

## Fully Automatic Corrugated Tube Cutting Machine

MODEL: KS-C520

# User Manual



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Thank you for purchasing Fully Automatic Corrugated Tube Cutting Machine KS-C520 from Kingsing Machinery.

*Please read this user manual carefully before using the machine.*

## **Basic Instructions**

The basic prerequisite for safe handling and trouble-free operation of the KS-C520 is being familiar with and observing the safety instructions. **It is for your own safety!**

The safety instructions must be observed by all persons working with the KS- C520. In addition, the rules and regulations pertaining to the application site, particularly those concerning the prevention of accidents, must be observed.

Safe structure of cutting device is designed into this application equipment to protect operators and maintenance personnel from most hazards during equipment operation. However, certain safety precautions must be taken by the operator and repair personnel to avoid personal injury, as well as damage to the equipment. For best results, application equipment must be operated in a dry, dust-free environment. Do not operate equipment in a gaseous or hazardous environment.

Carefully observe the following safety precautions before and during operation of the equipment:

1. Power plug has to be connected to a grounded receptacle. Once breakdowns occurred, it can avoid electric shock injury to the operator and lower down the loss.
2. Check the power supply of machine before operation (AC 110-125V/ AC-200-230V). Do not share one socket with other electrical equipment.
3. Protection cover is installed for security. Please do not start the machine when the protection cover is removed or open. If you want to remove this cover due to maintenance and other reasons, please disconnect the power first, and then start maintenance and other operations.
4. If you want to replace the parts (such as guiding tubes, blades, belts and etc.) or clean inside of the machine, power off machine first to avoid accidents.
5. If power failure during operation, please power off machine immediately. Restart machine after the power supply is stability.
6. Please do not disassemble or refit machine by yourselves. If machine is failure, please contact us directly for repair.

7. When the machine is running, do not put hands on the moving parts. If necessary, equipment operation should be stopped, and then disconnect the power or disconnect the power plug. Non-compliance with the above instructions and touch the machine may cause an unexpected accident.
8. **Stay Alert!** Watch what you are doing! Never run the machine when you feel yourself overcharged, drugged, tired or unable to work!
9. Important notice for selecting operation place:

The following places should be avoided for operation and storage:

- (1) Damp or dusty places
- (2) Places exposed to high temperatures, direct sunlight or low temperatures.

Storage requirements: temperature 10 -30°C. Air humidity <40 %.

Normal Operation Temperature	-35°C ~ +75°C
Limit Operation Temperature	-40°C ~ +85°C
Storage & Transport Temperature	-40°C ~ +80°C
Storage & Operation Humidity	≤85%

- (3) Do not spill liquids onto the KS- C520.
- (4) Do not expose the KS- C520 to strong vibrations and impact.

The instrument should be put in a leveled place indoor with nice ventilation.

**The KS- C520 may only be used:**

- ※ For the purpose for which it was intended and in a perfectly safe technical condition.
- All persons involved in the start-up, operation and maintenance of the KS- C520 must
- ※ Be appropriately qualified and be intimately familiar with this operating manual.

### Instructions for Transportation

1. Instruction and Safety Measure for Transport:

Tie up machine for transportation properly (e.g. by truck, ship, plane). Grab machine with suited lifting equipment and on palette only Utilize screws locking for transportation.

2. Lifting Equipment Use suitable lift utilities for unload and transport of machine Use tested and approved lift utilities only.
3. Take care of sufficient bearing capacity when using any lifting equipment!
4. Unload, Load, Internal Transport. Transport by crane:
  - Take care of sufficient bearing capacity!
  - Be careful with packing, do not damage.
5. Transport by fork lift:
  - Ensure fork lift has sufficient lifting capacity!
  - Ensure floor's load capacity is enough!
  - Ensure that floor is even!
6. Packing Material
  - Packing material has to be disposed harmless for the environment
  - Pay attention to local environmental protection regulations

Report and document transport damages

- Note recognized damages into waybill
- Damage must be confirmed by signature of responsible deliverer (normally the truck driver)
- Inform manufacturer as soon as possible about damages.

### Place of Deposit, Period of Storage, Protective Measure

All bright parts are protected against corrosion.

- Storage of machine can be done up to 15 days without hesitation.
- Storage must be in dry rooms only.
- Protect cables against heat, oil and sharp edges.
- If you plan storage longer than 15 days (e.g. shipping overseas) contact manufacturer, because machine has to be packed seaworthy and protected especially for.

### Importance of this Operating Manual

- Basic requirement for meeting good working safety and undisturbed use of this machine is the knowledge of all relevant safety instructions.

- This operating manual must be handed over to all persons involved in machine set up operation, repair and maintenance. All mentioned persons should confirm in writing that they read and comprehended this manual truly.
- Pay attention to the local safety regulations for prevention of accidents.

### Duly Utilization, Appropriation

- This machine is Fully Automatic Corrugated Tube Cutting Machine specially designed for cutting soft tubes as below. (It is just designed for batch production.) Only tubes/pipes with the matching diameter & material can be processed in this machine.

Laboratory Equipment.

Corrugated tubes

Soft PVC pipes/tubes

Never insert solid metal parts, metal wires or hard objects in this machine; this would destroy the cutting unit. Unauthorized conversions which go beyond mere retooling and modifications to the KS-C520 are prohibited for safety reasons!

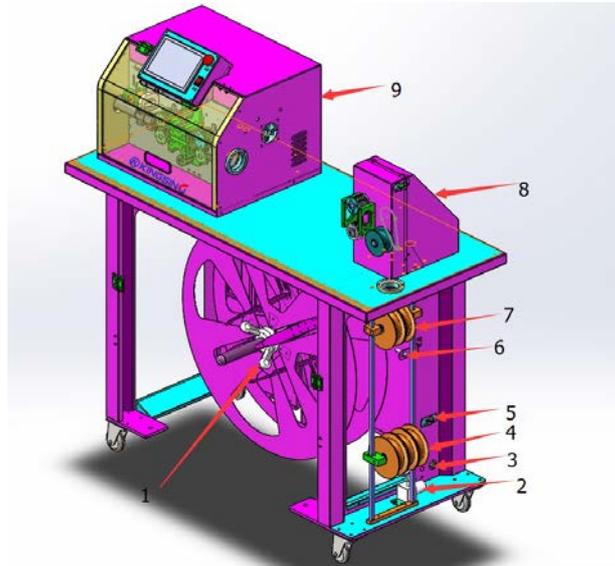
- Operating the machine inside dry room with non-dangerous environment
- Take care of all instructions given in operating manual
- Do never use accessories which are not certified by KINGSING and use KINGSING-machines, accessories and – attachments for KINGSING specified purposes only.
- This machine is not made for any other usage except what is listed in this operating manual (herein specified technical data).

Own modifications and constructions may not be accomplished therefore KINGSING will be not liable for caused accidents or damages.

### Product Description

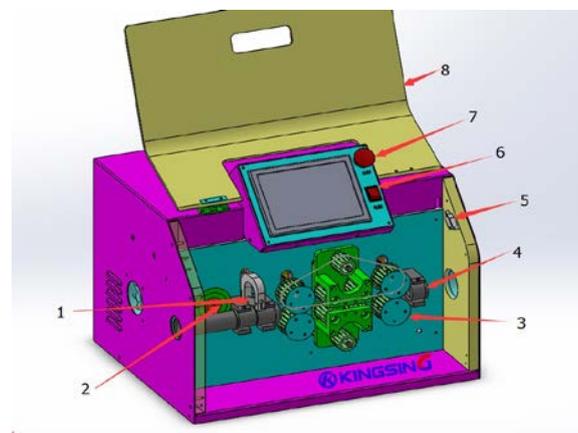
This Machine is specially designed for automobile wire harness industry, such as corrugated pipes, flexible round plastic tubes, rubber tubes, and etc. PLC touch screen control system, easy to operate. Driven by electricity, convenient to move. Adopt step motor, tube feeding is stable, and feeding length is high accurate. Integrated circuit is easy to maintenance and operate. Compared to manual cutting tools, this machine has largely improved working capacity.

## Main Structure



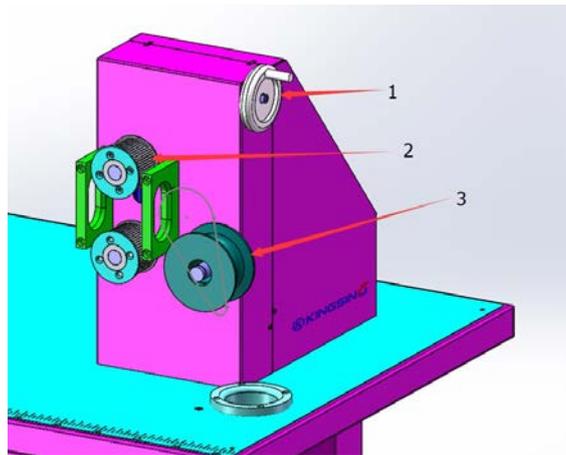
1. Locknut: loose this nut can take off feeding plate and load material in feeding device.
2. Pull Rope Potentiometer: Automatically control material feeding speed.
3. Power Supply
4. Lifting Roller: For feeding material and Pre-feeding speed buffer.
5. Positive and Negative Feeding Switch: Select material feeding direction.
6. Lifting Roller Upper Sensor: When the lifting roller reach this position, feeding device will stop automatically.
7. Fixed Feeding Roller: Work together with lifting roller.
8. Pre-feeding Device: Pre-feed material to main machine.
9. Main Cutting Machine

## Main Cutting Machine



- |                          |  |
|--------------------------|--|
| 1. Cutting Blade.        | 2. Splitting Blade (It is optional part, not standard equipment.)      |
| 3. Wire Feeding Rollers. | 4. Feeding Tubes (Nozzle)                      5. Safety Guard Sensor. |
| 6. Power Switch.         | 7. Emergency Stop Button.                      8. Safety Guard.        |

### Pre-feeding Device



1. Pre-feeding Roller Pressure Hand Wheel: Open and close pre-feeding rollers.
2. Pre-feeding Rollers: Feeding material to main cutting machine.
3. Fixed Feeding Roller.

### Product Specification

Item	Specification
Model	KS- C520
Power Supply	200-240V 50Hz
Available Tube Diameter	5~30 mm
Power Rating	1100W
Cutting Length	0.1-9999.9mm
Accuracy	± L x 0.01mm (L=cutting length)
Cutting Speed	60pcs/min (L=100mm)
Speed	L=100mm,100PCS/Min
Net Weight	370KG
Dimension	1400×670×1400mm

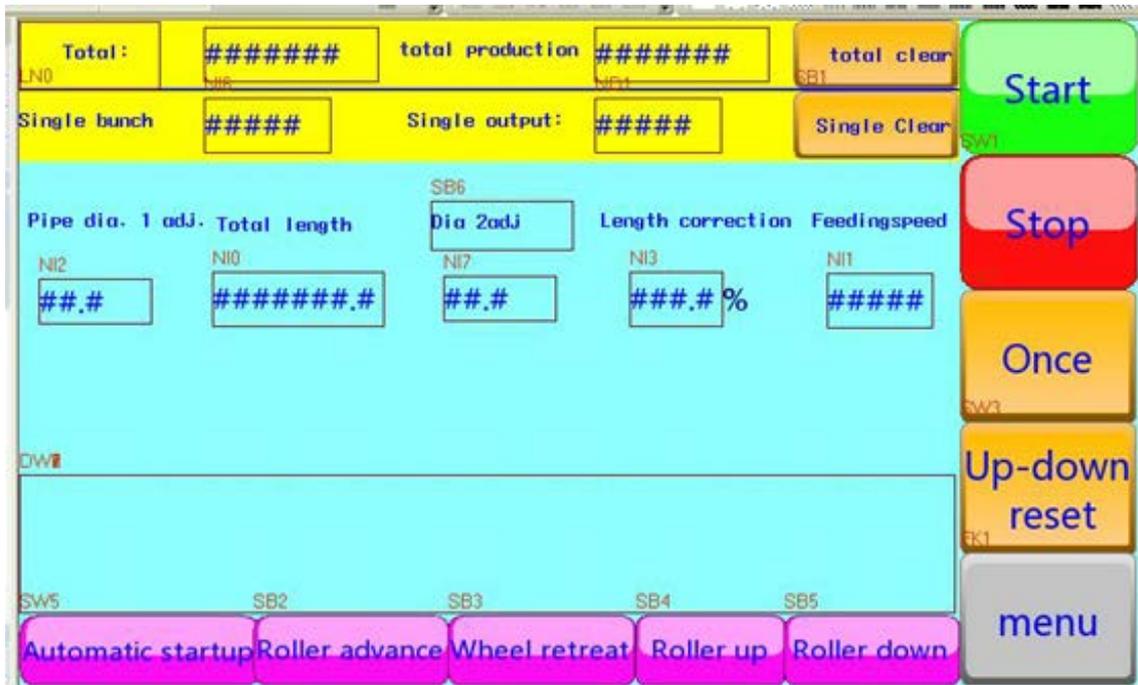
## Quick Guide for Operation

### Mechanical Adjustment

1. Power on the machine and wait for main cutting machine reset.
2. Take off locknut and outside feeding plate, load tube/pipe roll in feeding device and then install feeding plate, lock nut after loading material.
3. Put tube/pipe through lifting roller, fixed roller, pre-feeding roller and then into main cutting machine in sequence.
4. Adjust pre-feeding device and pressure device.
5. Test cutting effect with one tube/pipe. For example, cut one-meter length and then check the cutting length. If the actual cutting length is different from setting length, then adjust length scales until get the setting cutting length.
6. After settings, press start button.

### Control System Operation

1. Boot Screen
2. Operation Screen



Total: total production setting.

**Single Bunch:** bundle quantity, the machine will pause for some seconds per setting quantities, it helps to collect required pieces in one bundle.

**Total Production:** Finished production quantity.

**Total Clear:** Reset total output.

**Single Clear:** reset current output.

**Pipe dia 1 adj:** Pipe diameter 1 adjustment. Change tube 1 feeding size.

**Total Length:** Set total cutting length.

**Dia 2 adju:** Pipe diameter 2 adjustment. Change tube 2 feeding size.

**Length Correction:** total length plus percentage of total length.

**Feeding Speed:** Used for setting cutting speed. Max. speed is 9.

**Automatic Startup:** auto start production after single bunch.

**Roller Advance:** Manual feeding material.

**Wheel Retreat:** Manual retreat material.

**Roller Up:** Manual open rollers.

**Roller down:** Manual close rollers.

**Start:** Auto start.

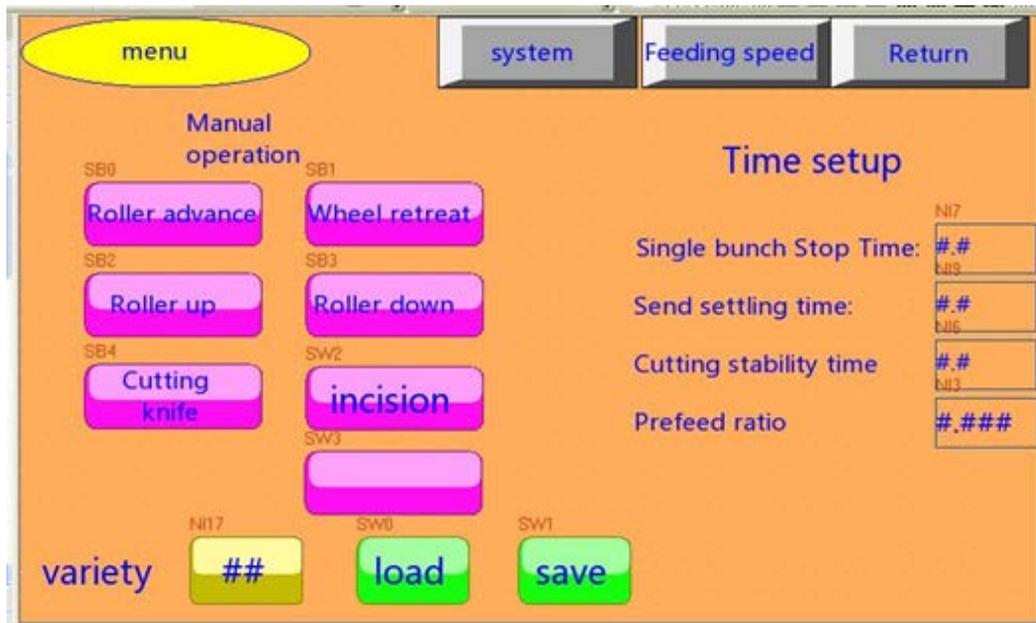
**Stop:** Auto stop.

**Once:** Machine work one cycle only. Used for adjusting parameters.

**Up-down Reset:** Press this button after booting, machine will reset lifting automatically.

**Menu:** enter into setting page.

## Manual Operation



Roller Advance: Feed material forward.

Wheel Retreat: Feed material backward.

Roller Up: Lift feeding rollers. It goes up to the origin.

Roller Down: Put down rollers. It goes down to setting position.

Cutting Knife: manual cutting operation.

Incision: Slit function open or close. (This is optional function.)

Lack of Material: machine will stop automatically when it is lack of material after open this function.

Variety: Input the material program number.

Load: Load saved parameters.

Save: Save the current product parameters, program number, cutting length correction, pipe diameter, feeding speed, length percentage and etc.

Single Bunch Stop Time: Pause time for single bunch production.

Send Settling Time: Pause time after feeding material.

Cutting Stability Time: Pause time after cutting operation.

Prefeed Ratio: The ratio of pre-feed length and setting feed length.

System: Enter into system setting page.

Feeding Speed: enter into feeding speed setting page.

Return: Back to home page.

### Feed Acceleration Settings

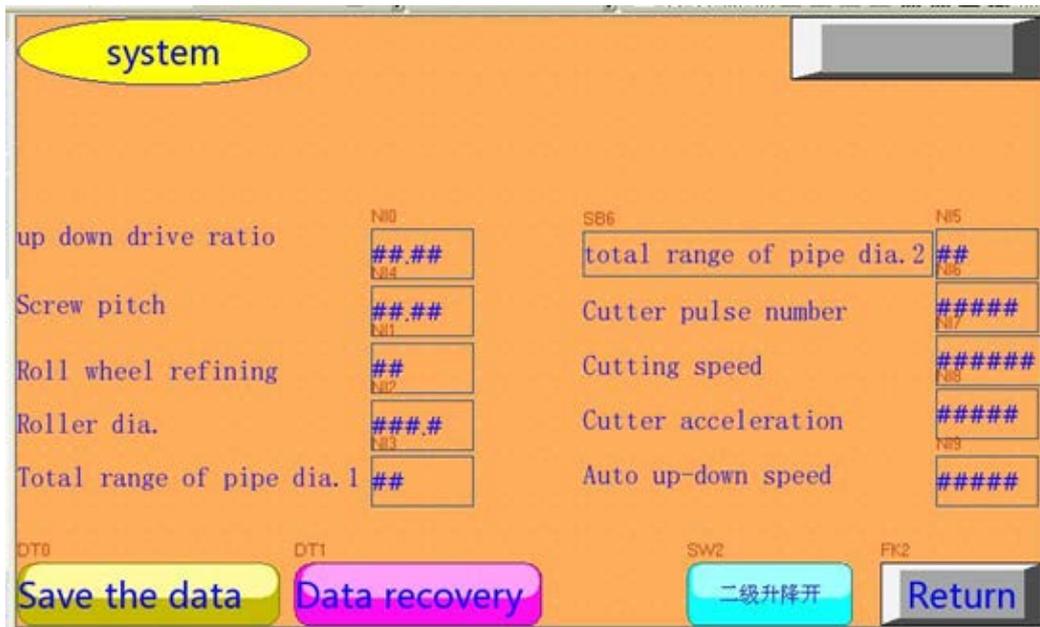
Project		Range	numerical value	
RCT0	Length scales	0-60000	NI0	#####
RCT5	Roll wheel acceleration	0-149 ms	NI1	####
RCT2	Roll wheel acceleration	150-239 ms	NI2	####
RCT6	Roll wheel acceleration	240-800 ms	NI3	####
RCT3	Roll wheel acceleration	>800 ms	NI4	####
RCT7				
RCT1				
RCT9				

Length Scales: Change the ratio of actual cutting length and setting length. If the cutting length is not equal to setting length, then adjust this parameter. When the actual cutting length is less than setting length, increase this value. When the actual cutting length is longer than setting length, decrease this value.

Roll Wheel Acceleration: Each length of the interval and conveyor belt startup speed can be set up. This parameter is smaller, the cutting speed will be faster, and conveying power will be smaller as well.

Cutting Speed: This parameter is bigger, then cutting speed will be faster.

## System Parameter Settings



Up Down Drive Ratio: Up and down gear ration.

Screw Pitch: Up and down screw pitch.

Roll Wheel Refining: Wire feeding drive card

Roller Dia. Wire feeding roller diameter.

Total Range of Pipe Dia. 1: Lift roller 1up to Max. height.

Total Range of Pipe Dia. 2: Lift roller 2 up to Max. height. (For last generation machine)

Cutter Pulse Number: one cycle cutting pulse.

Cutting Speed: Knife cutting down speed.

Cutter Acceleration: Cutter start and stop time.

Auto Up-down Speed: Roller reset speed.

## Alarming/Troubleshooting

### Emergency Stop

Reason: Emergency Stop button was pressed down.

Solution: Rotate emergency stop button in clockwise direction.

**Safety Guard is Open, machine stops.**

Reason: Safety guard is open.

Solution: Close the safety guard.

**The lifting and reset action is uncompleted, please reset manually.**

Reason: lifting reset.

Solution: Waiting for lifting reset completed.

**Pre-feeding Device Abnormal**

Reason: Feeding roller reaches original position. (Max. height)

Solution: Put down feeding roller manually.

**Meet total production. Clear output and then start machine.**

Reason: Finish total output.

Solution: Manual reset machine.

**Please close rollers.**

Reason: Rollers are open.

Solution: Close rollers manually.

## **Packing List**

Main Machine: 1 unit

Power Line: 1pc

Guiding Tube (Nozzle): one set standard nozzles in the machine (10mm, 20mm, 30mm for choice)

Hexagon Wrench: 1 set.

7mm Open Spanner: 1pc

A Cross Screwdriver: 1pc

English User Manual: 1pc



## Aftersales Service

1. We offer 12 months' free maintenance service from the stamped purchase date.
2. During the warranty period, clients no need pay for exchange new part (excluding consumable parts), but all freight costs caused by sending new parts are at the buyer's expense.
3. We only assure the warranty to the clients who originally purchased the machine from our company or our authorized agents. The warranty is void once the machine is on-sold, or otherwise traded to a new entity.
4. We are not responsible for any equipment fault occurred as follows:
  - a. Any equipment fault cause by not abiding by the operational requirements in the manual.
  - b. The operational environment in user's factory does not meet the minimum operational requirements set out in the manual (power instability and etc.).
  - c. A non-professional operator dismantles the machine without permission, which then leads to equipment fault or damage.
  - d. *Force majeure* will be invoked for any extraordinary incidents at leads to equipment fault or damage.
  - e. Maintenance by 3rd parties, other than our authorized agent(s) will void the warranty.

## Revision Summary

*Since the previous release, the manual format was updated to the current corporate requirements.*