CX801

HEAVY DUTY BENCH TOP LATHE

User Manual

TABLE OF CONTENT

GENERAL SAFETY INSTRUCTIONS

Do not attempt to operate the machine until you have read thoroughly and have understood completely all instructions, rules and conditions contained in this manual. Failure to comply can result in accidents involving fire, electric shock, or serious personal injury.

- **Know your machine**. For your safety, read the owner's manual carefully. Learn its applications and limitations, as well as specific potential hazards pertinent to this machine.
- **Make sure all tools are properly grounded**. If the tool electrical plug has three prongs, it should be used in a three hole electrical socket. If three prongs or two prongs adapter is used, the adapter plug must be properly grounded. Do not remove or disable the third prong.
- **Keep all the guards in place** and in good working order. If a guard must be removed for maintenance or cleaning, make sure it is properly attached before using the machine again.
- **Remove adjusting keys and wrenches.** Form a habit of checking to see that the keys and adjusting wrenches are removed from the machine.
- **Keep your work area clean**. Cluttered areas and workbenches increase the chance if an accident.
- **Do not use** the machine in dangerous environments**.**
- **Do not use power tools** in damp or wet locations or expose them to rain. Keep work areas well illuminated.
- **Keep children away**. All visitors should keep a safe distance from the work area.
- **Do not force the machine.** It will do the job better and be safe at the operating rate for which it is designed. Do not force the machine or attachments to do a job for which they are not designed.
- **Wear proper apparel**. Avoid loose clothing, gloves, neckties, rings, bracelets and jewelry which could get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair.
- **Always use safety glasses**. Also, wear a face or dust mask if the operation area is dusty. Everyday eyeglasses only have impact resistant lenses. They are not safety glasses.

CX801 HEAVY DUTY BENCHTOP LATHE
SPECIFIC SAFETY INSTRUCTIONS

Like all power tools and machinery, proper safety and attention must be adhered to. There is danger associated with using any tool or machine so pay careful attention each and every time you use your tool. If you are not familiar with the operations of a lathe, you should obtain the advice and/or instructions from a qualified professional.

- **Read this operation manual** carefully and understand it before operating the lathe.
- **Do not over-reach**. Keep proper footing and balance at all times.
- **Maintain machine** in top condition. Keep machine clean for best and safest performance. Follow instructions for lubrication and changing accessories.
- **Disconnect the machine** from power source before servicing, when changing accessories and when mounting or remounting motor.
- **To avoid accidental starting**, make sure the switch is in the OFF position before plugging in the power cord.
- **Never leave the machine running** and unattended. Turn the power OFF. Do not leave the machine until it comes to a complete stop.
- **Start and stop the machine yourself**. Do not have anybody help you do this.
- **Always wear a face dust mask** if operation creates a lot of sawdust and/or chips.
- **Always operate** the tools in a well-ventilated area and provide for proper dust removal. Use a dust collection system whenever possible.
- **Turn OFF then machine** before making any adjustments or servicing.
- **Do not attempt** to measure the work-piece size while the machine is running.
- **Make sure** the work-piece is clamped securely between the centers before starting the machine.
- **Only use** correct size centers.
- **After adjusting or servicing** the machine, remember to remove all wrenches or other tools from the machine.
- **Do not use any power tools** while under the effects of drugs, alcohol or any medication.

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.

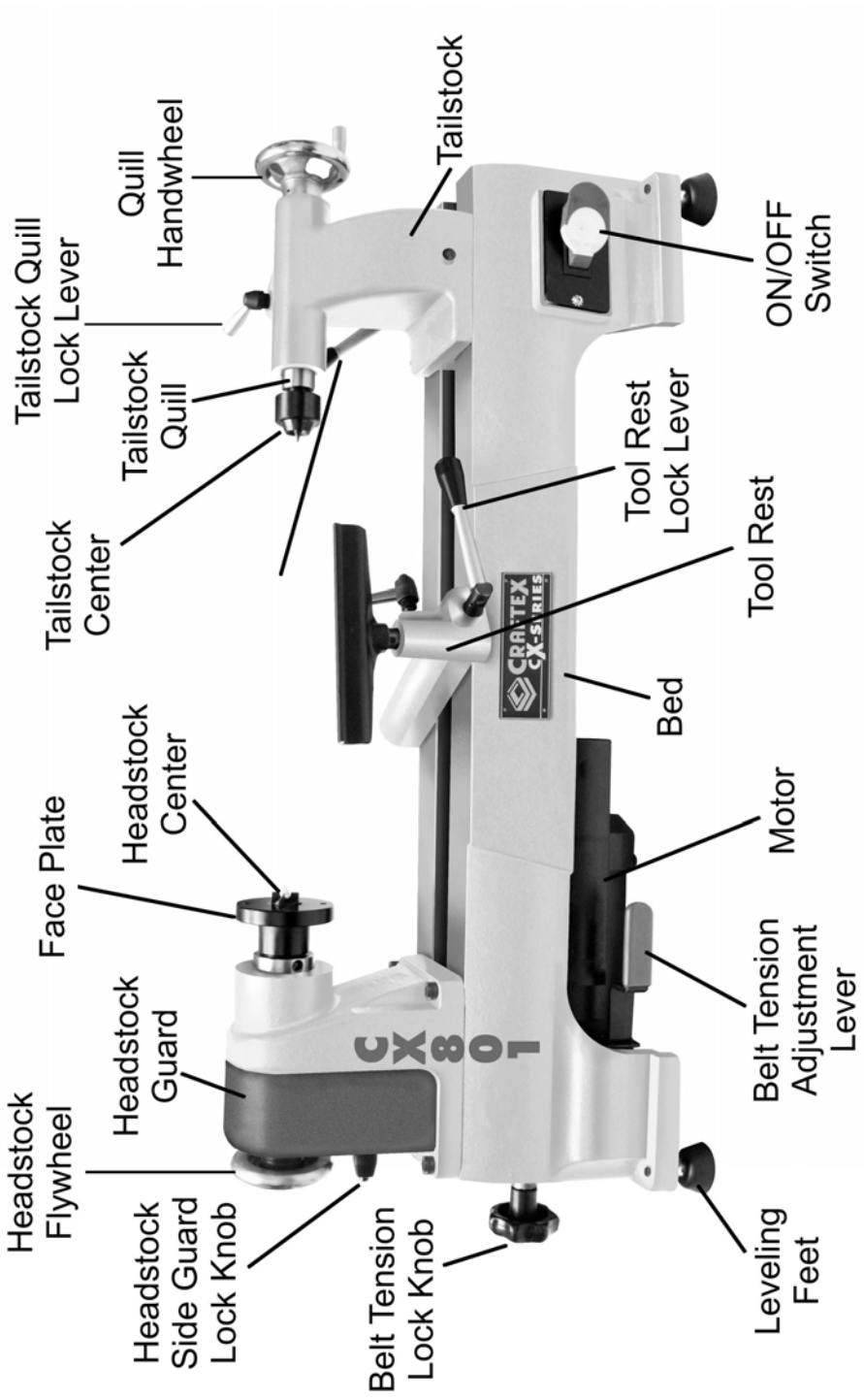
CX801 BENCHTOP LATHE
FEATURES

MODEL CX801 HEAVY DUTY BENCH TOP LATHE

As part of the growing line of Craftex woodworking equipment, we are proud to offer CX801 a Heavy Duty Bench Top Lathe. By following the instructions and procedures laid out in this owner's manual, you will receive years of excellent service and satisfaction. The CX801 is a professional tool and like all power tools, proper care and safety procedures should be adhered to.

- Main Motor.....Single Phase 1/2 HP, 110V, 60 HZ, 6Amps
- Speed.....1725 RPM
- Swing Over Bed.....10"(254mm)
- Swing Over Tool Rest (Base).....7-1/2"(190mm)
- Distance Between Center.....15 ½" (394mm)
- Tailstock Travel.....3 ¼" (83mm)
- Spindle Size.....7-51/64" x 1-7/8"
- Spindle TPI.....1" x 8 TPI
- Spindle Taper.....MT2
- Spindle Center.....5"(127mm)
- Tailstock Taper.....MT2
- Tailstock Center.....5"(127mm)
- Number of Spindle Speeds.....6
- Spindle Speed Ranges.....480, 1270, 1960, 2730, 3327, 4023 RPM
- Bed Width.....8-3/16"(208mm)
- Faceplate Size.....3" (76mm)
- Bed Construction.....Cast Iron
- Headstock Construction Cast.....Cast Iron & Steel
- Tailstock Construction Cast.....Cast Iron & Steel
- Bearings.....Shielded and Lubricated
- Approx. Weight.....105 lbs. (45 Kg)

PHYSICAL FEATURES



UNPACKING

The machine is properly packaged in a carton for safe transportation. When unpacking, carefully inspect the crate and ensure that nothing has been damaged during transit. Open the crate and check that the machine is in a good condition. There is a bag which contains some loose parts of the machine. After the machine has been un-packed, check that all loose parts shown in Figure-1 are present.

1. Tool Rest
2. Tailstock Center (Live Center) MT2
3. Headstock Center (Dead Center) MT2
4. Center Knock-Out Bar

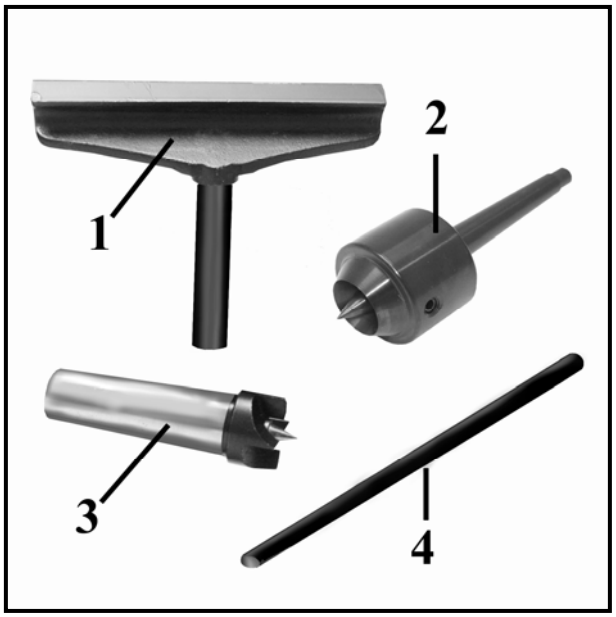


Figure-1 Loose parts

IMPORTANT

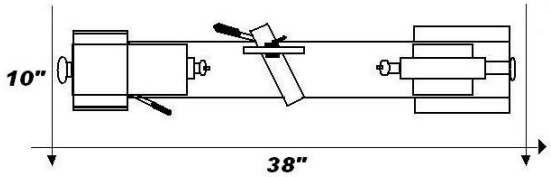
While doing inventory, if you can not find any part, check if the part is already installed on the machine.

SETUP

Before starting setting up the machine you need to read and understand this user manual completely. For the protection of your eyes you need to have safety glasses. The unpainted surfaces or parts of the lathe are coated with rust prevention waxy oil and you will want to remove this before you begin assembly. Use a solvent cleaner that will not damage painted surfaces.

IMPORTANT

When setting up your machine, you will want to find an ideal spot where your machine will most likely be positioned most of the time. Consider your complete work environment as well as working comfortable with the lathe before placing your machine in the ideal spot. The figure below shows minimum workplace for the lathe.



WARNING

CX801 weighs approximately 105 lbs. Do not over-exert yourself. Get the help of an assistant for safe moving.

MOUNTING ON A WORKBENCH

The lathe should be mounted on a workbench of proper height. The workbench must be rigid and flat enough to support the weight of the lathe. Make sure the lathe is mounted firmly on the workbench, otherwise chatter problems will occur while operation.

Before you start assembling the machine you need to level the machine using the four leveling feet.

LEVELING THE LATHE

Always note that if the lathe is not leveled properly it may cause bed twisting. A slight bed twisting will cause centers to be out of alignment and also inaccurate turning.

Level the machine by turning the four leveling screws, located at the four corners, at the base of the bed. Loosen the nut by using a wrench before adjusting leveling screw, turn the leveling screw manually until the correct level is achieved. Tighten the nut to lock the leveler in place.

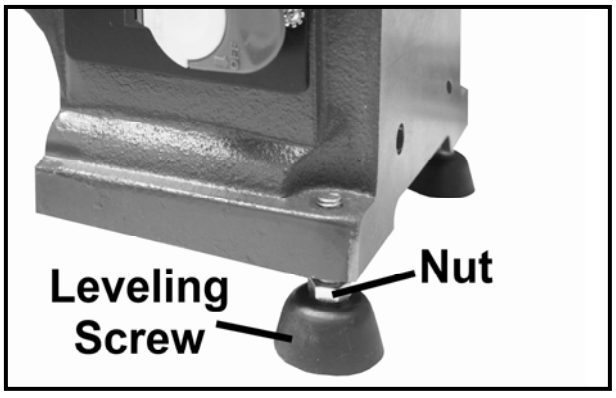


Figure-2 Leveling screw and nut

INSTALLING THE TOOL REST

Locate the hole on the tool rest base and thread the lock handle into the hole. See Figure-3.

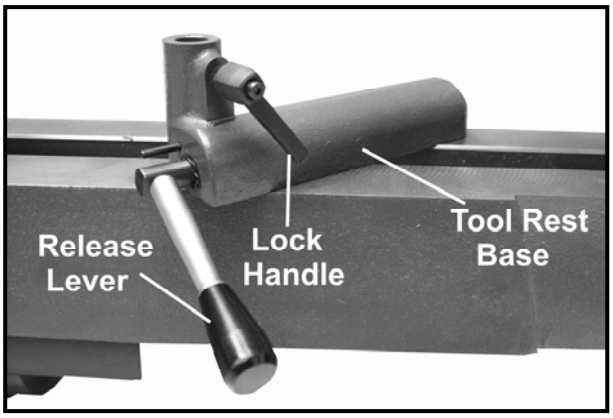


Figure-3 Tool rest lock handle installed

Now, insert the tool rest and turn the lock handle to secure the tool rest in position. See Figure-4.

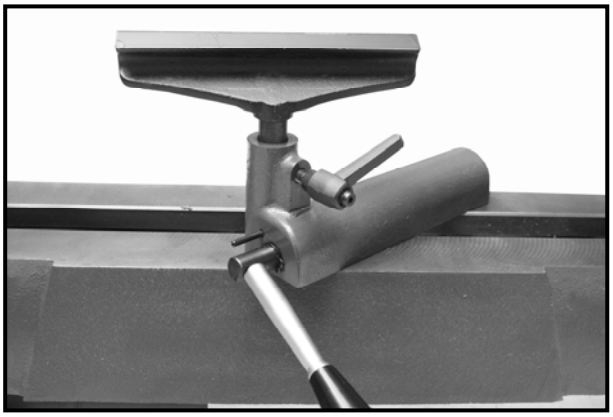


Figure-4 Tool rest Installed

Whenever you want to move the tool rest base, simply untighten the release lever and slide tool rest base on the bed and re-tighten the release lever.

BED EXTENSION (Optional)

The bed extension is available as an optional component (MODEL# CX801EXT). The bench top lathe has been factory drilled with two holes at the end of the bed for installing the bed extension. See Figure-5

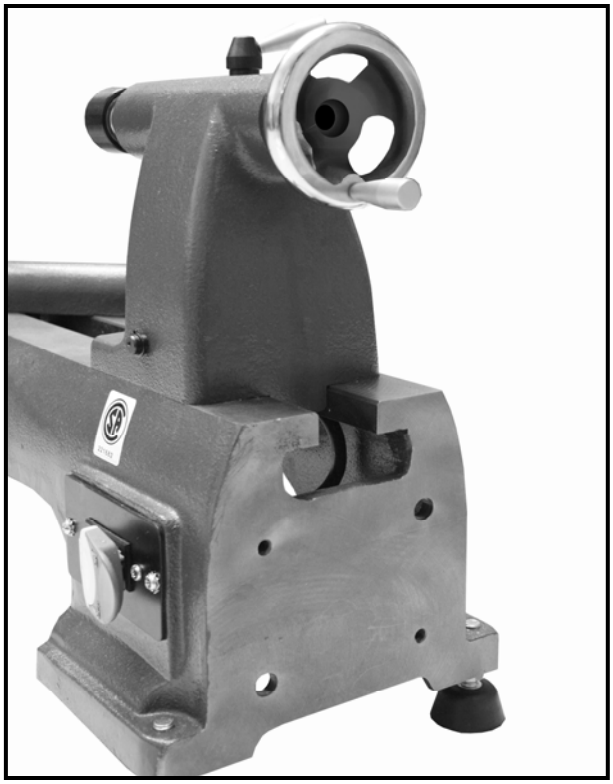


Figure-5 Bed Installing Extension Holes

To install the bed extension, align the two holes on the bed extension with the two holes on the bed end. Tighten the bed extension with two M8 screws.

It is necessary to make leveling adjustments between the lathe bed and the bed extension by using a straight edge guide.

INSTALLING / REMOVING TAILSTOCK CENTER

Clean the tailstock center shank and the tailstock quill and insert the center firmly by hand into the tailstock quill.

To remove the tailstock center from the tailstock quill, simply turn the quill movement hand-wheel until the quill end is nearly inside the tailstock. Then loosen the quill fix lever and you can move the quill in or out. See Figure-6.

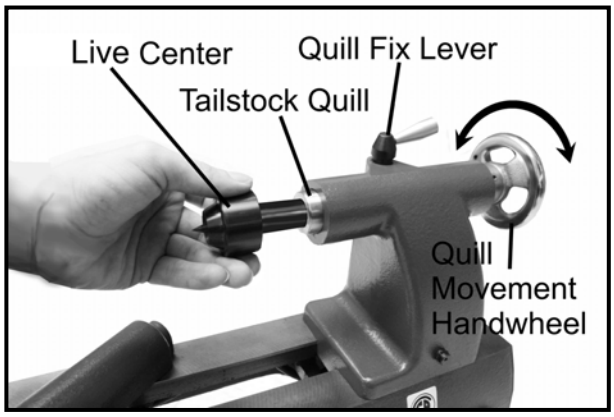


Figure-6 Installing / Removing tailstock

WARNING

Disconnect the machine from the power source before mounting and removing headstock center.

INSTALLING / REMOVING FACEPLATE

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

Attach the faceplate to the headstock by threading it on the spindle.

Now, use knock-out bar and tighten the faceplate as shown in the in Figure-7.

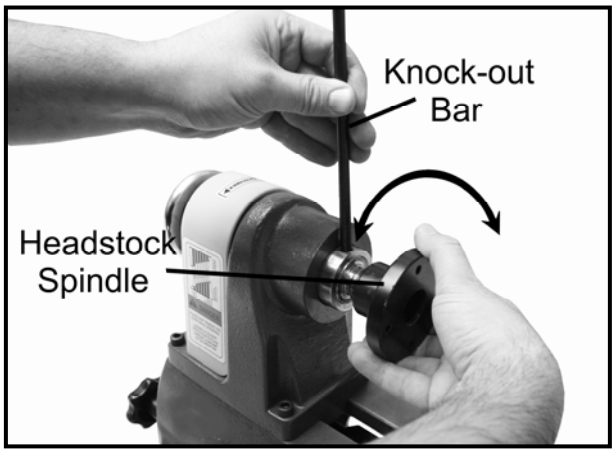


Figure-7 Installing the faceplate

When you want to remove the faceplate, simply do the above procedure in reverse.

WARNING

Disconnect the machine from the power source before mounting and removing parts.

INSTALLING / REMOVING HEADSTOCK CENTER

The headstock spindle is designed with an MT2 taper.

Clean the spindle bore and center's taper and insert the center into the spindle bore firmly by hand.

Removing the drive center is done by simply knocking it out, using the supplied knock-out bar. When knocking out the center, hold it by hand to prevent it dropping down. See Figure-8.

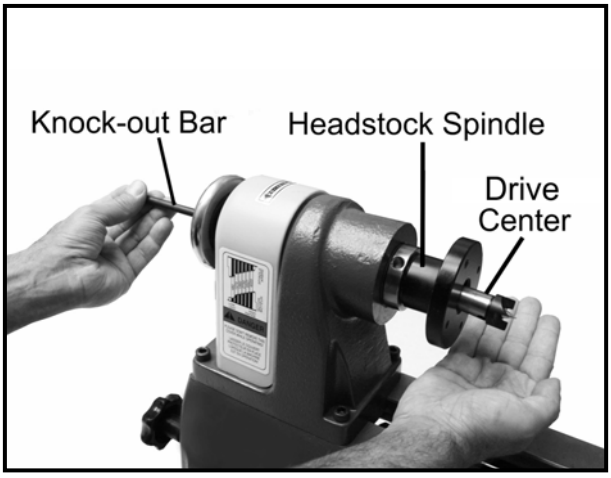


Figure-8 Knocking out the drive center with the help of knock-out bar

TEST RUN

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

Carefully look around your machine before turning it on to ensure no tools are left on the machine, all screws and knobs are securely fastened, and all controls are working properly.

IMPORTANT

Before a test run make sure that you have read and understood the user manual and you are familiar with the functions and safety features on this machine.

Before turning the machine on, make sure you are wearing your safety glasses and anyone around you is also wearing safety glasses.

Connect your machine to the correct power source and turn the power switch ON.

During the test run the machine should run smoothly and create very little noise or vibration. If there is an unusual noise coming from the machine or the machine vibrates excessively, turn the machine OFF and investigate the problem.

WARNING

Do not make any adjustments when the machine is running. Failure to follow this warning can cause a serious personal injury.

ON /OFF SWITCH

This lathe is equipped with a rocker type paddle switch to start and stop the lathe, located at the front side of the bed. The switch has a removable locking key to prevent unauthorized operation. If the lathe is not in use for long time, remove the locking key by pulling it out and storing it in a safe place.

To start the lathe, insert the locking key and turn it ON. To stop the lathe, shift the switch to the right. See Figure-9.

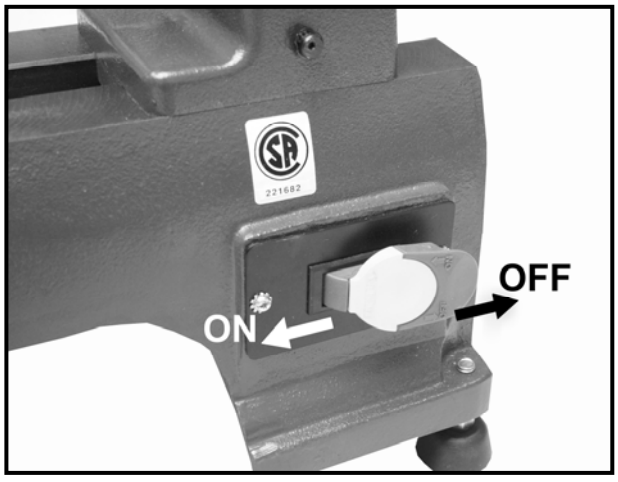


Figure-9 ON / OFF switch with safety key

CHANGING THE SPINDLE SPEED

The CX801 Heavy Duty Bench Top Lathe features 6 spindle speed changes: 480, 1270, 1960, 2730, 3327 and 4023 RPM. The turning speed of the lathe is varied with the work-piece diameter to be turned. When turning a smaller diameter of work-piece, a higher spindle speed is recommended. However, proper selection of spindle speed for the work-piece is made by the operator's experience.

TO CHANGE THE SPINDLE SPEED:

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

Open the V-belt guard located on the headstock. Loosen the guard lock lever.

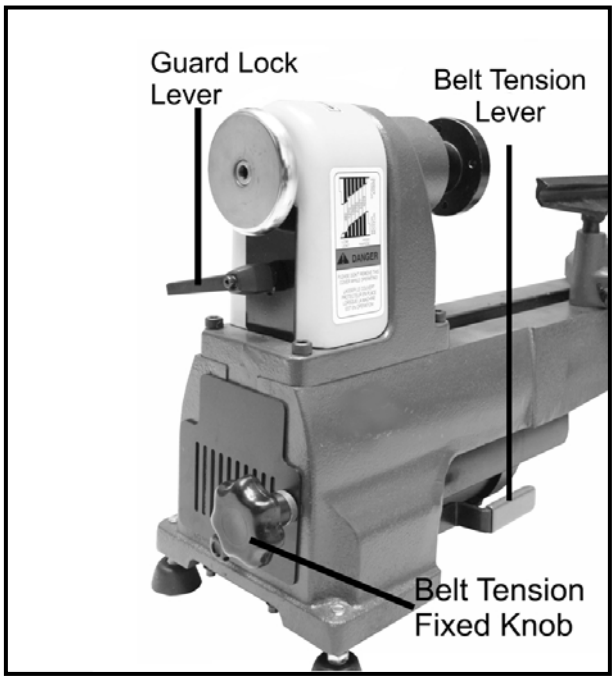


Figure-10 Releasing belt tension

Loosen the belt tension lock knob before shifting the belt tension lever and tighten it securely after adjustment.

Release the V-belt tension by shifting the belt tension lever, located under the bed shown in Figure-10.

Position the V-belt on both pulleys as shown in figure-11 to achieve the desired speed. At the same time, turn the headstock fly wheel to facilitate changing of the belt position.

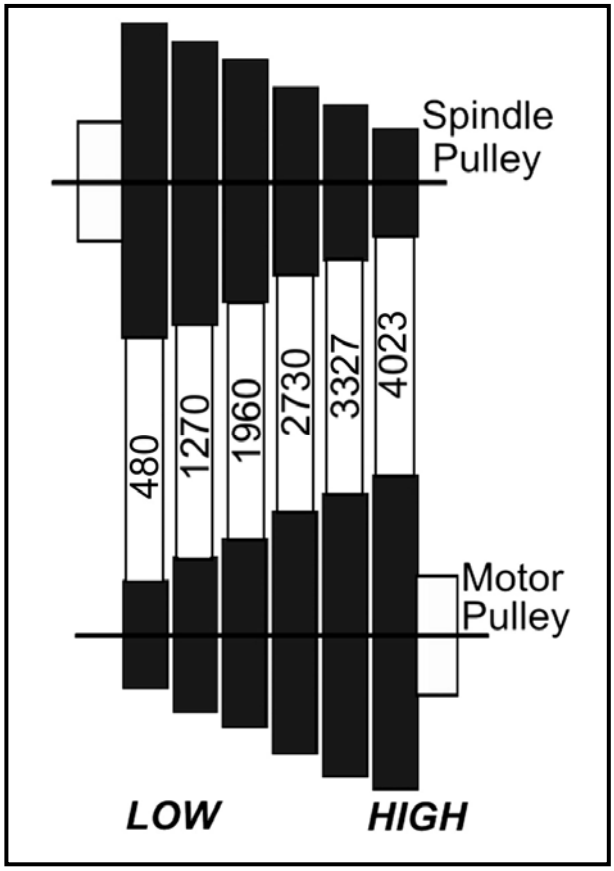


Figure-11 Spindle speed

Tension the V-belt by shifting the V-belt tension lever and then tighten belt tension fixed knob.

Re-install the belt guard.

TOOL REST & BASE

The tool rest base can be moved along the bed slide-ways. Loosen the tool rest base lock lever before adjusting the carriage position. Tighten the lever securely after position is achieved.

The tool rest should be adjusted so that its top is 3/16" (suggested) below, above the centers. Loosen the tool rest lock lever before adjusting tool rest position. Tighten the lock lever securely after adjustment.

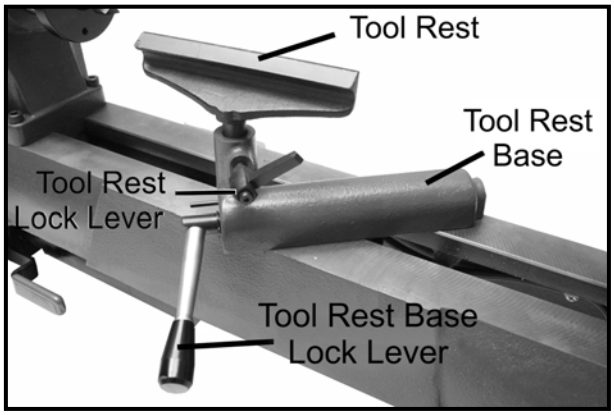


Figure-12 Adjusting Carriage & Tool Rest on the Bed

TAILSTOCK QUILL

The tailstock quill can be moved in and out of the tailstock by turning the quill hand-wheel.

Loosen the quill lock lever before turning the hand-wheel. Tighten it securely after the quill has been moved to the proper position.

TAILSTOCK

The tailstock is used to support the other end of the work-piece to be turned on the lathe. The tailstock can be moved along the bed slide ways. Before moving the tailstock, loosen the tailstock lock lever. Move the tailstock by hand to the desired position, and then tighten the tailstock lock lever securely.

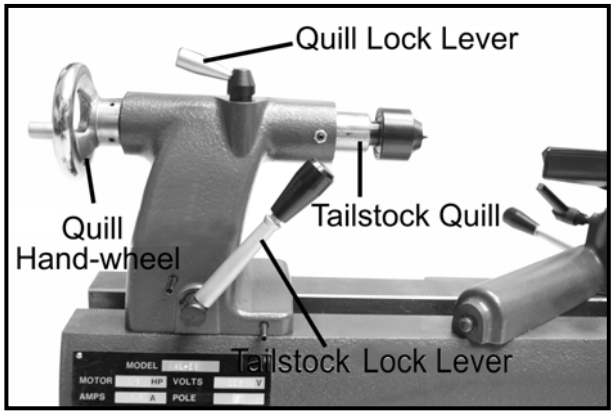


Figure-13 Tailstock and its components

FACEPLATE

This lathe is furnished with a face plate in case the work-piece to be turned and can not be clamped between the headstock center and the tailstock center.

The faceplate has been drilled with four holes for screwing the work-piece.

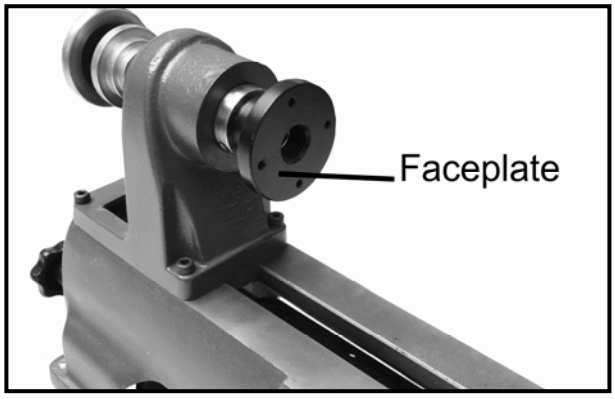


Figure-14 Showing faceplate attached to the lathe

ALIGNMENT BETWEEN CENTERS

The center alignment has been adjusted properly at the factory before the machine is shipped to you. However, after lengthy operation, the centers may be out of alignment. At this time center alignment needs to be done.

TO ALIGN THE CENTERS:

Make sure the cord is disconnected from the power source.

Remove tool rest base and the tool rest and slide the tailstock with the center towards the headstock.

Loosen the four screws securing the headstock to the bed. Slightly adjust the headstock position so that the centers are aligned with each other.

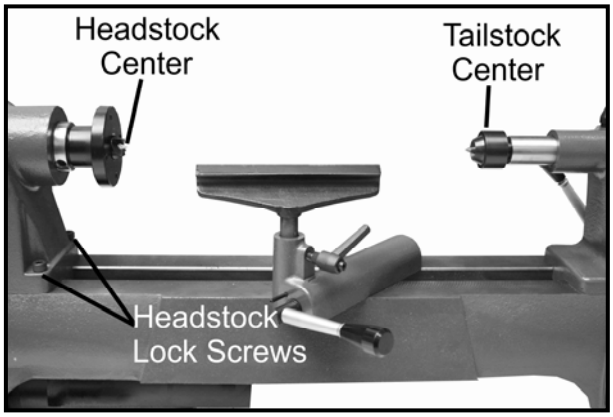


Figure-15 Headstock and tailstock centers aligned

MAINTENANCE

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

WARNING

Make sure the machine is turned OFF the cord is disconnected from the power source before servicing and removing/replacing any components of the machine.

Check your lathe daily for loose mounting bolts, damaged cord, worn switch and any other unsafe condition.

CLEANING

1. Everyday after use, remove chips from the machine and clean it. Apply oil on the sliding surfaces.

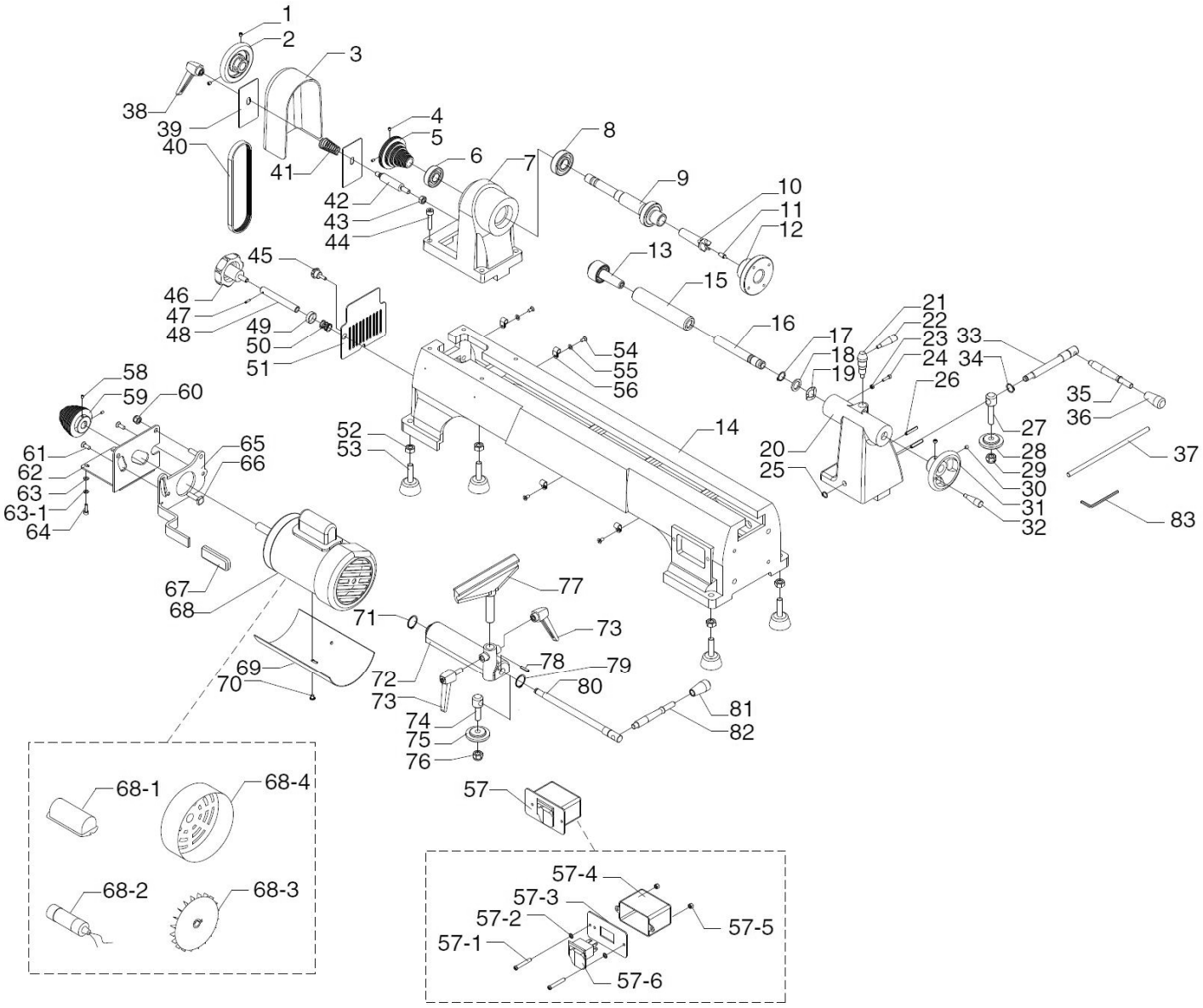
2. Everyday after use, turn OFF the power switch and remove the switch key.

3. A build up of dust in the motor can cause motor damage. Periodic cleaning of the motor is not only recommended, but mandatory for normal wood lathe performance.

TROUBLESHOOTING

PROBLEMS	CAUSES	CORRECTION
CUTTING TOOL VIBRATION	**1.** Work-piece is not clamped firmly.	**1.** Clamp it firmly.
POOR MACHINE ACCURACY	**1.** Work-piece is clamped incorrectly. **2.** Tailstock center and headstock center is out of alignment. **3.** Machine leveling loss.	**1.** Check balance. **2.** Adjust center Alignment. **3.** Check machine leveling periodically.
MOTOR DOES NOT RUN WHEN POWER WITCH IS TURNED ON	**1.** Switch is burnt out. **2.** Connection wire is loose or damaged.	**1.** Replace the switch. **2.** Tighten or replace wire.
MOTOR DOES NOT RUN AT A FULL SPEED	**1.** Power voltage is too low. **2.** Motor is damaged.	1. Test voltage. 2. Check and repair motor.
MOTOR DOES NOT REACH FULL SPEED	**1.** Incorrect power wiring. **2.** Overloaded.	**1.** Replace with correctly sized power wiring. **2.** Reduce load.
MOTOR OVERHEATING	1. Motor is dirty. 2. Motor is damaged.	1. Clean motor. 2. Check and repair motor.

CX801 PARTS BREAKDOWN



CX801 PARTS LIST

INDEX	DESCRIPTION	IVM
1	SCREW - SET M6-1.0 X 6	PSS02M
2	HEADSTOCK HANDWHEEL	P0624002
3	PULLEY SAFETY COVER	P0624003
4	SCREW - SET M4-0.7 X 6	PSS79M
5	SPINDLE PULLEY	P0624005
6	BEARING 6004Z	P6004
7	HEADSTOCK CASTING	P0624007
8	BEARING 6005ZZ	P6005
9	SPINDLE	P0624009
10	SPUR CENTER MT2	P0624010
11	INDEXED SPINDLE	P0624011
12	FACEPLATE 3"	P0624012
13	LIVE CENTER MT2	P0624013
14	BEDWAY	P0624014
15	TAILSTOCK QUILL	P0624015
16	TAILSTOCK LEAD SCREW	P0624016
17	C-RING EXTERNAL M15	PR05M
18	WASHER - FLAT M15	PW14M
19	RUBBER COLLAR	P0624019
20	TAILSTOCK CASTING	P0624020
21	ECCENTRIC SHAFT	P0624021
22	QUILL LOCK HANDLE	P0624022
23	NUT - HEX M4-0.7	PN04M
24	SCREW - CAP M4-0.7 X 16	PSB16M
25	C-RING M30	PR01M
26	PIN - ROLL M5 X 30	PRP05M
27	ADJUST SHAFT	P0624027
28	SLIDE COLLAR	P0624028
29	NUT - LOCK M10-1.5	PLN05M
30	SCREW - SET M6-1.0 X 6	PSS02M
31	TAILSTOCK HANDWHEEL	P0624031
32	QUILL HANDWHEEL HANDLE	P0624032
33	ECCENTRIC SHAFT	P0624033
34	C-RING M16	PR06M
35	TAILSTOCK RELEASE LEVER	P0624035
36	LEVER KNOB	P0624036
37	KNOCK OUT BAR	P0624037
38	LOCK HANDLE	P0624038
39	GUARD PLATE	P0624039
40	ULTRA FLEX BELT 7 X 3.4 X 600	P0624040
41	COMPRESSION SPRING	P0624041
42	THREADED SHAFT	P0624042
43	NUT - HEX M8-1.25	PN03M
44	SCREW - CAP M8-1.25 X 35	PSB40M
45	SCREW - THUMB M5-0.8 X 15	P0624045

46	BELT TENSION LOCK KNOB	P0624046
47	PIN - ROLL 3 X 12	PRP61M
48	SHAFT	P0624048
49	SPACER M18	P0624049
50	COMPRESSION SPRING	P0624050
51	LOWER PULLEY ACCESS PLATE	P0624051
52	NUT - HEX 3/8-16	PN08
53	RUBBER FOOT	P0624053
54	SCREW - PAN HD PHILLIPS M5-0.8 X 10	PS09M
55	WASHER - FLAT M5	PW02M
56	STRAIN RELIEF	P0624056
57	SWITCH - ASSEMBLY	P0624057
57-1	SCREW - PAN HD PHILLIPS 10-24 X 1 1/2	PS10
57-2	WASHER - TOOTHED EXT M5	PTLW02M
57-3	SWITCH PLATE	P0624057-3
57-4	SWITCH BOX	P0624057-4
57-5	NUT - HEX 10-24	PN07
57-6	SWITCH W/ SAFETY KEY	P0624057-6
58	SCREW - SET M4-0.7 X 6	PSS79M
59	MOTOR PULLEY	P0624059
60	NUT - LOCK M8-1.25	PLN04M
61	SCREW - PAN HD PHILLIPS M6-1.0 X 16	PS11M
62	MOTOR PLATE	P0624062
63	WASHER - FLAT M5	PW02M
63-1	WASHER - LOCK M5	PLW01M
64	SCREW - CAP SOC HD M5-0.8 X 15	PSB10M
65	TENSION BRACKET	P0624065
66	BOLT - SQUARE HD	P0624066
67	RUBBER SLEEVE	P0624067
OT	MOTOR	P0624068
68-1	CAPACITOR COVER	P0624068-1
68-2	CAPACITOR 25MFD 250VAC	P0624068-2
68-3	FAN	P0624068-3
68-4	FAN COVER	P0624068-4
69	DUST GUARD	P0624069
70	LOCTITE SCREW 10-24 X 6	P0624070
71	C-RING EXT M10	PR01M
72	TOOL POST BASE	P0624072
73	TOOL REST LOCK HANDLE M6-1.0	P0624073
74	ADJUST SHAFT	P0624074
75	SLIDE COLLAR	P0624075
76	NUT - LOCK M10-1.5	PLN05M
77	TOOL REST	P0624077
78	PIN - ROLL M4 X 20	PRP39M
79	C-RING EXT M14	PR02M
80	ECCENTRIC SHAFT	P0624080
81	LEVER KNOB	P0624081
82	TOOL REST RELEASE LEVER	P0624082
83	WRENCH - HEX M2.5	PAW02.5M

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 labour (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 etceteras.

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 with the following qualifications.
- Returns must be pre-authorized by us in writing.
- We do not accept *collect* shipments.
- Items returned for warranty purposes must be insured and shipped pre-paid to the nearest warehouse
- Returns must be accompanied with a copy of your original invoice as proof of purchase. Returns must be in an un-used 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 repair.