OPERATION MANUAL

Vqr ewv'5422'GT

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Overview of the Operation Manual

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ct Overview of the Operation Manual

The design of the products delivered to you may vary from this Operation Manual as a result of retrofit by the manufacturer; therefore these operation instructions herein are not necessarily fit for a certain specific model.

- Taking off the safety device and check plate, especially the saw blade cover and riving knife safety cover can endanger the operator and result in accident.
- ② All operators and relevant personnel of this brand panel saw must read carefully, understand and comply with this Operation Manual.
- ③ We recommend reading this Operation Manual carefully before using the machine. We are not responsible for any damage and adverse effect due to not complying with this Operation Manual.
- Qualification of operator Before using the panel saw, the flowing points must be complied with: only the operator who has been trained substantially and obtained the qualification can operate the panel saw.
- Explanatory notes This Operation Manual covers the important information about how to operate the panel saw safely, properly and economically, complying with this Operation Manual is helpful to avoid danger, reduce repair cost and idle time and improve the reliability and service life of panel saw.
- Rules for accident prevention This Operation Manual is supplemented by the existing regulations for accident prevention and environmental protection of the state. The place where this equipment is operated must be furnished with this Operation Manual, every new substitute of this equipment must read and comply with the requirements in this Operation Manual, for example: Operation includes setting up, removing operating troubles, clearing off production waste, maintaining and clearing off the operated and
- **Important notes** Read this Operation Manual in detail.

auxiliary materials.

Attention: some paring saw dust may be left when we conduct trial cut before delivery even with cleaning.

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<u>1. Technical Data</u>

Precision Panel Saw		
Model:	Vqr ew5422GT	
Power of main saw motor:	4/5.5 kw	
Power of scoring saw motor:	0.75 kw	
Main saw speed:	3000/4000/5000 r/min	
Scoring saw speed:	8000/min	
Main saw dia.:	∮ 250~ ∮ 400mm	
Scoring saw dia.:	∮ 120mm	
Net weight of machine:	1035kg	
Code of		
Manufacture:		
Date of		
Manufacture:		

1. Technical data

1.1 Machine mark

The nameplate on the machine frame plays a role as the machine mark and offers important parameters of the machine.

See Figure 1.1 for the meanings of the nameplate contents

This equipment is also furnished with the following certification marks meeting the requirements of CE so as to satisfy the basic safety and health-protection requirements in the appendix 98/37/EGW to the Operation Manual as a substitute for 89/392/EWG.

Figure 1.1 Machine Nameplate

Equipment:

Precision Panel Saw

1.2 Technical Parameters:

Main saw	Saw arbor dia. (mm)	30
	Angle of inclination of saw blade (°)	0-45
	Number of idling of main arbor (r/min)	3,000/4,000/5,000
Scoring saw	Saw blade dia. (mm)	120
	Saw arbor dia. (mm)	22
	Number of idling of main arbor (r/min)	8000
Check plate,	Length of sliding table (mm)	3200
vert. & hor.	Max cut length (mm)	3150
guiding rule,	Max cut thickness (mm)	80
sliding table and	Max cut width (mm)	1250
fixed table	Check plate length (mm)	1200
	Vert. & hor. guiding rule length (mm)	1,250
	Fixed table dimensions (mm)	1100*700
Suction	Suction inlet dia. (mm)	100
Environmental	Operating temperature ()	10-40
requirements	Max relative humidity (%)	90, no freezing
	Do not place the equipment in	
	explosive or erosive environment.	
Weight	Machine weight:	
	1,035KG	
Electrical	Voltage (V)+5%-10%, see nameplate	
equipment	Current (A), see nameplate	
	Frequency (HZ), see nameplate	
	Motor power, see nameplate	
		It shall save power
		according to the technical
		parameters of equipment.

1.3 Characteristic of noise level

The noise emission level rests with the sound intensity level EN3746 or EN11202 (calculated by the correcting factor K3 of A2 in the appendix of EN11204) based on the sum of operating conditions covered by ISO7904.

Table 5: Characteristic of noise lev	Table 5:	Characteristic	of noise l	evel
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Sound intensity level (dB)	Sound pressure emission level at working place (dB)	Tool
Idle LWA=85	Idle LPA=79.1	Circular saw blade 300×3.2×72 W2
Run LWA=90	Run LPA=88.2	n=4,030rpm

Permissible measurement error for specific emission level K=4dB (A) These specific values are emission level values, so is not necessarily the safety working level. Because emission is related to the emission level, though the protective measures have been taken for the operator, the noise may not be necessarily lowered thoroughly. The factors in work place that affect noise emission also include the duration of being in the noisy environment, indoor features and other noise sources, such as the emission from nearby equipment and number of equipment, or other processing. Nevertheless, these parameters are still helpful for the operator to identify the noise condition in the environment where the equipment is.

1.4 Dust emission parameterMaterialAs per the appendix 4 of BG1739 Dust Emission Standard, the
operating environment of woodworking panel saw belongs to the one
with low dust.

1.5 Operating as per specified requirements The panel saw model has an operating guide device that is special for the cases as follows:

- * Longitudinal cutting and cross cutting are running with at least one horizontal bearing surface, max thickness of vertical cutting 80mm
- * It can also cut solid wood, density fire board, shaving board, cardboard, plastic board, organic glass plate and gypsum board, etc.
- * For other materials to be cut, such as non-ferrous metal or synthetic material made of plastics, the relevant materials and saw blade used must be approved by the manufacturer.

Our manufacturer furnishes the FREUD circular saw blade made in Italy, with min diameter of 250mm, max diameter of 400mm and scoring saw blade 120mm.

4

Tool

Any other use than the specified cases as above is not complied with the design requirement and for any damage as a result of which, our manufacturer is not held liable and any risk of which is on the user's own account.

- Saw blade HSS * What deserves special attention is that it is prohibited to use high alloy & high speed steel saw blade (saw blade HSS) and wide-mouthed circular saw or wobble saw and saw blade with edge breakage or deformed saw blade.
- Installation site * Likewise, the equipment is not suitable to be installed in the open or workshop with explosive danger, the operation complied with design requirements also include fitting the equipment with properly-sized suction & waste discharge system, complying with the operating procedure specified by the manufacturer, as well as abiding by the safety regulations covered by the Operation Manual as for the maintenance and repair requirements.
 - * The panel saw can only be operated, installed and maintained by the personnel being familiar with the equipment characteristics and understanding the danger. The responsibilities for operation and maintenance must be pinpointed. The machine must be repaired by our customer service dept.
 - * Abide by relevant regulations on accident prevention and generally-recognized safety regulations, as well as industrial health-protection stipulation.
- Spare parts * Our original spare part is the only replacement part for this machine; the manufacturer will not guarantee any damage as a result of non-original part and will not be responsible for any damage as a result of the user's own improvement to the equipment without authorization.



operating position

The panel saw shall be operated in the following operating position with specified method:

- * On the left of moving table in front of equipment viewed from feed direction (position of main operator).
- * When the longitudinal cutting check plate is used, it is on the right of the sliding table on the cross cutting end of equipment.
- * Any person to remove the workpiece must stand on the right cross cutting end of equipment and behind extension table and shall not stand in the passing area of moving table at any time.

2. Safety

2.1 Explanation of symbol and warning



Operation safety symbol

This symbol is often seen in all materials about safety of this Operation Manual. There is the danger of injury and to life at any time in the place where this symbol is. The materials about operation safety shall be passed to other operators. Besides the regulations on safety in this Operation Manual, other common stipulations on safety and accident prevention also shall be abided by.

Warning

This warning symbol appears in the place where special attention shall be paid to in this Operation Manual so as to ensure that the correct operating procedure stipulated in the Manual could be complied with and preventing danger or damage to the machine.

2.2 Safety precautions

All equipment tools, especially the woodworking machinery fed manually, will cause a certain danger if not operated properly, therefore, it is required to always comply with the safety precautions and other industrial safety stipulations and requirements summarized in this chapter.

Regulations on accident prevention:

- * Before operation, ensure the safety and operating facilities are installed properly without any damage.
- * Before replacing saw blade, removing trouble and repairing, ensure the power supply has been switched off and it is necessary to lock the main power supply with lock for preventing accident.
- * It is only allowed to use the saw blade and grooving saw blade supplied by the manufacturer.
- * Wear close-fitting work clothes, and do not wear ring, bracelet or wrist watch.
- * The work place shall be clean, skid-proof and has sufficient illumination.
- * Do not process (overlarge or too small) workpiece that exceeds the machine's effective power.
- * Stand out of the bounce area of saw blade side and workpiece when operating and do not stand in middle of saw blade.
- * Remove the loose matters around saw blade before starting the machine.

- * Cutting shall not be started until the saw blade up to full speed.
- * Always use dust hood!
- * Except cross-cutting long and thin wood into pieces, the riving knife shall be always used and the riving knife shall not be thicker than the cut width and thinner than the main saw blade.

When cross-cutting long and thin wood into pieces cutting, use the anti-bounce device, such as fix it in the sliding table groove with striker plate against moving. After cross-cutting long and thin wood into pieces, remount the riving knife and safety cover immediately.

* When narrow wood is cut longitudinally, the planer shall be used.



- * For the purpose of avoiding the cut wood from being brought upward and bounced out by the uprising tooth ring, an offsetting wedge may be used for instance.
- * Do not cut round log with saw using standard feed auxiliary device or check plate.
- * Fix the workpiece on the sliding table with striker plate when trimming.
- * When using feed device, it at lease needs to use the longitudinal knife as the anti-bounce device.
- * Worn and torn sliding table strip shall be replaced promptly.
- * Do not use wobble saw or cutting device.
- * Wear hearing protection when operating because the noise in work place is more than 85dB (A).
- * The saw dust produced in cutting may affect the sight line and be also harmful to health, so the two dust collector openings of saw shall be connected with the suction system. When the suction force is not enough, no operation shall be done, and proper measures must be taken to ensure when the equipment is started, the suction system also is started.
- * Only qualified electrician can operate the electrical equipment of the machine.
- * Clean the equipment periodically, especially the saw bench, sliding table and check plate, which is an important safety factory, and before operation start, it must be ensured that the equipment cannot be started without cause.

2.3 Safety measures

Our panel saw is developed and manufactured according to the national standard and European CE Standard "Woodworking Machinery Safety, Circular Saw Part I, Circular Saw Machine with and without Sliding Table", in the stage of design, we paid great attention to creating ideal operating conditions, covering safety of various machinery and electrical equipment to isolating noise and lowering dust emission.

The machine is equipped with necessary protective device so as to avoid the risks with respect to design that are difficult to remove in operation, including:

- * The parallel safety cover on top is both available at 45° and 90° so as to cover the upper part of saw blade soundly and prevent any danger in cutting.
- * There are three riving knives with diameter between 250mm and 400mm so as to avoid the workpiece from bouncing back when cutting is jammed.
- * The longitudinal cutting check plate has an adjustable check plate that can be drawn back so as to long workpiece from being blocked between the check plate and uprising tooth ring, or may be replaced with a low guide check plate so that there could be appropriate space to lower the upper safety cover to the workpiece position when cutting narrow and flat workpiece.
- * Interlock the doors on machine body electrically so as to replace belt, when the door open, do not start the machine, when the machine operating, switch off the motor as soon as the plate guard opens.
- * No matter how many is the saw blade diameter and speed, once the machine is switched off, the automatic brake will stop the saw blade within 10 seconds (equipment of electromagnetic brake with CE standard).
- * With respect to optimizing environment, the machine has reasonable layout, the machine can be operated easily on both side of sliding table, the operating panel can be adjusted to the position of sight line, and all emergency-stop buttons on the operation panel can switch off all motors promptly and safely.

2.3.1 Mounting safety cover



When the 45° saw blade is operating, if the equipment has one narrow safety cover and one special safety cover for 45°, the special safety cover for 45° shall be mounted.

If only one safety cover available both at 90° and 45° is furnished, there is no necessity to change.

Release the rotary handle to replace the transparent safety cover $(45^{\circ}/90^{\circ})$ below.

Note: do not replace the safety cover when the saw blade is running.



2.3.2 Screwing off safety cover

Only in special cases, the safety cover may be screwed off with special care. Such as large-size workpiece. Afterwards, screw the safety cover back to the original position and lock it forcibly.

Screw off the safety cover according to the following procedure:

- * Cut off power supply and ensure not to switch on it again.
- * Loosen the locking bar A, then screw off the safety cover rightward.



Position of safety cover in normal operation Removing safety cover

Attention

Screw the safety cover back to the original position after completion and fix it reliably by tightening the locking bar A.

2.3.3 Cross-direction setting between safety cover and saw blade The safety holder is fixed on the extension arm so as to make the max distance between outer edge of safety cover and center edge of saw arbor be 15mm.



2.3.4 Setting of riving knife

With respect to safety, the accurate setting of riving knife plays a very important role. The distance between riving knife and toothed ring in cut height area shall not be more than 8mm, and the distance in most common use is about 5mm and that of the lower part is 3mm.



When setting riving knife, the power supply must be cut off, for setting riving knife, move the upper bracket to terminal position of unlocking device, fold the orange check plate downwards, subsequently, loosen the set screws on the holder of riving knife with special spanner, then move it in the fixed groove to adjust its height, remove the whole riving knife holder along the track to adjust the distance between riving knife and saw blade, and observe the scale on the riving knife at the same time, then tighten up the set screws and shut to the guard.

2.3.3 Extension of table

The worktable attached to the table may prevent workpiece from inclining backward in cutting and improve the safety. The attached worktable is a necessary part of a standard machine.

2.3.4 Striker plate

The striker plate is used for trimming of thickness and to fix the workpiece on the sliding table.



2.3.5 Planer

For the wood less than 120mm to be cut, the planer shall be used to prevent hand from approaching to the saw blade.



2.3.6 Planer handle

When cutting narrow workpiece, lean the workpiece against the check plate with planer that may be self-made by the operator.

2.3.7 Anti-bounce device

Do not use the cross check plate and parallel check plate because the saw blade may be jammed when wood cutting as a result of anti-bounce device.

2.4 Risks still exist

Although the operation is made according to the requirements and complying with safety system, the machine is made for special purposes and has limitation, so there are still the following risks:

- * Touch the main saw blade and grooving saw blade in cutting area.
- * When the sliding table go forward or all go back, touch the saw blade below sliding table.
- * Wood or partial part of wood bounce.
- * The hard alloy welded saw blade teeth are thrown off.
- * Breakage and saw blade is thrown out.
- * Crushed matters on the manual or motor-driven sliding table.
- * Crushed matters between the slant movement of motor-driven saw blade and riving knife check plate or workpiece.
- * When the electrical part area is disconnected, the case with power on is met.
- * Hearing is damaged in long time operation as a result of not wearing hearing protection.
- * Harmful dust is sucked because no waste is discharge in operation.

When setting the operation and maintaining panel saw, pay close attention to prevention against these risks that still exist causing injury.

2.5 Safety operation of panel saw

2.5.1 Cross-push shelf/cross-cutting check plate

Size and beveling

The cross-push shelf is put on the back-up key on one end of radial arm whose position can be adjusted according to the material size. The cross-cutting check plate may be placed on two positions of the cross-push shelf.

Position 1 Application: when cutting wood

The operator only needs to prop the wood against the check plate and push it to the saw cutting direction.



Cutting direction

Position 2 Application: cutting the solid wood and board with width less than 600mm.

The operator only needs to prop the wood against the check plate and push it to the saw cutting direction.



Cutting direction

Replacing cross-cutting check plate	 * Unscrew the set screws * Put the cross-cutting check plate on a new position and make sure the set screws are put into hole site properly. * Uplift the locking bar and push it outwards. * Insert the set screws into arbor slot. * Tighten up the set screws.
	2.5.2 Cross-cutting & angle check plate
Description of functions	 * The cross-cutting and beveling check plate can be rotated by 49° (as indicated on the scaleplate). For angle increase, use the scaleplate for length compensation. * The fixture added shall be 90°. * C profile is movable and lockable to assist in supporting.
Controlling	

Controlling



- Replacing*Unscrew the set screws,cross-cutting*Push leftwards the set screw 1 out the arbor slot,check plate*Move the cross-cutting check plate to Position 2,*Insert the clamp screw 1 into the arbor slot,*Tighten up the set screws.
- Setting angle Unscrew the set screw, adjust the angle check plate to the angle needed and then tighten the screw a little bit.
- AttentionWhen sizing with an adjustable rule, the individual locking snap spring
must be clamped to the extension of the check plate.
- Setting 2.5.3 Longitudinal-cutting check plate When cutting the board, the longitudinal-cutting check plate can be pushed forward to the desired size and secured with a lower cam lever that can be adjusted with fine adjustment. The set size can be read from the scaleplate and displayed if the monitor is mounted. Depending on the thickness of the saw blade, unscrew the screw to set size on the scaleplate. Be sure to feed with a planner and level the check plate when the cutting width is less than 120mm. The longitudinal-cutting check plate can be adjusted in the cutting direction and in the section. Use the upper cam lever to secure it at the desired position.
- Cross-cutting When cutting a short wood, use the flat face of the check plate, so that the space for wood cutting would be very large, and it may move the check plate close to the saw blade without touching the safety cover, especially when the saw blade tilts.



2.5.4 Actual operation

General Topcut 3200 ER panel saw is commonly-used equipment and can used for various saw cutting as long as being installed properly.

- Saw blade First of all, the saw machine can only be used in good condition. The riving knife shall be mounted correctly and the safety cover shall be lowered to cover the wood. The water discharge by suction at upper part is also very important.
- Suggestion It must set the rotary speed well, do not push the workpiece forward just after start, and the cutting can be started only when the saw blade is up to full speed.
- Position of hand Put five fingers together and on the wood with enough safety distance away from the saw blade. For the purpose of guaranteeing safety operation, please refer to the description of specific procedure as follows:
- Trimming Tool: longitudinal-cutting saw blade Procedure: Mount the holding pad on the moving table, make the hollow surface of wood down blow and press on the underneath of included angle and hold down the wood with hand to push it forward. There shall be safety distance between two hands and saw blade.



Longitudinally (wood width is less than 120mm)

cutting narrow Procedure: set the longitudinal-cutting check plate at the cut width and wood lower the safety cover according to the height of wood. Push the wood and the sliding table forward and the wood is along with the check plate, use planer around saw blade, push the wood cut out beyond the longitudinal-cutting knife. When cutting short wood, use the planer.



Cutting strip

Procedure: mount the longitudinal-cutting aluminum guiding rule on the low guide face, put the wood on the moving table, and press it to the side of longitudinal-cutting guiding rule with hand. Push the moving table and push the wood strip cut out beyond the saw blade with planer.



Cross-cutting wide wood

Procedure: put and prop the wood on and against the longitudinal-cutting guiding rule. Prop it against the rule closely and push it forward with left hand, rotate it up to make it away from the saw blade or move it from the saw teeth running on the wood before drawing it back after cutting.



Hidden cut Procedure: when undercutting, select proper cutting sequence so that the wood blocks cut out can be left at the other side of saw blade and check plate, lower the safety cover to the wood and make the operation guiding accurate. Prop and press workpiece against the side of guiding rule with left hand.



Slotting Procedure: close the opening on table with table strip matching with the slot, set the saw blade at the depth of slot and fence the rear part with longitudinal-cutting knife. When pushing the wood forward, press the workpiece on the table, otherwise, it may jump inward, resulting in danger.



Propping against the longitudinal-cutting guiding rule Prop the board against the cross-cutting guiding rule of the cross-cutting sliding table, set size on the longitudinal-cutting scaleplate, tighten up the set screws in front of saw blade, draw the moving table back and guide the workpiece with sliding table, after drawing the check plate back, the wood will not be blocked between the saw blade and check plate.



Cross-cutting short and narrow wood

Procedure: mount the offsetting wedge so that the matter cut out cannot touch the upward-rotating saw blade. It can only use the cross-cutting check plate to feed wood. It cannot use hand to remove the matter cut out around the saw blade.



Cutting large-size board

The size in this procedure may be set on both longitudinal-cutting check plate and cross-cutting check plate, if a large-size board is to be cut into many equal pieces, it may as well be cut into parallel wood blocks on the longitudinal-cutting guiding rule and then cut into the set size. However, when workpiece width is more than the cut width of the machine, it is necessary to set size on the cross-cutting guiding rule.



3. Transportation

When use crane or forklift to transport, it only needs to uplift the equipment just a little.



3.1 Packing

The form of packing depends on the transportation method and distance, if no requirement under contract, the packing shall be executed according to the relevant regulations on machine tool export packing of the state, and attention shall be paid to the marks on outside of packing.

3.2 Extent of sub-packing

The extent of sub-packing of panel saw depends on the transportation condition and supply options, this saw machine is divided into two parts to be delivered, which shall be transported with special care to avoid losses as a result of over violent force or careless handling.

3.3 Storage in intermediate link

The machine must be stored in the place with protection and against dust and moisture, the exposed and non-treated parts on the surface shall be applied with antirust agent whose effectiveness may last about one year, if more than one year, apply the protective agent again.

4. Assembly

4.1 Installation of panel saw

The panel saw shall be on hardened and flat floor that is enough to bear its weight without the necessity of special foundation. There shall be enough space on the installation site, as shown in figure, so as to install the equipment and operate large-size wood. There shall be a certain safety distance between other parts and other machines indoor to prevent hurting other personnel.

4.2 Installation of movable table

Put the movable table on the position of machine body, align the three set screws with the screw holes and tighten them up.

Mount the rear stop plate, check if it is up to the requirement and adjust it otherwise. Before start-up, check each link.





4.3 Electrical connection

Only qualified electrician can install the electrical equipment, including connection with power supply. Before electrical installation, the power supply must be cut off.

Only when the main power supply is cut off, each contact may be closed or opened.

The distribution box of panel saw is mounted on the rear side of machine body and has output line. There is a terminal box on the side and it only needs to connect according to the mark.



Terminal box

After finishing connection of power cord, start the machine just a little to check the running direction of main saw motor, if it is necessary to correct, just change the direction of two cord ends, and write the running direction down on the saw blade cover with arrow.

4.4 Connection of dust hood assembly

Connect the dust hood assembly with the machine body, and tighten up with M20 nuts + special flat gasket and elastic cushion, as shown in below figure.



4.5 Connection of suction system (self-prepared by customer)

According to the Annex 4 of BG1739, the operating environment of panel saw is a low-dust environment with the precondition that the following system is furnished.

- * 50mm hose and three-way pipe are mounted on the dust hood on top of saw blade as attachment.
- * Below the worktable, a dust chamber with 100mm diameter is mounted on dust collector opening with 100mm diameter.

If the operating environment of Vqrew'5422'GT is equipped the following dust exhaust system, then this environment is recognized as a low-dust operating environment. In this way, the connection between machine and suction system is correct and the air speed at the interface is at least 20m/s.

However, the hose, three-way pipe and dust collector carrier are not included in the scope of supply for standard model!

Moreover, the suction system and machine must be started at the same time and the contact switch without potential difference is used for which.

5. Installation of Machine

In final assembly, the basic settings have been done in the factory. But adjusting the basic settings of machine is necessary because of disassembly, transportation and assembly on site.

In order to make the sliding working table slide smoothly from one end to the other, make it slide with a little force in stationary state. Check the moving table. Put a rule on the moving table, move the moving table to the middle position and move the moving table backward and forward, the aluminum worktable shall be a little lower about 1/10mm. Set the moving table. Unscrew the lock screws on the four stud bolts, adjust the worktable, tighten up the set screws, then put the rule on the fixed table to be parallel with the moving table, if the surface is sunken, adjust the pressure screw for compensation.

Inspection:

Adjust the saw blade to max cutting position, use it to cut out a small piece (it may as well be MDF board) along cross-cutting guiding rule, judge if the setting of moving table is correct through the sound difference between saw teeth cutting and not cutting, when the uprising saw teeth passing through, there is only a little swing, but saw teeth have noise in cutting.

Setting: loosen the mounting pieces on both ends of moving table and in the middle, unscrew the lock nuts of stop screws for adjusting properly and then lock them, afterwards, adjust the moving table and tighten up each set screw.

Inspection:

Adjust the saw blade to the max cutting position to cut a piece of 300×450mm sample, if the setting of moving table is correct can be judged from the sound of uprising saw teeth.

Contrastive inspection:

Parallel check plate cutting Move the parallel shield 0.5mm near the saw blade, push forward the length cutting blade and the wood to cut 50-80mm backwards. Take it out, and then cut in 20mm along the normal direction. There is no difference can be seen between the two cuttings, but it can be felt by touching. Adjust and screw off the set screw, adjust and set the screw and set the easy kerf, and then tighten up the set screw, when using grooving saw, the two saw blades shall be aligned with each other and with the same thickness. Inspect the square angle cutting with adjusting the moving table (see operation manual) and radial arm, and it can be changed if necessary.

Angle cutting Use high quality saw blade, and we provide a set of Freud of 300mm×30×72 made in Italy, skewed tooth type, 4,600rpm speed, for 1,000×1,000mm flakeboard or density board, the min. thickness of 19mm and 5 times of cut (see Fig. 1), and put the last cut side on the cross-cutting guiding rule for reuse (anticlockwise turn over the board). In the fifth cut, cut off a strip with about 10mm width, and measure the thickness of its both sides with the vernier caliper. Difference between the two thickness is divided by 4 is

the square angle error of cut length per meter.



Adjustment of angel cutting in factory:

The frame is fixed on the position as shown in drawing (300mm from the edge of moving table) and the other position (about 1,300mm from the edge of moving table), the square angle inspection and adjustment are made on the above two position. The adjustment shall not be more than the max allowable error 0.2mm.

Inspection:

Erect the two boards (with width about 70mm) in front of the cross-cutting guiding rule, and cut at this position, and then make the cut planes abut, if it is set correctly, the cut planes shall run parallel with each other, that is to say there is no clearance can be seen between the two cut planes. Readjust the equipment!

6. Adjustment of Machine

* To raise or lower the lower auxiliary saw blade of main saw blade, and adjust the cutting angle.

a. To adjust the main saw, press MAIN SAW UP/DOWN on the operation panel to adjust to the proper position;

b. There is a limit on the highest and lowest point of scoring saw, at which the blade will stop automatically;

c. To adjust the runout angle, adjust with hand wheel manually;

d. ON/OF, UP/DOWN and E-STOP of main saw and auxiliary saw can be controlled accordingly on the operation panel, as shown in figure below;



6.1 Installation and adjustment of saw blade

Always comply with the following requirements by all means:

- * Don't mount the cracked or damaged saw blade, but only use 250mm-400mm saw blade.
- * Make a check, the rotary speed of saw blade shall not be too high, and the maximum rotary speed is marked on the saw blade.
- * Pay attention to choosing proper saw blade, open the clamp nut, and clockwise mount the main saw blade on arbor, put the saw clamp on, then tighten up the clamp nut, for scoring saw, mount anticlockwise the saw blade, tighten up the nut at last.



Mount the main saw blade

Mount the scoring saw blade

Cut off the power supply, adjust the saw blade to the top height with the obliquity of 0°, press down the E-STOP button to move the upper moving table towards the cutting direction until the forefront, and then lift the orange damper. When dismounting the main saw blade, insert the round bar into the main arbor pulley hole through the hole of fixed table, use a glass wrench SW55 to loosen nut A rightward. When dismounting the scoring saw blade, lock the small saw arbor with an Allen wrench, and screw off nut B anticlockwise with an outer-hex wrench.

Important
suggestion6.2 Replacement of saw blade
Prior to mounting the new saw blade, remove the sawdust on flange
firstly. Mount the saw blade and the front flange to the arbor. Tighten
up nut A leftward with the glass wrench SW55; afterward check if the
thickness and space of the riving knife are matching with the saw
blade.
Close the safety cover, and take a simple trial run to see if the saw
blade operates correctly, lower the safety cover of upper saw blade to
the designated position for checking if the saw blade is protected
completely.After saw blade is replaced, check if the riving knife is mounted
correctly by all means.

6.3 List of saw blade options

Main saw blade

Before leaving the factory, our panel saw is furnished with a set of Freud saw blade made in Italy, which is recommended to use thereafter. The saw blade selection of panel saw is very important for only the qualified saw blade can realize perfect cutting effect.

Material	Cutting speed (m/s)	Saw blade cut diameter	Saw blade cut diameter	Saw blade cut diameter
		∮ 250	\$ 300	\$ 350
Soft wood longitudinal cutting	60-80	24W	26W	28W
Soft wood cross cutting	60-80	40W	46W	48W
Hard wood longitudinal cutting	60-80	24W	26W	28W
Hard wood cross cutting	60-80	40W	46W	48W
Laminated plywood	50-70	40W	46W	48W
Plywood	60-80	48W	58W	60W
Clad plat	50-80	40W	46W	48W
Shaving board	60-80	48W	58W	60W
Faced shaving board	60-80	60TF	70TF	72TF
Compound floor board	50-70	60TF	70TF	72TF
Hard fiber board	60-80	60W	60W	60W
Gypsum board	40-60	48W	58W	60W

Scoring saw blade

V8-X panel saw needs to use double groove saw blade with dia. of \$\$\\$120mm×24 teeth*\$\$20mm.

Riving knife

Sizes of the supplied riving knives are all complying with the saw blade dia. range listed in table, and the corresponding specifications are marked clearly on the surface of riving knives, thickness of the riving knife shall comply with the standard requirement, the carbonized knife is more proper, and riving knives of other kinds are also OK.

6.4 Setting of main saw blade speed

Our panel saw is of three speeds, i.e. the rotary speeds of main shaft are 3,000, 4,000 and 5,000, which can be reached by moving the poly V-belt.

* Turn off the power source and press the emergency stop button.

* Rotate the rocker lever downward with a wrench to the lock position.

*Adjust the main saw belt to the appropriate position

* Rotate the rocker lever upward to tighten the belt by weight;



<u>Tip: belt tension will be self-adjusted after flipping of the rocker lever,</u> <u>requiring no manual adjustment</u>

6.5 Lock of moving table

The moving table of Z series is locked manually at the backend against moving casually so as to prop the wood to cut against the cross-cutting guiding rule, and it may be unlocked with the handle at the backend of the moving table.



The moving table of Y series is locked manually at the frontend against moving casually so as to prop the wood to cut against the cross-cutting guiding rule, and it may be unlocked by pushing the lock button inward.



6.6 Main switch

- Start Before closing the main power supply switch, the emergency stop switch must be in open condition. Then turn the emergency stop switch to left, and close the white switch of main saw, hereby the main saw is started. The scoring saw can be started only 5s after main saw starting.
- StopThe black button below the white button is the stop switch of main saw.Press down this button, the main saw will be stopped and the scoring saw
will be stopped accordingly.
- Emergency switch The machine can be stopped by the emergency stop switch, but this switch only can be used in case of emergency.

6.7 Reaction of motor to overload

Reaction of motor to overload means the motor is over loaded, prior to restart, causes shall be found out and trouble shall be removed by all means, there is a thermal rounding protective device to protect the motor, if overheat, the motor will be stopped automatically. Attention shall be paid in this situation that the motor of the machine with a scoring saw attached will be stopped automatically even if the scoring saw motor is not overloaded. Only after the thermal relay cooling down, can the motor be started again, and the thermal relay needs about 10min to cool down.

Electrical cabinet shall be measured by the electrician every year.

6.8 Scoring saw

The lower edge of raw material will be cut by about 1-2mm and then thoroughly separated by the main blade, the scoring blade must be coordinated with the main saw blade in position and adjusted to a suitable width

Adjustment

Manually adjust the saw blade around, the same can be adjusted when the machine is running, can be adjusted by means of an Allen wrench to complete the following figure position



Setting working height (cutting groove depth of scoring saw) Adjust upwards

If you want to continue to increase the working height, loosen the screw (1) and turn the adjusting jack screw (2) rightward and tighten the jack screw (1) up upon reaching the desired height.

Adjust downwards

If you want to decrease the working height, loosen the screw (1) and turn the adjusting jack screw (2) leftward and tighten the jack screw (1) up upon reaching the desired height.

Note: we recommend to adjust the new height of saw blade with the adjusting jack screw (2) turned leftward to the lower limit. Tighten up the screw (1) after reaching the desired height.

6.9 Replacement of scoring saw blade

- * When stopping the machine, adjust the scoring saw blade to the highest position, move the moving table to the cutting direction to expose all scoring saw blades, lock up the moving table, open the safety cap, and clockwise screw off the fixing nuts with special spanner. Take out the front flange and dismount the scoring saw blade.
- * Remove the stickers in the two flanges before mounting the new saw blade. Mount the saw blade and the front flange on the saw arbor, and then clockwise tighten up the nut.
- * When using the scoring saw set with stepless cut width, it shall strictly comply with the following items, and disobeying the requirements of operation manual will endanger the production, the loss caused by which is not in the claim range:
 - Max. rotary speed of the saw blade is 8,000rpm, and allowable cut width is 2.8-3.2mm.
 - Open and pack the adjusting devices with special care against injury.
 - All adjusting devices shall be stored in the original package.
 - All connecting parts shall be mounted properly by all means.
 - If the connecting component fittings being lost or damaged, the original fittings shall be used for replacement.

6.9.1 Setting of scoring saw blade width

- * Use spacer to set the width of double saw blade to make it 0.1mm wider than the main saw blade.
- * At first, align the scoring saw with the main saw at one side of the machine, and carry on a trial cutting.
- * Align them in left and right by means of increasing or decreasing spacer.

7. Maintenance

7.1 Troubleshooting

In troubleshooting process, there is potential danger, please operate complying with the following descriptions:

Trouble	Cause	Solution
	Main switch is not started up;	Close the main switch knife "I";
		Wait for recovery of the electric circuit, or
	Interruption occurs in electric	find out and remove the cause for power
	circuit or some phase;	failure. (e.g.: fuse is blown out)
	Protection for over load trips,	Solve the over load problem of machine, and
Machine can't	however, thermal relay is still not	wait for the thermal relay cooling down;
be started	cold that can't reset;	
	Ends of the moving table exceed	Pull the moving table back to the front end of
	the middle part of saw blade that	the saw blade middle part again.
	results in saw cut length is not	
	enough.	
	Emorgonov switch is prosped down.	Turn emergency switch to right to original
	Emergency switch is pressed down;	Turn emergency switch to right to original position;
	Saw blade front plate guard or	Close the door, and cover the plate guard;
	machine back door is not closed;	
	Fuse for controlling the current	Open the electrical cabinet (prior to which
	circuit is blown out.	close the main switch), and find out which fuse
		is damaged among F1, F2 & F3. Find out the
		cause and remove the trouble. Then, replace
		the burned fuse. Pay attention to that the fuse
		with same load can only be used;
	Power supply interruption occurs	Remove the cause for power failure in phase,
	in one or more phases, e.g. because	and re-start the machine.
	the fuse is blown out.	
Machine stops	Saw blade is too blunt or saw	Replace the saw blade or reduce the saw
automatically.	cutting speed is too fast that results	cutting speed; wait for the thermal relay
automaticany.	in over load protection trips;	cooling down, then re-start the machine;
	in over roug protection erips,	
	Fuse for controlling current circuit	Open the electrical cabinet (prior to which
	is blown out;	close the main switch), and find out which fuse
		is damaged among F1, F2 & F3. Find out the
		cause and remove the trouble. Then, replace
		the blown fuse. Pay attention to that the fuse
		with the same load can only be used;
Motor is	Saw blade becomes blunt;	Mount the new saw blade;
running, but the	Riving knife blade does not match	Replace with proper riving knife blade, and
workpiece does	with the saw blade	the thickness of which shall be a little
not run.		narrower than that of the main saw blade;

Trouble	Cause	Solution
Width of the workpiece cut	Scale of saw cut width shifts	Re-regulate the ruler. Cut a workpiece
by saw is not corresponding		on parallel check plate with saw, and
with the width regulated on		measure out the saw cut width, and
the parallel check plate		then adjust the scale of aluminum
		ruler to this measurement;
Width of the workpiece cut	Scale of saw cut width ruler	Adjust the ruler again. Cut a piece of
by saw is not corresponding	shifts	workpiece on cross-cutting check
with the width regulated on		plate with saw, and measure out the
the cross-cutting check		saw cut width, then adjust the scale of
plate		aluminum ruler to this measurement;
Operation of oscillating	Telescopic arm or guide pulley	Wash the telescopic arm and guide
arm is unstable.	is dirty	pulley;
The moving table wonders.	Improper installation of lower	Adjust the lower guide pulley of
6	guide pulley	moving table
Ends of the moving table is	Improper installation of lower	Adjust the lower guide pulley of
higher than the worktable	guide pulley	moving table
Saw blade is scorched on	Adjustment to the free saw	Adjust the free saw cutting;
the moving table surface	cutting of moving table is	J D/
8	insufficient;	
	Adjustment to the free saw	Adjust the parallel check plate;
	cutting of parallel check plate	J I I /
	is too large;	
Saw blade is scorched on	Adjustment to the free saw	Adjust the free saw cutting;
the parallel check plate	cutting of parallel check plate is	J D/
surface	insufficient.	
Both sides of the saw blade	Adjustment to the free saw	Adjust the free saw cutting; Replace
are scorched.	cutting is insufficient;	with a little thicker riving knife blade;
	Workpiece is locked;	Push the workpiece forward along left
	Operation mistake;	or right. Use the moving table for saw
		cutting, and don't prop against the
		parallel check plate.
Workpiece is cut by saw	Saw blade is too blunt;	Replace the saw blade;
later and has the mark of	Charging speed is too slow;	Be quicker in feeding;
being scorched.	Too many saw teeth on the saw	Replace the saw blade;
	blade;	•
	Mistake in free saw cutting;	Adjust the free saw cutting
Broken stubble (with	Grooving saw is not aligned	Readjust the centerline;
grooving saw)	with the main saw;	
	Grooving saw blade is too	Adjust the width of saw blade;
	narrow;	
Workpiece upwarping in	Grooving saw blade is too	Replace the saw blade;
saw cutting process.	blunt;	-
	Saw cut height is insufficient;	Adjust the saw cut height;

7.2 Maintenance of equipment



Prior to any maintenance for the machine, the power supply shall be cut off to guarantee the safety. Periodic cleaning can prolong the service life, and also is the precondition of perfect cutting effect. Thus the sliding table shall be cleaned at least twice a week according to the service condition. It is advisable to clean it once a day.

Clean the main parts, including fixed table, sliding table, guide shaft of sliding table, die holder shaft, machine inside, and machine surroundings.

Use the dust collector to remove the paring and saw dust attached to the machine, when removing the resin residue, it is advisable to use the cleaning agent that can dissolve the resin, after treatment of parts is finished, it is necessary to use the cloth with oil to wipe them for preventing rust.

7.2.1 Saw arbor lubrication

Bearings of the main saw arbor and grooving saw are closed and have been lubricated for whole lifetime, so there is no need to add lubricant.

7.2.2 Other parts

Lifting linear bearings of big saw shall be lubricated at least twice a week.

8. Description of Service Spare Parts for Customers

We have the stock of main spare parts and wearing parts, which is a very important precondition for keeping board-cutting efficiency and production capacity.

When ordering the fittings, please refer to the detailed list. And for more details, please refer to the explanatory notes in drawings in the specification.

We are only responsible for guaranteeing the original parts provided by our factory.

Our company definitely represents that we do not know the original fittings and accessories not supplied by our company to be mounted or used will affect the efficiency of the panel saw, and will bring harmful factors to safety production. And our company is not responsible for any loss or result from using the unoriginal fittings and accessories.

Attention: there are available materials of the specification for specialized production and delivery of the fittings supplied by us that are up to the updating technological requirement and legal rules all.

When ordering the fittings, please make the model of machine and names of detailed fittings clear, and if do not know the name, please mark clearly the no. of drawing.

Annex Circuit Diagram



Power supply: (items covered in the dotted box shall be mounted by customer)			
Main saw motor Scoring saw motor			
Scoring saw lifting motor DC power supply			
Control power supply Power supply to angle indicator			


Saw blade angle motor Main saw lifting motor
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Explosion Diagram

Vqr ew'5422'GT

CONTENTS

I. Machine body	
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I. Machine body



II. Transmission assembly



1	Connecting plate	24	Bolt		
2	Gas spring	25	Nut		
3	Screw	26	Hexagon half-round head screw		
4	Guide post	27	Guard		
5	Small saw assembly	28	Swivel bolt		
6	Big saw lift base assembly	29	Fixed block		
7	Small saw assembly	30	Bolt		
8	Gas spring	31	Bolt		
9	Fixing plate	32	Big saw poly V-belt		
10	Fixing rod	33	Small saw poly V-belt		
11	Stopper plate welded assembly	34	Screw		
12	Connecting plate cover	35	Lock washer		
13	Spacer	36	Big saw lift pusher		
14	Bolt	37	Holder assembly		
15	Bolt	38	Small saw lift pusher		
16	Casing	39	Electric putter contact block		
17	Bolt	40	Holder assembly		
18	Gas spring	41	Locking cap		
19	Bolt	42	Connection block		
20	Nut	43	Lift flap		
21	Bolt	44	Limit switch fixing plate		
22	Flat pad	45	Eccentric block		
23	Bolt	46	Guide plate		

1. Small saw assembly



1	Snap ring	13	Small saw pulley
2	Spindle assembly	14	Saw chuck
3	Adjustment shaft assembly	15	Saw chuck
4	Lock washer	16	Nut
5	Bolt	17	Copper pad
6	Bolt	18	Nylon locknut
7	Small blade		
8	Bolt		
9	Screw		
10	Scoring saw seat body		
11	Copper bush		
12	Small saw holder		

2. Big saw assembly



1	Main saw seat body	14	Bolt
2	Wave washer	15	Spindle assembly
3	Bearing	16	Saw blade
4	Bearing	17	
5	Spindle	18	
6	Flange	19	
7	Fixing plate	20	
8	Check plate	21	
9	Inner plate	22	
10	External splint	23	
11	Locking nut	24	
12	Bolt	25	
13	Bushing	26	

III. Fixed table assembly



1	Fixed table	14	Block
2	Saw aluminum guard A	15	
3	Saw aluminum guard C	16	
4	Screw	17	
5	Hexagonal nut	18	
6	Saw aluminum guard D	19	
7	Saw aluminum guard B	20	
8	Hexagon socket head cap screw	21	
	Hexagon socket countersunk		
9	head screw	22	
10	Rear table	23	
11	Side table	24	
12	Die holder assembly	25	
13	Die holder arbor	26	

IV. Dust hood assembly



1	Plastic plug	14	Nut M20
2	Rotating block	15	Rotating block B
3	Locking knob	16	Supporting rail B
4	Limit sheet	17	Hexagonal bolt
5	Hexagon nut	18	Dust hood holder
6	Spring washer	19	Dust hood block
7	Flat pad 16	20	Hexagonal bolt
8	Adjusting bolt	21	Dust hood connecting rod
9	Spring washer	22	Dust hood assembly
10	Flat pad 8	23	
11	Hex head cap bolt	24	
12	Bolt	25	
13	Flat pad	26	

V. Carriage assembly

1. Carriage and tumbler



1	Tumbler weldment	19	Slide arm casing cap
2	Auxiliary carriage	20	Square tube casing cap
3	Decorative board	21	Carriage ruler
4	Locking block	22	Nut
5	Locking handle	23	Block
6	Eccentric shaft	24	Aluminum strip
7	Slide arm	25	Left ruler
8	Adjusting bolt	26	Right ruler
9	Roller assembly	27	Bolt
10	Tumbler base	28	Bolt
11	Retainer ring	29	Swivel bolt
12	Bolt	30	Nut
13	Screw	31	Tumbler plug
14	Bearing	32	Rotary shaft A
15	Nut	33	Rotary shaft B
16	Rotary drum	34	
17	Drum shaft	35	
18	Bearing		
-			· · ·

2. Carriage ruler assembly

13

14

15

16

17

18

19

Base

Screw

Spring

Stud

Handle

magnifier 2

Plastic base



32

33

34

35

36

37

38

Bolt

Handle

Shaft

Angle locking block

Angle locking stud

Copper sheath

Magnifier

VI. Movable table Movable table – Series Y 1. Top carriage



- 1. Top carriage 3200mm 15. Screw 2. Round bar 16. Roller 3. Round bar 17. Bolt 4. Holding bar **18. Bolt** 5. Cheese head screw 19. Screw 6. Washer 20. Set collar 7. Stop **21.** Tube 8. Rubber 22. Hexagonal screw 9. Hexagonal nut 23. Nut 10. Cheese head screw 24. Slotted spring pin
- 11. Stop
- 12. Bumper
- 13. Screw
- 14. Barrier strip

- 28. Pressure spring
- 29. Casing cap
- 30. Casing cap
- 31. Screw
- 32. Screw
- 33. Grip
- 34. Hexagonal screw
- 35. Nut
- 36. Screw

25. Slotted spring pin

26. Parallel pin

27. Slotted spring

2. Movable working table - Middle carriage



- 1. Middle carriage
- 2. Eccentric shaft
- 3. Washer
- 4. Stop
- 5. Slotted spring
- 6. Connection block
- 7. Locking block
- 8. Slotted spring
- 9. Eye bolt
- 10. Hexagonal nut
- 11. Bush

- 12. Mushroom knob
- 13. Set collar
- 14. Pressure spring
- 15. Angle bracket
- 16. Hair brush
- 17. Bumper
- 18. Washer
- 19. Screw
- 20. Roller
- 21. Screw

3. Movable working table - Bottom carriage



1. Bottom carriage	10. Casing cap
1. Bottom carriage	10. Casing ca

- 2. Middle locking
- 3. End locking
- 4. Screw
- 5. Stop

6. Base gasket

- 7. Screw
- 8. Bumper
- 9. Round bar

- р
- 11. Casing cap
- 12. Screw
- 13. Rivet
- 14. Rivet
- 15. Bush
- 16. Screw
- 17. Stop

Tool List of Kit

No.	Name	Quantity
1	Glasses wrench SW55	1 piece
2	Solid wrench (14-17)	1 piece
3	Solid wrench 17-19	1 piece
4	Double offset ring spanner 22-24	1 piece
5	Allen wrench	1 set
6	Cross head screw-driver (150)	1 piece
7	Cross head screw-driver (150)	1 piece
8	Holding pad (or upper pad)	1 piece
9	Planer block	1 piece
10	Lever	1 piece
11	Operation Manual	1 сору

Packed by:

Checked by:

Packing List of Precision Panel Saw

Serial No. of Machine:

Quantity of cases (2 wooden cases)

1. Case of machine body and its accessories

2. Moving table and its accessories

3. Operation Manual

4. Acceptance certificate

5. Drawings of fittings

Packed by:

Checked by:

Acceptance Certificate

Performance and Quality Inspection

Model

Manufacturing Date and Serial No.:

Inspected by:

Production Manager:

Inspected on:

Inspected on:

Signature:

Signature:

Remarks: