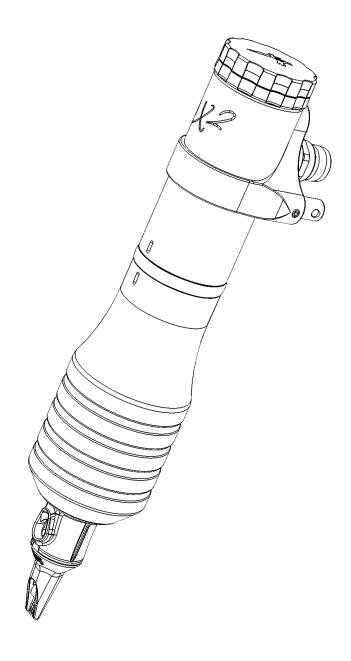


Manual for **Scorpion** tattoo machine rev.1





Manufacturer: InkMachines Sweden AB

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Document history

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Table of Content

Introduction	3
Document information	3
Description	4
Parts of the tattoo machine	4
Intended use	4
Approvals	5
Identification labels	5
Safety	6
Regulations	
Product	
Customer	
Cleaning and hygiene	
Instruction	
Delivery	
Unpacking	
Getting started	
Convert to regular cartridges	
Convert to Neo-cartridges	
Service and maintenance	
Lubrication	
Change drive magnet	
Trouble shooting	23
Waste	24
Technical specification	25
Scorpion X2	
Warranty	26
Status Light	27
Part list and spare parts	
Disassembly	
Assembly	
•	

App.

Declaration of Conformity for FCC and CE Warranty Certificate Electromagnetic compatibility





Introduction

Document information

Information in this document is subject to change without notice. InkMachines assumes no responsibility for any errors that may appear in this document.

Stylistic conventions

In this manual all references texts are shown in the text font *italic*. Cautions and Notes are shown as below.

Text



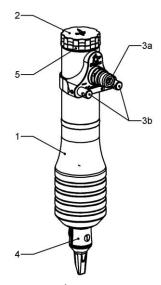
Description

Scorpion X2 is a tattoo machine intended for tattooing of humans for the use by professional tattoo artists. The machine is intended to use together with Neo or regular cartridge tattoo needles depending on the version purchased. It is prepared for wireless use with Scorpion Powerpacks and the associated wireless foot switch. Scorpion X2 can also be connected to TPS-500 or other power supply units intended for the purpose, by RCA cable or clip cord.

Scorpion X2 is provided with active vibration damping which means when the tattoo needle is mounted the vibrations from the machine is extremely low which makes it very ergonomic to work with.

When used together with Neo-Cartridge tattoo needles. The needle movement is driven magnetically. This together with the needle design with a one-piece housing minimizes the risk of cross-contamination between the needle and the tattoo machine.

Parts of the tattoo machine



Tattoo machine, Scorpion

- 1. Grip
- 2. Adjusting knob (needle protrusion)
- 3. Power connection
 - a. Connection for RCA cable
 - b. Connection for clip cord and battery (Powerpack).
- 4. Needle (Neo-Cartridge)
- 5. Status light

Intended use

The Scorpion tattoo machine is designed and developed solely for tattooing of humans for the use by professional tattoo artists with good knowledge of hygiene, how to prevent spreading infections and local regulations regarding this.



Approvals

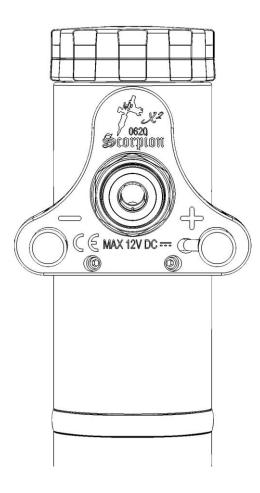
This product complies with the Europe requirements for CE-marking towards the Machine Directive, 2006/42/EC.

Rev 1.0 / 2021-05-01

See Declaration of conformity in the end of the manual.

Identification labels

The product is labelled according to below;





Safety

Regulations

Always follow local regulations concerning the tattoo operation. It is the operator's responsibility to follow regulations and to provide a reliable environment for their customers.

The manufacturer does not have responsibility for any kind of material or personal damage or infection caused by the operator. Negligence or misuse of the machine or the components attached to the machine is the operator's responsibility.

The manufacturer does not have responsibility for contamination or infection.

Product

To keep your product in good shape handle it with care!

The product should not under any circumstances come in direct contact with fluids. If fluids will get in contact with the electronics it can damage the product.

Keep the product away from warm places.

Customer

InkMachines only provide products for professional tattoo artists and the product may only be used by professionals with knowledge about diseases and how to maintain a clean working environment and a sterile equipment.

Always use:

- sterile grips and needles
- rubber/disposable gloves
- plastic bags and wraps for tattoo equipment; around the power supply and the machine with the Powerpack or the power cord

Always keep your equipment clean! See below for further instruction.

Cleaning and hygiene

Cleaning

Caution! Never spray or pour fluids directly on any of the units, it can cause short circuit and will void the warranty.



It is important for the tattoo operation to keep a clean and hygienic environment to avoid infection.

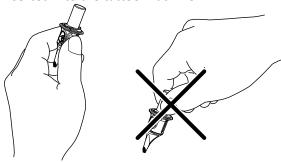
<u>Do NOT use strong alkaline (high pH) or acid (low pH) cleaning agents.</u> Only use pH neutral cleaning agents and alcohol disinfectants. Use a damped piece of paper or cloth to gently wipe off surfaces of the units.

Hygiene

• Do not touch sterilized grip or sterile needles with bare hands. Use disposable gloves!



 Needles would be hold as shown in the picture. Do not touch the part of the needle to be inserted into the tattoo machine.



- Clean the work surface thoroughly and cover the surface with plastic film before the tattoo session.
- Wrap the equipment with plastic film and arrange it as described in chapter *Getting started* on page 9.
- Follow local laws and regulations concerning the tattoo operation.



Instruction

Delivery

When your package is delivered please check that:

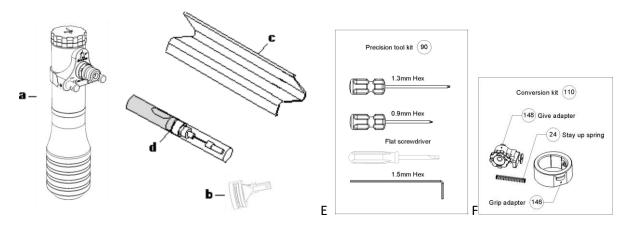
- there are no transport damages
- everything is delivered accordingly.

Unpacking



Note! Before unpacking make sure the area is cleaned!

Standard parts delivered with the Neo-cartridge version:



- a. 1pc Scorpion X2, tattoo machine
- b. 1pc Magnet Blue (in the box). Black standard in the machine
- c. 1pc Stand for tattoo needles (For Neo-Cartridges)
- d. 1pc oiler
- e. 1pc Precision tool kit No-90
- f. 1pc Conversion kit No.110

For the Regular cartridge version the following items are excluded:

No. 146 - Grip adapter

No. 24 - Stay up spring

No. 217 - X2 Counter weight assy

Items b:

No. 220 - X2 Drive magnet STD (Black)

No. 221 - X2 Drive magnet (Blue)

Item c:

No. 150 - Neo needle stand

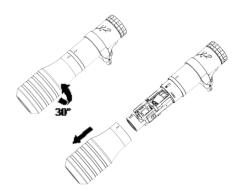


Getting started

Note! The product is not equipped with a power on button.

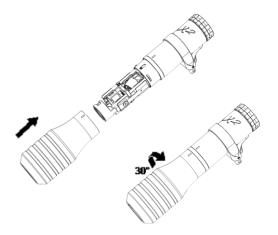


- 1. Make sure the workspace is thoroughly cleaned and disinfected.
- 2. Use disposable gloves when preparing the tattoo machine and work surface.
- 3. Cover the work surface with plastic film.



4. Hold the tattoo machine and turn grip 30° counterclockwise to remove the grip from the tattoo machine.

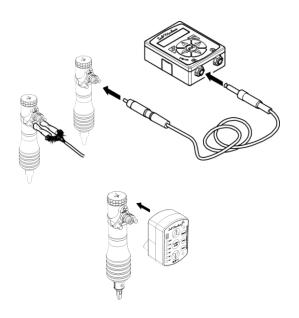
 Sterilize the grip.
 If disposable grips are used; discard the grip and use a new one.



- 6. Fit the grip as shown in the picture.
- 7. Turn the grip 30° clockwise.

Note! The mark on the grip and the mark on the tattoo machine should be aligned when the grip is correctly fitted to the tattoo machine.

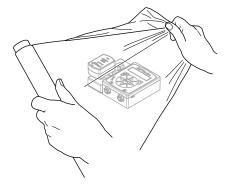




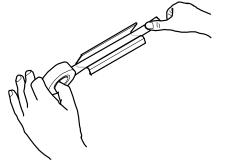
8. Connect the cable (RCA or clip cord) or the powerpack (see manual for power supply unit TPS-500) to the tattoo machine.



 Wrap the tattoo machine and the powerpack, or cable, with plastic film or similar.
 Seal with tape.

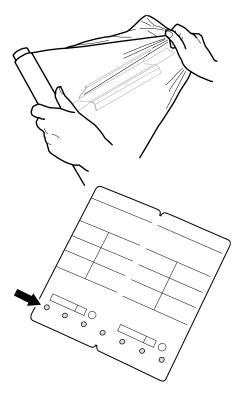


10. Wrap the power supply unit with plastic film (see the manual for the power supply unit).



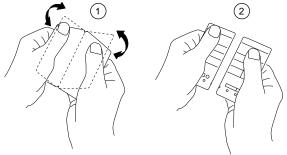
11. Tape the needle stand to the table.





12. Wrap the needle stand with plastic film.

13. Check that the dots at the bottom of the needle package are <u>NOT</u> Blue. If the dots are blue the needle package is not sterile and should not be used.

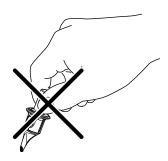


14. Remove a needle package from the other and open it.

Note! When a needle package is to be parted from the other do not tear them apart. Fold back and forth repeatedly until the package releases from the rest.

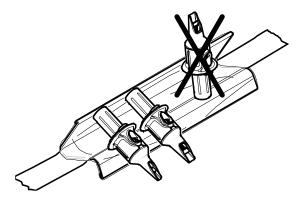
Otherwise there is a risk of damaging the adjacent package. The needle in the package is then no longer sterile and should not be used.



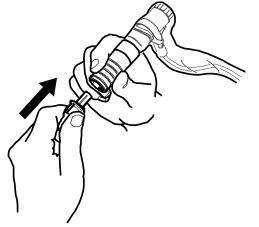


Note! When handling the needle, do not touch the part of the needle that is to be inserted into the tattoo machine

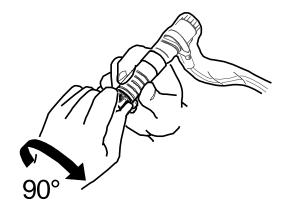




15. Place the number of needles needed during the work in the needle stand. The needles should be placed as shown. If you need more needles use one more stand.



16. Insert a needle in the tattoo machine.



17. Turn the needle 90° to lock it.



18. Set the voltage on the power supply unit (see the manual for TPS-500).

Appropriate start value: 8 - 10V.

- 19. Adjust the needle's protrusion (depth) with the adjustment knob. One revolution equals 2mm.
- 20. The tattoo machine is now ready for use.

Instruction



After each tattoo session

After each tattoo session the used tattoo needles should be destructed. Consumables and packaging such as plastic film, plastic bags, needle packaging etc. should be disposed.

Remove the grip from the tattoo machine and sterilize it. Wipe down the machine with alcohol and stir the magnet in a cup of alcohol (Neo version).



Converting to regular cartridges (Neo version)

InkMachines recommends that Neo-cartridges are always used for optimal performance and safety with the Scorpion machine. With regular cartridges some advantages will be lost. For example, the Neorail cannot be used with the TPS-500 and the advantages of Neo-cartridges will be lost.

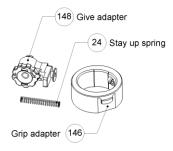
Caution! InkMachines does not have responsibility for any fluids or pigments entering the machine after using other cartridges than original Neo-cartridges. InkMachines does not have responsibility for contamination or infection of any kind. To avoid cross-contamination between the needle and the tattoo machine with regular cartridges, always use cartridges with membrane.

Never use cartridges without a sealing membrane.

Note! Save all removed parts for the future if you want to convert back to Neo-Cartridges again.

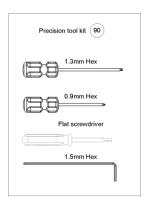
You need one Conversion kit No. 110 for regular cartridges and one Precision tool kit No. 90.

Conversion kit No. 110

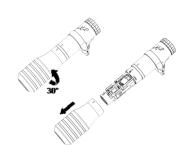


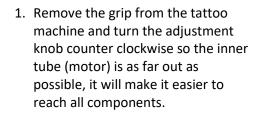
Stay up spring No. 24 (optional use) Give adapter No. 148 Grip adapter No. 146

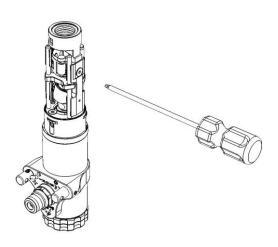
Precision tool kit No. 90







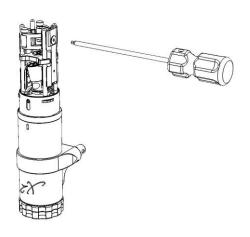




2. Remove the Drive magnet by loosen the Magnet holder screw on the side of the plastic slide with the 1.3 Hex key from the *Precision tool kit No.90*.



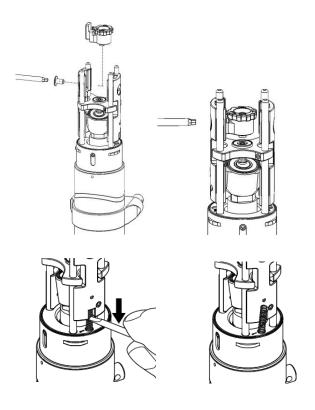
3. Leave the Magnet holder screw in the Magnet holder to prevent the screw from disappearing. Keep the magnet in a plastic bag to keep free from dirt.





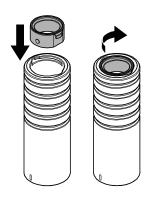
4. Use the 1.3 Hex key to remove the Counterweight screw on the "1" side of the machine, remove the Counterweight.





- 5. Mount the Give adapter No. 148 (included in *Conversion kit No. 110*) on the slide of un-marked side, make sure the screw goes smooth into the Give adapter, if not back the screw out, align and try again so that the thread is not damaged. Tighten gently.
- 6. Remove the Stay up spring No. 24 on the side "1", by pressing down the spring with the small flat screwdriver. Put one corner of the screwdriver between the fourth and fifth coil and press the spring down as straight as possible until it comes clear and can be taken out.

Note! Be very careful when pressing down the spring not to bend it.



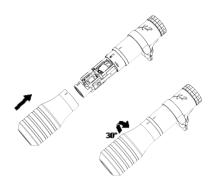
7. Place the Grip adapter No. 146 (included in the *Conversion kit No. 110*) in the grip and turn the grip adapter 90° clockwise. The Grip adapter is only for metal grips and not for disposable grips.



8. Tighten the screw with the 0.9 Hex key (red) from the *Precision tool kit No. 90*. Make sure the key engages in the screw properly before tightening so the screw is not damaged. Tighten medium hard and make sure you don't bend to the side which can damage the key or screw.



Note! Do not tighten the screw to tight.



9. Fit the grip and then turn the grip 30° clockwise.

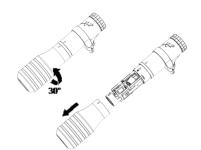
Note! The mark on the grip and the mark on the tattoo machine should be aligned when the grip is correctly fitted to the tattoo machine. But is of less importance when using regular cartridges.

The tattoo machine is now ready to be used with regular membrane cartridges.



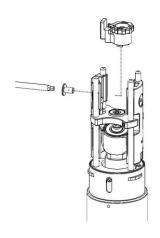
Converting to Neo-cartridges

If you have the Regular cartridge version you must have the No. 270 - Regular to Neo Kit

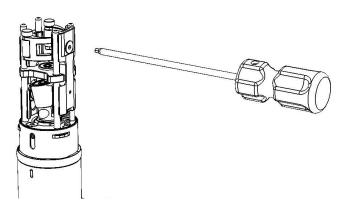


1. Remove the grip from the machine.

Note! Be very careful when pressing down the spring.



2. Remove the Give adapter No.148 from the plastic slide by using the 1.3 Hex key from the *Precision tool kit No.90*.

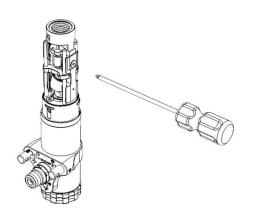


3. Mount the Counterweight on the Slide on the side marked "1". When correct mounted, the counterweight and the spring should both be located on the "1" side of the machine.

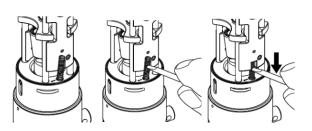




Note! Do not tighten the screw to tight.



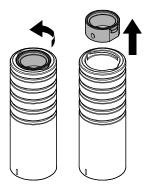
4. Mount the Magnet holder with magnet on the Slide on the un-marked machine side.



5. Mount the Stay up spring No. 24 placed on the machine side "1", by pressing down the spring with the small flat screwdriver. Put one corner of the screwdriver between the fourth and fifth coil and press the spring down as straight as possible until it comes clear and can be inserted.

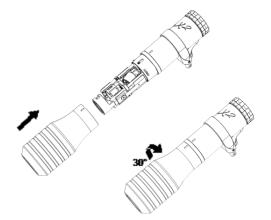


6. Loosen the grip adapter screw with the 0.9 Hex key from the *Precision tool kit No. 90*.



7. Turn the grip adapter 90° counterclockwise and remove it from the grip.





8. Fit the grip and then turn the grip 30° clockwise.

Note! The mark on the grip and the mark on the tattoo machine should be aligned when the grip is correctly fitted on the tattoo machine. Important when using Neo-cartridges.

The tattoo machine is now ready to be used with Neo-cartridges.



Service and maintenance

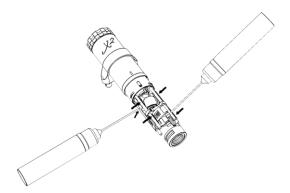
For service and repair visit www.inkmachines.com/service

Caution! Changes or modifications not approved by the manufacturer could void the warranty.

Lubrication

The tattoo machine should be lubricated every 100-150 hours for optimal performance and service life. Use the oil included in the delivery of the machine.

- Remove the grip (see point 4 at page 9).
- Lubricate the total 10 spots on the tattoo machine, in the 2 holes in the sliders and on the 8
 contact points between the sliders and pins. Do not leave oil on bearings, between the outer
 and the inner tube and do not let oil enter the motor. This can compromise the electric
 properties.



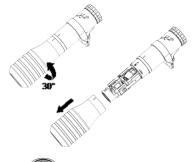
- Run the tattoo machine for a while to distribute the oil.
- Wipe off redundant oil with a soft cloth.
- Refit the grip on the tattoo machine (see point 6-7 on page 9).

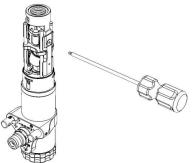
Change drive magnet

If a softer punch is required, the standard Drive magnet (Black) can be replaced with a softer Drive magnet (Blue). The Blue magnet is included in the tool kit in the box of the Neo version.

Change drive magnet





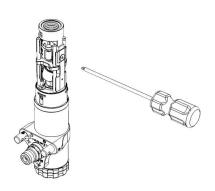


 Remove the grip, Hold the tattoo machine and turn the grip 30° counterclockwise to remove the grip from the tattoo machine.

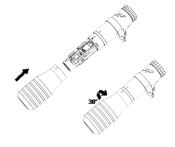
2. Remove the drive magnet by loosen the screw on the side of the slider with the Black 1.3mm key from the tool kit *No. 90*.



3. Remove the magnet assembly.



4. Place the Blue drive magnet in the slider. Check that the magnet holder is parallel to the slider before tightening the screw. Mis-alignment can damage the thread. Fasten the magnet holder with the screw.

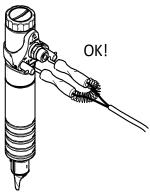


5. Fit the grip and then turn the grip 30° clockwise.



Trouble shooting

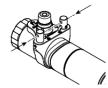
- If the machine does not start or fluctuates:
 - o Check that the contacts for connection of powerpack/cables is clean and look ok.
 - Test the machine with clip cord and RCA cable to isolate the problem. Make sure that
 the power supply and cables are working. If the machine runs with clip cord but not
 with the RCA try to re-adjust the RCA contact.



If powerpack (TPS-500) is used:
 Check the motor cable location. It should be straight according to the picture.







Otherwise align it and make sure the motor cord is not interfering with the Powerpack. The powerpack should be flush with the connecting part of the machine.

- Make sure that the two M2 screws that hold the + Bindingpost is not too tight, if they come through the plastic insulation sleeve it will cause short circuit.
- The Machine can fluctuate while the adjustment knob is turned but the power should be stable when the adjustment is not touched.
- The + power is transferred by a connecting pin, stay away from the ends of the adjustment with a few clicks to ensure the best connection.
- o If the problem remains, contact InkMachines (<u>www.inkmachines.com</u>)

If the problem persist or if there is other problems please contact InkMachines (www.inkmachines.com)



Waste

The manufacturing company is responsible for disposal of the Product. To avoid environment pollution and human injury follow local regulation concerning waste of electronic products. This product contains rechargeable and not rechargeable batteries. In the interest of protecting the environment and human health, please send the rechargable batteries back to the manufacturer for exchange and follow local regulations concerning waste of batteries.



This symbol indicates that the product and its electronic accessories are not to be disposed with other house hold waste.



Technical specification

Scorpion X2

Dimension, D x L	Ø22 x 116 mm		
Weight	150 grams (Std 30mm Alu grip)		
Power connections	RCA or clip cord (clip cord end diameter, max. Ø1.6 mm)		
Wire less ready	Yes		
Input voltage	0 – 12 V DC (max. 12 V DC)		
Rotational speed interval	0 – 8000 rpm		
Stitches/second	0 - 130		
Stroke length	3.7 mm		
Needle adjustment	3.7 mm		
Needle type	Neo-Cartridges / Regular Cartridges		
Max. needle size	27 Magnum		



Warranty

This product includes a 12 months warranty from the date of purchase. The warranty applies to factory faults and not to wear of any components caused by normal or abnormal use. If this product becomes defective during the Warranty period, InkMachines shall have the option, in its sole discretion, to either repair the product or replace the product. Shipping costs to repair destination is not covered.

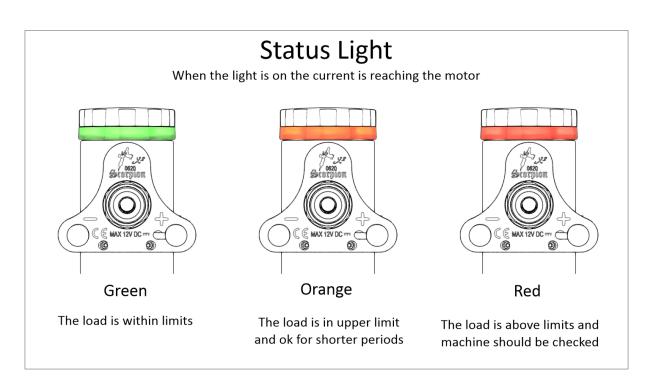
The warranty is void if:

- 1. The machine has been opened in an inappropriate way.
- 2. The machine has been autoclaved or cleaned in an ultrasonic cleaner.
- 3. Components have been damaged by misuse or carelessness.
- 4. Components have been manipulated in a harmful way.
- 5. Alkaline or acid cleaning agents with strong bases (high or low pH) have been used on the products.
- 6. More than 12 Volts have been applied to the machine.

InkMachines entire aggregate liability for losses and damages for any cause related to or arising out of the purchase and/or use of the product will in no event exceed the purchase price paid for the product. In no event will InkMachines be liable: (a) any indirect, special, incidental, consequential or punitive loss or damage, or other economic loss of any kind, in any case, even if advised of, or if InkMachines could reasonably foresee, the possibility thereof. The limitations, exclusions and disclaimers in this agreement shall apply irrespective of the nature of the cause of action, demand, or proceeding including but not limited to, breach of contract, negligence, tort, strict liability or any legal or equitable theory.

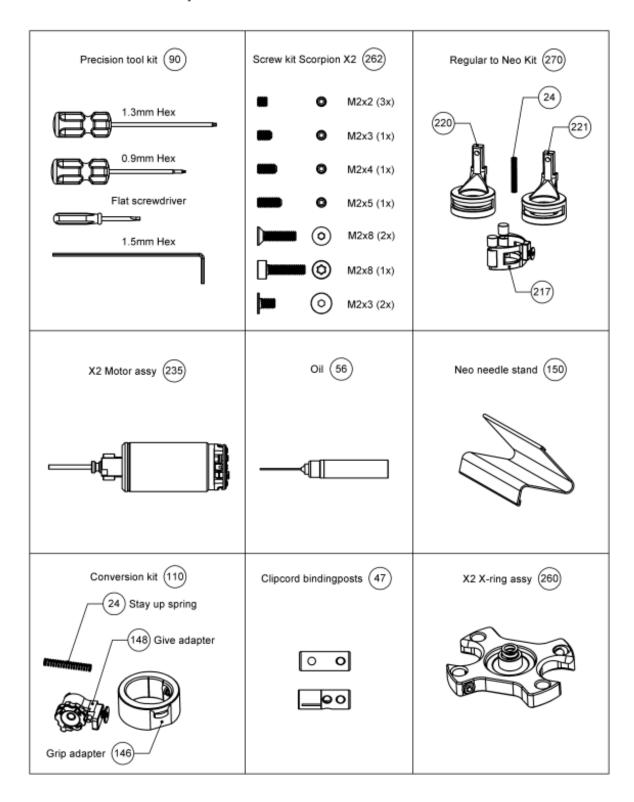


Status light

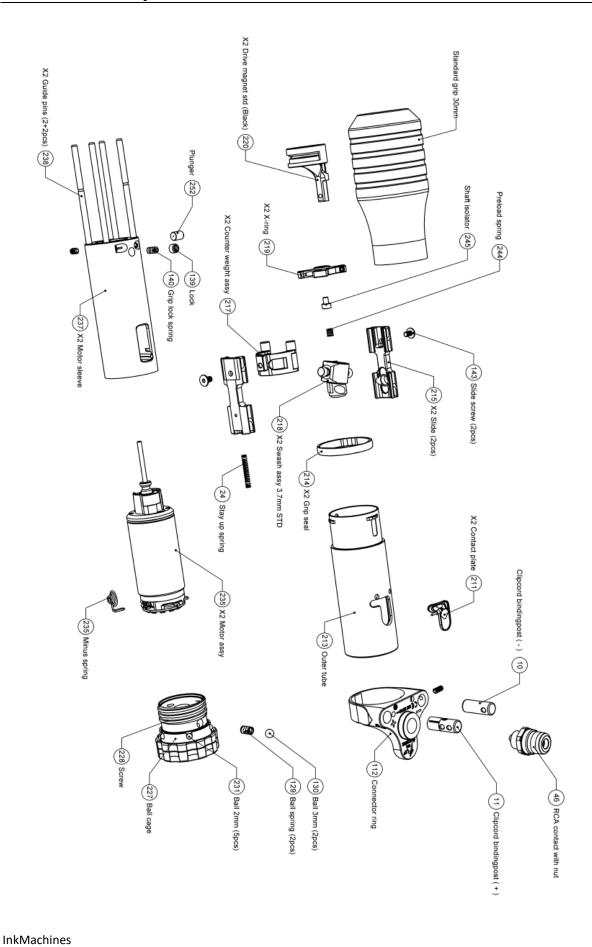




Part list Scorpion X2 tattoo machine



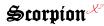




Disassembly



Force the two pins that was held by the screws slightly in the indicated direction Use the red key to remove the swash pin Use the red key to remove the two screws Loosen the two screws with the black key. Remove the magnet and counter weight. to release the X-ring from the pin grooves. Pull the assembly free from the guide pins. The parts can now be separated. Use the red key to remove the motor Turn the motor sleeve with guide pins sleeve stop screw. approx 90 degrees then turn the adjustment knob about 3 turns ccw to release the motor sleeve from the adjustment screw. Pull the minus spring out gently with a small pliers. Be careful not to damage the Pull the motor sleeve assy straight out. Remove the grip lock and grip lock spring. Use the black key to remove the two Be aware that the grip lock has spring tension. Hold your thumb to stop it once motor screws. it passes the edge of the oter tube. Pull the motor assembly out. Be careful Put the black key through the outer tube Push the plus spring in and use a thin curved Use the black key to remove the screw that piece of plastic sheet from the top to keep it not to damage the plus spring. Do not holds the adjustment knob assy through the center of the outer tube. and through the center hole of the screw to hold it for next step. inside so it can pass the thread on the way out. A piece of a needle blister pack can be used. remove the two screws that holds the bearing holder in the front of the motor.



Disassembly



17. Use the screw driver to position the five balls together on one side while holding the black key to hold the screw.	18. Pull the screw with balls and springs straight out. Hold your fingers to prevent the balls from ejecting when they pass the edge of the outer tube.	19. Unscrew the RCA nut with a 10mm wrench and unscrew the RCA contact.	20. Use the red key to remove the screws for the positive and negative binding posts.
	· · · · ·		
21. Remove the bindingposts and insulator sleeve.	22. Pull out the positive cord through the hole until the whole cord is on the inside of the outer tube.	23. Use the red key to remove the two screws holding the connector ring.	24. Remove the connector ring and magnet.
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25. Remove the contact plate assy.	26. Remove the grip seal. The three notches of the outer tube must align with the grooves in the grip seal.		



Use the red key to mount the two screws. Put the contact plate assembly in place with Put the grip seal on the outer tube. Make Slide the contact ring in place over the tube Make sure the screws sit tight but does not sure the three grooves align with the notches so the two screw holes align. Make sure that protrude on the inside of the tube. the magnet is in the connector ring. Polarity is important or it will repell the Powerpacks. on the outer tube. Check the polarity with a powerpack. Put the end of the positive cord in the hole Push with your finger on the cord inside the Insert the binding posts and the insulator Use the red key to insert the four screws. that goes through the tube and ring. tube until tou can reach and pull the end on the outside til the cord is flush to the sleeve in the connector ring. Make sure the grooves in the insulator sleeve is not in fron Dont tighten the insulator or the cord to hard, it can damage the sleeve and/or cord inside of the tube of the two screws that clamp it. causing short circuit or power loss. 1 Mount the RCA contact with nut and screw Use a 10mm wrench to tighten the nut Put the five 2mm balls in the groove where Put the screw on the black key and insert until the RCA contact sets on the contact against the connector ring without turning the magnet is located in the connector ring. the springs and 3mm balls. Hold the balls in plate. Make sure the nut is still loose at this the RCA contact. Dont over tighten it can It will hold them in place while inserting the place with your fingers while inserting the point. break the RCA contact. screw in the tube. Insert the screw while holding it away from While holding the screw in location use the Remove the black key and put the ball cage Continue with the screw driver and position the five balls until the groove in the screw screw driver to move a couple of balls to the each ball. Visually make sure there is a ball over the five balls. Place light ring, reflector aligns with the balls and outer groove opposite side of the screw. It will secure the in front of the middle of each groove in the and the top of the knob and tighten the screw to make sure that the parting of the screw through the tube with the black key. screw. balls are equal.





Use the black key to assemble the two Make sure that the plus spring springs back Push the plus spring in and use a thin Insert the motor assembly into the motor contersunk motor screws. Twist the motor curved piece of plastic sheet from the top after being pushed in. assembly so the screws can enter the threads to keep it inside so it can pass the thread. A piece of a needle blister pack can be used. 21. Use a pliers with small jaws to grip and push Place the grip lock and spring in the socket. Insert the motor sleeve into the outer tube Turn the adjustment knob clockwise and the minus spring straight into the contact on the motor circuit board. approx 90 degrees from the final position.
Push the springs and grip lock in one by one push the motor sleeve in at the same time so the thread can engage. Turn the knob as they meet the edge of the outer sleeve. until the motorsleeve is about 1mm inside the outer tube. Turn the motor sleeve and guide pins about Use the red key to insert the motor sleeve Put the guides and x-ring assy together and Put the stay up spring in the hole of the motor sleeve (marked "1"). Then slide the assembly down the guide pins until the 90 degrees to align the assembly. stop screw. Dont tighten hard, it should be hold it between your fingers. flush to the outer tube not to the motor swash reaches the bearing. First fit the counter weight on the same side as the stay up spring (marked "1"). Mount Insert the swash screw and tighten. Make sure that the grooves on the pins engages with the x-ring when pushing it Insert and tighten the screws for the x-ring. down. The x-ring should rest on the groove edges that are most away from the motor. the magnet on the side without spring. Once positioned hold it still until the screws are tightened. Dont push it down torward



CE

Declaration of Conformity

Manufacturer

InkMachines Sweden AB Grusåsvägen 8 352 45 Växjö Sweden

Equipment

Tattoo machine Scorpion X2 Year of manufacturer 2021

We InkMachines Sweden AB hereby declare that the Scorpion tattoo machine specified above conforms with the following directives:

Machine Directive 2006/42/EC

Växjö 2021-07-01

Christian Johansson CEO