MODEL ML392C Ⅰ
MULTIPLE USE
WOODWORKING MACHINE

SERVICE
MANUAL
CAUTION

1 To adjust and maintain after stopping the machine and take the plug off the socket.

2 Fix the milling hood when carriage, surface planing, press planing, sawing and storage (see below Fig).

3 To mount the protective device during the milling operation.

4 To dismount sawblade if you have to operate the press planing, milling and drill for a long time.

5 Max. diameter of milling cutter is less than 104mm.

6 Let the milling feeding presser (used as anti-kickback jaw) and the outfeed presser press the workpiece dependably. The adjusted natural height should be lower than that of the level of milling cutter.
Model ML392C is a multiple use woodworking machine widely used for its multiple functions, such as surface planing, press planing, sawing, milling, and drilling. Its main advantages are not only multiple purposes in usage but also light in weight, simple operation, and easy maintenance. It can be used to process various kinds of woodpieces in house building, furniture making, decoration, wood arts, and crafts making.

1 Primary parameters

- **Max. planing width**: 200mm
- **Max. planing depth**: 3mm
- **Press planing scale**: 6~90mm
- **Min. press planing length**: 150mm
- **Max. sawing thickness**: 70mm
- **Max. sawblade diameter**: 250mm
- **Max. crosscut width**: 270mm
- **Arbor rotate speed**: 3,500 r/min
- **Press planing feed speed**: 6.5m/min
- **Milling cutter diameter**: 74~104mm
- **Milling thickness scale**: 6~60mm
- **Max. milling width**: 40mm
- **Max. drilling diameter**: 12mm
- **Max. drilling depth**: 90mm
- **Milling arbor diameter**: Φ 20mm
- **Motor power**: 1.5kW (220V 50Hz; 380V 50Hz)
- **Net weight**: 135kg
- **Overall dimension (L×B×H. cm)**: 92×131×97mm

2 Noise & Dust

2.1 Index of acoustic power

Caution: A long exposure to over 85 dB(A) may damage the operator's health, therefore the use of personal protections such as ear plugs, headphones, etc., is recommended. The measures of the sound power emitted in the different machining operations comply with the ISO3746 / 1979 standards.

**Surface Planing**

- Infeed 89.0dB(A)
- Max. level-LpEaK dB less than 110

**Sawing**

- Infeed 91.0dB(A)
- Max. level-LpEaK dB less than 110

**Drilling**

- Infeed 87.5dB(A)
- Max. level-LpEaK dB less than 110

**Milling**

- Infeed 89.5dB(A)
- Max. level-Peak dB less than 110
2.2 Residual Dust

<table>
<thead>
<tr>
<th>Activity</th>
<th>Average Value of Residual Dust</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Planning</td>
<td>0.32 mg/m³</td>
</tr>
<tr>
<td>Press Planning</td>
<td>0.12 mg/m³</td>
</tr>
<tr>
<td>Sawing</td>
<td>0.34 mg/m³</td>
</tr>
<tr>
<td>Drilling</td>
<td>0.15 mg/m³</td>
</tr>
<tr>
<td>Milling</td>
<td>0.46 mg/m³</td>
</tr>
</tbody>
</table>

3 Structure

This machine is specially designed with the structure of plate combined bench type. It is very convenient and reliable in usage and maintenance. It is mainly made up of front and back bench, right and left bearing base, right and left wall board, press planing table, sawing table, arbor, motor and driving system. The machine can be accommodated to either one phase or three phase motor (1.5kW / 1.1kW).

The main driving is by V-belt as chain and gear ways. The feeding of press planing is automatically. The anti-kickback jaw guarantee the security of operation. The cutter head is installed on the milling arbor. The milling protective device guarantee the security of milling operation.

4 Carriage & Installment

During carriage, using lifting hook (Fig.2). To keep the machine balance, handle carefully. Keep the machine in a wide and arid place. Fix the machine with ground bolt (see Fig.3) On behalf of carriage, some of the parts are packed with small packing box. In this case, the customer must mount the dismounted parts in accordance with the stages and means showed below.

As Fig.15 showing to mount the box base.

As Fig.4 showing, mount milling part first. Fix supporter 35 on left wallboard 36 with bolt 34. Let milling table 7 parallel with surface planing table, then insert column guide 23 into the hole of milling table 7. Screw the bolt 28 tightly and then mount presser 11 and push presser
8 onto the drilling table 9 and milling table 7 separately. Screw the level moving bolt 27 into sliding base 29 and make it connected with the open ended screw arbor base of the supporter 35.

![Fig.1 Overall Diagram](image)


See Fig. 5, mount the square iron 12 (two pieces) on the saw table 5 with bolt 14 (four pieces) and bushing 13 (four piece). Connect guide track 11 with square iron 12 by screw 9 (two pieces) and press plate 10 (two pieces).

Keep the guide track 11 vertically with saw spindle. As Fig. 1 showing, dismount the rubber bushing 12, mount the crosscutting saw table 5 and keep it moving flexible on the guide track 11. Mount the dial scale 3 and presser 4.

As shown in Fig. 6, mount the ruler base 3 on the front bench 1 with bolt 2 M6×12 (three pieces). Don’t fixed the bolt 2 first, put the guide 6 which connected with guide base 5 on the ruler base 3, lock them with lock lever 4, and check if the side of the guide is parallel with the saw blade. If it is not parallel, adjust the guide base 5 until they are parallel. After mounting, clean the bench and clean the no painting parts with petrol or abies oil.
5 Electric part

5.1 Electric diagram see Fig. 7 a or b

5.2 Caution
Pay attention to the voltage, frequency. They should be accommodated with the requirement and the difference should be not more than \( \pm 5\% \), and earthed dependably. You can use single phase or three phase motor for the machine. The connection of the electric should be carried by special technicians. If you stop the machine by SB2, in the situation of the machine is off, press SB1, you can start the machine in touch form. If you need uniform operation, you must replace SB2
6 Safety rules

6.1 GENERAL SUGGESTIONS

It is compulsory that the operator acquires the necessary training to use this kind of machine before starting any work and has the minimum age provided for by the law of the country in which he is working. Before starting the machine carefully read the entire handbook observing the suggestions given as well as the plates exposed on the machine.
Fig. 5 Crosscutting diagram

Fig. 6 Guide mounting and adjustment diagram
1. front bench 2. bolt M6×12 3. ruler base 4. lock lever 5. guide base 6. guide
THE USE OF ANY MACHINE TOOL WITH ELECTRIC DRIVE CAN INVOLVE RISKS OF DAMAGE TO PERSONS OR THINGS. IT IS THEREFORE NECESSARY TO ALWAYS PAY THE UTMOST ATTENTION!

MAKE SURE THAT THE STARTING, STOPPING AND EMERGENCY CONTROLS ARE DISPLACED.

USE THE MOST SUITABLE CLOTHING FOR THE WORKING ENVIRONMENT AVOIDING LARGE SLEEVES AROUND THE WRISTS, SCARFS, NECKTIES, BRACELETS, RINGS AND KEEP YOUR HAIR TIED UP WHEN USING THE MACHINE.

DURING THE USE OF THE MACHINE, ALWAYS ADOPT THE SUITABLE PERSONAL PROTECTION SUCH AS HEADPHONES OR EARPLUGS, ANTIDUST MASKS, PROTECTION GLOVES, SAFETY SHOES.

BEFORE STARTING WORK, CHECK THAT THE WORKPIECE DOESN'T HAVE METAL INSERTS, NAILS, OR KNOTS OR DANGEROUS CRACKS, ALWAYS MACHINE THE WORKPIECE IN THE DIRECTION OF THE VEINS.

NEVER MACHINE TOO SMALL WORKPIECES AS THEY ARE DAMAGED, NOR TOO BIG OR HEAVY ONES IN RESPECT OF THE FEATURES OF THE MACHINE, NOR TOO CURVED ONES.

TO MACHINE LONG WORKPIECES, ALWAYS INSTALL SUITABLE SUPPORTS WITH INFEED AND OUTFEED ROLLERS IN ORDER TO BALANCE THE WEIGHT OF THE WOOD.
6.2 Operator’s risks prevention

Although the recommendations stated in par. 6.1, the operator may be subject to the following risks.

- Cut risk during the adjustment, mounting and removal of the tools and during the cleaning phase of the machine: Use gloves, keys and special equipment and carry out the operations with the necessary caution.
- Cut risk during machining: Don't put your hands on the tools when they are rotating; use the guards supplied, use gloves and advance the workpiece slowly and carefully.
- Risk of projection of splinters and / or parts of tools: Use the guards supplied; make sure that they are adjusted and stable; use goggles and assume suitable positions. Always make sure that the mounted tools are fixed well, clean, integral and balanced.

7 The use of the machine and prepare before starting

7.1 Change of knives (See Fig.8)

The machine is supplied with 3 already set knives; however, each time it will be necessary to sharpen or replace them, operate the following way:

- Turn-off the machine and take the plug off the socket, shut off the resources.
- Loose the three screws 5 of tool presser 4 with the wrench of the machine. Then adjust the knives.
Keep the blade in the middle, put the ruler 1 on the back bench 2, rotate the arbor 6, adjust the length of the knives above the surface of the bench until it can reach the ruler 1 on the back bench 2. Adjust the blade and make it parallel with the back bench or 0.05mm higher than the back bench on basis of back bench 2. Then lock the three screws 5 of tool presser 4. Turn the middle one first, then the both sides. Repeat the operation and mount the three knives.

Caution:

- Never mix knives of different types and series.
- Sharpen the knives in a way that the sharpening height and the angle (38° ~ 42°) are always the same for each series.
- The knives can be sharpened up to a minimum height of 21mm (original dimensions 260×30×3mm).

7.2 Surface planing (Fig.9)

Surface planing occurs with one or more passes to straighten the first and the second side of a rough piece of wood. After obtaining the complete flatness on the first side, pass on to planing the second side at 90° to the previous one. Let the first side against the guide 7 and the second side against the infeed table 4, put the left hand in front of the right one, push the wood lightly. After the wood passing guard 3. Place left hand forward to press the wood on outtable. Push the wood by right hand continually. Never put hand under guard 3. You should move the guide to the right side of the table 4 and lock it by bar 6 make full use of bridge guard 3.

Caution: Let the smooth surface of guide 7 face leftwards (Fig.9) dismount sawblade. Drill bit cutterpan and milling hood. Mount saw cover and arbor cover. Let button 1 in the position of R (Fig.14).

- For planing operations on the wide side with a height of up to 60mm. Adjust guard 3 laterally against guide 7 and rest it on the workpiece.
Fig. 9 Surface planing diagram (for wide workpiece)

Fig. 10 Surface planing diagram (for thin and thick workpiece)

- For planing operations on the wide side with a height of over 60mm, adjust guards against the workpiece and rest it on the machine table (Fig. 10).
- Operator should stand at the position of Fig.9. Instructions for use
- Always advance the wood uniformly and slowly.
- Check that the wood doesn’t have splittings or dangerous knots and always pass the concave part towards the tables.
- Avoid to pass short and small-dimensioned workpieces and, if necessary, use special flat holders.
- For long workpiece use supports in outfeed.
- Keep the knives sharp and don’t have cracks.
- For any sudden trouble or accident, press the E-button 11.
- At the end of work, turn-off the machine and clean the table.
- At the end of work, cover the knives with guide 3.

7.3 Press planing (Fig.11)

![Press planing diagram](image)


This operation is necessary for machining the third and fourth side of the wood piece which is already planed on the first and second side in order to obtain the finished workpiece.

Preparation
- Turn-off the machine and make sure that nobody may start it accidentally.
- Remove the drill bit and sawblade, mount spindle hood 1 and cover 9 (Fig.9)
- Cover the arbor 6 with bridge guide 5. The bridge guide is 3~4cm apart from the arbor.
- Turn-up the guide 10.
- Check that anti-kickback jaw 8. They should be free to fall down with their own weight. If not, clean them with brush.
- Adjust the press planing table 3 according to the workpiece height to be obtained. Lock the table well after adjustment. For finishing passes, give a removal of about 1mm.
- Insert the wood driving rollers by pulling out lever.
- The operator should stand at the position of Fig.11.
- At the end of work, separate the driving gears.

Instruction for use.
- Check that the wood doesn’t have cracks or dangerous knots.
- Pass the machined part of the wood on the press planing table.
- Don't machine too short workpieces, the min. length is 150mm, while for long ones use outfeed supports.
- Keep the knives sharp.
- Button 1 should be positioned in position. For any sudden trouble or accident, press the button 2 (Fig.14).
- At the end of work, turn-off the machine, take the plug off the socket, clean the machine.

7.4 Sawing (Fig.12)

![Fig.12 Sawing diagram](image)

1. spindle hood 2. bridge guide supporter 3. bridge guide 4. infeed table 5. ruler base 6. lock bar 7. sawing & planing guide 8. lock bar 9. saw cover

Blade changing
- Turn-off the machine and take the plug off the socket, dismount saw cover, raise sawing table, wear leather gloves, loose blade lock nut.
- Remove flange and blade, clean it well.
- Mount blade and lock nut again, screw the lock nut tightly, down the bench and lock it.
- Center the splitter knife. If not, loose the fixing nut, adjust it.

**Preparation**
- Turn-off the machine and take the plug off the socket.
- Mount spindle hood 1 and guide 3, then cover the guide 3.
- Mount saw cover 9 on the splitter knife. Adjust the knife and position it at 2mm from the blade, tighten the lockbar again.
- Adjust guide 7 according to the degree of ruler 5. Guide 7 is used for parallel sawing. Lock guide 7 by bar 6, making the larger surface of guide 7 towards right side.

**Caution:** Make the turn-button 1 in the position of R (Fig.14). Clip the workpiece well when angle cutting operation (Fig.5).
- Connect the chip suction plant with cover 9 and the below sawing dust hole, the hole Φ of cover 9 is 40mm, the below sawing dust hole is Φ80mm.
- Take the position as Fig.12 showing during operation.

**Instruction for use**
- Wear goggles.
- For too short workpiece, use push board please.
- For long workpiece, use outfeed supports.
- Check that the wood doesn’t have cracks or dangerous knots.
- Make the wood advance uniformly and slowly.
- Remove off-cuts and cut pieces in contact with the saw blade by means of wood and never use your hand to do so.
- Do not remove the workpiece when the cut already started.
- To obtain clean cuts without chippings, use blades having short pitch tooth.
- Keep knives sharp enough.
- Be sure the blade is in good condition.
- Press the E-button if there is something wrong.
- Mount sawing cover 9 well enough.
- At the end of work, turn-off the machine and take the plug off the socket, maintenance the machine.
- Dismount saw blade, mount saw cover 9 as Fig. 9 showing. Cover the arbor by guide 3.

**8 Milling** (Fig.4)

8.1 Preparation
- As Fig.13 showing, lock guide 8 by lockbar 7. Let the cover 6 fixed onto guide 8 cover the arbor completely. Fix the hood 10 onto the splitter knife by lockbar 9.
- Dismount arbor hood 1 (Fig.9).
- Adjust the cutters, make the sides of the cutters align with the side surface of the toolpan,

Fig.13Drilling Protective diagram
let the cutters extend over the toolpan at the same height, when straight edge cutter need to be mounted, the diameter of cutter edge is 74mm, when shaped edge cutters need to be mounted, the max. diameter of tool edge is not more than 104mm.

- Mount toolpan 4 and spacer 5 in proper order and then lock by nut 6.
- Adjust the position between bench and tool pan according to the width of the workpiece, then tighten the bench.
- Mount milling hood 3, let the milling feeding presser (used as anti-kickback jaw) and the outfeed presser press the workpiece dependably. The adjusted natural height should be lower than that of the level of milling cutter.
- Change-over switch 1 in the position of R (Fig.14). Infeed direction is the same as press planing direction. The milling depth is about 3mm. The Max. depth is not more than 5mm.
- The operator should stand at the left and back side of the machine.

8.2 Instruction for use

- Wear goggles.
- Keep the knives sharp, clean and the same weight.
- Check that the wood doesn’t have splitting or dangerous knots.
- Always advance the wood uniformly and slowly.
- Never low the table before the spindle stops completely.
- Press button 2 (Fig.14) if there is something wrong.
- Be sure to keep the arbor in well condition and covers in good position and fixed well.
- At the end of work remove the cutter, clean chips, mount spindle hood.

9 Drilling

Hole or half-holes can be carried out
- Turn-off the machine and take the plug off the socket.
- Cover the arbor by cover.
- Mount drill bit 1 and tighten by lock screw (Fig.13).

Caution: The max. Φ12mm drill bit clockwise is permitted.
● Mount hood 2 and fix it by screw 3 (M8×12 see Fig.13).
● Make marks on workpiece before drilling, then clip the work piece on bench.
● Adjust the height and position of bench 7 by handwheel 32 (Fig.4).
● Operate the lateral and longitudinal handles.
Caution: During waist shape hole drilling operate the lateral handle only
● Start the machine, stand at the left side of the machine.

Instruction for use
● Be sure to clip the woodwell. Never clip too long woodpiece. Avoid dangerous knots.
● Wear working clothing. Advance wood uniformly and slowly.
● Press button 2 (Fig.14) if there is something wrong.
● Keep the bit sharp enough.
● At the end of work, turn-off the machine, remove the bit. Mount spindle hood.

10 V-belt tension adjustment

As shown in Fig.1, loose bolt 19, 22, 23 (each two pieces), rotate motor 1 around bolt 23 to make the V-belt 24 tension lock the bolt 22, 23. Move the transfer bearing base 20 to make the V-belt 21 tension.

Fig.15 box-type base fixing diagram

1. bolt M8×25 2. spacer 3. cover 4. bolt M6×10 5.nut 6. spacer6-140HV 7. front frame plate
8. bolt M6×16 9 sheet 10. door 11. base plate 12. back frame plate
11 Maintenance & attendance

11.1 General maintenance
● Take the plug off the socket. Completely shut off the electric resource.
● Clean the wood chips after work. Don’t use iron brush on the anti-kickback jaws.
● Lubricate rotate part every month, apply grease on chain, gear, nut and bushing with hairbrush.
● Cover the V-belt to avoid polluted by oil when maintenance.
● When the table is not used for a long time, please brush the anticorrosive paint.

11.2 Special maintenance
● This work should be operated by special man, including some accident.
● Take the plug off the socket before operating, completely shut off the electric resource.
● Check the V-belt, motor every 500 hours, Dismount the V-belt hood when check. If something is wrong, please repair or change.

12 Major Standardization Products & Fragile Parts

<table>
<thead>
<tr>
<th>Name</th>
<th>Specifications</th>
<th>Amount</th>
<th>Mount position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radial ball bearing</td>
<td>80204</td>
<td>2</td>
<td>Planing arbor</td>
</tr>
<tr>
<td>Radial ball bearing</td>
<td>60203</td>
<td>4</td>
<td>Thickness feed drive</td>
</tr>
<tr>
<td>V-belt</td>
<td>A900</td>
<td>1</td>
<td>Thickness feed drive</td>
</tr>
<tr>
<td>V-belt</td>
<td>A800</td>
<td>2</td>
<td>Plane drive</td>
</tr>
<tr>
<td>Planer tool</td>
<td>210×30×3</td>
<td>3</td>
<td>Planing arbor</td>
</tr>
<tr>
<td>Saw blade</td>
<td>250×3×25.</td>
<td>1</td>
<td>Planing arbor</td>
</tr>
</tbody>
</table>

13 Tools to be used

The following tools are to be used during adjustment and maintenance.

<table>
<thead>
<tr>
<th>Name</th>
<th>Specification</th>
<th>Name</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flat head screw driver</td>
<td>100×6 75×4</td>
<td>Double ends solid wrench</td>
<td>14×17; 10×12</td>
</tr>
<tr>
<td>Crosshead screw driver</td>
<td>100×8</td>
<td>Monkey wrench</td>
<td>250×30</td>
</tr>
<tr>
<td>Allen key</td>
<td>5; 6; 8</td>
<td>Lead weigh</td>
<td>0.5kg</td>
</tr>
</tbody>
</table>
## 14 Machine Faults & Repairing Measures

Take the plug off the socket before repairing and shut off the electric source

<table>
<thead>
<tr>
<th>No.</th>
<th>Fault</th>
<th>Reason</th>
<th>Repairing Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The motor does not revolve although its switch is turned on</td>
<td>a. AC supply not electrified or the fuse has been blown</td>
<td>a. Check the power source and fuse</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. The wire connecting is relaxed or broken</td>
<td>b. Check the wire</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c. Contact fault of the switch</td>
<td>c. Check the switch</td>
</tr>
<tr>
<td>2</td>
<td>The motor is over heated</td>
<td>a. There are short inside the motor</td>
<td>a. Check the motor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. The motor is overloaded</td>
<td>b. Reduce the amount to feed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c. AC supply is under voltage</td>
<td>c. Check the supply voltage</td>
</tr>
<tr>
<td>3</td>
<td>Bearings are over heated</td>
<td>a. Bearings has been insufficiently</td>
<td>Apply or exchange lubricant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. The bearing inside is dirty</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Rotation is under speed</td>
<td>a. AC supply is under voltage</td>
<td>a. Restore the supply voltage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. The belt is loose</td>
<td>b. Tauten the belt</td>
</tr>
<tr>
<td>5</td>
<td>Planing quality gets worse</td>
<td>a. The tool edge is dulled or there are gaps</td>
<td>a. Sharpen the planer tool</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. Tools are fitted or adjusted improperly</td>
<td>b. Refit the planer tool</td>
</tr>
<tr>
<td>6</td>
<td>The machine is charged</td>
<td>Insulation of certain parts of the electric system is impaired and electricity leaked away</td>
<td>Repair or replace them</td>
</tr>
</tbody>
</table>