



User Manual



surspider

Guangdong Shunde Huayan Electronic Technology Co., Ltd



■ Add: No.6,Xinye 2nd road,Lingang road,Beijiao town,Shunde,Foshan,Guangdong,China
■ Tel : +86 757 81188941
■ Fax: +86 757 81188940
■ E-mail: surspider@huayandz.com
■ Web: <http://www.huayandz.com>
<http://surspider.en.alibaba.com>

Intelligent Rebar Tier

Model: ZKZ-20 ZKZ-30
ZKZ-20A ZKZ-25A
ZKZ-35A ZKZ-40A

"Please read this manual before using , and keep it carefully."

Guangdong Shunde Huayan Electronic Technology Co.,Ltd

Contents

| | | |
|-------------------------|----------------------------------------|----|
| Warning | warning | 2 |
| Attention | attention | 2 |
| Introduction | application | 3 |
| | advantage | 3 |
| | model description | 3 |
| | electrical schematics | 3 |
| | parts description | 4 |
| | main parameters | 6 |
| Instructions For Use | battery charging | 7 |
| | charger Description | 8 |
| | battery using | 9 |
| | installation of wire scroll | 9 |
| | tying operation | 10 |
| | hook operation | 11 |
| Trouble Shooting | usual troubles and solutions | 12 |
| Parts List | parts list | 13 |
| Maintenance And Service | maintenance | 15 |
| | after-sales service | 15 |
| Setting Description | Wire circle diameter adjustment | 16 |
| | Tying power and wire length adjustment | 17 |
| Warranty Card | Warranty Card | 18 |

Thanks for using "surspider" brand intelligent rebar tier, please read this manual carefully before using. In order to use the tool rightly, please make sure know exactly all attentions, operations and maintenance points, etc.

All schematic showed in manual only for your information, the actual ones must based on the practical tool. We apologize if any modification not informed in time.

Warning:

1. Don't touch the power wire with wet hands to avoid electric shock accident.
2. Please pull the plug to disconnect the power, don't pull the wire directly.
3. Don't share the terminal block with other equipments.
4. Please put the product on the safe place to avoid being damaged.
5. For avioding any hurt, don't put hands in the tying area or touch wire and scroll when the machine is working.
6. Don't operate the product head close to body for avoiding any hurt.
7. Store product in dry, clean and noncorrosive conditions.
8. Keep product on place where children can't touch it.
9. Please don't abnormally impact machine head or other parts.

Attention:

1. Don't split, repair, transform machine without authorization.
2. Don't allow cable to be wound or squeezed for avioding damaging cable.
3. Keep away from combustible material or high heat source to avoid equipment damage or accident.
4. Keep metal parts and wires clean and dry.
5. Don't clean the internal parts with alcohol or water, and must disconnect the power for any cleaning or repairing.
6. Must use original charger for charging.
7. Must immediately power off the machine if it alarm, work again after solving problem.
8. Machine must use the specified wire scroll and battery, otherwise any damage and accident will belong to youself.
9. Wire knots or other foreign bodies need to be cleaned before machine works every time.
10. Please operate the machine strictly as user manual, or else the consequences will be borne by yourself.

Introduction:

Application:

This product can be widely used in buildings, Bridges, roads, railways, infrastructure and even other special projects. The intelligent rebar tier take place of hand tying, it improved the work efficiency and make less workers needed. "SURSPIDER" rebar tier is available for all kinds of reinforced rebar and concrete construction.

Advantage:

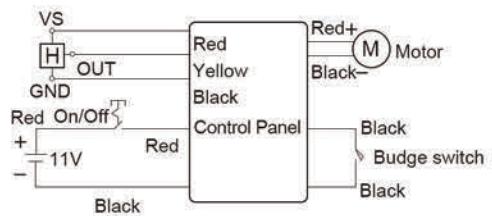
- ZKZ-30 weight 1.2KGS, compact size 300*205*68mm
- 1 SurSpider Tier = 4 Workers
- One key adjust tying power and wire length
- 99% tying success rate, all knots are tight and standard
- Exact wire length control, shortest wire for each knot
- 80% battery life left after 3 years using(Samsung battery core)
- Passed one million times life test
- Passed high-low temperature test (-5°C to 80°C)

Model Description:

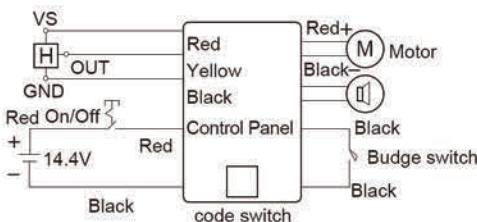
Product code ZKZ-30 □

Electrical Schematics:

ZKZ Model Electronic Control Panel



ZKZ-A Model Electronic Control Panel

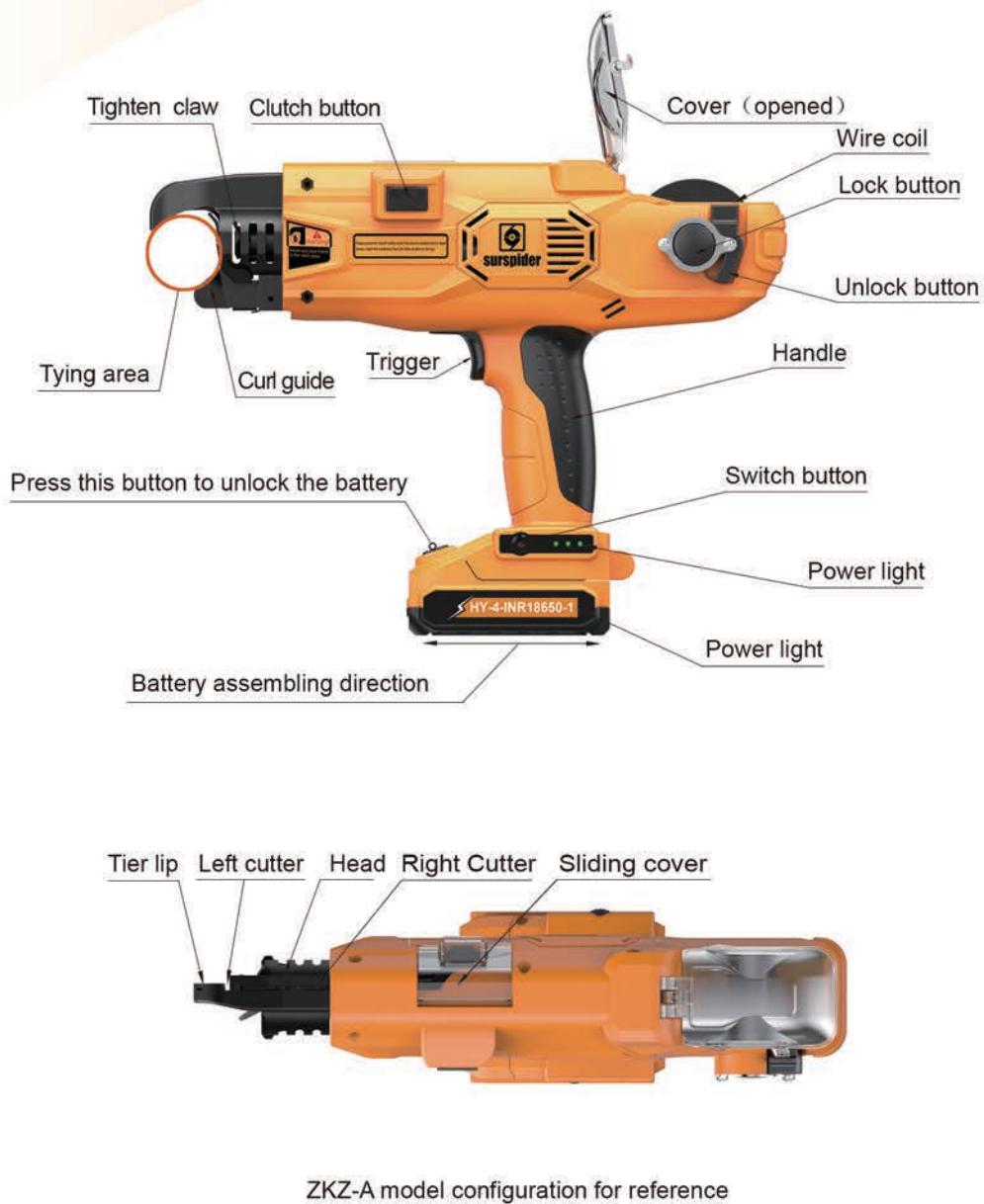


⚠️ Not notice again if any changes about the circuit diagram

Parts Description



Parts Description



Main Parameters:

| ZKZ Rebar tier | | |
|-------------------------------------|------------|------------|
| Model No. | ZKZ-20 | ZKZ-30 |
| Weight(kg) | 300X205X68 | 300X205X68 |
| Weight(kg) | 1.2 | 1.2 |
| Voltage (V) | 11 | 11 |
| Tying range (mm) | 8~20 | 18~26 |
| Tying speed(s) | 0.8 | 0.8 |
| Tying wraps | 2 | 2 |
| Ties per full standard battery(pcs) | 1600 | 1500 |
| Ties per full advanced battery(pcs) | 4800 | 4500 |

| ZKZ -A Rebar tier | | | | |
|-------------------------------------|------------|------------|------------|------------|
| Model No. | ZKZ-20A | ZKZ-25A | ZKZ-35A | ZKZ-40A |
| Dimension (mm) | 295X225X68 | 300X225X68 | 310X225X68 | 315X225X68 |
| Weight(kg) | 1.45 | 1.45 | 1.45 | 1.45 |
| Voltage (V) | 14.4 | 14.4 | 14.4 | 14.4 |
| Tying range (mm) | 8~18 | 12~24 | 24~32 | 26~40 |
| Tying speed(s) | 0.8 | 0.8 | 0.8 | 0.8 |
| Tying wraps | 2 | 2 | 2 | 3 |
| Ties per full standard battery(pcs) | 2100 | 2000 | 1750 | 1100 |
| Ties per full advanced battery(pcs) | 6500 | 6200 | 5450 | 3500 |

| Wire coil | | |
|---------------|-----|-----|
| Diameter(mm) | 0.7 | 0.8 |
| Length(meter) | 130 | 100 |
| Net weight | 390 | 390 |
| ZKZ-20 | 448 | 353 |
| ZKZ-30 | 346 | 266 |
| ZKZ-20A | 448 | 353 |
| ZKZ-25A | 368 | 283 |
| ZKZ-35A | 298 | 229 |
| ZKZ-40A | 191 | 147 |

Remark: Above is the standard wire reference number, in the production there is the possibility wire become thin, actual number maybe have small deviation.

Main Parameters:

| Bettery | ZKZ model | | ZKZ-A model | |
|----------------------|------------------|------------------|------------------|------------------|
| | Standard battery | Advanced battery | Standard battery | Advanced battery |
| Voltage (V) | 11 | 11 | 14.4 | 14.4 |
| Battery Charge | 12.6V DC1A | 12.6V DC3A | 16.8V DC0.7A | 16.8V DC2.2A |
| Battery capacity(Ah) | 2.0 | 6.6 | 2.0 | 6.0 |
| Charging time(H) | 2 | 2.2 | 2.8 | 2.7 |
| Warranty (month) | 6 | 6 | 6 | 6 |

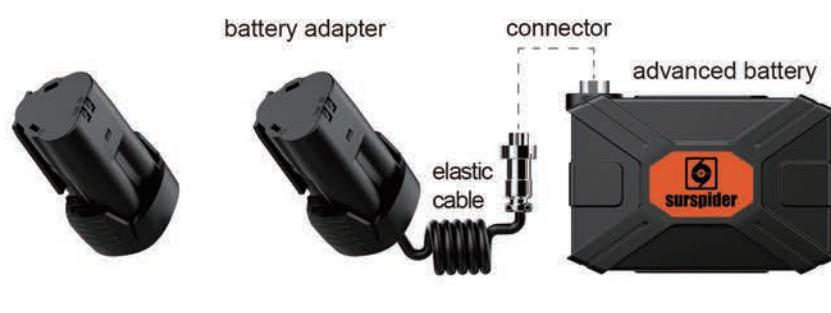
| Charger | ZKZ model | | ZKZ-A model |
|------------------------|-------------------------|-------------------------|-------------------------|
| | Single charger | Double charger | Double charger |
| Model No. | HY-CH-12V3A-1 | HY-CH-12V4A-2 | HY-CH-14.4V2.9A-1 |
| Input Voltage/Current | 100-240VAC 50/60HZ 0.6A | 100-240VAC 50/60HZ 0.8A | 100-240VAC 50/60HZ 0.8A |
| Output Voltage/Current | 12.6V DC 3A | 12.6V DC 4A | 16.8V DC 2.9A |

Use Instructions

Battery charging:

1. Charge must be done in dry and cool indoor environment.
2. Must use original charger for charging.
3. Make sure the cables and casing are good before charging.
4. Charge the middle/advanced battery with specified battery adaptor.

ZKZ model



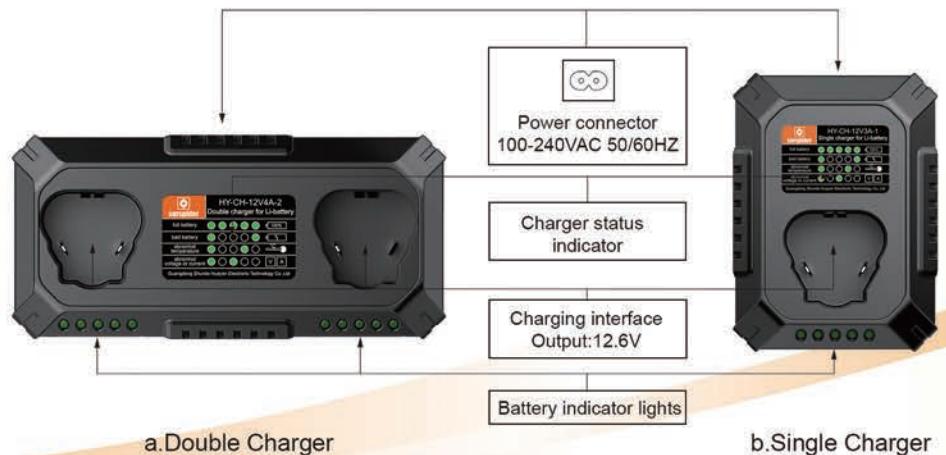
ZKZ-A model



- Operating battery according to indicated negative and positive direction, never reverse direction.
- Never put battery close to fire or other high temperature objects.
- Never expose the battery directly to the wet environment.
- The machine must use the specified battery, otherwise any damage and accident will belong to youself.
- Never short the positive and negative of battery without loads.
- Stop using the battery if any expansion or overheating phenomenon.
- Must power off the machine and unplug the battery before maintenance or repairing.
- No external shock or beat battery.
- Please keep all connectors clean and dry.

Charger Description:

1. Charge must be done in dry and cool indoor environment.
2. Use the original power cable.
3. Check the charge status from the top indicator lights.
4. First connect the charger to power then put the battery in





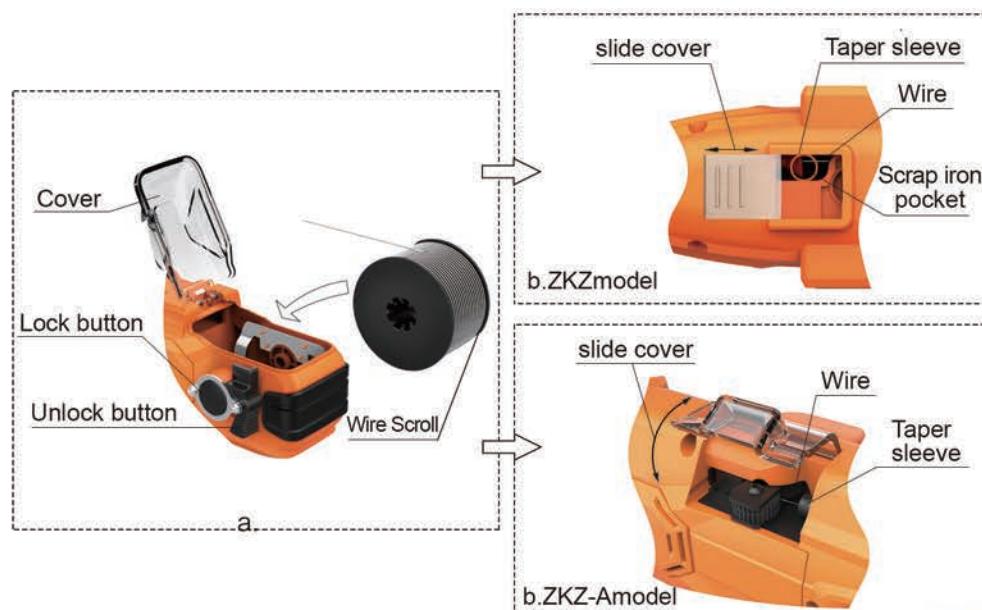
ZKZ-A model double charger

Battery using:

* Reference the "Description of parts".

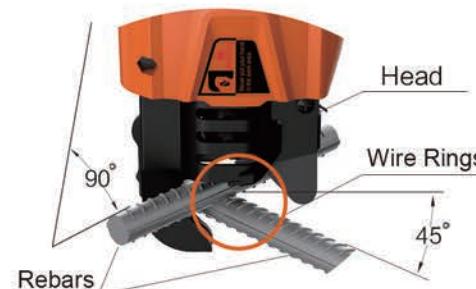
Installation of wire scroll:

1. Press "unlock button", the cover open.
2. Put wire scroll into the box.
3. Press "lock button" to fix the wire scroll.
4. Press "clutch button" and insert wire through wire sending channel.
5. Close cover after wire is inserted into taper sleeve (check it on top slot window).



Tying Operation:

1. Make sure all parts of rebar tier are good before working.
2. Press "Power Button" to turn on the power.
3. Battery indicator lights turn red to green.
4. Place rebar tier mouth onto rebar cross vertically, avoid any block of wire circle track.
5. Press "trigger" then the tool finish tying automatically.
6. Lift rebar tier against flexible curl guide and start next tying.



a. Tying Operation Schematic



b. Wire Knot after tying

- The "power indicator" appears red when battery is not enough, machine stops working.
- The residual wire of scroll can be observed by transparent cover.
- No barrier is allowed between tier tip and guide chin.
- If wire remains in the right cutter, take it out with tools through the top window of machine.
- If the first tying is not success because the wire coil head is not proper to tie, suggest press trigger to tie without any rebar, then tying the rebar again.
- Never put your hand in working area of machine.
- Please don't remove the machine when it is working, so as to avoid failed tying.
- Please take out the wire knot which remains in machine head after tying, then next

Trouble Shooting

Hook Operation:

There are two small hooks on the pry hook, like "r"shape, pry hook could plug into between rebars and template, and seperate them to get enough space for making sure the success tying operation. There are 2 methods for hook operation, select the right one according to the habit and conditions.

The 1st method:

Plug the hook 1 into between rebars and template, the hook 2 as supporting point, press the handle as arrow showing, make the rebar deviating from ground for making the success tying.



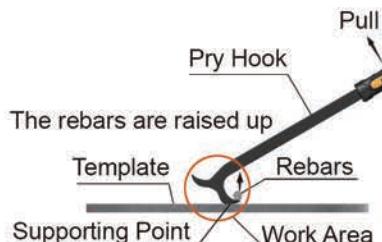
a. Operation Schematic



b. 3D Schematic

The 2nd method:

Plug the hook 2 into between rebars and template, the hook 1 as supporting point, pull the handle as arrow showing, make the rebar deviating from ground for making the success tying.



a. Operation Schematic

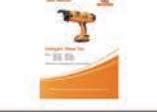


b. 3D Schematic

Usual Trouble And Solutions

| Trouble Description | Possible Reasons | | Solutions |
|-----------------------------------------|---------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|-----------------------------|
| Rebar tier not work | 1.Power indicator lights red, electric quantity is not enough. | Replace the battery. | |
| | 2.Power indicator lights green, means problem happen. | Stop use, send it to after-sale -service. | |
| | 3.Power indicator lights are not work or flash. Battery is not connected or battery failure | Reinsert battery or replace battery. | |
| Rebar tier work but no wire sending out | Circuit fault. | Stop use, send it to after-sale -service. | |
| | 1.No wire in machine or almost finished. | | Install the wire correctly. |
| | Wire didn't install correct. | Reinstall the wire coil correctly. | |
| | The wire is not correct wire. | Use the specified correct wire. | |
| | 2. The lock button wasn't press down. | Press down the lock button to fix wire coil. | |
| | The wire is blocked in the passage. | Clean up the blocked wire and reinstall the wire coil correctly | |
| | The surface of the wire is not smooth, there are joints and knots. | Clean up defective wire and reinstall the wire coil correctly. | |
| | The wire was blocked in the middle of the machine. | Use the cutter or allen key to clean up the deformed wire. Reinstall the wire coil correctly. | |
| | The right cutter has no reset, blocked the tire lip. | Stop use, send it to after-sale -service. | |
| Wire knots is not tight | The wire outlet of the tier head was blocked. | Clean out the wire outlet. | |
| | 1. Electric quantity was not enough. | Replace the battery. | |
| | 2. The wire is not correct wire. | Use the specified correct wire. | |
| | The wire length is too long, one more circle length than require. | Adjust the length. | |
| | Tying power is not appropriate. | Adjust the power. | |
| Wire knots is broken | Problem happened. | Stop use, send it to after-sale -service. | |
| | 1.The wire is not correct wire. | Use the specified wire. | |
| | 2.The wire is specified correct wire. | 1. Adjust the wire length. 2. Press down the lock button to lock wire coil. | |
| | Tying power is not appropriate. | Adjust the power. | |
| Wire run out of curl guide | Problem happened. | Stop use, send it to after-sale -service. | |
| | 1.If the machine can work normally without tying the rebar. | Some barriers happened in working area, Clean barriers and try again. | |
| Buzzer sound happen | 2.Tier works without rebar, but wire still run out. | 1. Checking the wire cirde to see if the circle diameter is correct. 2. Stop use, send it to after-sale -service. | |
| | 1.Shot buzzer sound when turn on the machine. | Boot up, normal. | |
| | 2.Long buzzer sound for 1 time. Power indicator lights were red. | Electric quantity was not enough, Replace battery. | |
| | 3.Long buzzer sound for 3 times. | Motor has problem, Stop use, send it to after-sale -service. | |
| | 4.Long buzzer sound for 5 times. | Machine dormancy, normal. | |

Parts List

| ZKZ model simple kit | | |
|------------------------|-------------------------------------------------------------------------------------|----------|
| Name | Picture | Quantity |
| Intelligent Rebar Tier |  | 1 pcs |
| Single Charger |  | 1 pcs |
| Standard Battery |  | 1 pcs |
| Wire Coil |  | 1 pcs |
| Cutter |  | 1 pcs |
| Allen Key |  | 1 pcs |
| Tool Box |  | 1 pcs |
| User Manual |  | 1 pcs |

| ZKZ-A model simple kit | | |
|------------------------|-------------------------------------------------------------------------------------|----------|
| Name | Picture | Quantity |
| Intelligent Rebar Tier |  | 1 pcs |
| Single Charger |  | 1 pcs |
| Standard Battery |  | 1 pcs |
| Wire Coil |  | 1 pcs |
| Cutter |  | 1 pcs |
| Allen Key |  | 1 pcs |
| Tool Box |  | 1 pcs |
| User Manual |  | 1 pcs |

| ZKZ model standard kit | | |
|------------------------|--------------------------------------------------------------------------------------|----------|
| Name | Picture | Quantity |
| Intelligent Rebar Tier |  | 1 pcs |
| Single Charger |  | 1 pcs |
| Standard Battery |  | 2 pcs |
| Wire Coil |  | 2 pcs |
| Cutter |  | 1 pcs |
| Allen Key |  | 1 pcs |
| Tool Box |  | 1 pcs |
| User Manual |  | 1 pcs |

| ZKZ-A model standard kit | | |
|--------------------------|--------------------------------------------------------------------------------------|----------|
| Name | Picture | Quantity |
| Intelligent Rebar Tier |  | 1 pcs |
| Double Charger |  | 1 pcs |
| Standard Battery |  | 2 pcs |
| Wire Coil |  | 1 pcs |
| Cutter |  | 1 pcs |
| Allen Key |  | 1 pcs |
| Tool Box |  | 1 pcs |
| User Manual |  | 1 pcs |

| ZKZ model Optional Parts | | |
|----------------------------------------------|---------------------------------------------------------------------------------------|--|
| Advanced Battery (Included Battery Adapter) |  | |
| Tools Belt |  | |
| Pry Hook |  | |

| ZKZ-A model Optional Parts | | |
|----------------------------------------------|---------------------------------------------------------------------------------------|--|
| Advanced Battery (Included Battery Adapter) |  | |
| Tools Belt |  | |
| Pry Hook |  | |

The pictures only for reference,actual depends on the real product.

Maintenance and Service

Maintenance:

- When the machine is sent out or received, the custodian must conduct a routine inspection:
 - Check any crack or damage happen on shell.
 - Check power switch is activated or not.
 - Check all working steps of machine, include wire rings making, wire rings tightening, wire cutting, reset etc.
 - Check battery is good assembled and connected.
- Please maintains the machine after using timely. clean the shell with special plastic detergent, never use gasoline, alcohol, thinner etc. After cleaning, keep it in dry and noncorrosive condition.
- Please don't keep battery together with metal things to avoid short circuit.
- If machine broken, please send it to appointed maintenance station for repair, no warranty is supplied if it was repaired by nonspecific station.
- NO warranty will be supplied if split, repair, transform machine without authorization
- There are magnets in iron dust container, they can adsorb iron dust, please clean them every month.
- In long time using process, the tier gun head will be abrasion or changing shape because of the crashing. These will cause the wire not twisting, or wire knots broken.
So please check the diameter of the wire circle before each using, if the wire circle is not applicable, adjust the circle firstly. Adjustment method please reference our operation video on website.

After-sales Service:

Any problems of machine, please reference to the <<trouble shooting>> for solving problems, if they still exist, or any unclear information, please contact with specified maintenance station or service center, they will supply professional service. thanks for cooperation!

| Warranty Commitment | | |
|---------------------|-----------------|----------------------------------------------------------------------------|
| Part Type | Warranty Period | Part List |
| Wearing Parts | 100,000 times | wire sending gears, cutter body, cutter, tier mouth, tier head, curl guide |
| Main parts | 6 months | DC motor, main drive mechanism |
| Battery | 6 months | all types of battery |

Any damage caused by the use of a non specified wire, charger, battery is not within the scope of warranty.

Please show the purchase invoice and warranty card if maintenance happen. the maintenance period start from the invoice issuing day, if invoice is missed, then start from Ex factory date. All products implement national UNPROFOR.

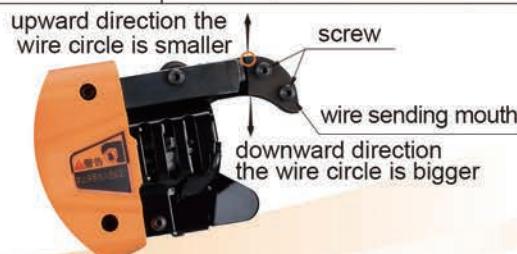
(Remark: the final interpretation belongs to company)

Products will be probably modified or improved, any changes of all parameters and structures will not be issued in time, please reference to the actual products for real specification.

Setting Description

Wire circle diameter checking and adjustment

In order to ensure the use effect, please check and adjust the wire circle before reaching the applicable range before use.

| | | | | | | | | | | |
|---------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------|---------|---------|--|--|--|--|--|
| ZKZ Model checking method | 1. Turn on the power switch. 2. Press the trigger and turn off the power in 0.5 second to shape the wire circle in tier gun mouth . 3.Cut off the wire circle. Measure diameter with tape measure or compare the wire circle with the correct diameter range on the wire scroll. | | | | | | | | | |
| ZKZ-A Model checking method | 1. Turn on the power switch. 2.Switch the dial plate to the 0 gear. Short press the trigger to shape the wire circle in tier gun mouth. 3.Cut off the wire circle. Measure diameter with tape measure or compare the wire circle with the correct diameter range on the wire scroll. | | | | | | | | | |
| Adjustment tool | Wire coil, Battery, Allen key, Tape measure, Cutter | | | | | | | | | |
| Adjustment method | 1.Loose the screw of wire sending mouth. 2.Adjust the back screw of wire sending mouse (wider part), downward direction the wire circle is bigger, upward direction the wire circle is smaller. 3.Lock the screw tightly. (Checking the circle diameter, if not correct, adjust it again as above steps) Remark: After finish adjustment, turn it to be 1-5 normal working grade for ZKZ-A model. (ZKZ model not need this step) | | | | | | | | | |
| Machine model | ZKZ-20/20A | ZKZ-25A | ZKZ-30 | ZKZ-35A | ZKZ-40A | | | | | |
| Correct diameter range/mm | 31-33 | 36-38 | 39-42 | 46-48 | 54-58 | | | | | |
| Operation video | Checking from our website | | | | | | | | | |
|  | | | | | | | | | | |
|  | | | | | | | | | | |

Tying power and wire length adjustment

| Adjustment type | ZKZ-A model adjustment method |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Model adjust(M) | When changing the tier head, user should adjust the correct model version. Switch the dial plate to M gear, short press the trigger, observe the display status of LED lights to keep sure the model version is correspond to the tier head. |
| Wire length adjust(L) | It should adjust the wire length when the wire circle is more or less. Switch the dial plate to the L gear, short press trigger to adjust the wire length. Observe the LED light display status to choose the right length, wire length increase from grade one to five. |
| Wire circle adjust(O) | It should adjust the wire circle to keep sure tying standard knots. Switch the dial plate to 0 gear, short press trigger to shape the wire circle in tier gun mouth.(see detail adjust method in page 16 Wire circle checking and adjustment) |
| Tying power adjust | In using process, if the knots is always not tight enough or broken, should adjust the tying power. Switch the dial plate to normal working mode 1 to 5, increase or decrease the grade number to adjust the tying power, the usual proper grade is grade three. |
| Remark: Model adjust/ Wire length adjust/ Wire circle adjust, please switch the dial plate to be normal working mode 1 to 5 grade after adjustment every time, then the adjustment is auto saved, tier back to working. | |

| Dial plate functional description | | | | | | | | |
|-----------------------------------|----------------|--------------------|-----------------------------------------|-----------|-----------|-------------|------------|------------|
| Dial plate mode | Adjusting mode | | Normal working mode(Tying power adjust) | | | | | |
| Gear position | M | L | 0 | 1 | 2 | 3 | 4 | 5 |
| Function | Model adjust | Wire length adjust | Wire circle adjust | grade one | grade two | grade three | grade four | grade five |

| Indicator light instruction | | | | | | | | | | | | | | |
|-----------------------------|--|--|----------|------------|---------------|--|----------|------|---------|-------------|----------|--|------------|-------------|
| Item | | | Function | Item | | | Function | Item | | | Function | | | |
| electric quantity | | | | grade one | machine model | | | | ZKZ-20A | wire length | | | | grade one |
| | | | | grade two | | | | | ZKZ-25A | | | | | grade two |
| | | | | full power | | | | | ZKZ-35A | | | | | grade three |
| | | | | low level | | | | | ZKZ-40A | | | | | grade four |
| Remark: | | | | | | | | | | | | | grade five | |

| Adjustment type | ZKZ model adjustment method |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tying power adjust | Make sure the power is off, press trigger and turn on power, when heard the second buming, we see the right side first LED light is green, loose trigger quickly, then we can adjust the tying power, there are 5 grade from right to left increasing, grade 5 is the biggest. After adjustment, turn off the power to save. |
| Wire length adjust | Make sure the power is off, press trigger and turn on power, when heard the first buming, we see the right side first LED light is orange, loose trigger quickly, then we can adjust the wire length, there are 5 grade from right to left increasing, each grade increase 3cm, grade 5 is the longest. After adjustment, turn off the power to save. |

Warranty Card

| Information | | | |
|----------------|--|-----------------|--|
| User Name: | | Phone NO.: | |
| Adress: | | PostCode: | |
| Product Model: | | Product Number: | |
| Sale Store: | | | |
| Buying time: | | Invoice Number: | |

| Maintenance Records | | | | | |
|---------------------|---------------------|-----------|----------------------|-----------|-----------|
| Date | Problem Description | Solutions | Maintenance Station: | Phone NO. | Repairman |
| | | | | | |
| | | | | | |
| | | | | | |

- Please immediately fill the warranty card when you buy product
- Please keep this warranty card, this card not need be sent back to the factory.
- Please take this card and valid invoice when maintaining.
- maintenance cost reference to the << price of maintenance>> on company website.