

SLIDING TABLE SAW

SL 300

OPERATING MANUAL



- Before you use the machine , please carefully read the manual and obey all related notes for safety and instructions.
- This manual is a part of the machine , so please make sure to include this manual when the machine is moved , transferred and sold.

PLEASE CAREFULLY READ THIS OPERATING MANUAL BEFORE USE

Thank you very much for your purchasing our SCORING TABLE SAW.

For personal safety and excellent performance of the machine, please first carefully read the Operating Manual and other attachments to be familiar with the machine's functions, safe instructions and notes.

- NOTES
1. The contents in this Operating Manual may be changed without pre-notice. Sorry.
 2. The contents in this Operating Manual have been carefully noted. In case there is a mistake that directly or indirectly results in damage, sorry our company will not be responsible for it.
 3. This Operating Manual is a part of the machine, so please make sure to include it when the machine is moved, transferred and sold.
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SAFE INSTRUCTIONS

1. If you are not fully familiar with the machine's operation, you must be instructed by your supervisor or qualified person.
2. If the running direction of the saw is wrong, it will cause danger.
3. The anti-skid floor cushion is put at the operator's standing area and the machine's working area. There should be a proper working space around the machine.
4. When the saw doesn't completely stop, please don't use extra pressure to stop it.
5. Don't operate the machine until the saw guard is well installed.
6. Please wear the approved safety glasses to protect eyes.
7. Before you repair or maintain the machine or change saw, please first shut down the machine's power.
8. When you rip small workpiece (<120mm), please use the push stick or wood block.
9. When the saw hasn't completely stopped, please don't adjust the saw guard.
10. When power is ON, don't clean saw and don't use hands to clean sawdust and use brush to clean chips.
11. Confirm if the machine is well installed with the earth wire.
12. When you finish the job or operator leave the working area, please make sure to turn the power to OFF.
13. While working, don't fail to pay full attention. Looking around, talking and clamoring are careless behaviors and will incur serious injury.
14. While operating the machine, please keep stable, balanced and coordinated gesture. Operator and others can't stand at the same line with the saw or the workpiece.
15. While the machine is running, no matter if the guard is installed, don't go near the saw or attach yourself to the machine.
16. The weight of workpiece can't exceed 40kgs.
17. Before you replace parts, maintain or repair the machine, please first shut down the machine's power.

EXPLANTION OF WARNING SIGN

To secure safety

Please make sure to carefully read the safe instructions to be familiar with the machine's functions, safe information and notes before you start, run & start the machine.

Please carefully read the trouble-shooting guide to be familiar with the machine's functions, safe information and notes before you repair or check the breakdown.

If you wrongly operate the machine, different degrees of personal injury or damage may happen. So, to avoid such wrong operation, we list the following 3 classes of warning signs:

WARNING SIGN	WARNING CLASS	WARNING CONTENTS
	WARM	If you wrongly operate it, assume the user to be dead or seriously injured.
	CAUTION	If you wrongly operate it, assume the user to be light injured or property damaged.
	MOTE	Remind the user to surely close power.

For special notes, the following sign is used :

★ is a special note.

Moreover, it's listed as "**CAUTION**", but the related serious damages may happen as per different situations.

The definition of " seriously injured ", " lightly injured ", " property damaged " shown in the above contents is as follows :

Seriously injured : Because of becoming blind, injury, electric shock, bone fracture, there is an after-effect that requires to stay hospital or go to hospital for treatment for a long time.

Lightly injured : Don't need to stay hospital or go to hospital for treatment for a long time.

Property damaged : Property and machine are directly or indirectly damaged.

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CHAPTER 1

BRIEF INTRODUCTION TO MACHINE

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1-1 SPECIFICATION

TECHNICAL DATA, STANDARD AND OPTIONAL EQUIPMENT

Unit: mm

ITEM	MODEL	SL300
Rectified cast iron fixed table dimension		570 x 1000
Sliding table dimension		380 x 3200
Max sawing carriage \varnothing 355mm (14")		●
Sawing carriage \varnothing 400mm (16")		√
Main saw blade \varnothing 305mm (12")		●
Main saw blade \varnothing 355mm (14")		√
Main saw bore		\varnothing 30 (\varnothing 25.4)
Max. cutting height with blade at 90°		105
Max. cutting height with blade at 45°		73
Main motor power 7.5HP (5.5 kw)		●
Main blade speed		3000 / 4000 / 5000 rpm
Scoring saw blade \varnothing 120		●
Scoring saw blade bore		22
Scoring motor power 1HP (0.75 kw)		●
Scoring blade speed		8000 rpm
Cutting width 1300 mm		●
Cutting width 1500 mm		√
Cutting width adjustment		CNC Control
Saw table extension 370 mm		●
Saw table extension 720 mm (CE)		√
Mitre fence		●
Blade tilting adjustment		CNC Control (0°~45°)
Main saw height adjustment		CNC Control
Scoring saw height adjustment		Motorize
Scoring saw +/- direction adjustment		Motorize
Overhead saw guard		Luxurious
Crosscut fence digital display		√
Rip clamp		√
Tool frame		√
		● (CE)
Dust collection system		Main chanel 4", Luxurious 3"

● : Standard √ : Optional

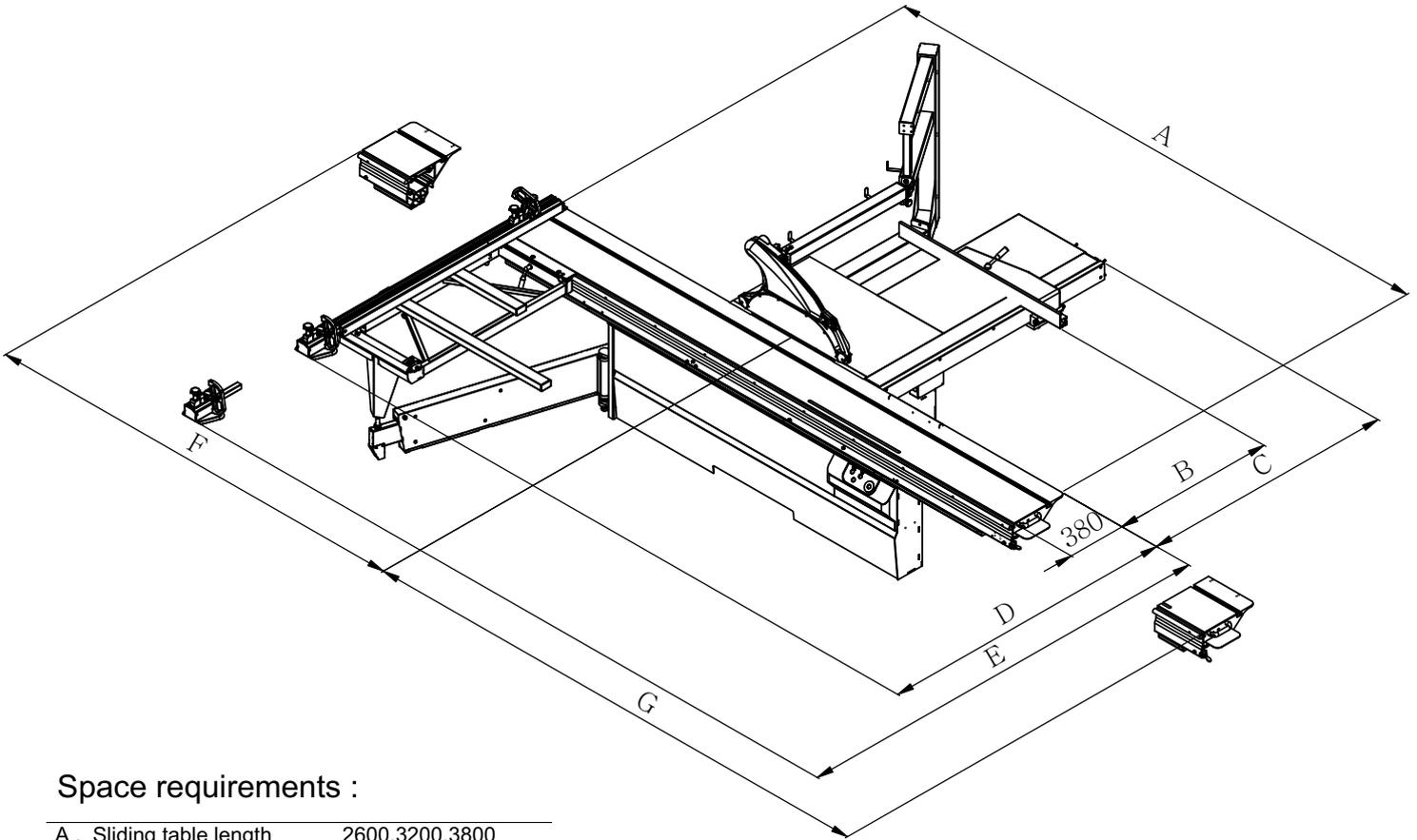
1-2 FEATURES



ILLUSTATION OF EACH MAIN PART :

- A : Scoring table ----- Table for main feeding while cutting .
- B : Dust guard ----- Not only reduce dust produced by chips while cutting , but also warning the operator where the saw-blade position .
- C : Main table ----- Main working table .
- D : Rip fence ----- Reference positioning while ripping .
- E : Tail control ----- Machine running, stop .
- F : Cross cut table ----- Used to put the work piece while cross cutting .
- G : Movable positioning stops ---- To position while cross cutting .
- H : Cross cut scale fence ----- To position the size of the movable positioning board .
- I : Touch screen control panel --- Control machine's running, display, stop, etc.

1-3 MACHINE DIMENSION



Space requirements :

A . Sliding table length	2600,3200,3800
B . Cutting width	1300,1500
C . Cutting width + 420	
D . Crosscut fence	1800
E . Crosscut fence	max.3215
F . Sliding table length + 340	
G . Sliding table length + 260	

Technical specifications :

Sliding table cutting lengths	With or without scoring saw blade
2600 mm (102.36 in)	2500 mm (98.43in)
3200mm (126 in)	3100 mm (122.05 in)
3800mm (149.61 in)	3700 mm (145.67 in)

Cutting depths

Saw blade diameter	Ø250 (10")	Ø300 (12")	Ø350 (14")	Ø400 (16")
Cutting depths at 90°	0 ~ 50 mm (0 ~ 2 in)	0 ~ 75 mm (0 ~ 2.95 in)	0 ~ 100 mm (0 ~ 4 in)	28 ~ 125 mm (1.1 ~ 4.92 in)
Cutting depths at 45°	0 ~ 35 mm (0 ~ 1.38 in)	0 ~ 53 mm (0 ~ 2.09 in)	0 ~ 70 mm (0 ~ 2.76 in)	19.8 ~ 88 mm (0.8 ~ 3.5 in)

1-4 INDICATION

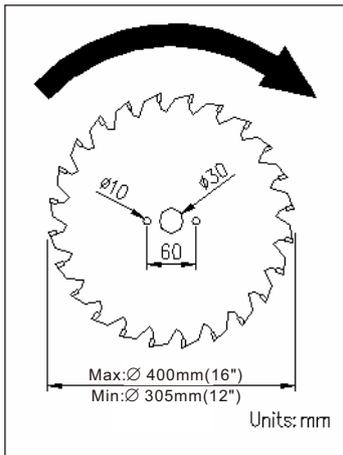


Fig.1-4-1

Operation scope of main saw			
Main saw dim.	305mm (12")	355mm (14")	400mm (16")
Saw blade speed	3000rpm	○	○
	4000rpm	○	○
	5000rpm	○	○

Fig.1-4-2

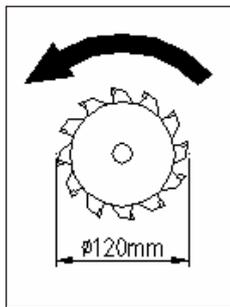


Fig.1-4-3

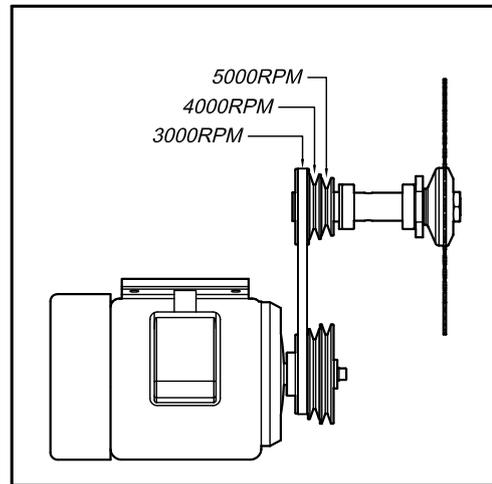


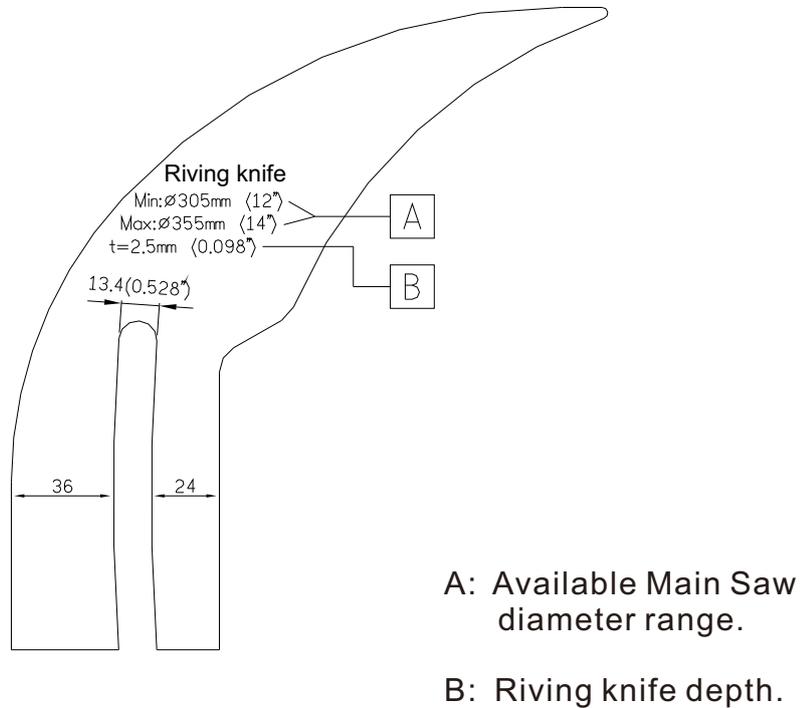
Fig.1-4-4

1. Fig.1-4-1 is the main saw's size, running direction.
2. Fig.1-4-2 is the main saw's size and main saw's permit speed diagram.
3. Fig.1-4-3 the scoring saw's size and running direction.
4. Fig.1-4-4 belt speed diagram.

NOTE : Using 16" main saw belt speed limit 3000rpm~5000rpm.

Main shaft speed ration follow up the ration limiting range to preventing the danger.

1-5 RIVING KNIFE SPECIFICATION



★Prior to setting the riving knife , check whether it matches the saw blade diameter and body thickness.

Always switch off the main switch prior to setting the riving knife preventing cause danger.

The machine is delivered as standard with the following riving knives.

305~355/2.5 specification : Saw blade diameter 305~355mm.

Saw blade basic body thickness up to maximum : 2.3mm.

Diameter range and thickness are both engraved at the bottom end of the riving knife.

The thickness of the riving knife was selected so that they match the commercially available saw blade thickness in the respective diameter range.

CHAPTER 2

TRANSPORT / ASSEMBLE

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2-1 TRANSPORT



To transport the machine, please request the person who has licenses of gantry, crane, lift truck, etc. to operate. The weight of machine is listed in the Chapter 2-1. After confirming, please proceed as per the weight. To suspend and move the machine, please follow Notes of Chapter 2-1 to operate. During transport, if the machine collapses or drops, it will cause an accident.

While transporting or assembling, please don't damage the wiring. After assembly is completed, please execute protective measures to avoid the workers, other persons or lift truck damaging the wiring.

2-1-1 TRANSPORT WOODEN CRATE

The machine's gross weight is about :

Main crate (Cutting width 1.3m) ----- 1070 kgs.

Main crate (Cutting width 1.5m) ----- 1090 kgs.

USE CRANE TO MOVE WOODEN CRATE

- ★ The crane's rope must be able to bear the machine's gross weight to prevent its breaking from happening danger.



Fig.2-1-1

USE LIFT TRUCK TO MOVE WODEN CRATE

- ★ Please put the wooden crate in the middle of the forks and keep over 50mm distance between the front of the forks and the wooden crate to avoid the case collapsing and secure safe transport.

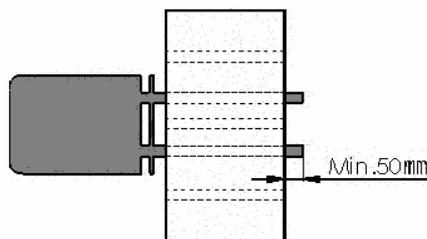


Fig.2-1-2

2-1-2 TRANSPORT MACHINE

The machine's net weight is about :

Main crate (Cutting width 1.3m) ----- 898 kgs.

Main crate (Cutting width 1.5m) ----- 918 kgs.

USE LIFT TRUCK TO TRANSPORT MACHINE



Fig.2-1-3

1. The lift truck must be able to bear at least 5tons.
2. Make sure the machine is balanced. While transporting, please don't vibrate it and keep at least 2m safe distance away from the transport area.
3. The machine is equipped with the slots as shown in Fig. 2-1-3 that are specially designed for transport of lift truck and manual (electric) trolley.

USE GANTRY OR CRANE TO MOVE MACHINE AWAY PALLET



Fig.2-1-4

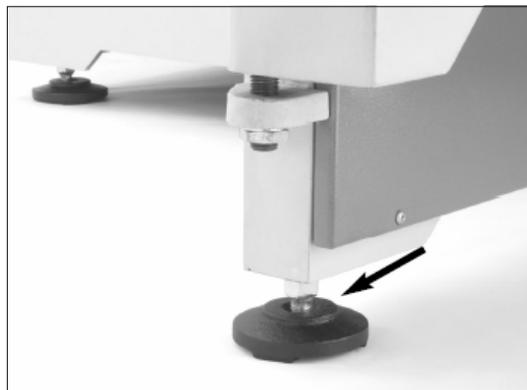


Fig.2-1-5

Before the machine is put on the floor, please first install 4 level adjusting bases (as shown in Fig. 2-1-5) and adjust the level of the machine's working table to secure the sliding table's smooth movement and the machine's balanced running.

2-2 ASSEMBLE



Fig.2-2-1

★Prior to setting sliding table , release the trimming planks (Fig.2-2-1). Ensure the trimming planks releasing before 1st working operation or the machine damaged.

2-2-1 ASSEMBLE THE SLIDING TABLE

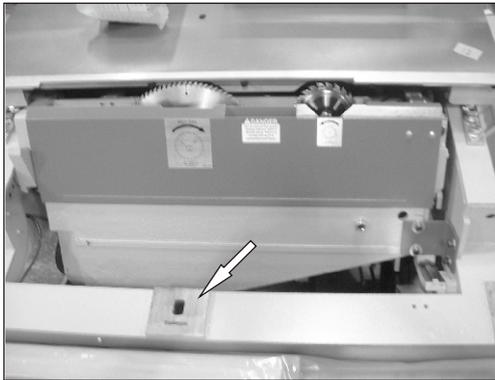


Fig.2-2-1-1

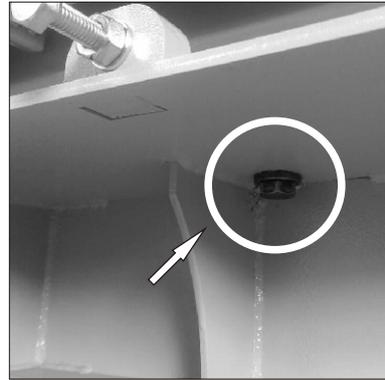


Fig.2-2-1-2

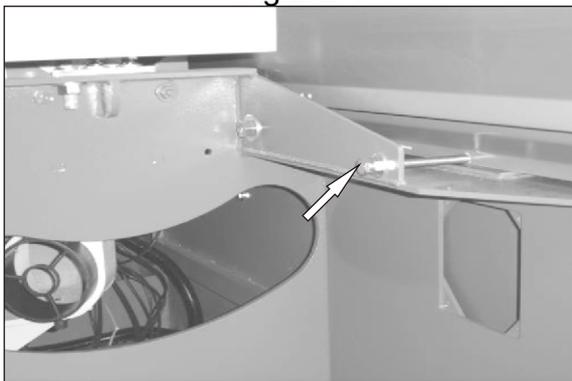


Fig.2-2-1-3

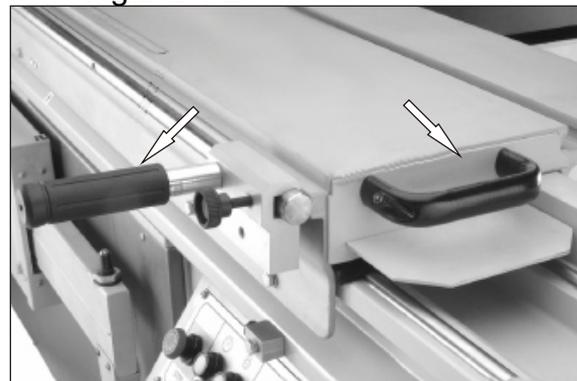


Fig.2-2-1-4

Assembling steps as follows :

1. Please first clean the position shown in Fig. 2-2-1-1 on the machine.
The three planes are the position of assembling the sliding table and machine.
2. Please ask workers to move the sliding table onto the machine to prevent hitting from influencing its levelness during transport.
The sliding table's size is different, so 4~ 6 workers are required.
3. Put the sliding table on the structure frame and tighten three screws as shown in Fig.2-2-1-2.
4. For clean & straight cut, the sliding table must be parallel to the knife.
5. Install the grip and the sliding table's handle into the sliding table as shown in Fig.2-2-1-4.

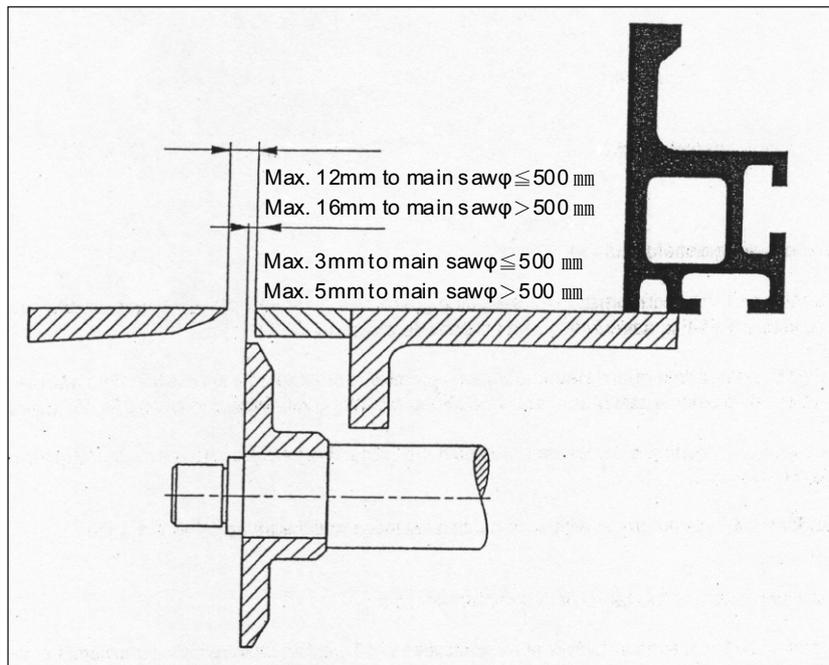


Fig. 2-2-1-5

Steps of adjusting the sliding table as follows :

1. Loosen three screws (as shown in Fig. 2-2-1-2) and use the parallel adjusting bolts at the two sides of the machine to do adjustment (as shown in Fig. 2-2-1-3).
2. For the gap between the sliding table and the main saw, please refer to Fig. 2-2-1-5.
3. Tighten three screws.

NOTE: The sliding table must be 0.15mm higher than the main cast iron table to enable to move up or down the casting on the main table. Please don't adjust the height of the sliding table.

2-2-2 ASSEMBLE CROSS CUT TABLE & SCALE BASE

ASSEMBLE CROSS CUT TABLE

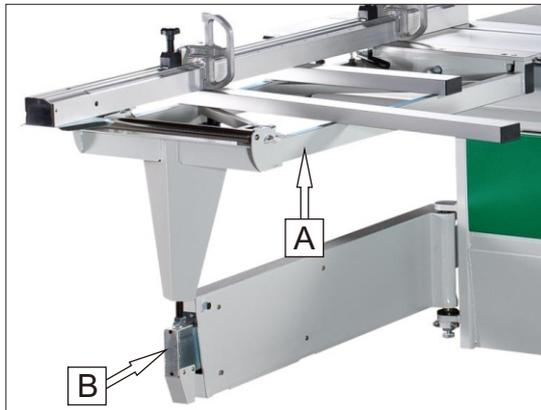


Fig. 2-2-2-1

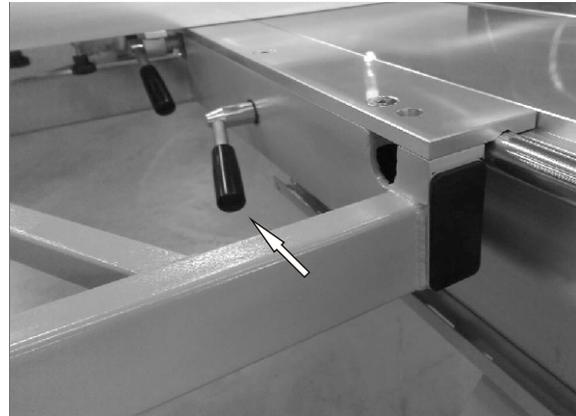


Fig. 2-2-2-2



Fig. 2-2-2-3

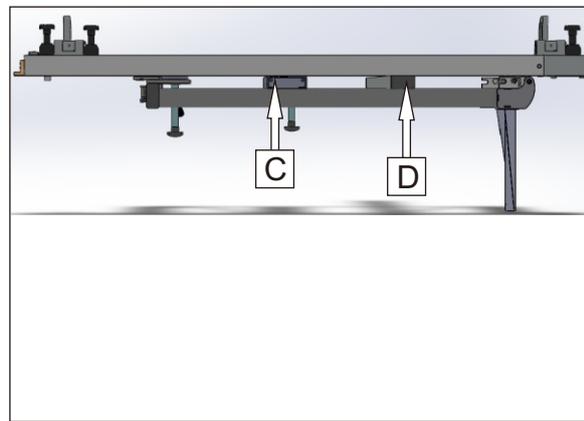


Fig. 2-2-2-4

Assembling way :

1. Put one end of the cross cut table into the projecting rod of the expanding bar (as Fig. 2-2-2-1).

Avoid the noise by greasing the lubricant on the supporting bolt on the swimming arm (Figure 2-2-2-1 B) before connect the cross cut fence (Figure 2-2-2-1 A) and swimming arm fence .

2. The other end of the cross cut table is against the rod of the sliding table and the cross cut table's fastening sliding block must put under the rod (as Fig.2-2-2-2)
3. Tighten the handle to fasten the cross cut table (as position shown in Fig. 2-2-2-3).
4. C is for fastening and D is for adjusting. (Fig. 2-2-2-4)

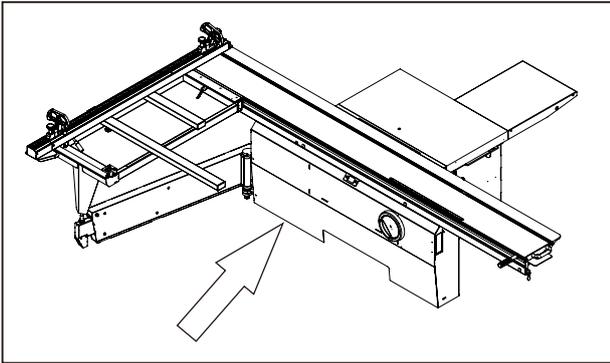


Fig. 2-2-2-5

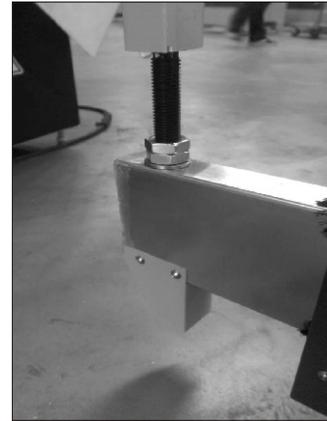


Fig. 2-2-2-6

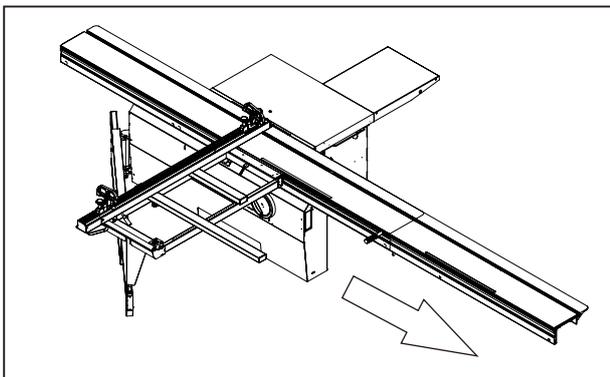


Fig. 2-2-2-7

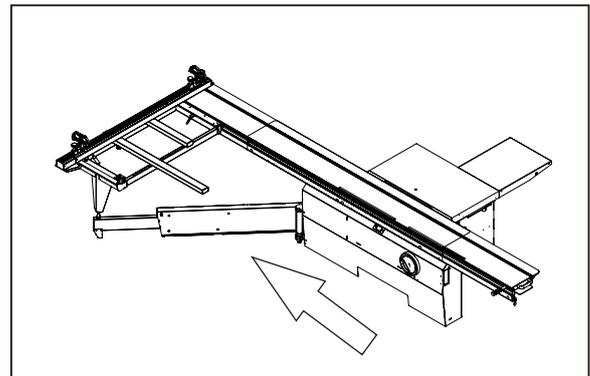


Fig2-2-2-8

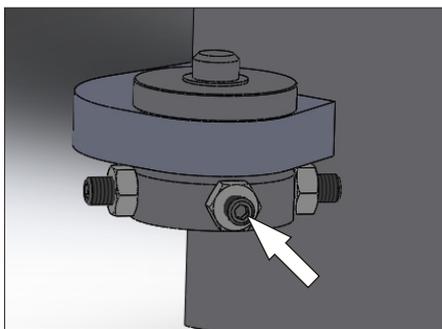


Fig. 2-2-2-9

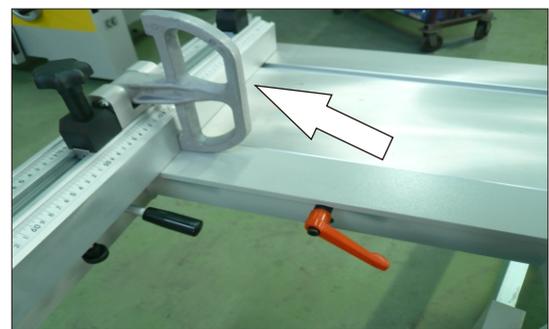


Fig. 2-2-2-10

Adjustments

1.(fig.2-2-2-5) is the first adjust part for crosscut fence and sliding table.if crosscut fence doesn't parallel with sliding table,adjust the round bar,nut and the(fig.2-2-2-6)

2.(fig.2-2-2-7)is the second adjust part for crosscut fence andsliding table.Move the sliding table to right to reach its limit,if crosscut fence doesn't parallel with sliding table,adjust nut (fig.2-2-2-9)

3.(fig.2-2-2-8)is the third adjust part for crosscut fence and sliding table.Move the sliding table to the left to reach its limit, if crosscut fence doesn't parallel with sliding table, adjust nut(fig.2-2-2-9)

4.Once finish the adjustment for crosscut fence and sliding table, check of the crosscut fence and sliding table is parallel(fig.2-2-2-10) check gap between crosscut fence and sliding table.

ASSEMBLE CROSS CUT SCALE BASE

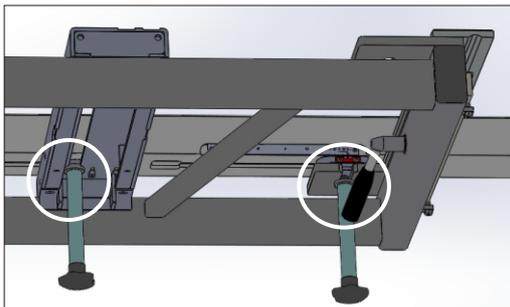


Fig. 2-2-2-5

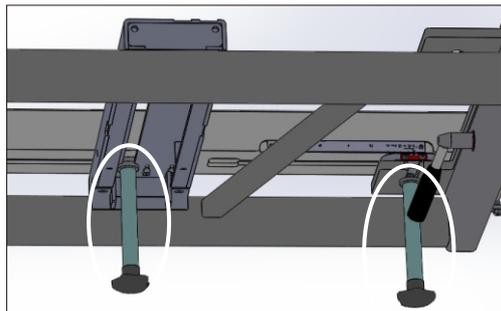


Fig. 2-2-2-6

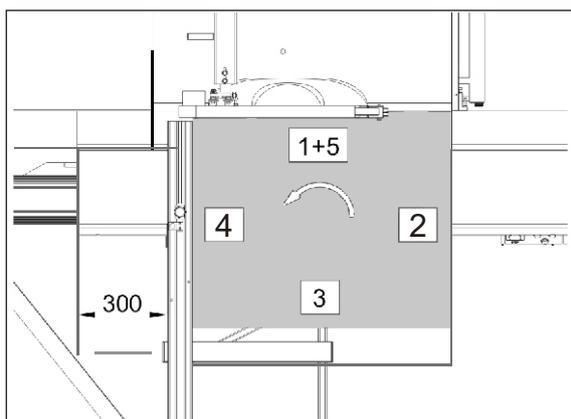


Fig. 2-2-2-7

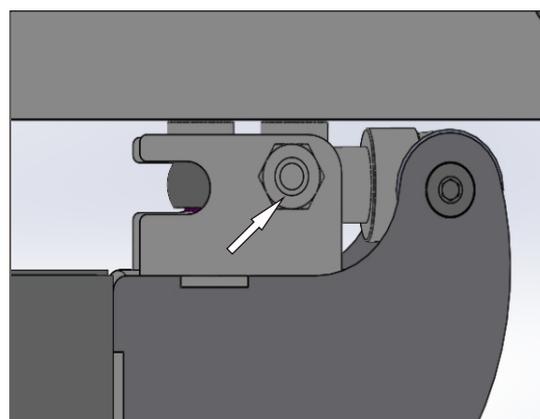


Fig. 2-2-2-8

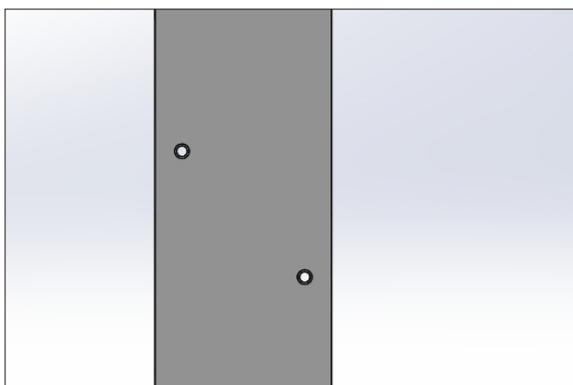


Fig. 2-2-2-9

Assembling steps as follows :

1. Put the fence into the position as shown in Fig. 2-2-2-5.
2. Turn the handle to fasten the fence (as position shown in Fig. 2-2-2-6).
3. Adjust the perpendicularity of the fence and the saw. Please use actual cutting error to proceed adjustment (as Fig. 2-2-2-7).

Adjusting method as follows :

1. Distance between crosscut fence and sliding table needs 300mm, adjust the saw blade to proper height and set the rotation speed at 5000rpm. Trial cutting by a 1000x1000x19 or 6/8" wood board.
2. Cutting in sequence from #1 to #5.(fig.2-2-2-7).
3. Measure the diagonal's error of the wood board to proceed adjustment (the adjusting position as shown in Fig. 2-2-2-8)
4. After adjusting, tighten the nut
5. The part shown in Fig. 2-2-5-9 is the knob for fastening scale.

2-2-3 INSTALL EXTENSION TABLE

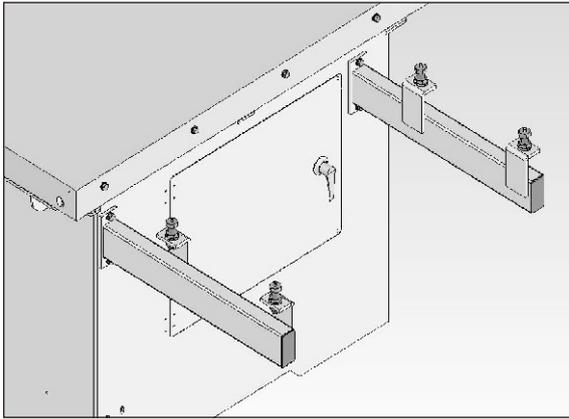


Fig.2-2-3-1

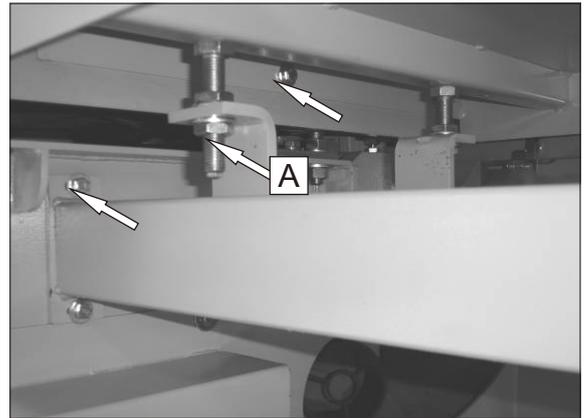


Fig.2-2-3-2

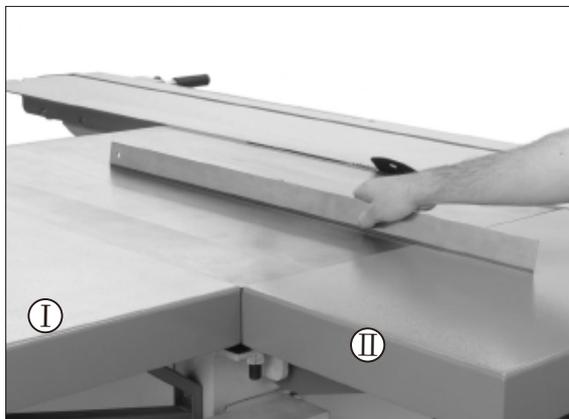


Fig. 2-2-3-3

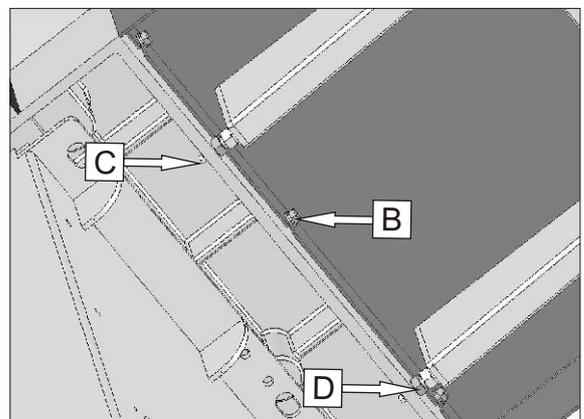


Fig. 2-2-3-4

Ⓘ :Width Cutting Extension Table.

Ⓜ :Extension Table.

Installing Width Cutting Extension Table :

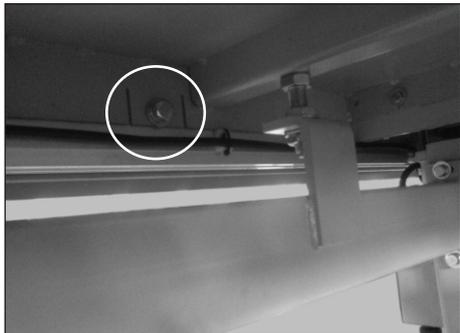
1. Tighten the supporting rack into the machine and its opening is towards outside (as Fig. 2-2-3-1).
2. Tighten the screws of the table, the machine and the supporting rack (as Fig. 2-2-3-2).
3. Use the adjusting screw A shown in Fig. 2-2-3-2 to make the extension table and the main table be at the same plane (as Fig. 2-2-3-3).

Installing Extension Tables:

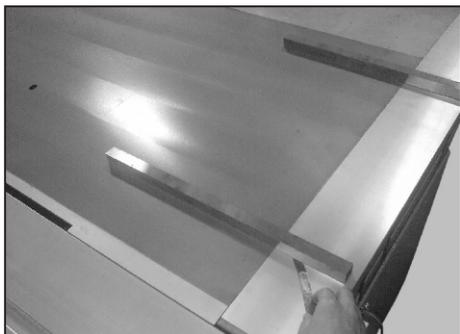
1. Use the adjustment screw under the extension table to level the top surface with the saw table (Fig 2-2-3-4-B,C).
2. Adjustment the screw (Fig2-2-3-4-D) and check the surfaces of the table with a straight edge as shown in Fig2-2-4-3.
- 3.Fasten the screw (Fig 2-2-3-4-B,C,D nuts).

2-2-4 ASSEMBLE ELECTRIC RIP FENCE

Sequence of Assembling and Adjusting Electric Rip fence:



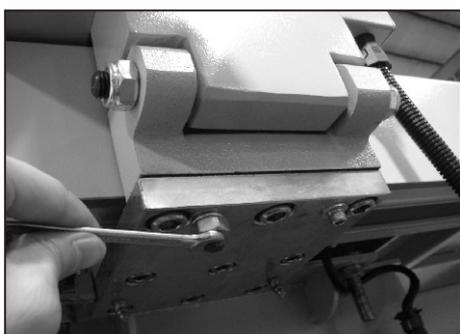
Step 1 : Put on the screw which is used to electric rip fence, working table and extension table (See the left drawing).



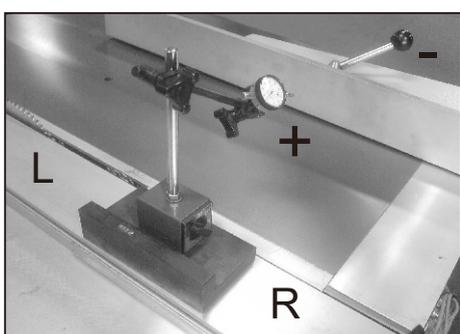
Step 2 : Adjust the gap between electric rip fence and main working table and then tighten the screw shown in Step 1. (Electric rip fence must be in the gap 0~0.1mm under the main working table.)



Step 3 : Put on the screw which is used to fasten the fence base and the electric rip fence. (See the left drawing)

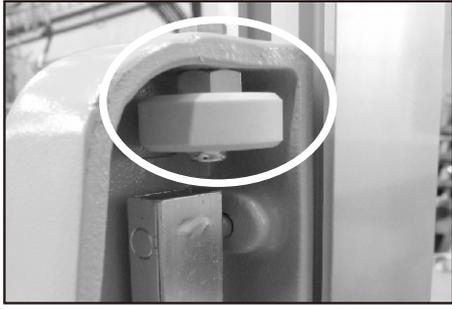


Step 4 : Use the open wrench 8 to adjust the screw to make the fence parallel to main saw blade. (See the left drawing)



Step 5 : Use the measuring gauge to measure parallelism of the fence and the main saw blade.

Measuring method : Fix the rip fence. Push the sliding table to the left. The measuring tolerance is 0~0.1mm from the right to the left as the direction of the left drawing shows. (Parallelism of the sliding table and the main saw blade must be first adjusted within tolerance)



Step 6 : Adjust the eccentric wheel at front end of the fence base to make the fence base parallel to the working table.



Step 7 : Adjust the eccentric wheel at the side of the fence base to make aluminum fence parallel to the working table. At this time, assembly of electric rip fence is completed.



Fig 2-2-4-1



Fig 2-2-4-2



Fig 2-2-4-3



When the safety guard is used (Fig 2-2-4-1), aluminum fence must be put at low position.

Fig 2-2-4-2 shows the position of the fence when the cutting angle is at 0~45 degree.

Fig 2-2-4-3 shows the position of the fence when the cutting angle is at 90 degree.

2-2-5 ASSEMBLE SAFETY GUARD

2-2-5-1 LUXURIOUS DUST GUARD

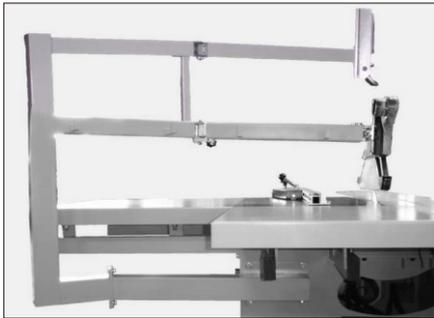


Fig. 2-2-5-1



Fig. 2-2-5-2



Fig. 2-2-5-3

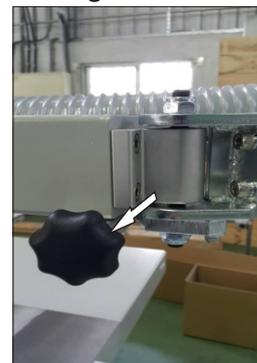


Fig. 2-2-5-4



Fig. 2-2-5-5

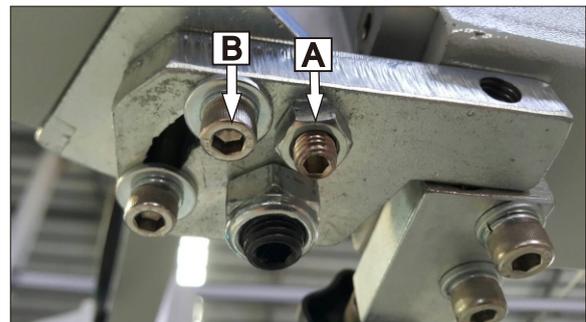


Fig. 2-2-5-6

Assembling steps :

★ Before you install the safety guard, please first lower the saw under the table.

1. Install the dust collection fixing rack onto the left side of the machine as shown in above drawing. (Fig.2-2-5-1)
2. Adjust the guard parallel with the saw and tighten the screw as shown in above drawing. (Fig.2-2-5-2)
3. Loose nuts on the arrow parts to adjust the distance between dust collector and saw blade. (Fig.2-2-5-3) (distance please refer to fig.2-2-5-7)
4. Tighten the knob to fix the guard. Loosen the knob, the guard can be moved as shown in above drawing. (Fig.2-2-5-4)
5. Adjust nuts on the arrow parts if sliding table does not parallel with dust collector. (Fig.2-2-5-5)
6. Adjust nuts on the arrow parts if dust collector does not parallel with saw blade. To adjust, loosen screw A and then loosen screw B. Once adjustment has been done, lock screw B and then lock screw A. (Fig.2-2-5-6)

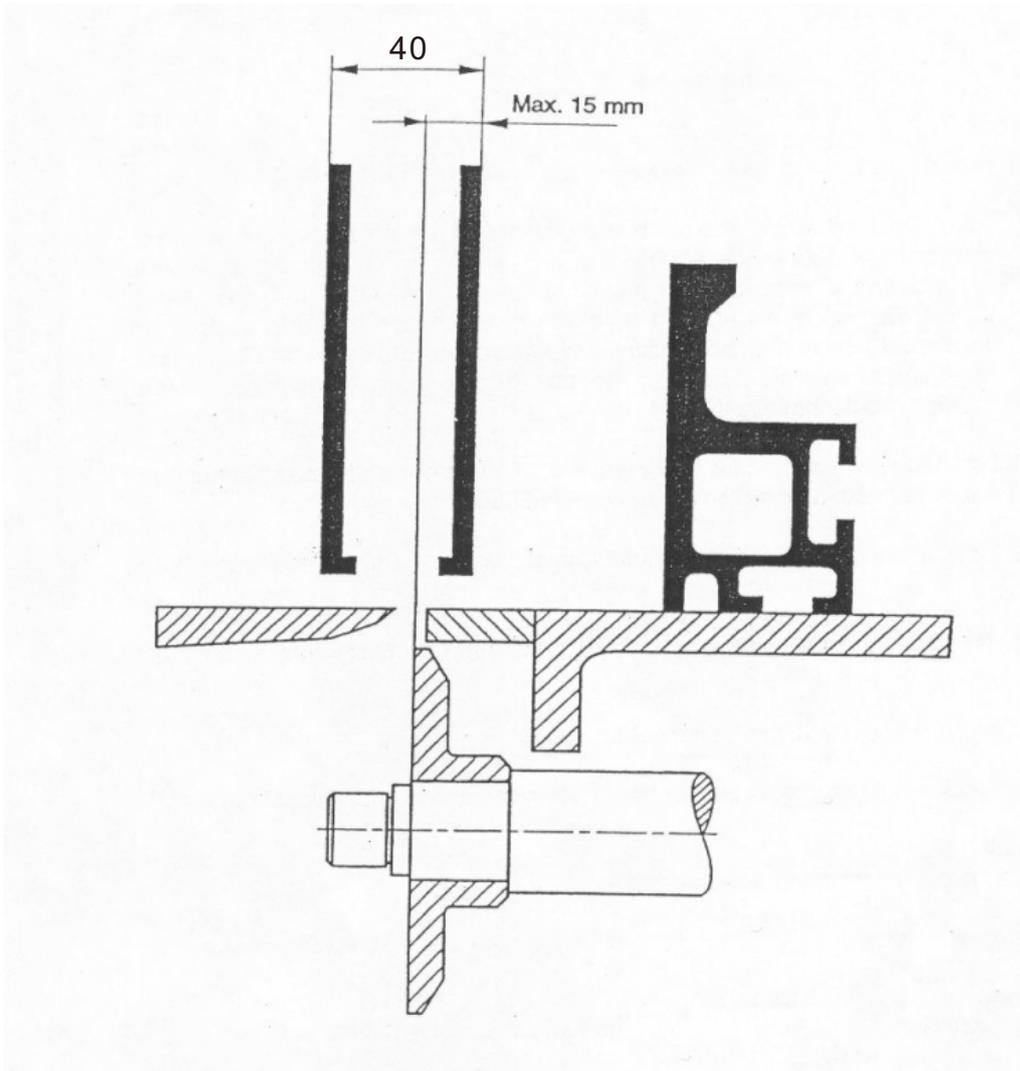


Fig.2-2-5-7

- ★ Please keep safe distance between the safety guard and the saw (as Fig. 2-2-5-7) to avoid the saw and the guard interfering each other.

2-2-5-2 PUSHING STICK INSTALLING

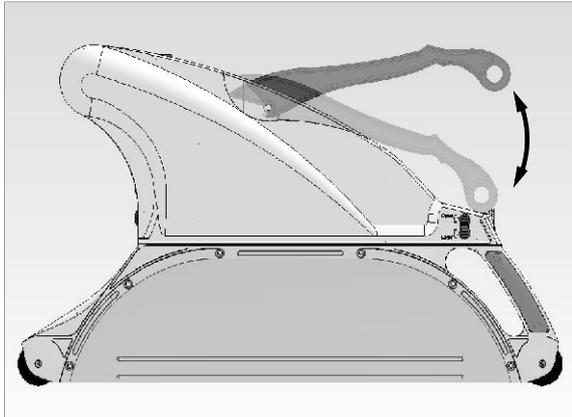


Fig. 2-2-5-2-1

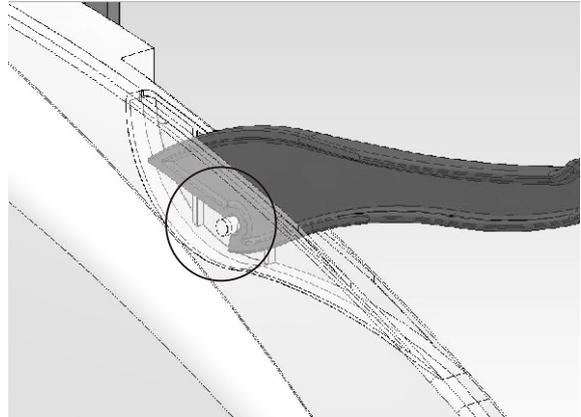


Fig. 2-2-5-2-2

Instruction Manual :

The pushing stick holder is located inside the saw guard by the pushing stick in degree 45 (Figure 2-2-5-2-2) and the sharp top one parallel with the pushing stick holder (Figure 2-2-5-2-2) so that can located the stick (Figure 2-2-5-2-1) ; opposite is take out the pushing stick.

2-2-6 INSTALL MITER FENCE

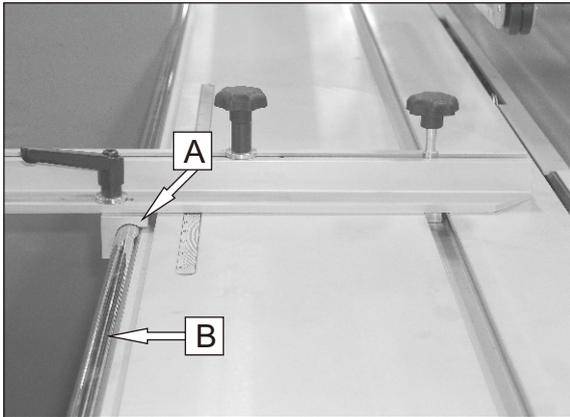


Fig.2-2-6-1

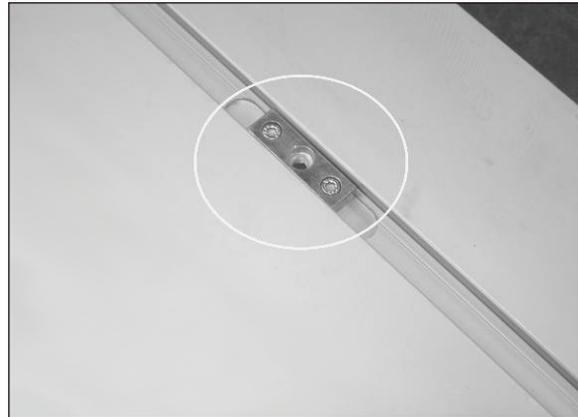


Fig.2-2-6-2

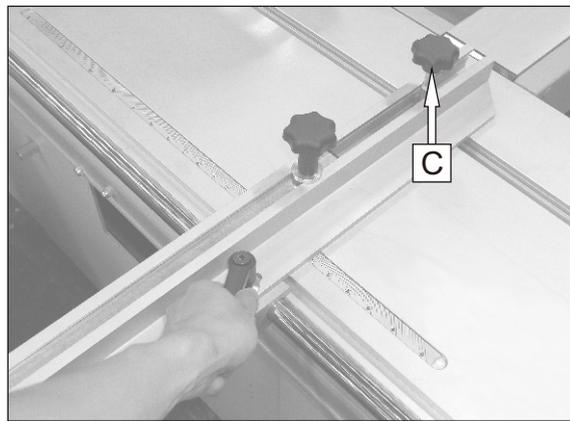


Fig.2-2-6-3

Assembling steps:

1. Put the sliding block of the miter backing board (As A shown in Fig2-2-6-1) handle into the slot (As B shown in Fig 2-2-6-1)
2. Tighten the knob (as C shown in Fig 2-2-6-3) of the miter backing board into the sliding table (as shown in Fig 2-2-6-2)
3. Tighten the handle to fasten the miter backing board. (As Fig 2-2-6-3). Loosen it to adjust angle)

2-2-7 CONNECT DUST-COLLECTING DUCT



Fig.2-2-7-1

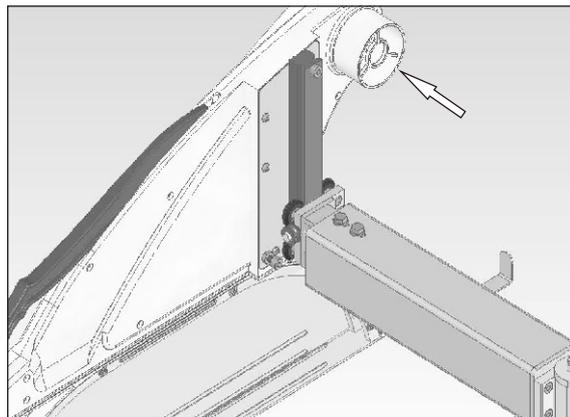


Fig.2-2-7-2

Assembling method :

1. Two dust-collecting guard outlets are installed at the left side of the machine and one dust-collecting guard outlet at the right side. They can be connected to the dust collector by one flexible hose in proper diameter. The diameter of the dust-collecting guard outlet is **5" and 3"** (as Fig. 2-2-7-1).
2. Fig. 2-2-7-2 shows the dust-collecting guard outlet 3".



**The required air flow speed of the flexible hose's end is 30-34m/sec.
The required air volume of the machine is 1120 – 1390 m³ (43000 -49000 m³).
★ Before the machine starts cutting, please make sure the dust collector is working.**

CHAPTER 3

ADJUST / CHANGE

3-1 SLIDING TABLE LOCK	3-1
3-2 ADJUST THE RIVING KNIFE	3-2
3-3 CHANGE MAIN SAW	3-4
3-4 CHANGE / ADJUST SCORING SAW	3-5
3-5 CHANGE SPINDLE ROTATING SPEED	3-6
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3-1 SLIDING TABLE LOCK

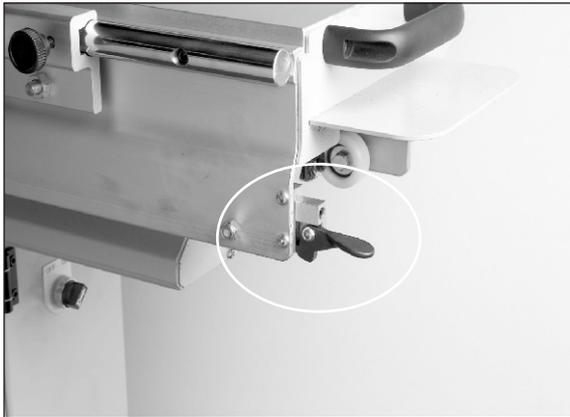


Fig. 3-4-1

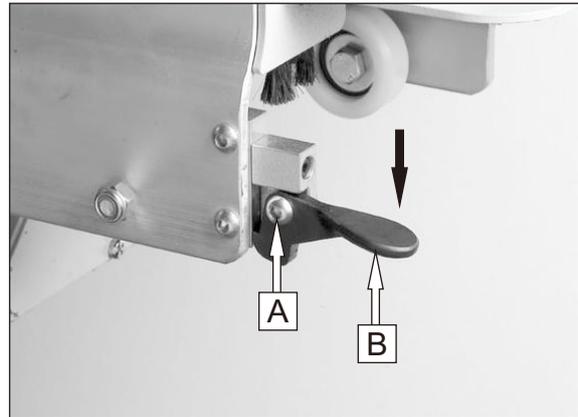


Fig. 3-4-2

Sliding table safety lock:

Safety lock button of new profile sliding table settle in the end of sliding table(as picture); The safety button can fix the sliding table in the middle and the end position , Downward part B could unlock ,Otherwise is lock.

Accessories A and B would be taken off and put into the tooling box in order to put the machines in the wooden case . When new sliding table is settled on themachine , Kindly put the accessories A and B into the position as picture.

Take your attention if the Part B is downward (unlock) or not before moving the sliding table.

3-2 ADJUST THE RIVING KNIFE

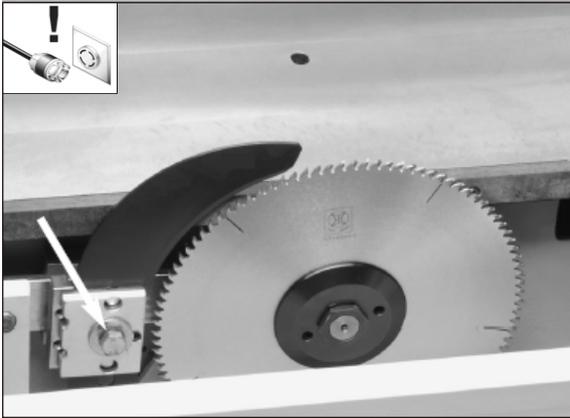


Fig.3-2-1



Fig3-2-2

Adjusting method :

1. Loosen the hexagon screw of the riving knife base (as Fig. 3-2-1) and use three adjusting screws at the side to adjust the riving knife.
2. Max. gap between the riving knife and the saw is 0.2mm (as Fig. 3-2-3).
3. The highest point of the riving knife can't be 3mm higher than the highest saw tooth in the wood. Gap between the saw and knife must be the min. 3mm and the max. 8mm crossing the saw (as Fig. 3-2-4).

★ After adjusting, please make sure to lock the hexagon screw of the riving knife base (as Fig. 3-2-1).

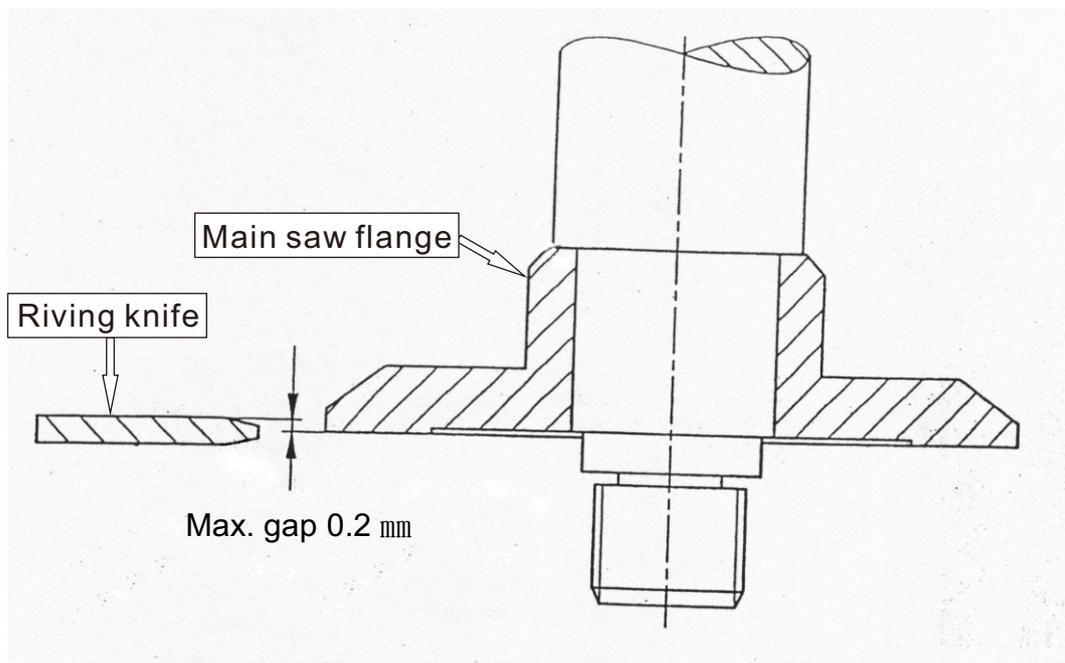


Fig.3-2-3

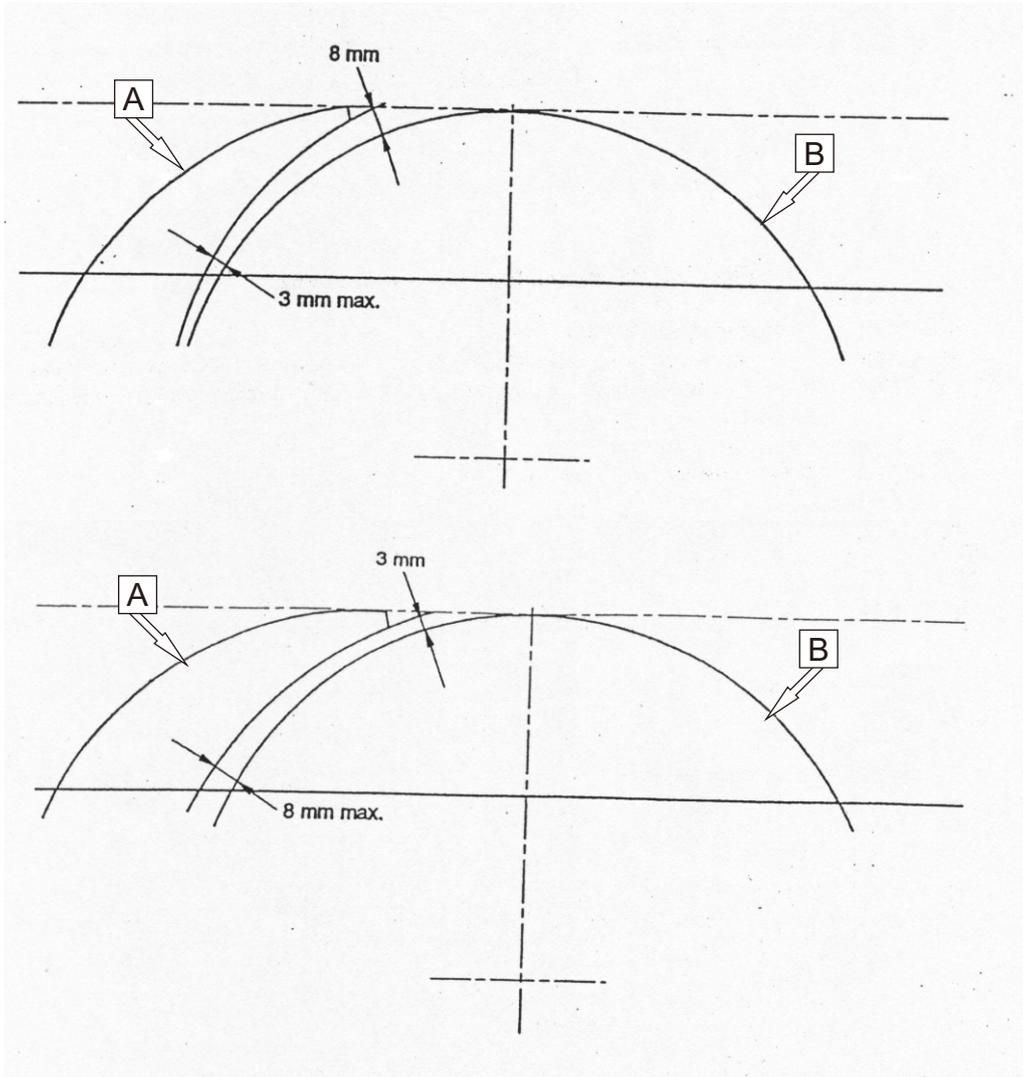


Fig.3-2-4

In above Fig., A is the riving knife and B is the saw.

3-3 CHANGE MAIN SAW

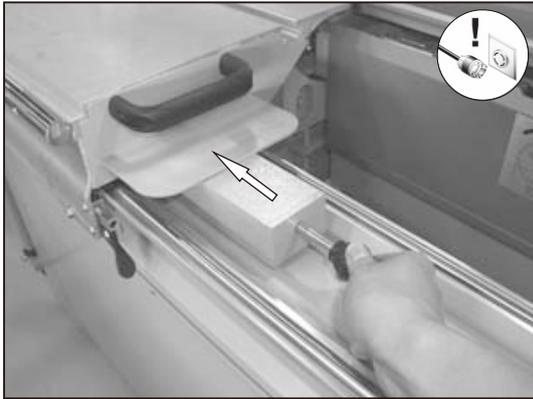


Fig.3-3-1

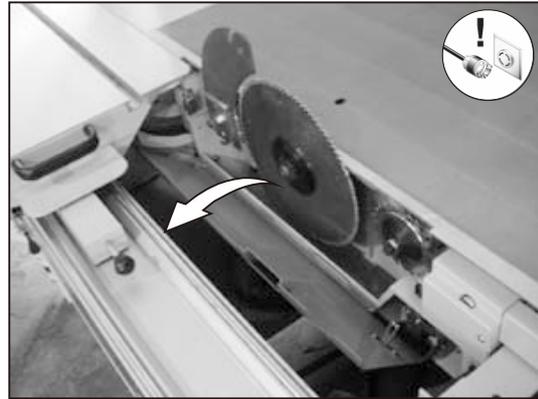


Fig.3-3-2



Fig.3-3-3

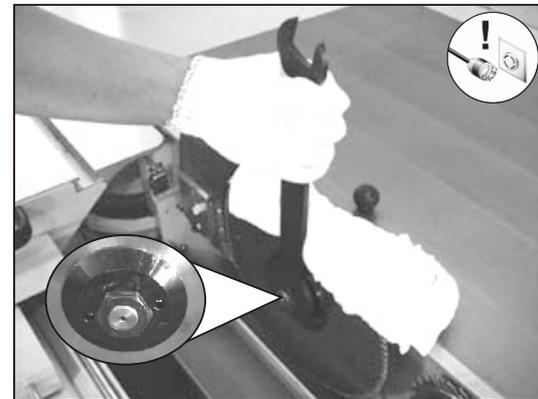


Fig.3-3-4



Before changing the saw, please make sure if the power is closed to avoid danger. Before changing the saw, please install the protective film to protect the saw and avoid injury while changing the saw.

Main shaft speed ration follow up the ration limiting rage to preventing the danger.

Assembling steps as follows :

1. Move the sliding table forwards and push the inside ball bead inwards and then put the sliding table forwards to the position of changing the saw.
2. Open the saw cover (as Fig. 3-3-2).
3. Lift the arbor of the saw to the highest position and insert the fixing pin into the hole of the cast iron table to fasten the saw (as Fig. 3-3-3).
4. Use the wrench in the tool box to turn the arbor until the fixing pin and hole inside the arbor align (as Fig. 3-3-4). Clockwise turn to remove the nut and cam (main saw's nut is left thread, so dockwise turn to loosen and anticlockwise turn to tighten).

CHANGE

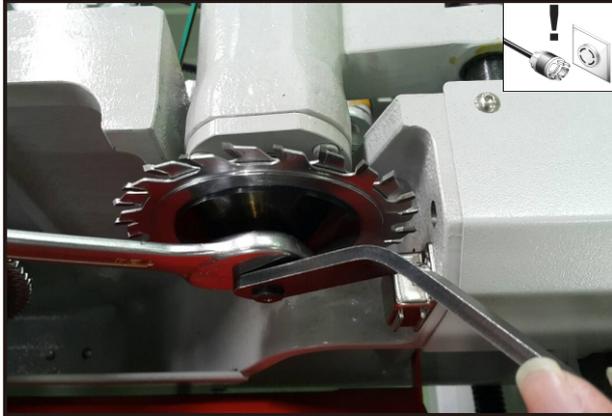


Fig.3-4-4



Fig.3-4-5



Before changing the saw, please make sure if the power is closed to void danger.

Before changing the saw, please install the protective film to protect the saw and avoid danger while changing.

Assembling steps as follows :

1. Same as item 1 of 3-3 Change Main Saw.
2. Lower the scoring saw to the floor and put the wrench on the even place of the arbor and then grip it.
3. Use knob to release and tighten the clamping screw. CW. for tighten. CCW. for release. (as Fig. 3-4-4).
4. Make sure the new saw and flange are clean. Install the new saw and use 250kg/cm torque to tighten the arbor's nut (as Fig. 3-4-5).

★ **After changing, please make sure if the arbor's nut of the scoring saw is tightened to prevent its drop from causing danger while machine is running.**

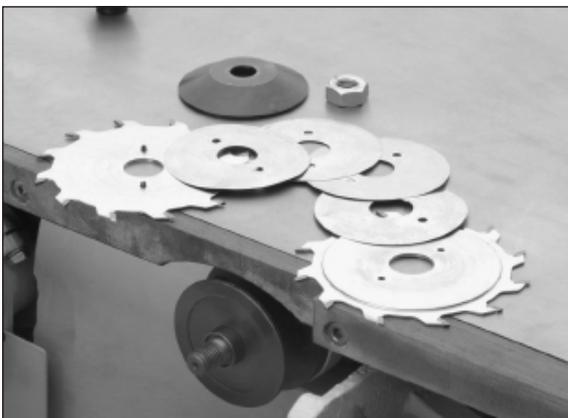


Fig.3-4-6

Gasket shown in Fig. 3-4-6 is to adjust the cutting width of the scoring saw to be bigger than the cutting width of main saw so that the workpiece will be nicer looking. The thickness of the attached scoring saw is 2.8mm. It can be adjusted to 4.3 mm.

Gasket of the scoring saw is 1pcs for 0.1mm , 1pcs for 0.2mm and 4pcs for 0.3mm.

3-5 CHANGE SPINDLE ROTATING SPEED

Belt tension of main motor is set at about 220kg.cm. The steps of changing main motor's rotating speed as follows :

1. Turn the hand wheel to make the saw lower to the bottom (as Fig. 3-5-1).
2. Loosen the screw to open the rear door.
3. Loosen the adjustable handle (as A shown in Fig. 3-5-2).
4. Press down the handle (as B shown in Fig. 3-5-2) to lift the motor board to loosen the belt.
5. Put the belt into the slot of the pulley to be changed (please refer to Fig. 3-5-4 for each rotating speed's position).
6. Push the rotation speed switching rod to required position (as the position shown in Fig. 3-5-3).
7. Make sure belt has been set onto the groove of the pulley. Check if rotation speed switching rod is on a correct rotation speed position.
8. Push the handle (as B shown in Fig. 3-5-2) to lower the motor board to pull tightly the belt and lock the adjustable handle (as A shown in Fig. 3-5-2).
9. The machine has the rotating speed 3000, 4000, 5000, r.p.m. available for change (as Fig. 3-5-4).

 Main shaft speed ration follow up the ration limiting range to preventing the danger.

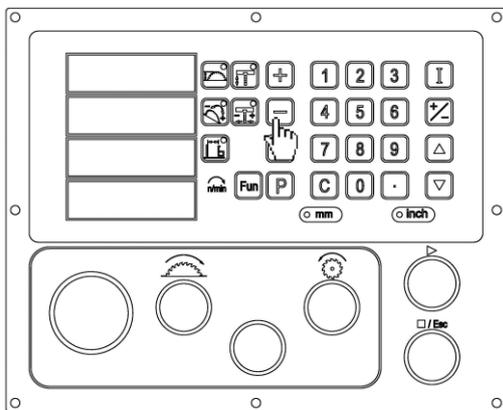


Fig.3-5-1

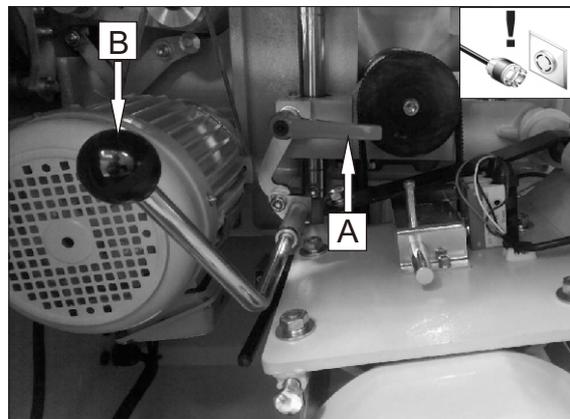


Fig.3-5-2

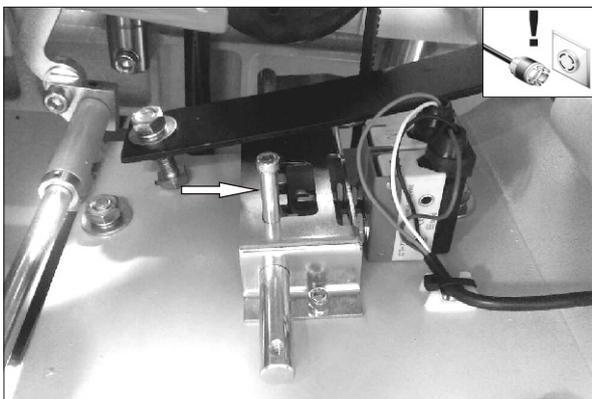


Fig. 3-5-3

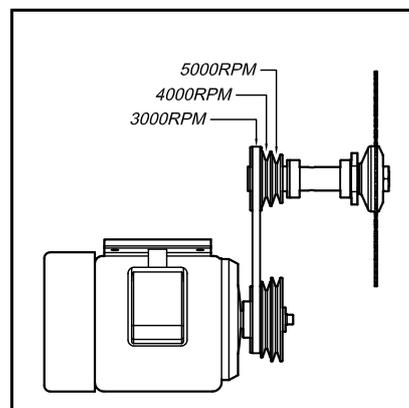


Fig.3-5-4

3-6 ADJUST SAFETY GUARD

ADJUST

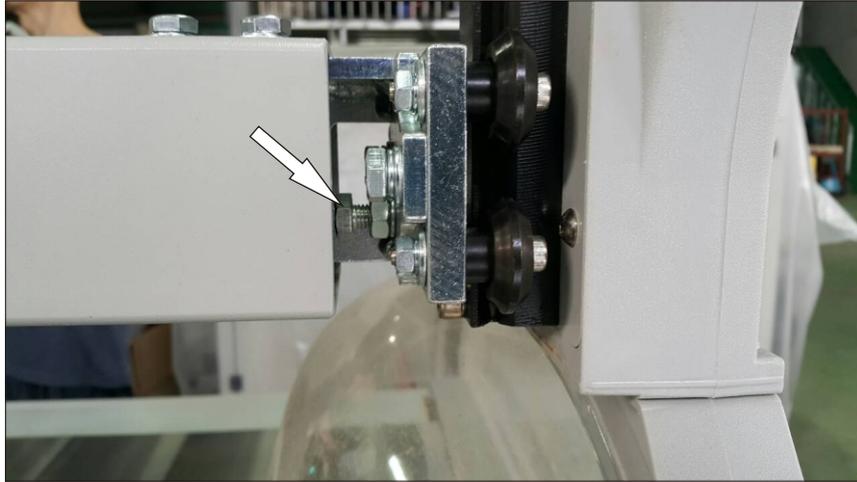


Fig.3-6-1

Adjust up/down of the saw guard :

1. Use hand to slightly move the saw guard up or down.
2. The screw shown in Fig. 3-6-1 is to adjust the tightness/looseness of up / down movement of the saw guard.

The safety guard can be moved up to any place but must be firmly tightened at that place to avoid it moving down. After it's used for a long time, the part will be worn. So, please adjust its tightness again.

CHANGE

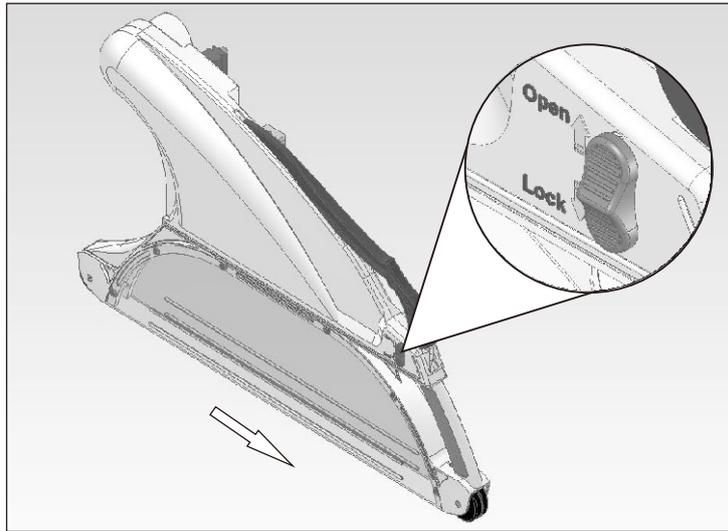


Fig.3-6-2

Replacement :

Push up the lock button on the saw guard (Figure 36-2) loosen the saw blade shield to outward can be replacement. (As Figure arrow direction)



Attention!

In order to prevent the saw blade touch the saw shield during the replacement, kindly downward the saw blade to the bottom and move the saw guard unit to the upward.

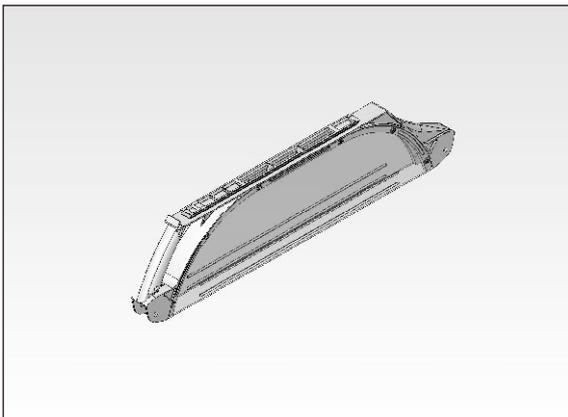


Fig.3-6-3

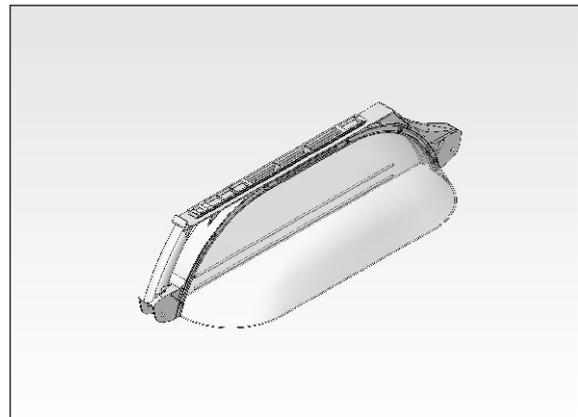


Fig.3-6-4

★ While cutting workpiece :

At 90 cutting, 90 special safety guard must be used (as Fig. 3-6-4).

At angular cutting, special angular safety guard must be used (as Fig. 3-6-5).

CHAPTER 4

OPERATION OF TOUCH SCREEN CONTROL PANEL

Chapter 1 : Product Induction

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1.2 Panel key functions.....	1-2
1.3 Console appearance and functionalities	1-3

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3.2 Controller troubleshooting.....	3-2

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1. Product Introduction

Please follow these regulations

1. Product Introduction
- 1.1 Specifications
 1. Power input: DC 0V - 24V.
 2. Signal Input: Standard ENCODER A, B phase signals (DC24V)
 3. Relay output contact rating: AC (250V - 15A)
 4. Safety limit switches: this controller shall be used together with safety limit switches for automatic safety protection (serious warning) and for ensuring personal and equipment safety. Safety limit switches must be installed as required.
 5. After 5-8 starts, the microcomputer controller will automatically reach its optimal use conditions.
 6. In order to lower interference from noises, please handle signal wires and power wires separately.
 7. Fuses must be furnished on the primary side of a DC or AC voltage input. Rating of the fuse must not exceed the rated load by 2A. (The user is required to calculate for proper fuses). Prevention must be made against failure of motor contactors or reverse connectors.
 8. RC Surge Arrester shall be provided at the AC load, so as to eliminate noise signals from the AC load.
 9. Shield sensor wiring shall not connect with grounding wires.
 10. This controller is suitable for use in general industrial locations.
 11. External wires of the controller shall not exceed 3 M.

 Electrical and other related personnel please be advised that failure to comply with any of the above 11 points can result in controller burning or malfunction, as well as machinery damage. Any of such results shall be the responsibility of the user.

 Unless by authorized technicians, do not make any alteration or modification in operating the machinery, so as to avoid machinery operation in incorrect dimensions and to prevent any hazard.

 Operator shall carry out proper personal protections, for preventing any danger.

 Please read this operation manual thoroughly before starting, for preventing any hazard or mechanical failure.



Self Learning Model

Please kindly do the SELF LEARNING MODEL on ALL the machines with AUTO RIP FENCE when you finished the installing and machine just with the power connected at the beginning.

1st Step for 8 points in same distance from 150mm to 1250 mm

Make the rip fence to move from 150mm->250mm, 250mm->350mm, 350mm->450mm, 450mm->550mm, 550mm-> 650mm, 650mm -> 750mm, 750mm-> 850mm, 850mm->950mm, 950mm->1050mm, 1150mm->1250mm

2nd Step for 8 points in same distance from 1250mm to 150 mm

Then go back from 1250mm->1150mm, 1150mm->1050mm, 1050mm->950mm, 950mm->850mm, 850mm->750mm, 750mm->650mm, 650mm->550mm, 550mm->450mm, 450mm->350mm, 350mm->250mm. 250mm->150mm

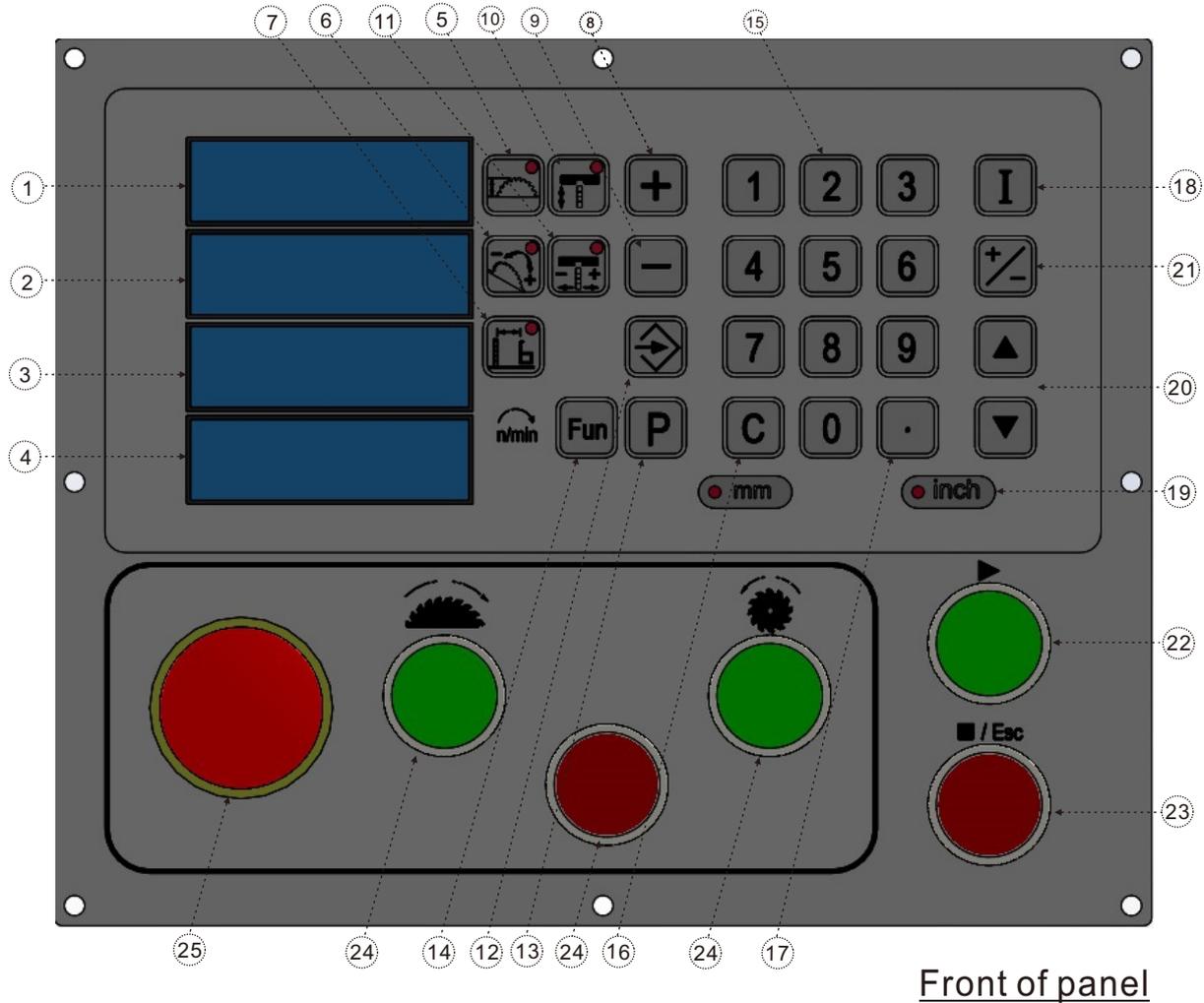
3rd Step for 8 points in 5mm distance only.

105mm->110mm, 110mm->115mm, 115mm->120mm, 120mm->125mm, 125mm->130mm, 130mm->135mm, 135mm->140mm, 140mm->145mm, 145mm->150mm, 150mm->155mm

4th Step for 8 points in 5mm distance only

155mm->150mm, 150mm->145mm, 145mm->140mm, 140mm->135mm, 135mm->130mm, 130mm->125mm, 125->120mm, 120mm->115mm, 115mm->110mm, 110mm->105mm

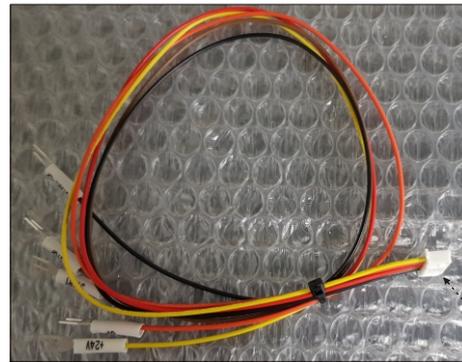
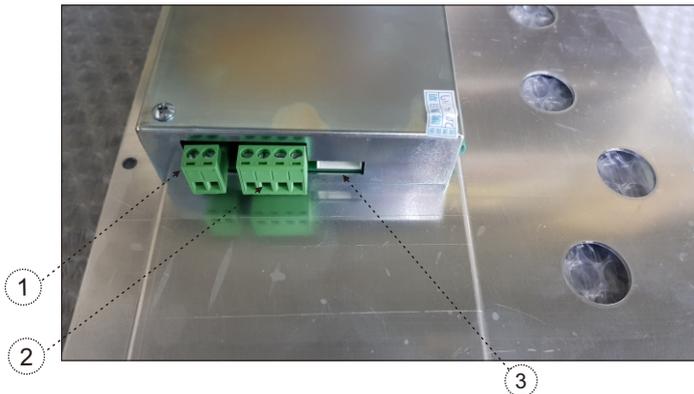
1.2 Panel key functions



Front of panel

Instruction of panel key function	
① Saw blade Up/Down axle display. (Unit:0.0mm / 0.000inch)	⑭ Function key.
② Saw blade tilting display. (Unit:0.0°)	⑮ Digit entry key.
③ Cutting width axle display. (Unit:0.0mm / 0.000inch)	⑯ Digit clear key.
④ Screen for RPM show, Function Keys, Adjustment data on scoring saw blade and Error message.	⑰ Decimal point key.
⑤ Saw blade Up/Down axle selection key.	⑱ Data input confirm key.
⑥ Saw blade tilting selection key.	⑲ mm/inch selection key.
⑦ Cutting width axle selection key.	⑳ Up and down function buttons.
⑧ Manual operation to increased size.	㉑ Positive and negative function keys.
⑨ Manual operation to decreased size.	㉒ Auto start button.
⑩ Scoring saw blade up/down key.	㉓ Stop all function keys.
⑪ Scoring saw blade forward/back key.	㉔ Start stop button.
⑫ Memory set selection key.	㉕ Emergency stop button.
⑬ Recall set selection key.	

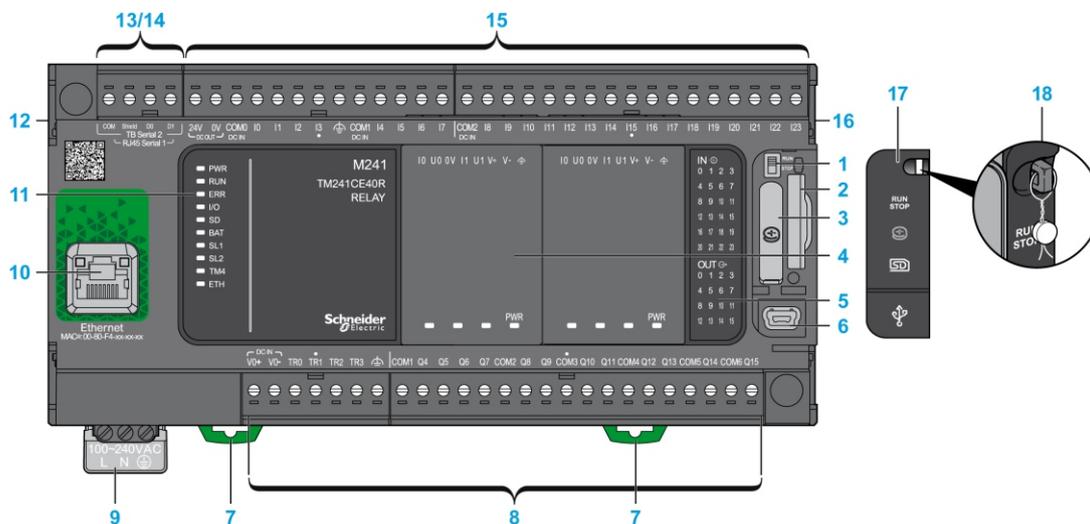
1.Product Introduction



Back of panel

Blu-ray panel											
NO	1		2				3				
NAME	DC24V IN Power supply		RS485 Communication terminal block		JOG+ Signal output terminal block		Start up/Stop Output/Input signal terminal block				
PIN NO.	1	2	1	2	3	4	1	2	3	4	5
FUN.	+20V	0V	D+	D-	JOG+	JOG-	+20V	0V	ST-in	SP-in	ST-out
Remarks	DC24V Input power (Control board power supply)		ModbusRTU		sink Output		DC24V Output DI/DO Use of signal wiring		Sink Input	Sink Input	Sink Output
Remarks: 1 · To: 2P+4P+2.50*5P											

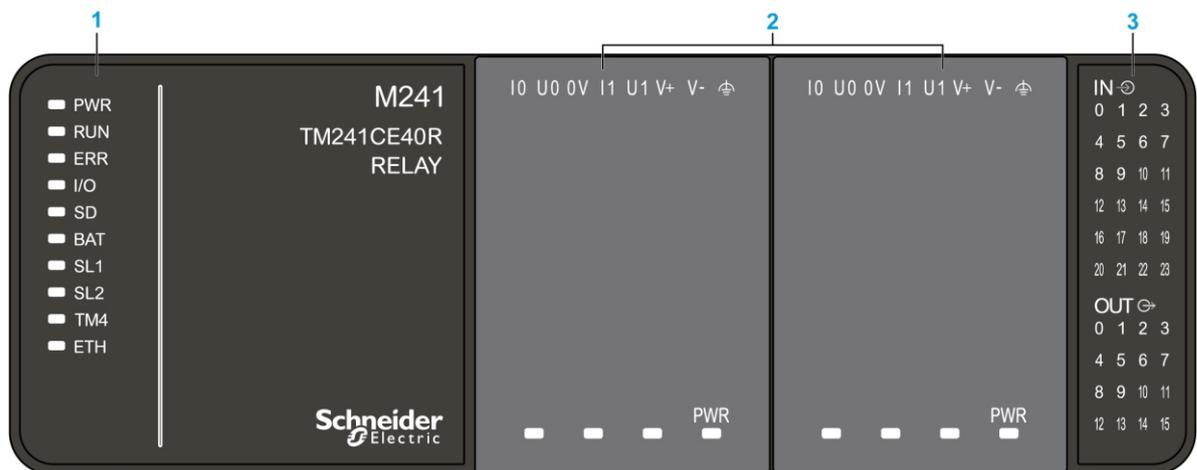
1.3 Console appearance and functionalities



Numbering	Description
1	Run/Stop switch
2	SD card slot
3	Battery holder
4	Cartridge slot
5	LEDs for indicating I/O states
6	USB Mini-B programming port/For terminal connection to a programming PC(EcoStruxure Machine Expert)
7	Clip-on lock
8	Embedded relay outputs · Embedded fast transistor outputs · Output removable terminal block

Numbering	Description
9	100...240 Vac 50/60 Hz power supply
10	Ethernet port/Type RJ45(RS-232orRS-485)
11	Status LEDs
12	TM 4 bus connector
13	Serial line port 1/Type RJ45(RS-232orRS-485)
14	Serial line port 2/Screw terminal block type(RS-485)
15	Embedded digital inputs · Input removable terminal block
16	TM 3/TM 2 bus connector
17	Protective cover(SD card slot, Run/Stop switch, and USB mini-B programming port)
18	Locking hook (Hook not included)

Status LEDs



1. System status LEDs
2. Cartridge status LEDs
3. I/Os status LEDs

The following table describes the system status LEDs

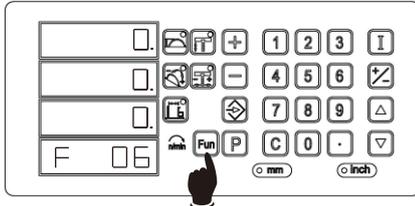
Label	Function Type
PWR	Power
RUN	Machine status
ERR	Error
I/O	I/O error
SD	SD card access
BAT	Battery
SL 1	Serial line 1
SL 2	Serial line 2
TM 4	Error on TM 4 bus
ETH	Ethernet port status

2. Operational functions

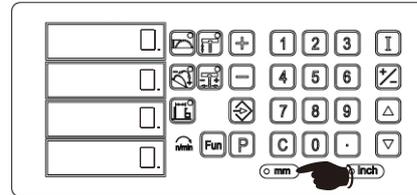
2.1 Metric and Inch Switch

1. mm and inch switch” is available on the keypad

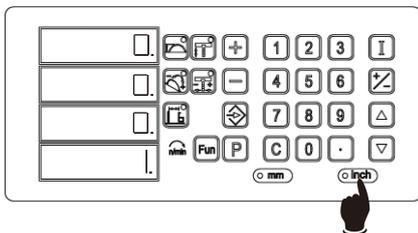
2. Press “FUN” till shows F06 , press 0 for metric unit (indication lights of mm ON) ,
press 1 for inch unit (indication lights of inch ON)



Press “FUN” till shows F06



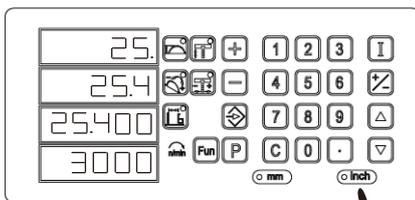
Press 0 for metric unit (indication lights of mm ON)



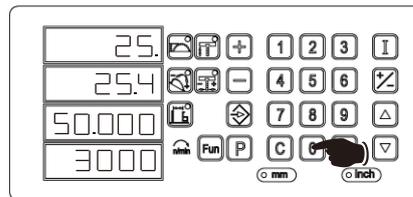
Press 1 for inch unit (indication lights of inch ON)

2.2 Instruction for Inch value set

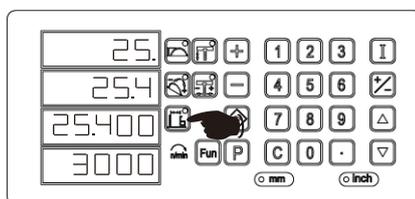
1. Inch value can be set to three digits after point. If the value need to be changed please set to third decimal place.
2. Tack two-axis for example of operational procedure, assume it's now in inch unit and the fence value is going to be changed from 25.4 inch, which is the present value shown on the screen to 50.8 inch
During the operation, you can press the ■/ESC key to cancel the operation. Please see the following illustrations:



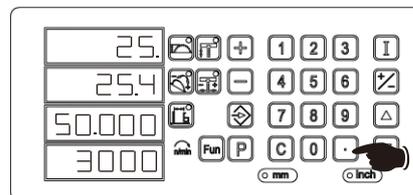
The current unit is inch.



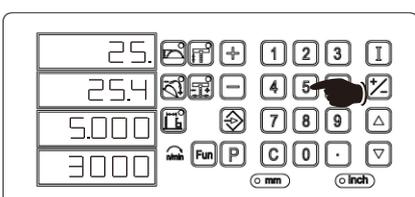
Step3:
Press 0 key, “50.000” is displayed and “50” flashes.



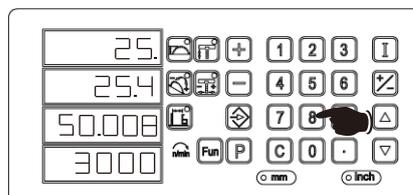
Step1:
Press 5 key, indicator light up.



Step4:
Press 0 key, “50.000” is displayed and “000” flashes.

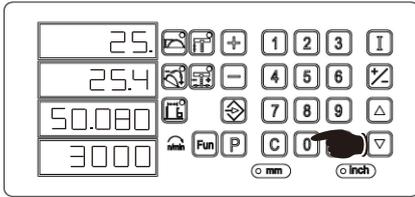


Step2:
Press 5 key, “5.000” is displayed and “5” flashes.

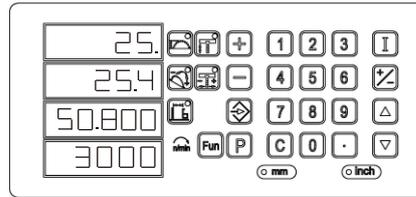


Step5:
Press 8 key, “50.008” is displayed and “008” flashes.

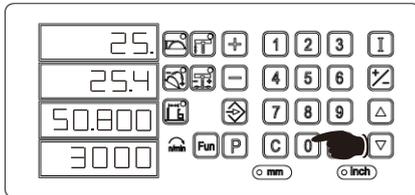
2. Operational functions



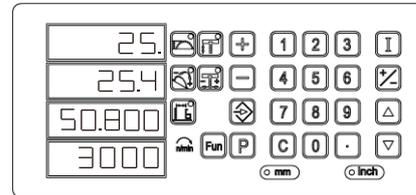
Step 6:
Press **0** key,
"50.080" is displayed
and "080" flashes.



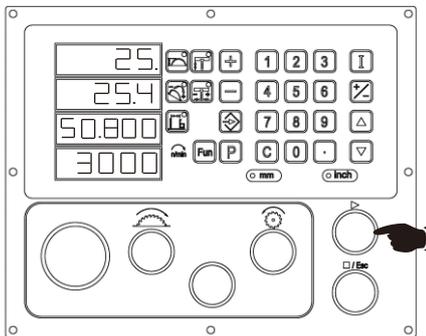
Step 9:
The cutting width axle
move to setting place.



Step 7:
Press **0** key,
"50.800" is displayed
and "800" flashes.



Step 10:
The operation is done.

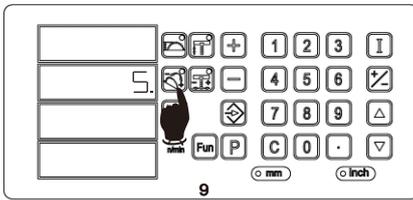


Step 8:
Press **▶** key,
"50.800" is displayed.

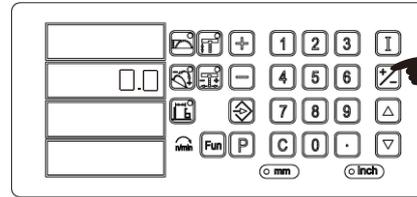
2. Operational functions

2.3 Positive and negative value input setting

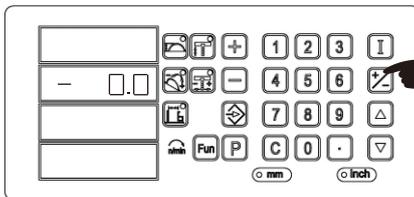
Switch the Positive and Negative value by press +/- key



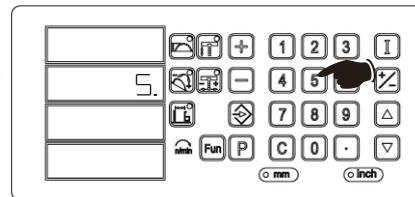
Step 1: Press key, and the function lights ON



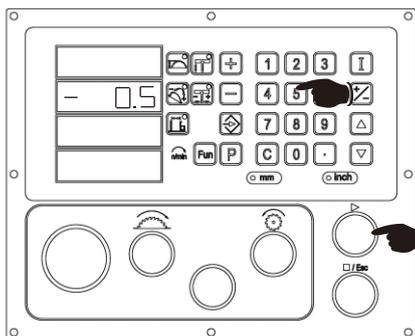
Step 4: Press "+/-" key to switch Positive or Negative



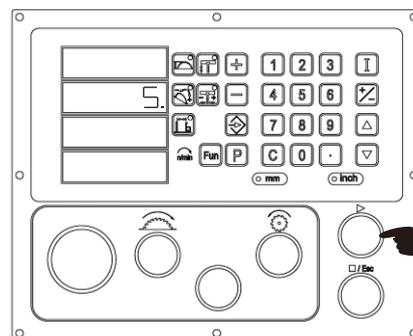
Step 2: Press "+/-" key to switch Positive or Negative



Step 5: Press key



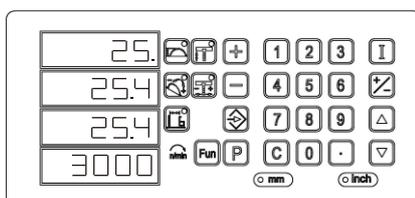
Step 3: Enter the number key to set the value



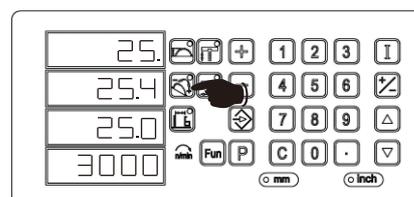
Step 6: Enter the number key to set the value

2.4 Current Unit calibration (Operate under protective mode)

1. The controller can perform single axle calibration or calibration of 3 axles at the same time. You can select any axle without the need of cancellation. During size adjustment, in case the display value does not match with the actual position of the work platform, use this function to calibrate. Please consult the manufacturer before performing calibration.
2. An example is made for the two-axle operation, supposing that the Saw Blade tilting display indicates 25.4 deg., Cutting width axle display indicates 25.0mm, and that you want to calibrate them into 26.1 deg. and 26.4mm. During the calibration, you can press /ESC key to cancel the operation. Please see the following illustrations:

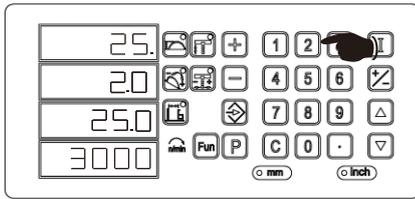


The current unit.

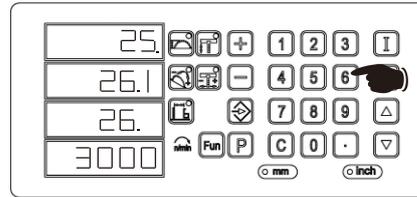


Step 1: Press key, now the indicator displays "25.4".

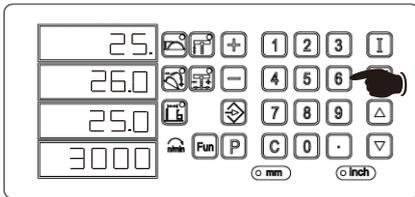
2. Operational functions



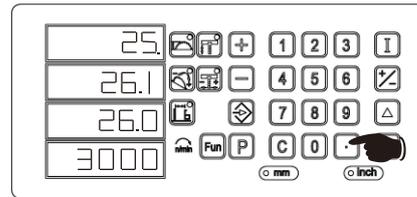
Step 2:
Press **2** key, "2" is displayed and flashes.



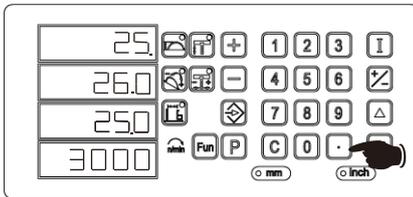
Step 8:
Press **6** key, "26" is displayed and flashes.



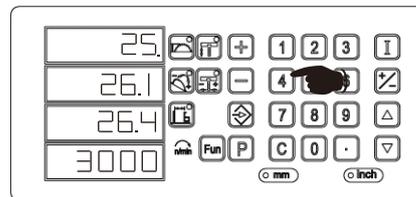
Step 3:
Press **6** key, "26" is displayed and flashes.



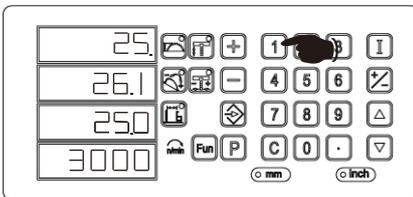
Step 9:
Press **.** key, "26.0" is displayed and all are flashing.



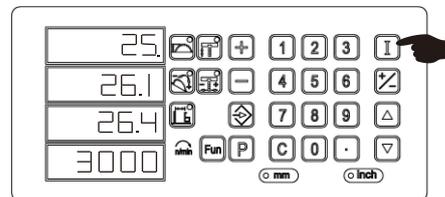
Step 4:
Press **0** key, "26.0" is displayed and all are flashing.



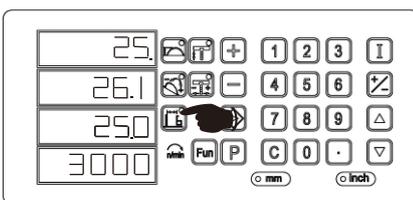
Step 10:
Press **4** key, "26.4" is displayed and all are flashing.



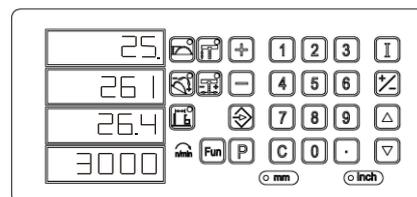
Step 5:
Press **1** key, "26.1" is displayed and flashes.



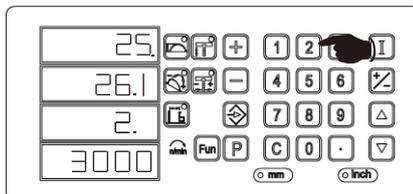
Step 11:
Press and hold **I** key, until the display stops flash.



Step 6:
Press **25.0** key, indicator light up, display is "25.0" in constant. Now the **25.0** indicator goes out, the display continues to flash.



Step 12:
The display stops flash, **25.0** key indicator goes out, and the calibration is done.

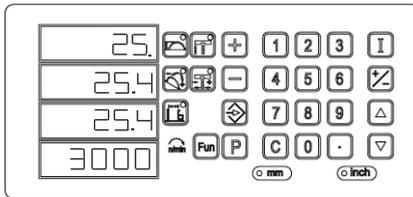


Step 7:
Press **2** key, "2" is displayed and flashes.

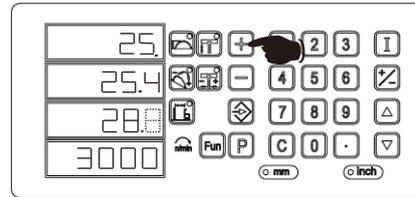
2. Operational functions

2.5 Manual operations of \oplus and \ominus keys

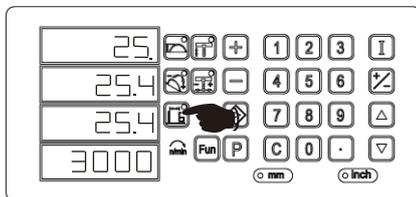
1. This function can be used for micro-adj the initial workpiece or for part replacement. Cutting width axle moves at a slow speed during this function; any of the 5 axles can be selected at any time without the need of cancellation.
2. Select the axle to be micro-adj; press \oplus key to increase the value in the display, press \ominus key to decrease the value in the display.
3. During the operation, you can press the \blacksquare /ESC key to cancel the operation. Please see the following illustrations:



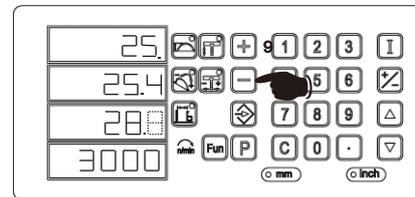
Current unit.



Step 2:
Press \oplus key to increase value in the display.



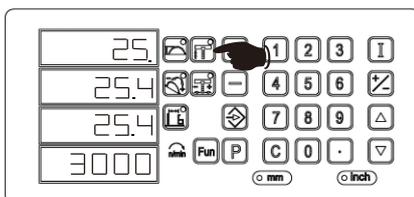
Step 1:
Press \blacksquare key.
Now the indicator lights up.



Step 3:
Press \ominus key to decrease value in the display.

2.6 Micro-adj up/down and horizontal of scoring saw blade

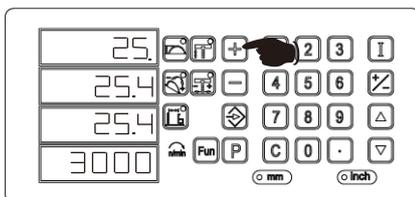
1. This function can be used for micro-adj up/down and horizontal of scoring saw blade.
2. Select the scoring saw blade to be micro-adj up/down, press \oplus key to go up the scoring saw blade, press \ominus key to go down the scoring saw blade.
Select the scoring saw blade to be micro-adj horizontal, press \oplus key once to backward the scoring saw blade for 0.05 mm, press \ominus key once to ahead the scoring saw blade for 0.05mm, and the value show in the display.
3. During the operation, you can press the \blacksquare /ESC key to cancel the operation. Please see the following illustrations.



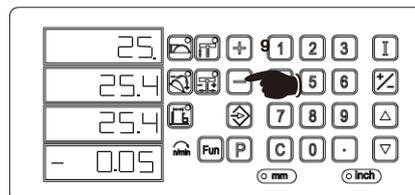
Step1:
Press \blacksquare key,
indicator light up.



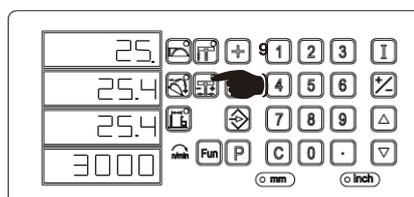
Step4:
Press \oplus key onetime,
scoring saw blade
go backward 0.05mm,
"0.05" is displayed.



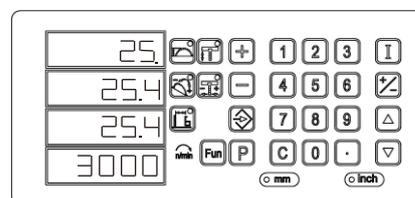
Step2:
Press \oplus/\ominus key,
scoring saw blade
go up/down.



Step5:
Press \ominus key onetime,
scoring saw blade go
ahead 0.05mm, "0.05"
is displayed.



Step3:
Press \blacksquare key,
indicator light up.

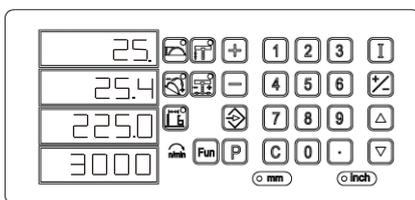


Step6:
Scoring saw blade
micro-adj completed.

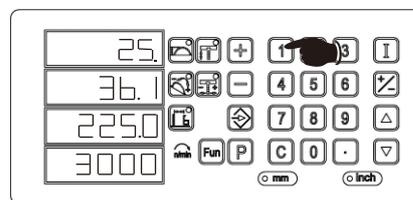
2. Operational functions

2.7 Automatic Operation Operators shall read this carefully.

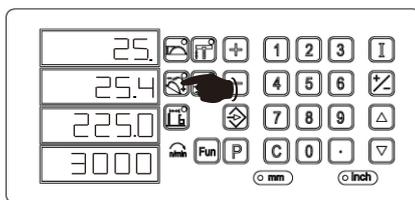
- This controller can perform automatic positioning of single axle or of 3 axles at the same time. You can select any axle without the need of cancellation. You only need to enter the position you want and press **▶**.key to fulfill the operation. If you choose to move the 3 axles at the same time, the Saw Blade tilting axle and Side plate axle will move to the set point first. When the Saw Blade tilting axle reaches and stops at the set position, the Saw Blade Up/Down axle will start to move to the set position. During the movement, when the Side plate axle enters the opposite safety distance, it will stop, and the display panel will flash; at this time, it is required to wait for the other axles to move to the set position, and then the **▶**.key indicator will go out, and you can proceed with inching, by pressing and holding the **▶** key, to move to the required position. For ensuring safety, when using the inching function, make visual contact of the movement to prevent collision and damage of the fence and the saw blade.
- An example is made for the two-axle operation, supposing that the Saw Blade tilting display indicates 25.4 deg., the cutting width axle display indicates 225.0mm, and that you want to move them into 36.1 deg. and 326.4mm. During the operation, you can press the **■**/ESC key to cancel the operation. Please see the following illustrations:



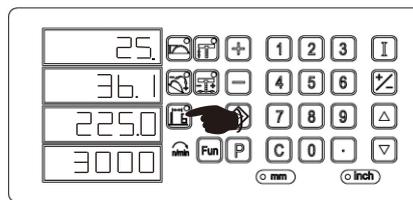
Current unit.



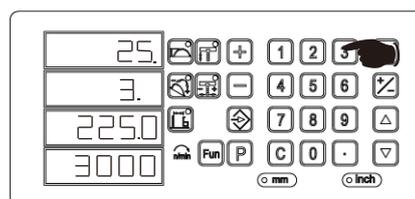
Step 5:
Press **1** key, "36.1" is displayed and flashes.



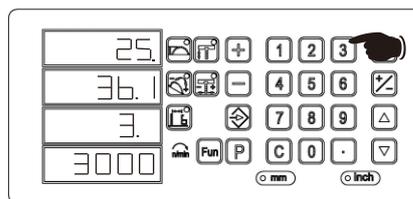
Step 1:
Press **2** key, now the indicator displays "25.4".



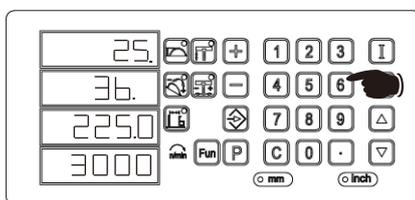
Step 6:
Press **7** key, indicator lights up, display is "225.0" in constant, Now the **7** indicator goes out, the display continues flashing.



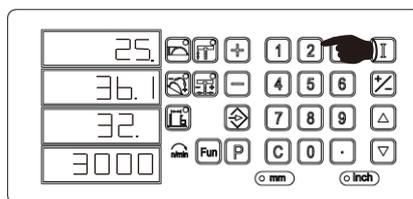
Step 2:
Press **3** key, "3" is displayed and flashes.



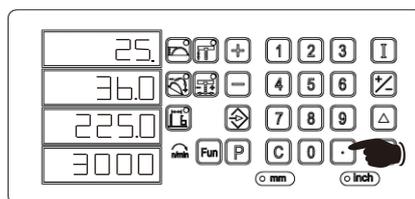
Step 7:
Press **3** key, "3" is displayed and flashes.



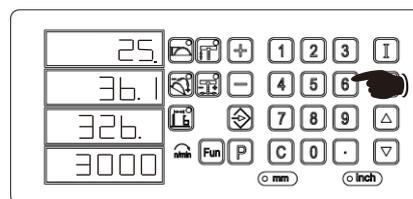
Step 3:
Press **6** key, "36" is displayed and flashes.



Step 8:
Press **2** key, "32" is displayed and flashes.

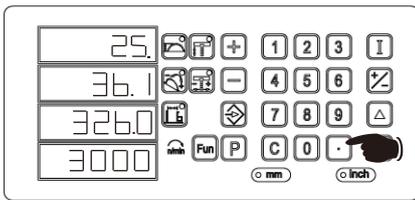


Step 4:
Press **0** key, "36.0" is displayed and all are flashing.

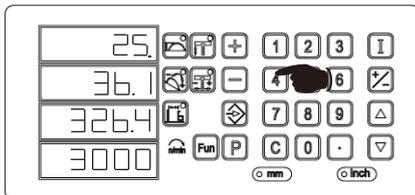


Step 9:
Press **6** key, "326" is displayed and flashes.

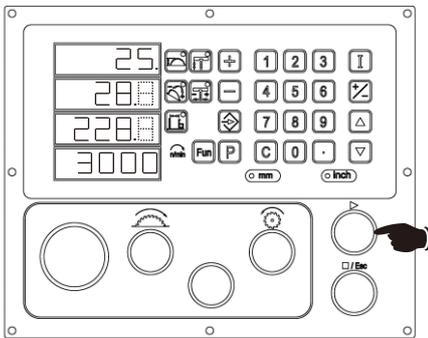
2. Operational functions



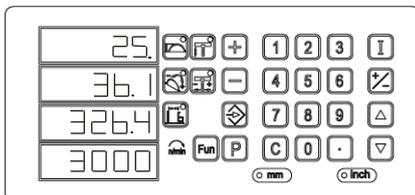
Step 10:
Press **.** key, "326.0"
is displayed and all
are flashing.



Step 11:
Press **4** key, "326.4"
is displayed and all
are flashing.



Step 12:
Press **▶** key, the
start indicator lights
up, the display stops
flashing, the **▶**
indicator goes out,
and movement starts
toward the set
position.

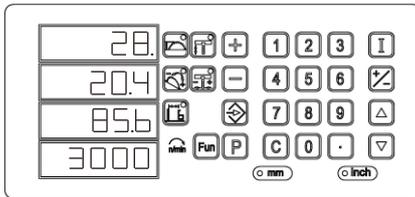


Step 13:
Reach the set
position and complete
the positioning.

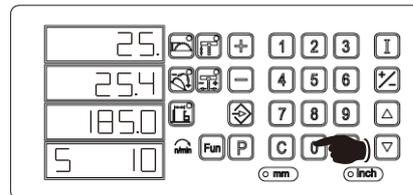
2.8 Memory and recall setup operation

- The controller is capable of saving the currently displayed values or preset values into the memory by groups. If the value displayed in the display exceeds the safety range, the memory function cannot be performed. As for the group selection, you only need to select the group of dimensions that you desire to position to, then pressing the **▶** key will automatically carry out the positioning. When in the Memory and Recall mode, digit keys can be directly pressed for selecting the desired data; **▲** key and **▼** key can also be used for increasing or decreasing the value of the desired data, each press will add/deduct 1. All actions must be zeroed before performing Recall, otherwise the recall function will not work.
- The example is made for memory operation with preset data; assuming the current 3-axle data group is to be saved into memory S10, and then recall the P15 memory group for the dimension position of a subsequent workpiece. The **■**/ESC key can be pressed to cancel the operation. Please see the following illustrations:

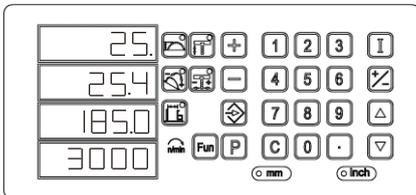
PS. The following is the memory example.



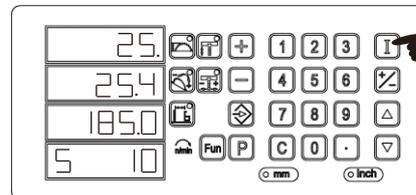
Current unit.



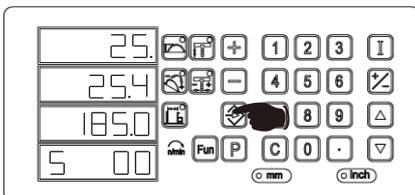
Step 4:
Press **0** key, "S10" is displayed and flashes.



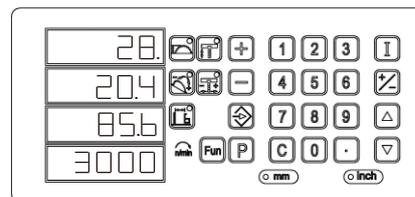
Step 1:
enter the values that you desire to save.
(The same method as entering for calibration.)



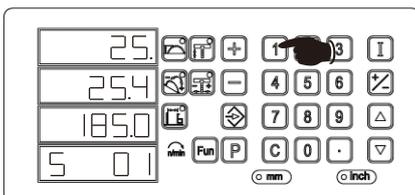
Step 5:
Press and hold **I** key until the 4 display panels stop flash.



Step 2:
Press and hold **8** key until the memory group display shows "S00", now the indicators of the previously selected axes will go off, all the 4 display panels will flash, except "S".



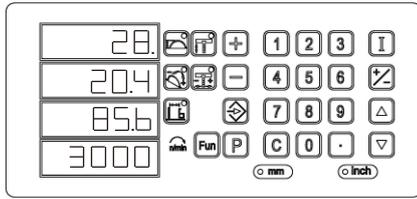
Step 6:
When the 4 display panels stop flashing, the memory saving is complete.



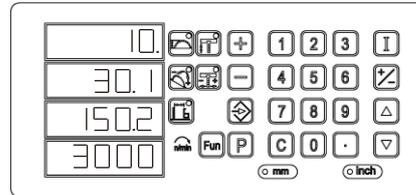
Step 3:
Press **1** key, "S01" is displayed and flashes.

2. Operational functions

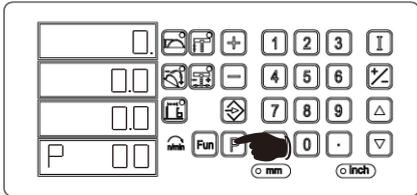
PS. The following is the example of memory recall.



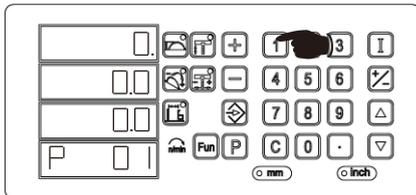
The current unit.



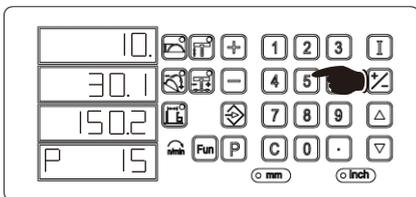
Step 6:
Reach the set position and complete the positioning.



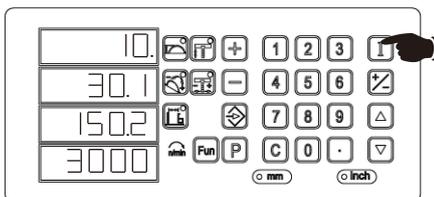
Step 1:
Press and hold **P** key until "P00" appears in the memory display. At this time the fourth display shows "P 00" and is flashing except "P".



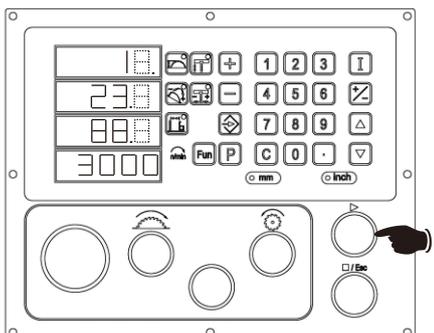
Step 2:
Press **1** key, "P 01" is displayed and flashes.



Step 3:
Press **5** key, "P 15" is displayed and flashes.



Step 4:
Press and hold **I** key until the three axle display panels flash.



Step 5:
Press **▶** key, the indicator lights up, display panels stop flashing, and movement starts toward the set position.

3. Failure symptoms and troubleshooting

3.1 Failure message cross reference table

Message	Cause	Troubleshooting
AL-01	External safety switch / EMG was touched/pushed.	1.Check external safety switch or EMG button 2.Reset external safety switch and internal protection switch by push ■/ESC
AL-02	No movement after the main saw blade up/down.	Power off the unit and check if motor is overheated. If so, Consult related technician to check. If everything is normal, then power ON and operate.
AL-03	Main saw blade don't lift to the target position.	
AL-04	No movement after the main saw blade tilting is on.	
AL-05	Main saw blade don't tilt to the target position.	
AL-06	No movement after the rip fence is on.	
AL-07	Rip fence don't movement to target position.	
AL-08	Positioning input value exceeds software limit.	
AL-09	No movement for scoring saw blade up/down movement.	Power off the unit and check if motor is overheated. If so, Consult related technician to check. If everything is normal, then power ON and operate.
AL-10	No movement for scoring saw blade +/- direction.	
AL-13	Backboard blocked.	remove the Obstructions
AL-66	Enter safe area.	Hold ► to run the fence within safety area also watch the distance between blade and rip fence
AL-98	Failure in the communication connection.	This message indicates failure in the communication connection between the console and the operation panel.
AL-99	Data transmission error.	Power off the unit, check for detachment or loosening in the communication connections. If all are normal, contact the manufacturer.

The above breakdowns need to be operated by professional engineer.

3. Failure symptoms and troubleshooting

3.2 Controller troubleshooting

Display panel does not display	
Cause	Troubleshooting
1. Blown fuse in the control circuit.	Check if Saw Blade motor is working; if not, power off and replace new fuse, also check all the fuses in the unit.
2. The console power supply fails to supply DC24V.	Use DC voltmeter to measure the DC24V output. If the result is not normal, power off and replace with a new power supply, then power and operate.
3. Slackened connectors between the console and the operation panel.	Check if the connectors and plugs in the rear side of operation panel are detached or loose.
4. If the above items are checked and normal, consult the manufacturer.	
Values indicated in the display panel do not match with the actual movement of the platform.	
Cause	Troubleshooting
1. The ENCODER does not synchronize with motor.	Check if the coupling between the ENCODER and the console is loose or detached or damaged.
2. The ENCODER is partially damaged.	Use DC voltmeter to measure the A-phase and B-phase, and check if a variation of DC24V and 0V exists; if so, check if the A-phase and B-phase indicators on the console ENCODER connectors are switching normally. Abnormal switching shall mean partial damage in the ENCODER. Power off and replace with new ENCODER, and then power on and operate.
3. Slack connectors between the console and the ENCODER.	Check if the console ENCODER connectors and plug are partially loose or detached.
4. If the above items are checked and normal, consult the manufacturer.	
Axles fail to manually or automatically operated.	
Cause	Troubleshooting
1. The DC36V power supply to axle movement motors is not working, or the DC9V power supply to Cutting width axle low speed movement is not working.	Use DC voltmeter to measure the DC36V output or DC9V power supply for the Side Plate low speed output is normal. If not, power off the unit and replace with new power supply. Then power on and operate.
2. The ENCODER itself fails or the shaft coupler is loose or damaged.	Use DC voltmeter to measure the A-phase and B-phase, and check if a variation of DC24V and 0V exists; if so, check if the A-phase and B-phase indicators on the console ENCODER connectors are switching normally. Abnormal switching shall mean partial damage in the ENCODER. Power off and replace with new ENCODER, and then power on and operate.
3. Damaged or failure of axle movement motors or Side Plate brake.	Consult first with related technicians for inspection to see if the equipment is damaged.
4. Damaged or failure of Console internal relay or motor.	Press the key of the axle that cannot move, observe if the corresponding indicator on the console activates simultaneously with the pressing action. If this is normal, use a DC voltmeter to measure the output connector from console to motor, and check whether there is a DC36V or DC9V output while the indicator is lit. If there is no voltage, it shall mean the relay is damaged; if there is DC voltage, the motor may be damaged. For either case, consult the manufacturer.
5. Detachment or loosened connectors between the ENCODER or motor and the console.	Check if connectors between the ENCODER or motor and the console are detached or loose.
6. If the above items are checked and normal, consult the manufacturer.	

4.SPECIAL FUNCTIONS

4.1 Function Key illustration

Code	Function illustration	Note	
F00	Access to Function Key	More details check section 4.2	
F01	Main saw blade diameter set	The parameter need to be reset when the main saw blade is changed.	
F02	Main saw blade thickness set.		
F03	Main saw blade teeth thickness set.		
F04	Measurement set when rip fence is on horizontal  position	Operator can change measurement of A&B with the actual rip fence measurement. 【original set A=92.B=52】	
F05	Measurement set when rip fence is on vertical  position		
F06	Length Unit	0: mm 1: inch	
F10	Main saw blade up limit protection set	Please don't randomly change the original value set	
F11	Main saw blade down limit protection set		
F12	Main saw blade up/down parameter set		
F13	Set for main saw blade up in low speed		
F14	Set for main saw blade down in low speed		
F15	Set for main saw blade tilting upward limit protection		
F16	Set for main saw blade tilting downward limit protection		
F17	Main saw blade tilting parameter set		
F18	Set for main saw blade tilting in slow speed(long distance)		
F19	Set for main saw blade tilting in slow speed(long distance)		
F20	Set for main saw blade tilting in slow speed(long distance)		
F21	Set for Rip fence forward limit protection		
F22	Set for Rip fence backward limit protection		
F23	Rip fence parameter set		
F24	Set for Rip fence in low speed		
F25	Set for thread clearance compensation on Rip fence		
F26	Rip fence safe area set		
F27	Compensation set in A parameter		
F28	Compensation set in B parameter		
F29	Compensation set in C parameter		
F30	Brake time set		
F31	Set for machine warm-up time to stay		
F32	Set for machine warm-up cycle times(either on main saw blade up/down and tilting up/down, rip fence forward or backward)		
F33	Set for the thread clearance between tooth and tooth of scoring saw blade		
F34	On/off set for automatic up/down on scoring saw blade		0: off
F35	On/off set for main saw blade sensor		1: on
F36	Select the method of safety area		1: Interior determination(F22) 0: Exterior determination(sensor)
F37	Release the motor break of rip fence for 15 seconds		0: off 1: on
F38	Rip fence CRASH setting by TIME (unit:0.1 seconds)	Please don't randomly change the original value set	
F39	Rip fence CRASH setting by COUNTER		
F42	Set the main blade lifting speed		

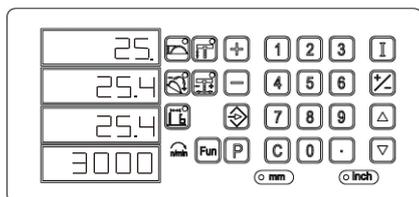
4.SPECIAL FUNCTIONS

4.1 Function Key illustration

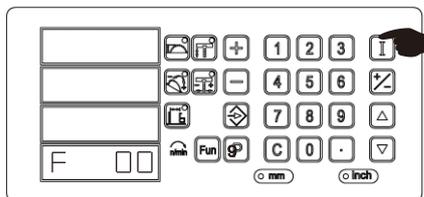
Code	Function illustration	Note
F43	Set the main blade descent speed	Please don't randomly change the original value set
F44	Set the main blade MICRO lifting speed	
F45	Set the tilting positive direction speed	
F46	Set the tilting negative direction speed	
F47	Set the tilting movement MICRO speed	
F48	Set the shortest distance of main saw lifting and positioning	
F49	Set the shortest distance of main saw tilt positioning	
F50	Set the shortest distance for positioning by the board	

4.2 Unlock Function Key

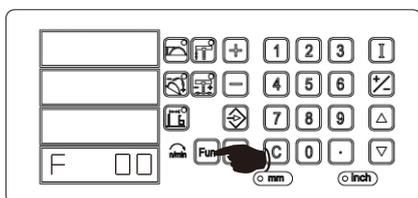
1. This function can be used for open the Function Key.F00=0(Basic operation)
- 2.Operation process input 1 :open F01~F06 function setting and correction function.
- 3.During the operation, you can press the /ESC key to cancel the operation. Please see the following illustrations:



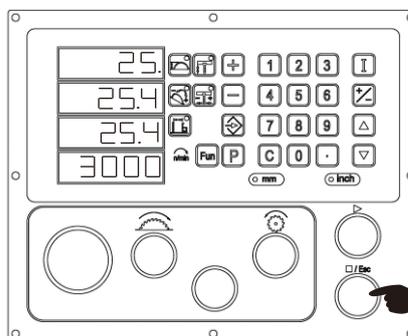
Current unit.



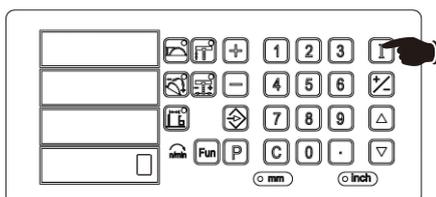
Step4:
Press  key, "F00" is displayed and "00" flashes.



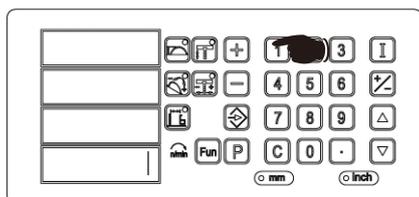
Step1:
Press  key, "F00" is displayed and flashes.



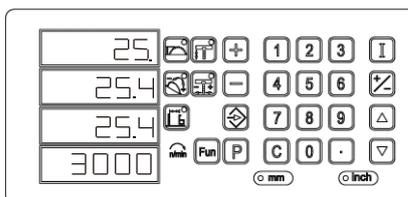
Step5:
Press /ESC key, current unit is displayed and the setting has done.



Step2:
Press  key, "0" is displayed and flashes.



Step3:
Press the value(0,1or7) to unlock and release function set. The value will be displayed on the screen and flash.

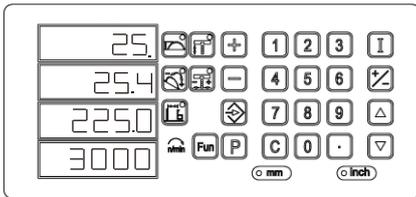


Step6:
Please repeat above steps for open the other Function Keys.

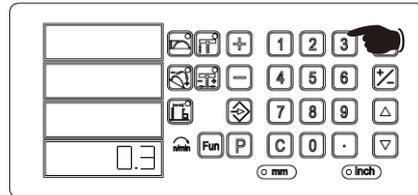
4.3 The method of parameter set

1. This function is for setting all the parameters.
2. Tack the operation process of main saw blade diameter set as an example, assume the current saw blade dia. is 305mm and the saw blade is change to 355mm, the main saw blade dia. has to be reset to 355mm. The set method for other parameter is the same.
3. During the operation, you can press the ■/ESC key to cancel the operation. Please see the following illustrations:

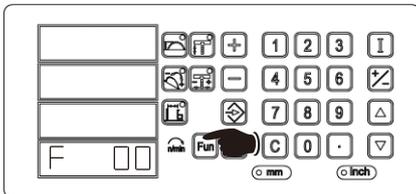
PS. The below diagrams are example of main saw blade dia. with parameter "F01".



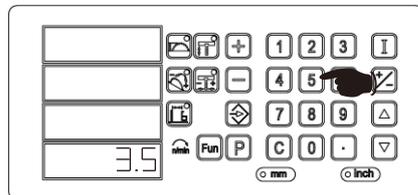
Current unit.



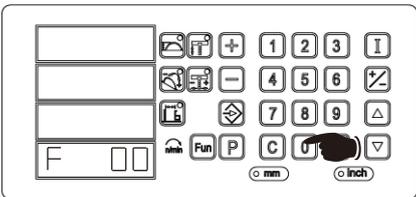
Step6:
Press **3** key, "0.3" is displayed and flashes.



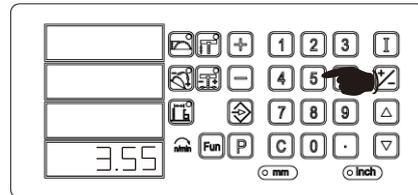
Step1:
Press **Fun** key, "F00" is displayed and "00" flashes.



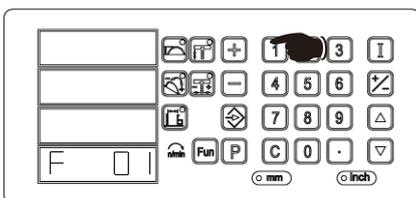
Step7:
Press **5** key, "3.5" is displayed and flashes.



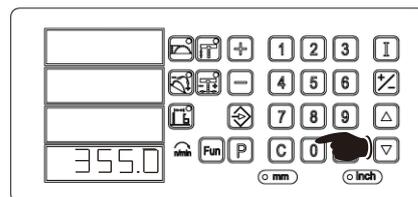
Step2:
Press **0** key, "F00" is displayed and "00" flashes.



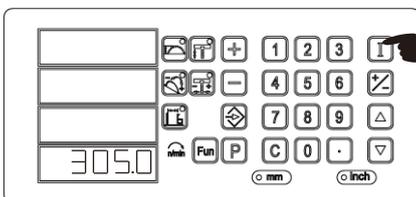
Step8:
Press **5** key, "3.55" is displayed and flashes.



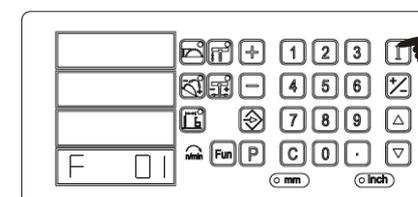
Step3:
Press **1** key, "F01" is displayed and flashes.



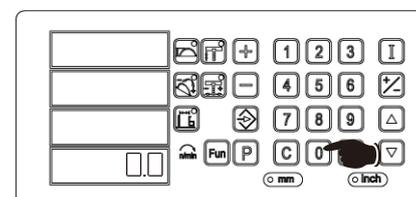
Step9:
Press **0** key, "355.0" is displayed and flashes.



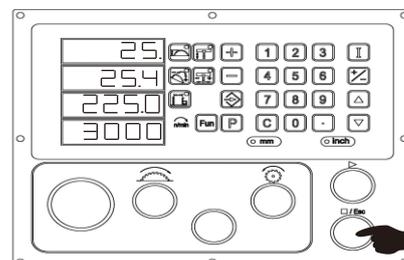
Step4:
Press **I** key, "305.0" is displayed and flashes.



Step10:
Press **I** key, "F01" is displayed and "01" flashes.



Step5:
Press **0** key, continuously to change the main saw blade dia. until "0.0" is displayed and flashes.



Step11:
Press **■/ESC** key, current unit is displayed. The setting is completed. Please repeat above steps for setting the other parameters.

CHAPTER 5

CLEAN / MAINTAIN

5-1 SLIDING TABLE MAINTENANCE.....	5-1
5-2 LUBRICATION	
5-2-1 LUBRICATION FOR MAIN SAW BLADE UP/DOWN.....	5-1
5-2-2 LUBRICATION OF ROTARY TABLE	5-2
5-2-3 LUBRICATION OF SLIDING UP AND DOWN OF THE SAFETY GUARD ..	5-2
5-3 EMERGENCY STOP & SAFETY CONNECTING SWITCH CHECKING	5-3
5-4 BRAKE CHECKING	5-3

5 MAINTAIN

5-1 SLIDING TABLE MAINTENANCE

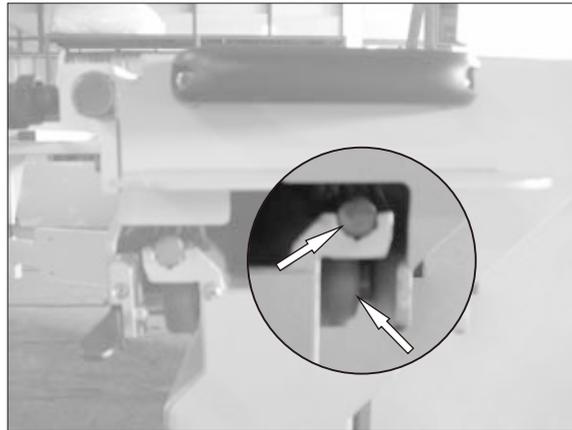


Fig.5-1

After work is finished, please clean the slide guide, rod guide, roller and contact surface between roller and lower slide base as shown in Fig. 5-1 to secure good accuracy.

5-2 Lubrication

5-2-1 Lubrication for main saw blade up/down

Must turn off machine when maintenance and lubricate machines

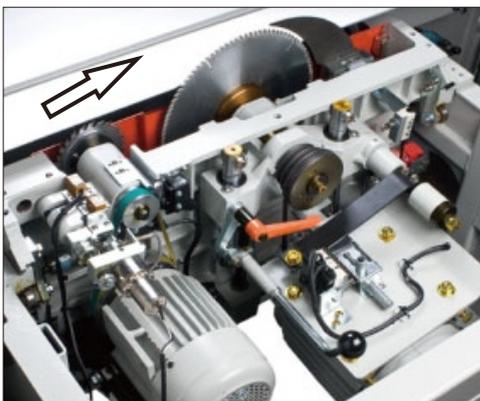


fig. 5-2-1 -1

- clean dust or wood chips on the roller.
- lubricate after clearance (please refer to fig.5-2-3-2 for lubrication selection)
- maintenance regularly on above mentioned touched surface ensures the accuracy of machine.
- clean daily after usage.

5-2-2 Lubrication of rotary table



Fig.5-2-2-1

- clean machine daily after usage it helps machine in best condition.
- clean dust or wood chops on the roller.
- lubricate after clearance (please refer to below chart 5-2-3-2 for lubrication selection)
- maintenance regularly on above mentioned touched surface ensures the accuracy of machine.

5-2-3 Lubrication of sliding up and down of the safety guard



Fig.5-2-3-1

- keep clean for the safety guard roller (as shown on the left photo)
- lubricate roller (please refer to below chart 5-2-3-2 for lubrication selection)

ISO DIS-3498	LUBRICATING CYCLE	LUBRICATING WAY
XM2	6 months	Lubricate on the machine
BRAND		
MOBIL	ESSO	SHELL
MOBILUX 2	BEACON 2	ALVANIA R2

LIST 5-2-3-2

5-3 EMERGENCY STOP & SAFETY CONNECTING SWITCH CHECKING [CE]

★ Check Emergency Stop and Safety Connecting Switch twice every week.

The checking steps as follows :

1. Connect to power. Push main saw START button and scoring saw button to run the machine.
2. Push Emergency STOP. Check if the main saw and scoring saw's brake stops in 5 seconds.
3. Push any key and there will be no any action.
4. Release Emergency STOP button, otherwise stop operating machine at once and send it to the factory or inform the factory to repair it.

Check the safety connecting switch as follows :

1. Connect to power. Push main saw START button and scoring saw button to run the machine.
2. Open the cover and check if the main saw or scoring saw stopped running.
3. Push any key and there will be no any action.
4. Close the cover, push main saw START button and main saw UP or DOWN button. If they acts, it means OK.
5. Open the door at the back of the machine and check if the main saw or scoring saw stopped. Repeat 3.
6. Close the door, push main saw START button and main saw UP or DOWN button. If they acts, it means OK, otherwise stop operating machine at once and send it to the factory or inform the factory to repair.
7. PUSH the main saw OFF button or the scoring saw OFF button to stop running.

5-4 BRAKE CHECKING [CE]

While pushing Emergency STOP Brake button, the main saw and scoring saw will stop immediately. Check the brake twice every week. If the main saw or scoring saw doesn't stop for over 5 seconds, please send it to the factory or inform the factory to repair it.

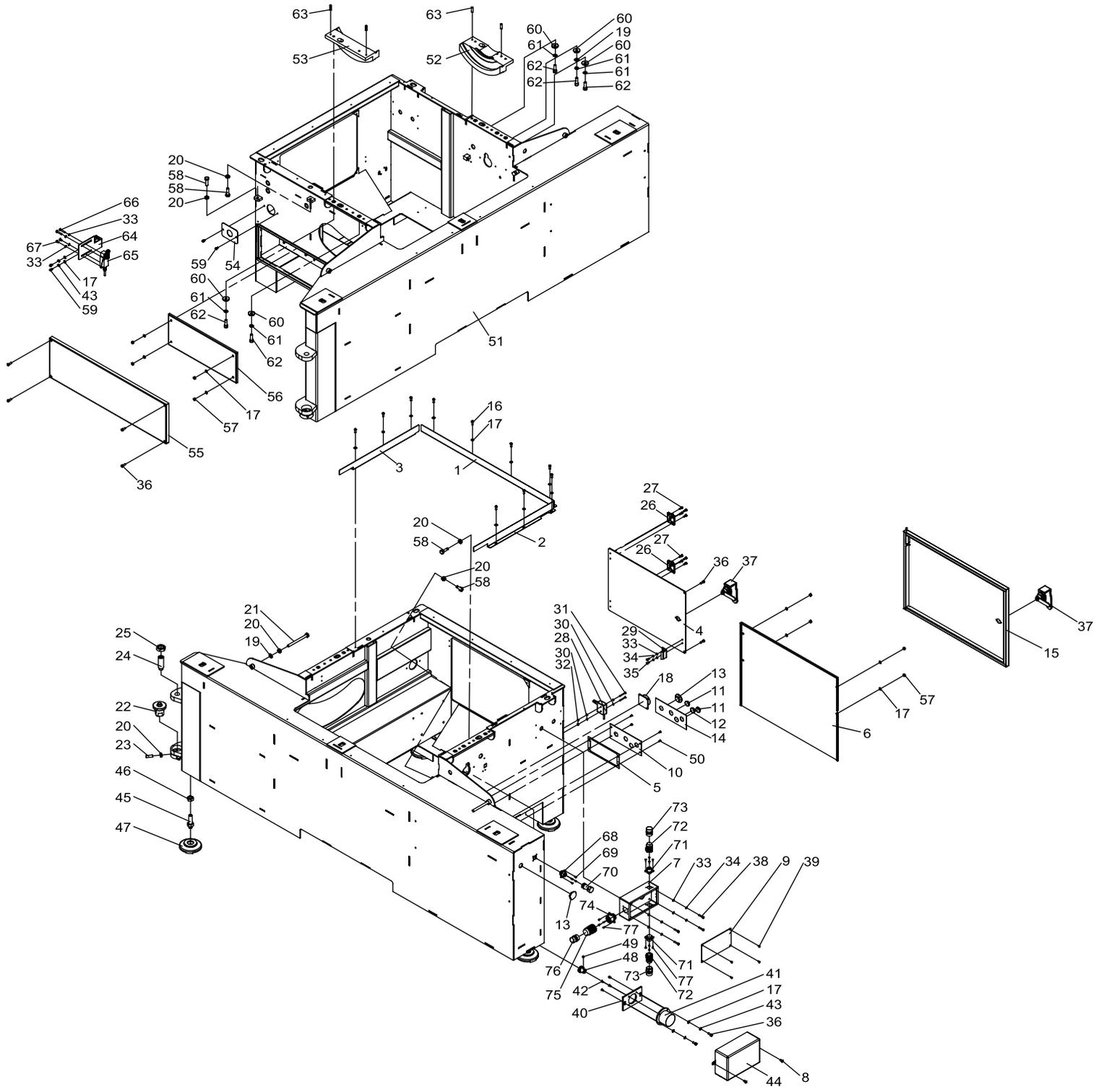
CHAPTER 6

TROUBLE SHOOTING GUIDE

6-1 TROUBLE SHOOTING GUIDE	6-1
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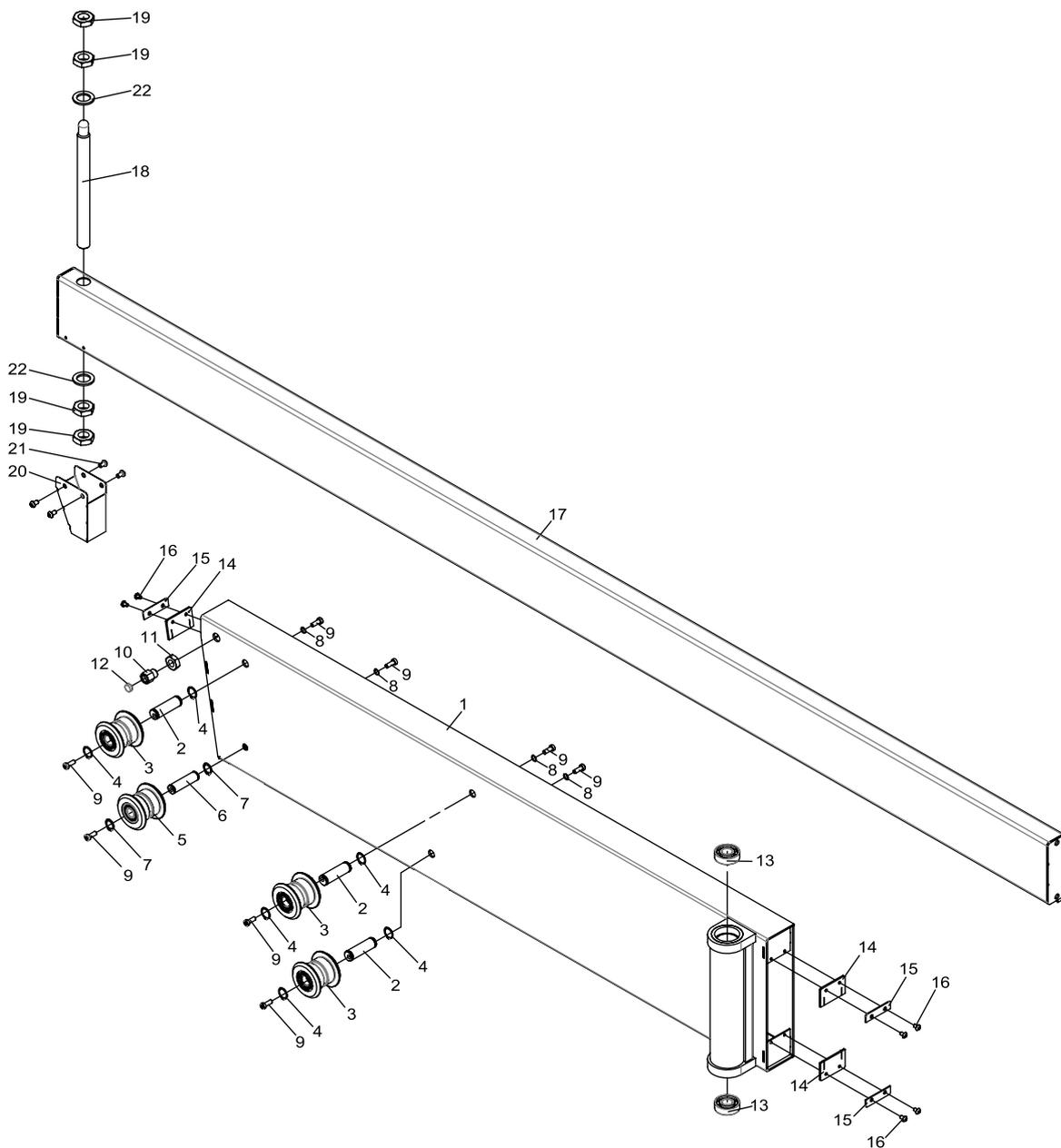
6 TROUBLE SHOOTING GUIDE

TROUBLE	CAUSE	GUIDE
Display can't show	1. Check if power or voltage is normal.	Input correct voltage.
	2. If above 1 is correct, it means controller is damaged.	Send it to the factory for repair.
Display can show digit but the digit can't be changed as per machine's size.	1. If encoder is used, please check if encoder runs together with the machine.	Check if the shaft connector of encoder and machine drops or is damaged. If yes, replace it or repair it.
	2. Check if A.B. phase has DC12V or 0V change. Please measure it with wattmeter.	If A.B phase doesn't change, please replace the encoder.
Push START button but machine doesn't act.	<ol style="list-style-type: none"> 1. No power. 2. Emergency STOP button is pushed. 3. Voltage is incorrect. 4. Unlock the orange guard. 	<ol style="list-style-type: none"> 1. Check power. 2. Release Emergency STOP button. 3. Check voltage unit. 4. Fold down the orange guard.
Overheat	Overload isn't set or faulty.	Contact service person or factory.



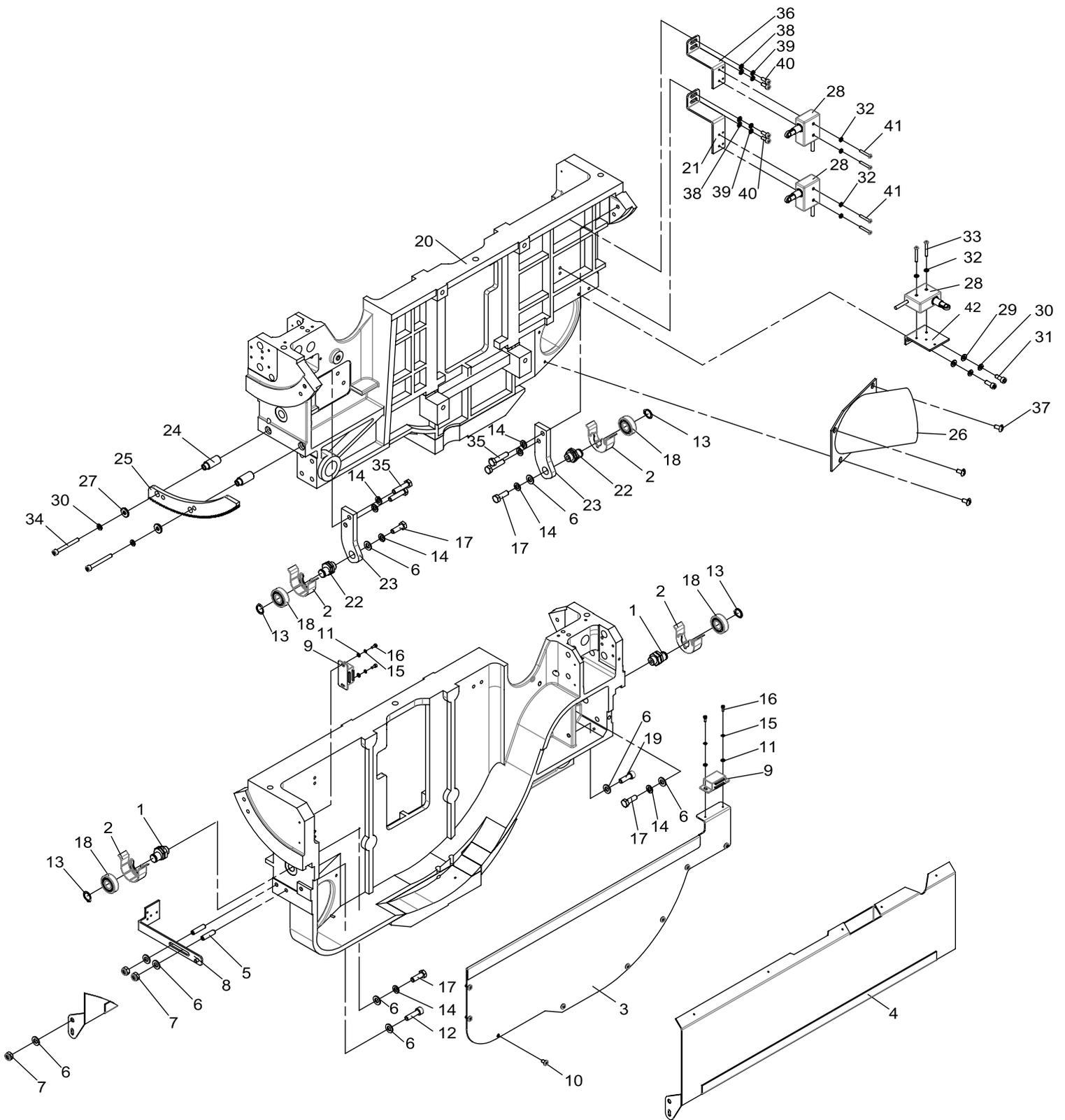
NO	FIG.NO.	DESCRIPTION	SPEC
1	20211103-0	Shutter	
2	20211101-0	Shutter	
3	20211102-0	Shutter	
4	20211002-0-56	Rear door panel	
5	LST-A039	Washer	
6	LST-A010C	Electron Part	
7	ST-T038B	Adapter box	
8	ST-C005A	Cover	
9	ST-T039A	Transfer box cover	
10	ST-A138	Aluminum plate	
11	416010047	Button, ON	ZB4-BW33+ZB4-BZ10(1A)
12	416010048	Button, OFF	ZB4-BA4+ZB4-BZ10(1B)
13	416010046	Emergency button	ZB4-BS844+ZB4-EZ10(1B)
14	ST-A142	Mask	
15	LST-A007F	Electron Door	
16	401032032	Button head screw	M6x16
17	401140010	Washer	Ø6
18	416010045	Power Switch	ZH-28-2-80-BY
19	401140005	Washer	Ø10
20	401101006	Hex Nut	M10
21	401010047	Hex Bolt	M10x120
22	20213005-0	Support adjustment seat	
23	401072069	Set screw	M10x30
24	20213004-0	Lower positioning shaft	
25	401101010	Hex nut	M24
26	402090002	Aluminum Hinges	CL-208
27	401022028	Cap screw	M5x12
28	416040002	Limit switch	TZ-7312
29	20213003-0	Touch block	
30	401140001	Washer	M4
31	401042015	Phillips Head Screw	M4x35
32	401101002	Hex nut	M4
33	401140002	Washer	Ø5
34	401150002	Lock Washer	Ø5
35	401022027	Cap screw	M5x10
36	401022053	Cap screw	M6x16
37	402010025	Handle	JHA-172-2H
38	401022033	Cap screw	M5x25
39	401032008	Button head screw	M4x8

NO	FIG.NO.	DESCRIPTION	SPEC
40	ST405-105	Fixed Board	
41	415071113	Encoder	HSK-XA074
42	401042012	Phillips sunk head cap screw	M4x8
43	401150003	Lock Washer	Ø6
44	401032030	Button Head screw	M6x12
45	LST-A017	Levelng pads	
46	401101012	Hex Nut	M16
47	401260007	Adjust Base	
48	ST405-104	Gear	
49	401072033	Setscrew	M6X6
50	401051108	Countersink Hex Screw	M4x10
51	20211002-0	Saw frame body	
52	LST-A002A	Right slide base	
53	LST-A003	Left slide base	
54	ST-T047B	Wire connector	
55	20212004-0	Electrical box cover	
56	20212005-0	Electrical box bottom plate	
57	401101004	Hex Nut	M6
58	401010038	Hex Bolt	M10x35
59	401032029	Round head screw	M6x10
60	RH-2040	Washer	
61	401150005	Lock washer	Ø10
62	401022105	Cap screw	M10x30
63	401200034	Fixed Ring	8x25
64	LST-A013	Switch fixing plate	
65	416040005	Micro-motion witch	ME-8014
66	401042105	Phillips sunk head cap screw	M5x30
67	401042008	Phillips Head Screw	M5x10
68	404070015	Electrical connector	PLS 20-7-RF
69	401022002	Cap screw	M3x8
70	414070016	Electrical connector	PLS 20-7 GPM3
71	414070007	Electrical connector	MS-3102A 14S-2S(4P)
72	414070006	Electrical connector	MS-3106A 14S-2P(4P)
73	414070014	Electrical connector	MES-0306 3/8"*6A
74	414070008	Electrical connector	MS-3102A 20-07S(8P)
75	414070004	Electrical connector	MS-3106A 20-7P(8P)
76	414070005	Electrical connector	MES-0312 3/8"*12A
77	401042020	Phillips head screw	M3x8



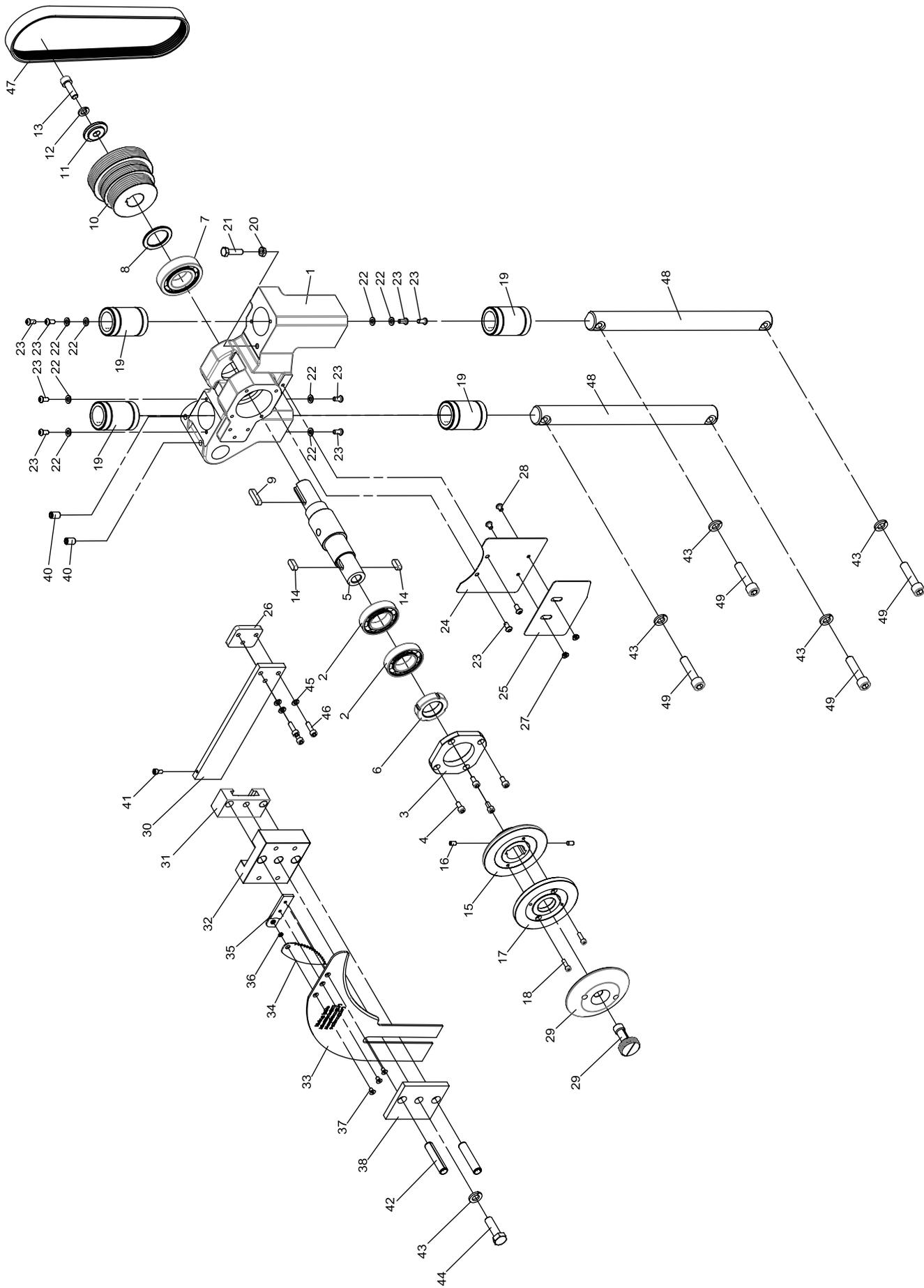
NO	FIG.NO.	DESCRIPTION	SPEC
1	LST-G001G	Crosscut Swing Arm	P26/P32
2	LST-G004	Adjustment shaft	
3	ST-J014K	Roller/Ball bearing	6003-ZZ TPI
4	401252012	Ext Retaining Ring	S-17
5	ST-J014L	Roller/Ball bearing	6202-ZZ TPI
6	ST-J015	Roller for shaft	
7	401252010	Retaining rings for shaft	S-15
8	401151002	Washer	Ø8
9	401212001	Low head capscrew	M8x16
10	LST-A008A	Housing for magnet	
11	401101008	Hex nut	M14

NO	FIG.NO.	DESCRIPTION	SPEC
12	402120001	Magnet	Ø12x5 S03302
13	403015133	Ball Bearing	6203-LLU TPI
14	LST-G003	Way wipers	
15	LST-G002	Locating plate	
16	401032016	Button Head Screw	M5x8
17	LST-G009B	Crosscut Swing Arm Extension(2220mm)	3.2
18	LST-G008	Threaded Shaft	M20xP2.5
19	401102002	Hex nut	M20-9.5t
20	ST-J023B	Cover plate	
21	401032029	Round head screw	M6x10
22	LST-G032	Washer	Ø22-Ø34-3t



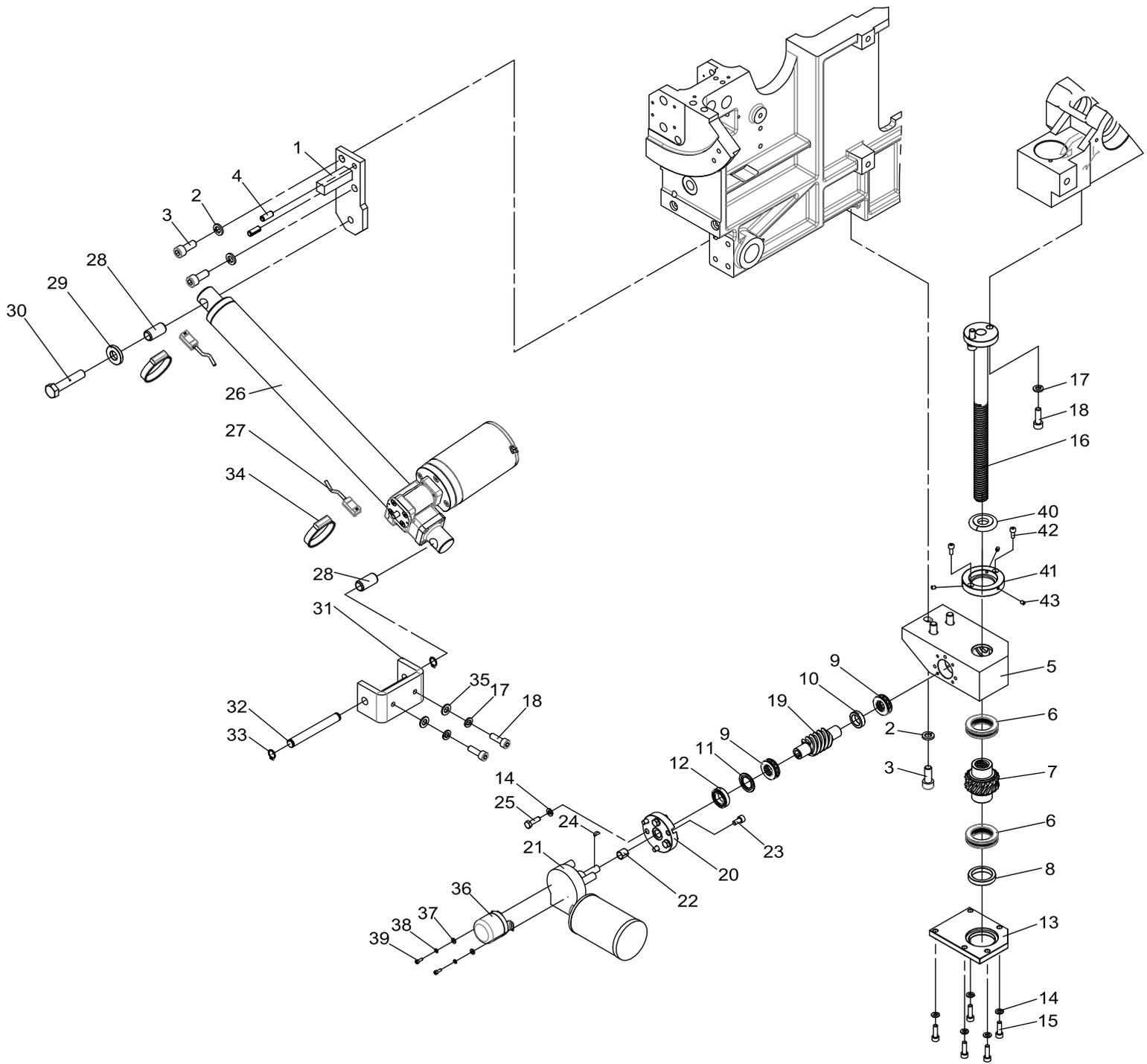
NO	FIG.NO.	DESCRIPTION	SPEC
1	LST-B002	Adjust shaft	
2	20225001-0	Scraper	
3	20222004-0	Lower Blade Cover	
4	LST-B009A	Cover	
5	401072056	Set serew	M8x30
6	401151002	Safety Washer	Ø8
7	401103001	Lock nut	M8
8	LST-B013B	Join bar	
9	402120004	Magnets	
10	401042107	Phillips sunk head cap screw	M5x8
11	401140015	Washer	Ø3
12	401022080	Cap screw	M8x30
13	401252010	Retaining rings for shaft	S15
14	401150003	Lock nut	Ø8
15	401150010	Lock washer	Ø3
16	401022002	Cap screw	M3x8
17	401010020	Hex Bolt	M8x25
18	403015132	Ball Bearing	6202 ZZ
19	401022079	Cap Screw	M8x25
20	20222001-0	Rotary base	
21	20224001-0	Fixed block	

NO	FIG.NO.	DESCRIPTION	SPEC
22	LST-B002A	Adjust shaft	
23	LST-B004	Fixed block	
24	LST-B005	Fixed Pole	
25	LST-B006	Rack	
26	LST-B015	Exhaust pipe	
27	NST-432-0-0	Washer	
28	416040001	Limit switch	TZ7311(b)
29	401140010	Washer	Ø6
30	401150003	Lock Washer	Ø6
31	401022053	Cap scre	M6x16
32	401140001	Washer	Ø4
33	401042002	Phillips sunk head cap screw	M4x30
34	401022062	Cap Screw	M6x55
35	401010022	Hex head bolt	M8x35
36	LST-B017A	Fixed block	
37	401042101	Phillips Head Screw	M6x12
38	401140002	Washer	Ø5
39	401150002	Lock Washer	Ø5
40	401022028	Cap scre	M5x12
41	401042014	Phillips head screw	M4x25
42	LST-B014A	Fixed sheet	



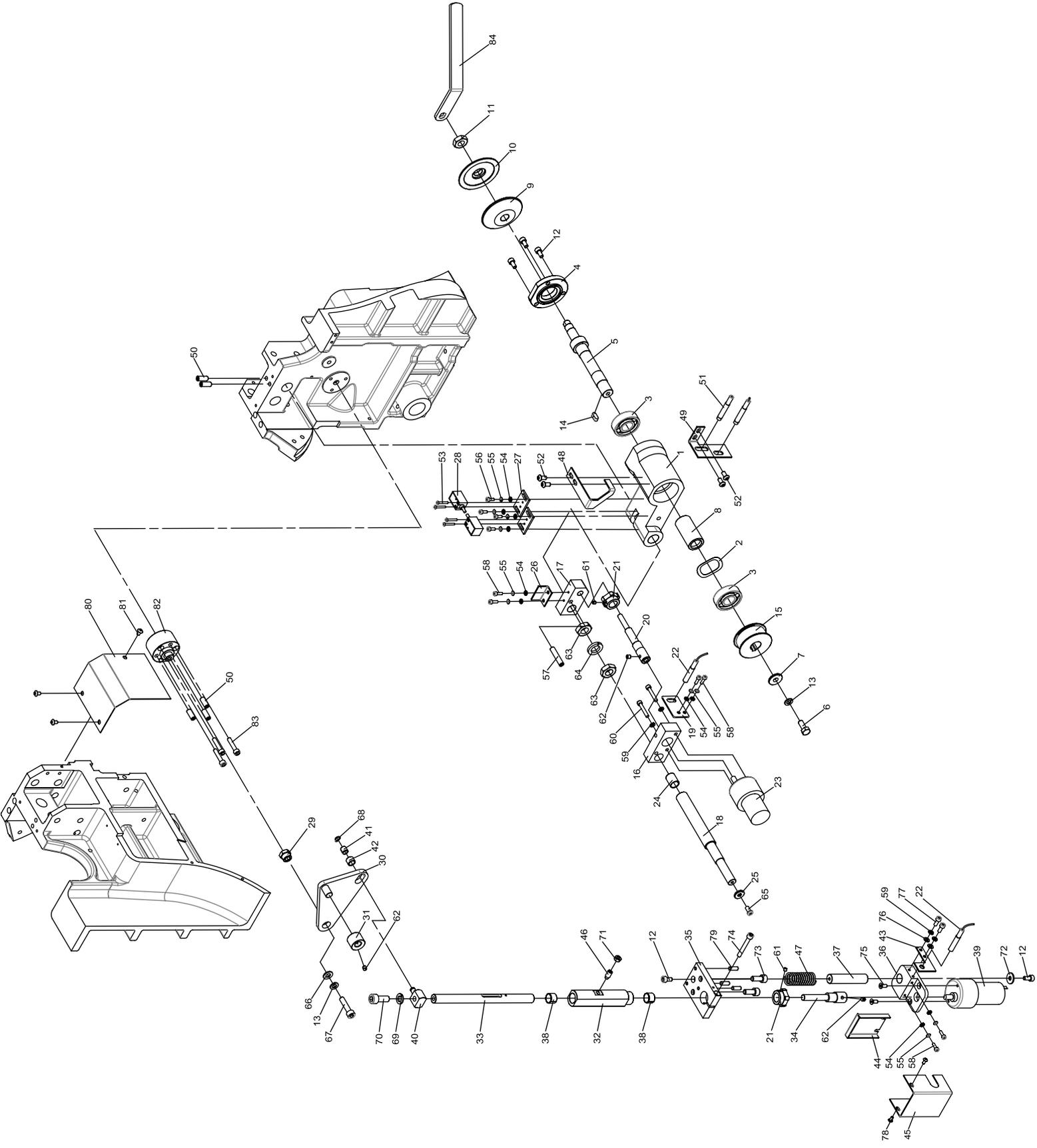
NO	FIG.NO.	DESCRIPTION	SPEC
1	20232001-0	Arbor Mount	
2	403017107	Ball bearing	6007
3	20232007-0	Bearing Cover	
4	401022051	Cap scre	M6x12
5	20232005-0	Spindle	
6	401110003	Precision nut	YSR-M35x1.5P-L
7	403010317	Ball bearing	6207 VV CM
8	20232014-0	Bearing Seat	
9	401230021	key	8x7x40
10	20232008-0	Spindle pulley	
11	LST-C007	Fixed Ring	
12	401150005	Lock washer	Ø10
13	401022105	Cap scre	M10x30
14	401230016	Key	8x7x20
15	20232006-A	Spindle flange	
16	401072035	Set screw	M6x10
17	20232009-0	Flange washer	
18	401020030	Cap screw	M5x16
19	404020011	Linear bushing	JB-30A WW
20	401101005	Hex Head Bolt	M8
21	401022080	Hex head bolt	M8x30
22	401140010	Washer	Ø6
23	401032030	Button Head serew	M6x12
24	20234006-0	Dust guard	
25	20234007-0	Lower dust board	

NO	FIG.NO.	DESCRIPTION	SPEC
26	20234005-0	Fixed block	
27	20234008-0	bushing	
28	401032029	Button Head Serew	M6x10
29	413101001	PRO-LOCK_screw	
30	LST-C010	Riving knife's slide rail	
31	NLST-C054	Riving knife's rear fixed block	
32	NLST-C055	Riving knife adjusting block	
33	ST405-202	Riving Knife	
34	20234002-0	Bull etproof claw	
35	20234003-0	Connect film	
36	20234004-0	Collar	
37	401052118	Counter sunk head cap screw	M5x12
38	NLST-C056	Riving knife's front fixed block	
39	410030001	Gre ase nipples	M6
40	401072065	Set Screw	M10x16
41	401022027	Cap scre	M5x10
42	401200032	Roll Pin	D13x60
43	401150006	Lock washer	Ø12
44	401010054	Hex head boit	M12x40
45	401150003	Lock Washer	Ø6
46	401022055	Cap scre	M6x20
47	405150007	Multi-groove belt	6 PK 750
48	20222003-0	shaft	
49	401022131	Cap Screw	M12x50



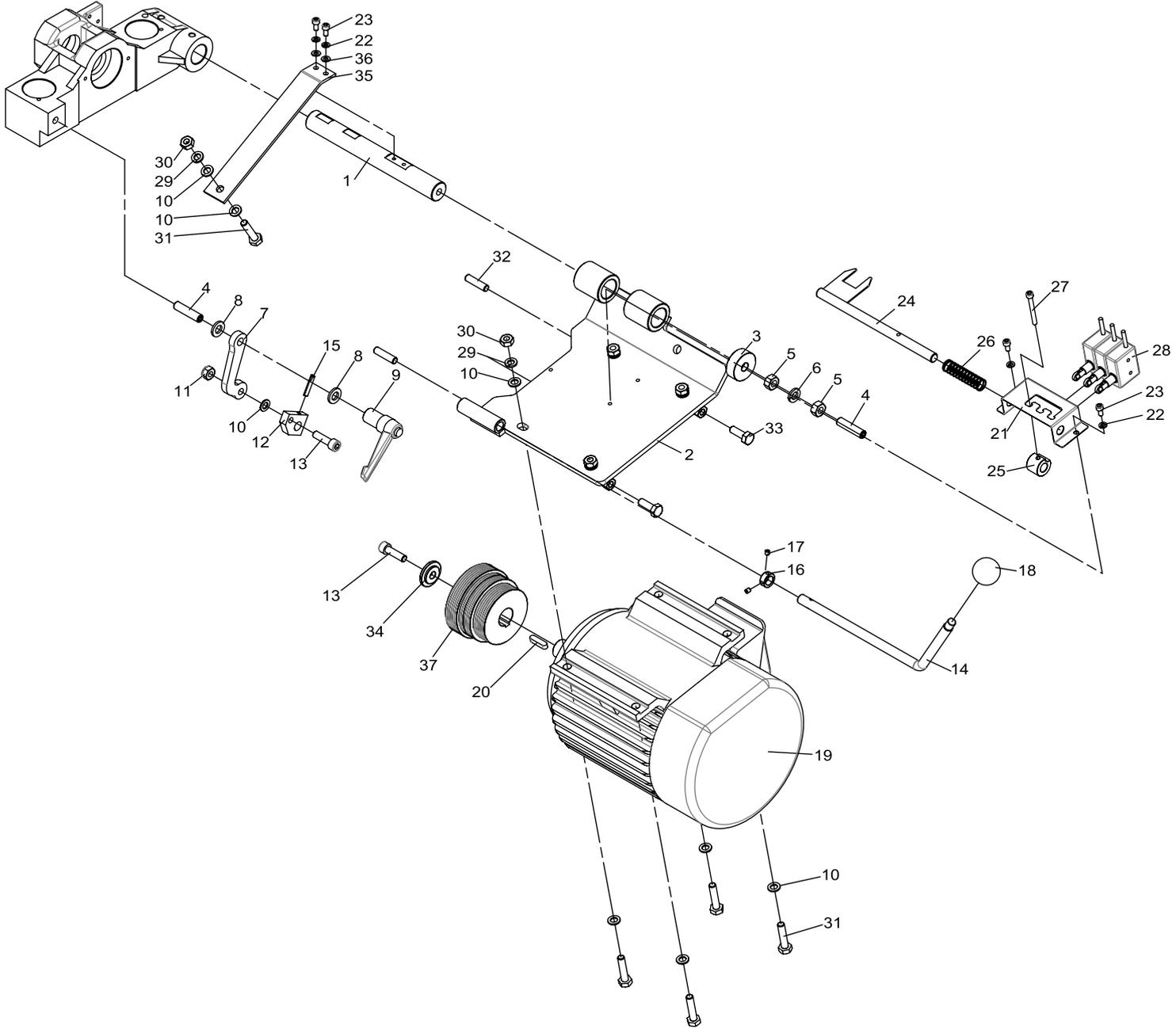
NO	FIG.NO.	DESCRIPTION	SPEC
1	LST-E015A	Motor Mount Bracket	
2	401150005	Lock washer	Ø10
3	401022104	Cap screw	M10x25
4	401200015	Fixed Ring	Ø8x20
5	LST-E002	Gear hous	
6	403060009	Therust Bearing	51106
7	LST-E003	Worm gear	
8	LST-E005	Adjustment nut	
9	403060002	Thrust Bearing	51103
10	NST-414-0-0	Collars	
11	LST-E007	Washer	
12	403017235	Ball Bearing	6903LLB
13	LST-E004	Cover	
14	401150003	Lock Washer	Ø6
15	401022055	Cap scre	M6X20
16	20223001-0	Screw	
17	401150004	Lock nut	Ø8
18	401022079	Cap Screw	M8x25
19	LST-E006A	Worm Shaft	
20	LST-E020	Fixed Base	
21	406100006	DC Motor	APL-9200GL23-330rpm
22	403090026	Bush	LFB-1012

NO	FIG.NO.	DESCRIPTION	SPEC
23	401022051	Cap scre	M6x12
24	401242001	Key	Ø3x10
25	401010009	Hex Head Bolt	M6x20
26	90310001-0	Linear Actuator	
27	409070013	Limit Switch	RD-201(b contact)
28	ST-F069	Gasket	
29	ST-F062	Washer	14.2-30-5t
30	ST-F071	Join Shaft	
31	ST-F075	Fixed Base	
32	ST-F072	Rear Join Shaft	
33	401252007	Retain Ring	S12
34	409070020	Continuous fixed piece	PH-1
35	401151002	Safety Washer	Ø8
36	415071109	Decoder	HTR-HB-6-200-2-C
37	401140015	Washer	Ø3
38	401150010	Lock washer	Ø3
39	401022002	Cap screw	M3x8
40	20223002-0	Dust brush	
41	20223003-0	Brush holder	
42	401022013	Cap Screw	M4x10
43	401071013	Set Screw	M4x5



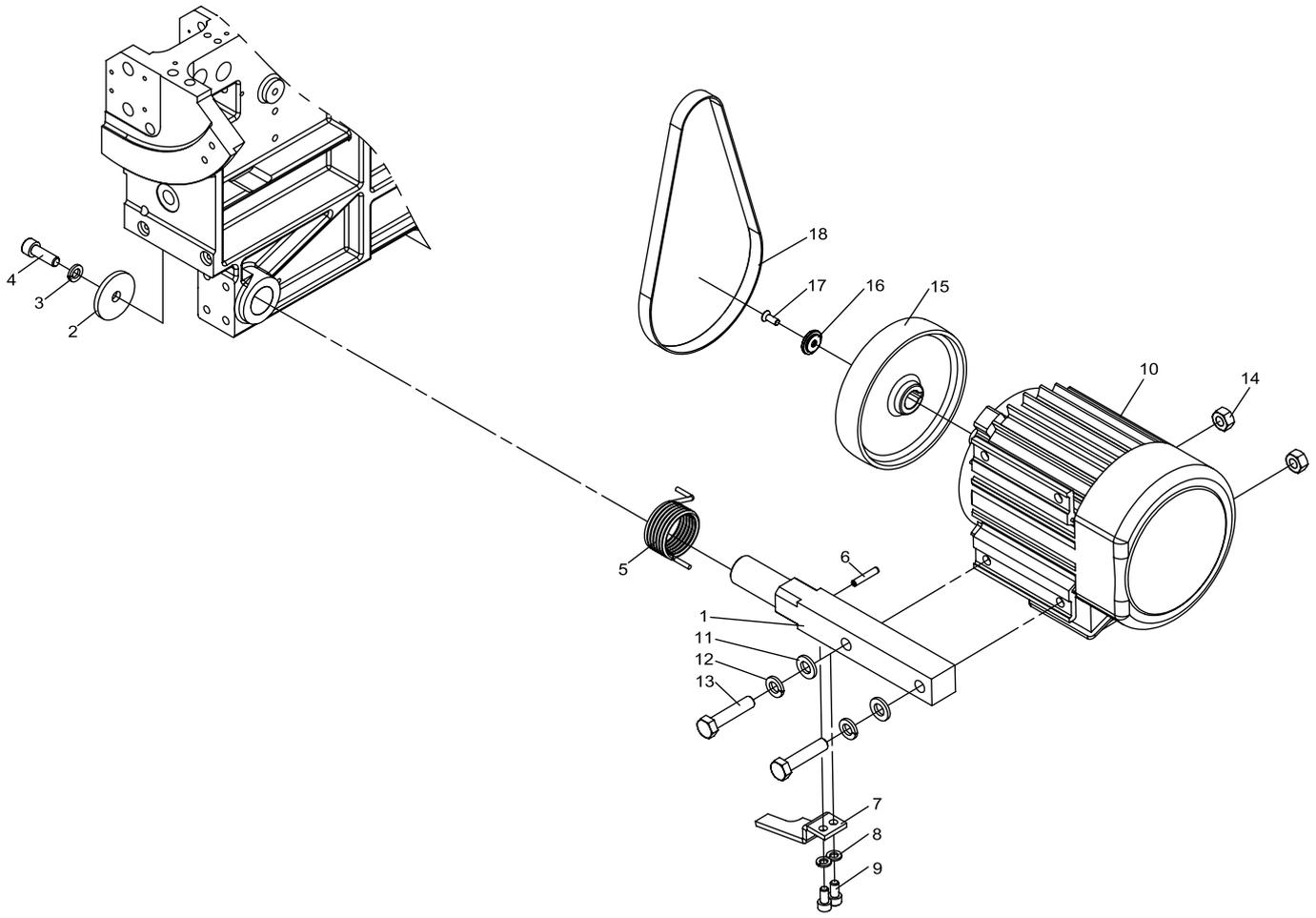
NO	FIG.NO.	DESCRIPTION	SPEC
1	LST-D001	Scoring Spindle Housing	
2	411050001	Wave washer	D46.2 X D35.66 X T0.51
3	403010305	Deep groove ball bearing	6204-LLB-CM
4	NST-321-0-0	Bearing's front cover	
5	LST-D002	Scoring Blade Spindle	
6	ST-I038A	Left hex head bolt	
7	ST-I039A	Fixing Ring	
8	LST-D003	Splndle Sleeve	
9	ST-I046	Rear cover	
10	ST-I047	Front cover	
11	401102008	Hexagon thin nut	M14 x P1.5
12	401022051	Hexagon socket screw	M6x12
13	401150003	Lock nut	Ø8
14	401230008	Key	6x6x15
15	ST-I048C	Pulley	
16	LST-D028	Fixed block	
17	LST-D027	Adjustment block	
18	LST-D029	Guide rod	
19	LST-D040	Stand by	
20	ST-I056C	Adjust Screw	
21	ST-I087	Split wheel	
22	416031005	Proximity switch	PM08-01NE
23	406100023	DC Motor	JM272E-3540C(DC24V 30rpm)
24	403090029	Oilless bearing	LFB-1420
25	NST-432-0-0	Washer	
26	ST405-321	Dogs For Limit Switch	
27	ST-405-322	Bracket	
28	416031013	Proximifty Switch	PN05-NP
29	NST-317-0-0	Pivot axis	
30	LST-D018A	Crank	
31	NST-328-0-0	Adjustment collars	
32	20244001-0	Drive rod seat	
33	20244002-0	Drive rod	
34	20244003-0	Screw	
35	20244004-0	Fixed seat	
36	20244005-0	Fixed seat	
37	20244006-0	Pivot	
38	403090041	Self-lubricating bushing	MB1512
39	406100026	DC Motor	JM025E-KD5B(DC24V 220rpm)
40	20244014-0	Fixed nut	
41	403090049	Self-lubricating bushing	BM0810
42	20244015-0	Spacer ring	

NO	FIG.NO.	DESCRIPTION	SPEC
43	20244010-0	Fixed seat	
44	20244016-0	Fixed plate	
45	20244017-0	Fixed plate	
46	20244018-0	Fixing screw	
47	411010023	Compressed spring	AM22-65
48	20244021-0	Detect block	
49	20244022-0	Fixed plate	
50	401072054	Set screw	M8x20
51	416031015	Proximity switch	PSC0802-N3
52	401032030	Button Head serew	M6x12
53	401042021	Phillips sunk head cap screw	M3x20
54	401140001	Washer	Ø4
55	401150001	Lock washer	M4
56	401022013	Cap screw	M4x10
57	401071058	Fixing screw	M8x40
58	401022014	Cap Screw	M4x12
59	401150002	Lock Washer	Ø5
60	401022034	Cap screw	M5x30
61	401072023	Setscrew	M5x6
62	401072033	Setscrew	M6X6
63	401102001	Hex nut	M16
64	401150008	Lock Washer	Ø16
65	401042010	Phillips head screw	M6x12
66	401151002	Safety Washer	Ø8
67	401022081	Cap Screw	M8x35
68	401252003	Retaining rings for shaft	S8
69	401150005	Spring washer	M10
70	401022104	Cap screw	M10x25
71	401101004	Hex nut	M6
72	401140011	Flat washers	Ø6x19
73	401022078	Cap scre	M8x20
74	401022060	Hex socket socket	M6x45
75	401052118	Counter sunk head cap screw	M5x12
76	401140002	Washer	Ø5
77	401022028	Cap scre	M5x12
78	401032008	Button head serew	M4x8
79	401072038	Set Screw	M6x16
80	LST-B010	Cover	
81	401032016	Button Head Serew	M5x8
82	20244009-B	Fixed seat	
83	401022057	Cap screw	M6x30
84	ST-I058	Scoring Blade Wrench	



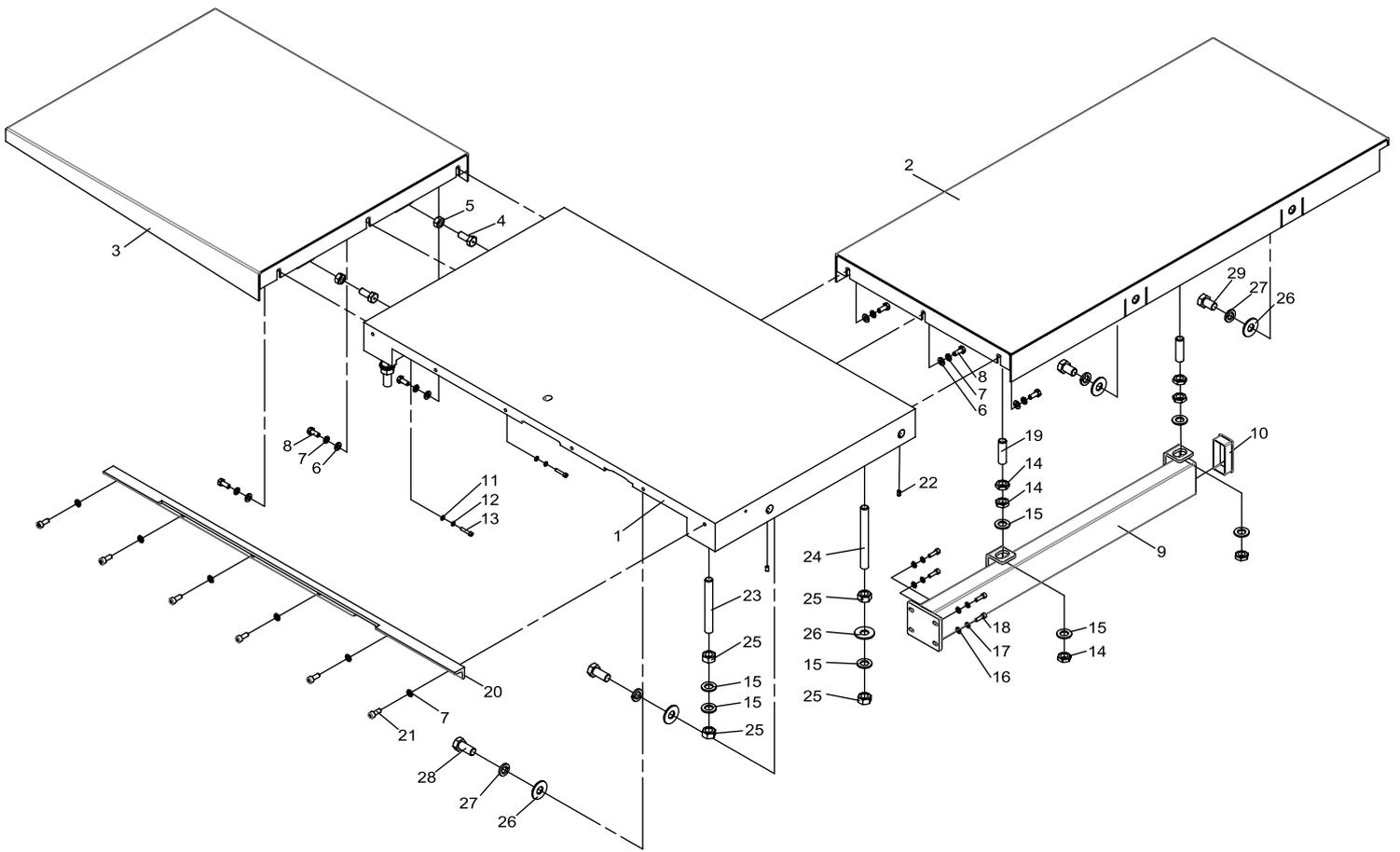
NO	FIG.NO.	DESCRIPTION	SPEC
1	LST-C015B	Shaft	
2	LST-C016A	Main Motor Pivot Plate	
3	LST-C033	End caps	
4	401072085	Sew serew	M12x50
5	401101007	Hex Nut	M12
6	401150006	Lock washer	Ø12
7	LST-C018	Elbow	
8	401140014	Washer	
9	402040028	Adjustable handle	4010-80-M12-BK
10	401140005	Washer	Ø10
11	401103002	Lock Nut	M10
12	LST-C019	Rotary Block	
13	401022106	Cap Screw	M10x35
14	LST-C020	Adjust Handle	
15	401200019	Spring pin	Ø6x32
16	LST-D014	Sleeve ring	
17	401072033	Setscrew	M6X6
18	402060006	Knob	1/2"
19		Motor	

NO	FIG.NO.	DESCRIPTION	SPEC
20	401230005	Key	8x7x32
21	20233011-0	Inspection seat	
22	401150003	Lock Washer	Ø6
23	401022051	Cap scre	M6x12
24	20233012-0	Belt positlon detector plate	
25	LST-C040A	Sensing Block	
26	LST-C041	Compressed Spring	
27	401022062	Cap Screw	M6x55
28	416040001	Limit Switch	TZ7311
29	401150005	Lock washer	Ø10
30	401101006	Hex head bolt	M10
31	401010039	Hex Bolt	M10x40
32	401071071	Set screw	M10x40
33	401010037	Hex Bolt	M10x30
34	LST-C007	Fixed Ring	
35	LST-C026	Spring Sheet	
36	401140010	Washer	Ø6
37	20232022-A	Multi-slot pulley	



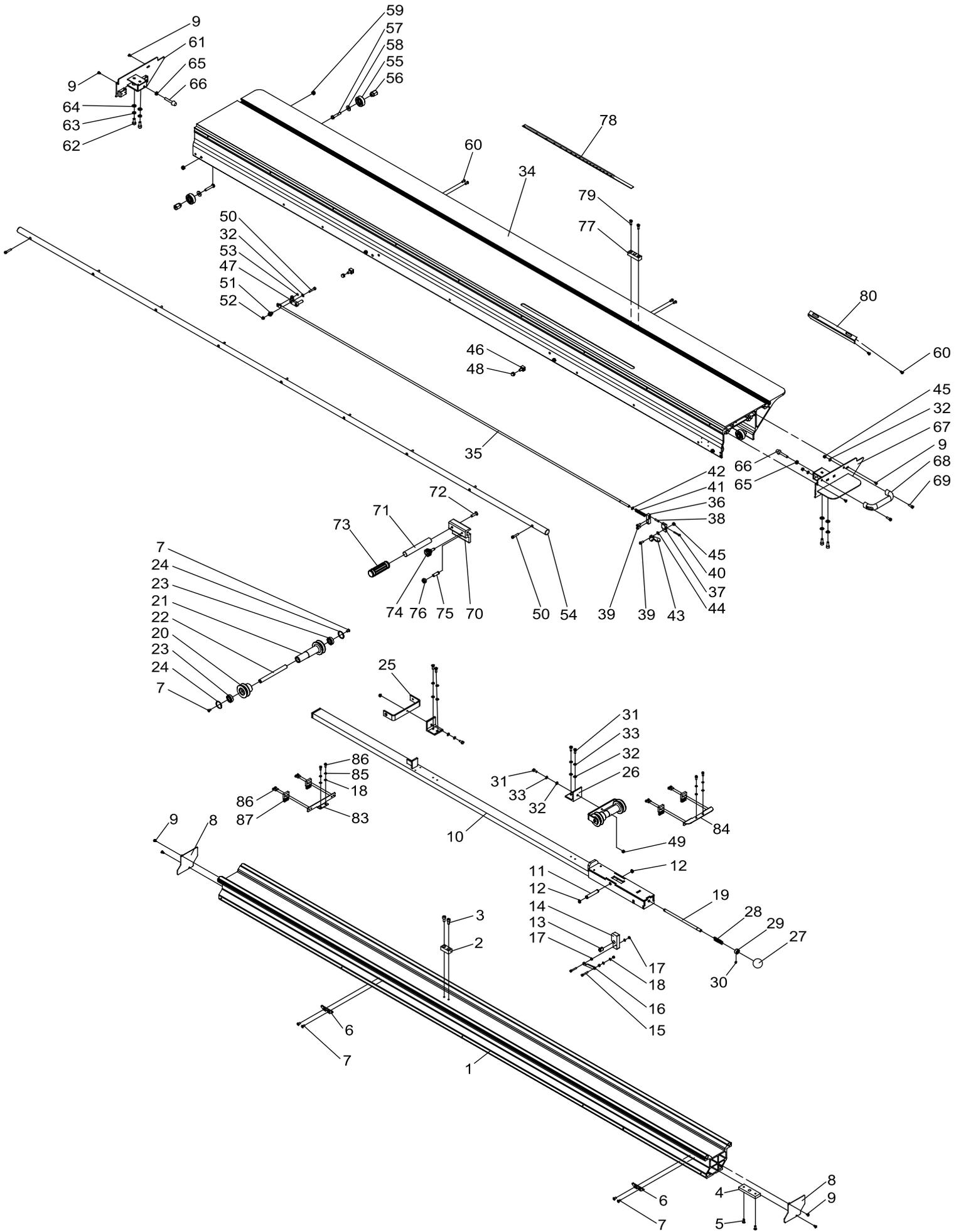
NO	FIG.NO.	DESCRIPTION	SPEC
1	LST-D005	Pivot axis	
2	LST-D007A	Washer	
3	401150005	Lock Washer	Ø10
4	401022105	Cap scre	M10x30
5	NST-104-0-0	Spring	
6	401200019	Spring pin	Ø6x32
7	LST-D025	Stop Board	
8	401150003	Lock nut	Ø8
9	401022076	Cap Screw	M8x16

NO	FIG.NO.	DESCRIPTION	SPEC
10		Motor	
11	401140014	Washer	Ø12
12	401150006	Lock Washer	Ø12
13	401011023	Hex Bolt	M12x55
14	401101007	Hex Nut	M12
15	ST-I032	Pulley	
16	ST-I040	Lock Ring	
17	401052131	Counter sunk head cap screw	M6x16
18	405040006	Belt	15x670x1.8t



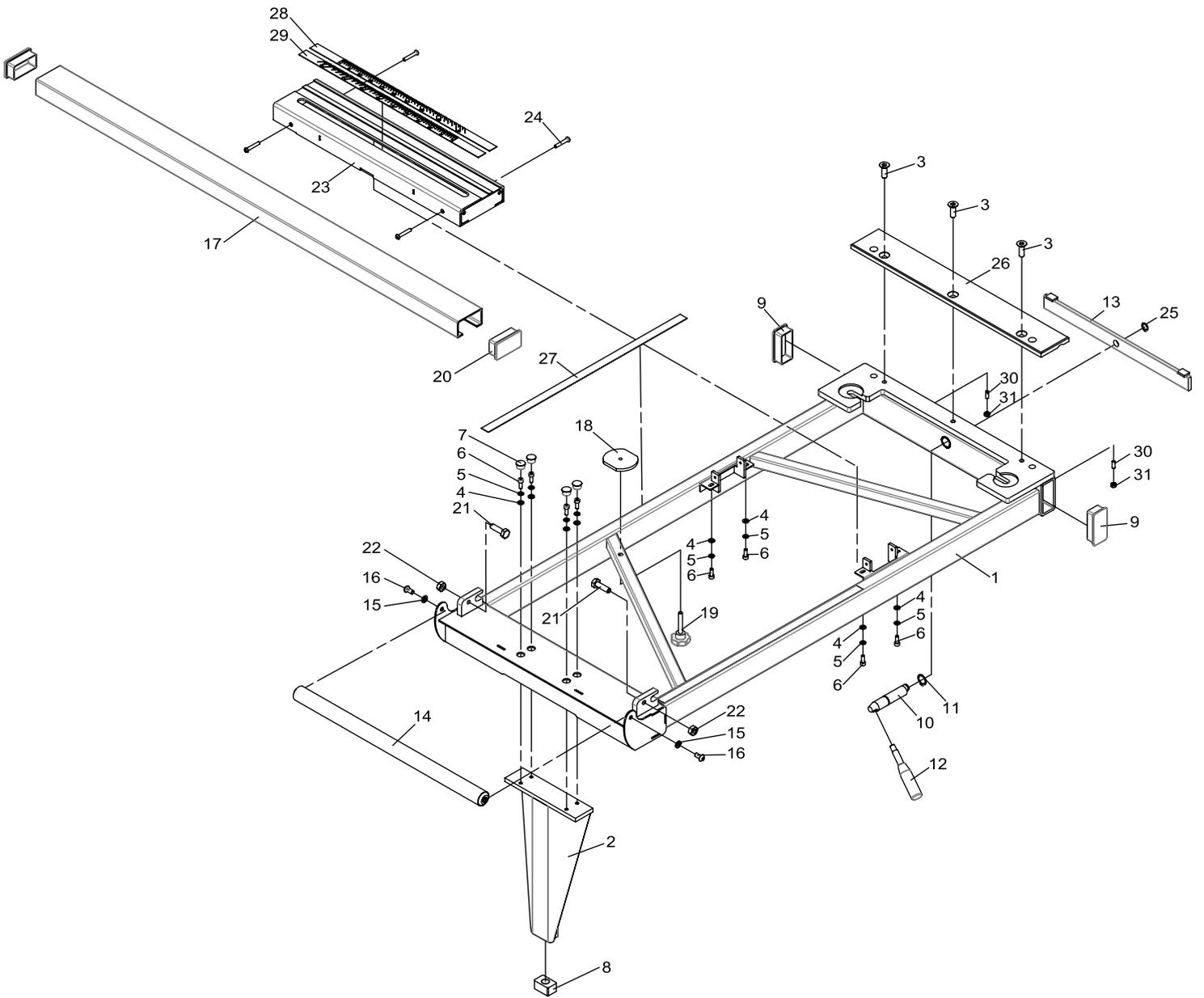
NO	FIG.NO.	DESCRIPTION	SPEC
1	LST-F001H	Workbench	
2	LST-F014G	Width extension	1.3m
3	LST-F011	Small Extension Table	
4	ST405-505	Hex screw	
5	401101007	Hex Nut	M12
6	401151002	Safety Washer	Ø8
7	401150003	Lock nut	Ø8
8	401010019	Hex Head Bolt	M8x20
9	LST-F015A	Support rack	1.3/1.5
10	402130001	Square pipe plug	80-40-3t
11	401140002	Washer	Ø5
12	401150002	Lock Washer	Ø5
13	401022033	Cap screw	M5x25
14	401101012	Hex Nut	M16
15	401140020	Washer	Ø16

NO	FIG.NO.	DESCRIPTION	SPEC
16	401140010	Washer	Ø6
17	401150003	Lock Washer	Ø6
18	401022055	Cap screw	M6X20
19	401072086	Set screw	M12x55
20	LST-F003A	Table Insert	
21	401080012	Cap screw	M8x15
22	401072035	Set screw	M6x10
23	401072135	Set screw	M16x130
24	401071131	Set Screw	M16x150
25	401101012	Hex Nut	
26	401140007	Washer	Ø16-40
27	401150008	Lock Washer	Ø16
28	401010076	Hexagon screw	M16x35
29	401010077	Hexagon screw	M16x25



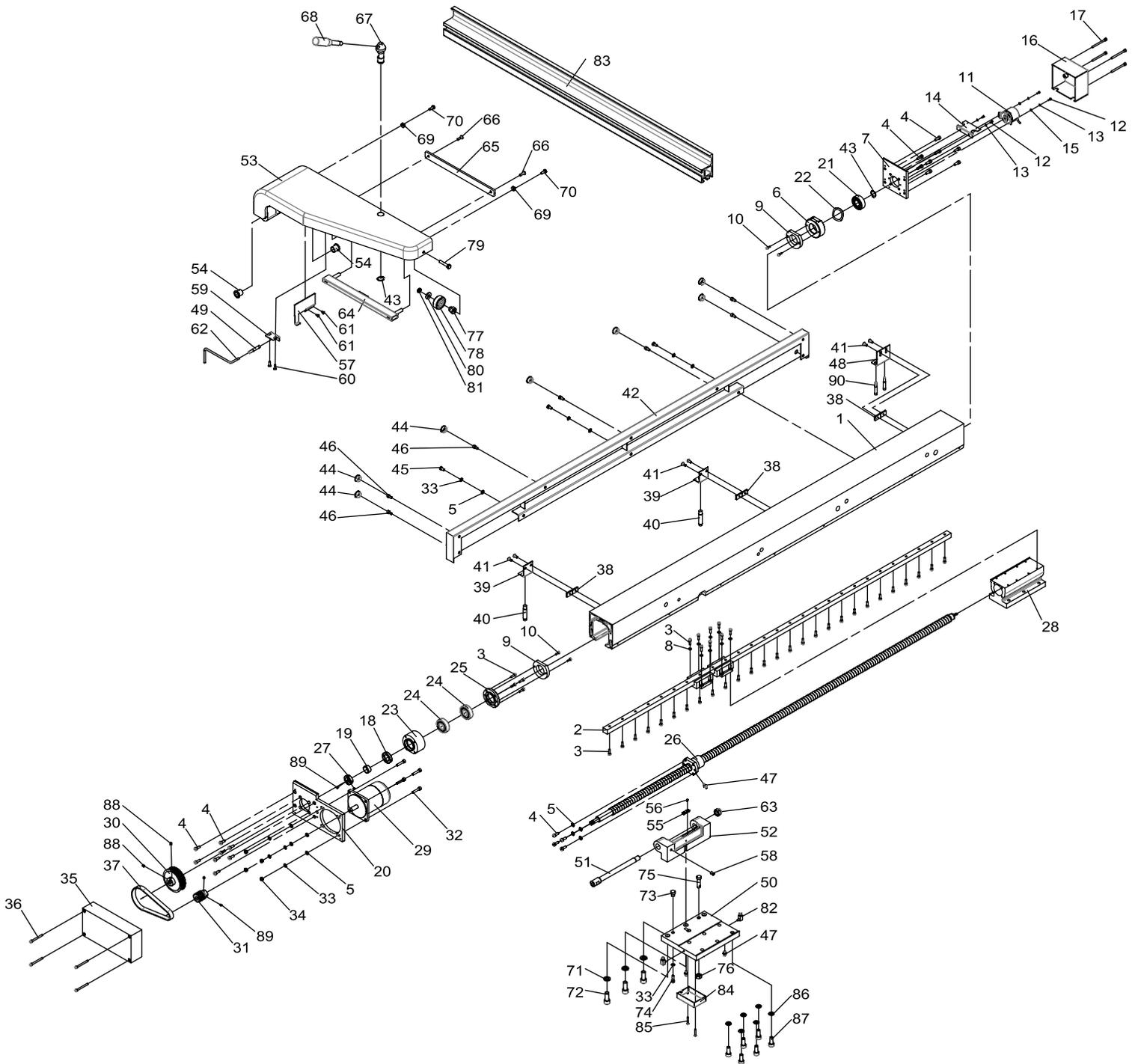
NO	FIG.NO.	DESCRIPTION	SPEC
1	ST-K302G	Support Base	3.2
2	ST-K041A	Stop block	
3	401022076	Cap screw	M8-16
4	ST-K002	Lock Block	
5	401052131	Counter sunk head cap screw	M6x16
6	ST-K316	Positioning block	
7	401052129	Counter sunk head cap screw	M6x12
8	ST-K320	Cover	
9	401042107	Phillips sunk head cap screw	M5x8
10	20261033-0	Slide Bar	3.2
11	ST-K071	Fixed Shaft	
12	401252007	Retain Ring	S12
13	403090013	Bush	LFB1215
14	ST-K069A	Stop Block	
15	401022034	Cap screw	M5x30
16	ST-K073	Join element	
17	401101003	Hex Nut	M5
18	401140002	Washer	Ø5
19	20262003-0	Pull bar	
20	ST-K095	Sliding wheel	
21	ST-K094	Slide Wheel	
22	ST-K096	Slide Wheel Shaft	
23	403017102	Ball bearing	6002LLB
24	401251024	Retaining rings for hole	R32
25	ST-K097A	Slide Wheel Base	
26	ST-K098A	Fixed Base	
27	402060005	Knob	
28	ST-K082	Spring	
29	ST-K083	Fixing ring	
30	401072033	Set Screw	M6X6mm
31	401010008	Hex head bolt	M6x16
32	401140010	Washer	Ø6
33	401150003	Lock Washer	Ø6
34	ST-K301B	Slide Table	3.2
35	ST-K323A	Connect Block	3.2
36	ST-K309A	Fixed Block	
37	ST-K308A	Stop block	
38	401200001	Spring Pin	5x20
39	401032032	Button head screw	M6x16
40	401021020	Cap screw	M4x30
41	ST-K317	Spring	
42	401253012	Retaining Rings E Type	E6
43	ST-K307A	Handle	
44	ST-K322	Washer	

NO	FIG.NO.	DESCRIPTION	SPEC
45	401101004	Hex Nut	M6
46	ST-311	Fixed Pillar	
47	ST-K313A	Connect Block	
48	401104003	Cap Nut	M8
49	401103005	Lock Nut	M6
50	401022057	Cap screw	M6x30
51	ST-K312	Pivot Axis	
52	401104004	Cap Nut	M6
53	401253009	Retaining Rings E Type	E4
54	ST-K204	Slide Rail	3.2
55	ST-K043A	Sliding Wheel	
56	ST-K044	Adjust Block	
57	401010025	Hex head bolt	M8x45
58	401140028	Washer	8x23x3t
59	401103001	Lock nut,	M8
60	401032030	Button Head screw	M6x12
61	ST-306	Cover	
62	401022078	Cap screw	M8x20
63	401151002	Spring washer	Ø8
64	401140004	Washer	Ø8
65	401101005	Hex Head Bolt	M8
66	402160002	Stop block	
67	ST-K305	Cover	
68	402020001	Handle	
69	401022055	Cap screw	M6x20
70	ST-K003A	Fixed Block	
71	ST-K004	Handle	
72	401052143	Counter sunk head cap screw	M8x25
73	402010011	Handle sleeve	
74	402100002	Emboss screw	8010-30-M8-20
75	RS-4025	Screw	
76	401101006	Hex head bolt	M10
77	ST-L007	Positioning block	
78	ST-K010	Scale	
79	401022053	Cap screw	M6x16
80	ST-K318	Touch Block	
81	ST-K207	Support Stand	
82	LST-A051	Extension bracket	
83	20261031-0	Brush rack	
84	20261032-0	Brush rack	
85	401150002	Lock Washer	Ø5
86	401022028	Cap screw	M5x12
87	ST-K031B	Bristle brush	



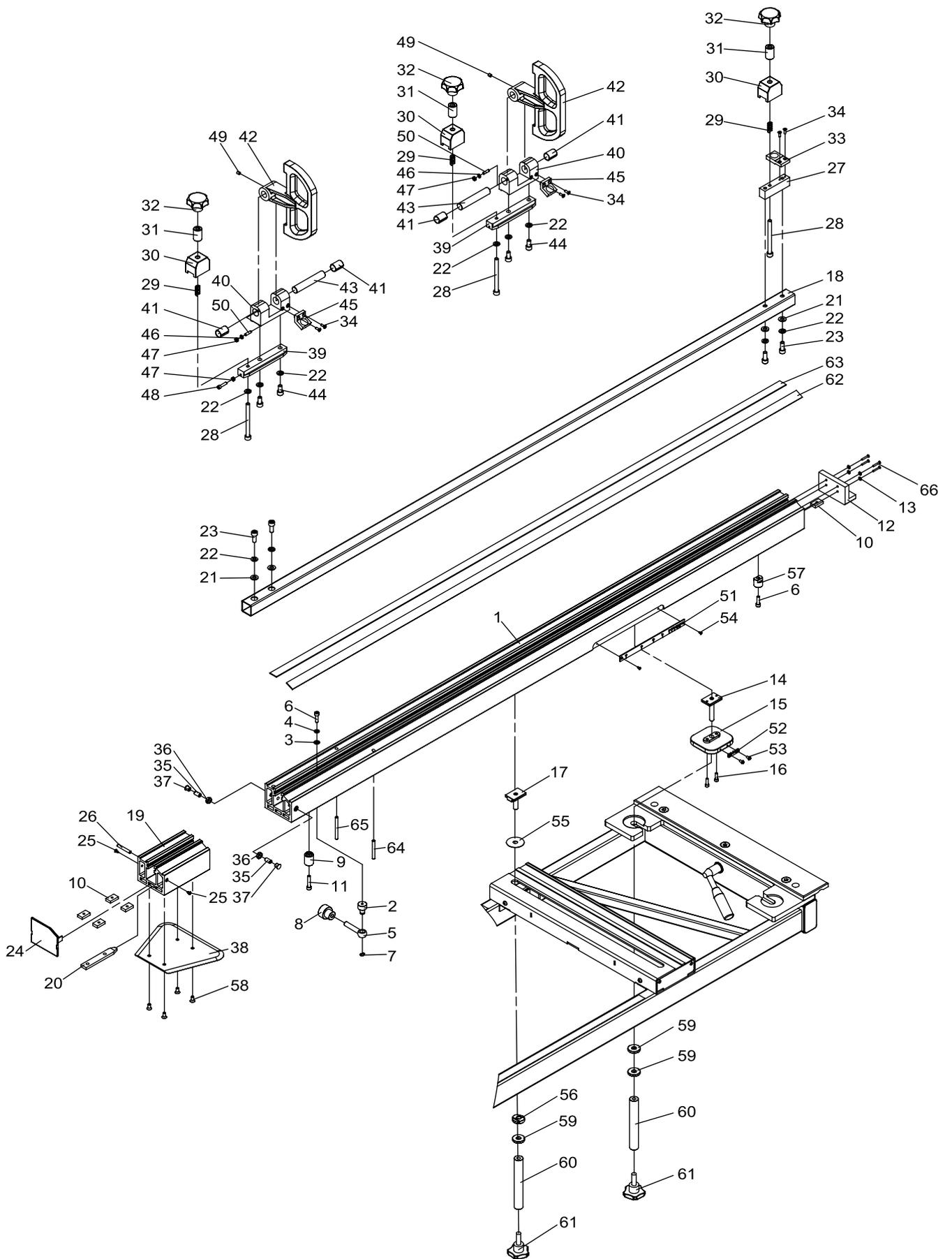
NO	FIG.NO.	DESCRIPTION	SPEC
1	20274005-0	Crosscut table	
2	LST-G027	Support frame	
3	401052152	Counter sunk head cap screw	M10x25
4	401140010	Washer	Ø6
5	401150003	Lock Washer	Ø6
6	401022053	Cap scre	M6x16
7	414080004	Hole plugs	HP-16
8	NST-713-0-0	Rubber guide	
9	ST-M037	Caps	80-40-4t
10	ST-M005	Fixed Shaft	
11	401252015	Retaining rings for shaft	S20
12	402010002	Round Knob	7108-M10-100
13	ST-M006	Lock Bar	
14	403140001	Roller element	U-318SC-RL524-12 M8x20
15	401150004	Lock Washer	Ø8
16	401032043	Button Head Screw	M8x16

NO	FIG.NO.	DESCRIPTION	SPEC
17	ST-M019	Long cross-support	
18	ST-M020	Clampingn element	
19	402070005	Knob bolt	HS50AM850
20	ST-M017	Square tube plug	70x40x3t
21	401010038	Hex Bolt	M10x35
22	401101006	Hex head bolt	M10
23	20274004-0	Scale seat	
24	401032036	Button head screw	M6x35
25	401252009	Retaing rings for shaft	STW-14
26	ST-M002C	Fixed Board	
27	ST-N095G	Avert Friction Sheet	
28	20274002-0	Scale	
29	20274003-0	Scale	
30	401072038	Set Screw	M6x16
31	401101004	Hex Nut	M6

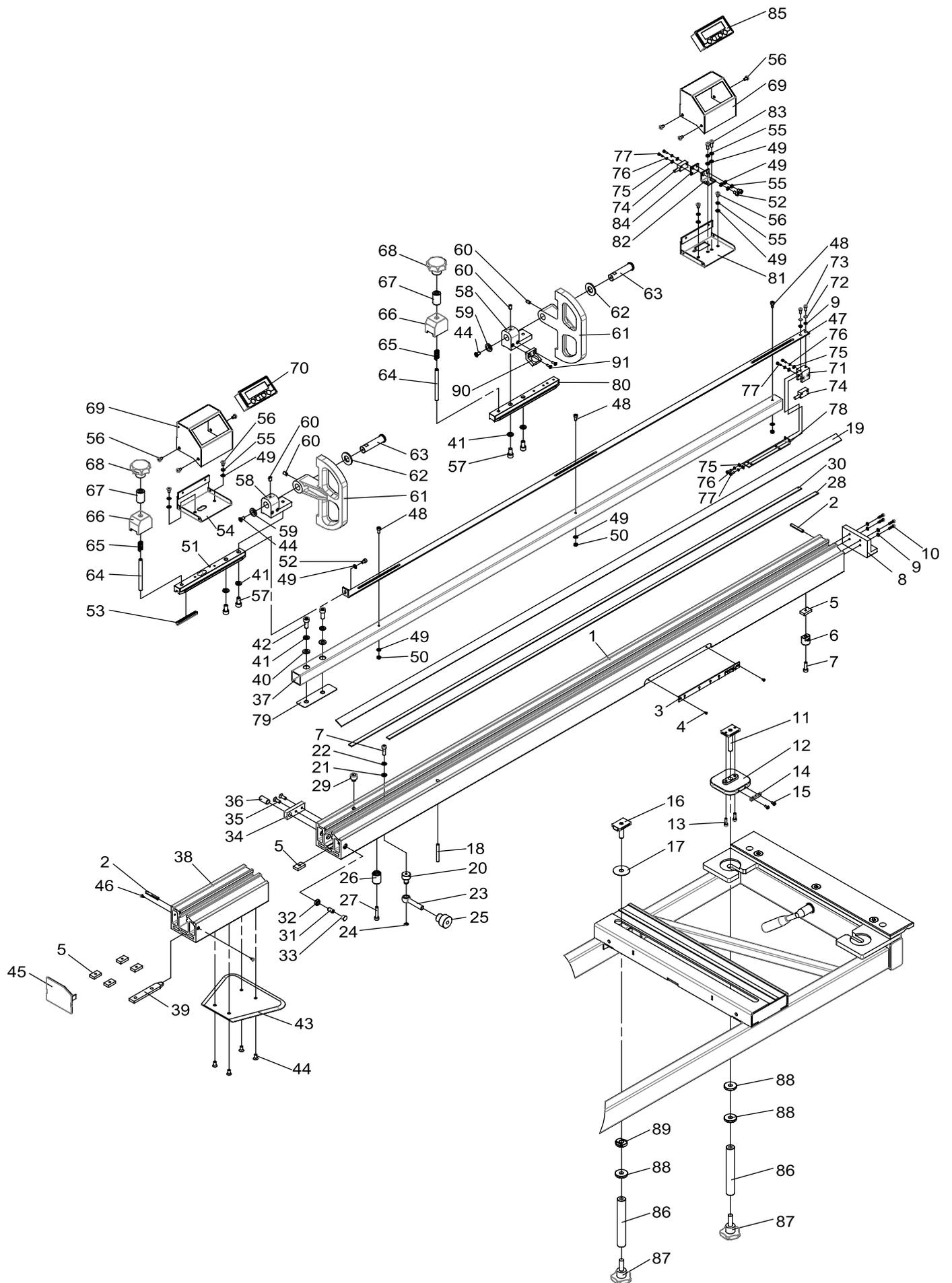


NO	FIG.NO.	DESCRIPTION	SPEC
1	ST-T803	Plate slide(1.3)	
2	404010008	Linear slide(1.3M)	HGW-20-HC-2-R1600-ZA-C
3	401020030	Cap screw	M5x16
4	401022053	Cap scre,M6x16	M6x16
5	401140010	Washer	Ø6
6	ST-N212	Bearing housing	
7	ST-T108B	Fixed plate	
8	401140002	Washer	Ø5
9	ST-T115	Urethane Washer	
10	401022014	Cap Screw	M4x8
11	415071106	Decoder	HTR-HB-6-200-2-L
12	401022002	Cap screw	M3x8
13	401150010	Lock washer	Ø3
14	ST-T078	Terminal block	
15	401140015	Washer	Ø3
16	ST-T045A	Cover	
17	401022040	Cap screw	M5x60
18	408010001	Grease seal	25X38X8 TC
19	ST-T105	Spacer Ring	
20	ST-T106A	Base Plate	
21	403015134	Deep groove ball bearing	6204-2NSE-CM
22	411050001	Wave washer	D46.2xD35.66xT0.51
23	ST-T103A	Bearing Holder	
24	403020005	Angular contact ball bearing	7204 BWDBCPI0 NSK
25	ST-T104A	Bearing cover	
26	ST-T004F	Ball screw(1.3M)	R25x10k3XFSCX1573x1700x0.05
27	401110001	Precision NutYSR	YSR M20x1.0
28	ST-T102D	Slider	
29	406100024	DC Motor	D12A(K)24-1800-12-M
30	ST-T026D	Pulley	
31	ST-T027D	Pulley	
32	401022057	Cap screw	M6x30
33	401150003	Lock Washer	Ø6
34	401101004	Hex Nut	M6
35	ST-T036	Cover	
36	401021038	Cap scre	M6x50
37	405030003	Timing belt	HTD-420-5M-15
38	ST-N059A	Fixed piece	
39	ST-T035	Sensor holder	
40	416031016	Proximity open	PSC1205-N3
41	401032030	Button Head screw	M6x12
42	ST-T111	Shield	
43	401252015	Retaining rings for shaft	S-20
44	414080003	Hole plugs	HP-19
45	401010007	Hex head bolt	M6x12

NO	FIG.NO.	DESCRIPTION	SPEC
46	401022051	Cap scre	M6x12
47	410030001	Butt mouth straight	M6xP1
48	ST-T035C	Sensor holder	
49	416031002	Proximity open	PM08-02NE
50	ST-T110C	Connector	
51	ST-T014B	Rotating shaft	
52	ST-T005C	Connecting shaft seat	
53	ST-T017D	Plate fixing arm	
54	ST-T238	Copper bushing	
55	416031006	Proximity switch	TL-W1R5MC1
56	401051101	Countersink Head Screw	M3x6
57	20255003-0	Fixed plate	
58	401072050	Set screw	M8x12
59	20255002-0	Fixing frame	
60	401032020	Button Head serew	M5x16
61	401032008	Button head serew	M4x8
62	411020009	Tension spring	0.5x5.3x4.3(Φ)x80
63	401103004	Hex nut	M14
64	ST-Q010	Lashing bar	
65	ST-Q005	Lashing plate	
66	401052132	Counter sunk head cap screw	M6x12
67	ST-Q011A	Fixed shaft	
68	402010009	Handle	7108-M12-137
69	ST-Q002	Guide wheel	
70	401010008	Hex head bolt	M6x16
71	401150006	Lock washer	Ø12
72	401022127	Cap screw	M12x30
73	ST-T019	Location pins	
74	401022055	Cap scre	M6X20
75	ST-T018A	Adjust the location pins	
76	401101006	Hex head bolt	M10
77	ST-K044	Sliding wheel adjusting block	
78	ST-K043A	Sliding Wheel	
79	401010023	Hex head bolt	M8x40
80	401140028	Washer	8x23x3t
81	401101005	Hex Head Bolt	M8
82	410071005	L type oil joint	M6
83	ST-Q014	Rip fence	
84	ST-T076	Wire connector cover	
85	401042014	Phillips head screw	M4x25
86	401150005	Lock washer	Ø10
87	401022104	Cap screw	M10x25
88	401072033	Setscrew	M6X6
89	401072023	Setscrew	M5x6
90	416031014	Proximity open	PSC0801-N3

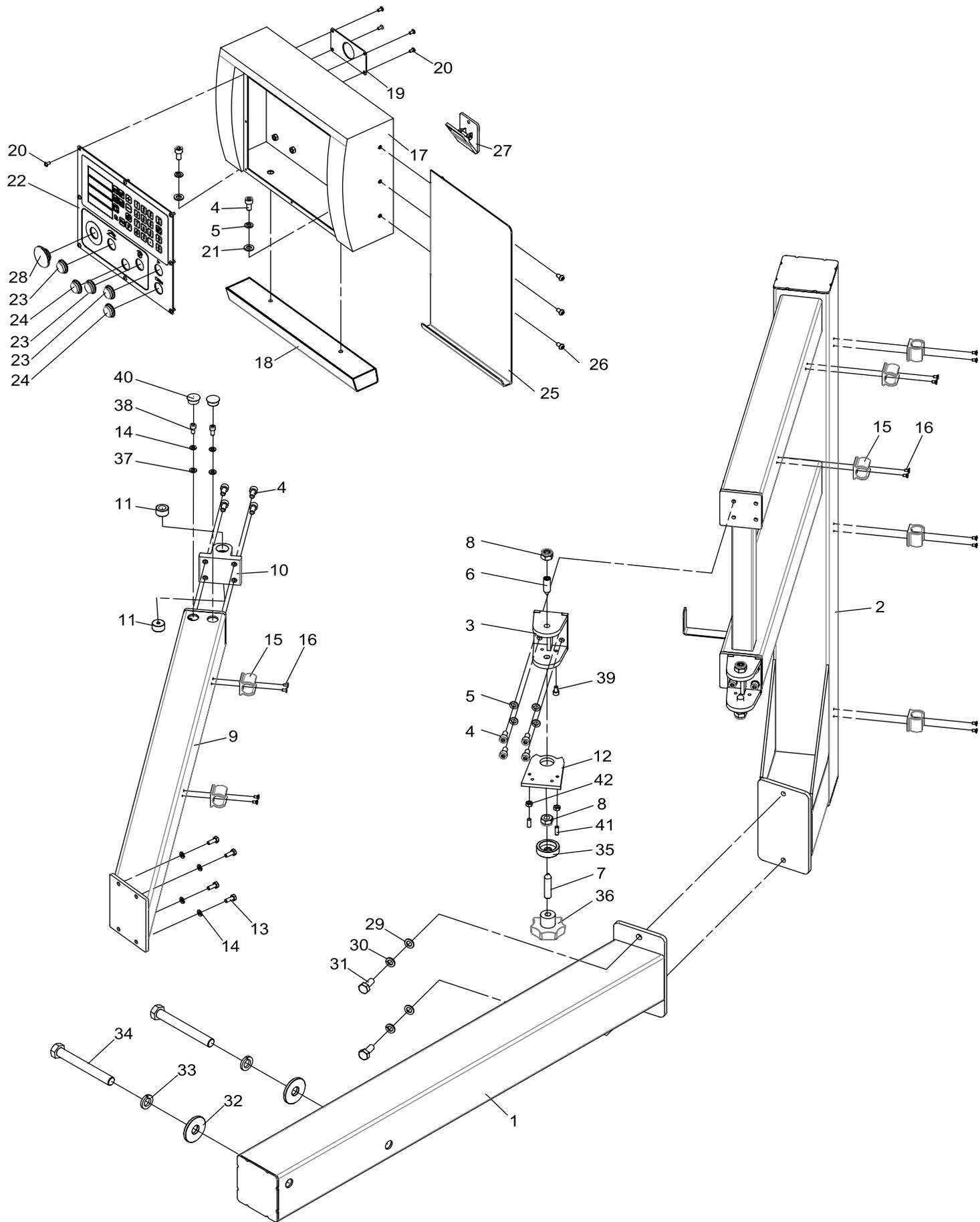


NO	FIG.NO.	DESCRIPTION	SPEC	NO	FIG.NO.	DESCRIPTION	SPEC
1	ST-N058U-01	Fence scale base		34	401051110	Counter sunk head cap screw	M4x12
2	LST-G023	Fixed axis		35	ST-N107	Set screw	
3	401140010	Washer	Ø6	36	401101005	Hex Head Bolt	M8
4	401150003	Lock Washer	Ø6	37	414080008	Hole plug	HP-9
5	402140001	Swing bolts		38	ST-N054A	Butterfly-shaped plate	
6	401022055	Cap scre	M6x20	39	ST-N027	Locking lower slide base	
7	401252003	Retaining rings for shaft	STW-8	40	ST-N007	Adjusting block	
8	LST-G024	Emdossed nut		41	403090028	Bush	MB1625
9	LST-G022	Positioning column		42	ST-N008	Positioning plate	
10	ST-N059	Fixing sheet		43	ST-N011	Shaft	
11	401022057	Cap screw	M6x30	44	401022076	Cap screw	M8-16
12	ST-N052	Lengthening scale base		45	ST-N053	Magnifier	
13	401140001	Washer	Ø4	46	401150002	Lock Washer	Ø5
14	20275005-0	T-slider		47	401101003	Hex Nut	M5
15	20275006-0	Fixed block		48	401022032	Cap scre	M5x20
16	401020030	Cap screw	M5x16	49	401072033	Setscrew	M6X6
17	20275004-0	T-slider		50	LST-N091B	Set Screw	M5x16
18	ST-N006	Positioning pipe		51	20275007-0	Offset scale	
19	ST-N061	Scale Base		52	ST-M335A	Index	
20	ST-N055	Positioning pin		53	401032008	Button head screw	M4x8
21	401151002	Safety Washer	Ø8	54	401053101	Countersink Hend Screw	M3x5
22	401150004	Lock Washer	Ø8	55	20275001-0	Washer	
23	401022078	Cap scre	M8x20	56	20275003-0	Washer	
24	ST-N060	Left cover plate		57	20275008-0	Positioning column	
25	401060004	PLUG	1/8"-3/8"	58	401052129	Counter sunk head cap screw	M6x12
26	401200008	Spring Pin6x40	Ø6x40	59	LST-G018A	Washer	
27	ST-N018	Locking lower slide block		60	20275002-0	Locking handle	
28	401021092	Cap screw	M8-90	61	402070017	Male hand knobs	HS50AM1020
29	ST-N022	Spring		62	ST-N434	Scale	
30	ST-N013	Locking slide block		63	ST-N435	Scale	
31	ST-N014	Locking bush		64	401072046	Set serew	M6x50
32	402070002	Star-ahaped knob	HS50AM8	65	401072144	Set serew	M6x60
33	ST-N015	Magnifier		66	401080011	Phillips sunk head cap scre	M3x20



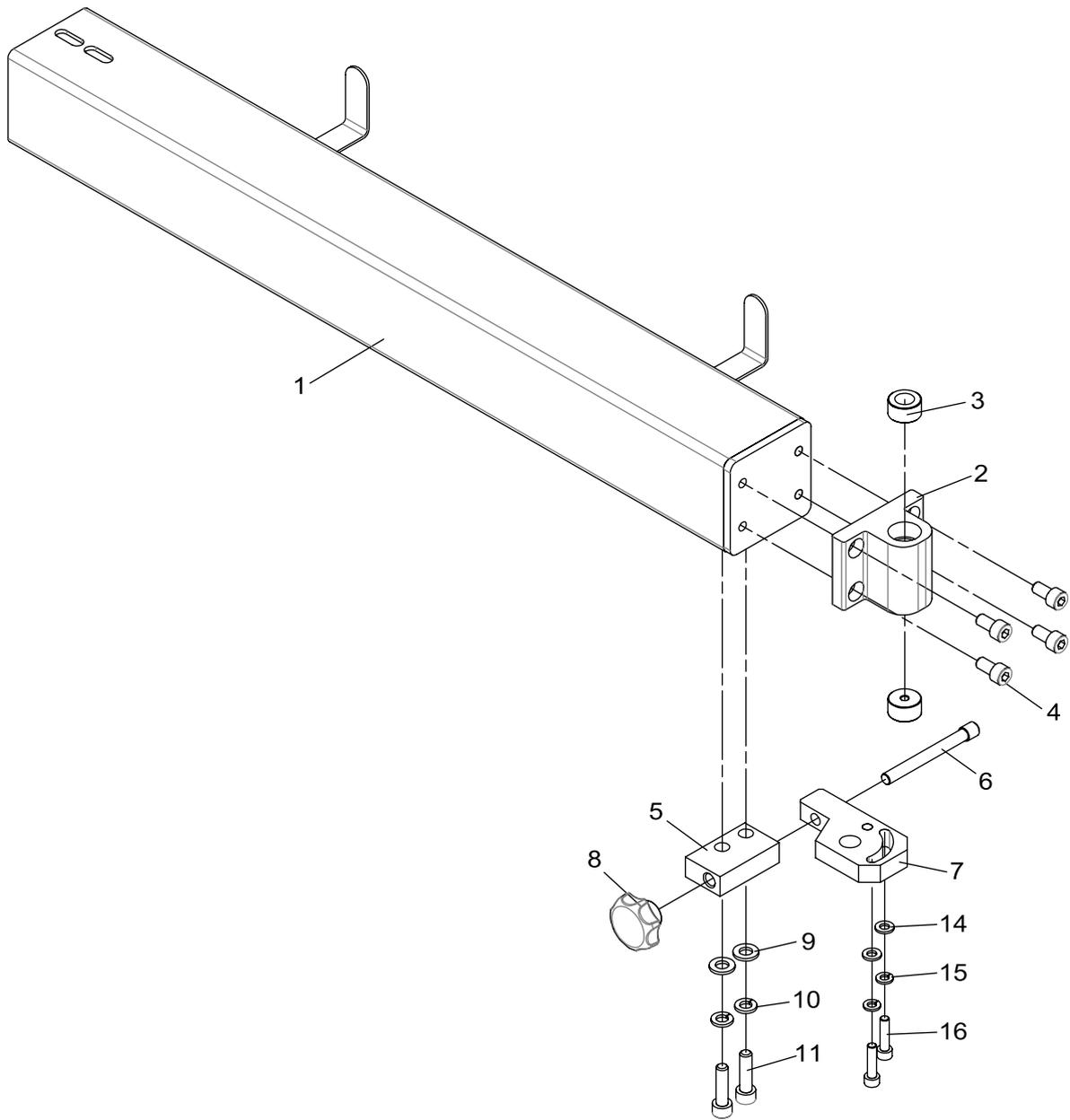
NO	FIG.NO.	DESCRIPTION	SPEC
1	ST-N058V-01	Fence Scale Base	
2	401200008	Spring Pin	Ø6x40
3	20275007-0	Offset scale	
4	401053101	Countersink Head Screw	M3x5
5	ST-N059	Fixing sheet	
6	20275008-0	Positioning column	
7	401022055	Cap screw	M6x20
8	ST-N052	Lengthening scale base	
9	401140001	Washer	Ø4
10	401080011	Phillips sunk head cap screw	M3x20
11	20275005-0	T-slider	
12	20275006-0	Fixed block	
13	401020030	Cap screw	M5x16
14	ST-M335A	Index	
15	401032008	Button head screw	M4x8
16	20275004-0	T-slider	
17	ST-N005	Washer	
18	401072046	Set screw	M6x50
19	ST-N028F	Scale	
20	LST-G023	Fixed axis	
21	401140010	Washer	Ø6
22	401150003	Lock Washer	Ø6
23	402140001	Swing bolts	
24	401252003	Retaining rings for shaft	STW-8
25	LST-G024	Embossed nut	
26	LST-G022	Positioning column	
27	401022057	Cap screw	M6x30
28	415020013	Magnetic ruler	1450mm
29	ST-N094	Stop screw	
30	415020014	Magnetic ruler	1520mm
31	ST-N107	Set screw	
32	401101005	Hex Head Bolt	M8
33	414080008	Hole plug	HP-9
34	ST-N438	Fixed block	
35	401052131	Counter sunk head cap screw	M6x16
36	401071080	Fixing screw	M12x25
37	ST-N006D	Position pipe	
38	ST-N058-02	Fence Scale Base	
39	ST-N055	Positioning pin	
40	401151002	Safety Washer	Ø8
41	401150003	Lock nut	Ø8
42	401022078	Cap screw	M8x20
43	ST-N054B	Butterfly-shaped plate	
44	401052129	Counter sunk head cap screw	M6x12
45	ST-N060	Left cover plate	
46	401060004	PLUG	1/8"-3/8"

NO	FIG.NO.	DESCRIPTION	SPEC
47	ST-N102	Link	
48	401022027	Cap screw	M5x10
49	401140002	Washer	Ø5
50	401101003	Hex screw	M5
51	ST-N066E	Lock slide base	
52	401022026	Cap screw	M5x8
53	408110003	Slot cover	
54	ST-N065D	Cover	
55	401150002	Lock Washer	Ø5
56	401042107	Phillips sunk head cap screw	M5x8
57	401022076	Cap screw	M8x16
58	ST-N073A	Fixed base	
59	ST-N101	Washer	
60	401072035	Set screw	M6x10
61	ST-N008	Positioning plate	
62	ST-N100	Washer	
63	ST-N099	Pivot axis	
64	401072138	Setscrew	M8x90
65	ST-N022	Spring	
66	ST-N013	Locking slide block	
67	ST-N014	Locking bush	
68	402070002	Star-shaped knob	HS50AM8
69	ST-N064E	Cover	
70	415020025	Digital display	
71	ST-N103	Fixed block	
72	401150001	Lock washer	M4
73	401022013	Cap screw	M4x10
74	415020012	Digital display	
75	401140015	Washer	Ø3
76	401150010	Lock washer	Ø3
77	401022003	Cap screw	M3x10
78	ST-N112	Protective sheet	
79	ST-N113	Packing Up block	
80	ST-N066D	Lock slide base	
81	ST-N065C	Cover base	
82	ST-N067	Fixed Rack	
83	401022028	Cap screw	M5x12
84	ST-N068	Fixed board	
85	415020024	Digital display	
86	20275002-0	Locking handle	
87	402070017	Male hand knobs	HS50AM1020
88	RH-2040	Washer	
89	20275003-0	Washer	
90	ST-N053	Magnifier	
91	401051110	Counter sunk head cap screw	M4x12



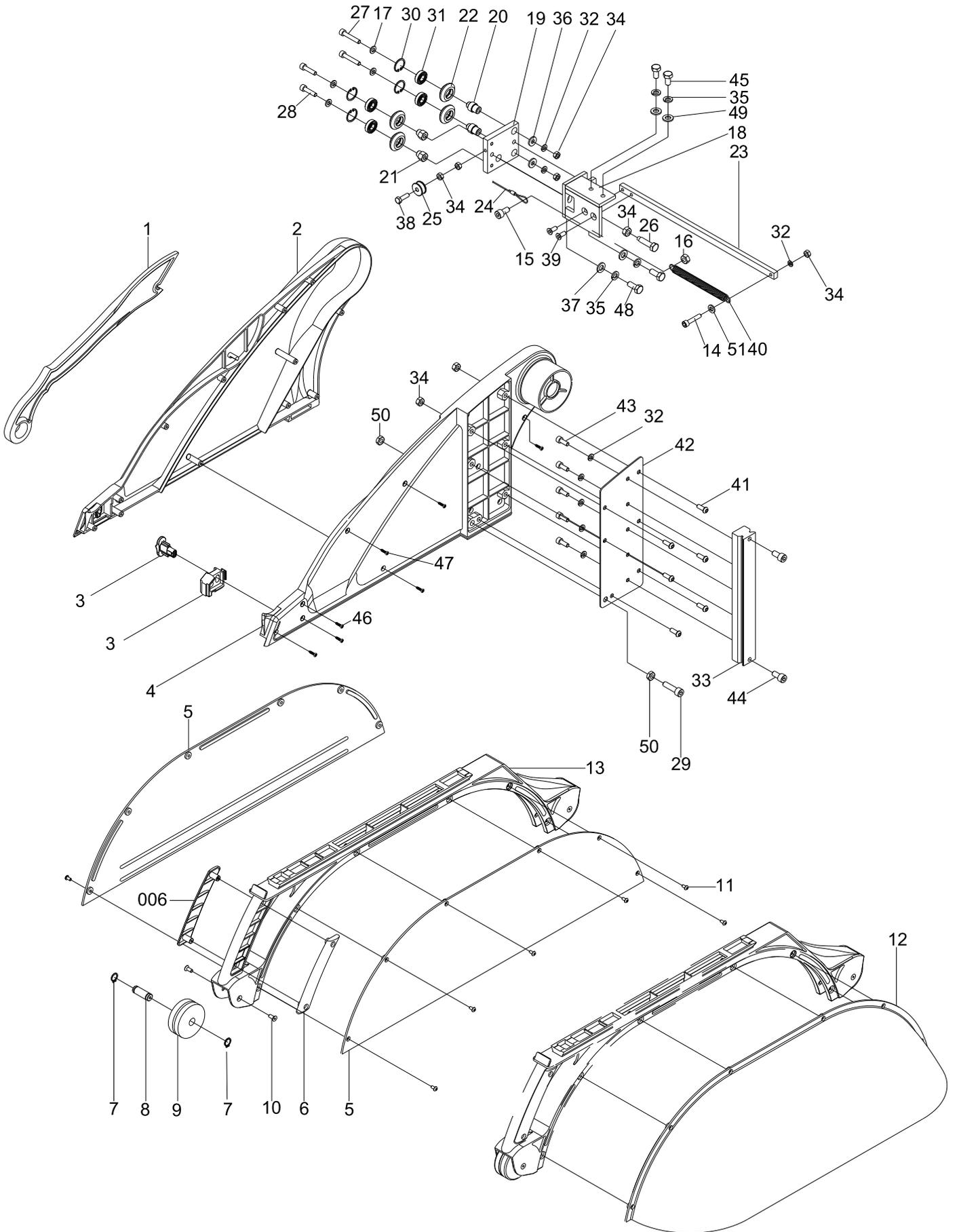
NO	FIG.NO.	DESCRIPTION	SPEC
1	LST-H004A	Vacuum cleaner	1.3m
2	LST-H009A	Vacuum cleaner	
3	ST-D525-0-1	Fasten Base	
4	401022076	Cap screw	M8-16
5	401150003	Lock nut	Ø8
6	ST-I023	Set Screw	
7	ST-D533-0-1	Set Screw	
8	401103003	Lock nut	M12
9	ST-D544A-0-1	Connecting elbow	1.3m
10	ST-D027B	Connect Block	
11	ST-D527-0-0	Bush	
12	ST-D616	Fixed plate	
13	401010008	Hex head bolt	M6x16
14	401150003	Lock Washer	Ø6
15	414021001	C Shape glides	9F22-1
16	401051108	Countersink Head Screw	M4x8
17	ST-D542-0-2	Electric control box	
18	20212003-0	Handle seat	
19	ST-A140B	Joint plate	
20	401032008	Button head serew	M4x8
21	401140004	Washer	Ø8

NO	FIG.NO.	DESCRIPTION	SPEC
22	415012005	Control panel	MH-730
23	416010047	Button, ON	ZB4-BW33+ZB4-BZ101(1A)
24	416010048	Button, OFF	ZB4-BA4+ZB4-BZ102(1B)
25	ST-D543-0-1	Board clamp	
26	401032029	Round head screw	M6x10
27	402150001	Plastic clip	
28	416010046	Emergency button	ZB4-BS844+ZB4-BZ102(1B)
29	401140005	Washer	Ø10
30	401150005	Lock washer	Ø10
31	401010037	Hexagon screw	M10x25
32	LST-H003	Washer	Ø16
33	401150008	Lock Washer	Ø16
34	401010075	Hex Head Bolt	M16x130
35	ST-D617	Washer	
36	402070016	Hand Knobs	6020-63-M12
37	401140010	Washer	Ø6
38	401022051	Cap scre	M6x12
39	401022050	Cap screw	M6x10
40	414080003	Hole plugs	HP-19
41	401072038	Set Screw	M6x16
42	401101004	Hex Nut	M6

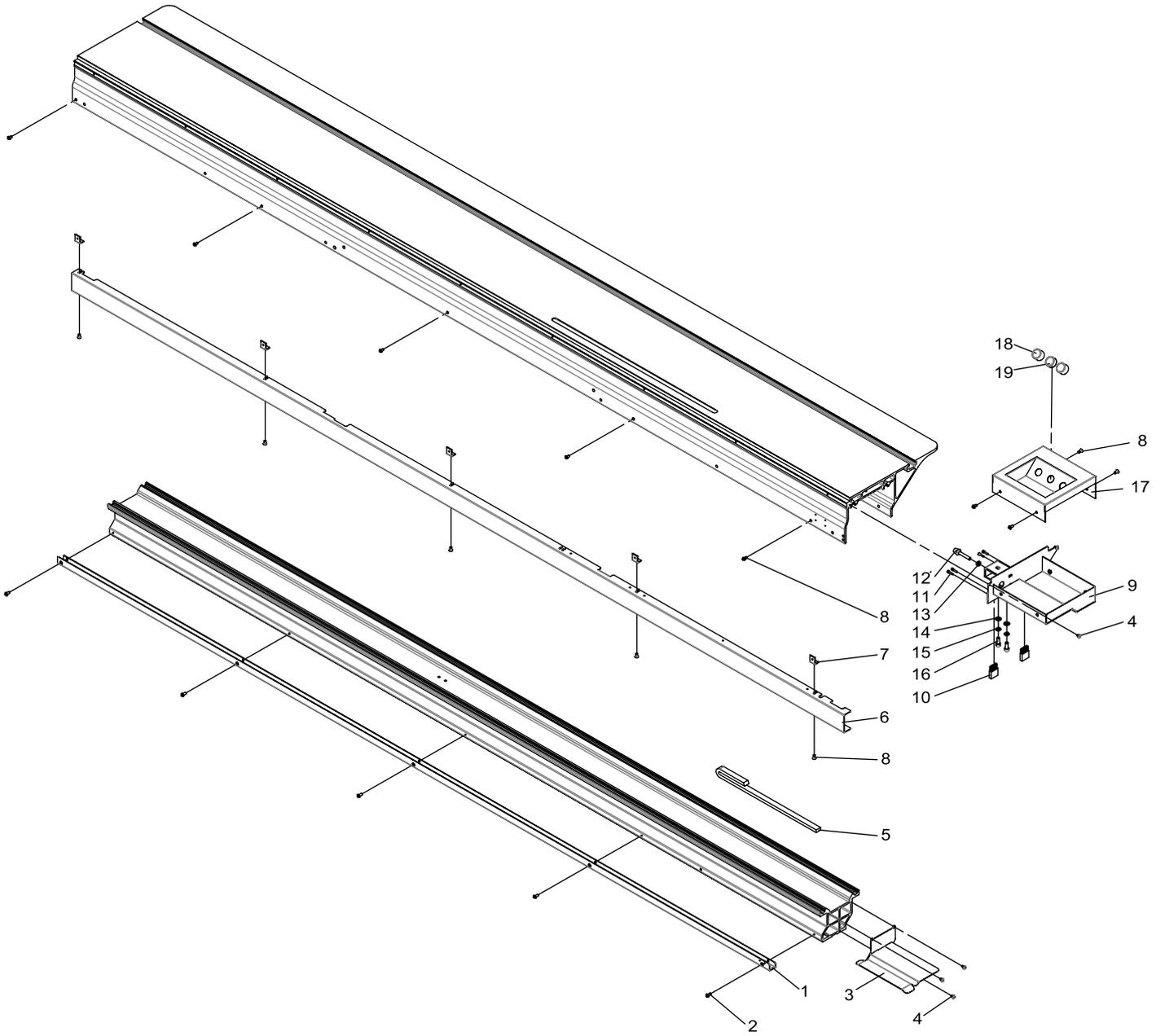


NO	FIG.NO.	DESCRIPTION	SPEC
1	ST405-609	Rotary Arm	1.3m
2	ST-D027B	Connect Block	
3	ST-D527-0-0	Bush	
4	401022076	Cap screw	M8x16
5	ST-D529-0-1	Fixed Base	
6	ST-D531-0-0	Lock Shaft	
7	ST-D526-0-0	Adjust Block	
8	402070002	Knob	6020-40-M8

NO	FIG.NO.	DESCRIPTION	SPEC
9	401140004	Washer	Ø8
10	401150003	Lock nut	Ø8
11	401022080	Cap screw	M8x30
12	401072055	Set screw	M8x25
13	401101005	Hex Head Bolt	M8
14	401140010	Washer	Ø6
15	401150003	Lock Washer	Ø6
16	401022056	Cap screw	M6x25

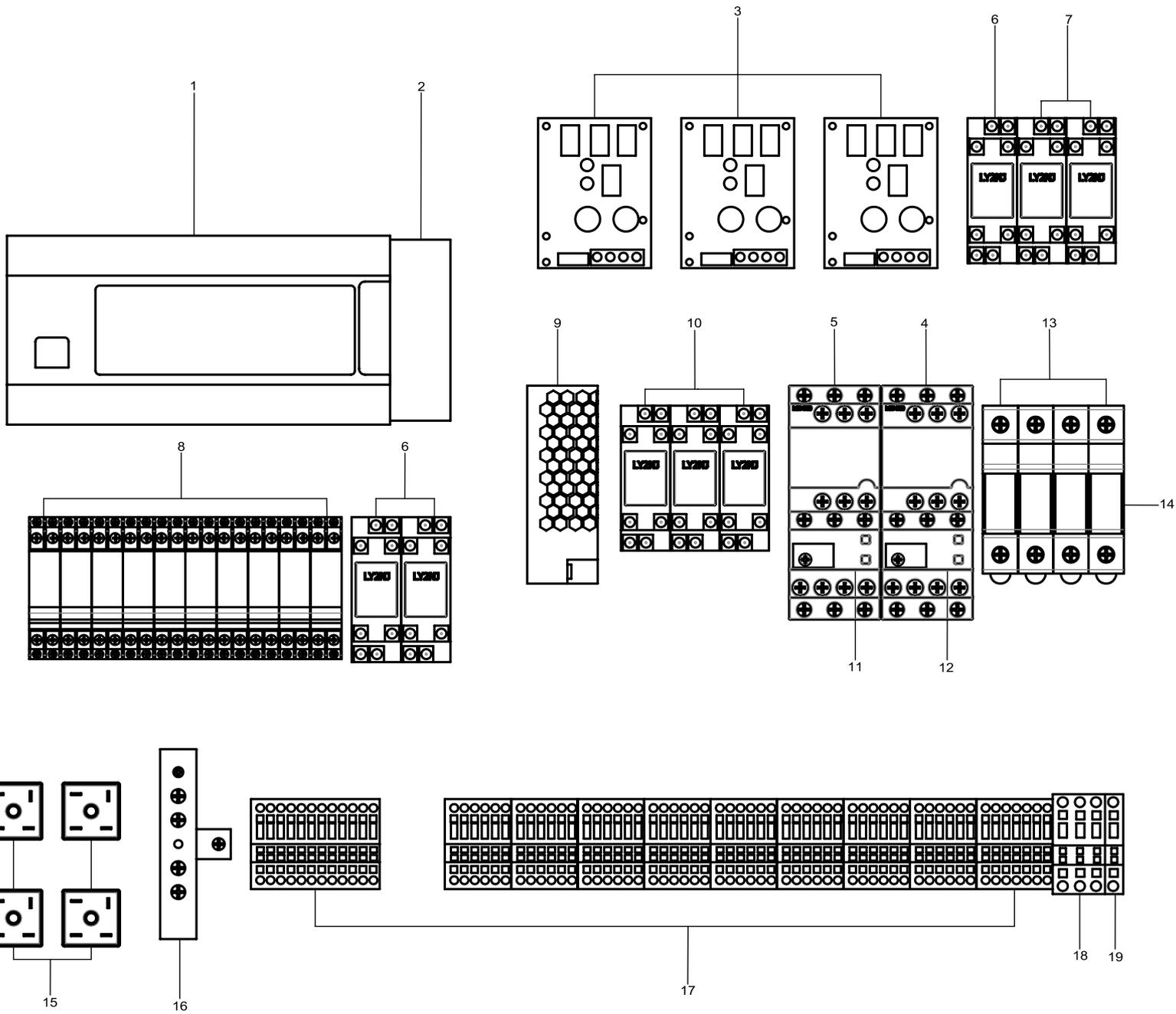


NO.	FIG. NO.	DESCRIPTION	SPEC	NO.	FIG. NO.	DESCRIPTION	SPEC
1	ST-Q047B	Push Stick		27	401022058	Cap Screw	M6x35
2	ST-D311A	Left Safety Guard		28	401022056	Cap Screw	M6x25
3	ST-D314	Open/Lock Button		29	401022082	Cap Screw	M8x40
4	ST-D311B	Right Safety Guard		30	401251017	Retain Ring	φ 22
5	ST-D303A	Chip Guard Cover		31	403013232	Ball Bearing	6900
6	ST-D313	Grip Cover		32	401150003	Lock Washer	φ 6
7	401252007	Retain Ring	φ 12	33	ST-D518-1-0	Slide Wheel	
8	ST-D032A	Pin		34	401101004	Hex Nut	M6
9	ST-D033A	Slide Wheel		35	401150004	Lock Washer	φ 8
10	401052118	Countersink Head Screw	M5x12	36	401140003	Washer	φ 6x φ 16
11	401032008	Button Head Screw	M4x8	37	401140016	Washer	φ 8x φ 23
12	ST-D304A	Chip Guard Cover		38	401032035	Button Head Screw	M6x30
13	ST-D312	Grip Cover Base		39	401052129	Countersink Head Screw	M6x12
14	401022057	Cap Screw	M6x30	40	ST-D038A	Spring	
15	401022051	Cap Screw	M6x12	41	401032033	Button Head Screw	M6x20
16	401103005	Lock Nut	M6	42	ST-D315	Join Block	
17	ST-D522-0-0	Washer		43	401022015	Cap Screw	M6x12
18	ST-D512-0-1	Fixed Base		44	401022076	Cap Screw	M8x16
19	ST-D513-0-1	Fixed Block		45	401010019	Hex Head Bolt	M8x20
20	ST-D514-0-1	Fixed Shaft		46	401060001	Phillips Head Screw	1/8"x3/4"L
21	ST-D515-0-1	Adjust Shaft		47	401060003	Phillips Head Screw	1/8"x5/8"L
22	ST-D516-0-1	Slide Wheel		48	401010018	Hex Head Bolt	M8x16
23	ST-D519-0-1	Spring Fixed Bar		49	401140016	Washer	φ 8x φ 23x3t
24	ST-D521-0-0	Wire Rope		50	401103005	Hex Nut	M8
25	ST-D524-0-0	Slide Wheel		51	401140010	Washer	φ 6x φ 13
26	ST-D520-0-1	Setscrwe					



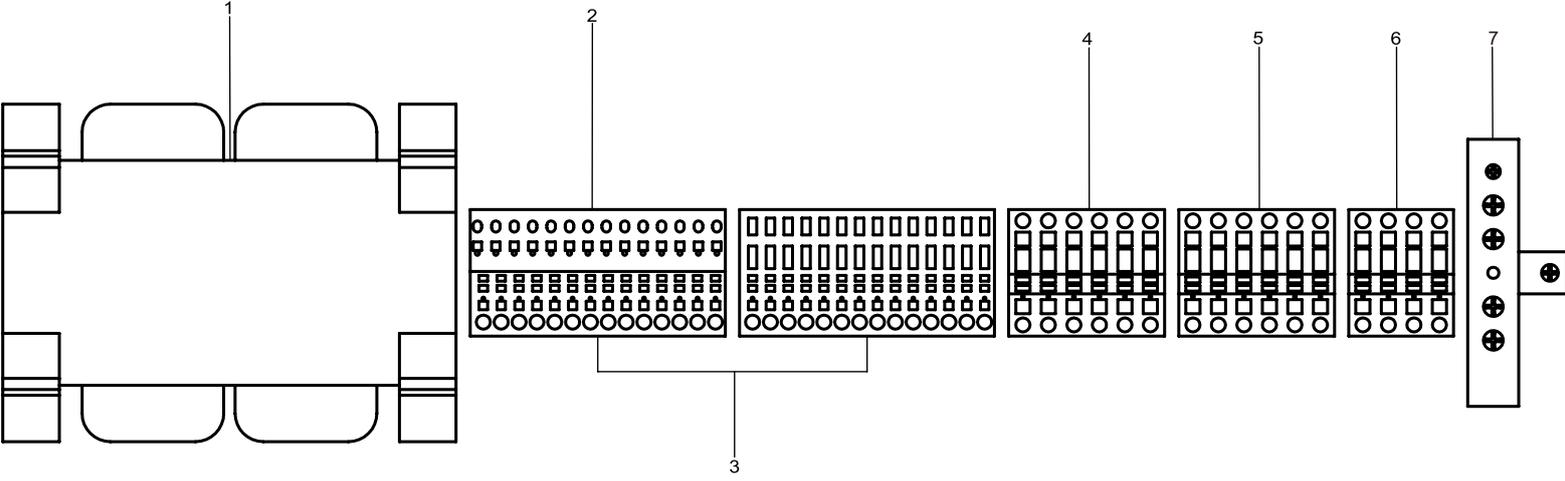
NO	FIG.NO.	DESCRIPTION	SPEC
1	ST-K550B	Fixed seat(3.2m)	
2	401032030	Button Head serew	M6x12
3	ST-K320A	Cover	
4	401042107	Phillips sunk head cap screw	M5x8
5	414010015	Miniature towline	06.10.018.0 (158)
6	ST-K554B	Cover	
7	ST-K559	Fixed seat	
8	401032029	Round head screw	M6x10
9	ST-K552A	Cover	
10	ST-K031	Bristle brush	

NO	FIG.NO.	DESCRIPTION	SPEC
11	401022016	Cap scre	M4x16
12	402160002	Stop block	SSP-FC-806312
13	401101005	Hex Head Bolt	M8
14	401151002	Safety Washer	Ø8
15	401150003	Lock nut	Ø8
16	401022078	Cap scre	M8x20
17	ST-K558	Upper cover	
18	416010047	Button, ON	ZB4-BW 3+ZB4-BZ101(1A)
19	416010048	Button, OFF	ZB4-BA 4+ZB4-BZ 102(1B)



NO	FIG.NO.	DESCRIPTION	SPEC
1	415030009	PLC controller	TM241CE40T
2	415030012	Expansion module	TM3DI8(8i)DI8x24DCV
3	416061014	Power Supplier	PWM-30A DC6~60V
4	416021109	Electromagnetic contactor	LC1-D09(M7)
5	416021128	Electromagnetic contactor	LC1-D25(M7)
6	416023009	Relay	MY-2NJ DC24V
7	416023001	Relay	MY-2NJ AC220V
8	416023014	Relay	RJ1S-CL DC24V
9	416061015	Power Supplier	LRS-100-24
10	416023013	Relay	RH2B-UL DC24V

NO	FIG.NO.	DESCRIPTION	SPEC
11	416220003	Thermal Relay	LR3-D22
12	416220001	Thermal Relay	LR3-D08
13	416051014	Fuse Holder	DF102 10x38 2P
14	416052025	Input fuses	4A GG
15	416081001	Bridge Rectifier	KBPC 2506
16	416230001	Ground plate	5P
17	414041017	Terminal Block	PT-2.5
18	414041018	Terminal Block	PT-6
19	414041019	Terminal Block	PT-6PE



NO	FIG.NO.	DESCRIPTION	SPEC
1	416071033	trans former	1172VA
2	414041022	Terminal Block(Active end)	PP-H4/14
3	414041021	Terminal Block	PT4/1P
4	414041018	Terminal Block	PT-6
5	414041020	Terminal Block	PT-4
6	414041017	Terminal Block	PT-2.5
7	416230001	Ground plate	5P