



# STE-PS33

## IGM PS33 Spiral Portable Thickness Planer Manual



Manufacturer

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STE-PS33 IGM PS33 Spiral Portable Thickness Planer Manual EN v1.02.02 A4ob



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## **EN – English**

### **Manual**

Dear Customer,  
thank you for the confidence you have placed in us with the purchase of your new IGM machine. This manual was prepared for the owner and operator of **IGM PS33 Spiral Portable Thickness Planer** to promote safety during setup, operation and maintenance. Please read carefully and understand the information contained in this manual and accompanying documents. To obtain maximum service life and performance, use the machine according to these instructions and safety guidelines. Observe work safety.

We wish you a lot of work satisfaction and joy when working with the IGM PS33 Spiral Portable Thickness Planer.

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## 1. ES/EU Declaration of Conformity

Manufacture: IGM nástroje a stroje s.r.o., Ke Kopanině 560, 25267 Tuchoměřice, Czech Republic  
We as manufacturer declare that:



Product(s): Thickness Planer IGM  
Type: PS33

complies with the provisions of European Directives:

- Machine Directive 2006/42/ES
- Electromagnetic compatibility (EMC) Directive 2014/30/EU

The product(s) are manufactured in accordance with the following designated standards:

EN ISO 12100:2011, EN 61029-1 ed.3, EN 61029-2-3, EN ISO 11201: april 2010, EN 55014-1 ed4.4:2021, EN 55014-2 ed.2:2021

EC type examination certificate No. ES/11/001/23/083

Responsible for the Documentation: Head of Product Management,  
IGM nástroje a stroje s.r.o., Ke Kopanině 560, 25267 Tuchoměřice, Czech Republic

Place and date of issue: Tuchoměřice, 4.7.2023

Signed on behalf of and in name of manufacture: Ing. Ivo Mlej, CEO



### 1.1 Warranty

IGM always strives to deliver a high-quality and efficient product. The warranty is governed by the valid terms and conditions of IGM.

## 2. Specification

Machine Dimensions (LxWxH):	340 x 615 x 555 mm
Machine Weight:	34 kg
Package Dimensions (LxWxH):	415 x 660 x 545 mm
Package Weight:	39 kg
Machine Dimensions with Tables Down (LxW):	850 x 615 mm
Noise Emission:	96 dB
Power:	230V / 50Hz / 1 Phase
Power Cord:	3 m, 1,5 mm <sup>2</sup>
Recommended Breaker:	10 A, tripping characteristic D
Reference Current:	8,3 A
Motor:	1800 W
Motor Speed:	21 000 RPM
Motor Power:	Belt Drive
Cutterhead Lock:	Yes
Dust Port Diameter:	62 mm
Maximal Planing Width:	330 mm
Minimal Workpiece Length:	120 mm
Minimal Workpiece Thickness:	3,2 mm,
Maximal Workpiece Thickness:	156 mm
Maximal Depth of Cut at Width 330 mm:	0,8 mm
Maximal Depth of Cut at Width 229 mm:	1,6 mm
Maximal Depth of Cut at Width 153 mm:	2,4 mm
Maximal Depth of Cut at Width 76 mm:	3,2 mm
Cutterhead:	spiral, 4 spirals
Cutterhead Diameter:	46 mm
Cutterhead Speed:	9000 RPM
Feed Rollers Speed:	7,9 m/min
Reversible Knife:	carbide, replaceable, 36 pcs
Knife Size:	15x15x2,5 mm, R=150

## 3. Safety

### 3.1 Intended Use

This machine is designed for planing wood only. Planing any other materials is prohibited. Use only natural wood. Do not insert MDF, OSB, plywood, laminates or other synthetic materials in the machine.



Proper use includes compliance with the instructions given in this manual. The machine may be operated only by a person familiar with the instructions given in this manual and machine operation. The machine may be used only in a perfect technical condition. When working, all safety covers must be mounted. In addition to instructions given in this manual, always follow general regulations applicable in your country. The operator is liable for improper or unauthorized use.

### 3.2 General Safety Instructions

**Warning!** Read all instructions and safety guidelines. Failure to follow safety instructions may result in damage to the machine and serious injury to the operator. Keep the manual for future reference.

- The machine may be dangerous if not used properly. Read the manual carefully and make sure you understand all the instructions.
- Keep children and pets away from packaging materials supplied with this machine.
- Place the machine on a stable and well-lit surface. There must be sufficient space around the machine for safe operation.
- Check the technical condition of the machine before work. Do not start the machine when damaged or faulty. Repair or replace damaged parts immediately. Repairs may be carried out only by a qualified person. Use only original spare parts.
- All safety covers must be mounted before operation. Replace damaged covers immediately.
- The machine may be used, assembled, and maintained only by persons who are familiar with its operation and are aware of potential danger. No changes to the machine may be made!
- Carry out maintenance regularly.
- Keep workplace and the machine clean. Keep workplace well lit. Remove all tools from the machine and surroundings before turning the machine on.
- Carry out assembly, repairs and maintenance only when the machine is disconnected from the power supply.
- Prevent unintentional start of the machine. Before connecting the machine to the power supply, make sure the switch is in OFF position.
- Make sure circuit requirements specified in this manual are met.
- Take care of your safety when operating the machine. Long hair, loose clothing and jewellery may cause injury. Wear suitable work clothing, footwear and eye, ear and respiratory protection.
- Do not use gloves when operating the machine.
- Do not operate the machine if you feel tired, ill or under the influence of drugs or alcohol.
- Watch your hands and fingers. Always use both hands when operating the machine.
- Do not lean over the machine. Always maintain balance and stand on firm and stable surface when operating the machine.
- Keep children and other persons from moving freely around the workplace. Keep the machine out of reach of children and unqualified persons. Do not allow anyone who is not familiar with the machine and this manual to operate the machine.
- Never leave a running machine unattended. After you finish your work, switch off the machine and disconnect it from the power supply.
- Do not leave the machine in a damp environment and do not expose it to rain.
- Do not overload the machine.
- Do not operate the machine near flammable liquids or gases.
- Keep the motor fan clear.

### 3.3 Symbols



Warning of general danger



Warning of electric shock



Warning of injury caused by moving parts of the machine



Do not operate the machine under the influence of drugs or alcohol!



Do not use gloves when operating the machine!



Read the instructions and safety guidelines carefully!



Wear ear and eye protection when operating the machine!



Wear respiratory protection when operating the machine!



Wear suitable work clothing and footwear when operating the machine!



Switch off and disconnect the machine from the power supply when not in use, before assembly and maintenance!



Workpiece feed direction



Cutterhead rotation direction



Lock or release the cutterhead to adjust height



Each full turn of the crank changes the cutterhead height by 1,6 mm



Maximal depth of cut at a given workpiece width



Depth of cut indicator



Depth stop to preset workpiece thickness when repeat planing



Scan the QR code to find the manual



CE mark: The product is in compliance with EEA directives



Protection class I. of electrical appliances



Recycle package materials



Do not dispose of the device in the municipal waste

### 3.4 Additional Safety Instructions for Thickness Planers

**Caution!** Dust containing harmful chemicals such as lead from lead-based paints or arsenic and chromium from chemically treated lumber can be produced during operation. Work in a well-ventilated area and wear approved protective equipment such as face mask or respirator. Observe safety regulations applicable in your country.

- Wear respiratory protection such as dust mask when operating the machine.
- Before placing the machine on a workbench, make sure it is stable and can hold both the machine and the workpiece.
- Always lock the cutterhead before operating the machine!
- Use only natural wood!
- Do not overload the machine by excessive depth of cut.
- Never feed the workpiece before turning the machine on! Allow the cutterhead to reach full speed before feeding.
- Watch out for kickback. Kickback is usually caused by poor workpiece selection, improper feeding, setup or maintenance. Workpiece can be ejected and endanger operator or persons in the workplace.
- Use sharp knives only! Replace dull or damaged knives immediately.
- Do not plane more than one workpiece at a time!
- Examine the workpiece before operation! Do not use workpieces with large or loose knots, nails, staples or other unsuitable

material. Use stable workpieces only. If you have any doubts about the workpiece condition, do not use it.

- Slightly deformed workpieces should be planed by hand before feeding. When feeding, such workpieces must be planed with the raised side up (concave shape).
- Use calliper for precise workpiece thickness.
- The workpiece must rest securely on the table during operation.
- If a workpiece gets stuck in the machine, switch the machine off and disconnect it from the power supply! Then raise the cutterhead using height adjustment crank and remove the workpiece.
- Do not exceed maximal and minimal workpiece dimensions specified in the Specification section.
- Planing across wood grain is strenuous for the machine and can cause kickback. Always plane in the grain direction or at a slight angle.
- Remove excess glue when planing glued workpieces.
- Use support on both sides or ask for help when planing long workpieces.
- Do not use wood with high moisture. Wood with moisture over 20 % or wood stored in damp conditions may be difficult to plane and can cause corrosion and excessive wear of the machine.
- Stand on one side of the machine when operating.
- Use full width of the machine when planing for even wear of the knives.

### 3.5 Power Supply

**Warning!** Any modification to the electrical installation may be carried out only by a qualified electrician in accordance with all applicable regulations.

#### Full load current at 230V: 8,3 A

The full load current does not indicate the maximum value that the machine can draw. If the machine is overloaded, it will draw more power beyond the full load. Damage, overheating or fire may occur if the machine is overloaded for an extended period of time. Avoid overloading the machine!

**Caution! Disconnect the machine from the power supply!** Do not connect the machine to the power supply until assembly is completed.

#### Circuit Requirements

This machine is designed to operate on a grounded power supply that meets the following requirements:

Voltage: 220V ~ 240V, 50/60 Hz

Phase: single phase

Power circuit: 10 A

A power circuit includes all electrical equipment between the machine and the breaker box or fuse panel in the building. The power circuit used for this machine must be sized to safely handle the full load current for an extended period of time.

**Warning!** Circuit requirements in this manual apply to a dedicated circuit where only one machine will be running at a time. Consult a qualified electrician before connecting the machine to a shared circuit. Make sure the circuit is properly sized for safe operation.

#### Grounding and Plug Requirements

This machine is equipped with a grounded plug. Insert the plug only into a matching outlet that is properly installed and grounded in accordance with all local regulations. Do not modify the provided plug!

The wire with green insulation (with or without yellow stripes) is the grounding wire. Do not connect the grounding wire to the power supply if repair or replacement of the power cord or plug is necessary. Repair damaged cord or plug immediately. Repairs may be carried out only by a qualified electrician.

**Caution!** Improper grounding and connection of the machine to the power supply may result in an electric shock, damage or fire.

### 3.6 Environment

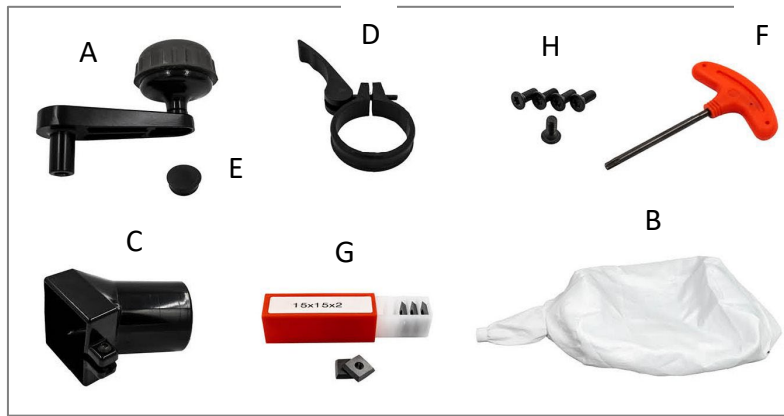
Do not dispose of the device in the municipal waste. Electronic devices must be collected and handed in for proper recycling. Recycle package material and other accessories.



## 4. Machine Description

Carefully observe the images below and familiarize yourself with the package contents and listed machine parts and features.

### 4.1 Package Contents



#### Package contents:

Thickness Planer

A. Cutterhead elevation crank

B. Dust bag

C. Dust port (diameter 62 mm)

D. Dust bag clamp

E. Crank cap

F. Torx wrench T25

G. Spare knives 5pcs

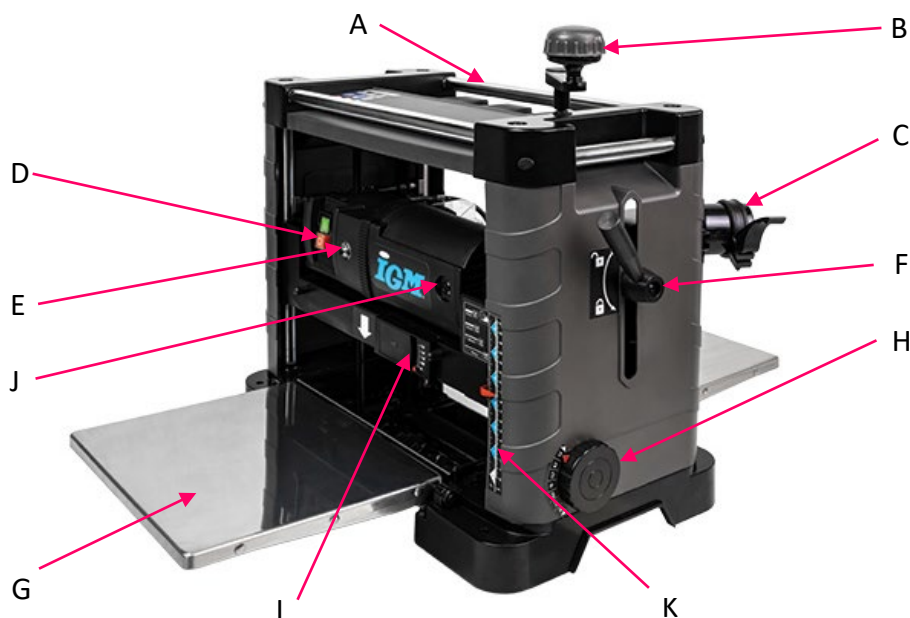
H. Spare knife screws T25 M5x12 5pcs

I. Screws and nuts (not shown)

- Screw M5 8x20

- Washer 5 mm

#### 4.2 Parts of the Machine



**A. Return rollers:** Used to slide the workpiece back to the operator when repeat planing.

**B. Cutterhead height adjustment crank:** Raises and lowers cutterhead. Turning the crank clockwise lowers the cutterhead. Turning the crank counterclockwise raises the cutterhead. Each full turn of the crank changes the height by 1,6 mm.

**C. Dust port:** Used to connect to a dust collection or to connect the dust bag.

**D. ON/OFF switch:** Press the green button to turn the machine on. Press the red button to switch the machine off.

**E. Reset button:** Used to restart the machine. The button will pop out when the machine is overloaded or overheated.

To restart the machine, press the red OFF button. Wait a couple of minutes to allow the motor to cool. Press the reset button. If the reset button pops out again, wait longer to allow the motor to cool completely. Then try again.

**F. Cutterhead lock lever:** Turn the lever counterclockwise to lock the cutterhead. Turn the lever clockwise to release the cutterhead



and adjust the height. Always lock the cutterhead before feeding the workpiece into the machine!

**G. Table:** Used to feed the workpiece. Folding tables can be folded up and down.

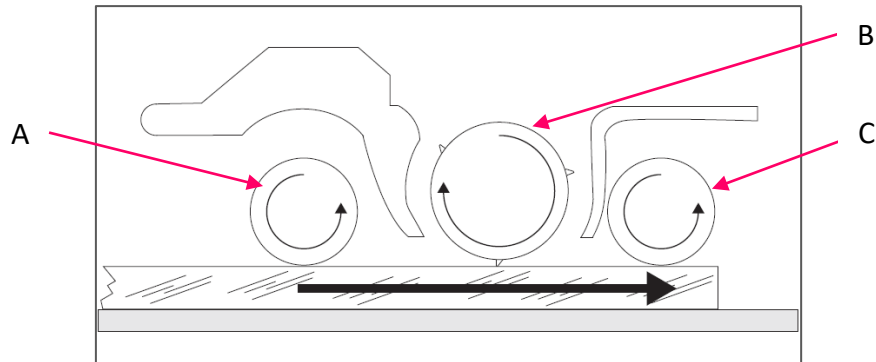
**H. Depth stop:** Used to preset depth of cut when repeat planing. Red arrow on the stop indicates the workpiece thickness after planing.

**I. Depth of cut indicator:** Indicates depth of cut (0 mm – 3,2 mm) when the workpiece touches the ball at the bottom of the indicator.

**J. Motor brushes:** The motor is equipped with two long life brushes (on the front and back side of the motor). Motor load and usage frequency affects the brush life. Worn brushes can cause intermittent operation and difficulty starting the motor.

**K. Cutterhead height scale:** Indicates the cutterhead height above the table. Red arrow indicates workpiece thickness after planing.

#### Material feed



**A. Infeed roller:** Rotates in the direction of feed. Feeds the workpiece towards the cutterhead.

**B. Cutterhead:** Rotates opposite the direction of feed. Equipped with reversible knives that remove material from the workpiece.

**C. Outfeed roller:** Rotates in the direction of feed. Pulls the workpiece out of the planer.

#### 4.3 Noise Emission

Sound pressure level A idling: 96 dB

Sound power level A in operation: 103 dB

#### 5. Setting Up the Machine

Approximate assembly and setup time: 10 min

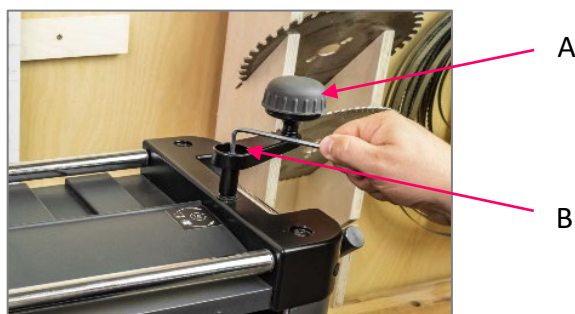
##### 5.1 Unpacking

When unpacking, separate the machine and all supplied parts from the packaging materials. Check that no parts have been damaged. If damage has occurred as a result of transport, contact your supplier immediately.

##### 5.2 Assembly

Make enough space around the machine before you start the assembly. The machine is partially assembled. The cutterhead height adjustment crank and dust port must be installed before operation.

1. Place the cutterhead height adjustment crank (A) on the protrusion and secure with M5 8x20 screw and 5 mm washer. Do not tighten by force.
2. Install the crank cap (B).



3. Slide the dust port (A) onto the fan cover. Secure the dust port with bolt and nut.







### Workbench Mount

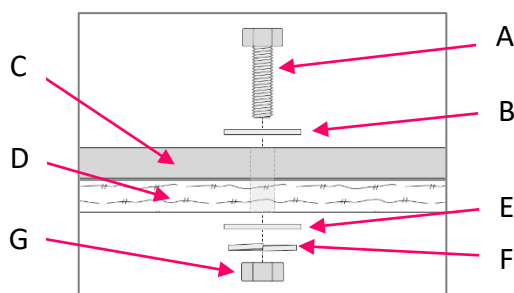
Number of mounting holes: 4

Diameter of required bolt: M8

The base of this machine has mounting holes that allow it to be attached to a workbench or other surface to prevent it from moving during operation and causing injury or damage.

It is best to make a through mount in the workbench (see below). Hex bolts, washers and hex nuts are used to secure the machine.

#### Through mount



A – hex bolt

B – flat washer

C – machine base

D – workbench

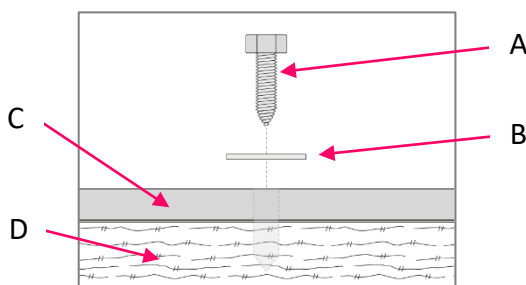
E – flat washer

F – lock washer

G – hex nut

Another mount option is to attach the machine directly to the workbench using screws and washers (see below).

#### Direct mount



A – wood screw

B – flat washer

C – machine base

D – workbench

### Dust Collection

Recommended airflow at dust port: 255 m<sup>3</sup>/h (150 CFM).

Do not confuse this recommended airflow with the airflow of a dust collector. To determine the airflow at the dust port, you must consider the following variables: (1) dust collector airflow rating, (2) the extraction hose type and the distance between the collector and the machine, (3) the number of branches and turns, (4) the number of additional paths throughout the dust collection system. Calculation of these variables is beyond the scope of this manual. Consult an expert.

You can connect the machine to a dust collection system instead of the dust bag.

Connecting the extraction hose:

1. Remove dust bag from the dust port.
2. Fit 63 mm extraction hose to the dust port and secure with hose clamp.
3. Ensure that the hose is tightly attached.

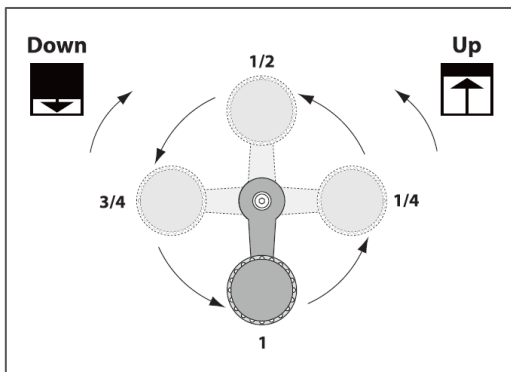


### 5.3 Setup

#### Setting the Depth of Cut

The depth of cut indicates the amount of material removed. Adjust the depth of cut by rotating the cutterhead height adjustment crank. Each full turn of the crank changes the height by 1,6 mm. Turning the crank clockwise lowers the cutterhead. Turning the crank counterclockwise raises the cutterhead.

Although the correct depth of cut varies according to hardness of the wood and the size of the workpiece, we do not recommend the maximum depth of cut to exceed 1,6 mm per pass. More passes with lower depth of cut will produce better end results and will not overload the machine. The depth of cut indicator should only verify the depth of cut and should not be used as a precision gauge. The cutterhead height adjustment crank has a slight backlash when making a first turn. This should be taken into account when adjusting the cutterhead height.



Down – lowering the cutterhead

Up – raising the cutterhead

1/4 turn = 0,4 mm

1/2 turn = 0,8 mm

3/4 turn = 1,2 mm

1 turn = 1,6 mm

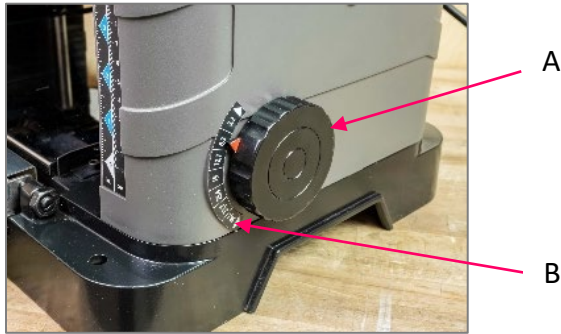
#### Removing the Top Cover and Side Panels

The same disassembly must be done for several maintenance/setup procedures. To remove following tools are needed: hex key 4 mm, 5 mm, flat head screwdriver 4 mm.

1. Remove depth stop from the machine. The stop is securely mounted and may require greater force to remove.
2. Remove the cutterhead height adjustment crank. Remove the lock ring from the crank shaft.
3. Remove the cutterhead lock lever using the hex key.
4. Remove four screws on the top cover using the hex key. Remove the top cover and side panel with the depth stop.
5. Once maintenance/setup is complete, reassemble the side panel, top cover and lock ring, attach the crank, stop and lever.

#### Depth Stop Setup

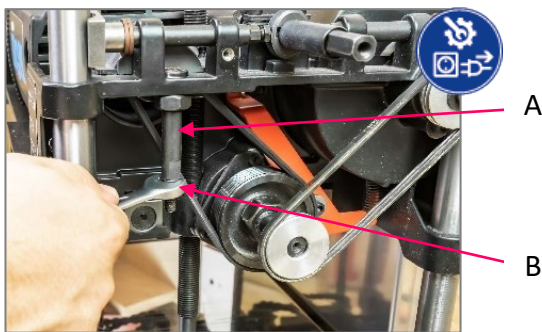
Depth stop (A) on the right side of the machine allows you to preset the depth of cut for consistent repeat planing. The scale (B) indicates the workpiece thickness. Raise the cutterhead, select preferred thickness by rotating the stop, then lower the cutterhead until it rests on the preset stop. Do not use excessive force on the stop.



### Depth Stop Calibration

To calibrate following tools are needed: wrench 10 mm; hex key 3 mm, 4 mm, 5 mm

1. Disconnect the machine from the power supply!
2. Remove the top cover and side panel, see Removing the Top Cover and Side Panels.
3. Loosen the nut (B) and adjust the height adjustment screw (A) – up to increase / down to decrease the depth of cut.



4. Tighten the nut.
5. Attach the side panel, crank and depth stop. Turn the height adjustment crank until the cutterhead rests on the stop. Compare the stop scale with the cutterhead height scale.

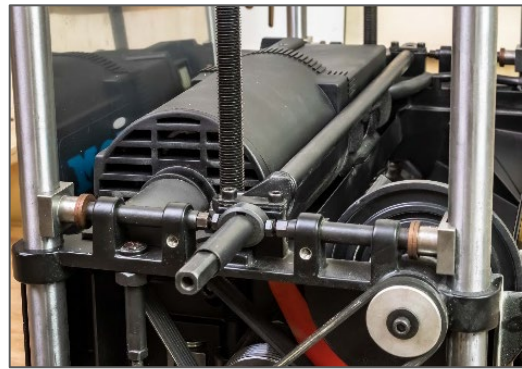
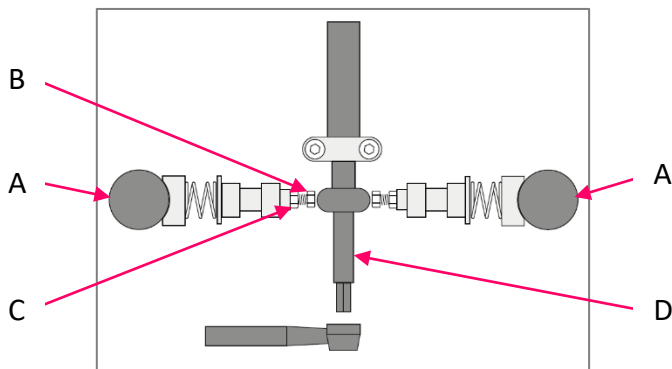


6. Repeat steps 3-5 until both scales match.
7. Once calibration is complete, reassemble the top cover, lock ring and cutterhead lock lever.

### Cutterhead Lock Lever

The pressure that the lever (D) exerts on columns (A) can be adjusted. The lever must exert even pressure on both columns to achieve consistent planing. To adjust following tools are needed: wrench 8 mm, hex key 4 mm, 5 mm.

1. Disconnect the machine from the power supply!
2. Release the cutterhead and lower it all the way down.
3. Remove the top cover and side panel, see Removing the Top Cover and Side Panels. This will reveal eccentric mechanism on each side of the machine.
4. Use the screw (B) and nut (C) to adjust the pressure. Turning the screw towards the column decreases pressure, turning away from the column increases the pressure. Turn both bolts evenly.

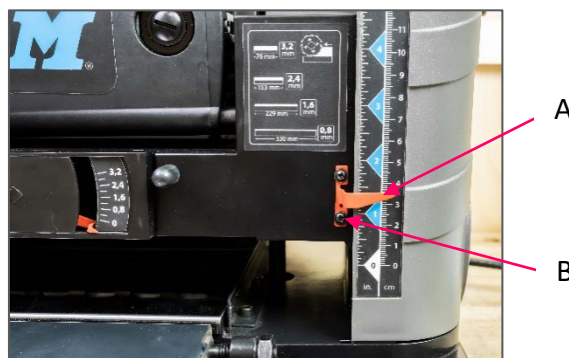


5. Locking the cutterhead should then be easy. Once locked, the cutterhead should not move even if you turn the height adjustment crank. Never use force to adjust the cutterhead height, especially when it is locked!

#### Cutterhead Height Scale

The scale is correctly set at the factory and can be calibrated if necessary.

1. Prepare a piece of wood with same thickness on both sides. This piece will act as a reference.
2. Use calliper to measure the thickness.
3. If there is a difference between the thickness of the piece and reading on the scale, loosen the screw (B) and adjust the position of the red arrow (A) correctly. Then retighten the screw.



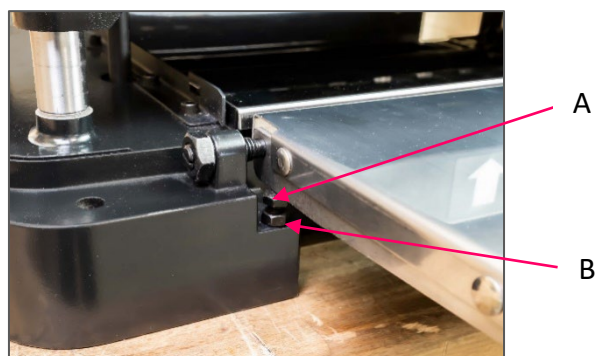
#### Feed Rate

This machine has one feed rate set from the factory. The value is specified in the Specification section. Infeed and outfeed rollers move the workpiece through the machine and simultaneously push it onto the table.

#### Aligning the Table

Folding tables height can be adjusted. Check the height periodically to ensure proper contact between the workpiece and the cutterhead. To align following tools are needed: 2x wrench 10 mm, ruler or a straight piece of wood.

1. Check the alignment of the table with a ruler.
2. To align, loosen the bolts (A) and nuts (B) under folding tables. Bolt and nut are located on both the left and right side.



3. Loosen the nut on the left and right side and adjust the height of the table by turning the bolt. Check the alignment.
4. Once the table is aligned, tighten the nut.

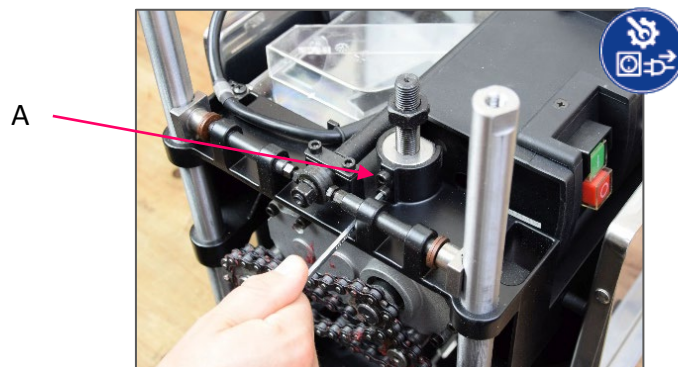
#### Aligning the Cutterhead and Table

Cutterhead and table alignment is correctly set at the factory and can be adjusted if necessary. To align following tools are needed: hex key 4 mm, 2 workpieces with minimum length 305 mm. The workpieces must have the same height.

1. Disconnect the machine from the power supply!
2. Place the workpieces on each side of the table. Lower the cutterhead until it rests on the workpieces. Accurate alignment is only achieved when both workpieces have exactly the same height.



3. Check the contact between the cutterhead and the workpieces. If the cutterhead rests on both workpieces evenly, no adjustment is needed. If the cutterhead rests only on one workpiece, continue with step 4.
4. Lock the cutterhead (using the lock lever), then loosen the cutterhead adjustment screws (A) on the left side of the cutterhead.



5. Raise or lower the cutterhead using the height adjustment crank until it rests on both workpieces evenly.
6. Tighten the screws and release the cutterhead (using the lock lever).
7. Raise the cutterhead slightly then lower it until it rests on both workpieces evenly. If the cutterhead still does not rest on both workpieces evenly, repeat steps 3-6.
8. Test the alignment by planing any workpiece. Check whether the workpiece is planed evenly.

#### 5.4 Operation

**Warning!** If you are inexperienced with this type of machine, it is strongly recommended that you seek further instructions outside this manual.

1. Check whether the workpiece is suitable for planing.
2. Wear personal protective equipment such as goggles, respirator, earmuffs or face shield.
3. Place the workpiece on the table and adjust the cutterhead according to the workpiece thickness and depth of cut.
4. If all safety guidelines have been met, turn on the machine.
5. Stand on one side of the machine. Slowly feed the workpiece into the machine until the feed roller start to move it further.

**Warning!** Infeed and outfeed rollers control the feed rate. Never push or pull the workpiece. If the cut is too deep and the machine stalls, reduce the depth of cut immediately.

6. The outfeed roller pushes the workpiece out of the machine. Once the workpiece stops moving, remove it. If you repeat plane, use the return rollers.
7. Switch the machine off and disconnect it from the power supply when you have finished.

#### Wood Types

Wood type and its condition significantly affect the depth of cut the machine can handle without any issues.

The table below shows the so-called Janka hardness scale of the most commonly used wood types. The higher the number, the harder the wood, and the less material should be removed per pass.

Type	Hardness
------	----------



Ebony	3220
Red mahogany	2697
Rosewood	1780
Red pine	1630
Sugar maple	1450
White oak	1360
White ash	1320
American beech	1300
Red oak	1290
Black walnut	1010
Teak	1000
Black cherry	950
Cedar	900
Sycamore	770
Douglas fir	660
Chestnut	540
Hemlock	500
White pine	420
Basswood	410
White pine	380
Balsa	100

## 6. Maintenance and Inspection

**Caution!** Disconnect the machine from the power supply before maintenance and inspection. Carry out maintenance regularly.

**Before each use, check** for loose screws, damaged knives and damaged or worn out cord and plug. Do not use the machine until all defects have been fixed. Vacuum dust and other scraps from the machine and surrounding area **after each use**. Wipe the machine using a dry cloth. If resin has built up, use resin remover.

**Carry out the following tasks on a monthly basis:**

- Check whether the knives are sharp.
- Clean chains, sprockets and bolts of dust and grease. Lubricate them.
- Check motor brushes.
- Clean infeed and outfeed rollers.
- Check the belt.
- Remove the top cover and fan cover to thoroughly clean all accumulated dust.

Maintenance steps for each part is described below.

### 6.1 Replacing Knives

The cutterhead is equipped with replaceable knives. The knives are secured with a Torx screw and can be rotated. If one edge becomes dull or damaged, rotate the knife 90°. Note the reference point on the knife. Replace the knife when all four edges have been used! To replace following tools are needed: Torx T25 screwdriver, hex key 3 mm, thick gloves and lubricant.

1. Disconnect the machine from the power supply!
2. Lower the cutterhead all the way down.
2. Remove the dust port, fan cover and top cover. **Warning!** Loosen the two screws on the fan cover, one at the front and one at the back of the cover.
3. Put on gloves.

**Caution!** The knives are sharp! Be careful and wear gloves when handling the knives.

4. Remove all dust from the cutterhead. The cutterhead can be turned only when you press the red safety pin.



5. Loosen the Torx screw and remove the knife. Clean all parts thoroughly.

**Warning!** Dust trapped on the knife or in the knife pocket can cause poor material removal.

6. Turn the knife 90° / replace. When replacing, always insert the knife in the pocket with the reference point in the same position.
7. Apply a small amount of lubricant on the Torx screw thread. Wipe excess lubricant off and tighten.

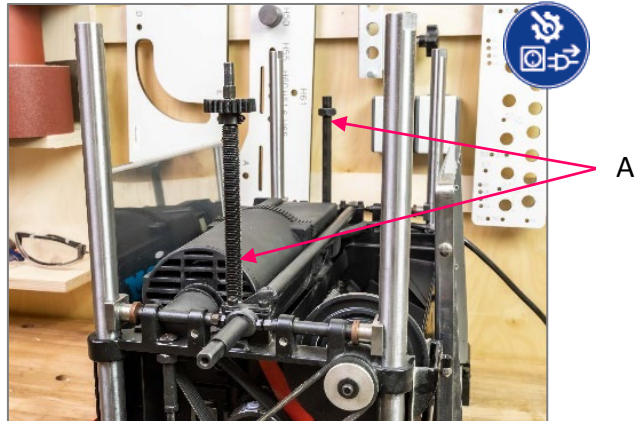
## 6.2 Lubrication

The following parts require regular lubrication: cutterhead height adjustment screws, cutterhead height adjustment columns, feed roller chain, cutterhead height adjustment chain. Clean these parts with a degreasing agent before lubrication.

### Cutterhead Height Adjustment Screws and Columns

Lubricant type: grease NLGI 2

1. Disconnect the machine from the power supply!
2. Remove the top cover and both side panels, see section 5.3, to reveal cutterhead height adjustment screws (A).

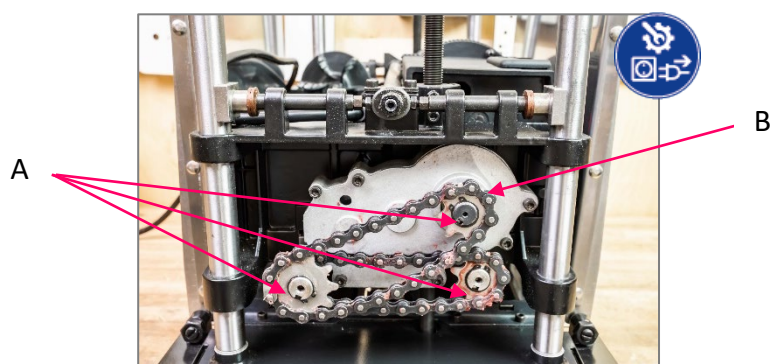


3. Vacuum dust and other scraps.
4. Remove old lubricant.
5. Apply lubricant to each screw and column. Be careful, keep the lubricant off the belts. Move the cutterhead up and down to distribute evenly.

### Feed Roller Chain

Lubricant type: grease NLGI 2

1. Disconnect the machine from the power supply!
2. Remove four M8x12 screws from the top of the column cover.
3. Remove side cover to reveal sprockets (A) and chains (B).
4. Remove old lubricant.
5. Apply a small amount of lubricant on the chain and sprockets.
6. Reassemble the side cover.

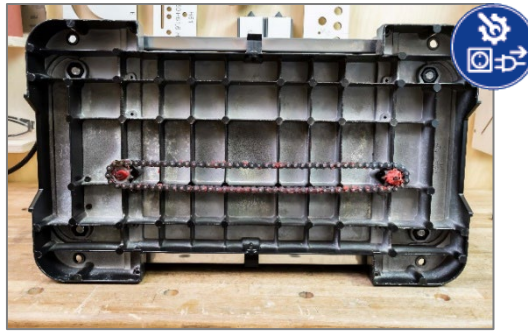


### Cutterhead Height Adjustment Chain

Lubricant type: grease NLGI 2

1. Disconnect the machine from the power supply!
  2. Lay the machine on its side.
  3. Remove old lubricant.
  4. Apply a small amount of lubricant on the chain and sprockets.
  5. Put the machine back on its base.
- If the chain is damaged, remove the cotter pin and replace the chain. Lubricate the new chain.





### 6.3 Motor Brushes

The motor is equipped with two long life brushes (on the front and back side of the motor). Motor load and usage frequency affects the brush life. Worn brushes can cause intermittent operation and difficulty starting the motor. If either brush is worn, replace both.

1. Disconnect the machine from the power supply!
2. Remove plastic covers, then motor brushes (A). Note the brush orientation.



3. Check the brush length. If either brush is worn down to 6 mm or less, replace both.
4. Insert brushes into the motor.
5. Attach plastic covers.

### 6.4 Cleaning

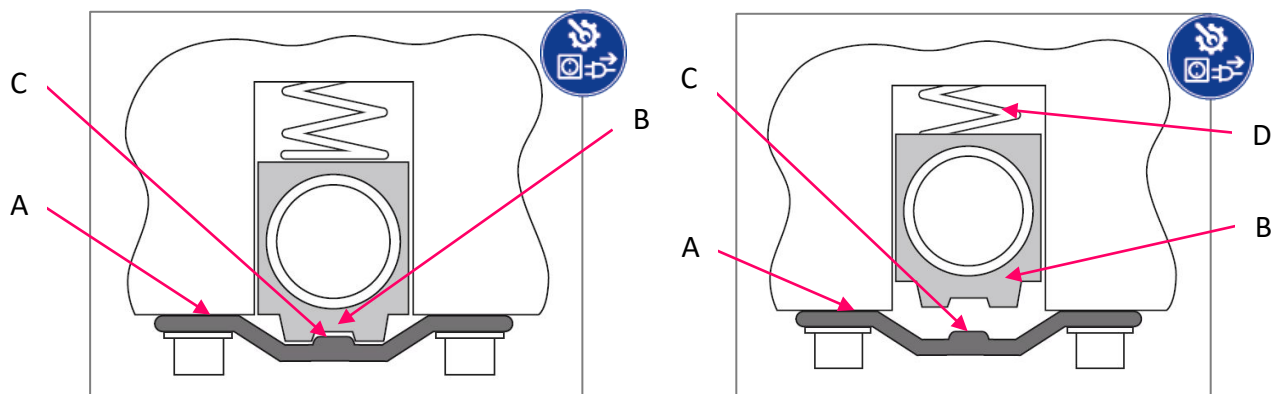
#### Cleaning Infeed and Outfeed Roller

Dust from the workpiece can build up on the infeed and outfeed roller. Clean the rollers regularly.

1. Disconnect the machine from the power supply!
2. Raise the cutterhead completely for easy access to the rollers.
3. Vacuum dust and clean the rollers. Use a resin remover if necessary.

Dust (C) may build up between bracket (A) and bushing (B). Check regularly and remove dust between the bracket and bushing if necessary. To clean following tools are needed: piece of wood 100-150 mm high.

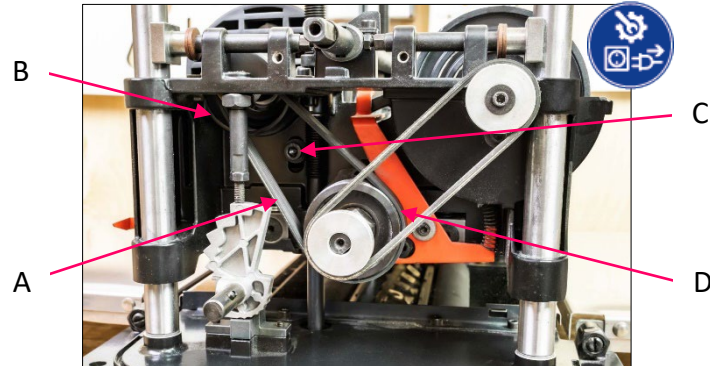
1. Disconnect the machine from the power supply!
2. Place the piece of wood 100-150 mm high between the roller and table. The cutterhead should not rest on the wood piece.
3. Lower the cutterhead so that the roller is pushed against the spring (D). This releases both brackets.
4. Remove all dust between the roller and the bracket.



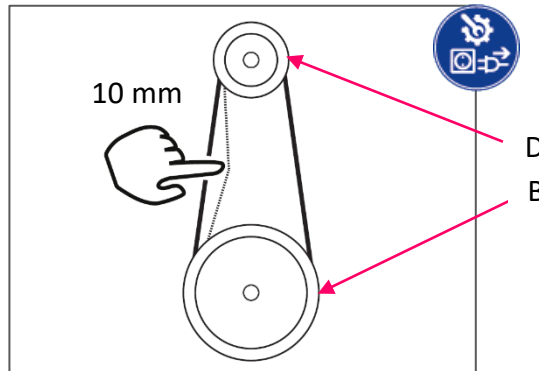
### 6.5 Drive Belt

The drive belt (A) transfers power from motor to the cutterhead and feed rollers. Check regularly that the belt is tensioned properly and in good condition. If the belt is worn, cracked or damaged, replace it immediately. To replace following tools are needed: hex key 4 mm, 5 mm, 6 mm, flat head screwdriver.

1. Disconnect the machine from the power supply!
2. Raise the cutterhead completely.
3. Remove the top cover and side panel, see section 5.3.
4. Remove the pulley side cover and motor pulley cover to reveal the belt and pulley.



5. Loosen motor tension screw (C) to release tension on the belt (A). Remove the belt from the pulley.
6. Loop the new belt around the motor pulley (B) but only halfway on the cutterhead pulley (D).
7. Apply pressure to the belt with one hand and slowly rotate the motor pulley (B) to properly seat the belt in grooves.
8. Belt is properly tensioned when it can be deflected by approximately 10 mm by applying slight pressure. To adjust deflection, raise the motor on the front side using a flat head screwdriver. Then tighten the motor tension screw.



9. Once is belt is fully seated, rotate it several times. If the belt is not seated properly, remove it and repeat steps 6–9.
10. Reassemble the side panel, top cover and depth stop.

### 7. Accessories

Recommended accessories is listed on the IGM website.

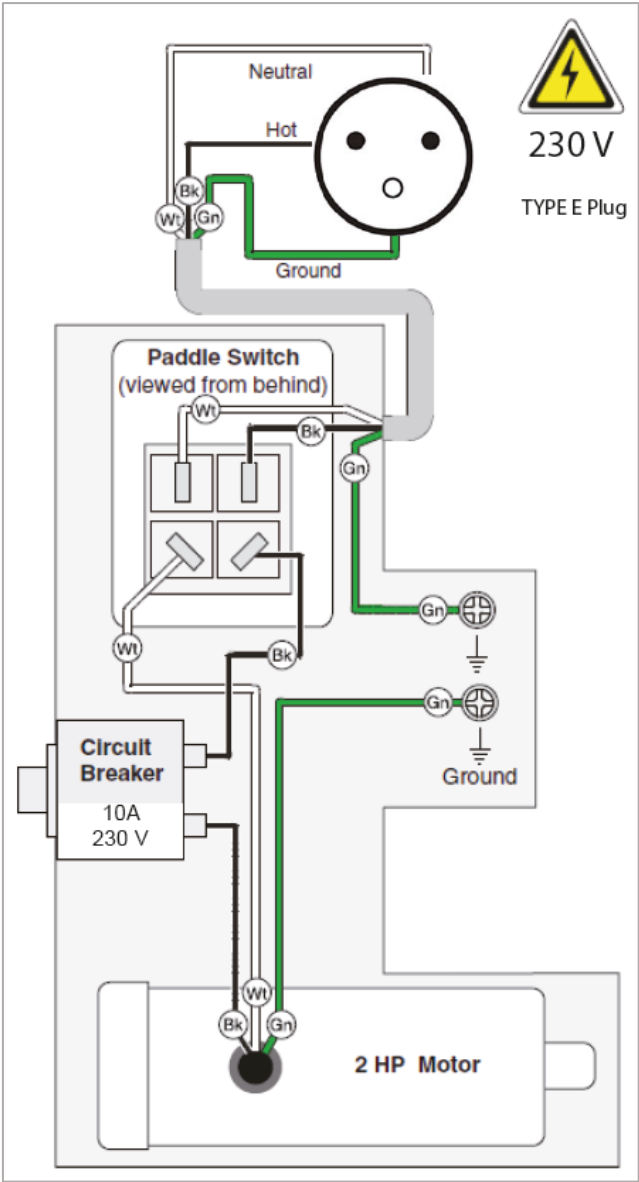
**Caution!** Installing unapproved accessories can cause damage to the machine and serious injury. Use only accessories recommended for this machine by IGM.

- NT100791 – IGM N013 Reversible Knife HWM Z4 bevel - 15x15x2,5 R=150 Wood

## 8. Troubleshooting

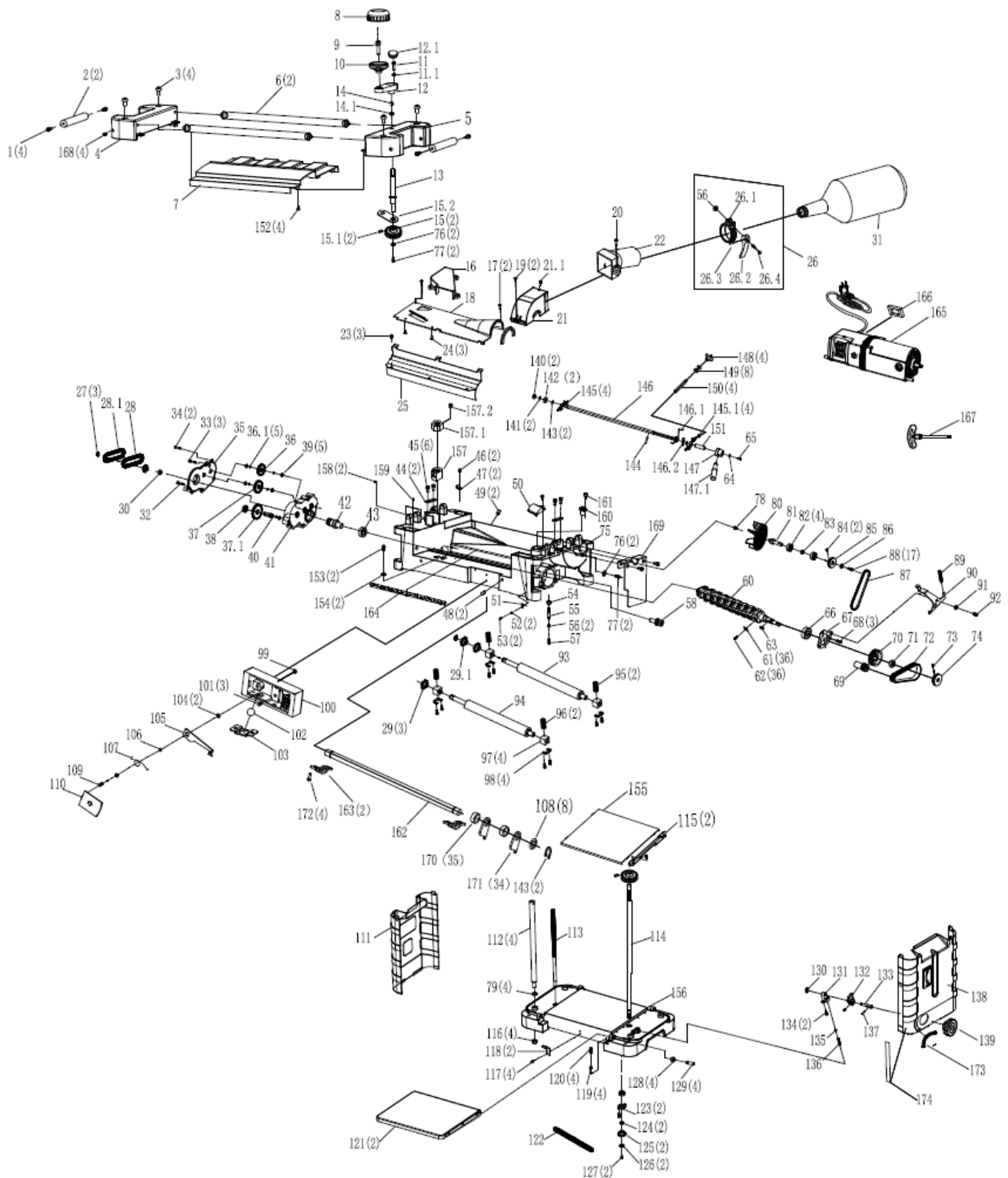
Problem	Possible cause	Solution
Machine does not start or a breaker trips.	<ol style="list-style-type: none"> <li>1. Main breaker tripped.</li> <li>2. Incorrect power supply or tripped breaker or blown fuse.</li> <li>3. Incorrectly connected wires on switch.</li> <li>4. Wiring open / has high resistance.</li> <li>5. Faulty ON/OFF switch.</li> <li>6. Worn motor brushes.</li> <li>7. Motor malfunction.</li> </ol>	<ol style="list-style-type: none"> <li>1. Restart. Contact customer support if breaker trips frequently.</li> <li>2. Ensure power supply is sized properly and free of short circuits. Restart breaker or replace fuse.</li> <li>3. Fix wire connection.</li> <li>4. Check / fix broken, disconnected or corroded wires.</li> <li>5. Test / replace.</li> <li>6. Replace motor brushes.</li> <li>7. Test / repair / replace.</li> </ol>
Machine stalls or has insufficient power supply.	<ol style="list-style-type: none"> <li>1. Cut is too deep.</li> <li>2. Material is not suitable.</li> <li>3. Motor is overheated. Tripped breaker.</li> <li>4. Belt slipping, incorrect belt tension, grease on belt.</li> <li>5. Worn knives.</li> <li>6. Built up dust causes clog up of dust collection.</li> <li>7. Pulley / sprocket slipping on shaft.</li> <li>8. Faulty motor bearings.</li> </ol>	<ol style="list-style-type: none"> <li>1. Reduce depth of cut.</li> <li>2. Use only wood with moisture below 20 %.</li> <li>3. Allow motor to cool, reset the breaker if necessary and reduce depth of cut.</li> <li>4. Clean / tension / replace belts.</li> <li>5. Replace / turn knives.</li> <li>6. Clear dust collection. Check whether the dust collection works efficiently.</li> <li>7. Tighten pulley; replace damaged pulley / shaft.</li> <li>8. Test / repair / replace.</li> </ol>
Machine vibrates or is too noisy.	<ol style="list-style-type: none"> <li>1. Loose motor or part; machine is not balanced on workbench.</li> <li>2. Belt(s) worn, loose or slap cover.</li> <li>3. Loose pulley.</li> <li>4. Motor fan slaps fan cover.</li> <li>5. Worn knives.</li> <li>6. Damaged motor bearings.</li> <li>7. Damaged cutterhead bearings.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check / tighten loose screw and nuts; replace damaged parts; place machine on stable surface.</li> <li>2. Replace belt(s).</li> <li>3. Align / replace shaft, pulley screw and key.</li> <li>4. Repair / replace fan cover; replace loose / damaged fan.</li> <li>5. Replace / turn knives.</li> <li>6. Test by rotating shaft; replace bearing if damaged.</li> <li>7. Replace bearings.</li> </ol>
Excessive snipe.	<ol style="list-style-type: none"> <li>1. Folding tables are not aligned with table.</li> <li>2. Workpiece is not properly supported.</li> <li>3. Minor snipe is inevitable.</li> </ol>	<ol style="list-style-type: none"> <li>1. Align table.</li> <li>2. Support workpiece on both ends.</li> <li>3. Plane longer workpiece. Cut off excess.</li> </ol>
Cracked wood.	<ol style="list-style-type: none"> <li>1. Knots or planing against grain.</li> <li>2. Cut too deep.</li> <li>3. Chipped knife.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check grain direction. Use wood without knots.</li> <li>2. Reduce depth of cut. Always reduce depth of cut when planing hardwood.</li> <li>3. Replace / turn knives.</li> </ol>
Workpiece stops / slows during planing.	<ol style="list-style-type: none"> <li>1. Cut too deep.</li> <li>2. Feed rollers are too low.</li> <li>3. Pitch and glue build up in machine.</li> </ol>	<ol style="list-style-type: none"> <li>1. Reduce depth of cut. Always reduce depth of cut when planing hardwood.</li> <li>2. Clean feed rollers.</li> <li>3. Clean machine parts.</li> </ol>
Splintered wood.	<ol style="list-style-type: none"> <li>1. Wood has high moisture.</li> <li>2. Worn knives.</li> </ol>	<ol style="list-style-type: none"> <li>1. Use only wood with moisture below 20 %.</li> <li>2. Replace / turn knives.</li> </ol>
Ridges on workpiece.	<ol style="list-style-type: none"> <li>1. Damaged knives.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace / turn knives.</li> </ol>
Splinter marks.	<ol style="list-style-type: none"> <li>1. Worn knives.</li> <li>2. Cut too deep.</li> <li>3. Wood has high moisture.</li> <li>4. Dust is not extracted.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace / turn knives.</li> <li>2. Reduce depth of cut.</li> <li>3. Use only wood with moisture below 20 %.</li> <li>4. Clear dust collection. Check whether the dust collection works efficiently.</li> </ol>
Feed rollers not rotating.	<ol style="list-style-type: none"> <li>1. Chain and sprockets are worn or not adjusted properly.</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust chain and sprockets; replace if necessary.</li> </ol>

9. Wiring  
Wiring diagram and electric parts



## 10. Parts List

### Machine

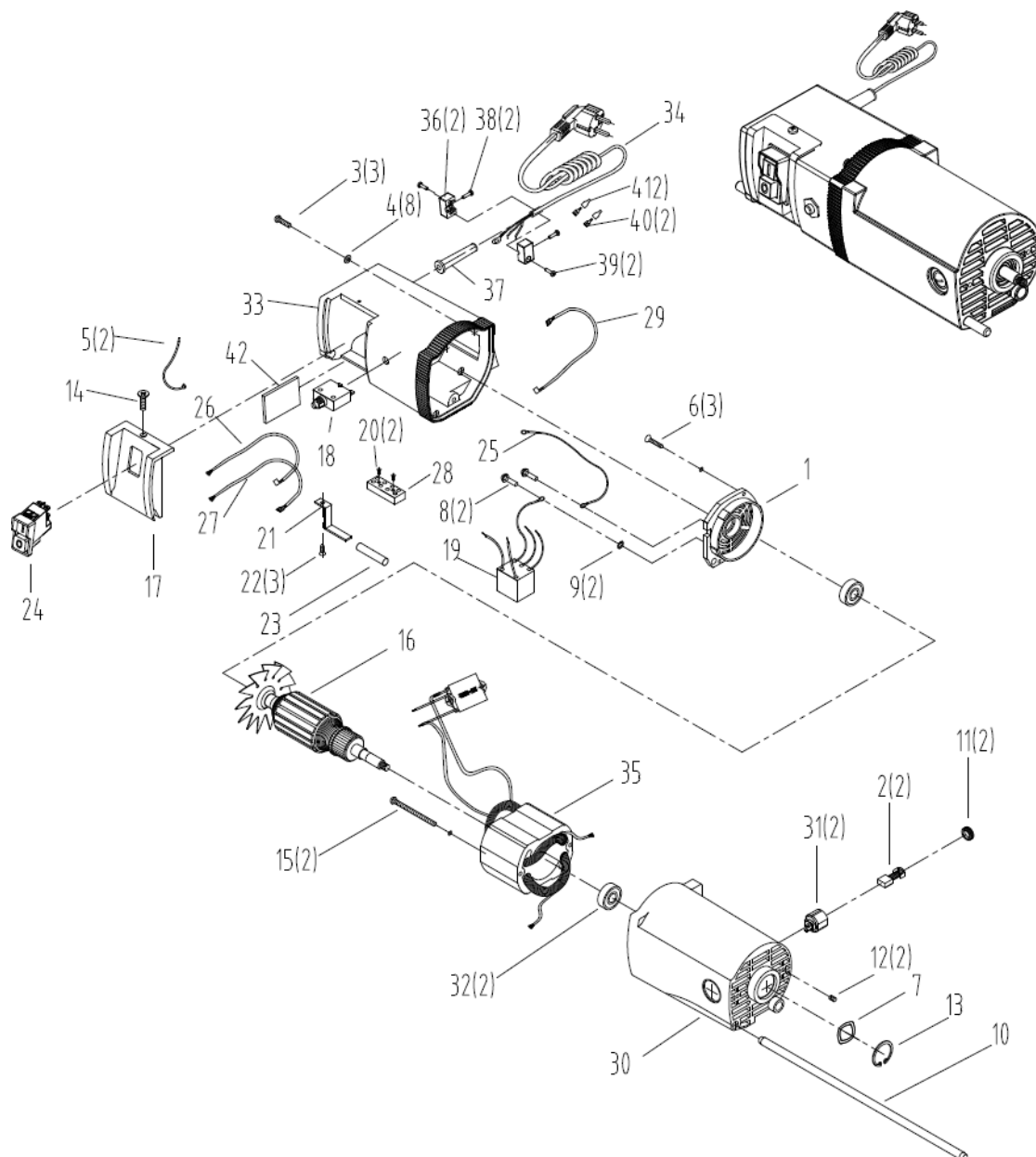




#	PART NO	DESCRIPTION	SPECIFICATION	QTY	#	PART NO	DESCRIPTION	SPECIFICATION	QTY
1	401010017	Screw (M5x10mm)	M5X10L	4	82	408010011	Ball Bearing (6000-2Z)		4
2	203042390	Handle Cover		2	83	203040500	Washer (Ø10)		1
3	401020030	Screw (M8x16mm)	8x16	4	84	401070018	Set Screw (M6x6mm)	6x6	2
4	203042400	Top cover - Left		1	85	203040490	Fan Pulley		1
5	203042410	Top cover - Right		1	86	404020009	Washer (Ø5)		1
6	20304301Z	Feed rod group		2	87	203041390	Belt (130J2)		1
7	203045340	upper cover plate		1	88	401010015	Screw (M5x10mm)	5x10	17
8	203020760	Grip cover		1	89	203040630	Spring		1
9	203020490	Grip shaft		1	90	203040330	Cutter Head Lock		1
10	203030990	Grip		1	91	203040190	Locker Spacer (Cutter Head)		1
11	401010027	Screw (M5x20mm)	5x20	1	92	401010016	Screw (M5x10mm)		1
11,1	404010005	Plain washer	Ø5	1	93	203041100	Outfeed Roller (Rear)		1
12	203020400	Rocking bar		1	94	203041090	Infeed Roller (Front)		1
12,1	203020730	Plastic cap		1	95	203040670	Compression Spring (Outfeed)		2
13	203042750	Shaft		1	96	203040660	Compression Spring (Infeed)		2
14	405030004	Split washer	Ø8	1	97	203040350	Bearing Block	24*22*24-Ø16	4
14,1	404010021	Plain washer	Ø10	1	98	203041260	Retainer		4
15	203045680	Gear		2	99	203041380	Nut (M4,Special)		1
15,1	401070009	Screw (M5x8mm)	5x8	2	100	203042570	Pointer box		1
15,2	203045690	Dead plate		1	101	401990016	Screw (M4x10mm)	4X10	3
16	203042460	Wind deflector		1	102	499010005	Steel Ball (12mm)	Ø12	1
17	401990017	Screw (M4x10mm)	M4X10	2	103	203042610	Lifting ball key		1
18	203042450	Dust plate		1	104	203040100	Bushing		2
19	401020006	Screw (M5x10mm)	M5X10L	2	105	203042590	Pointer		1
20	401020023	Screw (M6x25mm)	M6X25L	1	106	404010002	Washer (Ø4)	Ø4	1
21	203042470	Fan shroud		1	107	203040820	Torsion Spring		1
21,1	203040830	Stopper		1	108	203030300	Spacer	1.2mm	8
22	203020450	Chip nozzle		1	109	401990022	Screw (M4x14mm)		1
23	401990036	Screw (M5x10mm)	M5X10L	3	110	203042580	Pointer cover		1
24	401080129	Self-tapping screw (ST3.5x6)	3.5x6	3	111	203045350	Left cover		1
25	203040240	Chip discharge pipe		1	112	203040430	Pillar		4
26	20301209Z	Guard staple		1	113	203041140	Lifting screw-Left		1
26,1	203010760	Guard staple	Ø60	1	114	203042630	Lifting screw-Right		1
26,2	203010750	Spanner		1	115	203040090	Guide rail clip		2
26,3	201030860	Pin		1	116	403010018	Hex Nut (M12)	M12	4
26,4	402030002	Drop bolt	M6x50L	1	117	401990090	Screw (M5x10mm)	5x10	4
27	405010012	Shaft retaining ring	Ø15	3	118	203041130	Spring Plate		2
28	203041560	Chain (410#-26)		1	119	403010008	Hex Nut (M6)	M6	4
28,1	203020640	Chain (410#-27)		1	120	402010020	Bolt (M6x20mm)	6x20	4
29	203042190	Chain wheel		3	121	203030700	Subsidiary operating board		2
29,1	203020380	Chain wheel		1	122	203041340	Chain (35#-87)		1
30	203041400	Spacer ring		1	123	203040390	Bearing Retainer		2
31	303010601	Dust collector bag	Ø60	1	124	203041530	Spindle Washer		2
32	401010167	Combination screw (M5X32mm)	5x32	1	125	203020020	Sprocket		2
33	401010168	Combination screw (M5X32mm)	5x35	3	126	404020004	Washer (Ø4.3)		2
34	402010138	Screw (M5x12mm)		2	127	401010007	Screw (M4x12mm)		2
35	203044310	Gear Box Cover	91g	1	128	403010016	Hex Nut (M10)	M10	4
36	203041440	Gear		1	129	203040060	Adjustment Bolt		4
36,1	203041330	Washer	Ø8xØ14x0.1mm	5	130	405010004	External retaining ring	Ø8	1
37	203041450	Gear		1	131	203042820	Step Bracket		1
37,1	203041460	Gear		1	132	203042830	Thickness block		1
38	408010019	Bearing (6002-2Z)		1	133	203040810	Stationary shaft		1
39	203041430	Gear Bushing		5	134	401010027	Screw (M5x20mm)	5x20	2
40	203041420	Ttransmission shaft		1	135	499010003	Steel Ball (Ø6)	Ø6	1
41	203044300	Gear Box		1	136	203040470	Compression Spring	Ø5x32-Ø0.7	1
42	203041500	Drive gear wheel		1	137	407010013	Roll Pin	4x18	1
43	408010044	Bearing (6203-2Z)		1	138	203045360	Right cover		1
44	203042510	Pressing plate		2	139	203042740	Position fixing knob		1
45	401010019	Screw (M5x12mm)	5x12	4	140	403010011	Hex Nut (M8)	M8	2
46	401990181	Combination screw(M5X10mm)	M5x10	1	141	404030011	Spring washer	Ø8	2
47	203041320	Cable Clamp	UC-1.5-A	1	142	203045450	Lock wheel	20*24*9mm	2
48	203042700	Anti-collision rubber plug		2	143	405010008	External retaining ring	Ø12	4
49	203042710	Anti-collision rubber plug		2	144	407010022	Pin	5x28	1
50	203041230	Belt Guard		1	145	499010046	Bolt (M5x16mm)	5x16	4
51	203043120	Pointer		1	145	403990004	Hex Nut (M5)	M5	4
52	404010001	Plain washer (Ø3)	Ø3	2	146	203045370	Check lock lever		1
53	401990003	Screw (M3x6mm)	3x6	2	147	203045490	Fixed seat		1
54	403010016	Hex Nut (M10)	M10	1	147	203045710	Handle	Ø22x96xM10	1
55	203040530	Adjustment Rod		1	148	203045720	Stock locator block		4
56	403010008	Hex nut (M6xP1.0)	M6	2	149	203045700	Butterfly gasket	Ø8xØ16x2.0	8
57	401040020	Set screw (M6x30mm)	6x30	1	150	203042520	Locating rod		4
58	401010163	Combination screw (M8X25mm)	M8x25	1	151	203045480	Sleeve	Ø12*Ø15*46	1
60	203043450	13"Cutter Head		1	152	401080066	Self-tapping screw (ST4.2x10)	4.2X10	4
61	203011960	Planer Blades	15x15x2.5xR100	36	153	401080121	Self-tapping screw (ST5x10)	5X10	2
62	203011980	Screw(M5x12mm)	M5x12	36	154	404040004	Toothed washer	Ø5	2
63	406010011	Key	A5x12	1	155	203040070	Planer Table		1
64	404010051	Plain washer (Ø6.5)	Ø6.5xØ16x1mm	1	156	203042640	Pedestal		1
65	401990202	Screw(M6x12mm)	M6x12	1	157	203040280	Elevating Nut(Left Hand)		1
66	408010047	Bearing (6204-2Z)		1	157	203040450	Nut		1
67	203040320	Bearing seat cover		1	157	401050008	Screw(M6x6mm)	6x6	1
68	401010019	Screw (M5x12mm)	5x12	3	158	401010019	Screw(M5x12mm)	M5X12	2
69	203040550	Motor Pulley		1	159	401070011	Screw(M5x10mm)	5x10	1
70	203044950	Cutter Head Pulley	Ø58	1	160	203040290	Elevating Nut(Right Hand)	GB/T862	1
71	403990003	Hex Nut (M16)	M16	1	161	203040600	Set Screw	M5*23	1
72	205015510	Belt (135J6)	355PJ6	1	162	203043060	Shaft		1
73	401070018	Set Screw (M6x6mm)	6x6	1	163	203043070	Pressing buckle		2
74	203041240	Cutter shaft auxiliary pulley		1	164	203041540	Sponge strip	320x10x8	1,5
75	203043080	Lifting seat		1	165	20304543Z	Motor	230V 50/60Hz 1800W 21000RPM	1
76	404020012	Washer (Ø5.3)		2	166	203040770	Sponge block	14x60x90	1
77	401010015	Screw (M5x10mm)	5x10	2	167	203043680	Spanner	T25	1
78	401020037	Combination screw (M6X12mm)	M6x12	1	168	203043250	Stopper		4
79	203041250	Washer		4	169	203045670	Guard plate	1.5mm	1
80	203042840	Fan		1	170		Spacer	6.0mm	35
81	203040510	Fan Shaft		1					

171		Recoil pawl	3.5mm	34
172	401990025	Screw (M4x16mm)	M4x16	4
173	303040396	Label	R49XR39X10mm	1
174	303030319	Scaleplate	22x181mm	1
175	303040407	Foam	625*380*500	1
176	303040405	Foam block	120x80x80	2
177	303040147	Inner box	630*385*510mm	1
178	303040148	Outer box	640*400*525mm	1

## Motor





#	PART NO	DESCRIPTION	SPECIFICATION	QTY
1	203041690	Motor front cover		1
2	203031940	Carbon brush	8×16×17mm	2
3	401990046	Screw	5×20	3
4	404030005	Spring washer	Ø5	8
5	203041820	Cable tie	2.5×100	2
6	401080088	Screw	ST4.8×20(Ø9.2)	3
7	404050016	Wave washer	Ø25×Ø31.5×0.3	1
8	401990189	Combination screw	M5×14	2
9	404040004	Toothed washer	Ø5	2
10	203041930	Motor pin		1
11	203041800	Carbon brush cap	12"	2
12	401070009	Screw	5×8	2
13	405020005	Circlip For Hole	Ø32	1
14	401080107	Screw	ST4.8×16	1
15	401080095	Screw	ST4.8×70	2
16	20303190Z	Rotor	Ø54×Ø18×H55 (220V 2000W)	1
17	203020920	Switchboard		1
18	203043330	Overload protector	UL/98 Series 250V 10A	1
19	203032290	Filter	1UF + 2×0.0022UF + 2×1.5MH + 1MΩ 6A	1
20	401080006	Screw	3×14	2
21	203030530	Fix securely		1
22	401080010	Screw	4×8	3
23	203032440	Fiberglass pipe	Ø12 (1500V)	0,05
24	203030550	Electromagnetic switch	KJD17/220V-240V	1
25	203032280	Ground lead	VDE/1.5m H05V-K/350mm	1
26	203030600	Lead	UL/16AWG/105°C/0.20m	1
27	203030610	Lead	UL/16AWG/105°C/0.20m	1
28	203032270	Termianl	PA10 450V 4P	1
29	203030590	Lead	UL/16AWG/105°C/0.20m	1
30	203020900	Motor casing		1
31	203041790	Brush holder	12"	2
32	408010067	Bearing	6201-2Z	2
33	20304544Z	Switch box		1
34	203032300	Power cord	VDE H05VV-F 3Gx1.5mm2x3.3m	1
35	20303191Z	Stator	Ø100×Ø55×H55 (220V 2000W)	1
36	203032340	Cable ramp	/	2
37	205014780	Bushing		1
38	401080054	Screw	ST3.5×13	2
39	401080072	Screw	ST4.2×16	2
40	203042100	Wiring terminal	170213-2	2
41	203042170	Terminal sheath	AMP/280232 (14~18AWG)	2
42	303030415	Foamed Plastics	5×50mm 3M	0,08



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