



CX601
MILL / DRILL
WITH DIGITAL READOUT
User Manual (Revised - Jan 2013)



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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 owner's 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** wears loose clothing or jewelry when operating your machine. Wear protective hair covering.
- ⚠ **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 use 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** allow unsupervised or untrained person to operate the machine
- ⚠ **NEVER** reach over the table 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.
- ⚠ **ALWAYS** make sure that any tools used for adjustments are removed before operating the machine.
- ⚠ **ALWAYS** keep bystanders safely away while the machine is in operation.
- ⚠ **NEVER** attempt to remove jammed cutoff pieces until the blade has come to a full stop.

CX601 – MILL / DRILL

SPECIFIC SAFETY INSTRUCTIONS

- ❖ **READ AND UNDERSTAND** the user manual before operating the milling/drilling machine.
- ❖ **ALWAYS WEAR** safety glasses for the protection of your eyes while operating this machine.
- ❖ **WEAR PROPER APPAREL.** Loose clothing, gloves neckties, rings, bracelets, or other jewelry may get caught in moving parts of the machine. Wear protective hair covering to contain long hair. Do not wear gloves and keep your fingers and hair away from rotating parts.
- ❖ **KEEP GUARDS** in place. Safe guards must be kept in place and in working order. CX601 will not start until the chip guard is in its position, guarding the spindle.
- ❖ **MAKE SURE** the work-piece is properly clamped to the table before operating the machine. Never hold the work-piece by hands when using the mill.
- ❖ **MAKE SURE** the cutting tool is sharp, not damaged and properly secured in the chuck before you start the machine.
- ❖ **NEVER** turn the power ON with the cutting tool contacting the work-piece.
- ❖ **SELECT THE PROPER SPINDLE SPEED** for the type of work and material you are cutting. Let the spindle reach to its full speed before beginning a cut.
- ❖ **DO NOT FORCE THE TOOL.** Always use the machine at the rate for which it is designed. Do not force the machine doing a job for which it is not designed.
- ❖ **NEVER LEAVE** the machine unattended while it is running.
- ❖ **ALWAYS** turn off the power before removing scrap pieces and cleaning the machine.
- ❖ **SHOULD ANY PART** of your tool be missing, damaged or fail in any way, shut off the machine immediately and remove the plug from power source. Replace any damaged or missing parts before resuming operation.
- ❖ **MAKE SURE** before installing and removing any parts, servicing, cleaning or making any adjustments, the switch is in the “OFF” position and the cord is unplugged from the power source.
- ❖ **BEFORE OPERATING** your CX601 make sure you have read and understood all the safety instructions in the manual and you are familiar with your machine. If you fail to do so, serious injury could occur.

WARNING

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



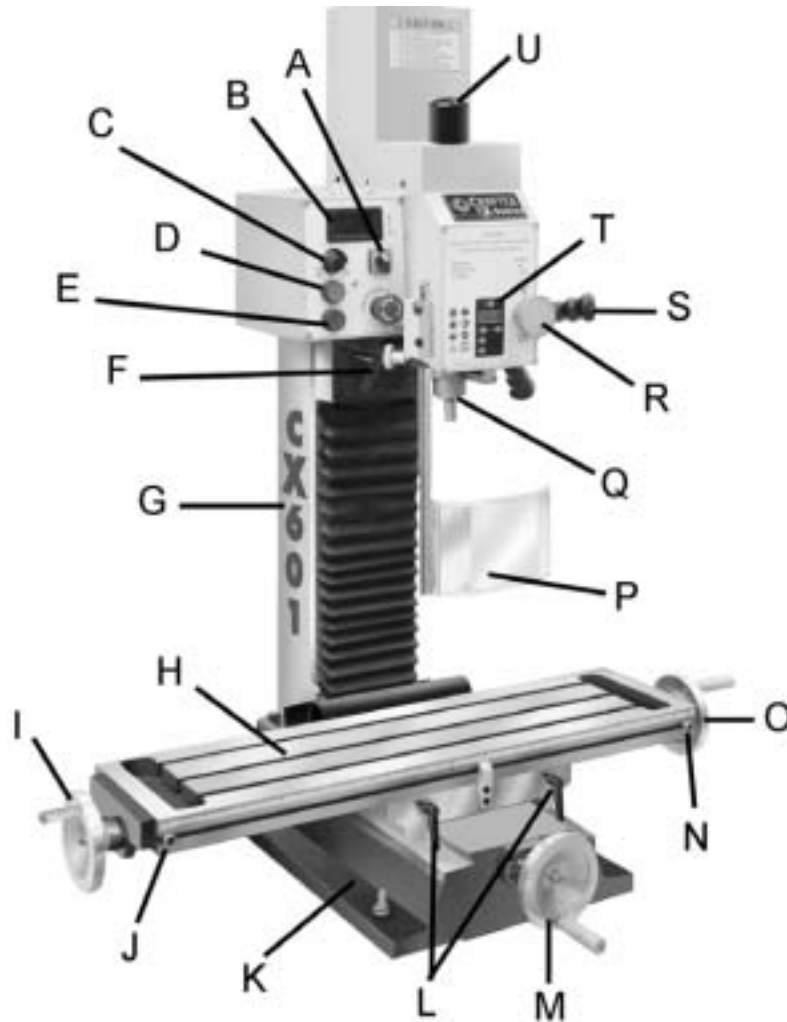
CX601 – MILL / DRILL FEATURES

MODEL CX601 – MILL / DRILL WITH DIGITAL READOUT

As part of the growing line of Crafttex metalworking equipment, we are proud to offer the CX601, a Mill / Drill with Digital Readout. The Crafttex name guarantees Craft Excellence. By following the instructions and procedures laid out in this user manual, you will receive years of excellent service and satisfaction. The CX601 is a professional tool and like all power tools, proper care and safety procedures should be adhered to.

- ⦿ Motor 1.0 KW, 110-V, Single Phase
- ⦿ Drilling Capacity..... 32mm (1.25")
- ⦿ End Mill Capacity..... 20mm (0.78")
- ⦿ Face Mill Capacity 76mm (3")
- ⦿ Spindle Taper R8
- ⦿ Spindle Stroke 70mm (2.7")
- ⦿ Head Tilt 45° to the Right & 45° to the Left
- ⦿ Number of Spindle Speeds.. Variable
- ⦿ Range of Spindle Speeds 50 – 2250 RPM
- ⦿ Working Surface of Table 840mm x 210mm (33" x 8.2")
- ⦿ Table Longitudinal Travel 425mm (16.7")
- ⦿ Table Cross Travel 220mm (8.6")
- ⦿ Number of T-Slots 3
- ⦿ T-Slot Size 10mm (0.39")
- ⦿ Overall Dimensions 850mm x 890mm x 1120mm (33.4" x 35" x 44")
- ⦿ Net Weight (approx) 240 Kg, 529 lbs
- ⦿ Shipping Weight (approx) 280 Kg, 617 lbs
- ⦿ Warranty 3-Years

CX601 MILL / DRILL PHYSICAL FEATURES



- | | |
|-------------------------------------|-------------------------------------|
| A. Forward/Reverse Switch | L. Logitudinal Table Lock Levers |
| B. Digital Spindle RPM Readout | M. Cross Feed Hand Wheel |
| C. Variable Speed Control Knob | N. Table Stop |
| D. ON Button | O. Longitudinal Hand Wheel (X-Axis) |
| E. OFF Button | P. Chip Guard |
| F. Quill Lock Lever | Q. Spindle |
| G. Column | R. Fine Feed Knob |
| H. Work Table | S. Down Feed Handle |
| I. Longitudinal Hand Wheel (X-Axis) | T. Digital Spindle Height Gauge |
| J. Table Stop | U. Drawbar Cover |
| K. Base | |

PROPER GROUNDING

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

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

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

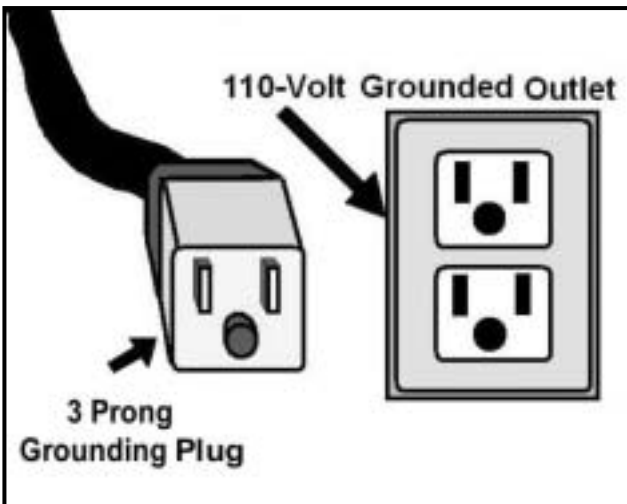


Figure-1 110-Volts outlet for CX601

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 CX601. Always try to position your machine close to the power source so that you do not need to use extension cords.

If it necessary to use an extension cord, make sure the extension cord does not exceed 50-feet in length and the cord is 14-gauge to prevent motor damage. Check for heat build up periodically.

Your CX601 should be wired with a 3-prongs plug fitting a 3 prong grounded receptacles as shown in figure-1. 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.

SETUP

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

The unpainted surfaces of this machine 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

CX601 is a very heavy machine, do not over-exert yourself. Use fork truck or other mechanical devices for safe moving.

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

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 crate and unbolt the machine from the crate. Check that the machine and the parts are in good condition.

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

LIST OF CONTENTS

QTY

| | |
|--|---|
| Mill/Drill Machine (not shown) | 1 |
| Drawbar..... | 1 |
| Digital Scale | 1 |
| Tool Box | 1 |
| Oil Bottle..... | 1 |
| R8 Arbor..... | 1 |
| Double End Spanner (17-19, 22-24mm) .. | 2 |
| Allen Wrenches (2.5, 3, 4, 5, 6, 8mm)..... | 6 |
| Slotted Screwdriver | 1 |
| Phillips Screwdriver | 1 |
| Handles | 4 |
| M12 "T" Screws | 2 |
| M10 Washers | 2 |
| M10 Nuts..... | 2 |
| Optional CX601 Stand (not shown)..... | 1 |



Figure-2 Inventory

MOUNTING TO WORKBENCH OR STAND

The CX601 features four mounting holes on its base which allows to be mounted on a stand or workbench.

To mount the machine on a stand or workbench:

Make sure the stand or the workbench is sturdy enough to support a weight of 240 Kg or 529 lbs (weight of CX601).

The stand or workbench must be level so that the machine is mounted in a stable position.

Lift the machine using a fork truck and place it over the stand or workbench. Make sure the machine is centered on the workbench.

WARNING

CX601 is a very heavy machine, do not over-exert yourself. Use fork truck or other mechanical devices for safe moving method

Locate the four mounting holes on the CX601 base and mark the holes on workbench or stand using a center punch.

Remove the machine and drill four holes where you marked the workbench or stand top.

Position the machine on the stand or workbench and align the holes on the machine base with the holes on the stand or workbench top.

Bolt the machine base properly on the workbench or stand top.

ASSEMBLY

Install the four handles by threading them onto the hand wheels as shown in figure-3.

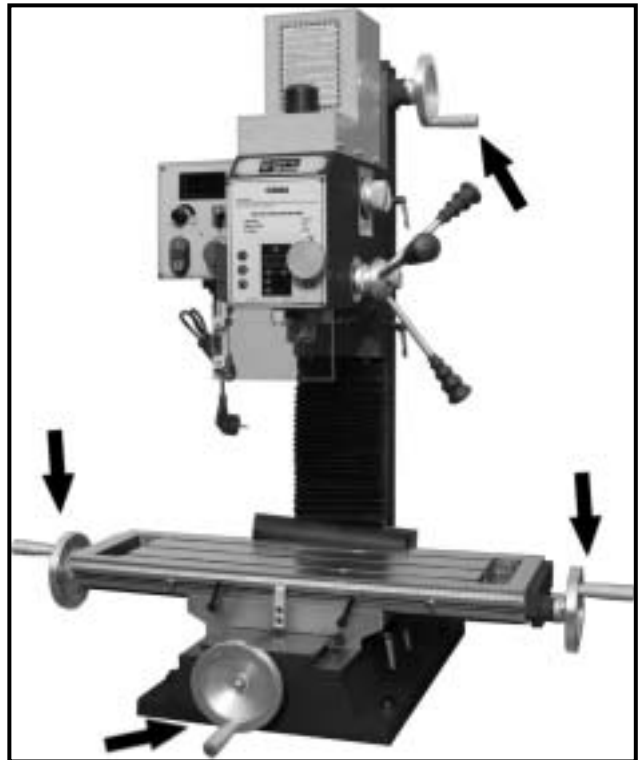


Figure-3 Handles installed onto the hand wheels

CONTROLS

This section provides information on the CX601 controls.

LONGITUDINAL HAND WHEELS: These hand wheels are used to move the work table side to side. See figure-4.

CROSS FEED HAND WHEEL: This hand wheel is located on the front of the machine and is used to move the work table towards or away from the column. See figure-4.

HEAD ELEVATING HAND WHEEL: This hand wheel is located on the top right side of the column and it is used to adjust the head height up or down as required. Turn the hand wheel clockwise to move the head up and counter-clockwise to move the head down. See figure-4.

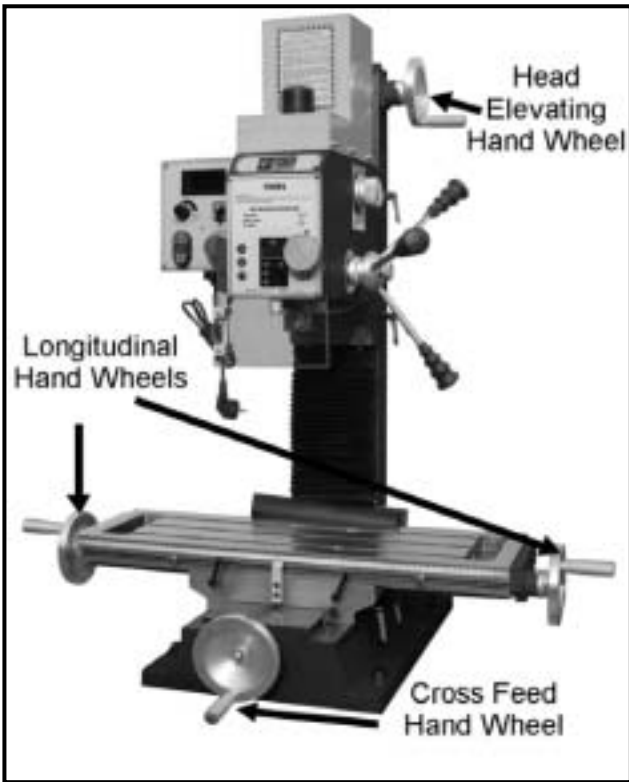


Figure-4 CX601 controls

ADJUSTABLE TABLE STOPS: These stops are located on the front side of the work table as shown in figure-5. These stops are adjusted to stop the work table at any position along the longitudinal axis.

TABLE LOCK LEVERS: The machine features lock levers to secure the work table on X and Y axis in position when needed.

The longitudinal lock levers are located in the front side of the machine and must be

loosened before moving the table using longitudinal hand wheels.

The cross feed lock levers are located on the right side of the machine, under the work table. These two lock levers must be loosened before moving the table using cross feed hand wheel. See figure-5.

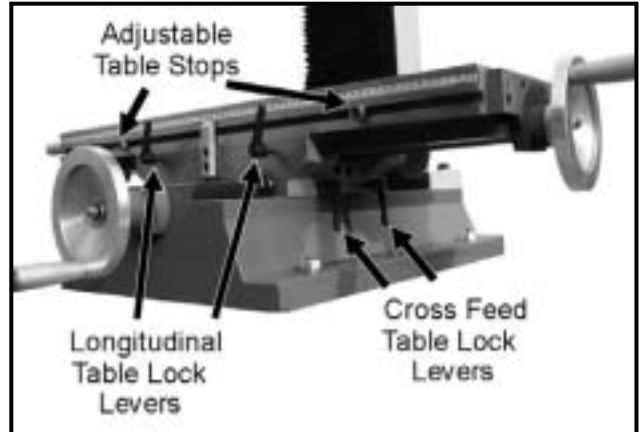


Figure-5 Table stops and table locks

MILL HEAD LOCK LEVERS: Located on the right side of the column, these two lock levers are used to lock and unlock the mill head. Unlock the mill head before adjusting the mill head height using the head elevating hand wheel and re-tighten the lock levers once the head is at the desired height.



Figure-6 Head and quill locks levers

QUILL/SPINDLE LOCK LEVER: The quill lock lever is located on the left side of the head and is used to secure the quill in position. See figure-6.

WARNING

For best result, all milling operations should be done with the quill/spindle as close to the head assembly as possible. Make sure to lock the spindle, table, and mill head in place before starting milling operation.

DOWN FEED HANDLES: Located on the left side of the head casting, the down feed handles are used to raise or lower the spindle/quill.

The quill/spindle lock lever should be loosened before operating the down feed handles.

FINE DOWN FEED KNOB: Tighten the knob shown in figure-7 to engage the fine feed knob in the front of the machine. Turn the fine feed knob clockwise to move the spindle/quill down and counter-clockwise to retract it. See figure-7.

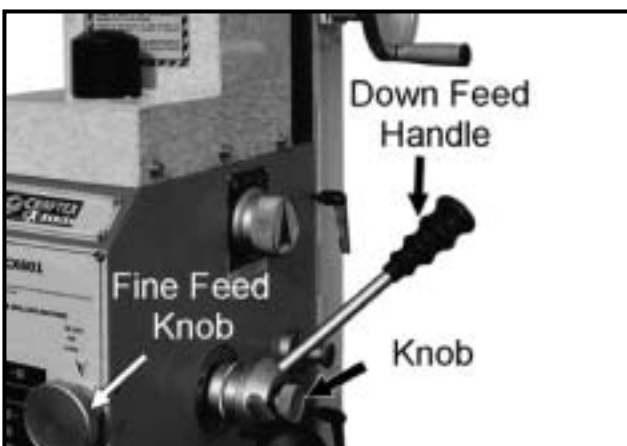


Figure-7 Feed controls

HIGH LOW SPEED KNOB: The CX601 features a high/low speed knob shown in figure-8, used to set the spindle at high or low speed, as required for the job.

The low speed is 50 RPM to 750 RPM while the high speed is 150 RPM to 2250 RPM.

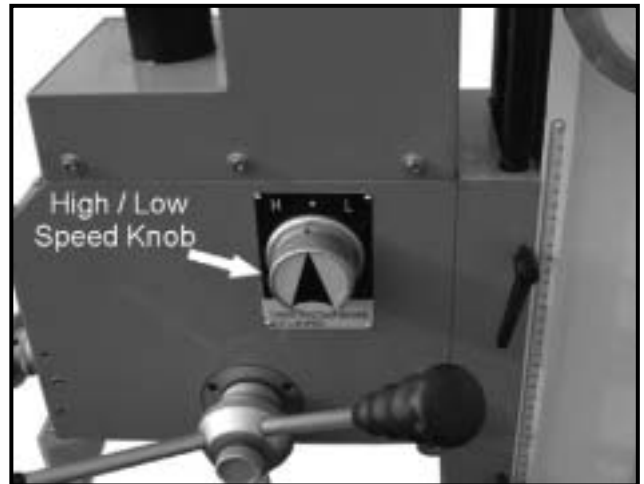


Figure-8 High / Low speed knob

MILL HEAD ROTATION: The CX601 mill head is designed to be tilted 45° to the right or 45° to the left, enabling it to perform task such as angle drilling or horizontal slotting.

Support the head and loosen the lock nuts located under the head shown in figure-9.

Rotate the head to its desired position, using the reference guide shown in figure-9. Once the head is at the desired angle, re-tighten the nuts.

WARNING

When loosening the nuts, make sure to provide support to the head so that it does not rotate unexpectedly.

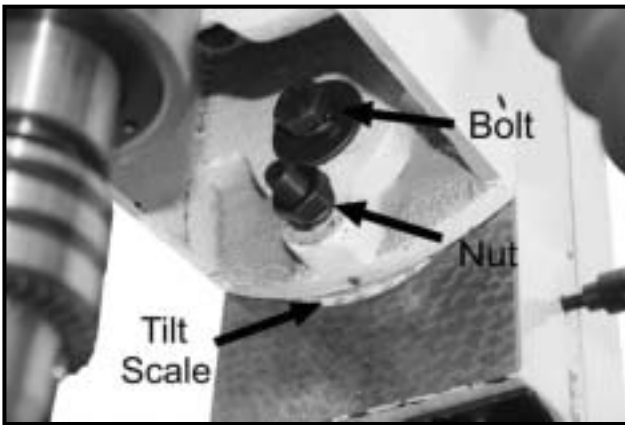


Figure-9 Tilting the mill head

Keep in mind that the head must be positioned accurately at a 90-degree position to the table. If you are able to use an angle vise to accomplish your milling operation without tilting the head, you can save yourself a good amount of set-up time.

CONTROL PANEL

A. EMERGENCY STOP SWITCH: The CX601 features a large emergency stop button used to stop the machine in the emergency cases.

B. ON/OFF BUTTON: The green push button is to start the motor while the red push button is to switch the motor off.

C. SPEED CONTROL KNOB: The CX601 is a variable speed milling machine and features a speed control knob. The knob should be turned to zero before turning the machine ON.

D. FORWARD / REVERSE SWITCH: The forward / reverse switch is used to change the rotating direction of the spindle.

E. DIGITAL SPINDLE RPM READOUT: The digital spindle RPM display shows the spindle speed.



Figure-10 Control panel

SPINDLE HEIGHT DIGITAL READOUT

The spindle height digital readout displays the spindle position and movement to increase milling accuracy.

F. ON / ZERO "0" BUTTON: Turns the digital spindle height gauge ON when it is OFF. When pressed again, zeros the digital read at any point along its stroke.

G. OFF BUTTON: Turns the digital spindle height gauge OFF.

H. DIGITAL SPINDLE HEIGHT DISPLAY: Displays the spindle height and movement.

I. mm/inch BUTTON: Toggles units of measure between metric and inch conventions.

J. ↑ BUTTON: Increases the current depth reading.

K. ↓ BUTTON: Decreases the current depth reading.

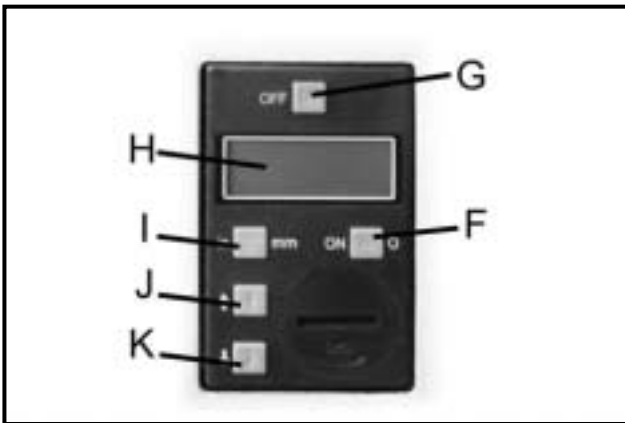


Figure-11 Digital spindle height gauge controls

CHIP GUARD

The chip guard on CX601 is one of the main safety features of this machine. The machine does not start until the chip guard is in its position, guarding the spindle.

Make sure the chip guard is in its closed position before turning the machine ON.

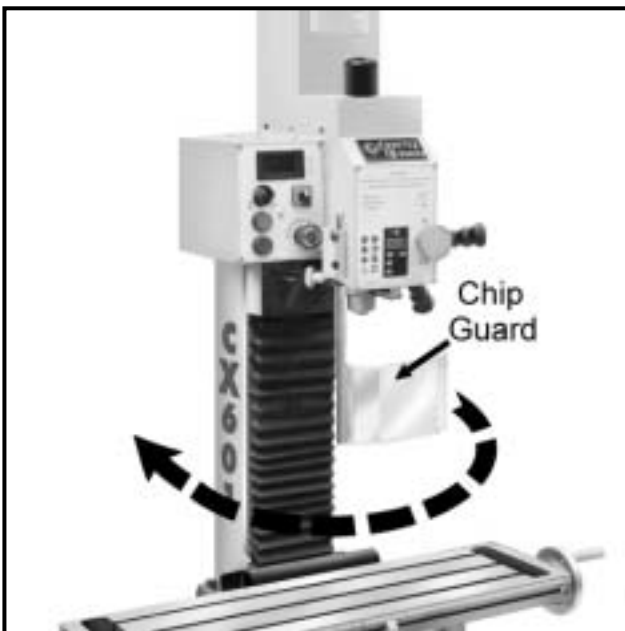


Figure-12 CX601 Chip guard

TEST RUN

Once you have assembled your mill/drill completely, it is then time for a test run to make sure that the mill/drill 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 mill/drill, 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.

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

TO TEST RUN THE CX601:

1. Push the green button in, on the control panel. It should turn the machine ON.
2. Now, push the Emergency Stop Button in, it should turn the machine OFF.
3. Turn the machine back ON, and let the machine run on slow speed for 10 minutes.
4. Locate the High/Low speed control knob on the left side of the machine and turn it to high speed. Use the variable speed control knob and increase the spindle speed and let the machine run for another 10 minutes.

5. If you hear any unusual noise(s) coming from the machine or if it vibrates excessively, shut the machine OFF immediately and disconnect from the power source. Investigate to determine the problem with your machine.
6. If the machine runs smoothly, proceed to the next step.
7. Turn the machine OFF.
8. Use the forward/reverse switch and turn the spindle in the opposite direction for 10 minutes.

WARNING

Do not make any adjustments while the machine is running. Turn the machine OFF and un-plug the cord from the power source before making any adjustments. Failure to do so may cause serious personal injury.

COLLET REPLACEMENT

The CX601 features an R8 spindle taper which allows using R8 collets. Collets are used to hold the cutting tool into the spindle.

TO INSTALL R8 COLLETS:

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

Remove the draw bar cap as shown in figure-13.

Hold the flat part of the spindle with one hand while loosening draw bar with another hand, using proper size wrenches provided.

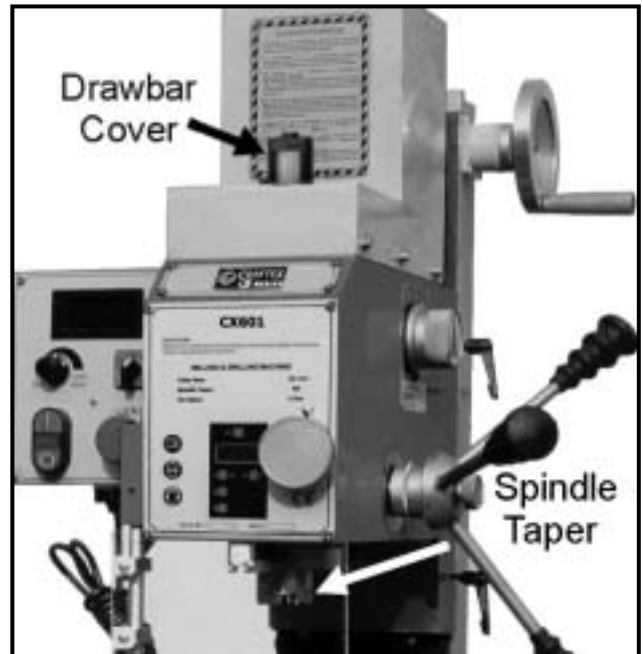


Figure-13 Drawbar cover and spindle taper

Loosen the draw bar fully and tap it with a rubber mallet from the top.

WARNING: The collet with the cutting tool will fall down on to the work table if not supported from below the cutter.

Carefully clean the surface of the new collect, cutting tool and the spindle taper and make sure there is no debris on any part.

Insert the collect into the spindle taper and partially thread so that it just holds it.

Insert the cutting tool into the collet and continue to tighten. Use a hex wrench (provided) and tighten the collet into the spindle taper.

Make sure not to over-tighten the drawbar. Over-tightening the drawbar makes the collet removal difficult and damages the drawbar and the collet threads.

Re-install the drawbar cover.

GIBS ADJUSTMENT

After a period of time, movement of the work table and the head over the slide ways will cause normal wear that needs to be adjusted.

To adjust the gib screws:

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

Locate the work table horizontal adjustment gib screw (**A**) on the right side of the table and vertical adjustment gib screw (**B**) on the front side of the table as shown in figure-14.

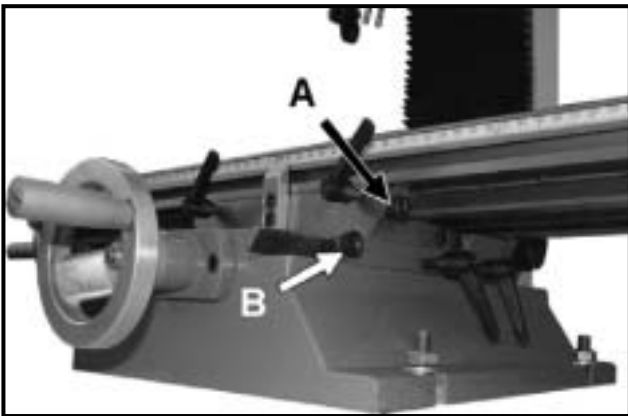


Figure-14 Table gib adjustment screws

Locate the head adjustment gib screws (**C**) on the column as shown in figure-15.

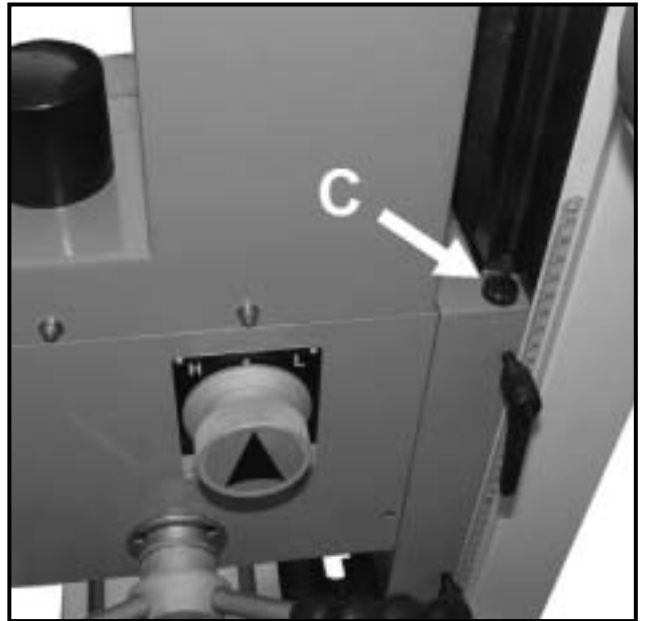


Figure-15 Head adjustment gib screw

Use a Phillips screw driver (provided) and tighten the screws.

Check the work table and the mill head movement on the slide ways using the hand wheels.

MAINTENANCE

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

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

3. 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 work table and the slide ways.

WARNING

Do not remove the chips with your bare hands. There is a risk of cut due to sharp-edged chips. Never use flammable solvents or cleaning agents or agents that generate noxious fumes. Protect electrical components such as motors, switches, switch boxes, etc..., against humidity when cleaning.

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

5. Make sure your work area is well ventilated.

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

7. Check the machine everyday before operation for; worn or damaged cord, wire, loose nuts and bolts and make sure all the safety devices are working properly.

SPINDLE HEIGHT DIGITAL READOUT

When the digital spindle height gauge display is dim or does not show at all, the battery will need to be replaced.

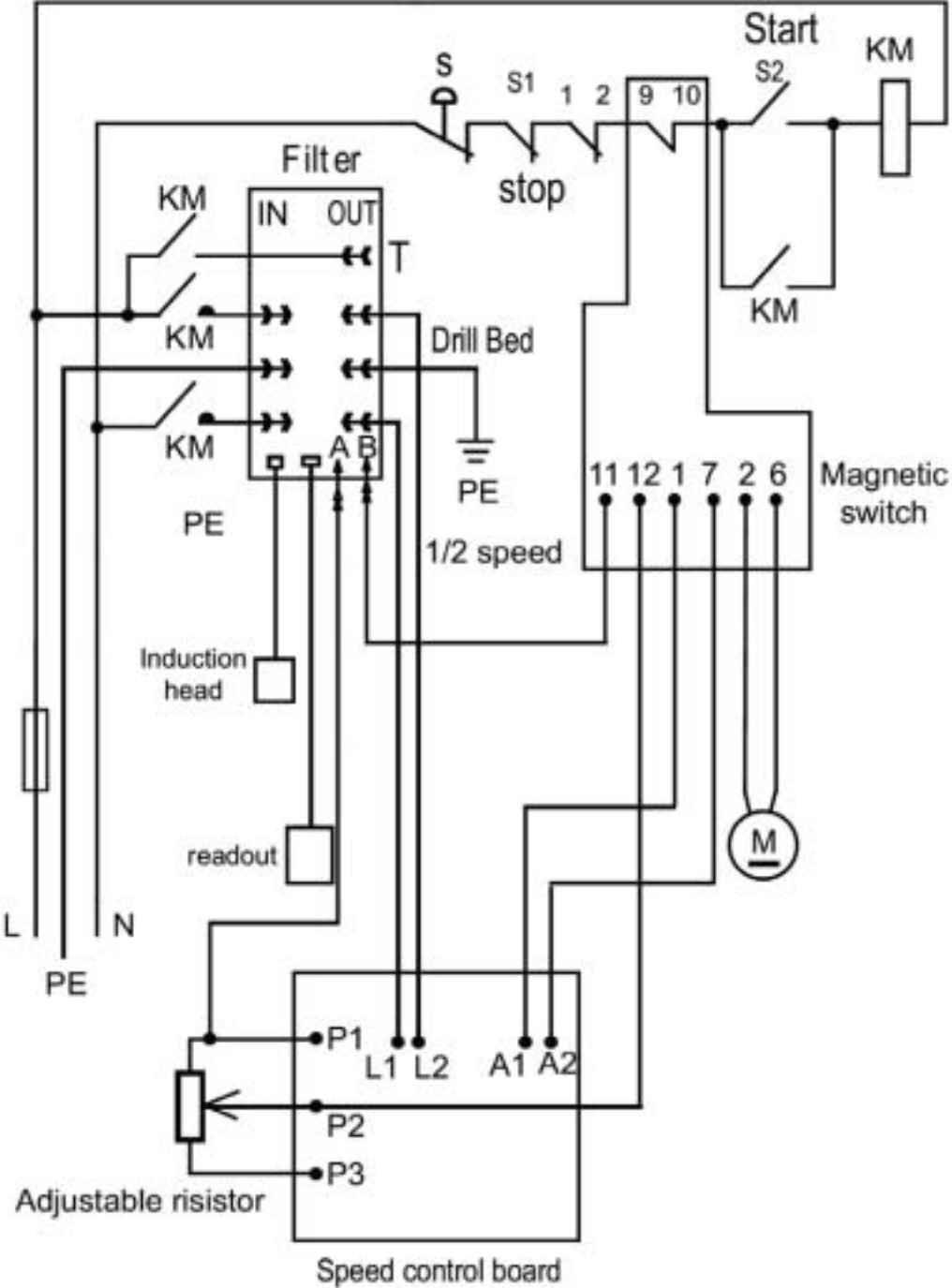


Figure-16 Digital spindle height gauge

Use a Phillips screw and turn the cap, clockwise to open it. Replace the battery with a new one and close the cap.

WIRING DIAGRAM

Before connecting the machine to the mains, make sure the electrical values of the mains supply are the same as those for the machine's electrical components. Use the wiring diagram below for connecting the mill/drill machine to the mains supply.

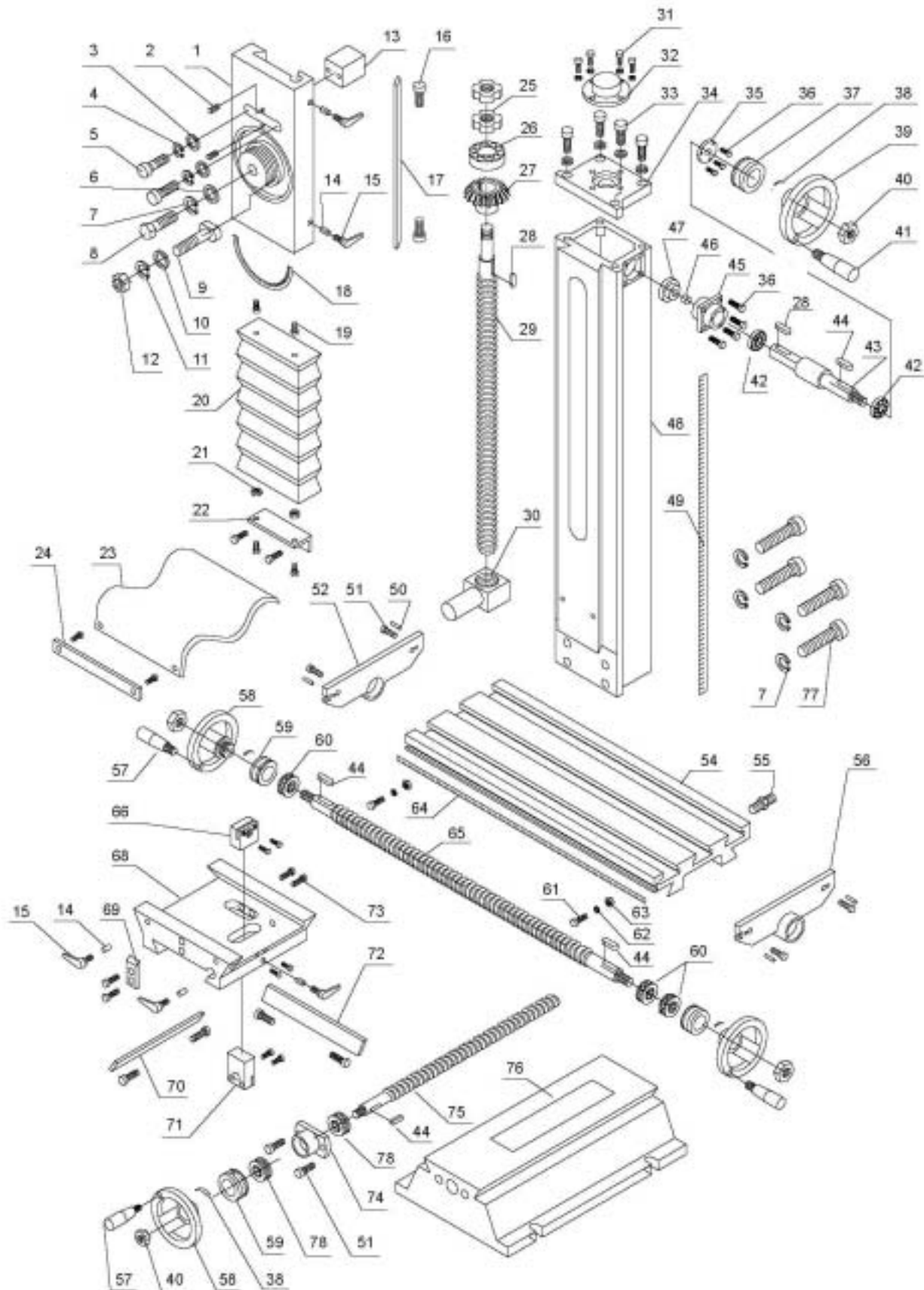


CX601 MILL/DRILL TROUBLESHOOTING

| Problem | Possible Causes | Solutions |
|---|---|--|
| Unusual noise coming from the machine when running. | Gibs too loose on table, column Unused feeds not locked Mill head not locked Quill too loose Tool not in center Improper tool shape, tool dull | Readjust gibs Lock all axes but the one moving Lock mill head Tighten quill lock Center tool Sharpen, or replace tool |
| Depth of cut is not consistent | Quill moving Setup wrong | Lock quill Make sure setup is parallel to table |
| Hole is off center or bit wanders | Dull bit Bit not mounted correctly in chuck Chuck loose in spindle Drawbar not secured Bearing loosen or worn Cutting too fast | Use sharp bits Remount tool Remount chuck on arbor Tighten drawbar Tighten or replace bearings Reduce speed |
| Bit turns erratically or stops | Bit fed into work too fast | Reduce feed rate |
| Chuck is difficult to tighten or loosen | Chuck sticking Debris in chuck | Apply lubricant Clean chuck |
| Chuck wobbles | Chuck loose on arbor Drawbar not tight | Clean arbor and remount Clean spindle and replace drawbar |
| Machine does not run when turned ON | Chip guard is not in place Fuse/Breaker is tripped Cord not plugged in | Move chip guard to its position Re-set the fuse/breaker Plug in the cord |

CX601 - MILLING & DRILLING MACHINE

Column, Table, Base Assembly



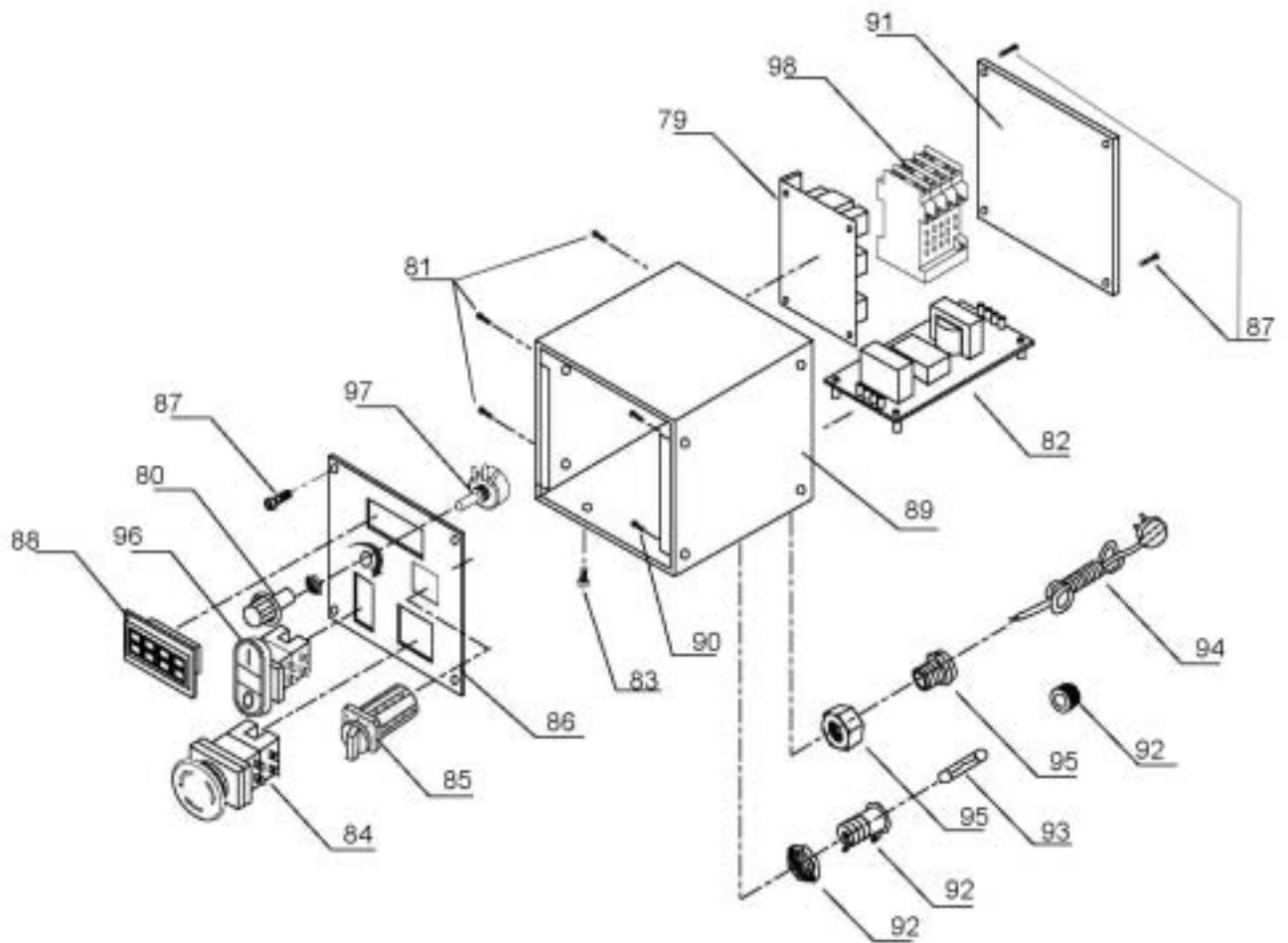
CX601 - COLUMN, TABLE, BASE ASSEMBLY

| Parts No | Description | Specification | Qty |
|-----------------|------------------------|----------------------|------------|
| 1 | Vertical Slide | | 1 |
| 2 | Screw | M6x16 | 2 |
| 3 | Washer | | 2 |
| 4 | Spring Washer | 8 | 6 |
| 5 | Screw | M8x25 | 2 |
| 6 | Screw | M12x40 | 1 |
| 7 | Spring Washer | 12 | 5 |
| 8 | T-Nut | 12 | 1 |
| 9 | Bolt | M10x60 | 1 |
| 10 | Washer | M10 | 1 |
| 11 | Spring Washer | M10 | 1 |
| 12 | Nut | M10 | 1 |
| 13 | Block | | 1 |
| 14 | Brass Pin | Φ5x10 | 5 |
| 15 | Locking Lever | M6x16 | 5 |
| 16 | Gib Screw | M8 | 1 |
| 17 | Gib | | 1 |
| 18 | Angle Indication Label | | 1 |
| 19 | Screw | M5x10 | 12 |
| 20 | Dust Cover | 120x400mm | 1 |
| 21 | Nut | M5 | 2 |
| 22 | Connect Rib | | 1 |
| 23 | Dust Cover | | 1 |
| 24 | Connect Rib | | 1 |
| 25 | Nut | M16x1.5 | 2 |
| 26 | Bearing | 51203 | 1 |
| 27 | Gear | 26T | 1 |
| 28 | Key | 4x16 | 2 |
| 29 | Vertical Leadscrew | | 1 |
| 30 | Nut | | 1 |
| 31 | Washer | M5 | 4 |
| 32 | Cover | | 1 |
| 33 | Screw | M8x20 | 4 |
| 34 | Bracket | | 1 |
| 35 | Flange | | 1 |
| 36 | Screw | M5x12 | 7 |
| 37 | Dial | | 1 |
| 38 | Spring Piece | | 4 |
| 39 | Handwheel | | 1 |
| 40 | Locking Nut | M8 | 4 |
| 41 | Handle | M10x80 | 1 |

CX601 - COLUMN, TABLE, BASE ASSEMBLY

| Parts No. | Description | Specification | Qty |
|------------------|------------------------|---------------------------|------------|
| 42 | Bearing | 6001 | 2 |
| 43 | Shaft | | 1 |
| 44 | Key | 4x12 | 2 |
| 45 | Bearing Housing | | 1 |
| 46 | Bush | Φ14 45 ^o steel | 1 |
| 47 | Gear | 26T | 1 |
| 48 | Column | | 1 |
| 49 | Label | A5x25 | 1 |
| 50 | Pin | M6x16 | 10 |
| 51 | Screw | M6x14 | 1 |
| 52 | Left Bracket | | 1 |
| 54 | Working Table | | 1 |
| 55 | Plug | | 1 |
| 56 | Right Bracket | | 1 |
| 57 | Handle | M8x63 | 3 |
| 58 | Handwheel | | 3 |
| 59 | Dial | | 3 |
| 60 | Bearing | 51200 | 3 |
| 61 | Screw | M6x10 | 2 |
| 62 | Bush | Φ15 45 ^o steel | 2 |
| 63 | T-Nut | | 1 |
| 64 | Scale | | 1 |
| 65 | Longitudinal Leadscrew | | 1 |
| 66 | Longitudinal Nut | | 1 |
| 67 | Adjusted Screw | M4x20 | 4 |
| 68 | Cross Slide | | 1 |
| 69 | Position Block | | 1 |
| 70 | Cross Gib | | 1 |
| 71 | Cross Nut | | 1 |
| 72 | Longitudinal Gib | | 1 |
| 73 | Screw | M6x25 | 2 |
| 74 | Bearing Housing | | 1 |
| 75 | Cross Leadscrew | | 1 |
| 76 | Base | | 1 |
| 77 | Screw | M12x90 | 4 |
| 78 | Bearing | 51100 | 2 |

CX601 - MILL ELECTRICAL BOX ASSEMBLY

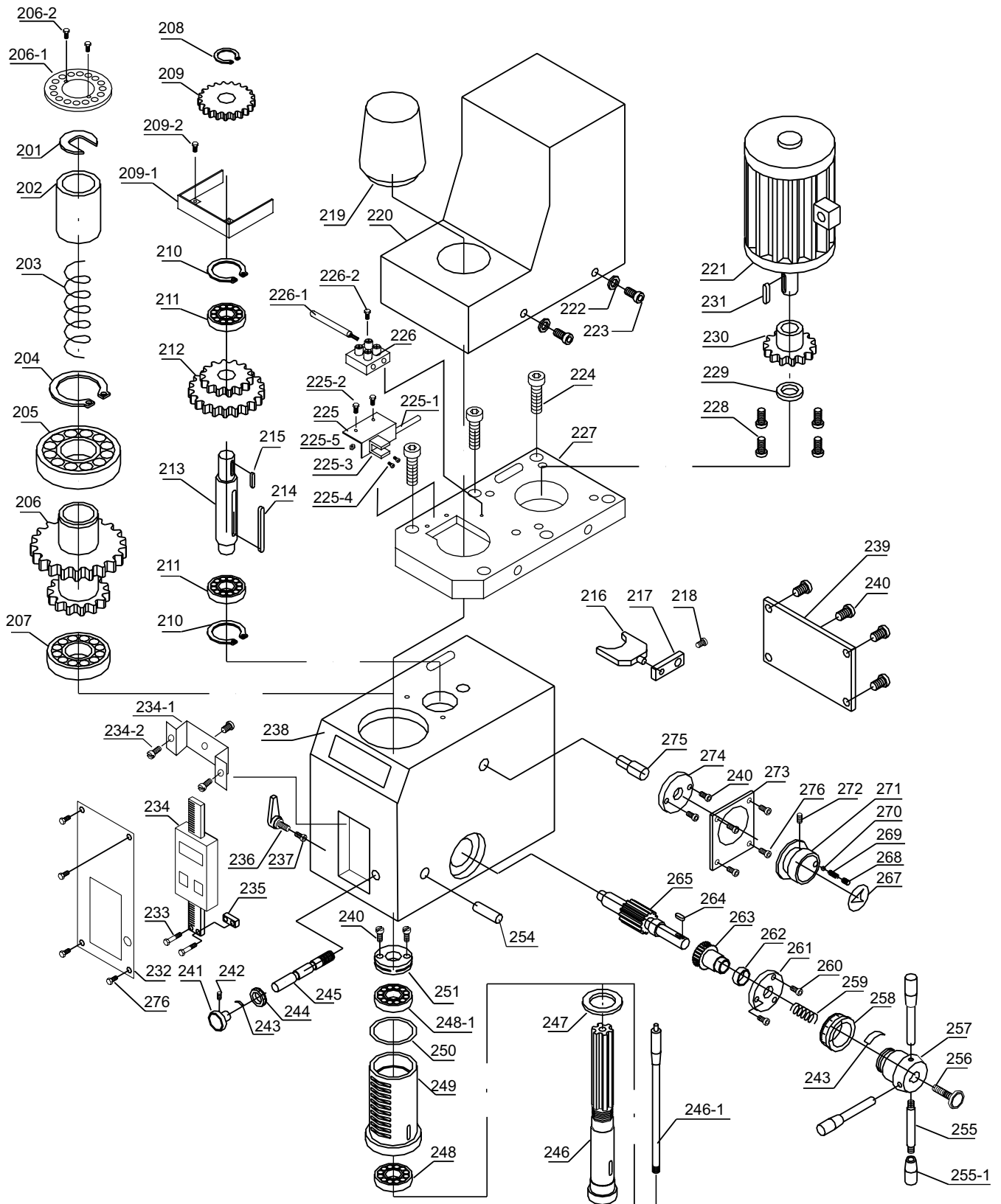


CX601- MILL ELECTRICAL BOX ASSEMBLY

| Parts No. | Description | Specification | Qty |
|------------------|--------------------------|----------------------|------------|
| 79 | Speed Control | | 1 |
| 80 | Timing Knob | | 1 |
| 81 | Screw | M3x8 | 4 |
| 82 | Filter | | 1 |
| 83 | Screw | M3x16 | 4 |
| 84 | Emergency Switch | | 1 |
| 85 | Forward / Reverse Switch | | 1 |
| 86 | Electrical Plate | | 1 |
| 87 | Screw | M4x6 | 8 |
| 88 | Speed Display | | 1 |
| 89 | Electrical Box | | 1 |
| 90 | Screw | M5x8 | 4 |
| 91 | Cover | | 1 |
| 92 | Fuse Holder | | 1 |
| 93 | Fuse (10A) | | 1 |
| 94 | Plug | | 1 |
| 95 | Strand Relief | | 1 |
| 96 | ON/OFF Switch | | 1 |
| 97 | Potentiometer | | 1 |
| 98 | AC Contactor | | 1 |

CX601-MILLING & DRILLING MACHINE

Mill Head Assembly



CX601 MILL HEAD ASSEMBLY

| Parts No. | Description | Specification | Qty |
|-----------|--------------------|---------------|-----|
| 201 | Position Washer | | 1 |
| 202 | Bush | | 1 |
| 203 | Spring | 2.5x28x100 | 1 |
| 204 | Snap Ring | Φ 45 | 1 |
| 205 | Bearing | 6211 | 1 |
| 206 | Gears | 39/64T | 1 |
| 206-1 | Raster Ring | 16 Bore | 1 |
| 206-2 | Screw | M3x8 | 2 |
| 207 | Bearing | 6207 | 1 |
| 208 | Snap Ring | Φ 15 | 1 |
| 209 | Gears | 39T | 1 |
| 209-1 | Guard | | 1 |
| 209-2 | Screw | M3x6 | 2 |
| 210 | Snap Ring | Φ 32 | 2 |
| 211 | Bearing | 6202 | 2 |
| 212 | Shafting Gear | 31/56T | 1 |
| 213 | Shaft | | 1 |
| 214 | Key | 5X50 | 1 |
| 215 | Key | C5x12 | 1 |
| 216 | Fork | | 1 |
| 217 | Fork Arm | | 1 |
| 218 | Set Screw | 5x8 | 1 |
| 219 | Drawbar Cover | | 1 |
| 220 | Motor Cover | | 1 |
| 221 | Motor | 108ZYT | 1 |
| 222 | Washer | Φ4 | 4 |
| 223 | Screw | M4x8 | 4 |
| 224 | Screw | M6x14 | 6 |
| 225 | Bracket for finder | (Optional) | 1 |
| 225-1 | Electrical wire | | 1 |
| 225-2 | Screw | M3x6 | 2 |
| 226 | Terminal | (Optional) | 1 |
| 226-1 | Electrical wire | (Optional) | 1 |
| 226-2 | Screw | M3x12 | 1 |
| 227 | Motor Plate | | 1 |
| 228 | Screw | M5x12 | 4 |
| 229 | Snap Ring | M10 | 1 |
| 230 | Gear | 19T | 1 |
| 231 | Key | C4X6 | 1 |
| 232 | Label | | 1 |
| 233 | Screw | M4x50 | 2 |
| 234 | Digital Scale | (Optional) | 1 |

CX601 - MILLHEAD ASSEMBLY

| Parts No. | Description | Specification | Qty |
|-----------|----------------------------|---------------|-----|
| 234-1 | Braket | | 1 |
| 234-2 | Screw | M4x12 | 3 |
| 235 | Base | | 1 |
| 236 | Locking Lever | M8x20 | 1 |
| 237 | Brass Pin | | 1 |
| 238 | Mill Head | | 1 |
| 239 | Plate for Head | | 1 |
| 240 | Screw | M4x8 | 6 |
| 241 | Knob | | 1 |
| 242 | Set Screw | M5x6 | 1 |
| 243 | Spring Piece | | 2 |
| 244 | Dial | | 1 |
| 245 | Worm Shaft | | 1 |
| 246 | Spindle | | 1 |
| 246-1 | Drawbar | | 1 |
| 246-2 | Retainer cap | | 1 |
| 247 | Ring | | 1 |
| 248-1 | Bearing | 32006 | 1 |
| 248 | Bearing | 32007 | 1 |
| 249 | Sleeve | | 1 |
| 250 | "O"Rubber Ring | 58x2.65 | 1 |
| 251-1 | Screw | | 2 |
| 251 | Adjusted Nut | | 1 |
| 254 | Pin | A6x30 | 1 |
| 255 | Handle | | 3 |
| 255-1 | Rubber Handl | | 3 |
| 256 | Knob | | 1 |
| 257 | Base | | 1 |
| 258 | Dial | | 1 |
| 259 | Spring | 1.2x12x2.5 | 1 |
| 260 | Screw | M4X40 | 3 |
| 261 | Flange | | 1 |
| 262 | Bushing | | 1 |
| 263 | Worm Gear | | 1 |
| 264 | Key | 4x12 | 1 |
| 265 | Gear Shaft | | 1 |
| 266 | Flange | | 1 |
| 266-1 | Screw | 4x12 | 3 |
| 267 | H/L Speed Indication Label | | 1 |
| 268 | Set Screw | M8x8 | 1 |
| 269 | Spring | 0.8x5x25 | 1 |
| 270 | Ball | Φ 6.5 | 1 |
| 271 | Knob | | 1 |
| 272 | Set Screw | M5x16 | 1 |
| 273 | H/L Speed Label | | 1 |
| 274 | Flange | | 1 |
| 275 | Fork Shaft | | 1 |
| 276 | Cap Screw | M3x4 | 6 |



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 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 repairs.

CX601



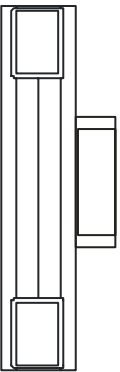

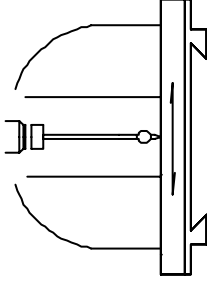
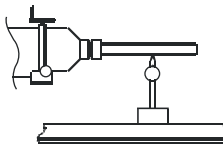
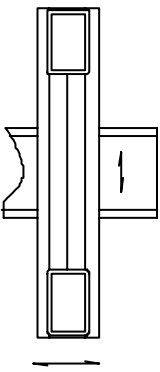
Test Record

CX601

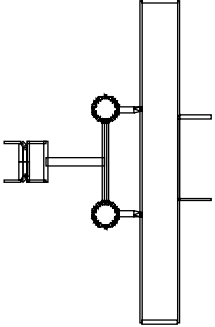
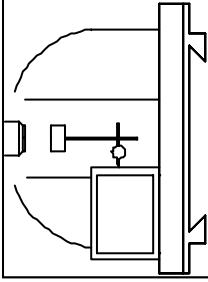
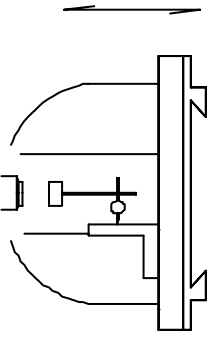
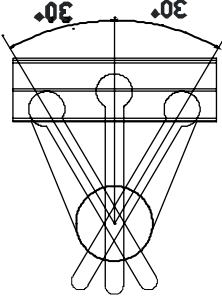
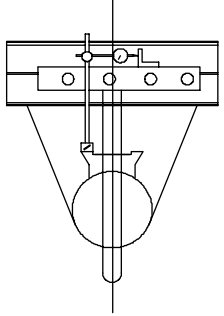
| 1. Visual Inspection | OK | 4. Electrical Inspection | OK |
|---------------------------------|--------------------------|-----------------------------------|--------------------------|
| a. Correct label | <input type="checkbox"/> | a. Connection tightened | <input type="checkbox"/> |
| b. Painting damage | <input type="checkbox"/> | b. Correct electrical elements | <input type="checkbox"/> |
| c. Corrosion damage | <input type="checkbox"/> | c. Earth/Insulation resistance | <input type="checkbox"/> |
| d. Screw tightened | <input type="checkbox"/> | d. Tolerance voltage test | <input type="checkbox"/> |
| 2. Mechanical Inspection | | 5. Final Inspection | |
| OK | | OK | |
| a. Spindle up and down | <input type="checkbox"/> | f. Emergency button | <input type="checkbox"/> |
| b. Spindle fine down feed | <input type="checkbox"/> | g. Coolant pump switch | <input type="checkbox"/> |
| c. Ram sliding front and back | <input type="checkbox"/> | h. Right/Left Button | <input type="checkbox"/> |
| d. Knee up and down | <input type="checkbox"/> | i. Stop button | <input type="checkbox"/> |
| e. Table move left and right | <input type="checkbox"/> | j. Function power indicator light | <input type="checkbox"/> |
| f. Saddle move front and back | <input type="checkbox"/> | k. Function of pump motor | <input type="checkbox"/> |
| j. Lock for spindle sleeve | <input type="checkbox"/> | l. Function of motor | <input type="checkbox"/> |
| h. Locks for table ,saddle,knee | <input type="checkbox"/> | m. Safety cover | <input type="checkbox"/> |
| 3. Active Inspection | | 3. Active Inspection | |
| OK | | OK | |
| a. Function of mill head | <input type="checkbox"/> | a. Correct accessories | <input type="checkbox"/> |
| b. Function of power feed | <input type="checkbox"/> | b. Correct documents | <input type="checkbox"/> |
| c. Running test | <input type="checkbox"/> | c. Machine cleanness | <input type="checkbox"/> |
| d. Noise test | <input type="checkbox"/> | d. Credibility antitrust | <input type="checkbox"/> |
| e. Milling test | <input type="checkbox"/> | e. Correct mark | <input type="checkbox"/> |
| Rem ark : | | | |

| | |
|------------|----------------------|
| Serial No. | <input type="text"/> |
| Date | <input type="text"/> |
| Inspector | <input type="text"/> |

CX601

| NO. | INSPECTION ITEM | DIAGRAM | TOLERANCE(IN") | |
|-----|---|---|--|--------|
| | | | PERMISSIBLE | ACTUAL |
| 1 | Flatness of table |  | IN 8" MPE 0.003" On Full table | |
| 2 | Parallelism of T slot to table movement |  | 0.002" | |
| 3 | Parallelism of table to table movement a in longitudinal b in cross |  | a 0.001" b 0.0008" | |
| 4 | Runout of spindle hole a at spindle nose b 300 distance |  | a 0.0006" near the spindle nose b 0.0008" IN 4" | |
| 5 | Squareness of table longitudinal and cross movement |  | 0.0008" IN 12" | |

CX601

| NO. | INSPECTION ITEM | DIAGRAM | TOLERANCE(IN") | |
|-----|--|---|--|--------|
| | | | PERMISSIBLE | ACTUAL |
| 6 | Squareness of spindle axis to table a right & left b forward & backward |  | a 0.002" IN 12" b 0.002" IN 8" a ≤ 90° | |
| 7 | Squareness of spindle sleeve movement to table a right & left b forward & backward |  | a 0.0008 IN 5" b 0.0008" IN 5" | |
| 8 | Squareness of table movement to spindle axis a right & left b forward & backward |  | a 0.001" IN 12" b 0.001" IN 12" | |
| 9 | Parallelism of table to ram saddle rotation |  | 0.0014" | |
| 10 | Parallelism of table to ram movement |  | 0.001" IN 12" | |



MODEL NO.: **CX601**

MFG.: _____

SERIAL NO.: _____

N.W.: _____ **KGS**

ITEM NO.: _____

G.W.: _____ **KGS**

DIMENSION: _____ **MM**

**MANUFACTURED IN CHINA
TO  'S SPECIFICATIONS**



MODEL NO.: **CX601**

MFG.: _____

SERIAL NO.: _____

N.W.: _____ **KGS**

ITEM NO.: _____

G.W.: _____ **KGS**

DIMENSION: _____ **MM**

**MANUFACTURED IN CHINA
TO  'S SPECIFICATIONS**