

POWERDOT

Instruction Manual

www.getpowerdot.com



YOUR POWERDOT

Thank you for purchasing PowerDot! Please read this manual carefully before using this product.

PowerDot uses electrical muscle stimulation (EMS) technology to stimulate your muscles and help you to improve your sports performance at any level.

With that regard, PowerDot is a truly wearable sports assistance device.

As a connected gadget, PowerDot is operated wirelessly from a companion Android or iOS mobile application over Bluetooth Low Energy (Bluetooth 4.0) interface.

POWERDOT KIT CONTENTS



PowerDot Unit

PowerDot generates electrical signals which are sent, via pads, to your muscles to cause them twitch or contract.

2 Leads (Electrode Cables)

The leads are used to transmit electrical signals from PowerDot unit to pads.

PowerDot leads come at 10 cm (4") and 25 cm (10") length and, depending on the muscles selection and their anatomical dimensions, either of those two leads should be used (e.g., for abdominal muscles, 10 cm lead will be enough, while for longer quadriceps muscles, 25 cm might be a more suitable option).

Round adhesive pads, Rectangular adhesive pads

Self-adhesive pads are for connected to the leads via snap on connectors. Mobile application Pad Placement instructions are used to visualize the correct placement of pads for targeted muscles.

USB charging cable

PowerDot charging cable is used to charge PowerDot from any reliable USB connection **only**. **When PowerDot is charged, it cannot be used to output any electrostimulation.**

Carry case

Carry case used for storage of your PowerDot, active pads, leads and bands between sessions and for easiness of carrying the whole package.

Instruction Manual

WHAT IS POWERDOT FOR?

PowerDot allows athletes to stimulate their muscles with electrical impulses in order to improve endurance & fatigue resistance, strength & explosive strength characteristics of their main muscle groups.

It's scientifically proven that specially parameterized electrostimulation sessions, when effectively combined with regular physical training, help to significantly improve performance characteristics of trained muscles in just several weeks' time.

The best performance results are achieved when electrostimulation workouts are used 3-4 times/week during pre-season and 1-2 times a week during mid-season preparation phases.

In addition, PowerDot offers active recovery program, which increases blood flow and helps to remove lactic acid from the muscles. Active recovery sessions are generally recommended after every intensive physical workout.


Also, PowerDot device can be used for relaxing massage and muscle potentiation (i.e. preparation for the maximum power output before important sporting events and competitions).

In general, electrostimulation is a very efficient way to make your muscles work without causing cardiovascular or mental fatigue and with very limited stress to your joints and tendons.

PowerDot stimulation programs, stimulation parameters and general guidelines & advice are based on the results of the latest research and clinical studies carried over by the world's leading sport neurology laboratories.

In order to maximize your results, we recommended using PowerDot as a complementary sports assistance gadget, which should be used in addition to your regular physical training sessions, plyometric exercises, balanced and healthy nutrition, as well as complement your active lifestyle.

WARNINGS

 ***By a number of international classifications, PowerDot is classified as Class 2/2a medical device, as it affects physiological properties of your muscles through a direct body contact. This is why you should pay MAXIMUM attention to the below counter-indications, safety measures and precautions:***

1. Counter-indications

NEVER use PowerDot if you have ANY of the following:

- Cardiac stimulator (pacemaker)
- Epilepsy
- Cancer or cancerous lesions
- Any heart problem or condition
- Pregnancy (do not use on the abdominal area)
- Serious arterial circulation disorders in lower limbs
- Abdominal or inguinal hernia

General Usage Precautions

Please CONSULT YOUR DOCTOR before using PowerDot if you have ANY of the following:

- After trauma or a recent operation (less than 6 months prior)
- Muscle atrophy
- Persistent pain
- Need for muscle rehabilitation

2. Safety Measures

PowerDot Do Nots

- Do not apply stimulation near the area of an implant, such as cochlear implants, pacemakers, electrical or skeletal anchorage implants
- Do not apply stimulation near metal. Remove jewelry, body piercings, belt buckles or any other removable metallic product or device in the area of stimulation
- If pregnant or menstruating, do not place electrodes directly over the uterus or connect pairs of electrodes across the abdomen

- Do not use PowerDot in water or in a humid atmosphere (sauna, hydrotherapy, etc.)
- Do not use PowerDot in an oxygen-rich atmosphere
- For first time users, muscle stimulation can be an unusual sensation. We recommend that you begin in a seated position with low stimulation settings to familiarize yourself with the sensation before progressing to higher intensities.
- Do not connect leads or pads to the other objects
- Do not allow movement resulting from muscular contraction during a stimulation session. You should try to always stimulate in isometric way; this means that the extremities of the limb in which a muscle is being stimulated must be firmly fixed, so as to prevent any movement resulting from contraction.
- Do not use PowerDot if you are connected to a high-frequency surgical instrument as this could cause skin irritations or burns under the electrodes.
- Do not use the PowerDot unit within 1.5 meters of short wave or unshielded microwave devices as this could alter the current generated by the stimulator. If you have any doubts when using the stimulator in close proximity to another medical device, please contact the device manufacturer or your doctor.
- Do not use the PowerDot in areas where unprotected devices are used to emit electromagnetic radiation. Portable communications equipment can interfere with electrical medical equipment.
- During a stimulation session, do not disconnect electrodes when stimulation is running. Stop the stimulation first.
- Keep PowerDot device and its accessories out of reach of children and pets. Do not allow any foreign objects (soil, water, metal, etc.) to get into the device.
- Sudden temperature changes can cause condensation to build up inside the stimulator. Only use the device once it has reached ambient temperature.
- Do not use the PowerDot while driving, operating machinery or cycling.
- Do not exert yourself when using electrical muscle stimulation. Any workout should be at a level comfortable for you
- Do not apply stimulation while sleeping.
- Do not use the stimulator at altitudes of over 3,000 meters.
- ***NEVER re-charge PowerDot when unit is attached to an electrode and/or on your body***

NEVER Apply Electrodes:

- Near or to your head

- On the front and sides of the neck
- To your front torso (i.e. pecs or abs) and back torso (i.e. back, lats or traps) AT THE SAME TIME
- To the left and right side of your chest at the same time (for opposite polarity (e.g. negative and positive) electrodes)
- To your chest in any layout/setup varying from the following one:

3. Precautions when using pads

- Only use electrode pads supplied by PowerDot. Other electrodes may have electrical properties that are unsuitable for the PowerDot.
- Do not immerse the pads in water
- Do not apply solvents of any kind to the pads
- Do not attempt to place pads on any part of the body which is not directly visible without assistance
- For best results, wash and clean the skin of any oil and dry it before attaching the pads
- When attaching the pads, please ensure that the entire surface is in contact with the skin.
- For hygienic reasons, each user must have his/her own set of pads. Do not use the same pads on different people
- Never use a set of adhesive pads for more than 30 stimulation sessions as their bonding power deteriorates overtime and optimal contact is very important for both user comfort and stimulation efficacy.
- Some people with very sensitive skin may experience redness under the pads after the stimulation session. Generally, this redness is completely harmless and disappears after 15 to 20 minutes. However, avoid starting a stimulation session on the same area until the redness is no longer visible.

Never use with pacemaker

Do not use if pregnant

Never use pads on head, face or neck, or genitals

Never apply to front and back of the thorax

Never apply to both sides of the chest simultaneously

Never apply over skin abrasions

Never cut pads

Apply to dry skin only

Do not put electrodes into water

Do not share pads with other person

Store pads attached to the film

Do not use near metal

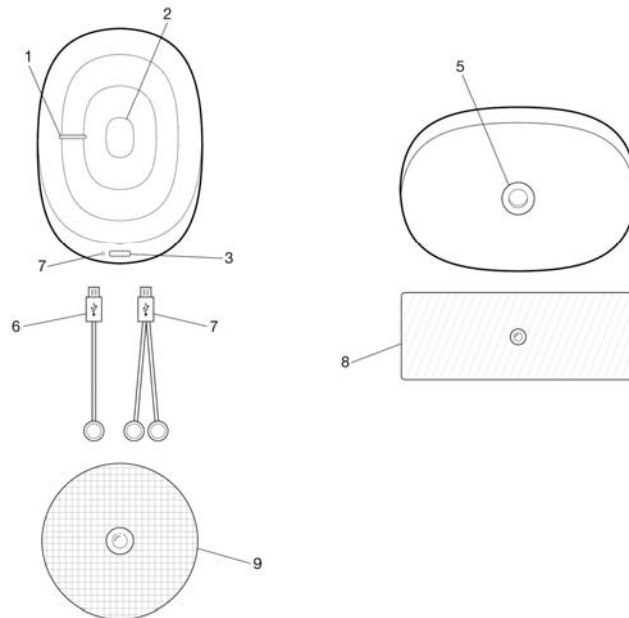
Do not use while driving

Do not use while sleeping

Never charge device on the body

Never touch pads from the conductive side or disconnect leads during running stimulation]

POWERDOT DEVICE & ACCESSORIES



1 – Power/Stimulation LED

2- Tactile Multi-Functional Button

3 - Micro USB connector (dual function: connects either leads or the charging cable)

4 – Charging LED

5 – Female snap on connector (connects device to a rectangular pad, holds the device attached to a body)

6 – Lead cable with two 3.5 mm snap on connectors

7 - Pad with 2.2 mm snap male connector (rectangular)

8 - Pad with 3.5 mm snap male connector (round)

Power/Stimulation LED (1):

Power/Stimulation LED (1) can go either BLUE or ORANGE.

When PowerDot is switched OFF – Power/Stimulation LED is OFF too.

Power/Stimulation LED is BLUE - PowerDot is in ON state and ready for stimulation.

Power/Stimulation LED is ORANGE – your PowerDot is in Stimulation mode.

⚠ WARNING! Never de-attach pads from the body or touch unstuck or partially unstuck pads when PowerDot is in Stimulation state. Always PAUSE your stimulation session and make sure that Power/Stimulation LED is either BLUE or completely OFF before touching pads surface.

CHARGING LED is ORANGE - the device is charging its battery. Device can't be charging and stay in stimulation mode simultaneously, hence, you will never be able to see CHARGING LED on together with Power/Stimulation LED being ORANGE.

⚠ WARNING! NEVER charge PowerDot when it is worn on the body or held in the hand. Always use an original charging cable provided. Never charge PowerDot from unreliable or problematic power sources!

Tactile Power Button (2) Modes:

Power Button Action	Device Initial State	Device Resulting State
Hold for ~1 second	Device is in OFF state (Power LED is OFF)	Device moves into ON state (Power LED becomes ON)
Hold for ~0.5 seconds	Device is in ON state (Power LED is ON)	User confirmed readiness for the stimulation session
Short Click	Device is in ON state (Power LED is ON)	Device moves into OFF state (Power LED becomes OFF)
Short Click	Device is in STIMULATION state (Stimulation LED is ON)	Stimulation is stopped and device moves into ON state
Hold for 10 seconds	Device is in OFF state (Power LED blinks 3 times and then turns OFF)	Activation lock removed, device is OFF

Micro-USB connector (3):

PowerDot uses the same high voltage micro-USB connector (5) for both leads connection and charging.

If device is operating in stimulation mode, it will be stopped immediately once leads are unplugged from micro-USB connector.


When device is in charging mode and not completely charged as yet, Charging LED (4) will be ON. See *Re-Charging PowerDot* section of User Manual for more information on PowerDot charging.

Snap Connector (5):

Snap connector is used to attach and hold the device on the rectangular pad.

Lead (6):

In order to further improve comfort of PowerDot stimulation experience, two lengths of leads (6) are provided with each PowerDot (10 cm and 25 cm), which allow you to select the most suitable wire length based on the targeted muscle group selection and your anatomical parameters.


 **WARNING!** *Never unsnap pads from the lead snap connectors during running stimulation session (i.e. when Stimulation LED on the device is ON).*

Electrode Pads (7,8):

PowerDot uses two types of electrode pads – two 4.5 cm (1.8”) round pads (9) and 8x4 cm (3.1”x1.6”) (8) rectangular pad. Rectangular pad is also used as a holder for PowerDot unit itself.

PowerDot pads use unique biocompatible hydrogel with superb conductive and adhesiveness qualities.

The lifetime of PowerDot pads depends a lot on your individual skin properties, level of hairlessness and quality of maintenance. On average, we expect each pad to last for at least 25 stimulation sessions (or approximately one month worth of training under ‘average’ 3 times a week/2 muscle groups per session schedule). After that, adhesiveness and conductive properties of the pads will likely start to deteriorate.

 **WARNING!** *Never cut pad or put them into water. Always store your pads attached to the plastic safety film, in dry environment (either in their original plastic bags or in PowerDot carry case provided). Always apply your pads to the dry skin only!*

DIRECTIONS FOR USE

Mobile Application Installation

Android Users

- 1) Make sure you mobile device runs Android OS 4.3 or later and has built-in Bluetooth LE support.
- 2) Search for PowerDot Mobile application at the Google Play, download and install it.
- 3) Run installed PowerDot application, watch Safety Briefing and then follow on-screen instructions on how to Locate and Activate your PowerDot device (or devices) for the first usage.

iOS Users

- 1) Make sure you mobile device runs iOS 7.0 or later and has built-in Bluetooth LE support (i.e. you have iPhone 4S or later).
- 2) Search for PowerDot Mobile application at Apple Store, download and install it using your Apple ID.
- 3) Run installed PowerDot application, watch Safety Briefing and and follow on-screen instructions on how to Locate and Activate your PowerDot device (or devices) for the first use.

Turning ON and OFF the device

To turn on your PowerDot unit, hold the Tactile Multifunction Button for approximately 1 second, until main LED turns BLUE. When PowerDot is not in Stimulation mode (i.e. main LED is BLUE rather than ORANGE), you can turn it off by just promptly clicking Tactile Multifunction Button. When in Stimulation, you would have to click twice to turn on the device, as the first click will stop running Stimulation (main LED switches from ORANGE to BLUE) and the second click will turn OFF the device (main LED is OFF).

Device Activation

Before PowerDot device can be used for muscle stimulation, it needs to be activated from your PowerDot Mobile application. When activated, your PowerDot device is programmatically locked to your mobile phone and you won't be able to activate or use your PowerDot from any other mobile phone, until you deactivate it either programmatically (from the Device Settings screen) or manually (by holding Tactile Power Button for 10 seconds when PowerDot is turned ON and not in Stimulation).

If you do not have any active PowerDot devices, activation screen automatically opens up for you when you launch PowerDot mobile application, otherwise, use PowerDot Main Menu in order to navigate to the Device Settings screen.

Device Deactivation


PowerDot can be deactivated and reset back to its factory state either programmatically or manually. For manual deactivation, make sure device is ON and not in stimulation, then hold Multi-Function Tactile Button for 10 seconds till you see Power/Stimulation LED blinking BLUE 3 times.

Programmatic deactivation can be done from Device Setup menu. Just use Deactivate button next to the relevant device, but the device should be powered ON before it can be deactivated.

Pre-Stimulation Assembly & Placing On a Body

Before placing PowerDot on a body, it's always easier to pre-assemble PowerDot:

- 1) Snapping on your PowerDot unit to your currently used rectangular pad (while pad is staying attached to its storage/carrying piece of film).
- 2) Plugging selected relevant lead into PowerDot micro-USB socket;

 ***WARNING! ALWAYS visually inspect leads and PowerDot units for any damage BEFORE every stimulation session. Do not use damaged accessories or units, consider replacing them immediately.***

- 3) Snapping on round pads to your lead (while pads are staying attached to their storage/carrying film). Alternatively, you can place round pads on body first and snap lead snap connectors to them while they're on the body.
- 4) Unstick both round pads from their safety films and place them on your body in accordance your mobile application pads placement recommendation.
- 5) Unstick rectangular pad from its safety film and attach it to the relevant position on your body (in accordance with your mobile application pads placement recommendation).

Selecting Stimulation Program and Muscle Group.

Your Best Position During Stimulation.

You can use PowerDot Casual Stimulation mode when selecting stimulation program and targeted muscle group or you can activate pre-planned Stimulation Program based on previously created Training Plan.

Always try to take PowerDot Mobile Application recommended position for your stimulation session.

Recommended body position as well as range of motion recommendations will be depending solely on the currently selected stimulation program and targeted muscle group.

⚠️WARNING! It's in the interest of your own SAFETY and stimulation EFFICIENCY to follow recommended body positions and allowed range of motion guidelines during stimulation.

ADVISED POSITIONS

Sitting, Minimal Range of Motion, Hands/Arms Locked.

Sitting position with minimal range of motion is generally advised for Main Programs executed on upper legs, arms and thorax muscle groups. During arm or thorax muscle groups stimulation (Deltoids, Biceps, Triceps, Forearms, Pecs, Traps, Lats), it's also advised that you keep stimulated hands and/or arms locked under your weight or in some other in order to provide isometric resistance to involuntary movement during contraction phase.

Lying, Minimal Range of Motion.

Lying position with minimal range of motion is advised for Main Programs ran on Hamstring muscles. Try to create isometric pressure and resist involuntary leg movement to the best of your efforts during contractions.

Standing, Minimal Range of Motion.

Standing position with minimal range of motion is advised for Main Programs ran on Calf muscles. Your own weight is used to provide isometric resistance during contractions for the most effective calves muscle training.

Any Position. Reasonable Motion Allowed.

Reasonable motion is generally for recovery and massage programs which do not involve strong muscle contractions but rather twitches. This is where you can use mobility and flexibility of PowerDot to its full extent. Just make sure you do not sit on, lie over or put significant pressure in any other way against working PowerDot devices.

Starting Stimulation Session

Make sure your PowerDot unit is well charged, leads are connected and pads are attached to the targeted muscle groups in line with the in-app Pad Placement instructions.

Once you Turn ON your device, Mobile Application will automatically check remaining battery charge and lead cable connectivity for your PowerDot and will let you know if there are problems detected.

If everything is in order, it will ask you to confirm that you're ready to start you stimulation session by holding Multi-Function button on your device (or each of the devices in Duo stimulation mode) for around half a second.

Once you confirm that you are ready to go, you will see the Stimulation Session screen and ticking session timer is a good confirmation that your stimulation session have just started.

Controlling Stimulation Session

Muscle Stimulation session is initiated and can be controlled from the Stimulation Session screen:


Intensity Adjustment controls – Intensity Increase (1) and Intensity Decrease (2) are used to adjust stimulation intensity on a currently selected (visible to you) device.

Device Lock (3) and Channel Lock controls (4) allow you to control stimulation intensities in synchronized manner between 2 PowerDot devices and/or between 2 stimulation channels on the same device.

When Channel Lock is active (4), stimulation intensity adjustments will be affecting both stimulation channels simultaneously. When Channel Lock is in inactive state, you get an opportunity to fine tune intensities for each of the stimulation channels independently. For most of the users and use cases, it won't be ever needed, however, it's always good to have a fine tuning option, isn't it?

When two PowerDot devices are used simultaneously, user can switch between devices and, when Device Lock (3) control is inactive, do independent intensity adjustments on the currently selected device. In general, you would only require different intensity settings for your left and right PowerDots only if you have significant differences in your sensitivity to stimulation or major differences in the muscle development between left and right sides of your body (which is also not a case for the majority). For the simplicity purposes, we advise you to memorize which PowerDot colors you use on which side and just follow the same pattern when making device color specific adjustments to the intensities.

Main Timer slider (5) can be used to Pause, Resume or Stop stimulation session or to Skip current stimulation phase (e.g. Warm Up). Just slide Main Timer control to left or right of the screen in order to select your required option.

 WARNING! Always use your own feelings as guidance when you increase intensities during stimulation. Although, for some of the programs we advise to run stimulations at maximum intensities you can tolerate, If, to some reason, you experience major discomfort or pain – consider PAUSING your

stimulation session and/or decreasing intensities. Whenever you PAUSE your stimulation session, for safety purposes, you will be able to resume your stimulation again only at 80% or lower off your previous intensity values.

Always keep in mind, that old and worn out electrodes can be another reason causing discomfort and pain during your stimulation session.

Pausing or Stopping Stimulation

It's very important to know, how you can quickly stop stimulation session (e.g. you suddenly start experiencing discomfort, e.g. when your pads partially or fully unstuck, muscle gets fatigued, etc.).

As PowerDot is on safety, there are 3 main ways to stop your current stimulation session, sorted from the most recommended to least:

- 1) Slide to Pause or Stop with your Main Timer sliding control right from your Stimulation Session screen of your PowerDot mobile application: *recommended main use option.*
- 2) Promptly click Multi-Function Tactile button on your PowerDot unit (or any of the units when used in Duo mode): *recommended emergency option.*
- 3) Unplug micro-USB lead from its connector: *recommended as last retreat emergency option, use only if option 2) is not working or not available to some reason.*

Note, that when two PowerDot units are used for simultaneous stimulation in Duo mode, you can perform emergency stop actions 2) and 3) on any of your active PowerDot devices and, if PowerDot Mobile Application is still running, the second PowerDot device will terminate its stimulation session automatically.


Fine Tuning Stimulation Parameters

[missing text]

Carrying & Storing PowerDot

PowerDot carry case is the specifically designed for carrying and storing your PowerDot device bundled together with your currently used (or new) pads and leads.

In general, it's recommended to carry or store your PowerDot device attached to a rectangular pad and only de-attach it when the pad needs to be replaced (i.e. after 20-30 stimulations). It's also recommended to store rectangular pad attached to a transparent safety film which is coming with every new pad. You can stick your round pads to the other side of the same storage film or, alternatively, store them attached to separate storage films of their own. There is a customized foam section at the bottom of your carry case, which you can use to store your lead (or leads).

 **WARNING!** *Disconnect lead wire from PowerDot unit AND lead snaps from the pads when storing them in the carry case. Otherwise, the leads might bend excessively close to the connectors and this may either damage the leads or significantly reduce their lifetime.*

POWERDOT STIMULATION PROGRAMS

PowerDot Mobile Application supports a number of built-in stimulation programs and output modes, suitable for different purposes, which, when used in with the recommendations and when are integrated into your existing training plan, can help to improve performance and aesthetical characteristics of the targeted muscle groups (and, with PowerDot, you can target up to 15 main muscle groups of your body).

PowerDot programs can be divided into two main sections:

MAIN PROGRAMS

Main Programs are generally integrated into your current sports training plan and help you to develop or maintain your muscle performance characteristics during various stages of your training program.

Main Programs are generally used 3-4 times per week during pre-season training and 1-2 times per week during season or rest/recovery periods. In general, you are expected to stimulate 1 or 2 muscle groups per stimulation session.

The final selection of your actual stimulation program and targeted muscle groups will depend on a number of factors including your sports selection, your ultimate objective, your current training plan and training phase. All the above parameters and others will be taken into consideration by PowerDot Mobile Application built-in stimulation session planning functionality.

Alternatively, you can always override your current plan and run manually customized Main Programs in casual training mode.

All Main Programs start with recommended 5 minutes Warm Up, followed by Main Workout phase (depending on a program, can be in 10-50 minutes range), which is then followed by highly recommended 5 minutes Recovery phase.

Endurance

Improves endurance & fatigue resistance properties for stimulated muscle groups.

By default, main phase of PowerDot Endurance Program runs for 40 minutes and consists of ~220 8+2 second contraction/rest periods, specifically targeting slow (endurance focused) muscle fibers at the stimulation frequency of 12 Hz.

Endurance programs are generally recommended for athletes who are primarily involved into endurance-focused sporting disciplines (e.g. marathon running, Iron Man, etc.) and/or are interested to further increase the proportion of slow fibers in their muscles.

The training effect of Endurance Program is similar to the effect of several sets of weight training in gym for 15-20 reps at 50-60% of 1RM (max weight repetition) load.

For better results, it makes sense to combine few weeks of Endurance training with 1 or 2 weeks of Resistance training program for every training cycle.

Resistance

Resistance Program targets both slow (endurance-focused) and fast (strength-focused) muscle fibers in order to develop endurance and strength properties of the stimulated muscles in approximately equal proportion.

At its default settings, Resistance Program runs at mid-range frequency of 55 Hz which generates around 110 of 7-second contractions followed by 7-second active rest periods.

As proportion of muscle fibers remains approximately the same, Resistance Program helps to improve overall tone and aesthetical properties of stimulated muscle groups.

Resistance programs are suitable for athletes involved in equally demanding endurance and strength kinds of sports, such as gymnastics, wrestling etc.

The training effect of Resistance Program is very similar to the effect of several sets of weight training in gym for 8-10 reps at 75-80% of 1RM (max weight repetition) load.

However, it's very rarely Resistance programs are run in pure standalone mode. For optimal results, we recommended to combine Resistance sessions with either Endurance or Strength programs (depending on your priorities, e.g. 2 weeks of Resistance + 4 weeks of Strength)

Strength

Strength Program targets fast (strength-focused) muscle fibers in order to improve pure strength properties of the stimulated muscles.

At its default settings, Strength Program runs at stimulation frequency of 85 Hz, which generates 50 of 4-second contractions followed by 20-second active rest periods.

Strength programs are suitable for athletes looking for immediate muscle strength gains, which may result in the overall performance improvements at their sports, e.g. leap performance for basketball/volleyball, sprint performance for soccer or rugby.

The training effect of Strength Program is very similar to the effect of several sets of weight training in gym for 4-6 reps at 80-85% of 1RM (max weight repetition) load.

In the longer run, Strength Programs work very well in conjunction with Explosive Strength Programs (e.g. 4 weeks of Strength + 2 weeks of Explosive Strength).

Explosive Strength

Explosive Strength Program targets the fastest muscle fibers in order to improve speed and power characteristics of the stimulated muscles.

At its default settings, Explosive Strength Program runs at stimulation frequency of 105 Hz, which generates 30 of 3-second contractions followed by 25-second active rest periods.

Strength programs are suitable for athletes involved into sports requiring maximum speed, explosiveness and muscle power output, such as Olympic weightlifting, some track and field disciplines etc.

The training effect of Explosive Strength Program is very similar to the effect of several sets of weight training in gym for 1-3 reps at 90-95% of 1RM (max weight repetition) load.

In the longer run, Strength Programs work very well in conjunction with Explosive Strength Programs (e.g. 4 weeks of Strength + 2 weeks of Explosive Strength).

Maximum Speed

Maximum Speed Program targets the fastest muscle fibers in order to improve speed and power characteristics of the stimulated muscles and is designed for experienced athletes with high levels of tolerance for muscle stimulation. It's based on the original muscle stimulation recommendations for Olympic level sprinters training by the "father of electrostimulation" Professor Kots and one of his early adopters – Olympic sprinter Charles Francis.

Make sure you feel yourself comfortable tolerating Strength and Explosive Strength training programs at high intensity settings (>70%) before trying out Maximum Speed program, as it's definitely not for everyone.

At its default settings, Maximum Speed Program runs at stimulation frequency of 120 Hz, which provides only 10 of super powerful 10-second contractions mixed up with 50-second full rest periods.

The Maximum Speed Program effect is similar to 100%+ new 1RM (max weight repetition) trial in weight training.

In the longer run, Maximum Speed Program is strongly recommended to be preceded by at least 2 weeks of very intensive Explosive Strength Programs.

ADDITIONAL PROGRAMS

In order to stay effective, Additional Programs do not depend as much on the accurate long term planning and execution as Main Programs do. In general, you are free to run Additional Programs any time you feel free it's suitable, however, depending on a program, there are still advised usage for each of them. Also, in difference from Main Programs, which are mainly used for the actual training purposes, Additional Programs are generally advised to be used for post-training recovery and relaxation as well as for pre-training preparation and warm ups.

Active Recovery

Active Recovery is the most demanded Additional Program and is suitable for almost any athlete, involved into high intensity physical workouts, however, most popular with runners, cyclers and triathletes.

Active Recovery program generates low frequency muscle twitches for around 25 minutes, which help to improve blood flow circulation, flush out lactic acid from your blood and release endorphins. This helps to remove post exercise muscle soreness and reduce the effect of delayed onset muscle syndrome (DOMS), and, by doing that, improve quality and time of your muscle recovery process.

Depending on the type of physical workout you were engaged into, we generally recommend to run Active Recovery Program over your calves for lower body & legs recovery, over lower back for core recovery, over your traps for upper body recovery and on your wrists for recovery after climbing or other grip training exercises.

Potentiation

PowerDot Potentiation program offers efficient warm up session for your targeted muscle group, which is generally recommended to be applied before important competition events (in addition to regular physical warm ups). Potentiation Program is applying a series of low, medium and high frequency electrical impulses to your muscles, which efficiently prepares both slow and fast muscle fibers to the maximum effort.


Different Massage Programs

PowerDot offers several massage programs which use comfortable low frequency and low intensity muscle twitches which are helping to relax your muscles, improve blood flow circulation and promote anti-stress recovery. Best areas for efficient massage are your traps, lower back or calves.

GENERAL USAGE GUIDELINES

Pad Placement

For your own safety and effectiveness of your stimulation sessions, use only Pad Placement setups advised by PowerDot Mobile Application.

 *WARNING! Always follow the pad placement directions provided by PowerDot mobile application unless you have other specific medical instructions. Smartissimo disclaim all responsibility for consequences arising from pads placed in other than recommended positions.*


Where necessary, look for the best possible position by slowly moving the positive pad over the muscle until you find the point that will produce the perfect combination of the strongest contractions and the best comfort.

Body Positions & Movement

This position will vary depending on the position of the pads, the muscles you wish to stimulate, and the program you are using.

For program inducing powerful muscular contractions (Endurance, Resistance, Strength, Explosive Strength and Maximum Strength programs), the muscle should always be stimulated in an isometric fashion.

You should therefore fix extremities of your limbs securely in order to provide maximum resistance to the movement and prevent any shortening of the muscle during the contraction.


 *WARNING! Always follow recommendations on the body positions and allowed range of motion provided in your PowerDot Mobile Application before and during every stimulation session.*

Adjusting Stimulation Intensities

In a stimulated muscle, the number of the recruited fibers depends on the stimulation intensity. For programs causing powerful muscle contractions (tetanic contractions) (e.g. Endurance, Resistance, Strength, Explosive Strength, Maximum Strength programs), target using maximum tolerable stimulation energies, always at the limit of what you can endure, in order to recruit the maximum number of fibers.


For programs only inducing muscle twitches, you should progressively increase the stimulation energies until you obtain clearly visible muscle twitches.

PowerDot mobile application is providing you with the best advice on how to adjust your intensities for each stimulation program.

 *WARNING! Always use your own feelings as guidance when you increase intensities during stimulation. Although, for some of the programs we advise to run stimulations at maximum intensities*


you can tolerate, If, to some reason, you experience major discomfort or pain – consider PAUSING your stimulation session and decrease intensities.

CHARGING POWERDOT

 WARNING! NEVER charge your PowerDot device when it is attached to your body or held. Always use an original charging cable provided as part of your PowerDot package. Never charge PowerDot from unreliable or problematic sources!

PowerDot uses built-in 210 mA Lithium Polymer battery which requires re-charging after approximately 5-6 hours of overall usage.

PowerDot Mobile Application displays current battery charge level for currently visible device at the Stimulation Session screen.

 WARNING! You won't be able to start new stimulation or resume existing one if any of your active PowerDot devices is not charged to at least 20% level.

Only use reliable and previously tested USB connection for re-charging your PowerDot.

When Charging LED is ON your device is charging and has to continue charging till Charging LED goes off, which generally means that your PowerDot is now fully charged and ready for use.

BASIC TROUBLESHOOTING

DEVICE IS FAILING TO TURN ON

You're very low on your battery. Please re-charge your battery. Full charging time for the battery is around 60 minutes.

WHEN ON PRE-STIMULATION APPLICATION SCREEN, DEVICE(S) NEVER GETS CONNECTED.

Your Bluetooth connectivity with PowerDot device can't be established to some reason. Check Device Settings menu to make sure that the device you're trying to use is in the list of active devices.

Make sure your PowerDot device is turned on (Power/Stimulation LED is BLUE) and the battery is charged.

If device is charged, activated and the device(s) still is not getting connected, try turning off the device(s), restarting PowerDot Mobile Application, turning on the device and trying again.

STIMULATION IS NOT PRODUCING THE USUAL SENSATION

Check that you are using the right program and that pads have full contact and are positioned properly. Pause your stimulation, re-attach or change of the position of the pads and then resume your stimulation.

THE STIMULATION CAUSES DISCOMFORT OR BURNING

If you're using your standard intensity modes, than most probably your pads are worn out and are losing their bonding strength. Pause your stimulation and try re-attaching your pads. If after resumption the same sensation continues, consider replacing your pads.

PADS DON'T ADHERE TO THE BODY OR STIMULATION IS VERY WEAK EVEN WHEN INTENSITY IS HIGH

Consider replacing your pads. Most probably they're worn out.

FAILING TO LOCATE DEVICE FOR ACTIVATION

Most probably your device is already activated to other mobile phone. To deactivate, make sure your device is turned ON and then hold Tactile Multi-Function for 10 seconds till your Power/Stimulation LED blinks for 3 times and device powers OFF itself after. Turn ON the device and try searching for it again.

BLUETOOTH LOW ENERGY COMMUNICATION

The unique feature of PowerDot is that it's operation can be fully controlled through Bluetooth LE, and, hence, theoretically, any Bluetooth LE-compatible device should be capable to control PowerDot.

PowerDot Bluetooth protocol allows to adjust main stimulation parameters (frequency, impulse duration, periods of contraction/relaxation, etc.) for each stimulation channel independently, to start and stop stimulation, to adjust intensities during the stimulation as well as able to provide feedback on the status/resistance of electrodes connectivity and battery charge.

Once stimulation started, PowerDot will handle the stimulation session (or part of it) on its own and won't require any continuous Bluetooth communication with the operating device (other than requesting the battery status every once in a while) until the user decides to do stimulation session intensity adjustments or stop/suspend the session.

PowerDot is specifically designed to be operated from user friendly application ran either from Android or iOS-powered mobile devices.


All Bluetooth commands sent from your mobile device to PowerDot are securely encrypted through Bluetooth built-in Secure Simple Pairing mechanism.

Before starting using PowerDot, user has to activate PowerDot unit from PowerDot mobile application and after the activation; each PowerDot unit is securely locked to his mobile device. The locked (active) device will be able to accept commands only from the mobile device it's being locked on.


POWERDOT MAINTAINENCE INSTRUCTIONS


As general recommendation, PowerDot should be switched OFF and lead detached from the connector at the end of every session (if user forgets to switch off, PowerDot will switch off itself automatically after 20 minutes of inactivity).

PowerDot unit, together with its accessories, should be kept in the carry case supplied and carefully stored on a secure surface and protected from the situations, listed in the WARNINGS above.

 **WARNING! Replace your electrode pads after 25-30 usages as recommended. Deteriorated & worn out pads can cause major discomfort during stimulation, affect the effectiveness and even lead to minor injury.**

 **WARNING! Cleaning: only clean the unit using a dry soft cloth.**

 **WARNING! Keep device and pads out of the water and store them in dry conditions in protective packaging or in the PowerDot carry case.**

 **WARNING! Disconnect lead wire from PowerDot unit AND lead snaps form the pads when storing them in the carry case. Otherwise, the leads might bend excessively close to the connectors and this may either damage the leads or significantly reduce their lifetime.**

PowerDot stimulators do not require calibration or verification of performance parameters. The characteristics are systemically verified and validated for each device manufactured. Those characteristics are stable and do not vary when used under normal conditions.

The manufacturer states that PowerDot unit cannot be repaired by personnel external to its own company. Any work of this nature carried out by personnel not authorized by the manufacturer will be classified as tampering with the unit, freeing the manufacturer from responsibility for the warranty and hazards that the operator or user may be exposed to.

ELIMINATION

European Directive 2002/96/CEE (WEEE) has a first priority, the prevention of waste electrical and electronic equipment, and in addition, the re-use, recycling and other forms of recovery of such wastes so as to reduce the disposal of waste:

- the pictogram wheeled bin barred means that the equipment can't be thrown with the household refuse, but that it makes the object of a selective collection
- the equipment has to be given to a suitable collection point for the treatment
- by this way, you contribute to the safeguarding of the natural resources and the human health protection

- batteries must be disposed of in accordance with your country's national laws governing the disposal of such items

POWERDOT PRODUCT WARRANTY

PowerDot is covered by world-wide warranty of 1 year which comes into effect on the date of purchase of the device (with the proof of purchase required).

Warranty applies to the stimulator (goods and work) and does not cover leads, pads, bands and carry case.

Within that period, Smartmissimo will be replacing your faulty PowerDots at no charge (except shipping & handling fees), provided that unit:

- Has been used for the intended purpose and in the manner described in this manual
- Has not been connected to an unsuitable power source
- Has not been subjected to misuse or neglect
- Has not been modified or repaired
- Has not been damaged further to a shock

Legal rights are not affected by this warranty.

TECHNICAL SPECIFICATIONS:

All electrical specifications are given for an impedance of 1000 Ohm per channel.

Battery: Lithium Polymer (LiPo) rechargeable 3.7 V, 210 mAh (~5-6 hours of continuous stimulation in average conditions).

Charging Input: 5V through USB 2.0 or higher connection (custom micro-USB to USB charging cable is provided as part of the package)

Stimulation Channels: 2 independent, galvanically isolated

Stimulation Waveform: Compensated trapezoid wave, zero mean DC, based on voltage regulated technology

Supported Stimulation Frequency Range: 1-120 Hz

Supported Stimulation Pulse Width: 150-400 us (for main/positive phase)

Maximum output voltage/amperage: 110 V/110 mA (+/-5%)

Bluetooth: FCC & EN300328 & BQB approved Bluetooth LE (4.0) support, built-in antennae

Mobile Application Compatibility:

- Android 4.3 (or later) powered smart phone with Bluetooth 4.0 module and HD (or better) touch screen
- Apple iPhone 4S/iPod 4S (or later) smart phone powered by iOS 7.0 (or later)

Device Dimensions: 60.4x43.5x13.6 mm

Device Weight: 25 g

Intended Use: Muscle Stimulator (for healthy muscles)

Environment Specifications:

- **Operating/Storage/Transport Temperature:** 0° C to +40° C
- **Storage/Transport Humidity:** 10-90% RH
- **Storage/Transport Atmospheric pressure:** from 700 hPa to 1060 hPa

Product Expected Lifetime: 5 years

Housing: ABS & TPE

Limitations: equipment is not suitable for use in the environments with a high concentration of oxygen and/or flammable liquids and/or flammable gas; do not use with equipment for electro surgery or short-wave or microwave therapy.

STANDARDS

PowerDot is based directly on medical technology.

To guarantee your safety, the design, manufacturing and distribution of PowerDot are in conformity with the requirements of the European Medical Device Directive 94/42/EEC.

The device is in conformity with the number of internationally recognized standards: standard for general safety rules for electromedical devices IEC 60601-1, the standard for electromagnetic compatibility IEC 60601-1-2, the standard for medical electrical equipment used in the home healthcare environment IEC 60601-1-11 and the standard for safety rules for nerve and muscle stimulators IEC 60601-2-10.

Directive 2002/96/CEE Waste electrical and electronic equipment (WEEE).

IP Rating IP22

FCC and EN300328 compatibility

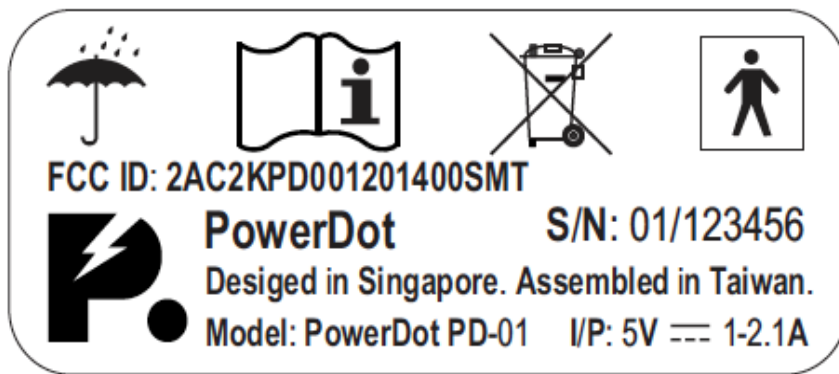
The device complies with Part15 of FCC rules. Operation is subject to the following conditions:

- a. This device may not cause harmful interference, and
- b. This device must accept any interference received, including interference that may cause undesired operation.

FCC ID: 2AC2KPD001201400SMT

Bluetooth Smart Ready compatibility





NORMALISED SYMBOLS



This symbol on your PowerDot unit is to indicate conformity with the requirements of the Medical Device Directive (94/42/EEC)



Manufacturer



EU Authorized Representative



Keep dry



Internally powered device Class II with Type BF applied parts



Product subject to WEEE regulations concerning separate waste collection



Read the instructions for use carefully before using this device



RoHS Compliance

S/N

Serial Number

Manufacturer & After-sale Service

SmartMissmo Technologies Pte Ltd

4 Shenton Way, #28-01 SGX Centre II

Singapore 068807

E-Mail: info@getpowerdot.com;

E-Mail: support@getpowerdot.com

EU Authorized Representative

MT Promedt Consulting GmbH

Altenhafstrasse 80

66386 St. Ingbert Germany

Phone:(+49) 6894 581020

E-Mail: [info\(at\)mt-procons.com](mailto:info(at)mt-procons.com)