CT160
HEAVY DUTY BENCH TOP LATHE
User Manual

INDEX

General Safety Instructions

WARNING: 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.

CT160-10” Heavy Duty Bench Top 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.

***IMPORTANT**: 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.*

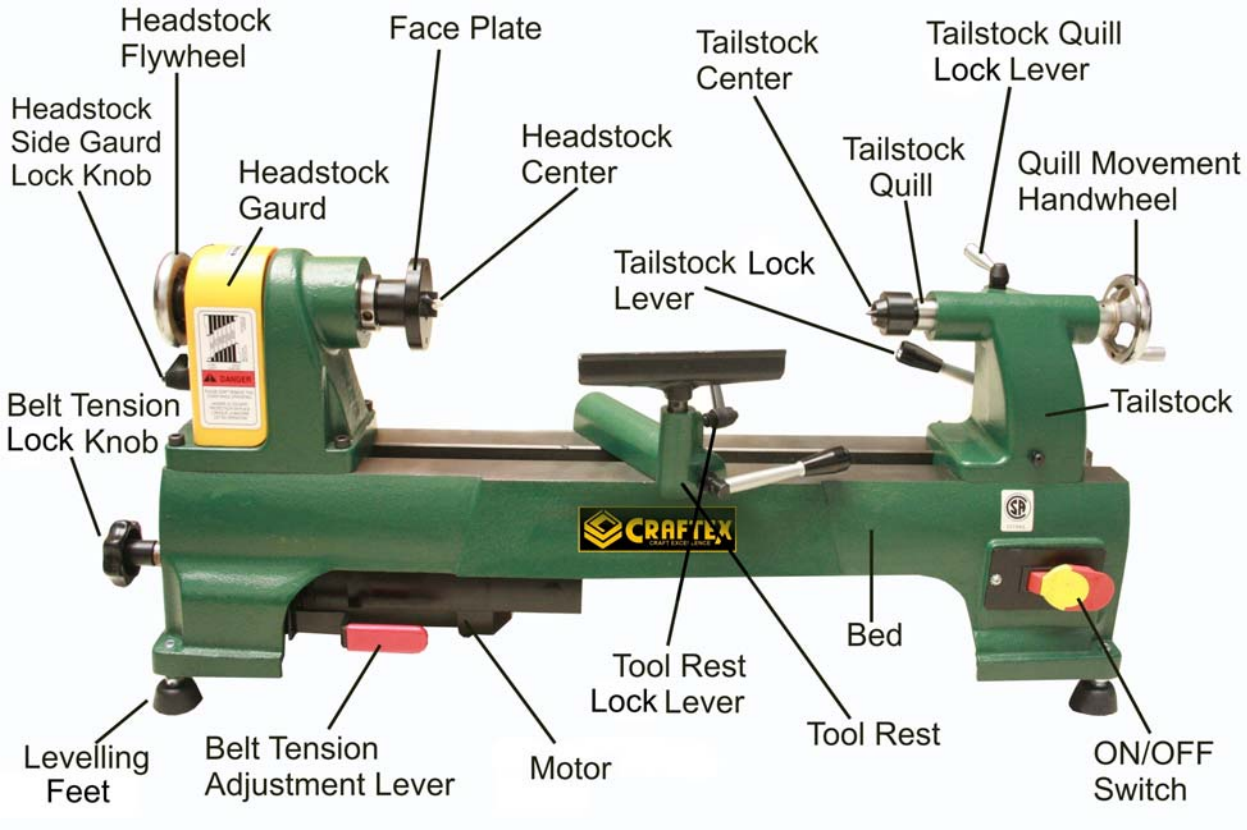
Heavy Duty Bench Top Lathe
FEATURES

MODEL CT160-HEAVY DUTY BENCH TOP LATHE

As part of the growing line of Craftex woodworking equipment, we are proud to offer CT160-Heavy Duty Bench Top Lathe. The Craftex name guarantees Craft Excellence. By following the instructions and procedures laid out in this owner's manual, you will receive years of excellent service and satisfaction. The CT160 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, 3.8Amps**
Speed	**1720 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	**106 lbs. (45 Kg)**

PHYSICAL FEATURES



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 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.

CT160 weighs approximately 106 lbs. Do not over-exert yourself. For safe moving method use fork truck or get the help of an assistant or friend.

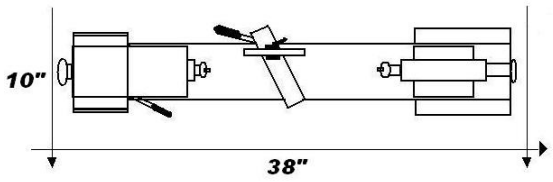
Figure-1 Loose parts

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)
3. Headstock Center (Dead Center)
4. Center Knock-Out Bar

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.



ASSEMBLY

The lathe should be mounted on a workbench with 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 clatter problems will occur while operation.

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

Adjusting Machine Leveling

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 of the bed. Loosen the nut by using a wrench before adjusting leveling screw, turn the leveling screw manually until proper leveling is achieved. Tighten the nut after leveling adjustment.

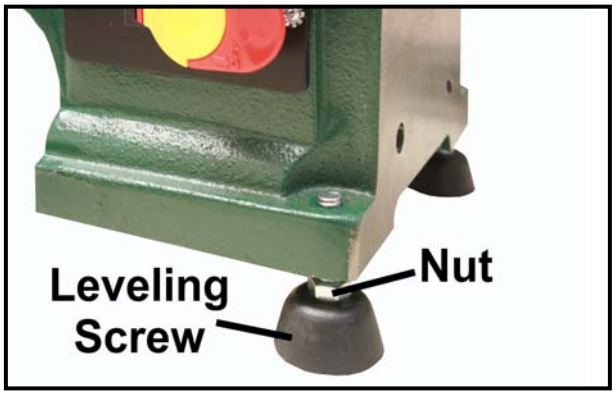


Figure-2 Leveling screw and nut

Installing the Tool Rest

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

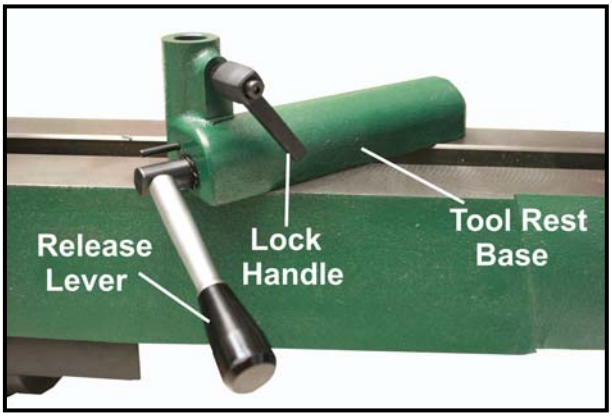


Figure-3 Tool rest lock handle installed

Now, insert the tool rest and turn the release lever to lock the tool rest. See Figure-4

Figure-4 Tool rest Installed

Whenever you want to move the tool rest base, simply untighten the release lever and move tool rest base where you want and tighten back the release lever.

ASSEMBLY

Installing the Bed Extension

The bed extension is supplied as optional equipment (MODEL# CT160EXT). The mini 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 adjustment between the maintain bed and the bed extension by using a straight edge guide.

Installing / Removing Tailstock Center

The tailstock quill has a taper hole into which the tailstock center fits. Fit the tailstock center firmly by hand. Clean the tailstock center shank and the tailstock quill hole before fitting.

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-7

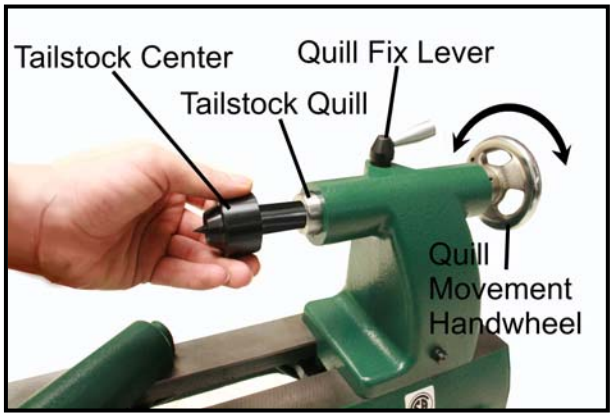


Figure-7 Installing / Removing tailstock

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

ASSEMBLY

Installing / Removing Faceplate

First, disconnect the machine from the power source and remove the headstock center. Attach the faceplate to the headstock spindle with the help of threads on it. Now, use knock-out bar and tighten the faceplate as shown in the in Figure-8

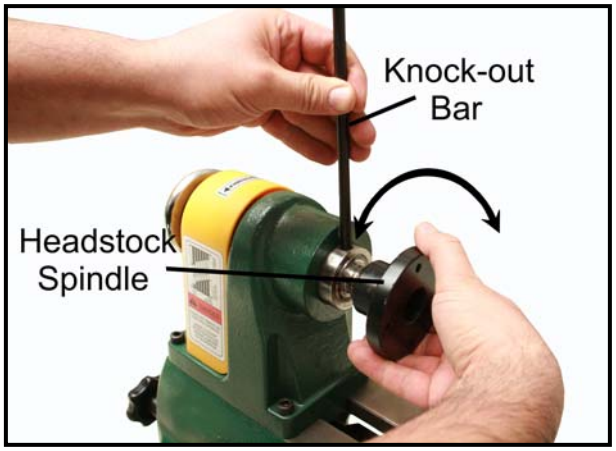


Figure-8 Installing the faceplate

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 a taper hole into which the headstock center fits. Fit the headstock center firmly by hand. Clean the headstock center shank and spindle hole before fitting.

Removing the headstock 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-9

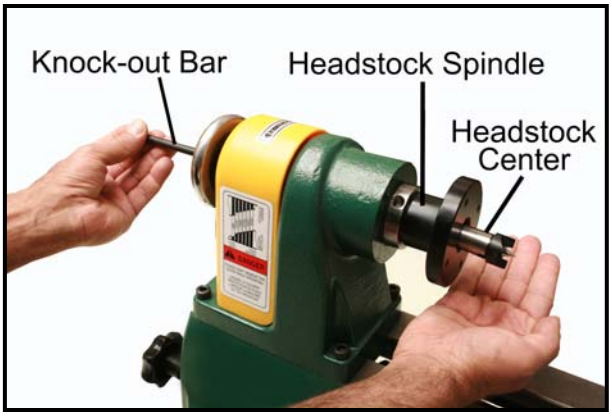


Figure-9 Knocking out the headstock with the help of knock-out bar

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.

Take a careful look in and around your machine before turning it on to ensure everything is in place, 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 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 a lot, turn the machine OFF right away and inspect the problem.

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

OPERATIONS & ADJUSTMENTS

Power Switch (ON / OFF)

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 put out and store it in a safe place.

To start the lathe, insert the locking key and shift the switch to the left. To stop the lathe, shift the switch to the right. See Figure-10

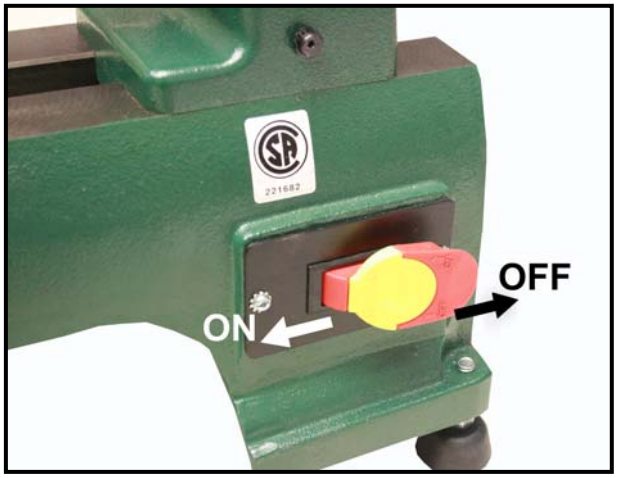


Figure-10 Power Switch (ON / OFF)

Changing the Spindle Speed

The CT160 Heavy Duty Bench Top Lathe features 6 spindle speed changes: 500, 1270, 1960, 2730, 23320 and 4020 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.

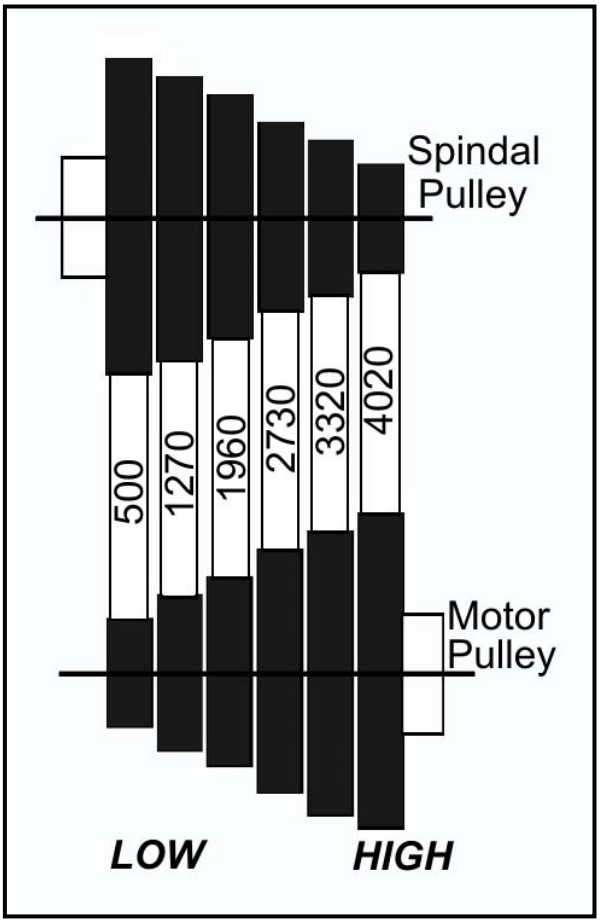


Figure-11 CT160 Heavy Duty Spindle Speed Changes

OPERATIONS & ADJUSTMENTS

Change spindle speed according to the following procedures:

1. Turn OFF the power switch (key switch), and remove the key to avoid unauthorized starting of the lathe.

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

Figure-12 Removing the V-belt guard

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

4. Release the V-belt tension by shifting the belt tension fix lever, located under the bed.

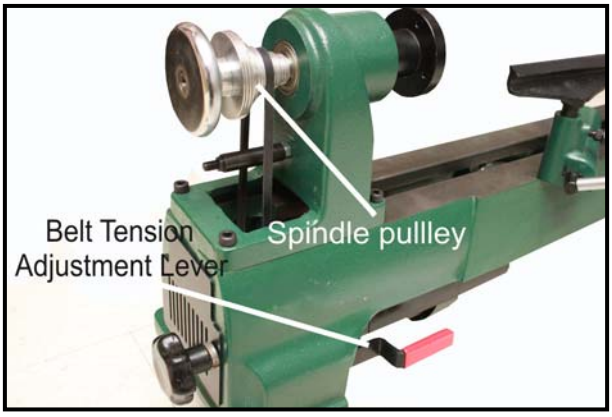


Figure-13 Adjusting the V-belt tension

5. Place the V-belt to a new position on the pulley. At the same time, turn the headstock fly wheel to facilitate changing of the belt position.

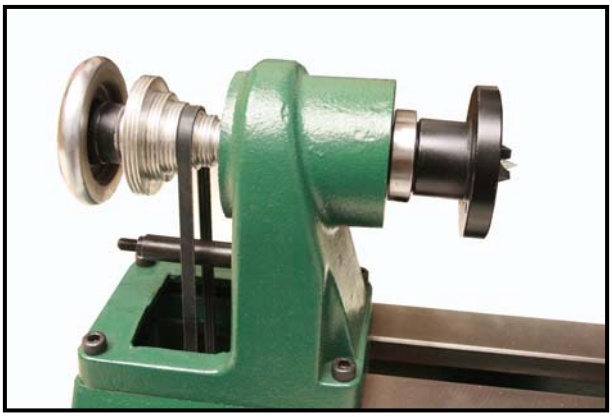


Figure-14 V-belt tension changed

6. Make sure the V-belt tension is properly installed in case its position has been changed.

7. Reverse above procedures to return the lathe to its original condition.

OPERATIONS & ADJUSTMENTS

Adjusting Carriage and Tool Rest

The carriage can be moved along the bed slide-ways. Loosen the carriage fix lever before adjusting the carriage position. Tighten the fix lever securely after adjustment.

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.

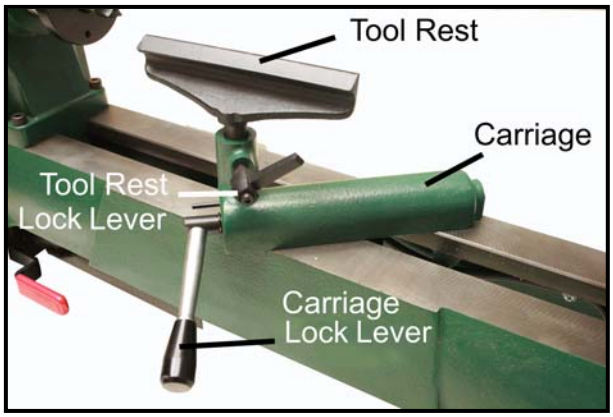


Figure-15 Adjusting Carriage & Tool Rest on the Bed

Moving Tailstock Quill In and Out

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

Loosen the quill lock lever before turning the hand-wheel. Tighten it securely after the quill has been moved to a 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 a desired position, and then tighten the tailstock fix lever securely.

Note:
Lubricate the bed slide-ways before moving the tailstock.

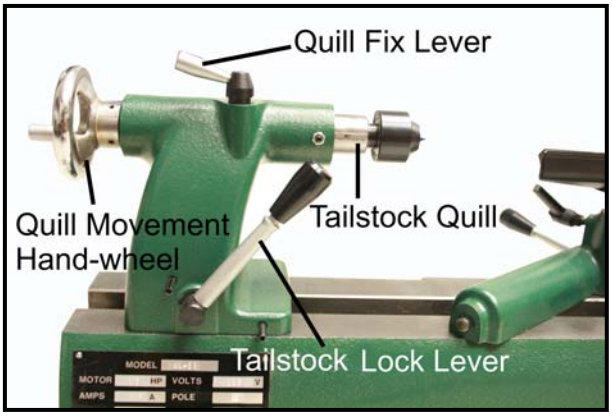


Figure-16 Tailstock and its components

OPERATIONS & ADJUSTMENTS

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 clamping the work-piece.

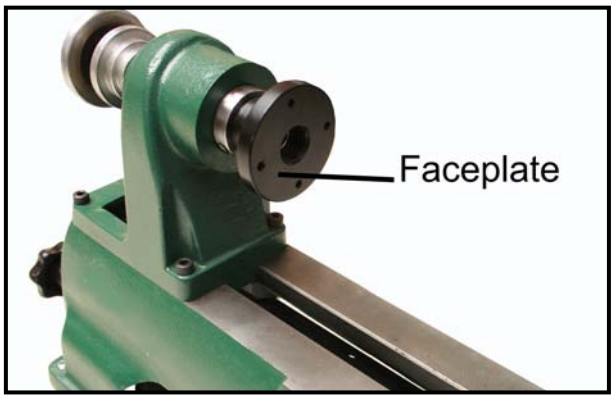


Figure-17 Showing faceplate attached to the lathe

To install the faceplate to the headstock please see Page-10.

Checking Alignment between the Centers

The center alignment has been adjusted properly in 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 do this, loosen the four screws that tighten the headstock to the bed. Slightly adjust the headstock position to adjust center alignment. See Figure-18

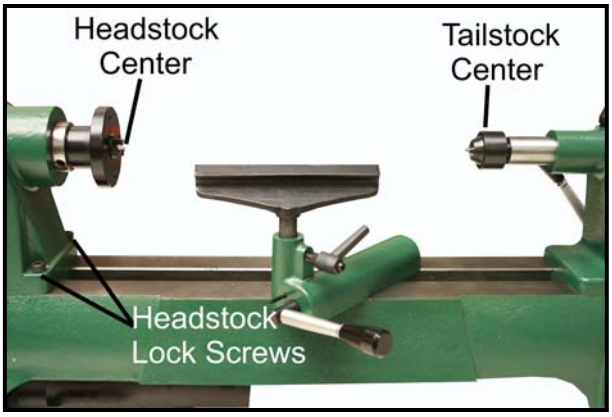


Figure-18 Headstock and tailstock centers aligned

MAINTENANCE

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.

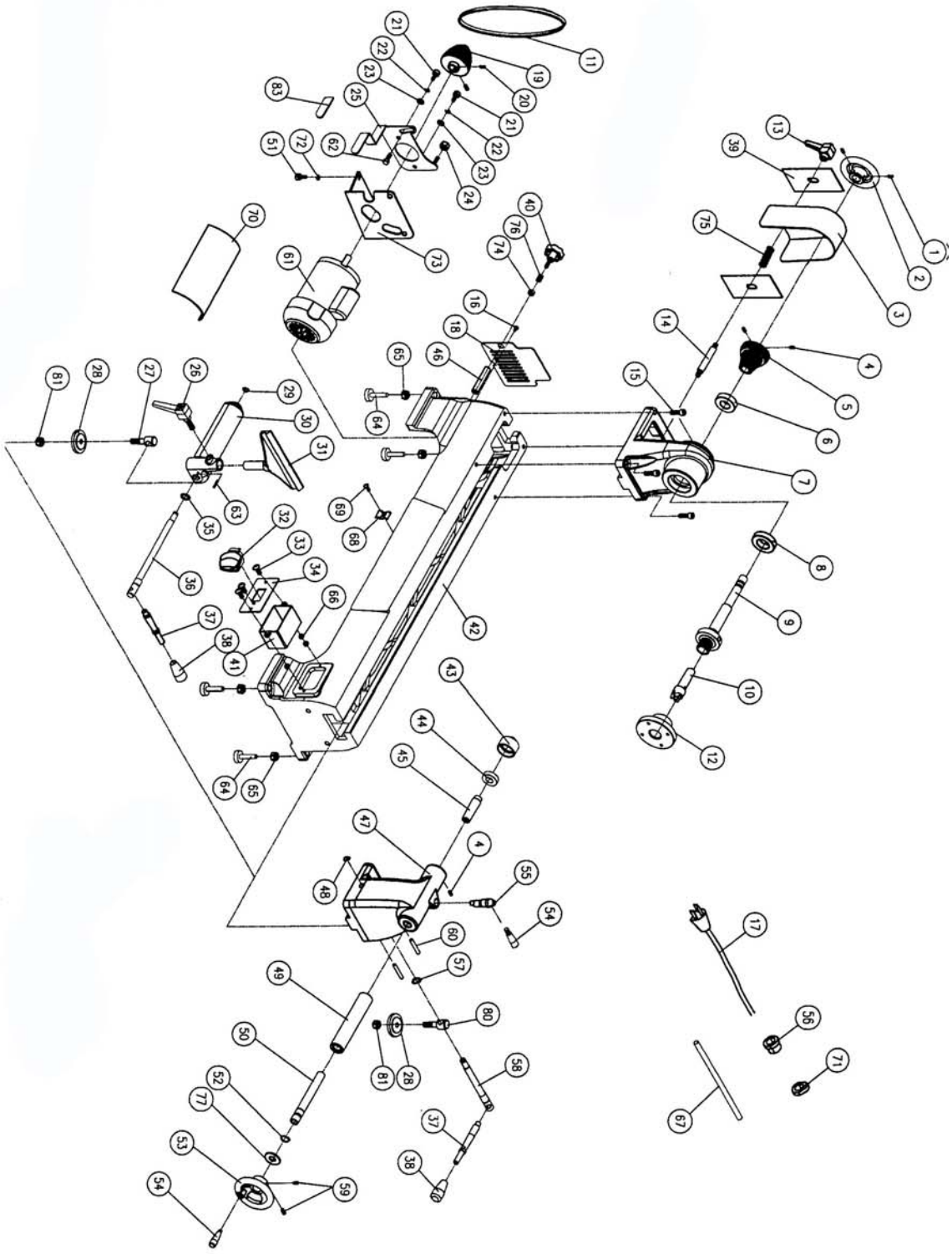
3. A build up of dust in the motor can cause motor damage. Periodic cleaning of the motor is not only recommended, but mandatory for normal wood lathe performance.

Warning: *Disconnect the machine from the power source before mounting, removing or making any adjustments.*

TROUBLESHOOTING

PROBLEM	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.

CT160- HEAVY DUTY BENCH TOP LATHE
PARTS BREAKDOWN



CT160- HEAVY DUTY BENCH TOP LATHE PARTS LIST

No.	DESCRIPTION	PART No.	Quantity
1	Set Screw M4 x 0.7P x 6L	S0050406M	2
2	Flywheel	80100005	1
3	Pulley Guard	80100022	1
4	Set Screw M4 x 0.7P x 6L	S0050406M	2
5	Spindle Pulley	80100012	1
6	Bearing 6004	C1106004	1
7	Headstock	80100002	1
8	Bearing 6005	C1106005	1
9	Spindle	80100007	1
10	Spur Center	80100011	1
11	Belt 24 inch	V00240J3	1
12	Face Plate	80100008	1
13	Fix Lever M8 x 1.25P	50205015	1
14	Screw Shaft	80100023	1
15	Hexagonal Socket Head Screw M8 x 1.25P x 35L	S0010835M	4
16	Knob M5 x 0.8P x 15L	60102003	1
17	Power Wire	L0000000	1
18	Guard	80100025	11

CT160- HEAVY DUTY BENCH TOP LATHE PARTS LIST

No.	DESCRIPTION	PART No.	Quantity
19	Motor Pulley	80100026	1
20	Set Screw M4 x 0.7P x 6L	S0050406M	2
21	Hexagonal Socket Head Screw M6 x 1P x 15L	S0010615	2
22	Spring Washer M6	S0230600M	2
23	Flat Washer M6	S0210600M	2
24	Nut M8 x 1.25P	S0110800M	1
25	Motor Base	80100024	1
26	Fix Lever M8 x 20	80100034	1
27	Adjustment Screw	80100010	1
28	Slide Collar	80100020	2
29	"S" Circlip STW-10	S0520010	1
30	Carriage	80100004	1
31	Tool Rest	80100021	1
32	Switch	W2010001	1
33	Round Cross Head Screw 3/16-UNC x 1 1/2	S0030324	2
34	Switch Plate	80100028	1
35	"S" Circlip STW-14	S0520014	1
36	Eccentric Shaft	80100017	1

CT160- HEAVY DUTY BENCH TOP LATHE PARTS LIST

No.	DESCRIPTION	PART No.	Quantity
37	Handle	80100033	2
38	Handle Knob	80100032	2
39	Guard	80100027	2
40	Knob M8 x 1.25P	20101024	1
41	Switch Box	10105052P	1
42	Bed	80100001	1
43	Live Center Body	80100014	1
44	Bearing 6002	C1106002	1
45	Center Shank	80100013	1
46	Screw	80100018	1
47	Tailstock	80100003	1
48	"S" Circlip STW-10	S0520010	1
49	Tailstock Quill	80100009	1
50	Tailstock Screw M8 x 20	80100016	1
51	CAP fastener M5 x 0.8P x 15L	S0010515M	1
52	"S" Circlip STW-16	S0520016	1
53	Handwheel STW-16	80100006	1
54	Handle	80100031	2

CT160- HEAVY DUTY BENCH TOP LATHE PARTS LIST

No.	DESCRIPTION	PART No.	Quantity
55	Eccentric Shaft	80100019	1
56	Clamp	S100PG16	2
57	"S" Circlip STW-16	S0520016	1
58	Tailstock Eccentric Shaft	80100015	1
59	Set Screw M4 x 0.7P x 6L	S0050406M	2
60	Spring Pin Ø5 x 30L	S0310530	2
61	Motor	M8010000	1
62	Square Head Screw M8 x P1.25 x 30L	S0020830	1
63	Spring Pin Ø3.5 x 28L	S0313528	2
64	Leveling Screw	11800038	4
65	Nut 3/8-16UNC	S0110600	4
66	Nut 3/16-24UNC	S0110300	2
67	Round Rod	80100029	1
68	Wire Clamp	S1000017	2
69	Round Cross Head Screw M5 x P0.8 x 8L	S0030508M	2
70	Dust Guard	80100030	1
71	Wire Insert	10401008	1
72	Spring Washer M5	S0230500M	2

CT160- HEAVY DUTY BENCH TOP LATHE
PARTS LIST

No.	DESCRIPTION	PART No.	Quantity
73	Motor Base	80100040	1
74	Spacer	80100035	1
75	Coil Spring	80100037	1
76	Short Spring	80100036	1
77	Flat Washer	S0211624	2
78	Polylon	A8010000	1
79	Carton	F8010000	1
80	Tailstock Adjustment Screw	80100038	1
81	Nylon Nut	S0121000M	2
83	Rubber Sleeve	80100041	1

WARRANTY

CRAFTEX 2 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 **Two 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.