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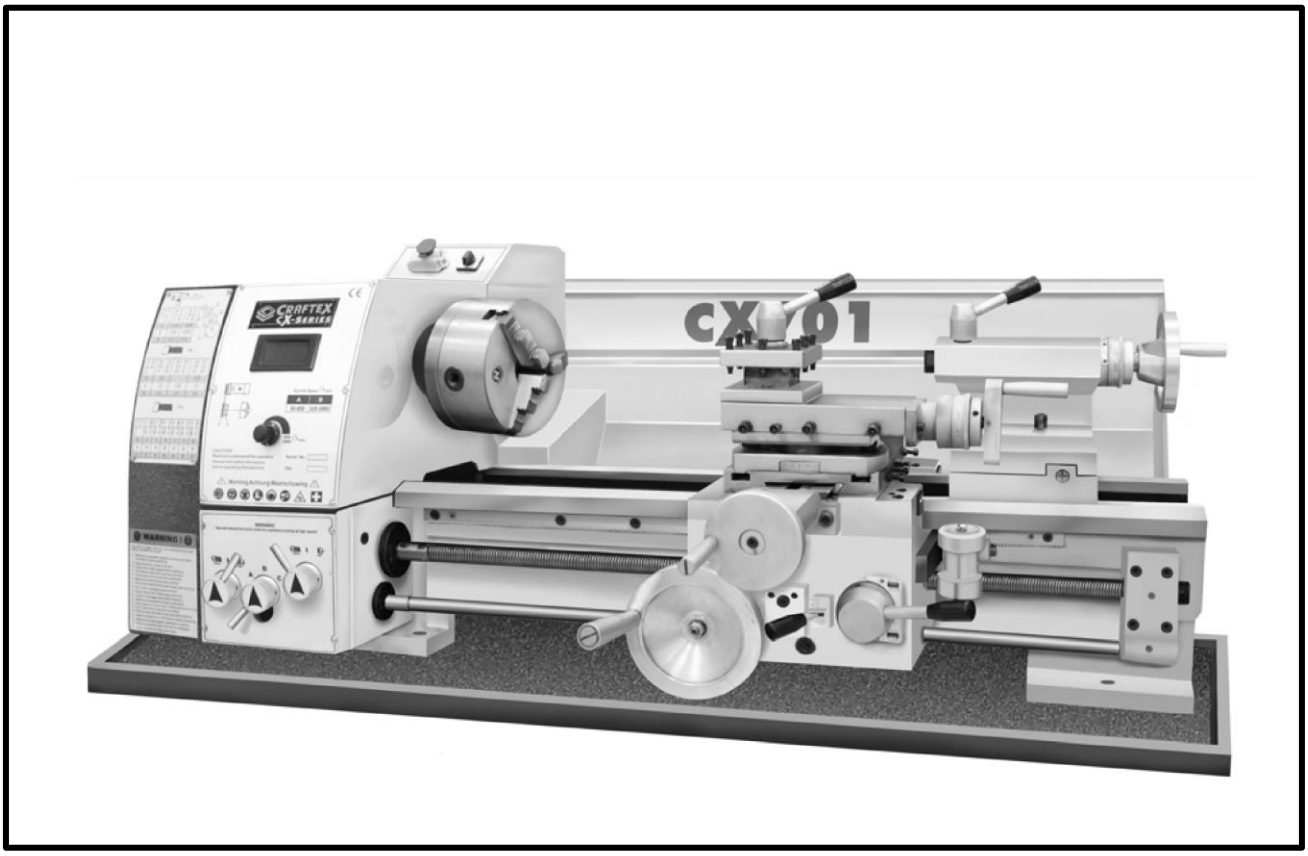
CX701
12” x 28” METAL LATHE with DIGITAL READOUT
User Manual



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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 safely feed your work through the machine and clamp the workpiece (when necessary) to prevent the workpiece from any unexpected movement.
- **ALWAYS** make sure that any tools used for adjustments are removed before operating the machine.
- **ALWAYS** keep the bystanders safely while the machine is in operation.
- **NEVER** attempt to remove jammed cutoff pieces until the saw blade has come to a full stop.

CX701 - 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 you have proper training and knowledge has been obtained.
- **Keep guards in place.** Safety guards must be kept in place and in 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 not expose the machine to rain. Do not use the machine in wet locations.
- **Check for damaged parts.** Check for proper alignment of moving parts, broken parts, and any other conditions that may affect 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 outlet.
- **Make sure** you have read and understand 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 cannot be complete because the environment in every shop is different. Always consider safety first as it applies to your individual working conditions*.**

CX701 – METAL LATHE

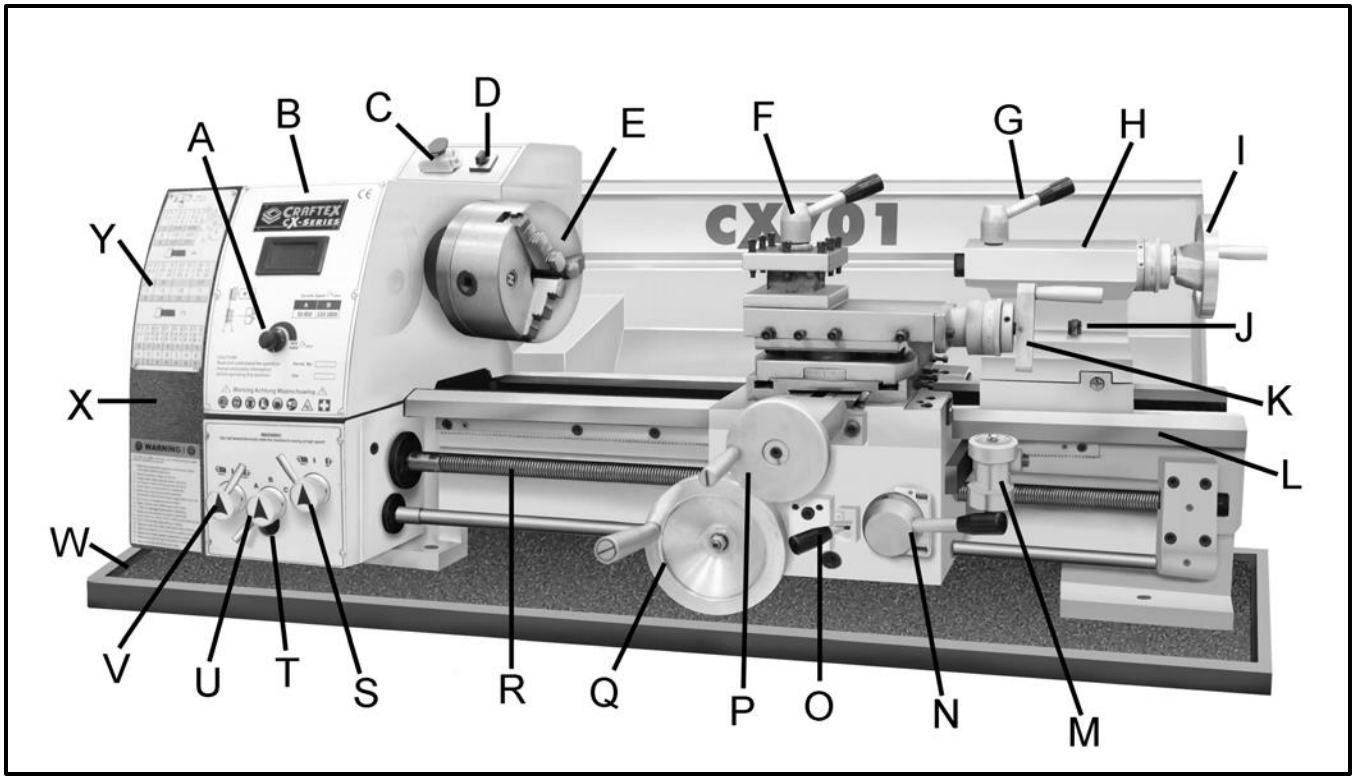
FEATURES

MODEL CX701 – 12” x 28” METAL LATHE WITH VARIABLE SPEED

As part of the growing line of Craftex metalworking equipment, we are proud to offer the CX701 a 12” x 28” Metal Lathe with Digital Readout. The Craftex name guarantees C raft Excellence. By following the instructions and procedures laid out in this user manual, you will receive years of excellent service and satisfaction. The CX 701 is a professional tool and like all power tools, proper care and safety procedures should be adhered to.

- Motor ..... .1.5-HP, 1.1 KW, DC90 V, 12.3 Amp, 4600 r/min
- Swing Over Bed..... 11.5”, (290mm)
- Swing Over Cross Slide..... 6.5”, (165mm)
- Distance Between Centers..... 27.5”, (700mm)
- Width of Bed..... 7”, (180mm)
- Hole Through Spindle ..... 1.5”, (38mm)
- Taper in Spindle Nose MT5
- Number of Spindle Speeds ..... Variable
- Range of Spindle Speeds ..... 50 – 850 RPM and 110 – 1800 RPM (Variable Speed)
- Number of Metric Threads 8
- Range of Metric Threads..... 0.5mm – 3.0mm
- Number of Imperial Threads 21
- Range of Imperial Threads .....8 – 56 T.P.I
- Range of Cross Feed .....0.02 – 0.28mm / Revolution
- Range of Longitudinal Feed.....0.07 – 0.40mm / Revolution
- Tool Post Type 4-Way
- Max Compound Slide Travel ..... 3”, (80mm)
- Max Cross Slide Travel ..... 5.5”, (140mm)
- Maximum Carriage Travel..... 22”, (560mm)
- Tailstock Spindle Travel ..... 3”, (80mm)
- Taper in Tailstock Spindle..... MT3
- Overall Dimension of the lathe ..... Length 55” x Width 27.5” x Height 26.5”
- Weight..... 210 Kgs (462 lbs.)
- Warranty.....3-Years

CX701 - METAL LATHE
PHYSICAL FEATURES



A. Variable Speed Switch
B. Headstock
C. ON/OFF Switch
D. Forward/Reverse Switch
E. 3-Jaw Chuck
F. Four Way Tool Post
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***
> *CX701 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.

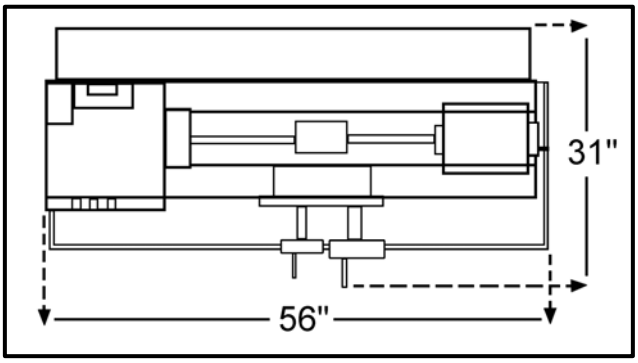


Figure-1 CX701 Footprint

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

- **A.** Face Plate 1
- **B.** Change Gears 8
- **C.** 4-Jaw Chuck 1
- **D.** 3-Jaw Chuck 1
- **E.** Steady Rest 1
- **F.** Follow Rest 1
- **G.** External Jaws for 3-Jaw Chuck 3
- **H.** Dead Center MT3 1
- **I.** Reduce Sleeve (No. 5/3) 1
- **J.** Oil Gun 1
- **K.** Toolbox 1
- **L.** 4-Way 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

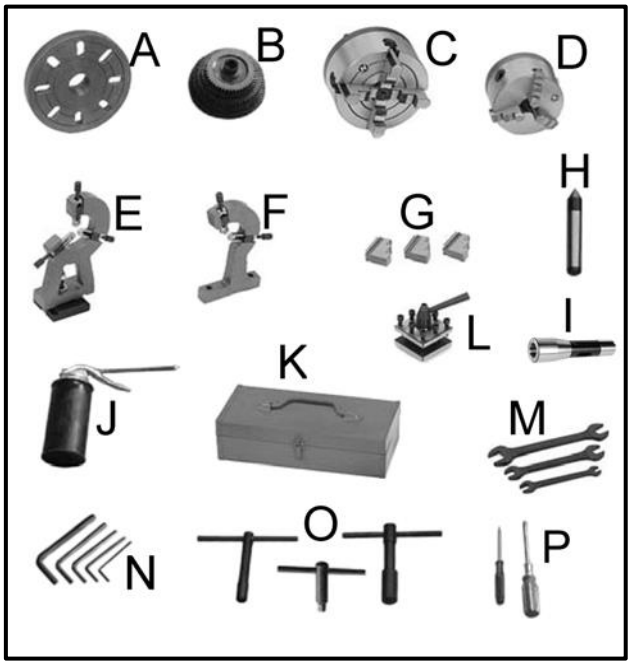


Figure-2 Inventory

While doing inventory, if you cannot 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.

CX701 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 us ed, it must be attached to the metal screw of the receptacle.

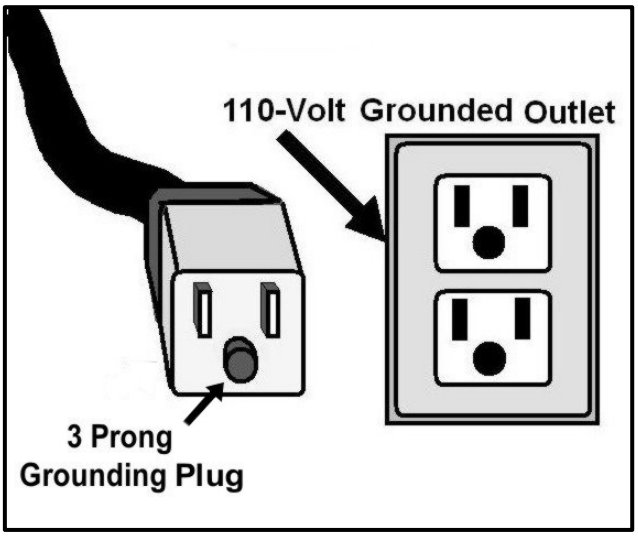


Figure-3 110-Volts Outlet for CX701

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 CX701. 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.

Your CX701 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

CX701 comes equipped with a 125mm, 3-jaw chuck, a 125mm, 4-jaw chuck and a 220mm faceplate.

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 workpieces.

The chucks feature three hex nuts and three set screws for mounting as shown in figure- 4.

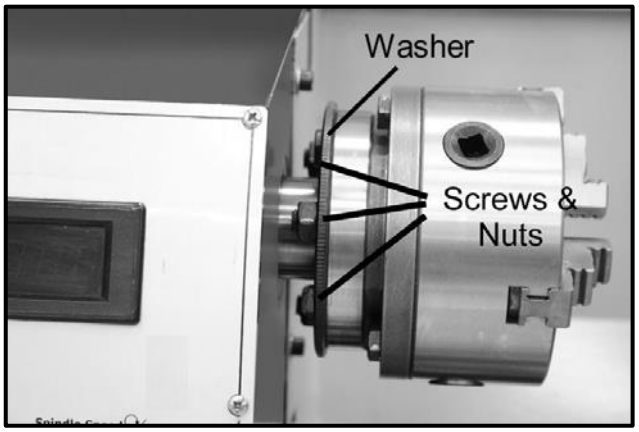


Figure-4 Chuck mounting screws and nuts

When removing the chuck, loosen the hex nuts, turn the washer count er-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 access at the outboard end of your workpiece.

To mount the steady rest:

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

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

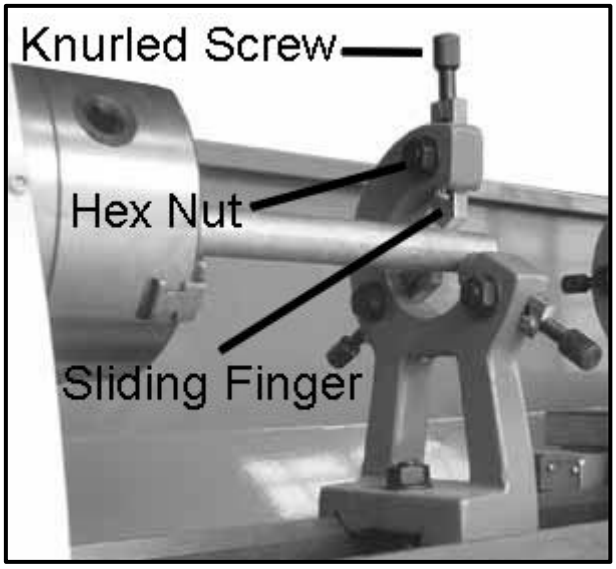


Figure-5 Steady rest

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 workpiece. Secure the steady rest in position. See figure-5.

Tighten the knurled screw so that the fingers are snug but not tight against the workpiece. 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 turning tool. Only two sliding fingers are required. The place of the third finger is taken by turning tool. The follow-restis used for turning operations on long s lender workpieces. It prevents the flexing of the workpiece under pressure from the turning tool.

Set the fingers snug to the workpiece and make sure not to overtighten. 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-sideways 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.

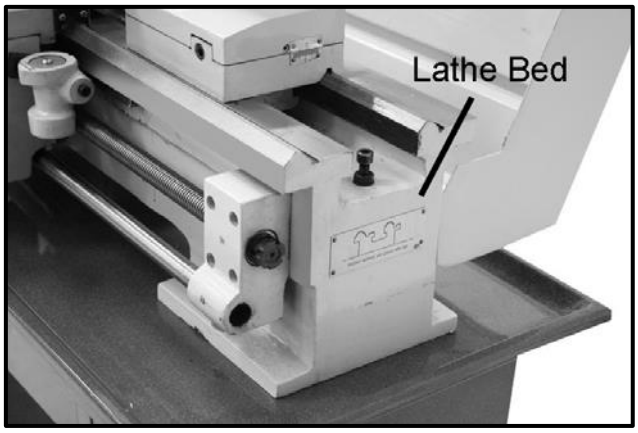


Figure-7 Lathe bed

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 locate d 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/Off button allows to start and stop the machine.

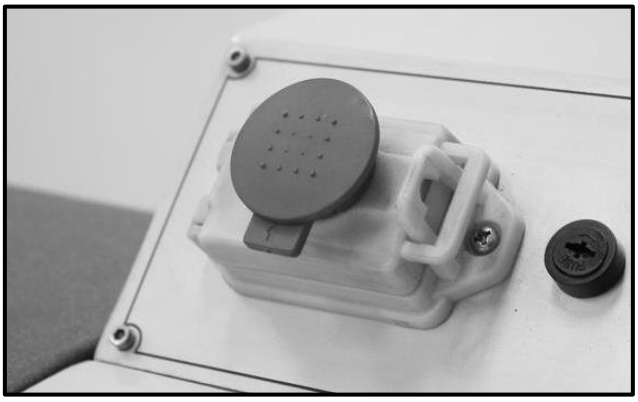


Figure-10 Emergency ON/OFF button

FORWARD / REVERSE SWITCH: After the machine is switched ON, turn the switch to “F” position for counterclockwise spindle rotation (forward).

Turn the switch to “R” position for clockwise spindle rotation (Reverse).

Turning the switch to “0” position the spindle remains idle.

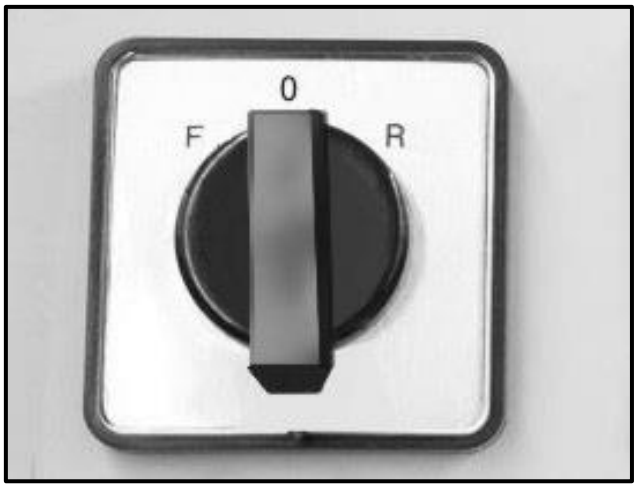


Figure-11 Forward / Reverse switch

FEED RATE SELECTOR KNOB: Use the feed rate selector knob to set the desired feed or thread rates. See figure-12.

FEED THREAD SELECTOR KNOB: For thread selecting, shift the knob to the left and for feed selecting, shift the knob to the right. See figure-12.

FEED DIRECTION SELECTOR KNOB: Select the carriage travel direction when the chuck is rotating in the forward direction or counterclockwise as viewed from the front of the chuck.

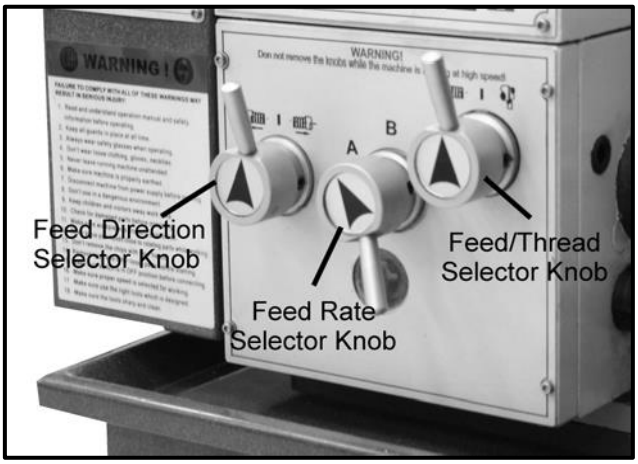


Figure-12 Gearbox controls

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

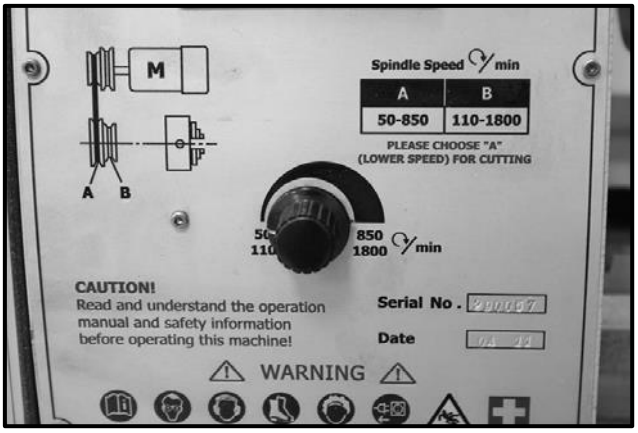


Figure-13 Variable speed control knob

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.

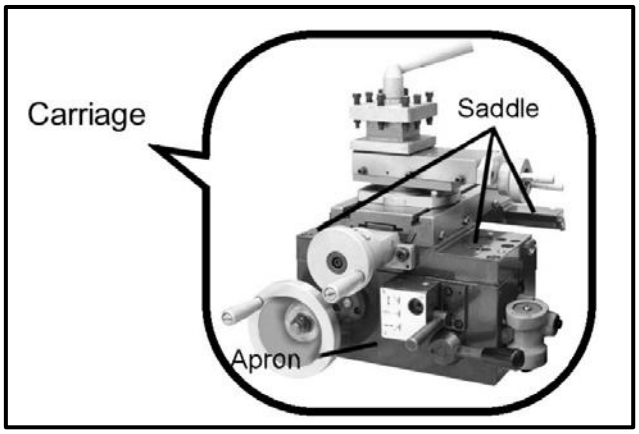


Figure-14 Saddle and apron

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: Turning 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 figure15.

CROSS SLIDE HAND WHEEL: Turning the cross-slide handwheel, 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 to a full 360°, if needed. See figure-15.

TOOL POST: A four-way tool post is supplied with CX701. Cutting tools can be attached and removed by tightening or loosening the clamping bolt. See figure-15.

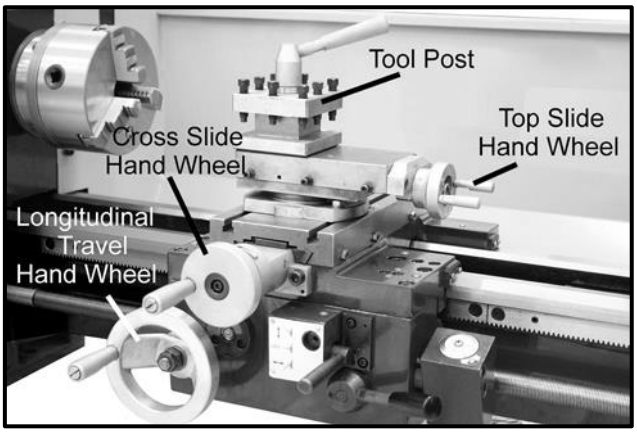


Figure-15 Carriage controls

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.

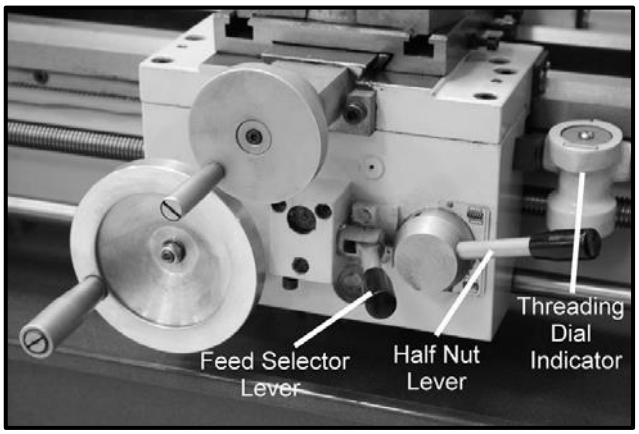


Figure-16 Carriage controls

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.

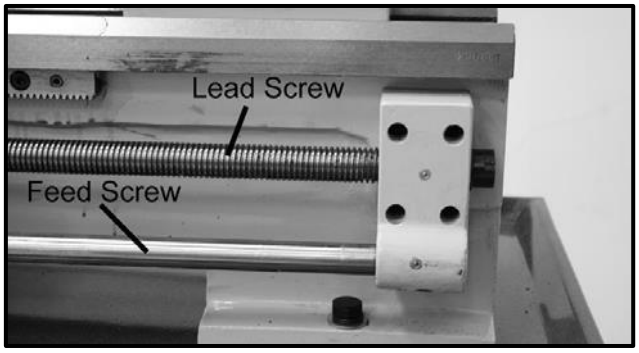


Figure-17 Lead screw and feed screw

TAILSTOCK

The tailstock slides on a V-way and can be clamped 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.

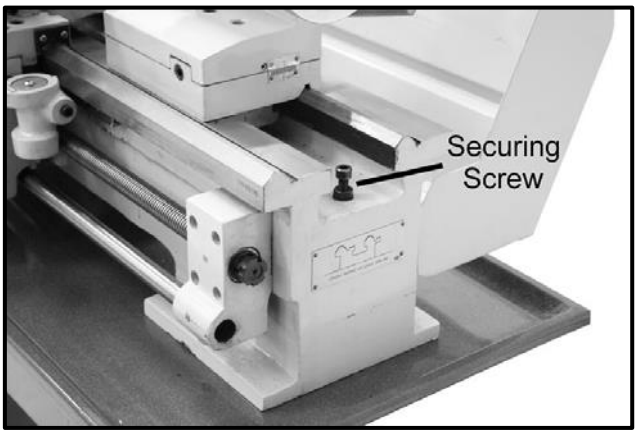


Figure-19 Installing the securing screw on the lathe bed

TAILSTOCK CONTROLS

TAILSTOCK HAND WHEEL: Turning the hand wheel advances 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 quill in position when tightened. See figure-20.

TAILSTOCK LOCK LEVER: Turn this lock lever up to lock and down to unlock the tailstock 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 the Center Alignment.

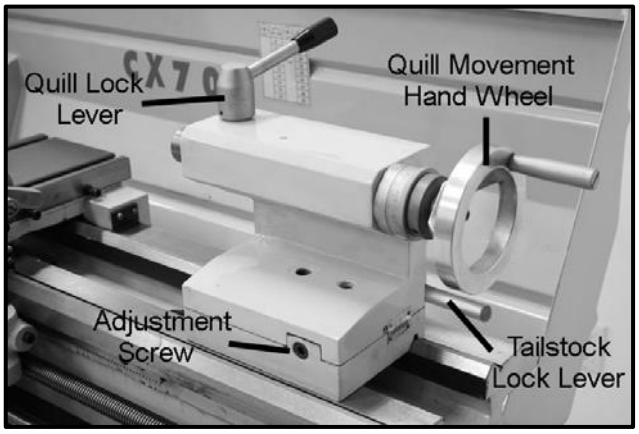


Figure-20 Tailstock controls

TEST RUN

Once you have assembled your lathe completely, it is then ti me 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.

WARNING

Before starting the lathe, make sure that you have read and understood the manual and you are familiar with the functions 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.

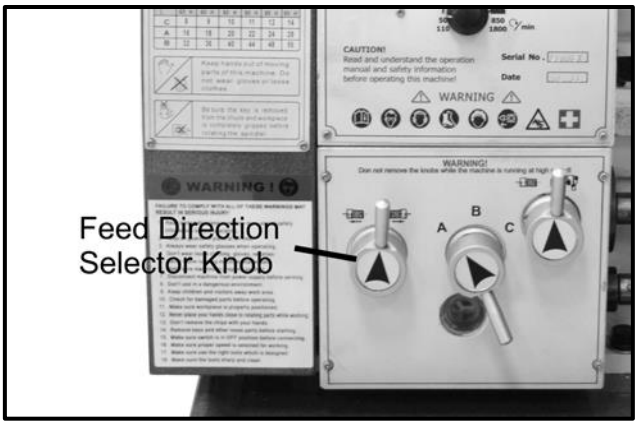


Figure-21 Feed direction selector knob

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 la the 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 Forward/Reverse switch to “R” position. Turn the machine back ON and make sure the spindle is rotating clockwise (reverse).

WARNING

Do not make any adjustments while the machine is 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 pulley s. 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 result in what speeds. The speed settings available on the CX701 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.

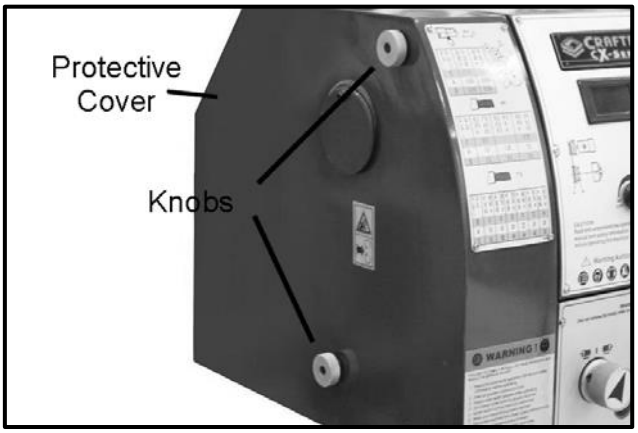


Figure-22 Removing the cover

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.

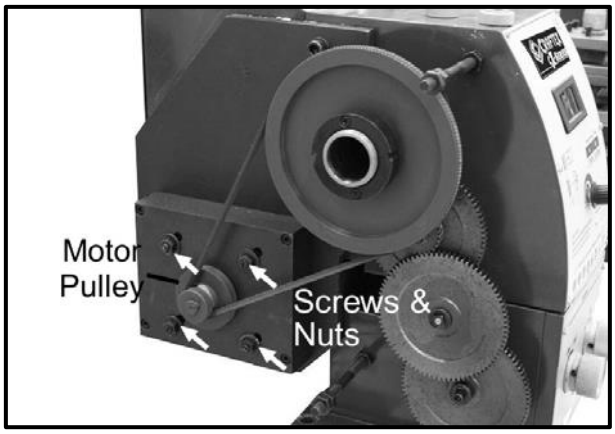


Figure-23 Screws and nuts securing the motor mounting plate

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.

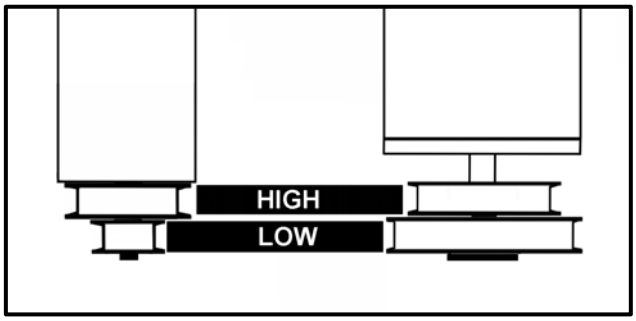


Figure-24 Belt position on the pulleys

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 TURNING 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.

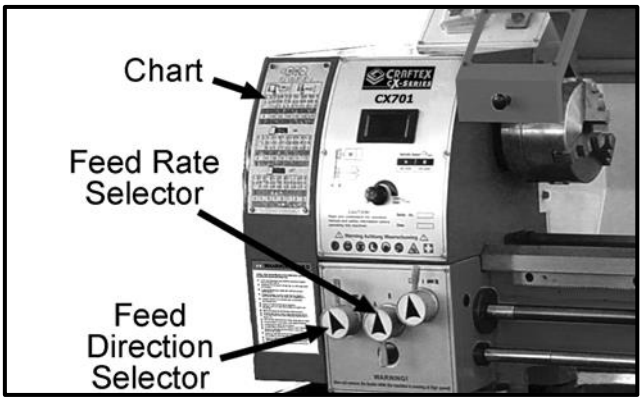


Figure-25 Feed rate se lector knob, feed direction selector knob and chart

Use the chart on the lath for selecting the feed speed or the thread pitch. Select the proper gear set if the required feed or thread pitch cannot 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 workpiece. 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.

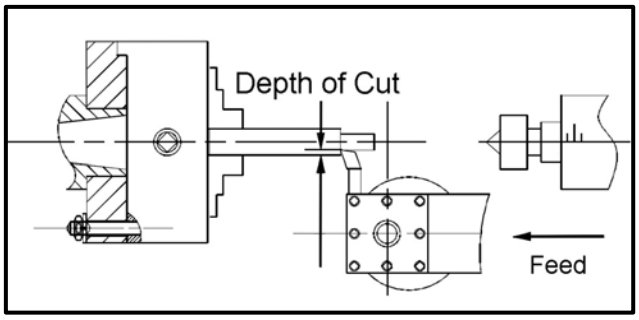


Figure-27 Straight turning

FACING AND RECESSES

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

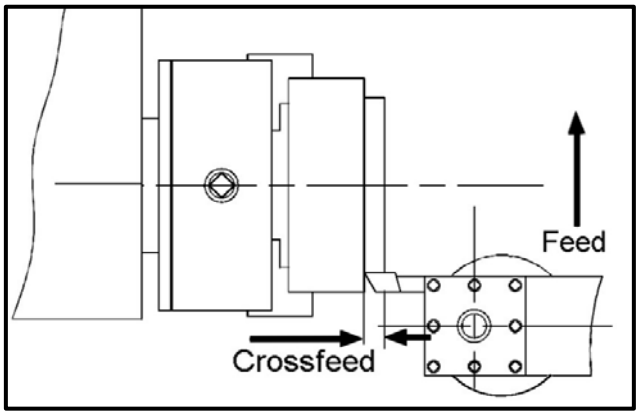


Figure-28 Facing & dressing

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

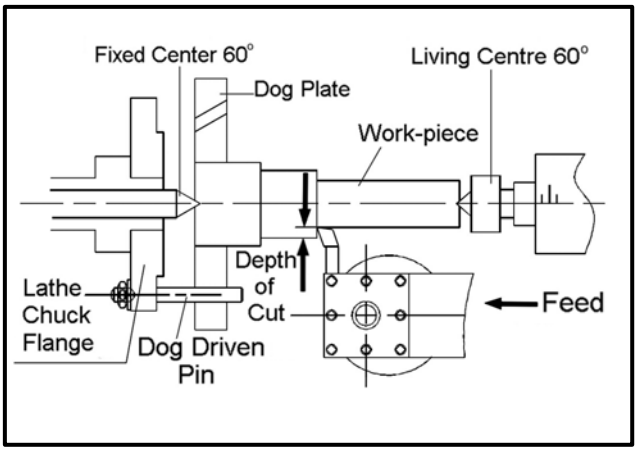


Figure-29 Turning between centers

IMPORTANT

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

THREAD CUTTING

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

IMPERIAL THREAD: When cutting inc h 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 cannot be utilized.

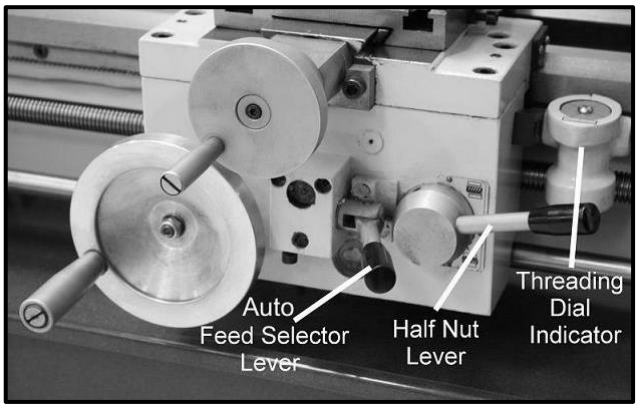


Figure-30 Half nut and threading dial

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 of the workpiece 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 counterclockwise, 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 OF F 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.

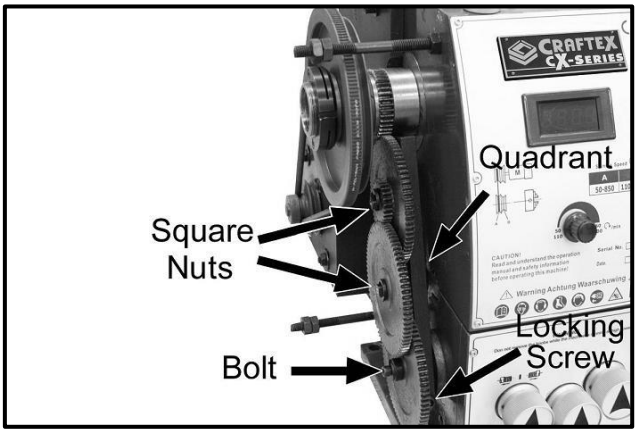


Figure-31 Change gears replacement

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 the gibs, loosen the nuts holding the gibs. Tighten the gibs until excess movement is eliminated and retighten the nuts. See figure 32.

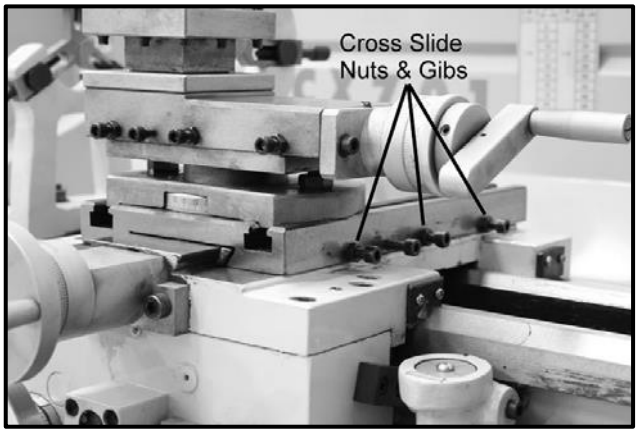


Figure-32 Cross slide adjustment gib screws

TOP SLIDE GIBS ADJUSTMENT

Locate the adjustment gibs on the side of the top slide as shown in figure 33. Loosen the nuts holding the gibs and then tighten the gibs until excess movement is eliminated. Once all the gibs are tightened properly, retighten the nuts.

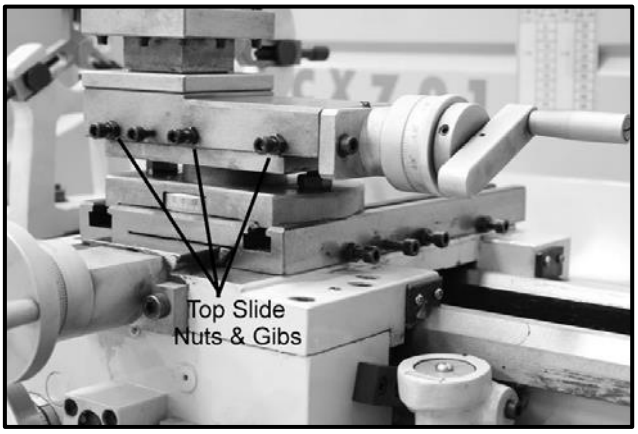


Figure-33 Top slide adjustment gibs screws

CHUCK RUN-OUT

If your lathe requires a higher level of accuracy, you may find it necessary to true-up the chuck to ensure minimal 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.

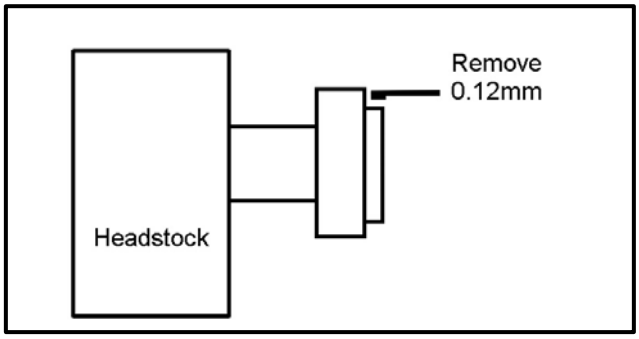


Figure-34 Turning the back plate

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.

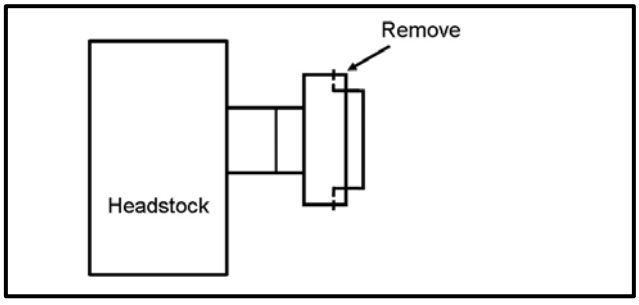


Figure-35 Turning new shoulder on back

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 Alignment of the Centre:

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

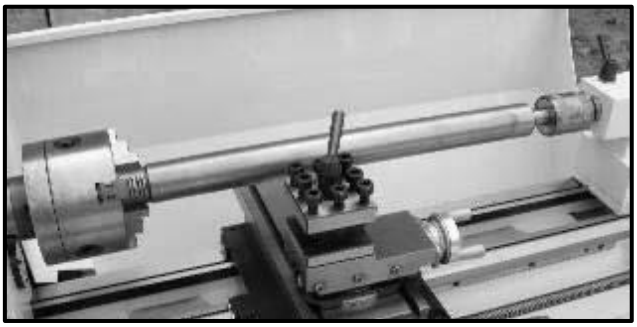


Figure-36 checking headstock and tailstock alignment

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.

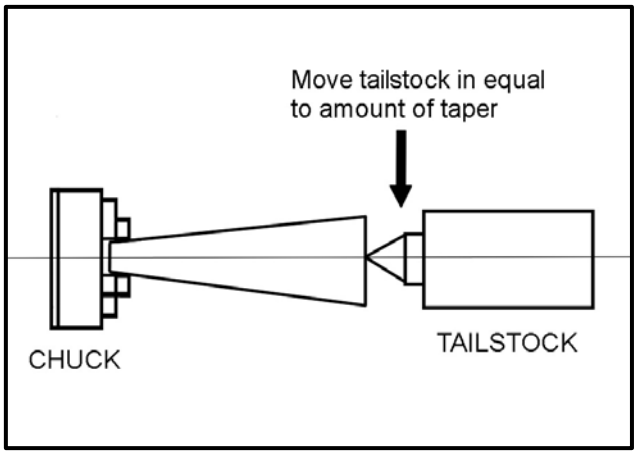


Figure-37 Stock thicker at the tailstock end

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.

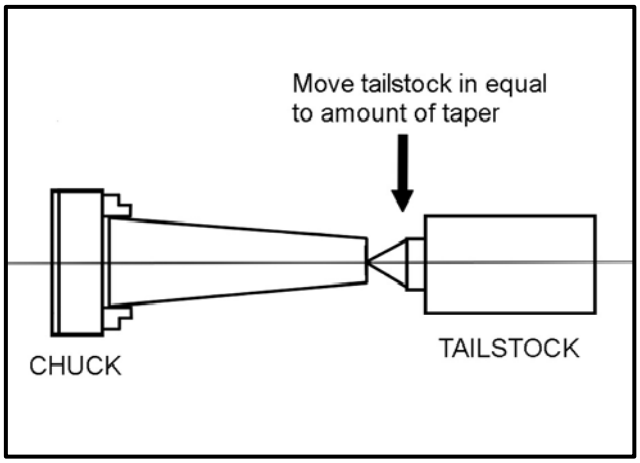


Figure-38 Stock thinner at the tailstock end

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.

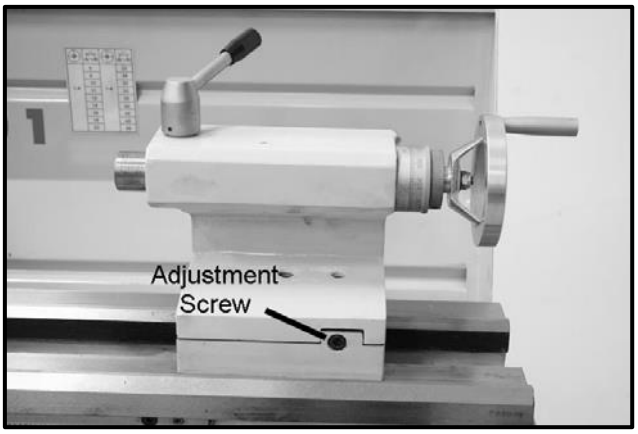


Figure-39 Tailstock offset adjustment screw

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.

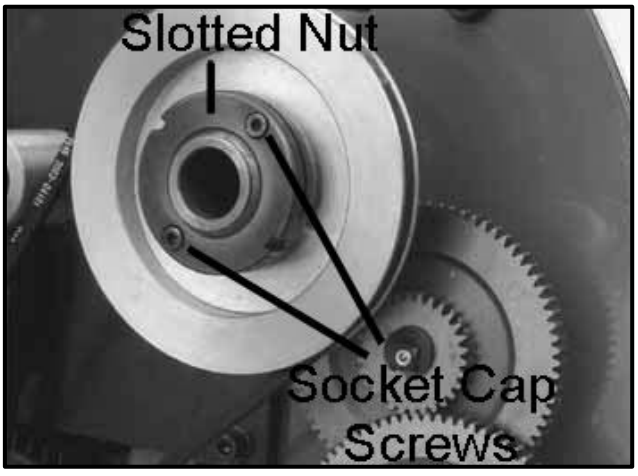


Figure-40 Main spindle bearing adjustment

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 serviced 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

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

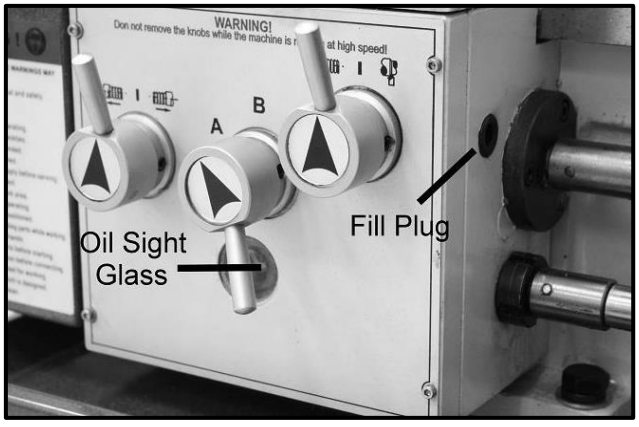


Figure-41 Gear box oil sight glass & fill plug

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

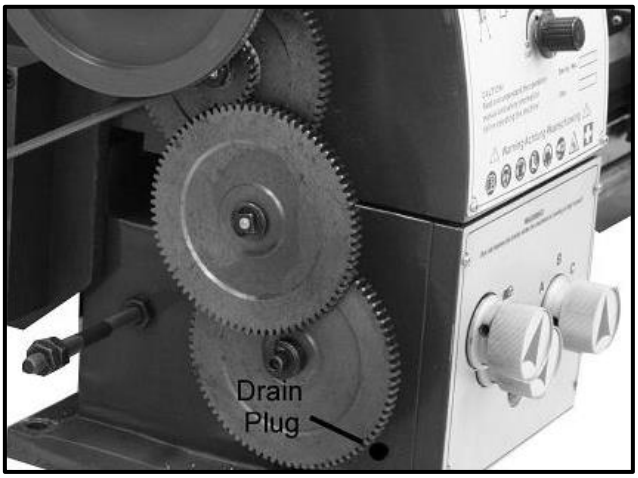


Figure-42 Gearbox oil drain plug

CHANGE GEARS

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

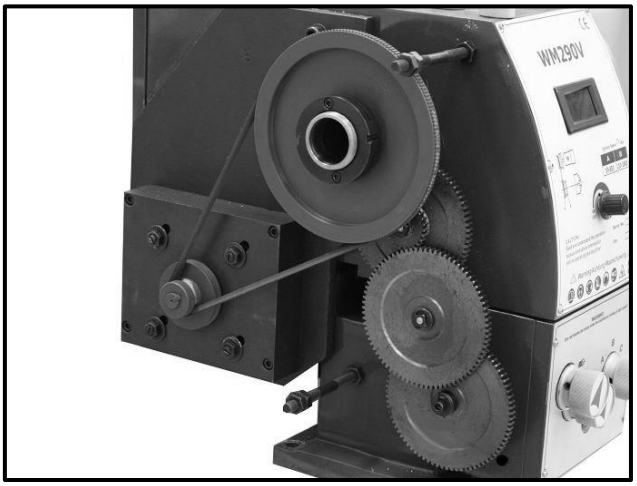


Figure-43 Change gears

SADDLE

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

CROSS SLIDE

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

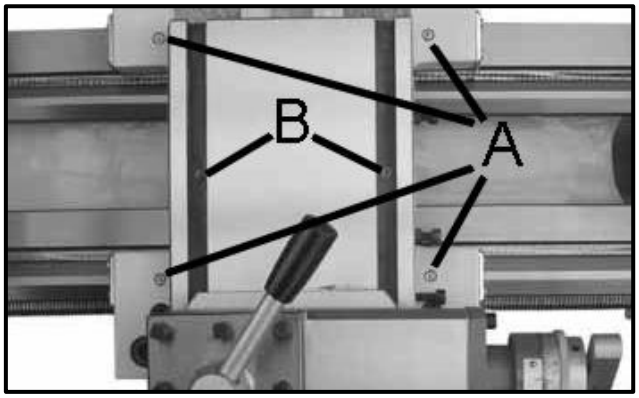


Figure-44 Carriage and cross slide oil fill ports

CROSS SLIDE HAND WHEEL

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

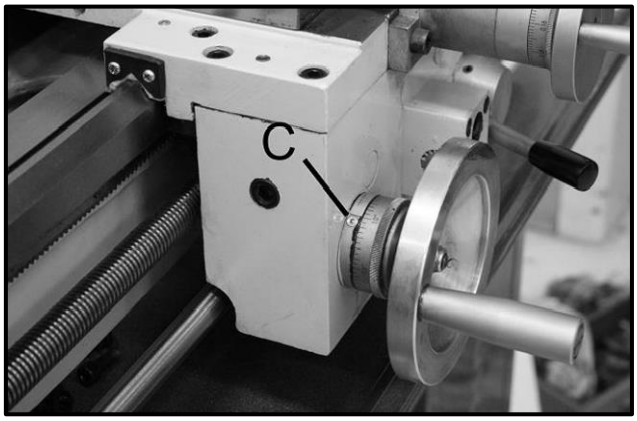


Figure-45 Cross slide hand wheel oil port

LEAD SCREW

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

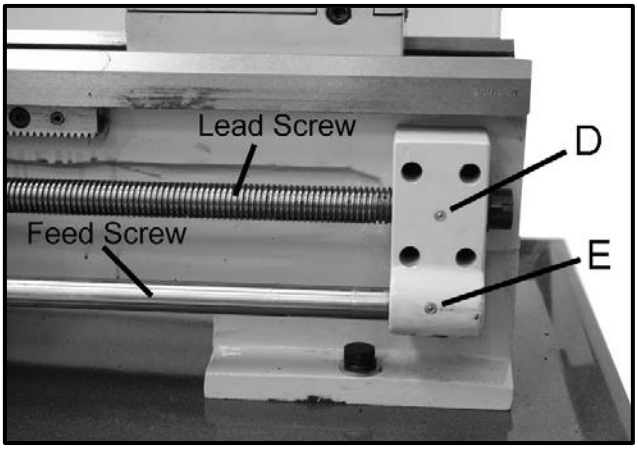


Figure-46 Lead screw and feed screw oil ports

TAILSTOCK

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

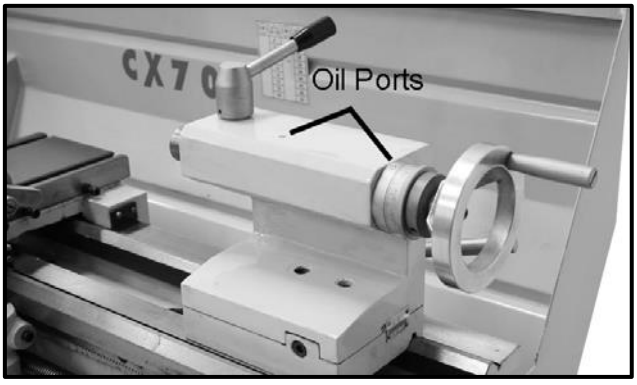


Figure-47 Tailstock oil ports

WARNING

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

MAINTENANCE

During the life of your machine, you will need to practice some regular maintenance to keep y our 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 in 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 c lean 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 CX701 features an optional stand Model CX701ST which can be bought separately.

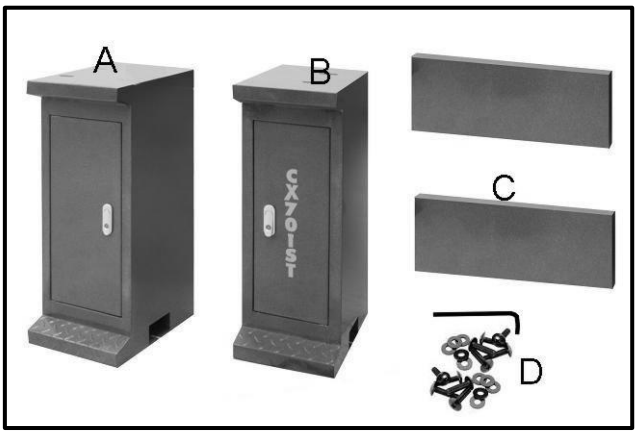


Figure-48 CX701 Stand inventory

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.

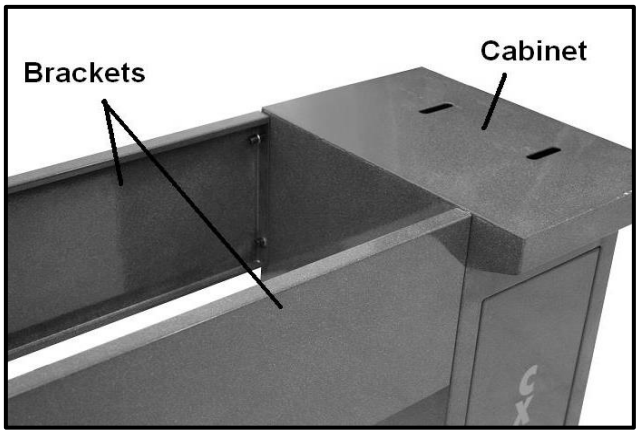


Figure-49 Mounting the lathe on the stand

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.

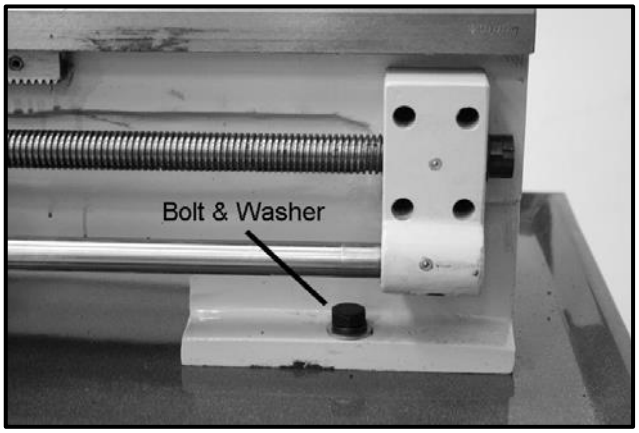


Figure-50 Lathe mounted on the stand

ELECTRICAL CONNECTIONS

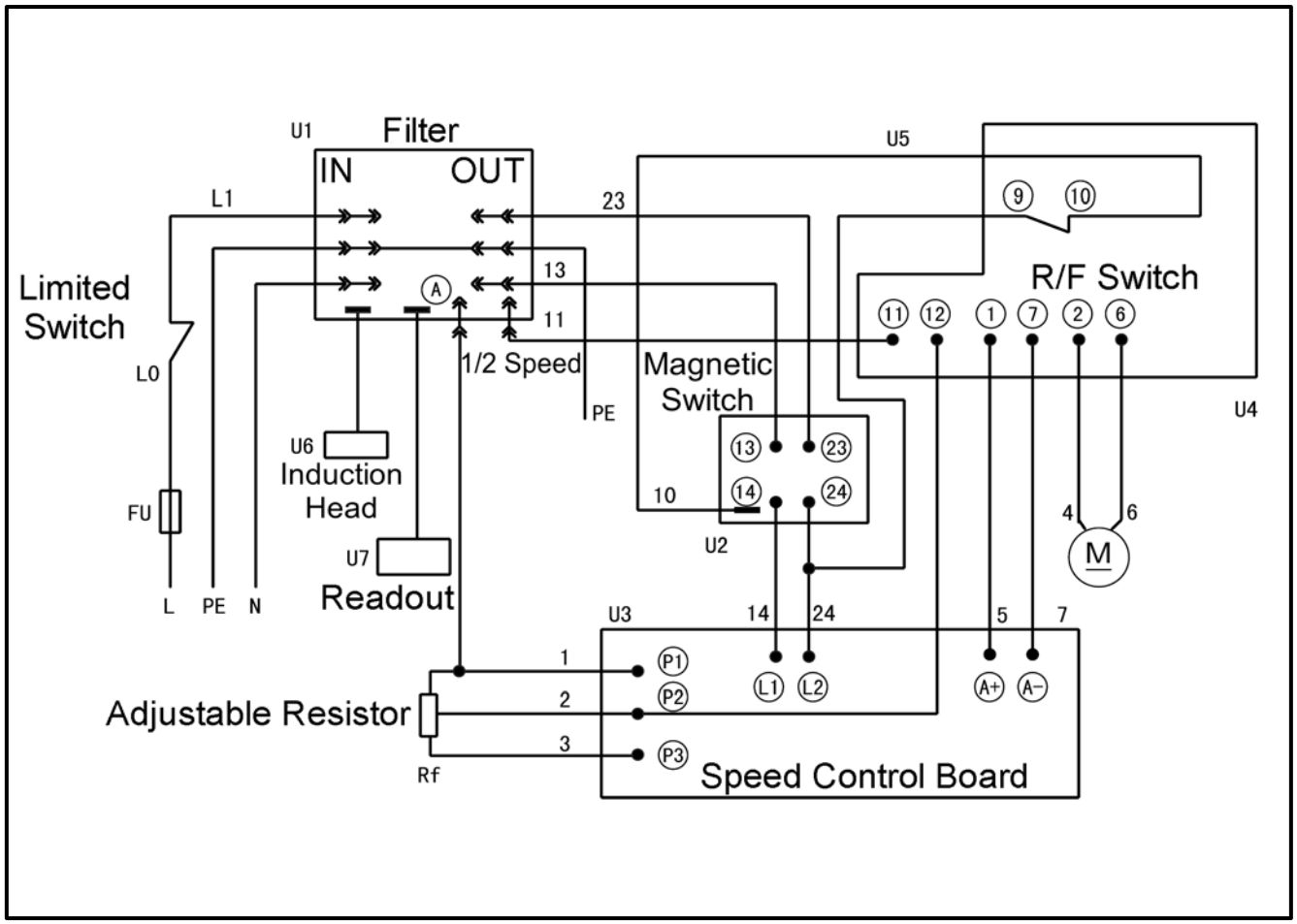
The CX701 Variable Speed Lathe is rated at 1.5-Horsepower, Single Phase, 110-Volt and 12.3 Amps. Use the wiring diagram for connecting the lathe to the main supply.

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

WARNING

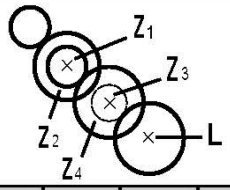
Connection of the lathe and all other electrical work may only be carried out by an authorized electrician. Failure to comply may cause serious injury and damage to the machinery and surroundings.

WIRING DIAGRAM FOR CX701



THREADING & FEEDING TABLE FOR LATHE

METRIC



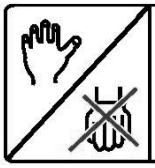
Z1 Z2 / Z4 Z3 / L		45 75 / 80 20 / H 85	45 75 / 80 30 / H 85	30 70 / 80 50 / H 85	30 75 / 80 50 / H 60	45 75 / 60 50 / H 80
mm	C	0.07	0.10	0.12	0.16	0.25
	A	0.14	0.21	0.25	0.32	0.5
	B	0.28	0.42	0.5	0.65	/
mm	C	/	/	/	/	0.03
	A	0.017	0.026	0.03	0.036	0.06
	B	0.035	0.052	0.06	0.072	0.12

mm

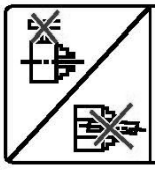
Z1 Z2 / Z4 Z3 / L	H 60 / 20 75 / 80 H	H 60 / 30 80 / 75 H	H 60 / 50 80 / 75 H	H 60 / 50 80 / 60 H	H 50 / 60 80 / 60 H	H 50 / 70 80 / 60 H
C	0.2	0.3	0.5	0.62	0.75	0.88
A	0.4	0.6	1.0	1.25	1.5	1.75
B	0.8	1.2	2.0	2.5	3.0	3.5

n / 1"

Z1 Z2 / Z4 Z3 / L	H 60 / 60 70 / 65 H	H 50 / 60 85 / 65 H	H 60 / 50 75 / 60 H	H 60 / 45 50 / 85 H	H 60 / 50 80 / 65 H	H 70 / 45 60 / 85 H	H 50 / 45 85 / 70 H
C	8	9	9.5	10	11	12	14
A	16	18	19	20	22	24	28
B	32	36	38	40	44	48	56

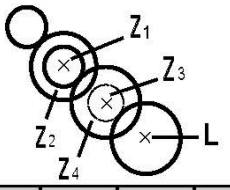


Keep hands out of moving parts of this machine. Do not wear gloves or loose clothes.



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

INCH



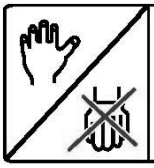
Z1 Z2 / Z4 Z3 / L		30 75 / 80 25 / H 80	40 75 / 70 20 / H 80	40 75 / 70 25 / H 80	40 75 / 80 30 / H 80	40 75 / 70 30 / H 80
in	C	0.0025	0.003	0.0038	0.004	0.0045
	A	0.005	0.006	0.0075	0.008	0.009
	B	0.01	0.12	/	/	/
in	C	/	/	/	/	/
	A	0.0015	0.0019	0.0024	0.0025	0.0028
	B	0.003	0.0038	0.0048	0.005	0.0056

mm

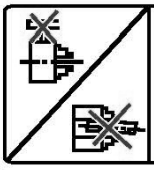
Z1 Z2 / Z4 Z3 / L	63 75 / 80 45 / H 60	H 60 / 50 63 / 80 H	45 50 / 80 63 / H 60
C	0.5		0.75
A	1.0	1.25	1.5
B	2.0	2.5	3.0

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 60 / 40 70 / 80 H
C	8	9	10	11	12	14
A	16	18	20	22	24	28
B	32	36	40	44	48	56



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

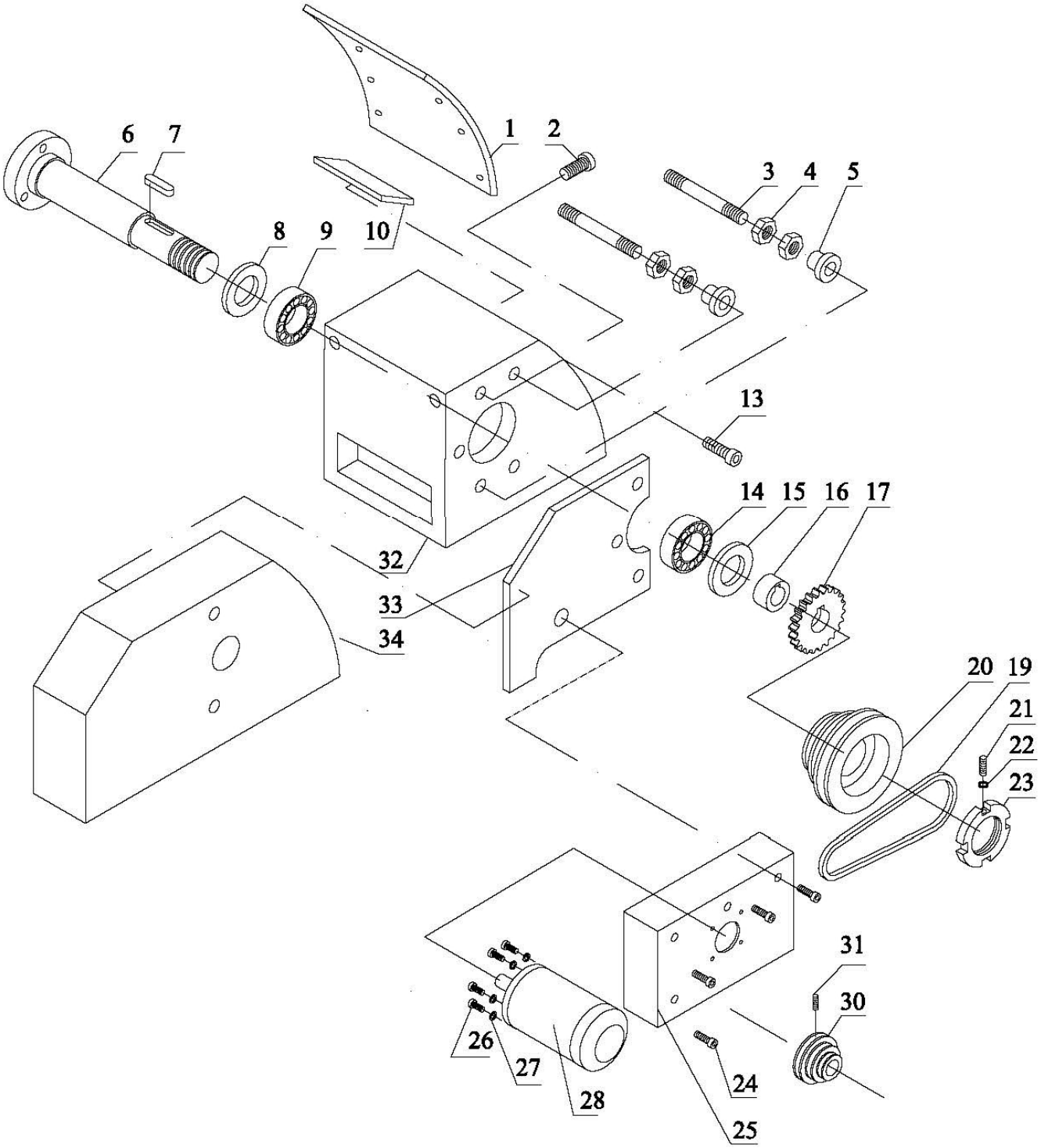


Be sure the key is removed from the chuck and workpiece is completely gripped before rotating the spindle!

CX701 TROUBLESHOOTING

Problem	Possible Reason	Elimination
Surface of workpiece is too rough	Tool blunt Tool springs Feed too high Radius at the tool tip 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 tailstock to the center Align 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 speed too high Crossfeed too high Insufficient cooling	Reduce cutting speed Lower crossfeed(finishing allowance should not exceed 0.5mm) More coolant
Flank wear too high	Clearance angle too small Tool tip not adjusted to 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	Tool is clamped incorrectly or has been started grinding the wrong way Wrong pitch Wrong diameter	Adjust too to the center Grind angle correctly Adjust the right pitch Turn the workpiece to the correct diameter
Spindle does not activate	Emergency stop switch activated	Unlock emergency stop switch

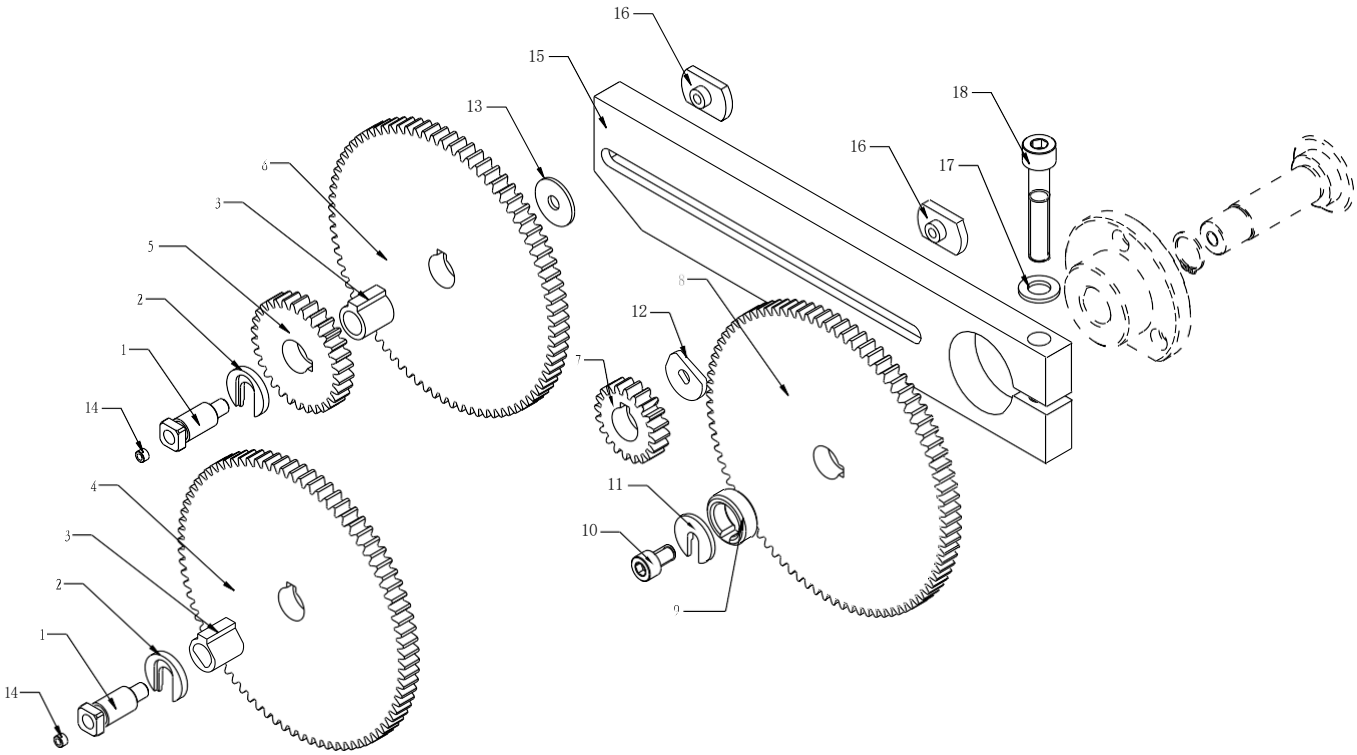
CX701 HEADSTOCK & DRIVING ASSEMBLY



CX701 HEADSTOCK & DRIVING ASSEMBLY

Parts No.	Description	Specification	Qty
1	Label		1
2	Screw	M3x0.5x6	6
3	Bolt		2
4	Nut	M10x1.5	4
5	Nut	M10x1.5	2
6	Spindle		1
7	Key	8x45	1
8	Gasket		1
9	Bearing	32012	1
10	Headstock		1
13	Screw	M8x1.25x25	2
14	Bearing	2007109E	1
15	Gasket		1
16	Bush		1
17	Gear	Z=40 M=1.5	1
19	Belt	Gates 7M825	1
20	Spindle Pulley		2
21	Set Screw	M5x0.8x12	1
22	Washer		2
23	Nut	M48x1.5	1
24	Screw	M6x1x30	4
25	Bracket		1
26	Screw	M8x1.25x30	4
27	Washer	Φ8	4
28	DC Motor	1.1KW	1
30	Motor Pulley		1
31	Set Screw	M6x1x10	1
32	Head Stock		1
33	Bracket Plate		1
34	Belt Cover		1

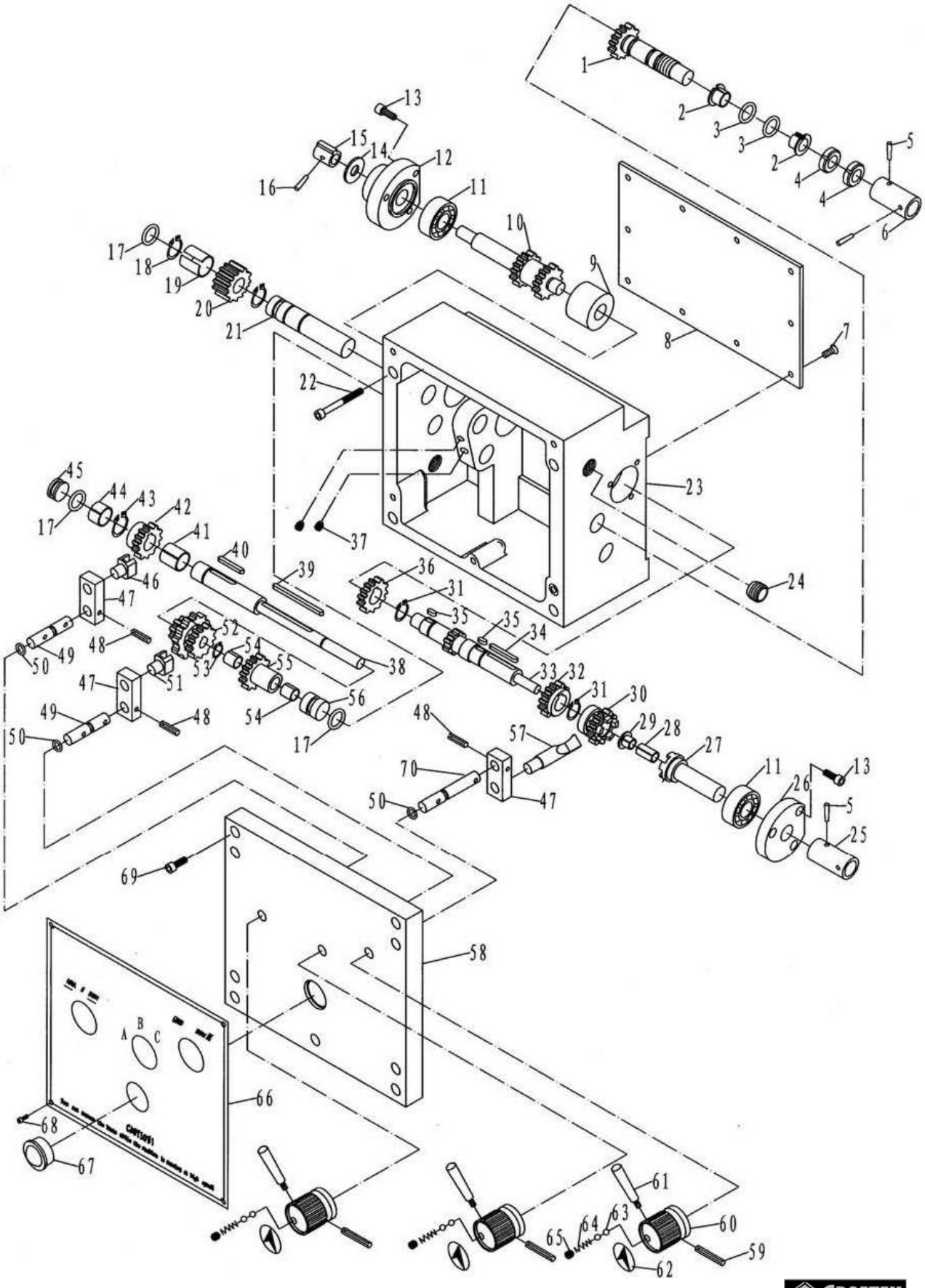
CX701-QUADRANT & CHANGE GEAR ASSEMBLY



CX701-QUADRANT & CHANGE GEAR ASSEMBLY

Parts No.	Description	Specification	Qty
1	Shaft		2
2	Snapring Washer		2
3	Bushing		2
4	Change Gear	80T	1
5	Change Gear	30T	1
6	Change Gear	75T	1
7	Change Gear	25T	1
8	Change Gear	80T	1
9	Spacing Ring		1
10	Hex Socket Cap Screw	M6x10	1
11	Snapring Spacer		1
12	Washer		1
13	Washer		1
14	Oil Cup	Φ6	2
15	Braket		1
16	Key nut		2
17	Washer	Φ8	1
18	Hex Socket Cap Screw	M8x45	1

CX701 GEARBOX ASSEMBLY

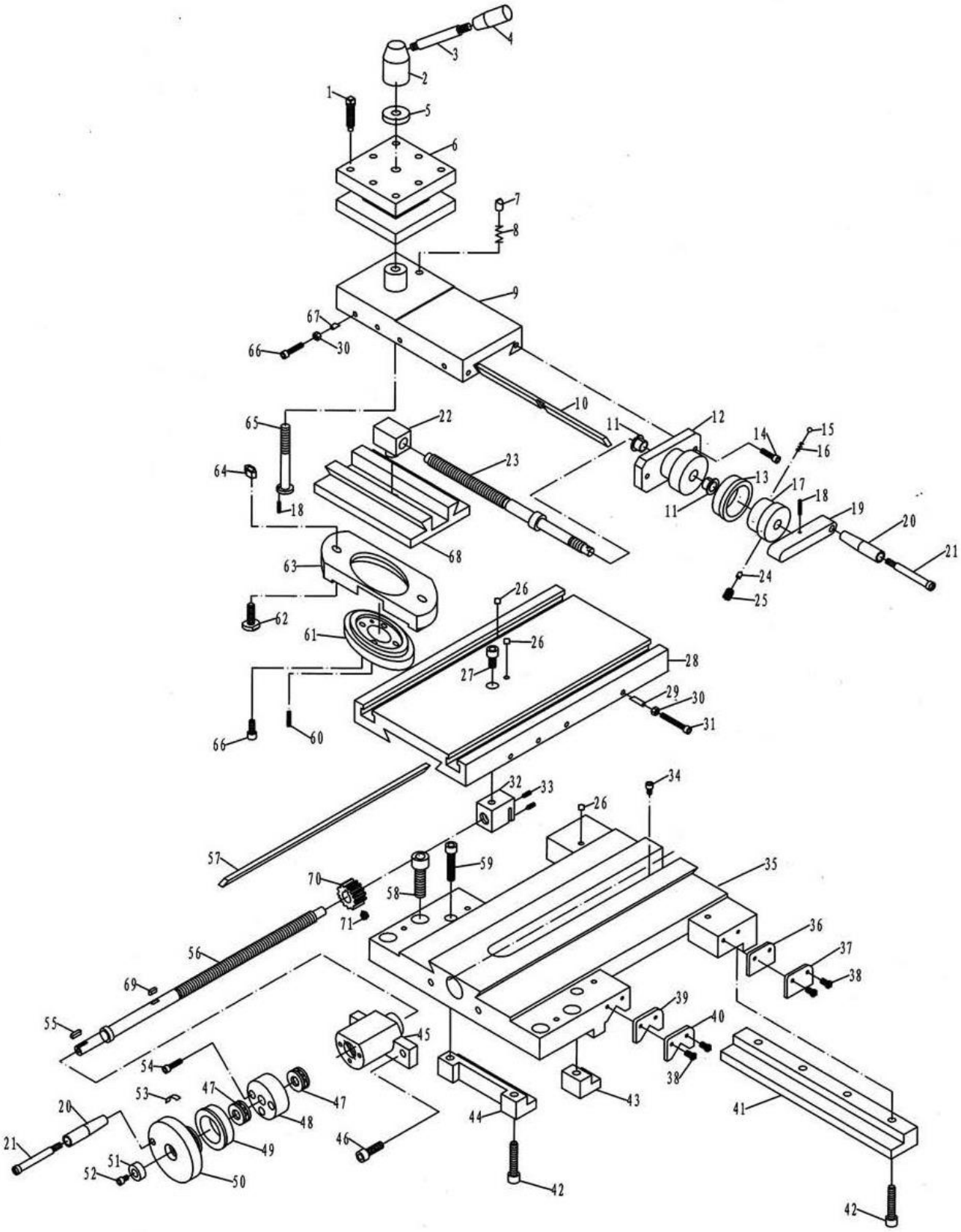


CX701 GEARBOX ASSEMBLY

Parts No.	Description	Specification	Qty
1	Shaft		1
2	Bearing	16170	2
3	O-Ring	18001400	2
4	Nut	M16x1.5	2
5	Pin	Φ3x22	2
6	Collar		1
7	Screw	M5x0.8x8	10
8	Cover		1
9	Collar		1
10	Gear	Z=24 M=1.25	1
11	Bearing	6202	2
12	Left Plug		1
13	Hex Socket Cap Screw	M5x0.8x10	6
14	Washer	Φ10	1
15	Key		1
16	Pin	Φ4x14	1
17	O-Ring	18001500	3
18	Snap Ring	Φ18	2
19	Bearing	1815	1
20	Gear	Z=24 M=1.25	1
21	Shaft		1
22	Hex Socket Cap Screw	M6x1x50	4
23	Gearbox		1
24	Set Screw	M16x1.5x12	2
25	Collar		1
26	Right Plug		1
27	Shaft		1
28	Bearing	0815	1
29	Bearing	08075	1
30	Gear	Z=24 M=1.25	1
31	Snap Ring	Φ15	2
32	Gear	Z=24 M=1.25	1
33	Shaft	Z=16 M=1.25	1
34	Key	4x25	1
35	Key	4x8	2
36	Gear	Z=32 M=1.25	1
37	Set Screw	M6x1x10	2
38	Shaft	Φ6x18	1
39	Key	4x50	1
40	Key	4x20	1
41	Bearing	1615	1
42	Gear	Z=24 M=1.25	1
43	Snap Ring	Φ16	1
44	Bearing	1610	1

Parts No.	Description	Specification	Qty
45	Left Plug		1
46	Fork		1
47	Bracket		3
48	Pin	Φ3X20	3
49	Shaft		2
50	O-Ring	1800690	3
51	Fork		1
52	Gear	Z=16/32/24 M=1.25	1
53	Snap Ring	Φ10	1
54	Bearing	1010	2
55	Gear	Z=24 M=1.25	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	M6x1x12	3
66	Label		1
67	Oil Sight	25x14	1
68	Screw	M3x0.5x16	4
69	Screw	M5x0.8x16	5
70	Shaft		1

CX701 TOP SLIDE, CROSS SLIDE AND CARRIAGE ASSEMBLY

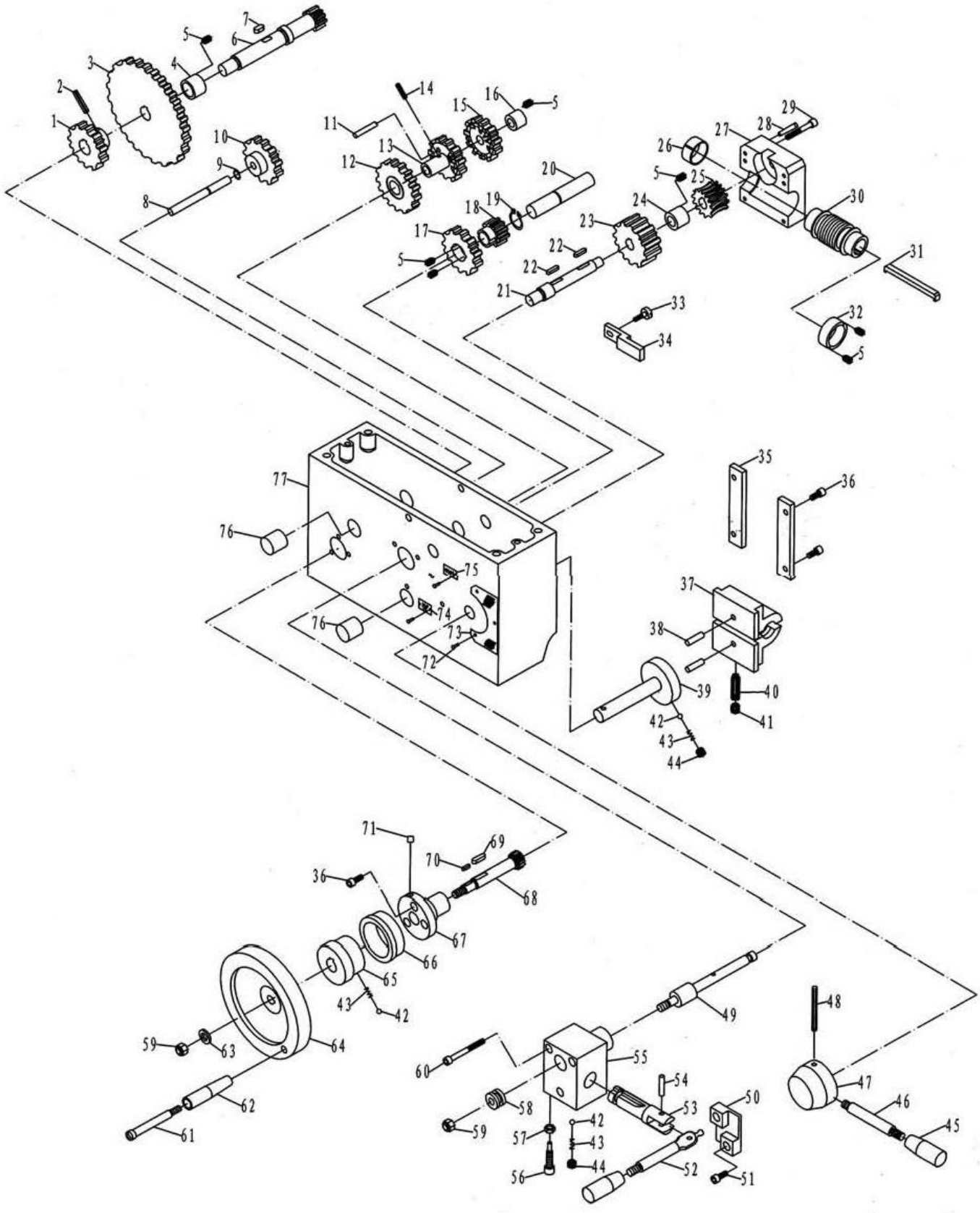


CX701 TOP SLIDE, CROSS SLIDE AND CARRIAGE ASSEMBLY

Parts No.	Description	Specification	Qty
1	Screw	M8x1x30	8
2	Handle Base		1
3	Handle Shaft		1
4	Knob		1
5	Washer	Φ10	1
6	Post Base		1
7	Stop		1
8	Spring	7x0.8x11	1
9	Top Slide		1
10	Gib		1
11	Washer		2
12	Hub		1
13	Index Ring		1
14	Hex Socket Cap Screw	M6x1x20	2
15	Ball	Φ5	1
16	Spring	1.5x0.5x6.5	1
17	Index Base		1
18	Pin	Φ3x16	2
19	Lever		1
20	Lever		2
21	Lever Shaft		2
22	Block		1
23	Screw	10T.P.I	1
24	plug		3
25	Set Screw	M6x1x10	3
26	Oil Ball	6mm	7
27	Hex Socket Cap Screw	M8x1.25x10	1
28	Cross Slide		1
29	plug		4
30	Hex Nut	M6x1	8
31	Hex Socket Cap Screw	M6x1x30	4
32	Block		1
33	Set Screw	M4x0.7x8	2
34	Hex Socket Cap Screw	M5x0.8x6	1
35	Saddle		1
36	Wiper		2
37	Plate		2
38	Screw	M4x0.7x18	8
39	Wiper		2
40	Plate		2
41	Strip		1
42	Hex Socket Cap Screw	M8x1.25x30	5
43	Strip		1
44	Strip		1

Parts No.	Description	Specification	Qty
45	Bracket		1
46	Hex Socket Cap Screw	M5x0.8x20	3
47	Bearing	51101	1
48	Collar		1
49	Index Ring		1
50	Handlewhere		1
51	Washer		1
52	Hex Socket Cap Screw	M5x0.8x10	1
53	Spring		1
54	Hex Socket Cap Screw	M5x0.8x20	3
55	Key	C4x12	1
56	leadscrew	10 T.P.I	1
57	Gib		1
58	Hex Socket Cap Screw	M12x1.75x30	2
59	Hex Socket Cap Screw	M8x1.25x40	2
60	Pin	Φ4x20	1
61	Graduated Collar		1
62	T-Bolt	M10x1.5x30	2
63	Clamping Ring		1
64	Nut	M10x1.5	2
65	Bolt		1
66	Hex Socket Cap Screw	M6x1x16	8
67	plug		4
68	Swivel Base		1
69	Key	4x10	1
70	Gear	Z=20 M=1.25	1
71	Set Screw	Mx0.8x16	1

CX701 APRON ASSEMBLY

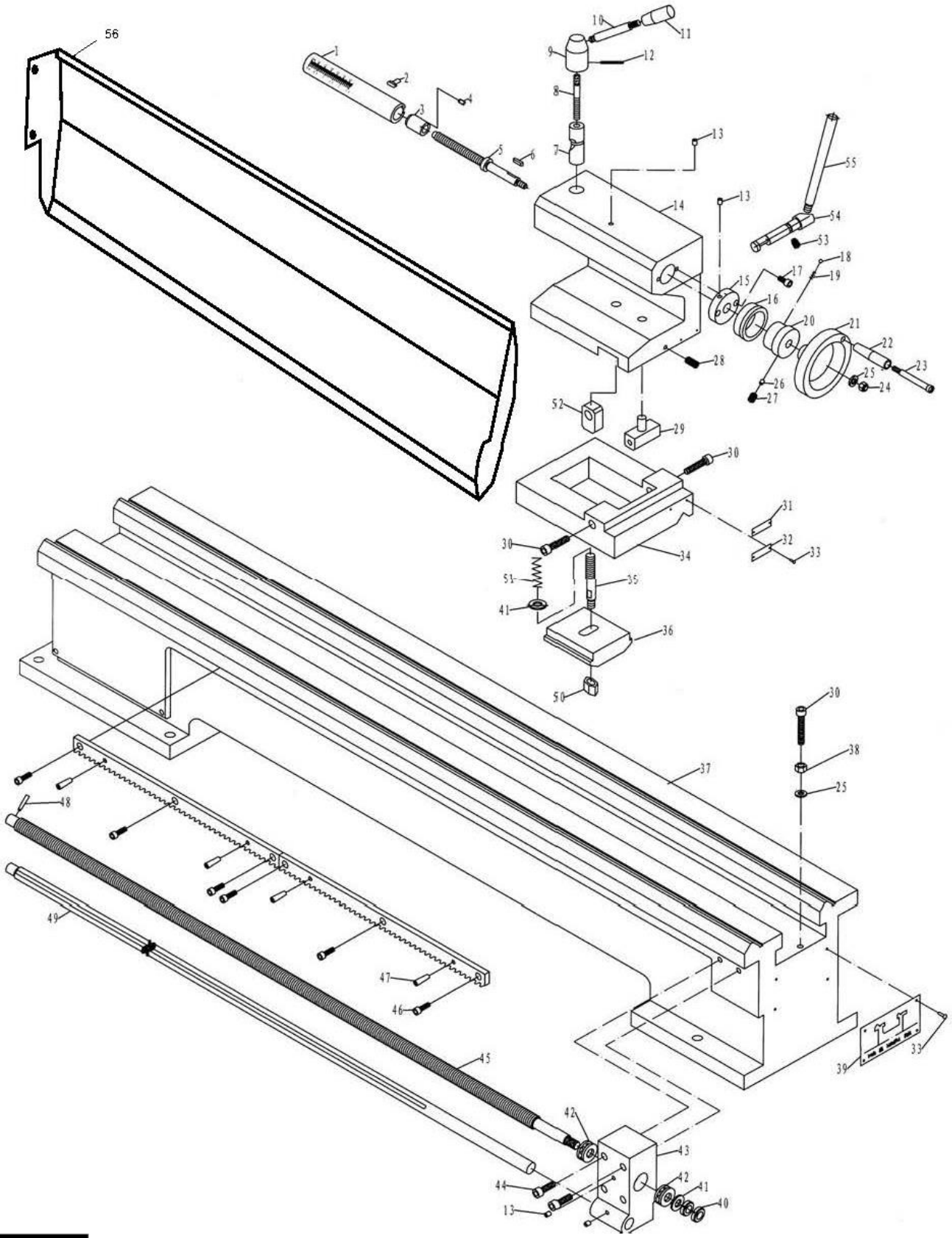


CX701 APRON ASSEMBLY

Parts No.	Description	Specification	Qty
1	Gear	Z=40 M=1.25	1
2	Pin	Φ5x24	1
3	Gear	Z=66 M=1.25	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	Z=26 M=1.25	1
11	Shaft	Z=45 M=1.25	3
12	Gear	Z=36 M=1.25	1
13	Gear	Z=36 M=1.25	1
14	Pin	Φ4x16	1
15	Gear		1
16	Washer		1
17	Gear	Z=40 M=1.25	1
18	Gear	Z=20 M=1.25	1
19	Snap Ring	Φ15	1
20	Shaft		1
21	Worm		1
22	Key	5x14	2
23	Gear	Z=34 M=1.25	1
24	Washer		1
25	Worm	Z_2=17 M=1.5 Z_1=1 Left Thread	1
26	Bearing	2501	1
27	Worm Base		1
28	Pin	Φ4x20	2
29	Hex Socket Cap Screw	M4x0.7x30	4
30	Worm		1
31	Key	5x62	1
32	Washer		1
33	Set Screw	M4x0.7x16.5	1
34	Plate		1
35	Plate		2
36	Hex Socket Cap Screw	M5x0.8x12	7
37	Half Nut		1
38	Pin	Φ6x18	2
39	Cam Shaft		1
40	Hex Socket Cap Screw	M6x1x20	1
41	Hex Socket Cap Screw	M6x1x8	1
42	Ball	Φ5	3
43	Spring	0.7x4x10	3
44	Set Screw	M6x1x6	2

Parts No.	Description	Specification	Qty
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	M5x0.8x10	6
52	Shaft Handle		1
53	Shaft Forx		1
54	Pin	Φ5x20	1
55	Base		1
56	Set Screw	M6x1x25	1
57	Nut	M6x1	1
58	Shift Lever		1
59	Nut	M8x1.25	2
60	Hex Socket Cap Screw	M5x0.8x35	2
61	Shaft Handle		1
62	Knob		1
63	washer	Φ8	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	Rivet	Φ2x6	7
73	Plate		1
74	Plate		1
75	Plate		1
76	Collar		2
77	Apron		1

CX701 TAILSTOCK, BED ASSEMBLY

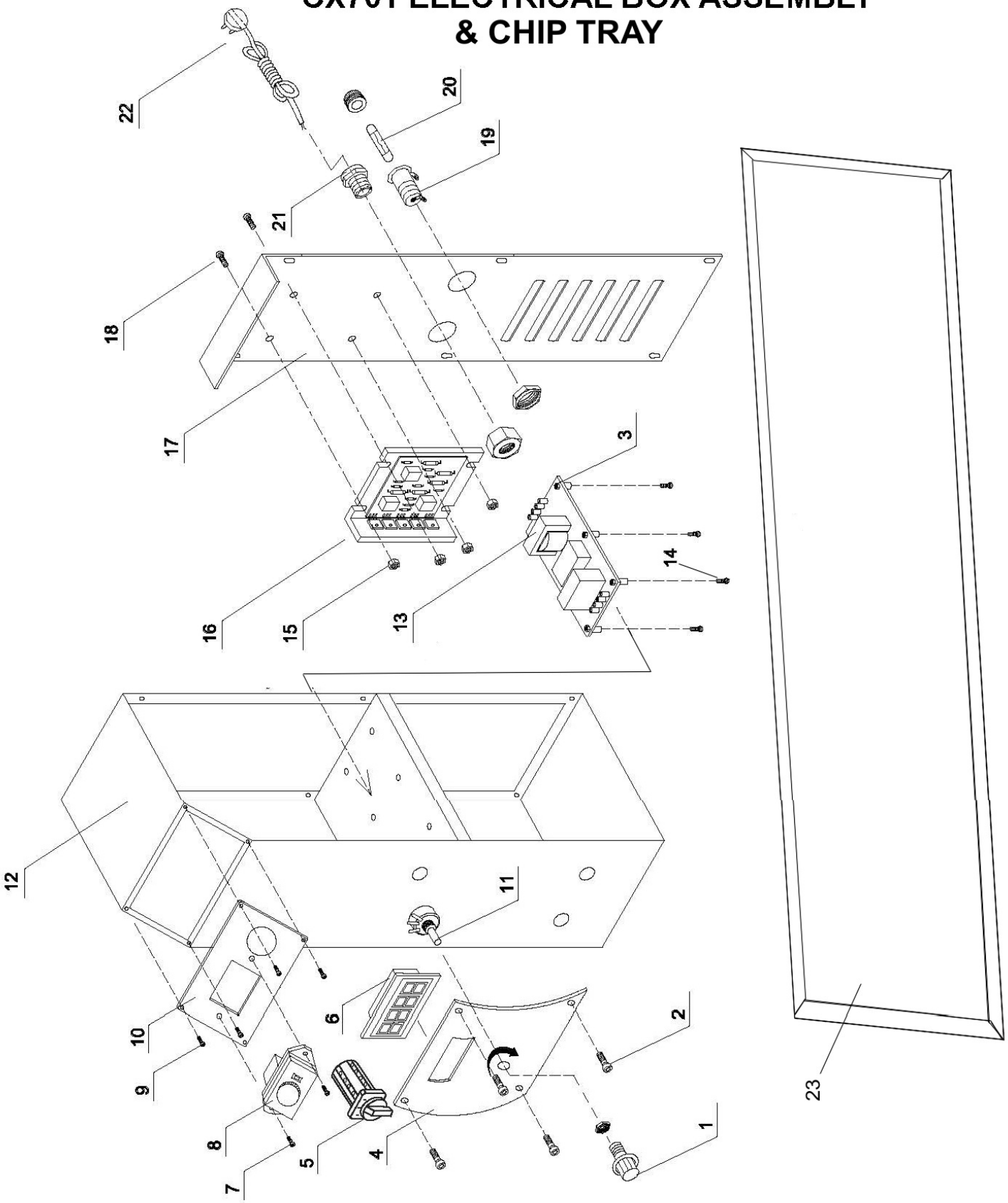


CX701 TAILSTOCK, BED ASSEMBLY

No	Parts No.	Description	Specification	Qty
260	1	Quill		1
261	2	Key		1
262	3	Nut	10 T.P.I	1
263	4	Set Screw	M6x1x10	1
264	5	Screw		1
265	6	Key	M4x10	1
266	7	Pivot Block		1
267	8	Screw		1
268	9	Handle Base		1
269	10	Handle Shaft		1
270	11	Knob	M8x1.25	1
271	12	Pin	Φ3x30	1
272	13	Oil Ball	Φ6	4
273	14	Tailstock body		1
274	15	Flange Cover		1
275	16	Index Ring		1
276	17	Hex Socket Cap Screw	M6x1x10	2
277	18	Ball	Φ4	1
278	19	Spring	Φ4x1x6	1
279	20	Sleeve		1
280	21	Handwheel		1
281	22	Knob		1
282	23	Screw		1
283	24	Nut	M8x1.25	1
284	25	Washer	Φ8	6
285	26	Brake Block		1
286	27	Hex Socket Cap Screw	M6x1x10	1
287	28	Hex Socket Cap Screw	M6x1x16	1
288	29	Set Screw		1
289	30	Hex Socket Cap Screw	M8x1.25x40	3
290	31	Plate		1
291	32	Plate		1
292	33	Rivet	Φ2x6	8
293	34	Base		1
294	35	Bolt		1
295	36	Clamping Plate		1
296	37	Bed		1
297	38	Nut	M8x1.25	5
298	39	Plate		1
299	40	Nut	M12x1.75	2
300	41	Washer	Φ12	2
301	42	Bearing	51102	2
302	43	Bracket		1
303	44	Hex Socket Cap Screw	M8x1.25x20	2

Parts No.	Description	Specification	Qty
45	Feed Shaft	8 T.P.I	1
46	Hex Socket Cap Screw	M6x1x15	6
47	Pin	Φ6x20	4
48	Pin	Φ4x22	1
49	Shaft		1
50	Nut	M12x1.75	1
51	Spring	Φ13x1x62	1
52	Brake Block		1
53	Set Screw	M6x1x10	1
54	Shaft		1
55	Handle		1
56	Back Splash		1

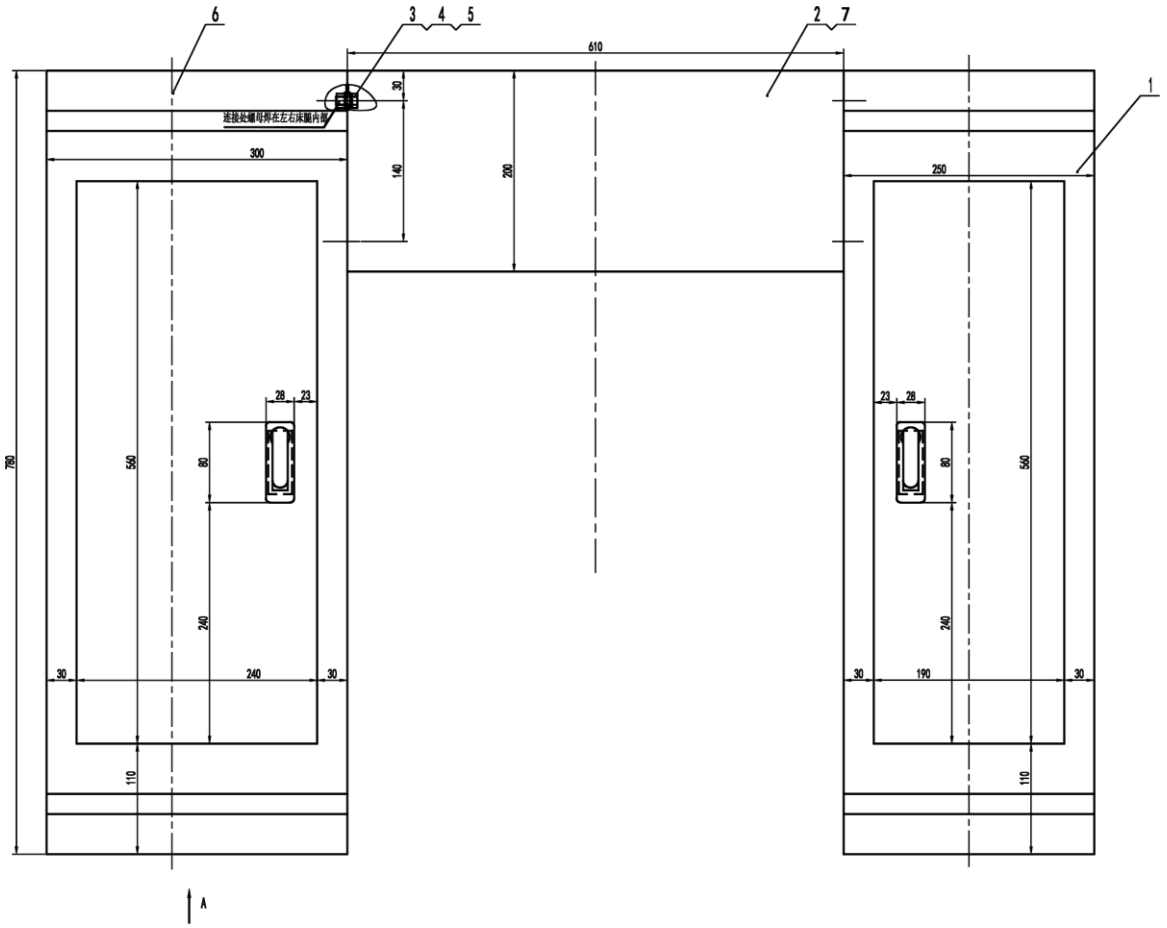
CX701 ELECTRICAL BOX ASSEMBLY & CHIP TRAY



CX701 ELECTRICAL BOX ASSEMBLY & CHIP TRAY

Parts No.	Description	Specification	Qty
1	Timing Knob		1
2	Screw	M3x0.5x6	4
3	Nut	M4x0.7	4
4	Lable		1
5	R/F Swich		1
6	Speed Display	Optional	1
7	Screw	M4x0.7x14	2
8	Magnetic Swich		1
9	Screw	M3x0.5x6	4
10	Electrical Plate		1
11	Potentiometer		1
12	Electrical Box		1
13	Filter		1
14	Screw	M4x0.7x14	6
15	Nut	M4x0.7	4
16	Speed Control Board		1
17	Cover		1
18	Screw	M4x0.7x12	4
19	Fuse Holder		1
20	Fuse	15A	1
21	Strand Relief	M16x2	1
22	Plug		1
23	Chip Tray		1

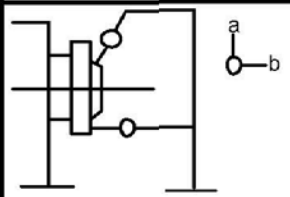
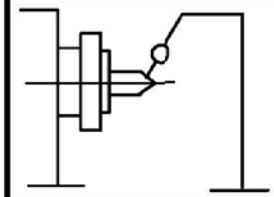
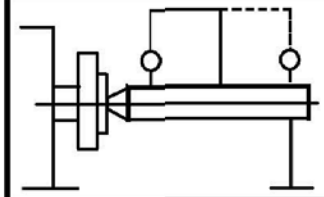
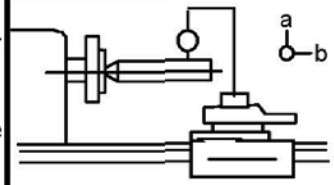
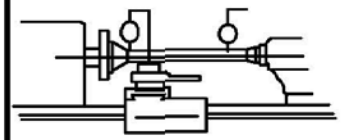
CX701 STAND ASSEMBLY



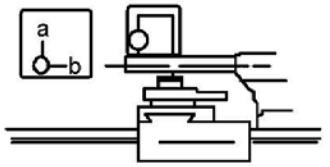
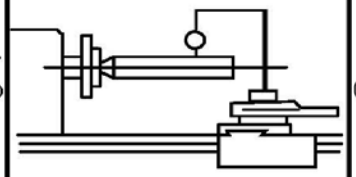
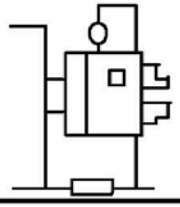
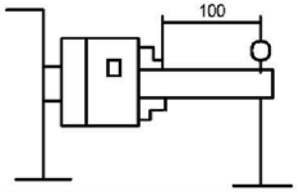
CX701 STAND PARTS LIST

No.	Parts No.	Description	Specification	Drawing No.	Qty	Code No.
1 PC	X701ST1	Right Stand			1	
2 PC	X701ST2	Front Connecting Plate			1	
3 PC	X701ST3	Hexagon bolt	M8X16		8	
4 PC	X701ST4	Plain washer	Φ8		16	
5 PC	X701ST5	Spring washer	Φ8		8	
6 PC	X701ST6	Left Stand			1	
7 PC	X701ST7	Back Connecting Plate			1	

CX701

NO.	INSPECTION ITEM	DIAGRAM	TOLERANCE(mm)	
			PERMISSIBLE	ACTUAL
1	Runout of spindle nose a radial plane b face plane		a 0.01 b 0.015	
2	Runout of center		0.03	
3	Runout of spindle taper hole a spindle nose b 250 distance		a 0.015 b 0.03	
4	Parallelism of center line of spindle to carriage movement a in horizontal plane b in vertical plane		a 0.03/250 a b 0.03/250 b	
5	Difference between two centers (higher at tailstock)		0.02-0.06	

CX701

NO.	INSPECTION ITEM	DIAGRAM	TOLERANCE(mm)	
			PERMISSIBLE	ACTUAL
6	Parallelism of tailstock quill to carriage movement a in horizontal plane b in vertical plane		a 0.025/50 a b 0.025/50 b	
7	Parallelism of tailstock quill taper hole to carriage movement a in horizontal plane b in vertical plane		a 0.03/250 a b 0.02/250 b	
8	Parallelism of center line of spindle to top slide movement		0.04/50	
9	Radial runout of chuck		0.04	
10	Radial runout of ø20 test bar		0.08/100	

WARRANTY

CRAFTEX 3 YEARS LIMITED WARRANTY

Craftex warrants every product to be free from defects in materials and agrees to correct such defects where applicable. This warranty covers **three years** for parts and 90 days for labor (unless specified otherwise), to the original purchaser from the date of purchase but does not apply to malfunctions arising directly or indirectly from misuse, abuse, improper installation or assembly, negligence, accidents, repairs or alterations or lack of maintenance.

Proof of purchase is necessary.

All warranty claims are subject to inspection of such products or part thereof and Craftex reserves the right to inspect any returned item before a refund or replacement may be issued.

This warranty shall not apply to consumable products such as blades, bits, belts, cutters, chisels, punches etc.

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

RETURNS, REPAIRS AND REPLACEMENTS

To return, repair, or replace a Craftex product, you must visit the appropriate Busy Bee Tools showroom or call 1-800-461-BUSY. Craftex is a brand of equipment that is exclusive to Busy Bee Tools.

For replacement parts directly from Busy Bee Tools, for this machine, please call 1-800-461-BUSY (2879), and have your credit card and part number handy.

- All returned merchandise will be subject to a minimum charge of 15% for re-stocking and handling the following qualifications.
- Returns must be pre-authorized by us in writing.
- We do not accept any type of *collect* shipments.
- Items returned for warranty purposes must be insured and shipped pre-paid to the nearest warehouse
- Returns must be accompanied by a copy of your original invoice as proof of purchase. Returns must be in an unused condition and shipped in their original packaging a letter explaining your reason for the return. Incurred shipping and handling charges are not refundable.
- Busy Bee will repair or replace the item at our discretion and subject to our inspection.
- Repaired or replaced items will be returned to you pre-paid by our choice of carriers.
- Busy Bee reserves the right to refuse reimbursement or repairs or replacement if a third party without our prior authorization has carried out repairs to the item.
- Repairs made by Busy Bee are warranted for 30 days on parts and labour.
- Any unforeseen repair charges will be reported to you for acceptance prior to making the repairs.
- The Busy Bee Parts & Service Departments are fully equipped to do repairs on all products purchased from us with the exception of some products that require the return to their authorized repair depots. A Busy Bee representative will provide you with the necessary information to have this done.
- For faster service it is advisable to contact the nearest Busy Bee location for parts availability prior to bringing your product in for repairs.