BANDSAW BS500-B

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**
- **FOREWORD** 1.1
- 1.2 MACHINE IDENTIFICATION
- 1.3 CUSTOMER SERVICE RECOMMENDATIONS
- 2 SAFETY PRECAUTIONS
- 2.1 SAFETY REGULATIONS
- **RESIDUAL RISKS** 2.2
- 2.3 SAFETY AND INFORMATION SIGNALS
- 3 **SPECIFICATIONS**
- MAIN COMPONENTS 3.1
- **TECHNICAL SPECIFICATION** 3.2
- **ELECTRICAL CONNECTION** 3.3
- **NOISE LEVEL** 3.4
- **DUST EXTRACTION** 3.5
- INSTALLATION AND OPERATION 4
- INSTALLATION ZONE CHARACTERISTIC 4.1
- 4.2 **LIFTING**
- POSITIONING THE MACHINE 4.3
- BLADE MOUTING AND ADJUSTMENT 4.4
- 4.5 SETTING BLADE GUARD & GUIDE
- TILTING THE WORK TABLE 4.6
- 4.7 **FACE CUTTING**
- **CUTTING SHORT PIECES** 4.8
- **CUTTING OF ROUND PIECES** 4.9
- 5 MAINTENANCE
- 6 TROUBLE SHOOTING
- DIAGRAMS AND COMPONENTS 7

GENERAL INFORMATION

1.1 **FOREWORD**

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:



WARNING 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.

1.2 MACHINE IDENTIFICATION

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

21 SAFETY REGULATIONS



WARNING 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 correctly reground 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
- 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:

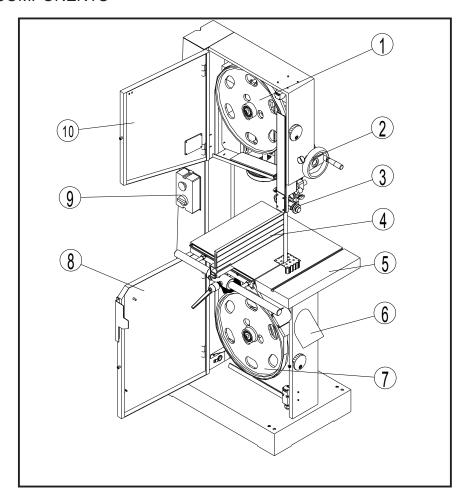
Indicate the technical characteristics, direction of rotation and inclination, block and release, etc.

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 Upper wheel
- 2 Upper guide lifting handwheel
- 3 Upper guide
- 4 Rip fence assembly
- 5 Table

- 6 Dust port
- 7 Lower wheel
- 8 Lower door
- 9 Switch with electric brake
- 10 Upper door

3.2 TECHNICAL SPECIFICATION

Motor Voltage
Current
Motor power output
Blade length
Blade width
Max. cut depth
Throat width
Blade speed
Table size
Table tilt
Dust port diameter

400 V ±5%/50HZ 7A 3kW 3962mm 6 - 30mm 305mm 480mm 1500m/min 633x485mm 0 - 45° 100mm

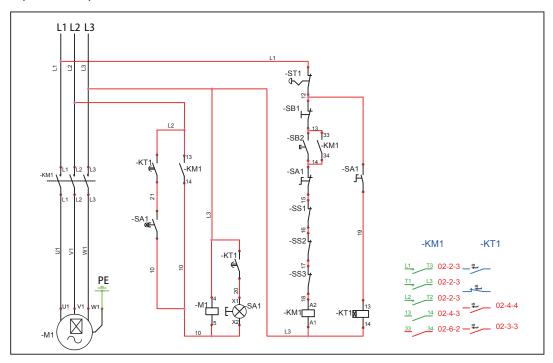
3.3 ELECTRICAL CONNECTION

- 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.



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 100mm (4").

- 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.

4. INSTALLATION AND OPERATION

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 LIFTING

The machine can be lifted using a fork-lift truck, placing the forks under the feet or by using a "SLING", as shown, with a lifting capability of 2000 Kg.

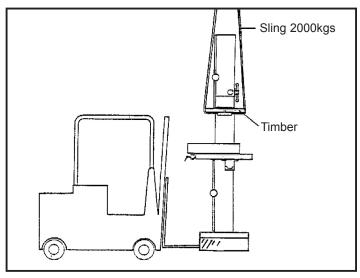


Fig.4.2

4.3 POSITIONING THE MACHINE

For a correct and rational organisation of the work area:

- Install the machine in an area that will not amplify vibration or noise
- Verify that the work area is adequately illuminated.
- When placed between other machinery there should be a space of at least 80 cm. It is necessary to anticipate sufficient space for cutting long work pieces traversly and for the fitting of rollers or other types of support, in front and at the rear of the table.

There are four holes for fixing the machine to the floor. When fixing to the floor it is recommended not to over tighten the fixtures to avoid increasing vibration. It is also advisable to place anti-vibration materials between the floor and the feet of the machine.

4.4 BLADE MOUNTING AND ADJUSTMENT

- To mount blade first remove the table insert (A of FIG.4.4.1) Place the blade onto the bandwheel checking the teeth are in a correct position, and then tighten the tension using the handwheel (A of FIG.4.4.2). The correct tension value is indicated on the tension scale inside the upper door, the indicated value corresponds to the width of the blade.
- Turn the bandwheels manually, checking that the blade does not interfere with any fixed parts and that the blade is placed correctly on the bandwheels. The points of the teeth should slightly protrude over the edge of the bandwheels. To adjust the blade position on the bandwheels slacken the locking lever(B of FIG.4.4.2), and then turn the knob(C of FIG.4.4.2): the blade will move inwards when turn the knob clockwise and the blade will move further out when turn the knob anticlockwise; A quarter of one circle is sufficient to make a noticeable displacement. Tighten the locking lever after the blade is positioned correctly.
- Then reinstall the table insert, close the band wheels accessing doors.



CAUTION

After use we recommend slackening the blade tension, and to display a visible sign on the machine advising of this procedure. Remeber to check and re-tension before use. This operation prevents damage to the bandwheel tyres.

4.5 SETTING BLADE GUARD & GUIDE

ADJUSTING THE BLADE GUIDES

Upper Guides:To adjust the upper blade guides, first position the roller guides relative to the blade by loosening the Allen cap head screw(A-Fig.4.5.1) and sliding the guide assembly until the side roller guides are approximately 1/16" behind the gullet of the blade, then re-tighten the Allen cap head screw(A-Fig.4.5.1).

Next,set the roller guides to within 1/32" of the blade by releasing the lock knob(B-Fig.4.5.1) and turning the microadjusting knob (C-Fig.4.5.1). Do not set the guides too close, as this will adversely affect the life of the blade. When the correct adjustment is reached, lock the guides in position by tightening the lock knob(B-Fig.4.5.1). Finally, follow the same steps above to position rear thrust guide.

Lower Guides:To adjust the lower blade guides, first loosen the hex nut(A-Fig.4.5.2) by placing a wrench through acess hole in side of frame. Move the lower guide support assembly to allow the side roller guides to be approximately 1/16" behind the gullets of the blade, and re-tighten the hex nut. Next set the roller guides to within 1/32" of the blade by releasing the lock knob(A-Fig.4.5.3) and turning the micro-adjusting knob (B-Fig.4.5.3).Do not set the guides too close, as this will adversely affect the life of the blade.

When the correct adjustment is reached, lock the guides in position by re-tightening the lock knob(B-Fig.4.5.3). Adjust the thrust guide to be just clear of the back of the blade by unlocking the wing nut(C-Fig.4.5.3), and turning adjusting knob on rear of the trunnion. Finally, re-tighten the wing nut(C-Fig.4.5.3).

Make sure the doors are closed, turn the bandsaw on and inspect that the upper, lower and thrust guides are not turning. All guides should not turn unless pressure from workpiece is applied to the blade .If guides are turning under no pressure, repeat the steps above to Correctly adjust the blade guides.

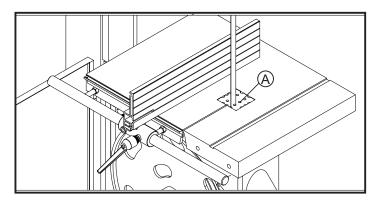


Fig.4.4.1

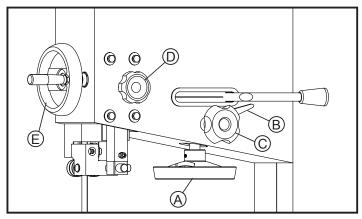


Fig.4.4.2

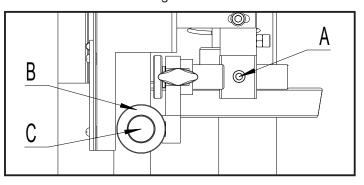


Fig.4.5.1

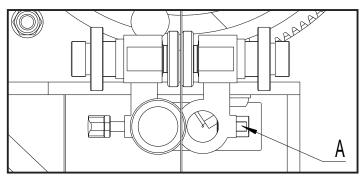


Fig.4.5.2

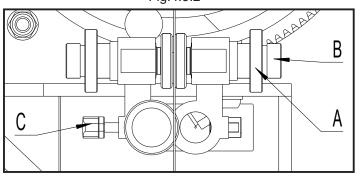


Fig.4.5.3

4.6 TILTING THE WORK TABLE

- The table may be set at 90degree to the blade by adjusting the table stop screw under the table. The table stop screw rests on the top of the lower wheel bandwheel housing. By first slackening the locking nut A and then adjusting the screw B, the table can be set correctly. Retighten the locking nut A making sure that the setting is maintained.
- To make adjustments of table tilting, slackening the locking handle D, and rotate the shaft C with special handle which you can find it in your loose parts bag whith this machine. When adjustment is correctly finished, tighten the handle D to lock it.

Fig.4.6

4.7 FACE CUTTING

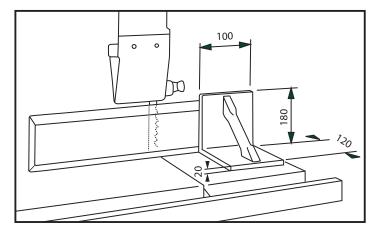


Fig.4.7

Use a square for safe guiding of the work during face cutting. (FIG.4.7)

4.8 CUTTING SHORT PIECES

Use pushing devices for cutting of short pieces. The pushing device type A is recommended for narrow pieces.

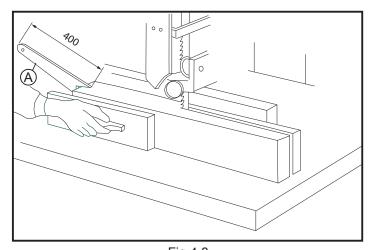


Fig.4.8

4.9 CUTTING OF ROUND PIECES

Use a wedge rest to prevent rotation of round parts during cutting.

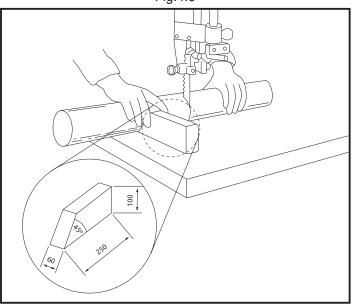


Fig.4.9

5. MAINTENANCE



BEFORE ANY INTERVENTION ALWAYS DISCONNECT THE ELECTRICAL SUPPLY BY PLUG OUT! Periodically check that all screws are tightly fastened and the condition of the various guards

- V BELTS

After the first few hours of operation it is necessary to check that the tension of the belts is correct, as they tend to stretch. To control the tension of the belts push the mid-point of the belt applying 3-4 Kg of pressure, the displacement should not exceed 5-6 mm. It is recommended that the correct blade tension is maintained as loose belts reduce the motor power and can increase the braking time. Belts that are too tight can cause the belts to become hot.

- TO CHANGE THE BELTS

Slacken the blade tension, remove the screw at the center of lower bandwheel, pull-out the bandwheel from the shaft, repeat the operations in reverse to re-assemble.

- DISMANTLING THE UPPER BANDWHEEL

Remove the upper bandwheel is same as the operations of lower bandwheel.

- REPLACEMENT OF RUBBER COVERING OF THE FLY-WHEELS

It is recommended that this be carried out by a competent specialist or the manufacturer, this is because the rubber covering is not only glued onto the bandwheel, but also ground in a crown form. It is strongly advised not to grind and shape the rubber directly on the machine using gouges, files or abrasives.

- CLEANING AND LUBRICATING

Periodically clean the inside of the machine with the aid of a dust extractor for any saw-dust deposits, remove any resinous deposits from the bandwheels surface. The bandwheel bearings do not require any greasing. It is not necessary to lubricate any part or component of the machine as the sawdust circulating within will adhere to any oiled or greased surface jeopardizing the sliding of moving parts such as the shaft of the blade guide adjustment and the slide of the tensioning group.

Frequently control the cleanliness of the rubber surfaces on the bandwheels, particularly in cases of cutting resinous materials or chip-board. Clean the surfaces, while machine is not in motion, of any resinous deposits taking care do not damage the surface.

6. TROUBLE SHOOTING

MARNING

- 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.

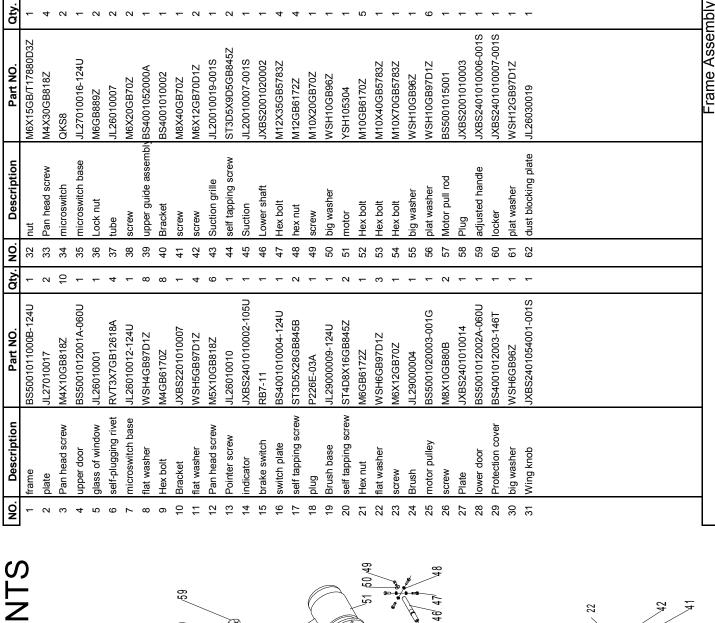
Troubleshooting

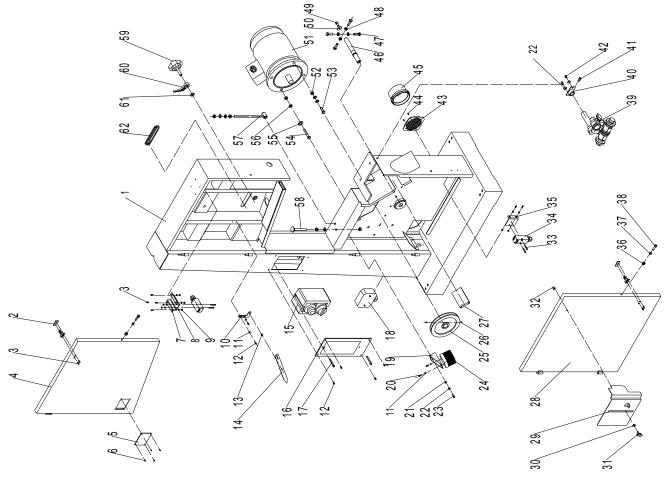
Trouble	Possible Cause	Solution
	Saw unplugged	Check plug connections
Saw stops or will not start	Fuse blown or circuit breaker tripped	Replace fuse or reset circuit breaker
	3. Cord damaged	3. Replace cord
	Stop not adjusted correctly	Check blade with square and adjust stop
Does not make accurate 45° 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
	3. 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	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	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
Coursilement of average in the	2. Bad V-belt	2. Replace V-belt
Saw vibrates excessively	3. Motor mount is loose	Tighten motor mount hardware
	Loose hardware	4. Tighten hardware

7. DIAGRAMS & COMPONENTS

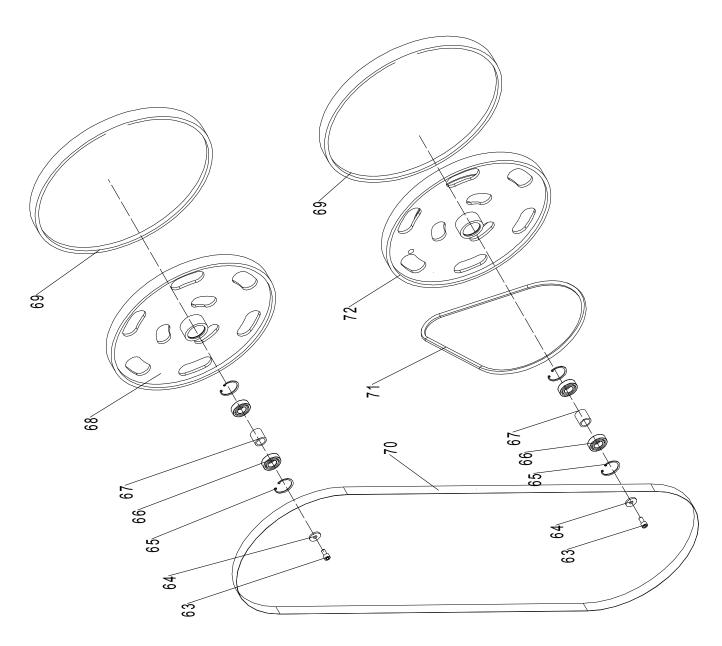
oty.

0 0

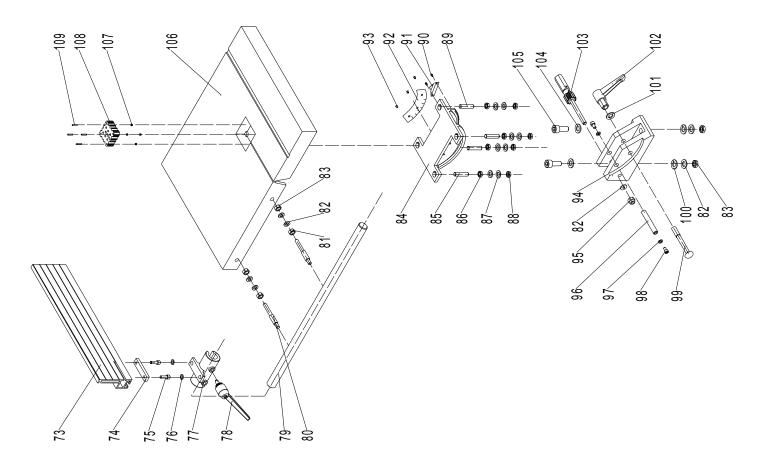




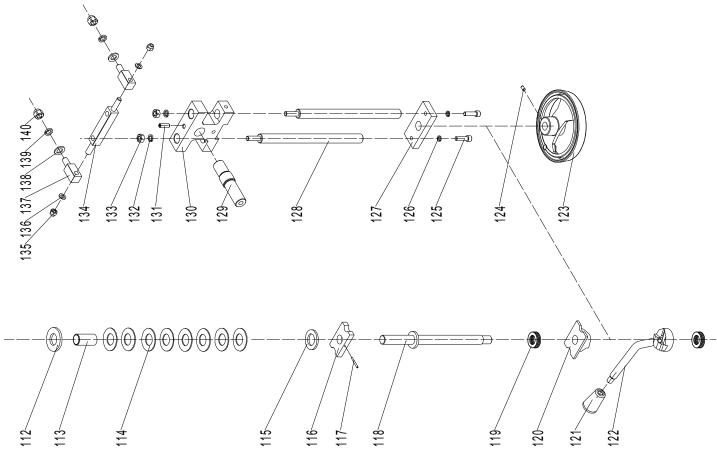
NO.	Description	Part NO.	Qty.
63	Screw	M10X20GB70Z	2
64	Washer	JXBS2201020004	2
65	Retaining ring	CLP52GB893D1B	4
99	Bearing	BRG6205-2RSGB276	4
29	Tube	BS5001022002	2
89	Upper wheel	BS5001021001A-001G	_
69	Tire	BS5001021002A	2
20	Blade	BS5001020001	_
71	Belt	BS5001020002	_
72	Lower wheel	BS5001022001A-001G	_
		Driving System Asse	Assembly



73 Rip f 74 Lock 75 Scre 76 Was 77 Fenc 78 Hanc 79 Fenc 80 Rod 81 Hex	Rip fence Lock plate	JL26060002C	—
,	k nlate		
<u>,, , </u>);;;	JXBS2001060001	-
<u>, </u>	Screw	M8X25GB70Z	7
	Washer	WSH8GB97D1Z	7
	Fence bracket	JXBS2001060002-001	-
	Handle	JXBS2201061000-001	-
	Fence guide	JXBS2001060005	-
	70	JXBS2001060003	7
	Hex nut	JXBS2001060004	7
82 Wa	Washer	WSH10GB97D1Z	7
83 He	Hex nut	M10GB6170Z	4
84 Tru	Trunnion Assembly	JXBS2001031100	-
85 Nut		M12X60GB77B	က
86 He	Hex nut	M12GB6172Z	4
87 Big	Big washer	WSH12GB96Z	∞
88 He	Hex nut	M12GB6170Z	4
89 Nut		M12X50GB77B	-
90 Nut		M3X5GB818Z	7
91 Ind	Indicator	JXBS2401031008	-
92 Scale	ale	JXBS2001031004A	-
93 Rivet	et	RVT2D5X5GB827C	က
94 Tru	Trunnion	JXBS2001031001	_
95 Loc	Lock nut	JL29042004	~
96 Gu	Guide shaft	JXBS2001031002	-
97 Nut		M6X10GB70Z	7
98 Big	Big washer	WSH6GB5287Z	7
99 Bolt	+	M12X100GB14Z	_
100 Spr	Spring washer	WSH10GB93Z	7
101 Wa	Washer	WSH12GB97D1Z	-
102 Loc	Locking handle	KTSB-1-A-M12X95	-
103 Ge	Gear shaft	JMBS2201032200	-
104 Big	Big washer	WSH10GB96Z	7
105 Bolt	+	M10X40GB5783Z	7
106 Table	ole	BS5001030002-001G	-
107 Loc	Lock nut	M5GB889Z	4
108 Tat	Table insert	BS5001030001-001S	_
109 Nut		M5X30GB77B	4
		Table Ass	Assembly



NO.	Description	Part NO.	Qty.
112	Washer	BS5001040007	1
113	Tube	BS5001040006	_
114	Spring washer	WSH50GB1972B	_∞
115	Flat washer	WSH24GB97D1Z	_
116	Plate	BS5001040009	_
117	Roll pin	PIN3X30GB879D1B	_
118	Thread rod	BS5001040004	_
119	Bearing	BRG51104GB301	2
120	Bracket	BS5001040002	_
121	Knob	1904011	_
122	Bracket	BS5001040005	_
123	Handwheel	JXBS2001040005	_
124	Set screw	M6X12GB78B	_
125	Pan head screw	M10X30GB70Z	7
126	Spring washer	WSH10GB93Z	7
127	Bracket	BS5001040003	_
128	Sliding rod	BS5001040001	7
129	Upper shaft	BS5001040008	_
130	Bracket	JXBS1401030001	_
131	Set screw	M8X20GB80B	_
132	Spring washer	WSH10GB93B	2
133	Hex nut	M10GB6170Z	7
134	Thread rod	JXBS1801030007	_
135	Lock nut	M10GB889Z	7
136	Spring washer	WSH10GB97D1Z	7
137	Bolt	JXBS1801030006	2
138	Flat washer	WSH12GB97D1Z	2
139	Spring washer	WSH12GB93Z	7
140	Hex nut	M12GB923Z	2
		Tonoion	7140
	מ	biade Tension Assembly	loly



141 hex bolt M8X20GB5783Z 4 142 big washer WSH8GB96Z 4 143 lock handle JL26040015-001S 1 144 Bracket JL26040008 1 145 Set screw M6X12GB77Z 4 146 Gear JL26040006 1 147 Plate JL26040006 1 148 screw JL26040006 1 150 screw JL26040006 1 151 cover JL26040006 1 152 Pan head screw MAX16GB70Z 4 153 Rack BS5001050001 1 154 screw MAX10GB10Z 1 155 supporting rod seat BS40010520003 1 156 screw MSX10GB70Z 1 158 screw MSX10GB10Z 2 159 big washer MX210GB10Z 2 160 composite bolt MX210GB10Z 2 <th>Ñ.</th> <th>Description</th> <th>Part NO.</th> <th>Qty.</th>	Ñ.	Description	Part NO.	Qty.
big washer WSH8GB96Z lock handle JL26040015-001S Bracket JL26040008 Set screw M6X12GB77Z Gear JL26040007 screw JL26040006 Screw M4X16GB70Z cover M4X16GB70Z screw M4X16GB70Z screw M4X16GB70Z screw M4X16GB19Z screw M4X16GB10Z composite bolt M6X10GB10Z composite bolt M6X10GB10Z screw M4X10GB10Z composite bolt M6X10GB10Z big washer M6X16GB96Z composite bolt M6X10GB10Z big washer M6X16GB10Z M5X10GB10Z composite bolt M6X10GB10Z big washer M6X16GB10Z M6X16GB10Z composite bolt M6X16GB10Z big washer M6X16GB10Z Leaf spring M6X10GB10Z M5X10GB10Z screw M5X10GB10Z M5X10GB10Z big handle M6X16GB70Z M5X10GB10Z big handwheel M5X10GB18B handle JL2603001Z-001S tube Screw M5X8GB78Z W0mm U1Z6040003 Screw-locked ring CLP1Z6B884B Set screw M5X8GB78Z W0mm U1Z6040004	141	hex bolt	M8X20GB5783Z	4
lock handle JL26040005 Bracket JL26040008 Set screw JL26040008 Set screw 1501006 Plate JL26040007 screw JL26040007 screw JL26040007 screw JL26040006 cover BS5001050001 Rack BS5001050001 Rack BS5001050002 screw MAX4GB823B Rack BS4001050002 screw MAX10GB818Z big washer WSH6GB96Z composite bolt MAX10GB818Z nut MAX10GB818Z big washer JL200610050002 screw JL29043001 Blade guard BS5001051000-126 screw JL29043001 Blade guard BS5001050002 screw JL26040005 big washer WSH5GB80Z screw JL26040005 Guide post BS5001050003 Pan head screw MEX16GB70Z big handwheel JL26030012-001S	142	big washer	WSH8GB96Z	4
Bracket JL26040008 Set screw M6X12GB77Z Gear 1501006 Plate JL26040007 screw JL26040006 cover BS5001050001 screw M8X16GB70Z cover BS5001050001 screw M8X16GB70Z cover BS5001050001 screw M4X16GB823B Rack M4X10GB819Z screw M4X10GB819Z screw M8X20GB70Z big washer WSH6GB96Z composite bolt M6X10GB70Z nut M2X10GB818Z nut M4X10GB818Z big washer WSH5GB96Z screw JL29043001 Blade guard M5X10GB70Z screw M5X10GB70Z big washer WSH5GB96Z screw M5X10GB70Z Guide post BS5001050003 Pan head screw M5X10GB818B handle J126040003 Screw-locked ring CLP12GB884B <	143	lock handle	JL26040015-001S	_
Set screw M6X12GB77Z Gear 1501006 Plate JL26040007 screw JL26040006 cover BS5001050001 screw BS5001050001 cover BS5001050002 Pan head screw MAX4GB823B Rack BS6001050001 screw MAX10GB819Z screw MAX10GB819Z screw MAX10GB70Z big washer WSH6GB96Z composite bolt MAX10GB818Z nut MAX10GB818Z observing window JL29043001 Blade guard MAX10GB818Z observing window JL29043001 Blade guard MAX10GB818B big washer WSH5GB90Z screw MACB6170Z big washer WSH6GB90Z screw MAX10GB818B handle JL26030012-001S big handwheel JL26040003 Screw-locked ring CLP12GB884B Set screw M5X8GB78Z Worm JL2604	144	Bracket	JL26040008	_
Gear 1501006 Plate JL26040007 screw JL26040006 cover BS5001050001 screw M8X16GB70Z cover BS5001050002 Pan head screw M4X4GB823B Rack M4X10GB819Z screw M4X10GB819Z screw M6X10GB70Z big washer WSH6GB96Z composite bolt M6X10GB70Z big washer WSH6GB96Z composite bolt M4X10GB818Z nut M6X16GB70Z big washer WSH6GB96Z screw M6X16GB70Z big washer WSH6GB96Z screw M5X10GB818B hande BS5001051000-126 screw M6X16GB70Z Guide post BS5001050003 Pan head screw M6X16GB70Z Guide post BS5001050003 Pan head screw M6X16GB84B big handwheel J126040003 Screw-locked ring CLP12GB884B Screw-locked ring	145	Set screw	M6X12GB77Z	4
Plate JL26040007 screw JL26040006 cover BS5001050001 screw M8X16GB702 cover BS5001050002 Pan head screw M4X4GB823B Rack M4X10GB819Z screw M4X10GB819Z screw M4X10GB819Z big washer M6X10GB70Z big washer JL20061003A-001S nut M6X16GB70Z big washer WSH6GB96Z composite bolt M6X10GB818Z nut M6X16GB70Z big washer WSH6GB96Z screw M6X16GB70Z big washer WSH6GB96Z screw M5X10GB818B hande BS5001050002 screw M6X16GB70Z Guide post BS5001050003 Pan head screw M6X16GB70Z Guide post BS5001050003 Pan head screw M6X16GB70Z big handwheel J126040003 Screw-locked ring CLP12GB884B Set screw M	146	Gear	1501006	_
screw JL26040006 cover BS5001050001 screw M8X16GB702 cover BS5001050002 Pan head screw M4X4GB823B Rack BS6001050001 screw M4X10GB8192 screw M4X10GB8192 screw M6X10GB702 big washer M6X10GB702 composite bolt M6X10GB702 nut M6X10GB702 nut M6X10GB702 big washer M6X16GB702 composite bolt M6X16GB702 nut M6X16GB702 big washer WSH5GB962 screw M6X16GB702 big washer WSH5GB962 screw M6X16GB702 guide post BS5001050003 screw M6X16GB702 duide post BS5001050003 screw M6X16GB702 big handwheel 1501009-200015 big handwheel 1501009-200018 Set screw M5X8GB782 Worm UL26040004 <td>147</td> <td>Plate</td> <td>JL26040007</td> <td>_</td>	147	Plate	JL26040007	_
cover BS5001050001 screw M8X16GB70Z cover BS5001050002 Pan head screw M4X4GB823B Rack M4X10GB819Z screw M4X10GB819Z Supporting rod seat BS6001050003 screw M8X20GB70Z Guide post BS4001052000A screw M6X10GB70Z big washer JL20061003A-001S nut M6X16GB70Z big washer JL29043001 Blade guard BS5001051000-126 screw M4X10GB818B big washer WSH5GB9CZ screw M5X10GB70Z Guide post BS5001050003 screw M5X10GB70Z Bundle J126030012-001S big handwheel J126030012-001S big handwheel J126040003 Screw-locked ring CLP12GB884B Morm Upper guide	148	screw	JL26040006	_
screw cover BS5001050002 Pan head screw RAX4GB823B Rack Supporting rod seat Screw Guide post BS4001052000A Screw BS4001052000A BS4001052000A BS4001052000A BS4001052000A BS4001052000A BS4001052000A BS4001052000A BS4001052000A Blade guard BS5001051000-126 Screw BS5001051000-126 Screw MSX10GB70Z BS5001051000-126 Screw MSX10GB70Z BS5001051000-126 Screw MSX10GB70Z BS5001051000-126 Screw MSX10GB70Z BS5001051000-126 Screw BS5001050003 BS4001050003 BS10109-20001S BS10109-20001S BS10109-20001S BS10109-20001S BS10109-20001S BS2 Screw MSX10GB84B Bhandle JL26030012-001S JL26030004 Worm Upper guide	149	cover	BS5001050001	_
cover BS5001050002 Pan head screw M4X4GB823B Rack BS6001050001 screw M4X10GB819Z screw M8X20GB70Z Guide post BS4001052000A screw M6X10GB70Z big washer JL20061003A-001S nut M6X16GB70Z composite bolt M4X10GB818Z composite bolt M4X10GB818Z observing window JL29043001 Blade guard M4X10GB818Z observing window JL29043001 Blade guard BS5001051000-126 screw M5X10GB70Z Leaf spring BS4001050002 screw M6X16GB70Z Guide post BS4001050003 Pan head screw M5X10GB818B handle JL26030012-001S tube JL26030012-001S tube JL26040003 Screw-locked ring CLP12GB884B Set screw M5X8GB78Z Vorm Upper guide	150	screw	M8X16GB70Z	4
Pan head screw M4X4GB823B Rack BS6001050001 screw M4X10GB819Z supporting rod seat BS40010520003 screw M8X20GB70Z Guide post BS4001052000A screw M6X10GB70Z nut M6X10GB18Z observing window JL29043001 Blade guard M4X10GB818Z observing window JL29043001 Blade guard M5X10GB70Z Leaf spring BS5001051000-126 screw M5X10GB70Z Cuide post BS5001050002 screw M5X10GB70Z Guide post BS5001050003 Pan head screw M5X10GB818B handle JL26030012-001S tube JL26040003 Screw M5X8GB78Z Worm UDPPER guide	151	cover	BS5001050002	_
Rack screw Ryx10GB819Z supporting rod seat Screw Guide post Screw Guide post BS4001052000A Screw M6X10GB70Z M8X20GB70Z M8X20GB70Z M8X10GB70Z M8X10GB70Z M8X10GB70Z M8X10GB818Z JL20061003A-001S nut M4X10GB818Z Observing window Blade guard Screw M6X16GB70Z Screw M6X16GB70Z BS5001050002 Screw M6X16GB70Z BS5001050003 Pan head screw M6X16GB70Z Guide post BS5001050003 BS4001050003 Screw M5X10GB818B handle J126030012-001S tube J126040003 Screw-locked ring Screw M5X8GB78Z JL26040004 Upper guide	52	Pan head screw	M4X4GB823B	2
screw supporting rod seat supporting rod seat screw Guide post Screw Guide post Screw Mex10GB70Z BS4001052000A BS4001052000A BS4001052000A BS4001052000A WSH6GB96Z Composite bolt MAX10GB818Z Observing window Blade guard Blade guard Blade guard BS5001051000-126 Screw Leaf spring BS4001050002 WSH5GB96Z Screw WSH5GB96Z WSH6GB70Z BS5001050003 BS4001050003 BS4001050003 BS4001050003 BS4001050003 BS5001050003 BS5001050003 CLP12GB884B Worm Upper guide Upper guide	53	Rack	BS6001050001	_
supporting rod seat BS4001050003 screw Guide post BS4001052000A screw big washer composite bolt M6X10GB70Z JL20061003A-001S mut mut M6X15GB/T17880D M4X10GB818Z JL29043001 Blade guard BS5001051000-126 screw big washer screw M5X10GB70Z BS5001050003 Pan head screw M5X10GB818B handle JL26030012-001S tube Screw M5X10GB818B M5X10GB818B handle JL26030012-001S tube Screw-locked ring CLP12GB884B Screw-locked ring CLP12GB884B M5X0rm Upper guide	54	screw	M4X10GB819Z	3
screw M8X20GB70Z Guide post BS4001052000A screw M6X10GB70Z big washer WSH6GB96Z composite bolt JL20061003A-001S nut M6X15GB/T17880D mut MAX10GB818Z observing window JL29043001 Blade guard BS5001051000-126 screw WSH5GB96Z big washer WSH5GB90Z screw M5X10GB70Z Guide post BS4001050003 Pan head screw M5X10GB818B handle 1501009-20001S big handwheel JL26040003 Screw-locked ring CLP12GB884B Set screw M5X8GB78Z Worm JL26040004	55	supporting rod seat	BS4001050003	_
Guide post BS4001052000A screw big washer WSH6GB96Z composite bolt JL20061003A-001S nut M6X15GB/T17880D nut M4X10GB818Z observing window Blade guard Blade guard BS5001051000-126 screw M5X10GB70Z Leaf spring BS4001050002 screw M5X10GB70Z BS4001050003 Pan head screw M5X10GB818B handle JL26030012-001S tube Screw M5X8GB78Z JL26040003 Screw M5X8GB78Z big handwheel JL26040003 Screw M5X8GB78Z JL26040003 Screw M5X8GB78Z JL26040004 JL26040004	26	screw	M8X20GB70Z	_
screw M6X10GB70Z big washer WSH6GB96Z composite bolt JL20061003A-001S nut M6X15GB/T17880D nut M4X10GB818Z observing window JL29043001 Blade guard BS5001051000-126 screw M4GB6170Z big washer WSH5GB96Z screw M5X10GB70Z Guide post BS5001050003 Pan head screw M5X10GB818B handle JL26030012-001S big handwheel JL26030012-001S tube JL26040003 Screw-locked ring CLP12GB884B Set screw M5X8GB78Z Worm Upper guide	57	Guide post	BS4001052000A	_
big washer	58	screw	M6X10GB70Z	_
composite bolt JL20061003A-001S nut M6X15GB/T17880D nut M4X10GB818Z observing window JL29043001 Blade guard BS5001051000-126 screw WSH5GB96Z screw WSH5GB96Z screw M5X10GB70Z Leaf spring BS4001050002 screw M6X16GB70Z Guide post BS5001050003 Pan head screw M5X10GB818B handle J126030012-001S big handwheel JL26030012-001S tube JL26040003 Screw-locked ring CLP12GB884B Set screw JL26040004 Worm JL26040004	59	big washer	WSH6GB96Z	7
nut nut nut nut MAX10GB818Z observing window Blade guard BS5001051000-126 Screw Leaf spring Screw Guide post Pan head screw MSX10GB70Z BS4001050002 BS4001050002 BS5001050002 BS5001050003 MSX16GB70Z BS5001050003 MSX16GB818B handle 1501009-20001S tube JL26040003 Screw-locked ring CLP12GB884B Set screw Worm Upper guide	9	composite bolt	JL20061003A-001S	_
nut M4X10GB818Z observing window JL29043001 Blade guard BS5001051000-126 screw WSH5GB96Z screw M5X10GB70Z Leaf spring BS4001050002 screw M6X16GB70Z Guide post BS5001050003 Pan head screw M5X10GB818B handle 1501009-20001S big handwheel JL26040003 Screw-locked ring CLP12GB884B Set screw M5X8GB78Z Worm JL26040004	61	nut	M6X15GB/T17880D3Z	_
observing window JL29043001 Blade guard BS5001051000-126 screw M4GB6170Z big washer WSH5GB96Z screw M5X10GB70Z Leaf spring BS4001050002 screw M6X16GB70Z Guide post BS5001050003 Pan head screw M5X10GB818B handle 1501009-20001S big handwheel JL26030012-001S Lube JL26040003 Screw-locked ring CLP12GB884B Screws M5X8GB78Z Worm JL26040004	62	nut	M4X10GB818Z	4
Blade guard BS5001051000-126 screw M4GB6170Z big washer WSH5GB96Z screw M5X10GB70Z Leaf spring BS4001050002 screw M6X16GB70Z Guide post BS5001050003 Pan head screw M5X10GB818B handle 1501009-20001S big handwheel JL26030012-001S tube JL26040003 Screw-locked ring CLP12GB884B Set screw M5X8GB78Z Worm JL26040004	63	observing window	JL29043001	_
screw M4GB6170Z big washer WSH5GB96Z screw M5X10GB70Z Leaf spring BS4001050002 screw M6X16GB70Z Guide post M6X16GB70Z Pan head screw M5X10GB818B handle 1501009-20001S big handwheel JL26030012-001S tube JL26040003 Screw-locked ring CLP12GB884B Set screw JL26040004 Worm JL26040004	64	Blade guard	BS5001051000-126T	_
big washer big washer Screw Leaf spring Screw Guide post RAX16GB70Z RAX16GB70Z Guide post RAX16GB70Z M6X16GB70Z M6X16GB818B handle 1501009-20001S big handwheel JL26030012-001S tube Screw-locked ring CLP12GB884B Set screw Worm Upper guide	65	screw	M4GB6170Z	4
screw M5X10GB70Z Leaf spring BS4001050002 screw M6X16GB70Z Guide post BS5001050003 Pan head screw M5X10GB818B handle 1501009-20001S big handwheel JL26030012-001S tube JL26040003 Screw-locked ring CLP12GB884B Set screw M5X8GB78Z Worm JL26040004 Upper guide	99	big washer	WSH5GB96Z	7
Leaf spring BS4001050002 screw M6X16GB70Z Guide post BS5001050003 Pan head screw M5X10GB818B handle 1501009-20001S big handwheel JL26030012-001S tube JL26040003 Screw-locked ring CLP12GB884B Set screw M5X8GB78Z Worm JL26040004 Upper guide	67	screw	M5X10GB70Z	7
screw M6X16GB70Z Guide post BS5001050003 Pan head screw M5X10GB818B handle 1501009-20001S big handwheel JL26030012-001S tube JL26040003 Screw-locked ring CLP12GB884B Set screw M5X8GB78Z Worm JL26040004 Upper guide	68	Leaf spring	BS4001050002	_
Guide post BS5001050003 Pan head screw M5X10GB818B handle 1501009-20001S big handwheel JL26030012-001S tube JL26040003 Screw-locked ring CLP12GB884B Set screw M5X8GB78Z Worm JL26040004	69	screw	M6X16GB70Z	2
Pan head screw M5X10GB818B handle 1501009-20001S big handwheel JL26030012-001S tube JL26040003 Screw-locked ring CLP12GB884B M5X8GB78Z JL26040004 JL26040004	70	Guide post	BS5001050003	_
handle 1501009-20001S big handwheel JL26030012-001S tube JL26040003 Screw-locked ring CLP12GB884B Set screw M5X8GB78Z Worm JL26040004	71	Pan head screw	M5X10GB818B	7
big handwheel JL26030012-001S tube JL26040003 Screw-locked ring CLP12GB884B Set screw M5X8GB78Z Worm JL26040004	72	handle	1501009-20001S	_
tube JL26040003 Screw-locked ring CLP12GB884B Set screw M5X8GB78Z Worm JL26040004 Upper guide	73	big handwheel	JL26030012-001S	_
Screw-locked ring CLP12GB884B Set screw M5X8GB78Z Worm JL26040004	74	tube	JL26040003	_
Set screw M5X8GB78Z Worm JL26040004 Upper guide	75	Screw-locked ring	CLP12GB884B	_
Worm JL26040004 Upper guide	9/	Set screw	M5X8GB78Z	_
guide	77	Worm	JL26040004	~
guide				
guide				
			guide	embly

