

## Automatic Wire Cutting & Stripping Machine

MODEL: KS-W Series

# User Manual



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## Security Notice

Thank you very much for purchasing Automatic Wire Cutting & Stripping Machine KS-W Series from KINGSING Machinery CO., Limited. KINGSING Machinery is a famous high-tech enterprise which has been engaged in developing, manufacturing and marketing of wire harness processing equipment.

Free maintenance during one year and lifetime free technical support!

- 1, Read this user manual carefully before using the machine, avoid any accident and prolong the service life of the machine.
- 2, Put the machine on the table which can bear the weight at least 60kg. Check the feet of the machine are stable on the table and make sure it's working smoothly when working.
- 3, Check the power supply before starting machine (Power supply 110/220V 60/50HZ) 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.
- 4, Setting correct parameters and testing the machine before production.
- 5, One-year warranty. (From the date stamped in the invoice) Please contact us directly if machine cannot properly or any problems caused by quality or misoperation.
- 6, The warranty will be confirmed according to the invoice number in the commercial invoice, please keep it for record. Please pass the user manual to the next user if machine is resale.

Important note: Add engine oil to the oiling hole on the top of the knife rack every day to make sure machine work properly and prolong product lifespan.

## Program Settings

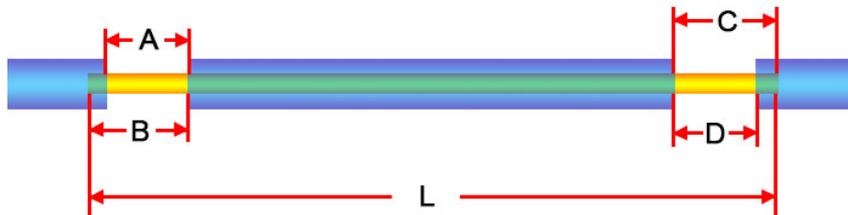
There are 13 zones in the LCD display as follows:

FUNC	PRO	TWIST				SPEED			PAUSE
		H	T	S	F	C	R	S	
Long Wire	1	C	C	9	9	5	5	5	5.0
	S.TOT: 50000				TOT:0				
	S.BUN:100				BUN:0				
08	06	80.0		06	08	60	12		
HEAD	GAP	LONG		GAP	TAIL	DIA	RT		

- 1) **FUNC:** This zone shows the current working mode (The above picture's current working mode is "Long Wire", there are Max. 6 different working modes for choice.)
- 2) **PRO.:** This zone shows the current program number, the program number is from 0 to 99, so you can store Max. 100 programs in the machine.
- 3) **TWIST:** This function need a wire twister, it's only useful for the machines which have a wire twister, you can set it to any value if your model does not have twisting function.  
 H: wire head twisting direction. (F: Clockwise, R: Anti-clockwise C: Close twisting function)  
 T: wire tail twisting direction. (F: Clockwise, R: Anti-clockwise C: Close twisting function)  
 S: wire twisting speed. (Recommend: 5 ~ 7)  
 F: wire twisting force. (Recommend: 5 ~ 9)
- 4) **SPEED:** the knife speed(C), roller speed(R) and stripping speed(S) are all adjustable, ranging from 0 to 9, the value the bigger, the speed the faster.
- 5) **PAUSE:** This parameter works together with "S. BUN" value, it means that the machine will pause "PAUSE" seconds per "S. BUN" quantity. (For Example: For above picture, PAUSE = 5.0, S. BUN =100, that means the machine will pause 5 seconds per 100 wires, so you have 5 seconds to collect the 100pcs of wires as a bundle).
- 6) **Quantity:** This zone has 4 parameters as follows:
  - A) **S. TOT:** The total quantity you need, the machine will stop when it arrives to this quantity.
  - B) **TOT:** This is a counter; it shows how many wires it has processed.

C) S. Bun: This parameter works together with “Pause”, said as above.

D) BUN: This is a counter; it shows the quantity for current bundle.



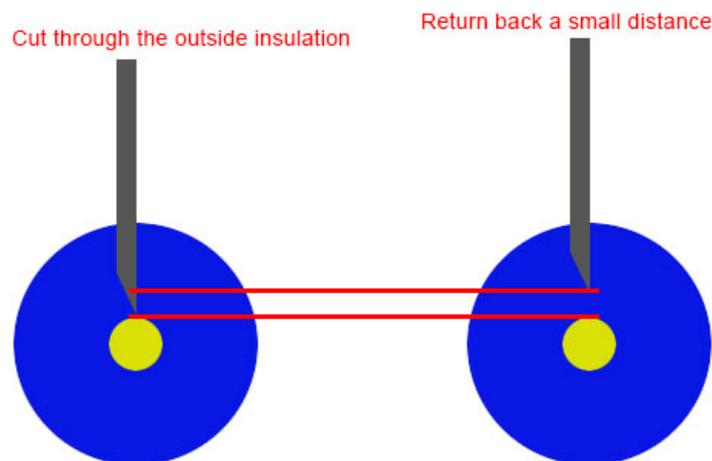
7) HEAD: Wire head stripping length. (Above Picture “B”)

8) GAP: Window width (Above picture “A”, if  $A > B$ , it is full stripping. If  $A < B$ , it’s half stripping).

9) LONG: The total length of the wire (Above picture “L”)

10) GAP: wire tail window width (Above picture “D”).

11) TAIL: Wire tail stripping length (Above picture “C”).



12) DIA (Knife Value): It controls the blade cutting depth, it should just cut through the outside insulation but not hurt the inner copper cores (Above picture left side).

13) RTN (Knife Retreating): In order to prevent the inner copper cores from hurting by the blade edge during the stripping period, so the blade should return back a small distance after it cut through the insulation, this parameter controls this distance (Above picture right side).

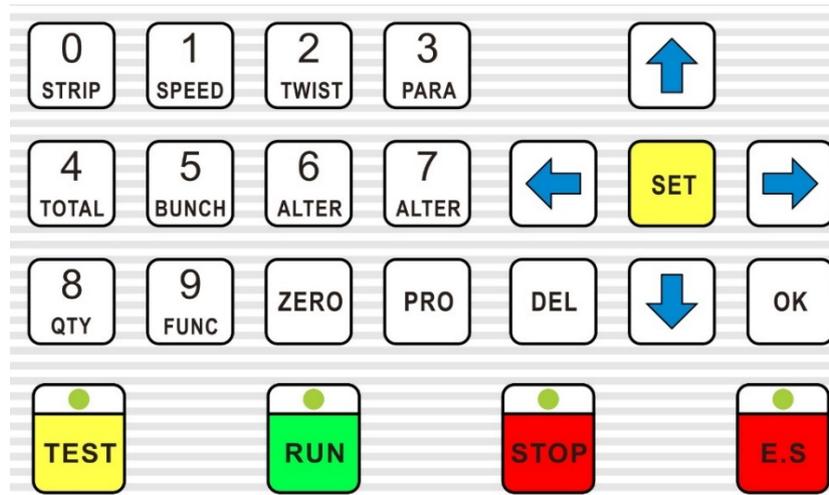
Suggestion: You should set the value according to your wire insulation’s thickness.

A) if the wire is less than  $10\text{mm}^2$ , the recommended value is 10 ~ 30.

B) If the wire is over  $10\text{mm}^2$  and less than  $25\text{mm}^2$ , the suggested value is from 20 to 50.

C) If the wire size is over  $25\text{mm}^2$ , the suggestion value is 35 ~ 90.

## Key Panel



KS-W series control system interface is composed of 23 keys and one set 192X64 dot matrix LCD display screen. Please find the following functions for each key.

	<p>Under edit mode, press this key to input number 0 in the machine.</p> <p>Under standby mode, press this key will enter into wire stripping parameters editing interface. The bottom line in the display will enter edit mode, you can set the value for “Head”, “Gap”, “Long”, “Gap”, “Tail”, “DIA”, “RTN” one by one, after you input numbers, you should press the “OK” key to make it effective, you can also press the blue left key or right key to move to next parameter.</p>
	<p>Under editing mode, press this key to input number 1 in the machine.</p> <p>You can press this key under standby mode to edit the speed of knife, rollers and stripping.</p>
	<p>Under editing mode, press this key to input number 2 in the machine.</p> <p>You can press this key under standby mode to edit the twisting parameters, it’s only useful for the machines which have a wire twister.</p>
	<p>Under editing mode, press this key to input number 3 in the machine.</p> <p>In standby mode, you can edit the parameters for your current mode, different working mode have different “PARA” program.</p>
	<p>Under editing mode, press this key to input number 4 in the machine.</p> <p>You can press this key to clear the counter to zero under standby mode.</p>
	<p>Under editing mode, press this key to input number 5 in the machine.</p> <p>You can press this key to clear the bundle to zero in standby mode.</p>
	<p>Under editing mode, press this key to input number 6 in the machine.</p> <p>There are 6 working modes for choice, you can press this key to choose proper working mode, when you move to the last mode, it will return to the first mode.</p>



Under editing mode, press this key to input number 7 in the machine.  
It's similar to the above key (6/ALTER), the above key like "Next Mode", and this key like "Previous Mode".



Under editing mode, press this key to input number 8 in the machine.  
You can press this key to set "S. TOT", "TOT", "S. BUN", and "BUN". Don't forget to press the "OK" key to make your settings effective.

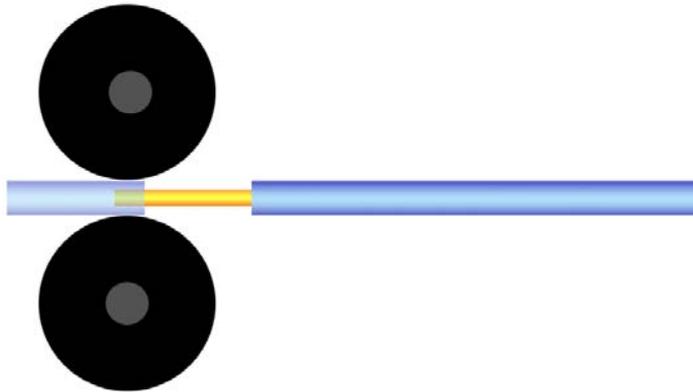


Under editing mode, press this key to input number 9 in the machine.  
You can press this key under standby mode to enter into the system parameter setting page as following picture show. Different program number with different settings, so you should enter into this page and check these parameters each time when you change a program number.

FUNC		PRO		TWIST				SPEED			PAUSE		
				H	T	S	F	C	R	S			
COU. MUL: 1				WIR.SEN: Off									
Cut. COR: F 0 B 0				TWI.MOV: 34.0									
GUID. SW: On				Auto Open: 5									
F. Strip: Off				SIN. Strip: Off									
HEAD		GAP		LONG				GAP		TAIL		DIA	RT
■		■		■				■		■		■	■

- 1) COU. MUL: please just keep its value to its default value, the counter will multiply this value. (Example: If your machine can process 2 wires at one time, then you can input "2" here)
- 2) GUID. SW: Wire guiding tube jump switch. (OFF: wire guiding tube will not jump up. ON: wire guiding tube will jump up when stripping the wire tail. Please open this function if you need to stripping the wire tail over 10mm.
- 3) TWI. MOV: it's only useful for the machines which have a wire twister, it

controls the wire head position between the twisting rollers.



If your current model has twisting function, then you should adjust this value to make sure the wire head position is as above picture shows, otherwise the wire head will not be twisted very well.

- 4) Auto Open: This function is only useful for the machines which have output roller jump up function. This value controls the output roller jump up height. If your wire head stripping length is less than 30mm, we suggest you set it to “0”, if your wire head stripping length is over 30mm, we suggest you set it to “3 ~ 5”, then the output rollers will rise up automatically when you strip the wire head.
- 5) The other parameters in this page is not useful, they are only used for some customized machines, standard machines do not have these functions.



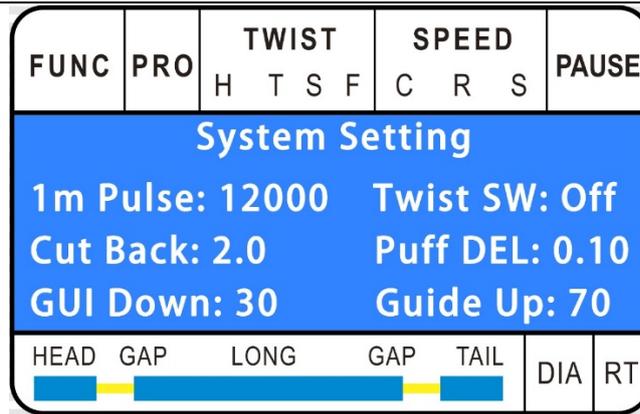
Under editing mode, press ZERO key to reset the current data.  
Under standby mode, press this key to clear the counter to “0”, both of “TOT” and “BUN” will be reset as 0.



Press this key to choose a program number, the program number ranging from 0 to 99, you can use any number. They are used for storing parameters for different wires.



Press “3/PARA” or “9/FUNC” key and then press “SET” key to enter into edit mode.  
Under standby mode, it will show password input box when you press down the “SET” key, you can input the password “10010011” to get in the follow page, please don’t modify any values if before you record the default values, otherwise it may cause machine error.



1m Pulse: if the wire real length is not equal to the setting length, then you can modify this value to fix the difference, it looks like a scale. (Example: you want to process a 100mm long wire, but you find that the real length is 99mm or 101mm, not equal to your setting length 100mm, then you can modify this value to fix the problem, then you input any other length will be always correct)

Twist SW: if your machine does not have twisting function, please do set it to Off, if your machine has a wire twister, then you should set it to On.

Cut Back: after the wire is cut off, the wire will return back a small distance. (If you set it to 2.0 as above picture, it means the wire will return back 2mm after cut off)

GUI Down: this value controls the wire guiding tube origin angle, make sure the tube is just pointing to the center of the blade hole.

Guide Up: this value controls the wire guiding tube jump up height.



In edit mode, you can press this key to plus 1 for current parameter.  
Under standby mode, you can press this key to plus 1 for “DIA” value.



In edit mode, press this key to minus 1 for current parameter.  
Under standby mode, press this key to minus 1 for “DIA” Value.



In edit mode, press this key for shifting to previous parameter.  
Under standby mode, press this key to minus 1 for “RTN” value.



In edit mode, press it for shifting to next parameter.  
Under standby mode, press this key to plus 1 for “RTN” value.



Anytime you can press this key to get in standby mode. (Example: After you finish setting the “PARA”, you can press “DEL” key to get back to the default screen and enter into standby mode.



In edit mode, you can press this key to write the current value to EEPROM (Memory IC), then the value will be effective.

	Each time you press down the “TEST” key, the machine will move one step. If you press down this key and hold it for at least 2 seconds, the machine will finish one circle automatically (Process one wire). It’s very useful to test the parameter settings before operation.
	Start the machine in automatic mode. (Remark: You can only start the machine in standby mode, and can’t start the machine in edit mode or parameter setting mode. You can press “DEL” key to get back to standby mode at any time)
	Stop the machine. It will finish the current circle and then stop automatically. So it will not stop immediately when you press this key.
	During work, press “E. Stop” key to stop the machine. The feeding roller will stop immediately, but the blade will complete the reset operation. Under standby mode, press this key to perform reset action.

## Fast Operation

Example: Process 0.5 mm<sup>2</sup> Wires



- 1) Lead the wire head through the wire feeding rollers, make sure the wire head is over the blade position. (There is no need to lead the wire head over the output rollers).
- 2) Adjust the roller pressure according to your wire diameter, make sure your wire will not slip between rollers, but please don’t give too much pressure to your wire, otherwise the roller may hurt your wire.

3) Press  key to input a program number, here we use program “1”.

4) Press  or  to select the “Long Wire” working mode.



- 5) Press to set the system parameters for program “1” as follows (you have to press the “System” key to get in edit mode):

COU. MUL: 1	WIR. SEN: OFF
Cut. COR: F 0 B 0	TWI. MOV: 34.0
GUID. SW: ON	Auto Open: 5
F. Strip: OFF	SIN. Strip: 50.0



- 6) Press to set parameters as following:

8.0	15.0	80.0	15.0	8.0	55	08
Head	Gap	Long	Gap	Tail	DIA	RTN

Remark: “DIA” value is an estimate value according to wire size, you need to do some tests to get the correct “DIA” value. The blade will cut deeper if you reduce this value, and we suggest you use a big value to test the result, then reduce this value step by step according to stripping result.



- 7) Press down and hold it for at least 2 seconds, then the machine will process a wire, please check the stripping result.

- A) If you find the outside insulation is not cut deeply enough, then you should press to reduce the knife value. (If you want to reduce a large range, you can press down to get in edit mode, then press key to move to “DIA”, and input a value and press key to confirm it). Then press key to try again.

- B) If you find the outside insulation is already cut through, and the inner copper cores are hurt by the blade, then you should press to increase the “DIA” value, the operation is similar to the above “A” condition. After that, press “TEST” key again to check again.

- C) If you find the wire is not stripped, and there is no cutting mark on the outside insulation at all, then you can measure the wire total length, if the total length is equal to 80mm, it means

the “DIA” value is too big, the blade can’t cut touch the insulation at all, so you should reduce the “Knife Value” a large range to test again. If you find the wire length is much shorter than the setting length, that means the blade cut too deep, it causes the wire head and tail are cut off directly, then you should increase the “DIA” value a large range.

D) If the blade just cut through the outside insulation, but the blade sometimes hurt the inner copper cores during stripping or the insulation sometimes can’t be taken off, then you may need to adjust the “RTN” value.

8) Now, I think you can strip a good wire according to the above steps, if you are satisfied with the

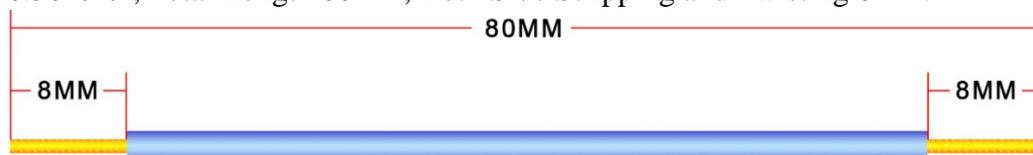
stripping result, then you can press  to set the quantity. And press  to set the working speed and pause time. (Example: if you need to process 5000 wires, and you want to collect the wires in one package per 200pcs, then you can set parameters as follows:

Long Wire	1	C C 9 9	4 6 4	5.0		
	S. TOT:	5000	TOT:	0		
	S. BUN:	200	BUN:	0		
8.0	15.0	80.0	15.0	8.0	55	08

9) Lastly, you can press the  key to run automatically.

## Twisting Example

Example:  $0.50mm^2$ , Total Length 80mm, Both Side Stripping and Twisting 8mm.



It’s quite similar to above “Fast Operation”, the different points are illustrated as follows:

1) Press  key to set twisting parameters as follows:

Wire Head Twisting Direction (H): F (Here we set wire head clockwise direction)

Wire Tail Twisting Direction (T): R (Here we set wire tail anti-clockwise direction)

Twisting Speed (S): 5 (Here we choose a middle speed)

Twisting Force (F): 9 (Here we choose very tight twisting effect).

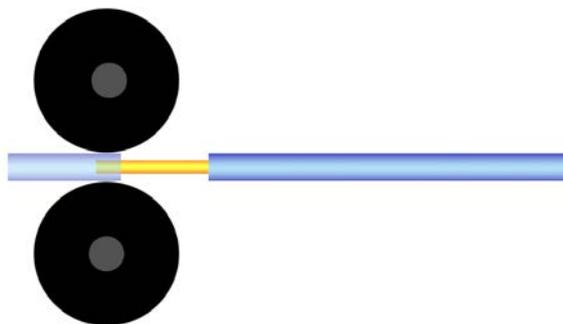
- 2) You have to set half stripping if you want to use the twisting function, normally you should set the "GAP" value 2mm smaller than stripping length.

Long Wire	1	F R 5 9	4 6 4	5.0		
	S. TOT:	5000	TOT:	0		
	S. BUN:	200	BUN:	0		
8.0	6.0	80.0	6.0	8.0	55	08

- 3) Now you can press the "TEST" key to process a wire and check the twisting effects, if you find the wire tail is twisted very well, but the wire head is not twisted well, then you may need to adjust the "TWI.MOV" value in this page:

FUNC	PRO	TWIST				SPEED			PAUSE
		H	T	S	F	C	R	S	
COU. MUL: 1		WIR.SEN: Off							
Cut. COR: F 0 B 0		TWI.MOV: 34.0							
GUID. SW: On		Auto Open: 5							
F. Strip: Off		SIN. Strip: Off							
HEAD	GAP	LONG	GAP	TAIL	DIA	RT			

Press the "Test" key to make the machine run step by step, then check the wire head position between the twisting rollers, adjust the "TWI. MOV" value until the wire head position between twisting rollers like follow picture:



Then try to process a wire again to check the twisting result.

4) If you are not satisfied with the twisting effects, please try to modify the following parameter values: twisting direction (Choose F or R), twisting speed, twisting force, TWI.MOV. Roller pressure is also very important for twisting.

## Trouble Shooting

Item	Fault	Solution
1	Rollers injure the wire jacket	A. Press down the green knob, then rotate the roller pressure adjusting knob to reduce the roller pressure. B. You can also order rubber rollers from us to replace the steel rollers.
2	Wire is longer or shorter than setting length	A) Please check the roller gap and roller pressure. B) Please check the “Knife Value”. C) Please check the “Knife Retreating” Value. D) Please check “Function Set” and working mode. E) Check if there are dirty things between rollers, clean them.
3	Inner copper cores are hurt	Please increase the “Knife Value” 1 or 2, and check the “Knife Retreating” value.
4	The screen shows an error message	Please check the “Speed” settings, don’t set the “Knife” and “Stripping” speed too fast.
5	Wire head or tail can’t be stripped	A) Please check the roller pressure and roller gap. (Add roller pressure and less the roller gap) B) Please check “Knife Value” & “Knife Retreating” value (Ref 00-10). C) Check if the stripping length is bigger than 3. D) If there are dirty things between rollers, clean the machine and recheck it. (Clean machine every day after work) E) Check if the upper and lower blades are in a line.
6	Sometimes, the wire tail is hurt by blades	Please press down “Function Set” key, make sure you have set “GUID. SW: OFF”, or the wire will not move back when stripping wire tail, then the tail will hit the wire head.
7	Wire head and tail are cut off or no cutting mark	A) Wire head or tail is cut off: Increase “Knife Value” (Ref:30-90) B) Wire head or tail is without cutting mark: Decrease “Knife Value”
8	Wire head or tail be cut off	A) Wire-outlet pressure is small. Adjust the Roller Gap Adjustment Knob and increase the wire-outlet pressure. B) Wire-inlet gap is too big. Less the roller gap.
9	Wire cannot be cut off sometimes	A) Add oil to oil holes and moving parts and try again. (Add oil once after every 8 hours’ work)

		<p>B) Low down the working speed and try again.</p> <p>C) Check if the wire size is within AWG12.</p> <p>D) If the blades are blunt. Change new blade set.</p> <p>E) Check if the upper and lower blades in correct position.</p>
10	Machine stop work after cutting one piece and error occur	<p>A) No wire in the machine, it stops automatically.</p> <p>B) If the cutting length setting is bigger than 32mm. (Excluding program 98)</p> <p>C) Wire-outlet gap is too big. Less the roller gap.</p>
11	Fans and display screen work normally, but machine not work after pressing start key	<p>A) The fuse is burnt out for voltage instability or worker maloperation. Change new fuse. (Open the cover and you will find the 5A fuse in circuit board)</p> <p>B) If the fuse still burnt out after changing the new one. Please contact us ASAP.</p>
12	Wire cutting edge is tilt	<p>A) Wire is bent before cutting. Order one wire straightener from us.</p> <p>B) The center of tube is not in line with the center of blades.</p> <p>C) Tube is too close to the Cutting Unit.</p>



## Important Note

1. We offer 12 months' free maintenance service from the stamped purchase date.
2. During the warranty period, clients do not need to pay for any parts or service; but all freight costs caused by sending spare parts are at the buyer's expense (excluding consumable parts).
3. We only assure the warranty to the clients who originally purchased the machine from our company or our authorized agent. 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, compressed air not dry and clean, 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.

Whenever you need our help, please prepare for the following information and send the details to following email:

[todd@kingsing.com](mailto:todd@kingsing.com) Mr. Todd (General Engineer)

[sales@kingsing.com](mailto:sales@kingsing.com) Ms. Bella (Sales Director)

01. Buyer name/ Company name
02. Buyer detailed address
03. Person for contact (name, email box, telephone number)
04. Equipment Model (Same as commercial invoice. Invoice No. if it is available)
05. Product part number/name
06. Urgency of request
07. Nature of problem
08. Description of inoperative component(s)
09. Additional pictures/demo video/ comments that may be helpful.

### **Revision Summary**

Since the previous release, the manual format has been updated to include current corporate requirements.

*We always welcome any feedback or improvement suggestions!*