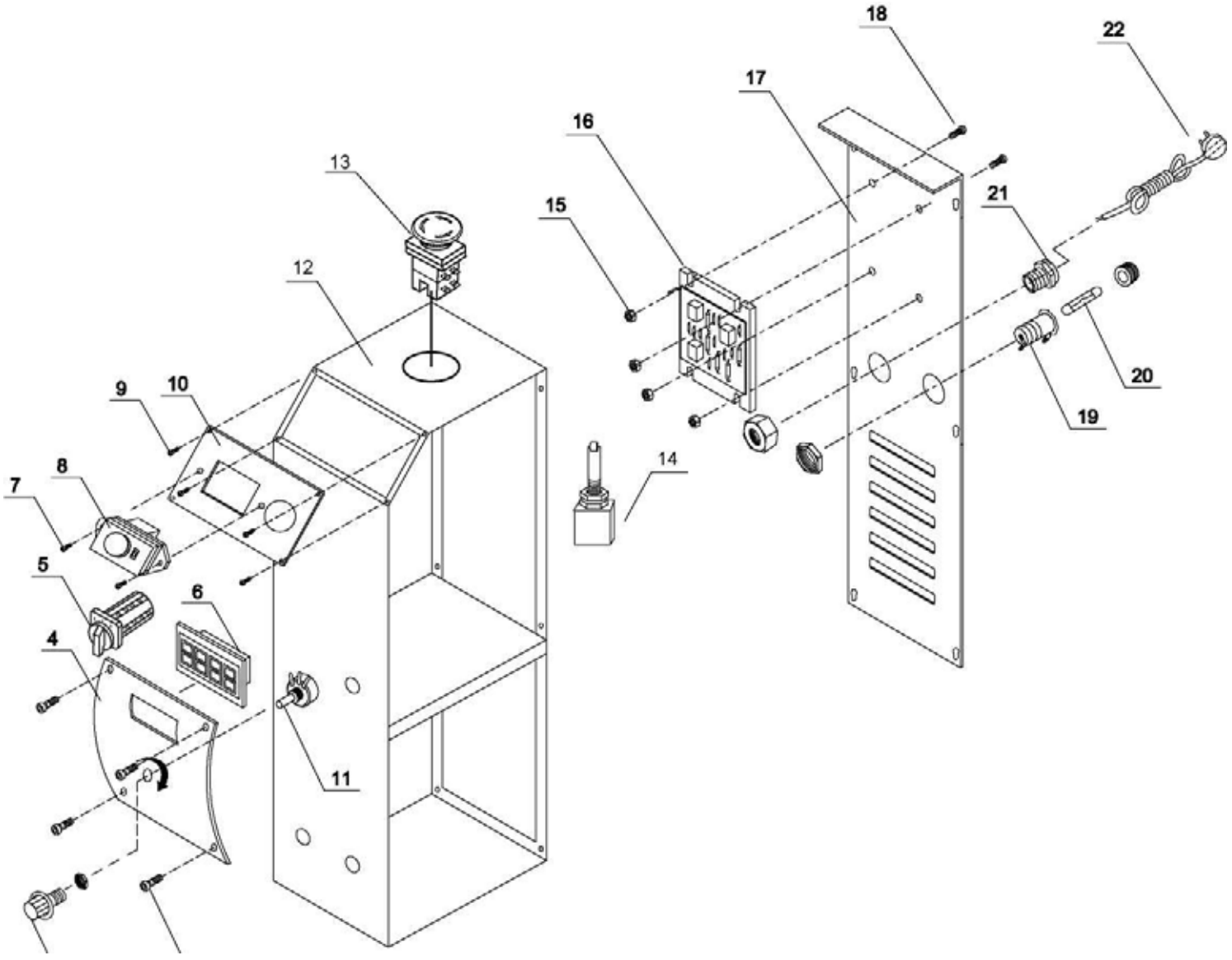
ELECTRICAL BOX ASSEMBLY



ELECTRICAL BOX ASSEMBLY

Parts No.	Description	Specification	Qty
1	Timing Knob		1
2	Screw		4
3	Nut		4
4	Lable		1
5	R/F Swich	ZH-A EN61058	1
6	Speed Display	Optional	1
7	Screw		2
8	Magnetic Swich		1
9	Screw		4
10	Electrical Plate		1
11	Potentiometer	WX 14-12	1
12	Electrical Box		1
13	Emergency Stop	XB2-BS542	1
14	Limited Switch	LXW5-11Q1	6
15	Nut		4
16	Speed Control Board		1
17	Cover		1
18	Screw		4
19	Fuse Holder		1
20	Fuse (10A)		1
21	Strand Relief		1
22	Plug		1