HARE&FORBES
MACHINERYHOUSE

Established 1930
Distributors of new & used workshop Equipment

W741
HPS-1600E
PANEL SAW WITH SCRIBE BLADE

INSTRUCTION & PARTS MANUAL

14-9-11

Revision A

INSTRUCTION MANUAL

Original Instructions

Sliding Table Saw

MODEL: HPS1600E

Harvey Industries Co., Ltd.

East Gate, 1519 Shuanglong Street, Jiangning Development Zone, Nanjing, Jiangsu 211112, P.R. China

298003602

Declaration of Conformity

(Manufacturer's Declaration)

We: Harvey Industries Co., Ltd.
East Gate, 1519 Shuanglong Street, Jiangning Development Zone, Nanjing, Jiangsu 211112, P.R. China

declare in sole responsibility that the equipment

Sliding Table Saw

Model: J-20, J-30, HPS-1600E, HPS-1300E

Serial Number: 110001R, 110002R, 110003R, 110003R

to which this declaration applies, complies with the following directives and/or standards:

2006/42/EC
2006/95/EC
2004/108/EC
2002/96/EC
EN 60204-1:2006+A1:2009
EN 1870-1:2007+A1:2009

This declaration is based on:

Third party testing, performed by TÜV Rheinland LGA Products GmbH · Tillystraße 2 · D - 90431 Nürnberg, Germany, with identification number of Notify Body: 0197.

TÜV Rheinland Technical Report Nr.: 17703891 001
TÜV Rheinland Certificate Nr.: BM 50202970 0001

Notes:

This declaration becomes invalid, if technical or operational modifications are introduced without the manufacturers consent.

Person responsible for keep the technical file:

Name, Surname:
Address:

Person responsible for making this declaration:

Name and Signature: HuaYi

Date and Place: 2011-08-05 NanJing

The title of signature: _____

Contents

1. Foreword

This manual was conceived at the manufacturer and is an indivisible part of the deliveryenclosed with the machine. It contains basic information for qualified operating staff and describes the surroundings and using ways of the machine for those it is intented. It contains also all necessary information for a correct and safe operating.The machine is equipped with various safety equipment protecting operator and machineas well at usual technological using. These regulations, however, cannot sheet all othersafety aspects. That is why operator must peruse and make sense of this manual before starting of machine use. Installation and operation mistakes will be foreclosed herewith.

Do not try to start the machine before having read all instructions manualdelivered with the machine and understood every function and technique.

2. Warranty Information

Limited Warranty

One year

Proof of Purchase

Please keep your dated proof of purchase for warranty and servicing purposes.

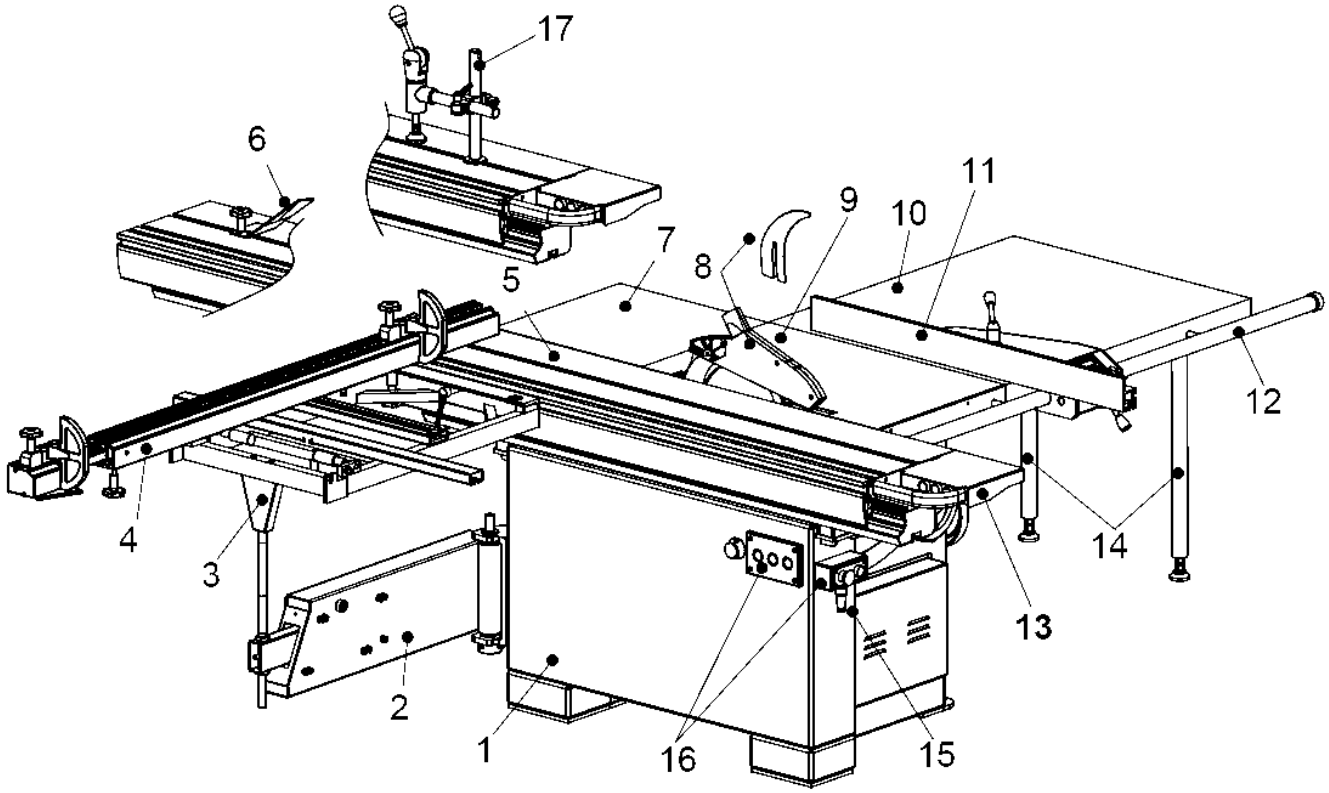
Limited Tool Warranty

we makes every effort to ensure that this product meets high quality and durability standards. we warrants to the original retail consumer a 1-year limited warranty as of the date the product was purchased at retail and that each product is free from defects in materials. Warranty does not apply to defects due directly or indirectly to misuse, abuse, normal wear and tear, negligence or accidents, repairs done by an unauthorized service center, alterations and lack of maintenance. we shall in no event be liable for death, injuries to persons or property or for incidental, special or consequential damages arising from the use of our products.

To take advantage of this limited warranty, return the product at your expense together with your dated proof of purchase to us ,we will either repair or replace the product if any part or parts covered under this warranty which examination proves to be defective in workmanship or material during the warranty period.

3. Machine Description

3.1 Feature Identification



No.	Description	**HPS1600E**	Remark
1.	main base unit	●	
2.	swing arm	●	
3.	crosscut table	●	
4.	crosscut fence	●	
5.	sliding table	●(1600mm)	
6.	edge shoe plate	●	
7.	rear extension table	●	
8.	Blade guard with Riving Knife	●	
9.	main table	●	
10.	side extension table	●(50")	
11.	rip fence	●	
12.	Round guide bar	●(50")	
13.	Sliding table handle	●	
14.	support leg	●(3pcs)	
15.	connector plugs	●	
16.	on/off/ emergency stop button	●	
17.	Vertical adjustable hold down	●	
18.	Mini crosscut table & fence	(optional)	Not shown
19.	Overhead	(optional)	Not shown

3.2 Intended Use

HPS1600E & HPS1300E Sliding table saw and the workpiece guide equipment supplied with it are intended to be used exclusively for the following purposes:

- Laminated and unlaminated board materials (e.g. chipboard, coreboard, MDF board, ...)
- Solid wood
- Gypsum plasterboard , Cardboard, Veneer with a suitable clamping device
- Dimensionally stable plastics (thermoset plastics, thermoplastics).Sawing these materials does not normally involve any risks in respect of dust, chips, and thermal degradation products.

Tools:

- The chosen saw blade must be suitable both for the specific work cycle and for the specific material.
- Only circular blades which are solid chrome vanadium (CV) or tungsten carbide tipped (TCT) and have a diameter of 315mm , arbor size 30mm,as well as a maximum width of 20mm are allowed for the main saw
- Blades with a diameter of 120mm,arbor size 20mm are allowed for the scoring saw.
- Saw blades made of high-alloy high-speed steel (HSS) are not allowed to be used.
- Saw blades and their fixing devices shall conform to EN 847-1:2005。

Site of installation/use:

- The machine is not suitable for use outdoors, or in rooms that are subject to moisture or the risk of explosions.
- The intended use of the machine involves connection to a suitably dimensioned extraction system .
- Intended use also involves compliance with our specified operating, maintenance and repair conditions and the safety information contained in the operating instructions.
- The sliding table saw may only be used, set up and maintained by persons who are familiar with the machine and aware of the dangers.
- The pertinent accident prevention regulations as well as any other generally recognised technical safety and industrial medicine rules must be observed.
- Repair work must be carried out by our own customer service or by an organization that we have authorized. Only original spare parts are allowed to be used for this. we will assume no warranty for any damage that is caused by using non-original spare parts.

Machine operator positions*(Fig.1)*

The sliding table is intended to be operated from the following positions:

- On the left of the sliding table at the front of the machine, seen in the feed direction (main operator position).
- At the front cross-end of the machine on the right of the sliding table when working with the rip fence
- Any person removing the workpieces must stand at the rear cross-end of the machine behind the main table length extension (under no circumstances in the sliding table traverse area).

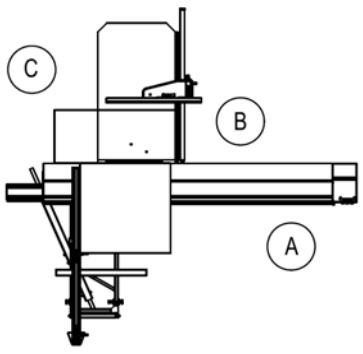


Fig.1

WARNING

The machine is prohibited to be used in a potentially explosive atmosphere!

3.3 Dimensions and weights

Machine type	Sliding table lenth	Net/gross weight of machine box(Kg)	Net/gross weight of sliding table box(Kg)	Dimensions of machine box(DxWxHmm)	Dimensions of sliding table box(DxWxHmm)
HPS1600E	1600mm	430/490	130/160	1380x1120x1035	1900x420x250

3.4 Requirements of electrical power

List of the motor using & pre-wired voltage

Main Motor/scoring motor(KW)	Voltage(V)	Freq.(Hz)	Nominal current A with scoring blade	Prewired	Cords
4/0.55	400V	50	7.82/1.39	400V 3PH	5

The input power supply of the machine is 3/N/PE, AC400V. The steady-state AC power supply is 0.9～1.1 times of the rated value.

- **Frequency**
  0.99～1.01 times of rated frequency (50 Hz , continuous working)
  0.98～1.02 times of rated frequency(50Hz, short period working)

- **Harmonics**
  The sum of 2nd-5th distorted harmonic must not exceed 10% of RMS of voltage. An additional 2% of RMS of line voltage is allowed to for the sum of 6th-30th harmonic.

- **Unbalanced voltage**
  Neither Negative nor zero sequence components is allowed to exceed 2% of the positive sequence component.

- **Electrical protection**
  End user should provide protection device against overvoltage due to lightning and short-circuited protection device at the power supply.

- **Ingress Protection at the inlet of incoming power cable**
  The incoming method of incoming cable should ensure IP54 protection class when finishing installation on the spot.

3.5 Noise

3.5.1 Reference standards

The measurements of noise emission were conducted according to the EN ISO 11202 for the determination of sound pressure level at the operation positions. When the measured sound pressure levels at the operation positions exceed 85dB(A), the measurements of sound power levels were conducted according to EN ISO 3746.

3.5.2 Operating conditions

The operating conditions for noise measurement comply with Annex A of ISO 7960:1995.

3.5.3 Testing results

		NO LOAD	**LOAD**
L_{WA}		91.8	97
L_{PA}	Position A	77.7	85.0
	Position B	80.3	86.5
	Position C	73.0	74.9
Associated uncertainty		*K* = 4 dB	

Note: Background noise of measurement surrounding is 65.0dB (A).

The figures quoted are emission levels and are not necessarily safe working levels. Whilst there is a correlation between the emission and exposure levels, this cannot be used reliably to determine whether or not further precautions are required. Factors that influence the actual level of exposure of the workforce include the characteristics of the work room, the other sources of noise etc. i.e. the number of machines and other adjacent processes. Also the permissible exposure level can vary from country to country. This information, however, will enable the user of the machine to make a better evaluation of the hazard and risk."

3.6 Technical parameters

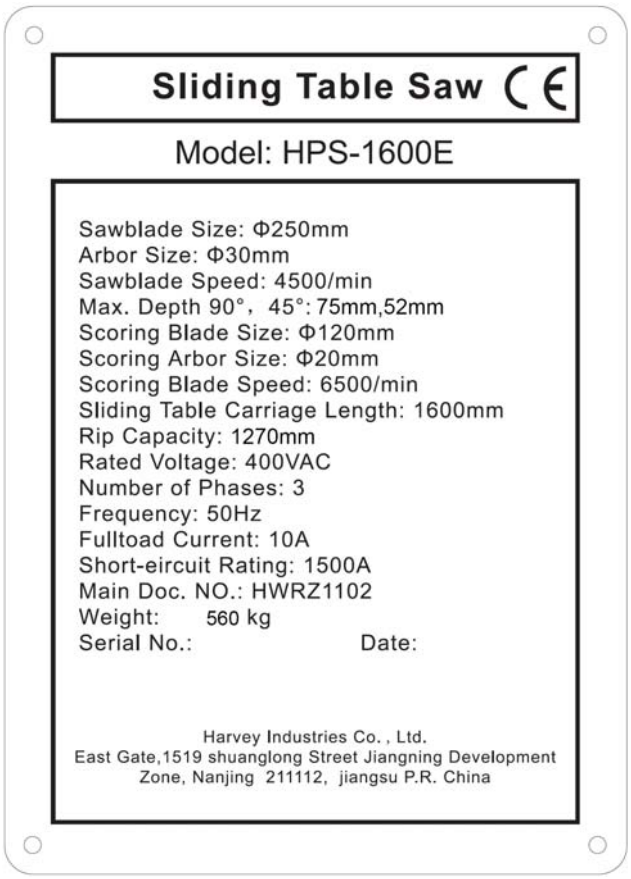
Models		HPS1600E
Overall Dimensions	Overall Size (DxWxH)	3630mmx4330mmx1095mm
	Table Height	860mm
	main Table Size	495mm x 800mm
	Sliding Table Size	361mm x 1600mm
	Machine Net Weight	Approx. 560 kg
	Machine foot print	715mm x 1030mm
Capacities	Main Blade Diameter (Maximum)	250mm
	Main Blade Arbor Size	30mm
	Main Blade Arbor Speed	4500/min
	Scoring Blade Diameter	120mm
	Scoring Blade Arbor Diameter	20mm
	Scoring Blade Arbor Speed	6500/min
	Maximum Depth of Cut at 90°	75mm
	Maximum Depth of Cut at 45°	52mm
	Dado Width (Maximum)	20mm
	Blade Tilt	Right
	Maximum Ripping Capacity	1270mm
	Maximum Length of Cross Cut Fence	2580mm
	Maximum Cross Cutting Length	1600mm
Construction	Sliding Table	T-6 Super Heavy Duty Extrusion
	Machine Frame	High Strength 4mm/6mm Steel Welding (Laser Cut)
	Cross Fence	Extruded T-6 Aluminum with fine anodization
	Rails	Chromed Plated Steel (40mm Dia)
	Trunnions	High Grade Cast Iron, Precisely Machined
Motor	400V/50Hz/3Ph/4kW 2850/min TEFC	
Power Transfer		Belt Drive
Features		Blade Guard with 50mm dust port
		100mm Main Dust Port
		Adjustable Riving Knife
		Micro Adjustable Rip Fence
		Ball Bearings: Sealed and Permanent Lubrication

Every machine we produce is fitted with a name plate with its serial number. The number is also punched on the machine.
An exact description of the machine model and serial number will facilitate rapid and effective replies from our after-sales service.

Position of nameplate: on the side of the main base unit.

WARNING

It is prohibited to alter the information given on the nameplate!



4. Safety Regulations

4.1 General Safety Instructions

1. KNOW YOUR MACHINE.

Read and understand the owners manual and labels affixed to the machine. Learn its application and limitations as well as its specific potential hazards;

2.GROUND THE MACHINE.

In the event of the electrical short, grounding reduces the risk of electrical short;

3. KEEP GUARDS IN PLACE.

Keep in good working order, properly adjusted and aligned;

4. REMOVE ADJUSTING KEYS AND WRENCHES.

Form habit of checking to see that keys and adjusting wrenches are removed from machine before turning it on;

5. KEEP WORK AREA CLEAN.

Cluttered areas and benches invite accidents. Make sure the floor is clean and not slippery due to wax and sawdust build-up;

6. AVOID DANGEROUS ENVIRONMENT.

Don’t use machines in damp or wet locations or expose them to rain. Keep work area well lit and provide adequate surrounding work space;

7. KEEPCHILDREN AWAY.

All visitors should be kept a safe distance from work area;

8. MAKE WORKSHOP CHILD-PROOF.

With padlocks, master switches or by removing starter keys;

9. USE PROPER SPEED.

A machine will do a better and safer job when operated at the proper speed;

10. USE RIGHT MACHINE.

Don’t force the machine or the attachment to do a job for which it was not designed;

11. WEAR PROPER APPAREL.

Do not wear loose clothing, gloves, neckties or jewelry (rings, watch) because they could get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair. Roll up long sleeves above the elbows;

12. DON’T OVER REACH.

Keep proper footing and balance at all times;

13. MAINTAIN MACHINE WITH CARE.

Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories;

14. DISCONNECT MACHINES.

Before servicing, when changing accessories or attachments;

15. AVOID ACCIDENTAL STARTING.

Make sure the switch is in the ‘’OFF’ ’position before plugging in;

16. USE RECOMMENDED ACCESSORIES.

Consult the manual for recommended accessories. Follow the instructions that accompany the accessories. The use of improper accessories may cause hazards;

17. NEVER STAND ON MACHINE.

Serious injury could occur if the machine tips over .Do not store materials such that it is necessary to stand on the machine to reach them;

18. CHECK DAMAGED PARTS.

Before further use of the machine, a guard or other parts that are damaged should be carefully checked to ensure that they will operate properly and perform their intended function. Check for alignment of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other parts that are damaged should be properly repaired or replaced;

19. NEVER LEAVE MACHINE RUNNING UNATTENDED.

Turn power ‘’OFF’’. Don’t leave any machine running until it comes to a complete stop;

20. LIGHTING SHALL BE PROVIDED.

A dequate general or localised lighting shall be provided;

4.2 Specific Safety Instructions for Sliding Table Saw

1. ALWAYS USE A GUARD.

Always use a guard, splitter and anti-kickback fingers on all “thru-sawing” operations. Thru-sawing operations are those when the blade cuts completely through the work piece as in ripping or crosscutting.;

2. ALWAYS HOLD THE WORK.

Always hold the work firmly against the miter gauge or fence;

3. ALWAYS USE A PUSHSTICK OR PUSH BLOCKS.

Push blocks or push sticks shall be used when cutting small workpieces and in circumstances where it is necessary to push the workpiece against the fence;

4.NEVER.

Never perform any operations “free-hand” which means using your hands to support or guide the work piece. Always use either the fence or the miter gauge to position and guide the work piece;

5.NEVER.

Never stand or have any part of your body in line with the path of the saw blade;

6.NEVER REACH BEHIND.

Never reach behind or over the cutting tool with either hand for any reason;

7. MOVE THE RIP FENCE.

Move the rip fence out of the way when crosscutting;

8. DIRECTION OF FEED.

Feed work into the blade against the direction of rotation;

9. NEVER.

Never use the fence as a cut-off gauge when you are cross-cutting;

10. NEVER.

Never attempt to free a stalled saw blade without first turning the saw OFF;

11. PROVIDE ADEQUATE SUPPORT.

To the rear and sides of the table saw for wide or long work pieces;

12. AVOID KICKBACKS.

Avoid kickbacks (work thrown back towards you) by keeping the blade sharp, by keeping the rip fence parallel to the saw blade, by keeping the splitter and anti-kickback fingers and guard in place and operating, by not releasing work before it is pushed all the way past the saw blade, and by not ripping work that is twisted or warped or does not have a straight edge to guide along the fence;

13. AVOID AWKWARD OPERATIONS.

Avoid awkward operations and hand positions where a sudden slip could cause your hand to move into the spinning blade;

14. BLADE REQUIREMENTS.

Only correctly sharpened saw blades manufactured in accordance with the requirements of EN 847-1:2005 shall be used;

15. SPEED.

No saw blade shall be used where the maximum marked speed is lower than the maximum rotational speed of the saw spindle;

16. CHIP AND DUST.

The machine shall be connected to an external chip and dust extraction system;

The dust extraction equipment is to be switched on before commencing machining;

17. CHECK

Period check the brake function to make sure the stop time of the saw blade is less than 10s. If more than 10s, maintenance the brake according to chapter 8;

4.3 Residual risks

1. Take precautions to reduce the hazard of inhalation of harmful dusts (e.g. wearing a dust mask);

2. Wear ear protection to prevent hearing loss;

3. Always wear safety glasses. also use a face or dust mask if cutting operation is dusty;

4. Against the hazard of cutting when handling saw blades into the machine or doing maintenance;

5. Not to try removing chips whilst the saw blade(s) is (are) running and the saw unit(s) is (are) not in the rest position;

6. Not to try using the machine unless all of the guards and other safety devices necessary for machining are in good working order;

4.4 Safety equipment

A push block ***(Fig.2)*** and A push stick ***(Fig.3)*** must be used

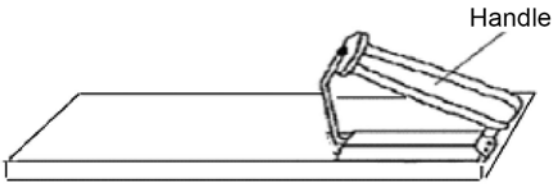


Fig.2

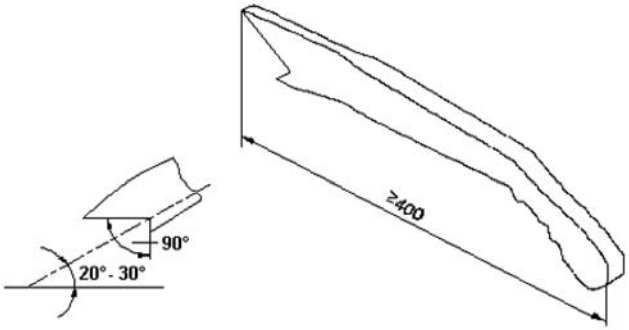


Fig.3

WARNING

If the workpieces is less then 120mm,you must use the push stick to prevent your hands from getting too close to the saw blade.

Push block must be used to cut narrow workpieces and, when necessary, to push the workpiece against the fence, a push block can be easily made by the operator as Fig.2。

4.5 Safety labels on the machine

Here below you will find the warning labels that are attached to the machine and illustrated in the instruction, see ***Fig.4;***

①. Warning for residual risks

And always use a push stick or push blocks.

②. Specific Safety Instructions for Sliding Table Saw.

③. Caution! Live equipment.

All electrical operation and maintenance shall be done by qualified electricians!

All electrical operation must be carried out in according to electrical instruction.

④. Warning for fence using。

⑤. Warning for motor cover open.

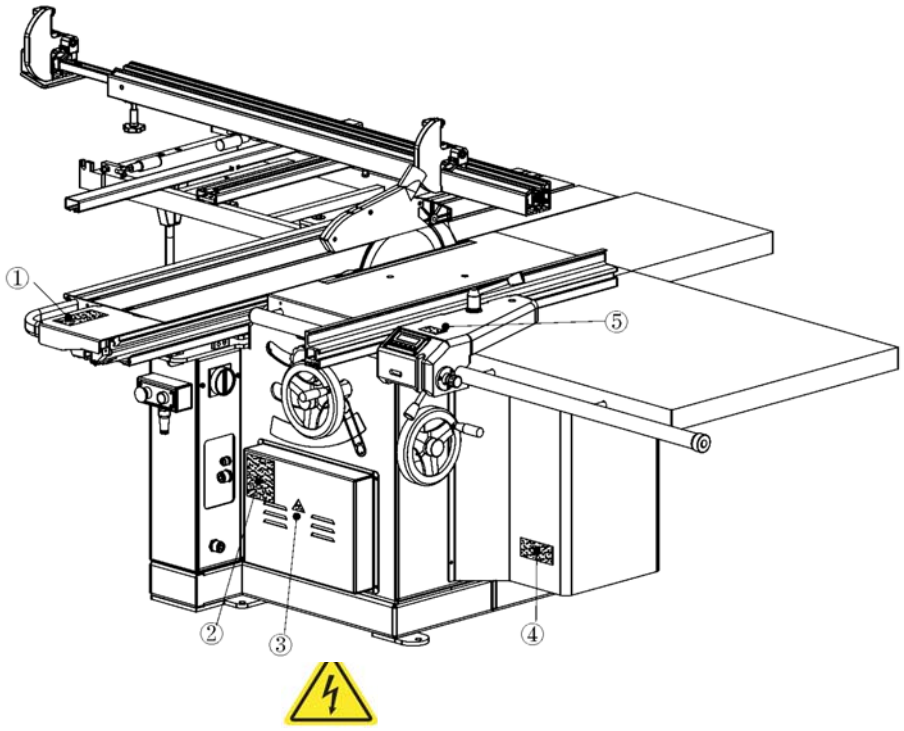


Fig.4

4.6 Safety Devices

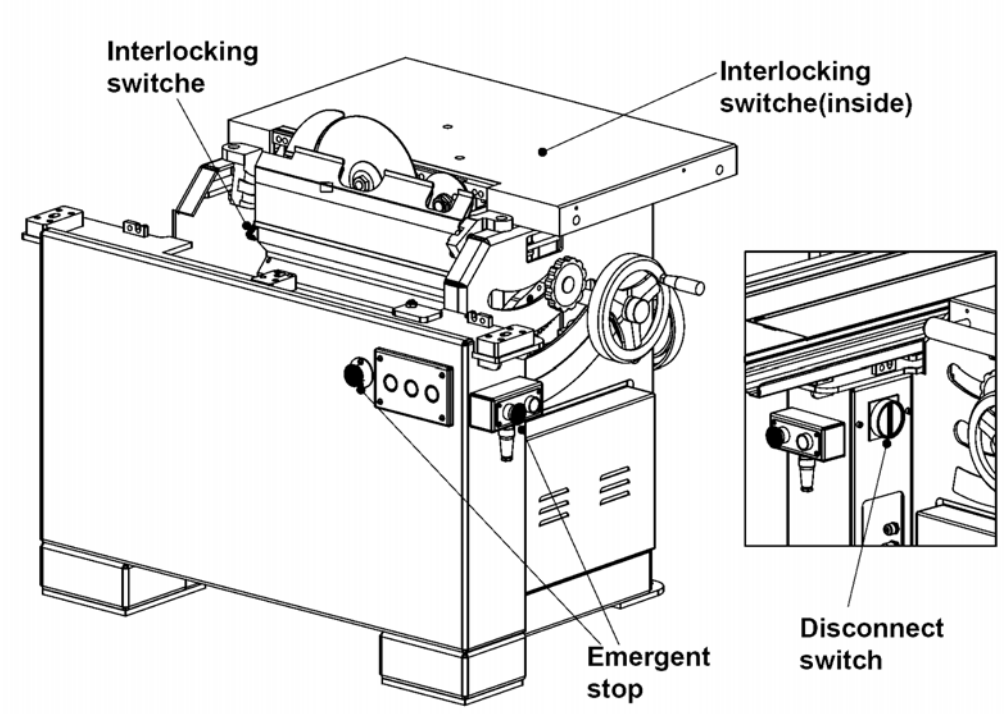


Fig.5

Disconnect switch

Interval: **8hours**

Position: As ***Fig.5***

Operation: With an external lockable handle (padlock should be provided by end user);

Emergent stop buttons

Interval: **8hours**

Position: 2 emergency stop buttons are separately setting, as ***Fig.5***

Operation: Press the emergent stop buttons when emergency.

Release the tripped person in the work zone by the emergent stop button in work zone.

Interlocking switches

Interval: **8hours**

Position: As ***Fig.5***

Interlocking switch-A: when open the cover, the motor power will be off.

Interlocking switch-B: when the scoring is under the surface of the table, the motor power will be off.

followed in the event of accident or breakdown, you must press the Emergent stop buttons, and handle the disconnect switch to cut the power.

When you setting up, operation, service the machine , you must pay increased attention to avoid the potential dangers.

Every time, before you operation the machine, you must check the **Disconnect switch, Emergent stop buttons, Interlocking switches** if in order.

NOTICE

Emergency stop buttons are prohibited to act as normal stop function.

5. Installation of the machine

5.1 Transportation of machines

5.1.1 Transportation and store

The measures of anti-rust and shockproof should be taken during packing. The machine endures transportation and store in -25~55°C ambient temperature.
Be care of not making machine exposed to rain or damaging the packing during transportation and store.

⚠ WARNING

- **While transporting or handling the machine, be careful and let the activity be done by qualified personnel especially trained for this kind of activity!**
- **While the machine is being loaded or unloaded, make sure that no person or subject gets pressed by the machine!**
- **Select proper transportation device according to the weight of the machine.**
- **Make sure the lifting capacity of transportation device is competent for the weight of the machine.**

5.1.2 Transportation before unpacking

As standard, the machine is packed in a robust wooden box. ***Fig.6*** shows the method can be used to transport the packing box.

Fig.6

5.1.3 Confirmation after unpacking

When open the packing box, please pay attention to the following stems. If you have any questions, please contact directly with us.

1) the machine is damaged in transportation or not
2) other accessories and documents is complete or not
3) the product is consistent with the contract or not
4) the specifications on machine label is consistent with the contract or not

5.1.4 Transportation after unpacking

When transport the machine with a stacker truck, firstly find the centre of gravity of the machine, insert the fork to the bottom of the machine and then rise or fall slightly.

5.2 Unpacking

your machine was carefully packaged for safe transportation. remove the packaging materials from around your machine and inspect it. if you discover the machine is damaged, please immediately call Customer Service for advice.

save the containers and all packing materials for possible inspection by the carrier or its agent. Otherwise, filing a freight claim can be difficult.

When you are completely satisfied with the condition of your shipment, inventory the contents.

Inventory

The following is a description of the main components shipped each J-20/J-30 model. lay the components out to inventory them.

Note: If you can't find an item on this list, check the mounting location on the machine or examine The packaging materials carefully. Occasionally we pre-install certain components for shipping purposes.

Machine Box Contents （*Fig.7*） (Hardware not shown):

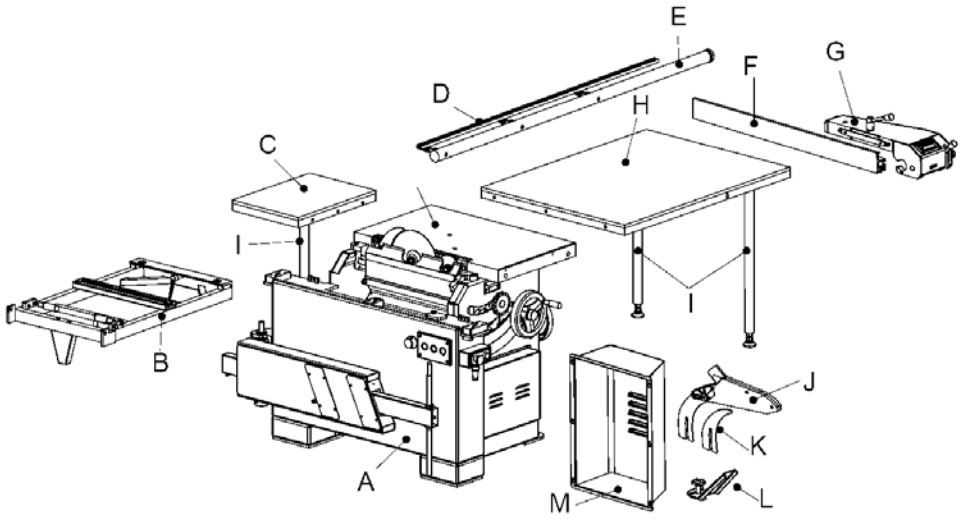


Fig. 7

Machine Box Contents:	Qty
A. Main unit	1
B. Crosscut table	1
C. Rear extension table	1
D. Scale breaket	1
E. Round guide bar	1
F. Rip fence	1
G. Rip fence body	1
H. Side extension table	1

Machine Box Contents:	Qty
I. Support leg	3
J. Blade guard	1
K. Riving Knife	1
L. Clamping shoe	1
M. Door	1
N. Push stick (not shown)	1
O. Hand feed (not shown)	1
P. Tool (not shown)	I set

Sliding Table Box Contents: *（Fig.8）*

（Hardware not shown）

Machine Box Contents:	Qty
A1.Sliding table Assembly	1
B1. Stop plate	2
C1. Cross-cutting fence	1
D1. Assistant support	1

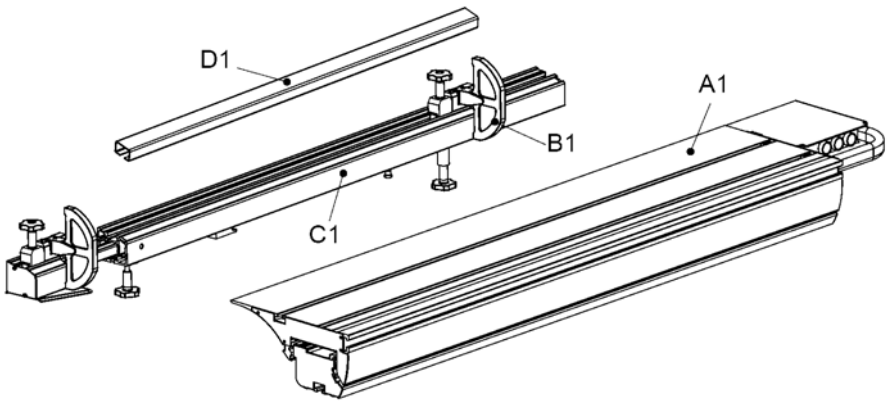


Fig.8

5.3 Safety measure before use/installation

Foundation plan（*Fig.9*）

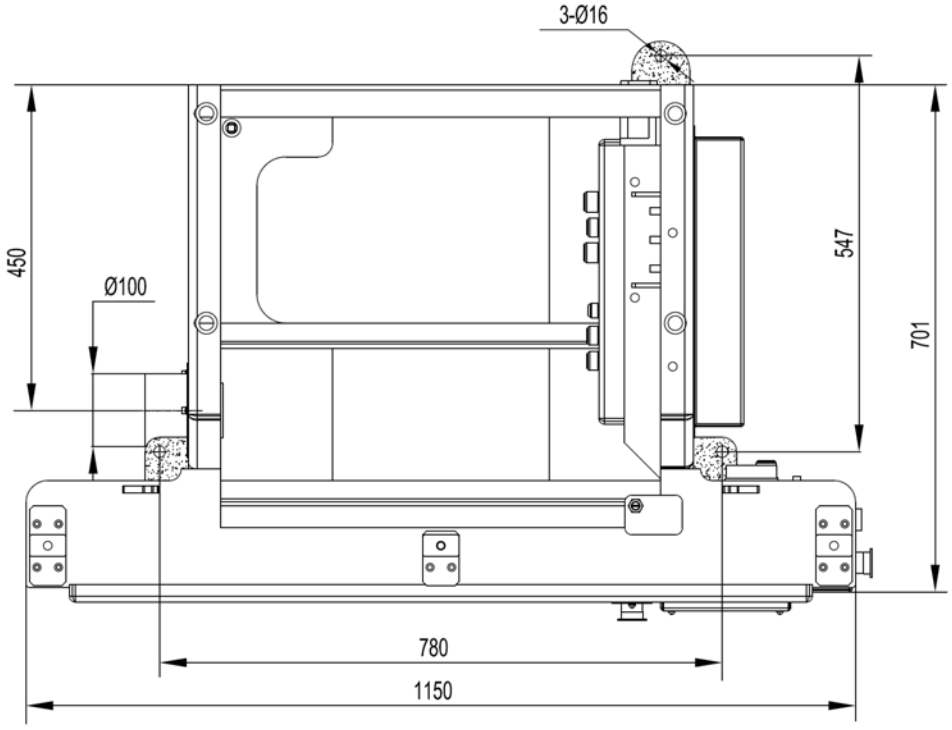


Fig.9

Space Requirements（*Fig.10*）

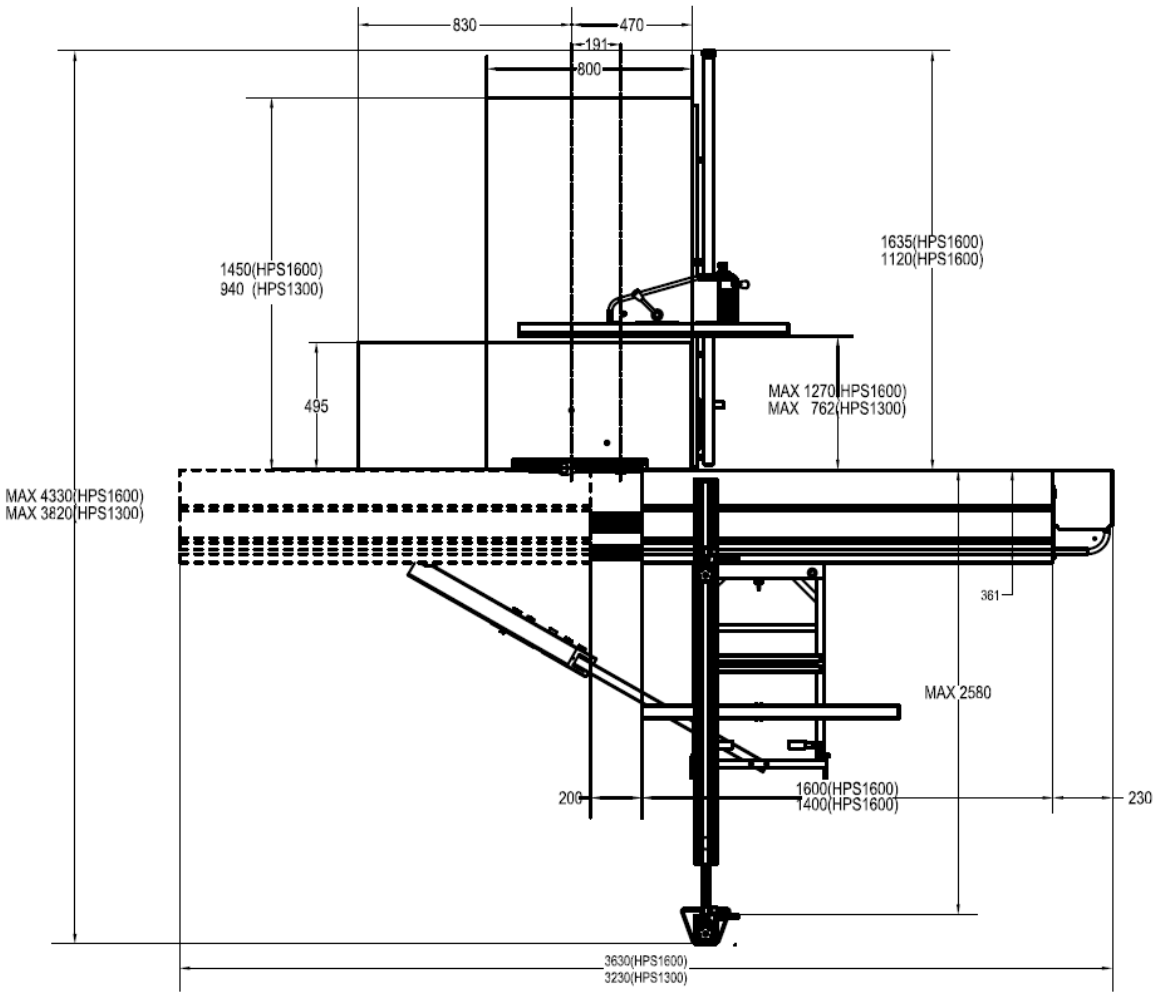
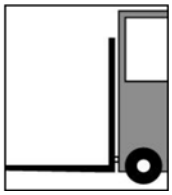


Fig.10

5.4 Installation

5.4.1 Moving & Placing Base Unit



This model is a heavy machine, Serious personal injury will be happen if safe moving methods are no followed! To be safe, you will need assistance and power equipment when moving the shipping crate and removing the machine from the crate!

WARNING

Do not connect machine to electricity before installation is completed!

a, main base is mounted at wood stock with three bolts at point A，B，C ,as(***Fig.11***), take out the bolts, separate the main base from wood stock, at the same time, raise bolts D .

b, moving the main base to suitable place.

Space required： refer to ***Fig.10,*** insure the interspace between the machine and wall at least 800mm.

ground required： there is no special ground required, the floor must have a load bearing strength for the machine weight and should be flat and level

c, when main base is placed, adjust bolts D to make the machine level off. Then tighten D.

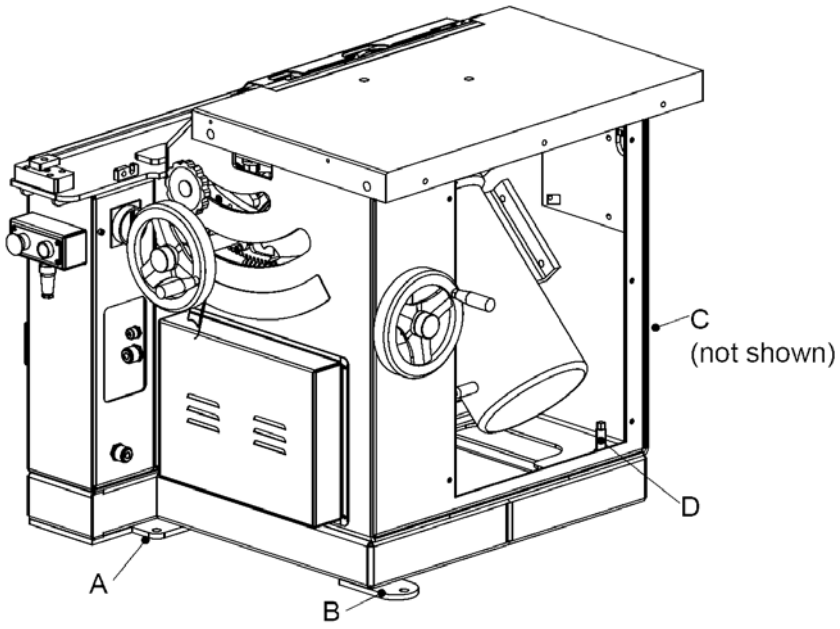


Fig.11

5.4.2 Installation of Sliding Table

Sliding table is packed separately from the main machine. So you need to install sliding table when cabinet is leveled.

WARNING

Always find the matching sliding table for the main machine!

The matching number is the Serial Number that are marked on main machine and sliding table as well as their packing boxes. Make sure the serial numbers on main machine and sliding table are the SAME. Otherwise will cause difficulties in assembling!

a, The sliding table is very heavy, you must moving it as ***Fig.12*****.**

b, Fit the sliding table to main base, mount it to aluminium block (E), as ***Fig.13, Fig.14***

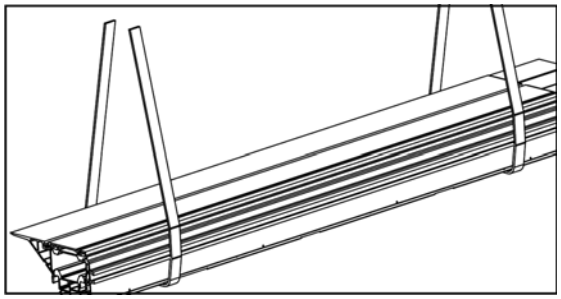


Fig.12

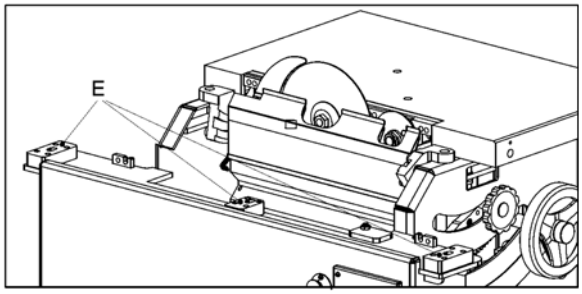


Fig.13

NOTICE

there are three aluminium blocks at the front of the main base, don't adjust it or take-down.

The sliding table must be parallel to the main blade. Set the blade to its max. height and cut a test piece (MDF or other similar materials) with sliding table. If the cut quality is not satisfactory, you can adjust sliding table parallelism to main blade:

c, adjust sliding table parallelism to main blade

Loosen (C) bolts between sliding table and cabinet tiny, *see* ***Fig.14***

Adjust two adjustment bolts A and B - both sides, *see Fig.15,* Bolt B can pull sliding table; bolt A pushes sliding table during adjustment.

When parallelism is OK, lock A and B, then tighten (C) Bolts. *see* ***Fig.15****.*

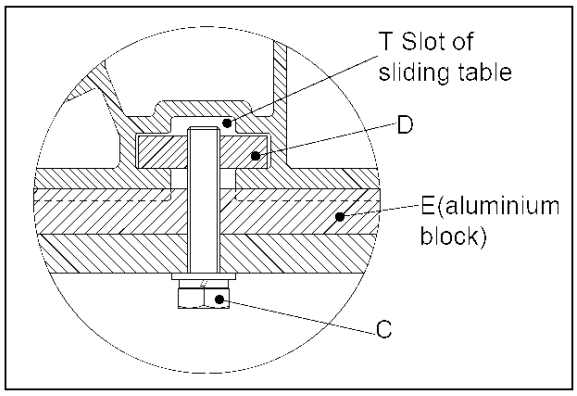


Fig.14

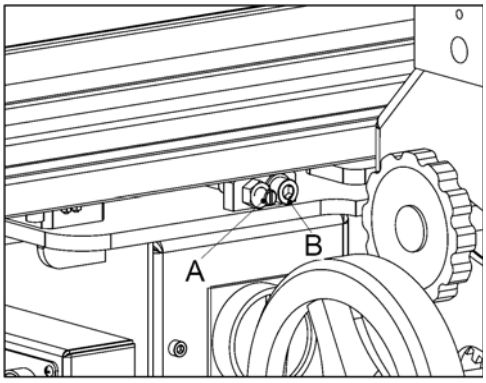


Fig.15

d. insert the 4pin connector (F) to the socket of the main base, as ***Fig.16***

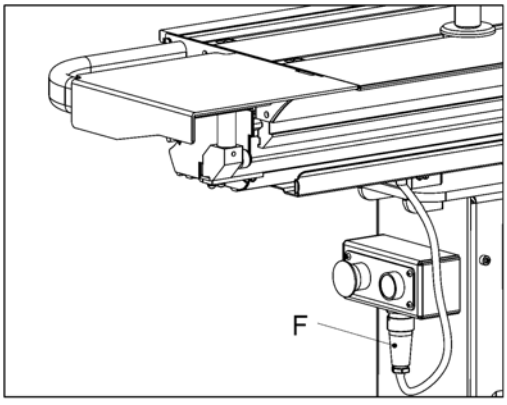


Fig.16

5.4.3 Installation of crosscut table

a. Slide crosscut table into T slot of sliding table ***(Fig.17)***.

b. Align the screw shaft (B) of swing arm to the hole on the bottom of crosscut table ***(Fig. 18)***, and adjust the screw (C), keep the surface of the crosscut table is parallel to the surface of the sliding table. then tighten the screw (D), and tighten the lock handle (A)(see ***Fig 18***)

c. the outrigger table system with swing arm will be in working position, Install the crosscut fence onto crosscut table with two positioning holes. The fence can be locked in any degree with quick lock knobs (E).

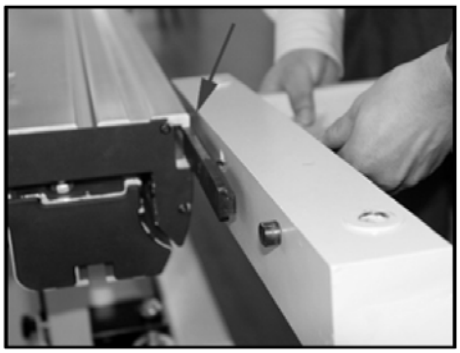


Fig.17

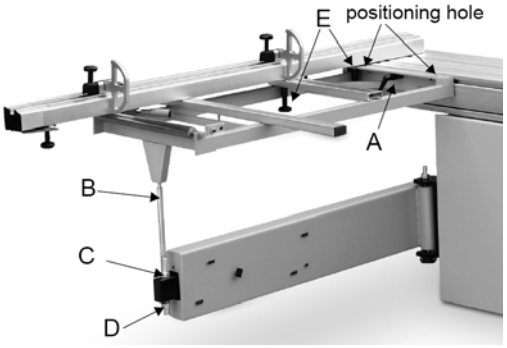


Fig.18

5.4.4 Side Extension Table Installation

a. Fix the side extension table to the side of the main table with three bolts (A),as ***Fig.19.***

b. Fit the legs (B) to the bracket of side extension table with bolts (C), as ***Fig.19.***

c. Adjust feet (D), ensure the side extension table is flat with the main table, as ***Fig.20,*** when adjustment is over, tighten the nuts of the feet(D).

d. at the same time，ensure the Side of Extension Table is flat with the side of main table, as ***Fig.21***, it is very importance for the installation of Rip Fence.

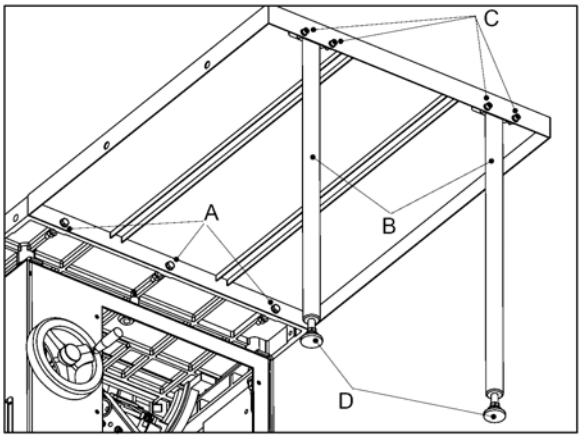


Fig.19

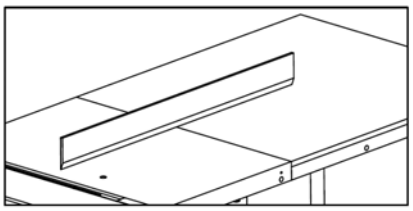


Fig.20

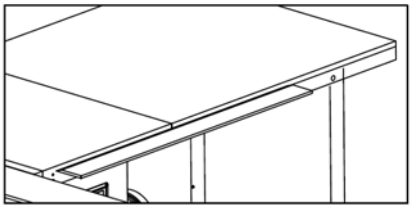


Fig.21

5.4.5 Rear Extension Table Installation

a. Fix the rear extension table to the rear side of the main table with three bolts(A),as ***Fig.22***.

b. Fit the leg (B) to the bracket of Rear Extension Table with bolts (C), as ***Fig.22***.

c, Adjust feet (D), ensure the rear Extension Table is flat with the main table, as ***Fig.23***, when adjustment is over, tighten the nuts of the feet(D).

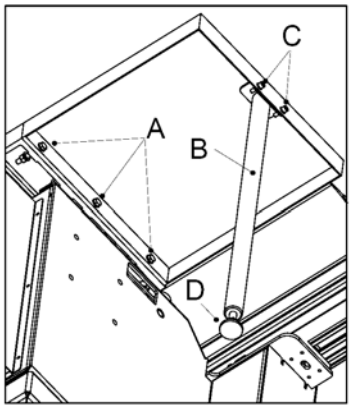


Fig.22

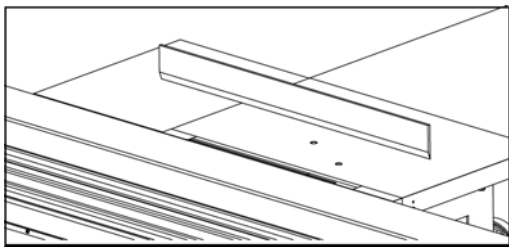


Fig.23

5.4.6 Installation of Rip Fence Scale Tubing and Guide Bar

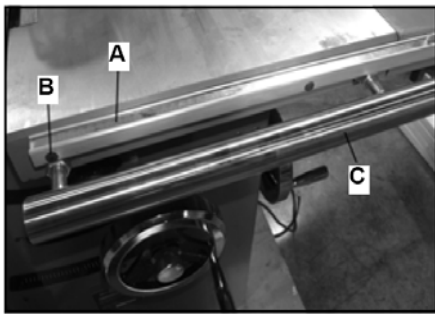


Fig.24

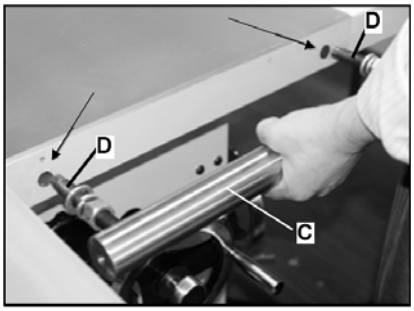


Fig.25

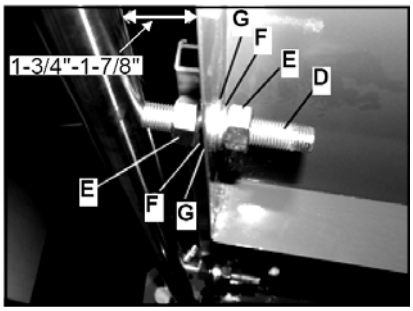


Fig.26

a. Install the scale tubing (A) to the edge of the main table and extension table using countersunk head screws (B). (see ***Fig.24***)

b. Install the guide bar (C) as ***Fig25,***washer (G), spring washers (F),and hex nuts(E) as shown in ***Fig26*** , tighten tiny.

c. The guide bar guides the rip fence along the top surface of the saw, it is important to make sure that the guide bar (C) is installed parallel to the front edge of the tables , the clearance distance from the guide bar to the edge of the tables should range in between 44.5mm and 47.5mm,see ***Fig26***, as reference. Before tightening hardware, make sure the distance is identical at both ends of the guide bar.

d. remove the limit cover(H), the position of lock knob(I) is as ***Fig.27***, slide the rip fence to the round rail, re-install the limit cover (H).

e. Sliding the stop fence(K) to the rip fence body, lock it with knob(J), as ***Fig.28.***

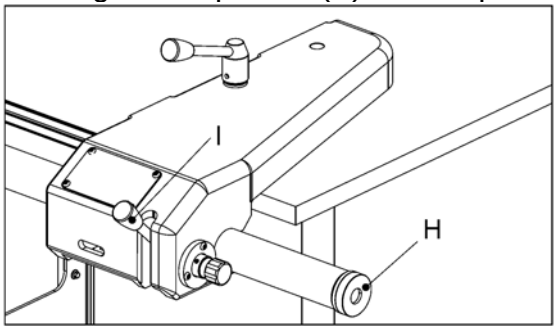


Fig.27

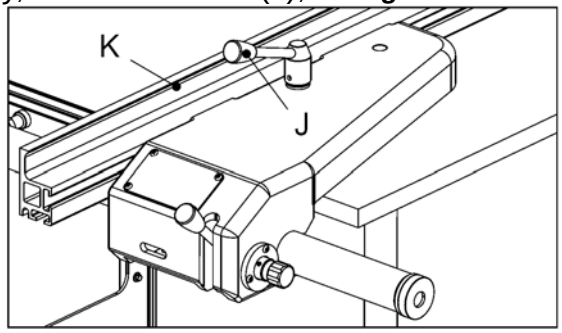


Fig.28

f. There is three stations for knob(I), as *Fig.29.*

station 1：Rip Fence is entirety loosen，glide freedom.

station 2：Rip Fence is in a condition for micro Adjust.

station 3：Rip Fence is entirety tighten, can be used for cutting work.

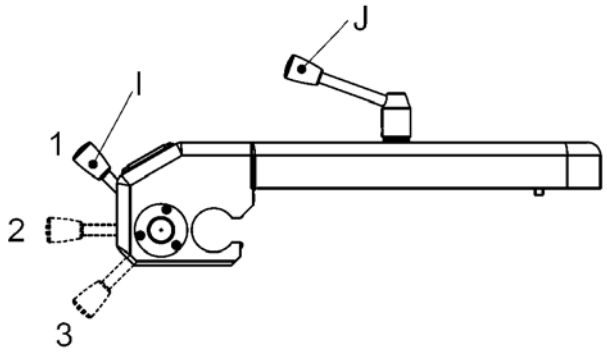


Fig.29

5.4.7 Blade installation and changing

WARNING

Turn the power switch "OFF" and unplug the power cord from its power source when changing the saw blade.

When replacing blades, check the thickness stamped onto the riving knife. You must select a blade with a kerf width larger than the thickness of the riving knife. Thinner blades may cause the workpiece to bind during cutting.

Main blade installation and changing (*Fig.30)*

a. Push sliding table all the way to the Right.
b. Open blade cover
c. Raise the spindle to the highest position
d. Insert the locking pin (A) into the hole in the main table to hold spindle from rotating.
e. Put blade onto spindle arbor and put on the clamping flange and locking nut. Use the wrench(comes with machine) to tighten the blade locking nut.
f. Push back the blade cover

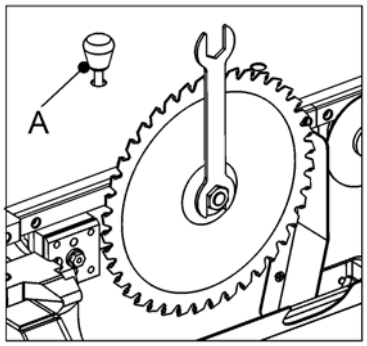


Fig.30

Use reverse steps to change blade.

Take out the lock pin after blade is installed.

Machine will not run when blade cover is not closed.

Scoring blade installation and changing (*Fig.31)*

a. Push sliding table all the way to the Right.
b. Open blade cover
c. Use wrench(comes with machine) as shown to lock the scoring blade to arbor.
e. Push back the blade cover

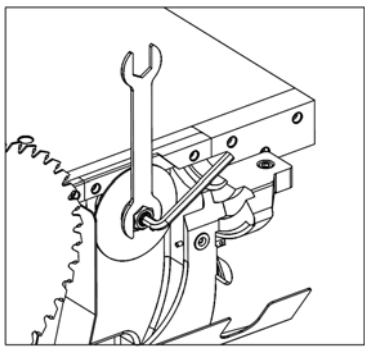


Fig.31

Use reverse steps to change blade.

NOTICE

Take out the lock pin (A) after blade is installed.
Machine will not run when blade cover is not closed.

5.4.8 Blade Guard & Riving knife installation

Installation of Blade Guard is the same as Installation of Riving knife

The Blade Guard & Riving knife can be adjusted in both horizontal and vertical directions, block(A) can be adjust left or right, the blade guard (B) can be adjust up or down. As ***Fig.32***

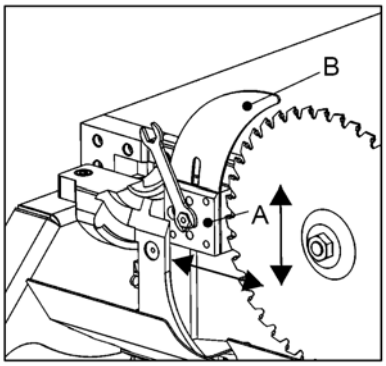


Fig.32

After changing a saw blade, always check that the Riving knife or Blade Guard is correctly set!

1. riving knives shall be manufactured from steel with an ultimate tensile strength of 580 N mm-2 or of a comparable material, have flat sides (within 0,1 mm per 100 mm) and shall have a thickness less than the width of cut (kerf) and at least 0,2mm greater than the saw blade plate. As ***Fig.33***

Key:
e riving knife thickness
b saw blade blade
B kerf(width of saw blade cut)

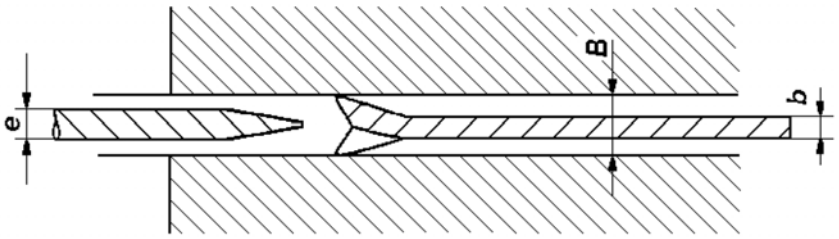


Fig.33

2, The distance of the riving knife from the gear rim must be between 3mm and 8mm. measured radially through the centre of the saw spindle. As **Fig.34**

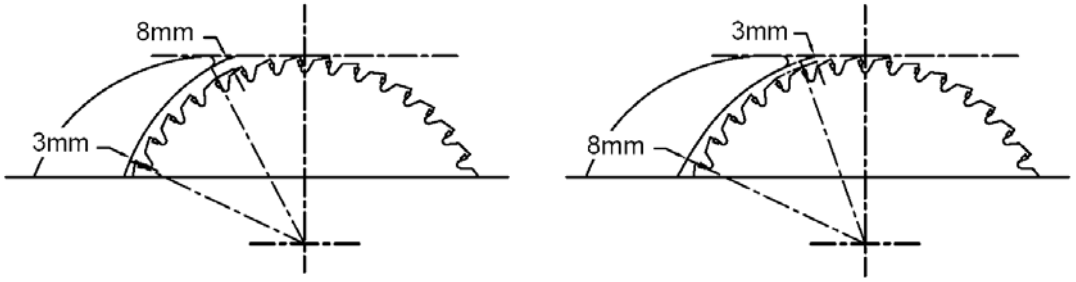


Fig.34

3. the highest point of the riving knife must be set beneath the topmost teeth.

WARNING

Check that saw blade clamping system is tight before operating the machine.

5.4.9 Connecting the extraction system

NOTICE

Dust collector device should be prepared by customer;

WARNING

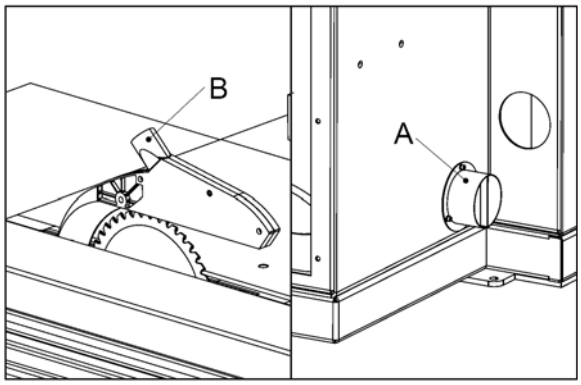
The dust extraction equipment is to be switched on before commencing machining;

As *Fig.35*

The outlet diameter of **A** is 100mm

The outlet diameter of **B** is 50mm

Air current speed is 20m/s for vacuum suction dust emission index, When air current speed of dust collector device (in accordance with EN 12779:2004) is not lower than 20m/s,ensure machine can be normal exhausted. User must wear dustproof mask. ***Fig.35***



1. Required air flow:1500 m3/h;
2. Ensure pressure drop of each dust collector outlet carrying air current speed: 1100Pa
3. Wind speed of dust collector tube m/s: dry chips: 20m/s, water content is equal to18% wet chips: 28m/s.

5.4.10 Electrical installation

WARNING

1. ***Wiring should only be done by professional electricians.***

2. ***All wirings in the cabinets should be protected against direct contact to at least IP2X when finishing electrical installation.***

3. ***All exposed conductive parts should be connected to the protective bonding circuit.***

4. ***Close and lock the door of cabinets, take off the keys and keep them well after finishing installation.***

NOTICE

1. Enough space around the machine and the cabinets should be kept in order to maintain conveniently.

2. The machine should be installed in a workshop with good illumination and ventilation.

3. Over-voltage protection device should be provided by end user on spot.

WARNING

Entrust this operation to qualified personnel. Always make sure the machine is properly earthed.

Check that the voltage and frequency required by the machine, shown on the machine's name plate, correspond to the electric power supply voltage and frequency.

The circuit breaker (16A) with RCD module (30mA) shall be installed for supplying electric power to this table saw, in order to protect people against electrical shock due to indirect shock

Wiring:

Finish electrical connection according to the electrical drawings.

The wirings on the spot should refer to the requirements of Clause 13 (Wring practices) of EN 60204-1:2006.

Checking:

After finishing wiring on the spot, check the following items at least:

Check the wirings of machine.

Check the direction of motors and change wiring if necessary.

Check the components for defects, such as loosening or damage.

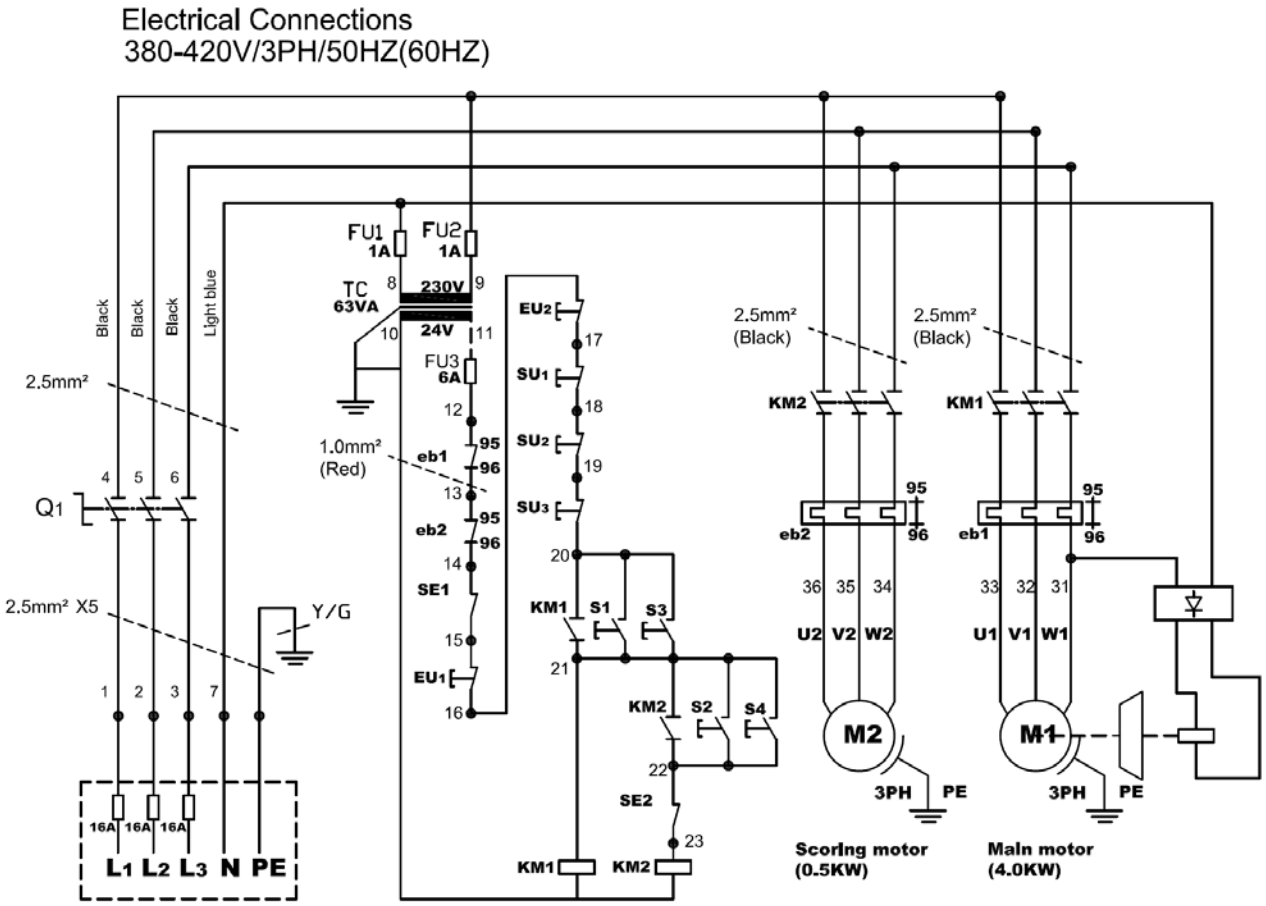
Check the functions of safety devices (such as interlocked guards and emergent stop buttons).

Check the direction of motors and change the phases if necessary.

Check the functions of all limited switches.

The terminals are marked L1,L2,L3,N,PE,
If blade direction is wrong, please change any two "L" terminal position.

ELECTRICAL CONNECTIONS



No.	Code	Name	Specification
1	Q1	main switch	ZH-N332(32A) 440V, 50Hz,15kA, IP54
2	Fu1,Fu2	Fuse	216.1A,250V,1A,1500A,5X20
3		Fuse holder	UK5-HES1
4	TC	Isolation transformer	ABL 6TS006B AC:220V/24V 63VA
5	Fu3	Fuse	216.6.3A,250V,6.3A,1500A,5X20
6	SE1	Interlocking switch	QKS7,AC-15, 250VAC, 10A, IP54
7	EU1,EU2	E-stop	Type CE4T-10R-01, 300V, 5A
8	SU1, SU2, SU3	Stop switch	Type CP1-10G-01, 300V, 5A
9	S1, S2, S3, S4	Start switch	Type CP1-10R-10, 300V, 5A
10	SE2	position switch	QKS7-5,AC-15, 250VAC, 10A, IP54
11	KM1	contactor	LC1-D32,400V,30A; Coil:24Vac
12	KM2	contactor	LC1-D09,400V,8A Coil:AC 24Vac
13	eb1	thermal relay	LRD-16C 9-13A (9A)
14	eb2	thermal relay	LRD-06C, 1-1.6A (1.0A)
15	M1	motor	MQAEJ112M, 4kW,380-420V, 2875/min, IP55;
16	M2	motor	YSJ7122-17, 0.55kW, 380V, IP55
17	X1	terminal block	ABB MA4/6
18		Cable (power cord, for	H07RN-F 5G2.5
19		control Cable (for	H07RN-F 4G1.5
20		cable (E-stop)	ZREE-C LSOH 2X1.0
21		Control cable	ZREE-C LSOH 7G0.75
22		Drag cable	EKM71100.050.04, 0.5X4C
23		4pin connector	KP32-4T-7 & KP32-4ZMC, IP65

6. Adjustment

NOTICE

Before operation, the machine should be carefully adjusted for best performance. Please make adjustment as following:

6.1 Sliding table

The sliding table must be parallel to the main blade. Set the blade to its max. height and cut a test piece (MDF or other similar materials) with sliding table. If the cut quality is not satisfactory, you can adjust sliding table parallelism to main blade:

The adjust method please see chapter 5.4.2

6.2 Main Table

Sliding table must be around 0.1mm higher than main table. Put a straight rule across the sliding table, use feeler gauge to check. We have **pre-adjusted**.

To adjust the height difference between main table and sliding table, you only need to adjust the four adjustment screws underneath main table (four corners), turn nut (A)&(B) in or out, The screws can be adjusted to reach perfect leveling of main table and the height of main table. see ***Fig.36***

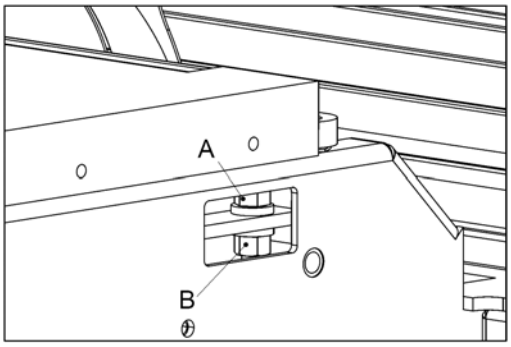


Fig.36

6.3 Scoring blade

Adjust the scoring blade horizontal to go ahead or fall back by turn hex wrench (A),hex wrench (A) through the hole(B) of the table, insert the hex hole of the shaft as ***Fig. 37*****.** right revolve，scoring blade go forward，left revolve, scoring blade fall back， per circle，journey about 0.15mm**.**

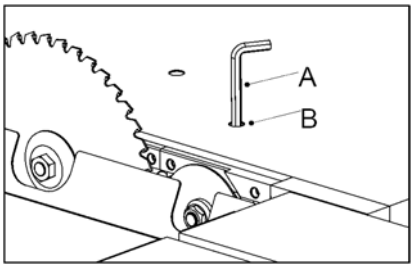


Fig. 37

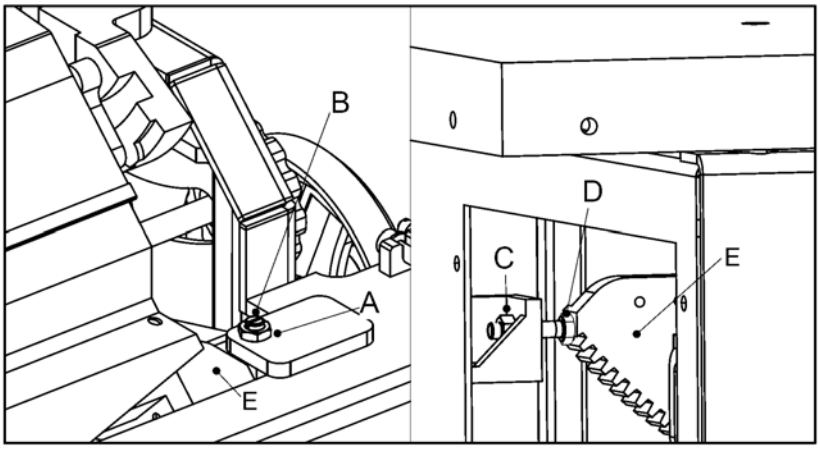


Fig. 38

6.4 90 and 45 degree stops

The blade tilting mechanism of your saw is equipped with a positive stop at 45 and 90 degrees. To check and adjust these positive stops, proceed as follows:

a. Raise the saw blade to its maximum height.

b. Set the blade at 90 degrees to the table by turning the blade tilting hand wheel counter clockwise as far as it will go.

c. Place a square on the table and check to see if the blade is at a perfect 90 degree angle to the table.

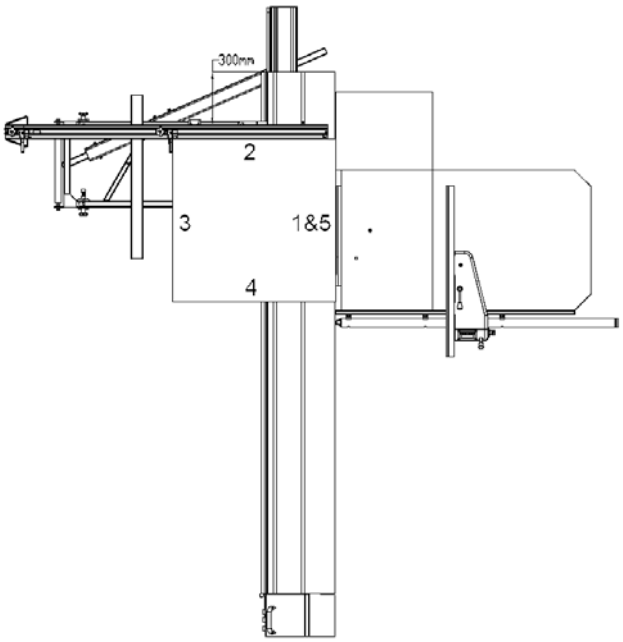
d. If the blade is not at 90 degrees，loosen screw (C), and turn 90° stop (D) in or out, The 90 ° stop (D) should against the block E, when the blade is at 90 degrees to the table. Retighten screw (C). see ***Fig.38***

e. If the 45 degree positive stop is not set properly, turn the same hand wheel clockwise as far as it will go , loosen screw (A), and turn 45° stop (B) in or out, The 45° stop blot (B)should against the block E, when the blade is at 45 degrees to the table. Retighten screw (A). see ***Fig.38***

6.5 Crosscut fence

Square to main blade:

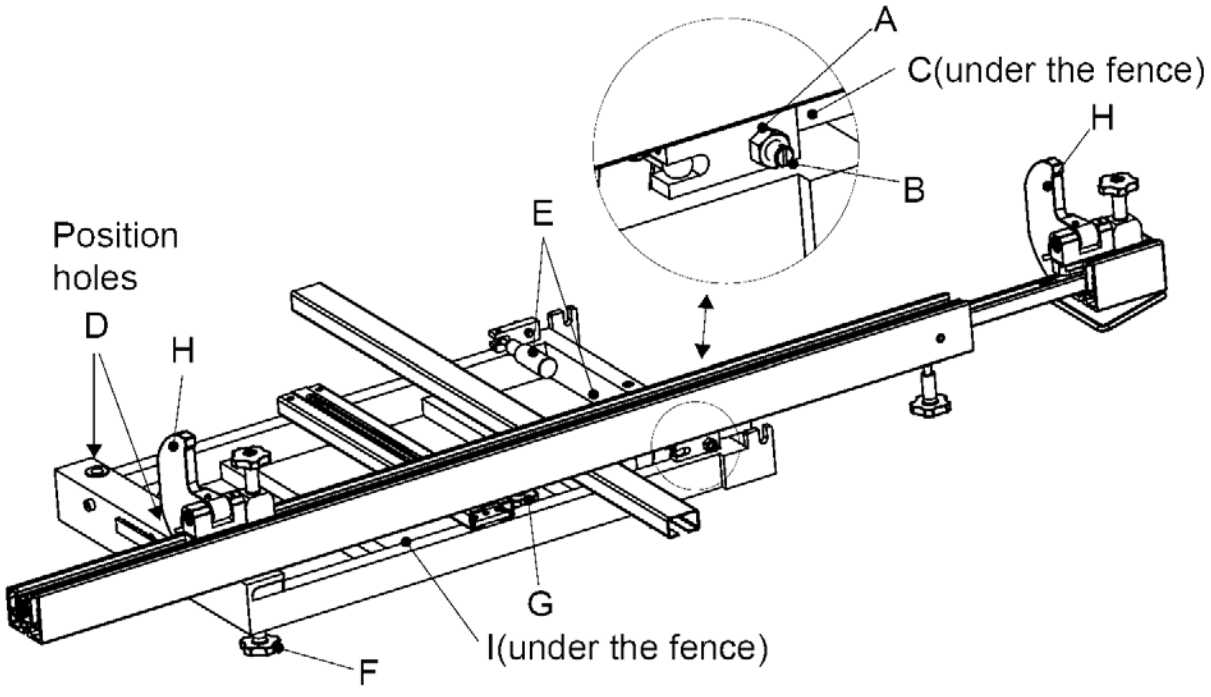
The crosscut fence/miter fence must be set 90 degree to the blade. Take a 1000x1000mm MDF or similar material with thickness at least 15mm, Make 5 cuts. (Put the last cut side against the fence for the next cut, keep turn the test piece in same direction). Measure the 5th cut off strip at both ends. The difference will be less than 0.75mm, see ***Fig.39***



F ig.39

Adjust as follow：

a. Release knob E，F，G and nut A，thread screw B in or out, see ***F ig.40***
b. Make block (C) touch the blot (B)，lock nut (A)and lock knob(E),(F),(G).
c. Base the experimentation above to make sure the fence is Square to main blade, till measure up。
d. There is two position holes on the crosscut table (***Fig.40***), at two position, the same adjustment action must be used.



F ig.40

Crosscut fence scale adjustment:

For the first time to use the fence or replacing blade, the scale must be readjust:

Set the stop plate (H) ***(Fig.40)*** at a certain location and cut a piece of workpiece.

a. measure the length of the workpiece, release the little knob (I) ***(Fig.40)***under the fence, adjust the location of the scale to fit the length you measured, confirm the scale's location and lock the scale with knob (I)。

b. use the same mode to adjust the inner scale.

6.6 Rip Fence

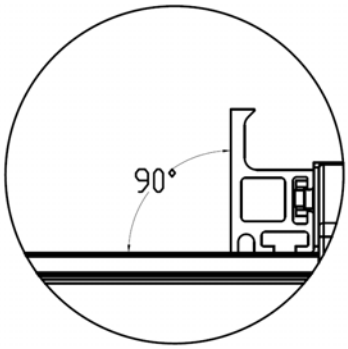
NOTICE

Rip fence must be adjusted as next before you use it.

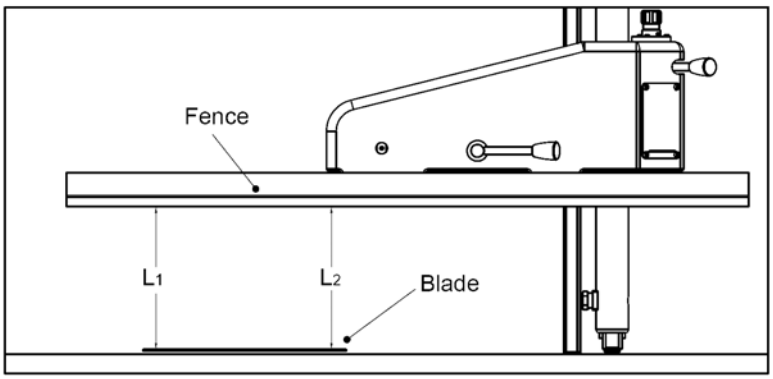
a. To adjust the fence upright with the table surface, as *F ig.41*.

b. To adjust the fence parallel with the blade.

the difference between L1 and L2 is 0.05-0.15mm, and that L1＞L2, as ***Fig.42***



F ig.41



F ig.42

The adjust method please see chapter 5.4.6

c. Adjust the Rip fence scale：

First time use or each time the blade change, the scale must be adjusted. Put the fence in a certain position and cut a test piece. Measure the length of the test piece. Loose the knob (A) under the scale and move the scale until it matches the length of the previously cut sample, see ***Fig.43***

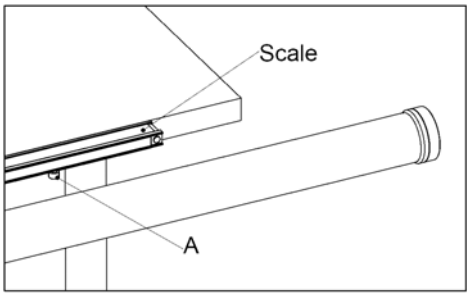


Fig. 43

7. Operations

7.1 Electrical Operations*(Fig.44)*

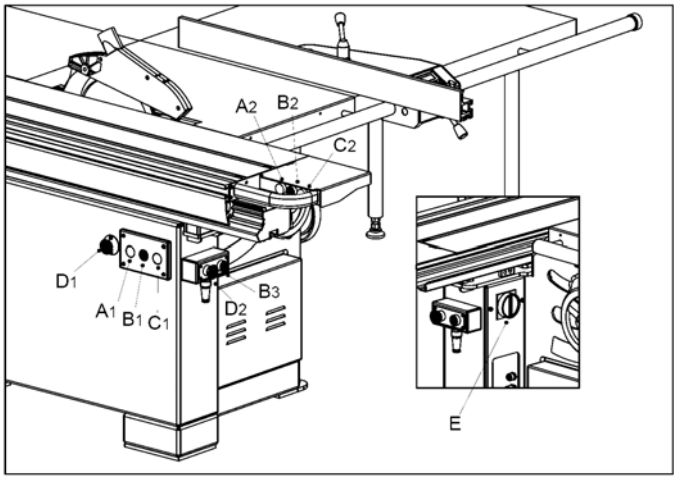


Fig.44

A1,A2 **Start button for main blade**
—start the main motor.

B1,B2,B3 **Stop button**
—stop all motors

C1,C2 **Start button for Scoring blade**
—start the scoring motor

D1,D2 **Emergency stop button**
—disconnects power to all motors in the motor cabinet

E **Main power switch**
—connect or disconnect the all motor power.

7.2 Safety precautions before operation

The operation of the machine involves a certain amount of hazard for the operator. Before attempting regular work we recommend you get the feel of operations using scrap lumber to check settings. Read entire instructions before you start to cut work piece. Always pay attention to safety precautions to avoid personal injury.

7.3 Crosscutting

1.The crosscut fence can be installed at two positions.
See *Fig.45*

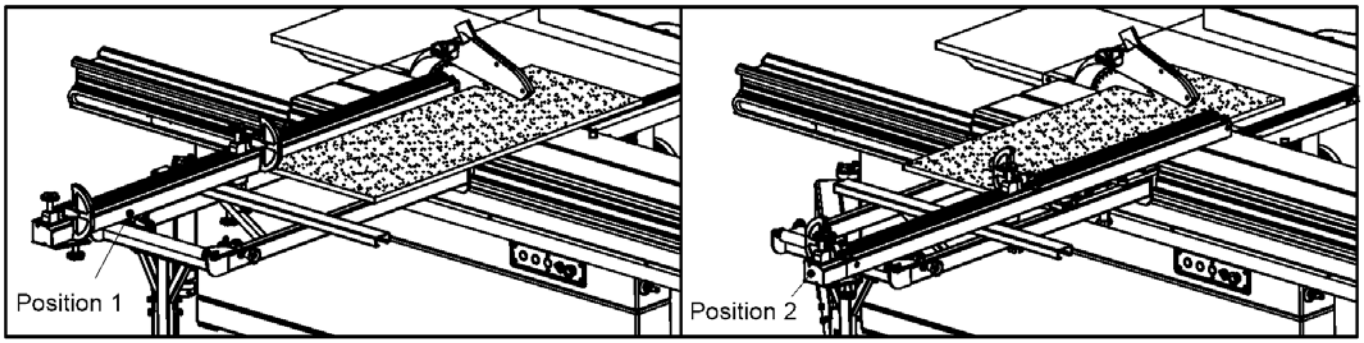


Fig.45

Position 1: the operator presses the workpiece against the fence in the cutting direction.
Position 2: the operator pulls the workpiece along the fence against the cutting direction.

2.The crosscut fence can be swung ±49°。

7.4 Rip Cutting

WARNING

When you use aluminum rip fence, Remove the crosscut fence/miter fence Use the sliding table lock lever to lock the sliding table.

When cutting width is less than 120mm, make sure that the material is fed with a push stick, and the stop fence is laid flat.

For cutting parallel, the rip fence is pushed up to the required dimension, the set dimension is read off from the edge of the aluminum rip fence.

The dimension can be adjusted to the individual tool thickness after release the knob under the scale.

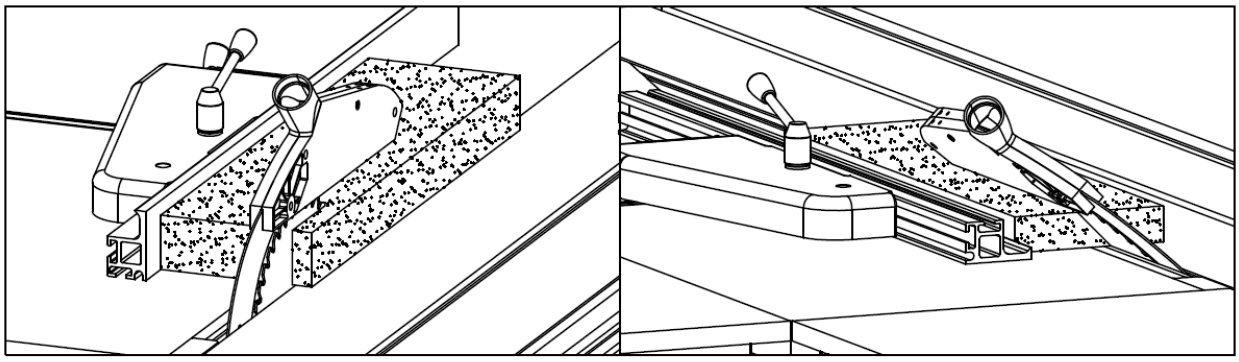
For cutting short workpieces, the stop fence is moved forward until its rear end is in front of the saw blade.

The stop fence can be installed at two positions. See *Fig.46*

Position 1: Upright position of the stop fence for normal workpieces;

Position 2: Flat position of the stop fence;

The stop fence is moved into the flat position when cutting flat and narrow workpieces, this means there is more space for workpiece guidance and the fence can be moved closer to the saw blade, in particular, when the blade is tilted, without hitting the safety hood.



Upright position of the stop fence　　Flat position of the stop fence

Fig.46

7.5 Clamping shoe

A clamping shoe for the irregular lumber. See *Fig.47*

Fit the clamping shoe on the sliding table, lay the workpiece with the hollow side down, and press underneath the shoe, push the workpiece forward by applying pressure with the ball of your right hand on the workpiece edge, place your hands with sufficient safety clearance from the tool.

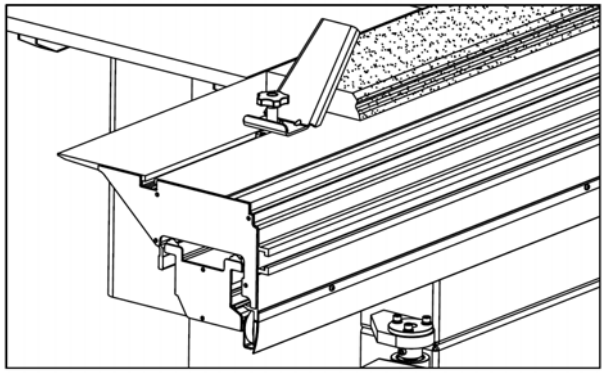


Fig.47

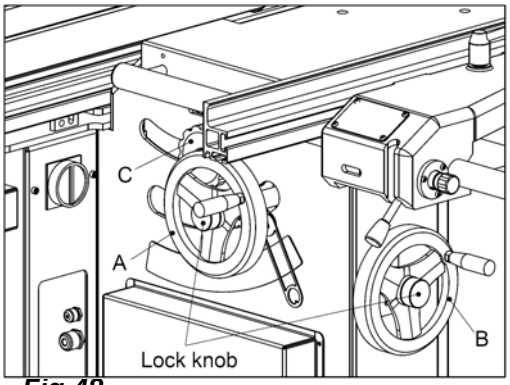


Fig.48

7.6 Operation of handle: see *Fig.48*

1. Turn angle adjustment hand wheel(A) to adjust main blade to a certain angle and lock in position.

2. Turn height adjustment hand wheel(B) to adjust main blade to a certain high and lock in position.

3. Turn height adjustment hand wheel(C) to adjust scoring blade to a certain high and lock in position.

7.7 Working examples

Crosscutting

Fig.49

Rip Cutting

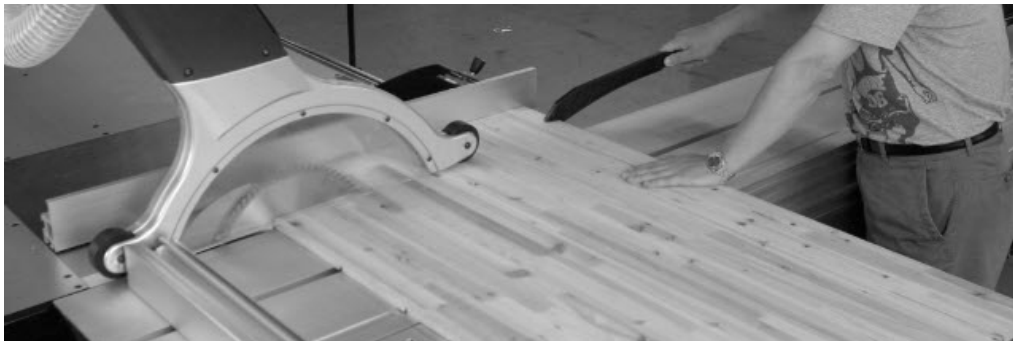


Fig.50

Dividing larger board

For this work cycle, the dimension can be set both on the rip fence and on the crosscut fence, if several pieces of the same size are to be cut from a large board, you cut the parallel strips at the rip fence first, and then crosscut to the required dimension, however, if the workpiece exceed the cutting width of the machine, the dimension is set at the crosscut fence;

Fig.51

8. maintenance

WARNING

Always disconnect power to the machine before performing maintenance. Failure to do this may result in serious personal injury.

8.1 Cleaning

Cleaning this machine is relatively easy. Vacuum excess wood chips and sawdust, and wipe off the dust with a dry cloth, if any resin has built up, use a resin dissolving cleaner to remove it, treat all cast iron and unpainted steel with a non-staining lubricant after cleaning.

Once a Week:

—clean sliding table surface and grooves.

—clean the cast iron saw table.

—clean the roller guide ways for the sliding table.

—clean the extruded aluminum rip fence and sliding grooves.

—clean the round guide bar.

8.2 Lubrication: see *Fig.52, Fig.53,*

8.3 Remove the motor cover, set the tilt to 45 degree, and cutting height below the table.

Once a Month:

—Two main blade guide(A)

—Two scoring blade guide(D)

—Screw(E,H)

—Gear(G,F)

—Trunnion（B,C）

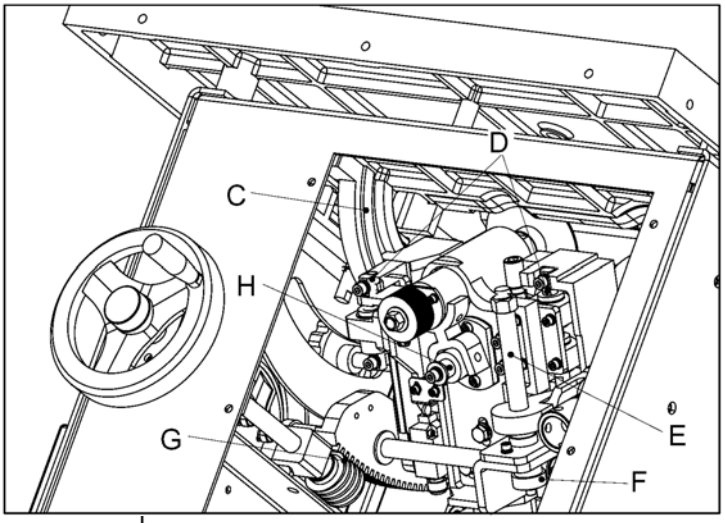


Fig.53

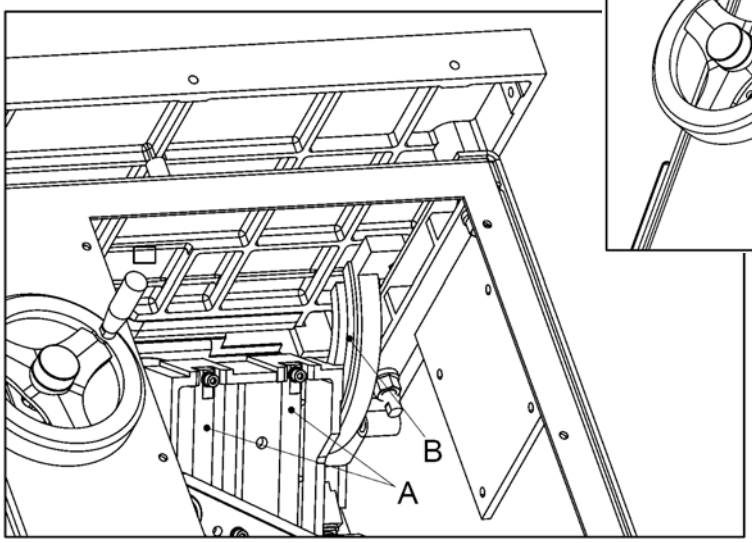


Fig.52

8.3 Replacing belt.

Remove the motor cover, set the tilt to 45 degree, and cutting height below the table.

Once a Month

1. Main motor belt.

release nut (A) and bolt (B)，you can rise the motor to loosen the belt, take out it and install new belt, thread bolt (B) to tighten the spring and tighten nut (A). see ***Fig.55***

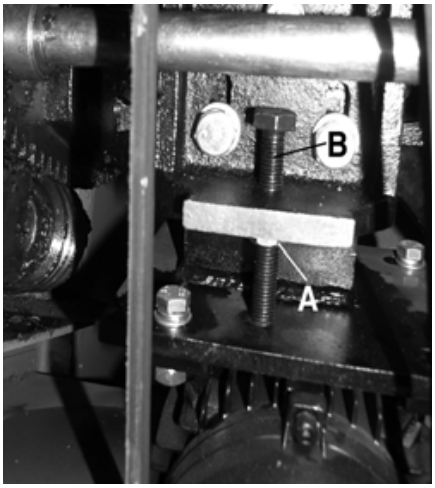


Fig.54

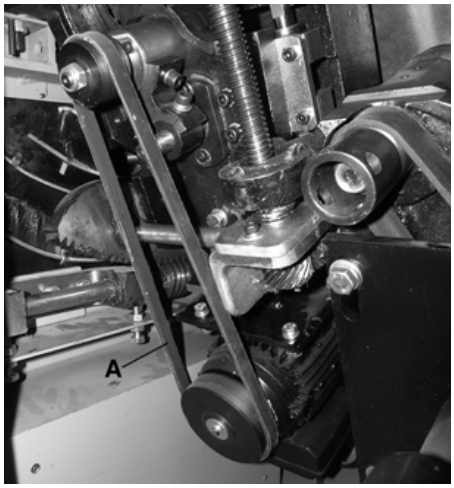


Fig.55

2. Scoring motor belt.

You can take out the belt (A) direct, and install new belt. see ***Fig.55***

8.4 Air gap adjustment of brake

8.4.1 After a long-term use, friction surface of the brake may be worn out, which leads to the increase of the air gap between electromagnetic iron and armature as well as the working length of spring, and decrease the spring strain and brake torque, at the same time, due to increased air gap, the current also rises when armature is released, the armature can not even be released in some extreme cases. Therefore, air gap shall be regularly checked and adjusted, or replace the friction disc if necessary.

8.4.2 Air gap is adjustment as follow *Fig.56*

a) Turn the hand release lever left and remove it.
b) Remove fan cover (11).
c) Turn nut (5) and bolt (8) left to loose them.
d) Turn bolt (8) right to adjust air gap of armature within values in the table below.

Type	Frame size	71	80	90	100	112	132	160	180	200	225	250
MQAEJ series	air gap(mm)	0.3	0.3	0.3	0.5	0.5	0.5	0.6	--	--	--	--
QAEJ series		0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.5	0.6	0.6

e) Turn nut (5) right and tighten firmly.
f) Reassemble fan cover (11).
g) Reassemble hand release lever.

8.4.3 Replace friction disc

Friction disc is easily worn out. If wear is above 2.5mm on one side, it must be replaced with the following steps:

a) Remove hand release lever.
b) Remove fan cover (11).

c) Remove fan (12).
d) Loose nut (5) and bolt (8).
e) Screw off bolt (8).
f) Disconnect leads of excitation coil of brake.
g) Remove electromagnetic iron and armature.
h) Remove brake disc abd replace friction disc.

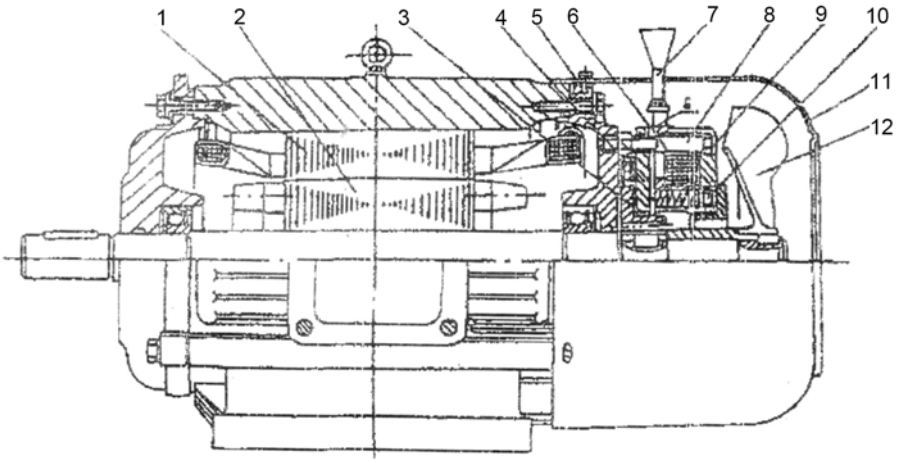


Fig.56

8.4.4 principle and use of hand release lever

pull the hand release lever right, transfer the force by lever to screws which are connected with armature, this may separate the armature from the friction disc so that the brake torque is released.

8.4.5 DC brake connection diagram

Connection method of the rectifier is mainly covered.

Four-pole rectifier is in accordance with ***Fig.57***

Six-pole rectifier (foe fast brake) is in accordance with ***Fig.58.***

DC power supply applied by customer shall ensure the synchronous power switchover between the motor and brake.

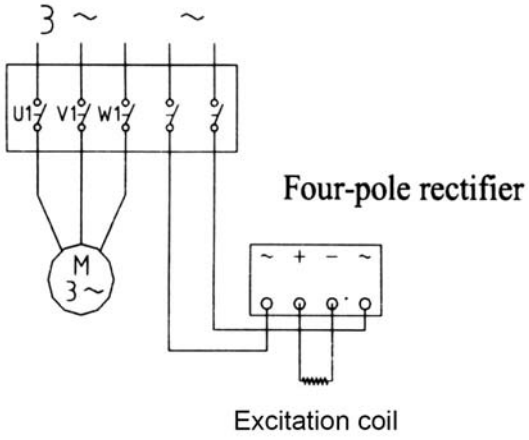


Fig.57

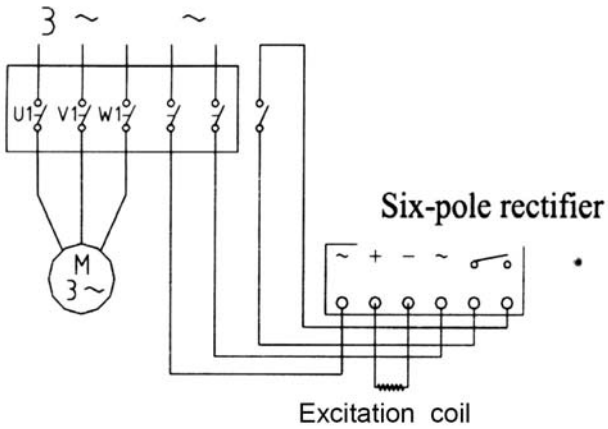


Fig.58

8.5 maintenance and repair of push block handles and push sticks

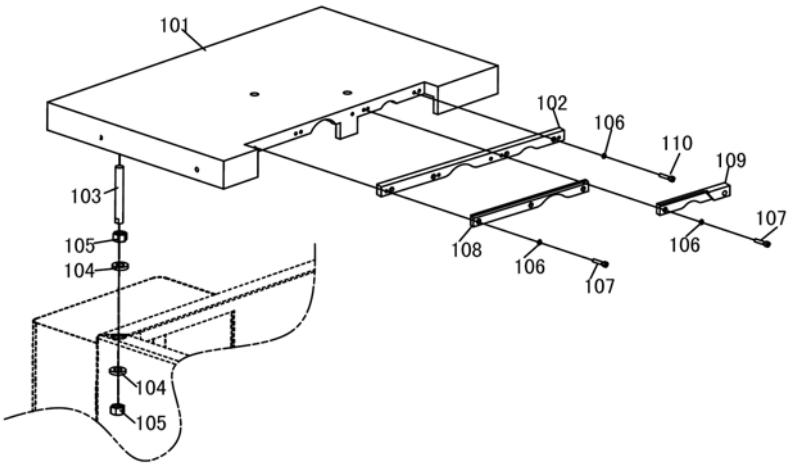
If the push block handles and push sticks wear out, please replace it at once. The size of the push block handles and push sticks shall conform to that mention in section 4.4.

9. Trouble shouting guide

PROBLEM	SOLUTION
SAW WILL NOT START	
1. Saw not plugged in.	1. Plug in saw.
2. Fuse blown or circuit breaker tripped.	2. Replace fuse or reset circuit breaker.
3. Cord damaged.	3. Have cord replaced by a certified electrician.
OVERLOAD KICKS OUT FREQUENTLY	
1. Extension cord too light or too long.	1. Replace with adequate size cord
2. Feeding stock too fast.	2. Feed stock more slowly.
3. Blade in poor condition (dull, warped, gummed).	3. Clean or replace blade.
4. Blade binding due to misaligned rip fence.	4. Check and adjust the rip fence. See rip fence instructions.
5. Blade binding due to warped wood.	5. Select another piece of wood.
6. Low house current.	6. Contact your electrical company.
DOES NOT MAKE ACCURATE 45 AND 90 RIP CUTS	
1. Positive stop(s) not adjusted properly.	1. Check blade with square and adjust positive stop.
2. Tilt angle pointer not set properly.	2. Check blade with square and adjust pointer to zero.
MATERIAL PINCHES BLADE WHEN RIPPING	
1. Rip fence not aligned with blade.	1. Check and adjust rip fence.
2. Warped wood.	2. Select another piece of wood.
MATERIAL BINDS ON SPLITTER	
1. Splitter not aligned correctly with blade kerf.	1. Check and align splitter with blade kerf.
SAW MAKES UNSATISFACTORY CUTS	
1. Dull blade.	1. Replace blade.
2. Blade mounted backwards.	2.Turn blade around.
3. Gum or pitch on blade.	3. Remove blade and clean with terpentine and steel wool.
4. Incorrect blade for work being done.	4. Change the blade.
5. Gum or pitch on table causing erratic feed.	5. Clean the table with turpentine and steel wool.
BLADE DOES NOT COME UP TO SPEED	
1. Extension cord too light or too long.	1. Replace with adequate size extension cord.
2. Low house current.	2. Contact your electric company.
3. Motor not wired for correct voltage.	3. Refer to motor and /or nameplate.
MACHINE VIBRATES EXCESSIVELY	
1. Table not mounted securely to cabinet stand.	1. Tighten all mounting hardware.
2. Stand is on uneven floor.	2. Reposition on flat level surface.
3. Damaged saw blade.	3. Replace blade.
4. Bad V-belt(s).	4. Replace V-belt(s).
5. V-belts not tensioned properly.	5. Adjust V-belt tension.
6. Bent pulley.	6. Replace pulley.
7. Improper motor mounting.	7. Check and adjust motor mounting.
8. Loose hardware.	8. Tighten all nuts, bolts and set screws.
BLADE DOES NOT RAISE OR TILT FREELY	
1. Sawdust or dirt in raising or tilting mechanisms.	1. Brush or blow out loose dust or dirt.

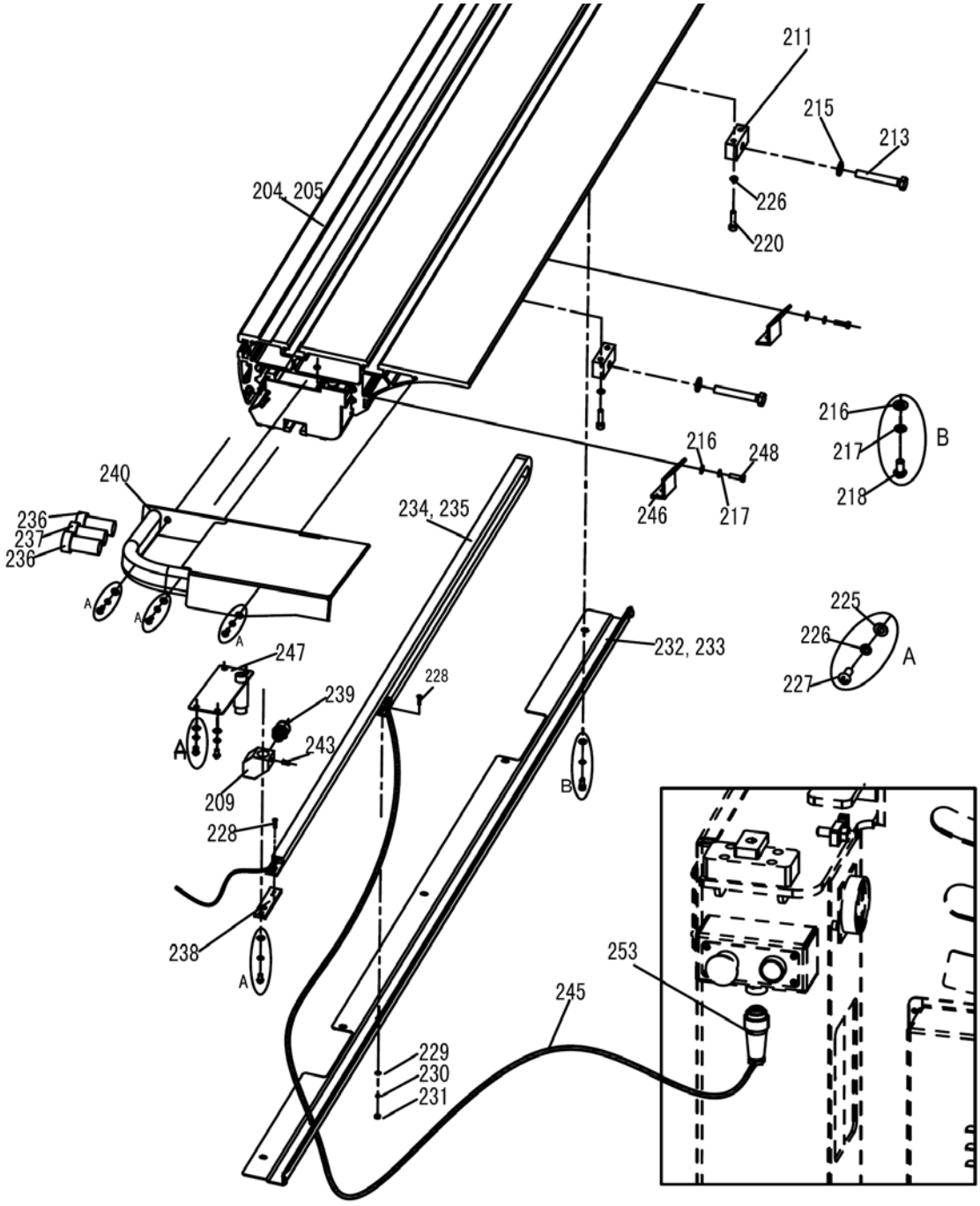
10. Parts List

Main table breakdown



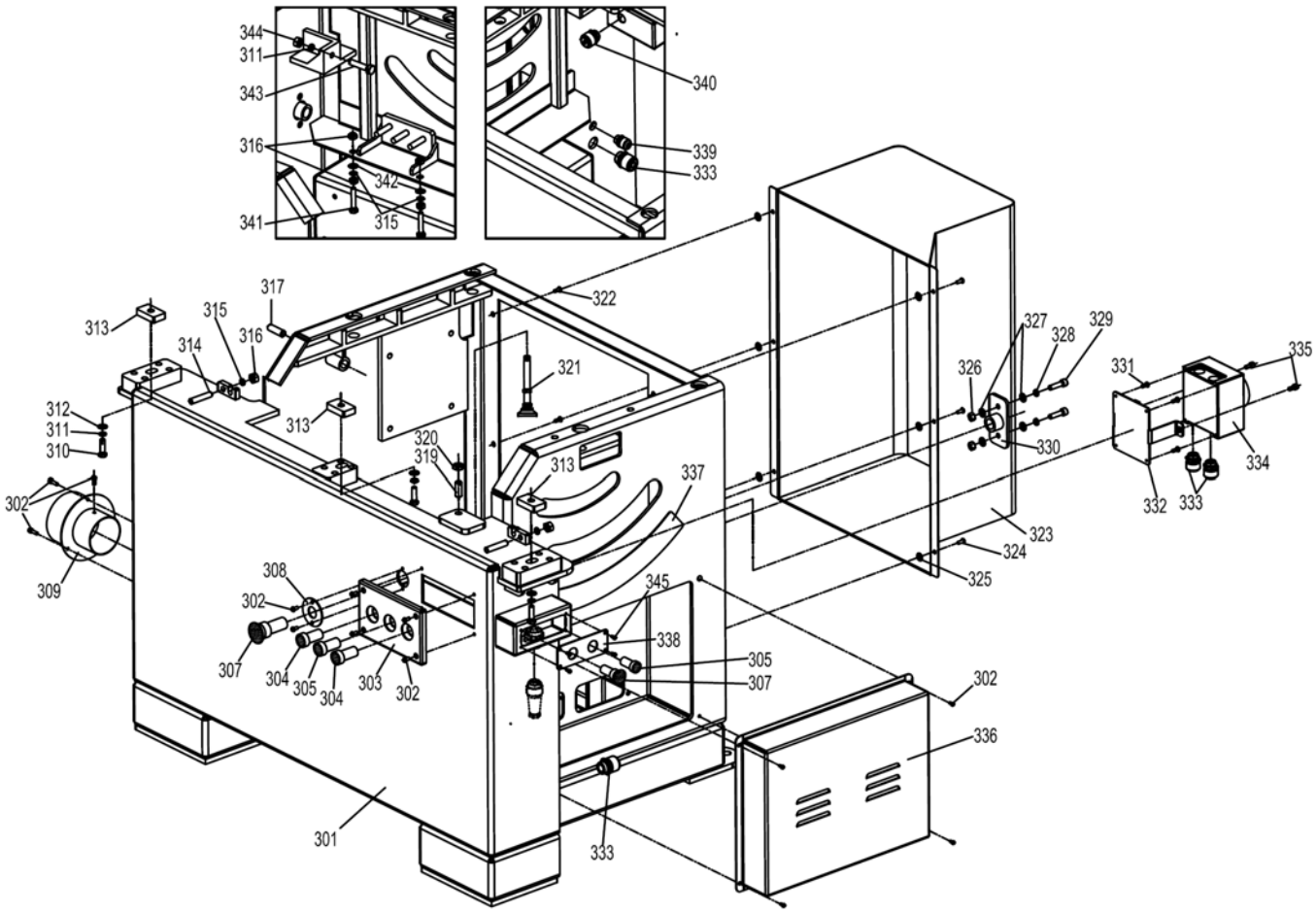
REF	DESCRIPTION
101	Main table
102	aluminum insert(inner)
103	Threaded stud
104	Washer
105	Hex. nut
106	Spring washer
107	Cap screw
108	aluminum insert(outer)
109	aluminum insert(outer)
110	Cap screw

Sliding table (HPS1600)



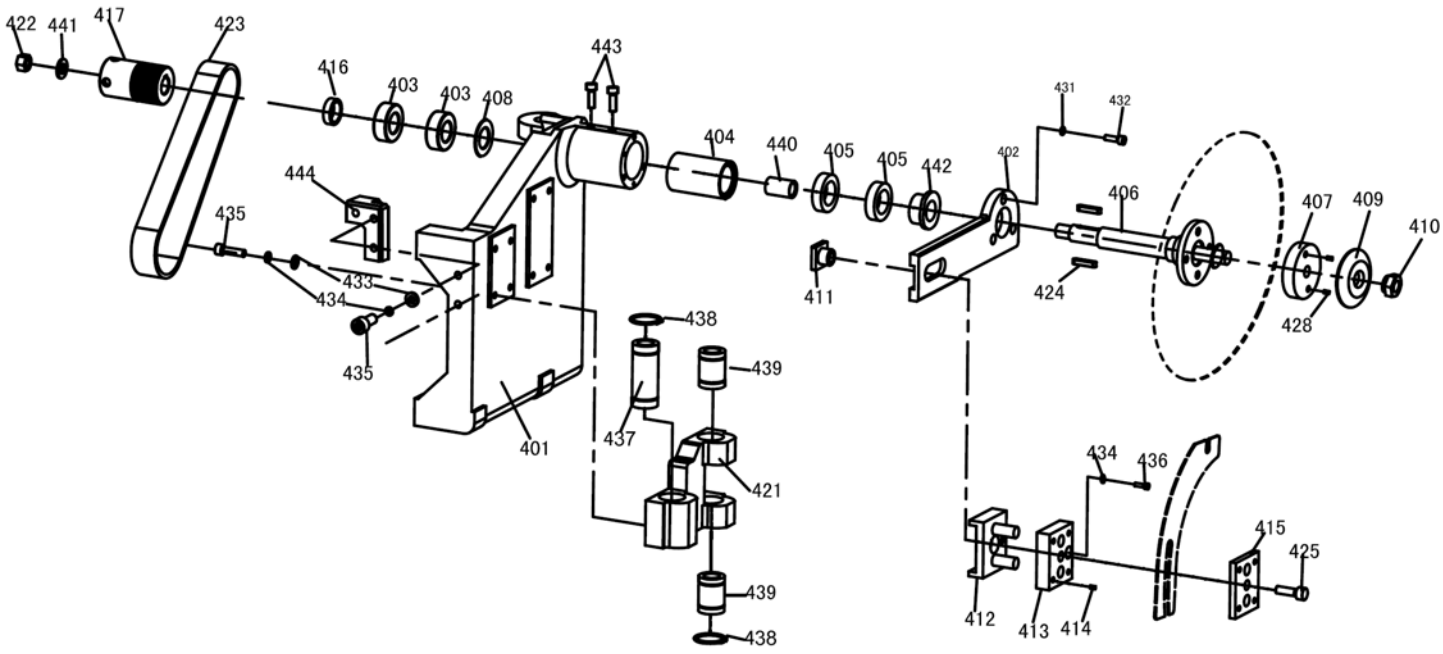
REF	DESCRIPTION	REF	DESCRIPTION	REF	DESCRIPTION	REF	DESCRIPTION
201	/	225	Washer	236	start	251	Bottom plate
204	Sliding table 1600	226	Spring washer	237	stop	252	cover
205	/	227	Screw	238	link plate	253	4 pin connector
208	Bottom plate	228	Screw	239	Strain relief		
209	block	229	Washer	240	Sliding table handle		
211	Pitch block	230	Spring washer	243	Set screw		
213	Set screw	231	Hex. nut	245	Drag cable		
215	Washer	232	towline rail 1600	246	towline support		
216	Washer	233	/	247	Bottom plate		
217	Spring washer	234	towline 1600	248	Screw		
218	Screw	235	/	249	towline plate		

Main body breakdown



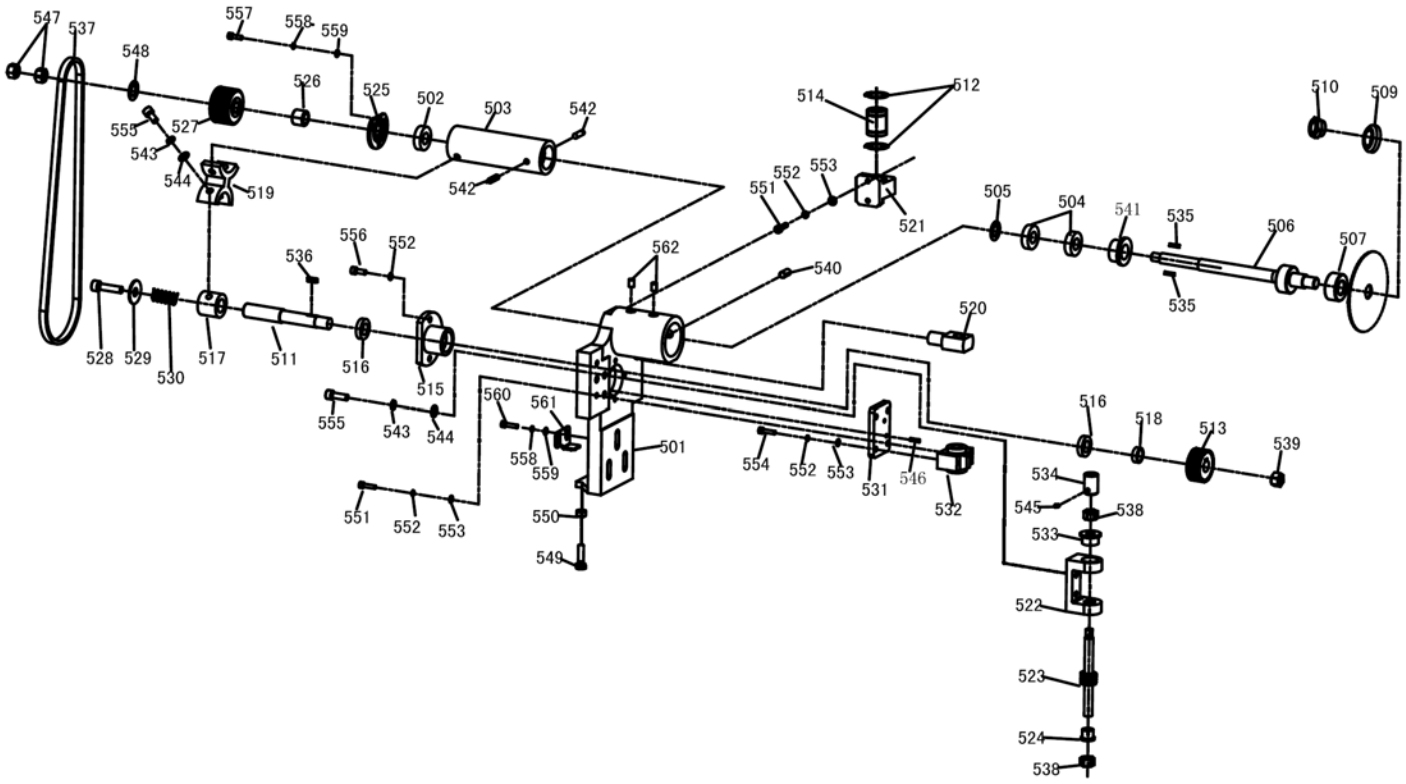
REF	DESCRIPTION	REF	DESCRIPTION	REF	DESCRIPTION
301	Cabinet	316	Hex nut M10	331	Cap screw M4X12
302	Button HD screw M5X12	317	Set screw M16X40	332	Switch plate
303	Switch plate	318	/	333	Strain relief PG16
304	Start button	319	Set screw M12X25	334	Switch
305	Stop button	320	Hex nut M12	335	Button HD screw M8X16
306	/	321	Foot	336	Electrical cover
307	Emergency stop button	322	Rivet nut M6x18	337	bevel scale
308	Plate	323	Motoe cover	338	Button plate
309	Dust Port 100mm	324	Cap screw M6X16	339	Strain relief PG9
310	Hex bolt M12X60	325	Clip	340	Strain relief PG11
311	Spring washer 12	326	Hex nut M8	341	Hex bolt M10X40
312	Flat washer 12	327	Flat washer 8	342	Flat washer 10
313	Fixation plate 1	328	Spring washer 8	343	Hex bolt M12X40
314	Set screw M10X60	329	Button HD screw M8X25	344	Hex nut M12
315	Spring washer 10	330	Tilt plate	345	Button HD screw M4X8

Main arbor assembly breakdown



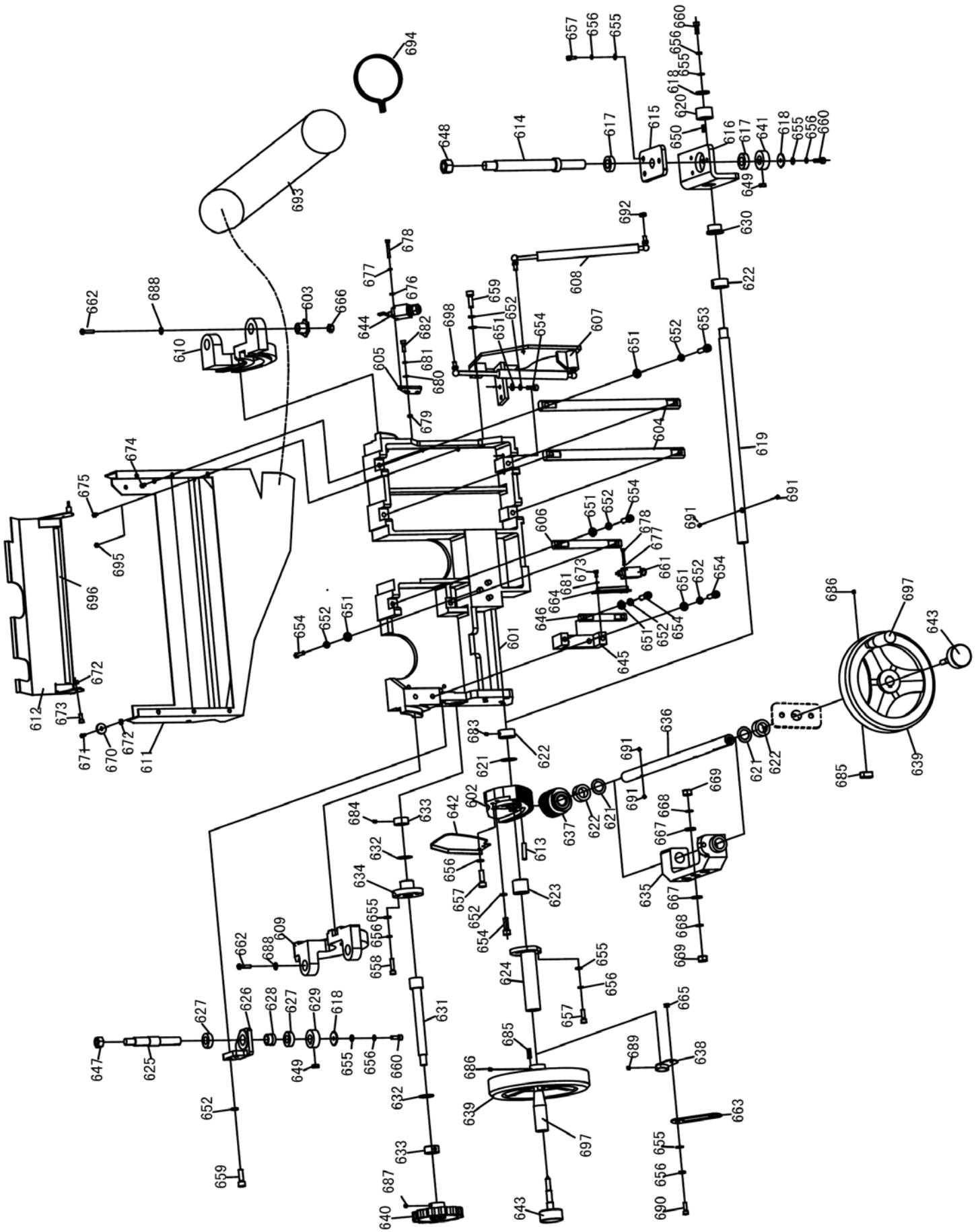
REF	DESCRIPTION	REF	DESCRIPTION	REF	DESCRIPTION
401	main arbor bracket	416	Collar	431	Elastic washer 6
402	blade guard bracket	417	wheel	432	button HD screw M6X16
403	Bearing	418	/	433	Flat washer 8
404	bush	419	/	434	Elastic washer 8
405	Bearing	420	/	435	cap screw M8X35
406	Arbor	421	Block	436	cap screw M8X16
407	Adjust plate	422	Nut M16X1.5	437	Bearing LME 20LUU
408	Spring	423	Strap 260 J 14	438	Circlips 32
409	Flange	424	Key 6X28	439	Bearing LME 20UU
410	Nut	425	Bolt	440	Inner bush
411	Nut	426	/	441	Flat washer 16
412	Slide block	427	/	442	Flange ring
413	plate	428	Set screw M8X16	443	button HD screw M8X16
414	Set screw M6X16	429	/	444	Bracket
415	Plate	430	/		

Scoring arbor assembly breakdown



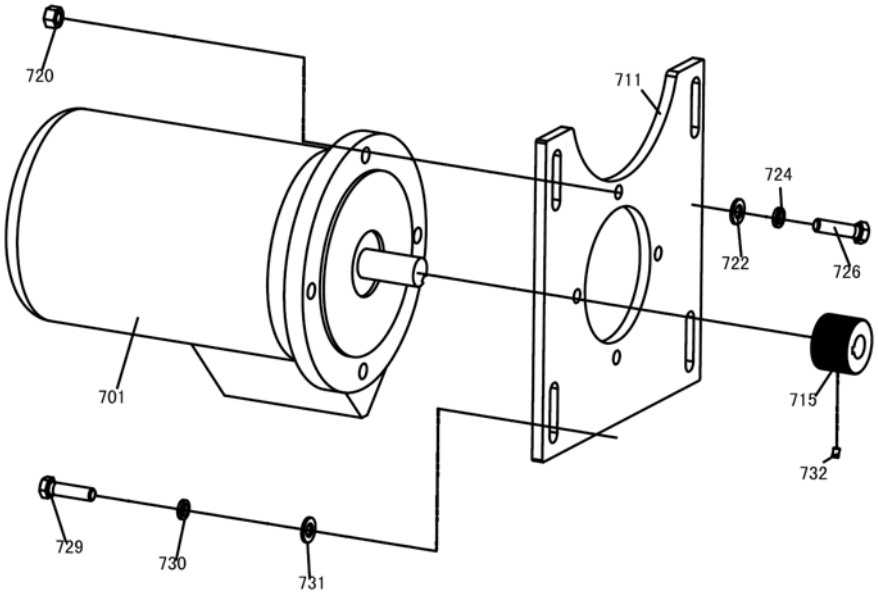
REF	DESCRIPTION	REF	DESCRIPTION	REF	DESCRIPTION
501	scoring bracket	522	worm plank	543	elastic washer 8
502	bearing 6003-2RS	523	worm	544	flat washer 8
503	bush	524	bushing	545	set screw M5X8
504	bearing 61904-2RS/P6	525	flange ring	546	elastic pin 5X16
505	spring	526	collar	547	nut M16X1.5-LH
506	arbor	527	pulley	548	flat washer 16
507	adjust plate	528	cap screw M5X8	549	HEX bolt M10X50
508	/	529	washer	550	nut M10
509	flange	530	spring	551	cap screw M6X30
510	nut	531	block	552	elastic washer 6
511	adjust shaft	532	bearing	553	flat washer 6
512	circlips A-28	533	bushing	554	cap screw M6X20
513	worm wheel	534	bolt	555	cap screw M8X25
514	bearing LM16UU	535	key 5X8	556	cap screw M6X16
515	supporting	536	key 5X16	557	cap screw M5X16
516	bearing 61903-2Z	537	strap370 J 6	558	elastic washer 5
517	adjust nut	538	nut M12X1.25	559	flat washer 5
518	collar	539	nut M16X1.5	560	cap screw M5X12
519	bracket	540	set screw M12X12	561	limit bracket
520	nut	541	flange ring	562	set screw M12X16
521	bearing block	542	set screw M5X6		

Tilting assembly breakdown



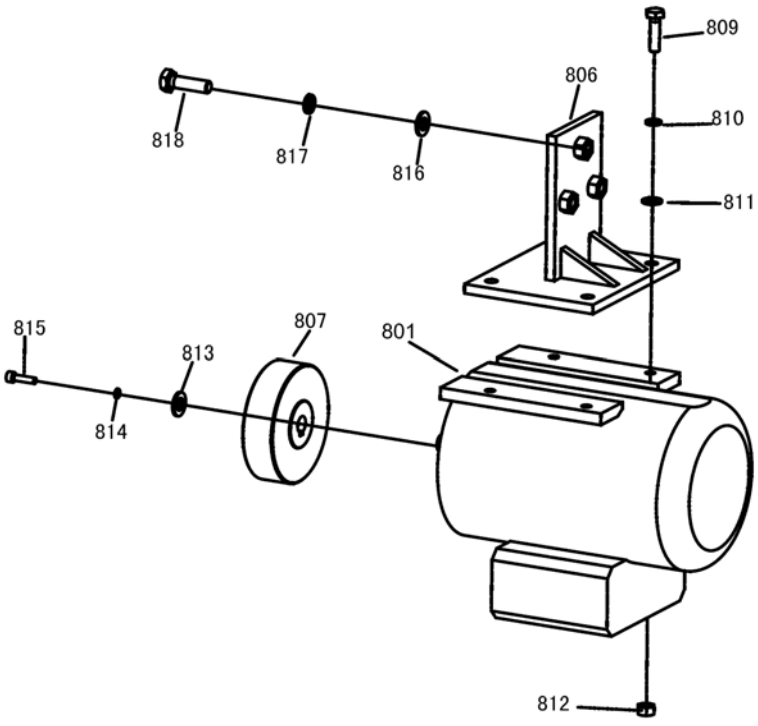
REF	DESCRIPTION
601	asway truck
602	geared trunnion
603	adjust screw
604	pillar
605	switch plate
606	pillar
607	air spring plate
608	air spring
609	front trunnion
610	rear trunnion
611	dust truck
612	dust plate
613	elastic pin 8X30
614	shaft
615	bushing
616	frame
617	bearing 51103
618	washer
619	high shaft
620	gear
621	copper washer
622	bushing
623	bushing
624	supporting
625	shaft
626	supporting
627	bearing 51102
628	bushing
629	gear
630	copper bushing
631	high shaft
632	copper washer
633	bushing
634	bushing
635	supporting
636	angle shaft
637	worm
638	angle pointer
639	hand wheel
640	hand wheel
641	gear
642	Plate
643	hand lock
644	switch
645	Bracket
646	pillar
647	nut M12X1.25
648	nut M16X1.5
649	key 5X10
650	key 5X18
651	flat washer 8
652	elastic washer 8
653	cap screw M8X30
654	cap screw M8X25
655	flat washer 6
656	elastic washer 6
657	cap screw M6X20
658	cap screw M6X25
659	cap screw M8X20
660	cap screw M6X16
661	switch
662	cap screw M12X40
663	angle pointer
664	Bracket
665	nut M6
666	nut M12
667	flat washer 10
668	elastic washer 10
669	nut M10
670	magnet
671	Flate HD screw M5X12
672	nut M5
673	cap screw M5X12
674	Flate HD screw M6X12
675	cap screw M6X12
676	flat washer 4
677	elastic washer 4
678	cap screw M4X30
679	nut M5
680	flat washer 5
681	elastic washer 5
682	cap screw M5X16
683	set screw M6X8
684	set screw M6X6
685	key 5X40
686	set screw M5X12
687	set screw M5X8
688	elastic washer 12
689	set screw M5X6
690	Button HD screw M6X16
691	pin
692	nut M8
693	dust pipe
694	pipe damp
695	plastic lid
696	sponge
697	handle
698	air spring

Main motor assembly breakdown



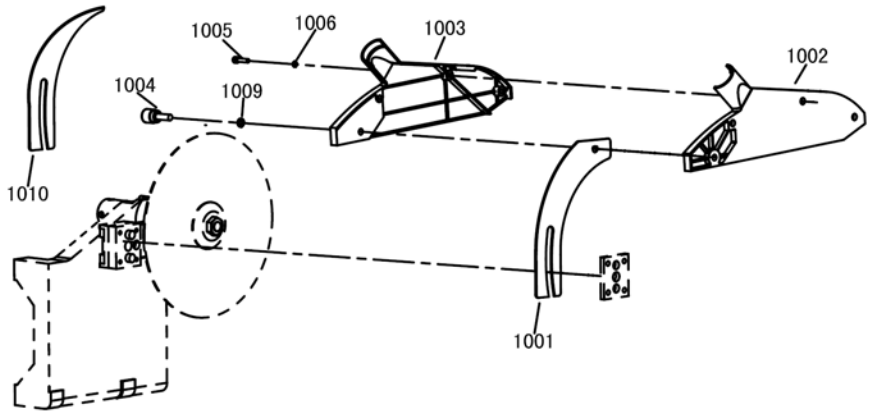
REF	DESCRIPTION	REF	DESCRIPTION
701	Main motor	726	Hex. bolt
711	Motor support	729	Hex. bolt
715	Motor pulley	730	Spring washer
720	Hex. nut	731	Washer
722	Washer	732	Set screw
724	Spring washer		

Scoring motor assembly breakdown



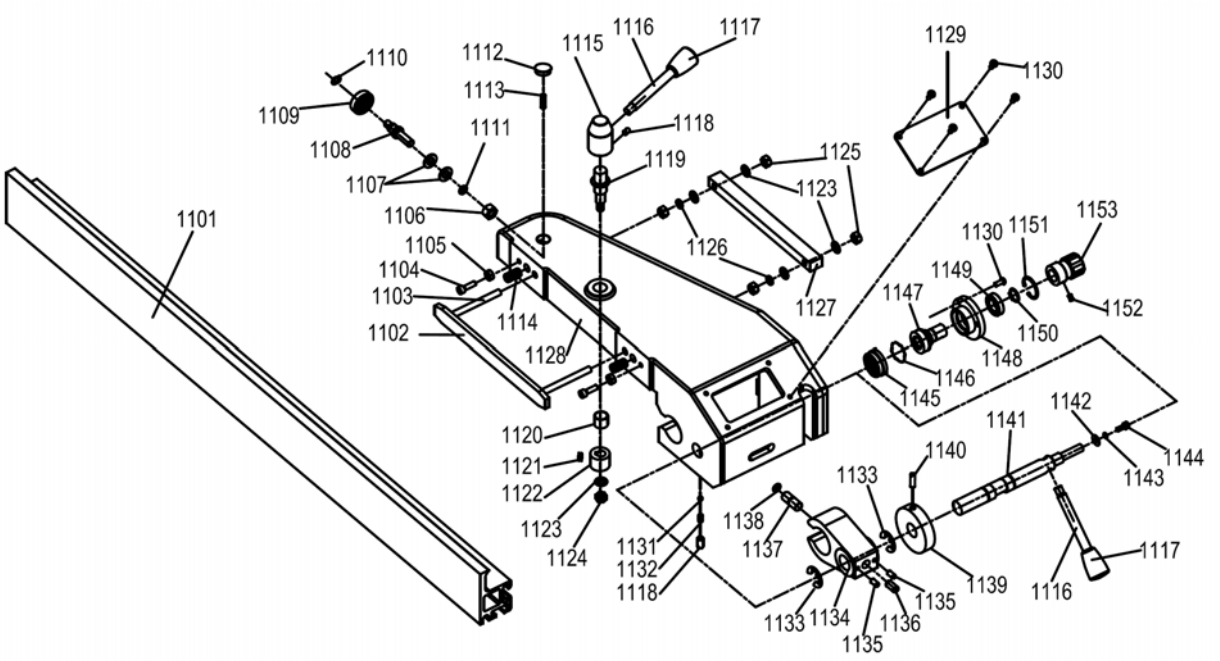
REF	DESCRIPTION
801	Scoring motor
806	Motor support
807	Scoring motor pulley
809	Hex. bolt
810	Spring washer
811	Washer
812	Hex. nut
813	Big washer
814	Spring washer
815	Cap screw
816	Washer
817	Spring washer
818	Hex. bolt

Blade guard assembly breakdown



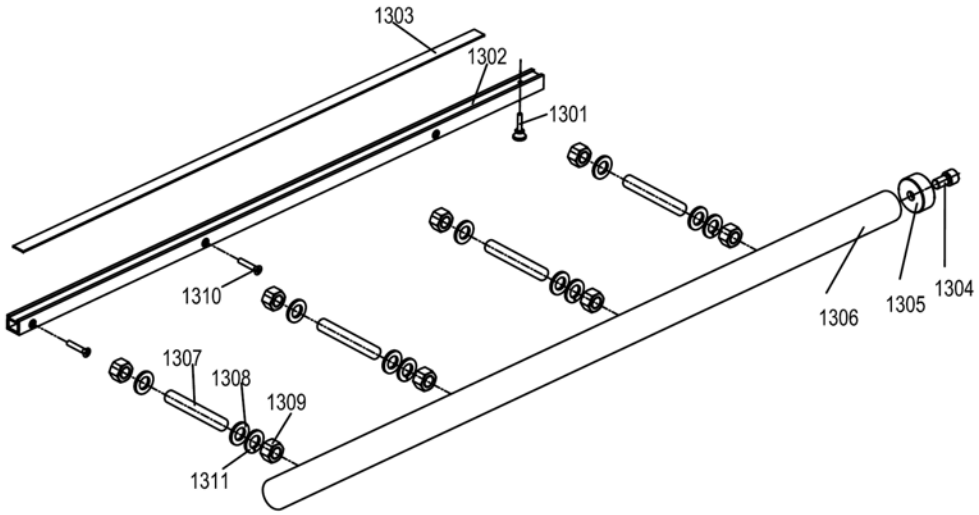
REF	DESCRIPTION
1001	Splitter
1002	Blade guard (left)
1003	Blade guard (right)
1004	Cap screw
1005	Cap screw
1006	Spring washer
1009	Spring washer
1010	Riving knife

Rip fence body assembly breakdown



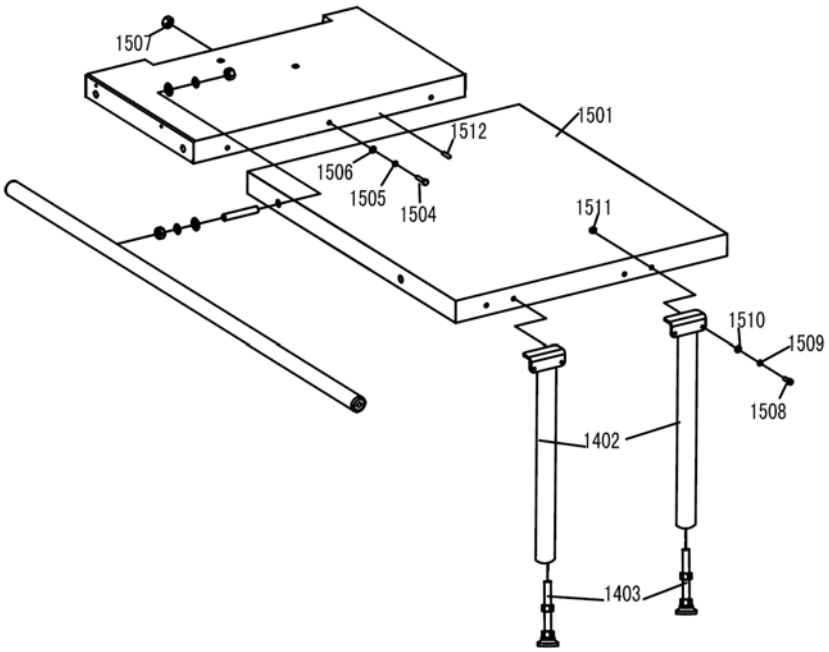
REF	DESCRIPTION
1101	Fence
1102	impact bar
1103	draw bolt
1104	screw M6X16
1105	adjustive wheel
1106	nut M10
1107	washer 10
1108	pin
1109	wheel
1110	circlips for shaft 12
1111	elastic washer 10
1112	cover
1113	set screw M6X12
1114	spring
1115	knob block
1116	shank
1117	knob
1118	set screw M8X8
1119	lock shank
1120	bush JFB-1615
1121	key 4X12
1122	cam
1123	washer 8
1124	nut M8
1125	nut M8
1126	elastic washer 8
1127	link bar
1128	fence
1129	plate
1130	button HD screw M5X8
1131	ball
1132	spring
1133	ring 15
1134	block
1135	set screw M6X8
1136	set screw M12X12
1137	lock pin
1138	ring 8.5X1.8
1139	cam
1140	set screw M8X16
1141	cam axis
1142	washer 5
1143	elastic washer 5
1144	cap screw M5X12
1145	ring
1146	clip
1147	jiggle screw
1148	block
1149	bearing 61903
1150	circlips for shaft A-17
1151	circlips for hole A-30
1152	set screw M5X6
1153	knob

50” guide bar assembly breakdown



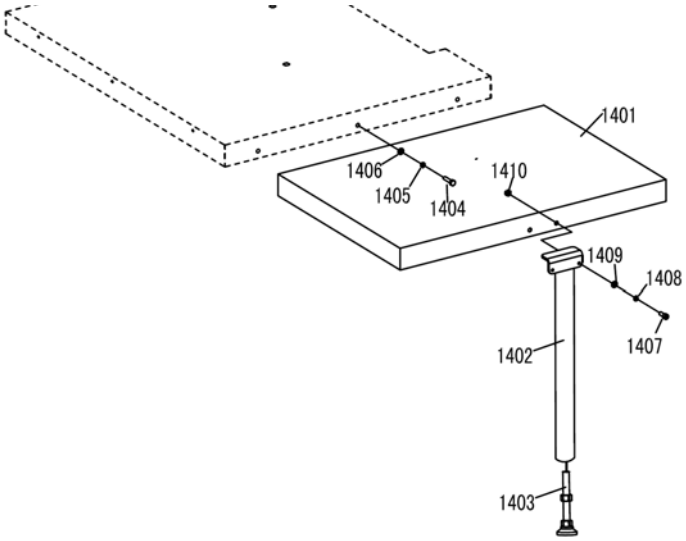
REF	DESCRIPTION
1301	Scale knob
1302	Scale tubing
1303	Scale
1304	Cap screw
1305	Stop collar
1306	Guide rail
1307	Threaded stud
1308	Washer
1309	Hex. nut
1310	Countersunk hd screw
1311	Spring washer

50” extension table assembly breakdown



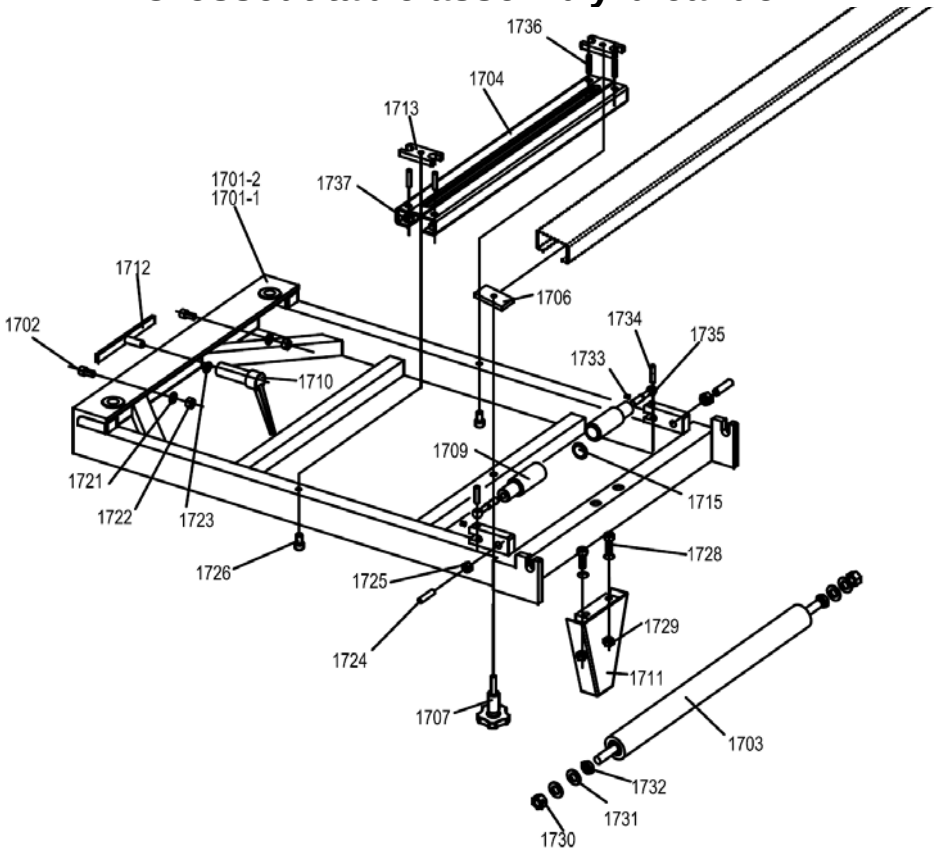
REF	DESCRIPTION
1501	Extension table
1504	Hex. bolt
1505	Spring washer
1506	Washer
1507	Hex. nut
1508	Round hd allen screw
1509	Spring washer
1510	Washer
1511	Hex. nut
1512	Set screw

Rear extension table assembly breakdown



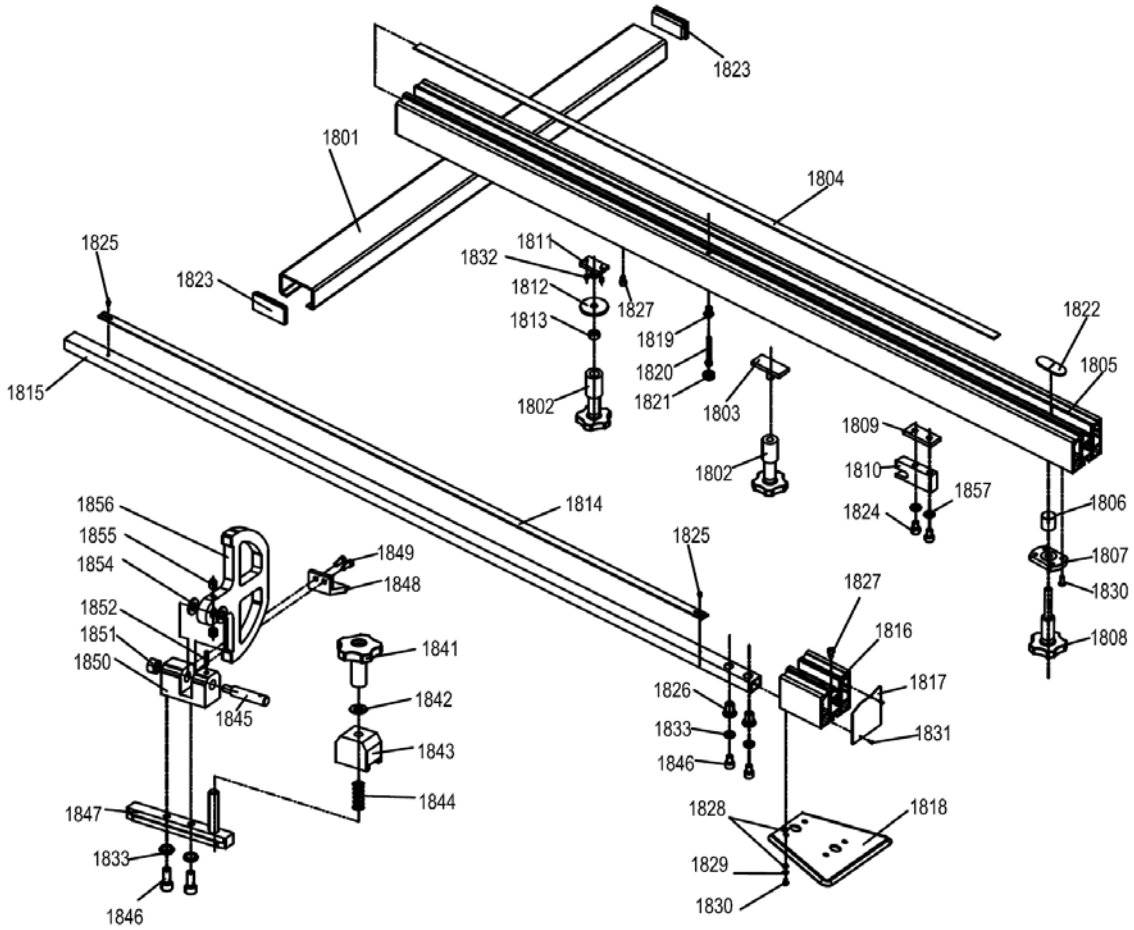
REF	DESCRIPTION
1401	board
1402	leg
1403	supporting
1404	bolt M10X35
1405	elastic washer 10
1406	flat washer 10
1407	button HD screw M8X20
1408	elastic washer 8
1409	flat washer 8
1410	nut M8

Crosscut table assembly breakdown



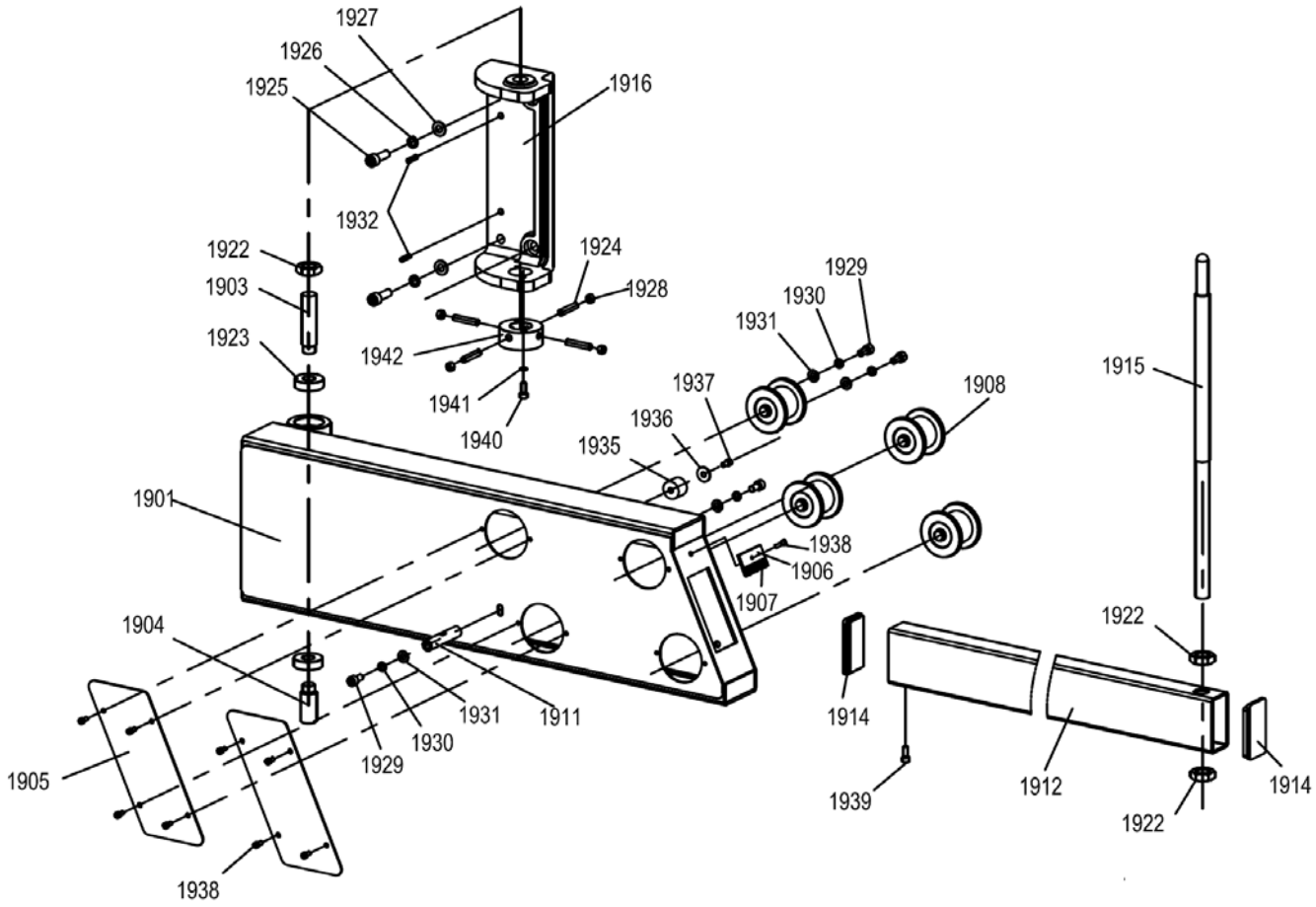
REF	DESCRIPTION	REF	DESCRIPTION	REF	DESCRIPTION
1701	crosscut table	1713	binder plate	1730	nut
1702	eccentric wheel	1715	rubber cap	1731	flat washer
1703	table roller	1721	flat washer	1732	thin nut
1704	angle scale	1722	nut	1733	hex socket set screw
1706	compress block	1723	flat washer	1734	hex socket set screw
1707	handle M10*70	1724	hex socket set screw	1735	eye bolt
1709	fasten handle	1725	nut	1736	hex socket set screw
1710	adjust handle	1726	hex socket head screw	1737	rivet nut
1711	supporting sheath	1728	hex socket head screw		
1712	T screw	1729	nut		

Crosscut fence assembly breakdown



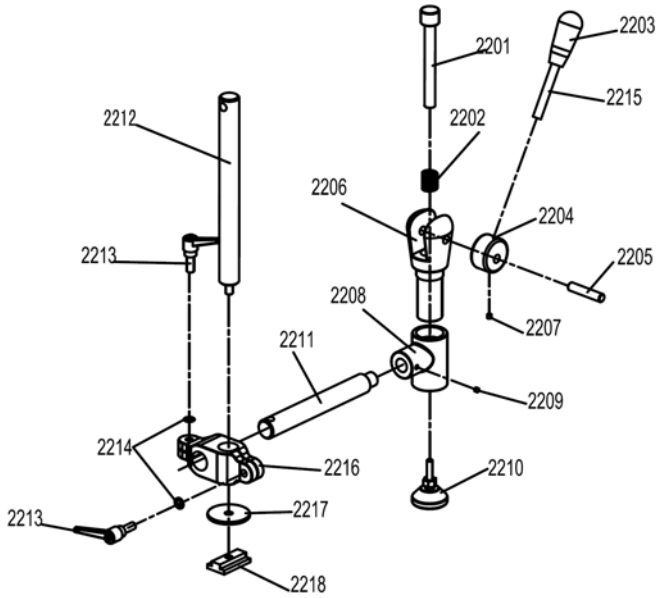
REF	DESCRIPTION	REF	DESCRIPTION	REF	DESCRIPTION
1801	C-fence	1818	bottom board	1842	washer 10
1802	handle	1819	Riveted nut M6X18	1843	impact block
1803	T-bolt	1820	cap screw M5X65	1844	spring
1804	scale	1821	knob	1845	pin
1805	fence	1822	scale slice	1846	cap screw M8X20
1806	nilong block	1823	cover	1847	T-oriented block
1807	lock block	1824	cap screw M6X25	1848	scale slice
1808	handle	1825	button HD screw M4X8	1849	Flat HD screw M4X6
1809	block	1826	Riveted nut M8X19.5	1850	orientation block
1810	lock block-1	1827	cap screw M5X8	1851	nut M8
1811	block	1828	washer 5	1852	set screw M6X30
1812	washer 10	1829	elastic washer 5	1854	washer
1813	screw sheath	1830	cap screw M5X16	1855	screw
1814	scale	1831	cap screw M4X8	1856	orientation board
1815	core ruler	1832	set screw M6X10	1857	elastic washer 6
1816	extend block	1833	elastic washer 8		
1817	side board	1841	handle		

Swing arm assembly breakdown



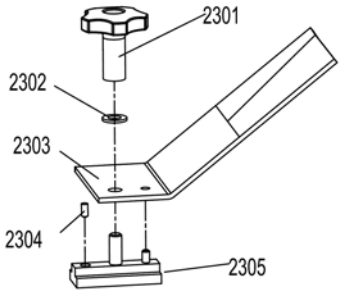
REF	DESCRIPTION	REF	DESCRIPTION	REF	DESCRIPTION
1901	rocker body	1914	cover	1930	elastic washer 8
1902	/	1915	support pole	1931	washer 8
1903	top head	1916	rocker support	1932	pin 8X25
1904	under head	1922	thin nut M20	1935	nilong block
1905	side board	1923	bearing 6203-2Z	1936	magnet
1906	brush board	1924	set screw M8X40	1937	Flat HD screw M5X20
1907	brush	1925	HEX screw M10X30	1938	button HD screw M5X12
1908	wheel	1926	elastic washer 10	1939	cap screw M6X12
1911	pin	1927	washer 10	1940	cap screw M6X25
1912	pole(suit to 1600)	1928	nut M8	1941	elastic washer 6
1913	/	1929	button HD screw M8X16	1942	bracket

Hold-down assembly breakdown



REF	DESCRIPTION
2201	Mandril
2202	Spring
2203	Cam knob
2204	Cam
2205	Pin
2206	Cam housing
2207	Set screw
2208	Linked sheath
2209	Set screw
2210	Holddown
2211	Shaft (horizontal)
2212	Shaft (vertical)
2213	Lock handle
2214	Washer
2215	Handle shaft
2216	Link housing
2217	Special washer
2218	T-nut

Trimming shoe assembly breakdown



REF	DESCRIPTION
2301	Lock knob
2302	Washer
2303	Trimming shoe
2304	Set screw
2305	T-nut

Revision A

INSTRUCTION MANUAL

Original Instructions

Overhead Guard

MODEL: VG-315

Harvey Industries Co., Ltd.

East Gate, 1519 Shuanglong Street, Jiangning Development Zone, Nanjing, Jiangsu 211112, P.R. China

298004701

Contents

1. Unpacking

VG-315 was carefully packaged for safe transportation. remove the packaging materials if you discover the machine is damaged, please immediately call Customer Service for advice.

save the containers and all packing materials for possible inspection by the carrier or its agent. Otherwise, filing a freight claim can be difficult.

When you are completely satisfied with the condition of your shipment, inventory the contents.

2. Inventory

The following is a description of the main components shipped each VG-315 model. lay the components out to inventory them.

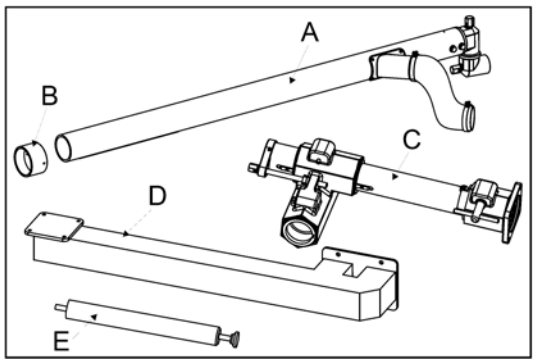


Fig 1

Arm Box Contents:(Fig 1)	**Qty**
A. Arm unit	1
B. transform pipe for 89-100	1
C. Stand pole unit	1
D. Support arm	1
E. Support leg	1

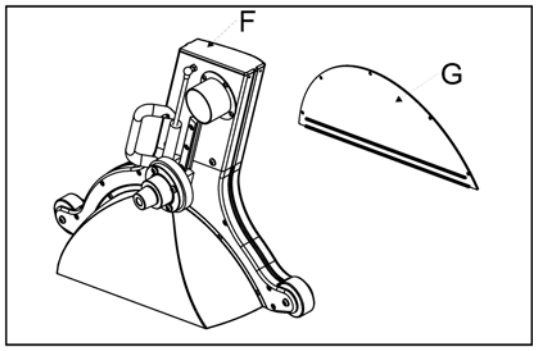


Fig 2

Overhead Box Contents:(Fig 2)	**Qty**
F. Overhead guard	1
G. Side cover	1
H, Tools (not shown)	1set

3. Technical Data*(Fig.3)*

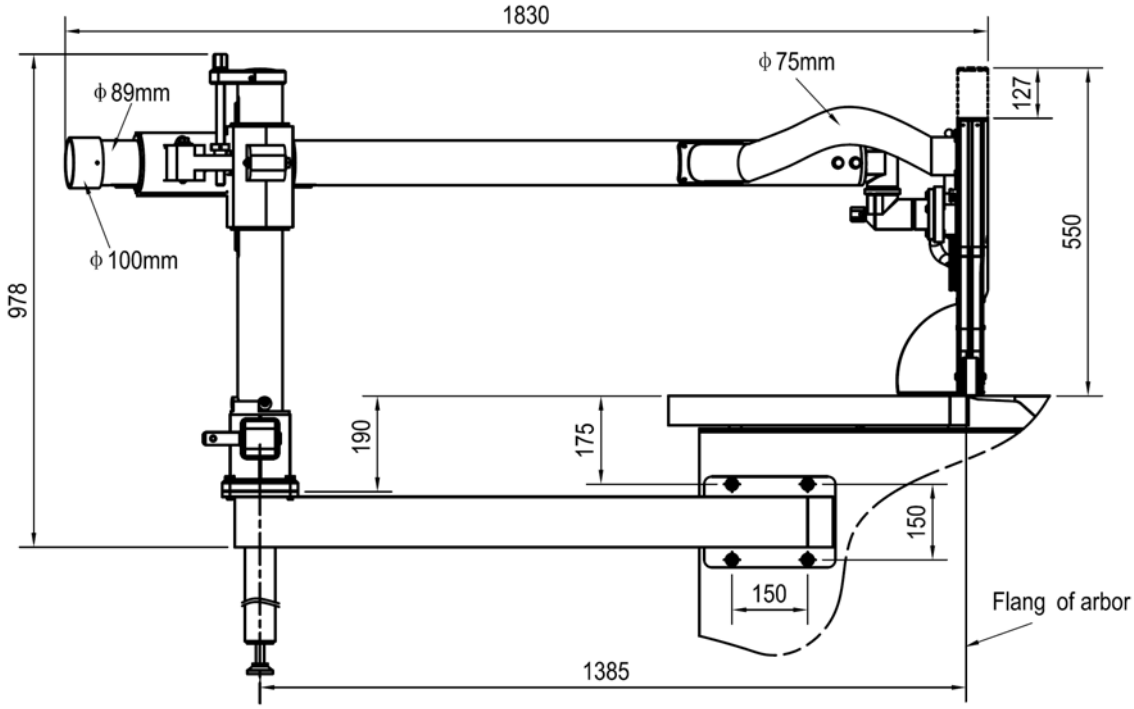


Fig.3

4. set up

WARNING

Do not connect machine to electricity before installation VG-315!

WARNING

Lifting heavy machinery or parts without proper assistance or equipment may result in strains, back injuries, crushing injuries, or property damage.

4.1 Thread the support leg(B) to the bottom of the support arm(A)and tighten, Then build in the support arm(A) to the carton with four set M12X40 hex screws(C). Adjust the leg(D) to make sure the support arm(A) is level, After adjust, Tighten four set M12X40 hex screws and lock leg(D). See ***Fig,4***

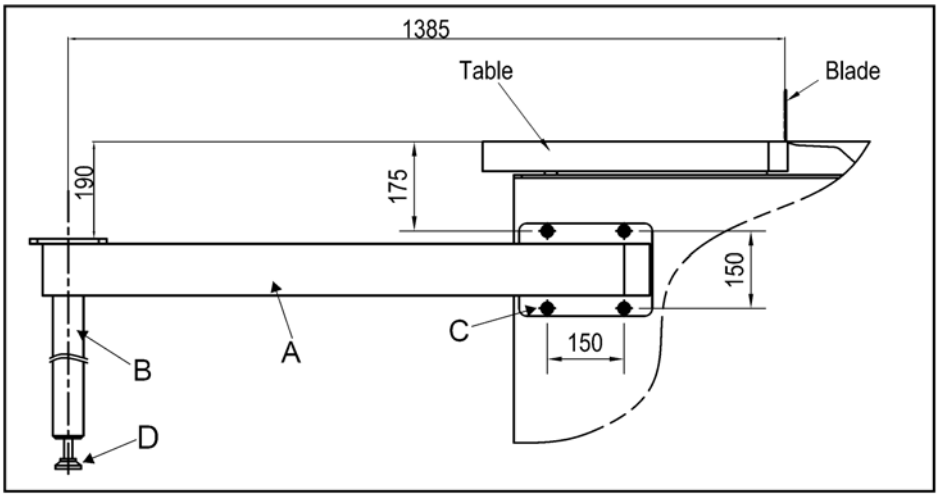


Fig.4

NOTICE

If there's no build in holes in the carton, you must match the support arm as Fig.4

4.2 Build in the Stand pole unit (E) to the support arm(A) with four set M10X40 hex screws(F) and tighten them. See ***Fig,5***

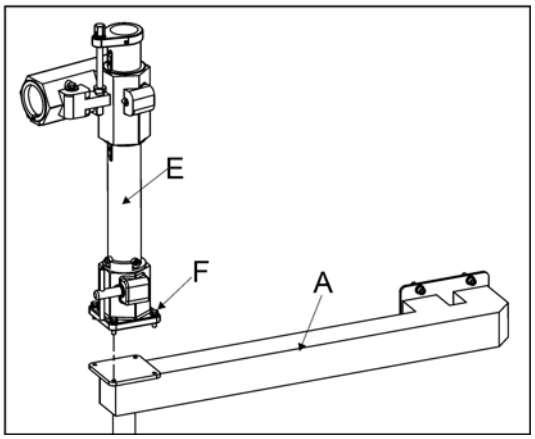


Fig.5

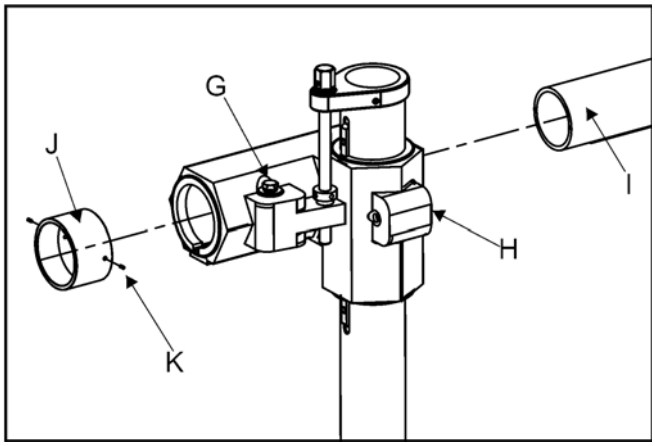


Fig.6

4.3 Release the hex blot (G)&(H), Fit the arm unit (I) to the holes of the Stand pole unit, then tighten (G)&(H). See ***Fig,6***

4.4 Fit transform pipe for 89-100 (J) to arm pipe with set screw(K) M6x8. See ***Fig,6***

4.5 Screw bolt (L) to fit the overhead guard (M) to arm unit (I), Fix the soft pipe (N) to (O) and lock it with clip. See ***Fig,7***

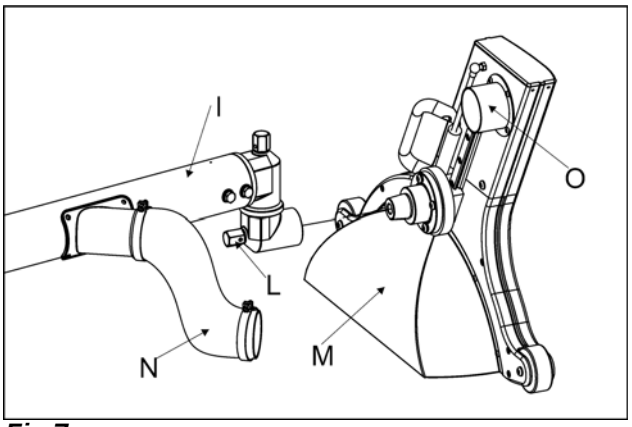


Fig.7

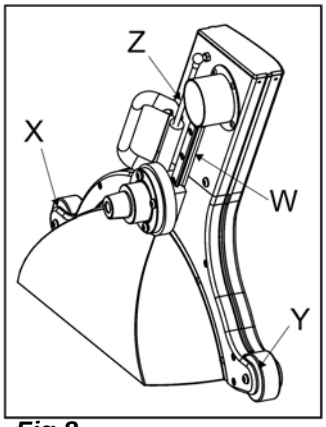


Fig.8

5. Adjust

5.1 Release hex bolt G&H, push arm unit (I) forward or back, to ensure "≤15mm", After adjust, Tighten hex bolt G&H. See ***Fig,9***

Screw bolt (P) in or out, to ensure "≤5mm", after adjust, lock limit nut (Q) with set screw(M6x8), As ***Fig.9***

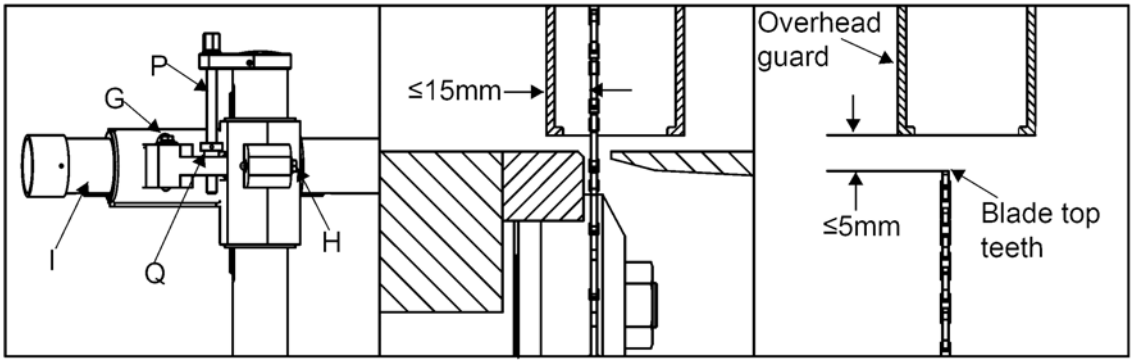


Fig.9

5.2 Release (T)&(L)and turn limit block (U), you can adjust the overhead guard station as you needed, When the blade is bevel, you must make sure the blade guard (S) will not meet (R). See ***Fig.10***

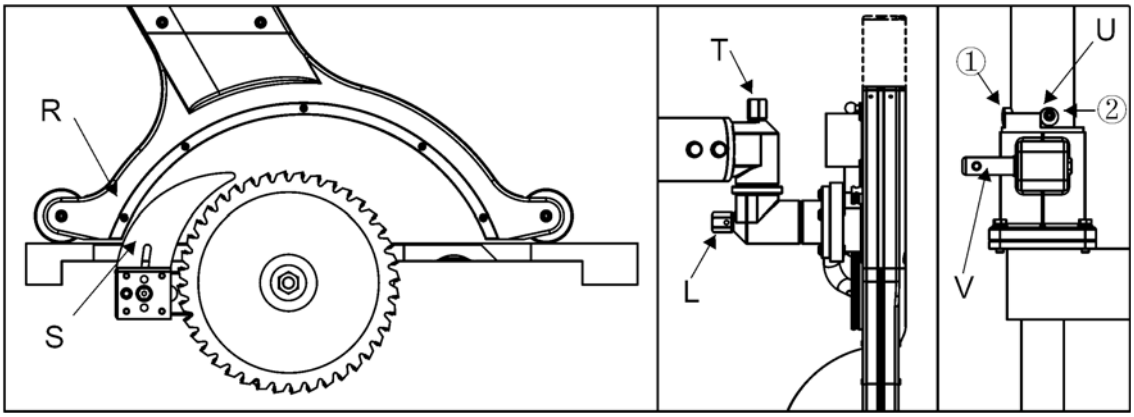


Fig.10

5.3 Release (V), you can swing the arm. See ***Fig.10.***

5.4 There's two position ①&② for you to fix the limit block (U), See ***Fig.10***

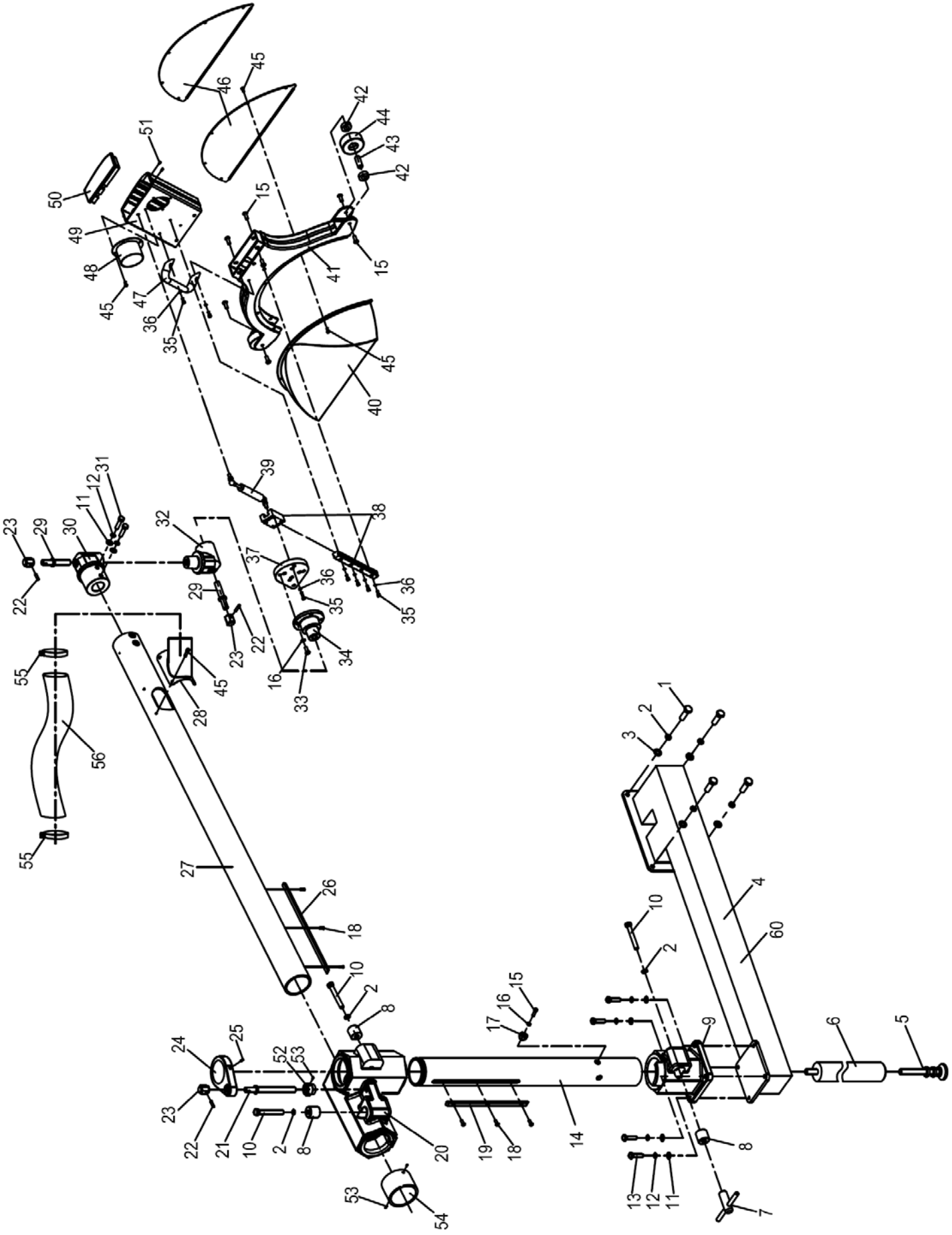
6. Lubrication& Cleaning

you must Cleaning & Lubrication every time after your use, See ***Fig.8***

Cleaning: wheel (X)&(Y), air spring (Z), guide (W).

Lubrication: guide (W)

7. Parts list



REF	DESCRIPTION
1	Hex bolt M12X40
2	Spring washer 12
3	Flat washer 12
4	Support arm
5	Leg
6	Support leg
7	Lock handle
8	Lock block
9	stand pole base
10	Hex bolt M12X65
11	Flat washer 10
12	Spring washer 10
13	Hex bolt M10X40
14	stand pole
15	Button HD screw M8X16
16	Spring washer 8
17	Limit block
18	Button HD screw M5X12
19	strip
20	arm base
21	Blot
22	Elastic pin 6x22
23	Cap
24	Cover
25	Set screw 8x8
26	Strip
27	Arm
28	Dust pipe
29	Bolt
30	Lock block

REF	DESCRIPTION
31	Hex bolt M10X25
32	Lock block
33	Button HD screw M8X30
34	Lock block
35	Cap screw M5X16
36	Spring washer 5
37	Fixation block
38	Guide
39	Air spring
40	Protect cover
41	Cover base
42	Bearing
43	Axis
44	Wheel
45	Button HD screw M5X8
46	Protect cover
47	Handle
48	Dust pipe
49	Dust pipe
50	Top cover
51	Phil HD screw ST3.5x13
52	Limit nut
53	Set screw 6x8
54	transform pipe for 89-100
55	clip
56	soft pipe

⚠WARNING

General Machinery Safety Instructions

Machinery House
requires you to read this entire Manual before using this machine.

1. **Read the entire Manual before starting machinery.** Machinery may cause serious injury if not correctly used.
2. **Always use correct hearing protection when operating machinery.** Machinery noise may cause permanent hearing damage.
3. **Machinery must never be used when tired, or under the influence of drugs or alcohol.** When running machinery you must be alert at all times.
4. **Wear correct Clothing.** At all times remove all loose clothing, necklaces, rings, jewelry, etc. Long hair must be contained in a hair net. Non-slip protective footwear must be worn.
5. **Always wear correct respirators around fumes or dust when operating machinery.** Machinery fumes & dust can cause serious respiratory illness. Dust extractors must be used where applicable.
6. **Always wear correct safety glasses.** When machining you must use the correct eye protection to prevent injuring your eyes.
7. **Keep work clean and make sure you have good lighting.** Cluttered and dark shadows may cause accidents.
8. **Personnel must be properly trained or well supervised when operating machinery.** Make sure you have clear and safe understanding of the machine you are operating.
9. **Keep children and visitors away.** Make sure children and visitors are at a safe distance for you work area.
10. **Keep your workshop childproof.** Use padlocks, Turn off master power switches and remove start switch keys.
11. **Never leave machine unattended.** Turn power off and wait till machine has come to a complete stop before leaving the machine unattended.
12. **Make a safe working environment.** Do not use machine in a damp, wet area, or where flammable or noxious fumes may exist.
13. **Disconnect main power before service machine.** Make sure power switch is in the off position before re-connecting.
14. **Use correct amperage extension cords.** Undersized extension cords overheat and lose power. Replace extension cords if they become damaged.
15. **Keep machine well maintained.** Keep blades sharp and clean for best and safest performance. Follow instructions when lubricating and changing accessories.
16. **Keep machine well guarded.** Make sure guards on machine are in place and are all working correctly.
17. **Do not overreach.** Keep proper footing and balance at all times.
18. **Secure workpiece.** Use clamps or a vice to hold the workpiece where practical. Keeping the workpiece secure will free up your hand to operate the machine and will protect hand from injury.
19. **Check machine over before operating.** Check machine for damaged parts, loose bolts, Keys and wrenches left on machine and any other conditions that may effect the machines operation. Repair and replace damaged parts.
20. **Use recommended accessories.** Refer to instruction manual or ask correct service officer when using accessories. The use of improper accessories may cause the risk of injury.
21. **Do not force machinery.** Work at the speed and capacity at which the machine or accessory was designed.
22. **Use correct lifting practice.** Always use the correct lifting methods when using machinery. Incorrect lifting methods can cause serious injury.
23. **Lock mobile bases.** Make sure any mobile bases are locked before using machine.
24. **Allergic reactions.** Certain metal shavings and cutting fluids may cause an ellergic reaction in people and animals, especially when cutting as the fumes can be inhaled. Make sure you know what type of metal and cutting fluid you will be exposed to and how to avoid contamination.
25. **Call for help.** If at any time you experience difficulties, stop the machine and call you nearest branch service department for help.

⚠WARNING

Sawbench/Panel Saw Safety Instructions

Machinery House
requires you to read this entire Manual before using this machine.

1. **Maintenance.** Make sure the saw is turned off and disconnect from the main power supply and make sure all moving parts have come to a complete stop before any inspection, adjustment or maintenance is carried out.

2. **Saw Condition.** Saw must be maintained for a proper working condition. Never operate a saw that has damaged or worn parts. Scheduled routine maintenance should performed on a scheduled basis.

3. **Blade Condition.** Never operate a saw with a dropped, cracked or badly worn blade. Before using a saw inspect blades for missing teeth and cracks. A damaged blade can cause serious injury.

4. **Replacing Blade.** Make sure teeth are face forward to the workpiece. Wear gloves to protect hands.

5. **Hand Hazard.** Keep hands and fingers clear from the line of cut of the blade. Serious injury can occur.

6. **Leaving a saw Unattended.** Always turn the saw off and make sure all moving parts have come to a complete stop before leaving the saw. Do not leave saw running unattended for any reason.

7. **Avoiding Entanglement.** Blade guard must be used at all times. Remove loose clothing, belts, or jewelry items. Never wear gloves while machine is in operation. Tie up long hair and use the correct hair nets to avoid any entanglement with the saw moving parts.

8. **Understand the machines controls.** Make sure you understand the use and operation of all controls.

9. **Power outage.** In the event of a power failure during use of the saw, turn off all switches to avoid possible sudden start up once power is restored.

10. **Work area hazards.** Keep the area around the saw clean from oil, tools, chips. Pay attention to other persons in the area and know what is going on around the area to ensure unintended accidents.

11. **Workpiece Handling.** Workpiece should be stable on the table and support either by the rip fence or crosscut table during cutting. Hold downs, push sticks and featherboards and other safety devices can be used to make cutting operations safe.

12. **Hearing protection and hazards.** Always wear hearing protection as noise generated from saw blade and workpiece vibration can cause permanent hearing loss over time.

13. **Saw Blade Hazards.** Never reach behind or over a blade with your hands while saw is operating, If you loose your balance or kick back occurs you could be pulled into the spinning saw blade.

14. **Operator position.** Never stand or have any part of your body in line with cutting path of the saw blade.

15. **Use a Push Stick.** Always use a push stick when ripping narrow material.

16. **Blade guards & blade splitter.** Always use blade guards and blade splitter when cutting completely through the workpiece.

17. **Crosscutting operation.** While using a mitre guide to crosscut a workpiece, remove the rip fence.

18. **Stalled blade.** In the case that the blade stalls while in operation, turn the saw off before freeing the stalled saw blade.

19. **Blade height.** Always adjust blade to the correct height above the workpiece.

20. **Kickback.** Kickback is defined as high speed expulsion of workpiece from the table saw towards the operator.

21. **Call for help.** If at any time you experience difficulties, stop the machine and call you nearest branch service department for help.

PLANT SAFETY PROGRAM

NEW MACHINERY HAZARD IDENTIFICATION, ASSESSMENT & CONTROL

Sawbench - Panel Saw

Developed in Co-operation Between A.W.I.S.A and Australia Chamber of Manufactures
This program is based upon the Australian Worksafe Standard for Plant(NOHSC:1010-1994)

Item No.	Hazard Identification	Hazard Assessment	Risk Control Strategies (Recommended for Purchase / Buyer / User)
A	ENTANGLEMENT	HIGH	Eliminate, avoid loose clothing / Long hair etc.
B	CRUSHING	LOW	Ensure machine is bolted down to prevent it falling.
C	CUTTING, STABBING, PUNCTURING	MEDIUM	Isolate main power switch before changing blade, cleaning or adjusting. Check blade is tight and in good condition before starting. Make sure blade guard is down and adjusted when changing thickness. Ensure blade is at the correct height when cutting. Hands must always be kept well away from blade at all times. Use a push stick where required.
D	SHEARING	MEDIUM	Make sure all guards are secured shut when machine is on.
F	STRIKING	LOW	Support long heavy workpieces and stand clear of offcuts falling. Remove all loose objects around moving parts. Wear safety glasses.
H	ELECTRICAL	MEDIUM	All electrical enclosures should only be opened with a tool that is not to be kept with the machine. Machine should be installed & checked by a Licensed Electrician.
K	ERGONOMIC	MEDIUM	Heavier pieces must be carried by more than one person, or use supports.
O	OTHER HAZARDS, NOISE, DUST.	LOW	Wear hearing protection as required. Must be connected to dust extraction.
Plant Safety Program to be read in conjunction with manufactures instructions			

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Authorised and signed by:
Safety officer: .....
Manager: .....

Revised Date: Aug-08