

INSTRUCTIONS



Revision: 1.3

Cartridges for the Derminator[®] 2 can not be used on the older machine and vice versa.




-  Derminator[®] 2 info page with videos and link to store:
<http://derminator.com/>
-  The latest version of this user manual:
<http://derminator.com/Derminator2-instructions.pdf>
-  How to properly attach the rubber feet to the machine:
<http://derminator.com/Mounting-the-rubber-feet.pdf>

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READ FIRST: VITAL DERMANEEDLING INFO

Before using the Derminator® 2, read our dermaneedling instructions available on



<http://dermaroller.owndoc.com/dermaroller-instructions.pdf>.

These instructions are essential because they contain important safety- and treatment guidelines as well as advice on how often to treat, and with which products to pre-treat, after-treat and treat during the actual needling procedure.

WARNING & DISCLAIMER

The Derminator® 2 is a medical device, used to administer an invasive medical treatment procedure to the skin. Improper use or over-use can result in permanent disfigurement. The use of Corticosteroids or plant sterols that impair healing, such as those found in herbs like Sarsaparilla could also result in permanent disfigurement. The patient should not use any supplements, medications or skin products with medicinally active chemicals that interfere with skin healing. Skin products used during or shortly after dermaneedling should be critically examined for potentially troublesome ingredients. Needle cartridges should be inspected before use on the presence of bent needle tips. The same needle cartridge should never be used on different people and cartridges should always be sterilized directly after use or they should be discarded.

THE DERMINATOR® 2 DEVICE IS SOLD "AS IS" UNDER THE ASSUMPTION THAT ITS USER, BEFORE USING THE DEVICE, FULLY READ AND FULLY UNDERSTOOD THIS MANUAL AS WELL OUR GENERAL DERMANEEDLING INSTRUCTIONS AVAILABLE AT THE WEB ADDRESSES PROVIDED ON PAGE 1. BY PROVIDING INSTRUCTIONS AND GENERAL GUIDELINES AND ADVICE WE DO NOT ASSUME RESPONSIBILITY FOR A NEGATIVE TREATMENT OUTCOME. OUR GUIDELINES ARE THE OPINIONS OF LAYPEOPLE AND NOT MEDICAL ADVICE. IT IS AGAINST OUR TERMS TO USE THIS MACHINE UNLESS ITS OPERATOR AND/OR PATIENT ASSUME FULL LEGAL LIABILITY FOR THE TREATMENT OUTCOME AND WILL INDEMNIFY US AGAINST DAMAGES, REAL OR PERCEIVED.

INTRODUCING THE DERMINATOR 2

CARTRIDGES, SPEED AND DEPTH

Cartridges are available with 1, 9 or 12 needles. They have a silicone spring/sleeve to prevent blood from entering the device.

The needling speed can be slow (3 Hz), medium (5 Hz) or fast (25 Hz). The slower speeds are rarely used, mainly to emulate a dermastamp or single needle, when very precise treatment of very small areas are required.

The needling depth is set with a push button and can be set to 0.25, 0.5, 0.75, 1, 1.25, 1.5, 1.75, 2, 2.25 or 2.5 mm. Using a “trick” (falsely claiming to the machine that a 9- or 12-needle cartridge is mounted), the 1-needle cartridge will needle 1 mm deeper than set, for a depth range from 1.25 to 3.5 mm. **This depth can cause nerve injury and is only to be used on the rare type of scar tissue that needs such a depth, and should only be used by a dermatologist or plastic surgeon.**

NO MICROTEARING

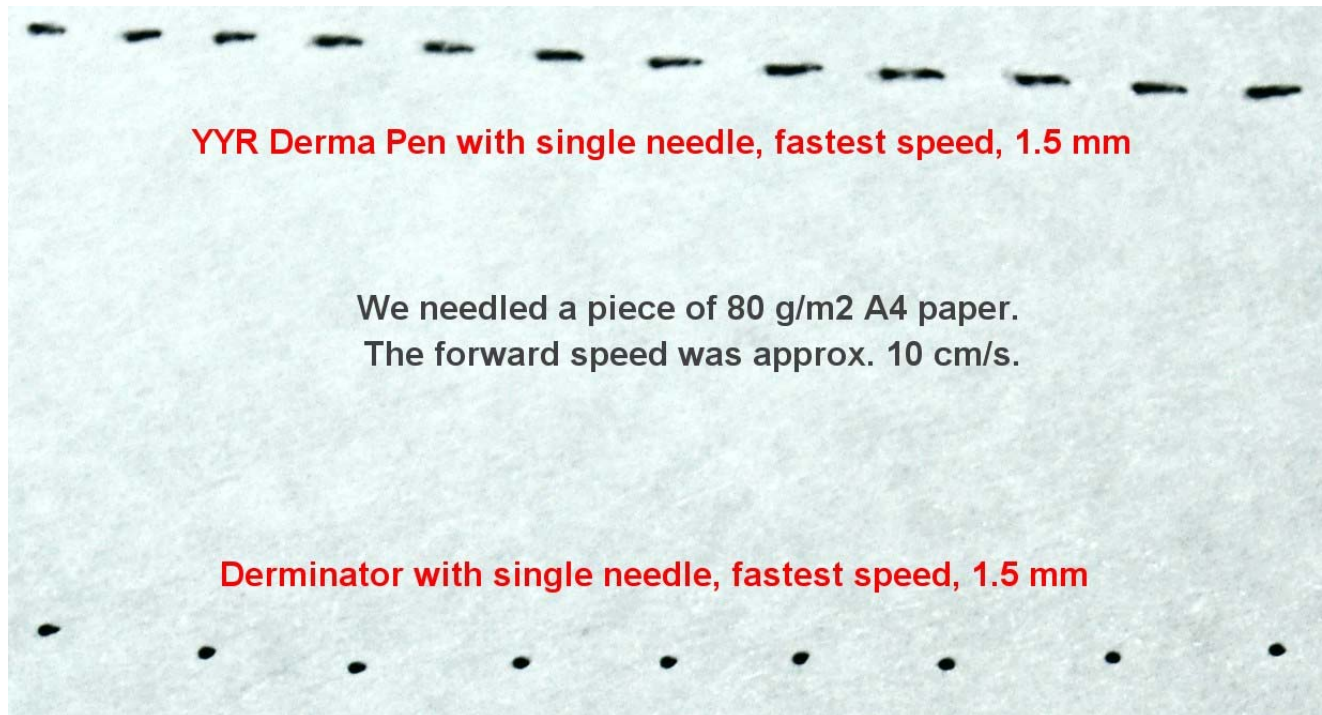
To avoid microtearing, a very powerful motor is a necessity in order to make the needles move in & out extremely quickly, and making the machine run on a rechargeable battery would therefore be impractical and very expensive. Competing (Chinese-made) devices are based on permanent makeup hardware and are much too feeble to be used for safe dermaneedling. They do not reach the advertised depth and they all cause more or less skin tearing.

TIMER

The Derminator® 2 is able to count down the time required to optimally treat a skin patch of a certain area by calculating the treatment time required based on the needling frequency used to automatically result in the optimal prick density. All you do is set inches or cm, input width and length of the skin area and start needling with any variety of speeds. The machine will stop automatically when the skin has been treated optimally. All the user needs to do is move the machine smoothly at least once over the entire area during the allotted, calculated treatment time, which is constantly displayed as it counts down.

NO MICROTEARING WITH THE DERMINATOR

This is what “micro”-tearing looks like. It is caused by a dermaneedling machine’s motor not having sufficient accelerating power to push the needles in quickly and pull them back out just as fast:



We have a video on our sales page where we use a microscope and needle paper with our device and another device. Anyone who has doubts about the above picture is encouraged to repeat the experiment and post the results online. We tested several more devices such as the Korean mCure and they all caused extreme tearing. We hope others will repeat our experiment with our machine and other machines and post their results online. Microtearing rips the edges of pores, causing permanent pore enlargement. Only a very powerful motor can move the needles in & out in a few milliseconds. That is why the Derminator® 2 is much louder than Chinese “pen” devices, and has a much larger motor part.

Chinese companies simply “recycled” their underpowered permanent makeup pens. Those feeble, overpriced “buzzers” will give electric dermaneedling a bad name, just like the dermarollers that have 540 stamped Titanium “knives” instead of real needles are causing permanent injury and thus give dermaneedling a bad name.

IMPORTANT PRECAUTIONS

- When using the 1-needle cartridge, do not tell the machine that a 9- or 12-needle cartridge is mounted, or the machine will needle 1 mm deeper than indicated!
- Do not reuse needle cartridges on different people. It is always best to discard needle cartridges after use, but they can be re-used, as long as you only use them on the same person and always clean and disinfect the cartridge directly after use.
- Do not pour water or other liquids into the hand unit's opening. You can use a cotton swab, moistened with alcohol at the most. Water will corrode the sensor electronics inside the machine, which will result in it refusing to operate.
- Do not pour water onto the outside of the hand unit, since it is not water proof, and water may corrode the sensor electronics.
- Do not use a disinfecting chemical spray on the hand unit, because certain popular disinfectant mixtures weaken the plastic cover, causing it to crack, when gripped firmly.
- Especially initially, **use one or more size shorter needle length and one week longer interval than used with manual needling**, when using the Derminator® 2. Pushing less hard will make the needles penetrate less. Do not use the timer function initially, since it uses an algorithm for a very thorough (medically optimal for regeneration) treatment.
- Only use the highest repetition rate and/or longer needle lengths when you have experience with the lower repetition rates/shorter needle lengths already, and only **after you have done a test patch with the higher repetition rate/needle length. Even the 0.25 mm setting can cause pain and redness and even pinpoint bleeding because the Derminator's needles penetrate deeper than those of a dermaroller or dermastamp of equivalent needle length**, and it makes many more stamps per minute than you can make with a dermastamp. Also competing electric devices, due to their weak motor, penetrate less deep than they claim. **Always do a very conservative test patch first and then wait!**

- Keep the device moving constantly and evenly over the skin when using the device.
- Keep the cartridge moving over the skin, without lifting it.
- Do not push the cartridge hard onto the skin.
- Do not hold the cartridge under an angle but flat onto the skin.
- Do not needle too long over the same skin patch if you have not seen how the skin reacts to intensive needling yet. Always do a test patch first!
- Never use needle cartridges not made by us! Even though they may fit, they all have a very different needle lengths, causing improper operation of the machine.

CARTRIDGE LIFETIME

The question “how long do the needle cartridges last” is unanswerable, since this depends on how many times the cartridge has been plunged into the skin, which depends on needling frequency, skin area, treatment frequency and the thickness of the particular skin. All we can say is that generally, cartridges can be reused one or more times and specifically, that they have become blunt when treatment starts to be more painful than it was when the cartridge was new.

CARTRIDGE DISINFECTION

Cartridges must be immediately cleaned and sterilized after use, if you want to reuse them. Mix the contents (20 g) of our Chloramine-T product into a litre / quarter gallon of lukewarm water. Use a plastic bottle and shake until it's dissolved. This liquid is more than a mere disinfectant – it actually *sterilizes* things. After-treatment procedure for cartridges:

- Within 5 minutes after use, drip some dishwashing detergent onto the needle(s) and, while holding it under a strong stream of lukewarm tap water, move the plunger until the soapy solution has enveloped the needles. Keep moving and rinsing until the detergent has been flushed away, also from inside the cartridge.
- Then pour some sterilisation liquid into a cup and add the cartridges to it. Make circling motions with the cup, so that the Chloramine-T solution swirls around the cartridges. Stick your fingers into the cup and operate the cartridges' plungers while they're submerged. Leave the cartridges for one hour. Bacteria and their spores that perhaps reside in any remaining blood are now destroyed.
- Then rinse the Chloramine-T out of the cartridges, one by one, under a strong stream of lukewarm water, while operating the plungers. Tap water does not contain harmful pathogens and even the rare occasional intestinal water-borne parasite is completely unable to infect (via the) skin.
- Leave the cartridges to completely dry in a dust-free spot (and not near a toilet bowl or place where pets have access!) before reuse.

DERMINATOR NEEDLING TECHNIQUE

When needling with the 9/12-needle cartridges, the hand unit should be held at a 90 degree angle with the skin, otherwise not all needles will penetrate to their full length. Make sure that the entirety of the cartridge rim touches the skin.

Do not hover or brush slightly over the skin but apply moderate, constant pressure at all times. This way, you can be assured that the needles penetrate the full length and that the machine is able to regulate needling depth correctly. Do not push too hard, or the skin is squeezed inside the cartridge rim and the result is deeper needling than intended.

Always keep the device moving in a moderate circular motion, do overlapping spirals with a few cm (1 inch) diameter, with a circling speed depending on the prick density you want to achieve. Always keep the device moving at least slightly, such as not to prick the exact same channels multiple times. Do not move the device in straight lines, otherwise needling density will not be uniform but “stripey”.

As long as you keep moving in circles, it’s not so important how large those circles are or how fast you’re circling or how quickly you’re navigating around the skin. The only really important thing is to cover all of the to-be-treated skin more or less equally. But you could and perhaps should put increased focus on skin that needs extra treatment.

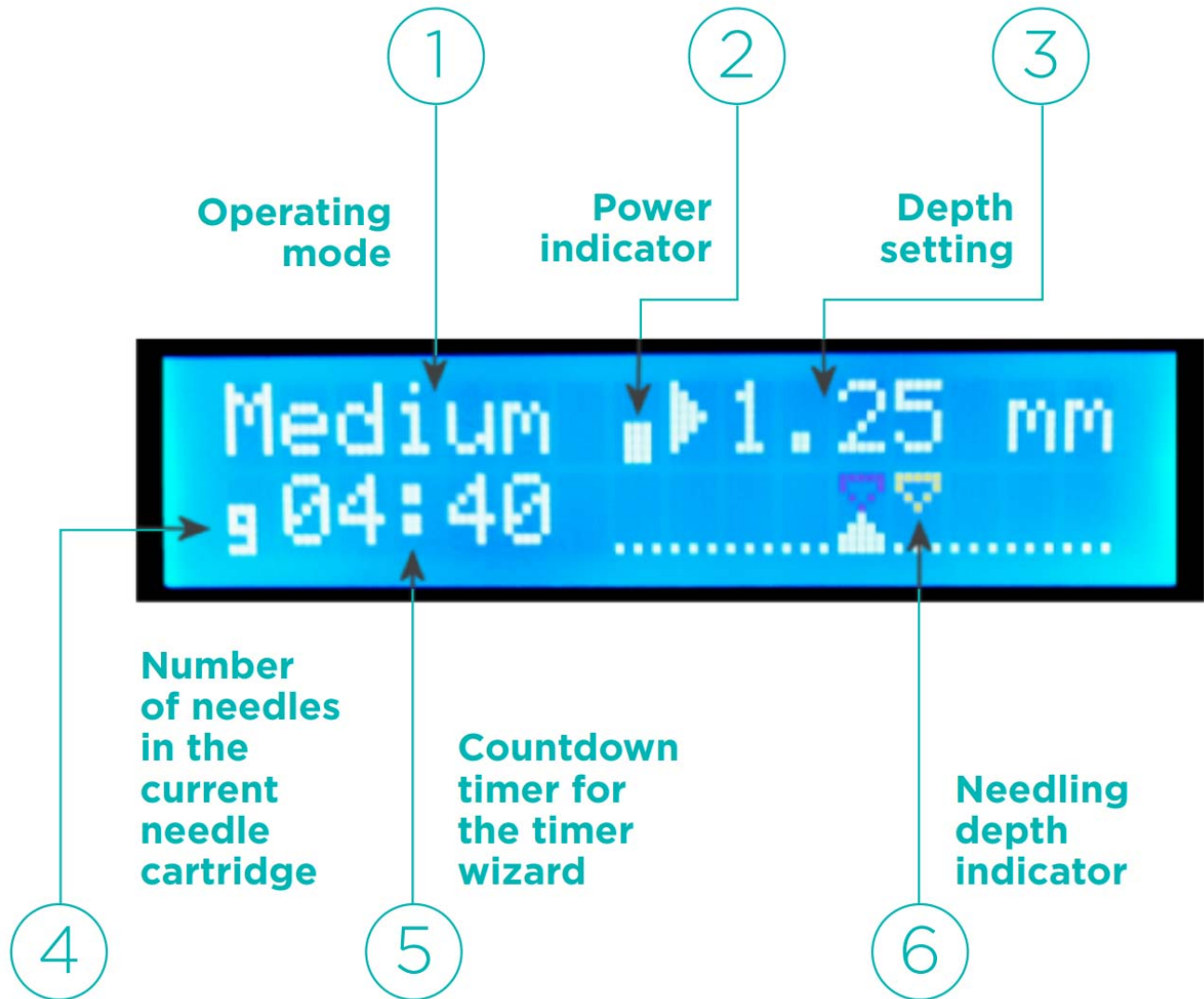


There are many videos on YouTube, including our channel and on our site <http://derminator.com/> where the correct technique is demonstrated.

The linear movement technique shown for those weak Chinese “buzzers” is wrong, just as we explained why the star pattern is wrong with manual dermaneedling. So the proper way to move over the skin is a constant circling motion with small circles, moving the hand around the skin while making small circles with the hand unit. Keep circling and try to cover the entire patch equally at least one full time.

When needling with the single needle cartridge, no special movement technique is required, but make sure you always keep moving. **The single needle, since it’s also designed to treat stretch marks, is usually NOT moved in circles.**

THE DISPLAY EXPLAINED



1. Operating mode

Can be “Slow”, “Medium”, “Fast” or “Timer”, where you can specify a skin area size and the machine calculates how much time should that area be needled with the speed setting(s) used. When you change the needling speed, the remaining time changes as well. The most common mode of operation is the “Fast” setting. **The left, gray button is used to select operating mode.**

2. Power indicator

Shows how hard the machine needs to push the needles to reach the set needling depth. It's not an important indicator but it shows that the machine works correctly. If the power indicator would be "maxed out" most of the time (8 bars lit) that would indicate that the motor has lost its power (due to a demagnetized magnet for example).

3. Depth setting

From 0 to 2.5 mm in steps of 0.25 mm. **The right, blue button is used to cycle through the needling depth.** Selecting a needling depth of zero functions as the "off button".

4. Shows the number of needles in the currently used needle cartridge

This is a small number in the bottom-left corner. It shows 1, 9 or 12. **VERY important** to: (1) Ensure that the Timer mode's calculations use the correct needle cartridge or the timer function will create up to 12 times more pricks than it should, when the user has told the machine that a single-needle cartridge has been mounted, but in fact a 12-needle cartridge is mounted. This error can result in permanent disfigurement.

This setting is also VERY important to: (2) Inform the sensor of the needle length of the cartridge used, otherwise the machine will needle 1 mm too deep when the user has told the machine that a 9- or 12-needle cartridge has been mounted, while in fact a single-needle cartridge is mounted. When the user then selects 2.5 mm needling depth, an actual needling depth of 3.5 mm is achieved, which can cause permanent nerve damage.

IT IS OF GREAT IMPORTANCE THAT THE MACHINE ALWAYS SHOWS THE NEEDLE CARTRIDGE TYPE THAT IS ACTUALLY MOUNTED

When the machine is turned on with the power switch, it asks what cartridge is going to be used: **single needle?** [Yes] [No]. The left gray button chooses "Yes" and the right blue button chooses "No". Other options are **9 needles?** [Yes] [No] and **12 needles?** [Yes] [No]

ALWAYS VERIFY YOUR SELECTION ON THE DISPLAY

To remind the user to pay great attention to answering correctly and verify his/her selection, and to remind the user that the only way to switch cartridge type is to turn the power off and on to the machine with the mains switch and then choosing the correct cartridge type, the following warning is flashed after cartridge type selection:

**Always answer
correctly and...**

**turn off before
cartridge swap!**

5. Countdown timer for the timer wizard

This is a very useful feature. The device allows you to specify the area in inch² or cm² of a skin patch by specifying width and length, and it then calculates, using 250 pricks/cm² (the same as 1500 pricks/in²), how long you should needle that patch in order to achieve that prick density. The device will stop when the timer has reached zero. All the user has to do is move the device with circular motions equally over the entire patch at least once during that time period.

6. Needling depth indicator

The bottom triangle indicates the set depth in increments of 0.25 mm. The deepest needling setting, 2.5 mm, shares its position with depth setting 2.25 mm.

The top triangle shows the actual needling depth, or, more accurately phrased, how far the needles are penetrating past the cartridge rim. This indicator serves as a verification that the device is working properly and that the correct needle depth is indeed attained. It also reminds the user to maintain proper skin contact, because when you keep lifting the device up and down from the skin, the depth indicator will flutter around too much. With proper needling technique, the actual-depth indicator remains in close proximity to the set-depth indicator, helping to attain a smooth, uniform needling depth, something harder to attain with manual instruments.

TIMER FEATURE FOR OPTIMAL TREATMENT

One of the main problems with manual dermaneedling is to figure out how many times to roll over the skin for optimum treatment. This involves complex maths because it depends on how wide the roller head is, how many needles are in the roller, the circumference of the roller head and of course the size of the skin area.

With the Derminator® 2, you only need to tell it the size of the skin area and the machine will simply switch off when you've treated the skin optimally. As long as you keep moving the device over the to be treated skin patch, the device will take care of the rest. You can even change pulsing frequency meanwhile. The Derminator® 2 knows how many pricks need to be made on the skin and when the skin patch has that number of pricks, it stops. That's all there is to it. And when you want to be conservative, you just stop sooner.

This "automatic mode" is done via the "Timer" function.

Timer mode is entered by pressing the right, blue "Depth" button marked **[OK]** when the display shows "**Timer**". The device then asks whether to use inches or cm:

Use **in²** or **cm²**?

[in²] **[cm²]**

After having selected the appropriate metric (by pressing the corresponding button below the text), the skin width and length is entered by pressing the corresponding buttons as many times as necessary. The left button increases the Length or Width.

Length skin area

[1] **[OK]**

Pressing the left button increases the value. Pressing the right button accept the entered value, and the next screen appears:

Width skin area?

[1] **[OK]**

When inches are selected, the max. size that can be entered is 16 inches. When cm are selected, this value is 40. When the maximum value is exceeded, the value cycles back to 1. **Be careful to select the proper metric because if you select inches when you mean cm and enter values in cm, treatment time will be too long!**

Then you can cancel the timer function or turn it on:

Turn on timer?

[Cancel] [OK]

When you turn it on, a time in minutes and seconds appears in the lower left corner like this:

Slow 0.00 mm

05:02

This means that when you needle the skin area on the “Slow” setting with the selected 9-needle cartridge, needling will take 5 minutes and 2 seconds. Needling time will shorten very considerably on faster settings, and the device automatically knows that and will turn itself off as soon as the optimal number of pricks have been made.

The device will stop needling and show “ENDED”.

When the timer has been set by selecting OK to the final value, you can start needling.

The machine will stop automatically when the needle density has been achieved. Of course you’ll have to actually needle the skin all that time and not take relatively long breaks, otherwise you’ll get a lesser prick density.

It is not necessary that the actual patch of skin to be treated has a rectangular shape.

All that’s required is to know the approximate area. Let’s say you’re going to treat a circular patch of skin with a diameter of 10 cm. How to set the timer? The area of skin according to the formula $\frac{1}{2} \pi d^2$ equals $0.5 * 10 * 3.14 * 3.14$, or 49 cm². Just use a width of 10 and a length of 5, or vice versa. Or you can just estimate the area. Say you guess that an area is about 60 square inches. Then you enter timer mode, select inches and enter 6 for length and 10 for width.

MANUALLY CALCULATING TREATMENT TIME

With the Derminator® 2, there is no more need to guess how long to treat the skin.

The machine calculates this itself, using the “Timer” function. However, if you insist on doing the math yourself, below is explained how the “Timer” function works:

The device does approx. 25 punches/second on the “Fast” setting. 1500 pricks/in² (250 pricks/cm²) is the goal.

Formula for sq. inches, using fast speed:

Treatment (in seconds) = (Area in in² x 60) / the nr. of needles in the cartridge

Formula for sq. cm, using fast speed:

Treatment (in seconds) = (Area in cm² x 10) / the nr. of needles in the cartridge

How exactly you move the device over the skin during that time and how many times the skin is covered by the device is up to you, but it is of course important that the entire area is more or less equally covered, resulting in a uniform redness. Circular motions are the best needling technique with this device.

When in doubt, use the “Timer” function and enter length and width of the skin area., or, when the treated area is not rectangular, estimate its surface area and enter a width and length, resulting in that surface area. Select inches or cm first! The machine will then turn off automatically when you should stop needling that skin area.

COMPLIANCE STATEMENTS

FCC

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 and part 18 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: Reorient or relocate the receiving antenna. Increase the separation between the equipment and receiver. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. Consult the dealer or an experienced radio/TV technician for help.

IMPORTANT: Any changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the device. Where shielded interface cables have been provided with the product or specified additional components or accessories elsewhere defined to be used with the installation of the product, they must be used in order to ensure compliance with FCC regulations.

CANADA

This Class A digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations. Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

EU

Products with the CE marking comply with the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community and if this product has telecommunication functionality, the R&TTE Directive (1999/5/EC).

Compliance with these directives implies conformity to the following European Norms (in parentheses are the equivalent international standards and regulations):

EN55022 (CISPR 22) – Electromagnetic Interference

EN55024 (IEC61000-4-2, 3, 4, 5, 6, 8, 11) – Electromagnetic Immunity

EN61000-3-2 (IEC61000-3-2) – Power Line Harmonics

EN61000-3-3 (IEC61000-3-3) – Power Line Flicker

EN60950 (IEC60950) – Product Safety

WARRANTY POLICY

We guarantee proper operation of the machine for 100 years, or the lifetime of our company, whichever lasts longer. Our company has been in business since 2006. Defective machines are replaced by brand new, unused machines at our cost, without the need to return the old machine, or we pay for return postage in rare cases when we want to diagnose an issue. An exception to this warranty policy is hand units with internal liquid damage.



You can reach our support department at <http://owndoc.com/support>

CARE & MAINTENANCE

This machine only uses needle cartridges with a silicone shroud, so blood can not enter the hand unit. If there is some kind of ‘emergency’ and you still think the hand unit should be cleaned on the inside, use a cotton swab, slightly wetted with alcohol according to [this video](#) and ignore the part about spraying the internals – that’s not recommended anymore.

The outside of the hand unit should never come into contact with anything else but a cloth, slightly wet with lukewarm water and a tiny bit of ordinary dishwashing/hand soap. Alcohol-based disinfecting products or any other products that contain organic solvents or dissolved chemicals will crack the hand unit shrouds.

Never spray any liquids into the hand unit and never spray any liquids onto it. Neither submerge it into liquids and neither keep it in contact with any liquid while performing a treatment. You can wipe it with a cloth, moistened with a disinfecting liquid, but certain chemicals in those liquids can weaken the plastic. Especially when you’re wearing gloves, wetted with certain disinfecting liquids with certain aggressive chemicals, the plastic shroud can crack. **Water, poured into the hand unit opening will short-circuit the sensor electronics inside and the unit will refuse to operate, displaying a “magnet missing” error.** Letting the hand unit dry out for a week may solve this problem. Moisture damage is NOT covered by warranty!

ERROR MESSAGES

MAGNET STUCK OR MISSING – CHECK!

How to find out exactly what's wrong

To diagnose whether the magnet is either stuck, missing, or something else is wrong, do the following:

- *Turn the machine on, while holding both console buttons depressed. Observe what number gets displayed. This number is the magnetic field sensor's value.*
- **When this figure is very close to 500, there is a magnet in the hand unit and it is most likely indeed stuck**, which could have been caused by its Chrome coating having become chipped and moisture from the air having rusted the Neodymium, making it expand, or blood serum having entered the hand unit and “glued” the magnet to its EPDM-foam back plug. The latter is nearly impossible, since the needle cartridge for the Derminator 2 contains a protective Silicone barrier. How to solve this issue is explained later.
- **When this figure is very close to 510, the magnet has either disappeared, or moisture has corroded the sensor electronics.** All machines are 100% guaranteed shipped with a magnet, since they would not have passed the calibration stage without one, and the error message “Magnet stuck or missing” can only appear when the calibration stage has been passed. The magnet goes missing when the machine is operated without needle cartridge on (can even have been a Customs officer!) or, in rare cases, the hand unit has been put close to a steel object, and the magnet got pulled out by it. Normally, a tiny “back magnet” holds the main magnet (the reciprocating magnet) into place. You should verify whether the magnet is really missing. If it is not, have you used water to clean the inside? If you have, we will discover corrosion in our warranty lab and this is not covered by our warranty. The problem may be resolved after letting the unit dry out for a week. If we don't find corrosion, we'll send you as new machine and pay for your shipping the bad machine to us.

How to get the issue resolved

First, to be absolutely sure, you must verify whether there really is a magnet or not inside the hand unit.

You do that by trying to remove it. There are two ways to do that:

1. Slam the hand unit hard with the open end onto the palm of your hand. Some people have trouble getting the magnet out that way. The goal is to cause sufficient deceleration force onto the magnet, such that the mass inertia overcomes the force of the tiny retaining magnet.
<https://www.youtube.com/watch?v=MfRSys2qfsE> shows how to do this.
2. Insert a small screwdriver into the hand unit. The steel of the screwdriver attracts the magnet stronger than the weak retainer magnet in the back of the hand unit, and thus the main magnet can be “fished out” of the hand unit.

If both of the above methods fail and you’re unsure whether there is a magnet or not, take a picture, using flash, directly down the hole in the hand unit, from a distance of about 10 inches (25 cm). If there is a magnet there, its reflective surface should be visible on the photo. Otherwise, only a “black hole” can be seen, since behind the reciprocating magnet is a black cell-foam plug.

If there is really no magnet (we have to be very sure!) then we will send you a new one, if you really did not operate the machine without needle cartridge mounted. Otherwise you should buy a new one, because running the machine without cartridge makes the magnet fly out with great speed and often it’s never found again, disappearing in a thick carpet and getting vacuumed or getting attached to the back of a radiator. It’s a small precaution to take for the benefit of a non-microtearing motor design.

If there is a magnet and it looks fine (no rust), we will either send you a couple of new ones to try, or we’ll replace your machine with a new one free of charge, with no requirement to send the old one back to us in most cases. And if we do ask for it to be sent back, we’ll pay for shipping. In some cases, when we think there may be a fixable problem with the machine (such as a firmware update by replacing the microcontroller) or we’re not satisfied that you diagnosed the magnet issue properly, we may ask for you to ship the machine back to us (we pay for shipping) before we’ll ship you it back. If we find nothing wrong with your machine, you’d have to refund us your refunded shipping and pay for our shipping to get your machine back.