

## Grasp and Release 3CH

**Category:** NMES/FES – manually triggered

Supports grasp and release by the stimulation of the upper limb muscles. The stimulation is manually triggered

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

**Stimulation pattern:** Sequential activation

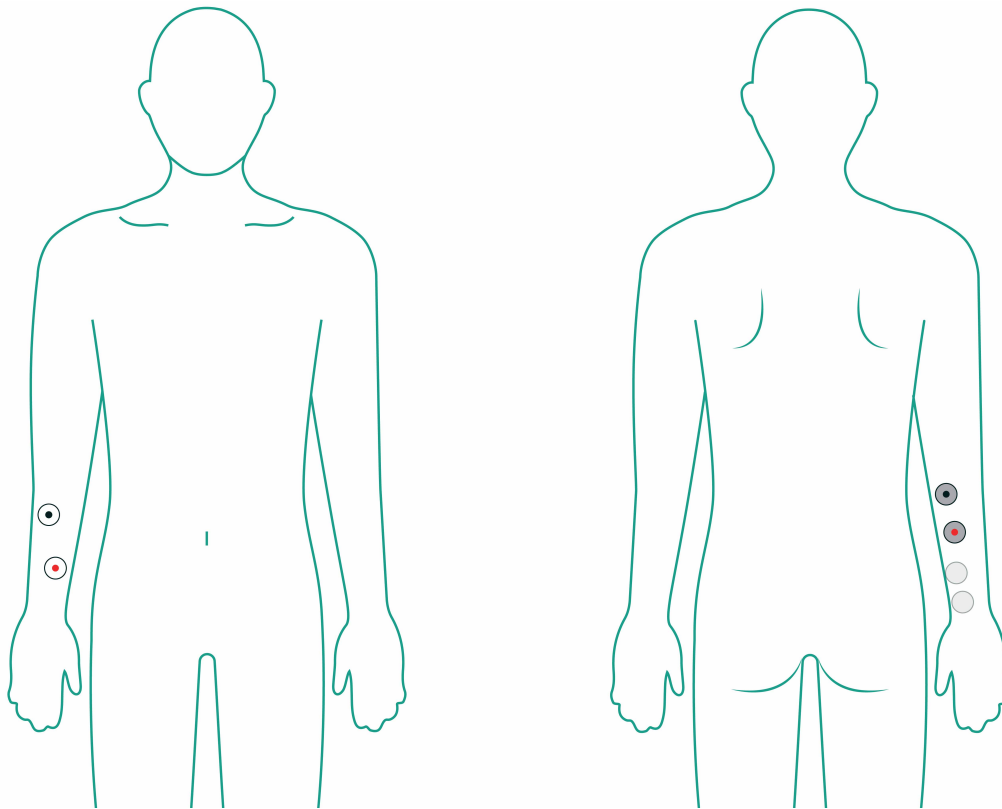
**Stimulation cable:** 5-channel

**Active channels:** Channel 1, Channel 2, Channel 3

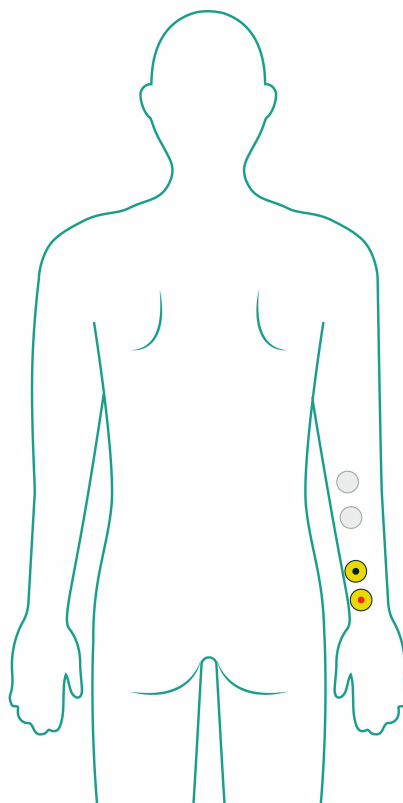
**Solo mode:** No

### Placement of electrodes and stimulator

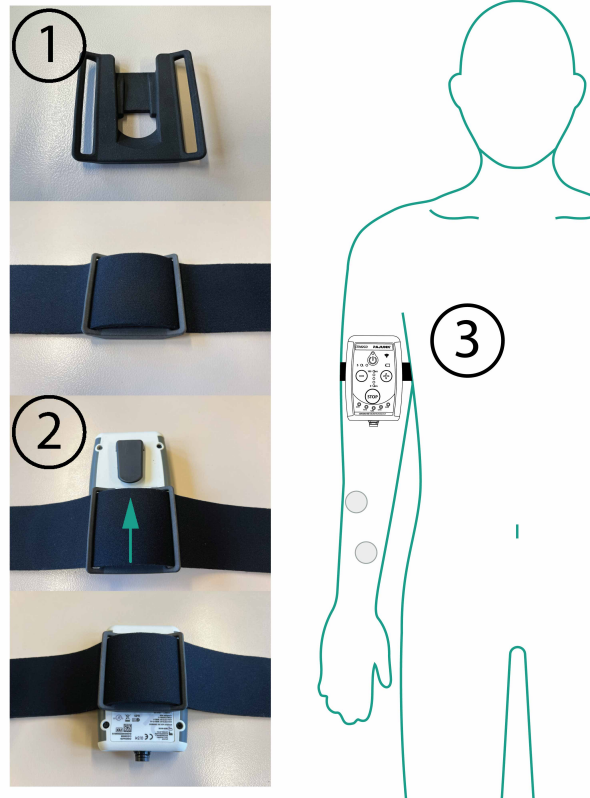
Channel	Function	Electrode type
1	finger- and wrist extensors	bipolar, round 1.25" (3.2cm)
2	finger flexors	bipolar, round 1.25" (3.2cm)
3	thumb flexor	bipolar, round 1.25" (3.2cm)



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



**Electrode placement:** channel 3 – thumb flexor

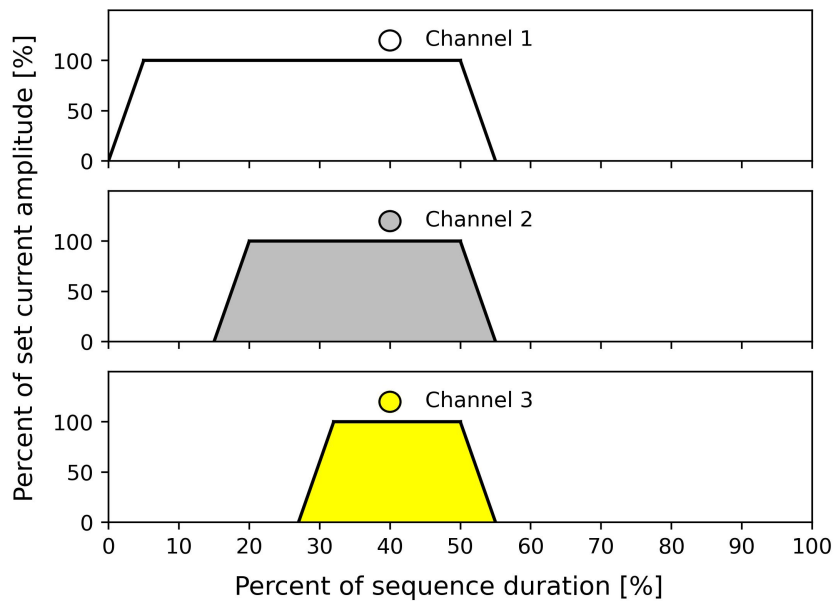


Stimulator placement

## Current settings for stimulation stages

### Training:

<b>Total duration</b>		20:00:000 (min:sec:msec)			
<b>Sequence duration</b>		00:22:000 (min:sec:msec)			
<b>Sequence mode<sup>1</sup></b>		manual triggered			
Channel	Maximal current	Maximal pulse width	Frequency	Pulse form	Pulse mode <sup>2</sup>
1	100.0 mA	200 $\mu$ s	33.3 Hz	biphasic (100 $\mu$ s pause)	sequential
2	100.0 mA	200 $\mu$ s	33.3 Hz	biphasic (100 $\mu$ s pause)	sequential
3	100.0 mA	200 $\mu$ s	33.3 Hz	biphasic (100 $\mu$ s pause)	sequential



**Activation of the stimulation channels for training**

**<sup>1</sup>Sequence 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.

**<sup>2</sup>Pulse 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.