# BANDSAW 10-IN

# Instruction Manual

#### **IMPORTANT**

For your safety, read instructions carefully before assembling or using this product. Save this manual for future reference.



#### **HEALTH AND SAFETY GUIDELINES**

Always follow the instructions provided with the manual. Always wear safety glasses when using woodworking equipment. Always disconnect the power before adjusting any equipment. Failure to observe proper safety procedures and guidelines can result in serious injury.

**WARNING:** Do not allow familiarity (gained from frequent use of your machine and accessories) to become commonplace. Always remember that a careless fraction of a second is sufficient to inflict severe injury.



Always wear safety glasses when using woodworking equipment.



Always read the instructions provided before using woodworking equipment.

## **INDEX**

- 1 GENERAL INFORMATION
- 1.1 FOREWORD
- 1.2 MACHINE IDENTIFICATION
- 1.3 CUSTOMER SERVICE RECOMMENDATIONS
- 2 SAFETY PRECAUTIONS
- 2.1 SAFETY REGULATIONS
- 2.2 RESIDUAL RISKS
- 2.3 SAFETY AND INFORMATION SIGNALS
- 3 SPECIFICATIONS
- 3.1 MAIN COMPONENTS
- 3.2 TECHNICAL SPECIFICATION
- 3.3 ELECTRICAL CONNECTION
- 3.4 NOISE LEVEL
- 3.5 DUST EXTRACTION
- 3.6 SAFETY DEVICES
- 4 INSTALLATION
- 4.1 INSTALLATION ZONE CHARACTERISTIC
- 4.2 INSTALL OF LOOSE PARTS INTRODUCTION
- 5 ADJUSTMENT AND OPERATION
- 5.1 CENTERING TABLE AND TILTING
- 5.2 SETTING TABLE SQUARE WITH BLADE
- 5.3 CHANGING AND SETTING THE BLADE
- 5.4 BLADE GUIDING
- 5.5 SETTING CUTTING HEIGHT
- 6 TROUBLE SHOOTING
- 7 DIAGRAMS AND COMPONENTS (Available for 50Hz)
- 8 DIAGRAMS AND COMPONENTS (Available for 60Hz)

### GENERAL INFORMATION

#### **FOREWORD** 1.1

Some information and illustrations in this manual may difer from the machine in your possession, since all the configurations inherent in the machine complete with all the optionals are described and illustrated. Therefore, refer only to that information strictly connected with the machine configuration you have purchased.

With this manual we would like to provide the necessary information for maintenance and proper use of the machine. The distribution network is at your service for any technical problem, spare parts or any new requirement you may have for the development of your activity.

This manual must be read and understood before operating the machine. This will provde a better working knowledge of the machine, for increased safety and to obtain the best results.

To facilitate its reading, the manual has been divided into sections pointing out the most important operations. For a quick research of the topics, it is recommended to consult the index. To better stress the importance of some basic passages, they have been marked by some preceding symbols:



Indicates imminent risks which may cause serious injury to the operator or other persons. Be careful and scrupulously follow the instructions.



A statement advising of the need to take care lest serious consequences result in harm to material items such as the asset or the product.

#### MACHINE IDENTIFICATION 1.2

There is a identification plate fixed to the machine, containing the manufacturer's data, year of construction, serial number and technical specifications.

#### 1.3 CUSTOMER SERVICE RECOMMENDATIONS

Apply the machine to skilled and authorized technical staff to carry out any operation dealing with parts disassembly. Keep to the instructions contained in this manual for the correct use of the machine.



**CAUTION** Only skilled and authorized staff shall use and service the machine after reading this manual. Respect the accident prevention regulations and the general safety and industrial medicine rules.

## 2. SAFETY PRECAUTIONS

#### 2.1 SAFETY REGULATIONS



Read carefully the operation and maintenance manual before starting, using, servicing and carrying out any other operation on the machine.

The manufacturer disclaims all responsibilities for damages to persons or things, which might be caused by any failure to comply with the safety regulations.

- The machine operator shall have all necessary prerequisites in oder to operate a complex machinery.
- It is prohibited to use the machine when under the influence of alcohol, drugs or medication.
- All the operators must be suitably trained for use, adjustment and operation of the machine.
- The operators must carefully read the manual paying particular attention to the warning and safety notes. Furthermore, they must be informed on the dangers associated with use of the machine and the precautions to be taken, and must be instructed to periodically inspect the guards and safety devices.
- Before carrying out adjustment, repair or cleaning work, disconnect the machine from the electric power by setting the main switch to stop.
- After an initial bedding-in period or many hours of operation, the driving belts may slacken; this causes an increase in the tool stopping time (the stopping time must be less than 10 seconds). Immediately tighten them.
- The working area around the machine must be kept always clean and clear, in order to have an immediate and easy access to the switchboard.
- Never insert materials which are different from those which are prescribed for the machine utilization. The material to be machined must not contain any metal parts.
- Never machine pieces which may be too small or too wide ithrespect to the machine capacity.
- Do not work wood which has evident defects (cracks, knots, metal parts, etc.)
- Never place hands among the moving parts and/or materials.
- Keep hands clear from the tool; feed the piece with the aid of a pusher.
- Keep the tools tidy and far away from those not authorized persons.
- Never employ cracked nor uckled, neither not correctlyreground tools.
- Never use the tools beyond the speed limit recommended bythe producers.
- Carefully clean the rest surfaces of tools and make surethat they find perfectly horizontally positioned, and with no dents at all.
- Always wear gauntlets when handling the tools.
- Mount the tools in the right machining direction.
- Never start the machine before having correctly installed all the protections.
- Connect the dust suction hoods to an adequate suction system; suction must always be activated when the machine is switched on.
- Never open doors or protections when the machine or the system is operating.
- Many unpleasant experiences have shown that anybody may wear objects which could cause serious accidents. Therefore, before starting working, take any bracelet, watch or ring off.
- Button the working garment sleeve well around the wrists.
- Take any garment off which, by hanging out, may get tangled in the MOVING UNITS.
- Always wear strong working footwear, as prescribed by the accident-prevention regulations of all countries.
- Use protection glasses. Use appropriate hearing protection systems (headsets, earplugs, etc.) and dust protection masks.
- Never let unauthorized people repair, service or operate the machine.
- The manufacturer is not responsible for any damage deriving from arbitrary modifications made to the machine.
- Any transport, assembly and dismantling is to be made only by trained staff, who shall have specific skill for the specified operation.
- The operator must never leave the machine unattended during operation.
- During any working cycle break, switch the machine off.
- In case of long working cycle breaks, disconnect the general power supply.

#### 2.2 RESIDUAL RISKS

Despite observance of all the safety regulations, and use according to the rules described in this manual, residual risks may still be present, among which the most recurring are:

- contact with tool
- contact with moving parts (belts, pulleys, etc..)
- recoil of the piece or part of it
- accidents due to wood splinters or fragments
- tool insert ejection
- electrocution from contact with live parts
- danger due to incorrect tool installation
- inverse tool rotation due to incorrect electrical connection
- danger due to dust inhalation in case of working without vacuum cleaner.

Bear in mind that the use of any machine tool carries risks.

Use the appropriate care and concentration for any type of machining (also the most simple).

The highest safety is in your hands.

#### 2.3 SAFETY AND INFORMATION SIGNALS

This signals may be applied on the machine; in some cases they indicate possible danger conditions, in others they serve as indication.

Always take the utmost care.

#### **SAFETY SIGNALS:**



Risk of eye injury. Wear eye protection.



Wear hearing protection systems.



Danger of electric shock. Do not access the area when the machine is powered.



Carefully read and understand the manual before using the machine.

#### **INFORMATION SIGNALS:**

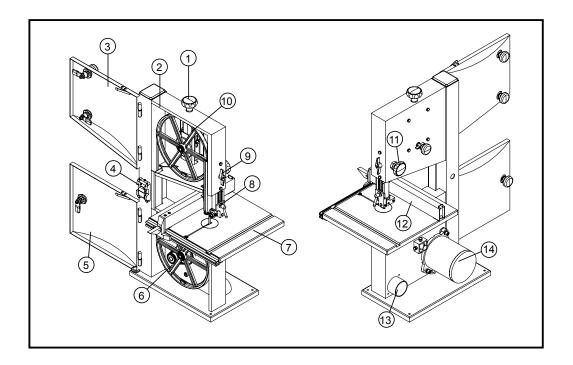
Indicate the technical characteristics, direction of rotation and inclination, block and release, etc.

Carefully following the directions to simply the use and adjustment of the machine.

The signals are graphically described and do not require further explanation.

# 3. SPECIFICATIONS

#### 3.1 MAIN COMPONENTS



- 1 Blade tension knob
- 2 Safety switch (Optional)
- 3 Upper door
- 4 Switch
- 5 Lower door
- 6 Lower wheel
- 7 Table
- 8 Blade guard

- 9 Blade guard locking knob
- 10 Upper wheel
- 11 Lifting knob
- 12 Rip fence
- 13 Dust port
- 14 Motor

#### 3.2 TECHNICAL SPECIFICATION

SPECIFICATION	BAS250	
Motor voltage	230V/50HZ	120V/60HZ
Motor power	200W	1/3HP
Blade length	1790mm	70-1/2"
Blade width	6-13mm	1/4" - 1/2"
Max. cut depth	120mm	4-5/8"
Throat width	245mm	9-5/8"
Blade speed	700m/min	2800FPM
Table size	350x318mm	13-3/4" x 12-1/2"
Table tilt	0~45°	0~45°
Table height to floor	388mm	15-1/4"

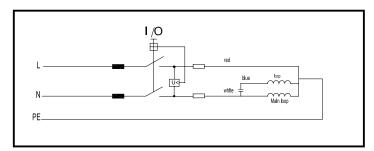
#### 3.3 ELECTRICAL CONNECTION

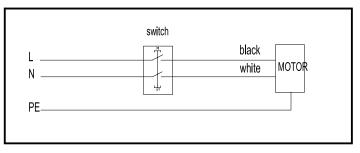
- Electrical installation should be carried out by competent, qualified personnel.
- The mains connection should be made using the terminal box.
- Replacement of the power supply cable should only be done by a qualified electrician.



#### WARNING

To avoid electrocution or fire, any maintenance or repair to electrical system should be done only by qualified electricians using genuine replacement parts.





230V/50HZ

120V/60HZ

#### 3.4 NOISE LEVEL

	No load	Load
Sound Pressure Level	< 80dB(A)	< 90dB(A)
Sound Power Level	< 90dB(A)	< 100dB(A)

The noise levels measured are emission levels and not necessarily the safe working level. Although there is a correlation between the emission levels and the exposure levels, this cannot be used reliably to determine whether or not further precautions are required. The factors which affect the actual level of operator exposure include the duration of exposure, the ambient characteristics and other sources of emission, for example, the number of machines and other adjacent machining. The permitted exposure values may also vary from country to country. Nevertheless, this information allows the user of the machine to better evaluate the dangers and risks.

Other factors which reduce exposure to noise are:

- correct tool choice
- tool and machine maintenance
- use of hearing protection systems (e.g. headsets, earplugs,...)



Please use the hearing protection systems if the above mentioned noise levels exceed 95dB(A).

#### 3.5 DUST EXTRACTION

If this band saw is operated indoors it is recommended to have it connected to a dust collector. The suction connector, supplied with the machine, has to be fitted to the dust ejection port of the saw for this purpose. The diameter of the suction connector is 60 mm.

- Workmen working in operations processing oak or beech timber where found to develop more often cancer of the mucous membrane of the nose (adenocarciome of the inner nose) then other workers.
- Experience shows that skin contact with oak or beech dust does not cause cancer



Wood dust and chips, together with an ignition source and the oxygen in the ambient air, can cause fires and explosions, injuries and allergies.

#### 3.6 SAFETY DEVICES (Optional)

The machine is equipped with two safety switches as the picture shown:

#### A - Safety Switch.

Stops the machine if the upper door or lower door is opened to perform operations on the blade.

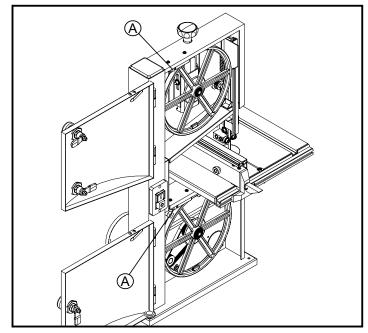


Fig.3.6

## 4. INSTALLATION

#### 4.1 INSTALLATION ZONE CHARACTERISTICS



#### **WARNING**

It is prohibited to install the machine in explosive environments.

The installation zone must be selected evaluating the work space required depending on the dimension of the pieces to be machined, and taking into account that a free space of at least 800 mm must be left around the machine. It is also necessary to check The floor capacity and its surface, so that the machine base is evenly resting on its four supports. A power outlet and a chip-suction system connection shall be close to the selected machine setting and it must be conveniently lighted.

#### 4.2 INSTALL OF LOOSE PARTS - INTRODUCTION

A few elements will be disassembled from the machine main structure due to packaging and shipping requirements. These loose parts should be installed as follows.



#### **WARNING**

Please tighten all bolts and nuts absolutely. Otherwise, may cause machine wobble or serious injury to the operator or other persons.

#### 4.2.1 INSTALL UPPER TRUNNION

- Put the upper trunnion A on to the frame as the picture shown.
- Put the carriage bolt 1 through the slider B and upper trunnion A.
- Mount the wing nut C through the washer 2 onto the carriage bolt 1, and tighten.

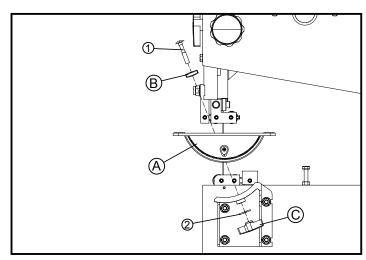


Fig.4.2.1

#### 4.2.2 INSTALL TABLE

Tools Required for Assembly:

- Hex wrench
- Put the table A onto the trunnion. Aline the mounting holes which are on the bottom of table to the four holes on trunnion.
- Use four hex bolt 1 and four teeth washer 2 to mount the table A to trunnion.

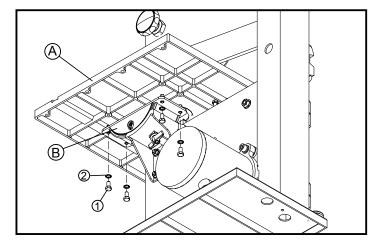


Fig.4.2.2

# 4.2.3 INSTALL LEVELING BOLT AND RIP FENCE

- Put the leveling bolt 1 through the table B.
- Tighten the leveling bolt with wing nut 3 and washer 2.
- Install the guide rail C to table with star knob 5 and washer 4.
- Slide the rip fence assembly A along the guide rail to table.

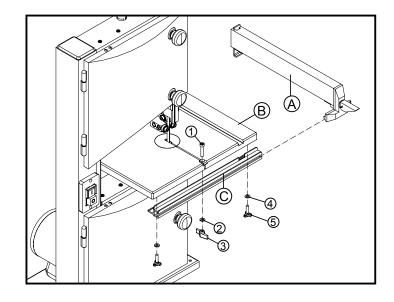


Fig.4.2.3

# 5. ADJUSTMENT AND OPERATION



Handle the tools with protective gloves.

#### 5.1 CENTERING TABLE AND TILTING

- Loosen the screws A which hold the lower table trunnion.
- Move table sideways as required until sawblade runs through the center of table insert.
- For bevel cuts the saw blade tilts steplessly through 45degree. To tilt, loosen the wing nut B on the table trunnions, set table to the required angle and tighen the wing nut again.
- Exchange the table insert against the one with the wide slot, so the blade can travel freely.
- It is recommended to verify the correct angle setting by making trial cuts in scrap wood.

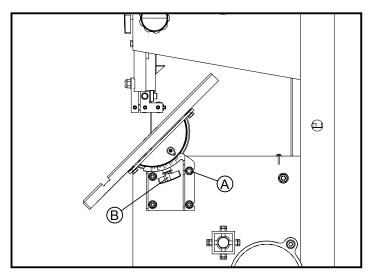


Fig.5.1

#### 5.2 SETTING TABLE SQUARE WITH BLADE

- PLEASE REFER TO FIG.5.1
- The table can be tilted up to 45degree. To tilt, loosen the wing nut of the table trunnion.
- Loosen the wing nut on the trunnion and adjust the table at 90degree with the blade.
- Check the table with a square to make sure the table is 90degree with the blade. If an adjustment is necessary, loosen the screw and adjust the pointer to 0 degree.

#### 5.3 CHANGING AND SETTING THE BLADE

- This band saw is factory-equipped with a general purpose wood cutting blade, the blade set. To change the blade, remove the wing nut and screw from the table. Then slacken the blade tension by turning the hand wheel on top of the upper wheel housing.
- Fit new blade and tension lightly. The blade should run in the center of the rubber lined band saw wheels or else it may jump of. To check tracking, turn upper wheel by hand. If required, adjust tracking with the knurled handle at the rear of the upper wheel housing.

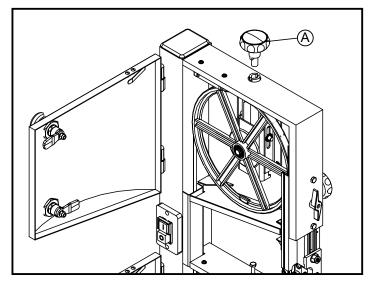


Fig.5.3

#### 5.4 BLADE GUIDING

- The saw blades guide of this band saw ensure an exact guiding of the blade for clean cuts. When using narrow blades ensure that the lower blade guide positively supports the blade from both sides and the rear. Set the bearings of the upper blade guide to within approx. 0.5 mm of the blade, and the large thrust bearing against the back of the blade, just clear of it. Do not set the bearing too close, as the friction generates heat, which may have an adverse effect on the bearings and the saw blade as well.

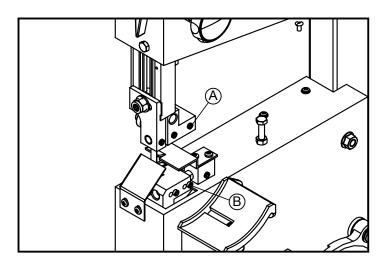


Fig.5.4

#### 5.5 SETTING CUTTING HEIGHT

- The upper blade guide should always be set as close as practical against the work. To adjust, loosen the wing nut at the side of the upper wheel housing, and set the blade guide to the required height. Tighten wing nut after setting.

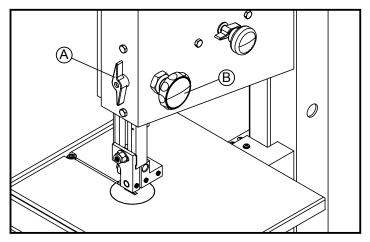


Fig.5.5

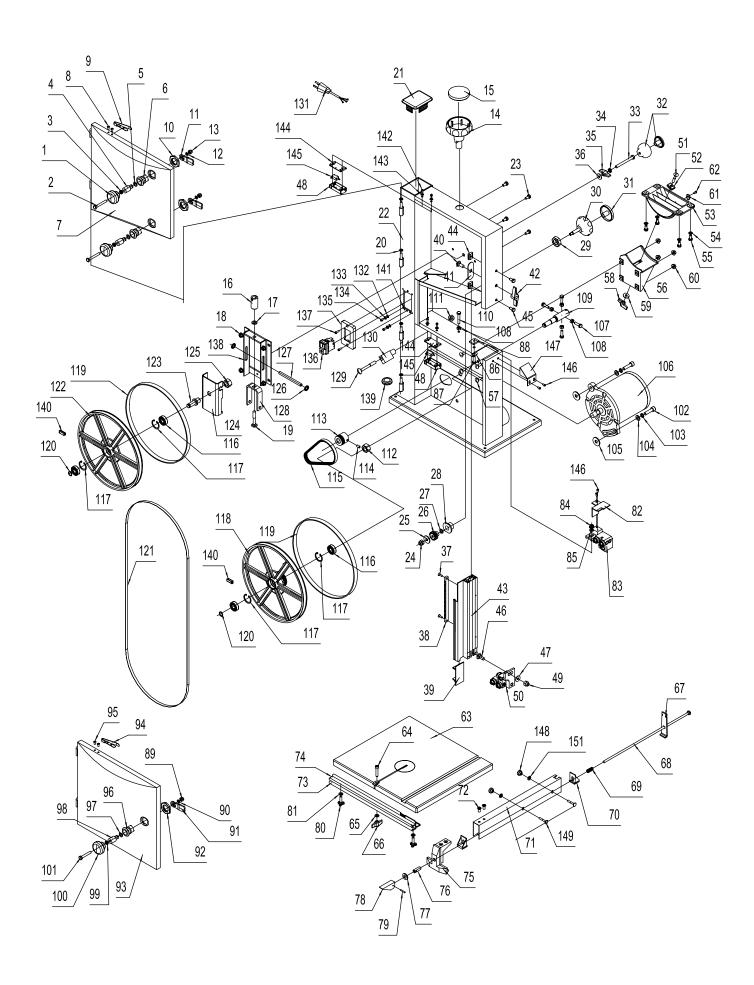
# 6. TROUBLE SHOOTING

# WARNING

- For any information or problem contact your area dealer or our technical service center. The necessary interventions must be carried out by specialised technical personel.
- Before carrying out any fault service or maintenance work, please always TRUN OFF THE SWITCH, UNPLUG POWER CABLE, WAIT FOR SAW BLADE TO COME TO STANDSTILL.

Trouble	Possible Cause	Solution
	Saw unplugged	Check plug connections
Saw stops or will not start	Fuse blown or circuit breaker tripped	Replace fuse or reset circuit breaker
	3. Cord damaged	3. Replace cord
	Stop not adjusted correctly	Check blade with square and adjust stop
Does not make accurate 45° or 90° cuts	Angle pointer not set accurately	Check blade with square and adjust pointer
	Miter gauge out of adjustment	Adjust miter gauge
	Fence not aligned with blade	Check and adjust fence
	2. Warped wood	2. Select another piece of wood
	Excessive feed rate	3. Reduce feed rate
Blade wanders during cut	4. Incorrect blade for cut	4. Change blade to correct type
	Blade tension not set properly	Set blade tension according to blade size
	Guide bearings not set properly	6. Review guide bearing adjustment on pages 8 & 9
	1. Dull blade	Replace blade
	2. Blade mounted wrong	2. Teeth should point down
Saw makes unsatisfactory cuts	3. Gum or pitch on blade	3. Remove blade and clean
	4. Incorrect blade for cut	4. Change blade to correct type
	5. Gum or pitch on table	5. Clean table
Blade does not come up to	Extension cord too light or to long	Replace with adequate size and length cord
speed	2. Low shop voltage	Contact your local electric company
	Base on uneven floor	Reposition on flat, level surface
Saw vibrates avenue in the	2. Bad V-belt	2. Replace V-belt
Saw vibrates excessively	3. Motor mount is loose	Tighten motor mount hardware
	4. Loose hardware	4. Tighten hardware

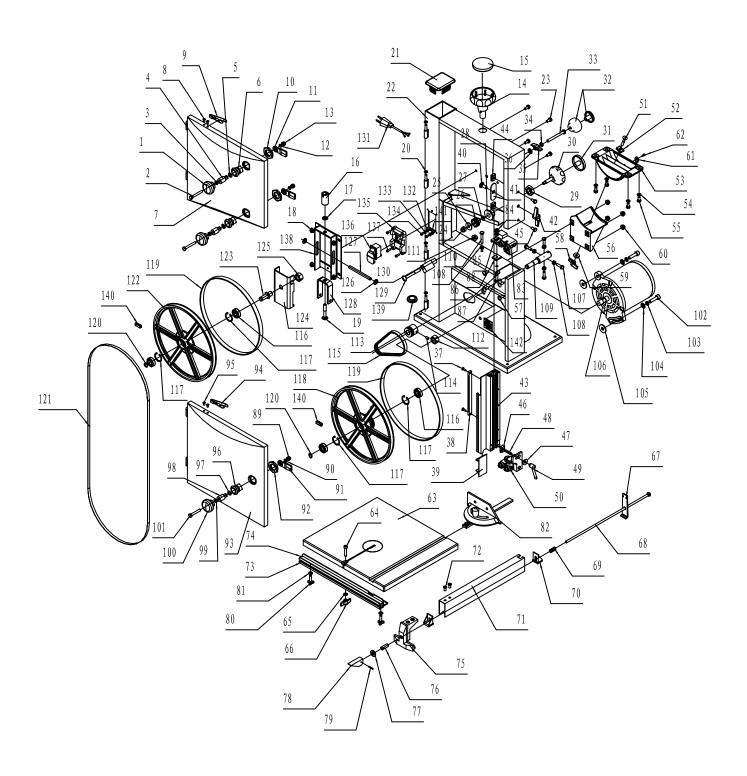
# 7. DIAGRAMS & COMPONENTS (Available for 50Hz)



No.         Description         Part No.           1         Knob Assembly         JL20061100-001S           2         Hex bolt         1-M6X45GB5781Z           3         Hex nut         1-M6GB6172Z           4         Locker insert         1-JL20010010F           5         Washer         1-JL20010014           6         Locker body         1-JL20010014           7         Upper door         1-JL22012000D-060U           8         Rivet         1-RVT4X8GB12618A           9         Spring plate         1-JL22010008           10         Hex nut         1-JL22010008           10         Hex nut         1-JL220010009           12         Washer         1-WSH6GB93Z           13         Lock nut         1-M6GB889ZF           14         Tension handle         1-JL22024001-001S           15         Tension handle cap         1-JL22024002-001S           16         Tension nut         1-JL22021003           17         Washer         1-WSH8GB97D1Z           18         Flange nut         1-M6GB6177Z           19         Carriage bolt         1-JL22010001A           21         End cap         1-JL22010001A-001S     <	Qty. 2 2 2 2 1 2 1 2 2 2 1 1 1 4 1 4 1
Hex bolt	2 2 2 2 2 1 2 2 2 2 2 1 1 1 1 1 1 1 1 1
Hex nut	2 2 2 2 1 2 1 2 2 2 2 1 1 1 1 1 1 1 1 1
5       Washer       1-JL20010014         6       Locker body       1-JL22010001A-001S         7       Upper door       1-JL22012000D-060U         8       Rivet       1-RVT4X8GB12618A         9       Spring plate       1-JL22010008         10       Hex nut       1-JL20010012         11       Plate       1-JL20010009         12       Washer       1-WSH6GB93Z         13       Lock nut       1-M6GB89ZF         14       Tension handle       1-JL22024001-001S         15       Tension handle cap       1-JL22021003         17       Washer       1-WSH8GB97D1Z         18       Flange nut       1-M6GB6177Z         19       Carriage bolt       1-M8X50GB14Z         20       Tube       1-JL22010001A         21       End cap       1-JL22011000N-124U	2 2 2 1 2 1 2 2 2 2 1 1 1 1 1 1 4 1 4 1
6 Locker body 7 Upper door 8 Rivet 1-JL22012000D-060U 8 Rivet 1-RVT4X8GB12618A 9 Spring plate 1-JL22010008 10 Hex nut 1-JL20010012 11 Plate 1-JL20010009 12 Washer 1-WSH6GB93Z 13 Lock nut 1-M6GB889ZF 14 Tension handle 1-JL22024001-001S 15 Tension handle cap 1-JL22024001-001S 16 Tension nut 1-JL22021003 17 Washer 1-WSH8GB97D1Z 18 Flange nut 1-M6GB6177Z 19 Carriage bolt 1-M8X50GB14Z 17 Tube 1-JL22010001A 21 End cap 1-JL2201000N-124U	2 2 1 2 1 2 2 2 2 2 1 1 1 1 1 4 1 4
7 Upper door 8 Rivet 1-JL22012000D-060U 9 Rivet 1-RVT4X8GB12618A 9 Spring plate 1-JL22010008 10 Hex nut 1-JL20010012 11 Plate 1-JL20010009 12 Washer 1-WSH6GB93Z 13 Lock nut 1-M6GB89ZF 14 Tension handle 1-JL22024001-001S 15 Tension handle cap 1-JL22024002-001S 16 Tension nut 1-JL22021003 17 Washer 1-WSH8GB97D1Z 18 Flange nut 1-M6GB6177Z 19 Carriage bolt 1-M8X50GB14Z 20 Tube 1-JL22010001A 21 End cap 1-JL2201000N-124U	2 1 2 1 2 2 2 2 2 1 1 1 1 1 4 1
7 Upper door 8 Rivet 1-JL22012000D-060U 9 Rivet 1-RVT4X8GB12618A 9 Spring plate 1-JL22010008 10 Hex nut 1-JL20010012 11 Plate 1-JL20010009 12 Washer 1-WSH6GB93Z 13 Lock nut 1-M6GB89ZF 14 Tension handle 1-JL22024001-001S 15 Tension handle cap 1-JL22024002-001S 16 Tension nut 1-JL22021003 17 Washer 1-WSH8GB97D1Z 18 Flange nut 1-M6GB6177Z 19 Carriage bolt 1-M8X50GB14Z 20 Tube 1-JL22010001A 21 End cap 1-JL2201000N-124U	1 2 1 2 2 2 2 2 1 1 1 1 4 1 4 1 1
8 Rivet 1-RVT4X8GB12618A 9 Spring plate 1-JL22010008 10 Hex nut 1-JL20010012 11 Plate 1-JL20010009 12 Washer 1-WSH6GB93Z 13 Lock nut 1-M6GB889ZF 14 Tension handle 1-JL22024001-001S 15 Tension handle cap 1-JL22024002-001S 16 Tension nut 1-JL22021003 17 Washer 1-WSH8GB97D1Z 18 Flange nut 1-M6GB6177Z 19 Carriage bolt 1-M8X50GB14Z 20 Tube 1-JL22010001A 21 End cap 1-JL2201000N-124U	2 1 2 2 2 2 2 1 1 1 1 4 1 4
10 Hex nut 11 Plate 12 Washer 13 Lock nut 15 Tension handle 16 Tension nut 17 Washer 18 Flange nut 19 Carriage bolt 20 Tender ap 21 Tender ap 22 Frame 1-JL220100012 1-JL220100012 1-JL22024009 1-JL22024001-001S 1-JL22024002-001S 1-JL22021003 1-JL22021003 1-JL22010001A 1-JL22010001A 1-JL22010001A 1-JL2201000N-124U	1 2 2 2 2 2 1 1 1 1 1 4 1 4
10 Hex nut 11 Plate 12 Washer 13 Lock nut 15 Tension handle 16 Tension nut 17 Washer 18 Flange nut 19 Carriage bolt 20 Tender ap 21 Tender ap 22 Frame 1-JL220100012 1-JL220100012 1-JL22024009 1-JL22024001-001S 1-JL22024002-001S 1-JL22021003 1-JL22021003 1-JL22010001A 1-JL22010001A 1-JL22010001A 1-JL2201000N-124U	2 2 2 1 1 1 1 4 1 4
12 Washer 13 Lock nut 14 Tension handle 15 Tension nut 16 Tension nut 17 Washer 18 Flange nut 19 Carriage bolt 20 Tube 21 End cap 22 Frame 1-WSH6GB93Z 1-M6GB889ZF 1-JL22024001-001S 1-JL22024002-001S 1-JL22021003 1-JL22021003 1-WSH8GB97D1Z 1-M6GB6177Z 1-M8X50GB14Z 1-JL22010001A 1-JL22010001A 1-JL22011000N-124U	2 2 2 1 1 1 1 4 1 4
13 Lock nut 14 Tension handle 15 Tension handle cap 16 Tension nut 17 Washer 18 Flange nut 19 Carriage bolt 20 Tube 21 End cap 22 Frame 1-M6GB889ZF 1-JL22024001-001S 1-JL22024002-001S 1-JL22021003 1-JL22021003 1-JL2201003 1-JL22010001A 1-JL22010001A 1-JL22011000N-124U	2 1 1 1 1 4 1 4
13 Lock nut 14 Tension handle 15 Tension handle cap 16 Tension nut 17 Washer 18 Flange nut 19 Carriage bolt 20 Tube 21 End cap 22 Frame 1-M6GB889ZF 1-JL22024001-001S 1-JL22024002-001S 1-JL22021003 1-JL22021003 1-JL2201003 1-JL22010001A 1-JL22010001A 1-JL22011000N-124U	2 1 1 1 1 4 1 4
15 Tension handle cap 16 Tension nut 17 Washer 18 Flange nut 19 Carriage bolt 20 Tube 21 End cap 22 Frame 1-JL22024002-001S 1-JL22021003 1-WSH8GB97D1Z 1-M6GB6177Z 1-M8X50GB14Z 1-JL22010001A 21 L-JL22010001A 22 Frame 1-JL22011000N-124U	1 1 1 1 4 1 4
16 Tension nut 1-JL22021003 17 Washer 1-WSH8GB97D1Z 18 Flange nut 1-M6GB6177Z 19 Carriage bolt 1-M8X50GB14Z 20 Tube 1-JL20010001A 21 End cap 1-JL22010001A-001S 22 Frame 1-JL22011000N-124U	1 1 4 1 4
16 Tension nut 1-JL22021003 17 Washer 1-WSH8GB97D1Z 18 Flange nut 1-M6GB6177Z 19 Carriage bolt 1-M8X50GB14Z 20 Tube 1-JL20010001A 21 End cap 1-JL22010001A-001S 22 Frame 1-JL22011000N-124U	1 4 1 4 1
18 Flange nut       1-M6GB6177Z         19 Carriage bolt       1-M8X50GB14Z         20 Tube       1-JL20010001A         21 End cap       1-JL22010001A-001S         22 Frame       1-JL22011000N-124U	4 1 4 1
18 Flange nut       1-M6GB6177Z         19 Carriage bolt       1-M8X50GB14Z         20 Tube       1-JL20010001A         21 End cap       1-JL22010001A-001S         22 Frame       1-JL22011000N-124U	1 4 1
19 Carriage bolt 1-M8X50GB14Z 20 Tube 1-JL20010001A 21 End cap 1-JL22010001A-001S 22 Frame 1-JL22011000N-124U	4
20 Tube 1-JL20010001A 21 End cap 1-JL22010001A-001S 22 Frame 1-JL22011000N-124U	1
21 End cap 1-JL22010001A-001S 22 Frame 1-JL22011000N-124U	1
22 Frame 1-JL22011000N-124U	
	1 1
	4
24 Lock nut 1-M6GB889ZF	1
25 Washer 1-WSH6GB97D1Z	1
26 Gear 1-JL22040001	1 1
27 Washer 1-JL22040003	1 1
28 Bolt 1-JL22040002A	1
29 Hex nut 1-JL22040007	1
30 Adjust handle 1-JL22044001-001S	1 1
31 Handle cap 1-JL20024001-001S	1
32 Knob Assembly 1-JL20061100-001S	1
33 Hex bolt 1-M6X60GB5781Z	1 1
34 Hex nut 1-M6GB6172Z	1
35 Wing nut 1-JL22020002B-001S	1 1
36 Washer 1-WSH6GB96Z	1
37 Tapping screw 1-ST3D5X13GB846B	2
38 Rack 1-JL22041006	1 1
39 Slider 1-JL22041009	1
40 Carriage bolt 1-M8X20GB14Z	1 1
41 Washer 1-JL20041004	1
42 Wing nut 1-JL20010016-001S	1
43 Guide rail 1-JL22041001C	1
44 T nut 1-JL22041008B	2
45 Hex bolt 1-M6X12GB5781B	2
46 Carriage bolt 1-M8X20GB14Z	$\frac{1}{1}$
47 Washer 1-WSH8GB97D1Z	1
48 Cover 1-JL20073002	2
49 Lock nut 1-M8GB889Z	1 1
50 Upper guider 1-JL22042000	1
51 Carriage bolt 1-M6X35GB12Z	1
52 Slider 1-JL22030002-001S	1
53 Trunnion 1-JL22032001B	1
54 Washer 1-WSH6GB862D2Z	4
55 Hex bolt 1-M6X12GB5783Z	4
56 Bracket 1-JL22030001	1 1
57 Carriage bolt   1-M6X16GB14Z	4
58 Wing nut 1-JL22020002B-001S	1
59 Washer 1-WSH6GB97D1Z	1
60 Flange nut 1-M6GB6177Z	4
61 Indicator 1-1506003-01016S	7
62 Tapping screw 1-ST3D5X9D5GB845Z	1
63 Table 1-JL22031000	1
64 Screw 1-M6X30GB70Z	1
65 Washer 1-WSH6GB97D1Z	1
66 Wing nut 1-JL22020002A-001S	1
67 Plate 1-JL22061006A	1
68 Rod 1-JL22061009	1
69 Rod spring   1-0802004	
70 Guide base 1-JL22061005A	2
71 Plate 1-JL22061001C	1
71   Screw   1-M6X10GB819Z	2
73 Guide rail 1-JL22033001B	1
74 Scale 1-RC22033002	
75 Bracket 1-JL22061002A	
1-0L22001002A	'

No.	Description	Part No.	Qty.
76	Thread rod	1-JL22061003	1
	Washer	1-WSH10GB97D1Z	Ιi
	Handle	1-JL22061004	
	Roll pin	1-PIN3X18GB879B	Ιi
	Knob	1-JL60020023B	2
	Washer	1-WSH6GB97D1Z	2
	Blade guard	1-JL22040005	1
	Lower guider	1-JL22043000A	
	Lock nut	1-M6GB889Z	
-	Washer	1-WSH6GB97D1Z	
	Washer	1-WSH6GB96Z	
			1
	Hex bolt	1-M6X20GB5783Z	1
	Plate	1-JL22040004	1
	Lock nut	1-M6GB889ZF	1
	Spring washer	1-WSH6GB93Z	1
-	Plate	1-JL20010009	1
	Nut	1-JL20010012	1
	Lower door	1-JL22013000A060U	1
	Spring plate	1-JL22010008	1
	Rivet	1-RVT4X8GB12618A	2
	Locker	1-JL20010011-001S	1
	Spring washer	1-JL20010014	1
	Locker insert	1-JL20010010D	1
	Hex nut	1-M6GB6172Z	1
	Knob Assembly	1-JL20061100-001S	1
	Hex bolt	1-M6X40GB5781Z	1
	Screw	1-M8X30GB70B	2
	Spring washer	1-WSH8GB93Z	2
	Washer	1-WSH8GB97D1Z	2
	Washer	1-WSH8GB96Z	2
	Motor	1-WH7423544	1
107	Hex bolt	1-M6X20GB5783Z	4
108	Hex nut	1-M6GB6170Z	5
109	Lower shaft	1-JL22020004	1
110	Hex bolt	1-M6X35GB5781Z	1
	Flange nut	1-M8GB6177Z	1
	Hex nut	1-M14GB6171Z	1
	Motor pulley	1-JL22071001A	1
	Set screw	1-M6X10GB80B	1
	Belt	1-JL22020003	1
	Bearing	1-BRG80101GB278	4
	Retaining ring	1-CLP28GB893D1B	4
-	Lower wheel	1-JL22023001	1
	Rubber	1-JL22022002 1-CLP12GB894D1B	2 2
	Retaining ring Blade	1-JL22020001A	l
	Upper wheel	1-JL22022001A	1   1
122	Upper shaft	1-JL22021006	
123	Upper shaft bracket	1-JL23021001-001Z	I
		1-M14GB6171Z	1
125	Hex nut	1-JL22021004	1
120	Retaining ring	1-JL22021004 1-JL22021002	2
	Guide shaft		1
	Plate	1-JL22021001-001Z 1-M8X70GB14B	1 1
129	Carriage bolt		
	Brush	1-JL22010006	1
	Cable	1-B33752300	1
	Washer	1-WSH4GB862D2Z	2
	Washer	1-WSH4GB97D1Z	2 2
	Screw	1-M4X8GB818Z	2
	Switch plate	1-JL20070002B	1
	Switch	1-KJD20-2	1
	Screw	1-M4X12GB823Z	2
	Tension plate	1-JL22021100-001Z	1
139	Ruuber tube	1-JL20072003	1
	Balance plate	1-JL22022003	4
141	Grounding label	1-1506011	1 1
142	Tapping screw	1-ST3D5X20GB845Z	4
	Washer	1-WSH4GB97D1Z	4
	Cover	1-JL20073003	2
	Safety switch	1-KW3-0Z-2B	2
	Screw	1-M4X8GB818Z	4
147	Right blade guard	1-JL22040006	1
148		1-JL20061003-001S	2
	Carriage bolt	1-M6X40GB14Z	2 2
TCI	Washer	1-WSH6GB97D1Z	2

# 8. DIAGRAMS & COMPONENTS (Available for 60Hz)



NI-	D	D. (N)	
No.	Description Knob Assy	Part No. JL20061100-001S	Qty.
	Bolt	1-M6X45GB5781Z	2   2
	Nut	1-M6GB6172Z	2
-	Locker insert	1-JL20010010F	2
5	Washer	1-JL20010014	2
	Locker body	1-JL20010011A-001S	2
	Upper door	1-JL22012000D-060U	1
-	Rivet	1-RVT4X8GB12618A	2
-	Plate Nut	1-JL22010008 1-JL20010012	1 2
-	Plate	11-JL20010012 11-JL20010009	
	Washer	1-WSH6GB93Z	2 2
	Nut	1-M6GB889ZF	2
14	Base	1-JL22024001-001S	1
15	Cap	1-JL22024002-001S	1
	Nut	1-JL22021003	1
	Washer	1-WSH8GB97D1Z	1
	Nut Carriage helt	1-M6GB6177Z 1-M8X50GB14Z	4
	Carriage bolt Tube	11-JL20010001A	1   4
-	End cap	1-JL22010001A 1-JL22010001A-001S	1 1
	Frame	1-JL220110001A-0013	
	Bolt	1-M6X12GB5781B	4
24	Nut	1-M6GB889ZF	1
-	Washer	1-WSH6GB97D1Z	1
	Gear	1-JL22040001	1
	Washer	1-JL22040003	1
	Bolt Nut	1-JL22040002A 1-JL22040007	1
	Base	1-JL22044001 1-JL22044001-001S	1 1 1 1
	Cap	1-JL20024001-001S	
	Knob Assy	1-JL20061100-001S	i
	Bolt	1-M6X60GB5781Z	1
	Nut	1-M6GB6172Z	1
	Nut	1-JL22020002B-001S	1
	Washer	1-WSH6GB96Z	1
	Screw Rod	1-ST3D5X13GB846B 1-JL22041006	2
	Plate	1-JL22041009	
	Bolt	1-M8X20GB14Z	
-	Plate	1-JL20041004	1 1
42	Nut	1-JL20010016-001S	1
	Rod	1-JL22041001D	1
	Nut	1-JL22041008B	2
	Bolt	1-M6X12GB5781B	2
	Nut Washer	1-JL22041008A 1-WSH6GB96Z	1     1
	Screw	1-M6X25GB80B	
	Handle	1-JL46084000-001S	
	Guider	1-JL22042000	i
51	Bolt	1-M6X35GB12Z	1
	Bracket	1-JL22030002-001S	1
	Trunnion	1-JL22032001B	1
	Washer	1-WSH6GB862D2Z	4
	Bolt Bracket	1-M6X12GB5783Z 1-JL22030001	4
	Bolt	11-M6X16GB14Z	4
	Nut	1-JL22020002B-001S	1 1
	Washer	1-WSH6GB97D1Z	
	Nut	1-M6GB6177Z	4
	Indicator	1-1506003-01016S	1
	Screw	1-ST3D5X9D5GB845Z	1
	Table	1-JL22031000	1
	Screw Washer	1-M6X30GB70Z 1-WSH6GB97D1Z	1 1
	Nut	1-JL22020002A-001S	
	Plate	1-JL22061006A	
	Rod	1-JL22061009	
	Plate	1-0802004	1
-	Base	1-JL22061005A	2
	Fence	1-JL22061001D	1
	Screw	1-M6X10GB819Z	2
-	Rod Scale	1-JL22033001B 1-SR22033002	1 1
	Base	1-JL22061002A	
	_ = = = =		_ '

		•	
No.	Description	Part No.	Qty.
76	Rod	1-JL22061003	1
	Washer	1-WSH10GB97D1Z	1
	Handle	1-JL22061004	1
	Pin	1-PIN3X18GB879B	1
	Knob Washer	1-JL60020023B 1-WSH6GB97D1Z	2 2
-	Gauge	1-JL60040000A	1
	Guider	1-JL22043000A	1
	Nut	1-M6GB889Z	1
	Washer	1-WSH6GB97D1Z	1
86	Washer	1-WSH6GB96Z	1
	Bolt	1-M6X20GB5783Z	1
	Plate	1-JL22040004	1
	Nut	1-M6GB889ZF	1
	Washer	1-WSH6GB93Z	1
-	Plate Nut	1-JL20010009 1-JL20010012	1 1
	Lower door	1-JL22013000A060U	1
	Plate	1-JL22010008	1
	Rivet	1-RVT4X8GB12618A	2
	Locker body	1-JL20010011-001S	1
	Washer	1-JL20010014	1
	Locker insert	1-JL20010010D	1
	Nut	1-M6GB6172Z	1
	Knob Assy	1-JL20061100-001S	1
	Bolt Screw	1-M6X40GB5781Z 1-M8X30GB70B	1 2
	Washer	1-WSH8GB93Z	2
	Washer	1-WSH8GB97D1Z	2
	Washer	1-WSH8GB96Z	2
	Motor	1-G7412634B	1
	Bolt	1-M6X20GB5783Z	4
108		1-M6GB6170Z	5
	Shaft	1-JL22020004	1
-	Bolt	1-M6X35GB5781Z	1
	Nut	1-M8GB6177D1B 1-M14GB6171Z	1
112 113	Pulley	1-JL22071001A	1 1
	Screw	1-M6X10GB80B	1
	Belt	1-JL22020003	1
116	Bearing	1-BRG80101GB278	4
	Ring	1-CLP28GB893D1B	4
	Lower wheel	1-JL22023001	1
	Tyre	1-JL22022002	2
	Ring Blade	1-CLP12GB894D1B 1-JL22020001A	2 1
	Upper wheel	1-JL22020001A	1
	Shaft	1-JL22021006	1
	Base	1-JL23021001-001Z	1
125		1-M14GB6171Z	1
	Ring	1-JL22021004	2
	Shaft	1-JL22021002	1
	Bracket	1-JL22021001-001Z	1
	Bolt	1-M8X70GB14B 1-JL22010006	1
	Brush Cable	1-U23182300-471	1 1
	Washer	1-WSH4GB862D2Z	
	Washer	1-WSH4GB97D1Z	2
	Screw	1-M4X8GB818Z	2
135	Plate	1-JL20070002A	1
	Switch	1-HY18-32A	1
	Screw	1-M4X12GB823Z	4
	Bracket	1-JL22021100-001Z 1-JL20072003	1
	Tube Clamp	1-JL22022003	1 4
	Plate	1-1506011	1
	Barrier	1-JL22010004	1
	- errende		•