

Grasp and Release 3CH

Category: NMES/FES – motion triggered with threshold

Supports grasp and release by the stimulation of the upper limb muscles. The stimulation is triggered by lifting the upper arm on which the stimulator is placed.

Indication: Paralysis or muscle weakness of the upper limbs, e.g., after SCI, MS or stroke

Stimulation pattern: Sequential activation

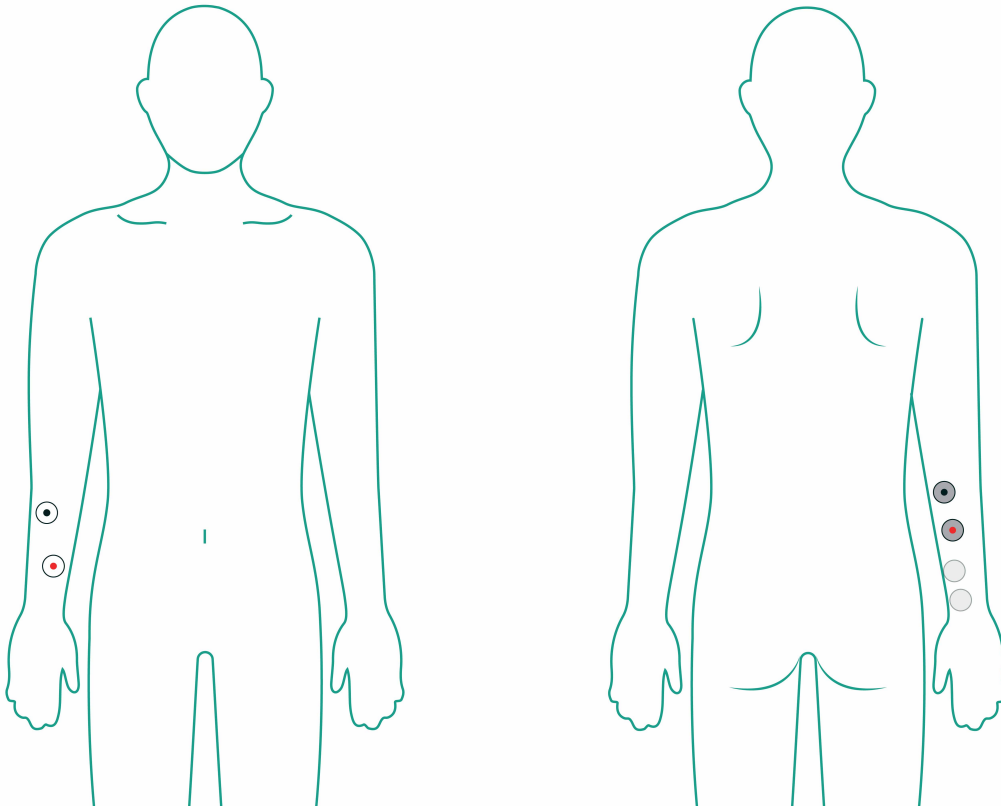
Stimulation cable: 5-channel

Active channels: Channel 1, Channel 2, Channel 3

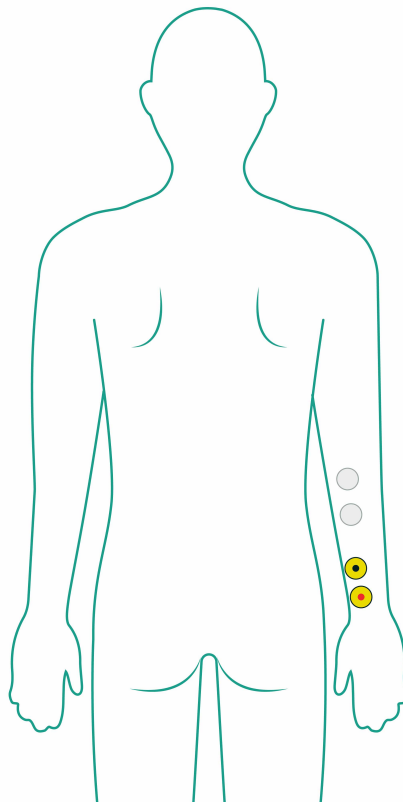
Solo mode: Yes

Placement of electrodes and stimulator

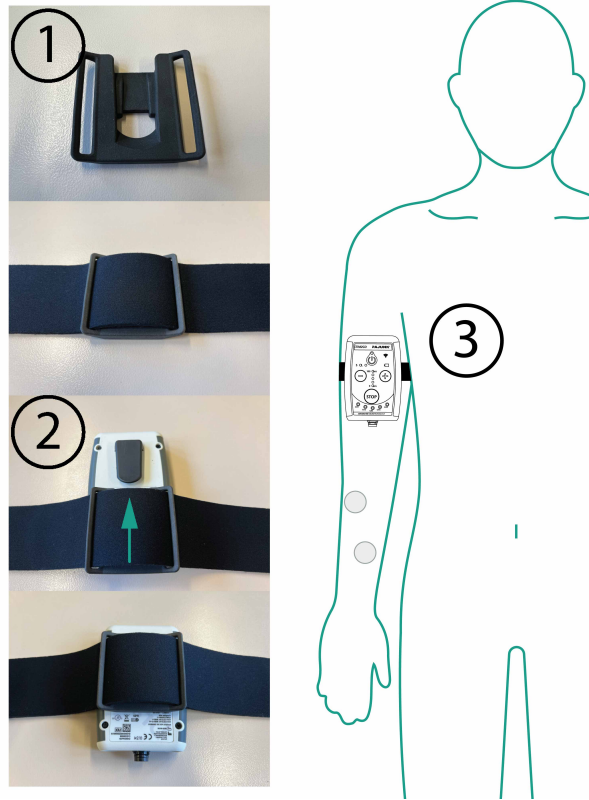
Channel	Function	Electrode type
1	finger- and wrist extensors	bipolar, round 1.25" (3.2cm)
2	finger flexors	bipolar, round 1.25" (3.2cm)
3	thumb flexor	bipolar, round 1.25" (3.2cm)



Electrode placement: channel 1 – finger- and wrist extensors and channel 2 – finger flexors



Electrode placement: channel 3 – thumb flexor

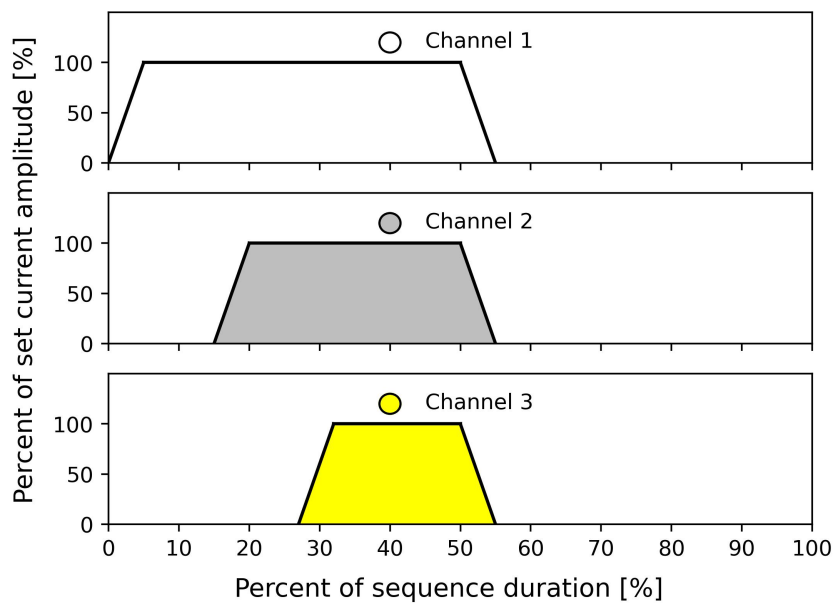


Stimulator placement

Current settings for stimulation stages

Training:

Total duration		20:00:000 (min:sec:msec)			
Sequence duration		00:22:000 (min:sec:msec)			
Sequence mode¹		motion triggered with threshold			
Threshold		50°			
Movement direction		raising			
Channel	Maximal current	Maximal pulse width	Frequency	Pulse form	Pulse mode ²
1	100.0 mA	200 µs	33.3 Hz	biphasic (100 µs pause)	sequential
2	100.0 mA	200 µs	33.3 Hz	biphasic (100 µs pause)	sequential
3	100.0 mA	200 µs	33.3 Hz	biphasic (100 µs pause)	sequential



Activation of the stimulation channels for training

**¹Sequence modes**

- Automatic repetition: The stimulation sequence will be automatically repeated until the total duration of the stage is reached.
- Motion triggered cyclic: The stimulator is placed on a limb and the cycle percentage will be estimated during cyclic movements like leg cycling or arm cranking. The Stimulation is controlled as a function of the current cycle percentage and can be activated in up to three phases per active channel.
- Motion triggered with threshold: The stimulation sequence will be triggered by an change in the inclination angle of a body segment on which the stimulator is placed. The angle and direction of change (increasing or decreasing) must be defined.
- Manually triggered: The stimulation sequence will be manually triggered by the therapist or patient using the Stim2Go app.

²Pulse modes

- Sequential: The stimulation is activated in up to three phases within a sequence duration or motion cycle.
- Always on: For a current amplitude larger than zero, the stimulation of a channel is permanently on over the entire sequence duration.